

# USER MANUAL

DIR-280

VERSION 1.0



**D-Link**<sup>®</sup>

**WIRELESS**

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# Package Contents



- D-Link DIR-280 Wireless G Router
- Power Adapter
- Manual and Warranty on CD

**Note:** Using a power supply with a different voltage rating than the one included with the DIR-280 will cause damage and void the warranty for this product.

**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 Version 6.0 or Mozilla Firefox Version 1.5 and above (for configuration)

# Introduction

D-Link, the industry leader in wireless networking, introduces another breakthrough in wireless connectivity. The D-Link DIR-280 Wireless G Router which is capable of transferring data with a maximum wireless signal rate of up to 54Mbps\* in the 2.4GHz frequency — the same wireless frequency as 802.11b. The D-Link DIR-280 Wireless G Router also offers four Ethernet ports to support multiple computers.

The advanced wireless technology built into the DIR-280 Wireless G Router offers data transfer speeds with a maximum wireless signal rate of up to 54Mbps\* through its wireless channels allowing streaming videos and other high bandwidth applications, such as online gaming events, to operate without the hassle of Ethernet cables. The ability to use high bandwidth applications also makes streaming real-time programs more enjoyable and more efficient.

With the DIR-280 Wireless Router's built-in advanced Firewall, threats of hackers penetrating your network are minimized. Features like Access Control and Website Filtering are useful tools to prevent other unwanted intruders from connecting to your network or browsing restricted sites.

The easy-to-use Configuration Wizard takes only minutes to setup and guides users step-by-step through configuring the DIR-280. With all the versatile features and a user-friendly utility, the DIR-280 Wireless G Router provides an enhanced networking experience.

\* Maximum wireless signal rate derived from IEEE Standard 802.11g 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.

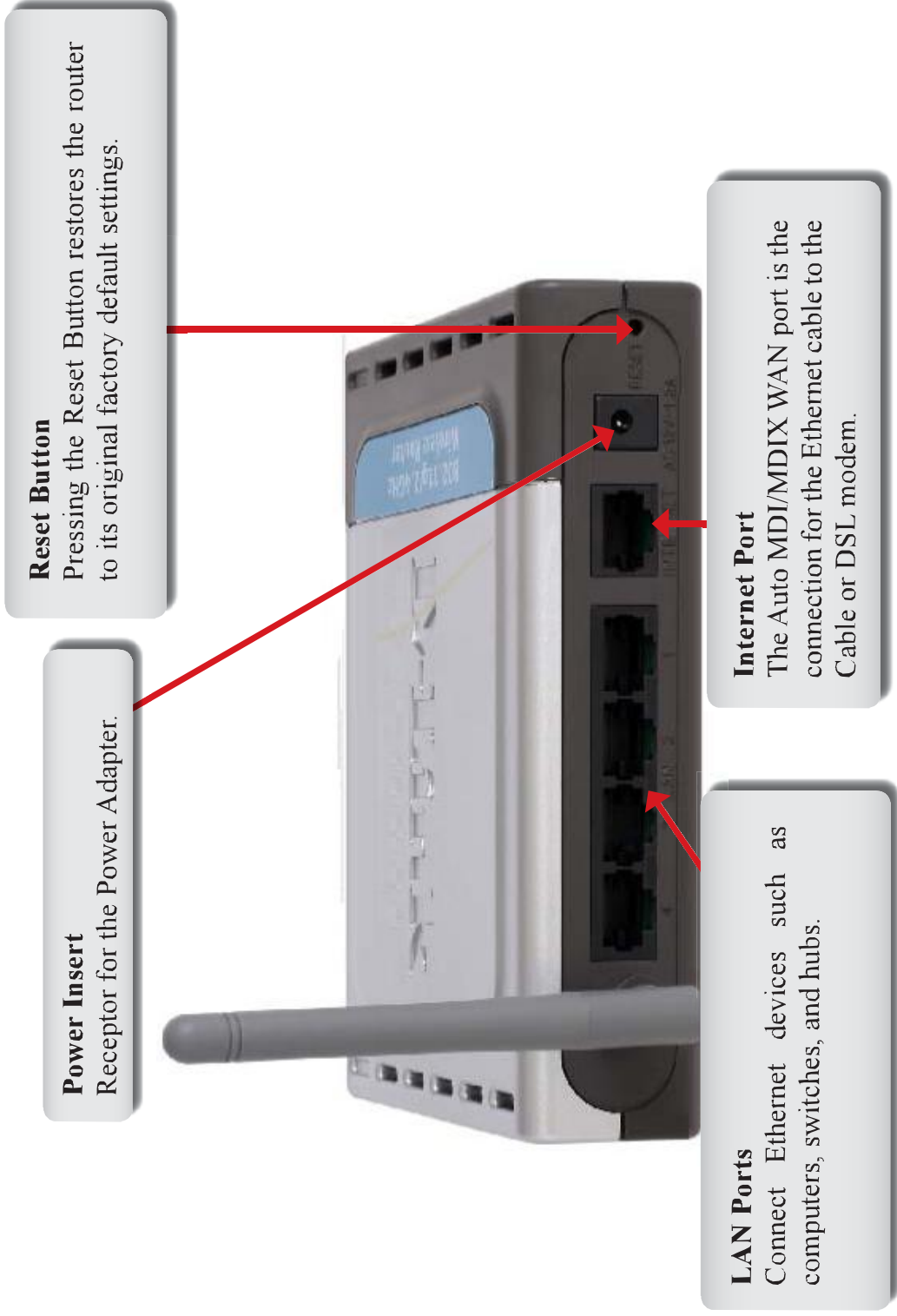
# Features

- **Faster Wireless Networking** - The DIR-280 provides up to 54Mbps\* wireless connection with other 802.11g 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 802.11g wireless router gives you the freedom of wireless networking at speeds 5x faster than 802.11b.
- **Compatible with 802.11b and 802.11g Devices** - The DIR-280 is still fully compatible with the IEEE 802.11b standard, so it can connect with existing 802.11b PCI, USB and Cardbus adapters.
- **Advanced Firewall Features** - The Web-based user interface displays a number of advanced network management features including:
  - **Content Filtering** - Easily applied content filtering based on the URL.
  - **Secure Multiple/Concurrent Sessions** - The DIR-280 can pass through VPN sessions. It supports multiple and concurrent IPSec and PPTP sessions, so users behind the DIR-280 can securely access corporate networks.
  - **User-friendly Setup Wizard** - Through its easy-to-use Web-based user interface, the DIR-280 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 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.

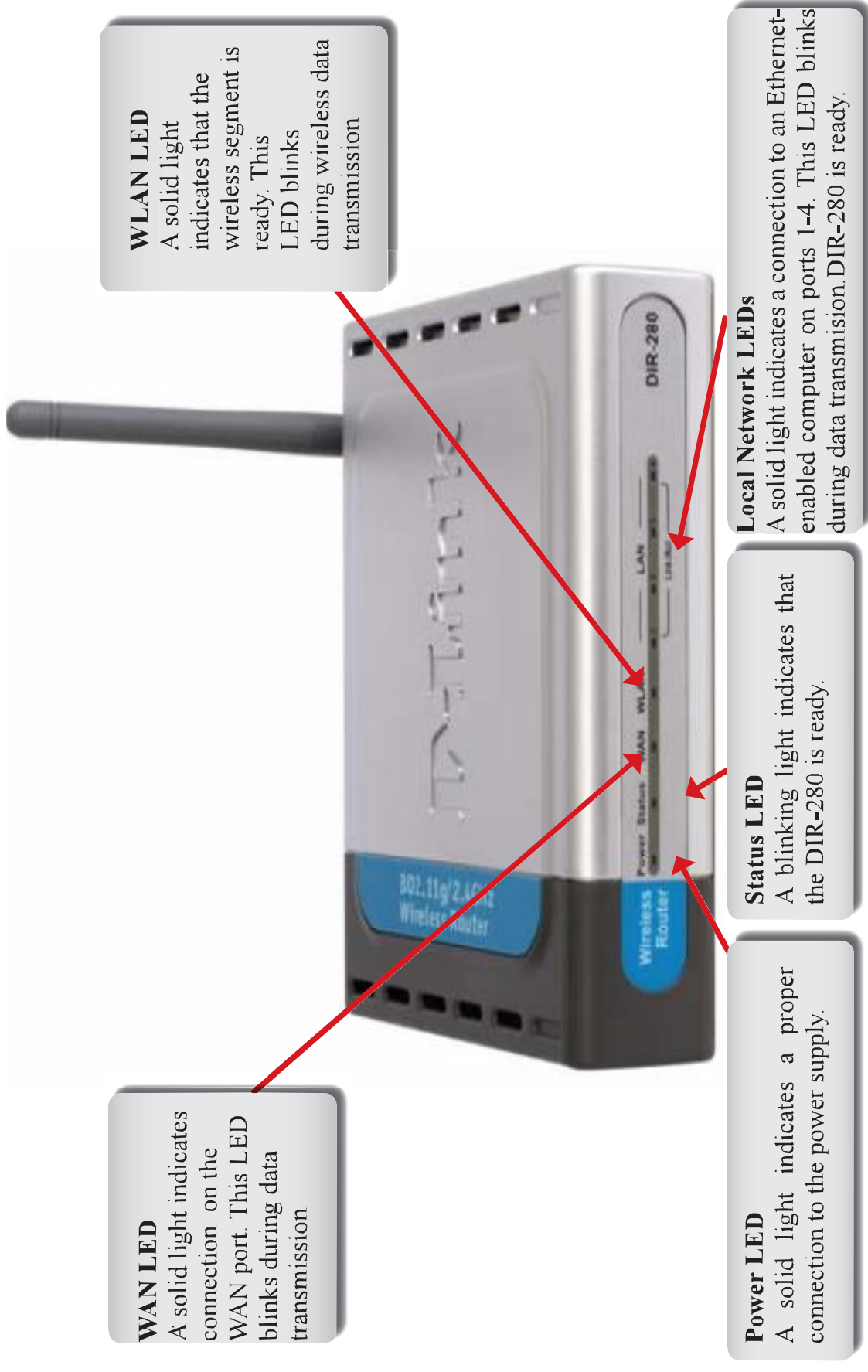
# Hardware Overview

## Connections



# Hardware Overview

## LEDs



**WAN LED**  
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.

**Status LED**  
A blinking light indicates that the DIR-280 is ready.

**Local Network LEDs**  
A solid light indicates a connection to an Ethernet-enabled computer on ports 1-4. This LED blinks during data transmission. DIR-280 is ready.



# 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.

### 以下警語適用台灣地區:

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

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

## 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 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 14 to configure your router.

# Connect to Another Router

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

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

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

1. Plug the power into the router. Connect one of your computers to the router (LAN port) using an Ethernet cable. Make sure your IP address on the computer is 192.168.0.xxx (where xxx is between 2 and 254). Please see the **Networking Basics** section for more information. If you need to change the settings, write down your existing settings before making any changes. In most cases, your computer should be set to receive an IP address automatically in which case you will not have to do anything to your computer.
2. Open a web browser and enter **http://192.168.0.1** and press **Enter**. When the login window appears, set the user name to **admin** and leave the password box empty. Click **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

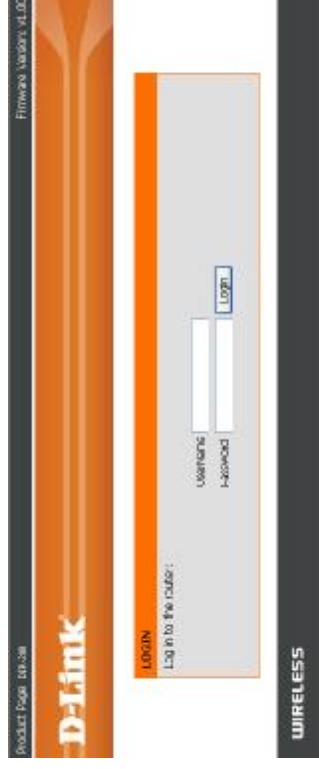
This section will show you how to configure your new D-Link wireless router using the web-based configuration utility.

## 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).



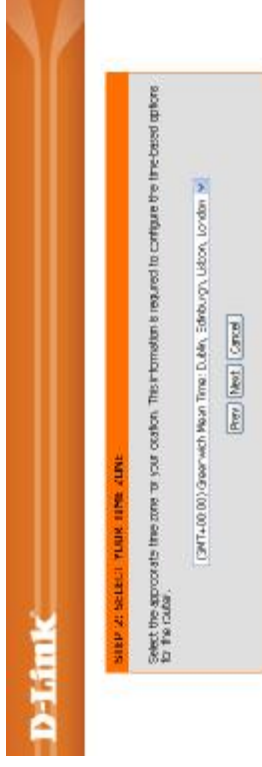
Enter the user name (admin) and your password. Leave the password blank by default.



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



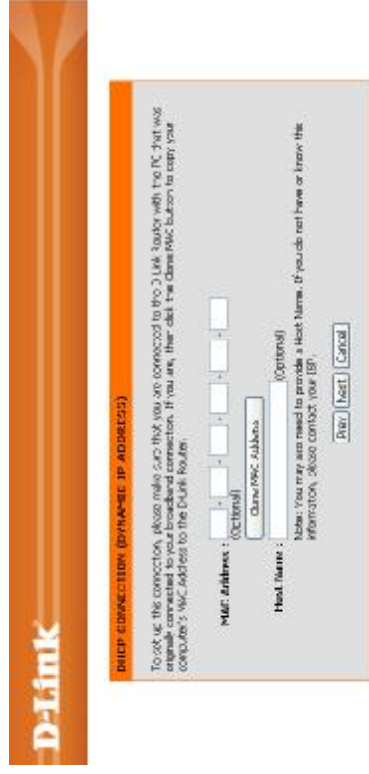
Select your time zone from the drop-down menu and then click **Next** to continue.



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



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



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

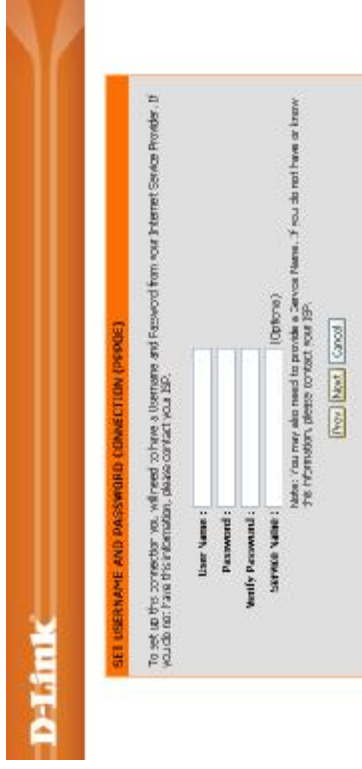


If you selected Username/Password Connection (PPPoE), enter your PPPoE username and password in the appropriate fields.

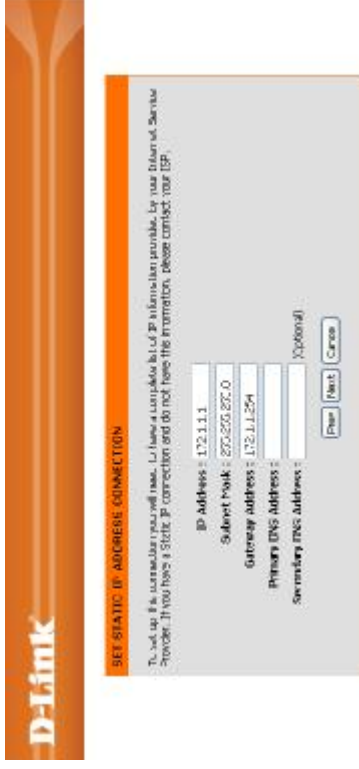
Confirm the Password in the Confirm Password Field.

If your ISP requires you to enter a Service Name enter this in the Service Name field.

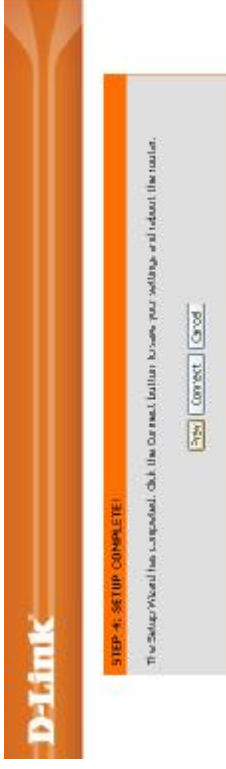
Click **Next** to continue.



If you selected Static IP Address Connection, 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.



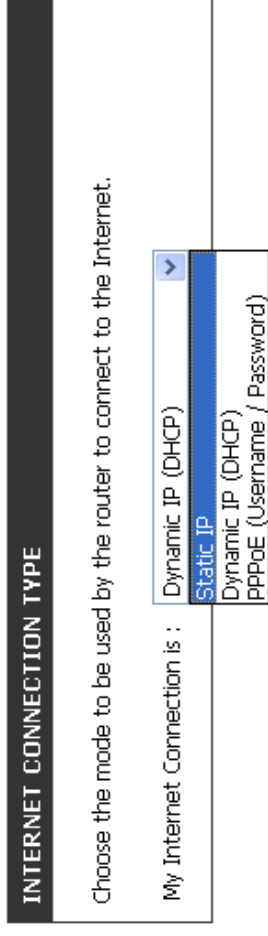
## Manual Internet Connection Setup

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

Choose the connection type from the **My Internet Connection** is drop-down menu.

The following options are available:

- Static IP
- Dynamic IP (DHCP)
- PPPoE (Username /Password)



## Static IP (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:** 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.

The screenshot shows the D-Link DIR-280 router's configuration interface. The main navigation tabs are SETUP, ADVANCED, TOOLS, and STATUS. The current page is 'Internet Setup' under 'LAN Setup'. The 'INTERNET CONNECTION' section provides instructions and a 'Save Settings' button. The 'INTERNET CONNECTION TYPE' dropdown is set to 'Static IP'. The 'STATIC IP ADDRESS INTERNET CONNECTION TYPE' section contains the following fields:

- IP Address: 172.1.1.1 (assigned by your ISP)
- Subnet Mask: 255.255.255.0
- ISP Gateway Address: 172.1.1.254
- MAC Address: (optional) Clone MAC Address
- Primary DNS Address: (optional)
- Secondary DNS Address: (optional)
- MTU: 1500 (200-1500)

Buttons for 'Save Settings' and 'Don't Save Settings' are located at the bottom of the form.

## Dynamic IP (DHCP)

Select Dynamic IP (DHCP) from the My Internet Connection is drop-down menu if all WAN IP information is obtained from your ISP.

**Dynamic IP:** Choose Dynamic IP Address 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. The default host name is the device name of the Router and may be changed.

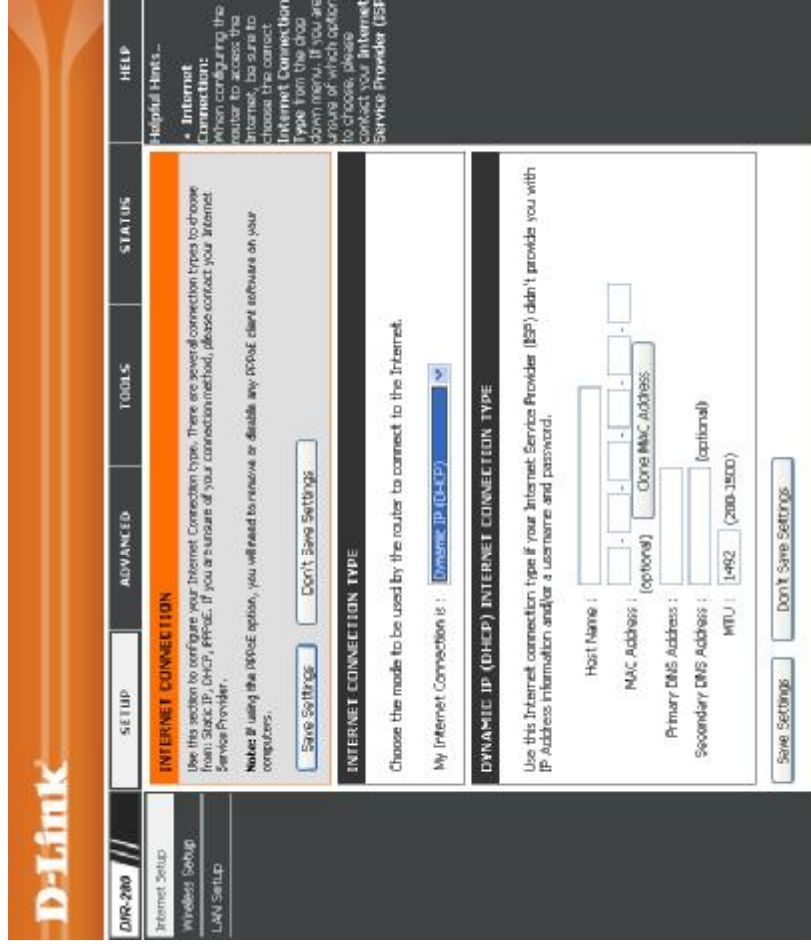
**MAC Address:** The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

**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 DNS Address:** Enter the Primary DNS (Domain Name Server) server IP address assigned by your ISP.

**Secondary DNS Address:** Enter the Secondary DNS IP address. (This is optional).

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



## PPPoE (Username / Password)

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.

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

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

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

**MAC Address:** If your ISP requires you to use your PCs MAC address to connect to the WAN service, type in the MAC address in the MAC address text boxes. Click the **Clone MAC Address** button to clone the MAC address of the PC you are connecting to the Router from.

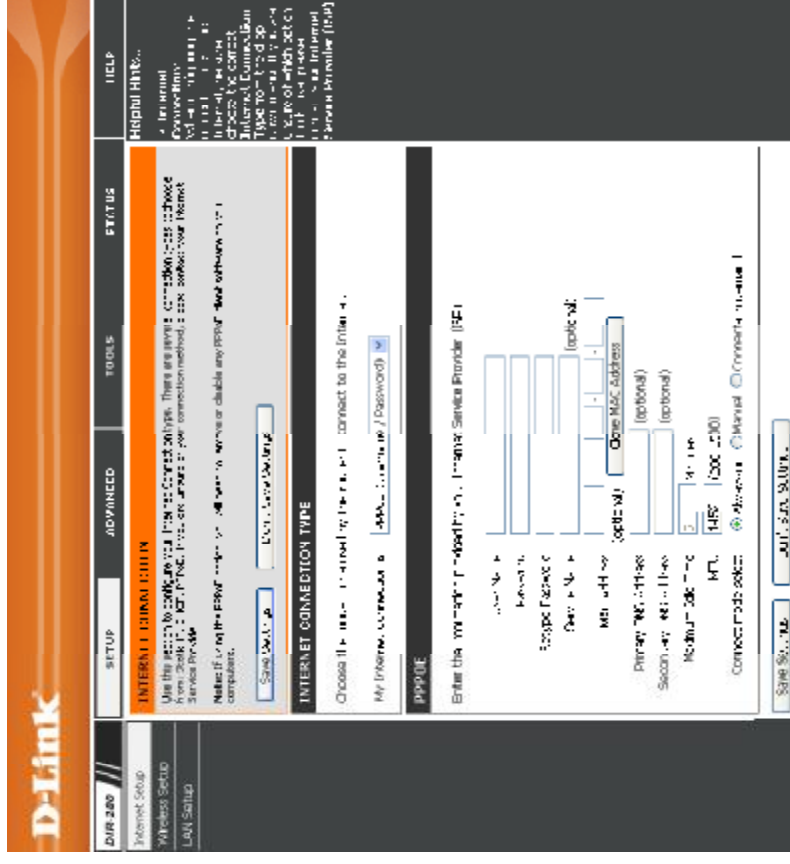
**Primary DNS Address:** Enter the Primary DNS Server Address.

**Secondary DNS Address:** Enter the Secondary DNS Server Address.

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

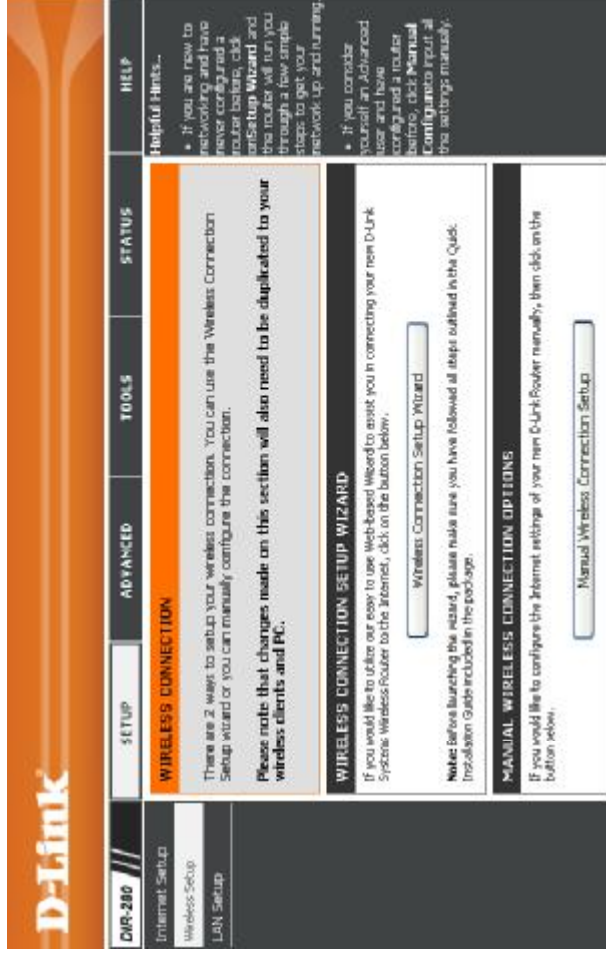
**MTU:** Maximum Transmission Unit - You may need to change the MTU for optimal performance with your specific ISP.

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



# Wireless Setup

Wireless settings for the router may be configured manually or by using the 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 the **Wireless Connection Setup Wizard** button to start the wizard. The following screen appears summarizing the steps required to setup the wireless connection. Click **Next** to continue.





Enter a Wireless Network Name in the textbox, which is also known as the SSID.

Use the radio buttons to select the desired method to assign a network key. The two options are **Automatically assign a network key** and **Manually assign a network key**. Click the checkbox if you want to use WPA encryption instead of WEP, if you want to use a stronger encryption method.

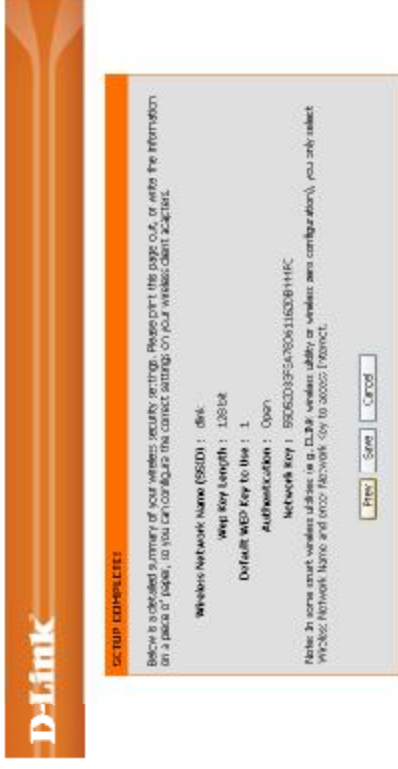


If manually assigning a network key, enter a Network Key in the textbox and then click **Next** to continue.





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.





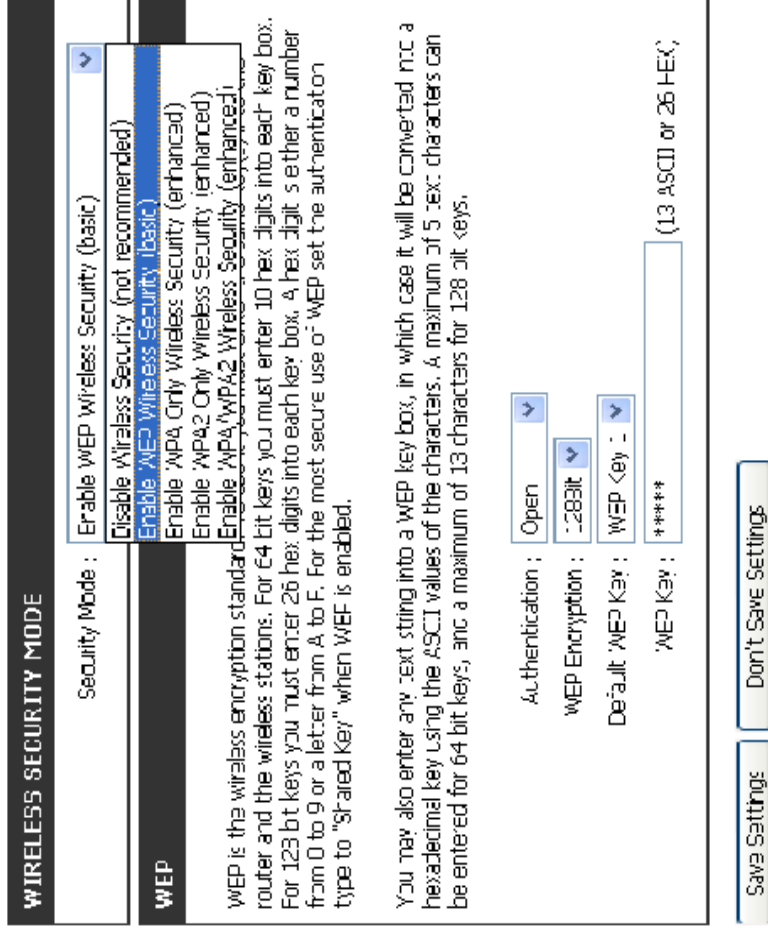
**Security Mode (WEP):**

1. To enable wireless security on the Router, use the dropdown 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 dropdown menu next to **WEP Encryption**.
4. Next to **Default Key Type**, select *WEP Key 1* and enter a WEP key that you want to 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.



**Security Mode (WPA, WPA2, WPA/WPA2):**

1. To enable WPA, WPA2, or WPA/WPA2, select either *Enable WPA Only Wireless Security (enhanced)*, *Enable WPA2 Only Wireless Security (enhanced)*, or *Enable WPA/WPA2 Wireless Security (enhanced)*.

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

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, or 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.

**WIRELESS SECURITY MODE**

Security Mode : [Enable WPA Only Wireless Security \(enhanced\)](#)

---

**WPA ONLY**

WPA Only requires stations to use high grade encryption and authentication.

Cipher Type :

PSK / EAP :

Network Key :

(8~63 ASCII or 64 HEX)

**WIRELESS SECURITY MODE**

Security Mode : [Enable WPA2 Only Wireless Security \(enhanced\)](#)

---

**WPA2 ONLY**

WPA2 Only requires stations to use high grade encryption and authentication.

Cipher Type :

PSK / EAP :

Network Key :

(8~63 ASCII or 64 HEX)

**WIRELESS SECURITY MODE**

Security Mode : [Enable WPA/WPA2 Wireless Security \(enhanced\)](#)

---

**WPA/WPA2**

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

Cipher Type :

PSK / EAP :

Network Key :

(8~63 ASCII or 64 HEX)

# 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.

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

**Enable DNS Relay:** Tick 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.





# Port Forwarding

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

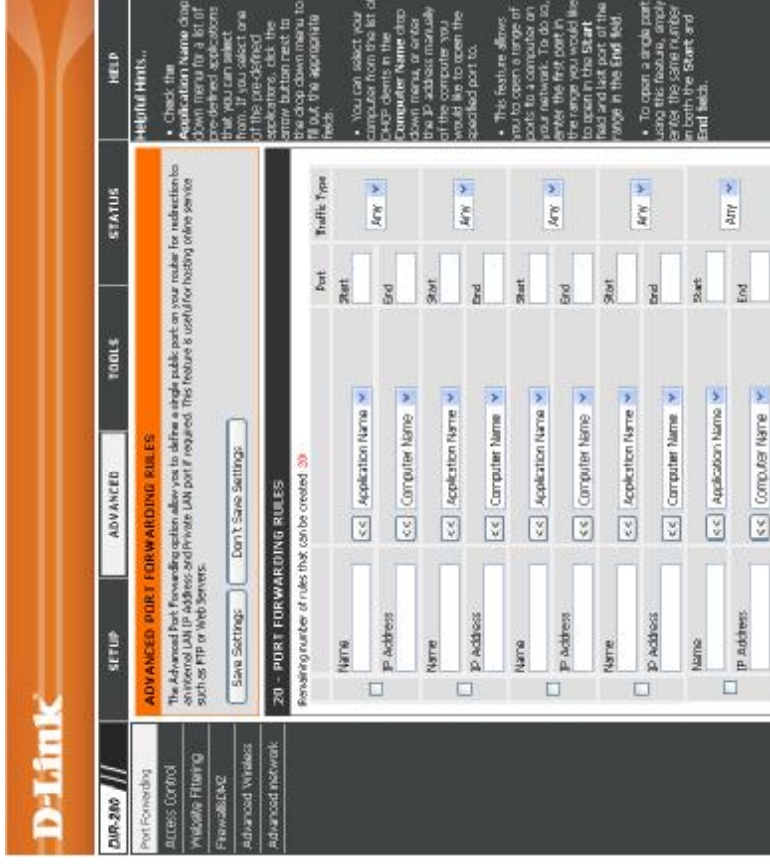
**Rule:** Check the box to enabled the rule.

**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*





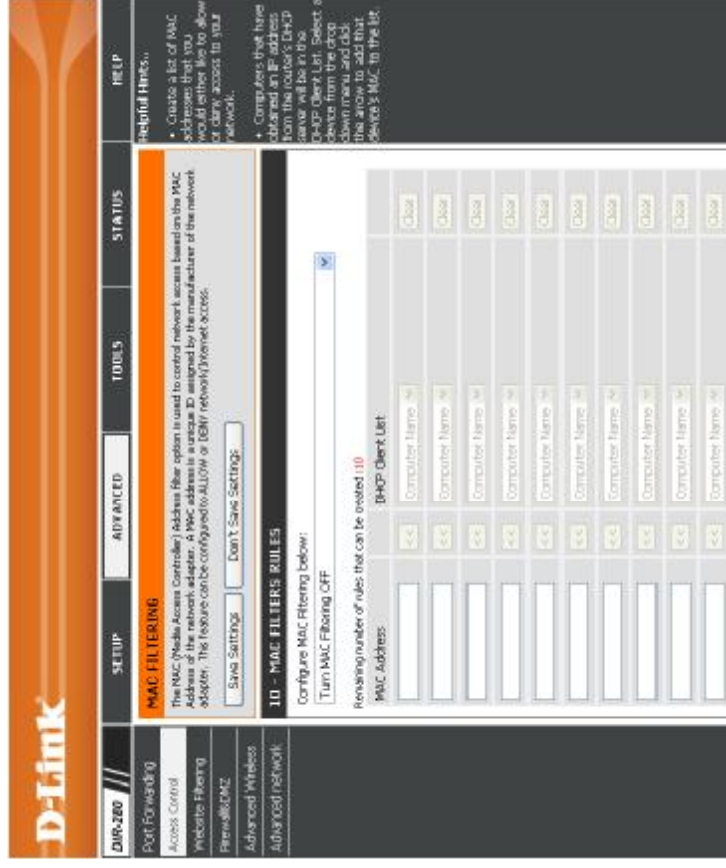
# Access Control

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



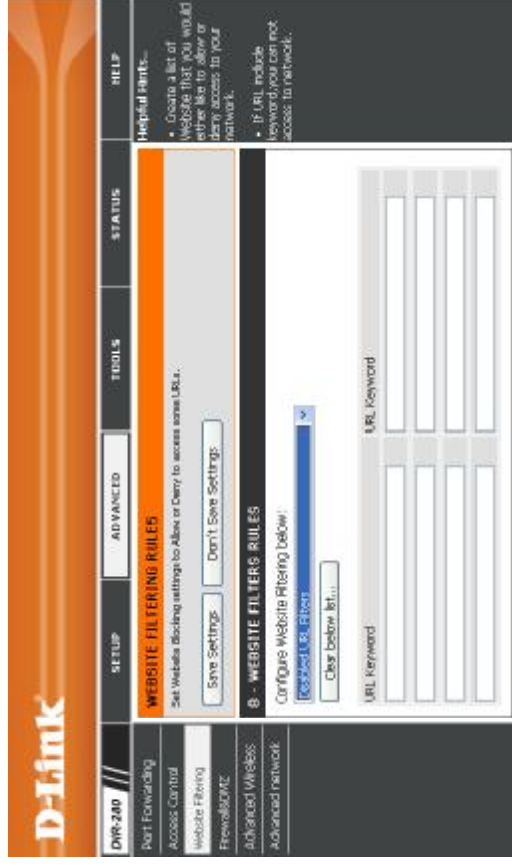


# Website Filtering

Website Filtering is used to deny LAN computers from accessing specific web sites by the URL or domain. A URL is a specially formatted text string that defines a location on the Internet. If any part of the URL contains the blocked word, the site will not be accessible and the web page will not display. To use this feature carry out the following:

- Select *Enabled URL Filters to deny user access list URL* from the drop-down menu
- Enter the text string to be blocked and click **Save Settings**.
- The text to be blocked will appear in the list.

**URL Keyword:** Enter the keywords or URLs that you want to block.  
Any URL with the keyword in it will be blocked.



# 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-280, then you can set the client up for unrestricted Internet access. This 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 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.

**Enable PPTP Passthrough:** Tick this box to enable PPTP Passthrough.

**Enable L2TP Passthrough:** Tick this box to enable L2TP Passthrough.

**Enable IPsec Passthrough:** Tick this box to enable IPsec Passthrough.

**Enabled DDOS:** Tick this box to enable DDOS.



## 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.

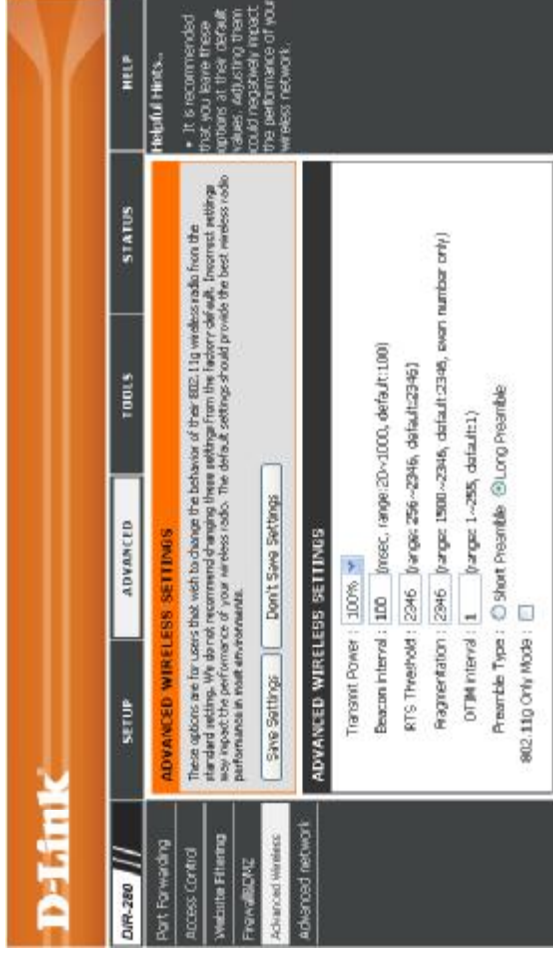
**Fragmentation:** The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the *2346* byte setting will be fragmented before transmission. *2346* is the default setting.

**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.

### 802.11g Only

**Mode:** Tick this checkbox to restrict access to 802.11g devices only.



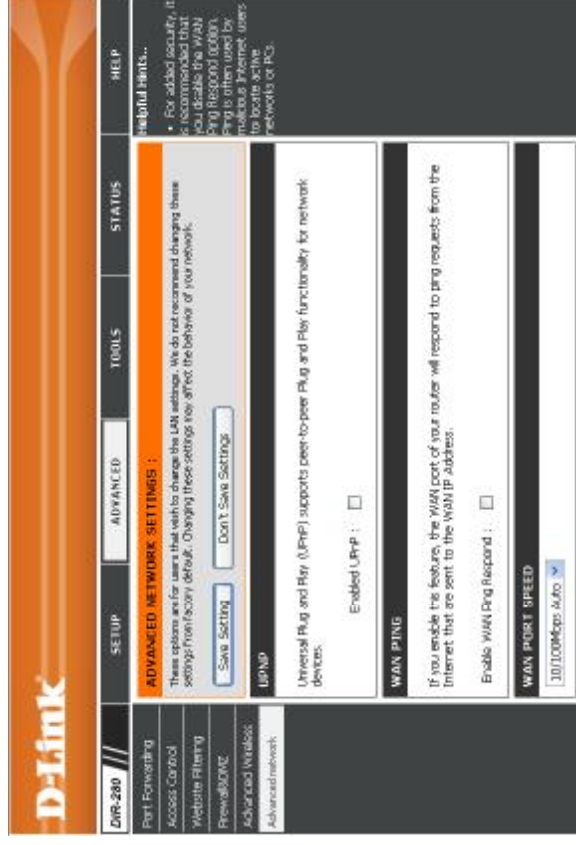
# Advanced Network

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** Unchecking the box will not allow the DIR-280 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** Use the drop-down menu to set the port speed of the WAN port. The available speeds are *10Mbps*, *100Mbps* or *10/100Mbps Auto*. Some older cable or DSL modems may require you to set the port speed to 10Mbps.



# Device Administration

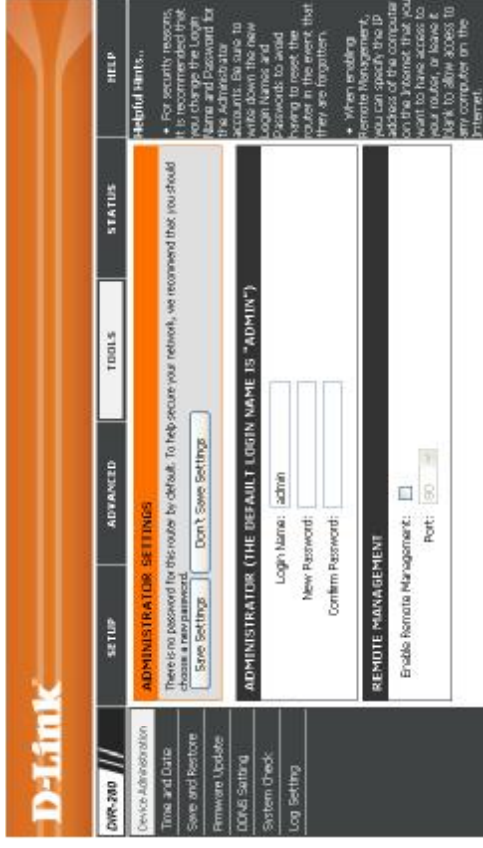
This window will allow you to change the Administrator password. This window also allows you to enable Remote Management.

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

**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-280 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.

**Port:** The port number used to access the DIR-280. For example: `http://x.x.x.x:8080`, where `xxxx` is the WAN IP address of the DIR-280 and `8080` is the port used for the Web-Management interface.



# 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 NTP:** NTP is an abbreviation for Network Time Protocol.

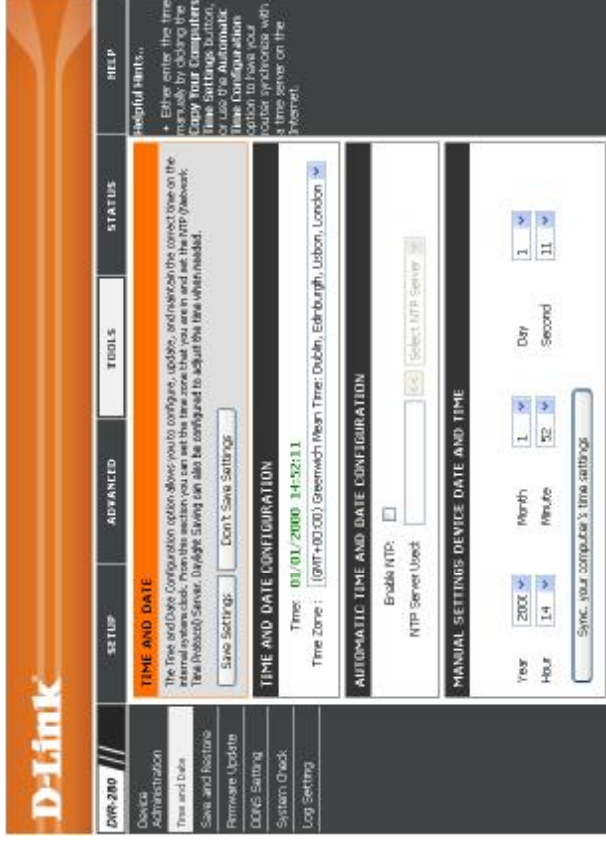
**NTP:** NTP synchronizes computer clock times in a network of computers. Tick this box to use an NTP server. This feature will only connect to an NTP server on the Internet, not a local server.

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

**Used:**

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

**Sync. your computer's time settings:** You can use this button to replace the time with the time setting of your computer.





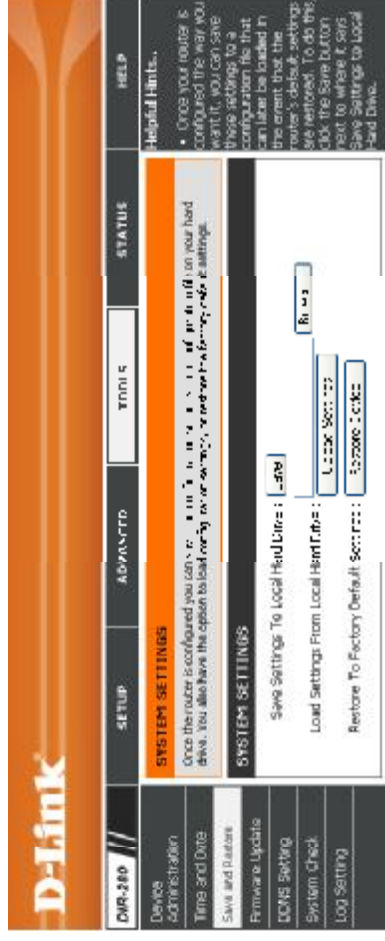
# Save and Restore

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 saved 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.



# 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 **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.

**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.

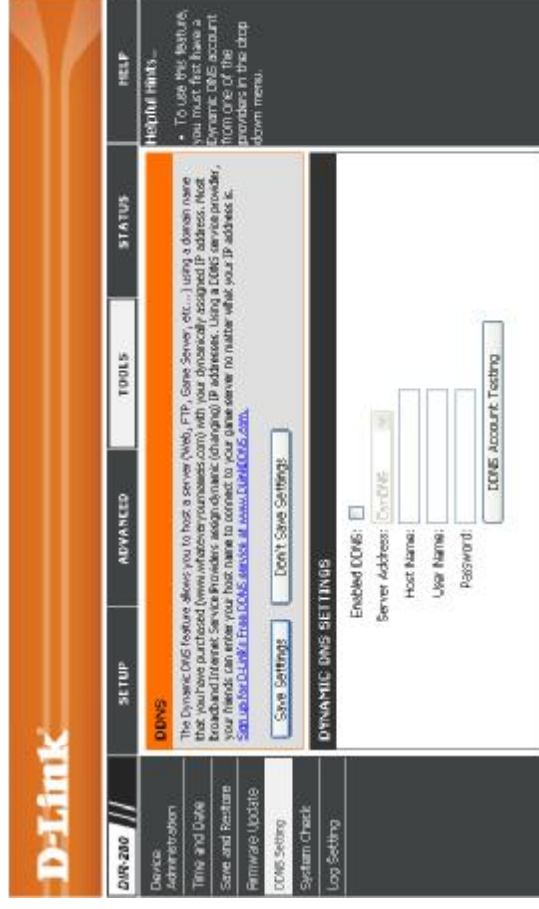
**Server Address:** Select one of the DDNS registration organizations from those listed in the pull-down menu. Available servers include *dlinkddns.com(Free)*, *DynDns.org(Custom)*, *Dyn.Dns.org(free)*, and *Dyn.Dns.org(Static)*.

**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.

**DDNS Account Testing:** Click this button to test the DDNS function.

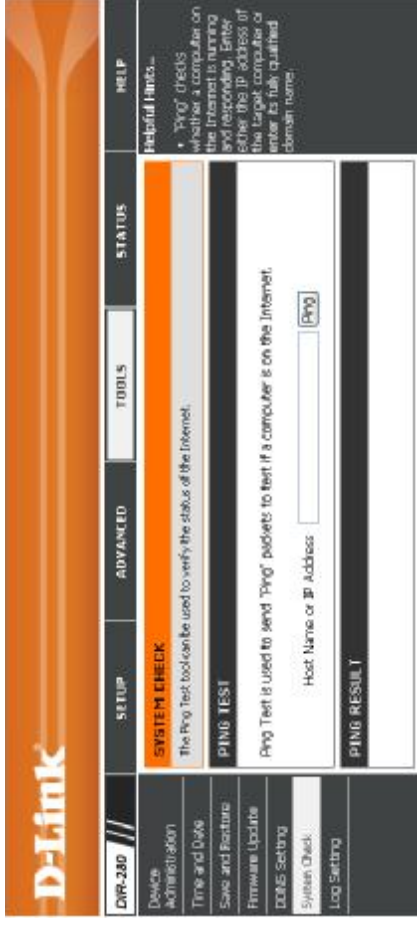


# System Check

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.

**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 Result:** The results of the Ping attempts will be displayed in this section.



# 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 or send the log to an e-mail address. 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.

**Log Type:** Tick the checkbox(es) for the type of log information requested. The available options are *All Log*, *Wireless* and *DoS*.

**Email Address:** Input the email address where you want the e-mail to be sent to.

**Email Subject:** Input the email subject

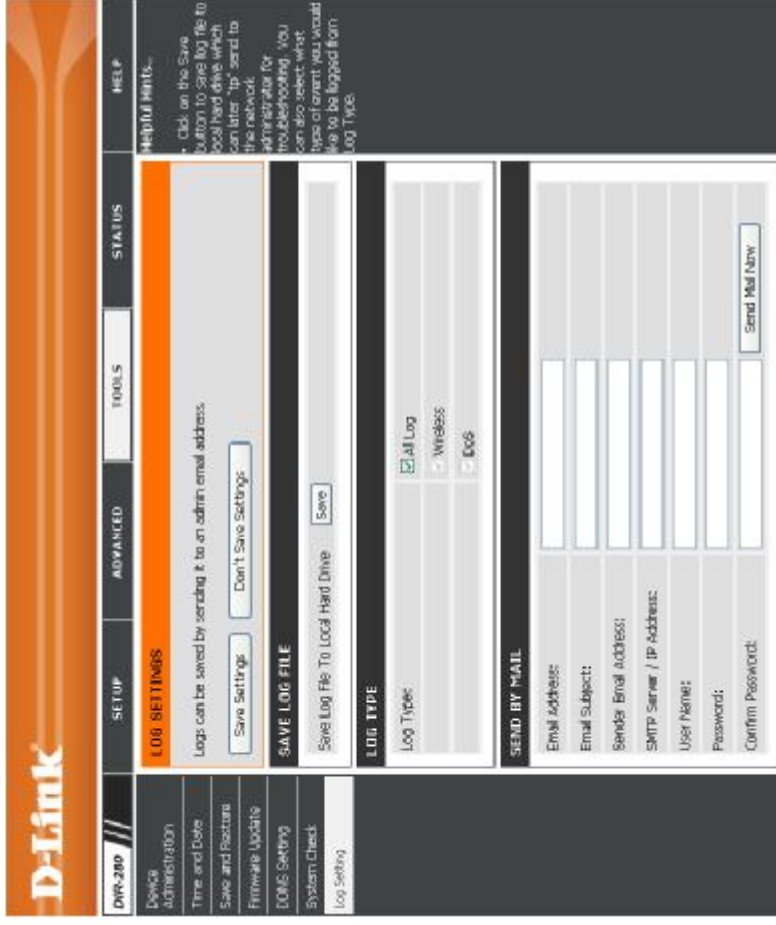
**Sender Email Address:** This email address will appear as the sender when you receive a log file via e-mail.

**SMTP Server/IP Address:** Enter the SMTP server address for sending the emails.

**Username:** Enter the account for sending email.

**Password:** Enter the password associated with the account.

**Confirm Password:** Re-enter the password associated with the account.



## Device Info

This window displays the current information for the DIR-280. It will display the LAN, Internet, 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** Displays the wireless MAC address and your **802.11G:** 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.

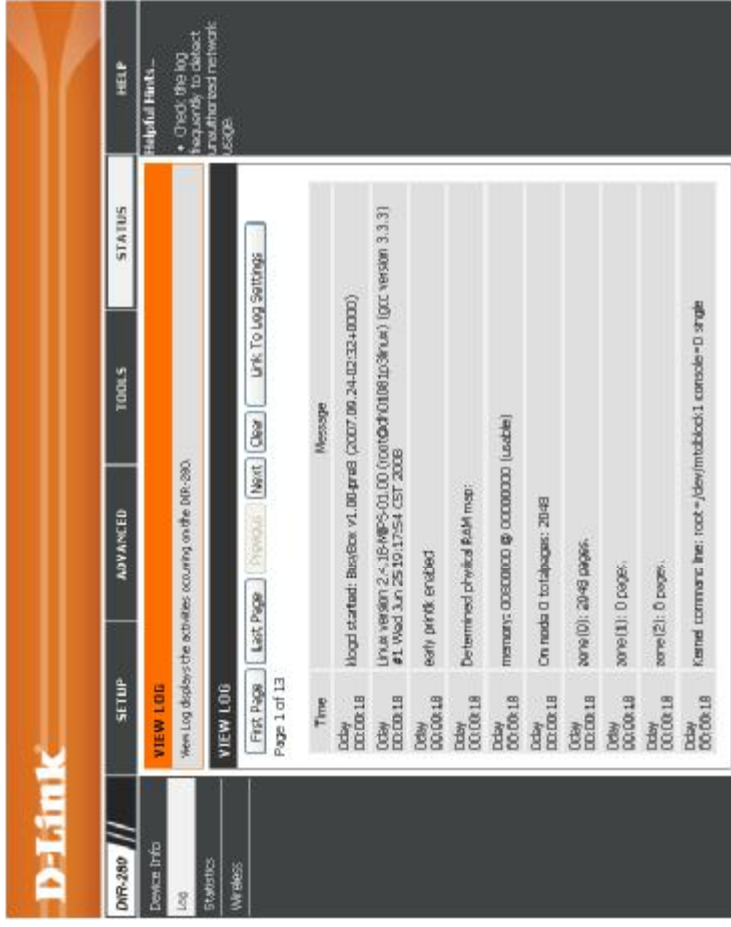
**Last Page:** View the last page of the log.

**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.



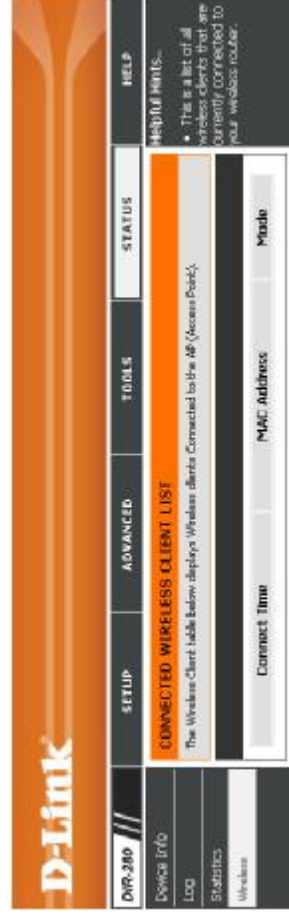
# Statistics

The window below displays the Traffic Statistics. Here you can view the amount of packets that pass through the DIR-280 on both the WAN and the LAN ports. The traffic counter will reset if the device is rebooted.



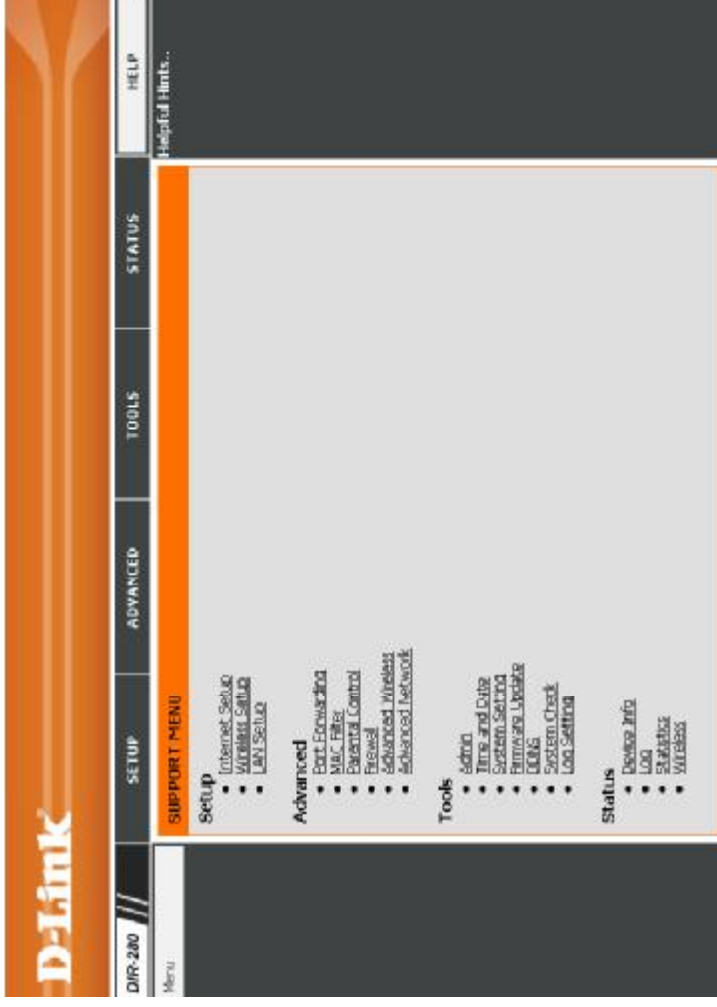
# Wireless

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.



# Help

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





# Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-280 offers the following types of security:

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

## What is WEP?

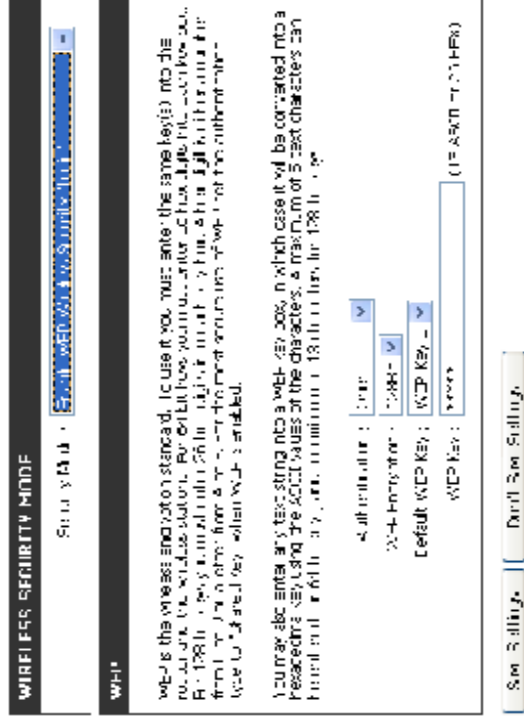
WEP stands for Wired Equivalent Privacy. It is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. WEP provides security by encrypting data over your wireless network so that it is protected as it is transmitted from one wireless device to another.

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

# Configure WEP

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

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Setup** on the left side.
2. Next to **Security Mode**, select *Enable WEP Wireless Security (basic)*.
3. Next to **Authentication**, select either *Shared Key* or *Open*. *Shared Key* is recommended as it provides greater security when WEP is enabled.
4. Select either *64Bit* or *128Bit* encryption from the drop-down menu next to **WEP Encryption**.
5. 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.
6. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WEP on your adapter and enter the same WEP key as you did on the router.



## 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 haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard (AES) instead of TKIP.
- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

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

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