D-Link®

DIR-685

Xtreme N Storage Router

User Manual

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 26, 2009	DIR-685 Revision A1 with firmware version 1.00
1.1	February 27, 2009	Minor fixes and updates

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Package Contents

D-Link DIR-685 Xtreme N™ Storage Router	
Power Adapter	
Ethernet Cable	
CD-ROM	
Stand	

Note: Using a power supply with a different voltage rating than the one included with the DIR-685 will cause damage and void the warranty for this product.

System Requirements

Network Requirements	• An Ethernet-based Cable or DSL modem • IEEE 802.11n-draft or 802.11g wireless clients • 10/100/1000 Ethernet
Web-based Configuration Utility Requirements	**Computer with the following:** • Windows®, Macintosh®, or Linux-based operating system • An installed Ethernet adapter **Browser Requirements:** • Internet Explorer 6.0 or higher • Mozilla 1.7.12 or higher • Firefox 2.0 or higher • Safari 1.0 or higher (with Java 1.3.1 or higher) • Chrome 1.0 or higher • Opera 6.0 or higher **Windows® Users:** Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.
CD Installation Wizard Requirements	**Computer with the following:** • Windows® XP with Service Pack 2 or Vista • An installed Ethernet adapter • CD-ROM drive

Introduction

TOTAL PERFORMANCE
Combines award-winning router features and Draft 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 Xtreme N Storage Router is a draft 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 Xtreme N Storage 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 Xtreme N technology, this high performance router provides superior Whole Home Coverage while reducing dead spots. The Xtreme N Storage Router is designed for use in bigger homes and for users who demand higher performance networking. Add an Xtreme N notebook or desktop adapter and stay connected to your network from virtually anywhere in your home.

TOTAL NETWORK SECURITY
The Xtreme N™ Storage 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™ and WEP standards ensure that you will be able to use the best possible encryption method, regardless of your client devices. In addition, this Xtreme N Storage 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 Draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

Features

- **Faster Wireless Networking** - The DIR-685 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-685 is still fully compatible with the IEEE 802.11g standard, so it can connect with existing 802.11g wireless 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.

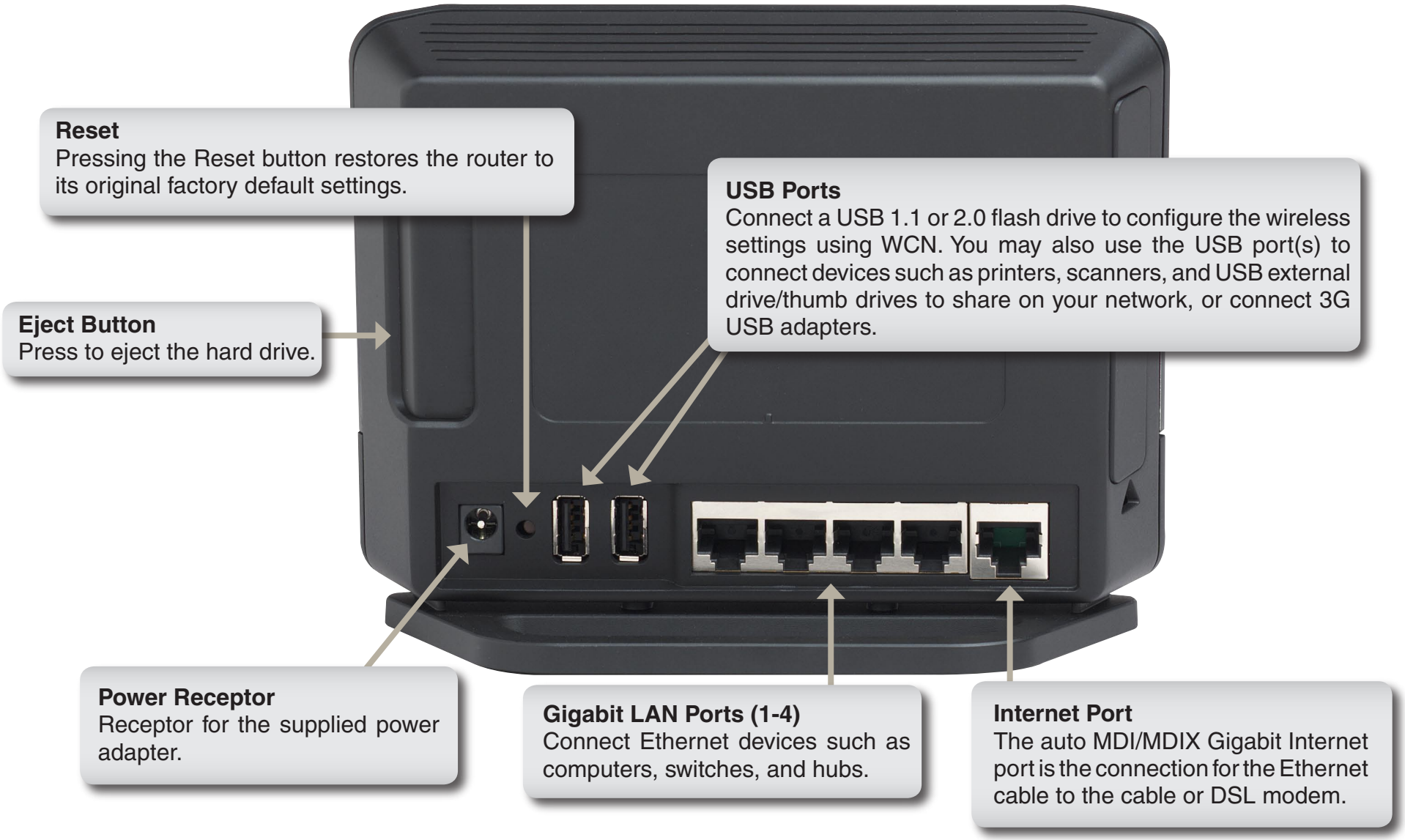
    - **Filter Scheduling** - These filters can be scheduled to be active on certain days or for a duration of hours or minutes.

    - **Secure Multiple/Concurrent Sessions** - The DIR-685 can pass through VPN sessions. It supports multiple and concurrent IPSec and PPTP sessions, so users behind the DIR-685 can securely access corporate networks.

- **User-friendly Setup Wizard** - Through its easy-to-use web-based user interface, the DIR-685 lets you control what information is accessible to those on the wireless network, whether from the Internet or from your company's server. Configure your router to your specific settings within minutes.

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

Hardware Overview
Connections



Hardware Overview
Front View

Touch Pad
Press the buttons (up, down, left, right, and center) to navigate through the options on the screen. Refer to page 8.

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

WPS LED
When enabling WPS, the light will blink during broadcast.

LCD Screen
The LCD screen will display pictures as well as router statistics and features.

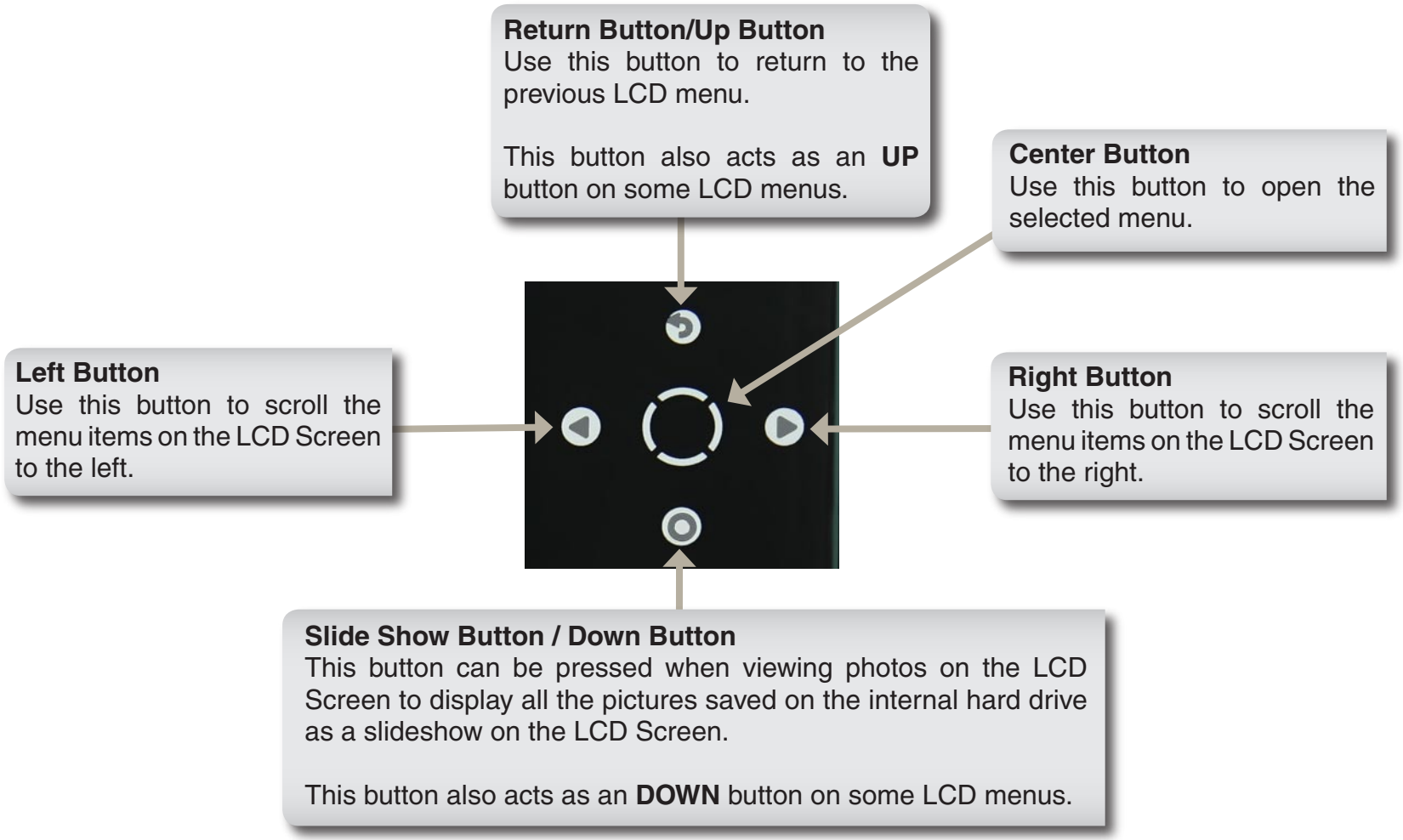
Hardware Overview

Side View

Hardware Overview
Using the LCD Screen

The DIR-685 features an LCD Screen that can be used to display router statistics and change some basic settings.

Use the touch pad buttons to control the LCD Screen as indicated below:



The following screens can be viewed on the LCD Screen using the Touch Pad buttons:

- **Time / Date** - The router displays the date and time when the device has been left idle for the amount of time specified in the **Setup > LCD Setup** configuration screen.
- **Router Statistics** - The Router Statistics screen displays the send/receive rates of the different router interfaces.
- **Status** - The following screens can be viewed after selecting the Status screen:
    - **General Router Info** - Displays the Model Name, Hardware Version, Firmware Version, and System Up Time of the Router. The *New Firmware* field informs the user if there is a new firmware version available from the D-Link website.
    - **Internet Status** - Displays the Internet Connection Type, Cable Status, Network Status, Connection Time, MAC Address, IP Address, Subnet Mask, and Gateway of the Internet Connection.
    - **Wired Status** - Displays the MAC Address, IP Address, Subnet Mask, DHCP Server, and the status of each Ethernet connection on the Router.
    - **Wireless Status** - Displays the Wireless Radio status, Wireless Channel, SSID of the Host network, SSID of the Guest network, the enabled 802.11 modes, the Security mode enabled for the Host Zone, the Security mode enabled for the Guest Zone, MAC Address of the Wireless Radio and the WPS PIN number.
    - **Hard Disk Status** - Displays information about the Hard Drive installed in the 2.5” Hard Drive bay including the amount of available space, the make and model, disk format, total capacity, used disk space, available disk space, disk health, and disk temperature.
- **WPS** - The WPS (Wi-Fi Protected Setup) screen allows you to add your router into an existing network via a PIN number, or allows you to add a new wireless device to the router via Push Button Configuration (PBC). Use the touch pad buttons to select the desired option.

- **Photos** - The Photos screen allows you to view photos that are stored on the internal hard drive or on a USB Storage device connected to the Router.

- **FrameChannel** - Use the FrameChannel window to obtain an activation code so that you can register the DIR-685 on the FrameChannel website and view the pictures associated with your FrameChannel account on the LCD Screen.

Hardware Overview

LEDs

The DIR-685 has LEDs for Power, WPS, and Hard Drive Status.

See the table below for detailed information about the LEDs:

LED INDICATOR	COLOR	STATUS	DESCRIPTION
Power	Blue	Off	The device is powered off.
		Solid Blue	The device is powered on.
WPS	Blue	Off	WPS is ready to be triggered.
		Blinking Blue	WPS has been triggered and is processing.
		Solid Blue	WPS signal has been successfully established. The LED will remain solid blue for 5 seconds.
Hard Drive Status	Blue	Off	No hard drive detected.
		Blinking Blue	Hard drive is busy or the system is mounting the hard drive.
		Solid Blue	Hard drive has been detected and is idle.
	Orange	Blinking Orange	System is un-mounting the hard drive.
		Solid Orange	The hard drive can be removed safely.

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 an attic or garage.

Before you Begin

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

Install/Remove Hard Drive

To install a hard drive:

1. Open the hard drive bay. The router can be powered on during installation.
2. Insert your hard drive into the bay with the label facing towards the back of the router.
3. Push hard drive firmly in the bay.
4. Close the hard drive bay door.
5. The **Detect Hard Drive Success** message will appear. Press the center button to continue.

To remove a hard drive:

Warning: *Do NOT eject the hard drive without pressing the unmount button below the hard drive bay.*

1. Open the hard drive bay door.
2. Press the unmount button.
3. Once the unmount button is amber/orange, press the eject button located on the opposite side.

Caution: *Hard drive may be hot. Use caution when handling.*

4. Pull the hard drive out.

Wireless Installation Considerations

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

1. Keep the number of walls and ceilings between the D-Link router and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle, it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

3. Building Materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.

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

5. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone is not in use.

Connect to Cable/DSL/Satellite Modem

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

1. Place the router in an open and central location. Do not plug the power adapter into the router.

2. Turn the power off on your modem. If there is no on/off switch, then unplug the modem's power adapter. Shut down your computer.

3. Unplug the Ethernet cable (that connects your computer to your modem) from your computer and place it into the Internet port on the router.

4. Plug an Ethernet cable into one of the four LAN ports on the router. Plug the other end into the Ethernet port on your computer.

5. Turn on or plug in your modem. Wait for the modem to boot (about 30 seconds).

6. Plug the power adapter to the router and connect to an outlet or power strip. Wait about 30 seconds for the router to boot.

7. Turn on your computer.

8. Skip two pages to the **Getting Started** section to configure your router.

Connect to Another Router

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

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

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

1. Plug the power into the router. Connect one of your computers to the router (LAN port) using an Ethernet cable. Make sure your IP address on the computer is 192.168.0.xxx (where xxx is between 2 and 254). (Please see the **Networking Basics** section for more information). If you need to change the settings, write down your existing settings before making any changes. In most cases, your computer should be set to receive an IP address automatically in which case you will not have to do anything to your computer.

2. Open a web browser and enter **http://192.168.0.1** and press **Enter**. When the login window appears, set the user name to **Admin** and leave the password box empty. Type in the Captcha phrase and click **Log In** to continue.

3. Click on **Advanced** and then click **Advanced Network**. Uncheck the Enable UPnP checkbox. Click **Save Settings** to continue.

4. Click **Setup** and then click **Network Settings**. Uncheck the Enable DHCP Server checkbox. Click **Save Settings** to continue.

5. Under Router Settings, enter an available IP address and the subnet mask of your network. Click **Save Settings** to save your settings. Use this new IP address to access the configuration utility of the router in the future. Close the browser and change your computer's IP settings back to the original values as in Step 1.

6. Disconnect the Ethernet cable from the router and reconnect your computer to your network.

7. Connect an Ethernet cable in one of the LAN ports of the router and connect it to your other router. Do not plug anything into the Internet port of the D-Link router.

8. You may now use the other three LAN ports to connect other Ethernet devices and computers. To configure your wireless network, open a web browser and enter the IP address you assigned to the router. Refer to the **Configuration** and **Wireless Security** sections for more information on setting up your wireless network.

Getting Started

The DIR-685 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 to those found in 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:\DIR685.exe**" (where **D:** represents the drive letter of your CD-ROM drive).

When the autorun screen appears, click **BEGIN INSTALL**.

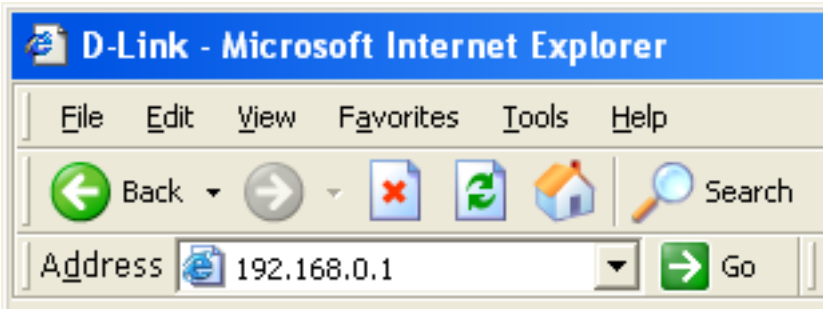
***Note**: It is recommended to write down the login password on the provided CD holder.*

Configuration

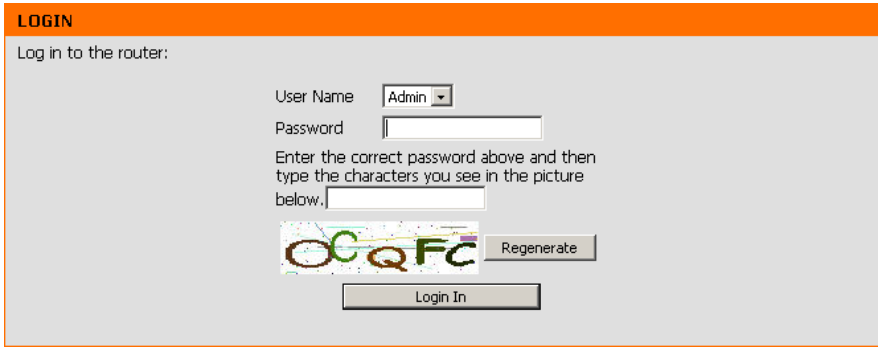
This section will show you how to configure your new D-Link wireless router using the web-based configuration utility.

Web-based Configuration Utility

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



Select **Admin** from the drop-down menu and then enter your password. Leave the password blank by default. Type the characters that appear in the picture at the bottom of the window into the field above the picture and click the **Log In** button to log into the router. Click the **Regenerate** button if you would like to generate a new code.

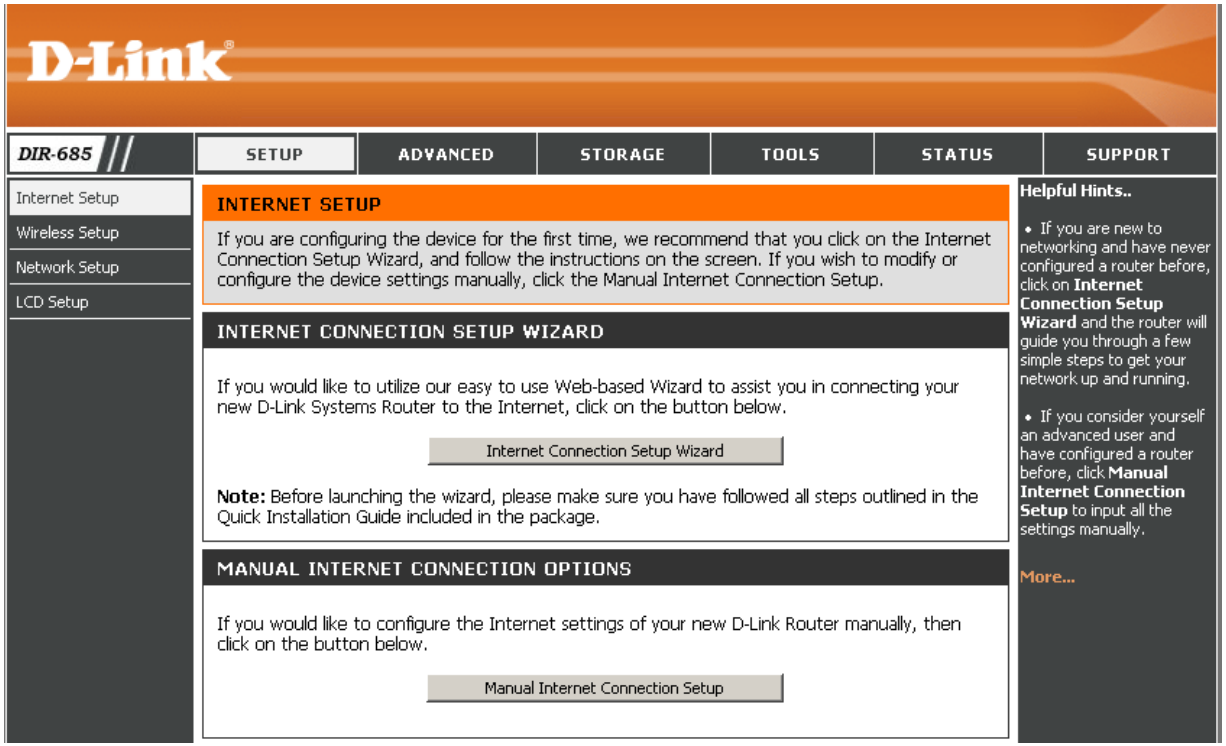


If you get a **Page Cannot be Displayed** error, please refer to the **Troubleshooting** section for assistance.

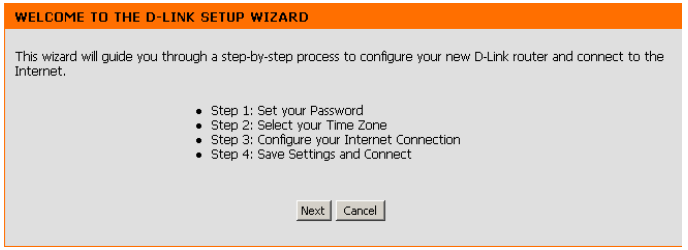
Setup Wizard

You may click **Internet Connection Setup Wizard** to quickly configure your router. Refer to the next page.

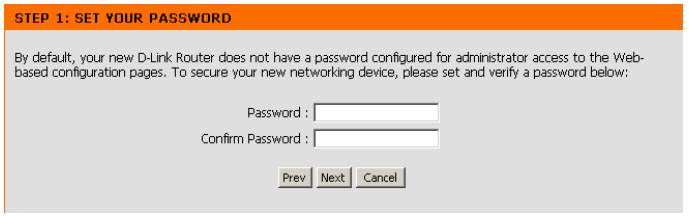
If you want to enter your settings without running the wizard, click **Manual Internet Connection Wizard** and skip to the **Manual Internet Configuration Setup** section.



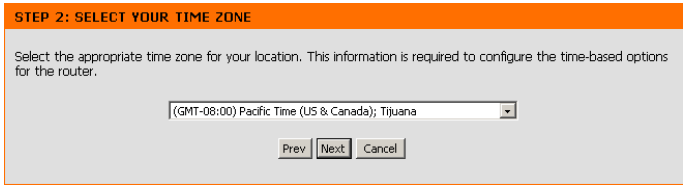
Click **Next** to continue.



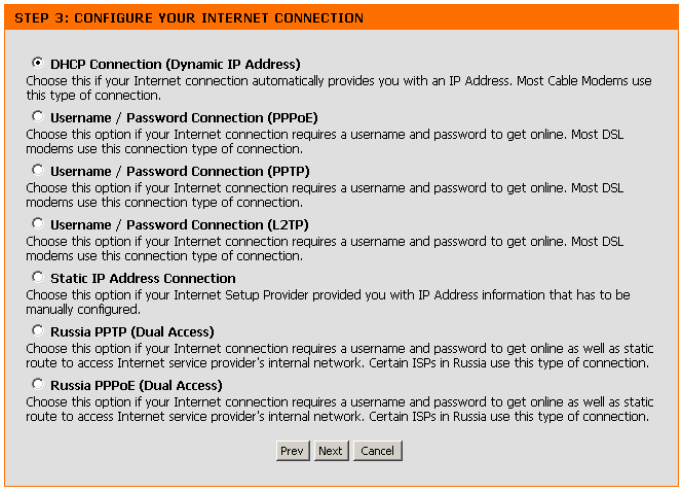
Create a new password and then click **Next** to continue.



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

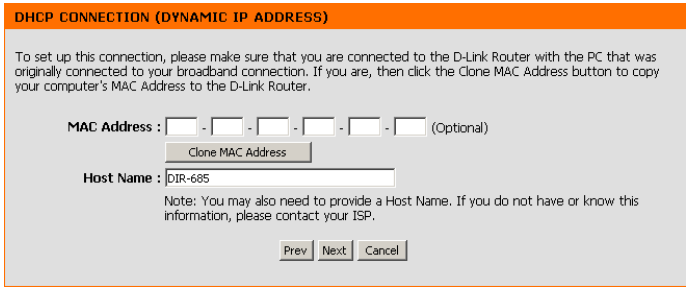


Select the type of Internet connection you use and then click **Next** to continue.



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.

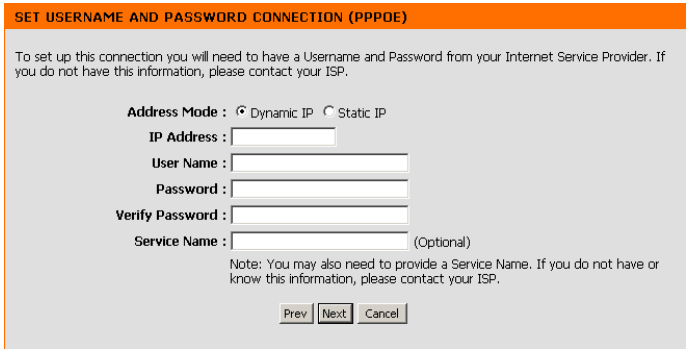
The Host Name is optional but may be required by some ISPs. The default host name is the device name of the Router and may be changed.



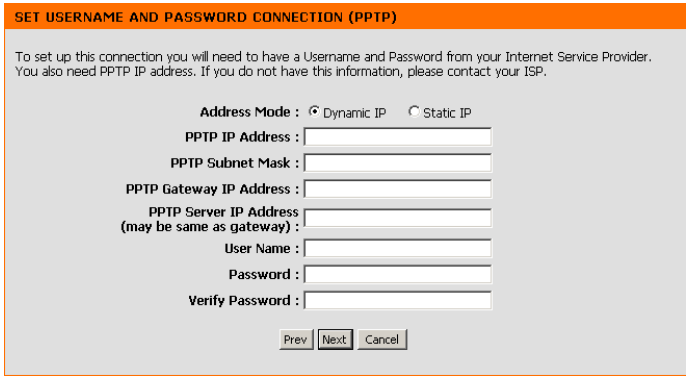
If you selected **PPPoE** or **Russian PPPoE**, enter your PPPoE username and password. Click **Next** to continue.

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.*

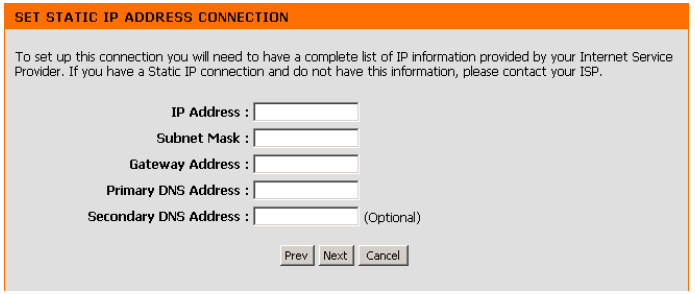


If you selected **PPTP** or **Russian PPTP**, enter your PPTP username and password. Click **Next** to continue.



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

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



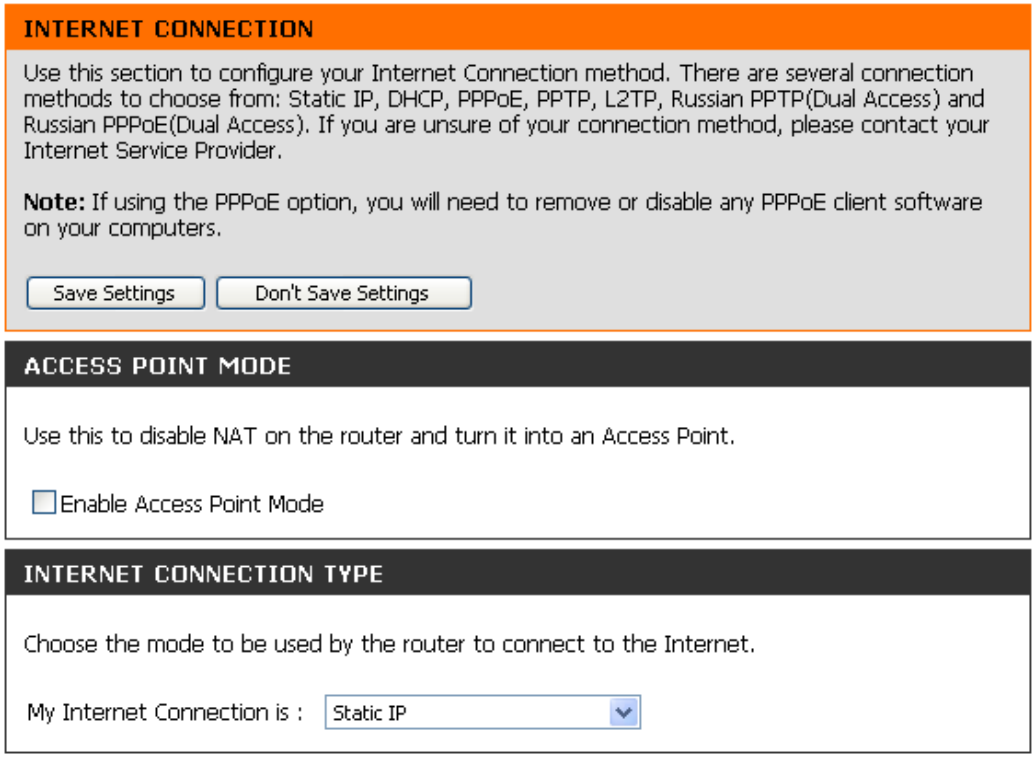
Click **Connect** to save your settings. Once the router is finished rebooting, click **Continue**. Please allow 1-2 minutes to connect.

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

Manual Internet Connection Setup

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

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



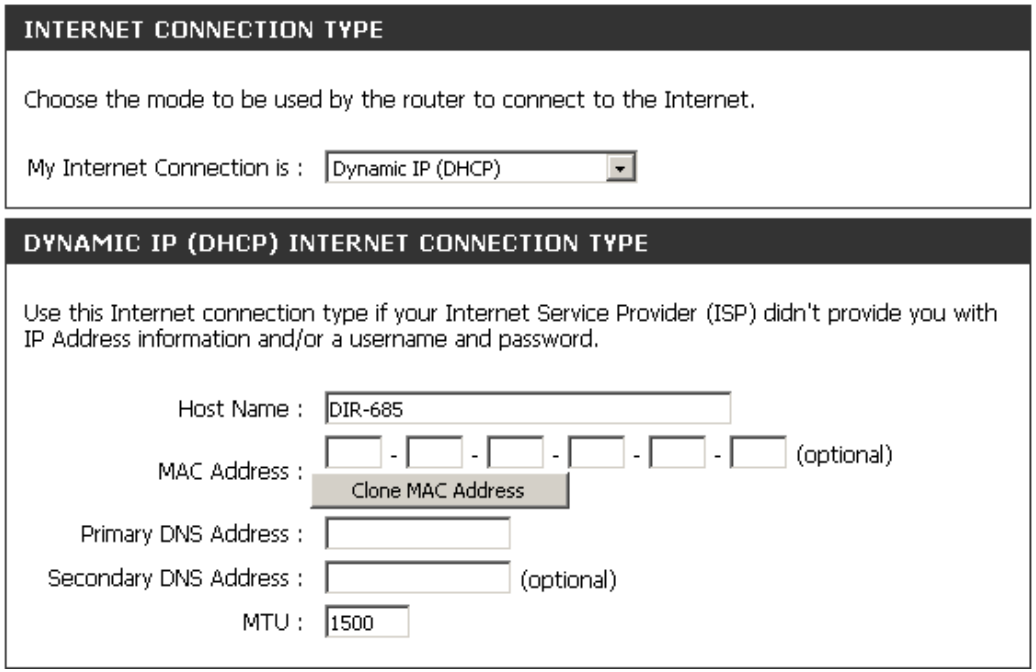
Manual Configuration
Dynamic (Cable)

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

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

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

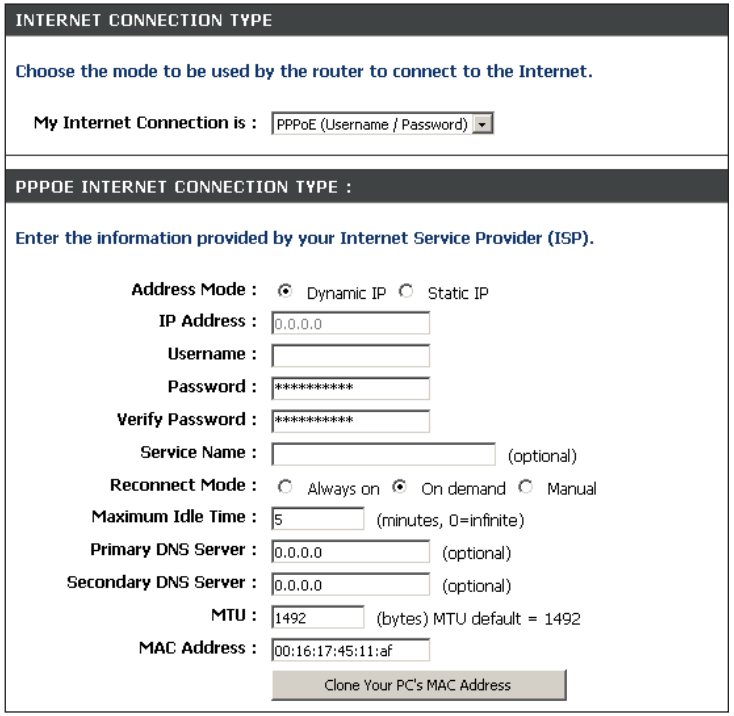
MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. The default MTU is 1500.



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

Internet Setup
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).

Username: Enter your PPPoE username.

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

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

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

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

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. The default MTU is 1492.

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

Internet Setup
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.

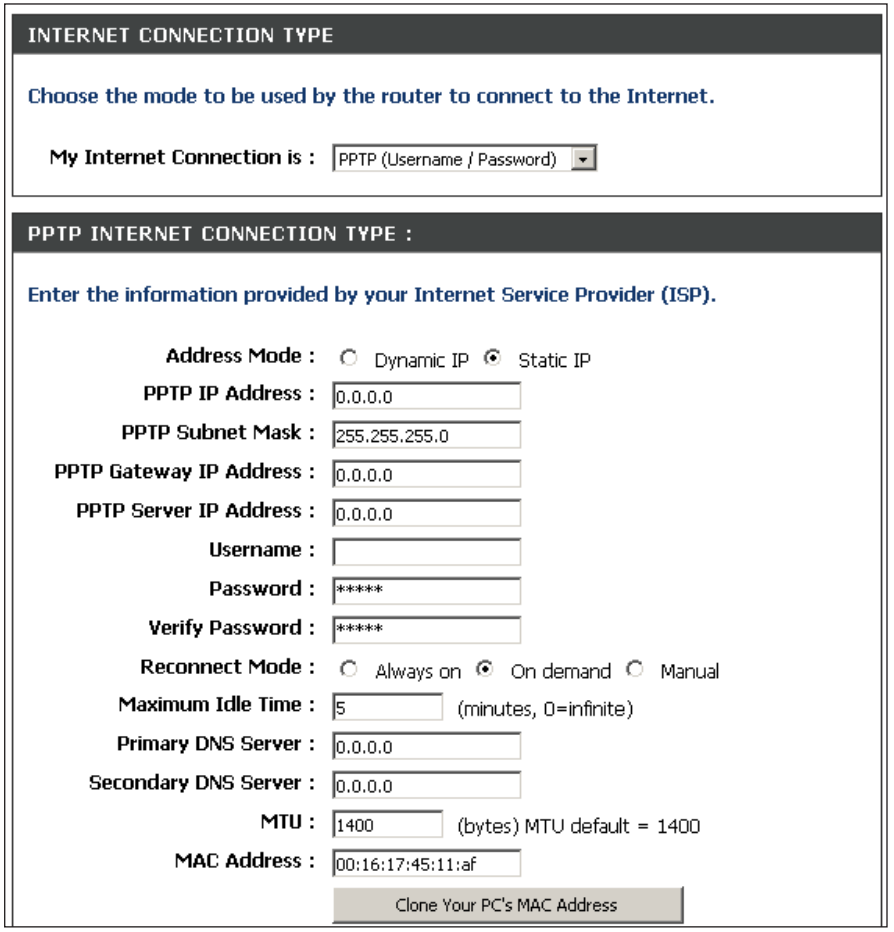
PPTP Server IP: Enter the Server IP provided by your ISP (optional).

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. The default MTU is 1400.

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

Internet Setup
L2TP

Choose L2TP (Layer 2 Tunneling Protocol) if your ISP uses an 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.

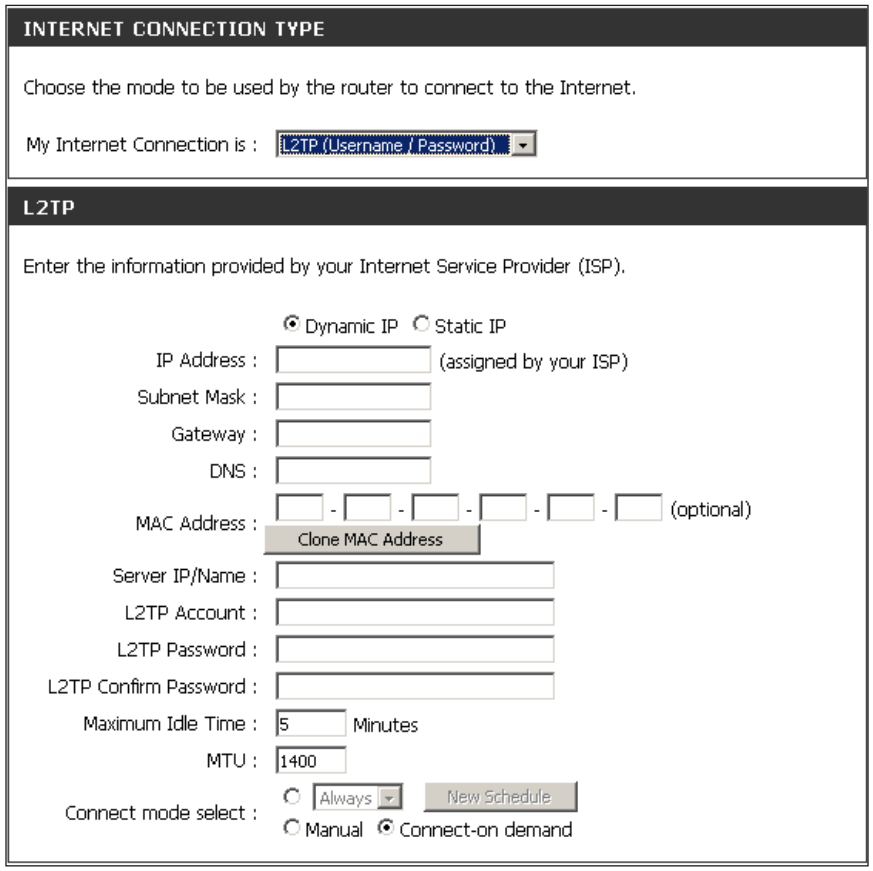
L2TP Server IP: Enter the Server IP provided by your ISP (optional).

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. The default MTU is 1400.

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

Internet Setup
Static (assigned by ISP)

Select Static IP Address if all the connection 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.

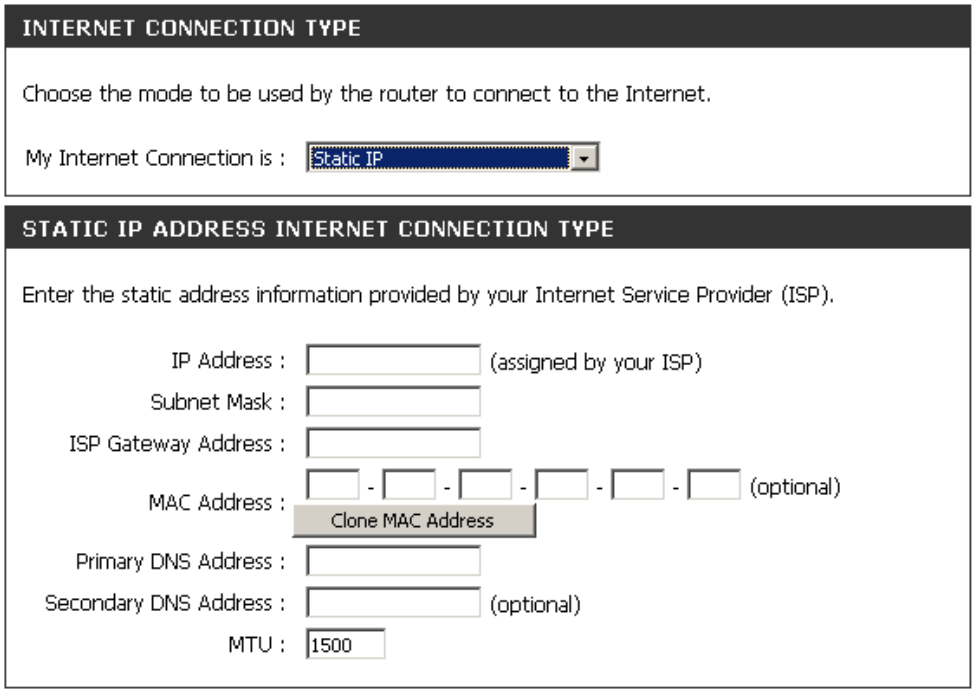
Subnet Mask: Enter the Subnet Mask assigned by your ISP.

Default Gateway: Enter the Gateway assigned by your ISP.

DNS Servers: The DNS server information will be supplied by your ISP.

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

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



Internet Setup
3G USB Adapter

Select 3G USB Adapter if you are using a 3G USB adapter to connect to the Internet.

Country: Select the country from the drop-down menu.

ISP: Select your Internet Service Provider (ISP) from the drop-down menu.

Username: Enter your username.

Password: Enter your password.

Dial Number: The default is ***99***1#**. This field should not be altered except when required by your service provider.

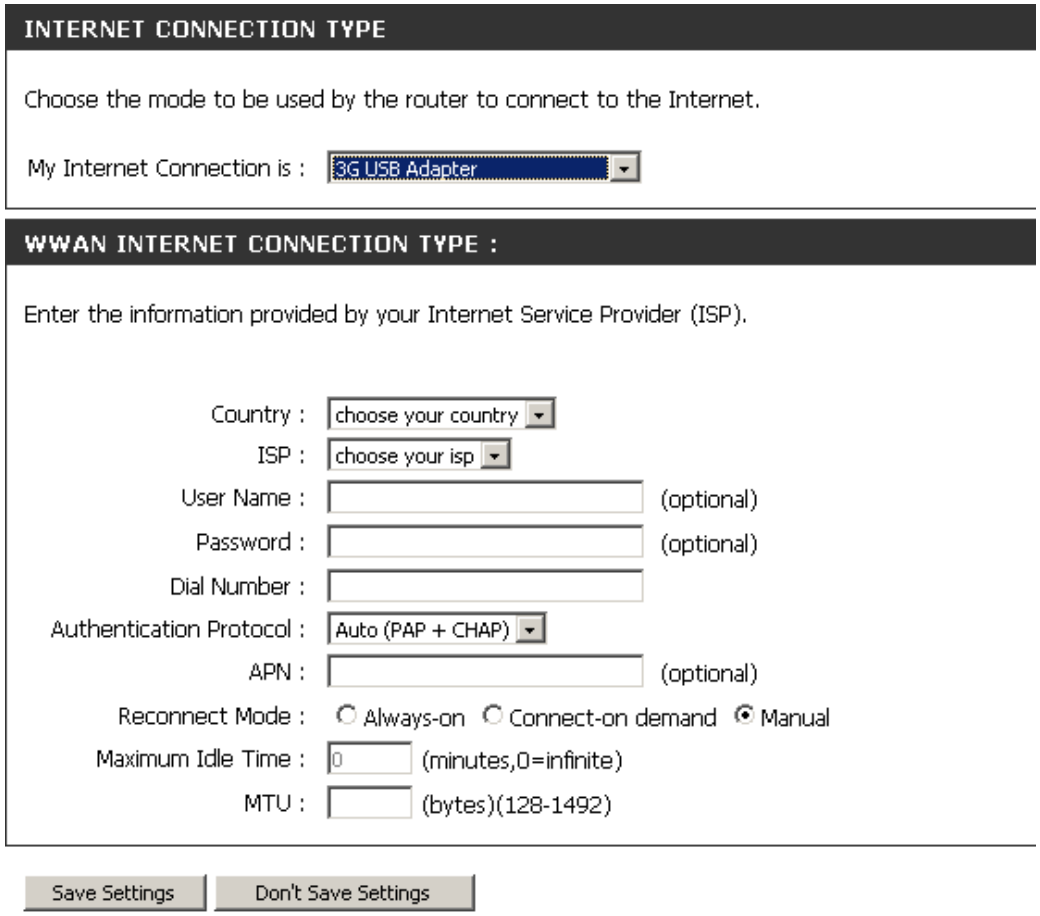
Authentication Protocol: Select the authentication protocol from the drop-down menu.

APN: Enter the access point name (APN).

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

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

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



Internet Setup
Russia PPTP (Dual Access)

If you are in Russia and your ISP uses a PPTP connection, choose Russia PPTP (Dual Access) from the drop-down menu. Your ISP will provide you with a username and password. This option is typically used for DSL services.

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

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

Subnet Mask: Enter the Subnet Mask of the PPTP connection. (Static PPTP only).

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

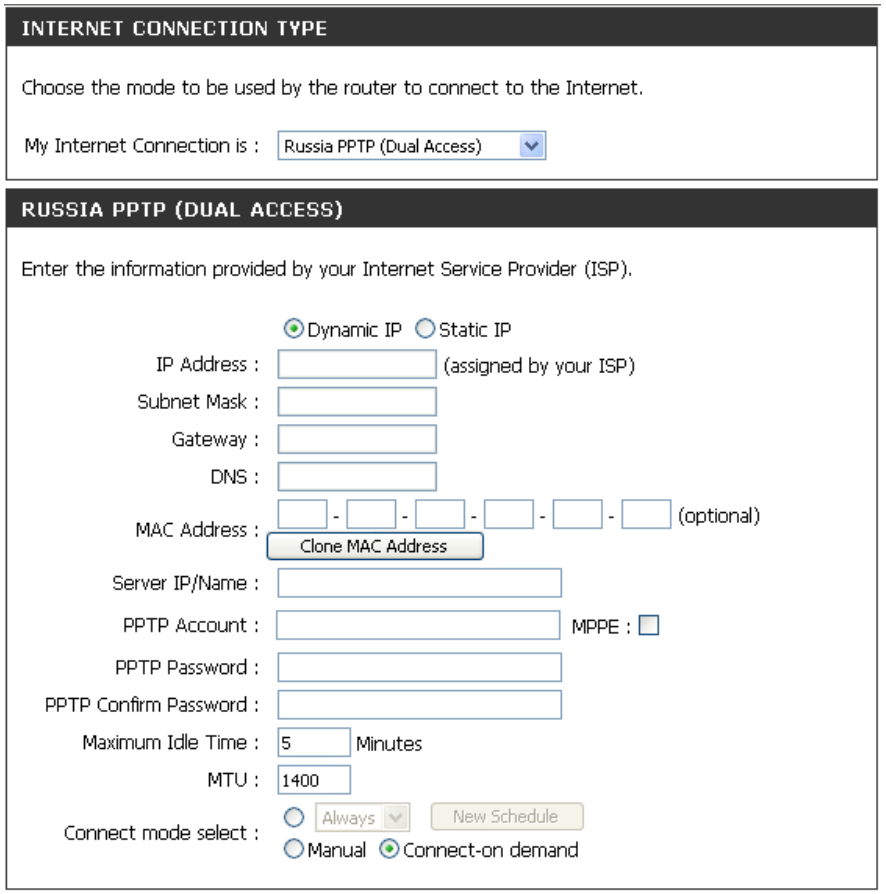
DNS: Enter the IP address of the DNS Server supplied by your ISP.

MAC Address: The default MAC Address is set to the WAN/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 MAC Address** button to replace the WAN/Internet port's MAC address with the MAC address of your Ethernet card.

Server IP/Name: Enter the IP address or DNS Name of the PPTP Server provided by your ISP.

PPTP Account: Enter your PPTP username.

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



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

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

Connect mode select: Use the drop-down menu to select a Schedule that determines when the router should try reconnecting to the Internet in the event that the Internet connection is lost. The router will list the Schedules that have been defined in the **Tools > Schedule** window. Click the **New Schedule** button to open the **Tools > Schedules** window and create a new schedule (see page 85 for instructions on how to create a New Schedule).

Click the **Manual** radio button to specify that the Internet connection should be re-established manually, in the event of the router losing its Internet connection.

Click the **Connect-on demand** radio button to specify that the Internet connection re-connect when a user or application tries to establish an Internet connection.

Internet Setup
Russia PPPoE (Dual Access)

If you are in Russia and your ISP uses a PPPoE connection, choose Russia PPPoE (Dual Access) from the drop-down menu. Your ISP will provide you with a username and password. Your ISP will provide you with a username and password. This option is typically used for DSL services. Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

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

User Name: Enter your PPPoE user name.

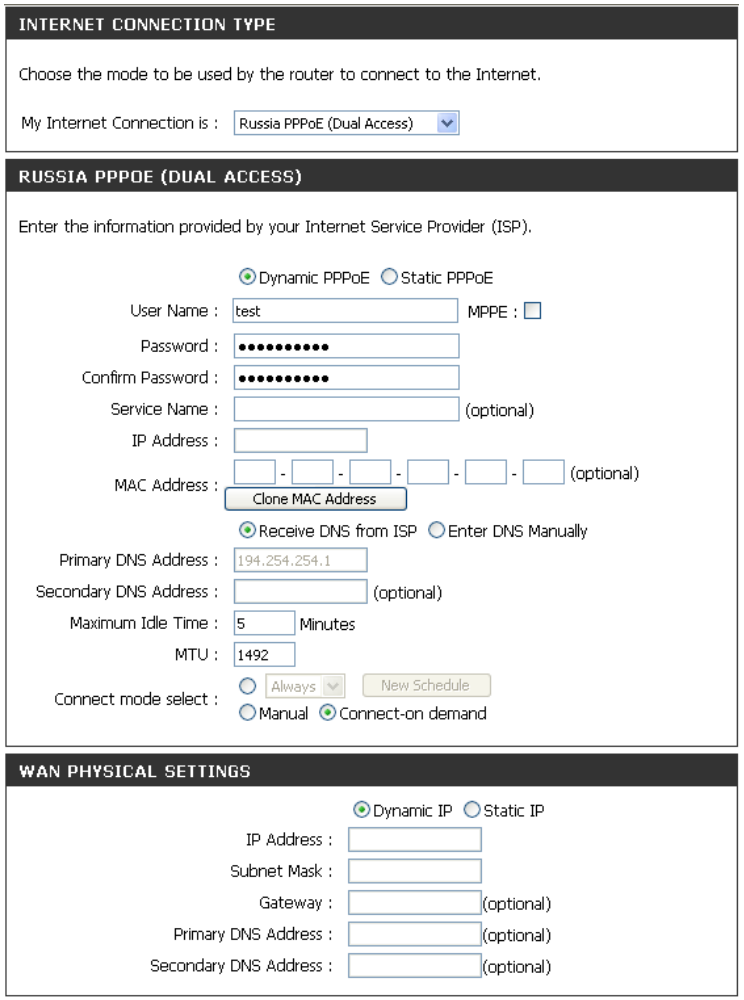
Password: Enter your PPPoE password and then retype the password in the **Confirm Password** box.

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

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

MAC Address: The default MAC Address is set to the WAN/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 MAC Address** button to replace the WAN/Internet port's MAC address with the MAC address of your Ethernet card.

DNS Address: Click the **Receive DNS from ISP** radio button to automatically obtain the IP addresses of the DNS Servers for your Internet connection from your ISP. Click the **Enter DNS Manually** radio button to enter the DNS IP addresses manually. If choosing the manual option, enter the IP addresses of the Primary and Secondary DNS servers supplied by your ISP (Internet Service Provider) in the DNS Addresses textbox.



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

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

Connect mode select: Use the drop-down menu to select a Schedule that determines when the router should try reconnecting to the Internet in the event that the Internet connection is lost. The router will list the Schedules that have been defined in the **Tools > Schedule** window. Click the **New Schedule** button to open the **Tools > Schedules** window and create a new schedule (see page 85 for instructions on how to create a New Schedule).

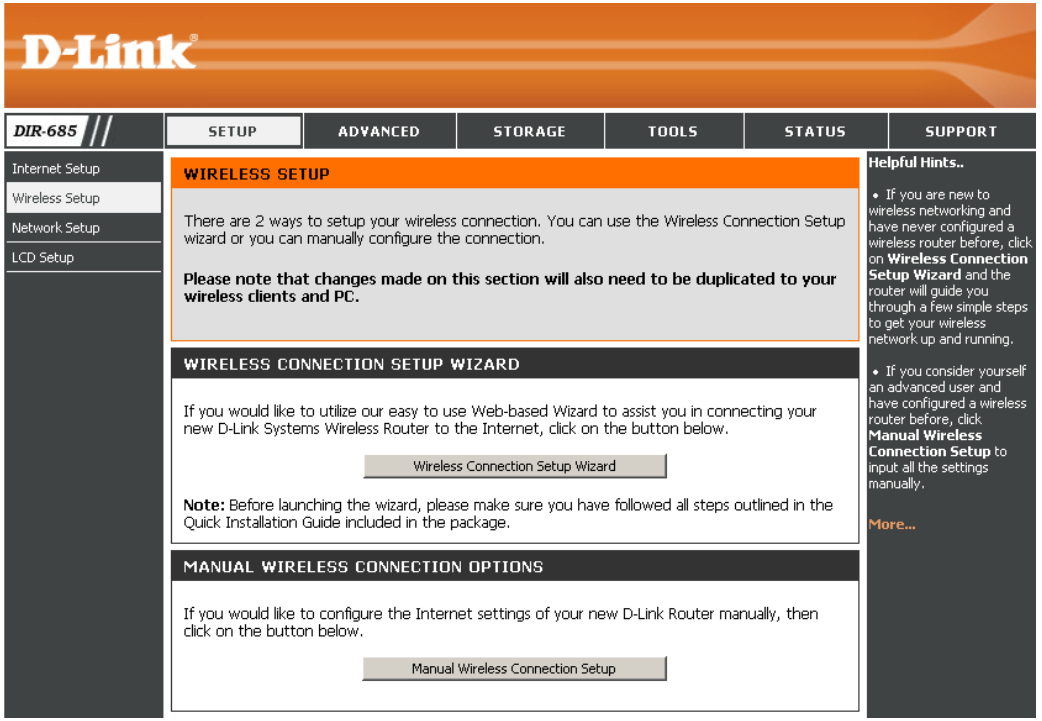
Click the **Manual** radio button to specify that the Internet connection should be re-established manually, in the event of the router losing its Internet connection.

Click the **Connect-on demand** radio button to specify that the Internet connection re-connect when a user or application tries to establish an Internet connection.

Wireless Settings

If you want to configure the wireless settings on your router using the wizard, click **Wireless Connection Setup Wizard** and refer to page 94.

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



Manual Wireless Settings

WPS: Click **Add Wireless Device with WPS** if you want to add a wireless device using Wi-Fi Protected Setup™. Refer to the next page.

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. Click **Add New** to create your own time schedule to enable the wireless function.

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.

802.11 Band: **2.4GHz** is displayed.

802.11 Mode: Select one of the following:

802.11g Only - Select if all of your wireless clients are 802.11g.

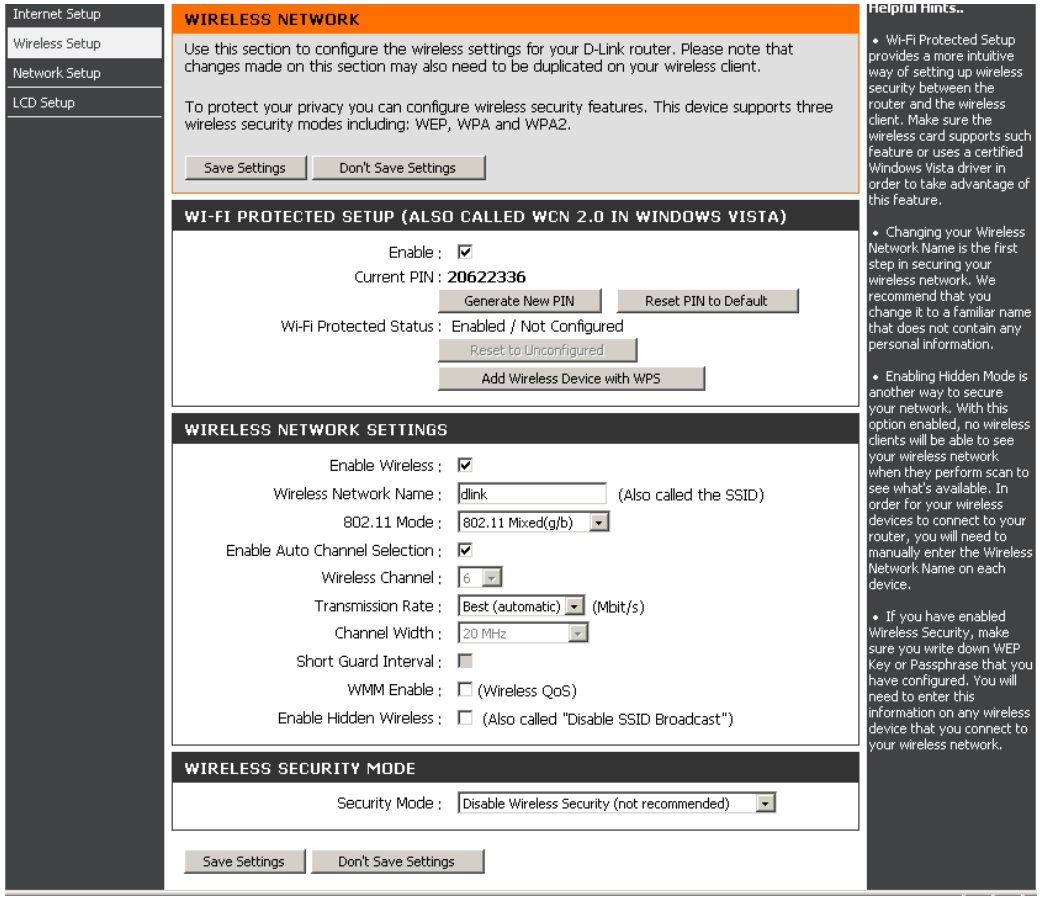
Mixed 802.11g and 802.11b - Select if you are using both 802.11b and 802.11g wireless clients.

802.11b Only - Select if all of your wireless clients are 802.11b.

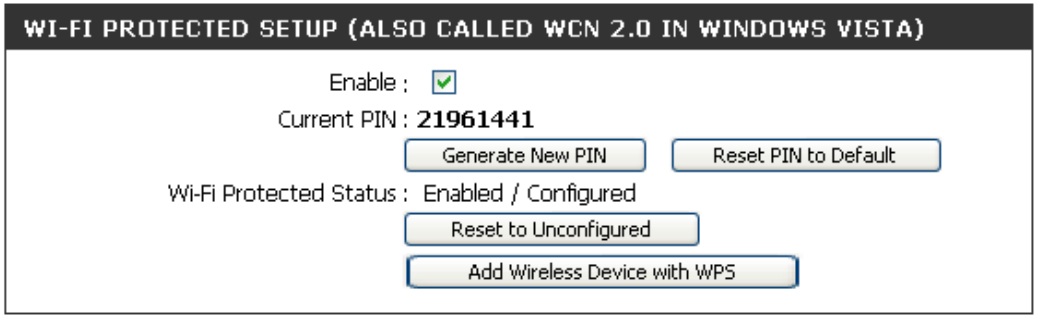
802.11n Only - Select only if all of your wireless clients are 802.11n.

Mixed 802.11n, 802.11b, and 802.11g - Select if you are using a mix of 802.11n, 11g, and 11b wireless clients.

Mixed 802.11n and 802.11g - Select if you are using a mix of 802.11n and 802.11g wireless clients.



Wi-Fi Protected Setup



Enable: Check to enable Wi-Fi Protected Setup (WPS) on the Router.

Current PIN: Displays the WPS PIN that is currently set on the DIR-685.

Click the **Generate New PIN** button to generate a new WPS PIN.

Click the **Reset PIN to Default** button to reset the WPS PIN to default settings.

Wi-Fi Protected Status: Displays the status of the Wi-Fi Protected service.

Click the **Reset to Unconfigured** button to reset the WPS configuration.

Add Wireless Device with WPS: Click the **Add Wireless Device with WPS** button if you want to add a wireless device using Wi-Fi Protected Setup. See the **Add Wireless Device with WPS Wizard** section for instructions on how to use WPS.

Enable Auto Channel Scan: The **Auto Channel Scan** setting can be selected to allow the DIR-685 to choose the channel with the least amount of interference.

Wireless Channel: Indicates the channel setting for the DIR-685. 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.

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

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

Visibility Status: Select **Invisible** if you do not want the SSID of your wireless network to be broadcasted by the DIR-685. If Invisible is selected, the SSID of the DIR-685 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DIR-685 in order to connect to it.

Wireless Security: Refer to **Section 4 - Wireless Security** for setup information.

Network Settings

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

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

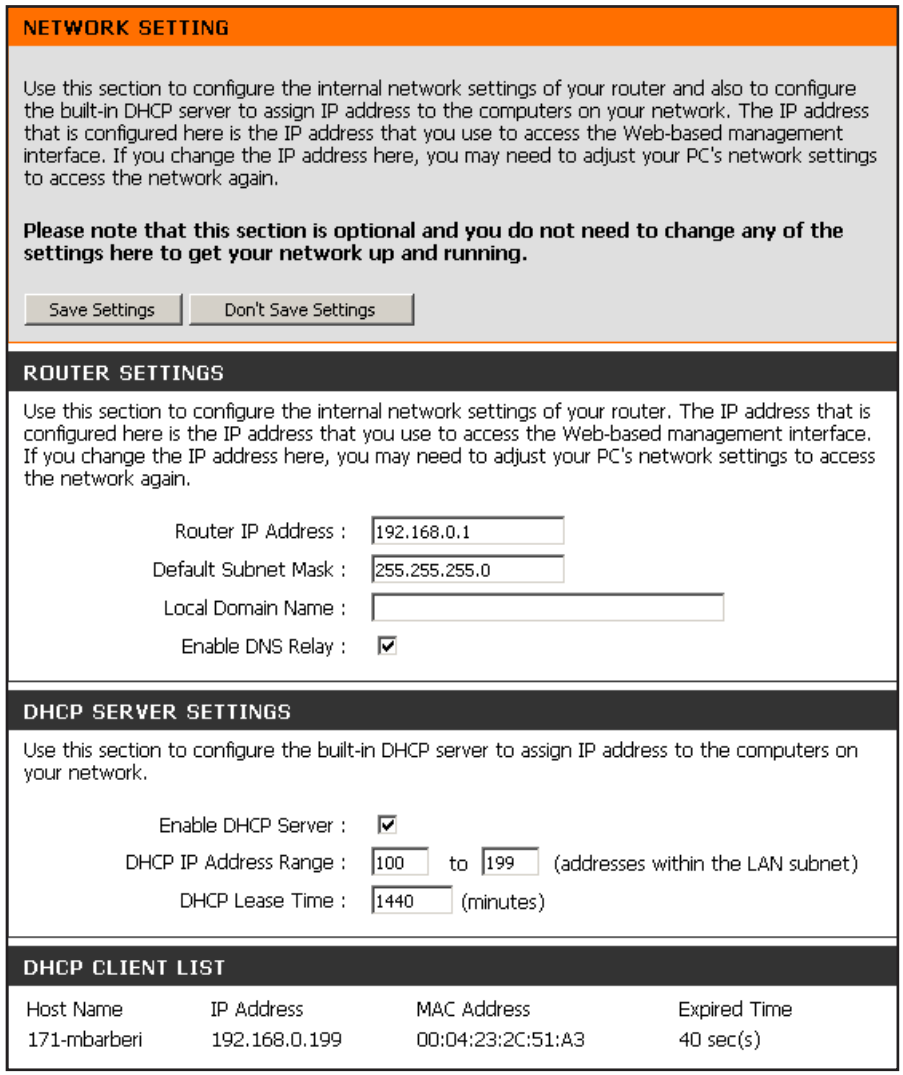
If you change the IP address, once you click **Apply**, you will need to enter the new IP address in your browser to get back into the configuration utility.

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

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.



DHCP Server Settings

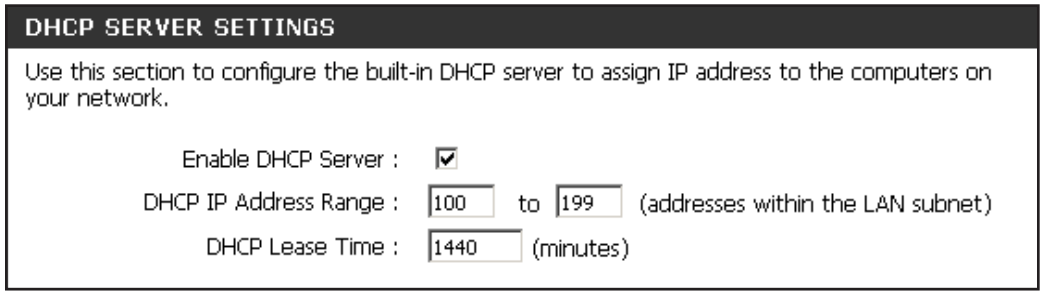
DHCP stands for Dynamic Host Control Protocol. The DIR-685 has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. Be sure to set your computers to be DHCP clients by setting their TCP/IP settings to "Obtain an IP Address Automatically." When you turn your computers on, they will automatically load the proper TCP/IP settings provided by the DIR-685. 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.



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.

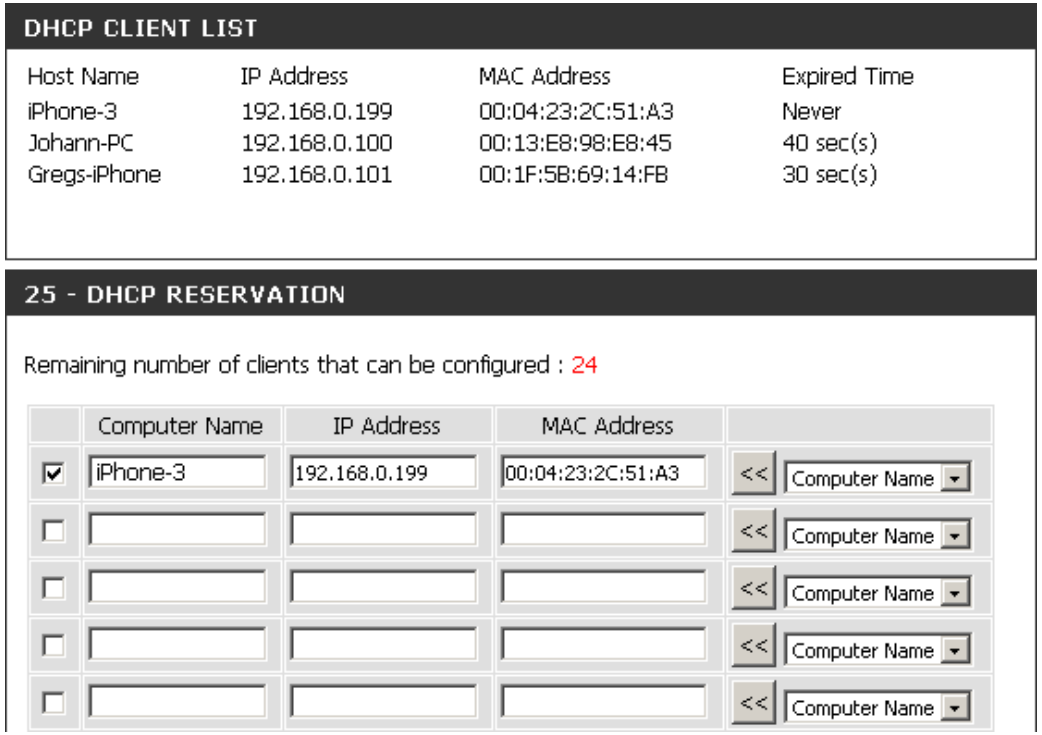
Enable: Check this box to enable the reservation.

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.

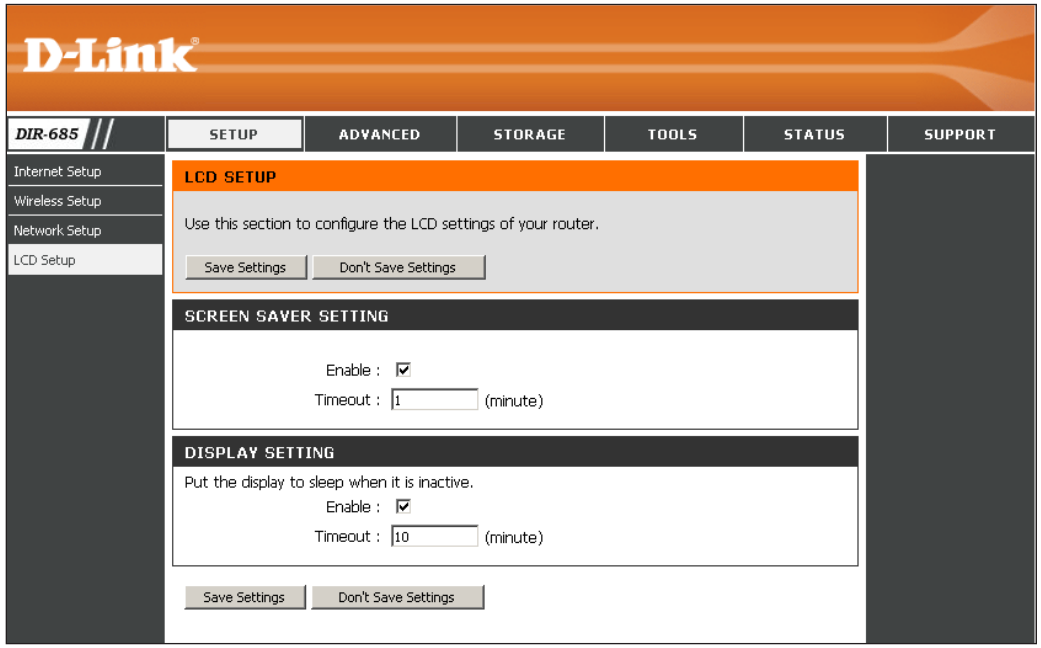
Save: Click **Save** to save your entry. You must click **Save Settings** at the top to activate your reservations.



LCD Setup

Screen Saver Setting: Check the **Enable** box to activate the screen saver on the LCD screen of the router. Enter the time of inactivity before the screen saver turns on (in minutes).

Display Setting: Check the **Enable** box and enter the time of inactivity before the screen turns off (in minutes).



Port Forwarding

The DIR-685 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-685 firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DIR-685 are invisible to the outside world. If you wish, you can make some of the LAN computers accessible from the Internet by enabling Port Forwarding. Depending on the requested service, the DIR-685 redirects the external service request to the appropriate server within the LAN network.

The DIR-685 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 Port Forwarding 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.

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

This will allow you to open a single port 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.

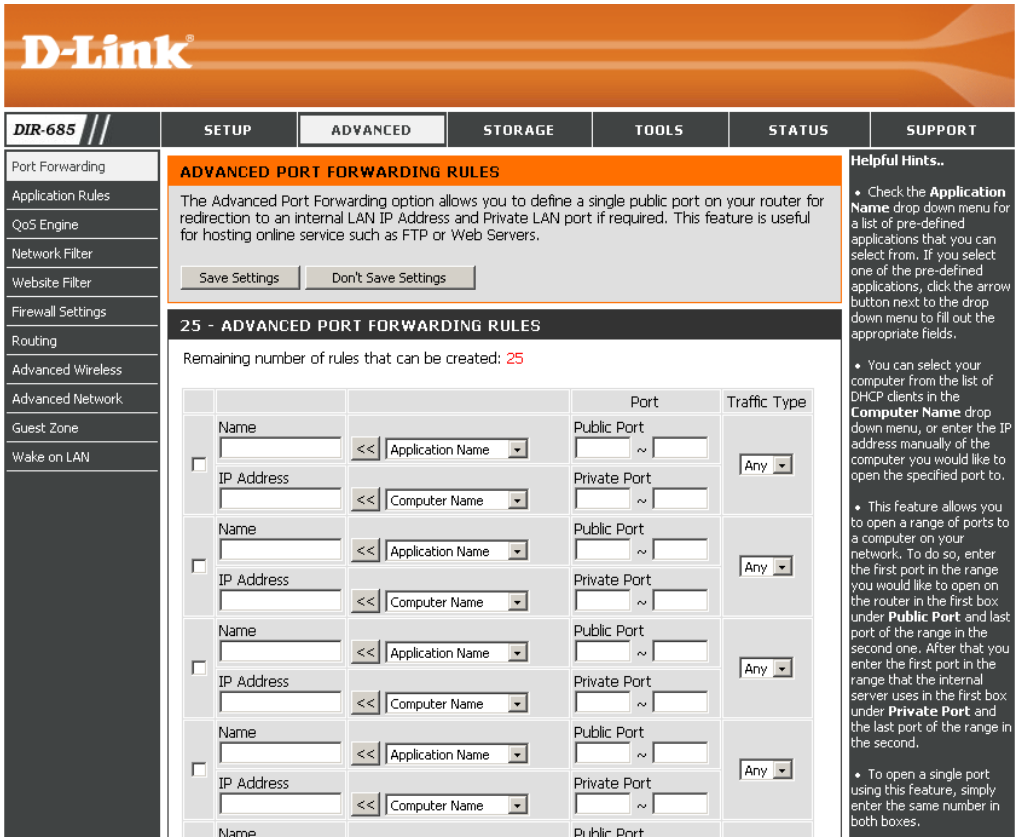
IP Address: Enter the IP address of the computer on your local network that you want to allow the incoming service to. If your computer is receiving an IP address automatically from the router (DHCP), your computer will be listed in the "Computer Name" drop-down menu. Select your computer and click 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

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.



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-685. 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-685 provides some predefined applications in the table on the bottom of the web page. Select the application you want to use and enable it.

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

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

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

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

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

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

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.

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

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

Lag Eliminated: Check this box to automatically set the priority for your applications.

Network Filter

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

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

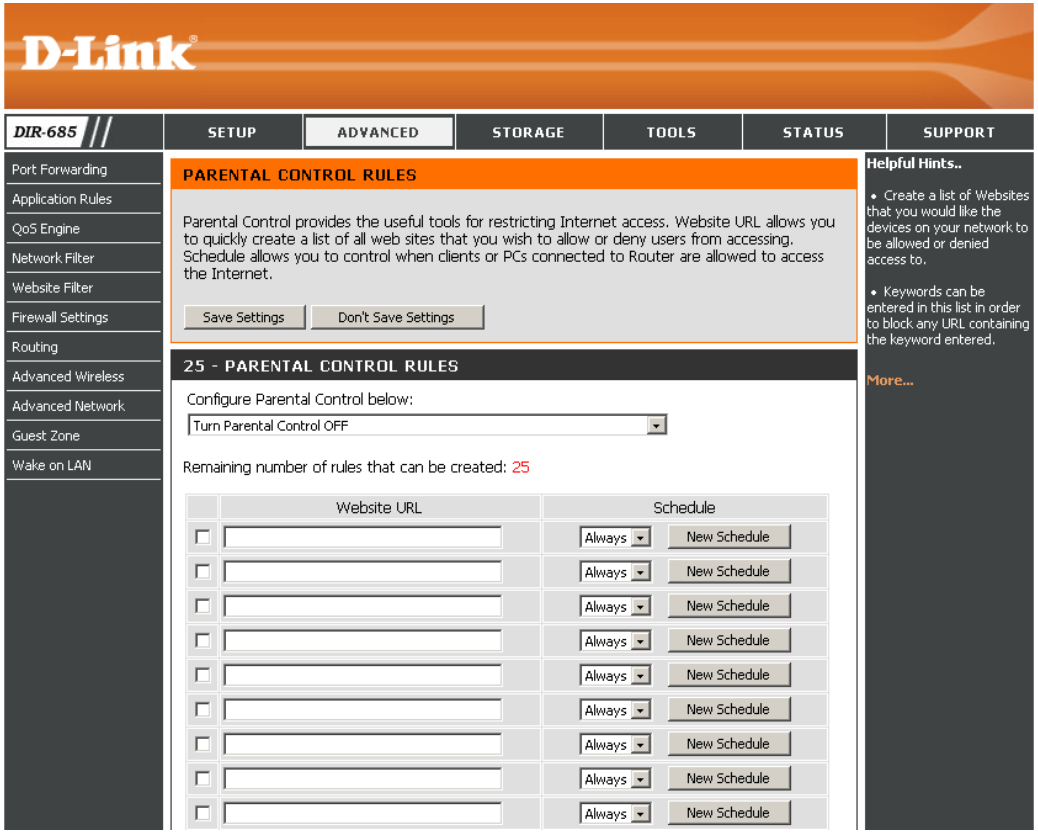
Website Filters

Website Filters are used to allow you to set up a list of allowed websites that can be used by multiple users through the network. To use this feature, select **Allow** or **Deny**. Enter the domain or website and click **Save Settings**.

Add Website Filtering Rule: Select **Allow** or **Deny**.

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

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



Firewall Settings

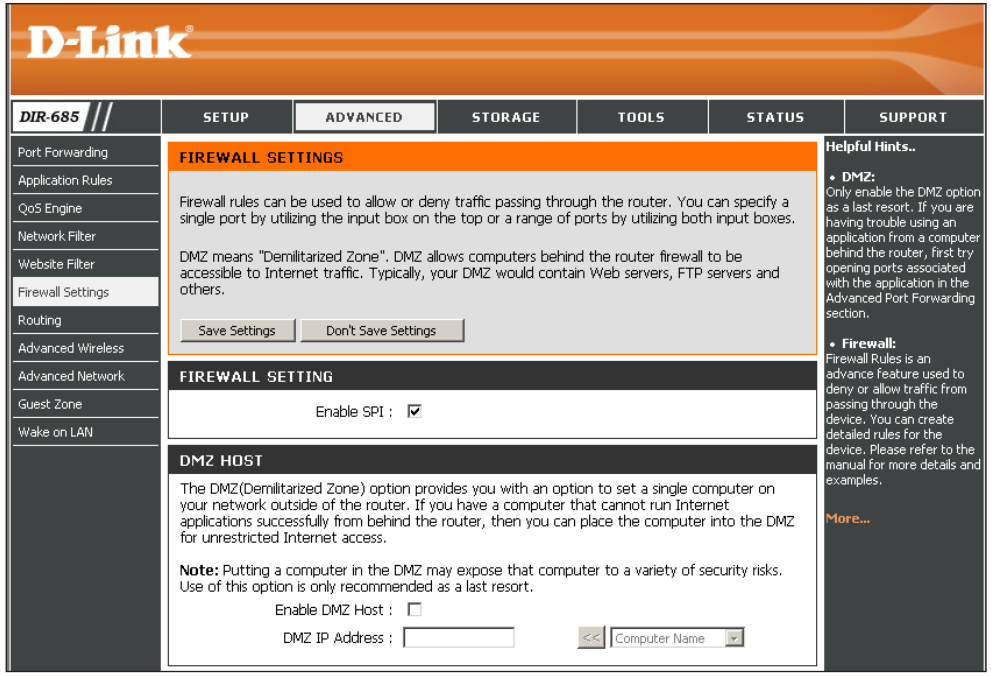
A firewall protects your network from the outside world. The D-Link DIR-685 offers a firewall type functionality. The SPI feature helps prevent cyber attacks. Sometimes you may want a computer exposed to the outside world for certain types of applications. If you choose to expose a computer, you can 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.

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

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

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



Firewall Rules

Firewall Rules: The firewall rules is used to allow or deny traffic coming in or going out to the router based on the source and destination IP addresses as well as the traffic type and the specific port the data runs on.

Name: Users can specify a name for a firewall rule.

Action: Users can choose to allow or deny traffic.

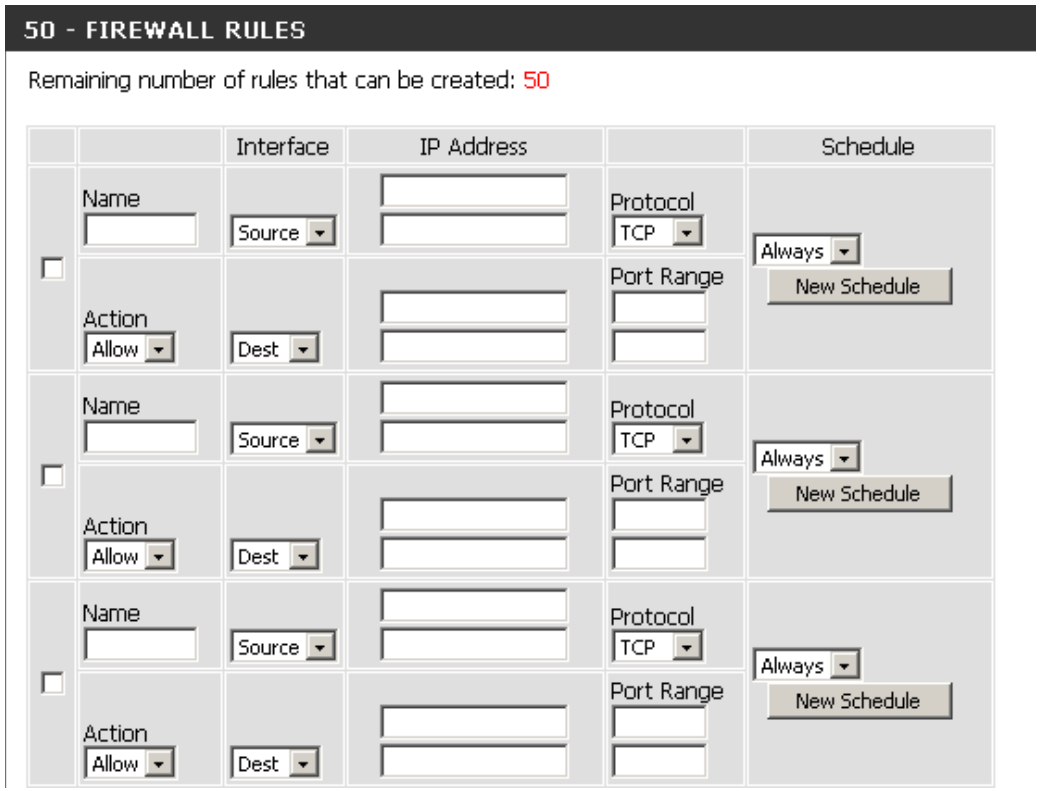
Interface: **Source** - Select Source from the drop-down menu to select the starting point of the traffic that's to be allowed or denied is from LAN or WAN interface.
Dest - Select Dest to select the ending point of the traffic that's to be allowed or denied is arriving at LAN or WAN interface.

IP Address: Specify a single source or dest IP by entering the IP in the top box or enter a range of IPs by entering the first IP of the range in the top box and the last IP of the range in the bottom one.

Protocol: Select the traffic type.

Port Range: Enter the same port number in both boxes to specify a single port or enter the first port of the range in the top box and last port of the range in the bottom one to specify a range of ports.

Schedule: Use the Always drop-down menu to select a previously defined schedule or click on the **New Schedule** button to add a new schedule.



Routing

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

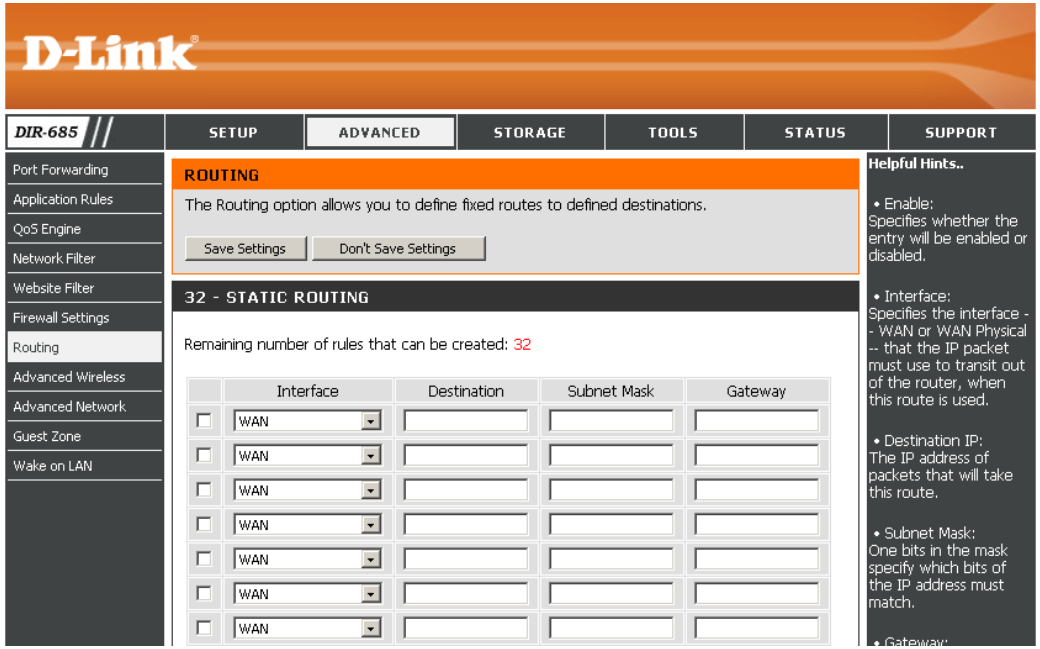
Destination IP: Enter the IP address of packets that will take this route.

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

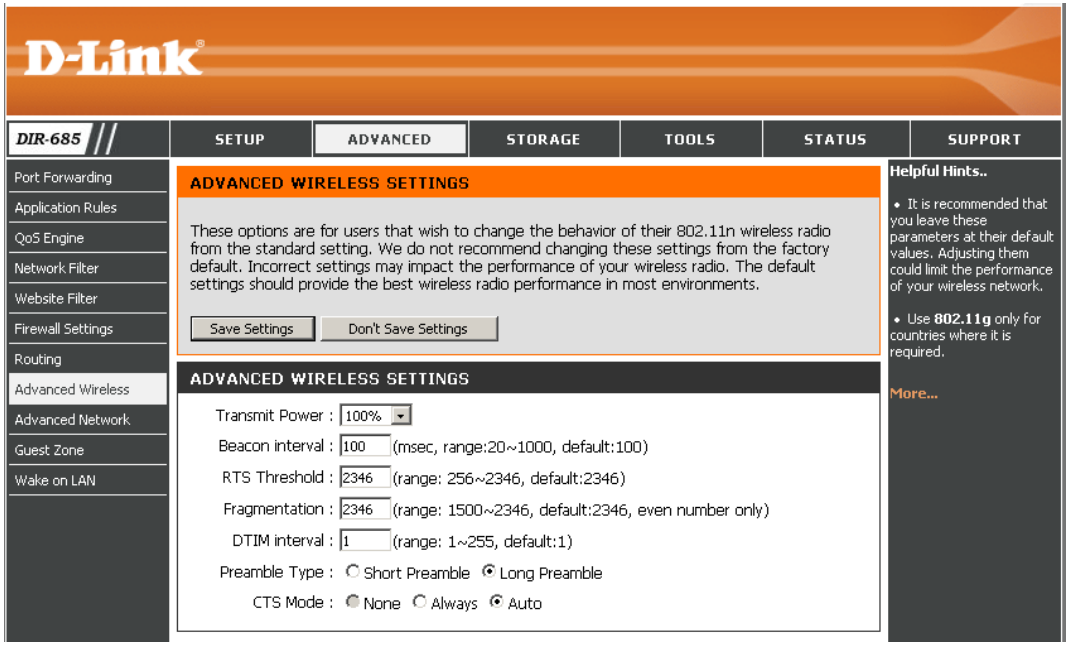
Gateway: Enter your next hop gateway to be taken if this route is used.

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 16 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.



Advanced Wireless Settings



Transmit Power: Set the transmit power of the antennas.

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

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

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

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

Preamble Type: Select **Short** or **Long** Preamble.

CTS Mode: Clear To Send (CTS) is a mechanism that wireless devices use when the surrounding environment is 'dirty' (i.e. many senders and receivers over the same wireless frequency).

When the CTS Mode is set to **Always** the transmitting device will need to send out an RTS (Request To Send), and the intended receiving device needs to send out a CTS (Clear To Send), before the actual data can be sent.

Setting the CTS Mode to **Auto** indicates that the router will decide whether or not the CTS mechanism should be used or not, depending on the current environment and data length.

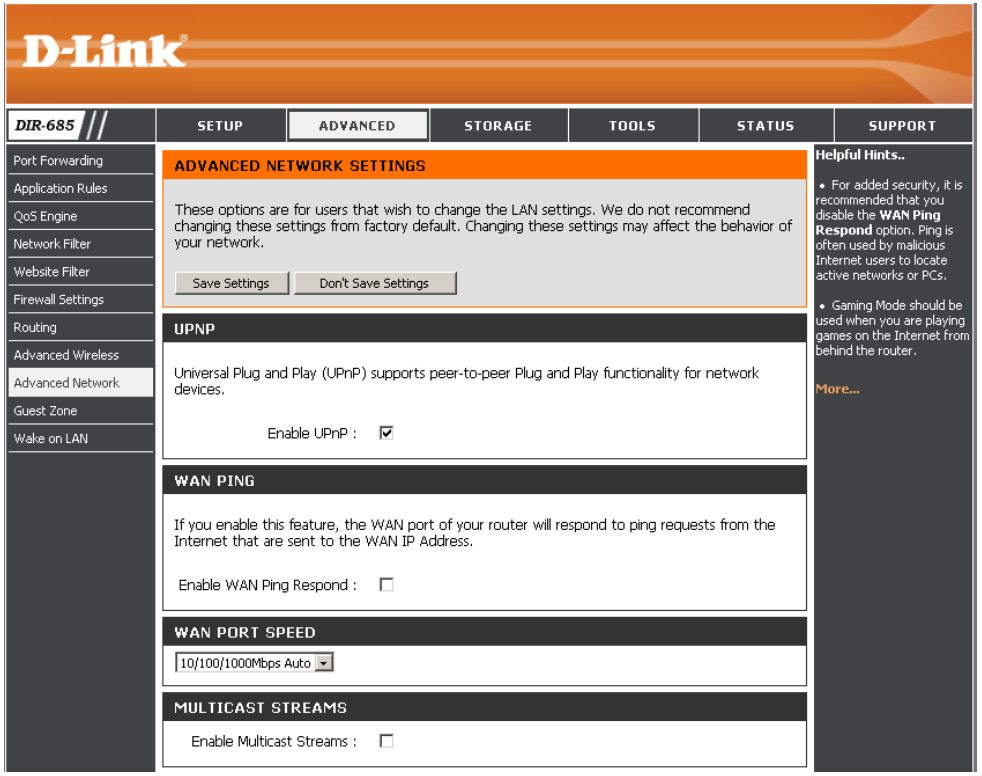
Advanced Network Settings

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

WAN Ping: Unchecking the box will not allow the DIR-685 to respond to pings. Blocking the Ping may provide some extra security from hackers. Check the box to allow the WAN port to be “pinged”.

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

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



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: Tick this checkbox to enable the Guest Zone feature.

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

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

Router IP Address: Type the IP Address that the router will use for the Guest Zone network.

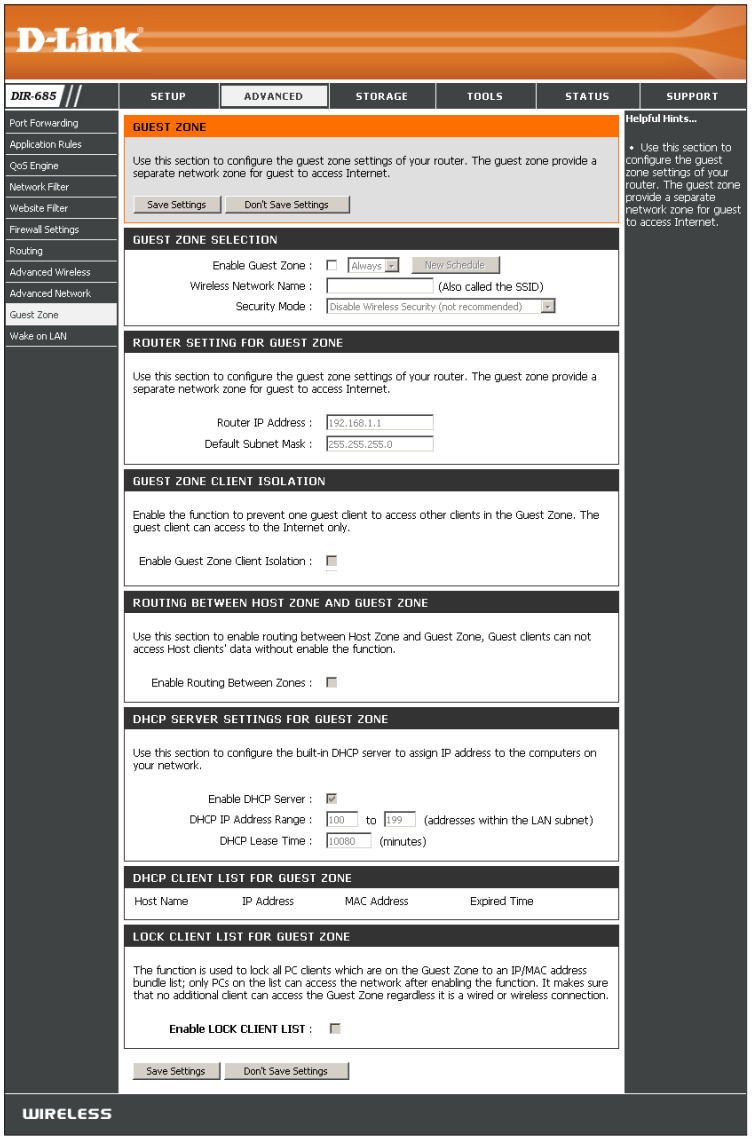
Default Subnet Mask: Type the Subnet Mask that the router will use for the Guest Zone network.

Enable Guest Zone Client Isolation: Tick this checkbox to prevent guest clients accessing other guest clients in the Guest Zone. Ticking this option only allows guest clients to access to the Internet.

Enable Routing Between Zones: Tick this checkbox to allow network connectivity between the different zones created.

DHCP Server Settings for Guest Zone: Tick the **Enable DHCP Server** checkbox to configure the built-in DHCP server to assign IP addresses to computers in the Guest Zone.

Specify the range of IP addresses that will be assigned to computers in the Guest Zone in the *DHCP IP Address Range* fields. Type the last IP octet of the first host in the range in the textbox on the left and the last IP octet of the last host in the range in the textbox on the right.



DHCP Server Settings for Guest Zone: Tick the **Enable DHCP Server** checkbox to configure the built-in DHCP server to assign IP addresses to computers in the Guest Zone.

Enter the starting and ending IP addresses that will be assigned to devices in the Guest Zone in the *DHCP IP Address Range* fields.

Specify the length of time (in minutes) for the IP address lease in the *DHCP Lease Time* field.

DHCP Client List for Guest Zone: Displays the Host Name, IP Address and the time the DHCP lease will expire for all the DHCP clients in the Guest Zone.

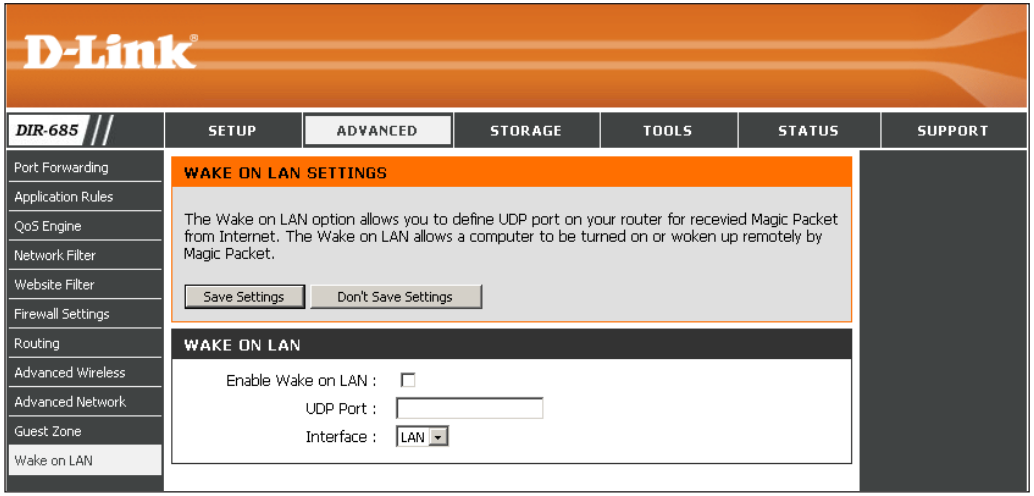
Wake on LAN

The Wake on LAN feature allows you to define a UDP port on your router to receive Magic Packet from the Internet to turn on a computer connected to the router remotely.

Enable Wake on LAN: Check to enable the Wake on LAN feature.

UDP Port: Enter a UDP port.

Interface: LAN will be selected.

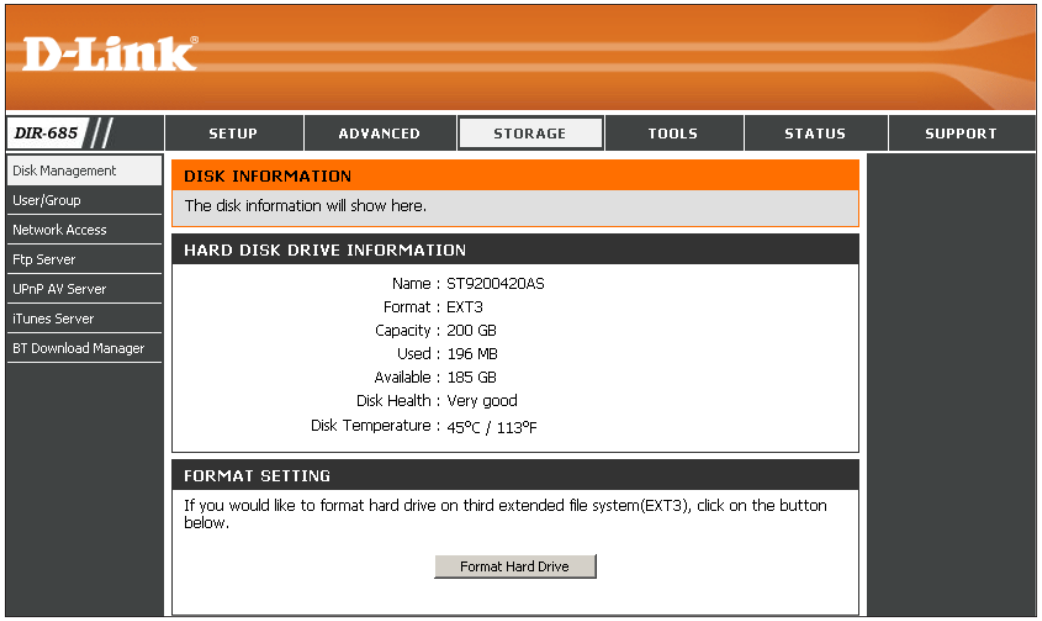


Disk Management

Hard Disk Drive Information: The hard drive information such as size, available space, used space, and format.

Format Setting: Click the **Format Hard Drive** button to format the hard drive.

Warning: *When formatting your hard drive, all data will be lost.*



User / Groups

The DIR-685 supports up to 64 unique users. The users can be added to a group, or individually. The users and groups are created to allow access to specific folders on the DIR-685, via FTP or your local network.

User and Group Creation: This section contains required attributes for a new user or group, including User Name and Password or Group name.

If creating a new user, carry out the following steps:

- Click the **User** radio button.
- Type in a **User Name**, **Password** and **Confirm Password** in the relevant fields.

If creating a new group, carry out the following steps:

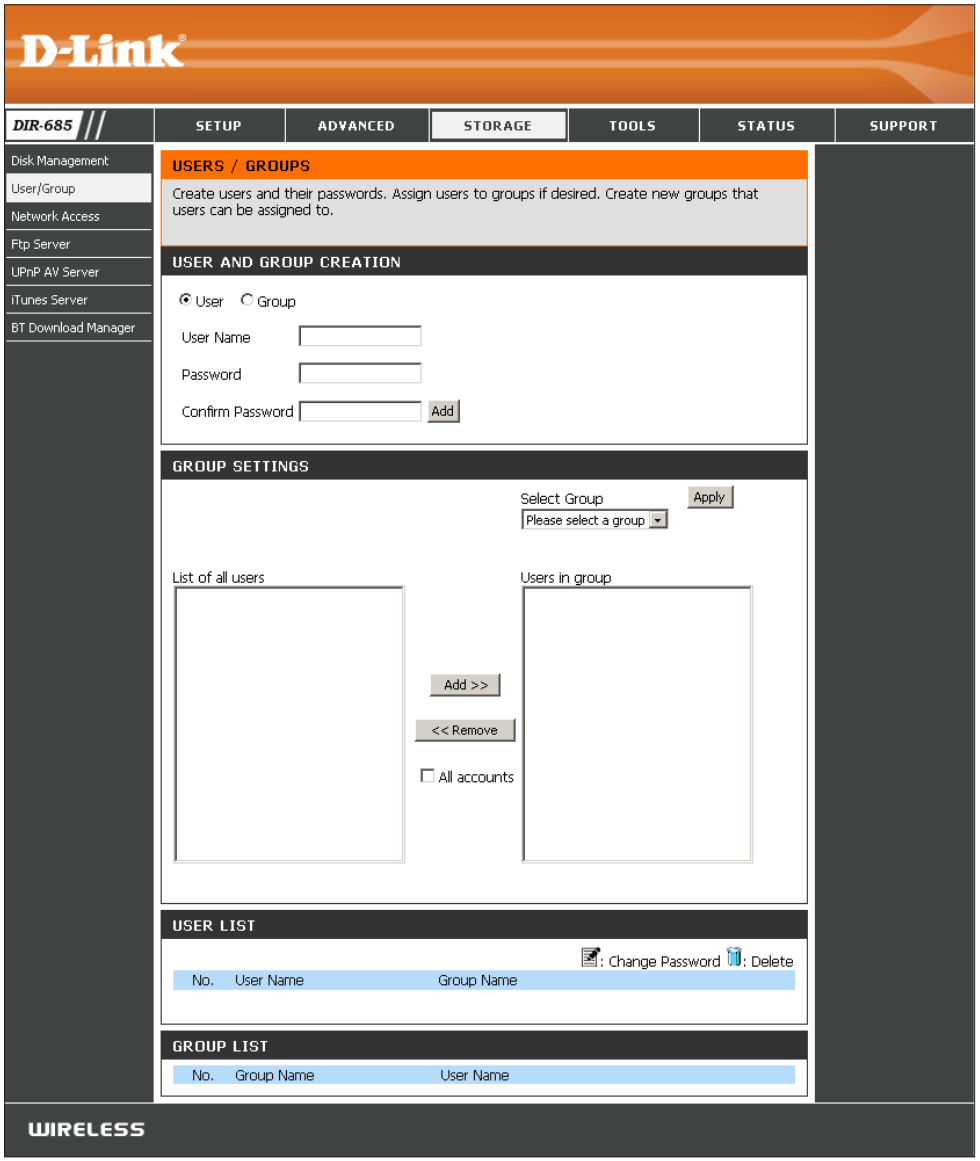
- Click the **Group** Radio button.
- Type in a **Group name** in the Add New Group text box.
- Click the **Add** button to finish creating the group

List of All Users: Displays the list of users that you may assign to the selected group.

Users in Group List: Displays the current status of the quota feature.

To add a new user to the selected group, click the user then click the **Add>>** button.

To remove a user from the group, click the user and then click the **<<Remove** button.

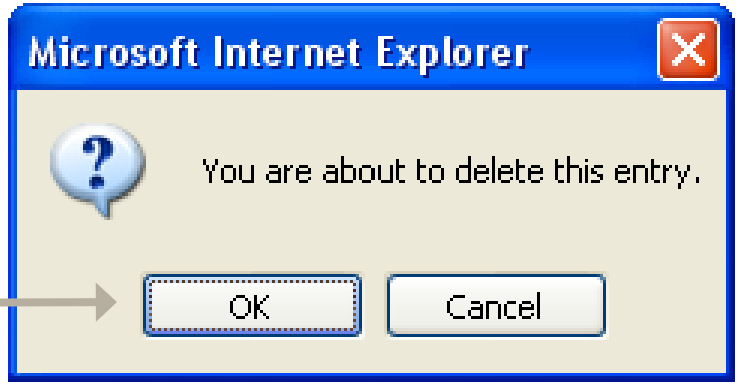


Users / Groups

Group List

Use the Group List section to view all the Groups setup on the DIR-685. The Group List section also allows you to delete groups that have been setup on the DIR-685. Carry out the following steps to delete an existing group:

1. In the Group List section, click the **Trash Can** icon next to the group you want to delete.



2. The following dialog box appears. Click the **OK** button to delete the Group.

Network Access

The Network Access settings allow you to assign users and groups to specific folders or volumes. By default, all volumes are open to anyone on the local network with read/write access. Before specific user or group rules can be created, the default rules must be deleted.

Network Access Settings: Assign permissions for users and groups on the local network.

Category: Determines whether the access rule will apply to a group or individual user.

User/Group: Select the user or group for the access rule or you can select **All Accounts**.

Folder: Browse to open and select the folder or directory you are controlling access to.

Permission: Set the user or group permission to **Read Only** or to **R/W: Read/Write**.

Oplock: Opportunistic locks (oplocks) are a characteristic of the LAN Manager networking protocol implemented in the 32-Bit Windows family. Oplocks are guarantees made by a server for a shared logical volume to its clients. These guarantees inform the client that a file's content will not be allowed to be changed by the server, or if some change is imminent, the client will be notified before the change is allowed to proceed.

Oplocks are designed to increase network performance when it comes to network file sharing; however, when using file-based database applications, it is recommended to set the share oplocks to **No (off)**.

By default, Windows Vista® has Oplocks enabled and cannot be disabled. If you are having network performance issues with applications sharing files from the DIR-685, you may try to improve performance by setting Oplocks to **No (off)**.

Map Archive: When enabled, the file attribute ”Archive” will be copied as the file is being stored on the DIR-685. Certain backup software attach this attribute to files that are being stored as backups.

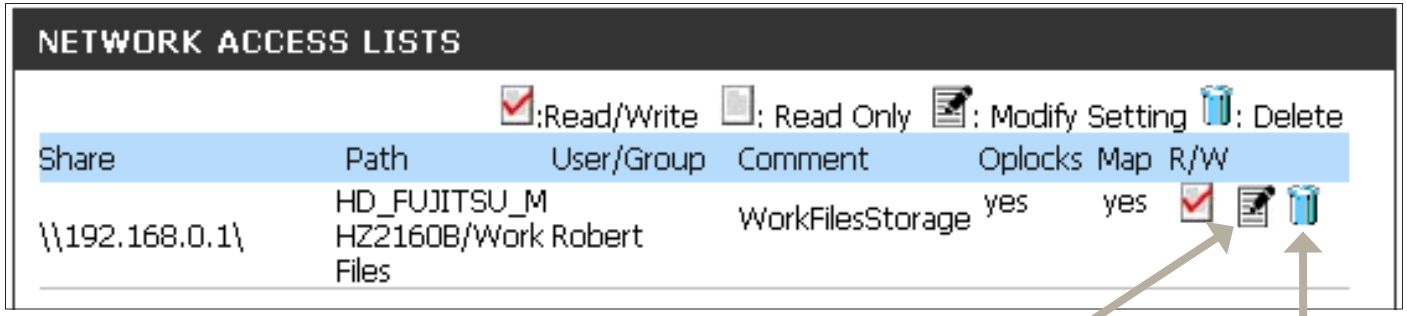
Comment: Enter a comment for reference or description of the rule.

Network Access List: Lists all defined access rules.

Storage Access

Network Access Lists

Use the Network Access List section to view all the Network Access Lists that have been setup on the DIR-685. The Network Access List section also allows you to modify or delete Network Access Lists that have been setup on the DIR-685.



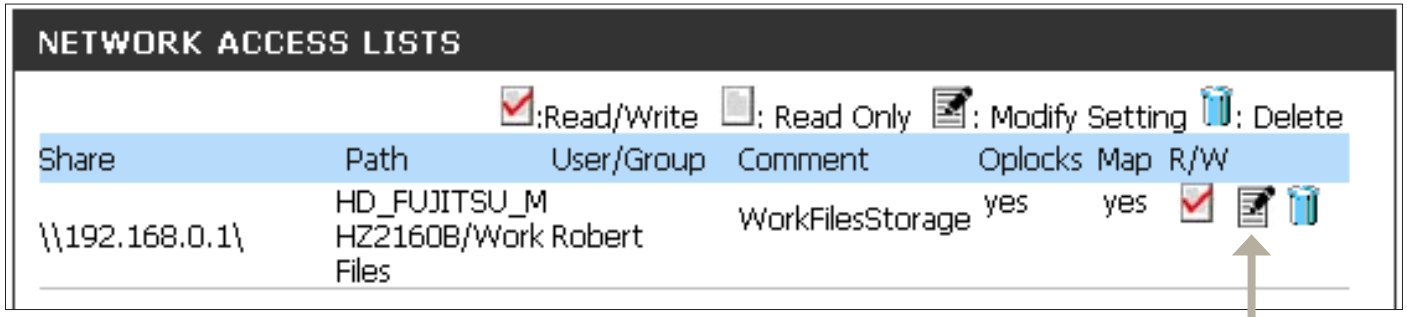
Editing a Network Access List
Click the notepad icon next to the user you want to edit. See the "**Editing Existing Network Access Lists**" section for more information.

Deleting a Network Access List
Click the notepad icon next to the user you want to edit. See the "**Deleting Network Access Lists**" section for more information.

Storage Access

Editing Existing Network Access Lists

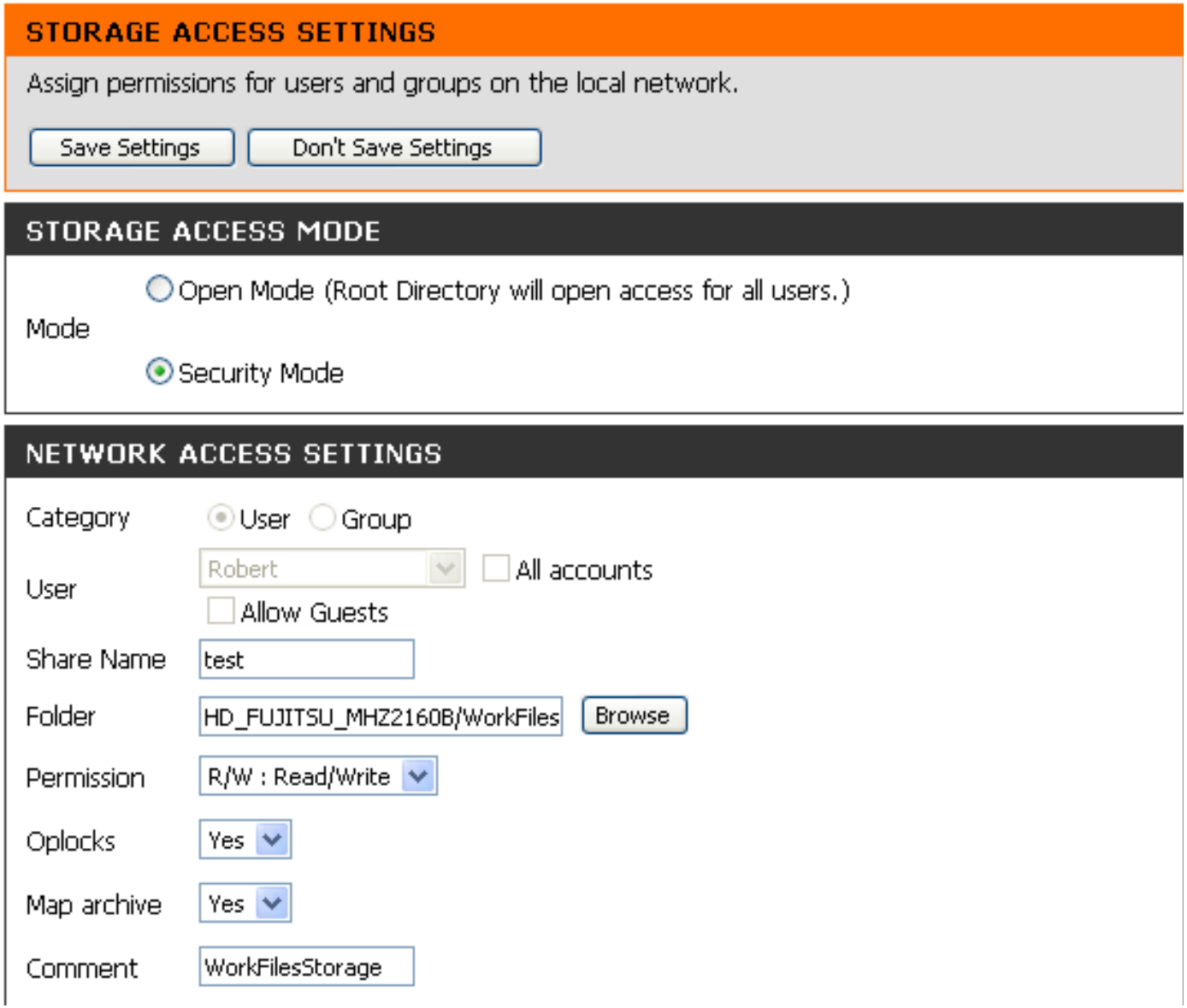
Carry out the following steps to edit a Network Access List:



1. In the Network Access Lists section, click the **Notepad** icon next to the Network Access List you want to edit.

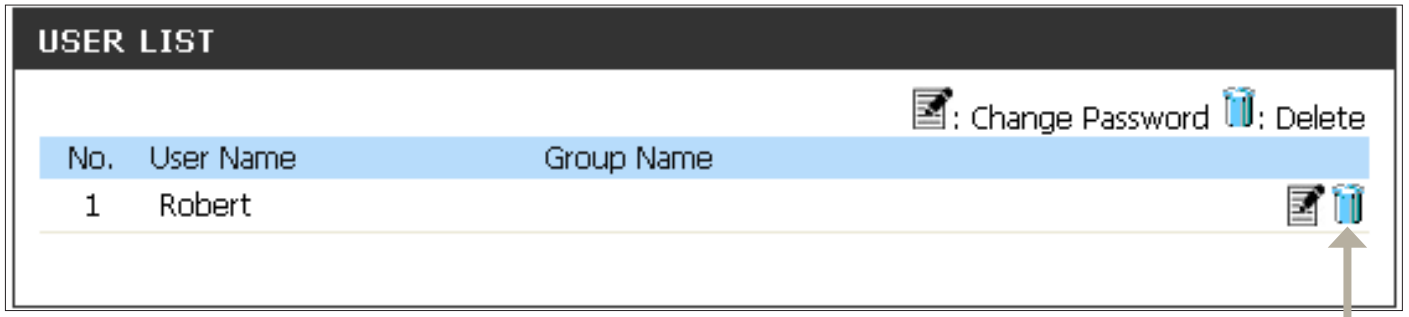
2. Modify the required settings in the Network Access Settings section.

3. Click the **Save Settings** button when you have changed the required settings.



Users / Groups
Deleting a Network Access List

Carry out the following steps to delete a Network Access List:



1. In the Network Access Lists section, click the Trash Can icon next to the network access list you want to delete.

2. The following dialog box appears. Click the **OK** button to delete the Network Access List.

FTP Server

The DIR-685 is equipped with a built-in FTP Server, which is easy to configure. It allows users access to important data whether they are on the local network or at a remote location. The FTP server can be configured to allow user access to specific directories, and will allow up to ten users to access the DIR-685 at a time. For improved security, the DIR-685 supports use of an FTPS client, such as SSL/TLS, to encrypt both the password and the data. The DIR-685 supports FireFTP, a cross-platform FTP client for Mozilla Firefox™ users.

FTP Server Settings: This section contains the user and group configuration settings for access to the FTP folder to the DIR-685.

Category: Determines whether the FTP server rule will apply to an individual user or a group.

User/Group: Select the user or group the FTP server rule will apply to.

Folder: Browse to open and select the folder or directory you are granting FTP access to. Select **root** to grant access to all volumes.

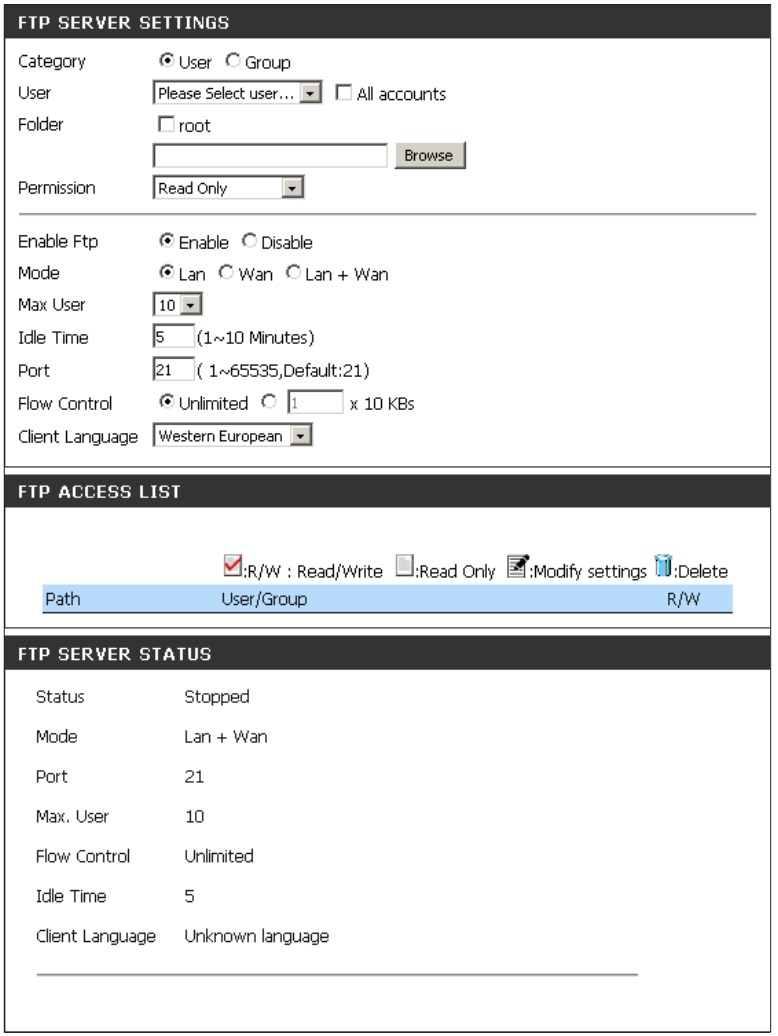
Permission: Set the user or group permission to **Read Only** or **RW: Read/Write**.

Enable FTP: Select **Enable** to enable the FTP server.

Mode: Select **LAN**, **WAN**, or **LAN+WAN**.

Max User: Sets the maximum amount of users that can connect to the FTP server.

Idle Time: Sets the amount of time a user can remain idle before being disconnected.



FTP Server Settings

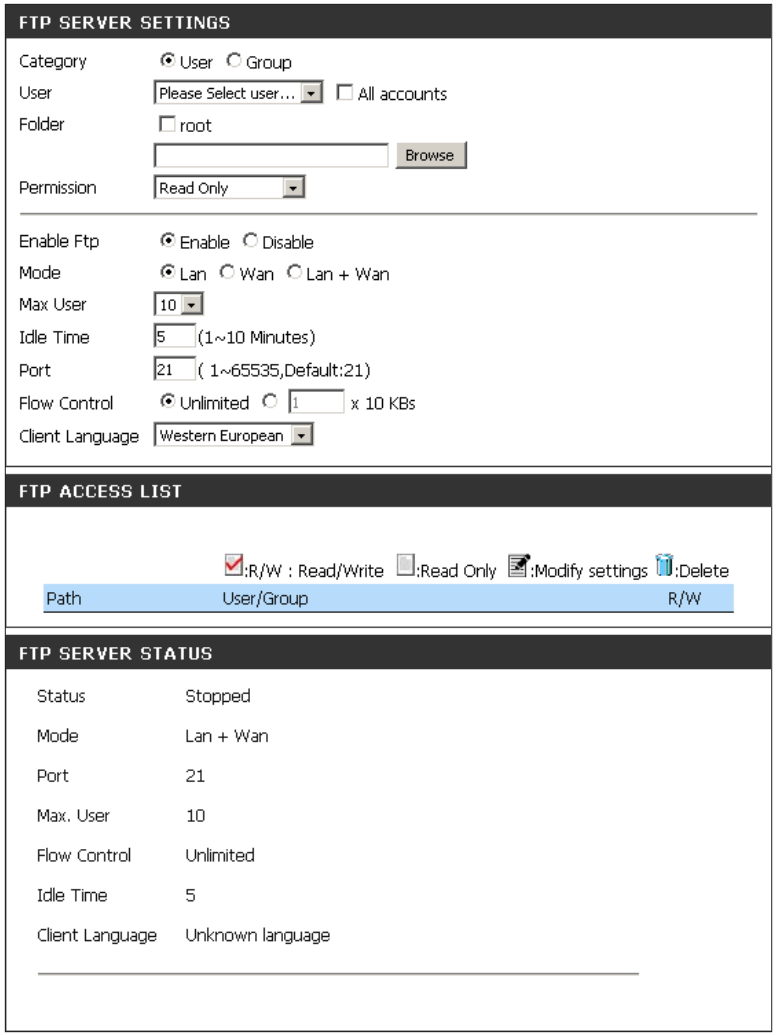
Port: Sets the FTP port. Default is 21.

Flow Control: Allows you to limit the amount of bandwidth available for each user.

Client Language: Most standard FTP clients like Windows FTP, only support Western European codepage when transferring files. Support has been added for non standard FTP clients that are capable of supporting these character sets.

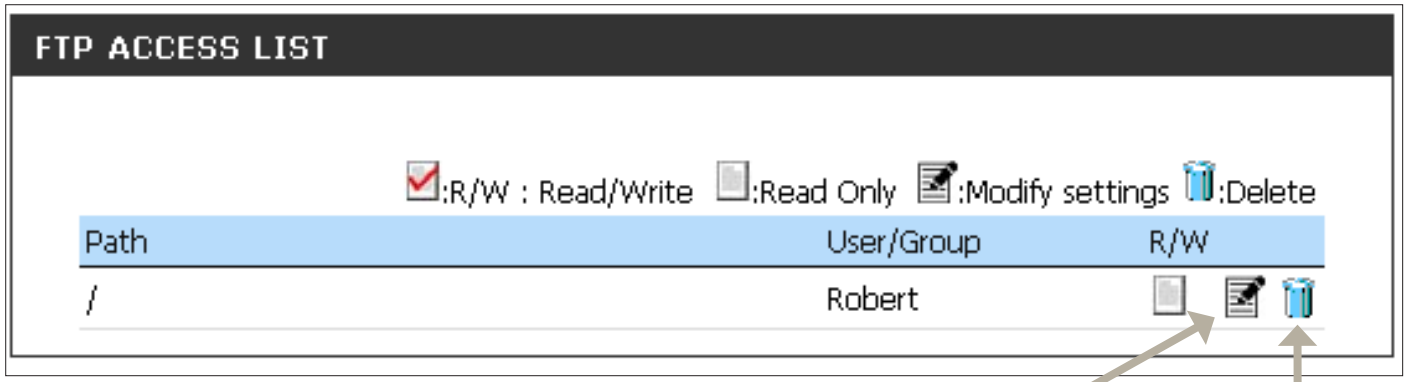
FTP Access List: The FTP access for users and groups can be added and edited here.

Server Status: Displays the current status of the FTP Server.



FTP Access List

Use the FTP Access List section to view all the FTP Access Lists that have been setup on the DIR-685. The FTP Access List section also allows you to modify or delete FTP Access Lists that have been setup on the DIR-685.

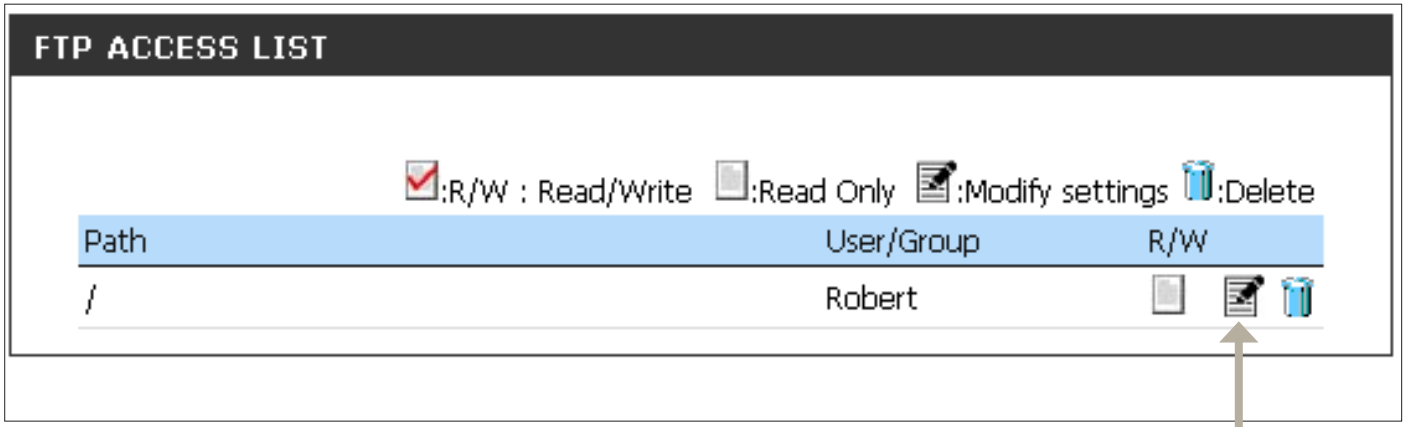


Editing an FTP Access List
Click the notepad icon next to the FTP user you want to edit. See the "**Editing an FTP Access List**" section for more information.

Deleting an FTP Access List
Click the notepad icon next to the user you want to edit. See the "**Deleting an FTP Access List**" section for more information.

Editing an FTP Access List

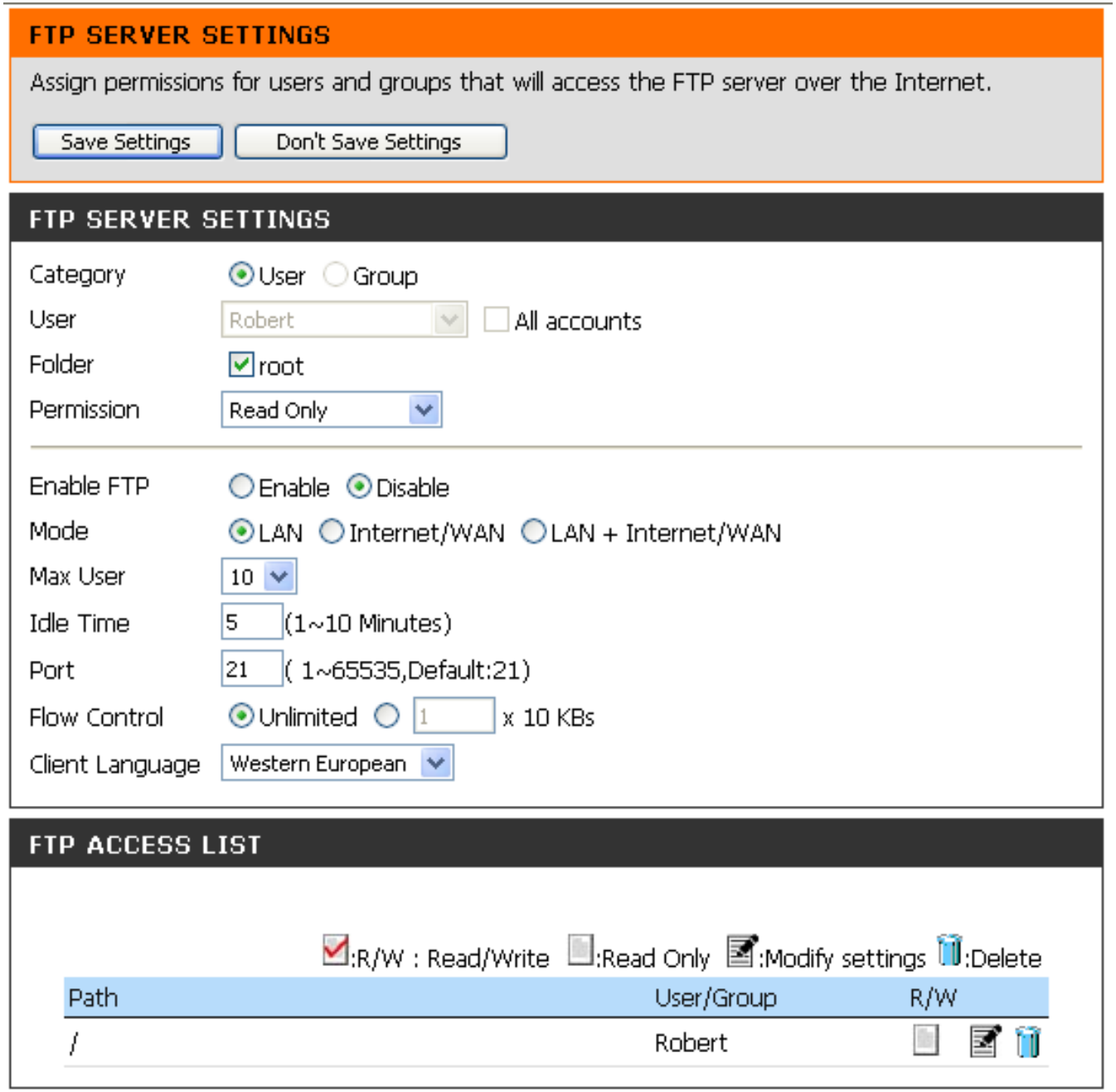
Carry out the following steps to edit a FTP Access List:



1. In the FTP Access Lists section, click the **Notepad** icon next to the FTP Access List you want to edit.

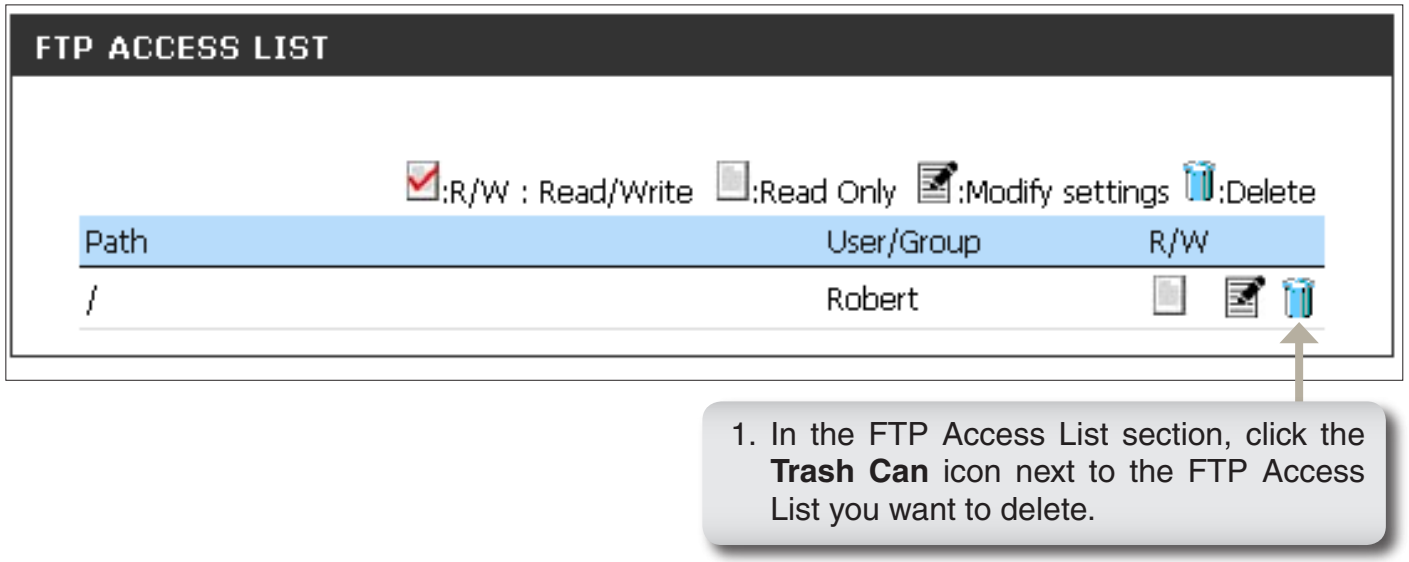
2. In the FTP Server Settings section, modify the required settings.

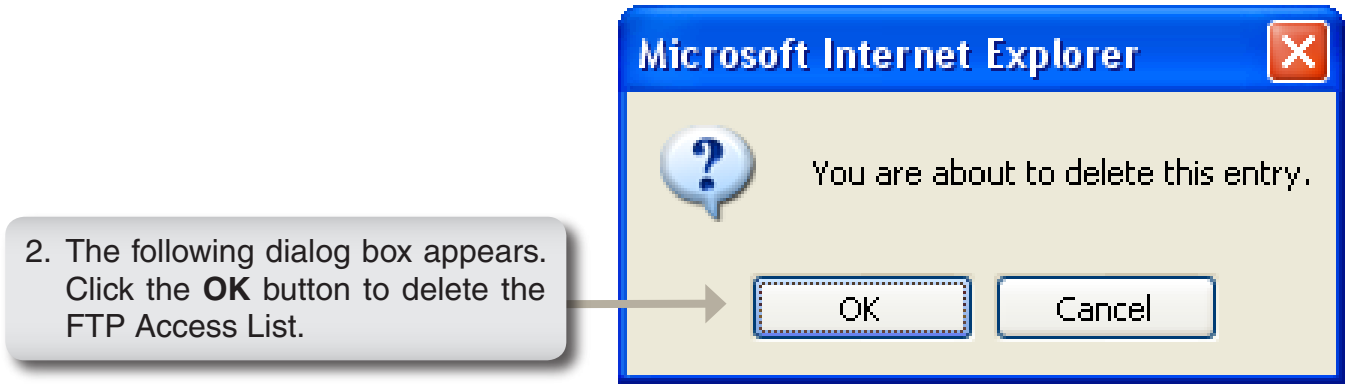
3. Click the **Save Settings** button when you have changed the required settings.



Deleting an FTP Access List

Carry out the following steps to delete a Network Access List:





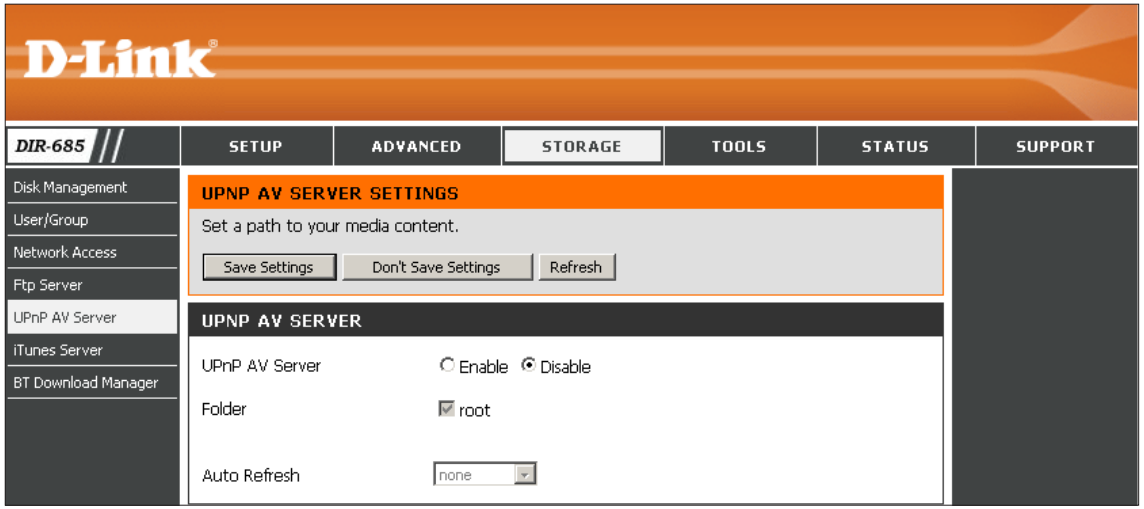
UPnP AV Server

The DIR-685 features a UPnP AV Server. This server provides the ability to stream photos, music and videos to UPnP AV compatible network media players. If the server is enabled, the DIR-685 will automatically be detected by UPnP AV compatible media players on your local network.

UPnP AV Server: Select **Enable** or **Disable** to enable or disable the DIR-685 UPnP AV server.

Folder: Specifies the folder or directory that will be shared by the UPnP AV server. Select **root** to share all files on all volumes, or click **Browse** to select a specific folder.

Auto Refresh: Select the auto refresh interval from the drop-down menu.



iTunes® Server

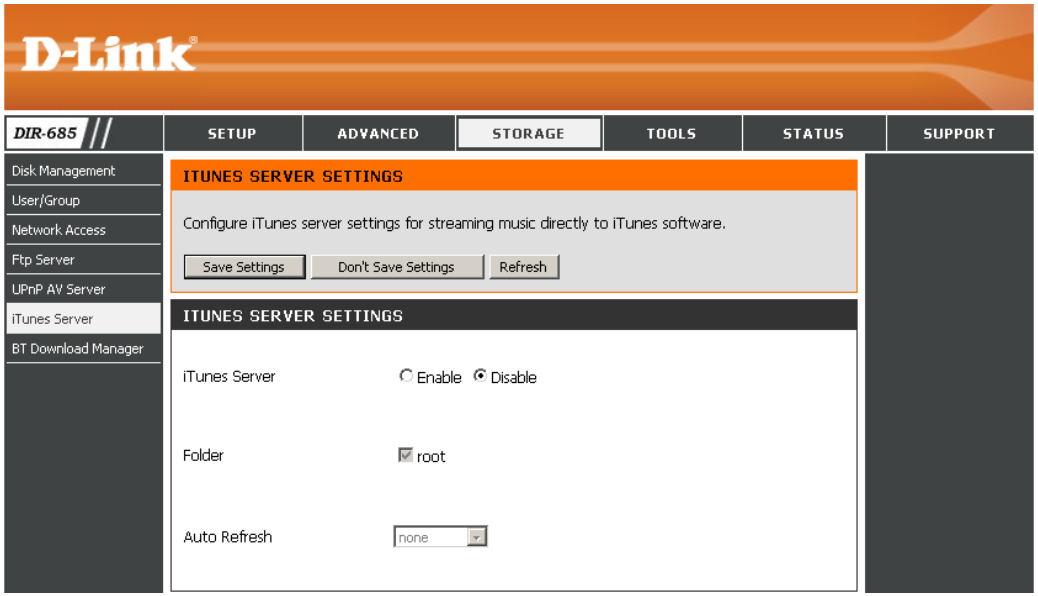
The DIR-685 features an iTunes® Server. This server provides the ability to share music and videos to computers on the local network running iTunes. If the server is enabled, the DIR-685 will be automatically detected by the iTunes program and the music and videos contained in the specified directory will be available to stream over the network.

iTunes Server: Select **Enable** or **Disable** to enable or disable the DIR-685 iTunes server.

Folder: Specifies the folder or directory that will be shared by the iTunes server. Select **root** to share all files on all volumes, or click **Browse** to select a specific folder.

Password: Sets password for the iTunes server. (Optional)

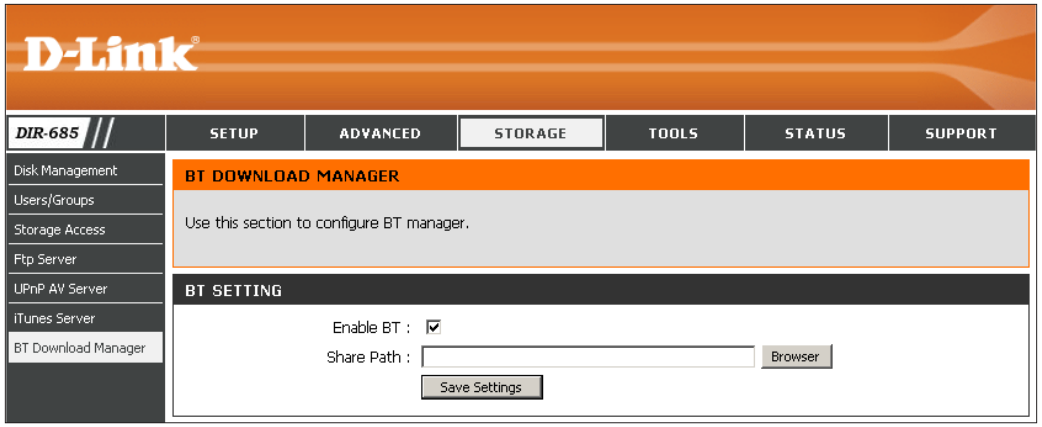
Auto Refresh: Select the auto refresh interval from the drop-down menu.



BitTorrent Download Manager

Enable BT: Check to enable the BitTorrent download manager.

Share Path: Enter the path to the folder on your hard drive in the router to allow BitTorrent downloading. Click **Browse** to select the folder.



Note: *A 2.5" SATA Hard Drive needs to be installed in the router in order to use the BitTorrent Download Manager.*

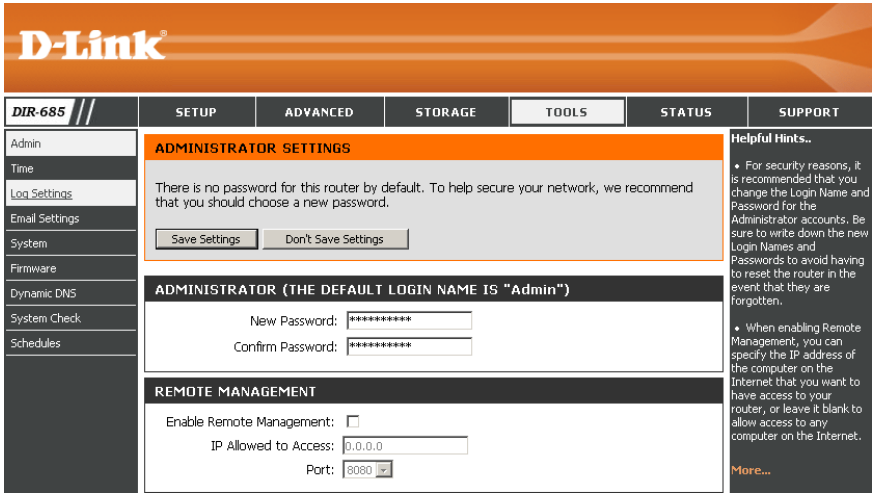
Administrator Settings

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 log in as the User, you can see the settings but cannot change them.

Remote Management: Remote management allows the DIR-685 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-685.
Example: http://x.x.x.x:8080 where x.x.x.x is the Internet IP address of the DIR-685 and 8080 is the port used for the Web-Management interface.

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.

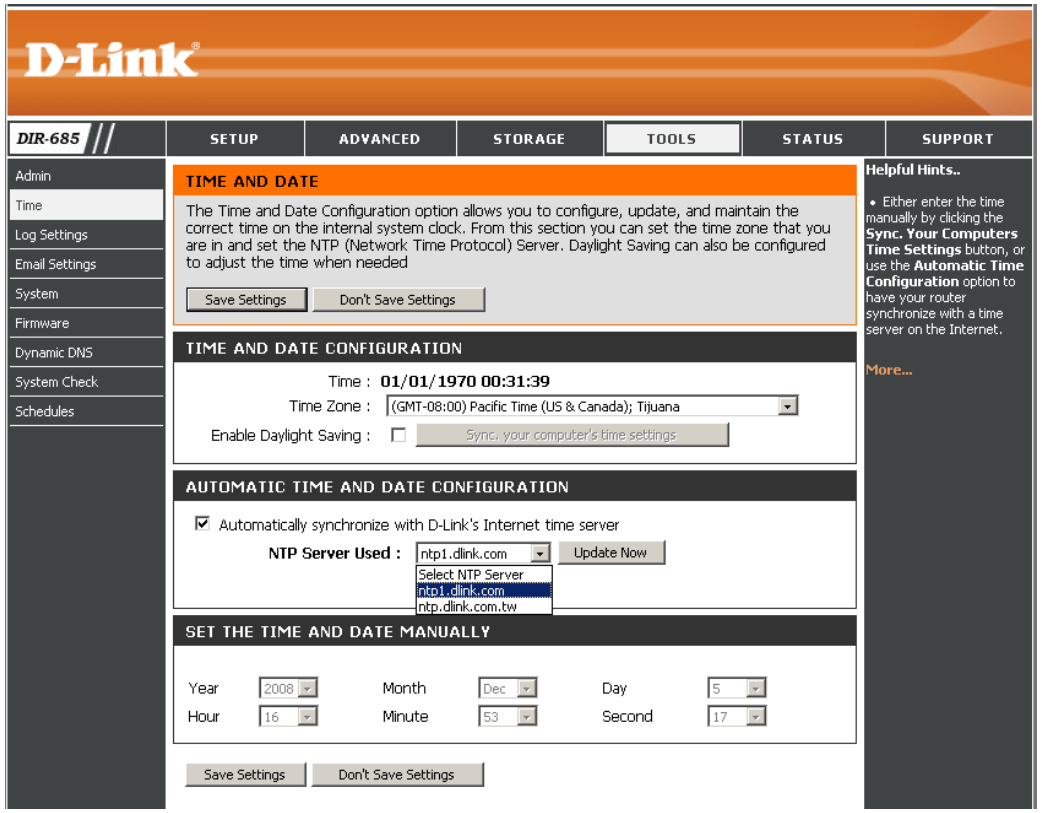
Time Zone: Select the Time Zone from the drop-down menu.

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 an NTP server. This will only connect to a server on the Internet, not a local server.

NTP Server Used: Select an NTP server from the drop-down menu.

Manual: To manually input the time, make sure the *Automatically synchronize with D-Link's Internet time server* box is unchecked. Select the Year, Month, Day, Hour, Minute, and Second from the drop-down menus. Click **Save Settings** to save and activate your settings.

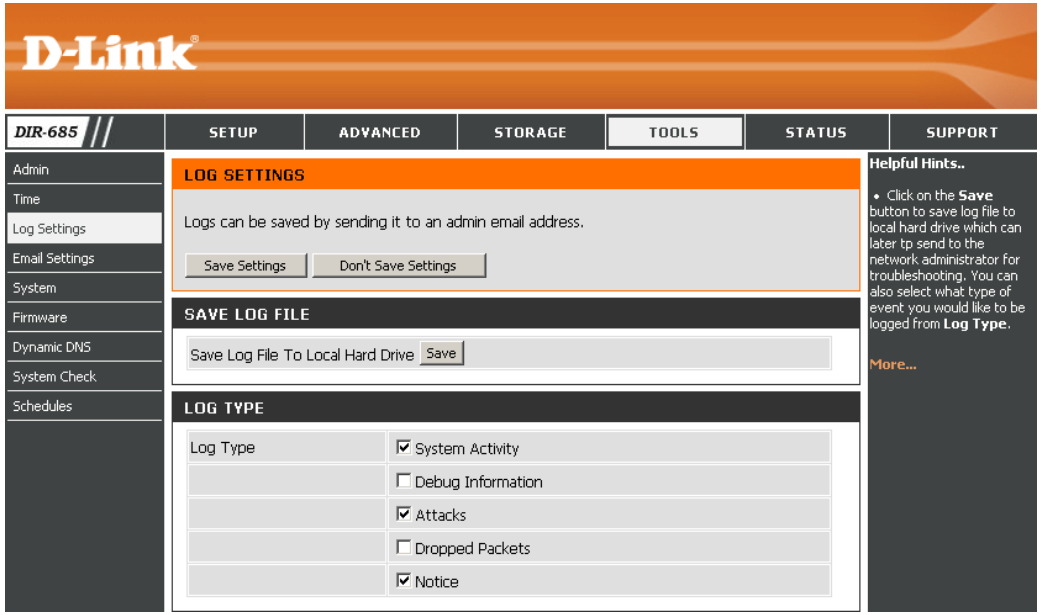


Log Settings

The DIR-685 keeps a running log of events and activities occurring on the router.

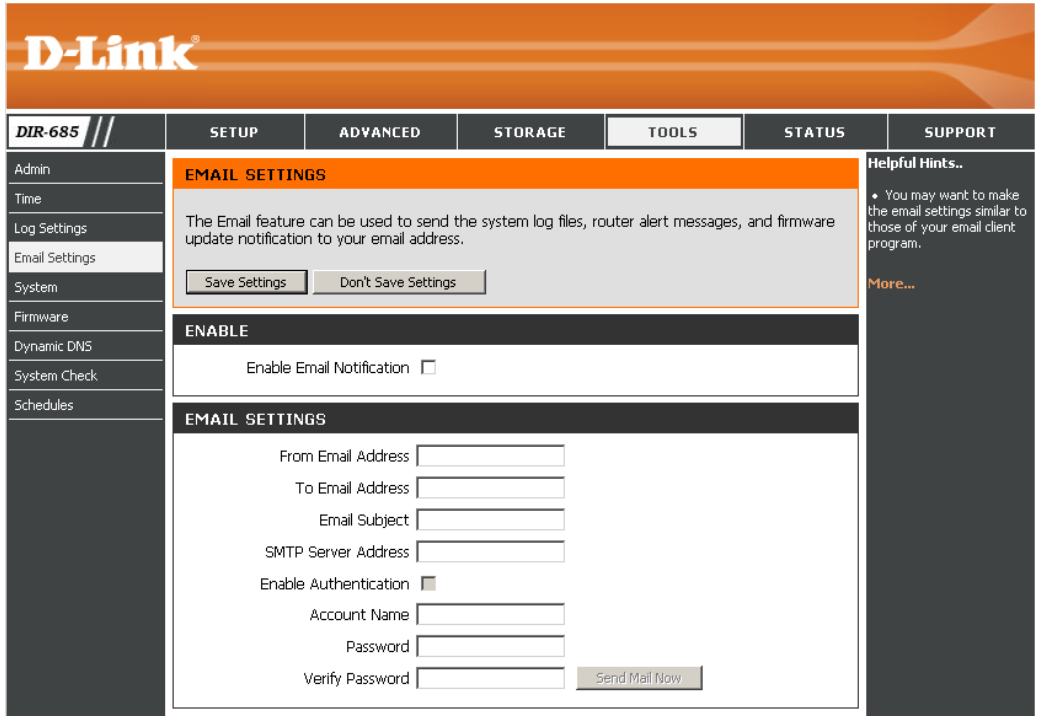
Save: Click to save the log results to your hard drive.

Log Types: Select the type of information displayed in the router log.



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.

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.

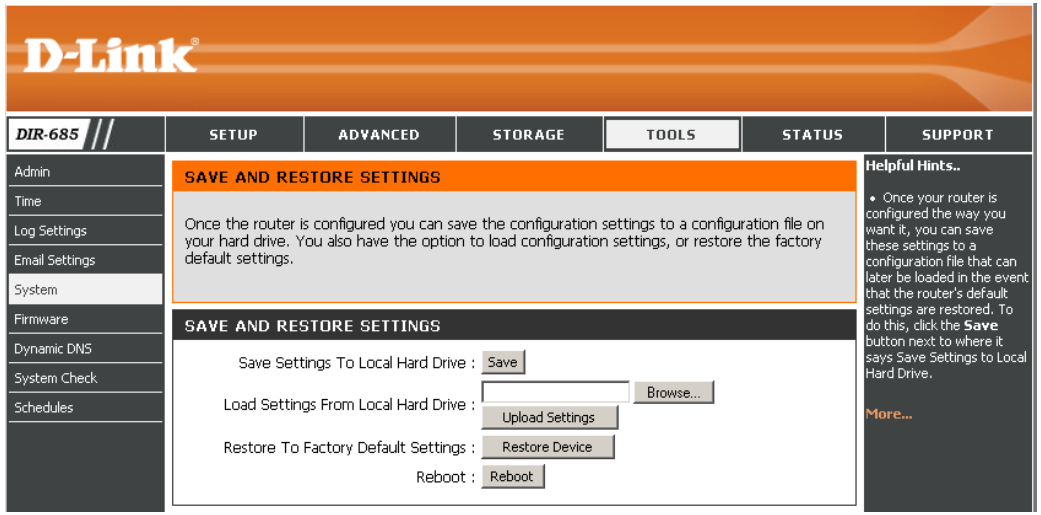
System Settings

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

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

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

Reboot Device: Click to reboot the router.

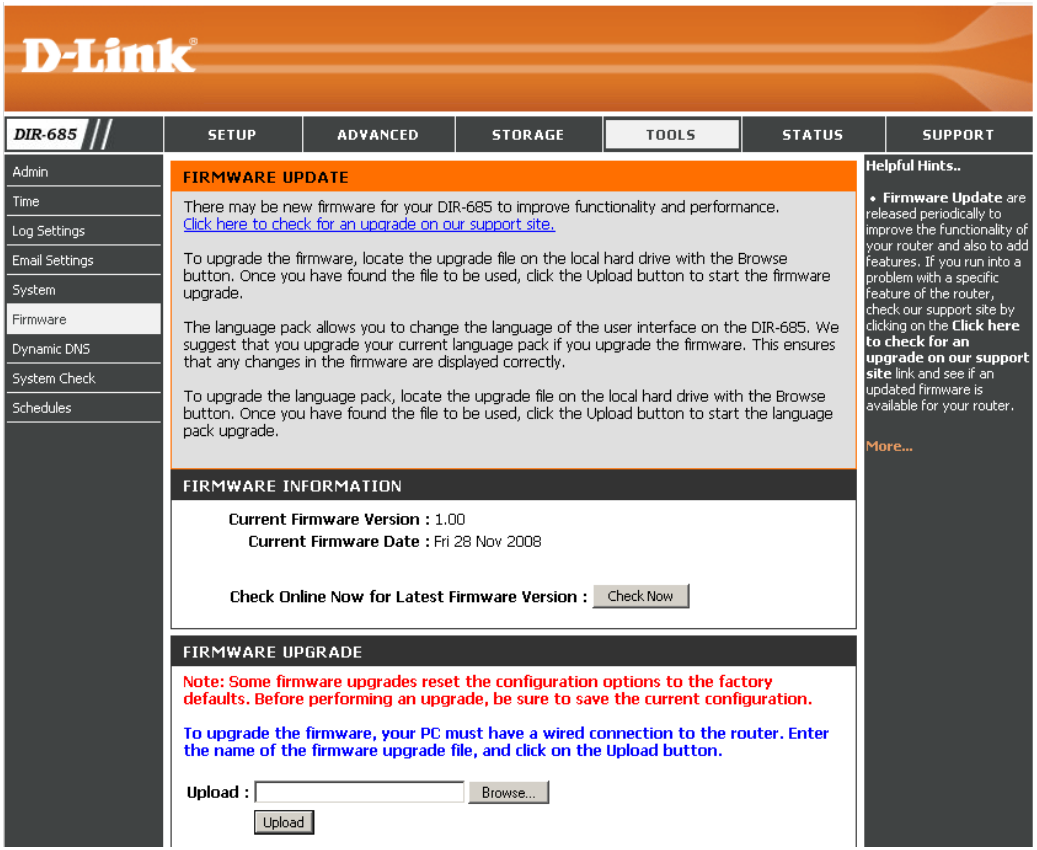


Update Firmware

You can upgrade the firmware of the DIR-685 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.



Dynamic DNS

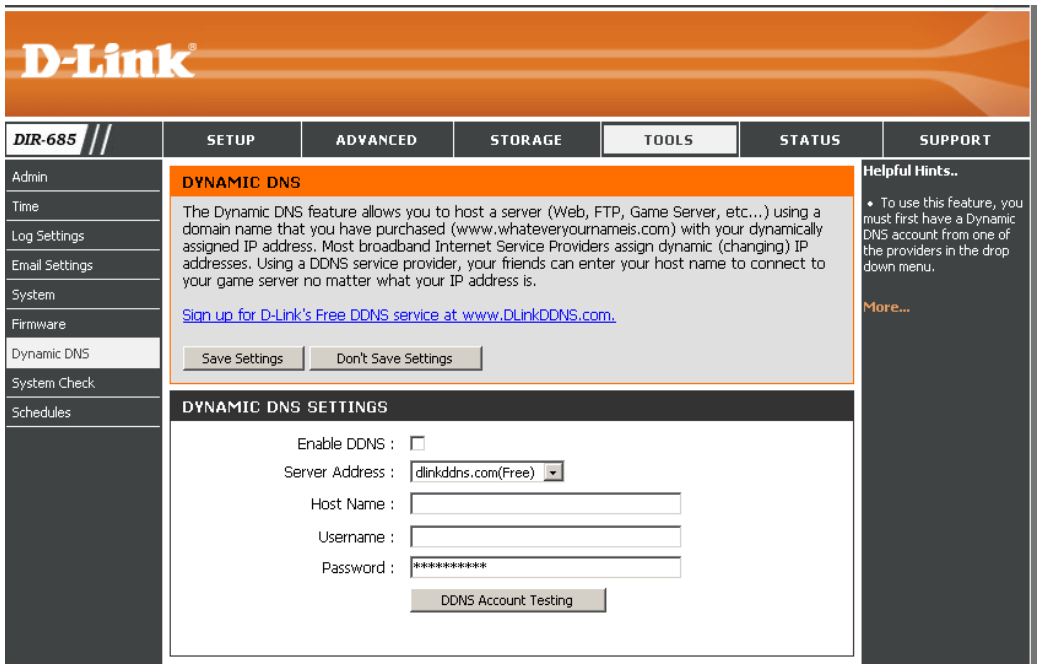
The DDNS feature allows you to host a server (Web, FTP, Game Server, etc…) using a domain name that you have (www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends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

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

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

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

Password: Enter the Password for your DDNS account.

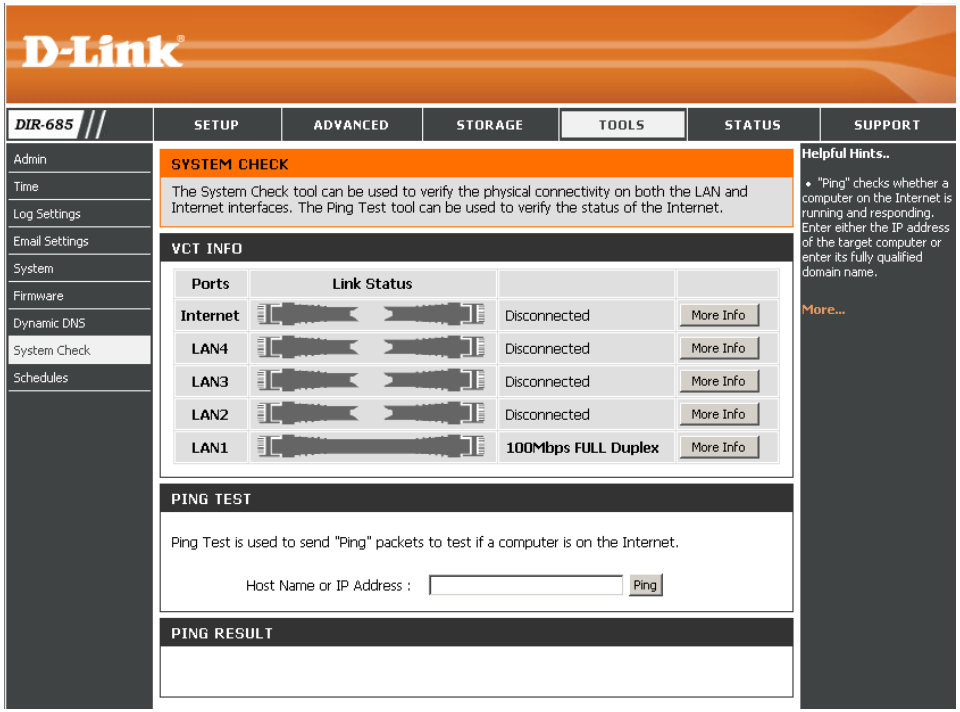


System Check

VCT Info: Displays the connection status of the Ethernet cables connected to your router.

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

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



Schedules

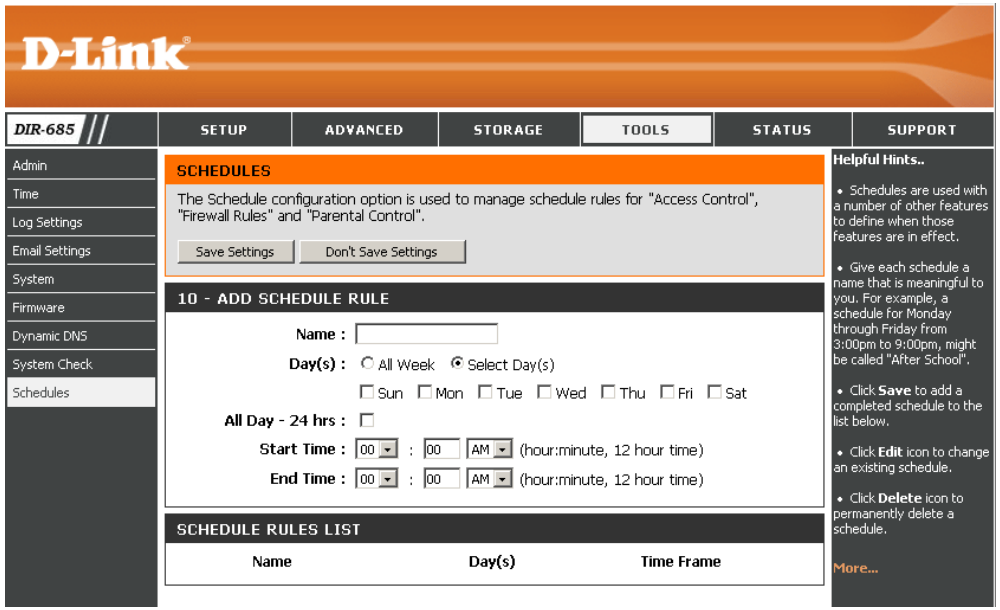
Name: Enter a name for your new schedule.

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

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

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

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



Device Information

This page displays the current information for the DIR-685. 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.

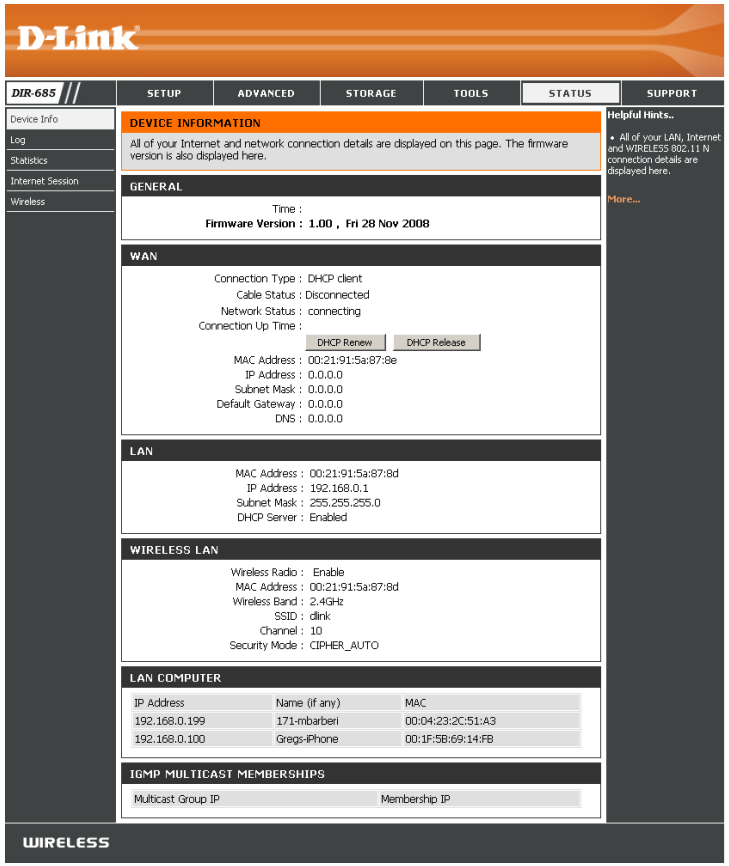
General: Displays the router's time and firmware version.

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).



Log

The router automatically logs (records) events of possible interest in its internal memory. If there is not enough internal memory for all events, logs of older events are deleted but logs of the latest events are retained. The Log 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.

First Page: Click to view the first page of the log.

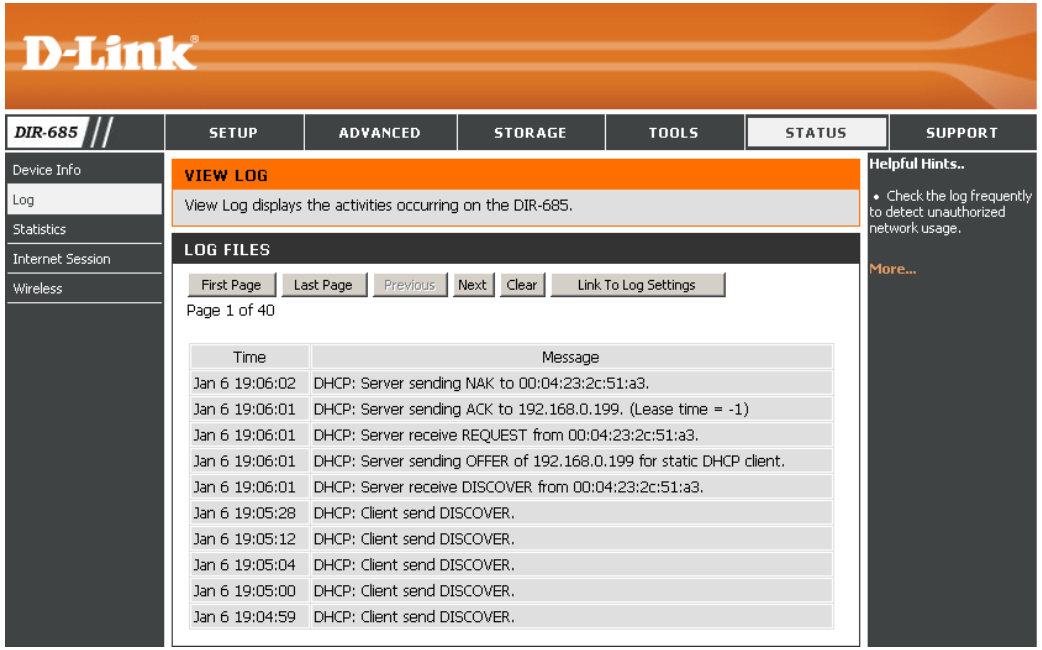
Last Page: Click to view the last page of the log.

Previous: Click to view the previous page.

Next: Click to view the next page.

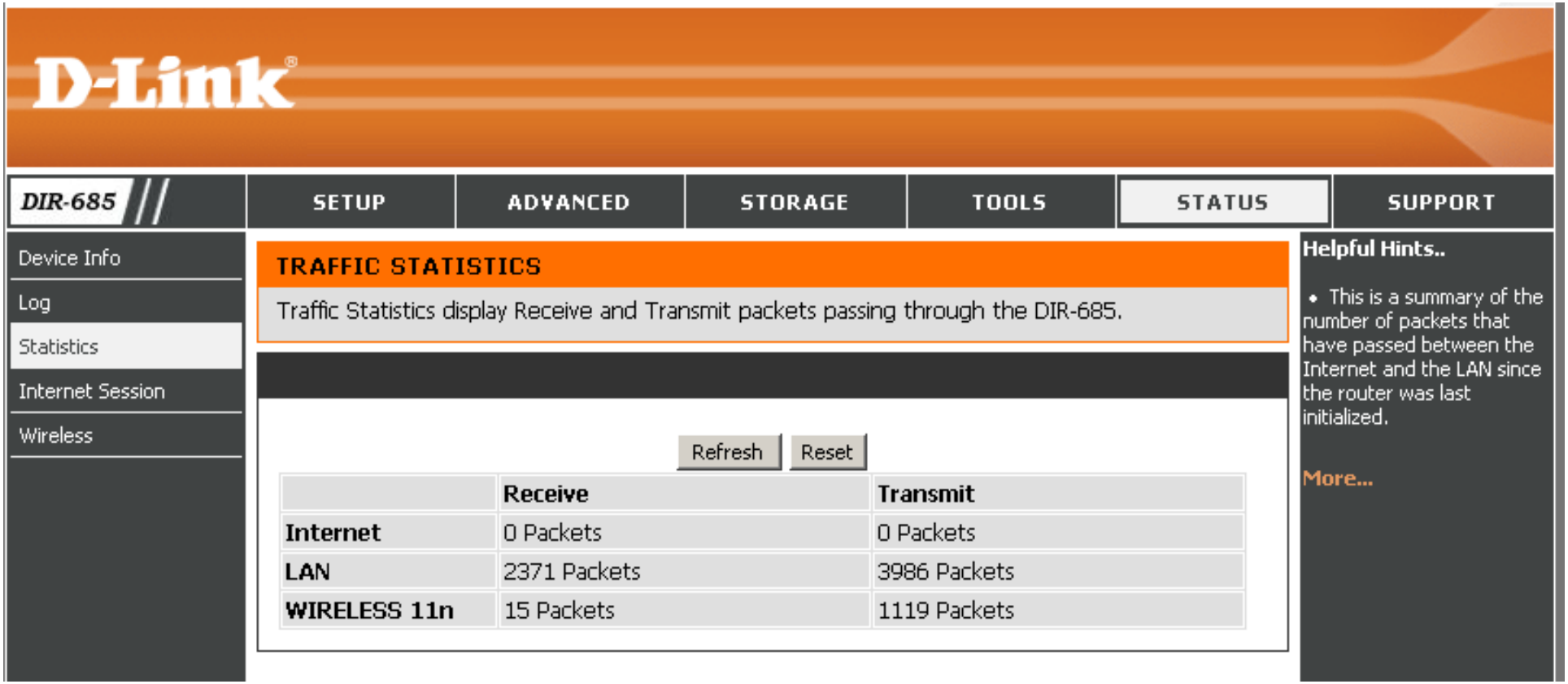
Clear: Clears all of the log contents.

Link to Log Settings: Click to navigate to the Log Settings page. You can select the type of information displayed in the log.



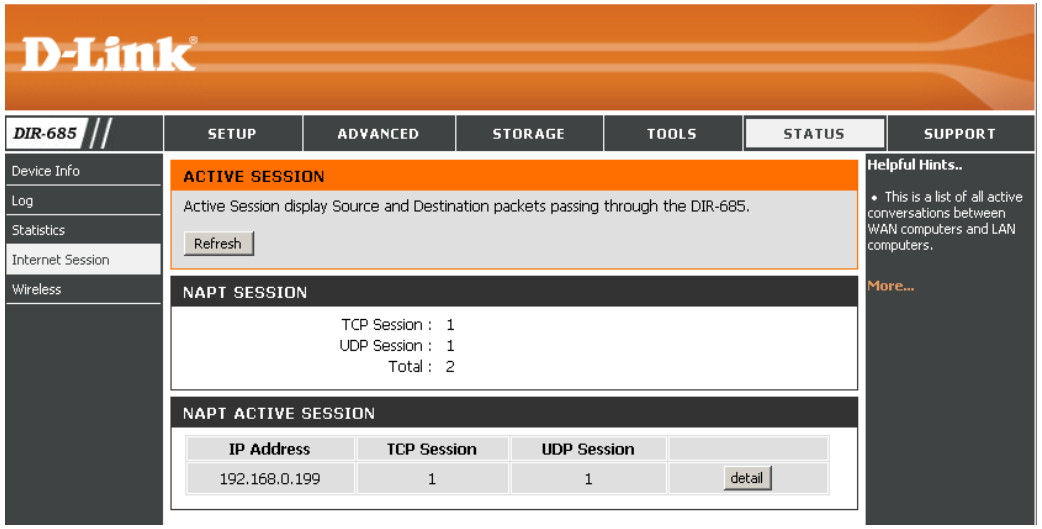
Statistics

The screen below displays the Traffic Statistics. Here you can view the amount of packets that pass through the DIR-685 on both the WAN and the LAN ports. The traffic counter will reset if the device is rebooted.



Internet Sessions

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



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

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

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

Protocol: The communications protocol used for the conversation.

State: State for sessions that use the TCP protocol:

NO: None -- This entry is used as a placeholder for a future connection that may occur.
SS: SYN Sent -- One of the systems is attempting to start a connection.
EST: Established -- the connection is passing data.
FW: FIN Wait -- The client system has requested that the connection be stopped.
CW: Close Wait -- The server system has requested that the connection be stopped.
TW: Time Wait -- Waiting for a short time while a connection that was in FIN Wait is fully closed.
LA: Last ACK -- Waiting for a short time while a connection that was in Close Wait is fully closed.
CL: Closed -- The connection is no longer active but the session is being tracked in case there are any retransmitted packets still pending.

Dir: The direction of initiation of the conversation:

Out - Initiated from LAN to WAN.
In - Initiated from WAN to LAN.

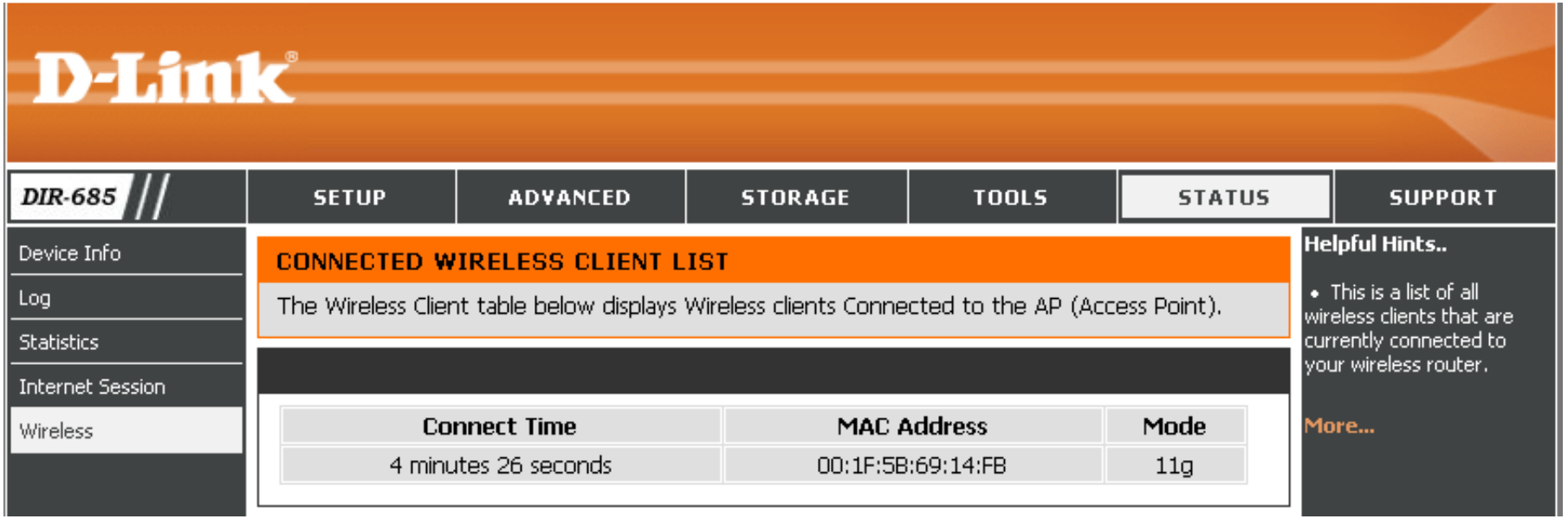
Priority: The preference given to outbound packets of this conversation by the QoS Engine logic. Smaller numbers represent higher priority.

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

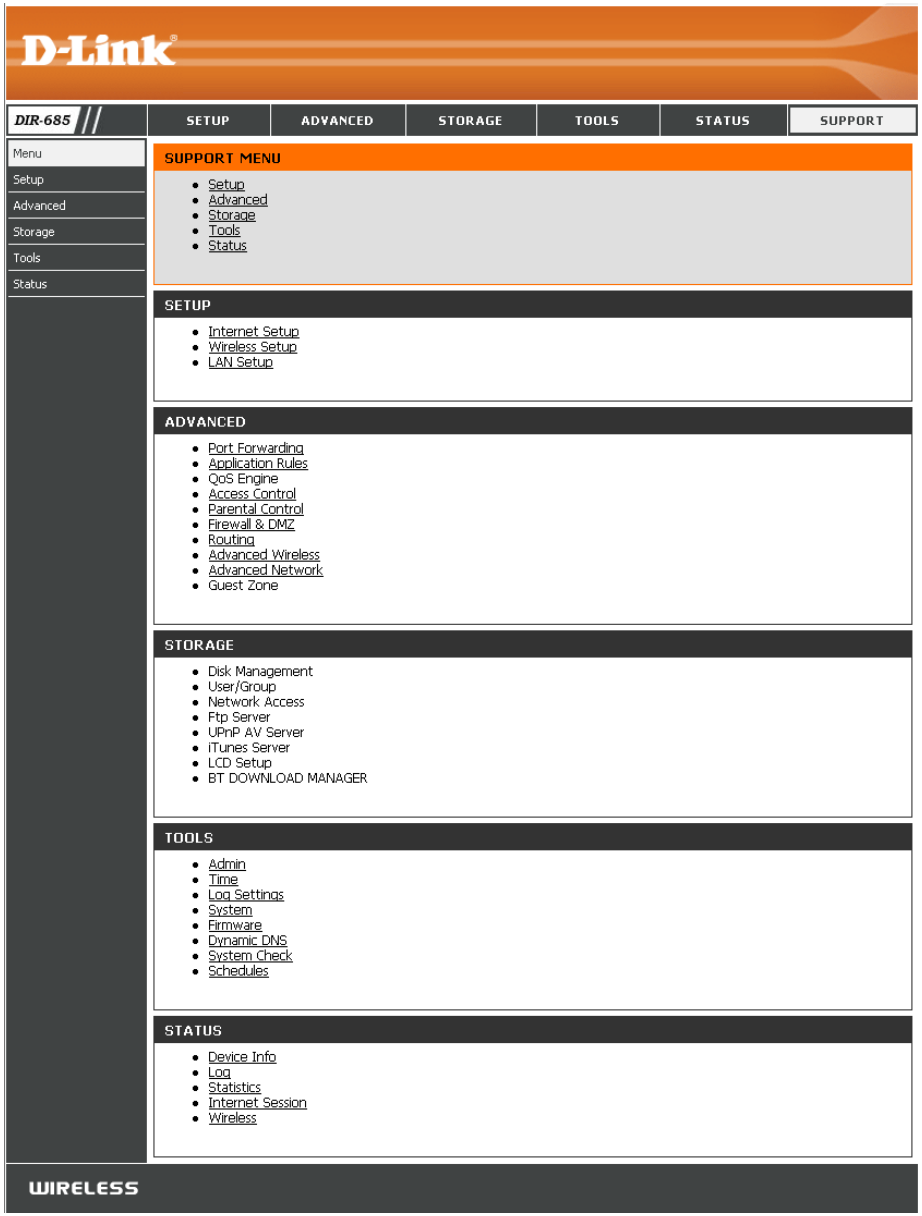
300 seconds - UDP connections.
240 seconds - Reset or closed TCP connections. The connection does not close instantly so that lingering packets can pass or the connection can be re-established.
7800 seconds - Established or closing TCP connections.

Wireless

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



Support


D-Link
DIR-685
SETUP
ADVANCED
STORAGE
TOOLS
STATUS
SUPPORT
Menu
Setup
Advanced
Storage
Tools
Status
SUPPORT MENU
Setup
Advanced
Storage
Tools
Status
SETUP
Internet Setup
Wireless Setup
LAN Setup
ADVANCED
Port Forwarding
Application Rules
QoS Engine
Access Control
Parental Control
Firewall & DMZ
Routing
Advanced Wireless
Advanced Network
Guest Zone
STORAGE
Disk Management
User/Group
Network Access
Ftp Server
UPnP AV Server
iTunes Server
LCD Setup
BT DOWNLOAD MANAGER
TOOLS
Admin
Time
Log Settings
System
Firmware
Dynamic DNS
System Check
Schedules
STATUS
Device Info
Log
Statistics
Internet Session
Wireless
WIRELESS

Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-655 offers the following types of security:

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

What is WPA?

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

The two major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys have not been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard (AES) instead of TKIP.

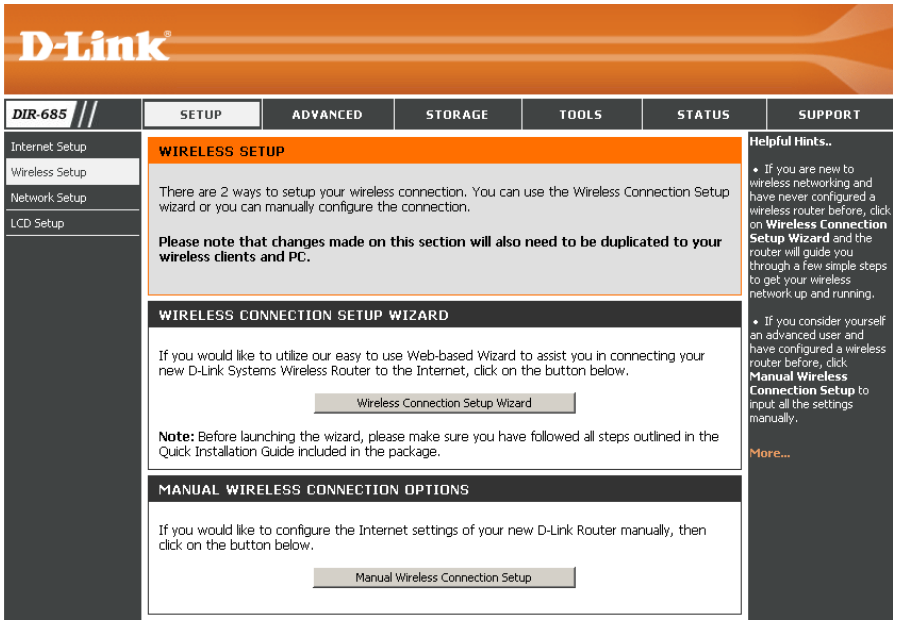
- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

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

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

Wireless Connection Setup Wizard

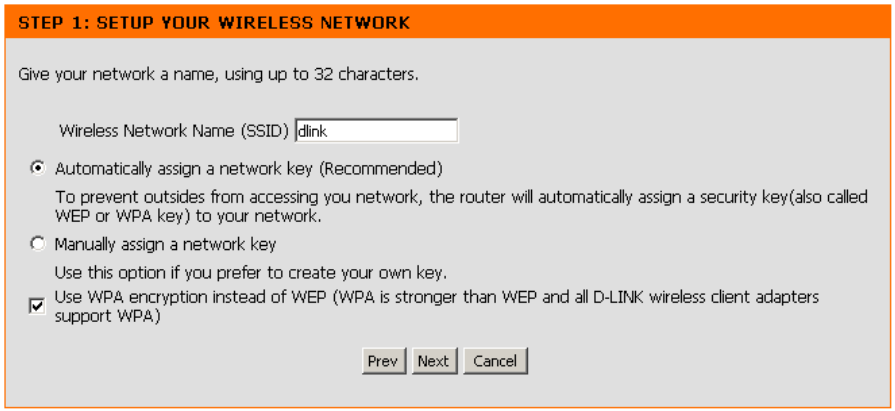
To run the security wizard, click on **Setup** at the top and then click **Wireless Connection Setup Wizard**.



Type your desired wireless network name (SSID).

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

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

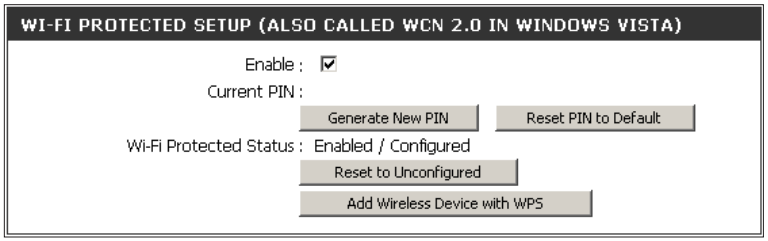


If you selected **Automatically**, the summary window will display your settings. Write down the security key and enter this on your wireless clients. Click **Save** to save your settings.

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

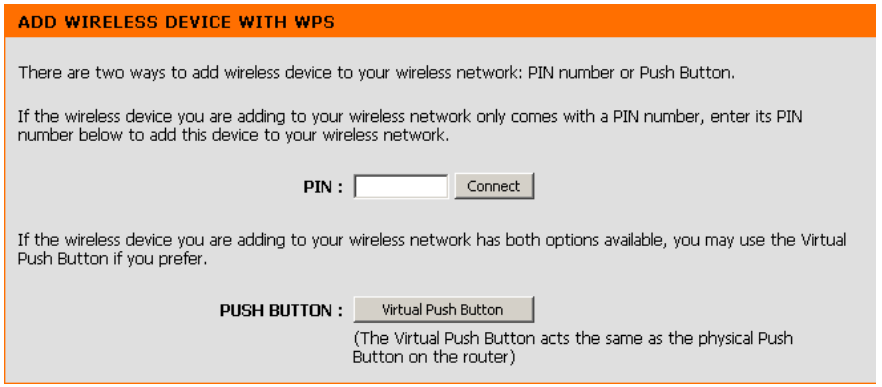
Add Wireless Device with WPS Wizard

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



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

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



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.

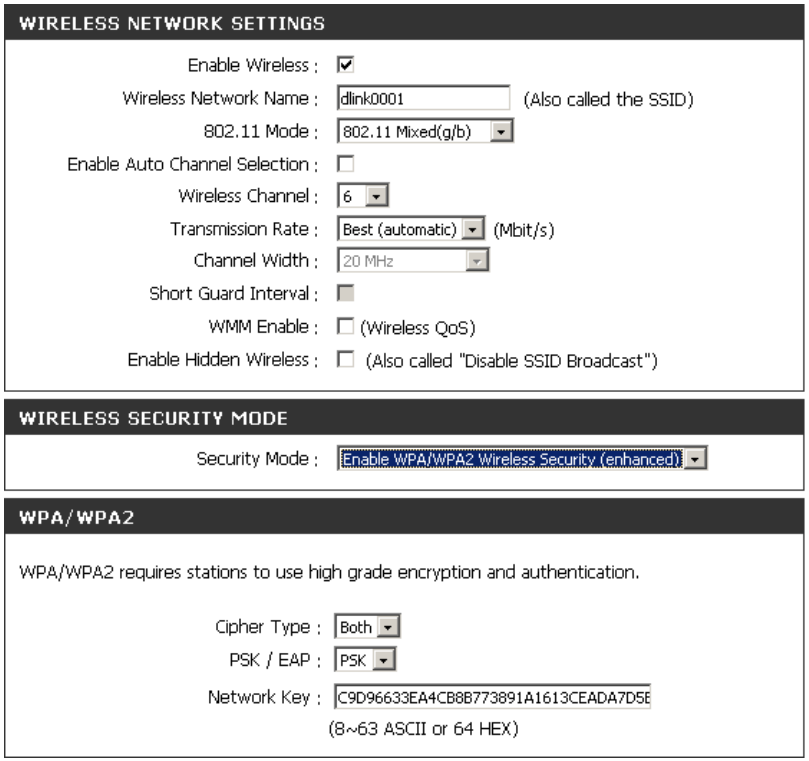
1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Setup** and then click **Wireless Settings** on the left side.

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

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

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.

Configure WPA/WPA2 (EAP)

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. You can configure the DIR-685 to use the 802.1x protocol by enabling the Extensible Authentication Protocol (EAP). Carry out the following steps to configure EAP on the DIR-685:

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 Setup** on the left side.

2. Click the **Manual Wireless Connection Setup** button.

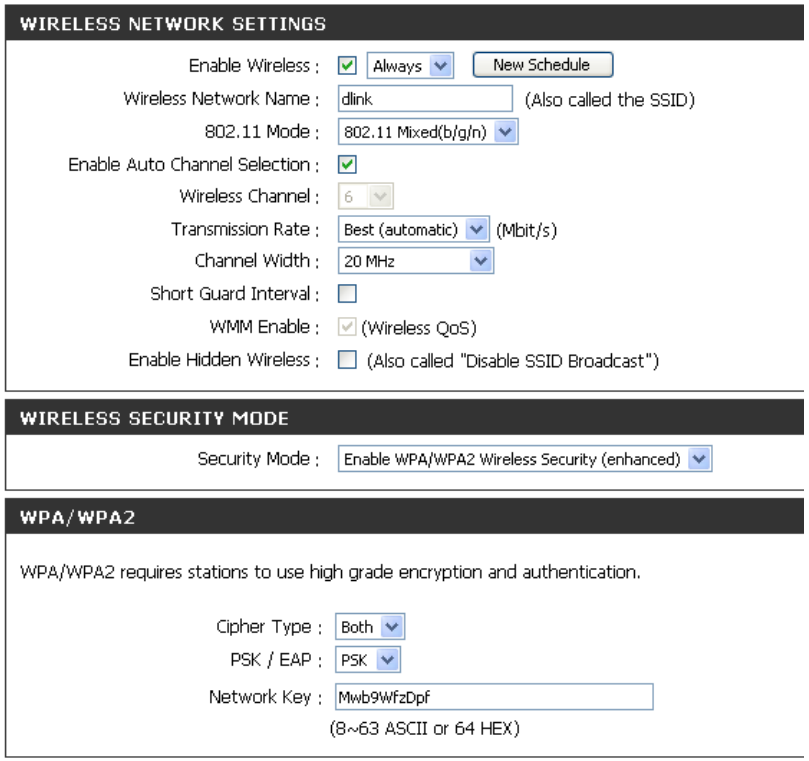
3. Next to *Security Mode*, select **Enable WPA/WPA2 Wireless Security (enhanced)**.

4. Next to *Cypher Type*, select **TKIP, AES**, or **Both**.

5. Next to *PSK / EAP* select **EAP** from the drop-down menu.

6. Next to *RADIUS Server IP Address*, enter the IP address of your RADIUS Server.

7. Enter the port used by your RADIUS Server in the *Port* field.



8. Enter the Shared Secret used by your RADIUS Server in the *Shared Secret* field.

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

Connect to a Wireless Network
Using Windows Vista®

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

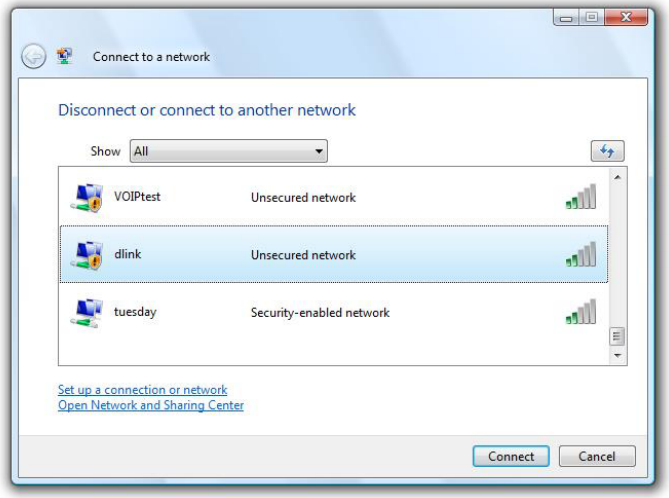
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

or

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

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

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

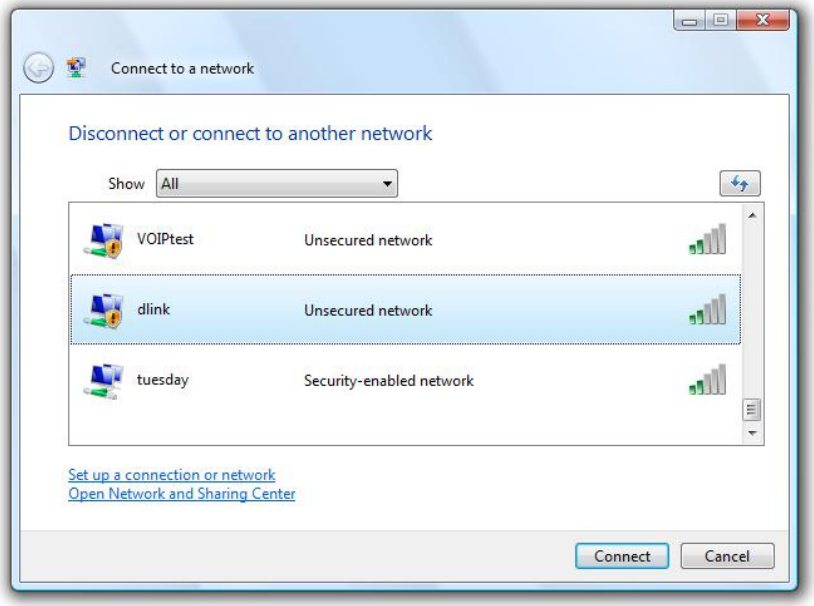


Configure Wireless Security

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

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

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



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

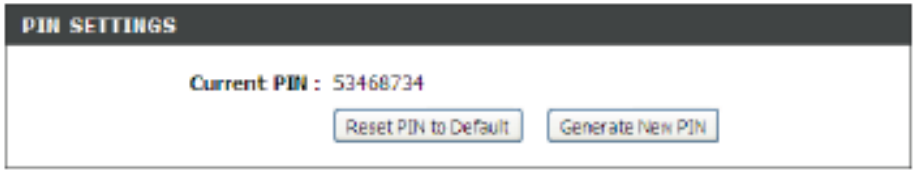
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.

Connect Using WCN 2.0 in Windows Vista®

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

When you first set up the router, Wi-Fi protection is disabled and unconfigured. To enjoy the benefits of Wi-Fi protection, the router must be both enabled and configured. There are three basic methods to accomplish this: use Windows Vista's built-in support for WCN 2.0, use software provided by a third party, or manually configure.

If you are running Windows Vista®, log into the router and click the **Enable** checkbox in the **Basic** > **Wireless** section. Use the Current PIN that is displayed on the **Advanced** > **Wi-Fi Protected Setup** section or choose to click the **Generate New PIN** button or **Reset PIN to Default** button.

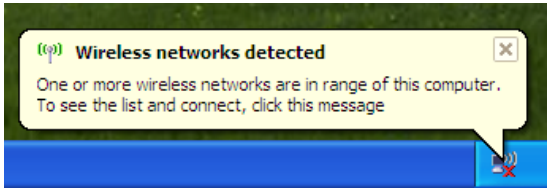


If you are using third party software to set up Wi-Fi Protection, carefully follow the directions. When you are finished, proceed to the next section to set up the newly-configured router.

Connect to a Wireless Network Using Windows® XP

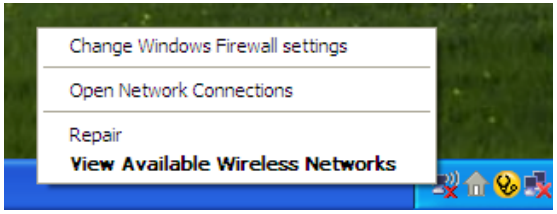
Windows® XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility or Windows® 2000, please refer to the user manual of your wireless adapter for help with connecting to a wireless network.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

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



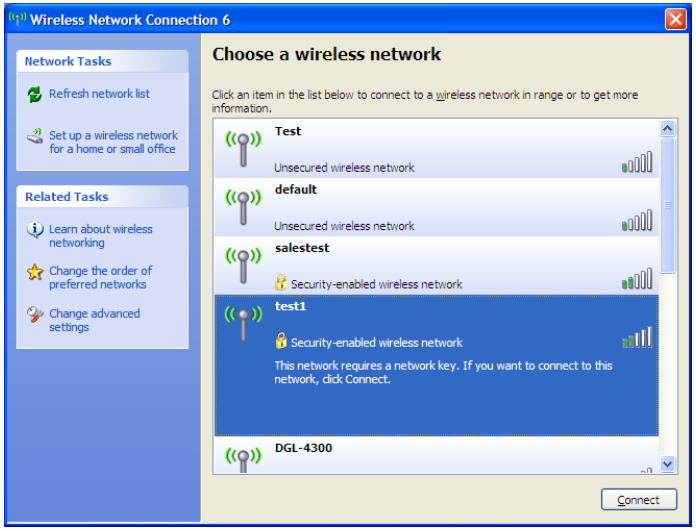
or

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



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

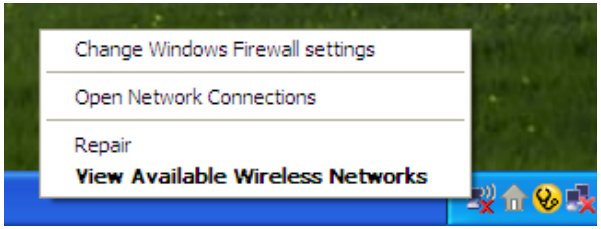
If you get a good signal but cannot access the Internet, check your TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



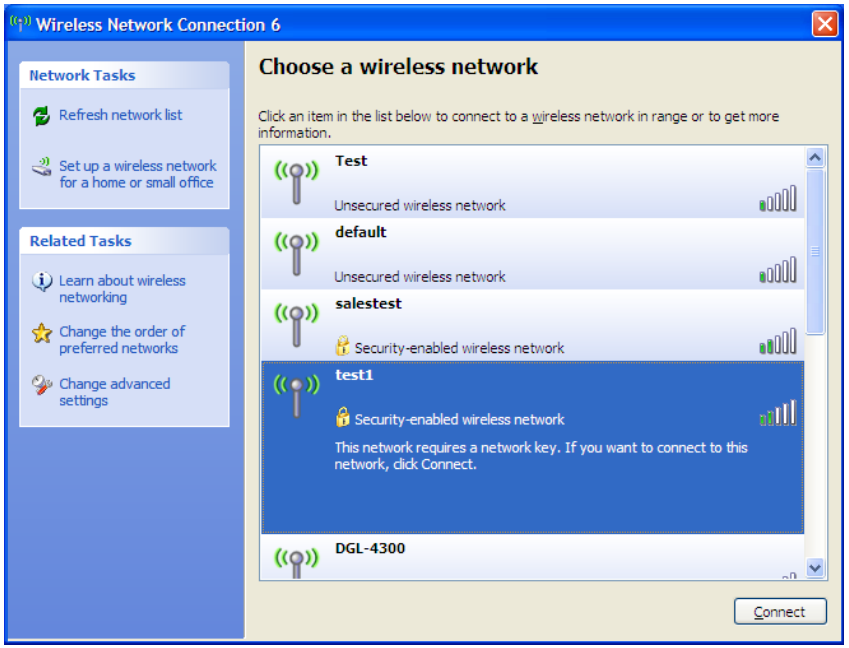
Configure WPA-PSK

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.

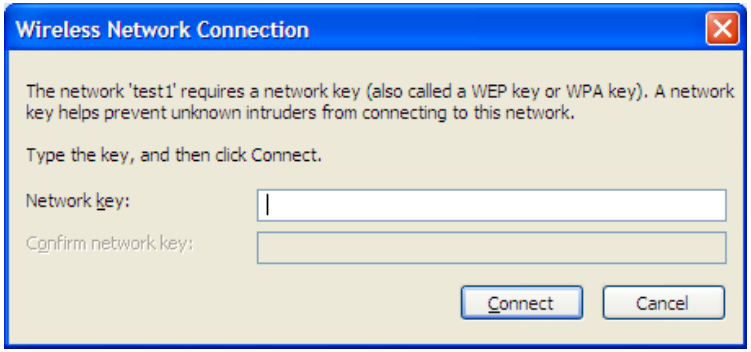
1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks**.



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.

LCD Screen Options

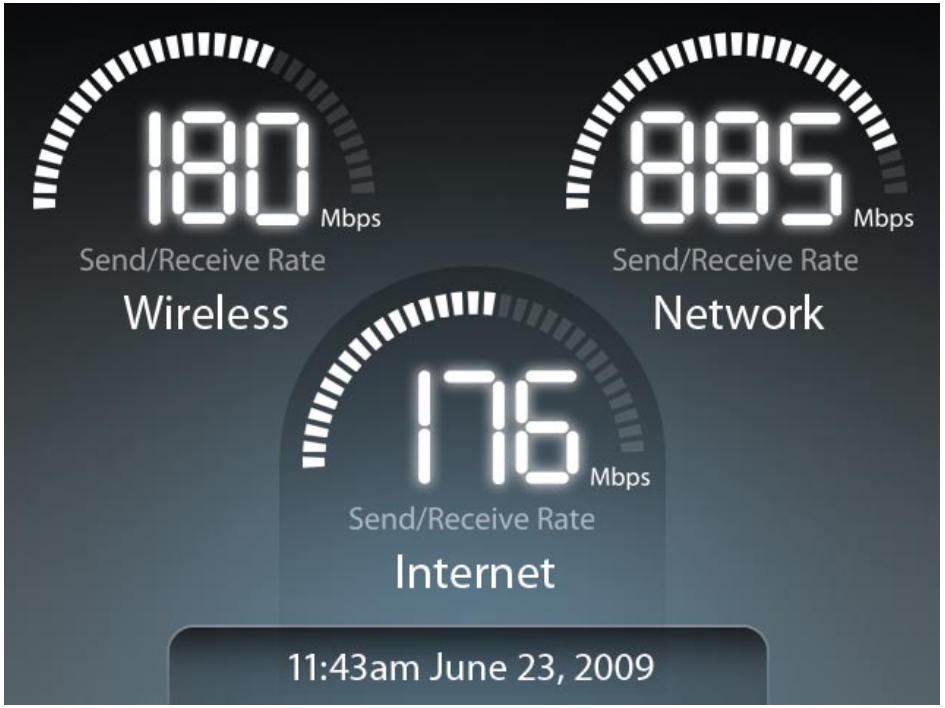
Router Statistics

The **Router Statistics** screen will display the following information:

Wireless - The send and receive rate of your wireless traffic.

Network - The send and receive rate of your network (LAN) traffic.

Internet - The send and receive rate of your Internet (WAN) traffic.



Status

General Router Info

The **General Router Information** screen will display the following information:

Model Name - The model of the router (DIR-685).

Hardware Version - The hardware revision of the router.

Firmware Version - The current firmware version of the router.

System Up Time - Displays how long the router has been on.

New Firmware - Displays if there is a new firmware available for upgrading the router.

Internet Status

The **Internet Status** screen will display the following information:

Connection Type - Displays the Internet connection type (Dynamic, PPPoE, PPTP, L2TP, or Static).

Cable Status - Connection status of the Internet port.

Network Status - Connection status of the Internet.

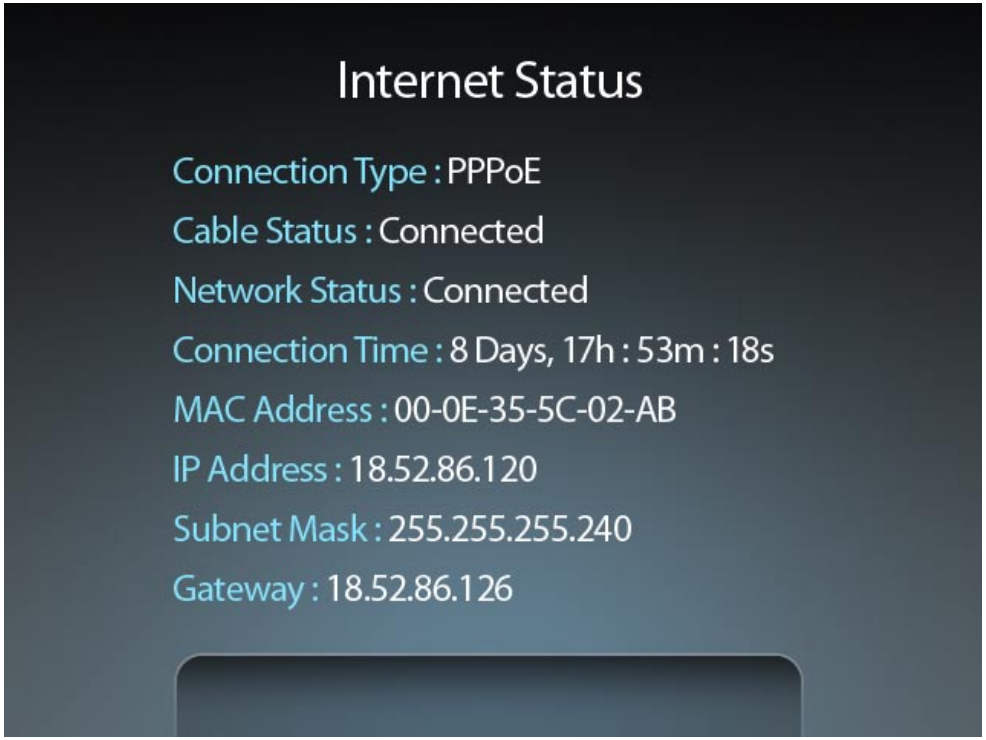
Connection Time - Displays how long the router has been connected to the Internet.

MAC Address - The MAC address of the Internet port on the router.

IP Address - The IP address of the router (Internet port).

Subnet Mask - The subnet mask of the router.

Gateway - The gateway IP address of the router.



Wired Status

The **Wired Status** screen will display the following information:

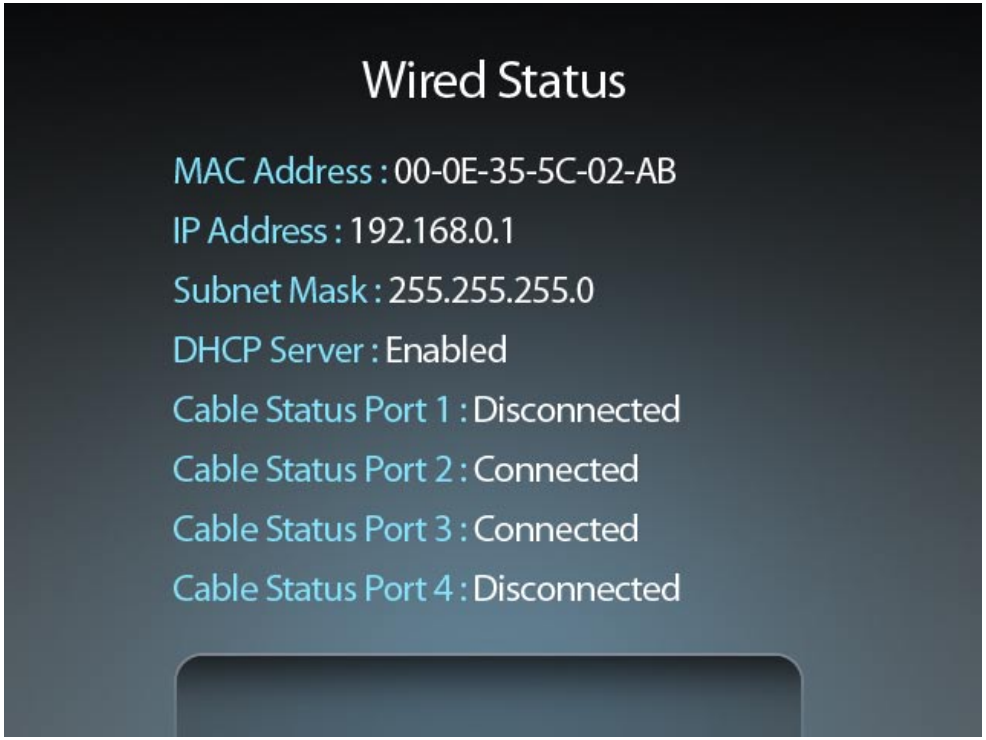
MAC Address - The MAC address of the router (LAN).

IP Address - The IP address of the router (LAN).

Subnet Mask - The subnet mask of the router.

DHCP Status - Displays if the DHCP server is enabled or disabled on the router.

Cable Status Port 1/2/3/4 - Displays the connection status of each of the 4 LAN ports.



Wireless Status

The **Wireless Status** screen will display the following information:

Wireless Radio - Displays the status of the wireless function of the router (Enabled or Disabled).

Wireless Channel - Displays the channel of your wireless network.

Host Network Name (SSID) - The SSID of the wireless network.

Guest Network Name (SSID) - The SSID of the guest wireless network.

802.11 Mode - The IEEE 802.11 mode(s) used on the router.

Host Zone Security Mode - Displays the encryption used on the host wireless network.

Guest Zone Security Mode - Displays the encryption used on the guest wireless network.

MAC Address - The wireless MAC address of the router.

WPS PIN Number - The current WPS PIN number for the router.

Hard Disk Status

The **Hard Disk Status** screen will display the following information:

HD - The brand/model of the hard drive.

Format - The format of the hard drive (EXT3).

Capacity - The total capacity of the hard drive.

Used - The amount of space used on the hard drive.

Available - The space available on the hard drive.

Disk Health - Displays the hard drive health status.

Disk Temp - Displays the temperature of the hard drive.

WPS

The **Wi-Fi Protected Setup**™ screen will display two ways to setup Wi-Fi Protected Setup (WPS):

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

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

Router Settings

LCD Saving Settings

The **Adjust Display Sleep Time** screen will appear. Use the left and right arrow buttons to select the amount of inactive time before the LCD display goes to sleep.

To save your settings, press the up arrow. You will be prompted to select **Yes** or **No**. Press the left button to select **Yes** and press the center button.

Clock Display Setting

Select **Yes** if you want the clock displayed on the LCD screen when asleep. Select **No** to have the LCD screen off when asleep.

LCD Luminance Settings

The **LCD Luminance Settings** screen will allow you to adjust the brightness of the LCD screen.

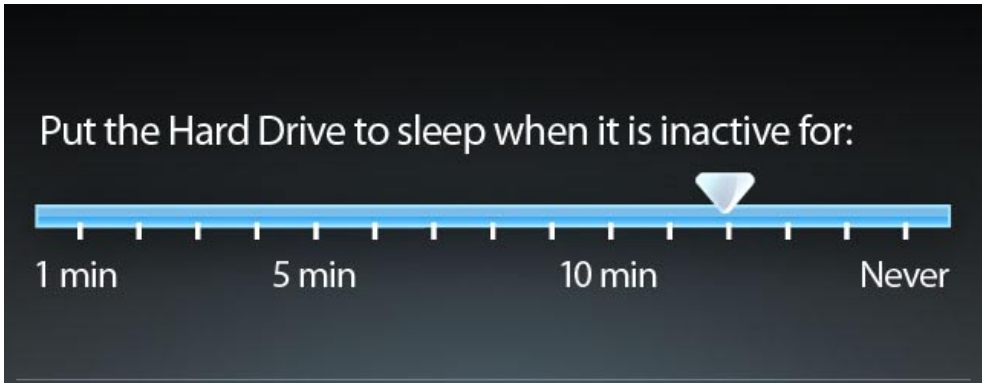
Press the left arrow to make the LCD screen darker or press the right arrow to make it brighter.

To save your settings, press the up arrow. You will be prompted to select **Yes** or **No**. Press the left button to select **Yes** and press the center button.

Hard Drive Saving Settings

The **Hard Disk Saving Settings** screen will allow you to set the length of time of inactivity before the hard drive goes to sleep.

To save your settings, press the up arrow. You will be prompted to select **Yes** or **No**. Press the left button to select **Yes** and press the center button.



Photos

Select the image or folder that contains the images you want to display on the LCD screen and press the center button.

Thumbnails of all the available images will appear. Select an image and press the center button. This will start the slideshow and will display all images in the selected folder.

FrameChannel®

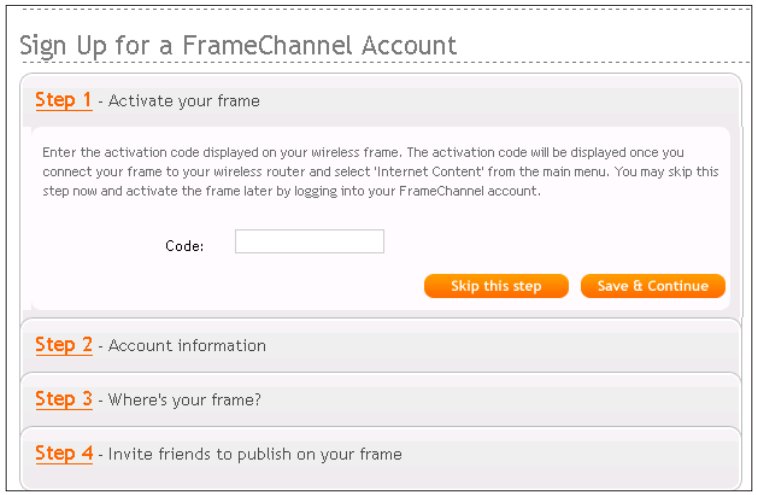
Our featured DIR-685 online site, FrameChannel® (http://dlink.framechannel.com), is a free service that allows you to add, create and manage online channels for your personalized content after you have signed up an account online. FrameChannel also allows you to set up your frame to incorporate images from popular photo sharing websites, such as Facebook®, Flickr™, Picasa®, and more. Your frame will automatically update when changes are made to any of your photo sharing sites.

Your DIR-685 will display the instructions to set up a FrameChannel account. On the DIR-685 select **FrameChannel** and then press the center button. For more details, follow the steps below:

1. Using the web browser on your PC, enter **http://dlink.framechannel.com**
2. Click **Get Started Now**
3. Enter the Activation Code displayed to activate your router.

Note: *Your activation code can be found after you have selected* ***FrameChannel*** *on your router.*

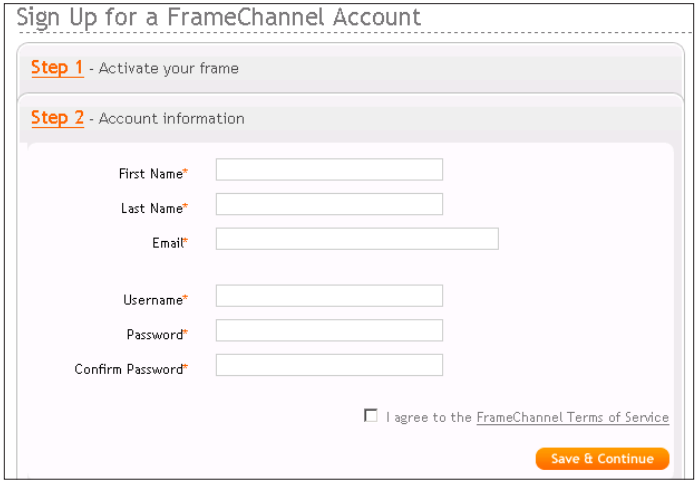
Click **Save & Continue** to proceed.



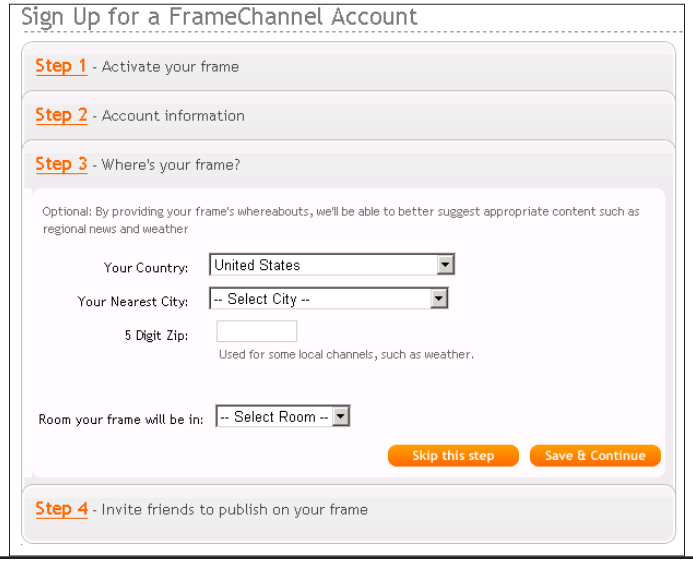
4. Enter your account information. Read and check the checkbox to agree to the FrameChannel's terms of service.

   Note: *It is recommended to note down all your account information for future log-on purposes.*

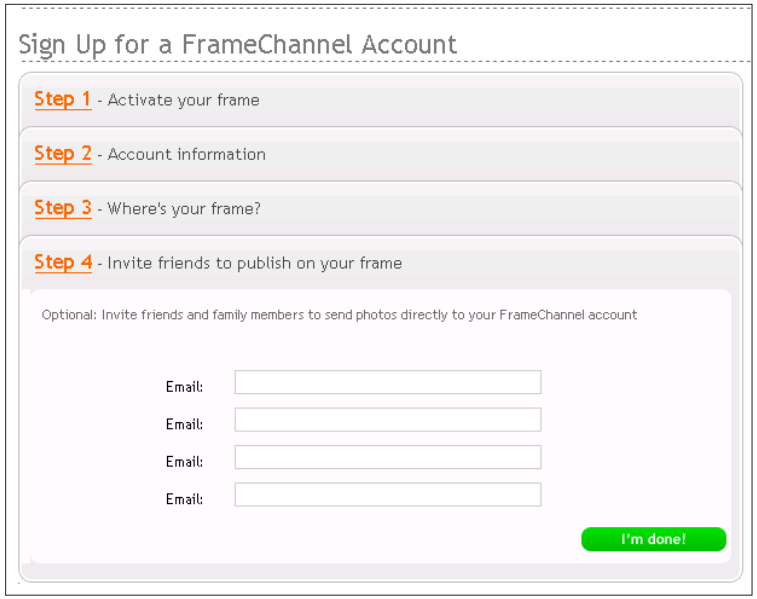
   Click **Save & Continue** to proceed.



5. Enter the remaining information for your account and click **Save & Continue** to proceed.



6. You may invite your friends to join or click **I'm done!** to enjoy your FrameChannel experience.



7. Once your account is active, you can select what channels you want to display on your frame.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DIR-685. 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 am I unable to access the web-based configuration utility?

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

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Internet Explorer 7.0 or higher
  - Netscape 8 or higher
  - Mozilla 1.7.12 (5.0) or higher
  - Opera 8.5 or higher
  - Safari 1.2 or higher (with Java 1.3.1 or higher)
  - Camino 0.8.4 or higher
  - Firefox 2.0 or higher
  - Chrome 1.0 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 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 am I unable to connect to certain sites or send/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 will have to do a special ping of the destination you are trying to go to. A destination could be another computer, or a URL.

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

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

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

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

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

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

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

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

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

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

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

C:\>
```

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

Wireless networking makes it easy to send powerful data signals to every corner of your house without cabling! No extreme home makeover is needed! You do not need to hire an electrician. Think of wireless networking like cordless phones for your computers. Setting-up a home network is as easy as plugging in a TV and attaching the cable. Let us show you how.

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 an easy way to connect your computers into a network without using wires. Wi-Fi uses radio frequencies to connect computers and peripherals (such as printers and game consoles) wherever they are located in your home or office.

Why D-Link Wireless?

A true designer and manufacturer, D-Link is an award-winning worldwide leader in networking products for home and business. D-Link has been at the forefront of Wi-Fi technology since it was first launched in 2000. D-Link delivers the networking performance you need at a price you can afford.

How Does Wireless Work?

Wireless networking works like your cordless phone: radio signals transmit data from point A to point B (and back). 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 and peripherals to a network (wireless routers have an access point built-in). The access point has a small antenna(s) attached to it, allowing it to transmit data back and forth via radio signals. Using an indoor wireless router/access point and a wireless PC adapter, the signal can travel up to 300 feet (see the illustration). With an outdoor access point, the signal can reach out up to 11 miles to serve places like manufacturing plants and other industrial facilities, 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 to create a Wireless Personal Area Network. Devices in a Bluetooth WPAN operate at a range of up to 30 feet, much less than a WLAN. WPAN data transfer speeds are also slower than what is possible with a WLAN.

However, Bluetooth WPAN does not use nearly as much power as WLAN, 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?

With wireless data transfer speeds now rivaling wired connection speeds, wireless technology's popularity has grown from being a convenience to the home networking solution of choice. Whether you want to set up a network at your home or small office, D-Link has wireless solutions to make it quick and easy.

Home

Let everyone at home share broadband Internet access and more

- Surf the web, email, instant message, share files and printers
- No wires to impact your home's décor
- Simple and easy to use

Small Office and Home Office

Powerful features level the playing field

- Share an Internet connection and printer with multiple computers
- Remotely access your office network from home
- No need to dedicate office space

Where is wireless used?

Wireless technology is everywhere today, well beyond the home and office. People have come to expect freedom of mobility. More and more public facilities are providing wireless access to attract and keep customers. Wireless connections in public places are popularly known as “hot spots.”

D-Link Wireless Notebook Adapters let you access the Internet through hot spots in remote locations like airports, hotels, coffee shops, libraries, restaurants and convention centers.

Popular Wireless Standards

Wi-Fi uses radio technologies to provide fast, secure, reliable wireless connectivity. Some of the popular wireless networking standards include Draft 802.11n, 802.11g, and 802.11b and 802.11a. These operate in the unlicensed 2.4 and 5GHz radio bands. With increasingly faster wireless speeds and wireless operating distances ranging from 300 feet to 11 miles (outdoors)*, Wi-Fi is a convenient solution for home and business connectivity.

Tips

Here are a few things to keep in mind when you install your wireless network:

Security

Do not let your neighbors or intruders connect to your wireless network. We strongly suggest that you replace the default passwords on every device you purchase with passwords of your own. Default means that every router, access point or other networking device comes with the same password. Imagine how many “dlink” networks there would be in the world if none of our customers renamed their routers?! Hackers make it a point to know every company’s default passwords. By simply defining a new password, one that will certainly be easier for you to remember than the default, you will establish the protection you need to halt hackers from accessing your network or devices.

As you answer the questions posed by our easy set-up wizards, rename your router and devices something unique and easy for you to remember. But be careful not to be so creative or simplistic that you provide sensitive information with the name you give your device. “Smith Family Router” is not the best idea.

Further secure your wireless network by turning on the WPA or WEP security feature on your router or access point. D-Link’s easy set-up wizards walk you through every step of the installation process, including choosing your level of security. After your initial installation, D-Link’s browser-based interfaces make it easy to review or change your settings.

Centralize your router or Access Point

Make sure you place the access point in a centralized location within your network for the best performance at each PC. Try to place the access point as high as possible as this helps to better disperse the signal throughout your home.

Eliminate Interference

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

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-685 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

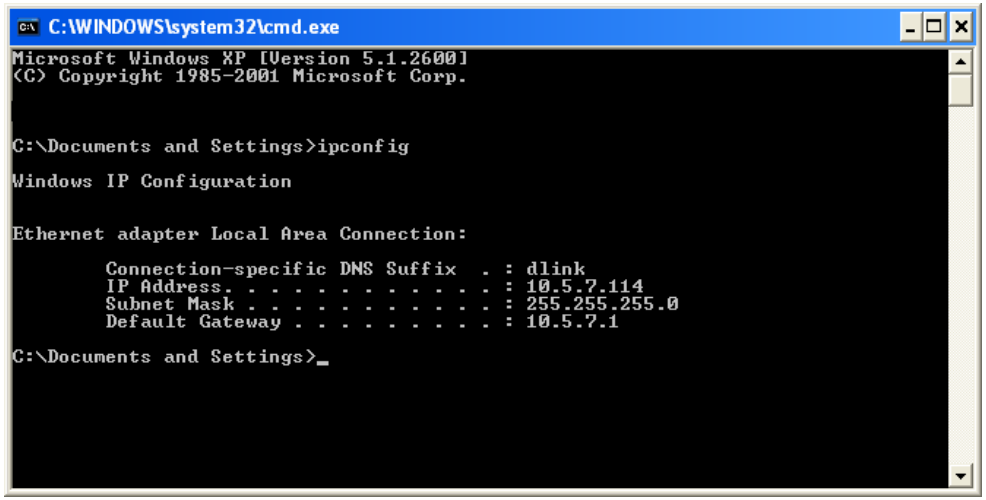
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below:

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

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 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

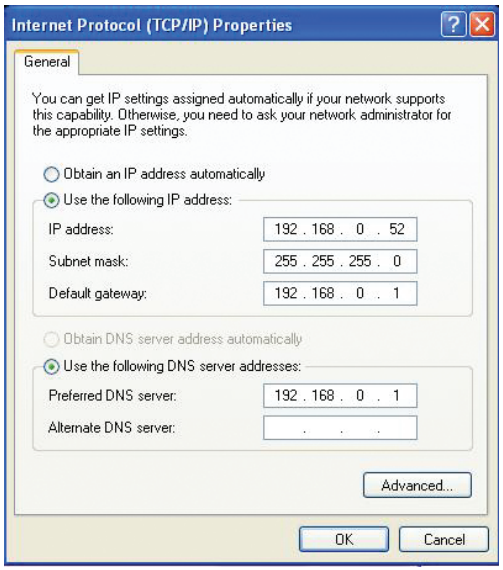
Right-click on the **Local Area Connection** which represents your D-Link network adapter and select **Properties**.

Step 3

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

Step 4

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



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

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

Step 5

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

Glossary

802.11a - An IEEE wireless LAN specification standard that operates in 5GHz frequency band.

802.11b - An IEEE wireless LAN specification standard that operates in 2.4GHz frequency band and is interoperable with 802.11b standard devices.

802.11g - An IEEE wireless LAN specification standard that operates in 2.4GHz frequency band and is interoperable with 802.11g standard devices.

Access Point - A device that creates wireless signal to allow users to connect wirelessly in a wired network.

Bridge - Connects any wired Ethernet device to a wireless network.

Broadband - Fast Internet connections typically at home, such as DSL and Cable, that allow high bandwidth capability are considered broadband connection.

Bluetooth - A low power short-range wireless network used to connect between desktops and laptop computers, PDAs, digital cameras, scanners, cell phones, and printers. Bluetooth wireless signal can transmit up to 30 feet.

Cable Modem - A device that works over coaxial line (TV), providing high bandwidth transfer rate, to access the Internet.

Cardbus Network Adapter - A device that connects a laptop to the network.

DDNS (Dynamic Domain Name System) - A service that maps Internet domain name to a dynamic IP address as it changes.

DHCP (Dynamic Host Configuration Protocol) - A protocol that dynamically assigns IP address to devices on the network.

DSL (Digital Subscriber Line) - DSL allows a high bandwidth transfer rates using existing phone line, to access the Internet.

Ethernet - First generation of Ethernet transfers up to 10Mbps. Fast Ethernet, the second generation transfers up to 100Mbps, and Gigabit Ethernet, the third generation of Ethernet transfers up to 1000Mbps.

Firewall - A security feature that protects a network by preventing intruders to connect.

Hotspots - A place usually in public where you can access wireless connection to the Internet. Hotspots are commonly found at airports, hotels, coffee shops, libraries, restaurants, and convention centers.

IP (Internet Protocol) Address - An unique number that identifies computers or devices on the network.

ISP (Internet Service Provider) - Company that provides Internet access such as Cox, Adelphia, SBC, Verizon, Comcast, and many more.

LAN (Local Area Network) - Group of computers connected together that can share data and peripherals such as printers, scanners, and etc.

PCI Network Adapter - A device that connects a desktop to the network.

Router - A device that connects LANs, WANs, and the Internet.

SSID (Service Set Identifier) - A network name that identifies the wireless network.

USB (Universal Serial Bus) - A standard interface commonly used to connect peripheral devices to computers.

VPN (Virtual Private Network) - Provides secured remote access to a network via the Internet by sending data in tunnels.

WAN (Wide Area Network) - A network that covers a large geographic area, usually two or more LANs.

WEP (Wired Encryption Privacy) - A standard security feature used to encrypt data over a wireless network to prevent intruder.

WPA (Wi-Fi Protected Access) - A stronger and more secured encryption than WEP to prevent intruders from trying to connect to wireless networks.

WLAN (Wireless Local Area Network) - A type of LAN that uses high-frequency radio waves to communicate with devices rather than wires.

Technical Specifications

Standards

- IEEE 802.11n (draft)
- IEEE 802.11g
- IEEE 802.3
- IEEE 802.3u

Security

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

Frequency Range

- 2.4GHz to 2.483GHz (802.11n/g)

Antenna Type

- Integrated Antennas

LEDs

- Power
- Internet
- Status
- WLAN
- LAN
- USB

Operating Temperature

- 32°F to 131°F (0°C to 55°C)

Humidity

- 95% maximum (non-condensing)

Safety & Emissions

- FCC
- IC

Dimensions

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

Warranty

- 1 Year limited

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

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-685)
- 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.com

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: One (1) year
- Power supplies: 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. D-Link will only replace the defective portion of the product and will not ship back any accessories.

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

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 communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

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

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

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 NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. To maintain compliance with FCC RF exposure compliance requirements, please avoid direct contact to the transmitting antenna during transmitting.

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.

We declare that the product is limited in CH1~CH11 by specified firmware controlled in the USA.

IC statement

Operation is subject to the following two conditions:
1) This device may not cause interference and
2) This device must accept any interference, including interference that may cause undesired operation of the device.

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

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
(i) the device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems;
(ii) the maximum antenna gain (2dBi) permitted (for devices in the band 5725-5825 MHz) to comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate, as stated in section A9.2(3).

In addition, users should also be cautioned to take note that high-power radars are allocated as primary users (meaning they have priority) of the bands 5250-5350 MHz and 5650-5850 MHz and these radars could cause interference and/or damage to LE-LAN devices.

Règlement d'Industry Canada

Les conditions de fonctionnement sont sujettes à deux conditions:
1) Ce périphérique ne doit pas causer d'interférence et.
2) Ce périphérique doit accepter toute interférence, y compris les interférences pouvant perturber le bon fonctionnement de ce périphérique.

The Class [B] digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulation.

Cet appareil numerique de la class [B] respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

Registration

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

Version 1.1
February 27, 2009