



# User Manual

## Wireless N 300 Gigabit Router

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# Preface

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

## Manual Revisions

Revision	Date	Description
1.0	January 25, 2011	• Initial Release

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# Package Contents



DIR-651 Wireless N 300 Gigabit Router



Ethernet Cable



Power Adapter



CD-ROM with Manual and Setup Wizard

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

**Note:** Using a power supply with a different voltage rating than the one included with the DIR-651 will cause damage and void the warranty.

# System Requirements

<b>Network Requirements</b>	<ul style="list-style-type: none"><li>• An Ethernet-based Cable or DSL modem</li><li>• IEEE 802.11n or 802.11g wireless clients</li><li>• 10/100/1000 Ethernet</li></ul>
<b>Web-based Configuration Utility Requirements</b>	<p><b>Computer with the following:</b></p> <ul style="list-style-type: none"><li>• Windows®, Macintosh, or Linux-based operating system</li><li>• An installed Ethernet adapter</li></ul> <p><b>Browser Requirements:</b></p> <ul style="list-style-type: none"><li>• Internet Explorer 6.0 or higher</li><li>• Chrome 2.0 or higher</li><li>• Firefox 3.0 or higher</li><li>• Safari 3.0 or higher</li></ul> <p><b>Windows® Users:</b> Make sure you have the latest version of Java installed. Visit <a href="http://www.java.com">www.java.com</a> to download the latest version.</p>
<b>CD Installation Wizard Requirements</b>	<p><b>Computer with the following:</b></p> <ul style="list-style-type: none"><li>• Windows® 7, Vista®, or XP (Service Pack 2 or higher)</li><li>• An installed Ethernet adapter</li><li>• CD-ROM drive</li></ul>

# Introduction

## **TOTAL PERFORMANCE**

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

## **TOTAL SECURITY**

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

## **TOTAL COVERAGE**

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

## **ULTIMATE PERFORMANCE**

The D-Link Wireless N 300 Gigabit Router is an 802.11n compliant device that delivers real world performance of up to 650% faster than an 802.11g wireless connection (also faster than a 100Mbps wired Ethernet connection). Create a secure wireless network to share photos, files, music, video, printers, and network storage throughout your home. Connect the Router to a cable or DSL modem and share your high-speed Internet access with everyone on the network. In addition, this Router includes a Quality of Service (QoS) engine that keeps digital phone calls (VoIP) and online gaming smooth and responsive, providing a better Internet experience.

## **EXTENDED WHOLE HOME COVERAGE**

Powered by Wireless N 300 technology, this high performance router provides superior Whole Home Coverage while reducing dead spots. The Router is designed for use in bigger homes and for users who demand higher performance networking. Add a Wireless N 300 notebook or desktop adapter and stay connected to your network from virtually anywhere in your home.

## **TOTAL NETWORK SECURITY**

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

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

## Features

- **Faster Wireless Networking** - The DIR-651 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 802.11g Devices** - The DIR-651 is still fully compatible with the IEEE 802.11g standard, so it can connect with existing 802.11g PCI, USB and Cardbus adapters.
- **Advanced Firewall Features** - The Web-based user interface displays a number of advanced network management features including:
  - **Content Filtering** - Easily applied content filtering based on MAC Address, URL, and/or Domain Name.
  - **Filter Scheduling** - These filters can be scheduled to be active on certain days or for a duration of hours or minutes.
  - **Secure Multiple/Concurrent Sessions** - The DIR-651 can pass through VPN sessions. It supports multiple and concurrent IPsec and PPTP sessions, so users behind the DIR-651 can securely access corporate networks.
- **User-friendly Setup Wizard** - Through its easy-to-use Web-based user interface, the DIR-651 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 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

# Hardware Overview

## Connections



<b>1</b>	LAN Ports (1-4)	Connect Ethernet devices such as computers, switches, and hubs.
<b>2</b>	Internet Port	The auto MDI/MDIX Internet port is the connection for the Ethernet cable to the cable or DSL modem.
<b>3</b>	Power Receptor	Receptor for the supplied power adapter.
<b>4</b>	Reset	Press and hold the Reset button to restore the router to its original factory default settings.

## LEDs



<b>1</b>	Power LED	A solid light indicates a proper connection to the power supply.
<b>2</b>	Internet LED	A solid light indicates connection on the Internet port. This LED blinks during data transmission. A solid blue light indicates that there is an Internet connection, an orange light indicates that there is none.
<b>3</b>	WLAN LED	A solid light indicates that the wireless segment is ready. This LED blinks during wireless data transmission.
<b>4</b>	Local Network's LED	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 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.

# Getting Started

The DIR-651 includes a Quick Router Setup Wizard CD. Follow the simple steps below to run the Setup Wizard to guide you quickly through the installation process.

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

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

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



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

# Configuration

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

## Web-based Configuration Utility

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

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



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

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

A screenshot of the D-Link router's login page. The page has an orange header with the word "LOGIN" in white. Below the header, it says "Log in to the router". There are two input fields: "User Name" with a dropdown menu showing "Admin" and "Password" with an empty text box. A "Log In" button is located below the password field.

# Setup Wizard

## Internet Connection

You may click **Setup Wizard** to quickly configure your router. Skip to the next page.

If you want to enter your settings without running the wizard, click **Manual Configuration** and skip to page 15.

**INTERNET CONNECTION**

There are two ways to set up your Internet connection: you can use the Web-based Internet Connection Setup Wizard, or you can manually configure the connection.

---

**INTERNET CONNECTION WIZARD**

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

[Internet Connection Setup Wizard](#)

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

---

**MANUAL INTERNET CONNECTION OPTIONS**

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

[Manual Internet Connection Setup](#)

## Wireless Settings

Click **Launch Internet Connection Setup Wizard** to begin.

If you want to configure your wireless settings, click **Launch Wireless Security Setup Wizard** and skip to page 60.

To manually configure your wireless settings, click **Manual Wireless Network Setup** and skip to page 21.

**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.

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**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.

---

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

---

**MANUAL WIRELESS NETWORK SETUP**

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

[Manual Wireless Network Setup](#)

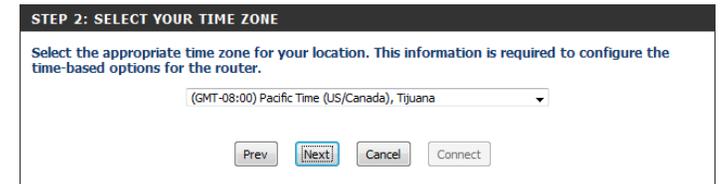
Click **Next** to continue.



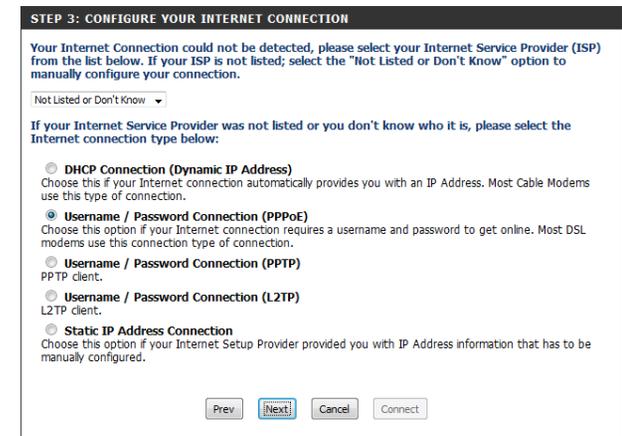
Create a new password and then click **Next** to continue.



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



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



If you selected 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 : 00:1e:8c:42:b4:1d (optional)

Copy Your PC's MAC Address

Host Name : DIR-651

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 : 0.0.0.0

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.

Prev Next Cancel Connect

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 : 0.0.0.0

PPTP Subnet Mask : 0.0.0.0

PPTP Gateway IP Address : 0.0.0.0

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

User Name :

Password : \*\*\*\*\*

Verify Password : \*\*\*\*\*

Prev Next Cancel Connect

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 : 0.0.0.0

L2TP Subnet Mask : 0.0.0.0

L2TP Gateway IP Address : 0.0.0.0

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

User Name :

Password : \*\*\*\*\*

Verify Password : \*\*\*\*\*

Prev Next Cancel Connect

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

**SET STATIC IP ADDRESS CONNECTION**

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

IP Address : 0.0.0.0

Subnet Mask : 0.0.0.0

Gateway Address : 0.0.0.0

Primary DNS Address : 0.0.0.0

Secondary DNS Address : 0.0.0.0

Prev Next Cancel Connect

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

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

**SETUP COMPLETE!**

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

Prev Next Cancel Connect

# Manual Configuration

**My Internet Connection is:** Select the type of Internet connection you have. Select **Dynamic IP (DHCP)**, **PPPoE**, **PPTP**, **L2TP**, or **Static**. Refer to the next few pages for more information.

**Enable Hardware NAT:** When this option is enabled, the router will speed up NAT performance by hardware acceleration mechanism.

**Note:** SPI and the QoS engine will be disabled automatically when hardware NAT is enabled.

**WAN**

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

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

---

**INTERNET CONNECTION TYPE**

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

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

---

**HAREWARE NAT SETTINGS**

**Enable Hardware NAT:**

---

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

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

**Host Name :**

**Use Unicasting :**  (compatibility for some DHCP Servers)

**Primary DNS Address :**

**Secondary DNS Address :**

**MTU :**  (bytes)MTU default = 1500

**MAC Address :**

## Dynamic (Cable)

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

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

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

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

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

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

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

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

**Host Name :**

**Use Unicasting :**  (compatibility for some DHCP Servers)

**Primary DNS Address :**

**Secondary DNS Address :**

**MTU :**  (bytes)MTU default = 1500

**MAC Address :**

# Internet Setup

## PPPoE (DSL)

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

**My Internet Connection:** 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 :**  (optional)

**Secondary DNS Server :**  (optional)

**MTU :**  (bytes) MTU default = 1492

**MAC Address :**

Copy Your PC's 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.

**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.

**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 :**

## 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).

**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 **Copy Your PC's MAC Address** button to replace the Internet port's MAC address with the MAC address of your Ethernet card.

**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 :**

## Static (assigned by ISP)

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 page titled "STATIC IP ADDRESS INTERNET CONNECTION TYPE". Below the title, there is a blue instruction: "Enter the static address information provided by your Internet Service Provider (ISP)". The page contains several input fields with the following labels and values:

- IP Address : 0.0.0.0
- Subnet Mask : 0.0.0.0
- Default Gateway : 0.0.0.0
- Primary DNS Server : 0.0.0.0
- Secondary DNS Server : 0.0.0.0
- MTU : 1500 (bytes) MTU default = 1500
- MAC Address : 00:1e:8c:42:b4:1d

At the bottom right, there is a button labeled "Copy Your PC's MAC Address".

# Wireless Settings

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

**Schedule:** The schedule of time when the wireless settings rules 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.

**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-651 to choose the channel with the least amount of interference.

**Wireless Channel:** Indicates the channel setting for the DIR-651. 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.

**802.11n Only** - Select only if all of your wireless clients are 802.11n.

**Mixed 802.11n and 802.11g** - Select if you are using a mix of 802.11n and 11g 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.

**40MHz** - Select if using only 802.11n wireless clients.

**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 broadcasted by the DIR-651. If Invisible is selected, the SSID of the DIR-651 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DIR-651

**WIRELESS NETWORK SETTINGS**

**Enable Wireless :**  Always New Schedule

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

**802.11 Mode :**

**Enable Auto Channel Scan :**

**Wireless Channel :**

**Transmission Rate :**

**Channel Width :**

**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 :**

# Network Settings

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

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

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

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

**Device Name:** Enter a name for the router.

**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 shows the D-Link DIR-651 web-based management interface. The top navigation bar includes the D-Link logo and tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists menu items: INTERNET, WIRELESS SETTINGS, and NETWORK SETTINGS (which is currently selected). The main content area is titled 'NETWORK SETTINGS' and contains the following text: 'Use this section to configure the internal network settings of your router and also to configure the built-in DHCP Server to assign IP addresses to the computers on your network. The IP Address that is configured here is the IP Address that you use to access the Web-based management interface. If you change the IP Address here, you may need to adjust your PC's network settings to access the network again.' Below this text are two buttons: 'Save Settings' and 'Don't Save Settings'. Underneath is a section titled 'ROUTER SETTINGS' with the text: 'Use this section to configure the internal network settings of your router. The IP Address that is configured here is the IP Address that you use to access the Web-based management interface. If you change the IP Address here, you may need to adjust your PC's network settings to access the network again.' This section contains the following fields: 'Router IP Address' (192.168.0.1), 'Subnet Mask' (255.255.255.0), 'Device Name' (dlinkrouter), 'Local Domain Name' (empty), and 'Enable DNS Relay' (checked). On the right side of the interface, there is a 'Helpful Hints ...' section with two paragraphs of text and a 'More...' link.

## DHCP Server Settings

DHCP stands for Dynamic Host Control Protocol. The DIR-651 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-651. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.

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

**DHCP IP Address Range:** Enter the starting and ending IP addresses for the DHCP server's IP assignment.  
**Note:** *If you statically (manually) assign IP addresses to your computers or devices, make sure the IP addresses are outside of this range or you may have an IP conflict.*

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

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

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

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

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

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

**Primary/Secondary WINS IP Address:** Enter your Primary (and Secondary) WINS IP address(es).

### 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)

**NetBIOS announcement :**

**Learn NetBIOS from WAN :**

**NetBIOS Scope :**  (optional)

**NetBIOS node type :**

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

**Primary WINS IP Address :**

**Secondary WINS IP Address :**

## 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.

**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 which 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.

**ADD DHCP RESERVATION**

**Enable :**

**Computer Name :**  <<

**IP Address :**

**MAC Address :**

**DHCP RESERVATIONS LIST**

Enable	Host Name:	MAC Address	IP Address
<input type="checkbox"/>			

**NUMBER OF DYNAMIC DHCP CLIENTS 1**

Hardware Address	Assigned IP	Hostname	Expires	
00:04:23:2C:51:A3	192.168.0.101	PM_TEST01	6 Days, 23:42:05	<a href="#">Revoke</a> <a href="#">Reserve</a>

## Virtual Server

The DIR-651 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-651 firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DIR-651 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-651 redirects the external service request to the appropriate server within the LAN network.

The DIR-651 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.

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

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

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

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

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

**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.

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**VIRTUAL SERVER**

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

Save Settings Don't Save Settings

**24 -- VIRTUAL SERVERS LIST**

	Name	IP Address	Application Name	Port	Protocol	Schedule
<input type="checkbox"/>		0.0.0.0	<< Computer Name	0	TCP	Always
<input type="checkbox"/>		0.0.0.0	<< Computer Name	0	TCP	Always
<input type="checkbox"/>		0.0.0.0	<< Computer Name	0	TCP	Always

**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

# 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.

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SETUP ADVANCED TOOLS STATUS SUPPORT

**PORT FORWARDING**

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

Save Settings Don't Save Settings

**24 — PORT FORWARDING RULES**

	Name	Application Name	Ports to Open	Schedule
<input type="checkbox"/>	IP Address 0.0.0.0	Computer Name	TCP 0	Always
<input type="checkbox"/>	IP Address 0.0.0.0	Computer Name	UDP 0	Always
<input type="checkbox"/>	IP Address 0.0.0.0	Computer Name	TCP 0	Always
<input type="checkbox"/>	IP Address 0.0.0.0	Computer Name	UDP 0	Always

**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

# 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-651. 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-651 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 predefined 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.

# QoS Engine

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

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

**Note: When this option is enabled, hardware NAT will be disabled automatically.**

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

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

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

**Enabled QoS Engine:** This option is enabled by default. This will allow your router to automatically determine the network priority of running programs.

**Automatic Classification:** This option is enabled by default so that your router will automatically determine which programs should have network priority. For best performance, use the Automatic Classification option to automatically set the priority for your applications.

**Dynamic Fragmentation:** This option should be enabled when you have a slow Internet uplink. It helps to reduce the impact that large low priority network packets can have on more urgent ones.

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SETUP | **ADVANCED** | TOOLS | STATUS | SUPPORT

**QoS ENGINE**

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

Save Settings | Don't Save Settings

**WAN TRAFFIC SHAPING**

Enable Traffic Shaping :

Automatic Uplink Speed :

Measured Uplink Speed : 0

Manual Uplink Speed : 128 kbps << Select Transmission Rate

**QoS ENGINE SETUP**

Enable QoS Engine :

Automatic Classification :

Dynamic Fragmentation :

**10 -- QoS ENGINE RULES**

Name	Priority	Protocol
	1 (1..255)	6 << TCP
<input type="checkbox"/>	Local IP Range 0.0.0.0 to 255.255.255.255	Local Port Range 0 to 65535
	Remote IP Range 0.0.0.0 to 255.255.255.255	Remote Port Range 0 to 65535

**Helpful Hints ...**

If the **Measured Uplink Speed** is known to be incorrect (that is, it produces suboptimal performance), disable **Automatic Uplink Speed** and enter the **Manual Uplink Speed**. Some experimentation and performance measurement may be required to converge on the optimal value.

[More...](#)

**QoS Engine Rules:** A QoS Engine Rule identifies a specific message flow and assigns a priority to that flow. For most applications, automatic classification will be adequate, and specific QoS Engine Rules will not be required.

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

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

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

**Protocol:** The protocol used by the messages.

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

**Local Port Range:** The rule applies to a flow of messages whose LAN-side port number is within the range set here.

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

**Remote Port Range:** The rule applies to a flow of messages whose WAN-side port number is within the range set here.

# 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.

**Clear:** Click to remove the MAC address.

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**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	Clear
00:00:00:00:00:00	<<	Computer Name	Clear
00:00:00:00:00:00	<<	Computer Name	Clear
00:00:00:00:00:00	<<	Computer Name	Clear
00:00:00:00:00:00	<<	Computer Name	Clear
00:00:00:00:00:00	<<	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:** Click the **Add Policy** button to start the Access Control Wizard.



## Access Control Wizard

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



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 :

---

Prev Next Save Cancel

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.

Always

Details :

---

Prev Next Save Cancel

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:  << Computer Name

Machine Address:  << Computer Name

Copy Your PC's MAC Address

OK Cancel

---

Machine

---

Prev Next Save Cancel

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 :

Prev Next Save Cancel

If you selected **Apply Advanced Port Filters**, then 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"/>		0.0.0.0	255.255.255.255	Any	0	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	0	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	0	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	0	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	0	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	0	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	0	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	0	65535
<input type="checkbox"/>		0.0.0.0	255.255.255.255	Any	0	65535

Prev Next Save Cancel

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

Prev Next Save Cancel

# Website Filter

Website Filters are used to deny 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 contains the blocked word, the site will not be accessible and the web page will not display. To use this feature, enter the text string to be blocked and click **Save Settings**. The text to be blocked will appear in the list. To delete the text, click **Clear the List Below**.

**Configure Website Filter Below:** Select **Allow** or **Deny**.

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

The screenshot shows the D-Link DIR-651 Advanced Setup interface. The top navigation bar includes tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The left sidebar lists various configuration options, with WEBSITE FILTER selected. The main content area is titled 'WEBSITE FILTER' and contains the following elements:

- WEBSITE FILTER** (Section Header)
- Introduction text: "The Website Filter option allows you to set up a list of Web sites you would like to allow or deny through your network. To use this feature, you must also select the 'Apply Web Filter' checkbox in the Access Control section."
- Buttons: "Save Settings" and "Don't Save Settings"
- 40 - WEBSITE FILTERING RULES** (Section Header)
- Configuration options: "Configure Website Filter below:" and a dropdown menu set to "DENY computers access to ONLY these sites".
- Button: "Clear the list below..."
- Website URL/Domain** (Table Header)
- Table with 2 columns and 8 rows of input fields for entering website URLs or domains.

On the right side of the interface, there is a "Helpful Hints..." section with the following text: "Create a list of Web Sites to which you would like to deny or allow through the network. Use with **Advanced** → **Access Control**. [More...](#)"

# 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 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 an 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-651

SETUP ADVANCED TOOLS STATUS SUPPORT

VIRTUAL SERVER  
PORT FORWARDING  
APPLICATION RULES  
QOS ENGINE  
NETWORK FILTER  
ACCESS CONTROL  
WEBSITE FILTER  
INBOUND FILTER  
FIREWALL SETTINGS  
ROUTING  
ADVANCED WIRELESS  
WI-FI PROTECTED SETUP  
ADVANCED NETWORK  
GUEST ZONE

**INBOUND FILTER**

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

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

**ADD INBOUND FILTER RULE**

Name :

Action :

Remote IP Range :	Enable	Remote IP Start	Remote 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

Add Clear

**INBOUND FILTER RULES LIST**

Name	Action	Remote 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-651 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.

**Note:** When this option is enabled, hardware NAT will be disabled automatically.

**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.

**Anti-Spoof Check:** Enable this feature to protect your network 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.

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

The screenshot shows the D-Link DIR-651 Firewall Settings page. The page is divided into several sections:

- FIREWALL SETTINGS:** The Firewall Settings allow you to set a single computer on your network outside of the router. There are buttons for "Save Settings" and "Don't Save Settings".
- ENABLE SPI:** The "Enable SPI" checkbox is checked.
- NAT ENDPOINT FILTERING:**
  - UDP Endpoint Filtering:** Radio buttons are selected for "Endpoint Independent", "Address Restricted", and "Port And Address Restricted".
  - TCP Endpoint Filtering:** Radio buttons are selected for "Endpoint Independent", "Address Restricted", and "Port And Address Restricted".
- ANTI-SPOOF CHECKING:** The "Enable anti-spoof checking" checkbox is unchecked.
- DMZ HOST:** The "Enable DMZ" checkbox is unchecked. The "DMZ IP Address" is set to 0.0.0.0 and the "Computer Name" is set to "Computer Name".

On the right side of the page, there is a "Helpful Hints..." section with the following text: "Enable the DMZ option only as a last resort. If you are having trouble using an application from a computer behind the router, first try opening ports associated with the application in the Virtual Server or Port Forwarding sections. More..."

# Application Level Gateway Configuration

Here you can enable or disable ALG's. Some protocols and applications require special handling of the IP payload to make them work with network address translation (NAT). Each ALG provides special handling for a specific protocol or application. A number of ALGs for common applications are enabled by default.

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

**L2TP:** Allows multiple machines on the LAN to connect to their corporate network using L2TP protocol.

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

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

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

APPLICATION LEVEL GATEWAY (ALG) CONFIGURATION	
PPTP :	<input checked="" type="checkbox"/>
L2TP :	<input checked="" type="checkbox"/>
IPSec (VPN) :	<input checked="" type="checkbox"/>
RTSP :	<input checked="" type="checkbox"/>
SIP :	<input checked="" type="checkbox"/>

# Routing

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

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

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

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

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

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

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DIR-651 // SETUP ADVANCED TOOLS STATUS SUPPORT

**ROUTING :**

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

Save Settings Don't Save Settings

**32 --ROUTE LIST**

	Name	Destination IP	Metric	Interface
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="1"/>	<input type="text" value="WAN"/>
	Netmask	Gateway		
	<input type="text" value="0.0.0.0"/>	<input type="text" value="0.0.0.0"/>		
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="1"/>	<input type="text" value="WAN"/>
	Netmask	Gateway		
	<input type="text" value="0.0.0.0"/>	<input type="text" value="0.0.0.0"/>		
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="1"/>	<input type="text" value="WAN"/>
	Netmask	Gateway		
	<input type="text" value="0.0.0.0"/>	<input type="text" value="0.0.0.0"/>		
<input type="checkbox"/>	<input type="text"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="1"/>	<input type="text" value="WAN"/>
	Netmask	Gateway		
	<input type="text" value="0.0.0.0"/>	<input type="text" value="0.0.0.0"/>		

**Helpful Hints...**

Each route has a check box next to it, check this box if you want the route to be enabled.

The name field allows you to specify a name for identification of this route, e.g. 'Network 2'

The destination IP address is the address of the host or network you wish to reach.

The netmask field identifies the portion of the destination IP in use.

The gateway IP address is the IP address of the router, if any, used to reach the specified destination.

[More...](#)

# 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 2432. 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.

**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-651 web interface. The top navigation bar includes 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'ADVANCED' tab is active, and the 'ADVANCED WIRELESS' sub-tab is selected. The main content area displays the following settings:

- Transmit Power:** High
- Beacon Period:** 100 (range: 20..1000)
- RTS Threshold:** 2347 (range: 0..2347)
- Fragmentation Threshold:** 2346 (range: 256..2346)
- DTIM Interval:** 1 (range: 1..255)
- WLAN Partition:**
- WMM Enable:**
- Short GI:**

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

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

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

[More...](#)

## Wi-Fi Protected Setup (WPS)

Wi-Fi Protected Setup (WPS) System is a simplified method for securing your wireless network during the “Initial setup” as well as the “Add New Device” processes. The Wi-Fi Alliance (WFA) has certified it across different products as well as manufactures. The process is just as easy, as 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 Station:** This Wizard helps you add wireless devices to the wireless network.

**Add Wireless Device Wizard:** 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 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.

Start the wizard.

# 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.

**Enable WAN Ping Respond:** Unchecking the box will not allow the DIR-651 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, 1000Mbps, or Auto 10/100/1000Mbps. 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.

**D-Link**

DIR-651 // SETUP ADVANCED TOOLS STATUS SUPPORT

**ADVANCED NETWORK**

If you are not familiar with these Advanced Network settings, please read the help section before attempting to modify these settings.

Save Settings Don't Save Settings

**UPNP**

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

Enable UPnP :

**WAN PING**

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

Enable WAN Ping Respond :

WAN Ping Inbound Filter : Allow All

Details : Allow All

**WAN PORT SPEED**

WAN Port Speed : Auto 10/100Mbps

**MULTICAST STREAMS**

Enable Multicast Streams :

**Helpful Hints ...**

UPnP helps other UPnP LAN hosts interoperate with the router. Leave the UPnP option enabled as long as the LAN has other UPnP applications.

For added security, it is recommended that you disable the WAN Ping 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.

More...

**WIRELESS**

# Guest Zone

The Guest Zone feature will allow you to create temporary zones that can be used by guests to access the Internet. These zones will be separate from your main wireless network.

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

**Schedule:** The schedule of time when the Guest Zone will be active. The schedule may be set to Always, which will allow the particular service to always be enabled. You can create your own times by clicking **Add New**.

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

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

# 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 cannot change the settings (you can only view them).

**Gateway Name:** Enter a name for the DIR-651 router.

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

**Enable HTTPS Server:** Check to enable HTTPS to connect to the router securely.

**Enable Remote Management:** Remote management allows the DIR-651 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-651.

Example: `http://x.x.x.x:8080` whereas x.x.x.x is the Internet IP address of the DIR-651 and 8080 is the port used for the Web Management interface. If you have enabled **HTTPS Server** and checked **Use HTTPS**, you must enter **https://** as part of the URL to access the router remotely.

**Inbound Filter/Details:** This section will list any rules that are created. Select from the Inbound Filter drop-down to set a rule. Click **Save Settings** to activate your changes.

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DIR-651 // SETUP ADVANCED TOOLS STATUS SUPPORT

**ADMINISTRATOR SETTINGS**

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.

By default, there is no password configured. It is highly recommended that you create a password to keep your router secure.

Save Settings Don't Save Settings

**ADMIN PASSWORD**

Please enter the same password into both boxes, for confirmation.

Password : [password field]  
Verify Password : [password field]

**USER PASSWORD**

Please enter the same password into both boxes, for confirmation.

Password : [password field]  
Verify Password : [password field]

**SYSTEM NAME**

Gateway Name : DIR-651

**ADMINISTRATION**

Enable Graphical Authentication :   
 Enable Remote Management :   
 Remote Admin Port : 8080  
 Remote Admin Inbound Filter : Allow All  
 Details : Allow All

**Helpful Hints ...**

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.

Enabling Remote Management, allows you or others to change the router configuration from a computer on the Internet.

Choose a port to open for remote management.

Select a filter that controls access as needed for the 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.

More ...

WIRELESS

# 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.

**Date and Time:** To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second and then click **Save Settings** at the top. You can also click **Copy Your Computer's Time Settings** to use the time from your computer.

**D-Link**

DIR-651 // SETUP ADVANCED **TOOLS** STATUS SUPPORT

ADMIN  
TIME  
SYSLOG  
EMAIL SETTINGS  
SYSTEM  
FIRMWARE  
DYNAMIC DNS  
SYSTEM CHECK  
SCHEDULES

**TIME**

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

Save Settings Don't Save Settings

**TIME CONFIGURATION**

Current Router Time : Wednesday, September 01, 2010 12:49:14 AM  
Time Zone : (GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi

Enable Daylight Saving :

Daylight Saving Dates : DST Start Month Week Day of Week Time  
Jan 1st Sun 12:00 上午  
DST End Jan 1st Sun 12:00 上午

**AUTOMATIC TIME CONFIGURATION**

Enable NTP Server :   
NTP Server Used : << Select NTP Server

**SET THE DATE AND TIME MANUALLY**

Date And Time : Year 2011 Month Jan Day 24  
Hour 01 Minute 57 Second 56 PM  
Copy Your Computer's Time Settings

Helpful Hints ...  
Good timekeeping is important for accurate logs and scheduled firewall rules.  
More...

**WIRELESS**

# 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).

The screenshot shows the D-Link web interface for the DIR-651 router. The top navigation bar includes 'DIR-651', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various configuration options: ADMIN, TIME, SYSLOG (selected), EMAIL SETTINGS, SYSTEM, FIRMWARE, DYNAMIC DNS, SYSTEM CHECK, SCHEDULES, and LOGOUT. The main content area is titled 'SYSLOG' and contains the following text: 'The SysLog options allow you to send log information to a SysLog Server.' Below this text are two buttons: 'Save Settings' and 'Don't Save Settings'. Underneath is the 'SYSLOG SETTINGS' section, which includes a checked checkbox for 'Enable Logging To Syslog Server:' and a 'Syslog Server IP Address:' field with the value '0.0.0.0' and a dropdown menu labeled 'Computer Name'. On the right side of the interface, there is a 'Helpful Hints ...' section with text explaining that a System Logger (syslog) is a server that collects logs from different sources and that if the LAN includes a syslog server, the router's logs can be sent to that server. A 'More...' link is also present.

# Email Settings

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

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

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

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

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

**SMTP Server Port:** Enter the port you want to use. The default port is 25.

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

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

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

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

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

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

**D-Link**

DIR-651 // SETUP ADVANCED TOOLS STATUS SUPPORT

**EMAIL SETTINGS**

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

Save Settings Don't Save Settings

**ENABLE**

Enable Email Notification :

**EMAIL SETTINGS**

From Email Address :

To Email Address :

SMTP Server Address :

SMTP server port : 25

Enable Authentication :

Account Name : user

Password :

Verify Password :

**EMAIL LOG WHEN FULL OR ON SCHEDULE**

On Log Full :

On Schedule :

Schedule : Never

Details : Never

Helpful Hints ...  
You may want to make the email settings similar to those of your email client program.  
More...

# System Settings

**Save 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 from Local Hard Drive:** Use this option to load previously saved router configuration settings. First, click **Browse** 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:** 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.

The screenshot shows the D-Link DIR-651 web interface. The top navigation bar includes 'DIR-651', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists menu items: ADMIN, TIME, SYSLOG, EMAIL SETTINGS, SYSTEM (highlighted), FIRMWARE, DYNAMIC DNS, SYSTEM CHECK, and SCHEDULES. The main content area is titled 'SYSTEM SETTINGS' and contains the following text and buttons:

**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.

**Save To Local Hard Drive:**

**Load From Local Hard Drive:**

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

**Reboot The Device:**

**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 Now** 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.

## Language Pack

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

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

**Note:** In most cases you must unzip the file first before uploading.

The screenshot displays the D-Link DIR-651 web interface. The top navigation bar includes 'DIR-651', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists various configuration options, with 'FIRMWARE' selected. The main content area is divided into three sections:

- FIRMWARE:** Contains a message about new firmware availability and a 'Check Online Now...' button. Below this, it provides instructions on how to upgrade the firmware using a local file and an 'Upload' button.
- FIRMWARE INFORMATION:** Displays the current firmware version (1.00), the current firmware date (Thu, 13, Jan, 2011), and the current language pack version (None). It includes a 'Check Online Now for Latest Firmware Version' button.
- FIRMWARE UPGRADE:** Features a red warning 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.' It also provides instructions on the required PC connection and includes a 'Browse...' button for file selection and an 'Upload' button.

The bottom section, **LANGUAGE PACK INFORMATION**, includes a red warning note: 'Note: Upgrade language pack will change the language displayed on web site.' It provides instructions on the required PC connection and includes a 'Browse...' button for file selection and an 'Upload' button.

# 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.

**Enable Dynamic DNS:** 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:** Select your DDNS provider from the drop-down menu or type it in the box.

**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.

**Verify Password or Key:** Re-enter the Password for your DDNS account.

**Timeout:** Enter a time (in hours).

The screenshot shows the D-Link DIR-651 web interface. The 'DYNAMIC DNS' section is highlighted in orange. It contains the following text and fields:

**DYNAMIC DNS**

The DDNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter 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

Save Settings    Don't Save Settings

---

**DYNAMIC DNS**

Enable Dynamic DNS :

Server Address :  << [dlinkddns.com.cn]

Host Name :

Username or Key :

Password or Key :

Verify Password or Key :

**Helpful Hints...**

To use this feature, you must first have a Dynamic DNS account from one of the providers in the drop down menu.

[More...](#)

# 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 or host name that you wish to Ping and click **Ping**.

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

The screenshot shows the D-Link DIR-651 web interface. The top navigation bar includes the D-Link logo and tabs for SETUP, ADVANCED, TOOLS, STATUS, and SUPPORT. The TOOLS tab is selected. On the left, a sidebar menu lists various configuration options, with SYSTEM CHECK highlighted. The main content area is titled 'PING TEST' and contains the following text: 'Ping Test sends "ping" packets to test a computer on the Internet.' Below this is a form with a label 'Host Name or IP Address :', an input field, and a 'Ping' button. A 'PING RESULT' section is visible below the form but is currently empty. On the right side, there is a 'Helpful Hints ...' section with the text: '"Ping" checks whether a computer on the Internet is running and responding. Enter either the IP address of the target computer or enter its fully qualified domain name.' and a 'More...' link.

# Schedules

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

**Day(s):** Select a day, a range of days, or All Week to include every day.

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

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

**Save Settings:** You must click **Save Settings** at the top for your schedules to go into effect.

The screenshot shows the D-Link DIR-651 web interface. The top navigation bar includes 'DIR-651 //', '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 (highlighted). The main content area is titled 'SCHEDULES' and contains the following text: 'The Schedule configuration option is used to manage schedule rules for various firewall and parental control features.' Below this text are two buttons: 'Save Settings' and 'Don't Save Settings'. The '10 - ADD SCHEDULE RULE' section includes a 'Name' input field, a 'Day(s)' section with radio buttons for 'All Week' (selected) and 'Select Day(s)', and checkboxes for 'Sun', 'Mon', 'Tue', 'Wed', 'Thu', 'Fri', and 'Sat'. There is an 'All Day - 24 hrs' checkbox and a 'Time format' dropdown menu set to '12-hour'. The 'Start Time' and 'End Time' are each set to '12:00 PM' with a '(hour:minute, 12 hour time)' label. Below this is a 'SCHEDULE RULES LIST' table with columns for 'Name', 'Day(s)', and 'Time Frame'. The right sidebar, titled 'Helpful Hints ...', provides instructions: '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.', and 'Click the **Delete** icon to permanently delete a schedule.'

# Device Information

This page displays the current information for the DIR-651. It will display the LAN, WAN (Internet), and Wireless information.

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

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

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

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

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

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

**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.

**D-Link**

DIR-651 // SETUP ADVANCED TOOLS STATUS SUPPORT

**DEVICE INFORMATION**

All of your Internet and network connection details are displayed on this page. The firmware version is also displayed here.

**GENERAL**

Time : Wednesday, September 01, 2010 1:38:41 AM  
Firmware Version : 1.00 , Thu, 13, Jan, 2011

**WAN**

Connection Type : Dynamic IP (DHCP)  
Cable Status : Unlink  
Network Status : Disconnected **Renew** **Release**  
Connection Up Time : N/A  
MAC Address :  
IP Address : 0.0.0.0  
Subnet Mask : 0.0.0.0  
Default Gateway : 0.0.0.0  
Primary DNS Server : 0.0.0.0  
Secondary DNS Server : 0.0.0.0

**LAN**

MAC Address : 00:18:e7:12:34:58  
IP Address : 192.168.0.1  
Subnet Mask : 255.255.255.0  
DHCP Server : Enabled

**WIRELESS LAN**

Wireless Radio : On  
802.11 Mode : 802.11bgn  
Channel Width : 20MHz  
Channel : 11  
Wi-Fi Protected Setup : Enabled/Configured

SSID List :

Network Name (SSID)	Guest	MAC Address	Security Mode
DIR-651 WORLD	No	00:18:e7:12:34:58	Off

**LAN COMPUTERS**

IP Address	Name (if any)	MAC
192.168.0.101	PM_TEST01	00:04:23:2C:51:A3

**IGMP MULTICAST MEMBERSHIPS**

Multicast Group Address

**WIRELESS**

# 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.

**Log Options:** You can select the types of messages that you want to display from the log. System Activity, Debug Information, Attacks, Dropped Packets, and Notice messages can be selected. Click **Apply Log Settings Now** to activate your settings.

**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 your email address configured in the Tools > Email Settings screen.

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

**D-Link**

DIR-651

SETUP ADVANCED TOOLS STATUS SUPPORT

DEVICE INFO  
LOGS  
STATISTICS  
INTERNET SESSIONS  
WIRELESS

**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 internal syslog server support so you can send the log files to a computer on your network that is running a syslog utility.

**LOG OPTIONS**

Log Options :  System Activity  
 Debug Information  
 Attacks  
 Dropped Packets  
 Notice

Apply Log Settings Now

**LOG DETAILS**

First Page Last Page Previous Next

Refresh Clear Email Now Save Log

1/1

Time	Message
Sep 1 00:15:51	user.warn: kernel: wlan0: A wireless client is deauthenticated - 58:94:6B:82:C2:A8
Sep 1 00:15:51	user.warn: kernel: wlan0: A wireless client is associated - 58:94:6B:82:C2:A8
Sep 1 00:15:51	user.warn: kernel: wlan0: A wireless client is associated - 58:94:6B:82:C2:A8
Sep 1 00:00:07	syslog.info: syslogd started: BusyBox v1.13.4

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

# Stats

The screen below displays the Traffic Statistics. Here you can view the amount of packets that pass through the DIR-651 on both the Internet and the LAN ports. The traffic counter will reset if the device is rebooted.

D-Link																			
DIR-651	<a href="#">SETUP</a> <a href="#">ADVANCED</a> <a href="#">TOOLS</a> <a href="#">STATUS</a> <a href="#">SUPPORT</a>																		
DEVICE INFO LOGS <b>STATISTICS</b> INTERNET SESSIONS WIRELESS	<div style="border: 1px solid black; padding: 5px;"> <p><b>TRAFFIC STATISTICS</b></p> <p>Traffic Statistics display Receive and Transmit packets passing through your router.</p> <p> <input type="button" value="Refresh Statistics"/> <input type="button" value="Clear Statistics"/> </p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><b>LAN STATISTICS</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Sent : 1900714</td> <td style="width: 50%;">Received : 1897521</td> </tr> <tr> <td>TX Packets Dropped : 0</td> <td>RX Packets Dropped : 0</td> </tr> <tr> <td>Collisions : 0</td> <td>Errors : 0</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><b>WAN STATISTICS</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Sent : 0</td> <td style="width: 50%;">Received : 0</td> </tr> <tr> <td>TX Packets Dropped : 0</td> <td>RX Packets Dropped : 0</td> </tr> <tr> <td>Collisions : 0</td> <td>Errors : 0</td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><b>WIRELESS STATISTICS</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Sent : 6995</td> <td style="width: 50%;">Received : 897864</td> </tr> <tr> <td>TX Packets Dropped : 0</td> <td>RX Packets Dropped : 0</td> </tr> <tr> <td></td> <td>Errors : 0</td> </tr> </table> </div>	Sent : 1900714	Received : 1897521	TX Packets Dropped : 0	RX Packets Dropped : 0	Collisions : 0	Errors : 0	Sent : 0	Received : 0	TX Packets Dropped : 0	RX Packets Dropped : 0	Collisions : 0	Errors : 0	Sent : 6995	Received : 897864	TX Packets Dropped : 0	RX Packets Dropped : 0		Errors : 0
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	Errors : 0																		
	<p><b>Helpful Hints...</b></p> <p>This is a summary of the number of packets that have passed between the WAN and the LAN since the router was last initialized.</p> <p><a href="#">More...</a></p>																		

# Internet Sessions



DIR-651	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT																																																	
DEVICE INFO LOGS STATISTICS <b>INTERNET SESSIONS</b> WIRELESS	<b>INTERNET SESSIONS</b> <p>This page displays the full details of active internet sessions to your router.</p>				<b>Helpful Hints...</b> <p>This is a list of all active conversations between WAN computers and LAN computers.</p> <p><a href="#">More...</a></p>																																																	
	<b>INTERNET SESSIONS</b> <table border="1"> <thead> <tr> <th>Local</th> <th>NAT</th> <th>Internet</th> <th>Protocol</th> <th>State</th> <th>Dir</th> <th>Time Out</th> </tr> </thead> <tbody> <tr> <td>192.168.0.101:4226</td> <td>4226</td> <td>192.168.0.1:53</td> <td>udp</td> <td>-</td> <td>OUT</td> <td>80</td> </tr> <tr> <td>192.168.0.101:3614</td> <td>3614</td> <td>192.168.0.1:53</td> <td>udp</td> <td>-</td> <td>OUT</td> <td>63</td> </tr> <tr> <td>192.168.0.101:3245</td> <td>3245</td> <td>192.168.0.1:53</td> <td>udp</td> <td>-</td> <td>OUT</td> <td>88</td> </tr> <tr> <td>192.168.0.101:4499</td> <td>4499</td> <td>192.168.0.1:53</td> <td>udp</td> <td>-</td> <td>OUT</td> <td>83</td> </tr> <tr> <td>192.168.0.101:4224</td> <td>4224</td> <td>192.168.0.1:53</td> <td>udp</td> <td>-</td> <td>OUT</td> <td>80</td> </tr> <tr> <td>192.168.0.101:3017</td> <td>3017</td> <td>192.168.0.1:53</td> <td>udp</td> <td>-</td> <td>OUT</td> <td>86</td> </tr> </tbody> </table>				Local	NAT	Internet	Protocol	State	Dir	Time Out	192.168.0.101:4226	4226	192.168.0.1:53	udp	-	OUT	80	192.168.0.101:3614	3614	192.168.0.1:53	udp	-	OUT	63	192.168.0.101:3245	3245	192.168.0.1:53	udp	-	OUT	88	192.168.0.101:4499	4499	192.168.0.1:53	udp	-	OUT	83	192.168.0.101:4224	4224	192.168.0.1:53	udp	-	OUT	80	192.168.0.101:3017	3017	192.168.0.1:53	udp	-	OUT	86	
Local	NAT	Internet	Protocol	State	Dir	Time Out																																																
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192.168.0.101:3017	3017	192.168.0.1:53	udp	-	OUT	86																																																

# 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.

**D-Link**

DIR-651 //

SETUP    ADVANCED    TOOLS    **STATUS**    SUPPORT

DEVICE INFO  
LOGS  
STATISTICS  
INTERNET SESSIONS  
**WIRELESS**

**WIRELESS**

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

**NUMBER OF WIRELESS CLIENTS :**

MAC Address	IP Address	Mode	Rate	Signal
-------------	------------	------	------	--------

**Helpful Hints...**

This is a list of all wireless clients that are currently connected to your wireless router.

[More...](#)

# Support

The screenshot displays the D-Link DIR-651 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 the main sections: MENU, SETUP, ADVANCED, TOOLS, and STATUS. The main content area is titled 'SUPPORT MENU' and contains several sub-sections:

- SUPPORT MENU**
  - [Setup](#)
  - [Advanced](#)
  - [Tools](#)
  - [Status](#)
- SETUP HELP**
  - [Internet Connection](#)
  - [WAN](#)
  - [Wireless](#)
  - [Network Settings](#)
- ADVANCED HELP**
  - [Virtual Server](#)
  - [Port Forwarding](#)
  - [Application Rules](#)
  - [QoS Engine](#)
  - [Network Filter](#)
  - [Access Control](#)
  - [Website Filter](#)
  - [Inbound Filter](#)
  - [Firewall Settings](#)
  - [Routing](#)
  - [Advanced Wireless](#)
  - [Wi-Fi Protected Setup](#)
  - [Advanced Network](#)
  - [GUEST\\_ZONE](#)
- TOOLS HELP**
  - [Admin](#)
  - [Time](#)
  - [Syslog](#)
  - [Email Settings](#)
  - [System](#)
  - [Firmware](#)
  - [Dynamic DNS](#)
  - [System Check](#)
  - [Schedules](#)
- STATUS HELP**
  - [Device Info](#)
  - [Logs](#)
  - [Statistics](#)
  - [Internet Sessions](#)
  - [Wireless](#)

At the bottom of the interface, there is a 'WIRELESS' section header.

# Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-651 offers the following types of security:

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

## What is WPA?

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

The 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, click on Setup at the top and then click **Launch Wireless Security Setup Wizard**.

Click **Next** to continue.

## WIRELESS SETTINGS

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

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

## WIRELESS NETWORK SETUP WIZARD

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

Wireless 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.

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

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

Add Wireless Device with WPS

## MANUAL WIRELESS NETWORK SETUP

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

Manual Wireless Network Setup

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

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

Network Name (SSID) :

Automatically assign a network key (Recommended)

To prevent outsiders from accessing your network, the router will automatically assign a security (also called WEP or WPA key) to your network.

Manually assign a network key

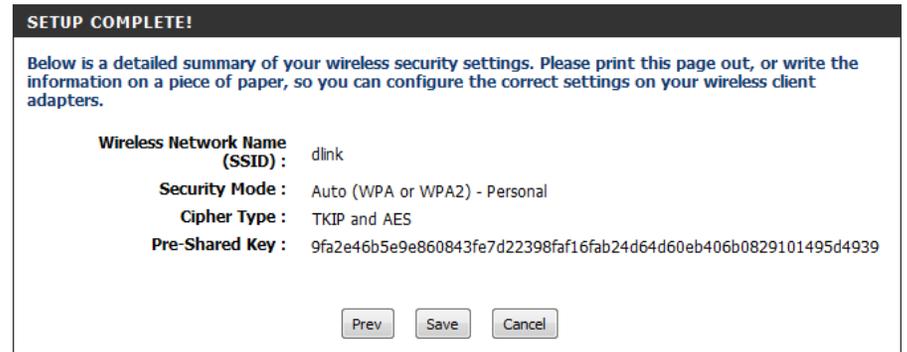
Use this options if you prefer to create our own key.

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

Prev Next Cancel Save

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 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 *Group Key Update Interval*, enter the amount of time before the group key used for broadcast and multicast data is changed (3600 is default).
5. 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.
6. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WPA-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 *Group Key Update Interval*, enter the amount of time before the group key used for broadcast and multicast data is changed (3600 is default).
5. Next to *Authentication Timeout*, enter the amount of time before a client is required to re-authenticate (60 minutes is default).
6. Next to *RADIUS Server IP Address* enter the IP Address of your RADIUS server.
7. Next to *RADIUS Server Port*, enter the port you are using with your RADIUS server. 1812 is the default port.
8. Next to *RADIUS Server Shared Secret*, enter the security key.

**WPA**

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

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

**WPA Mode :**

**Cipher Type :**

**Group Key Update Interval :**  (seconds)

---

**EAP (802.1X)**

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

**Authentication Timeout :**  (minutes)

**RADIUS server IP Address :**

**RADIUS server Port :**

**RADIUS server Shared Secret :**

**MAC Address Authentication :**

9. 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.
10. Click **Advanced** to enter settings for a secondary RADIUS Server.
11. 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 :**

# Connect to a Wireless Network

## Windows® 7

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

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



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

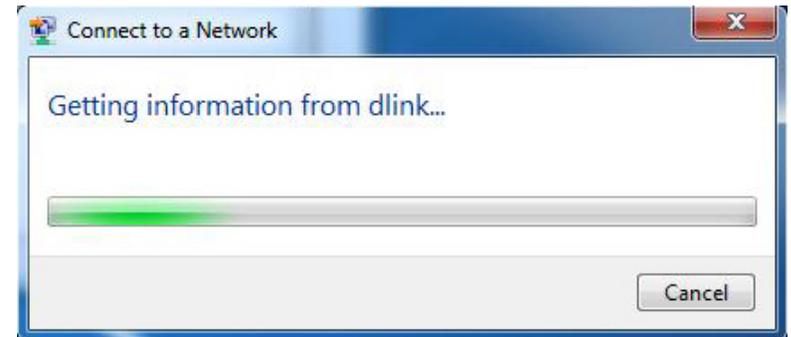


3. Highlight the wireless network (SSID) you would like to connect to and click the Connect button.

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



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



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

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



# Windows Vista®

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

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

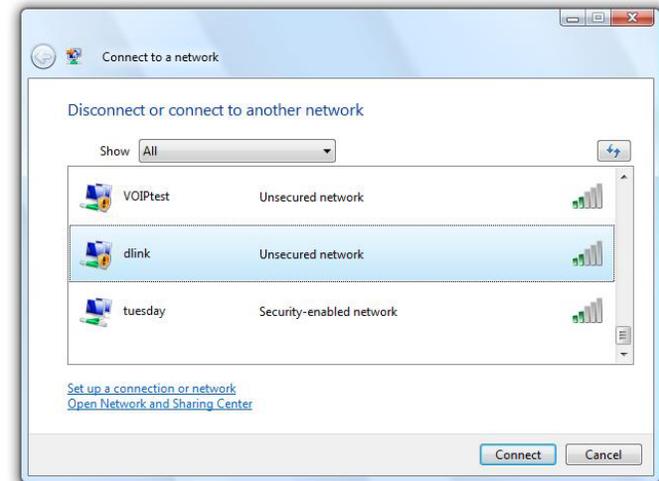
or

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



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

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



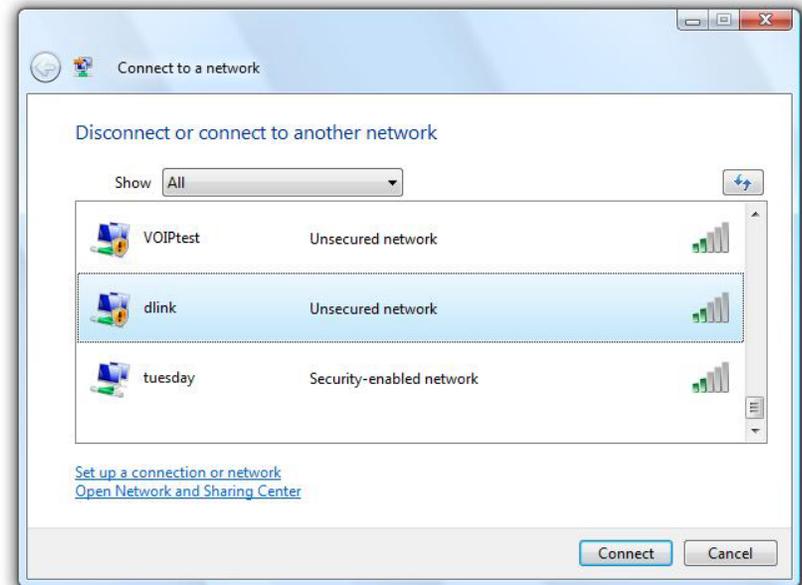
## Configure Wireless Security

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

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

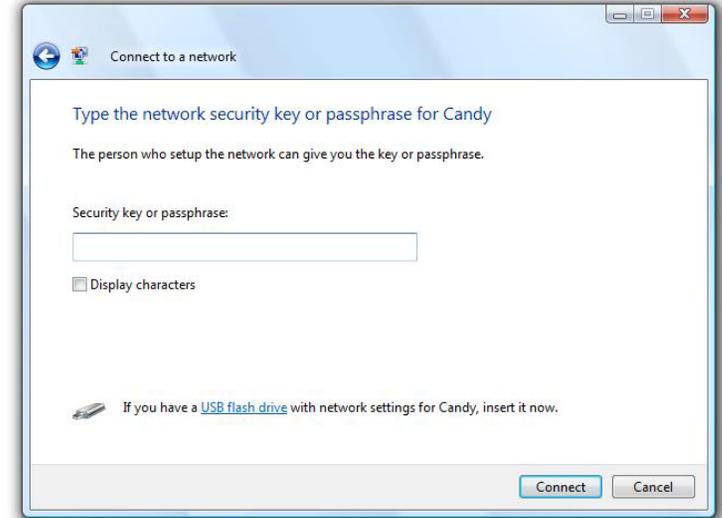


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



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

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



# 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.

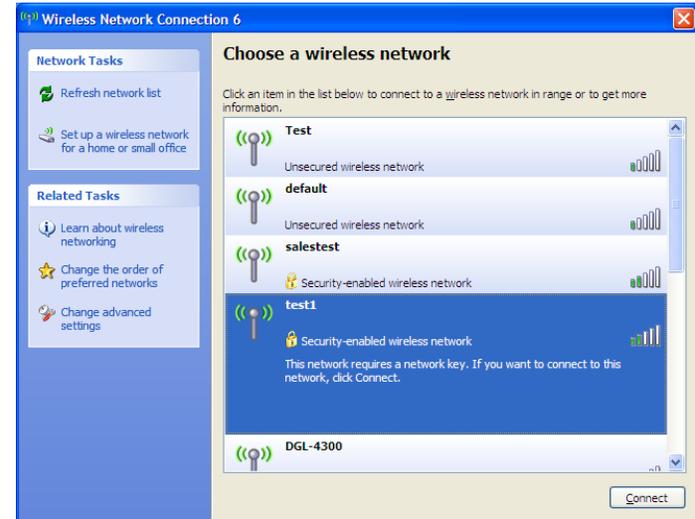
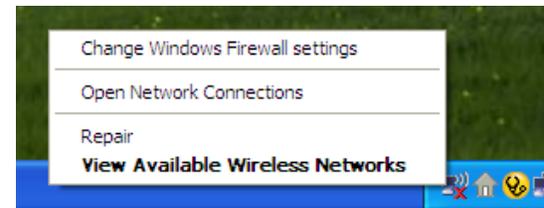
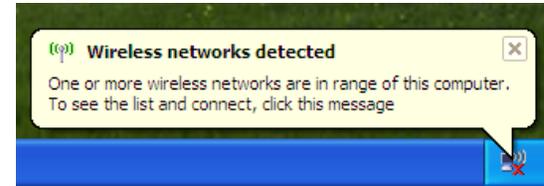
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

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. Select a wireless network (displayed using the SSID) and click the **Connect** button.

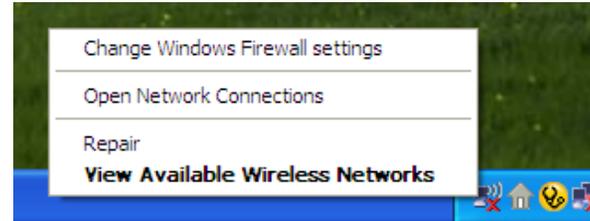
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



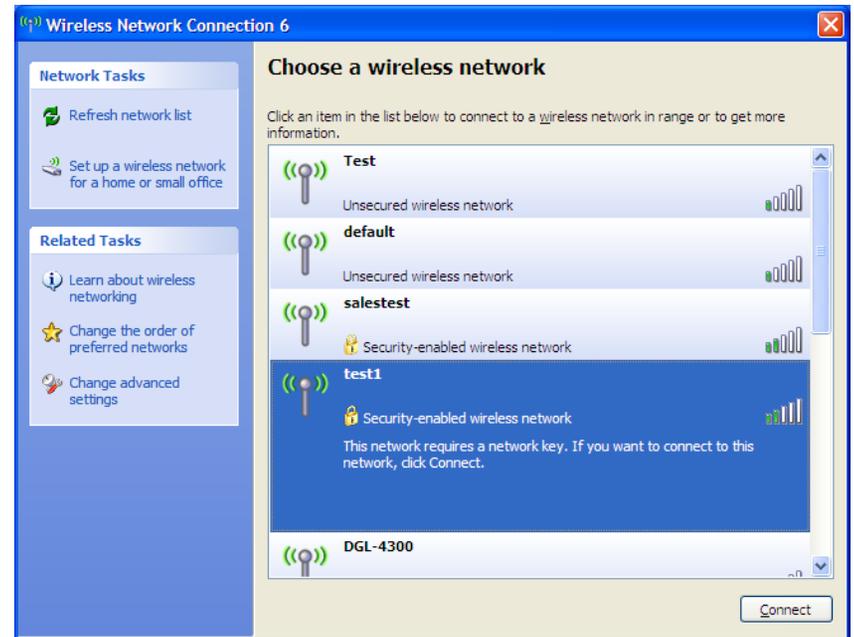
# Configure WPA-PSK

It is recommended to enable encryption 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 passphrase being used.

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

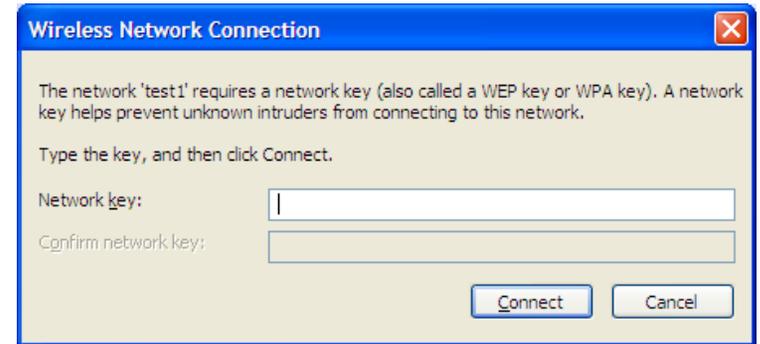


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the WPA-PSK passphrase and click **Connect**.

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



# Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DIR-651. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

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

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

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

• Configure your Internet settings:

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

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

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

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

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

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

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

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

- Click on **Start** and then click **Run**.
- Windows® 95, 98, and Me users type in **command** (Windows NT, 2000, XP, Vista® and 7 users type in **cmd**) and press **Enter** (or click **OK**).
- Once the window opens, you'll need to do a special ping. Use the following syntax:

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

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

```
C:\>ping yahoo.com -f -l 1482
Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:

Packet needs to be fragmented but DF set.

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 email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

# Wireless Basics

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

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

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

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

## **What is Wireless?**

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

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

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

## How does wireless work?

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

### Wireless Local Area Network (WLAN)

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

### Wireless Personal Area Network (WPAN)

Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away. Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

## Who uses wireless?

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

### Home

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

### Small Office and Home Office

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

## **Where is wireless used?**

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

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

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

## **Tips**

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

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

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

### **Eliminate Interference**

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

### **Security**

Don't let you next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA 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-651 wireless network Cardbus adapters.

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

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

# Networking Basics

## Check your IP address

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

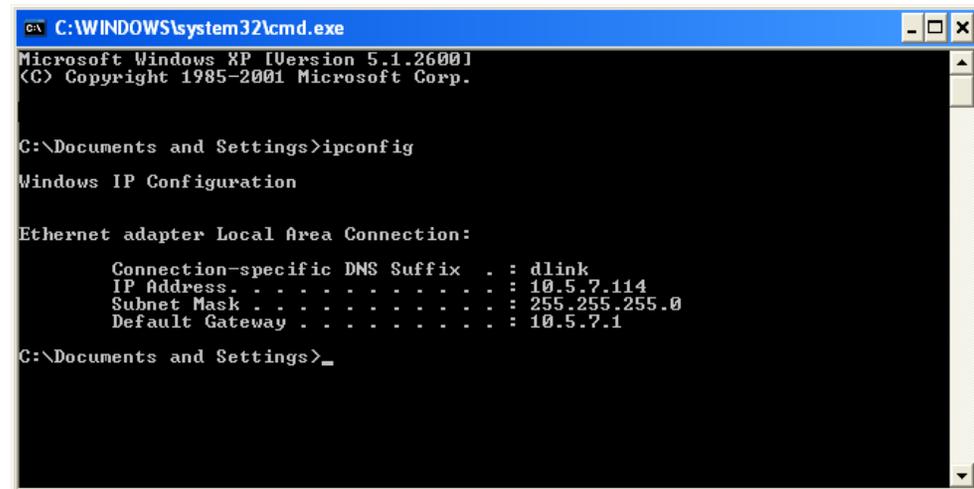
Click on **Start > Run**. In the run box type **cmd** and click **OK**. (Windows® 7/Vista® users type **cmd** in the **Start Search** box.)

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

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

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

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.



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

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

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

C:\Documents and Settings>_
```

## Statically Assign an IP address

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

### Step 1

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

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

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

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

### Step 2

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

### Step 3

Highlight **Internet Protocol (TCP/IP)** or **Internet Protocol Version 4 (TCP/IPv4)** and then click **Properties**.

### Step 4

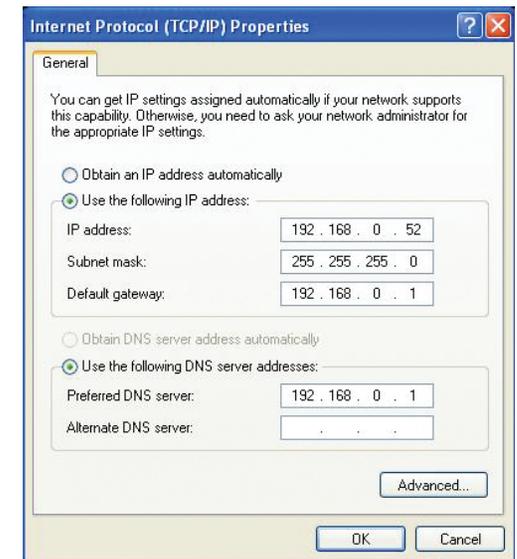
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

**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
- IEEE 802.11g
- IEEE 802.3
- IEEE 802.3u

## Security

- WPA-Personal
- WPA2-Personal
- WPA-Enterprise
- WPA2-Enterprise

## Wireless Signal Rates\*

- 300Mbps
- 108Mbps
- 54Mbps
- 48Mbps
- 36Mbps
- 24Mbps
- 18Mbps
- 12Mbps
- 11Mbps
- 9Mbps
- 6Mbps
- 5.5Mbps
- 2Mbps
- 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

## LEDs

- Power
- WLAN
- Internet
- LAN
- Status

## Operating Temperature

- 32°F to 131°F ( 0°C to 55°C)

## Humidity

- 95% maximum (non-condensing)

## Safety & Emissions

- FCC
- CE

## Dimensions

- L = 5.7 inches
- W = 4.6 inches
- H = 1.2inches

## Warranty

- 1 Year

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

# Contacting Technical Support

U.S. and Canadian customers can contact D-Link technical support through our web site or by phone.

Before you contact technical support, please have the following ready:

- Model number of the product (e.g. DIR-651)
- Hardware Revision (located on the label on the bottom of the router (e.g. rev A1))
- Serial Number (s/n number located on the label on the bottom of the router).

You can find software updates and user documentation on the D-Link website as well as frequently asked questions and answers to technical issues.

## For customers within the United States:

**Phone Support:**

(877) 453-5465

**Internet Support:**

<http://support.dlink.com>

## For customers within Canada:

**Phone Support:**

(800) 361-5265

**Internet Support:**

<http://support.dlink.ca>

# Warranty

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

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

## **Limited Warranty:**

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

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

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

### **Limited Software Warranty:**

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

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

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

### **Submitting A Claim:**

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

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

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. DLink will only replace the defective portion of the product and will not ship back any accessories.
- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery (“COD”) is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link’s reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

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

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

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

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

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

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

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

### **Limitation of Liability:**

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

### **Governing Law:**

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

### **Trademarks:**

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### **CE Mark Warning:**

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

**FCC Statement:**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC Caution:**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**IMPORTANT NOTICE:**

**FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

**Industry Canada Statement:**

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**IMPORTANT NOTE:**

**Radiation Exposure Statement:**

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device has been designed to operate with an antenna having a maximum gain of 2dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

# Registration

Register your product online at [www.onlineregister.com/dlink](http://www.onlineregister.com/dlink)



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

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