D-Link®
Building Networks for People

Manual

Version 1.0

DI-624M

Super G™ Smart Antenna Wireless Router

Table of Contents

Package Contents

- D-Link DI-624M Super G Smart Antenna Wireless Router
- CAT-5 Ethernet Cable (All the DI-624M's Ethernet ports are Auto-MDIX)
- Power Adapter (5.0V, 2.5A)
- Vertical Stands
- Mounting Kit
- CD-ROM with Software and Manual
- Quick Installation Guide

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

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

Minimum System Requirements

- Ethernet-Based Cable or DSL Modem
- Computers with Windows, Macintosh, or Linux-based operating systems with an installed Ethernet adapter and CD-ROM Drive
- Internet Explorer Version 6.0 or Netscape Navigator Version 7.0 and Above

Introduction

The D-Link DI-624M Super G Smart Antenna Wireless Router is an 802.11g high-performance, wireless router that supports high-speed wireless networking at home, at work or in public places.

Unlike most routers, the DI-624M provides data transfers at up to 108 Mbps (compared to the standard 54 Mbps) when used with other D-Link Super G Smart Antenna products. The 802.11g standard is backwards compatible with 802.11b products. This means that you do not need to change your entire network to maintain connectivity. You may sacrifice some of 802.11g's speed when you mix 802.11b and 802.11g devices, but you will not lose the ability to communicate when you incorporate the 802.11g standard into your 802.11b network. You may choose to slowly change your network by gradually replacing the 802.11b devices with 802.11g devices .

In addition to offering faster data transfer speeds when used with other 802.11g products, the DI-624M has the newest, strongest, most advanced security features available today. When used with other 802.11g WPA (WiFi Protected Access) compatible products in a network, the security features include:

WPA: **Wi-Fi Protected Access** authorizes and identifies users based on a secret key that changes automatically at a regular interval. **WPA** uses **TKIP** (**Temporal Key Integrity Protocol**) to change the temporal key every 10,000 packets (a packet is a kind of message transmitted over a network.) This insures much greater security than the standard WEP security. (By contrast, the older WEP encryption required the keys to be changed manually.)

Features and Benefits

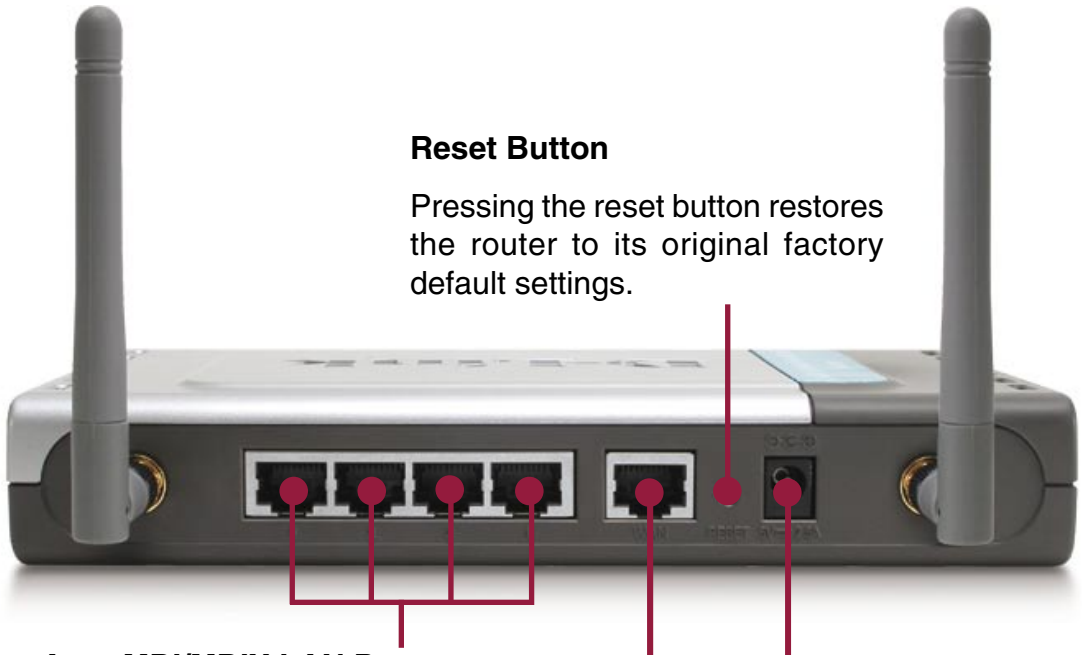
- Fully compatible with the 802.11g standard to provide a wireless data rate of up to 108Mbps
- Backwards compatible with the 802.11b standard to provide a wireless data rate of up to 11Mbps
- **WPA** (Wi Fi Protected Access) authorizes and identifies users based on a secret key that changes automatically at a regular interval, for example:

  Pre Shared Key mode means that the home user, without a RADIUS server, will obtain a new security key every time the he or she connects to the network, vastly improving the safety of communications on the network
- Utilizes **OFDM** technology (**O**rthogonal **F**requency **D**ivision **M**ultiplexing)
- User-friendly configuration and diagnostic utilities
- Operates in the 2.4GHz frequency range
- Connects multiple computers to a Broadband (Cable or DSL) modem to share the Internet connection
- Advanced Firewall features: Supports NAT with VPN pass-through, providing added security, MAC Filtering, IP Filtering, URL Filtering, Domain Blocking, and Scheduling
- DHCP server enables all networked computers to automatically receive IP addresses
- Web-based interface for Managing and Configuring
- Access Control to manage users on the network
- Supports special applications that require multiple connections
- Equipped with 4 10/100 Ethernet ports, 1 WAN port, Auto MDI/MDIX

Hardware Overview

Connections

All Ethernet Ports (WAN and LAN) are auto MDI/MDIX, meaning you can use either a straight-through or a crossover Ethernet cable.



Reset Button

Pressing the reset button restores the router to its original factory default settings.

Auto MDI/MDIX LAN Ports

These ports automatically sense the cable type when connecting to Ethernet-enabled computers.

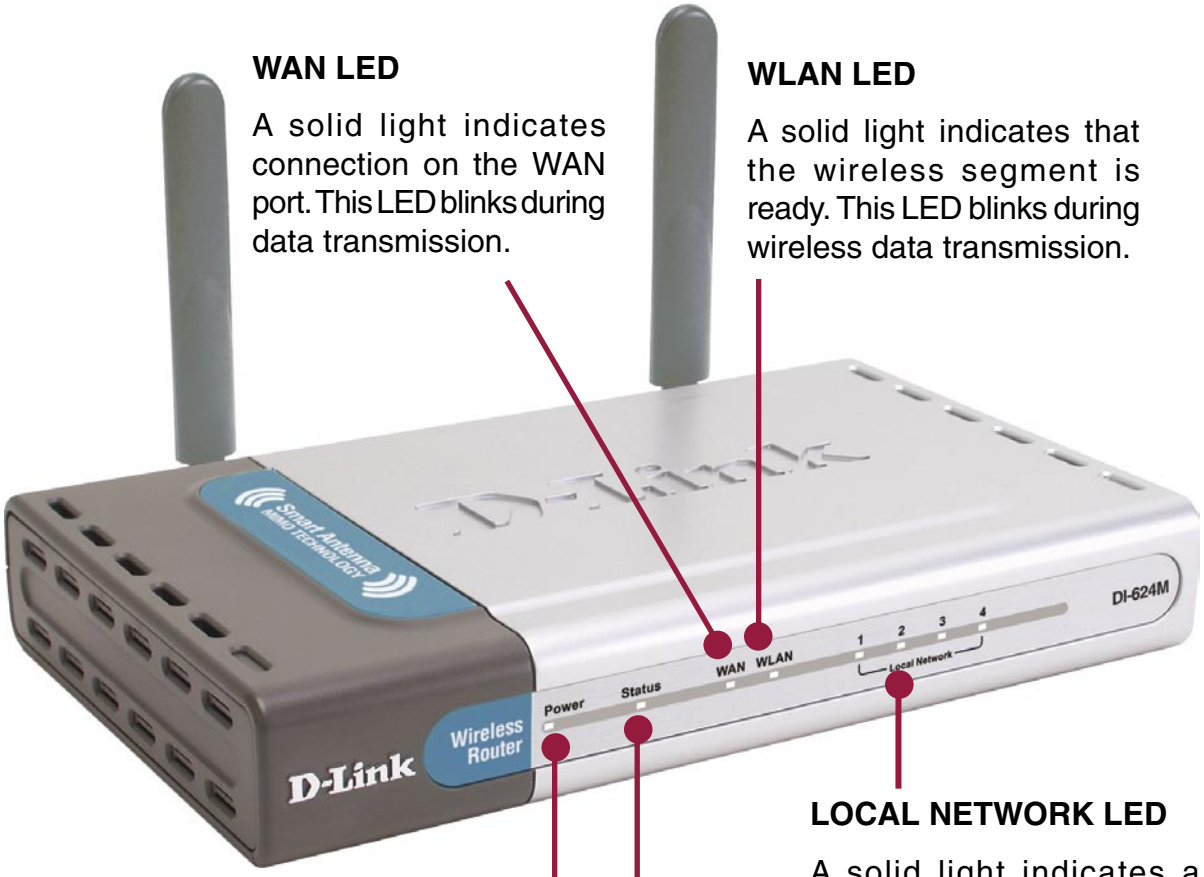
DC Power Connector

The DC power input connector is labeled **DC 5V** with a single jack socket to supply power to the DI-624M.

Auto MDI/MDIX WAN Port

This is the connection for the Ethernet cable to the Cable or DSL modem

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

A blinking light indicates that the DI-624M is ready.

LOCAL NETWORK LED

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

Wireless Basics

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

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

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

People use wireless LAN technology for many different purposes:

Mobility - Productivity increases when people have access to data in any location within the operating range of the WLAN. Management decisions based on real-time information can significantly improve worker efficiency.

Low Implementation Costs – WLANs are easy to set up, manage, change and relocate. Networks that frequently change can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

Installation and Network Expansion - Installing a WLAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings. Wireless technology allows the network to go where wires cannot go - even outside the home or office.

Scalability – WLANs can be configured in a variety of topologies to meet the needs of specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to larger infrastructure networks to accommodate hundreds or thousands of users, depending on the number of wireless devices deployed.

Inexpensive Solution - Wireless network devices are as competitively priced as conventional Ethernet network devices.

Standards-Based Technology

The DI-624M Super G Smart Antenna Wireless Router utilizes the **802.11g** standard.

The IEEE **802.11g** standard is an extension of the 802.11b standard. It increases the data rate up to 54Mbps within the 2.4GHz band, utilizing **OFDM technology.**

This means that in most environments, within the specified range of this device, you will be able to transfer large files quickly or even watch a movie in MPEG format over your network without noticeable delays. This technology works by transmitting high-speed digital data over a radio wave utilizing **OFDM** (**O**rthogonal **F**requency **D**ivision **M**ultiplexing) technology. **OFDM** works by splitting the radio signal into multiple smaller sub-signals that are then transmitted simultaneously at different frequencies to the receiver. **OFDM** reduces the amount of **crosstalk** (interference) in signal transmissions.

The DI-624M is backwards compatible with 802.11b devices. This means that if you have an existing 802.11b network, the devices in that network will be compatible with

Installation Considerations

The D-Link DI-624MSuper G Smart Antenna Wireless Router lets you access your network, using a wireless connection, from virtually anywhere within its operating range. 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 DI-624M and other network devices to a minimum - each wall or ceiling can reduce your D-Link wireless product'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 can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.

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

Getting Started

Please remember that **D-Link Super G Smart Antenna** *wireless devices are pre-configured to connect together, right out of the box, with their default settings.*

For a typical wireless setup at home, please do the following:

You will need broadband Internet access (a Cable or DSL-subscriber line into your home or office)

Consult with your Cable or DSL provider for proper installation of the modem.

Connect the Cable or DSL modem to the DI-624M Wireless Broadband Router (*see the printed Quick Installation Guide included with your router*).

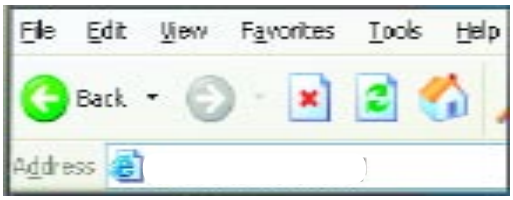
If you are connecting a desktop computer to your network, install the D-Link *Air*Plus *Xtreme G* DWL-G520 wireless PCI adapter into an available PCI slot on your desktop computer. You may also install the DWL-520+, or the DWL-520. (See the printed Quick Installation Guide included with the network adapter.)

Install the D-Link DWL-G650M wireless Cardbus adapter into a laptop computer. (*See the printed Quick Installation Guide included with the DWL-G650M.*)

Install the D-Link DFE-530TX+ adapter into a desktop computer. The four Ethernet LAN ports of the DI-624M are Auto MDI/MDIX and will work with both Straight-Through and Cross-Over cable. (*See the printed Quick Installation Guide included with the DFE-530TX+.*)

Using the Configuration Menu

Whenever you want to configure your DI-624M, you can access the Configuration Menu by opening the Web-browser and typing in the IP Address of the DI-624M. The DI-624M's default IP Address is shown below:



- Open the Web browser.
- Type in the **IP Address** of the Router (http://192.168.0.1).

Note: if you have changed the default IP Address assigned to the DI-624M, make sure to enter the correct IP Address.

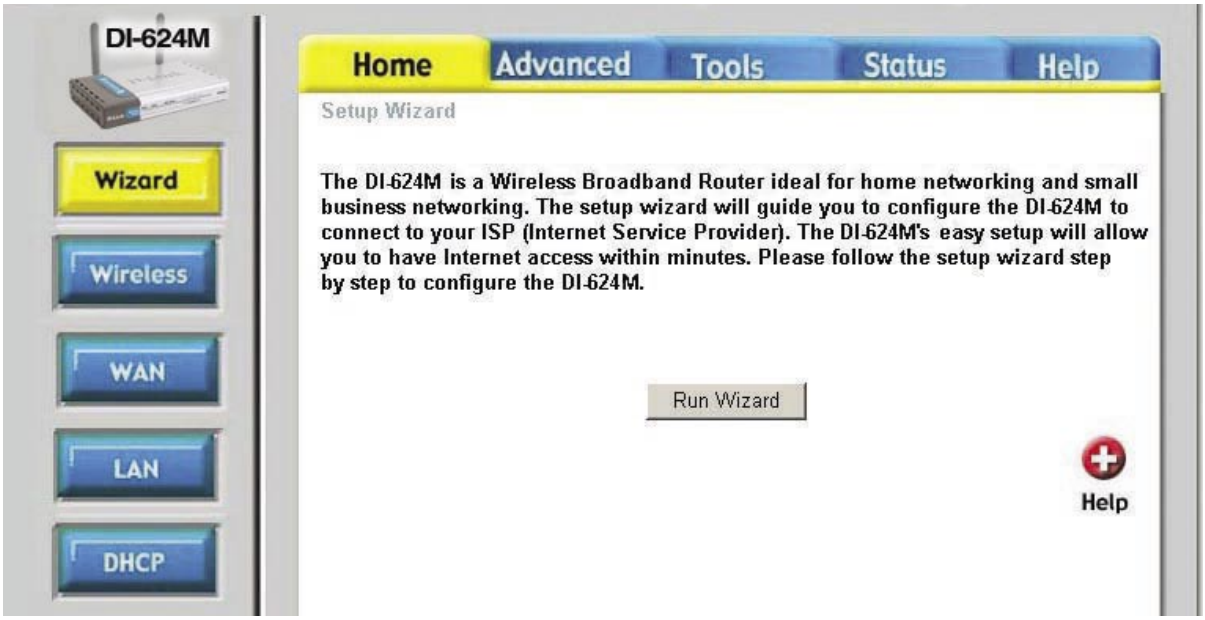
- Type **admin** in the **User Name** field.
- Leave the **Password** blank.
- Click OK.

Home

The Advanced tab provides the following configuration options: Wizard, Wireless, WAN, LAN, and DHCP.

Wizard

The Home>Wizard screen will appear. Please refer to the *Quick Installation Guide* for more information regarding the Setup Wizard.



Home > Wizard

These buttons appear on most of the configuration screens in this section. Please click on the appropriate button at the bottom of each screen after you have made a configuration change.

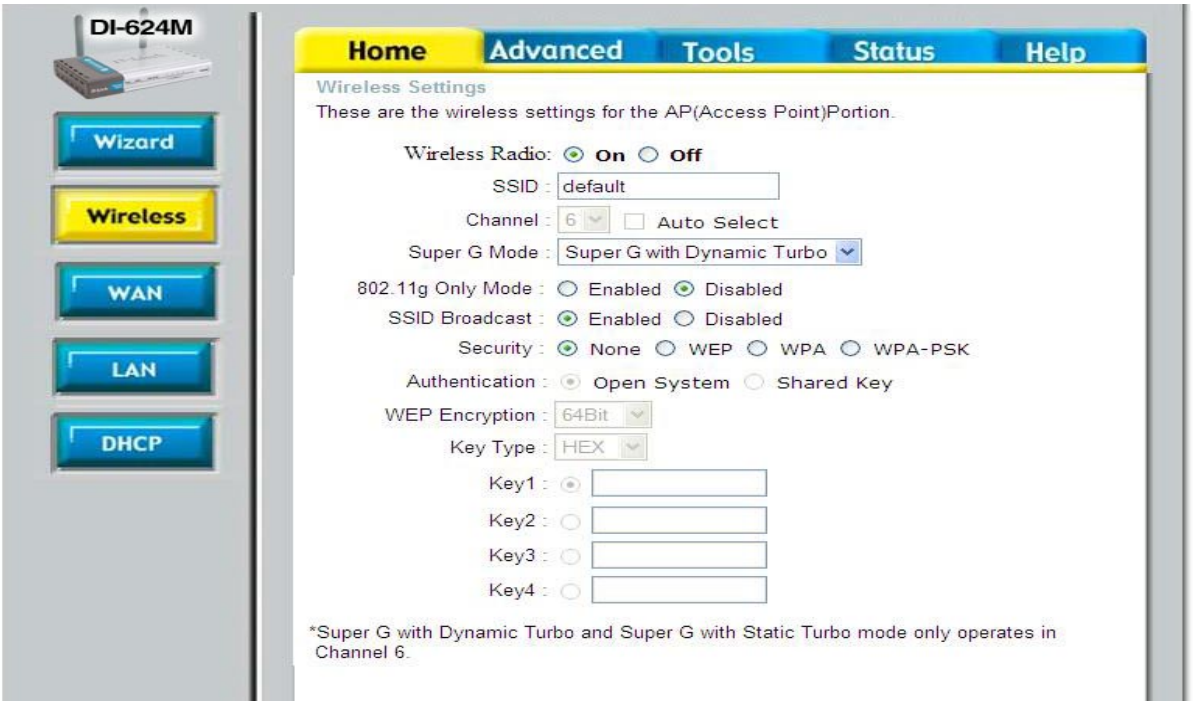
Apply — Clicking **Apply** will save changes made to the page

Cancel — Clicking **Cancel** will clear changes made to the page

Help — Clicking **Help** will bring up helpful information regarding the page

Restart — Clicking **Restart** will restart the router. (Necessary for some changes.)

Wireless



Home > Wireless

SSID: Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **default**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

Channel: **6** is the default channel. All devices on the network must share the same channel. (Note: The wireless adapters will automatically scan and match the wireless setting.)

Super G Mode: Super G is a group of performance enhancement features that increase end user application throughput in an 802.11g network. Super G is backwarsd compatible to standard 802.11g devices. For top performance, all wirelss devices on the network should be Super G capable. Select either Disabled, Super G without Turbo, Super G with Dynamic Turbo, or Super G with Static Turbo.

Disabled: Standard 802.11g support, no enhanced capabilities.

Super G without Turbo:: Capable of Packet Bursting, FastFrames, Compression, and no Turbo mode.

Super G with Static Turbo:: Capable of Packet Bursting, FastFrames, Compression, and Dynamic Turbo. This setting is backwards compatible with non-Turbo (legacy) devices. Dynamic Turbo mode is only enabled when all nodes on the wireless network is Super G with Dynamic Turbo enabled.

Super G with DynamicTurbo:: Capable of Packet Bursting, FastFrames, Compression, and Static Turbo. This setting is not backwards compatible with non-Turbo (legacy) devices. Static turbo mode is always on and is only enabled when all nodes on the wireless network is Super G with Static Turbo enabled.

802.11g Only Mode: Select this mode to restrict your network to only those devices that employ the 802.11g standard. Enabling this mode will ensure that you maintain the highest connectivity rate, unhampered by any connection to an 802.11b device.

SSID Broadcast: Choose **Enabled** to broadcast the SSID across the network. All devices on a network must share the same SSID (Service Set Identifier) to establish communication. Choose **Disabled** if you do not wish to broadcast the SSID over the network.

Security: Select **None**, **WEP**, **WPA**, or **WPA-PSK** encryption.

Authentication: Select **Open System** or **Shared Key** authentication.

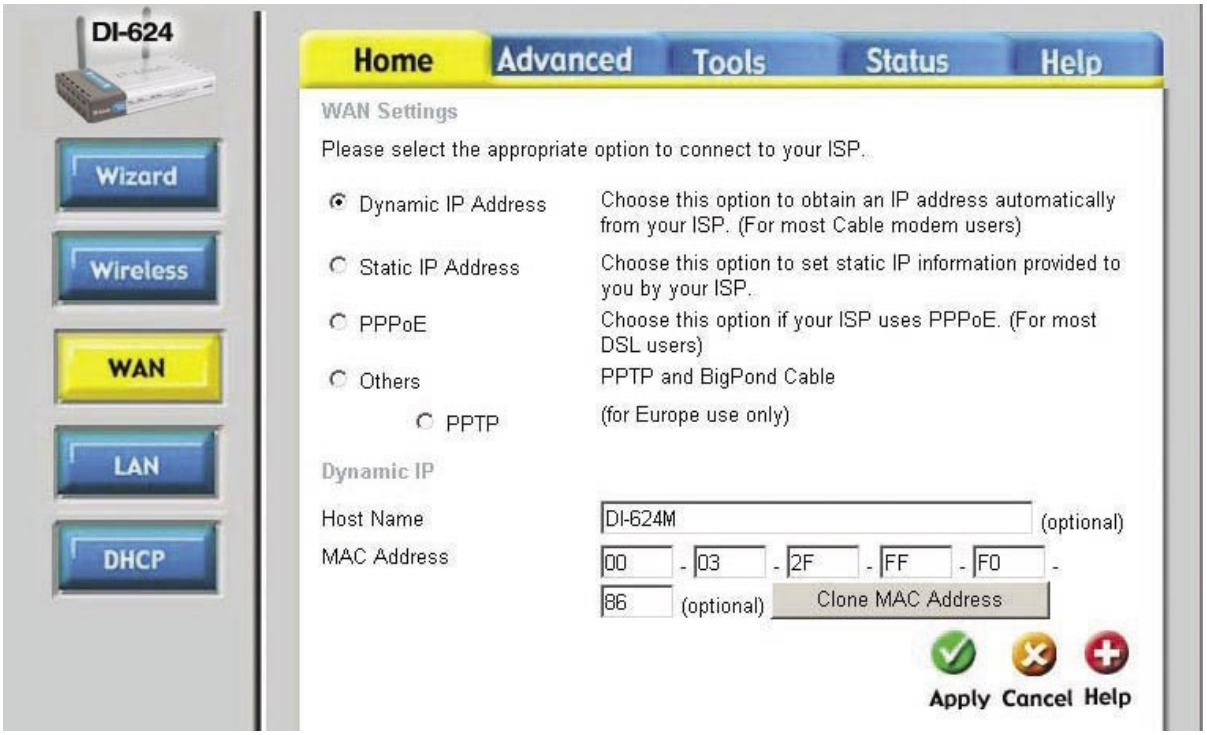
WEP Encryption: Wired Equivalent Privacy (WEP) is a wireless security protocol for Wireless Local Area Networks (WLAN). WEP provides security by encrypting the data that is sent over the WLAN. Select **Enabled** or **Disabled**. **Disabled** is the default setting. (Note: If you enable encryption on the DI-624M make sure to also enable encryption on all the wireless clients or wireless connection will not be established.) Select the level of encryption desired: 64-bit, or 128-bit.

Key Type: Select **HEX** or **ASCII**.

Keys 1-4: Input up to 4 WEP keys; select the one you wish to use.

WAN

Dynamic IP Address



Home > WAN > Dynamic IP Address

Dynamic IP Address: 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.

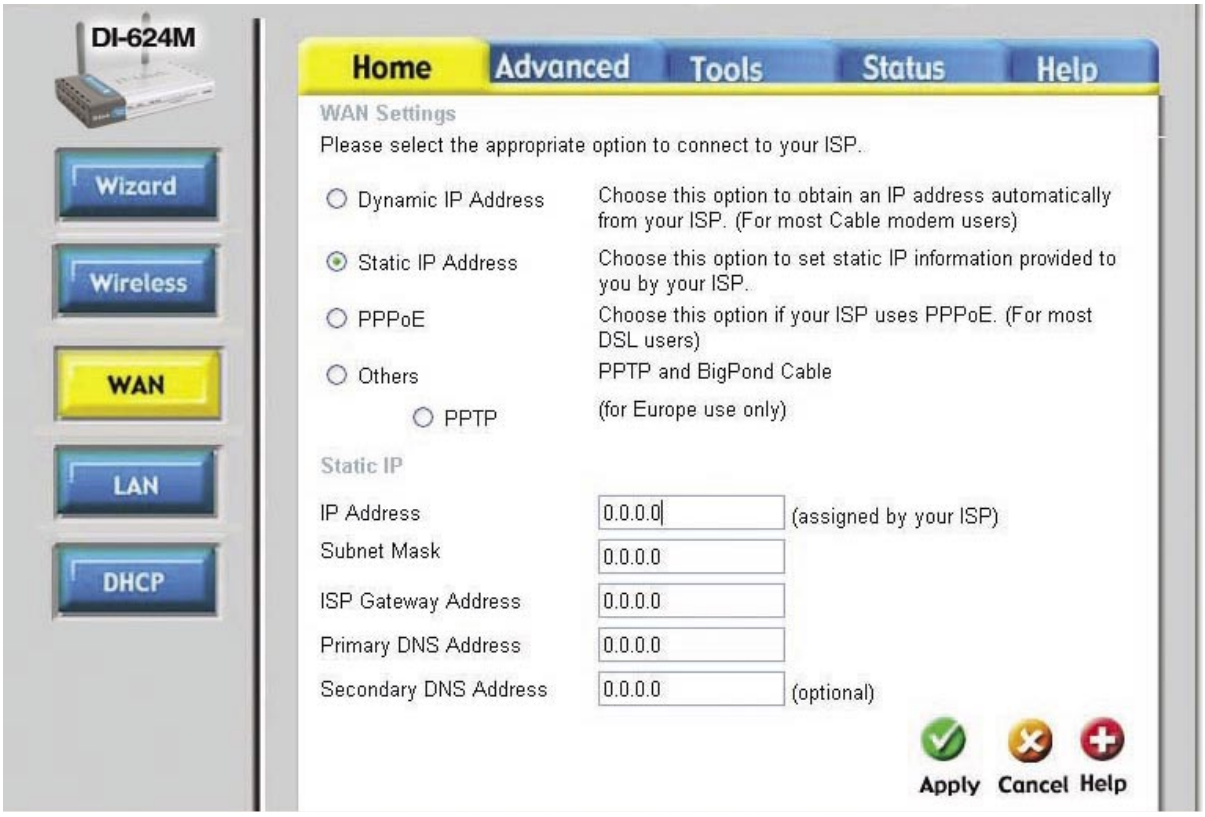
MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

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/Secondary DNS Address: Enter a DNS Address if you do not wish to use the one provided by your ISP.

MTU: Enter an MTU value only if required by your ISP. Otherwise, leave it a the default setting.

Static IP Address

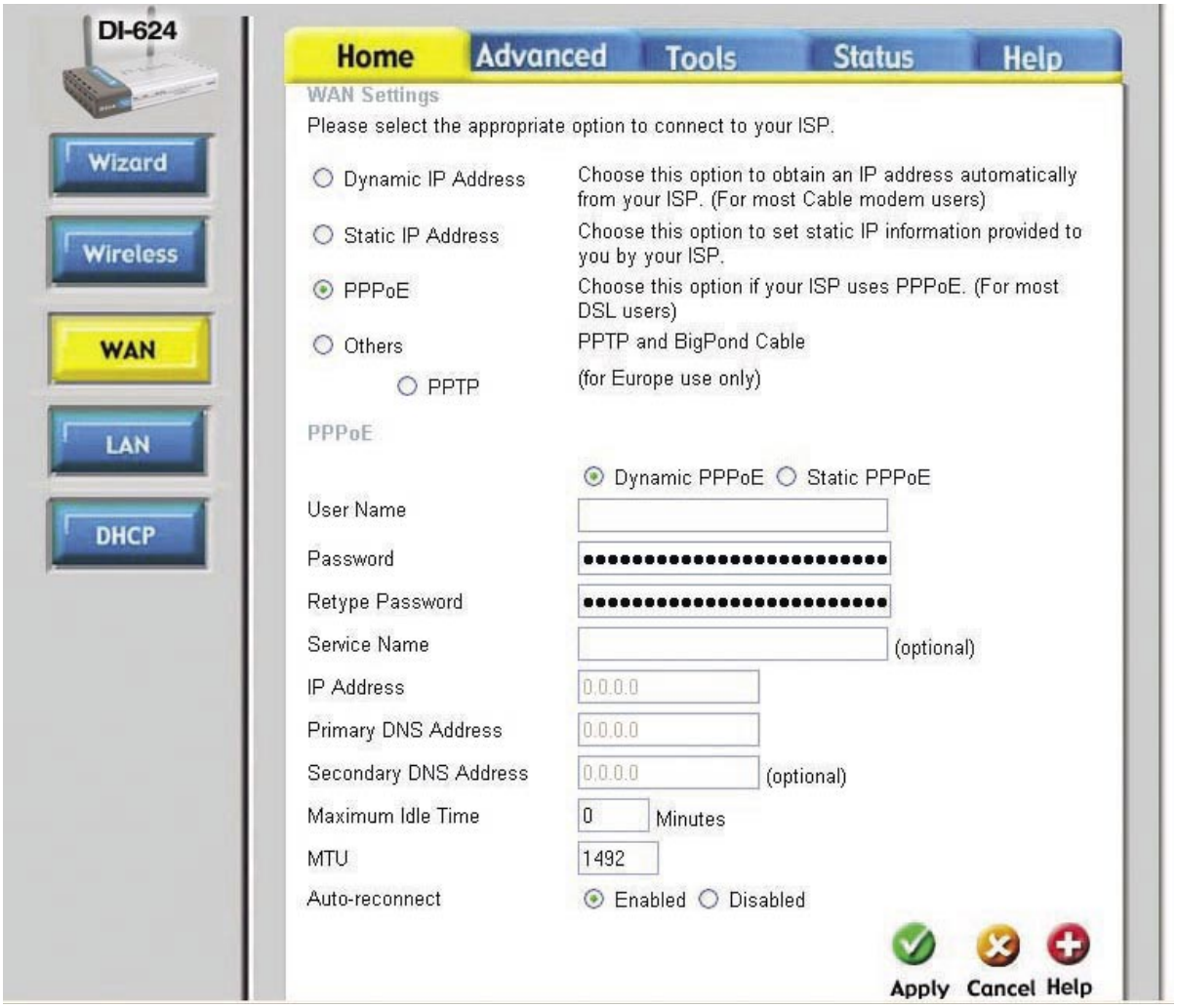


Home > WAN > Static IP Address

Choose 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:	Input the public IP Address provided by your ISP.
Subnet Mask:	Input your Subnet mask. (All devices in the network must have the same subnet mask.)
ISP Gateway Address:	Input the public IP address of the ISP to which you are connecting.
Primary DNS Address:	Input the primary DNS (Domain Name Server) IP address provided by your ISP.
Secondary DNS Address:	This is optional.
MTU:	Enter an MTU value only if required by your ISP. Otherwise, leave it at the default setting.

PPPoE



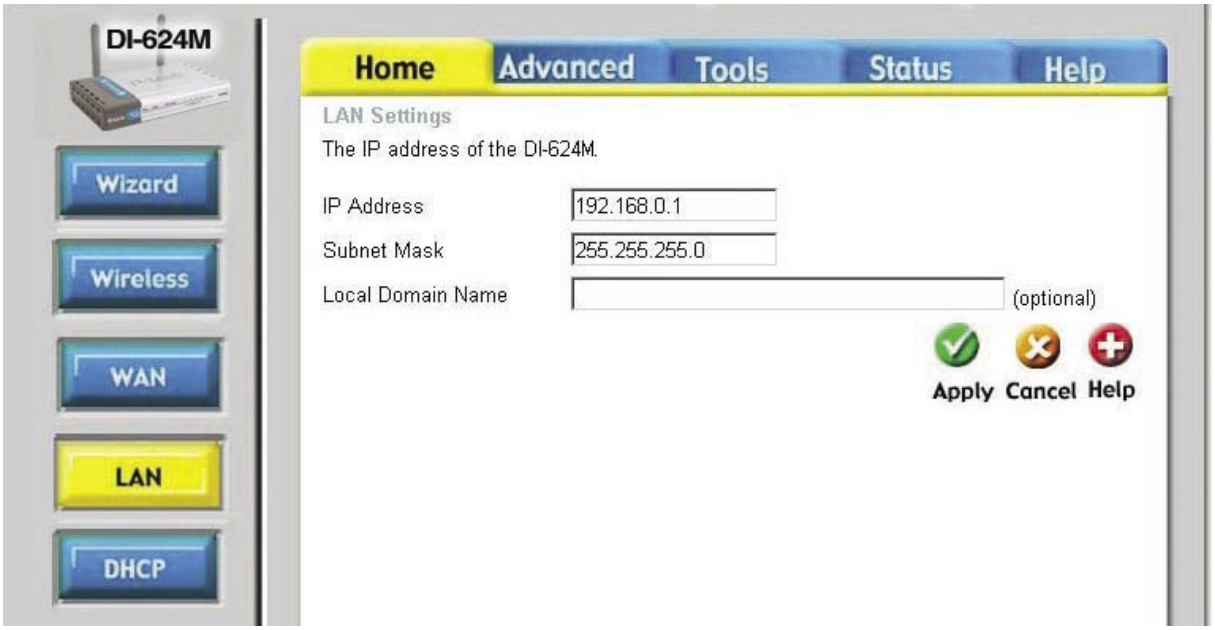
Home > WAN > PPPoE

Please be sure to remove any existing PPPoE client software installed on your computers.

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. Select Dynamic PPPoE to obtain an IP address automatically for your PPPoE connection. Select Static PPPoE to use a static IP address for your PPPoeE connection.

PPPoE:	Choose this option if your ISP uses PPPoE. (Most DSL users will select this option.) Dynamic PPPoE: Receive an IP Address automatically from your ISP. Static PPPoE: You have an assigned (static) IP Address.
User Name:	Your PPPoE username provided by your ISP.
Retype Password:	Re-enter the PPPoE password.
Service Name:	Enter the Service Name provided by your ISP (optional).
IP Address:	This option is only available for Static PPPoE. Enter the static IP Address for the PPPoE connection.
Primary DNS Address:	Primary DNS IP address provided by our ISP.
Secondary DNS Address:	This option is only available for Static PPPoE. Enter the static IP Address for the PPPoE connection.
MTU:	Maximum Transmission Unit-1492 is the default setting-you may need to change the MTU for optimal performance with your specific ISP.
Auto-reconnect:	If enabled, the DI-624M will automatically connect to your ISP after your system is restarted or if the PPPoE connection is dropped.

LAN

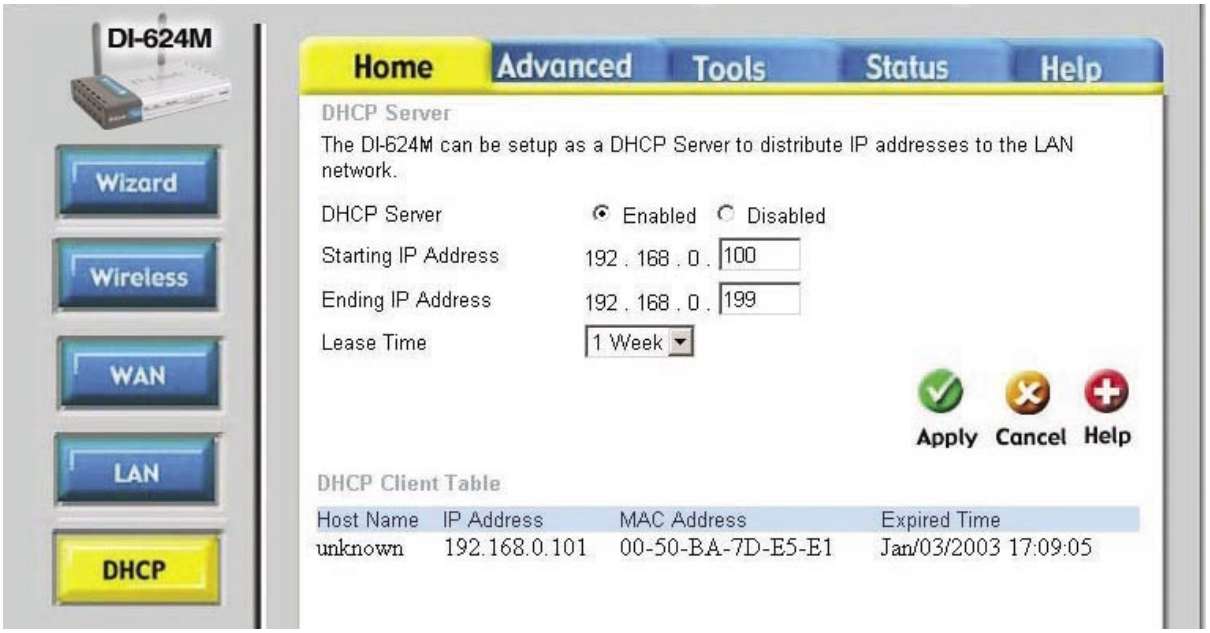


Home > LAN

LAN is short for Local Area Networ'... This is considered your internal network. These are the IP settings of the LAN interface for the DI-624M. These settings may be referred to as Private settings. You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet.

IP Address:	The IP address of the LAN interface. The default IP address is: **192.168.0.1**.
Subnet Mask:	The subnet mask of the LAN interface. The default subnet mask is **255.255.255.0**.
Local Domain Name:	This field is optional. Enter in the local domain name.

DHCP



Home > DHCP

DHCP stands for *Dynamic Host Control Protocol*. The DI-624M 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 DI-624M. 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.

DHCP Server: Select **Enabled** or **Disabled.** The **default** setting is **Enabled**.

Starting IP Address: The starting IP address for the DHCP server's IP assignment.

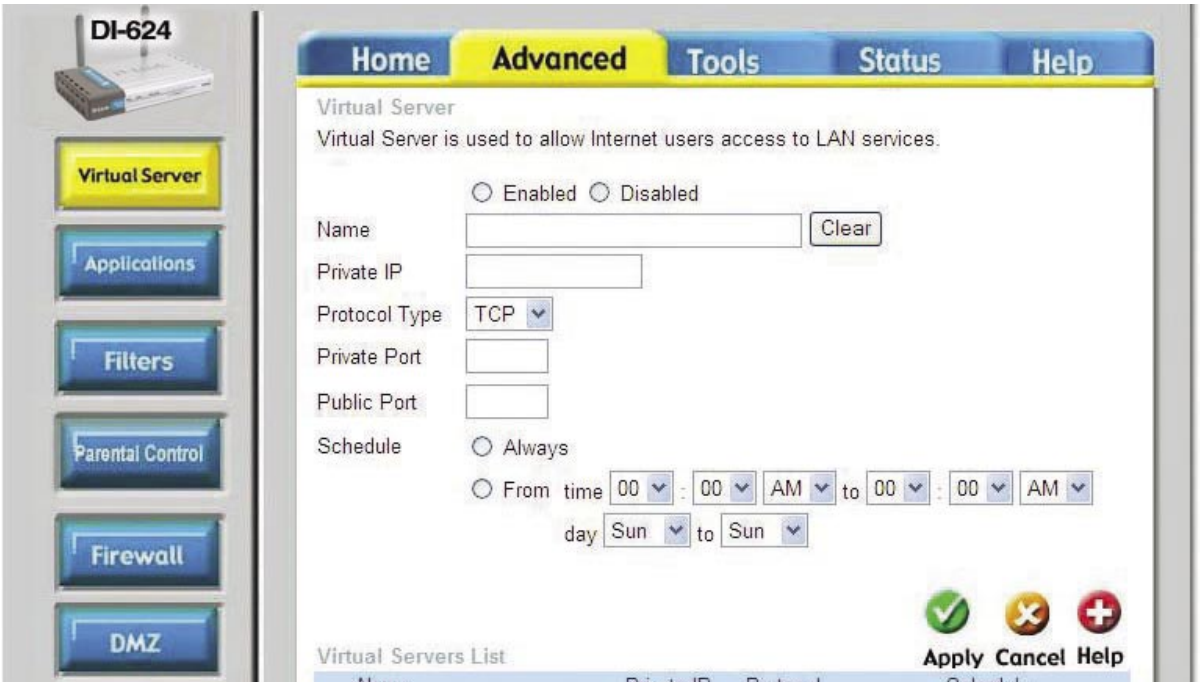
Ending IP Address: The ending IP address for the DHCP server's IP assignment.

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

Advanced

The Advanced tab provides the following configuration options: Virtual Server, Applications, Filters, Parental Control, Firewall, DMZ, and Performance.

Virtual Server



Advanced > Virtual Server

The DI-624M can be configured as a virtual server so that remote users accessing Web or FTP services via the public IP address can be automatically redirected to local servers in the LAN (Local Area Network).

The DI-624M firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DI-624M are invisible to the outside world. If you wish, you can make some of the LAN computers accessible from the Internet by enabling *Virtual Server.* Depending on the requested service, the DI-624M redirects the external service request to the appropriate server within the LAN network.

The DI-624M is also capable of port-redirection meaning incoming traffic to a particular port may be redirected to a different port on the server computer.

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

Virtual Server: Select **Enabled** or **Disabled**.

Name: Enter the name referencing the virtual service.

Private IP: The server computer in the LAN (Local Area Network) that will be providing the virtual services.

Protocol Type: The protocol used for the virtual service.

Private Port: The port number of the service used by the Private IP computer.

Public Port: The port number on the WAN (Wide Area Network) side that will be used to access the virtual service.

Schedule: The schedule of time when the virtual service will be enabled. The schedule may be set to **Always**, which will allow the particular service to always be enabled. If it is set to **Time**, select the time frame for the service to be enabled. If the system time is outside of the scheduled time, the service will be disabled.

Example #1: If you have a Web server that you wanted Internet users to access at all times, you would need to enable it. Web (HTTP) server is on LAN (Local Area Network) computer 192.168.0.25. HTTP uses port 80, TCP.

Name: Web Server
Private IP: 192.168.0.25
Protocol Type: TCP
Private Port: 80
Public Port: 80

Click on this icon to edit the virtual service.

Click on this icon to delete the virtual service.

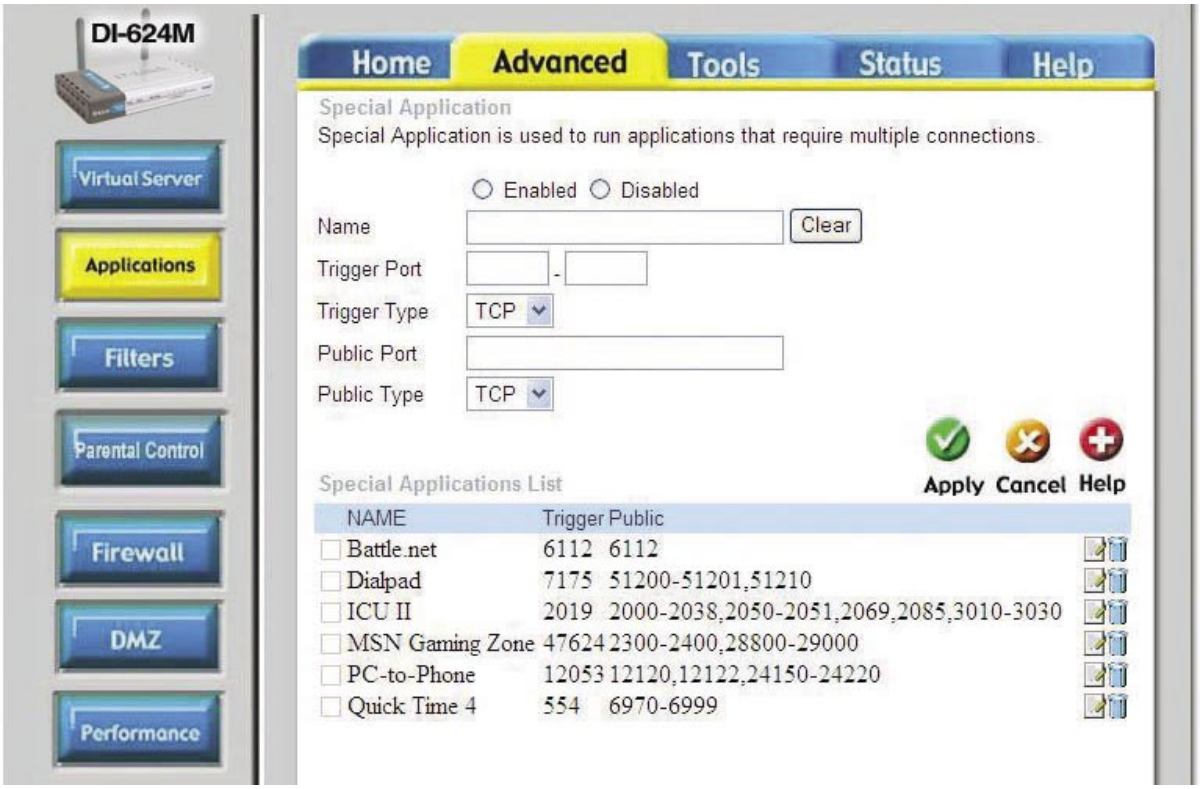
Example #2:

If you have an FTP server that you wanted Internet users to access by WAN port 2100 and only during the weekends, you would need to enable it as such. FTP server is on LAN computer 192.168.0.30. FTP uses port 21, TCP.

Name: FTP Server
Private IP: 192.168.0.30
Protocol Type: TCP
Private Port: 21
Public Port: 2100
Schedule: From: 01:00AM to 01:00AM, Sat to Sun

All Internet users who want to access this FTP Server must connect to it from port 2100. This is an example of port redirection and can be useful in cases where there are many of the same servers on the LAN network.

Applications



Advanced > Applications

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 DI-624M. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.

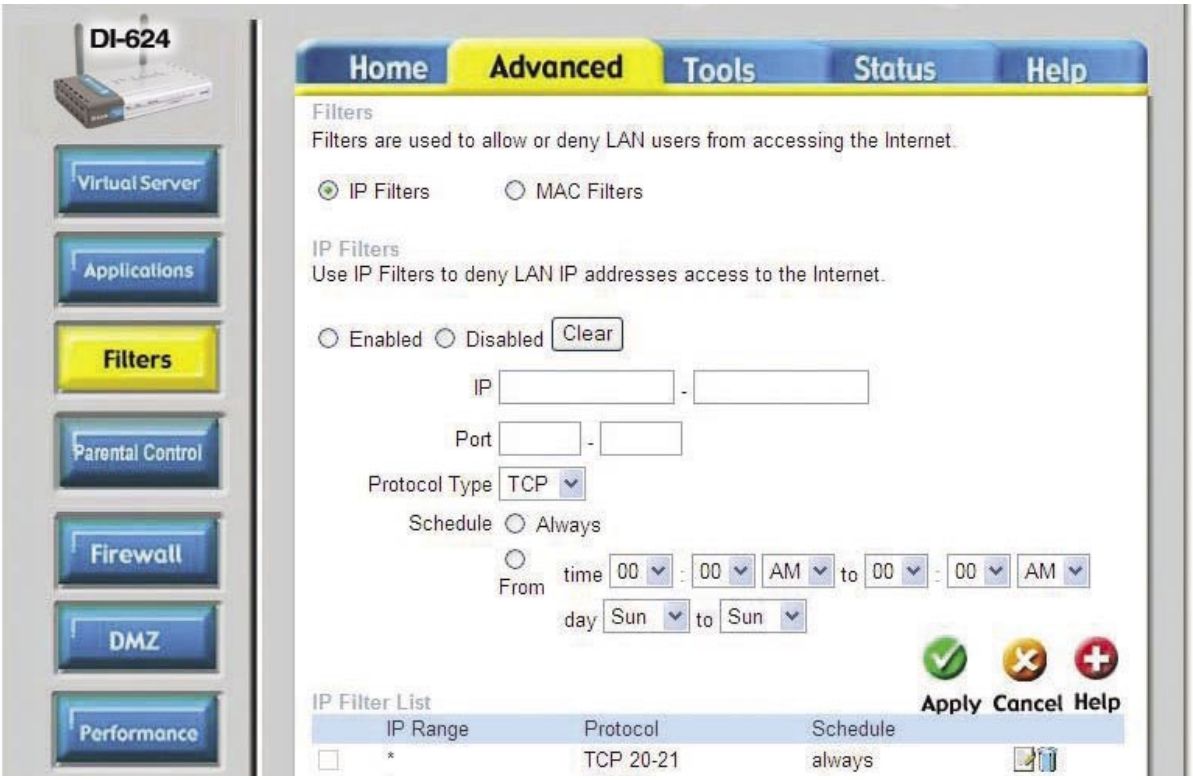
The DI-624M provides some predefined applications in the table on the bottom of the web page. Select the application you want to use and enable it.

Note: Only one PC can use each Special Application tunnel.

Name:	This is the name referencing the special application.
Trigger Port:	This is the port used to trigger the application. It can be either a single port or a range of ports.
Trigger Type:	This is the protocol used to trigger the special application.
Public 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.
Public Type:	This is the protocol used to trigger the special application.

Filters

IP Filters



Advanced > Filters > IP Filters

Filters are used to deny or allow LAN (Local Area Network) computers from accessing the Internet. The DI-624M can be setup to deny internal computers by their IP or MAC addresses. The DI-624M can also block users from accessing restricted Web sites.

IP Filters: Use IP Filters to deny LAN IP addresses from accessing the Internet. You can deny specific port numbers or all ports for the specific IP address.

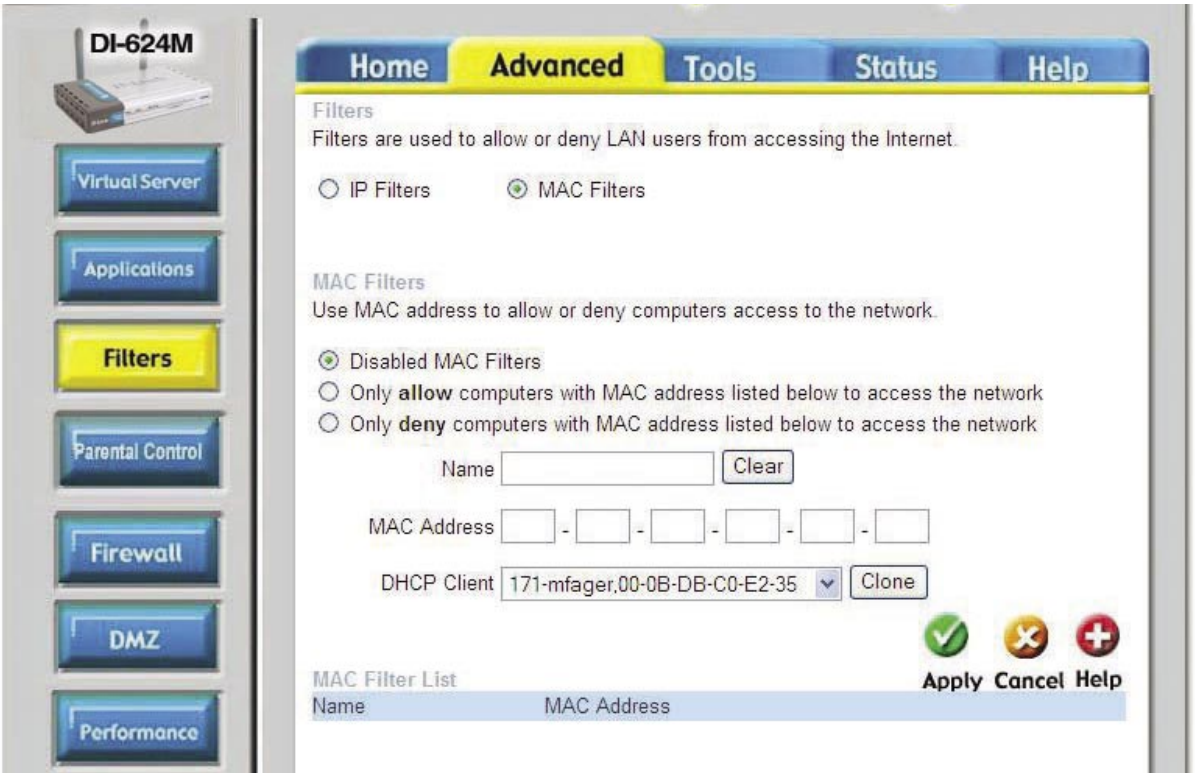
IP: The IP address of the LAN computer that will be denied access to the Internet.

Port: The single port or port range that will be denied access to the Internet.

Protocol Type: Select the protocol type.

Schedule: This is the schedule of time when the IP Filter will be

MAC Filters



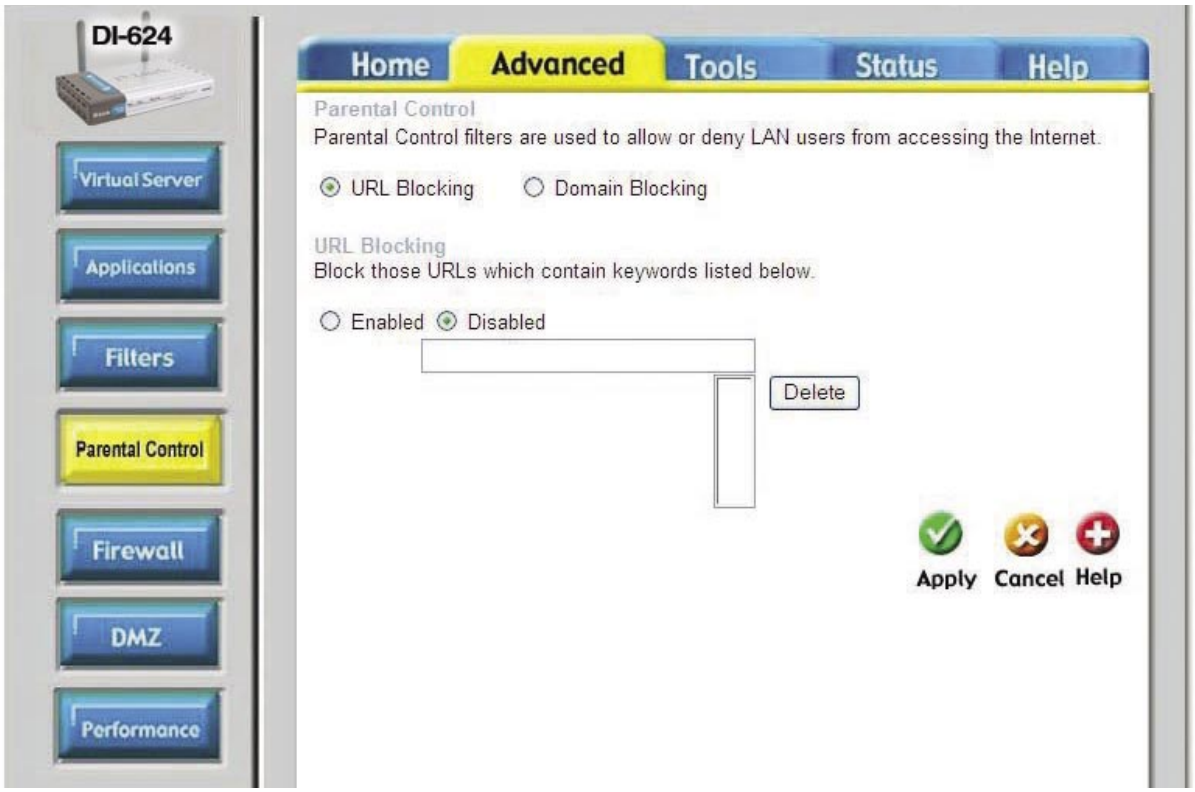
Advanced > Filters > MAC Filters

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

Filters:	Select the filter you wish to use; in this case, **MAC filters** was chosen.
MAC Filters:	Choose **Disable** MAC filters; **allow** MAC addresses listed below; or **deny** MAC addresses listed below.
Name:	Enter the name here.
MAC Address:	Enter the MAC Address.
DHCP Client:	Select a DHCP client from the pull-down list; click **Clone** to copy that MAC Address.

Parental Control

URL Blocking

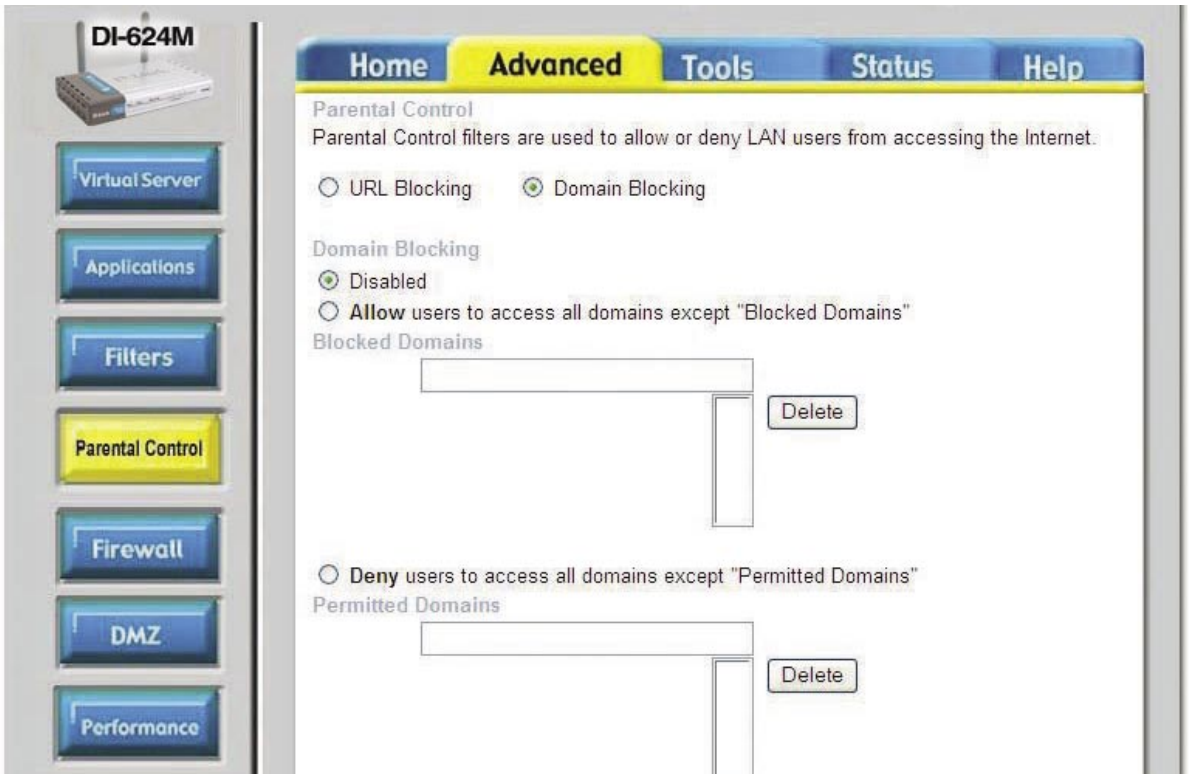


Advanced > Parental Control > URL Blocking

URL Blocking is used to deny LAN computers from accessing specific web sites by the URL. A URL is a specially formatted text string that defines a location on the Internet. If any part of the URL contains the blocked word, the site will not be accessible and the web page will not display. To use this feature, enter the text string to be blocked and click **Apply**. The text to be blocked will appear in the list. To delete the text, just highlight it and click **Delete**.

Parental Control Filters:	Select the filter you wish to use; in this case, **URL Blocking** was chosen.
URL Blocking:	Select **Enabled** or **Disabled**.
Keywords:	Block URLs which contain keywords listed below. Enter the keywords in this space.

Domain Blocking



Advanced > Parental Control > Domain Blocking

Domain Blocking is used to allow or deny LAN (Local Area Network) computers from accessing specific domains on the Internet. Domain blocking will deny all requests to a specific domain such as http and ftp. It can also allow computers to access specific sites and deny all other sites.

Parental ControlFilters:	Select the filter you wish to use; in this case, **Domain Blocking** was chosen.
Domain Blocking:	Disabled: Select **Disabled** to disable **Domain Blocking**. Allow: Allows users to access all domains except **Blocked Domains**. Deny: Denies users access to all domains except **Permitted Domains**.
Permitted Domains:	Enter the **Permitted Domains** in this field.
Blocked Domains:	Enter the **Blocked Domains** in this field.

Firewall

Advanced > Firewall

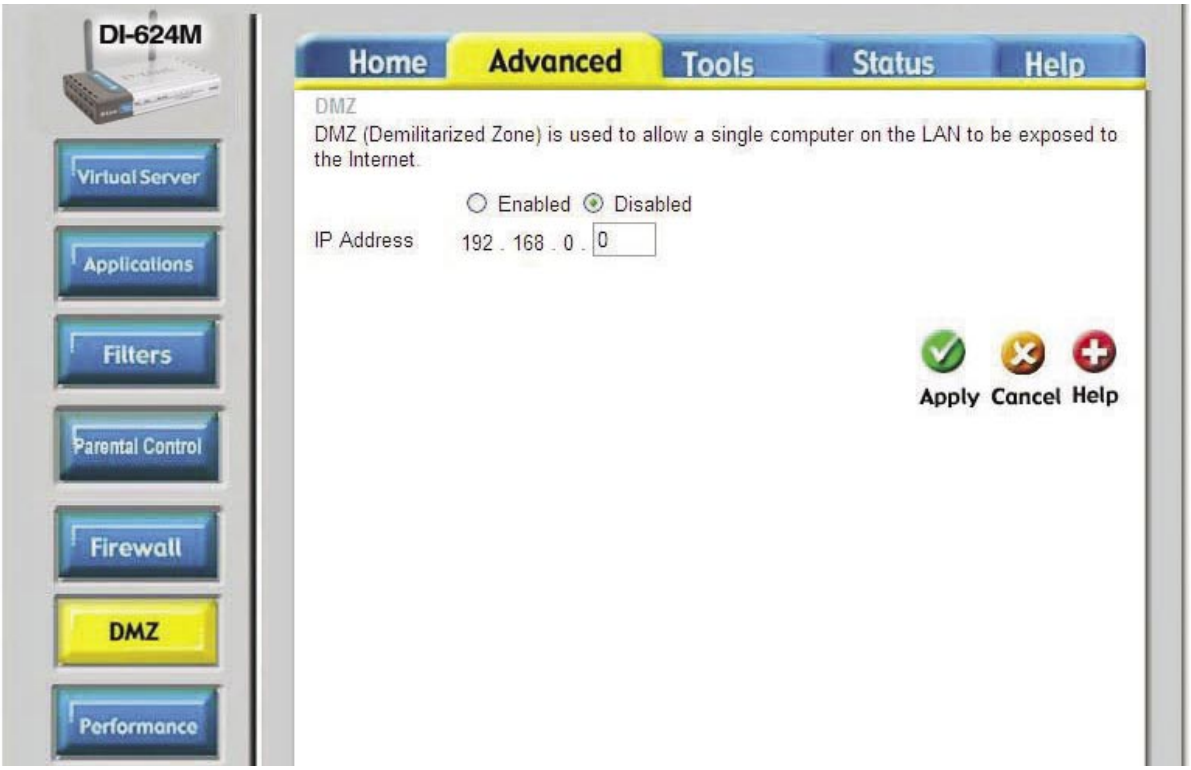
Firewall Rules is an advanced feature used to deny or allow traffic from passing through the DI-624M. It works in the same way as IP Filters with additional settings. You can create more detailed access rules for the DI-624M. When virtual services are created and enabled, it will also display in Firewall Rules. Firewall Rules contain all network firewall rules pertaining to IP (Internet Protocol).

In the Firewall Rules List at the bottom of the screen, the priorities of the rules are from top (highest priority) to bottom (lowest priority.)

Note:The DI-624M MAC Address filtering rules have precedence over the Firewall

Firewall Rules:	**Enable** or **disable** the Firewall.
Name:	Enter the name.
Action:	Select **Allow** or **Deny**.
Source:	Enter the **IP Address range**.
Destination:	Enter the **IP Address range**, the **Protocol**, and the **Port Range**.
Schedule:	

DMZ

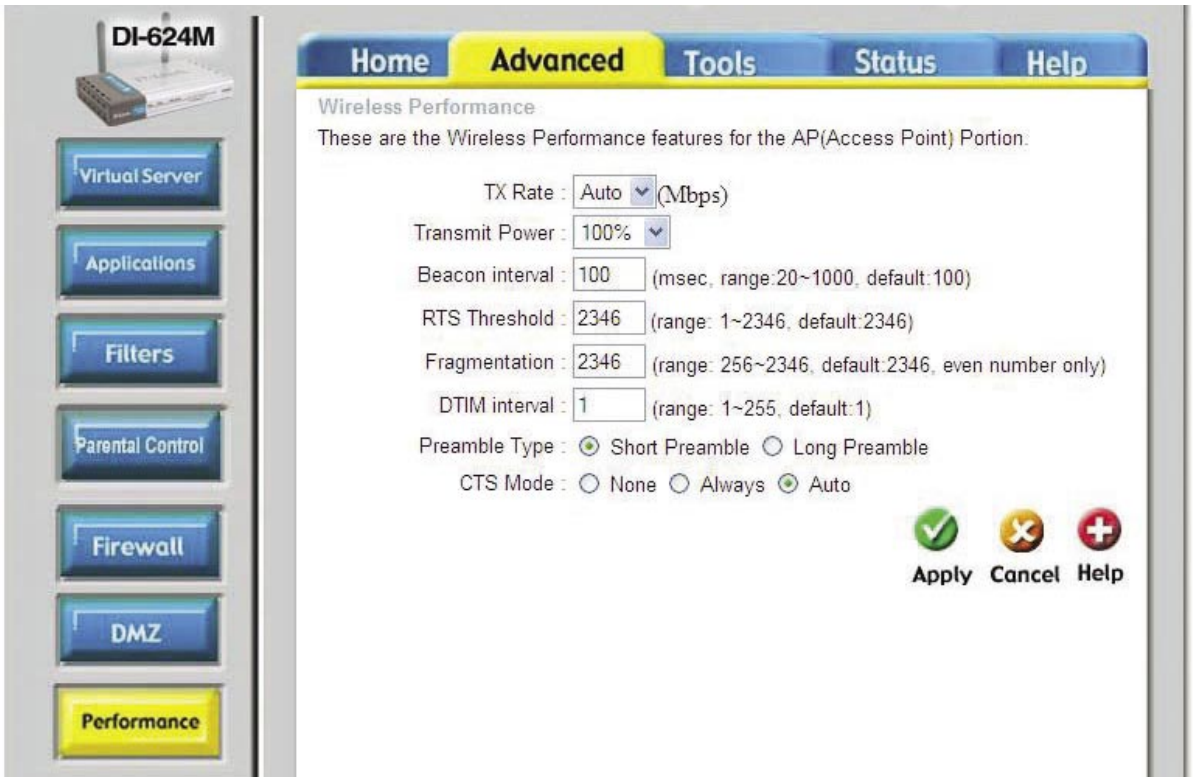


Advanced > DMZ

If you have a client PC that cannot run Internet applications properly from behind the DI-624M, 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.

DMZ:	**Enable** or **Disable** the DMZ. The DMZ (Demilitarized Zone) allows a single computer to be exposed to the internet. By **default** the DMZ is **disabled**.
IP Address:	Enter the **IP Address** of the computer to be in the **DMZ**.

Performance



Advanced > Performance

Note: These features will be available in future firmware releases.

TX Rate: **Auto** is the default selection. Select from the drop down menu.

Transmit Power: **100%** is the default selection. Select from the drop down menu.

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 2432. 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

DTIM Interval: (Delivery Traffic Indication Message) **3** is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

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. *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 throughput.
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.

Tools

The Advanced tab provides the following options: Admin, Time, System, Firmware, and Misc.

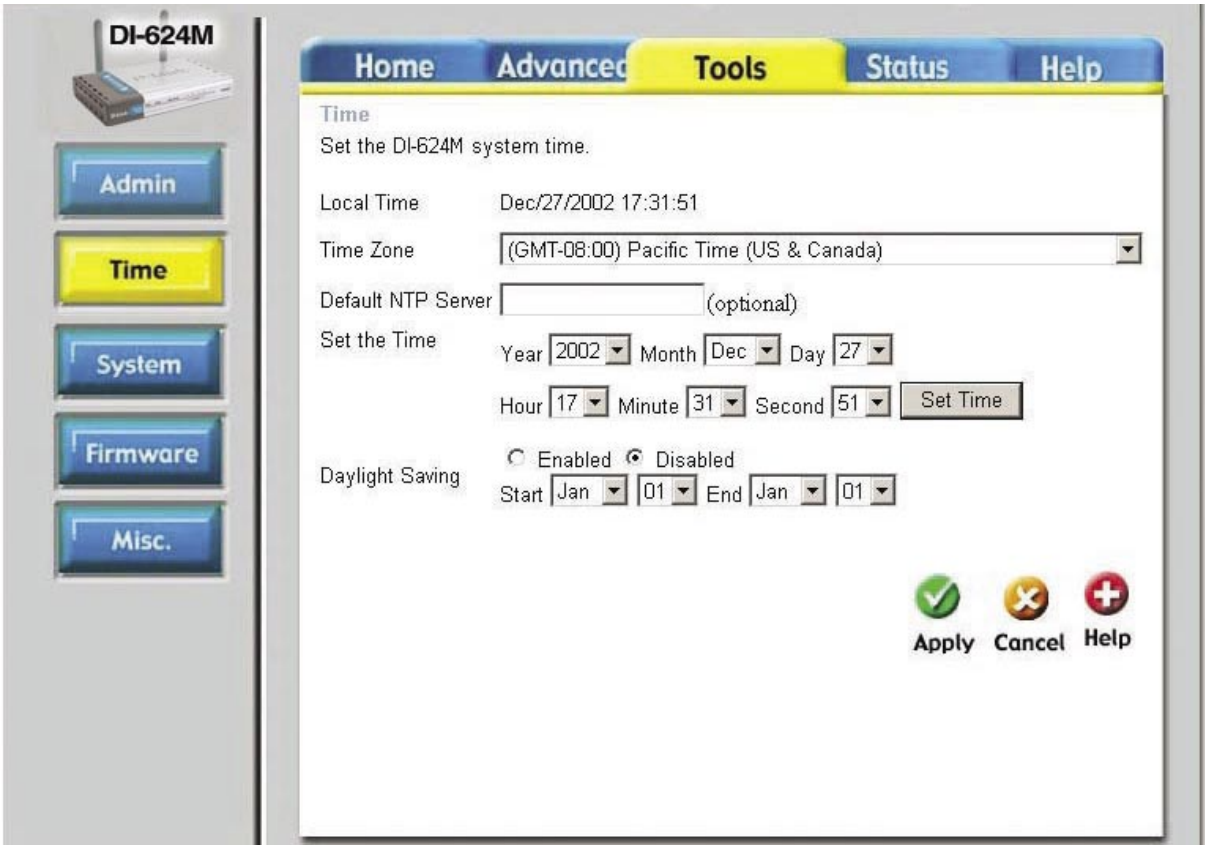
Admin

Tools > Admin

At this page, the DI-624M administrator can change the system password. There are two accounts that can access the Broadband Router's Web-Management interface. They are admin and user. Admin has read/write access while user has read-only access. User can only view the settings but cannot make any changes.

Administrator:	**admin** is the **Administrator login name.**
Password:	Enter the password and enter again to confirm.
User:	**user** is the **User login name.**
Password:	Enter the password and enter again to confirm
Remote Management:	Remote management allows the DI-624M 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 Address:	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 Broadband Router.
Example:	http://x.x.x.x:8080 where x.x.x.x is the WAN IP address of the Broadband Router and 8080 is the port used for the Web-Mangement interface.

Time



Tools > Time

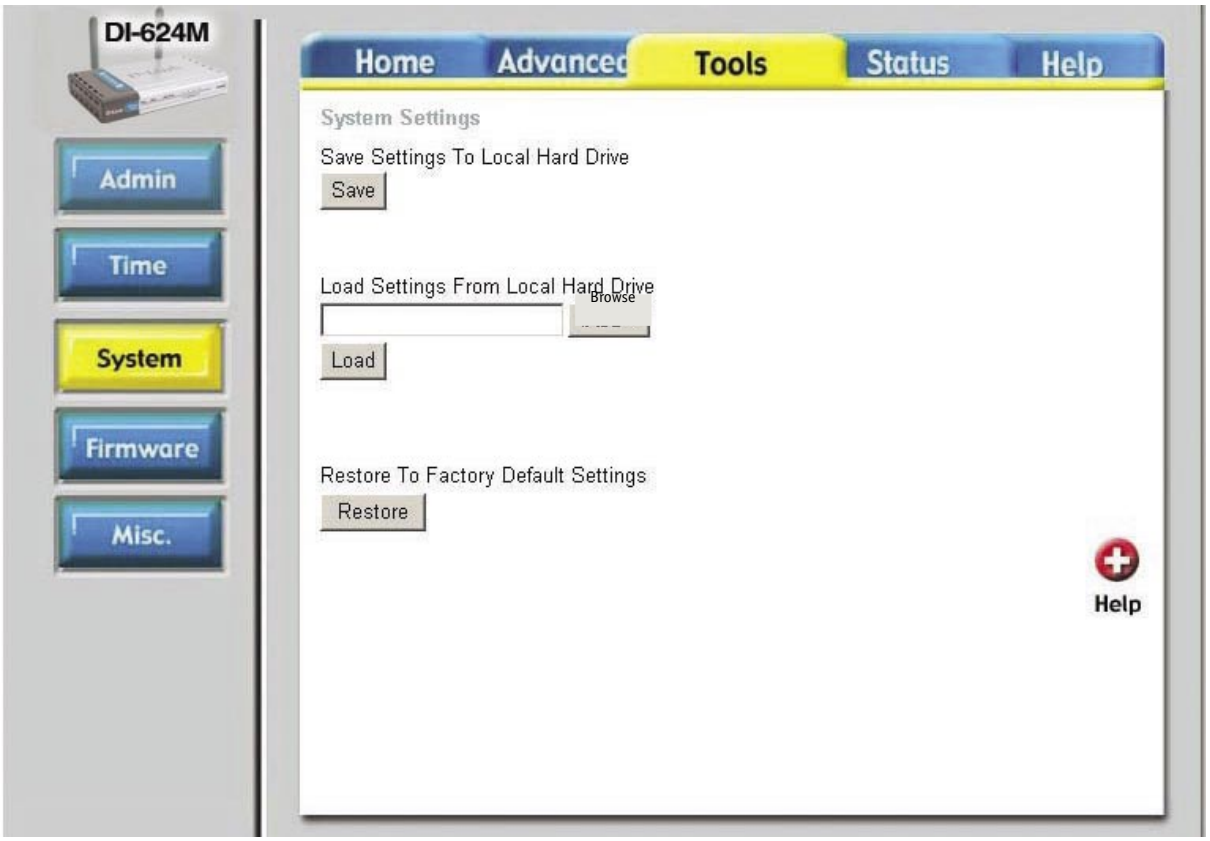
Time Zone: Select the Time Zone from the pull-down menu.

Default NTP Server: NTP is short for *Network Time Protocol.* NTP synchronizes computer clock times in a network of computers. This field is optional.

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

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

System



Tools > System

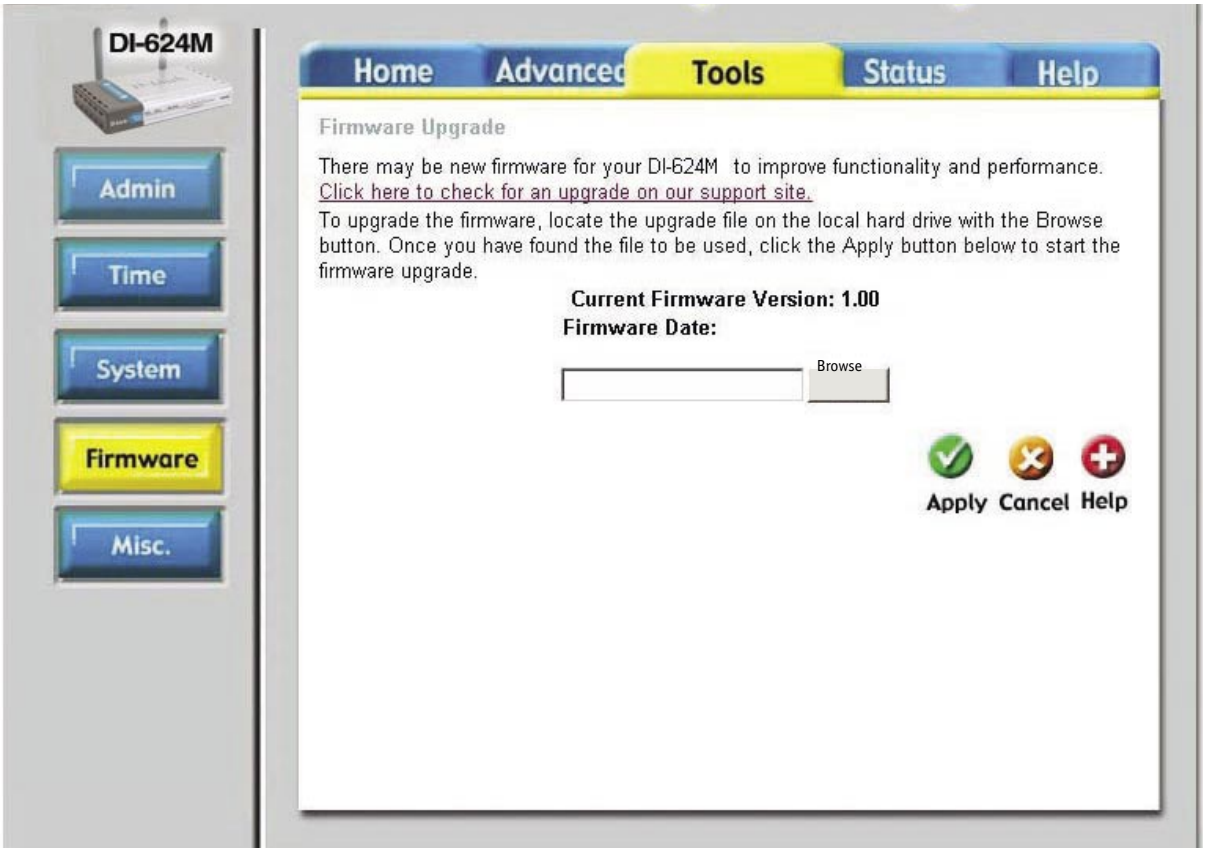
The current system settings can be saved as a file onto the local hard drive. The saved file or any other saved setting file can be loaded back on the Broadband Router. To reload a system settings file, click on **Browse** to browse the local hard drive and locate the system file to be used. You may also reset the Broadband Router back to factory settings by clicking on **Restore**.

Save Settings to Local Hard Drive: Click **Save** to save the current settings to the local Hard Drive.

Load Settings from Local Hard Drive: Click **Browse** to find the settings, then click **Load**.

Restore to Factory Default Settings: Click **Restore** to restore the factory default settings.

Firmware



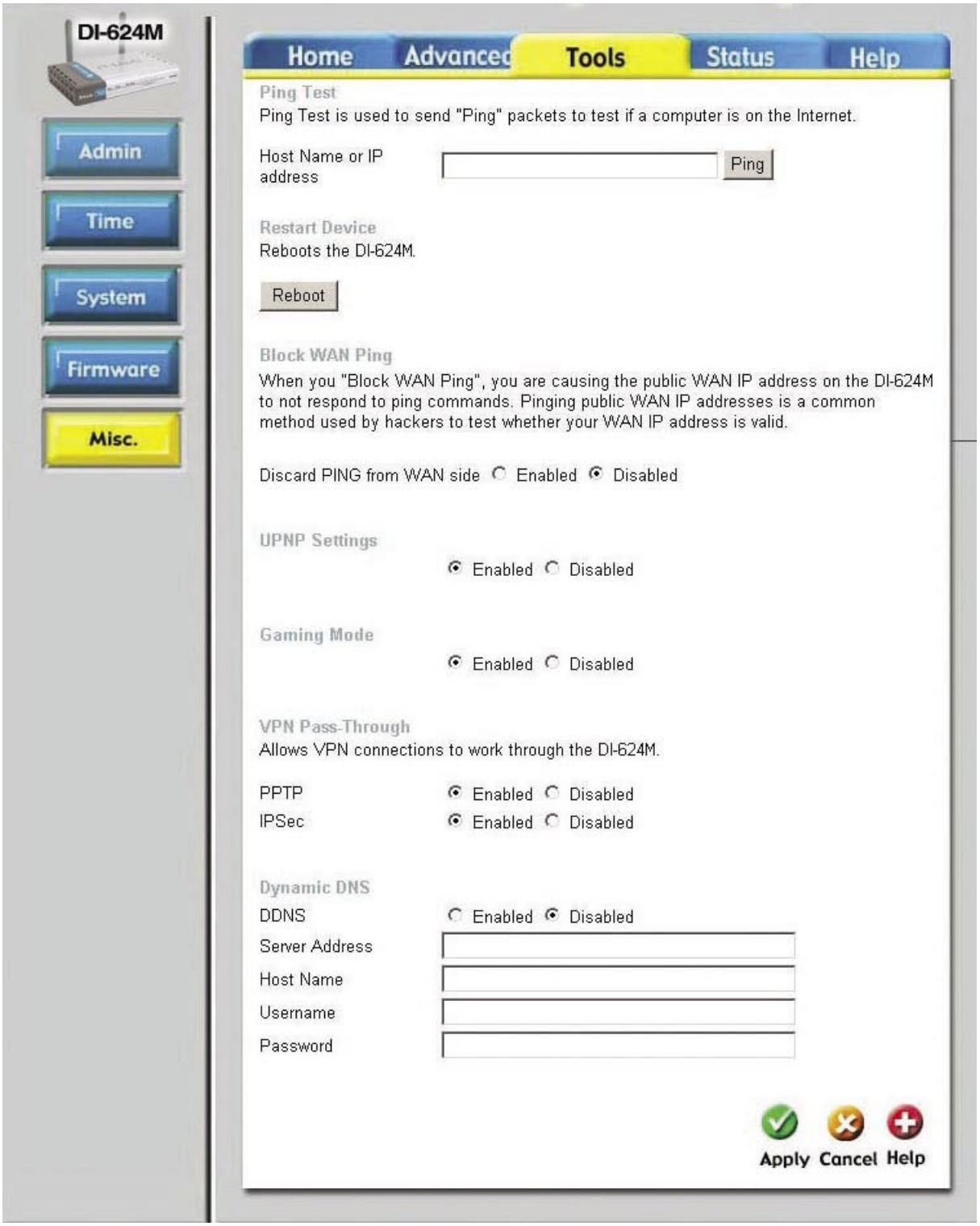
Tools > Firmware

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

Firmware Upgrade: Click on the link in this screen 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.

Misc.



Tools > Misc.

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**.

Restart Device: Click **Reboot** to restart the DI-624M.

Block WAN Ping: If you choose to block WAN Ping, the WAN IP Address of the DI-624M will not respond to pings. Blocking the Ping may provide some extra security from hackers.

Discard Ping from WAN side: Click **Enabled** to block the WAN ping.

UPNP: To use the *Universal Plug and Play* feature click on **Enabled**. UPNP provides compatibility with networking equipment, software and peripherals of the over 400 vendors that cooperate in the Plug and Play forum.

Gaming Mode: Gaming mode allows a form of pass-through for certain Internet Games. If you are using Xbox, Playstation2 or a PC, make sure you are using the latest firmware and Gaming Mode is enabled. To utilize Gaming Mode, click **Enabled**. If you are not using a Gaming application, it is recommended that you **Disable** Gaming Mode.

Dynamic DNS: Dynamic Domain Name System is a method of keeping a domain name linked to a changing IP Address. This is a useful feature since many computers do not use a static IP address.

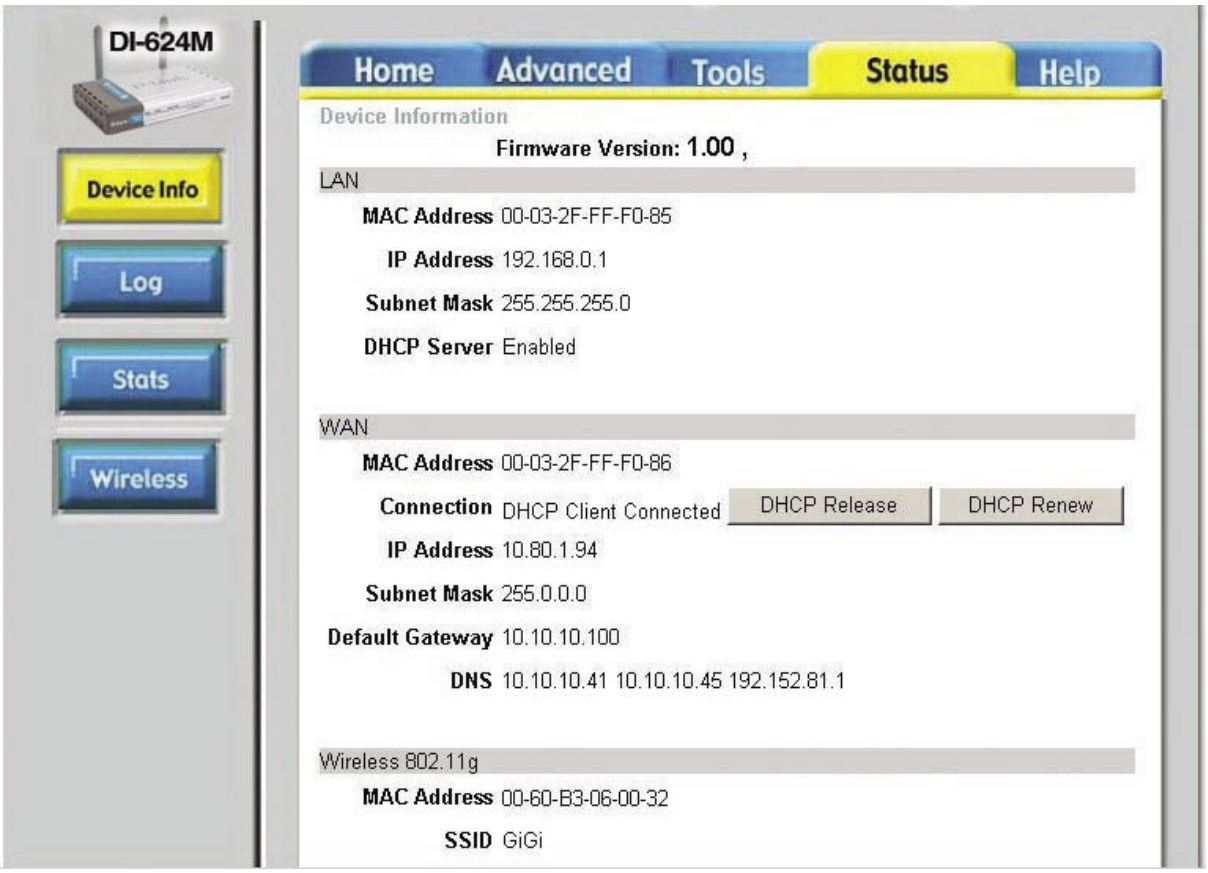
VPN Pass Through::

The DI-624M supports VPN (Virtual Private Network) pass-through for both PPTP (Point-to-Point Tunneling Protocol) and IPSec (IP Security). Once VPN pass-through is enabled, there is no need to open up virtual services. Multiple VPN connections can be made through the DI-624M. This is useful when you

Tools

The Advanced tab provides the following options: Device Info, Log, Stats, and

Device Info



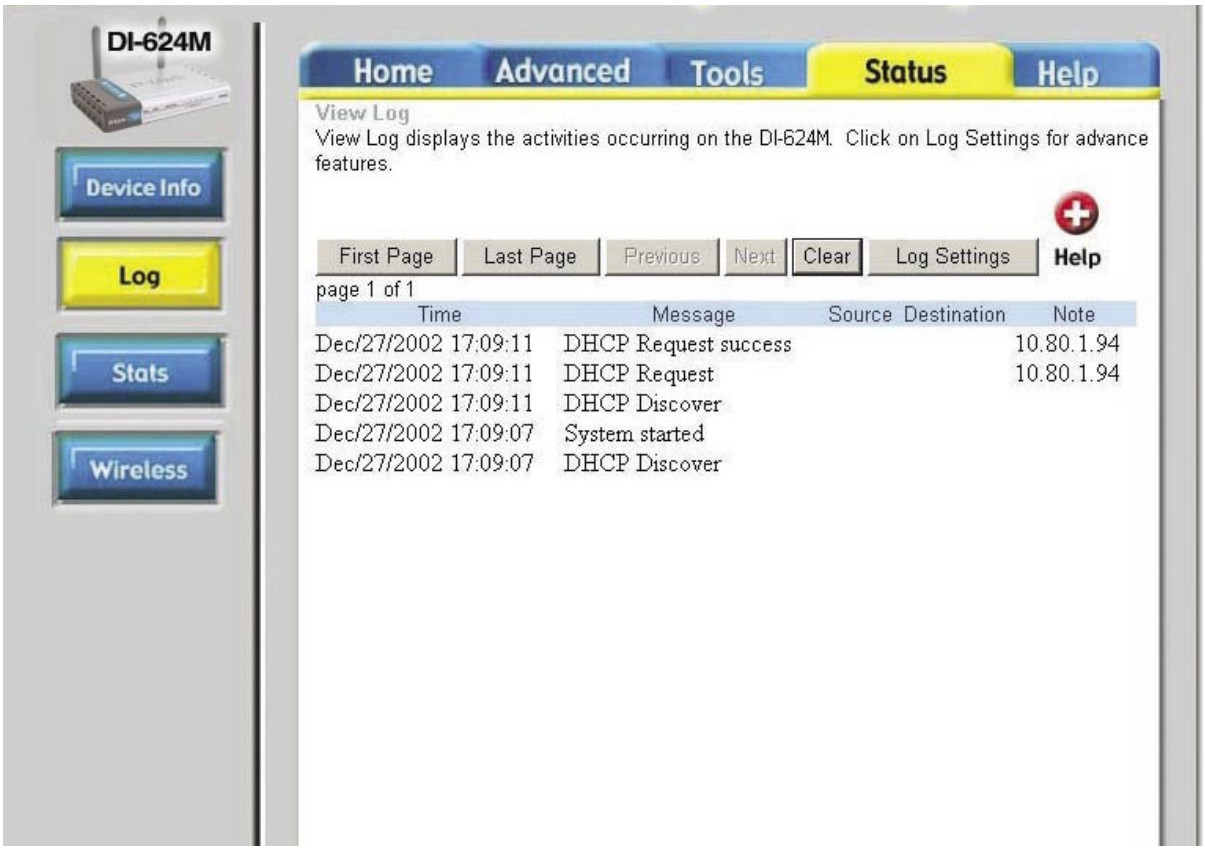
Status > Device Info

This page displays the current information for the DI-624M. It will display the LAN, WAN and MAC address information. If your WAN connection is set up for a **Dynamic IP address** then a **Release** button and a **Renew** button will be displayed. Use *Release* to disconnect from your ISP and use *Renew* to connect to your ISP. If your 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.

This window will show the DI-624M's working status:

WAN:	IP Address: WAN/Public IP Address
	Subnet Mask: WAN/Public Subnet Mask
	Gateway: WAN/Public Gateway IP Address
	Domain Name Server: WAN/Public DNS IP Address
	WAN Status: WAN Connection Status
LAN:	IP Address: LAN/Private IP Address of the DI-624M
	Subnet Mask: LAN/Private Subnet Mask of the DI-624M
Wireless:	MAC Address: Displays the MAC address
	SSID: Displays the current SSID
	Channel: Displays the current channel
	WEP: indicates whether WEP is enabled or disabled

Log



Status > Log

The Broadband Router keeps a running log of events and activities occurring on the Router. If the device is rebooted, the logs are automatically cleared. You may save the log files under Log Settings.

View Log:

First Page - The first page of the log.

Last Page - The last page of the log.

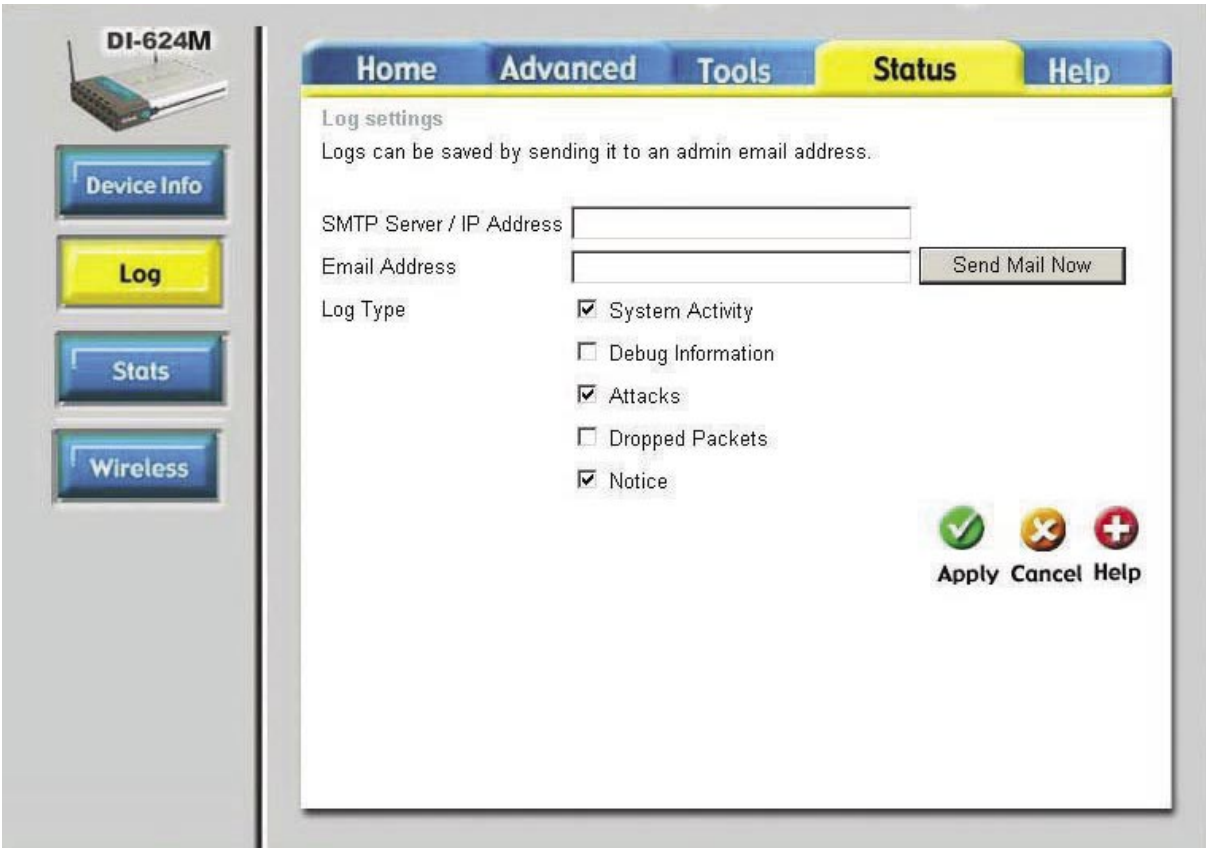
Previous - Moves back one log page.

Next - Moves forward one log page.

Clear - Clears the logs completely.

Log Settings - Brings up the page to configure the log.

Log Settings



Status > Log > Log Settings

Not only does the Broadband Router display the logs of activities and events, it can setup to send these logs to another location.

SMTP Server/ IP Address:	The address of the SMTP server that will be used to send the logs.
Email Address:	The email address to which the logs will be sent. Click on **Send Mail Now** to send the email.

Stats

Status > Stats

The screen above displays theTraffic Statistics. Here you can view the amount of packets that pass through the DI-624M on both the WAN and the LAN ports. The traffic counter will reset if the device is rebooted.

Wireless

Status > 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. Click on **Help** at any time, for more information.

Networking Basics

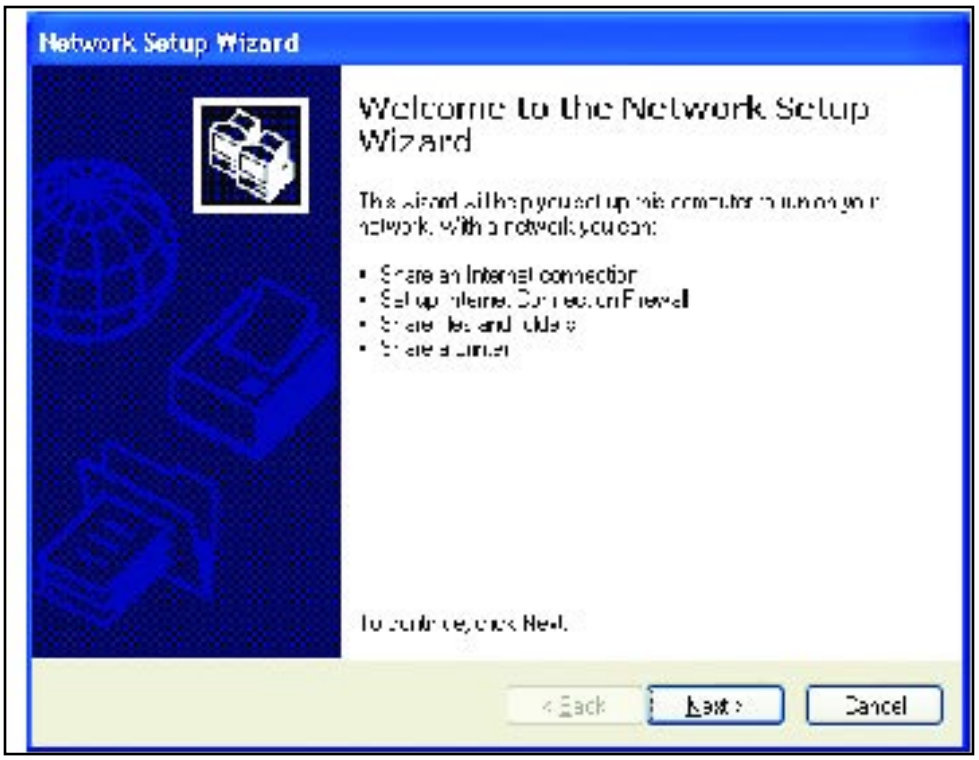
Using the Network Setup Wizard in Windows XP

In this section you will learn how to establish a network at home or work, using **Microsoft Windows XP**.

Note: Please refer to websites such as http://www.homenethelp.com and http://www.microsoft.com/windows2000 for information about networking computers using Windows 2000, ME or 98.

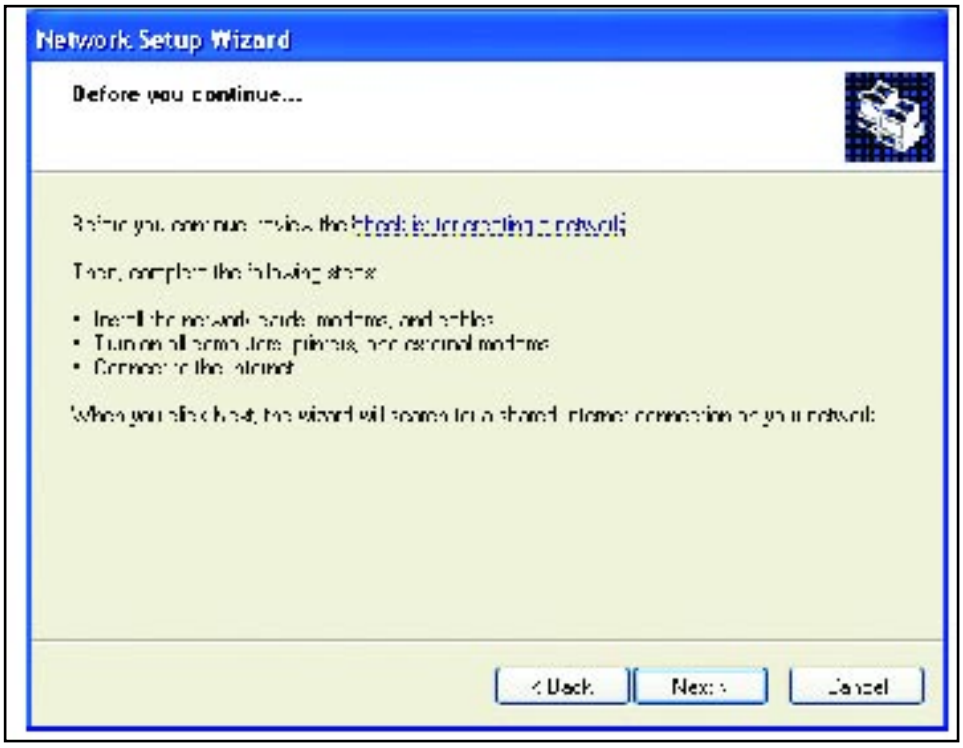
Go to **Start>Control Panel>Network Connections**.

Select **Set up a home or small office network**.



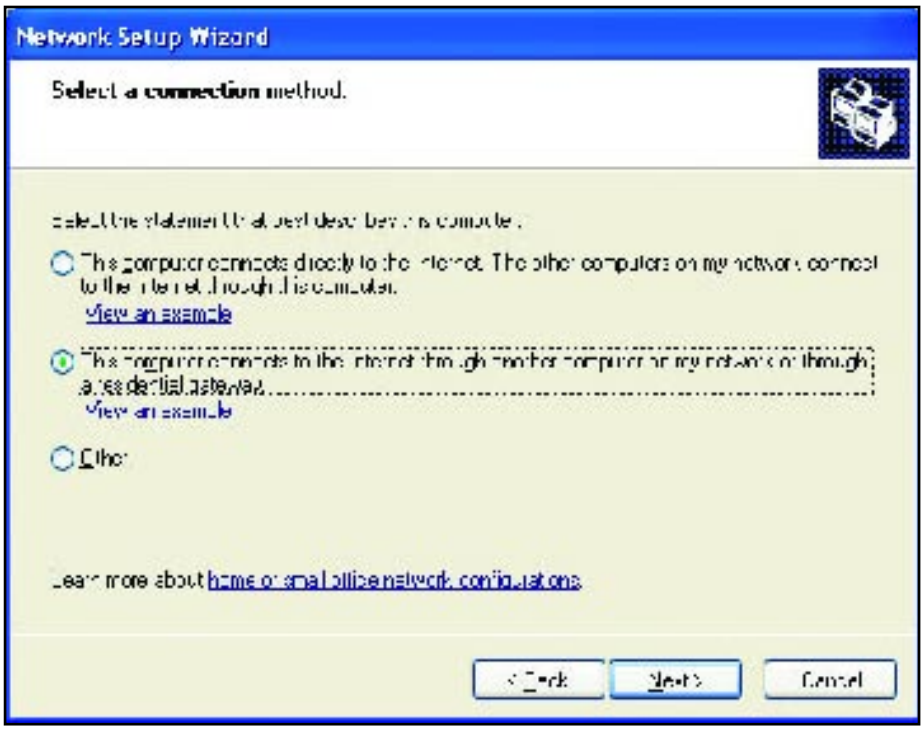
When this screen appears, Click **Next**.

Please follow all the instructions in this window:



Click **Next**.

In the following window, select the best description of your computer. If your computer connects to the internet through a gateway/router, select the second option as

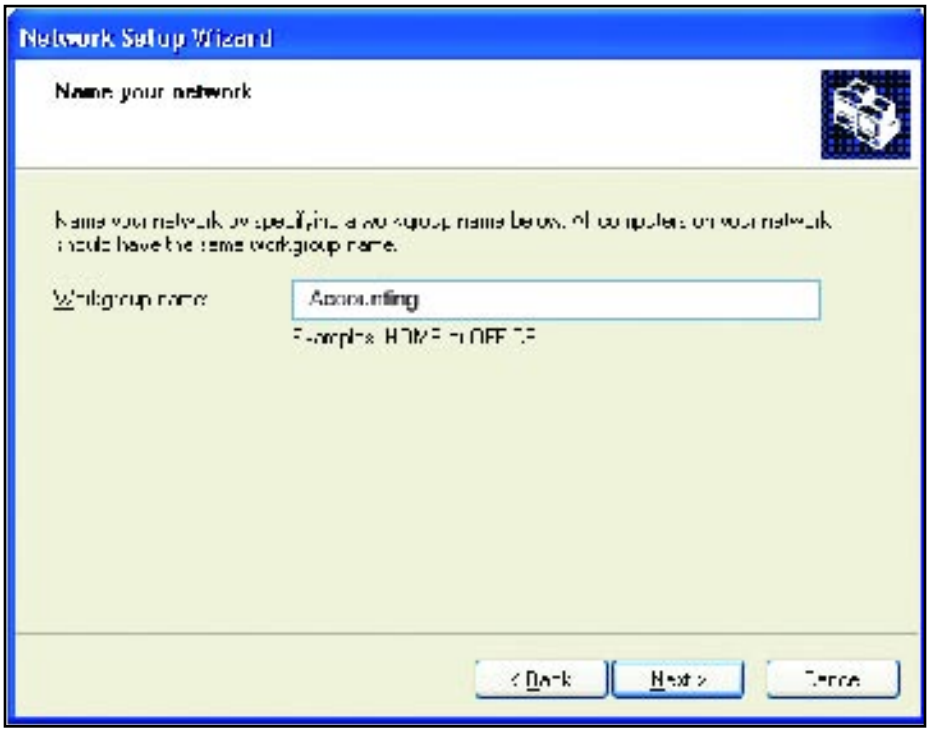


Click **Next**.

Enter a **Computer description** and a **Computer name** (optional).

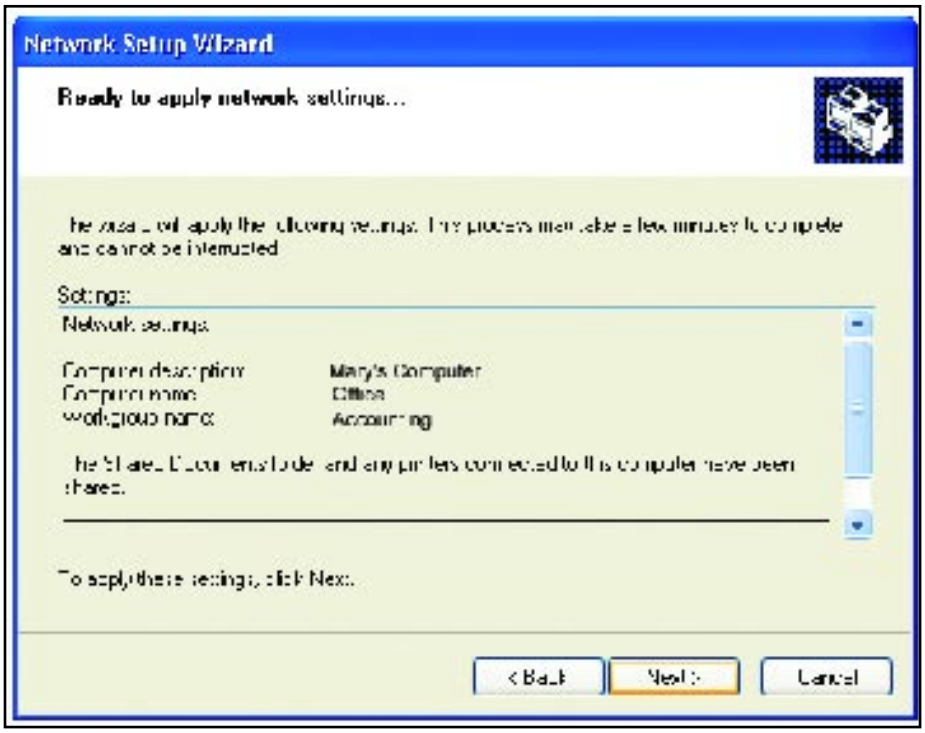
Click **Next**.

Enter a **Workgroup** name. All computers on your network should have the same **Workgroup name.**



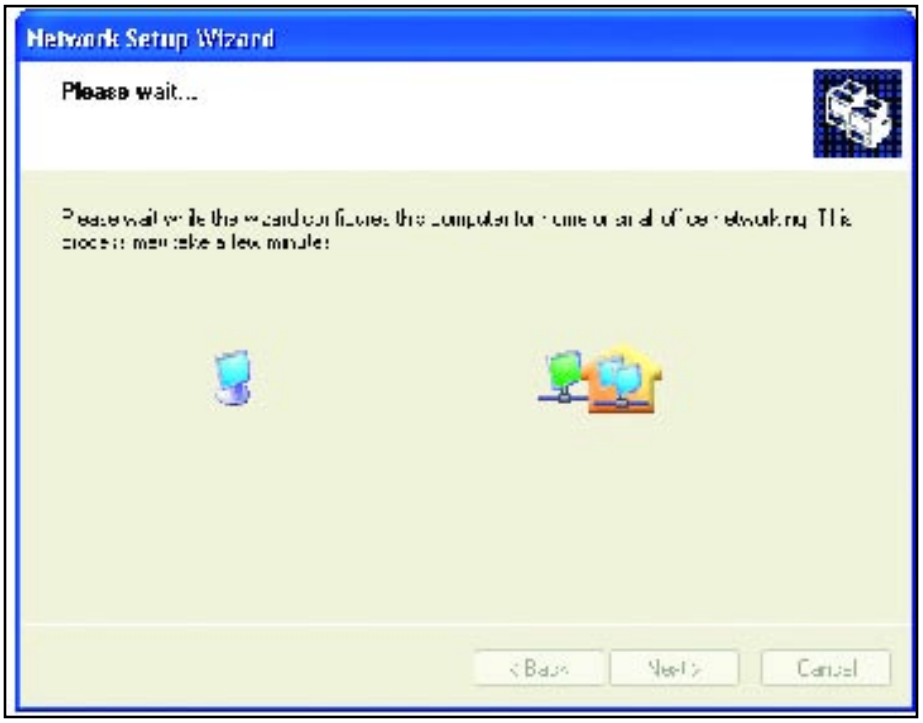
Click **Next**.

Please wait while the **Network Setup Wizard** applies the changes.



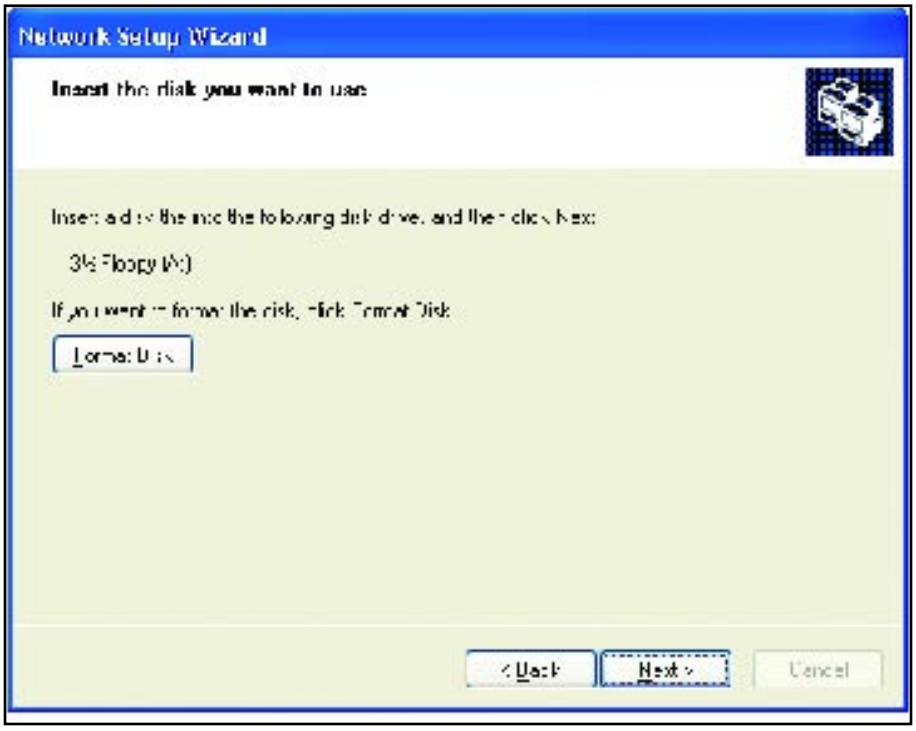
When the changes are complete, click **Next**.

Please wait while the **Network Setup Wizard** configures the computer. This may take a few minutes.



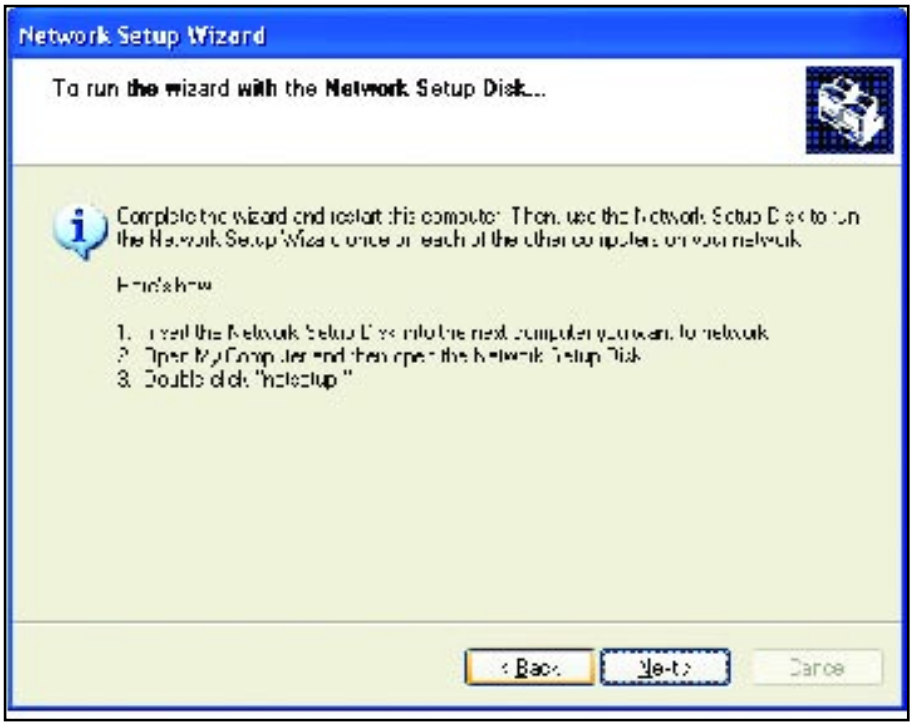
In the window below, select the option that fits your needs. In this example, **Create a Network Setup Disk** has been selected. You will run this disk on each of the computers on your network. Click **Next**.

Insert a disk into the Floppy Disk Drive, in this case drive **A**.



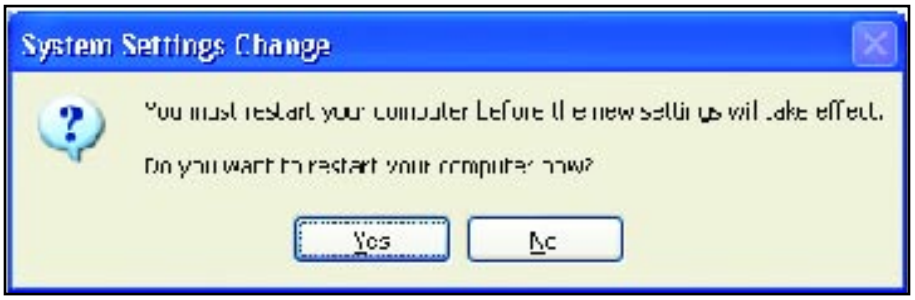
Click **Next**.

Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. To continue click



Please read the information on this screen, then click **Finish** to complete the **Network Setup Wizard**.

The new settings will take effect when you restart the computer. Click **Yes** to restart the computer.



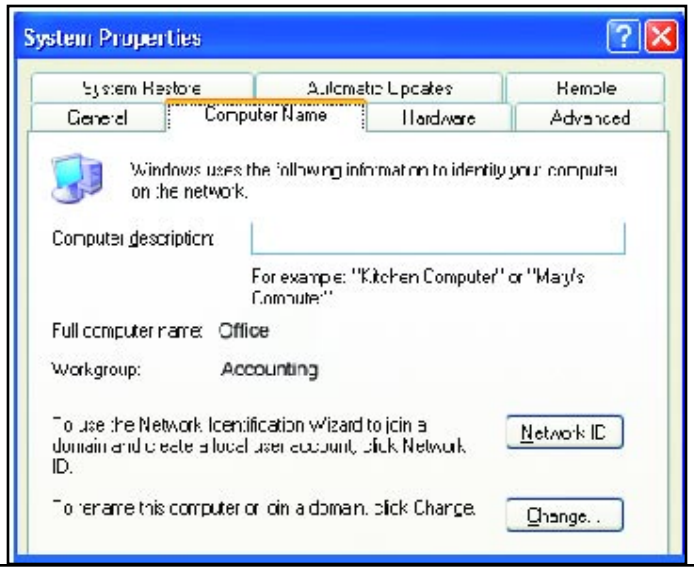
You have completed configuring this computer. Next, you will need to run the **Network Setup Disk** on all the other computers on your network. After running the **Network Setup Disk** on all your computers, your new wireless network will be ready to use.

Naming Your Computer

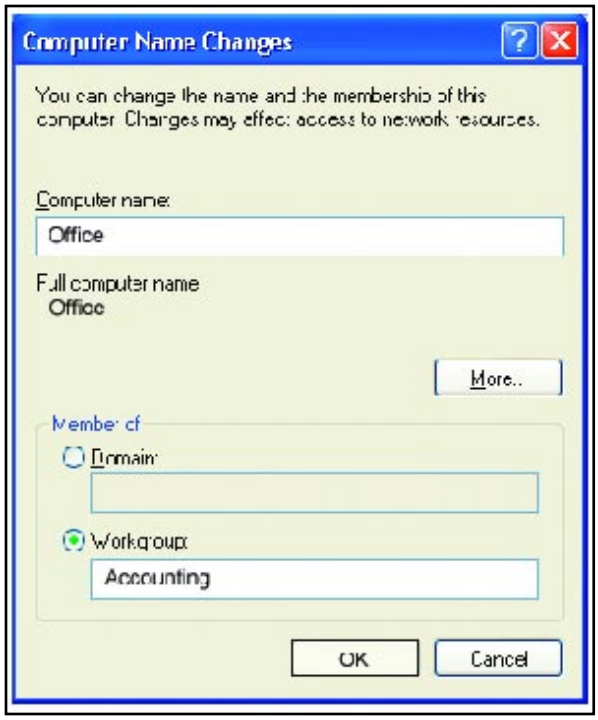
To name your computer, please follow these directions:In **Windows XP**:

- Click **Start** (in the lower left corner of the screen).
- **Right-click** on **My Computer**.
- Select **Properties** and click.

- Select the **Computer Name Tab** in the System Properties window.
- You may enter a **Computer Description** if you wish; this field is optional.
- To rename the computer and join a domain, Click **Change**.



- In this window, enter the **Computer name**.
- Select **Workgroup** and enter the name of the **Workgroup**.
- All computers on your network must have the same **Workgroup** name.
- Click **OK**.



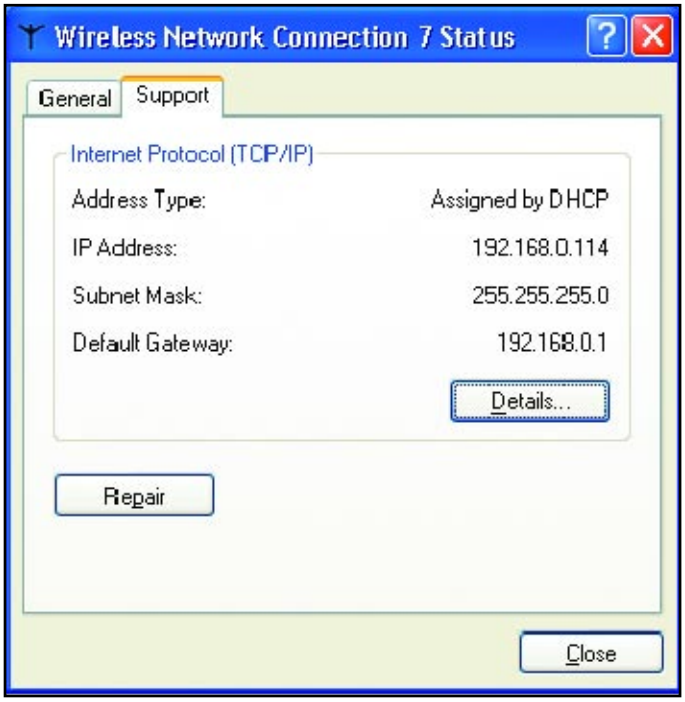
Checking the IP Address in Windows XP

The wireless adapter-equipped computers in your network must be in the same IP Address range (see Getting Started in this manual for a definition of IP Address Range.) To check on the IP Address of the adapter, please do the following:

- Right-click on the ***Local Area Connection icon*** in the task bar.
- Click on **Status**.

This window will appear:

- Click the **Support tab**.
- Click **Close**.



Assigning a Static IP Address in Windows

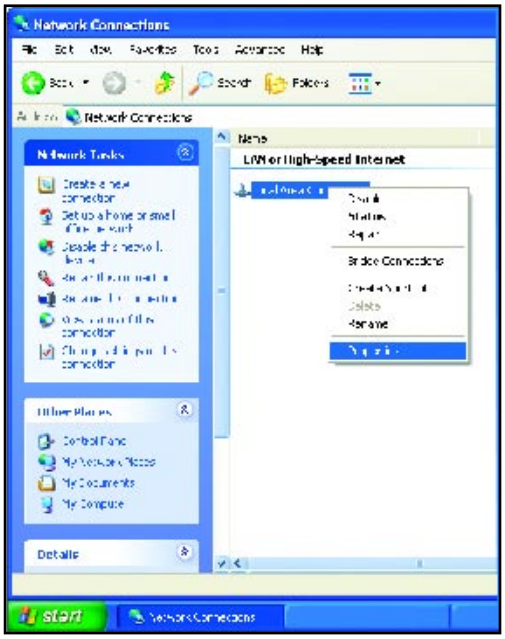
Note: Residential Gateways/Broadband Routers will automatically assign IP Addresses to the computers on the network, using DHCP (Dynamic Host Configuration Protocol) technology. If you are using a DHCP-capable Gateway/Router you will not need to assign Static IP Addresses.

If you are not using a DHCP capable Gateway/Router, or you need to assign a Static IP Address, please follow these instructions:

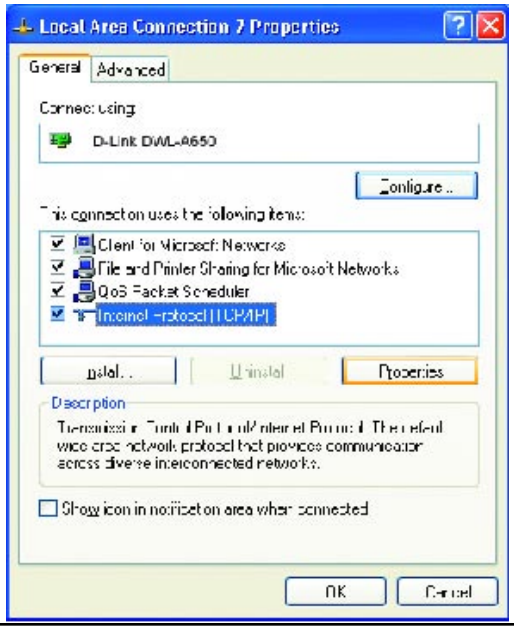
- Go to **Start**.
- Double-click on **Control Panel**.

- Double-click on **Network Connections**.

- Right-click on **Local Area Connections**.
- Click on **Properties**.



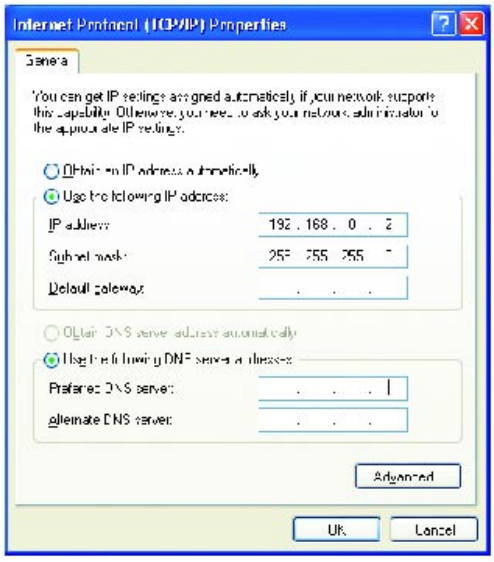
- Click on **Internet Protocol (TCP/IP)**.
- Click **Properties**.
- Input your **IP address and subnet mask**. (The IP Addresses on your network must be within the same range. For example, if one computer has an IP Address of 192.168.0.2, the other computers should have IP Addresses that are sequential, like 192.168.0.3 and 192.168.0.4. The subnet mask must be the same for all the computers on the network.)



- Input your **DNS server addresses**. **(Note: If you are entering a DNS server, you must enter the IP Address of the Default Gateway.)**

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

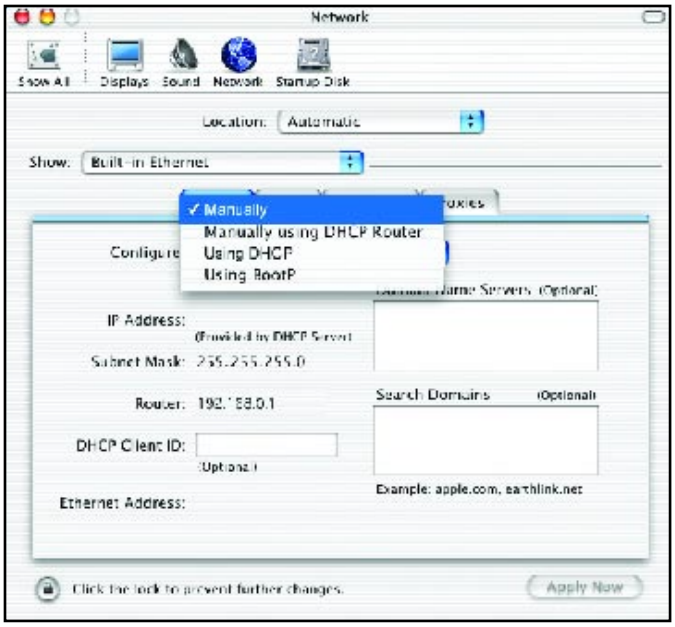
- Click **OK**.



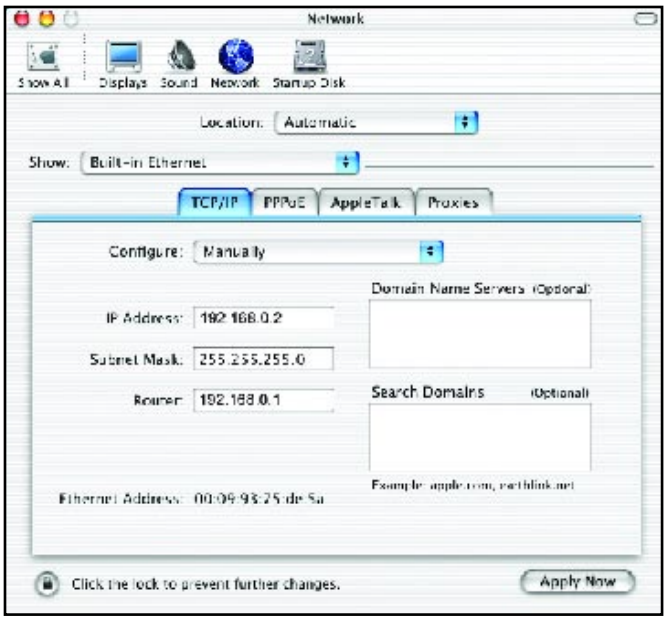
Assigning a Static IP Address in Macintosh

- Go to the **Apple Menu** and select **System Preferences**.
- Click on **Network**.

- Select **Built-in Ethernet** in the **Show** pull-down menu.
- Select **Manually** in the **Configure** pull-down menu.

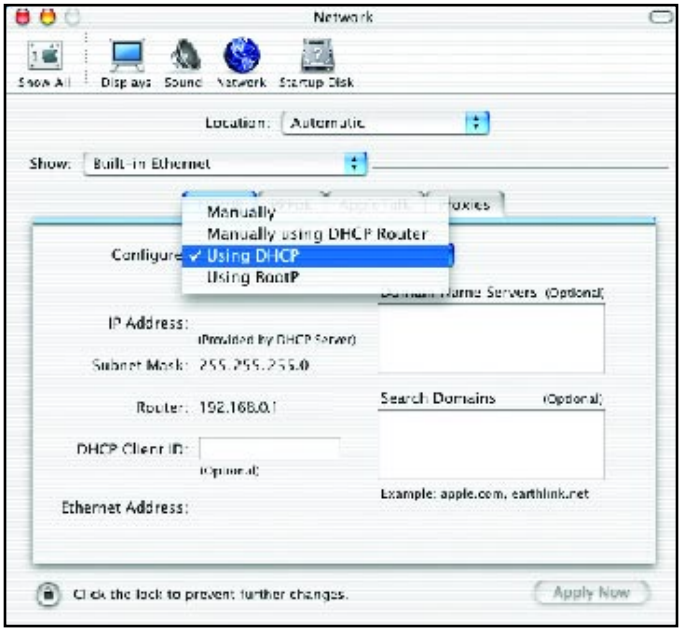


- Input the **Static IP Address**, the **Subnet Mask** and the **Router IP Address** in the appropriate fields.
- Click **Apply Now**.

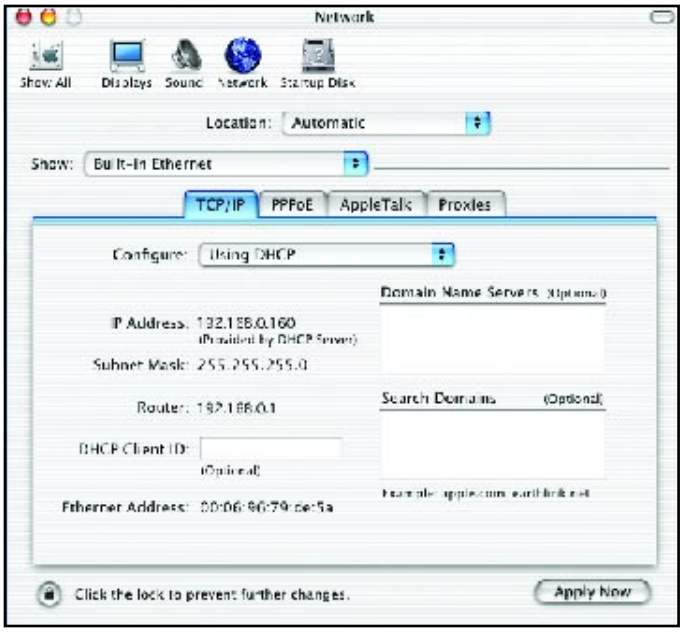


- Go to the **Apple Menu** and select **System Preferences**.
- Click on **Network**.

- Select **Built-in Ethernet** in the **Show** pull-down menu.
- Select **Using DHCP** in the **Configure** pull-down menu.

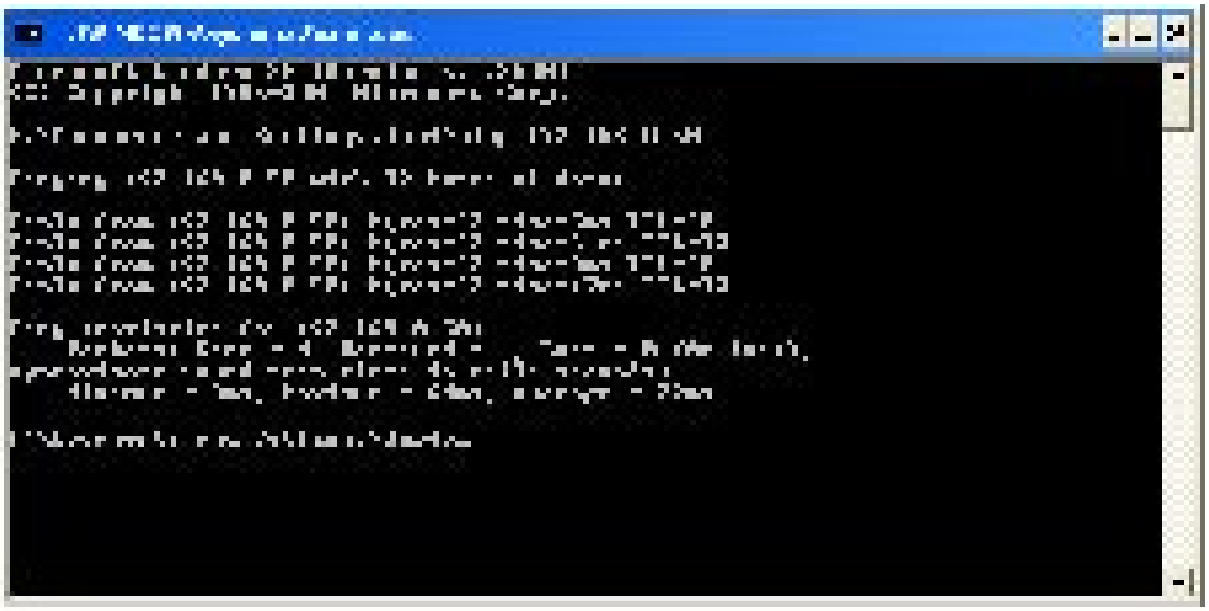


- Click **Apply Now**.
- The **IP Address, Subnet mask**, and the **Router's IP Address** will appear in a few seconds.



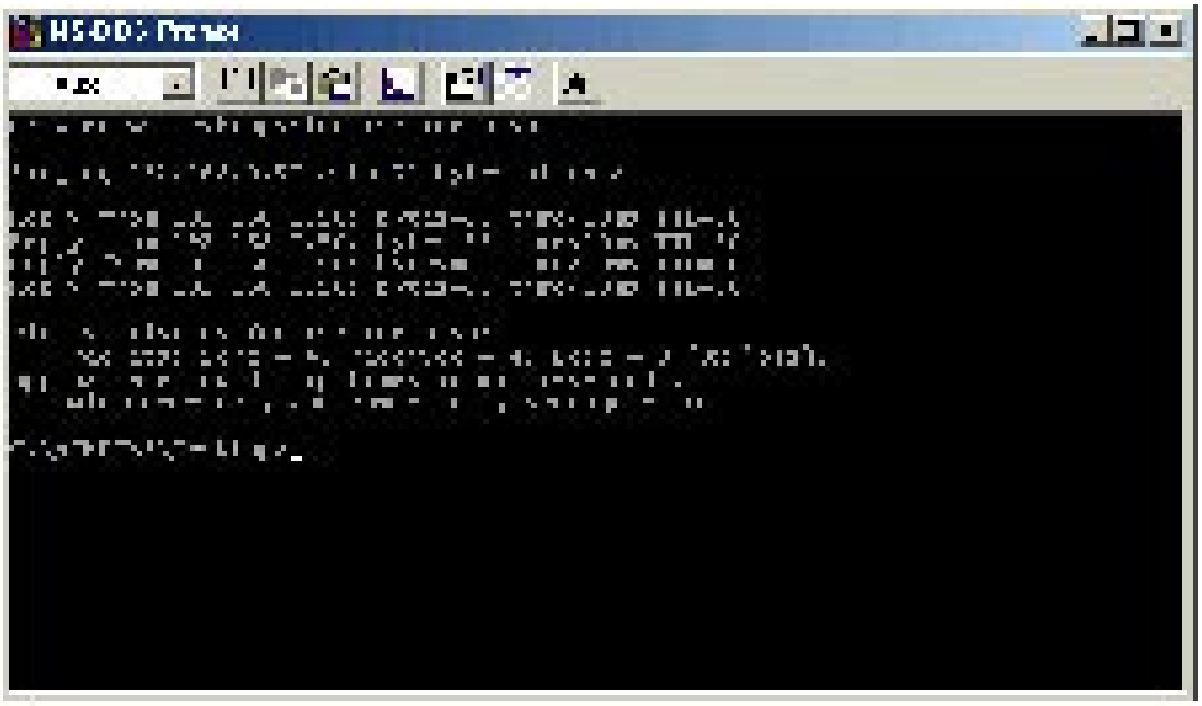
Checking the Wireless Connection by Pinging in Windows XP and 2000

Go to **Start** > **Run** > type **cmd**. A window similar to this one will appear. Type **ping xxx.xxx.xxx.xxx**, where **xxx** is the **IP Address** of the Wireless Router or Access Point. A good wireless connection will show four replies from the Wireless Router or Acess Point, as shown.



Checking the Wireless Connection by Pinging in Windows Me and 98

Go to **Start** > **Run** > type **command**. A window similar to this will appear. Type **ping xxx.xxx.xxx.xxx** where **xxx** is the **IP Address** of the Wireless Router or Access Point. A good wireless connection will show four replies from the wireless router or access point, as shown.



Troubleshooting

This Chapter provides solutions to problems that can occur during the installation and operation of the DI-624M Wireless Broadband Router. We cover various aspects of the network setup, including the network adapters. Please read the following if you are having problems.Note: It is recommended that you use an Ethernet connection to configure the DI-624M Wireless Broadband Router.

Note: It is recommended that you use an Ethernet connection to ***configure the DI-624M Wireless Broadband Router***.

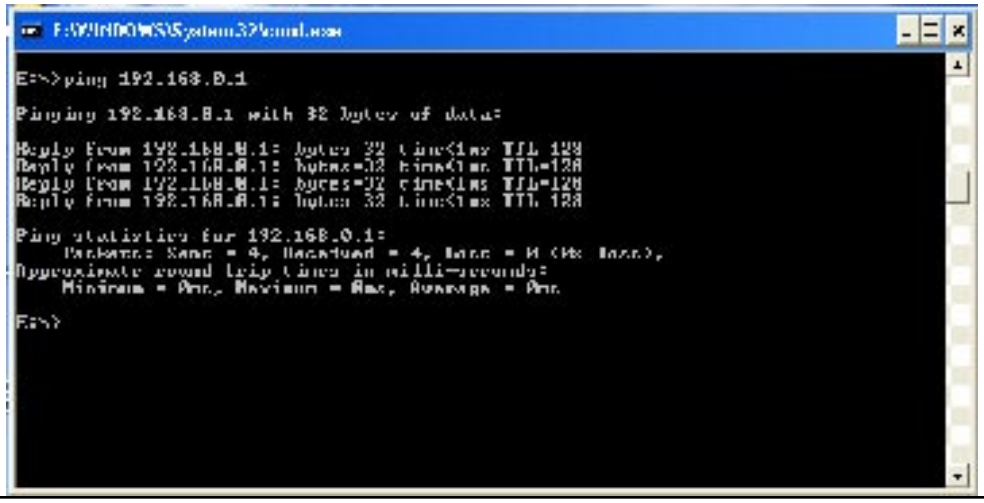
1. The computer used to configure the DI-624M cannot access the Configuration menu.

- Check that the **Ethernet LED** on the DI-624M is **ON**. If the **LED** is not **ON**, check that the cable for the Ethernet connection is securely inserted.
- Check that the Ethernet Adapter is working properly. Please see item 3 (***Check that the drivers for the network adapters are installed properly***) in this **Troubleshooting** section to check that the drivers are loaded properly.
- Check that the **IP Address** is in the same range and subnet as the DI-624M. Please see ***Checking the IP Address in Windows XP*** in the **Networking Basics** section of this manual.

Note: The IP Address of the DI-624M is 192.168.0.1. All the computers on the network must have a unique IP Address in the same range, e.g., 192.168.0.x. Any computers that have identical IP Addresses will not be visible on the network. They must all have the same subnet mask, e.g., 255.255.255.0.

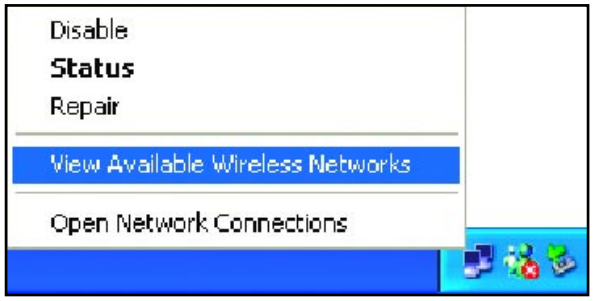
- Do a **Ping test** to make sure that the DI-624M is responding. Go to **Start**>**Run**>Type **Command**>Type **ping 192.168.0.1.** A successful ping will show four replies.

Note: If you have changed the default IP Address, make sure to ping the correct IP Address assigned to the DI-624M.



2. The wireless client cannot access the Internet in the Infrastructure mode.

Make sure the wireless client is associated and joined with the correct Access Point. To check this connection: **Right-click** on the **Local Area Connection icon** in the taskbar> select **View Available Wireless Networks**. The **Connect to Wireless Network** screen will appear. Please make sure you have selected the correct available network, as shown in the illustrations below.



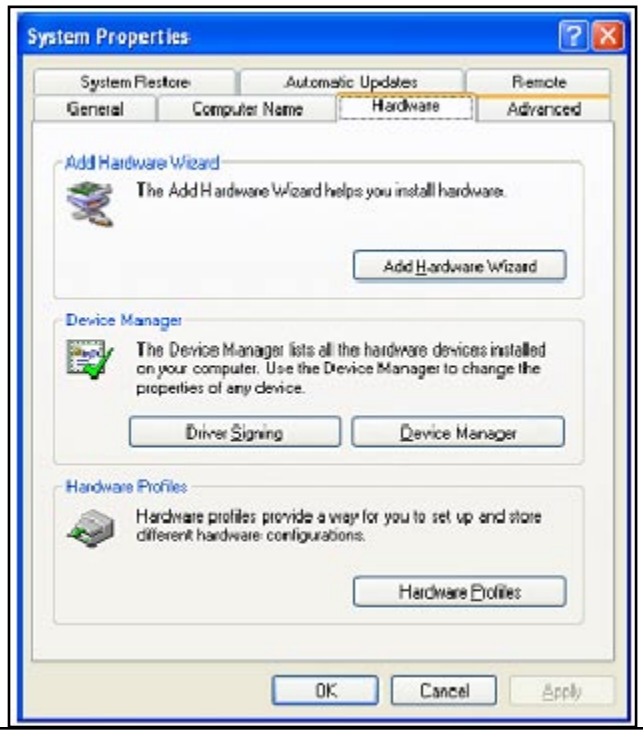
- Check that the **IP Address** assigned to the wireless adapter is within the same **IP Address range** as the access point and gateway. *(Since the DI-624M has an IP Address of 192.168.0.1, wireless adapters must have an IP Address in the same range, e.g., 192.168.0.x. Each device must have a unique IP Address; no two devices may have the same IP Address. The subnet mask must be the same for all the computers on the network.)* To check the **IP Address** assigned to the wireless adapter, **double-click** on the **Local Area Connection icon** in the taskbar > select the **Support tab** and the **IP Address** will be displayed. *(Please refer to **Checking the IP Address** in the **Networking Basics** section of this manual.)*
- If it is necessary to assign a **Static IP Address** to the wireless adapter, please refer to the appropriate section in **Networking Basics**. If you are entering a **DNS Server address** you must also enter the **Default Gateway Address.** *(Remember that if you have a DHCP-capable router, you will not need to assign a Static IP*

3. Check that the drivers for the network adapters are installed properly.

You may be using different network adapters than those illustrated here, but this procedure will remain the same, regardless of the type of network adapters you are using.

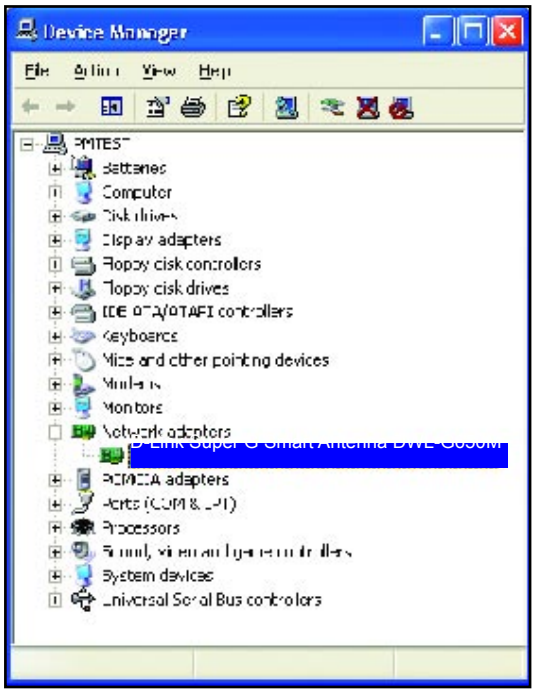
- Go to **Start > My Computer > Properties**.

- **Select** the **Hardware Tab**.
- Click **Device Manager**.

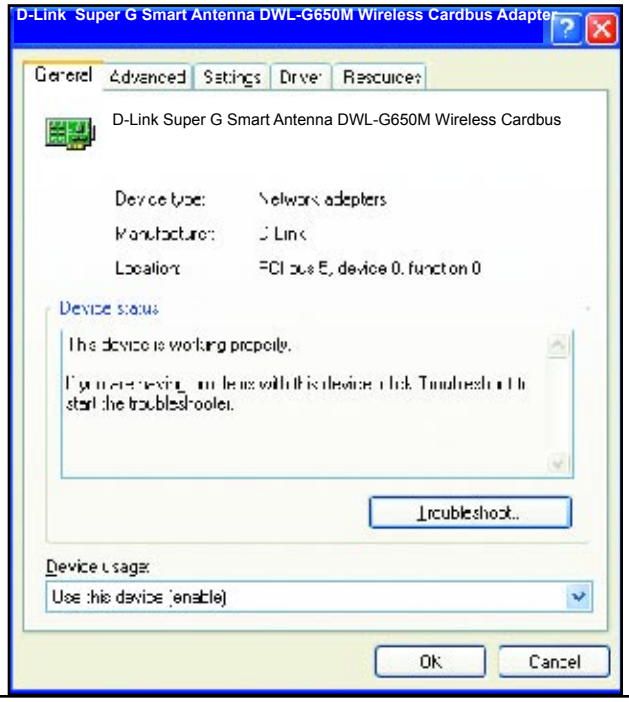


- Double-click on **Network Adapters**.
- Right-click on **D-Link DWL-G650M Super G Smart Antenna Wireless Notebook Adapter**. (In this example we use the DWL-G650M; you may be using other network adapters, but the procedure will remain the same.)

- Select **Properties** to check that the drivers are installed properly.



- Look under **Device Status** to check that the device is working properly.
- Click **OK**.



4. What variables may cause my wireless products to lose reception?

D-Link products let you access your network from virtually anywhere you want. However, the positioning of the products within your environment will affect the wireless range. Please refer to **Installation Considerations** in the **Wireless Basics** section of this manual for further information about the most advantageous placement of your D-Link wireless products.

5. Why does my wireless connection keep dropping?

- Antenna Orientation- Try different antenna orientations for the DI-624M. Try to keep the antenna at least 6 inches away from the wall or other objects.
- If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the Channel on your Router, Access Point and Wireless adapter to a different Channel to avoid interference.
- Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, Monitors, electric motors, etc.

6. Why can't I get a wireless connection?

If you have enabled Encryption on the DI-624M, you must also enable encryption on all wireless clients in order to establish a wireless connection.

- For 802.11b, the Encryption settings are: 64, 128, or 256 bit. Make sure that the encryption bit level is the same on the Router and the Wireless Client.
- Make sure that the SSID on the Router and the Wireless Client are exactly the same. If they are not, wireless connection will not be established.
- Move the DI-624M and the wireless client into the same room and then test the wireless connection.
- Disable all security settings. (WEP, MAC Address Control)\
- Turn off your DI-624M and the client. Turn the DI-624M back on again, and then turn on the client.
- Make sure that all devices are set to **Infrastructure** mode.
- Check that the LED indicators are indicating normal activity. If not, check that the AC power and Ethernet cables are firmly connected.
- Check that the IP Address, subnet mask, gateway and DNS settings are correctly entered for the network.
- If you are using 2.4GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, and lights, your wireless connection will degrade dramatically or drop altogether. Try changing the Channel on your DI-624M, and on all the devices in your network to avoid interference.
- Keep your product away (at least 3-6 feet) from electrical devices that generate RF noise, like microwaves, Monitors, electric motors, etc.

7. I forgot my encryption key.

- Reset the DI-624M to its factory default settings and restore the other devices on your network to their default settings. You may do this by pressing the Reset button on the back of the unit. You will lose the current configuration settings.

8. Resetting the DI-624M to Factory Default Settings

After you have tried other methods for troubleshooting your network, you may choose to **Reset** the DI-624M to the factory default settings. Remember that D-Link Super G Smart Antenna products network together, out of the box, at the factory default settings.

Reset Button

To hard-reset the DI-624M to Factory Default Settings, please do the following:

- Locate the **Reset** button on the back of the DI-624M.
- Use a paper clip to press the **Reset** button.
- Hold for about 10 seconds and then release.
- After the DI-62M reboots (this may take a few minutes) it will be reset to the factory **Default** settings.

Technical Specifications

Standards

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

VPN Pass Through/ Multi-Sessions

- PPTP
- L2TP
- IPSec

Device Management

- Web-Based- Internet Explorer v6 or later; Netscape Navigator v7 or later; or other Java-enabled browsers
- DHCP Server and Client

Advanced Firewall Features

- NAT with VPN Passthrough (Network Address Translation)
- MAC Filtering
- IP Filtering
- URL Filtering
- Domain Blocking
- Scheduling

Wireless Operating Range

- Indoors – up to 328 feet (100 meters)
- Outdoors – up to 1312 feet (400 meters)

Operating Temperature

- 32ºF to 131ºF (0ºC to 55ºC)

Humidity:

- 95% maximum (non-condensing)

Safety and Emissions:

- FCC

Wireless Frequency Range:

- 2.4GHz to 2.462GHz

LEDs:

- Power
- WAN
- LAN (10/100)
- WLAN (Wireless Connection)

Physical Dimensions:

- L = 7.56 inches (192mm)
- W = 4.65 inches (118mm)
- H = 1.22 inches (31mm)

Wireless Transmit Power:

- 15dBm ± 2dB

Security:

- WPA- WiFi Protected Access (64-,128-WEP with TKIP, MIC, IV Expansion, Shared Key Authentication)

External Antenna Type:

- Dual non-detachable antennas

Modulation Technology:

- Orthogonal Frequency Division Multiplexing (OFDM)

Power Input:

- Ext. Power Supply DC 5V, 2.5A

Weight:

- 10.8 oz. (0.3kg)

Warranty:

- 1 year

Wireless Data Rates with Automatic Fallback:

- 108 Mbps
- 54 Mbps
- 48 Mbps
- 36 Mbps
- 24 Mbps
- 18 Mbps
- 12 Mbps
- 11 Mbps

- 9 Mbps
- 6 Mbps
- 5.5 Mbps
- 2 Mbps
- 1 Mbps

Receiver Sensitivity:

- 108Mbps
- 54Mbps OFDM, 10% PER, -71dBm
- 48Mbps OFDM, 10% PER, -71dBm
- 36Mbps OFDM, 10% PER, -78dBm
- 24Mbps OFDM, 10% PER, -82dBm
- 18Mbps OFDM, 10% PER, -85dBm
- 12Mbps OFDM, 10% PER, -87dBm
- 11Mbps CCK, 8% PER, -85dBm
- 9Mbps OFDM, 10% PER, -90dBm
- 6Mbps OFDM, 10% PER, -91dBm
- 5.5Mbps CCK, 8% PER, -88dBm
- 2Mbps QPSK, 8% PER, -89dBm
- 1Mbps BPSK, 8% PER, -92dBm

Frequently Asked Questions

1 Why can´t I access the Web based configuration?

When entering the IP Address of the DI-624M (192.168.0.1), you are not connecting to the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

To resolve difficulties accessing a Web utility, please follow the steps below.

Step 1: Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.

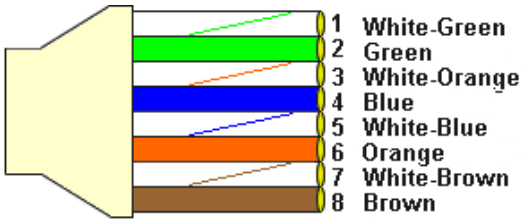
What type of cable should I be using?

The following connections require a Crossover Cable:
Computer to Computer
Computer to Uplink Port
Computer to Access Point
Computer to Print Server
Computer/XBOX/PS2 to DWL-810
Computer/XBOX/PS2 to DWL-900AP+
Uplink Port to Uplink Port (hub/switch)
Normal Port to Normal Port (hub/switch)

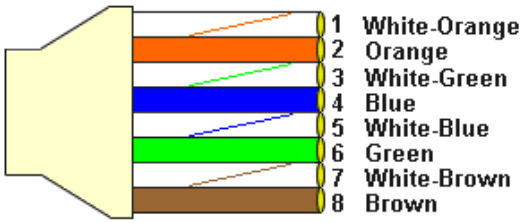
The following connections require a Straight-through Cable:
Computer to Residential Gateway/Router
Computer to Normal Port (hub/switch)
Access Point to Normal Port (hub/switch)
Print Server to Normal Port (hub/switch)
Uplink Port to Normal Port (hub/switch)

Rule of Thumb:
"If there is a link light, the cable is right."

What´s the difference between a crossover cable and a straight-through cable?
The wiring in crossover and straight-through cables are different. The two types of cable have different purposes for different LAN configurations. EIA/TIA 568A/568B define the wiring standards and allow for two different wiring color codes as illustrated in the following diagram.



568A CABLE END



568B CABLE END

*The wires with colored backgrounds may have white stripes and may be denoted that way in diagrams found elsewhere.

How to tell straight-through cable from a crossover cable:

The main way to tell the difference between the two cable types is to compare the wiring order on the ends of the cable. If the wiring is the same on both sides, it is straight-through cable. If one side has opposite wiring, it is a crossover cable.

All you need to remember to properly configure the cables is the pinout order of the two cable ends and the following rules:

A straight-through cable has identical ends. A crossover cable has different ends.

It makes no functional difference which standard you follow for straight-through cable ends, as long as both ends are the same. You can start a crossover cable with either standard as long as the other end is the other standard. It makes no functional difference which end is which. The order in which you pin the cable is important. Using a pattern other than what is specified in the above diagram could cause connection problems.

When to use a crossover cable and when to use a straight-through cable:
Computer to Computer – Crossover

Computer to an normal port on a Hub/Switch – Straight-through

Computer to an uplink port on a Hub/Switch - Crossover

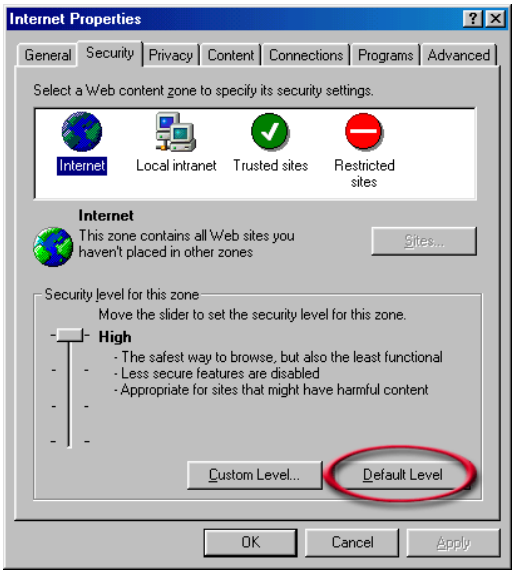
Hub/Switch uplink port to another Hub/Switch uplink port – Crossover

Hub/Switch uplink port to another Hub/Switch normal port - Straight-through

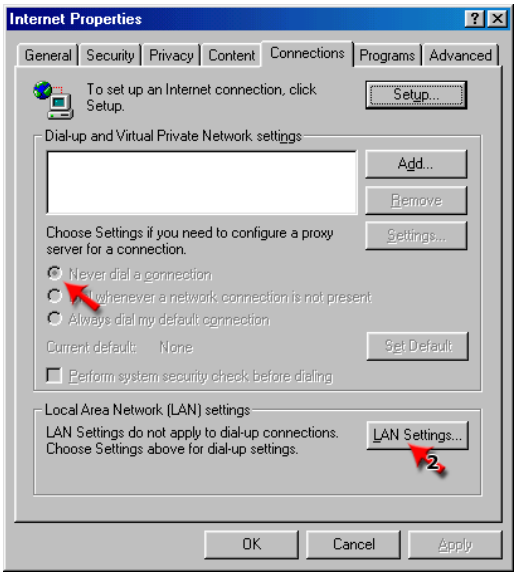
Step 2: Disable any Internet security software running on the computer. Software firewalls like Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, etc. might block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

Step 3: Configure your Internet settings.

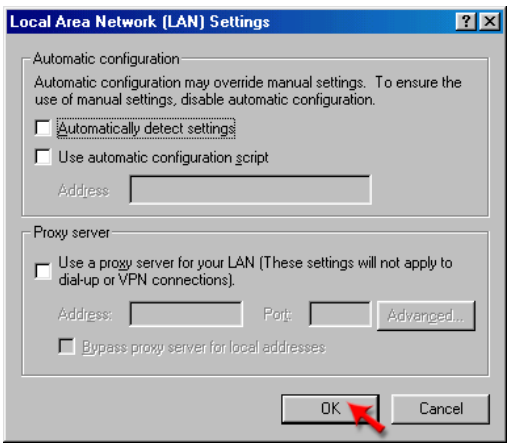
- Go to **Start>Settings>Control Panel**. Double click the **Internet Options** Icon. From the **Security** tab, click the button to restore the settings to their defaults.



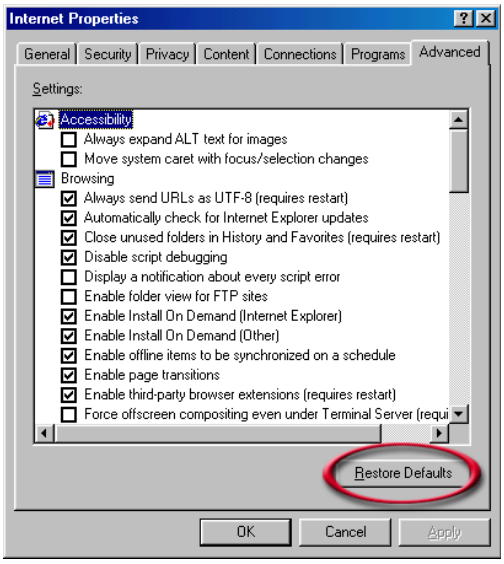
- Click to the **Connection** tab and set the dial-up option to **Never Dial a Connection**. Click the **LAN Settings** button.



- Nothing should be checked. Click **OK**.



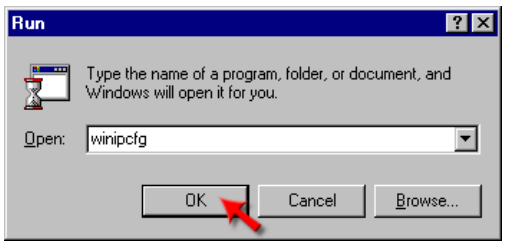
- Go to the **Advanced** tab and click the button to restore these settings to their defaults.
- Click **OK**. Go to the desktop and close any open windows.



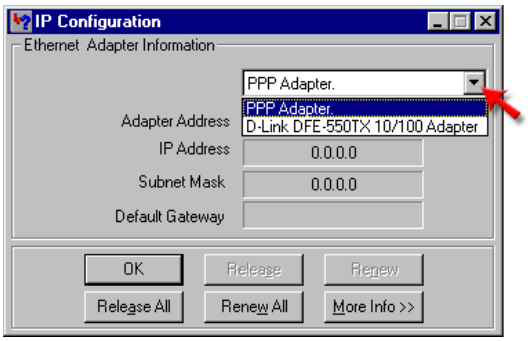
Step 4: Check your IP Address. Your computer must have an IP Address in the same range of the device you are attempting to configure. Most D-Link devices use the 192.168.0.X range.

How can I find my IP Address in Windows 95, 98, or ME?

- Click on **Start**, then click on **Run**.
- The Run Dialogue Box will appear. Type **winipcfg** in the window as shown then click **OK**.



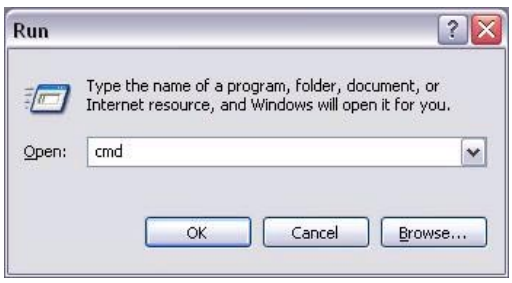
- The **IP Configuration** window will appear, displaying your **Ethernet Adapter Information**.
- Select your adapter from the drop down menu.
- If you do not see your adapter in the drop down menu, your adapter is not properly installed.



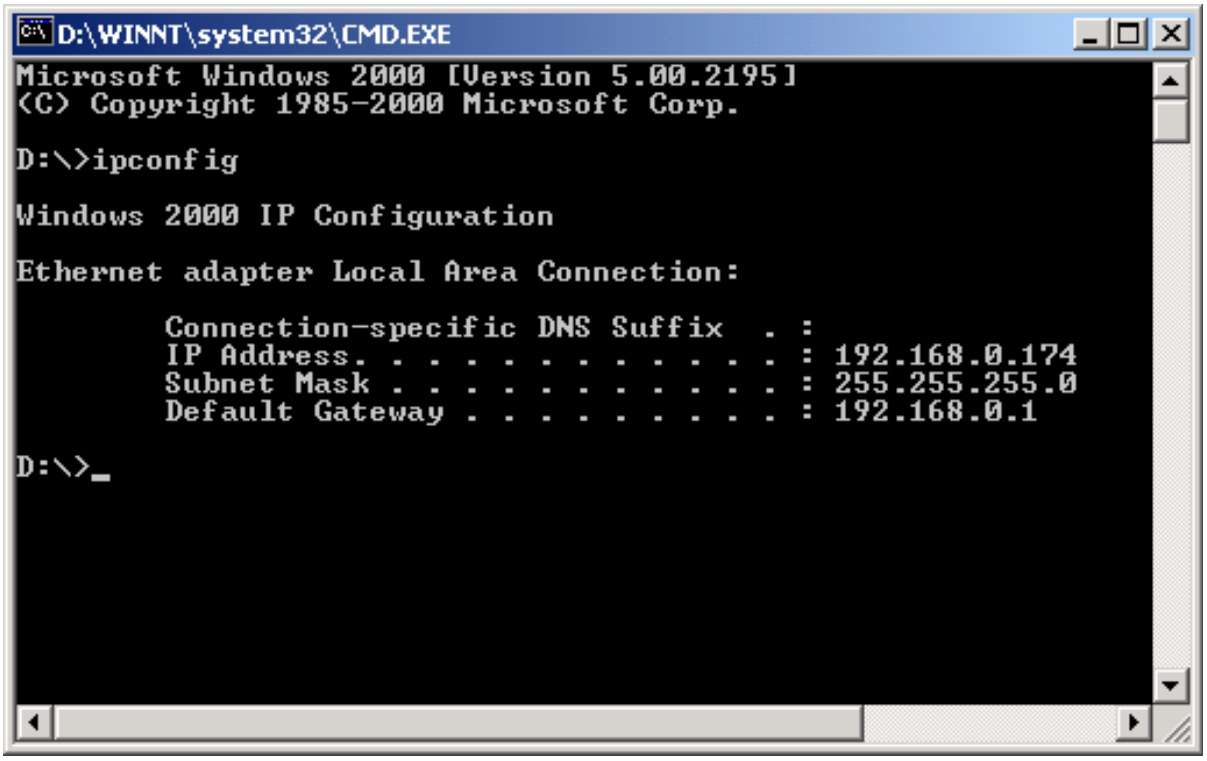
- After selecting your adapter, it will display your IP Address, subnet mask, and default gateway.
- Click **OK** to close the IP Configuration window.

How can I find my IP Address in Windows 2000/XP?

- Click on **Start** and select **Run**.
- Type **cmd** then click **OK**.



- From the Command Prompt, enter **ipconfig**. It will return your IP Address, subnet mask, and default gateway.

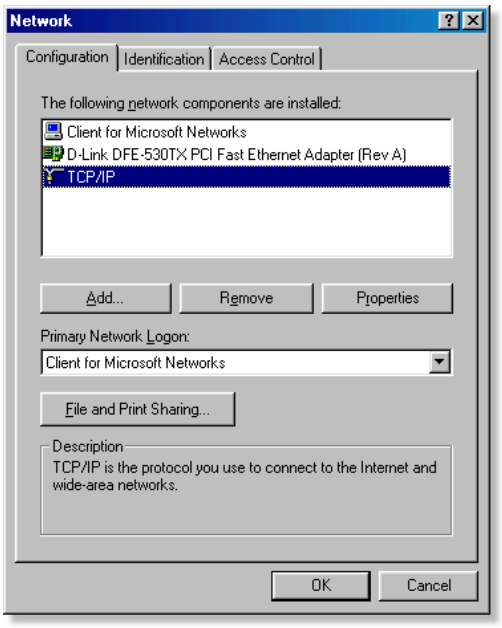


- Type **exit** to close the command prompt.

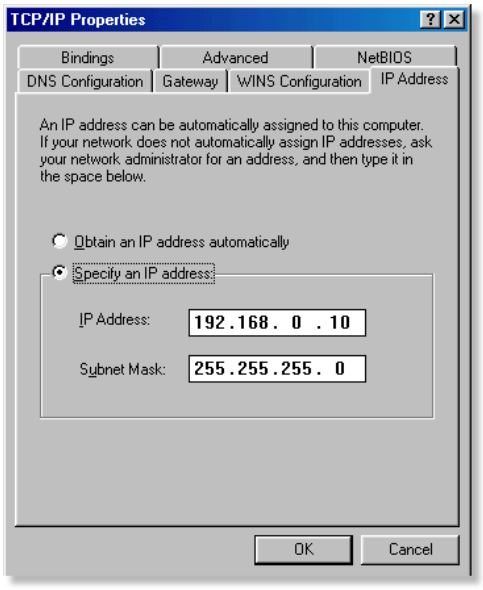
Make sure you take note of your computer´s Default Gateway IP Address. The Default Gateway is the IP Address of the D-Link router. By default, it should be 192.168.0.1

How can I assign a Static IP Address in Windows 98/Me?

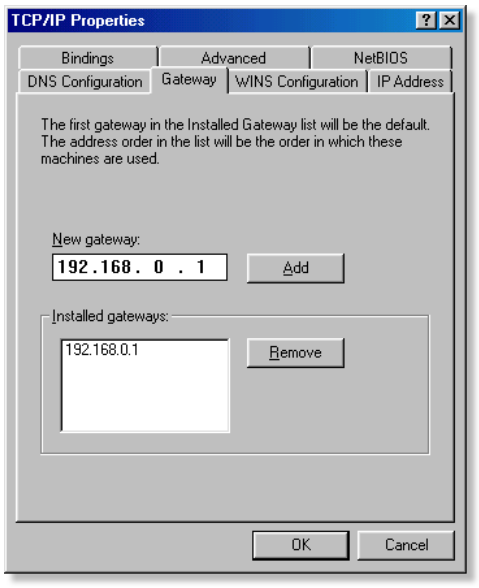
- From the desktop, right-click on the **Network Neigborhood** icon (Win ME - My Network Places) and select **Properties**.
- Highlight **TCP/IP** and click the **Properties** button. If you have more than 1 adapter, then there will be a TCP/IP "Binding" for each adapter. Highlight **TCP/IP > (your network adapter)** and then click **Properties**.



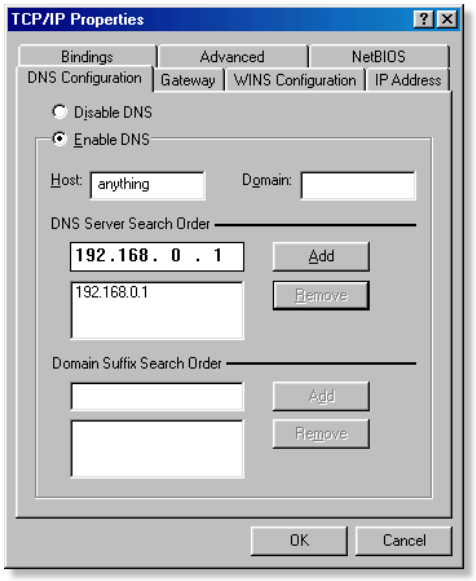
- Click **Specify an IP Address**.
- Enter in an IP Address that is on the same subnet as the LAN IP Address on your router. Example: If the router´s LAN IP Address is 192.168.0.1, make your IP Address 192.168.0.X where X is between 2-99. Make sure that the number you choose is not in use on the network.



- Click on the **Gateway** tab.
- Enter the LAN IP Address of your router here (192.168.0.1).
- Click **Add** when finished.



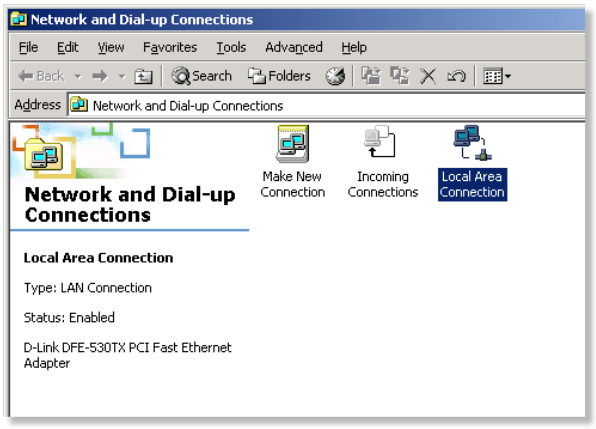
- Click on the **DNS Configuration** tab.
- Click **Enable DNS**. Type in a **Host** (can be any word). Under DNS server search order, enter the LAN IP Address of your router (192.168.0.1). Click **Add**.



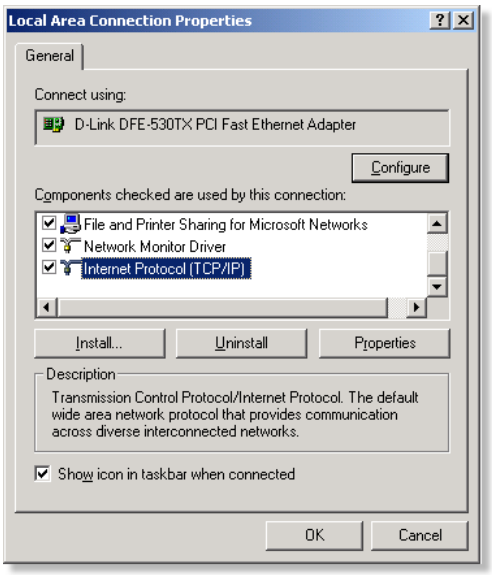
- Click **OK** twice.
- When prompted to reboot your computer, click **Yes**. After you reboot, the computer will now have a static, private IP Address.

How can I assign a Static IP Address in Windows 2000?

- Right-click on **My Network Places** and select **Properties**.
- Right-click on the **Local Area Connection** which represents your network card and select **Properties**.

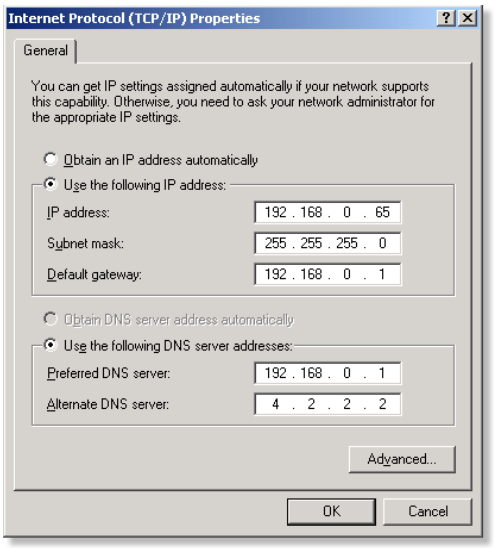


- Highlight **Internet Protocol (TCP/IP)** and click **Properties.**



- Click **Use the following IP Address** and enter an IP Address that is on the same subnet as the LAN IP Address on your router. Example: If the router´s LAN IP Address is 192.168.0.1, make your IP Address 192.168.0.X where X = 2-99. Make sure that the number you choose is not in use on the network.
- Set **the Default Gateway** to be the same as the LAN IP Address of your router (192.168.0.1).
- Set **the Primary DNS** to be the same as the LAN IP address of your router (192.168.0.1).

- **The Secondary DNS** is not needed or enter a DNS server from your ISP.
- Click **OK** twice. You may be asked if you want to reboot your computer. Click **Yes**.



How can I assign a Static IP Address in Windows XP?

- Click on **Start > Control Panel > Network and Internet Connections > Network connections**.
- See the second step for assigning a static IP address in Windows 2000 and continue from there.

Step 5: Access the Web management. Open your Web browser and enter the IP Address of your D-Link device in the address bar. This should open the login page for the Web management. Follow instructions to login and complete the configuration.

2 How can I setup my router to work with a Cable modem connection?

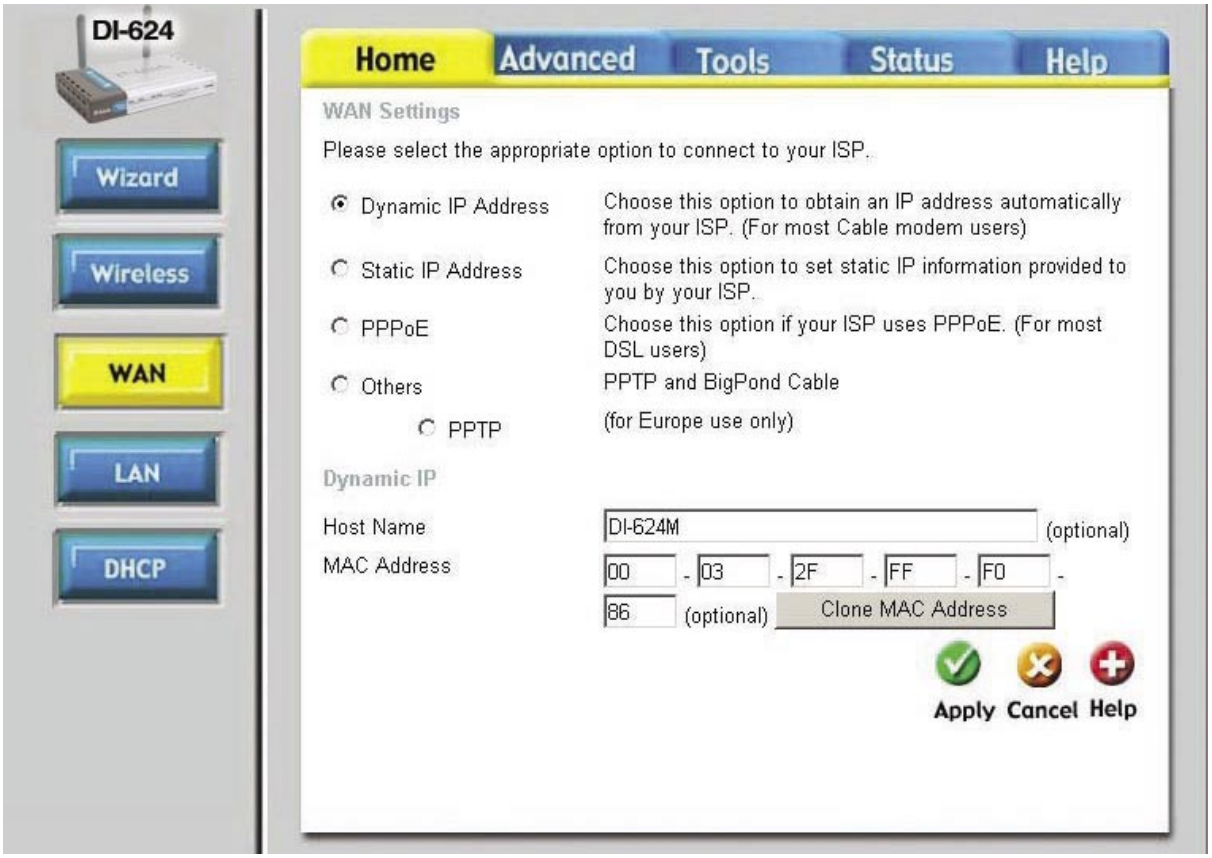
Dynamic Cable connection

(IE AT&T-BI, Cox, Adelphia, Rogers, Roadrunner, Charter, and Comcast).

Note: Please configure the router with the computer that was last connected directly to the cable modem.

Step 1: Log into the web based configuration by typing in the IP Address of the router (default:192.168.0.1) in your web browser. The username is **admin** (all lowercase) and the password is **blank** (nothing).

Step 2: Click the **Home** tab and click the **WAN** button. Dynamic IP Address is the default value, however, if Dynamic IP Address is not selected as the WAN type, select Dynamic IP Address by clicking on the radio button. Click **Clone Mac Address**. Click on **Apply** and then **Continue** to save the changes.



Step 3: Power cycle the cable modem and router.

Turn the cable modem off (first) . Turn the router off Leave them off for 2 minutes.** Turn the cable modem on (first). Wait until you get a solid cable light on the cable modem. Turn the router on. Wait 30 seconds.

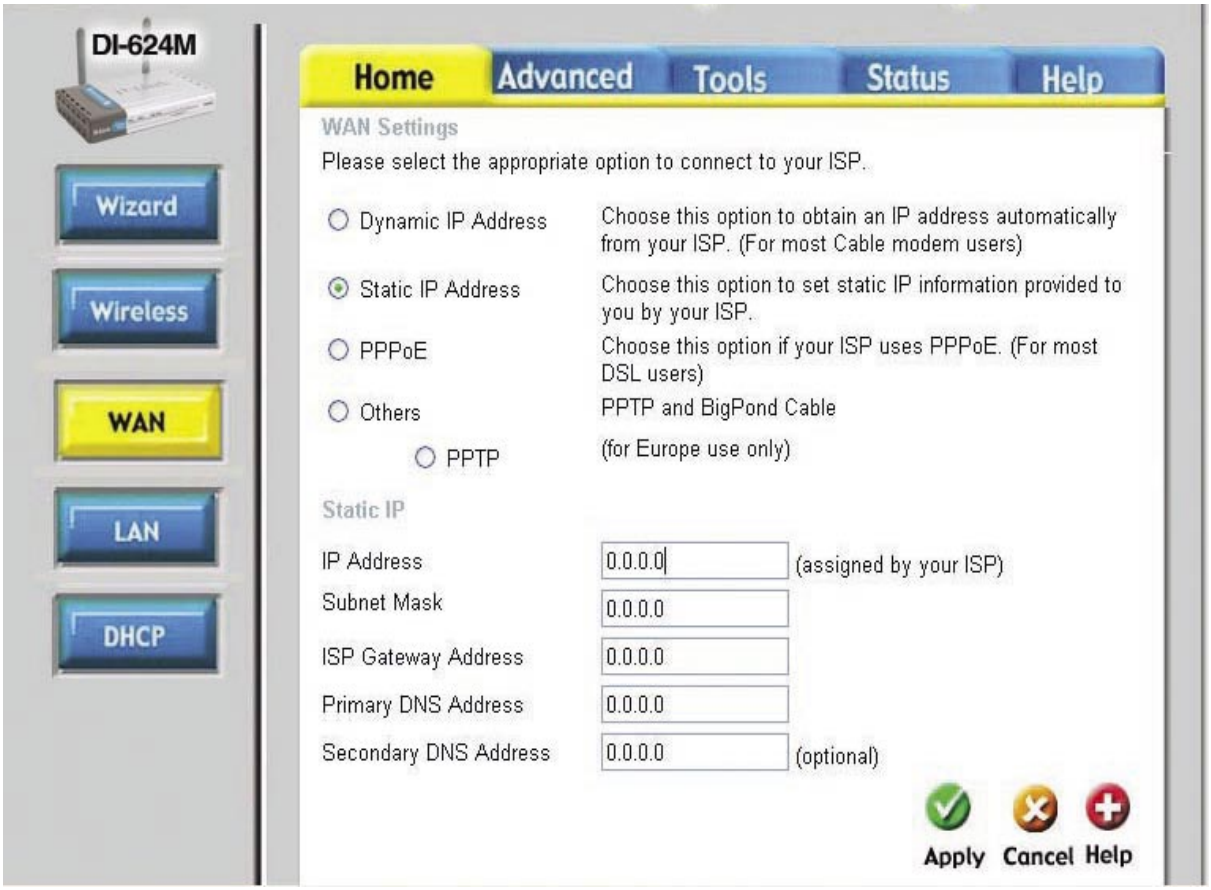
** If you have a Motorola (Surf Board) modem, leave off for at least 5 minutes.

Step 4: Follow step 1 again and log back into the web configuration. Click the **Status** tab and click the **Device Info** button. If you do not already have a public IP Address under the **WAN** heading, click on the **DHCP Renew** and **Continue** buttons.

Static Cable Connection

Step 1: Log into the web based configuration by typing in the IP Address of the router (default:192.168.0.1) in your web browser. The username is **admin** (all lowercase) and the password is **blank** (nothing).

Step 2: Click the **Home** tab and click the **WAN** button. Select **Static IP Address** and enter your static settings obtained from the ISP in the fields provided. If you do not know your settings, you must contact your ISP.



Step 3: Click on **Apply** and then click **Continue** to save the changes.

Step 4: Click the **Status** tab and click the **Device Info** button. Your IP Address information will be displayed under the **WAN** heading.

3 How can I setup my router to work with Earthlink DSL or any PPPoE connection?

Make sure you disable or uninstall any PPPoE software such as WinPoet or Enternet 300 from your computer or you will not be able to connect to the Internet.

Step 1: Upgrade Firmware if needed.

(Please visit the D-Link tech support website at: http://support.dlink.com for the latest firmware upgrade information.)

Step 2: Take a paperclip and perform a hard reset. With the unit on, use a paperclip and hold down the reset button on the back of the unit for 10 seconds. Release it and the router will recycle, the lights will blink, and then stabilize.

Step 3: After the router stabilizes, open your browser and enter 192.168.0.1 into the address window and hit the **Enter** key. When the password dialog box appears, enter the username **admin** and leave the password blank. Click **OK**.

If the password dialog box does not come up repeat **Step 2**.

Note: Do not run Wizard.

Step 4: Click on the **WAN** tab on left-hand side of the screen. Select **PPPoE**.

Step 5: Select **Dynamic PPPoE** (unless your ISP supplied you with a static IP Address).

Step 6: In the username field enter **ELN/username@earthlink.net** and your password, where username is your own username.

For SBC Global users, enter **username@sbcglobal.net**.

For Ameritech users, enter **username@ameritech.net**.

For BellSouth users, enter **username@bellsouth.net**.

For Mindspring users, enter **username@mindspring.com.**

For most other ISPs, enter **username**.

Step 7: Maximum Idle Time should be set to zero. Set **MTU** to 1492, unless specified by your ISP, and set **Autoreconnect** to **Enabled**.

Note: If you experience problems accessing certain websites and/or email issues, please set the MTU to a lower number such as 1472, 1452, etc. Contact your ISP for more information and the proper MTU setting for your connection.

Step 8: Click **Apply**. When prompted, click **Continue**. Once the screen refreshes, unplug the power to the D-Link router.

Step 9: Turn off your DSL modem for 2-3 minutes. Turn back on. Once the modem has established a link to your ISP, plug the power back into the D-Link router. Wait about 30 seconds and log back into the router.

Step 10: Click on the **Status** tab in the web configuration where you can view the device info. Under **WAN**, click **Connect**. Click **Continue** when prompted. You should now see that the device info will show an IP Address, verifying that the device has connected

4 Can I use my D-Link Broadband Router to share my Internet connection provided by AOL DSL Plus?

In most cases yes. AOL DSL+ may use PPPoE for authentication bypassing the client software. If this is the case, then our routers will work with this service. Please contact AOL if you are not sure.

To set up your router:

Step 1: Log into the web-based configuration (192.168.0.1) and configure the WAN side to use PPPoE.

Step 2: Enter your screen name followed by @aol.com for the user name. Enter your AOL password in the password box.

Step 3: You will have to set the MTU to 1400. AOL DSL does not allow for anything higher than 1400.

Step 4: Apply settings.

Step 5: Recycle the power to the modem for 1 minute and then recycle power to the router. Allow 1 to 2 minutes to connect.

If you connect to the Internet with a different internet service provider and want to use the AOL software, you can do that without configuring the router's firewall settings. You need to configure the AOL software to connect using TCP/IP.

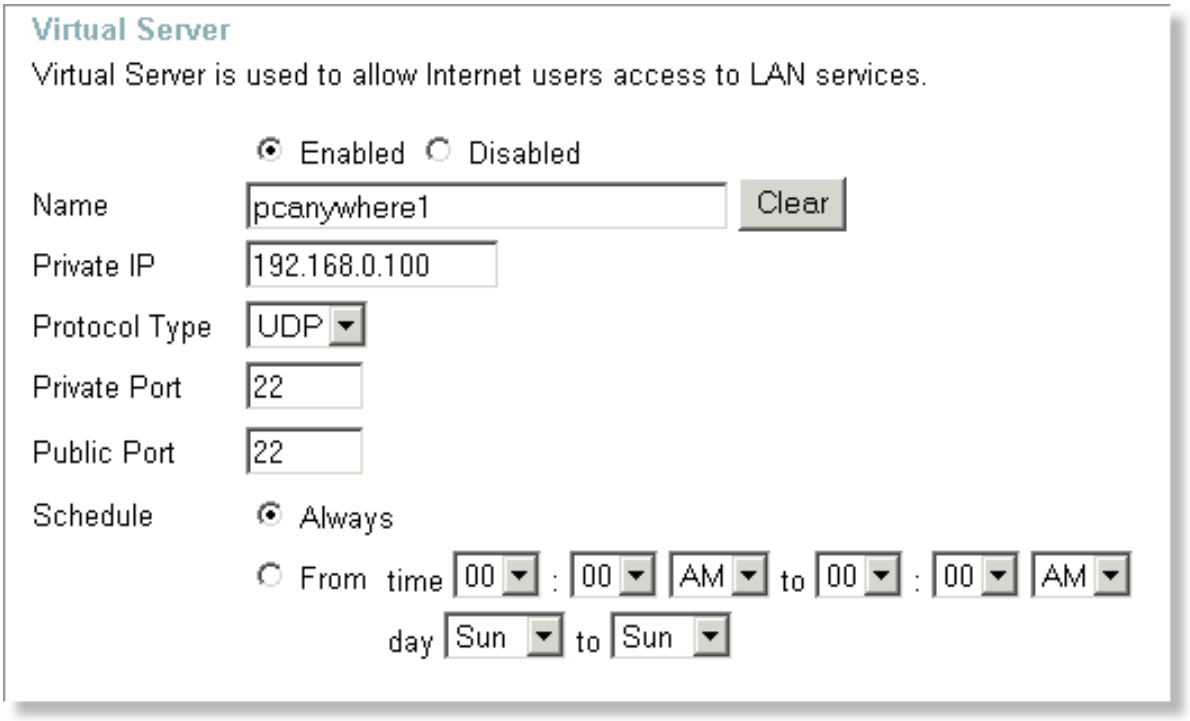
Go to http://www.aol.com for more specific configuration information of their software.

5 How do I open ports on my router?

To allow traffic from the internet to enter your local network, you will need to open up ports or the router will block the request.

Step 1: Open your web browser and enter the IP Address of your D-Link router (192.168.0.1). Enter username (admin) and your password (blank by default).

Step 2: Click on **Advanced** on top and then click **Virtual Server** on the left side.



Step 3: Check **Enabled** to activate entry.

Step 4: Enter a name for your virtual server entry.

Step 5: Next to **Private IP**, enter the IP Address of the computer on your local network that you want to allow the incoming service to.

Step 6: Choose **Protocol Type** - either TCP, UDP, or both. If you are not sure, select both.

Step 7: Enter the port information next to **Private Port** and **Public Port**. The private and public ports are usually the same. The public port is the port seen from the WAN side, and the private port is the port being used by the application on the computer within your local network.

Step 8: Enter the **Schedule** information.

Step 9: Click **Apply** and then click **Continue**.

Note: Make sure DMZ host is disabled. If DMZ is enabled, it will disable all Virtual Server entries.

Because our routers use NAT (Network Address Translation), you can only open a specific port to one computer at a time. For example: If you have 2 web servers on your network, you cannot open port 80 to both computers. You will need to configure 1 of the web servers to use port 81. Now you can open port 80 to the first computer and then open port 81 to the other computer.

6 What is DMZ?

Demilitarized Zone:

In computer networks, a DMZ (demilitarized zone) is a computer host or small network inserted as a neutral zone between a company´s private network and the outside public network. It prevents outside users from getting direct access to a server that has company data. (The term comes from the geographic buffer zone that was set up between North Korea and South Korea following the UN police action in the early 1950s.) A DMZ is an optional and more secure approach to a firewall and effectively acts as a proxy server as well.

In a typical DMZ configuration for a small company, a separate computer (or host in network terms) receives requests from users within the private network for access to Web sites or other companies accessible on the public network. The DMZ host then initiates sessions for these requests on the public network. However, the DMZ host is not able to initiate a session back into the private network. It can only forward packets that have already been requested.

Users of the public network outside the company can access only the DMZ host. The DMZ may typically also have the company´s Web pages so these could be served to the outside world. However, the DMZ provides access to no other company data. In the event that an outside user penetrated the DMZ hosts security, the Web pages might be corrupted but no other company information would be exposed. D-Link, a leading maker of routers, is one company that sells products designed for setting up a DMZ

7 How do I configure the DMZ Host?

The DMZ feature allows you to forward all incoming ports to one computer on the local network. The DMZ, or Demilitarized Zone, will allow the specified computer to be exposed to the Internet. DMZ is useful when a certain application or game does not work through the firewall. The computer that is configured for DMZ will be completely vulnerable on the Internet, so it is suggested that you try opening ports from the Virtual Server or Firewall settings before using DMZ.

Step 1: Find the IP address of the computer you want to use as the DMZ host.

To find out how to locate the IP Address of the computer in Windows XP/2000/ME/9x or Macintosh operating systems please refer to Step 4 of the first question in this section (Frequently Asked Questions).

Step 2: Log into the web based configuration of the router by typing in the IP Address of the router (default:192.168.0.1) in your web browser. The username is **admin** (all lowercase) and the password is **blank** (nothing)

Step 3: Click the **Advanced** tab and then click on the **DMZ** button. Select **Enable** and type in the IP Address you found in step 1.

Step 4: Click **Apply** and then **Continue** to save the changes.

Note: When DMZ is enabled, Virtual Server settings will still be effective. Remember, you cannot forward the same port to multiple IP Addresses, so the Virtual Server settings will take priority over DMZ settings.