USER MANUAL

DIR-600

VERSION 2.0

D-Link®

WIRELESS

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Package Contents

- D-Link DIR-600 Wireless Router
- Power Adapter
- Ethernet Cable
- Manual and Warranty on CD

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

The product must be used with the power adapter included with the device.

Note: Always attach the power cord plug to the power supply, before inserting the power cord and connected power supply to the wall outlet.

System Requirements

- Ethernet-based Cable or DSL Modem
- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet adapter
- Internet Explorer 6 or Firefox 2.0 or above (for configuration)

Features

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

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

- **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.

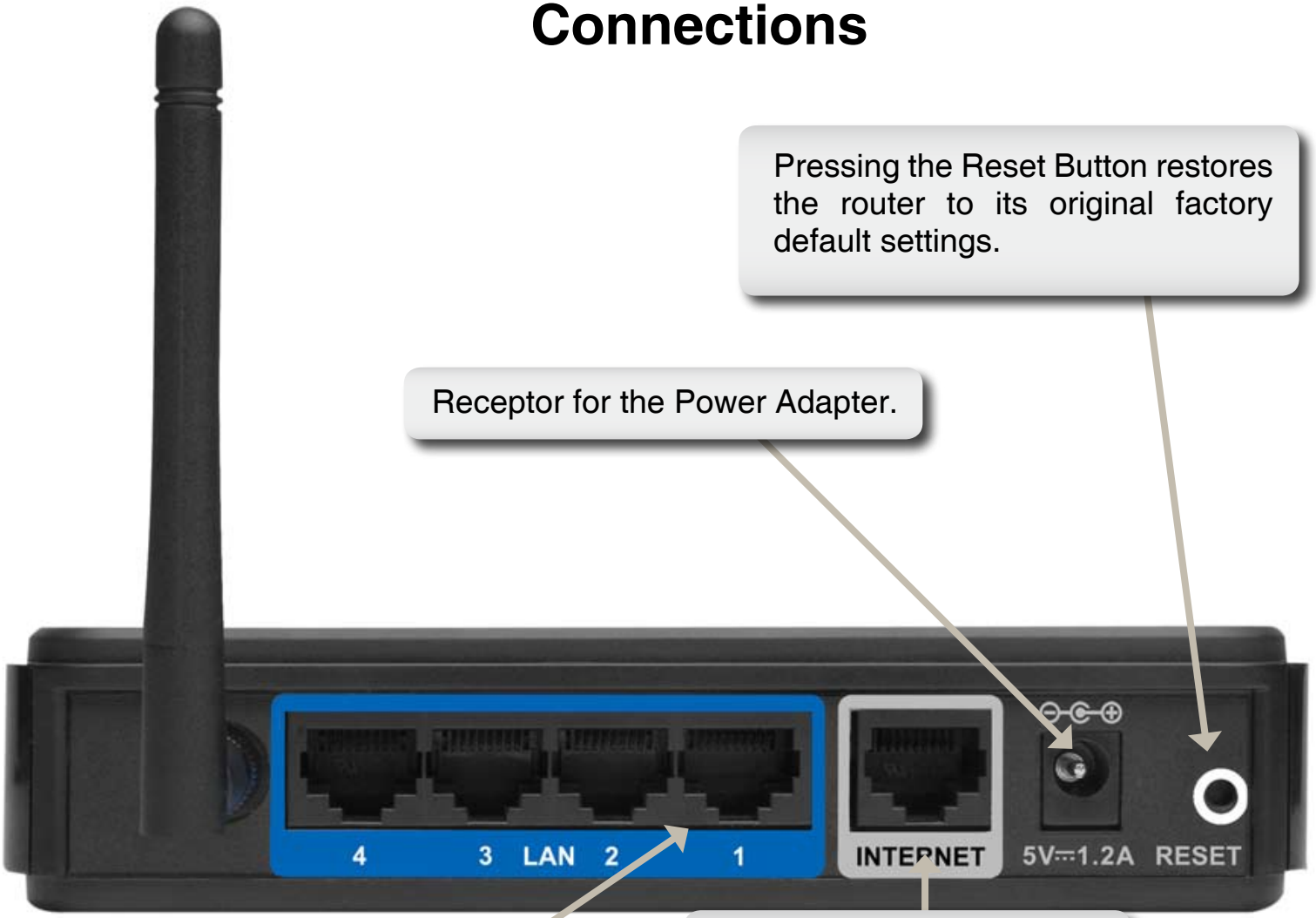
    - **Filter Scheduling** - These filters can be scheduled to be active on certain days or for a duration of hours or minutes.

    - **Secure Multiple/Concurrent Sessions** - The DIR-600 can pass through VPN sessions. It supports multiple and concurrent IPSec and PPTP sessions, so users behind the DIR-600 can securely access corporate networks.

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

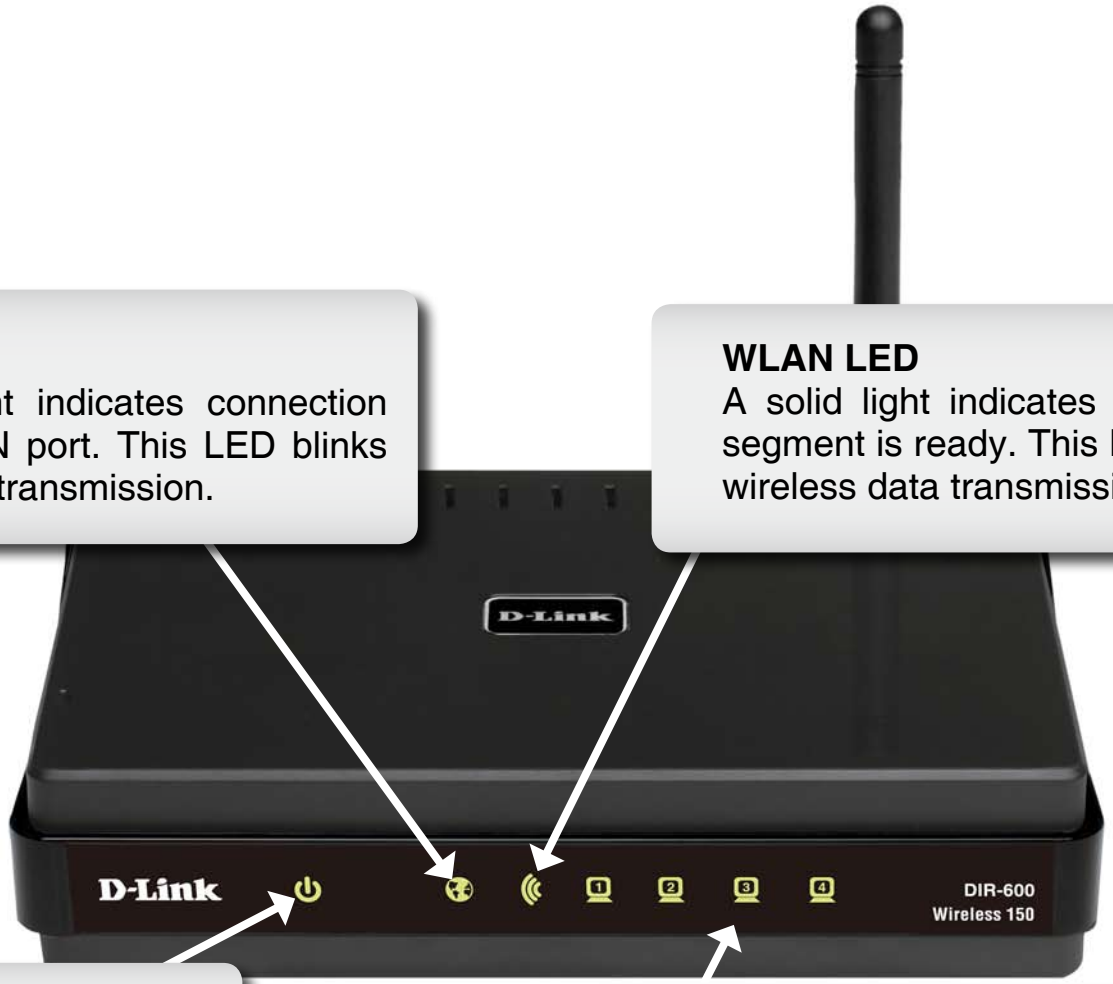
* Maximum wireless signal rate derived from IEEE Standard 802.11g and Draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput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

Hardware Overview
Connections



Hardware Overview

LEDs



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

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

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

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

Installation

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

Before you Begin

Please configure the router with the computer that was last connected directly to your modem. Also, you can only use the Ethernet port on your modem. If you were using the USB connection before using the router, then you must turn off your modem, disconnect the USB cable and connect an Ethernet cable to the WAN 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 Ethernet 300 from your computer or you will not be able to connect to the Internet.

Wireless Installation Considerations

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

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

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

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

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

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

Wall Mounting Your Device

You can mount the DIR-600 to a wall or a partition for easy and convenient placement of your device.

To wall mount your device,

A. Screw the provided screws with the equipment to the wall or partition where the device to be placed.
B. Place the mounting holes on the bottom of the device over the screws to mount it to the wall or partition.
C. Connect your cables to the device.

Step A

Step B

Step C

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 WAN port on the router.

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

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

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

7. Turn on your computer.

8. Verify the link lights on the router. The power light, WAN light, and the LAN light (the port that your computer is plugged into) should be lit. If not, make sure your computer, modem, and router are powered on and verify the cable connections are correct.

9. Skip to page 16 to configure your router.

Connect to Another Router

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

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

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

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

2. Open a web browser and enter **http://192.168.0.1** and press **Enter**. When the login window appears, set the user name to **admin** and leave the password box empty. Click **OK** to continue.

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

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

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

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

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

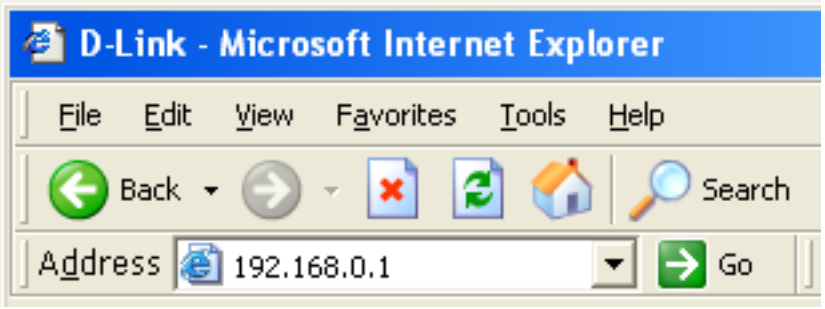
8. You may now use the other three LAN ports to connect other Ethernet devices and computers. To configure your wireless network, open a web browser and enter the IP address you assigned to the router. Refer to the **Configuration** and **Wireless Security** sections for more information on setting up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

Configuration

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

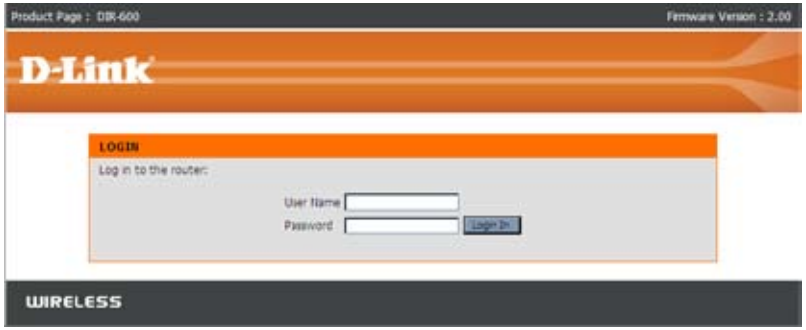
Web-based Configuration Utility

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).



Enter the user name (admin) and your password. Leave the password blank by default.

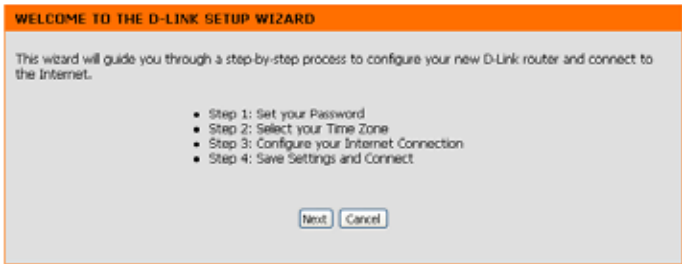
If you get a **Page Cannot be Displayed** error, please refer to the **Troubleshooting** section for assistance.



Setup Wizard

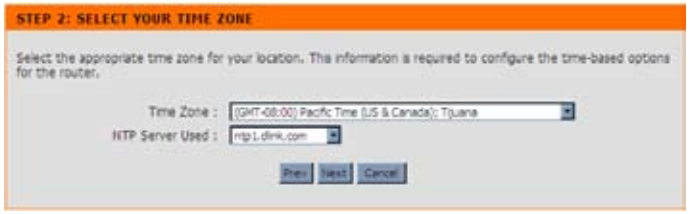
You may run the setup wizard from the opening Internet Setup window to quickly set up your router. Click **Internet Connection Setup Wizard**, you will be directed to the first window of the wizard.

Click **Next** to continue.



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

Select your time zone and NTP-server 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, enter your PPPoE username and password. Click **Next** to continue.

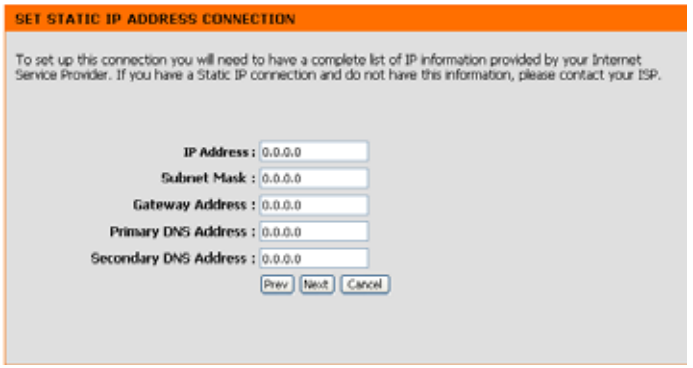
Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

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

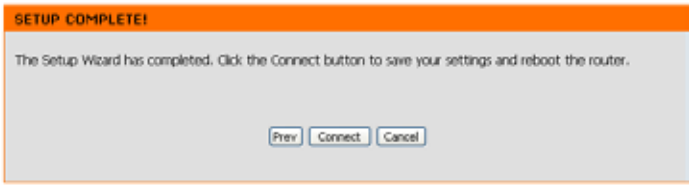
If you selected PPTP, enter your PPTP username and password. Click **Next** to continue.

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

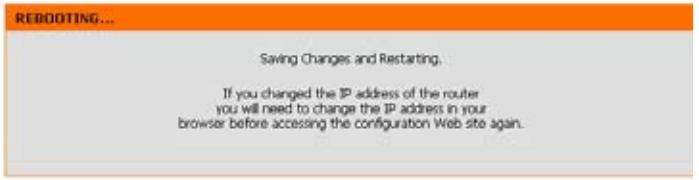
If you selected Static, enter your network settings supplied by your Internet provider. Click **Next** to continue.



Click **Connect** to save your settings.



Please allow 1-2 minutes for rebooting. When the router has finished rebooting, the opening window will be displayed.



Internet Setup
Static (assigned by ISP)

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

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

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

ISP Gateway Address: Enter the Gateway assigned by your ISP.

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

Clone MAC Address: The default MAC address is set to the WAN's physical interface MAC address on the Broadband Router. You can use the **Clone MAC Address** button to copy the MAC address of the Ethernet Card installed by your ISP and replace the WAN MAC address with the MAC address of the router. It is not recommended that you change the default MAC address unless required by your ISP.

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

Secondary DNS Address: This is optional.

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

Internet Setup
Dynamic

To manually set up the Internet connection, click the **Manual Internet Connection Setup** button on the Router's opening window.

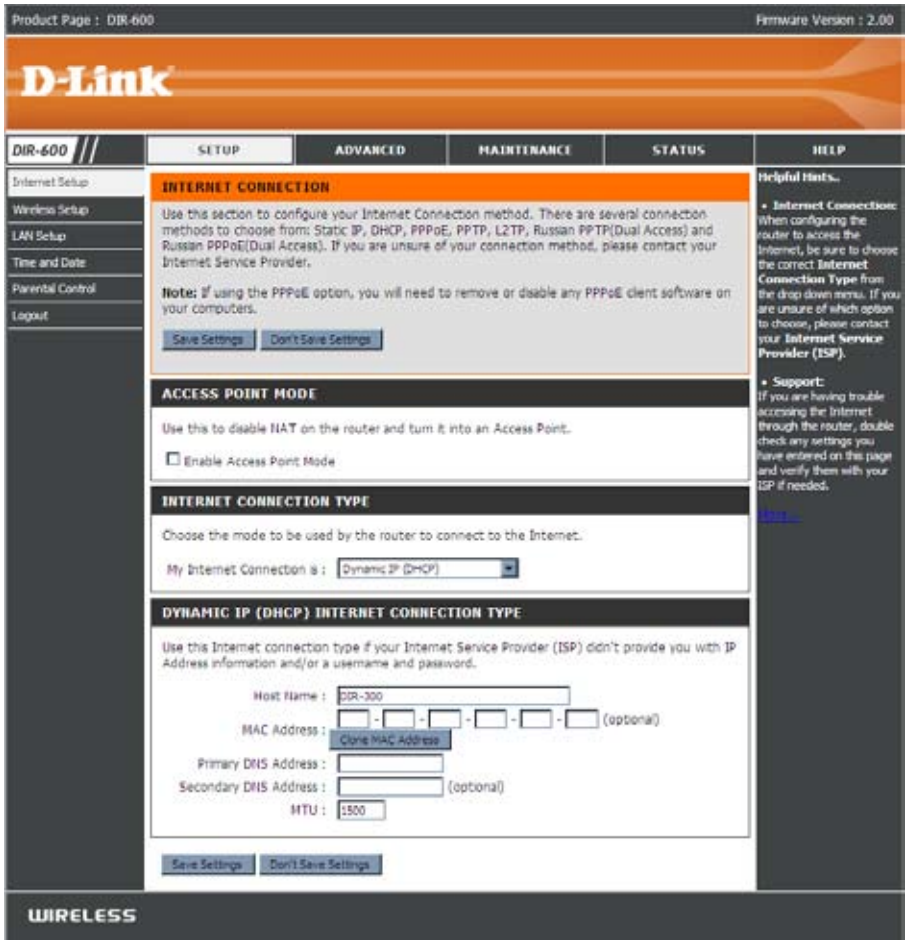
Access Point Mode: Checking this box disables NAT and turns the Router into an Access Point only.

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

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

Clone MAC Address: The default MAC address is set to the WAN's physical interface MAC address on the Broadband Router. You can use the "Clone MAC Address" button to copy the MAC address of the Ethernet Card installed by your ISP and replace the WAN MAC address with the MAC address of the router. It is not recommended that you change the default MAC address unless required by your ISP.

Primary / Secondary DNS Addresses: Enter the DNS (Domain Name Server) 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.

Internet Setup
PPPoE

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

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

User Name: Enter your PPPoE user name.

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

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

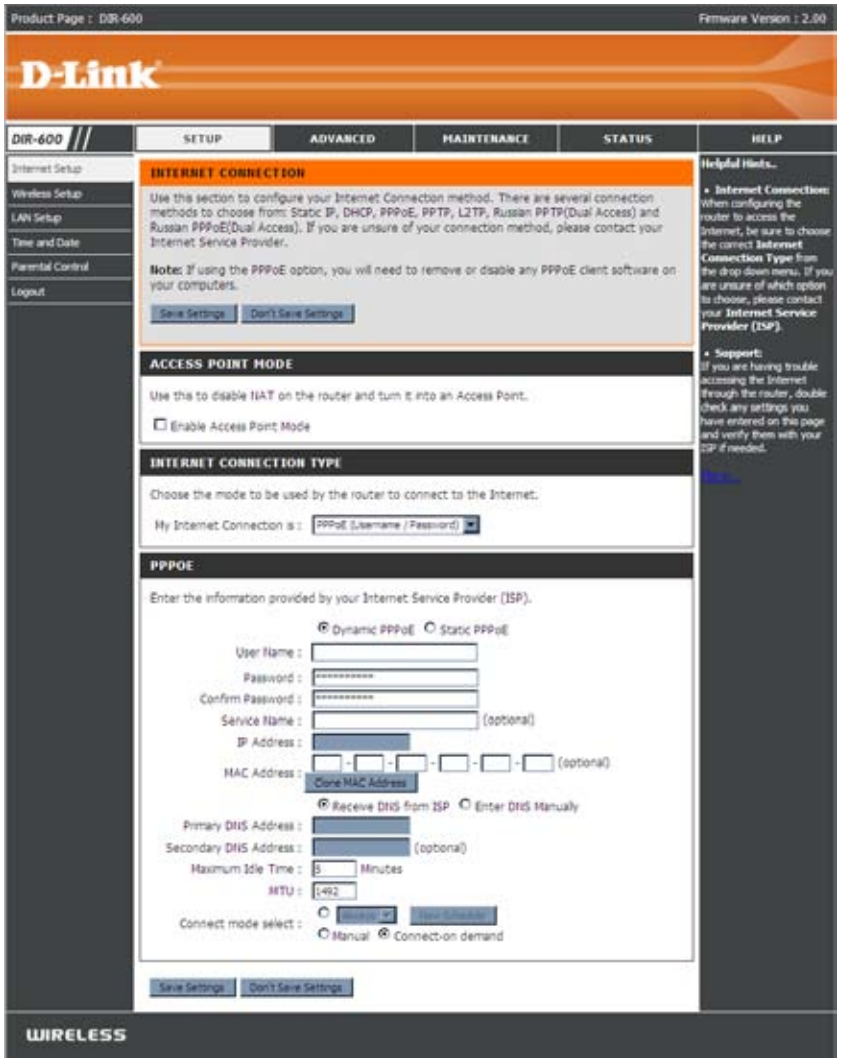
IP Address: Enter the IP address (Static PPPoE only).

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

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

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

Connection Mode Select: Select either **Always-on**, **Manual**, or **Connect-on demand**.



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.

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

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

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

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

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

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

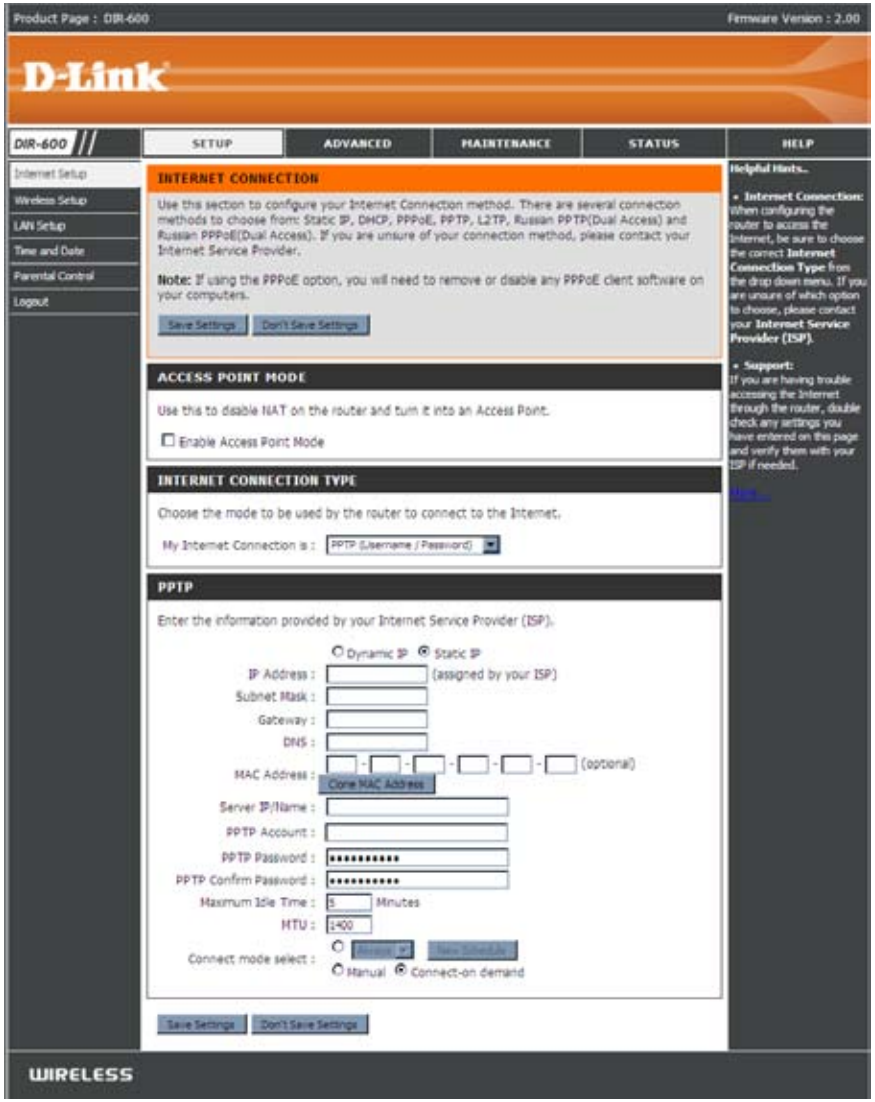
PPTP Account: Enter your PPTP account name.

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

Connect Mode: Select either Always-on, Manual, or Connect-on demand.



Internet Setup
L2TP

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

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

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

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

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

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

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

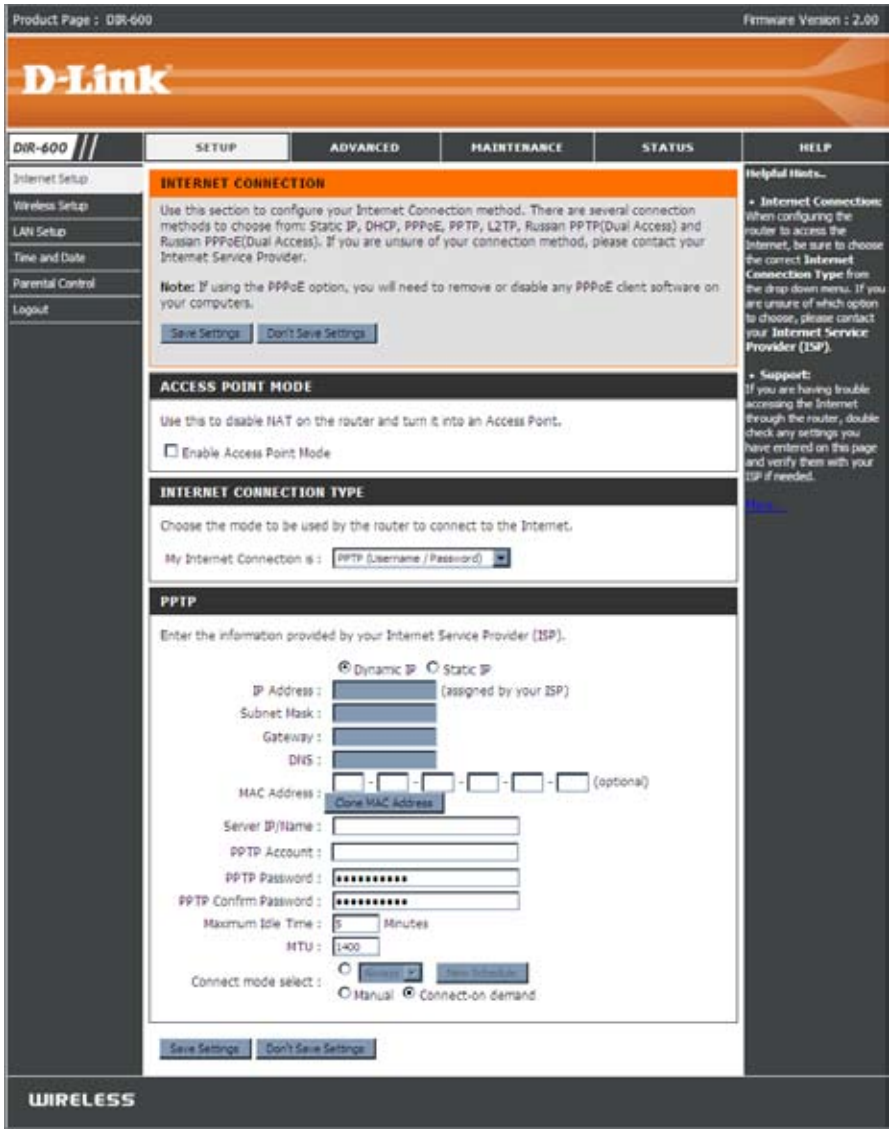
L2TP Account: Enter your L2TP account name.

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

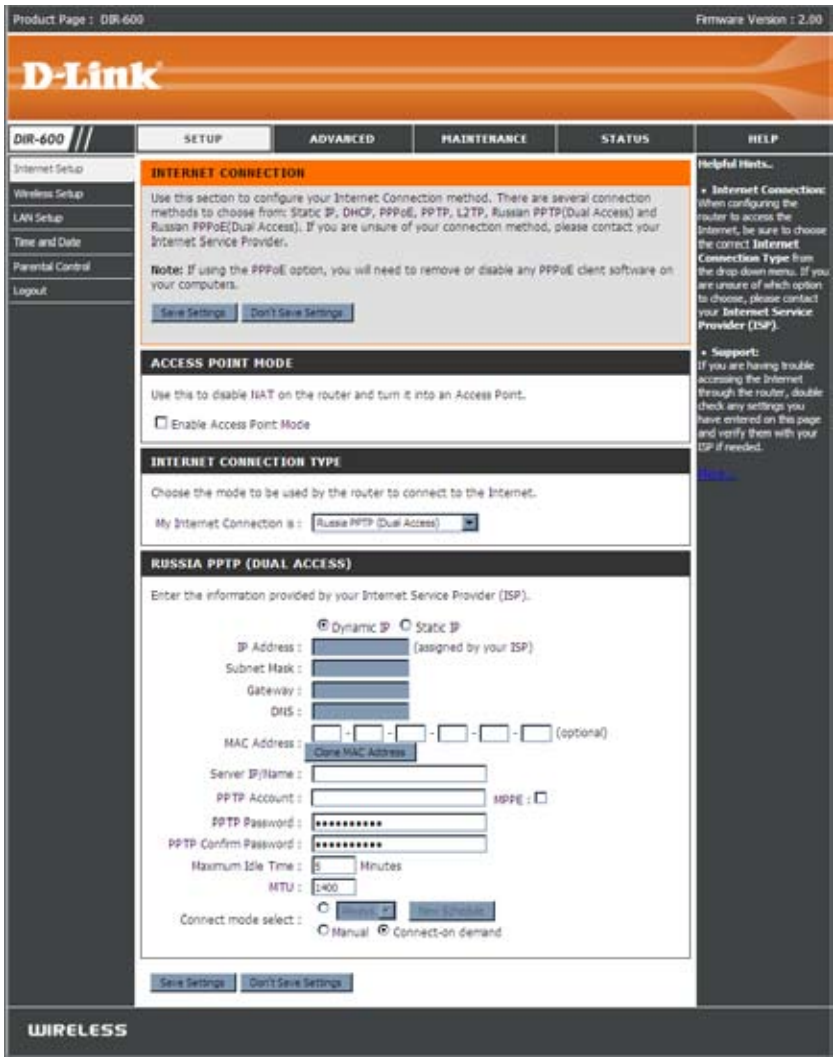
MTU: Maximum Transmission Unit - You may need to change the MTU for optimal performance with your specific ISP.

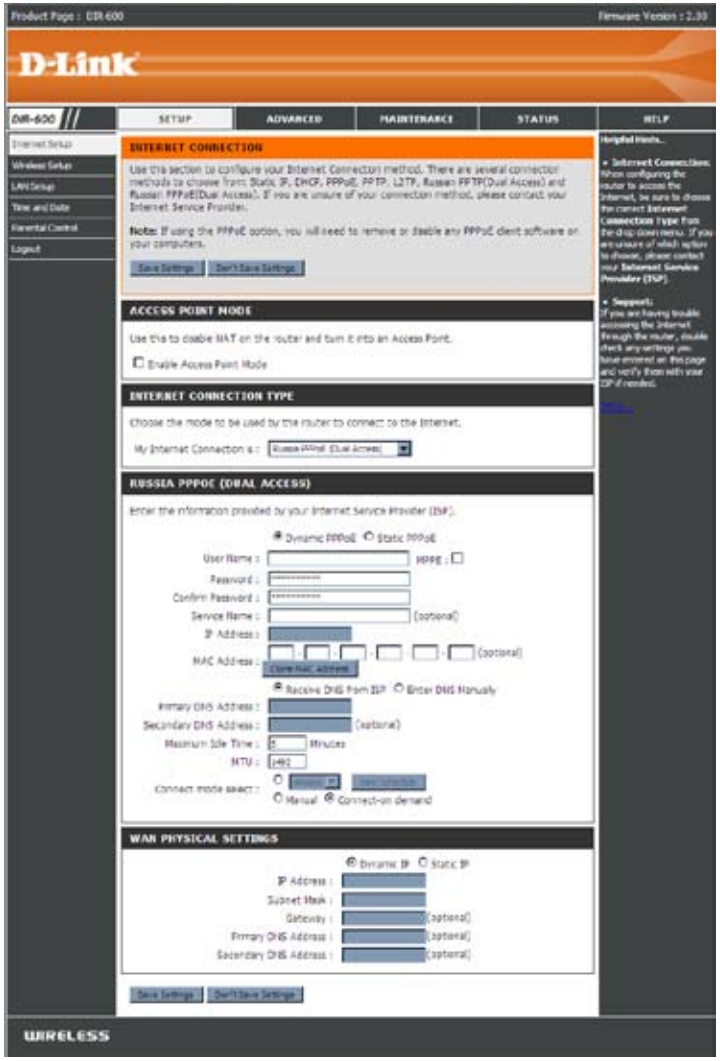
Connect Mode: Select either Always-on, Manual, or Connect-on demand.



Internet Setup
Dual Access (for Russia only)

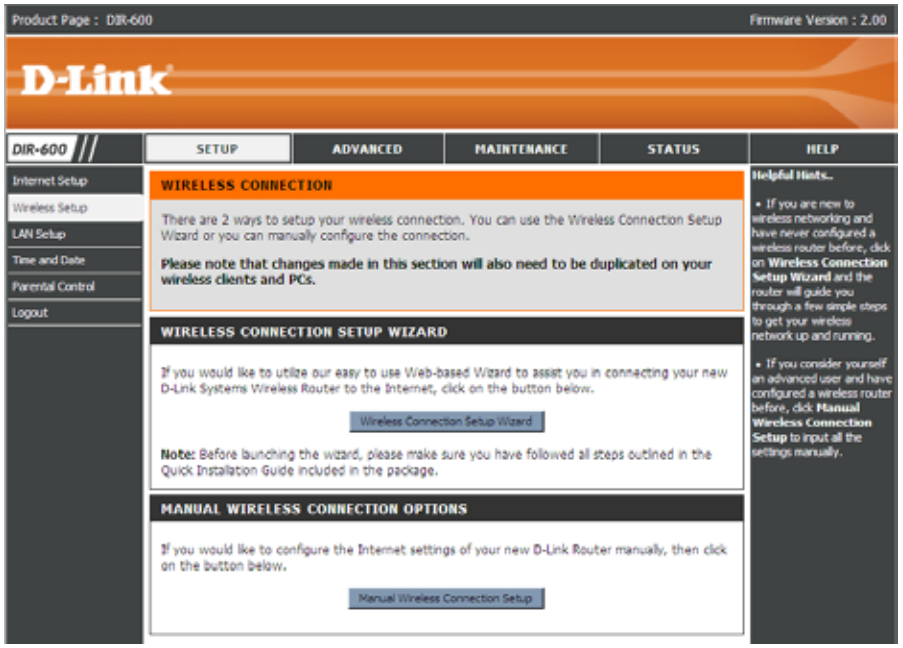
There are two main steps to configure a Dual Access Internet connection for Russia. First, configure a PPPoE connection (as previously described for PPPoE connections), and add the physical WAN IP settings as instructed from the ISP. Second, configure a PPTP connection (as previously described for PPTP connections). In addition, the second step also includes an option to use a MAC address that will always be associated with the connection. The MAC address is entered manually or copied from the computer.





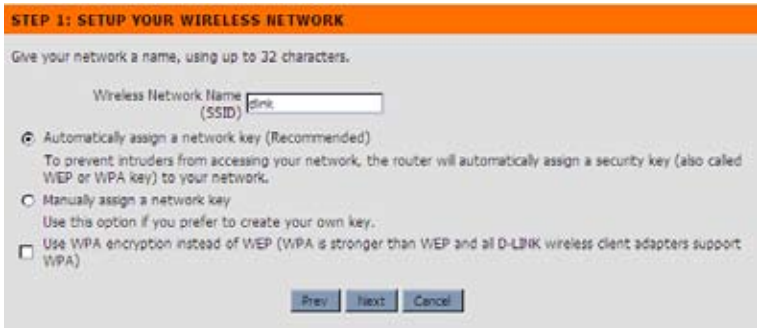
Wireless Setup

Wireless settings for the router may be configured manually or by using a wizard. To use the wizard, click the **Wireless Connection Setup Wizard** button and then follow the steps that are described below. To configure the wireless settings manually, click the **Manual Wireless Connection Setup** button. The parameters for this window are described later in this section. The Wireless Security section that directly follows this Configuration section provides additional explanation for how to configure the WEP, WPA, WPA2, and WPA/WPA2 wireless security mode options.



Click **Next** to continue.

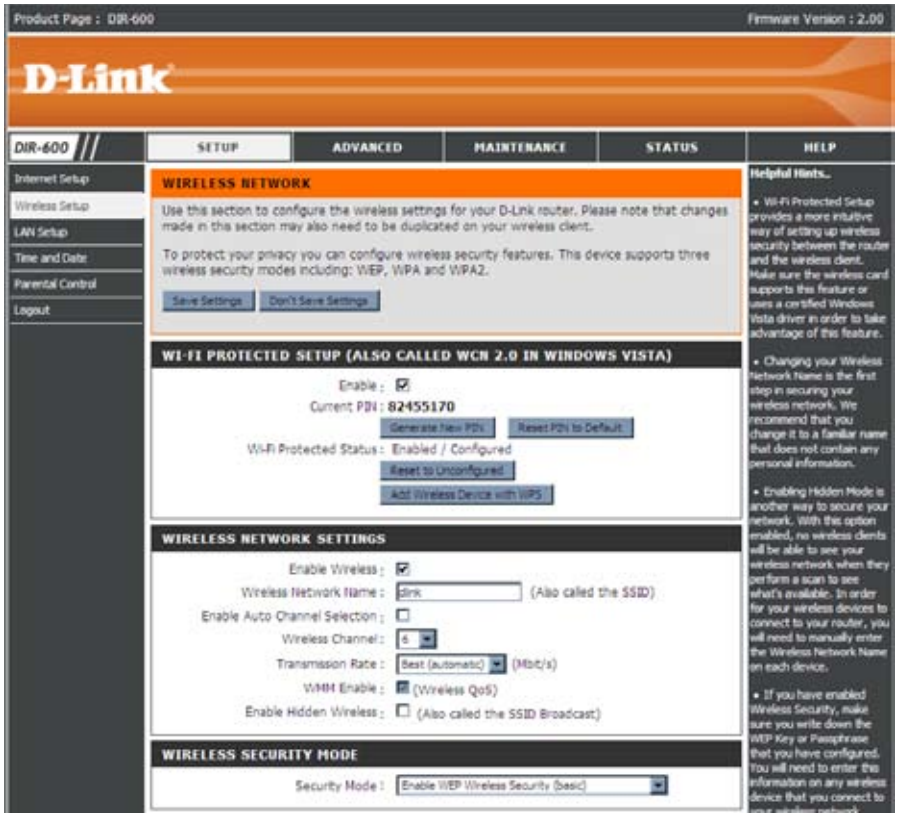
Enter a Wireless Network Name in the textbox, which is also know as the SSID and select the desired level of wireless security, WEP, WPA. and then click **Next** to continue.



Enter a Wireless Security Password in the textbox and then click **Next** to continue.

This window displays a summary of your wireless security settings. Please print this out or record this information in a safe place and then click **Save** to continue.

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



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

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

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

Enable Wireless Channel: Indicates the channel setting for the DIR-600. 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. The **Auto Channel Selection** setting can be selected to allow the DIR-600 to choose the channel with the least amount of interference.

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

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

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

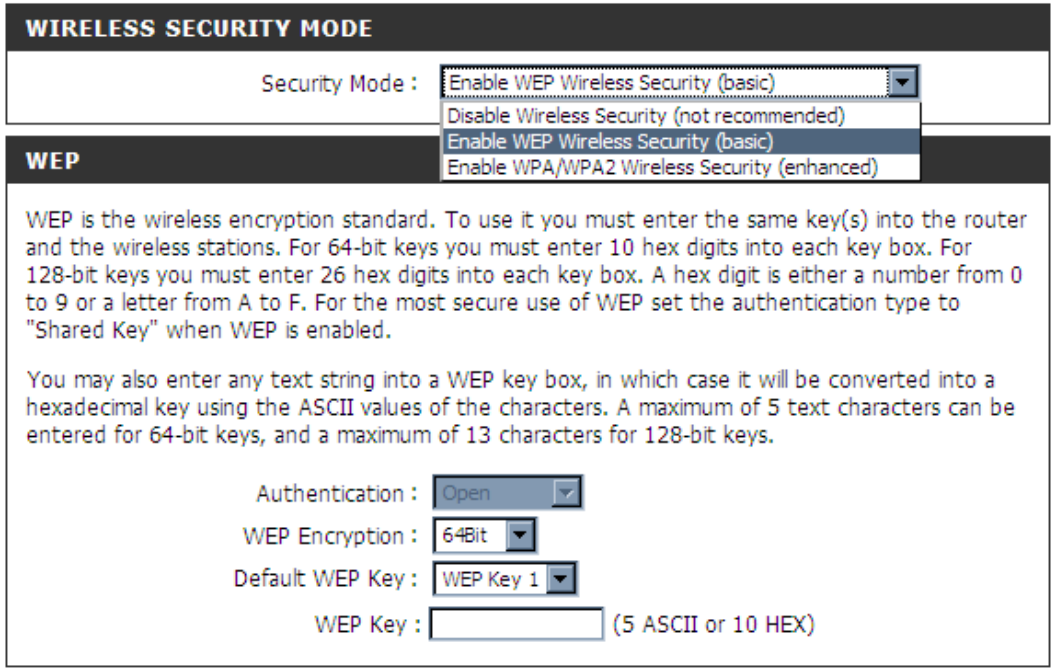
1. To enable wireless security on the Router, use the drop-down menu to select the desired option. To enable WEP, select *Enable WEP Wireless Security (basic)*.

2. Next to **Authentication**, select either *Open* or *Shared Key*. Shared Key provides greater security.

3. Select either *64Bit* or *128Bit* encryption from the drop-down menu next to **WEP Encryption**.

4. Next to **Default Key Type**, select *WEP Key 1* and enter a WEP key that you create. Make sure you enter this key exactly on all your wireless devices. You may enter up to four different keys either using *Hex* or *ASCII*. *Hex* is recommended (letters A-F and numbers 0-9 are valid). In *ASCII* all numbers and letters are valid.

5. Click **Save Settings** to save your settings. If you are configuring the Router with a wireless adapter, you will lose connectivity until you enable WEP on your adapter and enter the same WEP key as you did on the Router.



NOTE:
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.

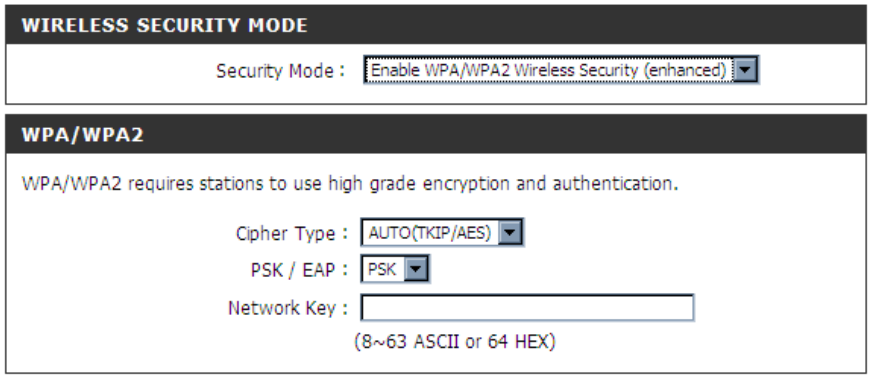
1. To enable *Enable WPA/WPA2 Wireless Security (enhanced).*

2. Next to **Cipher Type**, select *TKIP*, *AES*, or *AUTO*.

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

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

5. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WPA/WPA2 (whichever of the three options you have selected above) on your adapter and enter the same network key as you did on the router.



1. To enable WPA/WPA2 for a RADIUS server, next to **Security Mode**, selec or *Enable WPA/WPA2 Wireless Security (enhanced)*.

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

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

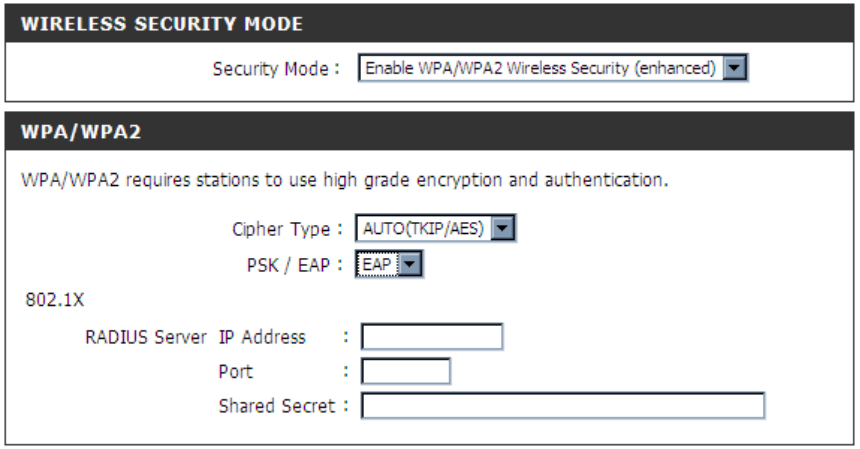
4. Next to **RADIUS Server 1** enter the **IP Address** of your RADIUS server.

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

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

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

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



LAN Setup

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

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

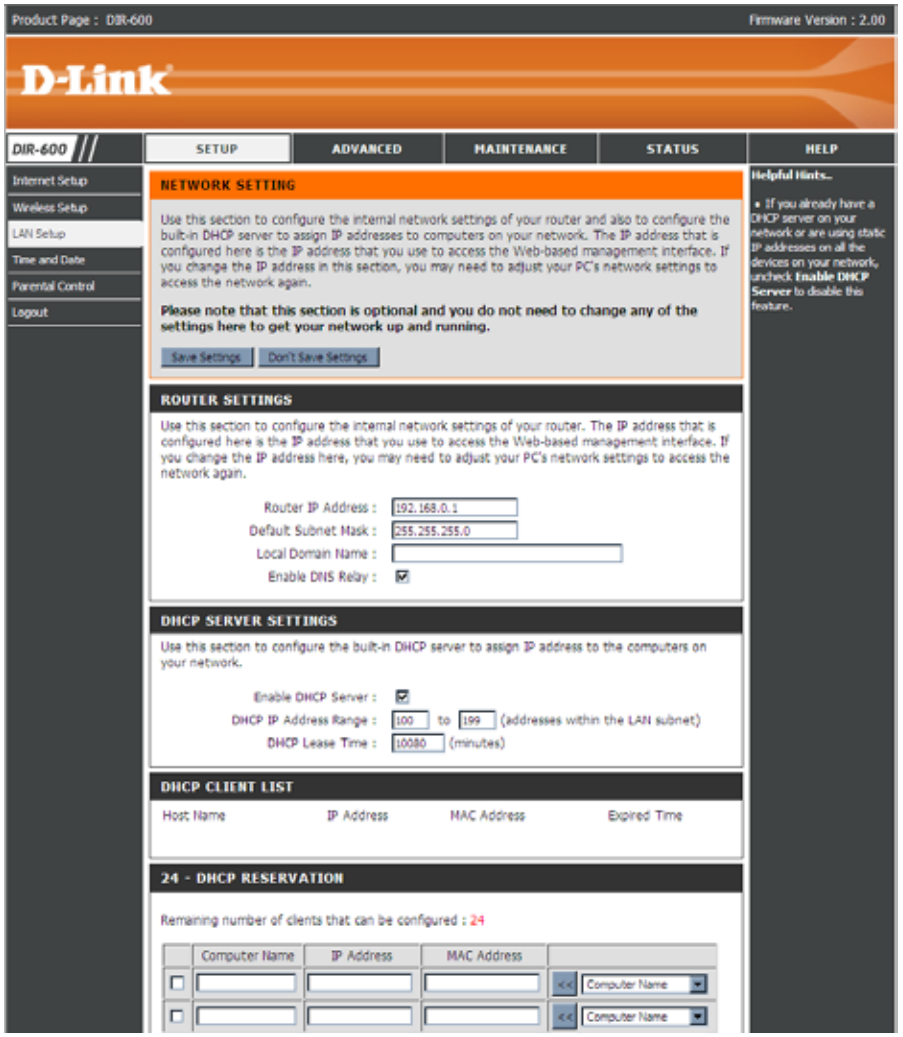
If you change the IP address, once you click **Apply**, you will need to enter the new IP address in your browser to get back into the configuration utility.

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

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

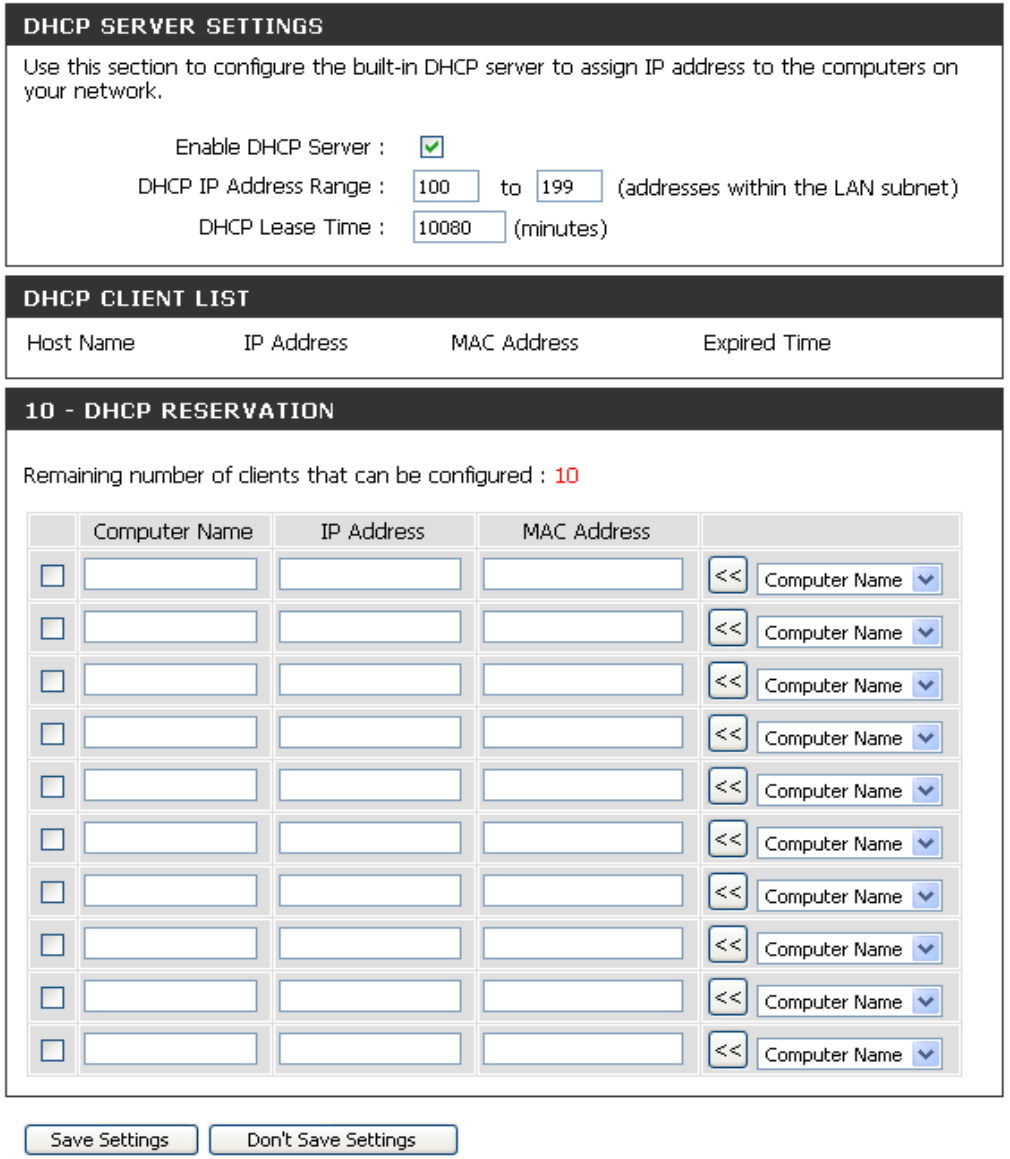
Enable DNS Relay: Check the box to transfer the DNS server information from your ISP to your computers. If unchecked, your computers will use the router for a DNS server.

Refer to the next page for DHCP information.



DHCP Server Settings

DHCP stands for Dynamic Host Control Protocol. The DIR-600 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-600. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.



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

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

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

Time and Date

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

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

Enable Daylight Saving: Ticking this checkbox enables Daylight Saving time. Click **Sync. your computer's time settings** to copy your PC's time settings.

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

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

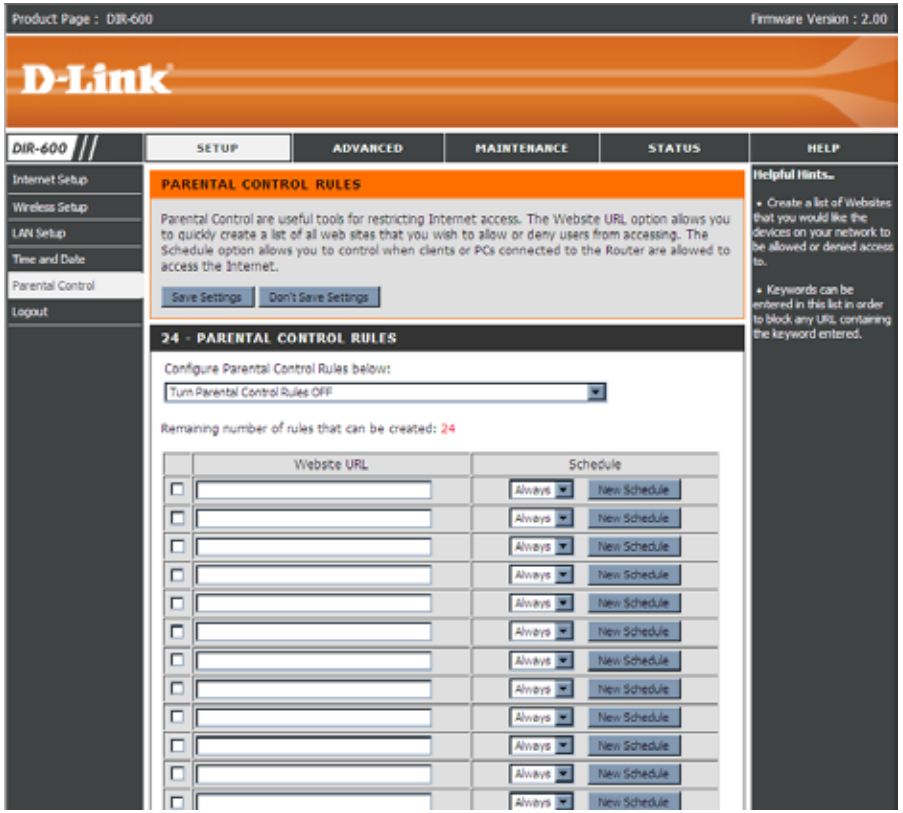
Parental Control

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

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

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

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



Port Forwarding

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

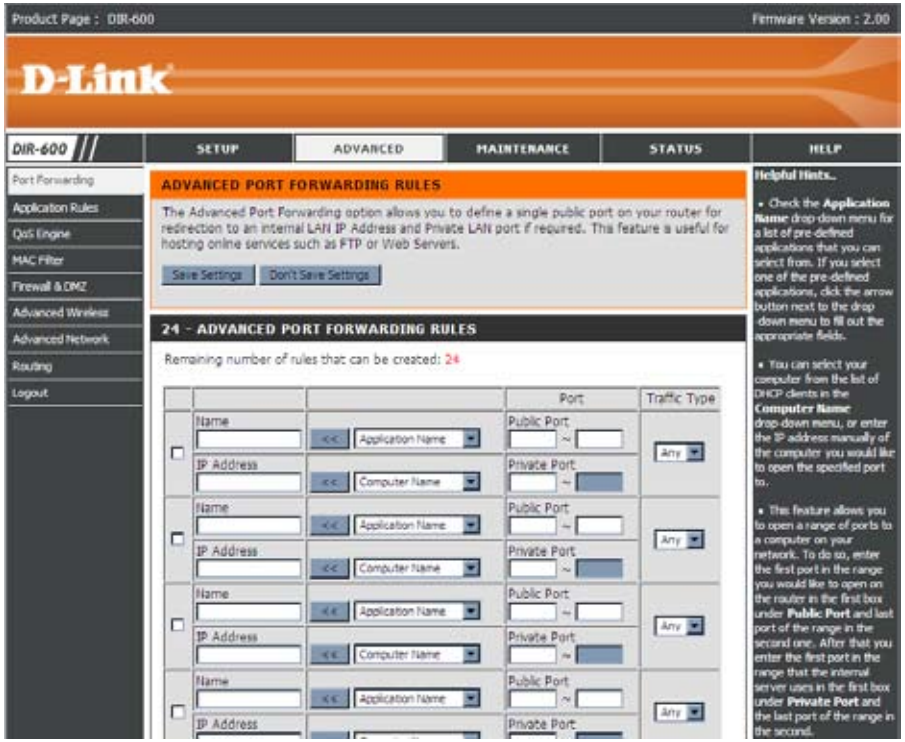
Rule: Check the box to enabled the rule.

Name: Enter a name for the rule.

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

Start Port/ End Port: Enter the port or ports that you want to open. If you want to open one port, enter the same port in both boxes.

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



Application Rules

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). Special Applications makes some of these applications work with the DIR-600.

Rule: Check the box to enable the rule.

Name: Enter a name for the rule.

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

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

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

QoS Engine

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

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

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

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

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

Detected xDSL: When Connection Type is set to automatic, the automatically detected connection type is displayed here.

MAC Filter

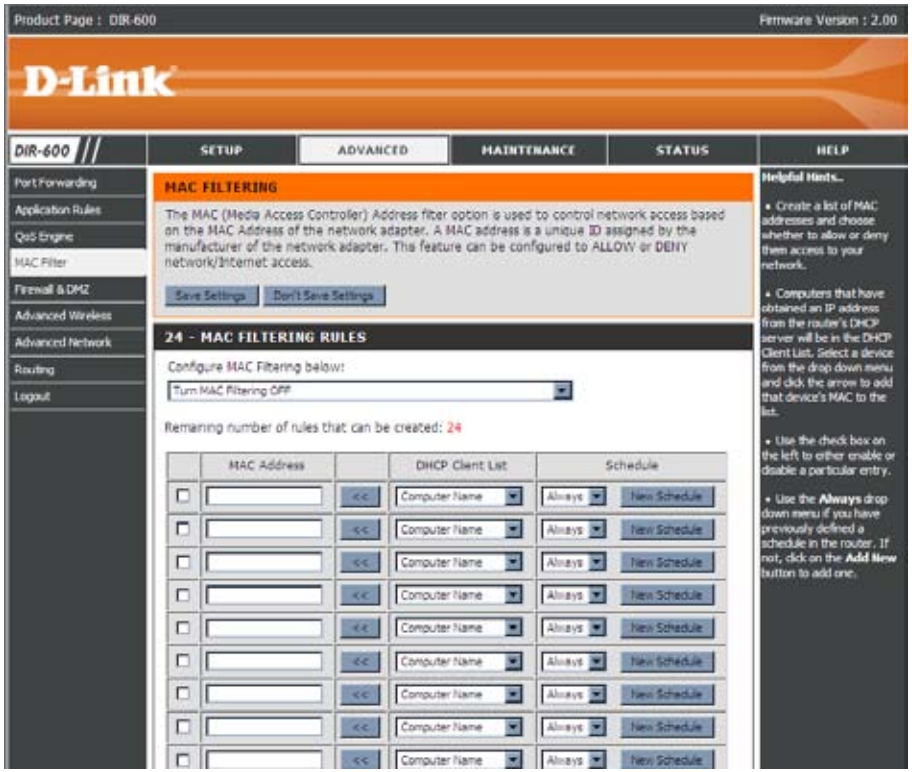
Use MAC (Media Access Control) Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the Network. You can either manually add a MAC address or select the MAC address from the list of clients that are currently connected to the Broadband Router.

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

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

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

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



Firewall & DMZ

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

If you have a client PC that cannot run Internet applications properly from behind the DIR-600, then you can set the client up for unrestricted Internet access. It allows a computer to be exposed to the Internet. This feature is useful for gaming purposes. Enter the IP address of the internal computer that will be the DMZ host. Adding a client to the DMZ (Demilitarized Zone) may expose your local network to a variety of security risks, so only use this option as a last resort.

Enable SPI: Check this to enable SPI.

Enable DMZ Host: Check this box to enable DMZ.

DMZ IP Address: Enter the IP address of the computer you would like to open all ports to.

Name: Choose a name for the firewall rule.

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

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

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

IP Address: Enter a beginning and ending IP address.

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

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

Advanced Wireless

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

Transmit Power: Set the transmit power of the antennas.

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

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

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

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

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

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

802.11 Mode: 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.

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.

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

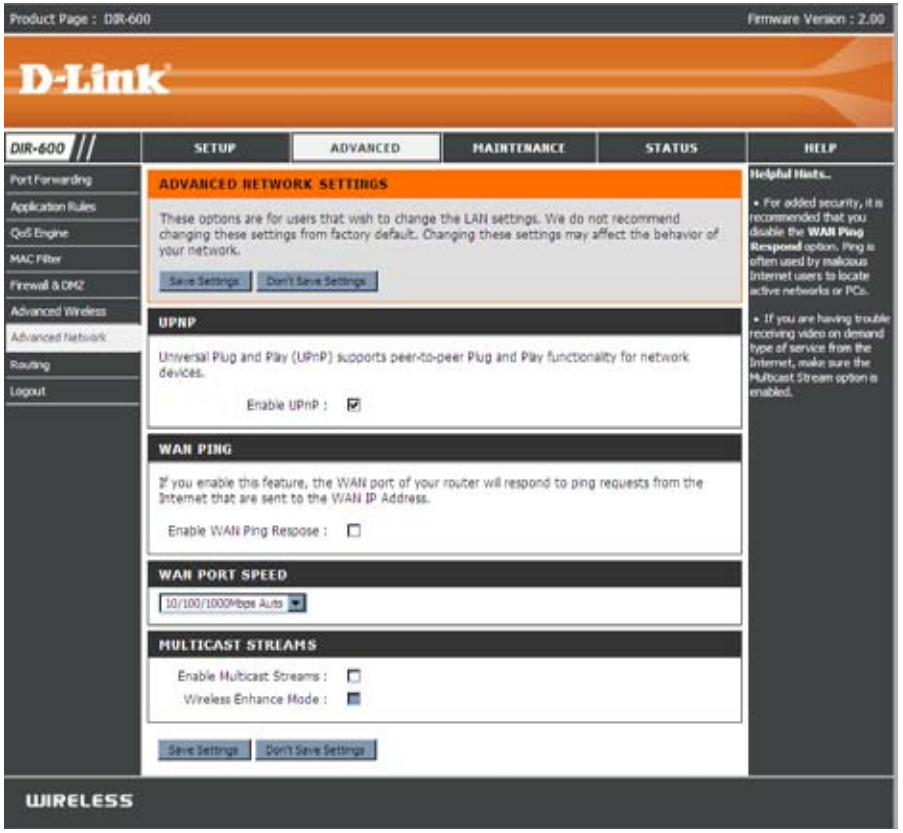
Advanced Network

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

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

Enable WAN Ping Respond: Unchecking the box will not allow the DIR-600 to respond to Pings. Blocking the Ping may provide some extra security from hackers. Tick this checkbox to allow the WAN port to be “Pinged”.

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



Routing

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

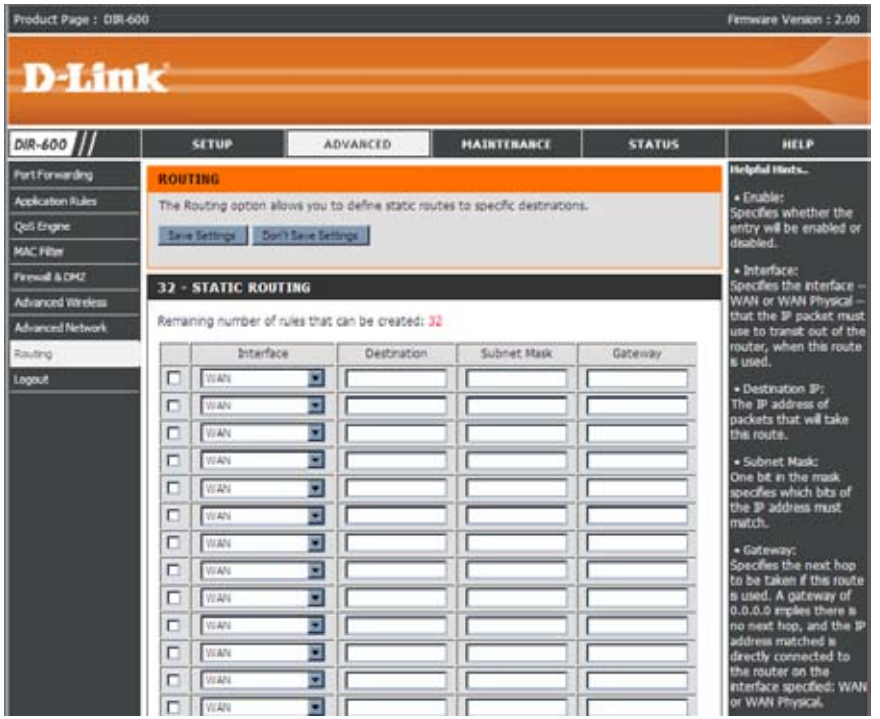
Enable: Tick this checkbox to enable or disable fixed routes to defined destinations.

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

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

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

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



Device Administration

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

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

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

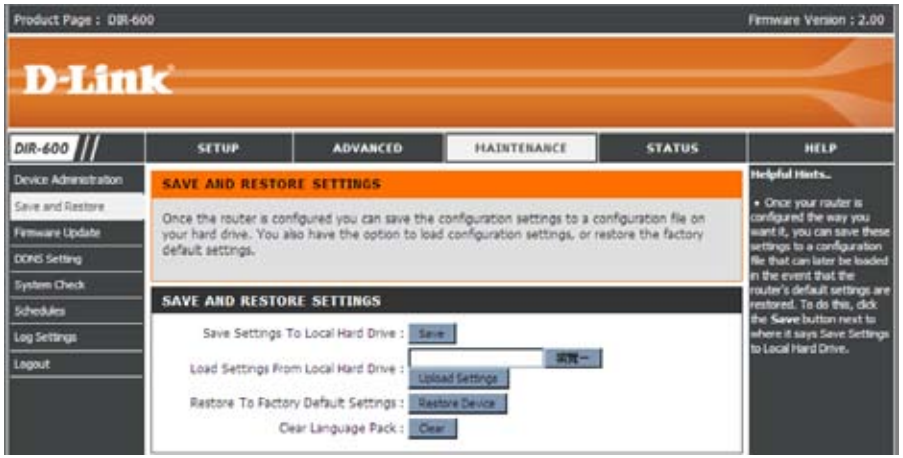
Enable Remote Management: Remote management allows the DIR-600 to be configured from the Internet by a web browser. A username and password is still required to access the Web-Management interface. In general, only a member of your network can browse the built-in web pages to perform Administrator tasks.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

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

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

Save and Restore

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



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

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

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

Reboots: Click the **Reboots** button on the left side of the window to restart the Router.

Firmware Update

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

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

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

DDNS Setting

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

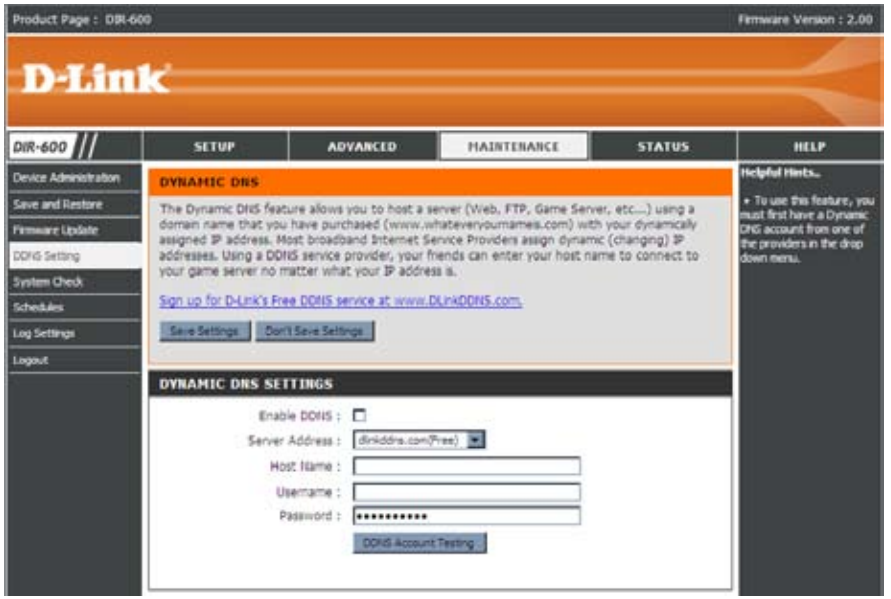
Enable DDNS: Tick the Enable DDNS checkbox to enable support for DDNS.

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

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

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

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

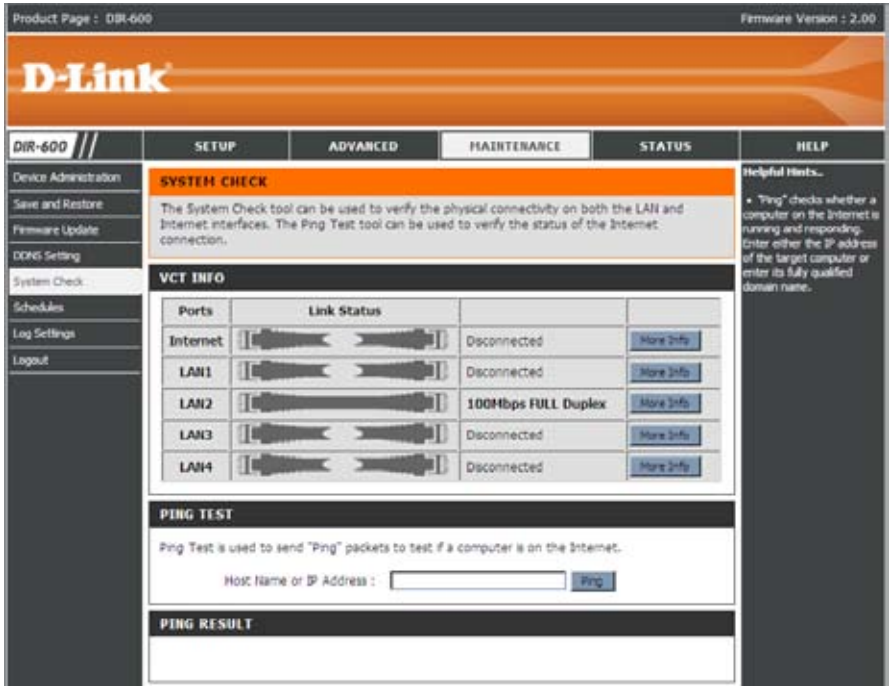


System Check

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

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

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



Schedules

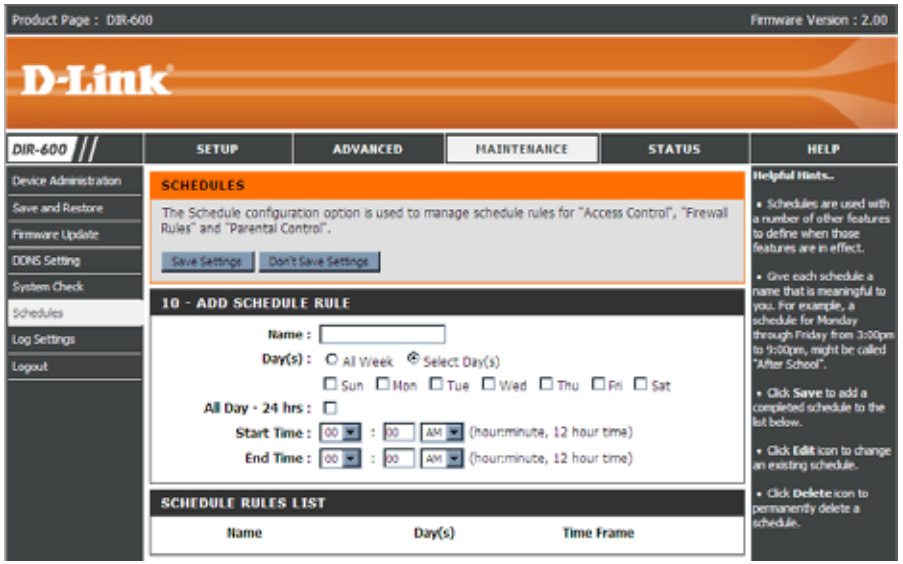
The Router allows the user the ability to manage schedule rules for various firewall and parental control features on this window. Once you have finished configuring the new schedule rule, click the **Save Settings** button at the top of the window.

Name: Enter a name for the new schedule rule.

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

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

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



Log Settings

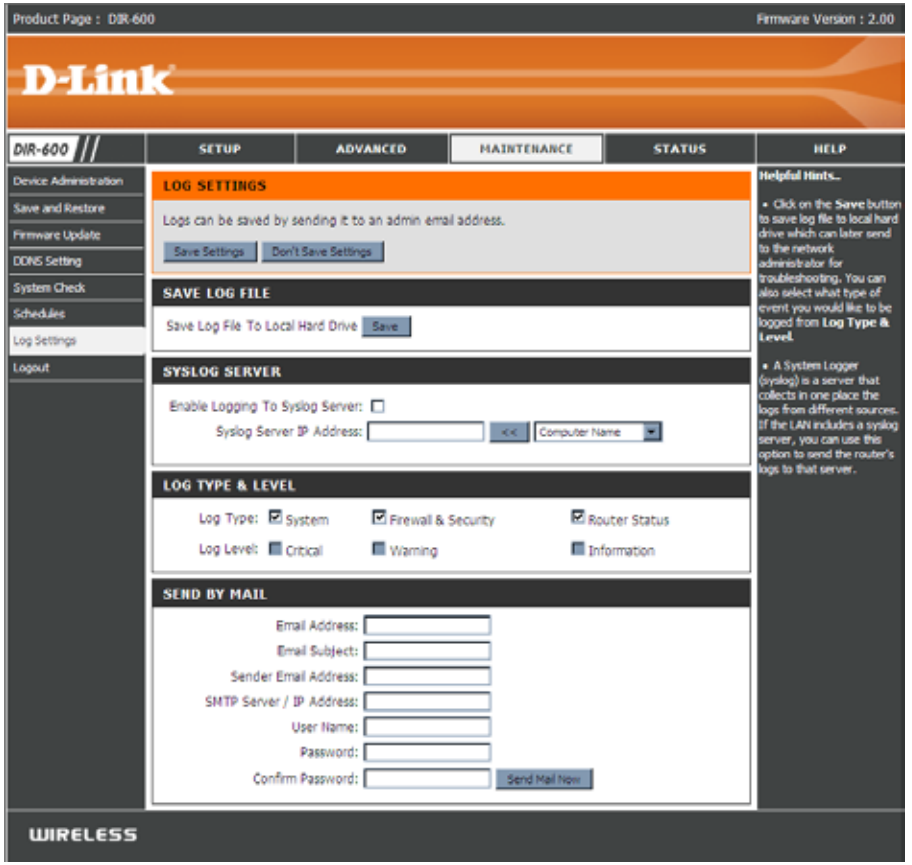
The system log displays chronological event log data specified by the router user. You may also save a simple text file containing the log to your computer. Click the **Save** button and follow the prompts to save the file.

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

Syslog Server: click the checkbox to save the log in the log server in the LAN side.

Log Type & Level: Click the checkbox(es) of the type of log information requested: **"System, Firewall & Security, Router Status, Critical, Warning and Information"**

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



Device Info

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

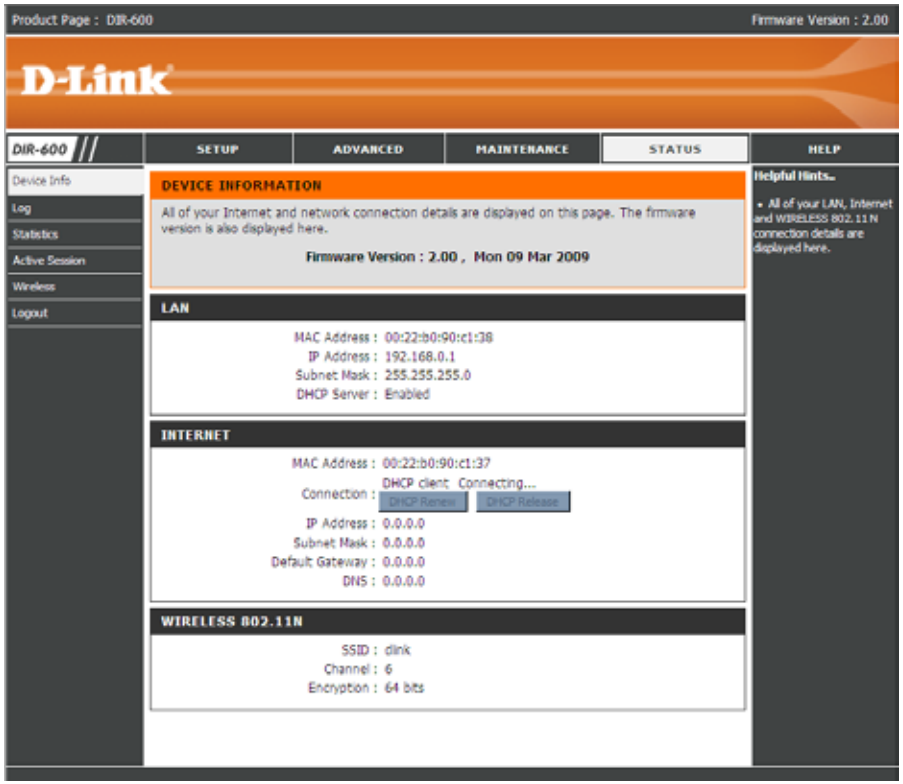
If your WAN connection is set up for a Dynamic IP address then a **DHCP Release** button and a **DHCP Renew** button will be displayed. Use **DHCP Release** to disconnect from your ISP and use **DHCP Renew** to connect to your ISP.

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

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

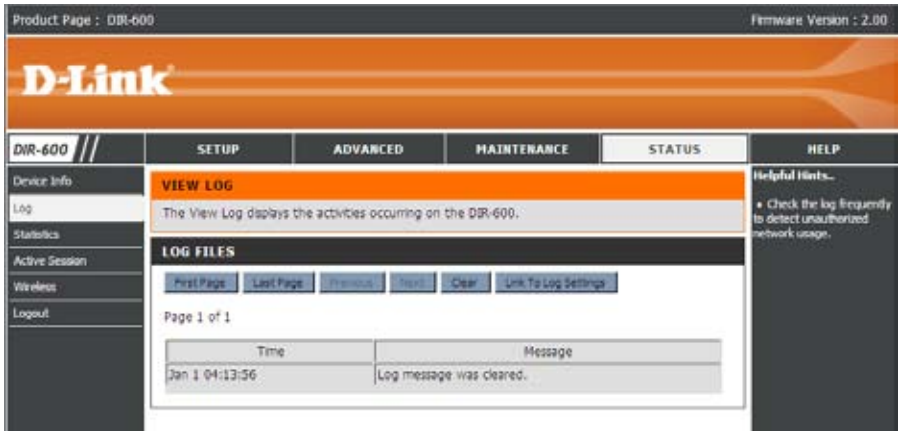
WAN: Displays the MAC address and the public IP settings for the router.

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



Log

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



First Page: View the first page of the log.

Last Page: View the last page of the log.

Previous: View the previous page.

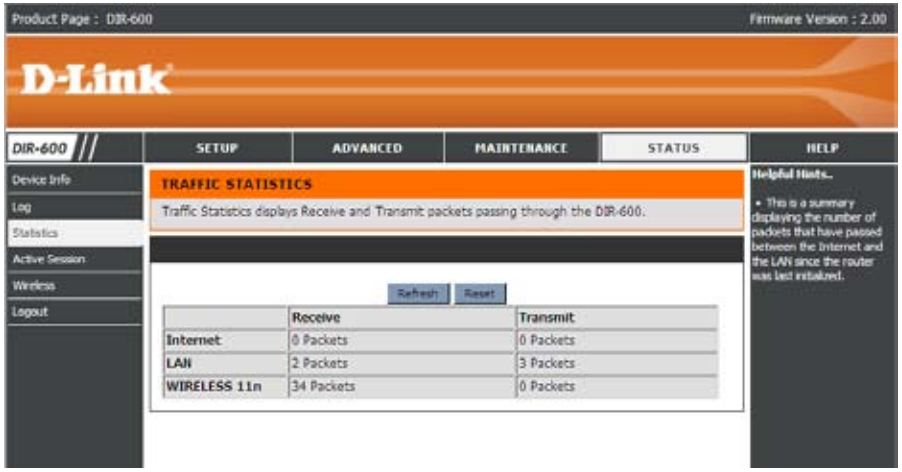
Next: View the next page.

Clear: Clear the log.

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

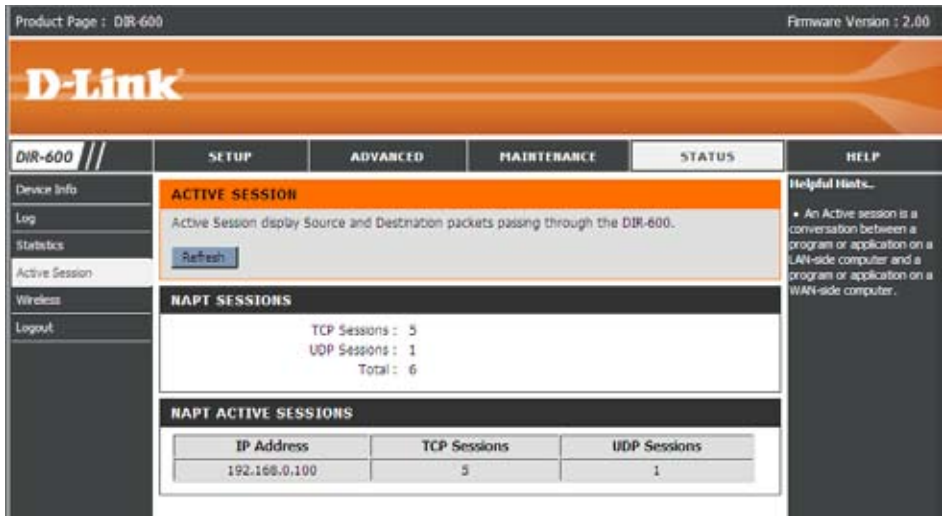
Statistics

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



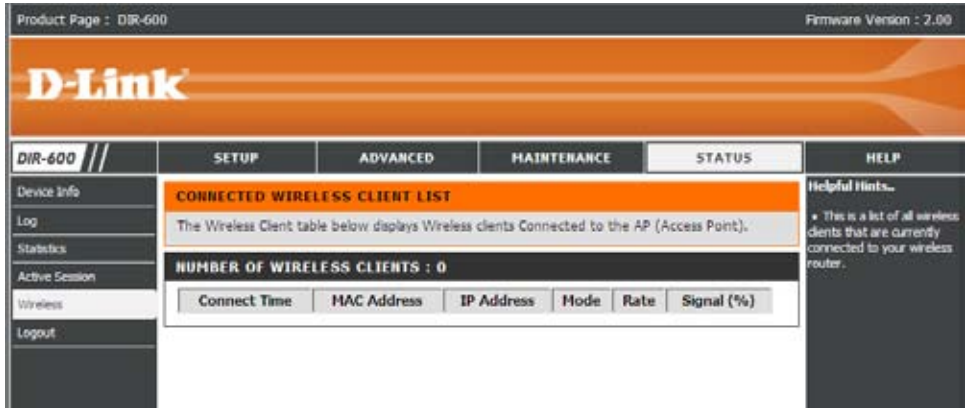
Active Session

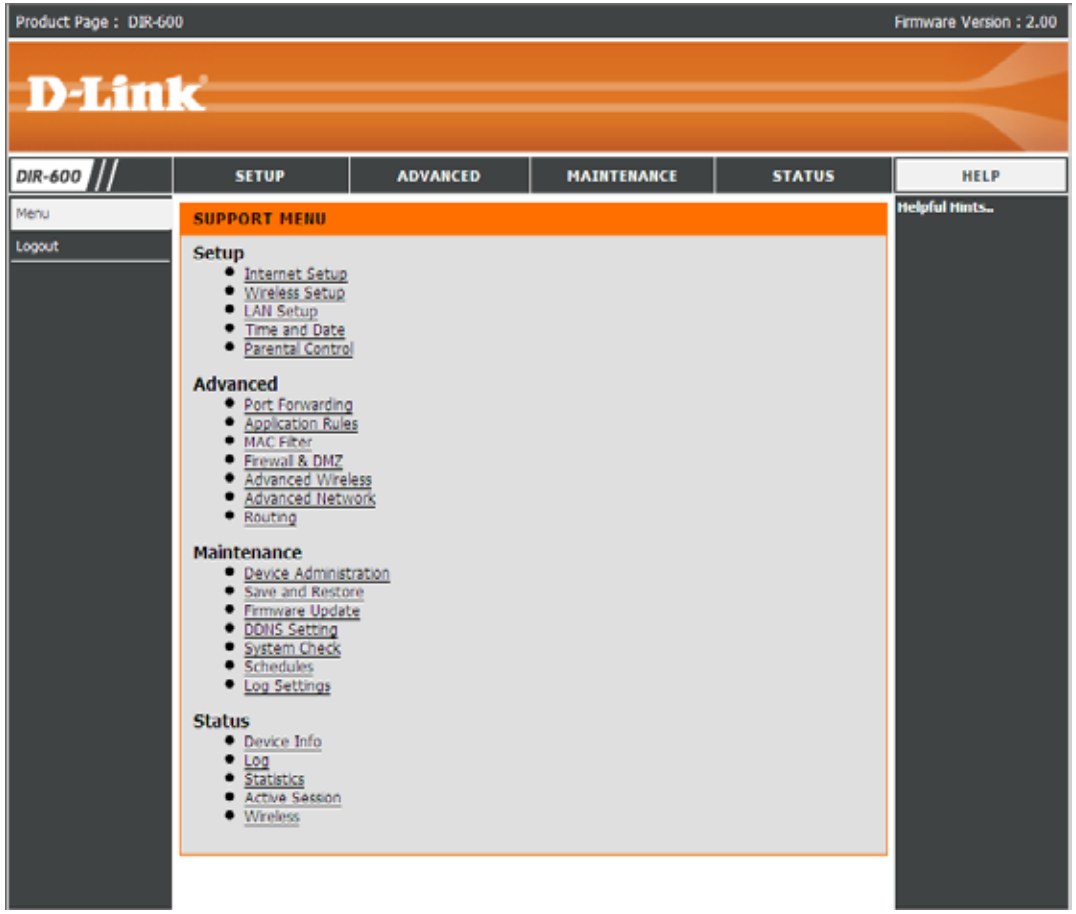
The NAPT Active Session table displays a list of all active conversations between WAN computers and LAN computers.



Wireless

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



Help

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