D-Link *Air*Plus *G*

DI-824VUP

High-Speed Enhanced 2.4 GHz
Wireless VPN Router

Manual

D-Link®

Building Networks for People

10/24/06

Contents

Package Contents

Contents of Package:

- **D-Link *Air*Plus *G* DI-824VUP** High-Speed Enhanced 2.4GHz Wireless VPN Router
- Power Adapter – 5V DC / 2.5A
- Manual on CD
- Quick Installation Guide

Note: Using a power supply with a different voltage rating than the one included with the DI-824VUP will cause damage and void the warranty for this product.

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

System Requirements For Configuration:

- Ethernet-Based Cable or DSL Modem
- Computer with Windows, Macintosh, or Linux-based operating system with an installed Ethernet adapter
- Internet Explorer version 6.0 or Netscape Navigator version 6.0 and above, with JavaScript enabled

Introduction

The D-Link *Air*Plus *G* DI-824VUP Wireless VPN Router is an 802.11g high performance, wireless router with two printer ports, one parallel and one USB. It is an ideal way to extend the reach and number of computers connected to your wireless network.

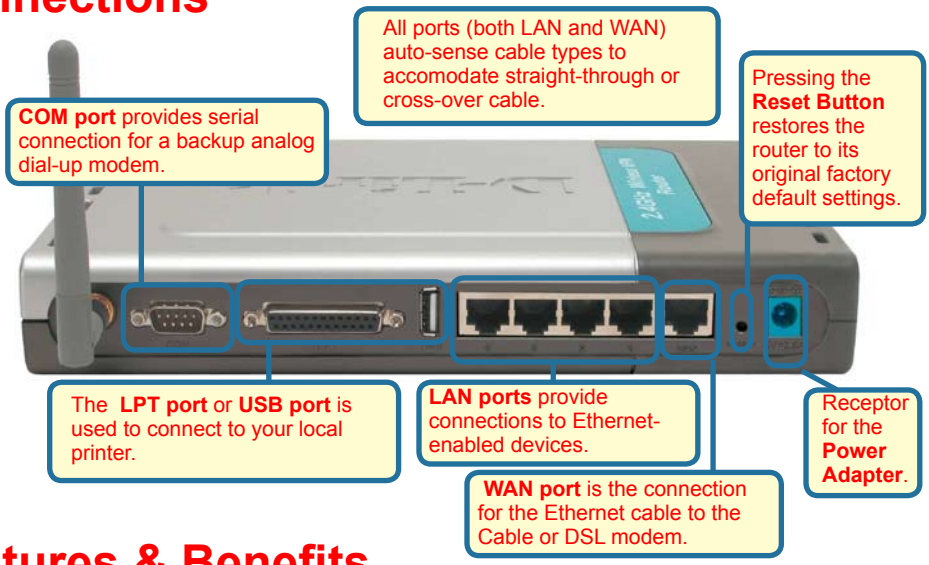
Unlike most 802.11g routers, the DI-824VUP is capable of data transfer speeds up to 54 Mbps* (compared to the standard 11 Mbps) when used with other D-Link *Air*Plus *G* products such as the DWL-G650 and DWL-G520 Wireless Adapters.

After completing the steps outlined in the *Quick Installation Guide* (included in your package) you will have the ability to share information and resources, as well as share a printer wirelessly on your network.

The DI-824VUP is compatible with most popular operating systems, including Macintosh, Linux and Windows, and can be integrated into a large network. This Manual is designed to help you connect the Router and D-Link *Air*Plus 2.4GHz Wireless Adapters into a network in Infrastructure mode. *Please take a look at the* ***Getting Started*** *section in this manual to see an example of an Infrastructure network using the* DI-824VUP*.*

*Maximum wireless signal rate based on 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.

Connections



Features & Benefits

- Connects multiple computers to an Ethernet Broadband (Cable or DSL) modem to share the Internet connection
- Supports VPN pass-through, providing added security
- Advanced Firewall features for added network security
- DHCP server support enables all networked computers to automatically receive IP addresses
- Wireless connection of up to 54Mbps
- Web-based interface for Management
- Access Control to manage users on the network
- Maximum reliability, throughput and connectivity with automatic data rate switching
- Stronger network security with 256-bit encryption
- Printer port enables connection to a network printer
- WAN and LAN ports auto detect cable types (straight-through or cross-over)
- UPnP supported

Note: Please refer to the *Resetting the DI-824VUP to the Factory Defualt Settings* section in this manual for instructions on how to use the Reset button.

LEDS

LED stands for **L**ight-**E**mitting **D**iode. The **DI-824VUP** has the following LEDs as described below:

LED	LED Activity
Power	A steady light indicates a connection to a power source
WAN	A solid light indicates connection on the WAN port. This LED blinks during data transmission
Status	Flashes once per second to indicate the unit is working properly
COM	A steady light indicates a connection to a back-up dial-up modem.
USB	A steady light indicates a connection to a USB printer.
LPT	A steady light indicates a connection to a parallel printer port
WLAN	A blinking light indicates that the wireless segment is ready. This LED blinks during wireless data transmission.
LOCAL NETWORK (Ports 1-4)	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 *Air*Plus wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business, or public access wireless networks. Strictly adhering to the IEEE standard, the D-Link *Air*Plus wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

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

Wireless Basics

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

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

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 (Wireless Local Area Networks) are easy to set up, manage, change, and relocate. Networks that frequently change, both physically and logically, can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

Installation Speed and Simplicity - Installing a wireless LAN system can be fast, easy, and can eliminate the need to pull cable through walls and ceilings.

Network Expansion - Wireless technology allows the network to go where wires cannot.

Scalability – Wireless Local Area Networks (WLANs) can be configured in a variety of topologies to meet the needs of specific applications or existing infrastructure. 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.

Wireless Basics

*The DI-824VUP is compatible with other **D-Link Air**Plus **G** 802.11g products, which include*:

- Enhanced 2.4GHz Wireless Cardbus Adapters used with laptop computers (DWL-G650)
- Enhanced 2.4GHz Wireless PCI cards used with desktop computers (DWL-G520)

Standards-Based Technology

Based on the IEEE **802.11g** standard, the DI-824VUP is interoperable with existing compatible 2.4GHz wireless technology with data transfer speeds of up to 54Mbps (with the D-Link *Air*Plus *G* family of wireless devices,) as well as standard 802.11b technology (the D-Link *Air* family of wireless devices), with speeds of up to 11Mbps.

Installation Considerations

The D-Link *Air*Plus *G* DI-824VUP lets you access your network, using a wireless connection, from virtually anywhere. 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-824VUP and your receiving device (e.g., the DWL-G650) to a minimum-each wall or ceiling can reduce your D-Link *Air*Plus wireless product's range from 3-90 feet (1-30 meters.) Position your receiving devices so that the number of walls or ceilings is minimized.

2. Be aware of the direct line between routers and computers. 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! Try to make sure that devices are positioned so that the signal will travel straight through a wall or ceiling 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 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 RF noise.

Getting Started

With its default settings, the DI-824VUP will connect with other D-Link *Air* or *Air*Plus products, right out of the box.

With a single IP Address from your Broadband Internet Service provider you can share the Internet with all the computers on your local network, without sacrificing speed or security, using D-Link *Air* networking products.

IP ADDRESS

Note: If you are using a DHCP-capable router in your network setup, such as the DI-824VUP, you will not need to assign a static IP Address.

If you need to assign IP Addresses to the computers on the network, please remember that the **IP Address for each computer must be in the same IP Address range as all the computers in the network**, and the Subnet Mask must be exactly the same for all the computers in the network.

For example: If the first computer is assigned an IP Address of 192.168.0.2 with a Subnet Mask of 255.255.255.0, then the second computer can be assigned an IP Address of 192.168.0.3 with a Subnet Mask of 255.255.255.0, etc.

IMPORTANT: If computers or other devices are assigned the same IP Address, one or more of the devices may not function properly on the network.

An **Infrastructure** wireless network contains an Access Point. The **Infrastructure Network** example, shown here, contains the following D-Link network devices:

A wireless Broadband Router -
D-Link *Air*Plus *G* DI-824VUP
A laptop computer with a wireless adapter -
D-Link *Air*Plus *G* DWL-G650
A desktop computer with a wireless adapter -
D-Link *Air*Plus *G* DWL-G520
A Cable modem -
D-Link DCM-201

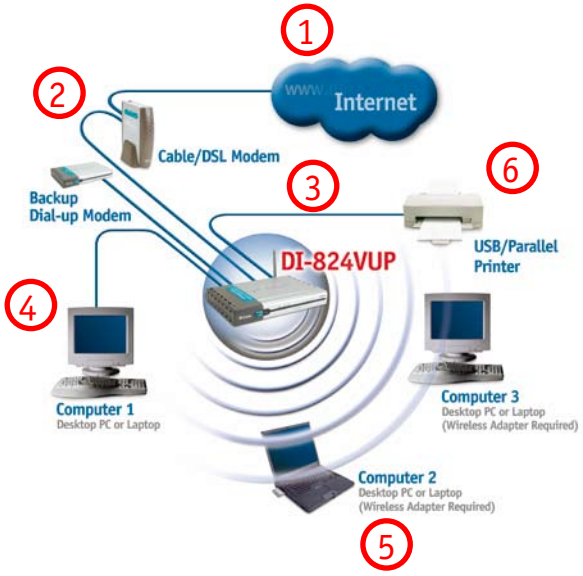
Getting Started

Please refer to the following sections of this manual for additional information about setting up a network:

Networking Basics - learn how to check and assign your IP Address; share printers and files.

Using the Configuration Menu - learn the settings for the DI-824VUP, using the web-based interface.

Troubleshooting - learn how to check for common installation issues and other tips for troubleshooting.



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

For a typical wireless setup at home (as shown above), please do the following:

You will need broadband Internet access (a Cable or DSL subscription 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-824VUP wireless broadband router (*See the Quick Installation Guide included with the DI-824VUP.*)

If you are connecting a desktop computer to your network, you can install the D-Link *Air*Plus *G* DWL-G520 wireless PCI adapter into an available PCI slot. (See the Quick Installation Guide included with the DWL-G520.)

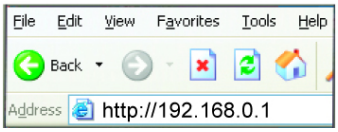
If you are connecting a laptop computer to your network, install the drivers for the wireless cardbus adapter (e.g., D-Link *Air*Plus *G* DWL-G650) into a laptop computer.(See the Quick Installation Guide included with the DWL-G650.) (*See the Quick Installation Guide included with the DWL-650+.*)

Connect your printer to the printer port on the DI-824VUP. Please refer to the quick installation guide for loading the print server software.

Using the Configuration Menu

Whenever you want to configure your network or the DI-824VUP, you can access the Configuration Menu by opening the web-browser and typing in the IP Address of the DI-824VUP. The DI-824VUP default IP Address is shown below:

- Open the web browser
- Type in the **IP Address** of the DI-824VUP



Note: if you have changed the default IP Address assigned to the DI-824VUP, make sure to enter the correct IP Address.

The factory default **User name** is **admin** and the default **Password** is blank (empty). It is recommended that you change the admin password for security purposes. Please refer to **Tools > Admin** to change the admin password.

Home > Wizard

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

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

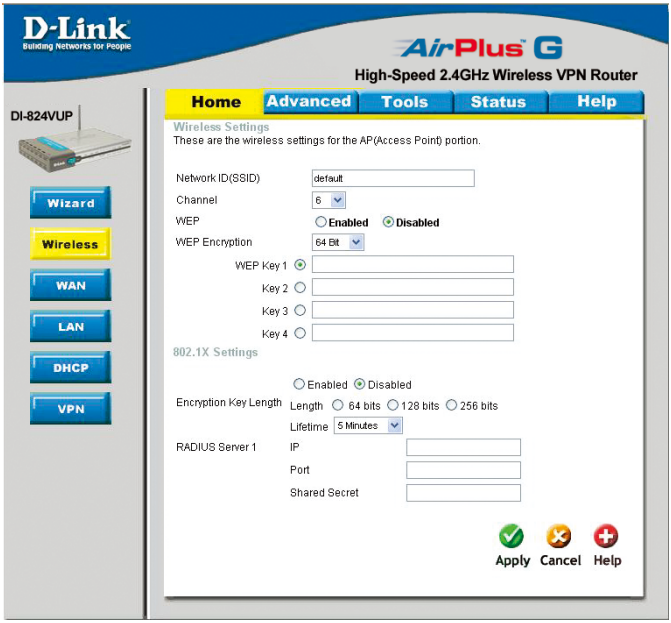
Cancel Clicking **Cancel** will clear changes made to the page.

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

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

Using the Configuration Menu

Home > Wireless



SSID — **default** is the default setting. All devices on the network must share the same SSID. If you change the default setting, the SSID may be up to 32 characters long.

Channel — **6** is the default channel. All devices on the network must share the same channel.

WEP — Click *Enabled* or *Disabled (default).*

WEP Encryption — Select the level of encryption desired: 64, 128, or 256-bit.

64-bit — Requires 10 digits
128-bit — Requires 26 digits
256-bit — Requires 58 digits

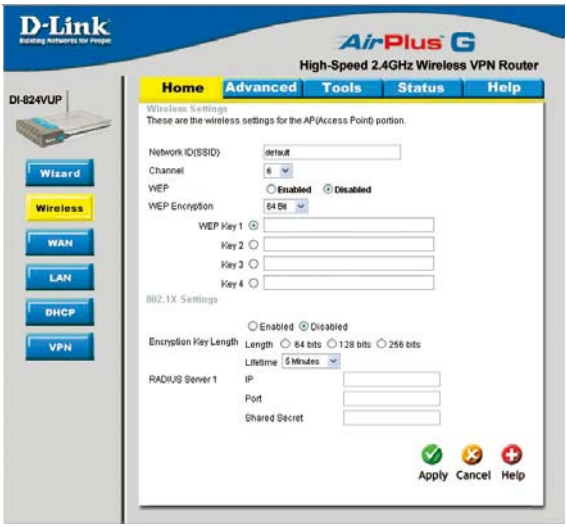
Keys 1-4 — Input up to 4 WEP keys using Hexadecimal format; select the one you wish to use.

Hexadecimal digits consist of the numbers 0-9 and the letters A-F.

WEP (*Wired Equivalent Privacy*) If you enable encryption on the DI-824VUP, make sure to also enable encryption on all 802.11b and 802.11g wireless clients, or wireless connection will not be established.

Using the Configuration Menu

Home > Wireless (Continued)



802.1x

The 802.1x is an authentication method which is designed to compliment the existing WEP encryption. During the authentication process, the server verifies the identity of the client attempting to connect to the network. With the proper client account and encryption key, access to the network is granted. Unfamiliar encryption key or clients are denied from accessing the wireless network. This feature will help safe guard a Local Area Network (LAN) from unwanted visitors.

To take the full advantage of the 802.1x in DI-824VUP, all of the wireless devices on your network must be 802.1x compatible and must have the 802.1x feature enabled to communicate with the router. (Note: Windows 2000 users will find a few downloads to enable 802.1x clients on the Microsoft website.)

Encryption Key

Selection for Encryption Key

- 64 bits – This will generate a 10 digit Dynamic Key value for encryption.
- 128 bits – This will generate a 26 digit Dynamic Key value for encryption.
- 256bits – This will generate a 58 digit Dynamic Key value for encryption.
- Lifetime – Select the period of time before a new Dynamic Key is generated.

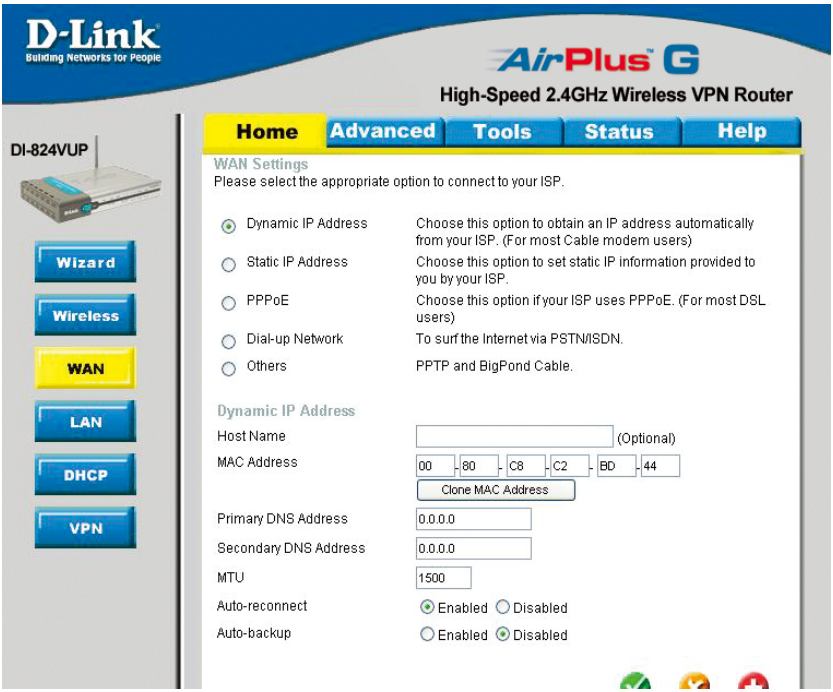
* Dynamic Keying is a technique for changing the WEP Key used between the supplicant (wireless client) and the access point.

RADIUS Server

Enter the IP address and port number of the RADIUS server that will be used as the 802.1x authenticator. Enter the secret key that has also been entered into the RADIUS server's configuration.

Using the Configuration Menu

Home > WAN



Choose WAN Type

WAN stands for ***Wide Area Network***. In this case WAN represents the mode in which your ISP connects to the Internet. If you are uncertain, please ask your ISP which of the following represents your connection mode to the Internet:

Dynamic IP Address — Obtain an IP address from your ISP automatically (mainly for Cable users).

Static IP Address — Your ISP assigns you a Static IP Address.

PPP over Ethernet — Some ISPs require the use of PPPoE to connect to their services (mainly for DSL users).

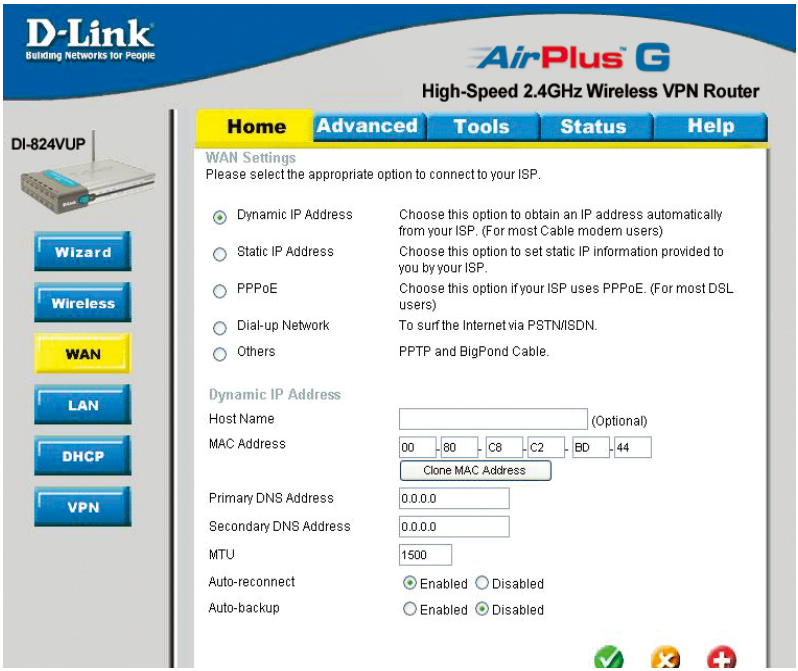
Dial-up Network — Dial-up users can select this option to connect to their ISP through an analog dial-up modem if broadband connectivity is unavailable.

Others

- **PPTP** — For use in Europe only.
- **Big Pond Cable** — For use in Australia only.

Using the Configuration Menu

Home > WAN > Dynamic IP Address



Most Cable modem users will select this option to obtain an IP Address automatically from their ISP (Internet Service Provider).

Host Name

This is optional, but may be required by some ISPs. The host name is the device name of the Router.

Renew IP Forever

Enable this feature to allow the router to automatically reconnect to the ISP if the connection drops.

MAC Address

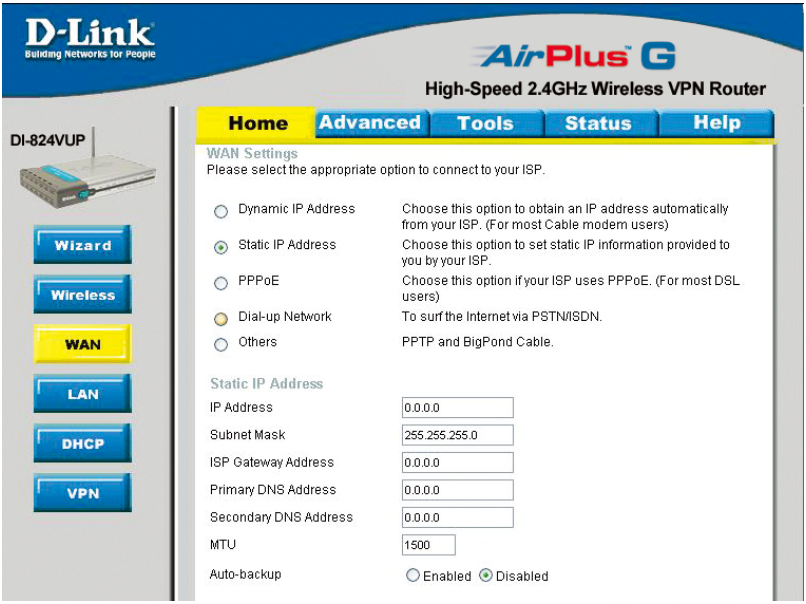
The default MAC Address is set to the WAN's physical interface MAC address on the Router.

Clone MAC Address

This feature will copy the MAC address of the Ethernet card from the computer that is logged into the router, and replace the WAN MAC address of the Router with this Ethernet card MAC address. It is not recommended that you change the default MAC address unless required by your ISP.

Using the Configuration Menu

Home > WAN > Static IP Address



If you use a Static IP Address, you will input information here that your ISP has provided to you.

WAN IP Address Input the IP Address provided by your ISP.

WAN Subnet Mask Input the Subnet Mask provided by your ISP.

WAN Gateway Input the Gateway address provided by your ISP.

Primary DNS Input the primary DNS address provided by your ISP.

Secondary DNS (Optional) Input the Secondary DNS address provided by your ISP.

MTU *Maximum Transmission Unit*; default is 1500; you may need to change the MTU to conform to your ISP.

Auto-backup Enabling this feature will connect your router to the Internet using a dial-up service if your broadband connection becomes unavailable. A subscription to a dial-up service is required for the auto-backup to work.

Using the Configuration Menu

Home > WAN > PPPoE

Most DSL users will select this option to obtain an IP address automatically from their ISP through the use of PPPoE.

User Name — Your PPPoE username provided by your ISP.

Password — Your PPPoE password provided by your ISP.

Service Name — (Optional) Check with your ISP for more information if they require the use of service name.

IP Address — (Optional) Enter in the IP Address if you are assigned a static PPPoE address.

Primary DNS — You will get the DNS IP automatically from your ISP but you may enter a specific DNS address that you want to use instead.

Secondary DNS — (Optional) Input the secondary DNS address.

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

MTU — *Maximum Transmission Unit*; default is 1492; you may need to change the MTU to conform to your ISP.

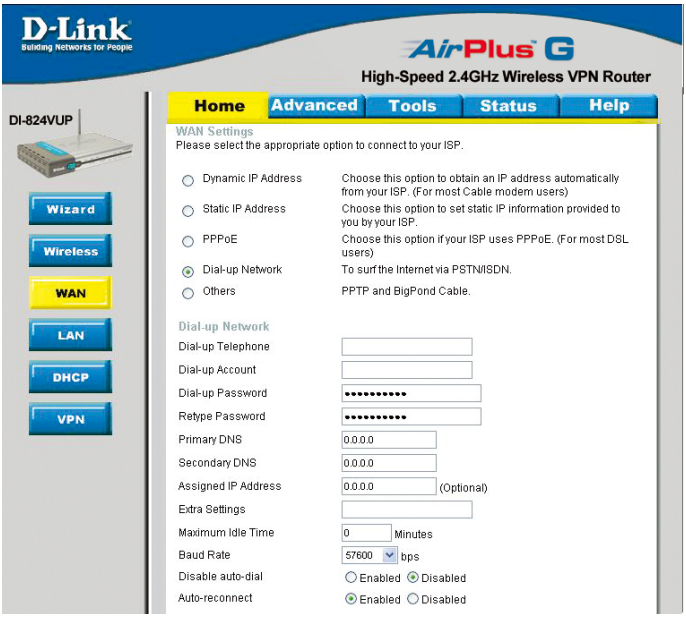
Auto-reconnect — If enabled, the Broadband Router will automatically connect to your ISP after your system is restarted or if the connection is dropped.

Auto-backup — Enabling this feature will connect your router to the Internet using a dial-up service if your broadband connection becomes unavailable. A subscription to a dial-up service is required for the auto-backup to work.

Using the Configuration Menu

Home > WAN > Dial-up Network

Most Dial-up users will select this option to connect to their ISP through an analog dial-up modem. This feature can be used as a back-up when your broadband connectivity is unavailable.



Dial-up Telephone — Telephone number to connect to your ISP

Dial-up Account — Username provided by your ISP

Dial-up Password — Password provided by your ISP

Primary DNS/ Seconday DNS — If the settings are configured as “0.0.0.0,” they will be automatically assigned upon connection.

Assigned IP Address — (Optional) Enter in the IP Address if you are assigned a static PPPoE address.

Extra Settings — This setting is used to optimize the communication quality between the ISP and your analog dial-up modem. (Initialization string) - optional.

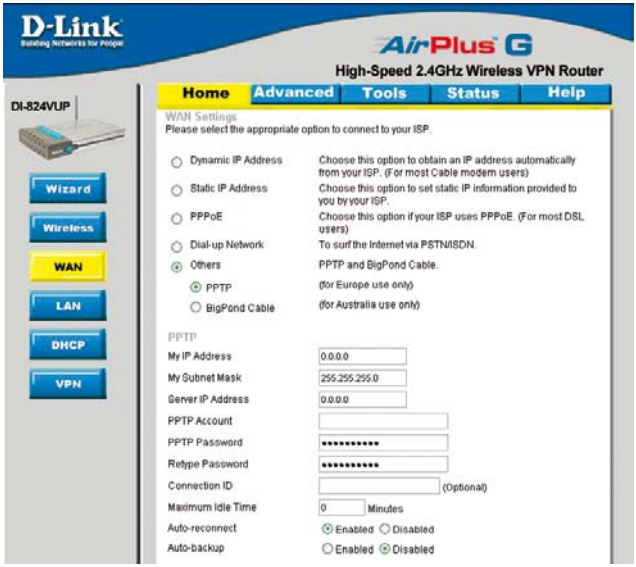
Maximum Idle Time — Enter a maximum idle time during which Internet connection is maintained during inactivity. To disable this feature, enable *Auto-reconnect*.

Baud Rate — The communication speed between the DI-824VUP and your modem.

Auto-reconnect — If enabled, the Broadband Router will automatically connect to your ISP after your system is restarted or if the connection is dropped.

Using the Configuration Menu

Home > WAN > Others > PPTP



Point-to-Point Tunneling Protocol (PPTP) is a WAN connection used in Europe.

My IP Address Enter the IP Address.

My Subnet Mask Enter the Subnet Mask.

Server IP Address Enter the Server IP Address.

PPTP Account Enter the PPTP account name.

PPTP Password Enter the PPTP password.

Connection ID (Optional) Enter the connection ID if required by your ISP.

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

Auto-reconnect If enabled, the Broadband Router will automatically connect to your ISP after your system is restarted or if the connection is dropped.

Auto-backup Enabling this feature will connect your router to the Internet using a dial-up service if your broadband connection becomes unavailable. A subscription to a dial-up service is required for the auto-backup to work.

Using the Configuration Menu

Home > WAN > Others > BigPond Cable

Dynamic IP Address for BigPond is a WAN connection used in Australia.

User Name Enter in the user name for the BigPond account.

Password Enter the password for the BigPond account.

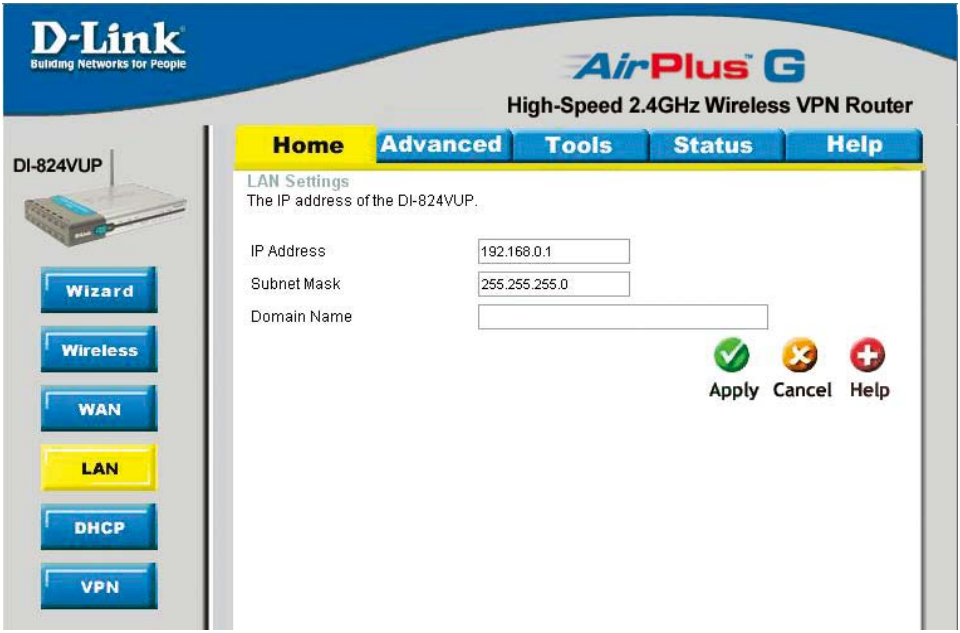
Login Server IP (Optional) Enter the Login Server IP if required.

Auto-reconnect If enabled, the Broadband Router will automatically connect to your ISP after your system is restarted or if the connection is dropped.

Auto-backup Enabling this feature will connect your router to the Internet using a dial-up service if your broadband connection becomes unavailable. A subscription to a dial-up service is required for the auto-backup to work.

Using the Configuration Menu

Home > LAN



LAN is short for Local Area Network. This is considered your internal network. These are the IP settings of the LAN interface for the DI-824VUP. 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.

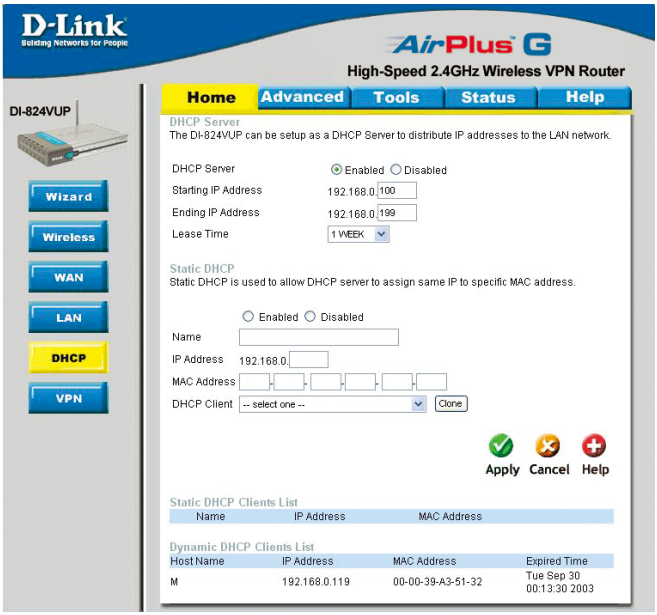
IP Address — The IP address of the LAN interface. The default IP address is: **192.168.0.1**.

Subnet Mask — The subnet mask of the LAN interface. The default subnet mask is **255.255.255.0**.

Domain Name — (Optional) The name of your local domain.

Using the Configuration Menu

Home > DHCP



DHCP stands for *Dynamic Host Control Protocol*. The DI-824VUP 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-824VUP. 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 Enable or disable the DHCP service.

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 DHCP lease.

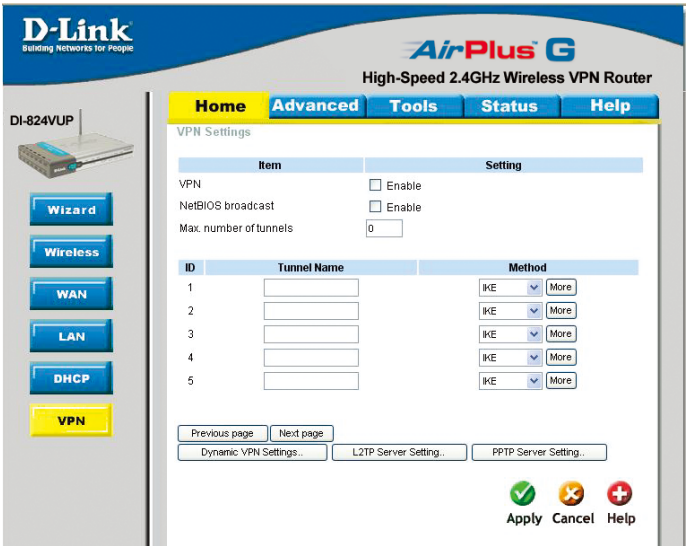
Static DHCP Used to allow the DHCP server to assign the same IP adress to a specific MAC address. Enter the name, IP address, and MAC address into the fields. Select which DHCP client to clone.

DHCP Clients List Lists the DHCP clients connected to the DI-824VUP. Click **Refresh** to update the list. The table will show the Host Name, IP Address, and MAC Address of the DHCP client computer.

Using the Configuration Menu

Home > VPN Settings

VPN Settings are settings that are used to create virtual private tunnels to remote VPN gateways. The tunnel technology supports data confidentiality, data origin, authentication, and data integrity of network information by utilizing encapsulation protocols, encryption algorithms, and hashing algorithms.



VPN

Click Enable to enable VPN tunnels. When you are not using the VPN feature, it is best to keep VPN disabled.

NetBIOS broadcast

Enable this to allow NetBIOS braodcast over the VPN tunnels.

Max. number of tunnels

Select the maximum number of allowable tunnels.

Tunnel Name

Create a name for the tunnel.

Method

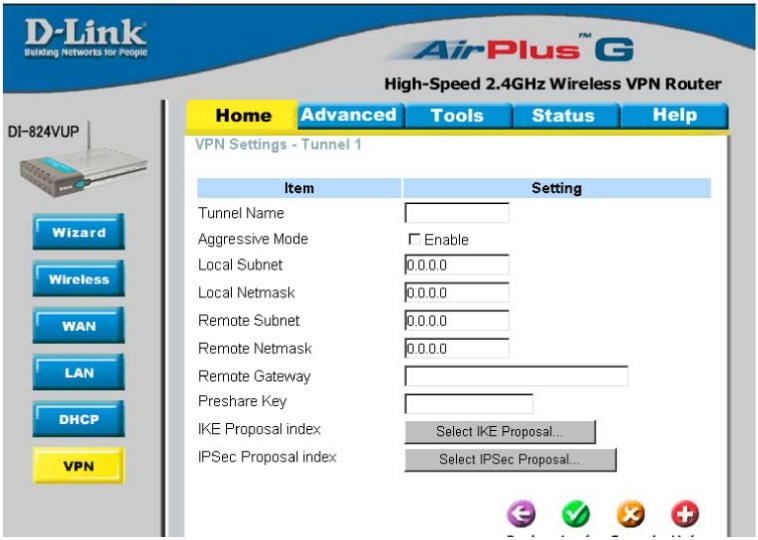
IPSec VPN supports two kinds of key-obtained methods: manual key and automatic key exchange. Manual key approach indicates that the two endpoint VPN gateways require setting up authentication and encryption key by the Administrator manually. However, IKE approach will perform automatic Internet key exchange. Admins of both endpoint gateways will only need to set the same pre-shared key.

More

For more in depth configuration to adjust manual key or IKE method settings, click **More.**

Using the Configuration Menu

Home > VPN Settings > Tunnel > Method >IKE



Tunnel Name Current tunnel name.

Aggressive Mode Enabling this mode will accelerate establishing tunnel, but the device will have less security.

Local Subnet The subnet of the VPN gateway's local network. It can be a host, a partial subnet or a whole subnet.

Local Netmask Enter the Subnet Mask for the Local Network of the router.

Remote Subnet The subnet of the remote VPN gateway's local network. It can be a host, a partial subnet, or a whole subnet.

Remote Netmask The Subnet Mask of the remote VPN gateway's Local Network.

Remote Gateway The WAN IP address of remote VPN gateway.

Preshared Key The first key that supports IKE mechanism of both VPN gateways for negotiating further security keys. The pre-shared key must be the same for both endpoint gateways.

IKE Proposal index Click the button to setup a set of frequent-used IKE proposals and select from the set of IKE proposals for the tunnel.

IPSec Proposal index Click the button to setup a set of frequent-used IPSec proposals and select from the set of IPSec proposals for the tunnel.

Using the Configuration Menu

Home > VPN Settings > Tunnel > Method > IKE > Select IKE Proposal

IKE Proposal index A list of selected proposal indexes from the IKE proposal pool listed below.

Proposal Name This is the name used to classify the IKE proposal.

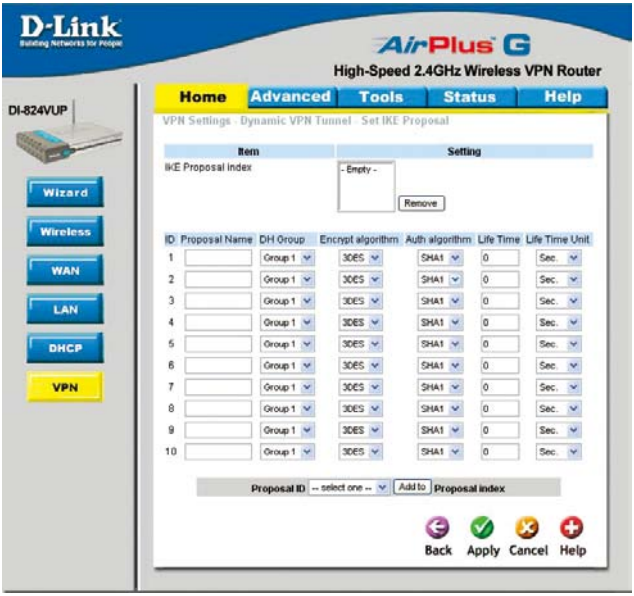
DH Group There are three groups that can be selected: group 1 (MODP768), group 2 (MODP1024), and group 5 (MODP1536).

Encrypt algorithm There are two algorithms that can be selected: 3DES and DES.

Auth algorithm There are two algorithms that can be selected: SHA1 and MD5.

Using the Configuration Menu

Home > VPN Settings > Tunnel > Method > IKE > Select IKE Proposal *Continued...*



Life Time Enter in the life time value.

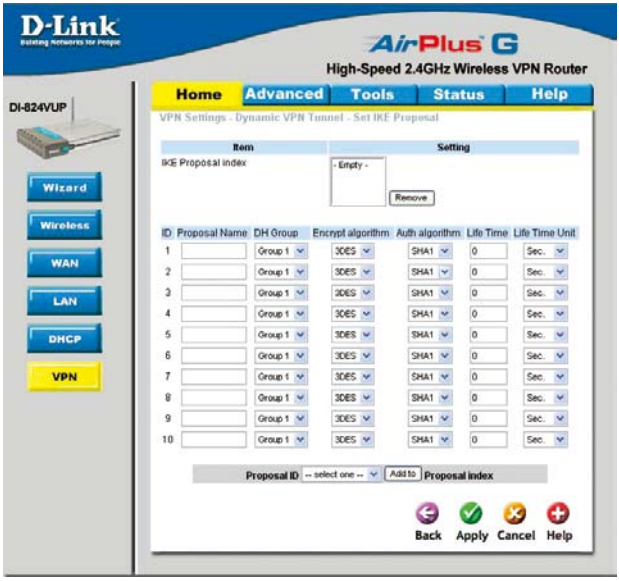
Life Time Unit There are two units that can be selected: second and KB.

Proposal ID The identifier of IKE proposal can be chosen for adding the corresponding proposal to the dedicated tunnel.

Add to Click it to add the chosen proposal indicated by proposal ID to IKE Proposal index list.

Using the Configuration Menu

Home > VPN Settings > Tunnel > Method > IKE > Select IPSEC Proposal



IPSec Proposal index — A list of selected proposal indexes from the IPSec proposal pool listed below.

Proposal Name — This is the name used to classify the IPSec Proposal

DH Group — There are three groups that can be selected: group 1 (MODP768), group 2 (MODP1024), and group 5 (MODP1536).

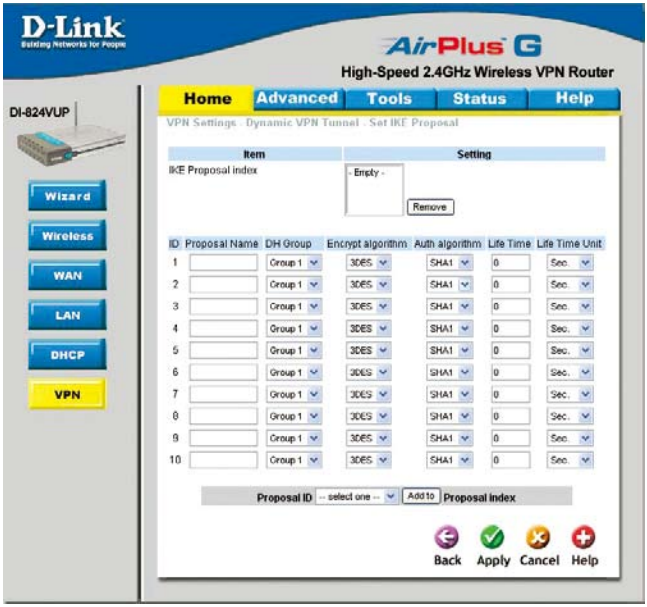
Encap protocol — There are two protocols that can be selected: ESP and AH.

Encrypt algorithm — There are two algorithms that can be selected: 3DES and DES.

Auth algorithm — There are three algorithms that can be selected: SHA1, MD5, and None.

Using the Configuration Menu

Home > VPN Settings > Tunnel > Method > IKE > Select IPSEC Proposal *Continued...*



Life Time — Enter in a life time value.

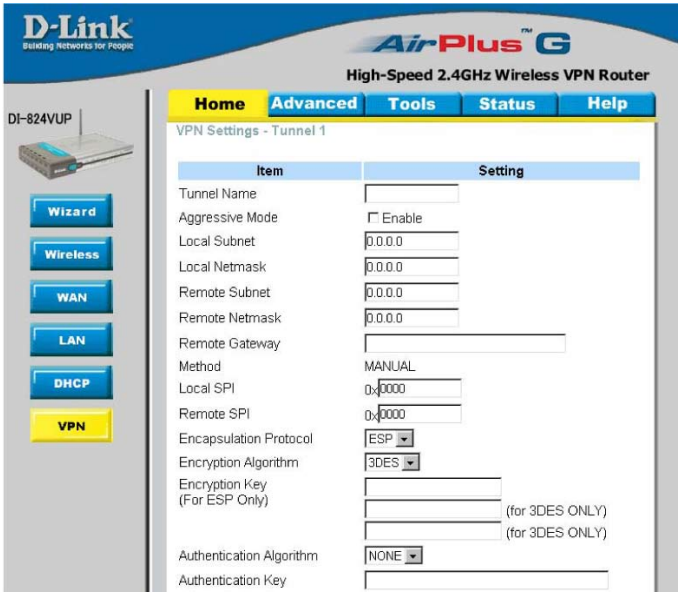
Life Time Unit — There are two units that can be selected: second and KB.

Proposal ID — The identifier of IPSec proposal can be chosen for adding the corresponding proposal to the dedicated tunnel.

Add to — Click it to add the chosen proposal indicated by proposal ID to IPSec Proposal index list.

Using the Configuration Menu

Home > VPN Settings > Tunnel > Manual



Tunnel Name Current tunnel name.

Aggressive Mode Enabling this mode will accelerate establishing tunnel, but the device will have less security.

Local Subnet The subnet of the VPN gateway's local network. It can be a host, a partial subnet, or a whole subnet.

Local Netmask Enter the Subnet Mask for the Local Network of the router.

Remote Subnet The subnet of the remote VPN gateway's local network. Enter in a valid Netmask IP address of the remote router.

Remote Netmask The Subnet Mask of the remote VPN gateway's Local Network.

Remote Gateway The WAN IP address of remote VPN gateway.

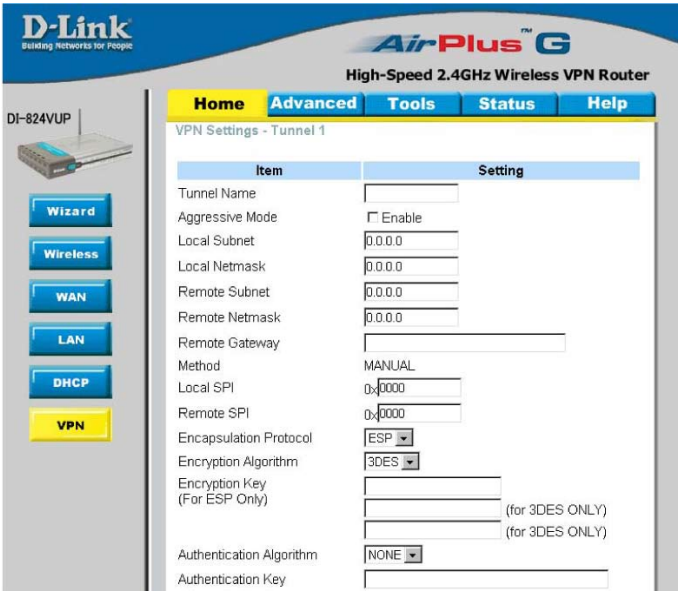
Method The set of rules applied when connecting to the VPN gateway.

Local SPI The value of the local SPI should be set in hex format.

Remote SPI The value of the remote SPI should be set in hex format.

Using the Configuration Menu

Home > VPN Settings > Tunnel > Manual *Continued...*



Encapsulation Protocol — There are two protocols that can be selected: ESP and AH.

Encryption Algorithm — There are two algorithms that can be selected: 3DES and DES.

Encryption Key — For DES, the encryption key is 8 bytes (16 Char.). For 3DES, the encryption key is 24 bytes (48 Char.).

Authentication Algorithm — There are two algorithms that can be selected: SHA1 and MD5.

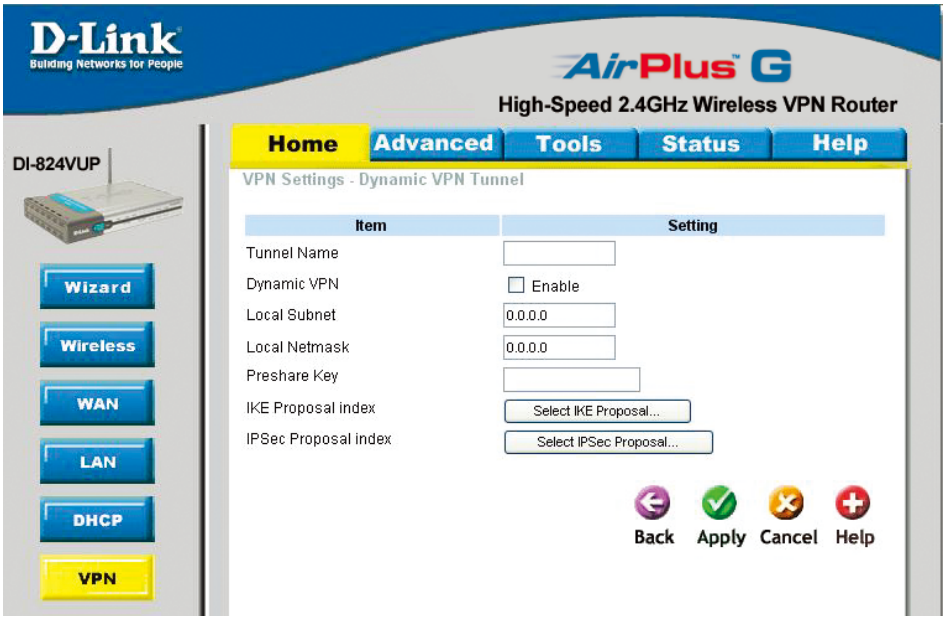
Authentication Key — For MD5, the authentication algorithm is16 bytes (32 Char.).For SHA1, the authentication algorithm is 20 bytes.(40 Char.).

Life Time — Enter in the life time value.

Life Time Unit — There are two units that can be selected: Second and KB.

Using the Configuration Menu

Home > VPN Settings > Dynamic VPN Tunnel



VPN Settings - IKE

There are three parts that are necessary to setup the configuration of IKE for the dedicated tunnel: basic setup, IKE proposal setup, and IPSec proposal setup. Basic setup includes the setting of following items: local subnet, local netmask, remote subnet, remote netmask, remote gateway, and pre-shared key. The tunnel name is derived from the previous page of VPN setting. IKE proposal setup includes the setting of a set of frequent-used IKE proposals and selecting from the set of IKE proposals.

Tunnel Name

Current tunnel name.

Dynamic VPN

This feature works with a VPN software client so the DI-824VUP does not need to know the IP address of the remote clients.

Aggressive Mode

Enabling this mode will accelerate establishing the tunnel, but the device will have less security.

Local Subnet

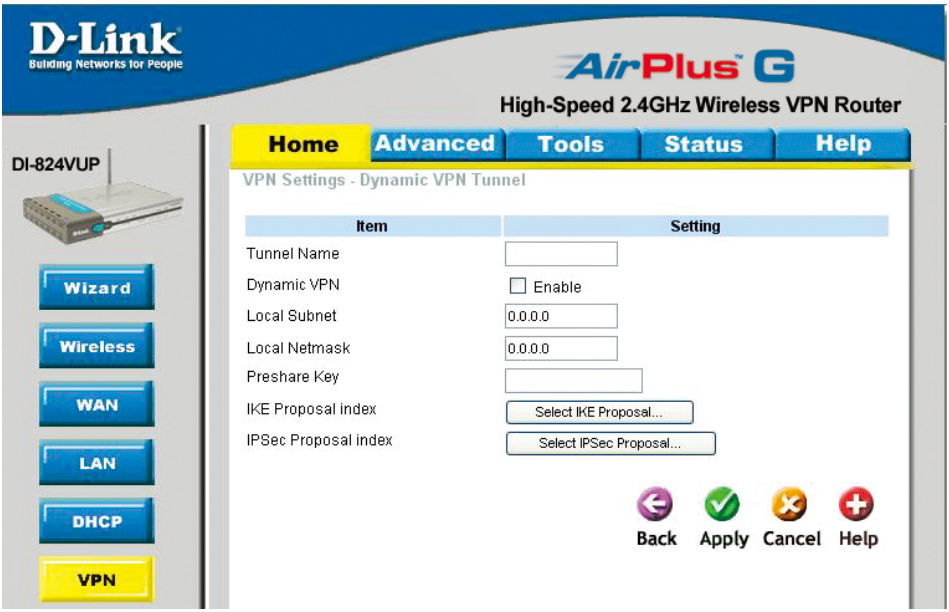
The subnet of the VPN gateway's local network. It can be a host, a partial subnet, or a whole subnet.

Local Netmask

The netmask of the VPN gateway's local network.

Using the Configuration Menu

Home > VPN Settings > Dynamic VPN Tunnel *Continued...*



Preshared Key

The first key that supports IKE mechanism of both VPN gateways for negotiating further security keys. The pre-shared key must be the same for both endpoint gateways.

IKE Proposal index

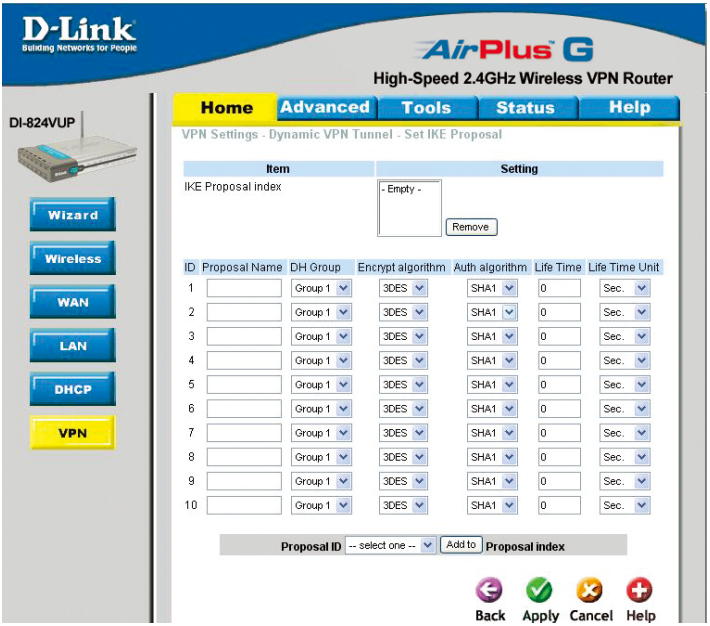
Click the button to setup a set of frequent-used IKE proposals and select from the set of IKE proposals for the dedicated tunnel.

IPSec Proposal index

Click the button to setup a set of frequent-used IPSec proposals and select from the set of IPSec proposals for the dedicated tunnel.

Using the Configuration Menu

Home > VPN Settings > Dynamic VPN Tunnel > Set IKE Proposal



IKE Proposal index A list of selected proposal indexes from the IKE proposal pool listed below.

Proposal Name It indicates which IKE proposal to be focused.

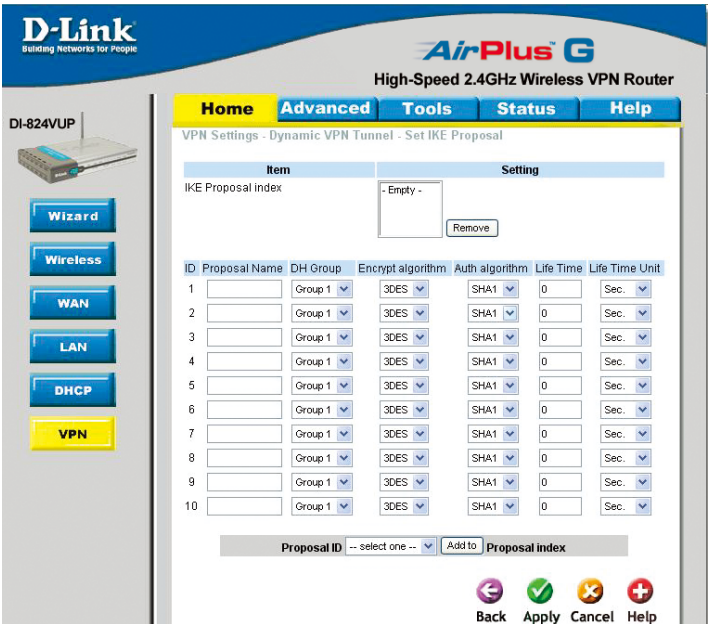
DH Group There are three groups that can be selected: group 1 (MODP768), group 2 (MODP1024), and group 5 (MODP1536).

Encrypt algorithm There are two algorithms that can be selected: 3DES and DES.

Auth algorithm There are two algorithms that can be selected: SHA1 and MD5.

Using the Configuration Menu

Home > VPN Settings > Dynamic VPN Tunnel > Set IKE Proposal *Continued...*



Life Time — Enter in the life time value.

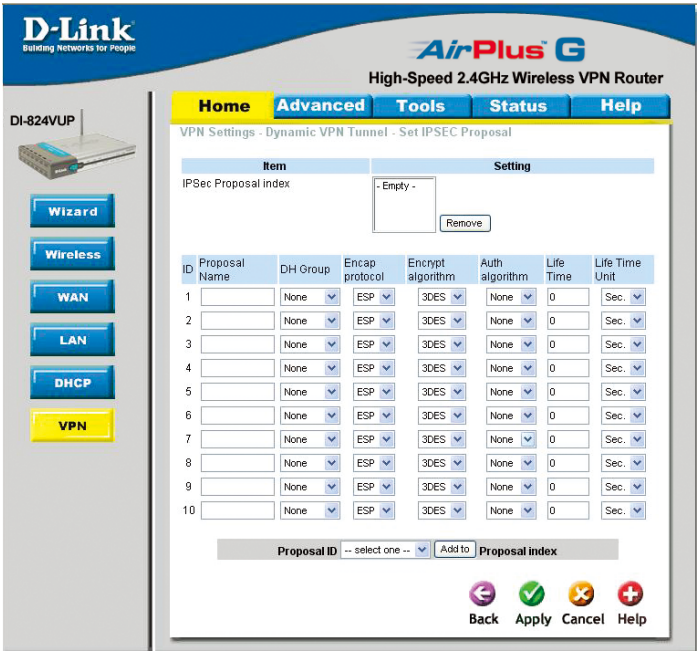
Life Time Unit — There are two units that can be selected: second and KB.

Proposal ID — The identifier of IKE proposal can be chosen for adding the corresponding proposal to the dedicated tunnel.

Add to — Click it to add the chosen proposal indicated by proposal ID to IKE Proposal index list.

Using the Configuration Menu

Home > VPN Settings > Dynamic VPN Tunnel > Set IPSEC Proposal



IPSec Proposal index — A list of selected proposal indexes from the IPSec proposal pool listed below.

Proposal Name — This is the name used to classify the IPSec proposal.

DH Group — There are three groups that can be selected: group 1 (MODP768), group 2 (MODP1024), and group 5 (MODP1536).

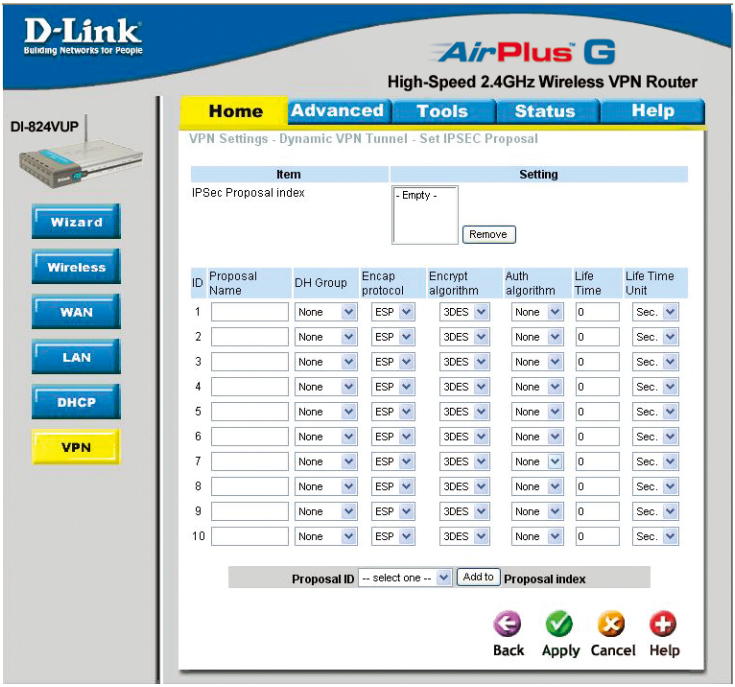
Encap protocol — There are two protocols that can be selected: ESP and AH.

Encrypt algorithm — There are two algorithms that can be selected: 3DES and DES.

Auth algorithm — There are three algorithms that can be selected: SHA1, MD5, and None.

Using the Configuration Menu

Home > VPN Settings > Dynamic VPN Tunnel > Set IPSEC Proposal *Continued...*



Life Time Enter in a life time value.

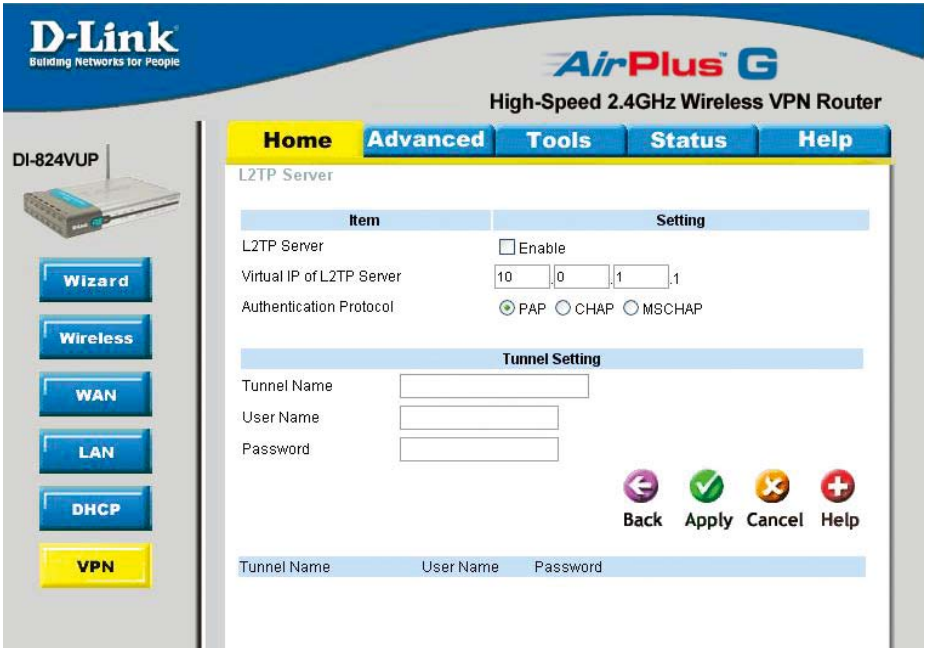
Life Time Unit There are two units that can be selected: second and KB.

Proposal ID The identifier of IPSec proposal can be chosen for adding the corresponding proposal to the dedicated tunnel.

Add to Click it to add the chosen proposal indicated by proposal ID to IPSec Proposal index list.

Using the Configuration Menu

Home > VPN Settings > L2TP Server Setting



Enable L2TP Server — Click to enable the L2TP Server function.

Virtual IP of L2TP Server — Enter your Virtual IP address to access the L2TP server.

Authentication Protocol — Select one of the following authentication protocols: PAP, CHAP, or MSCHAP.

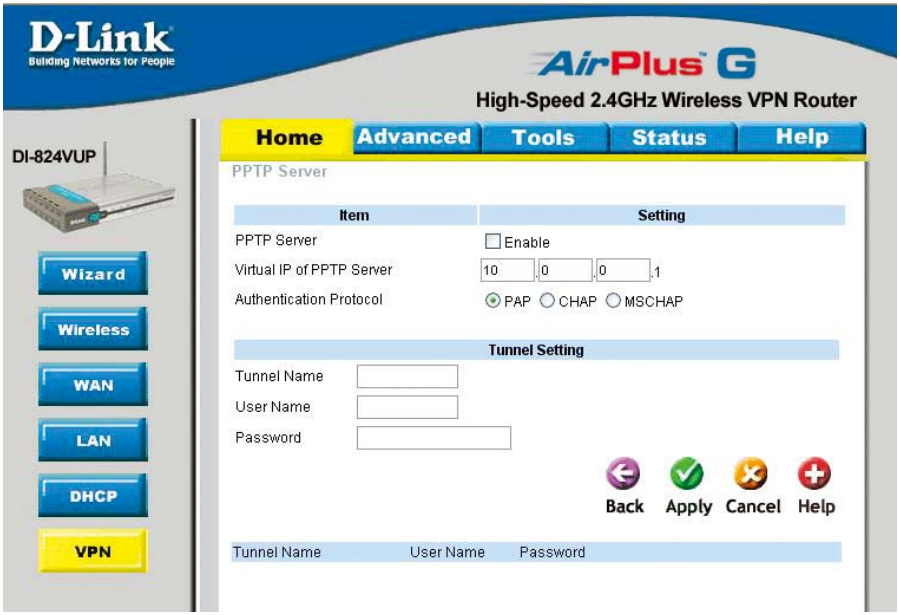
Tunnel Name — Current tunnel name.

User Name — Enter in the username for the L2TP account.

Password — Enter in the password for the L2TP account.

Using the Configuration Menu

Home > VPN Settings > PPTP Server Setting



Enable PPTP Server — Click to enable the PPTP Server function.

Virtual IP of PPTP Server — Enter your Virtual IP address to access the PPTP server.

Authentication Protocol — Select one of the following authentication protocols: PAP, CHAP, or MSCHAP.

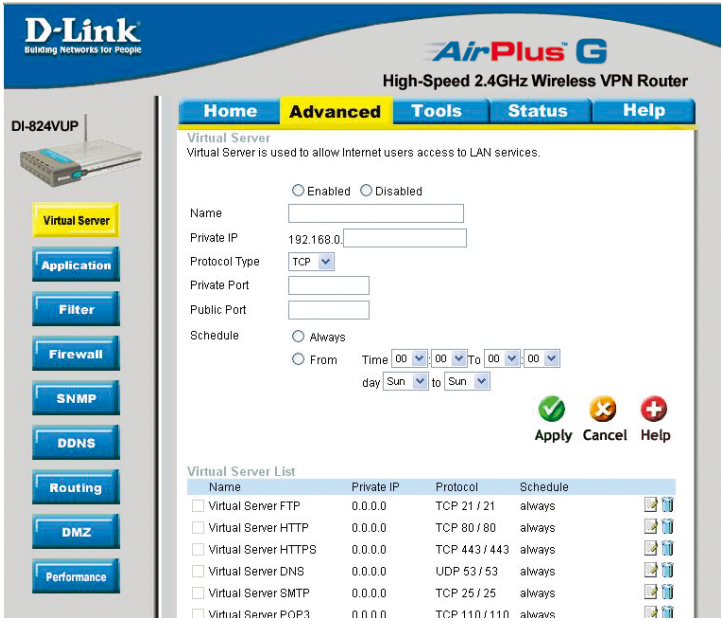
Tunnel Name — Current tunnel name.

User Name — Enter in the username for the PPTP account.

Password — Enter in the password for the PPTP account.

Using the Configuration Menu

Advanced > Virtual Server



The DI-824VUP 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-824VUP firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DI-824VUP 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-824VUP redirects the external service request to the appropriate server within the LAN network.

Name The name referencing the virtual service.

Private IP The server computer in the LAN network that will be providing the virtual services.

Protocol Type The protocol used for the virtual service.

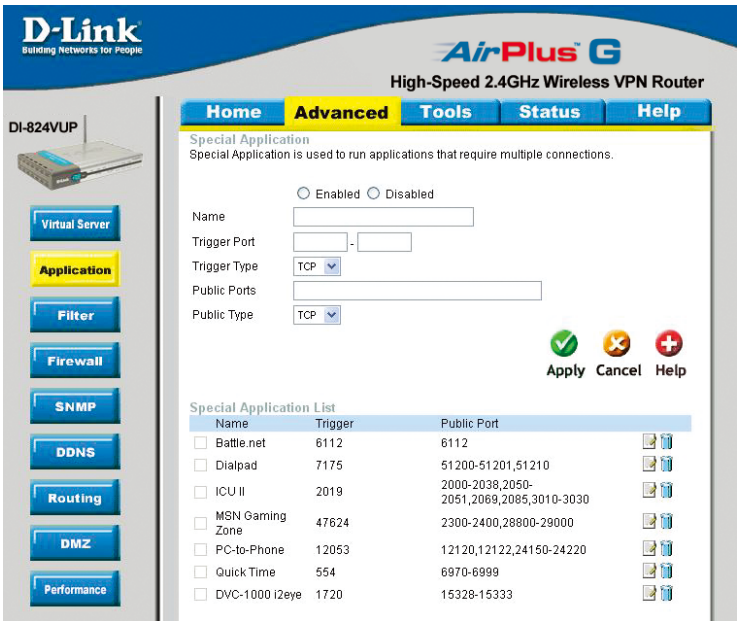
Private Port The port number of the service used by the Private IP com-

Public Port The port number on the WAN side that will be used to access the virtual service.

Schedule Select **Always**, or choose **From** and enter the time period during which the virtual service will be available.

Using the Configuration Menu

Advanced > Application



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-824VUP. If you need to run applications that require multiple connections, specify the port normally associated with an application in the **Trigger** field, then enter the public ports associated with the trigger port into the **Incoming Ports** field.

At the bottom of the screen, there are already defined special applications. To use them, select them from the list by clicking a check mark next to the application name. Users may configure the special applications by clicking the Edit icon next to the application. If the mechanism of Special Applications fails to make an application work, try using DMZ host instead.

Note! *Only one PC can use each Special Application tunnel.*

Enabled Select to activate the policy.

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

Public Ports 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.

Using the Configuration Menu

Advanced > Filter > IP Filter

Use IP (Internet Protocol) filters to allow or deny computers access to the Internet based on their IP address.

IP Filter

Use IP Filters to deny LAN IP addresses access to the internet.

Enabled or Disabled

Click **Enabled** to apply the filter policy or click **Disabled** to enter an inactive filter policy. (You can reactivate the policy later.)

IP Address

Enter in the IP address range of the computers that you want the policy to apply to. If it is only a single computer that you want the policy applied to, then enter the IP address of that computer in the Start Source IP and leave the End Source IP blank.

Port Range

Enter in the port range of the TCP/UDP ports that you want the policy to apply to. If it is only a single port that you want the policy applied to, then enter the port number in the Start Port field and leave the End Port field blank. If you want to use all the ports, you can leave the port range empty.

Protocol

Select TCP or UDP as the protocol type.

Schedule

Select **Always**, or choose **From** and enter the time period during which the IP filter policy will be in effect.

Using the Configuration Menu

Advanced > Filter > MAC Filters

MAC (Media Access Control) Filters are used to allow or deny LAN (Local Area Network) computers from accessing the Internet and network by their MAC address.

At the bottom of the screen, there is a list of MAC addresses from the DHCP client computers connected to the DI-824VUP. To use them, select one from the drop down list. Next click the “Clone” button. Then click the “Apply” button and the DI-824VUP will fill in the appropriate information to the list.

Disabled MAC Filter

Select this option if you do not want to use MAC filters.

Only allow computers with MAC address listed below to access the network

Select this option to only allow computers that are in the list to access the network and Internet. All other computers will be denied access to the network and Internet.

Only deny computers with MAC address listed below to access the network

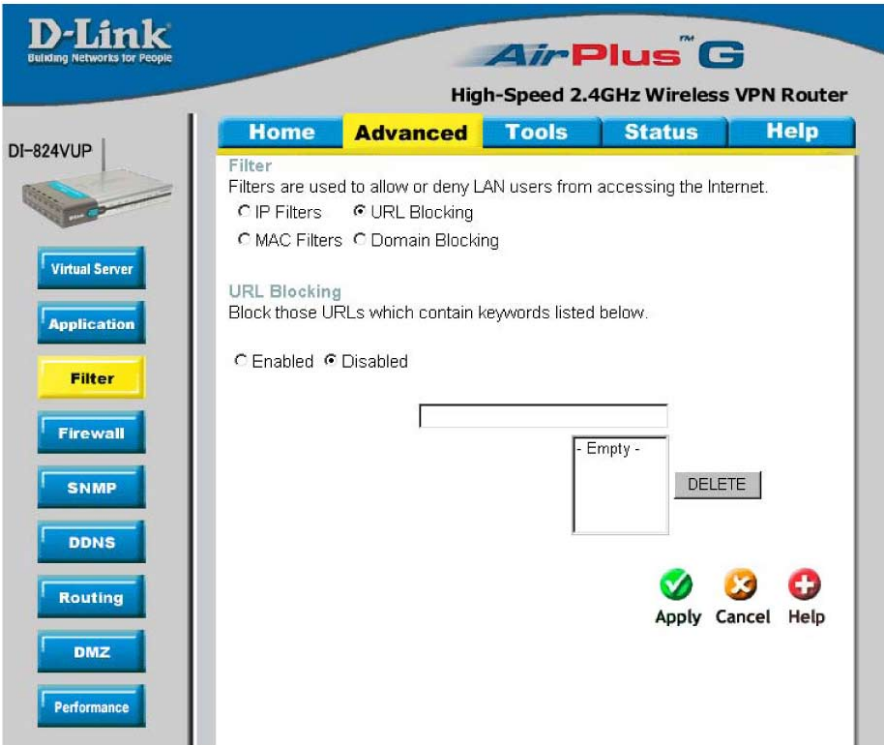
Select this option to only deny computers that are in the list to access the network and Internet. All other computers will be allowed access to the network and Internet.

MAC Address

Enter the **MAC Address** of the client that will be filtered.

Using the Configuration Menu

Advanced > Filter > URL Blocking



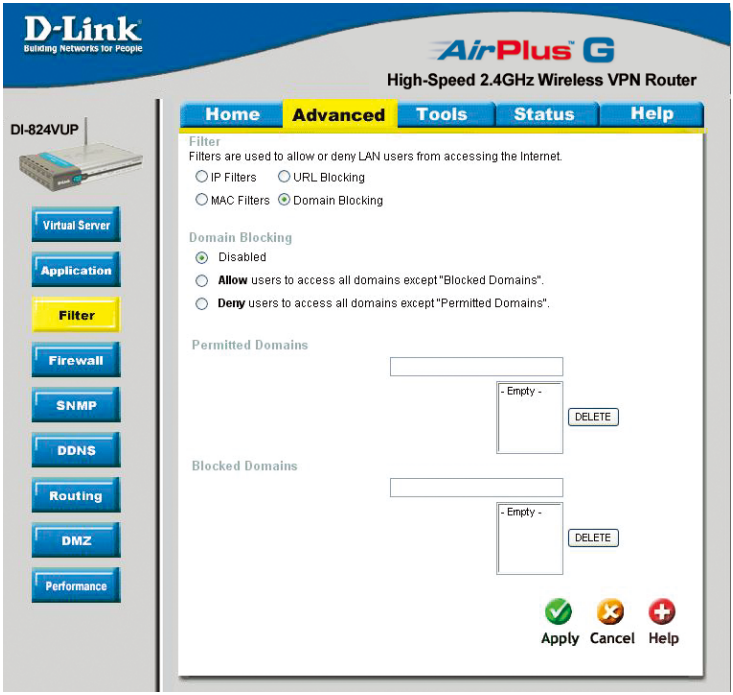
Use URL Blocking to deny LAN computers from accessing specific web sites by its URL. A URL is a specially formatted text string that defines a location on the Internet. If any part of the URL contains the blocked word, the site will not be accessible and the web page will not display.

Disabled URL Blocking

Select this option if you do not want to use URL Blocking.

Using the Configuration Menu

Advanced > Filter > Domain Blocking



Use Domain Blocking to allow or deny computers access to specific Internet domains whether it is through www, ftp, snmp, etc.

Disabled Domain Blocking

Select this option if you do not want to use Domain Blocking.

Allow users to access all domains except “Blocked Domains”

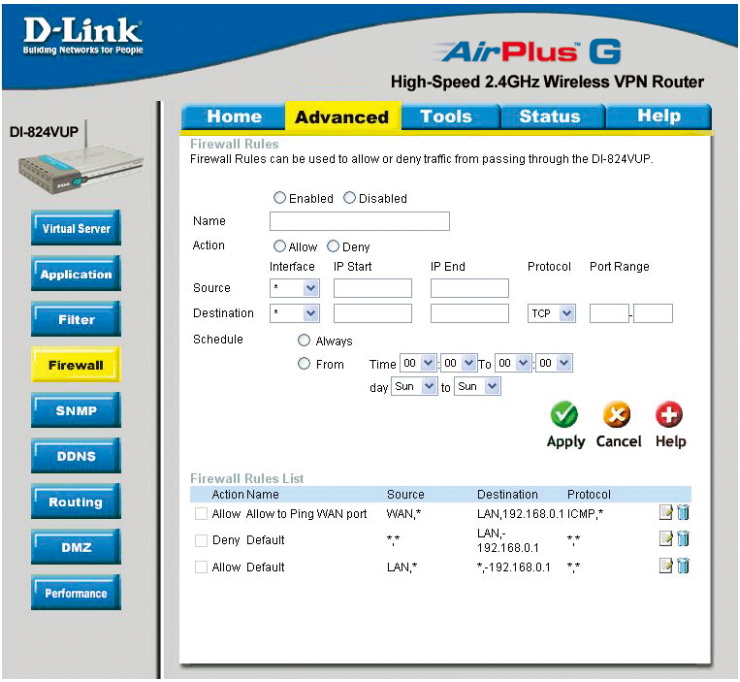
Select this option to deny users to access the specified Internet domains listed below. Users will be allowed access to all other Internet domains.

Deny users to access all domains except “Permitted Domains”

Select this option to allow users to access the specified Internet domains listed below. Users will be denied access to all other Internet domains.

Using the Configuration Menu

Advanced > Firewall



Firewall is an advance feature used to allow or deny traffic from passing through the device. It works in the same way as IP Filters with additional settings. You can create more detailed rules for the device.

Enabled or Disabled

Click **Enabled** to apply the filter policy or click **Disabled** to enter an inactive filter policy (You can reactivate the policy later).

Name

Enter the name of the Firewall Rule.

Action

Select Allow or Deny to allow or deny traffic to pass through the DI-824VUP.

Source

Choose between a LAN or WAN source. An asterisk signifies the selection of both sources.

IP Start

The starting IP address for the filter policy. Leaving the field blank selects all IPs.

IP End

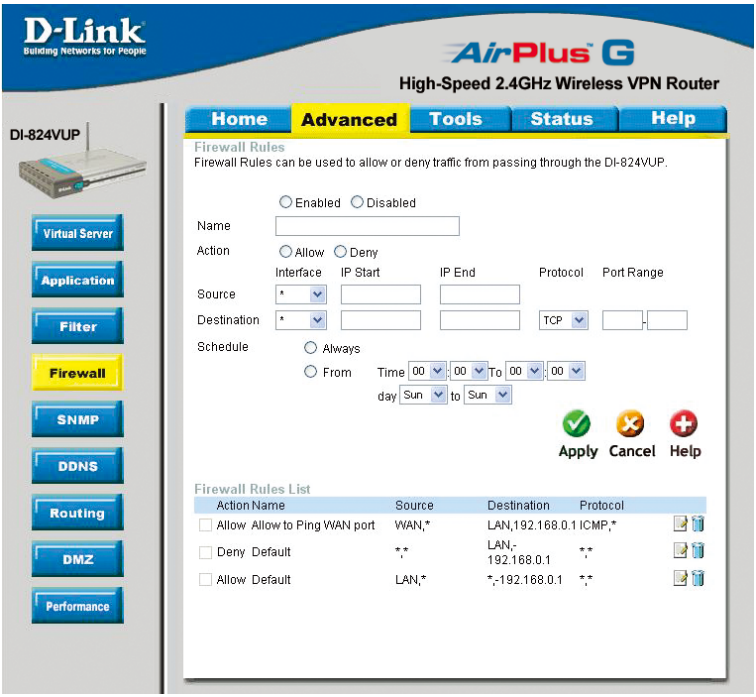
The ending IP address for the filter policy. Leaving the field blank selects all IPs.

Destination

Choose between a LAN or WAN destination. An asterisk signifies the selection of both destinations.

Using the Configuration Menu

Advanced > Firewall *Continued*



IP Address

Enter in the IP address range of the computers that you want the policy to apply to. If it is only a single computer that you want the policy applied to, then enter the IP address of that computer in the Start Source IP and leave the End Source IP blank.

Protocol

Select one of the following protocols: TCP, UDP, or ICMP.

Port Range

Enter in the port range of the TCP/UDP ports that you want the policy to apply to. If it is only a single port that you want the policy applied to, then enter the port number in the Start Port field and leave the End Port field blank. If you want to use all the ports, you can leave the port range empty.

Schedule

Select **Always**, or choose **From** and enter the time period during which the virtual service will be available.

Using the Configuration Menu

Advanced > SNMP

SNMP (Simple Network Management Protocol) is a widely used network monitoring and control protocol that reports activity on each network device to the administrator of the network. SNMP can be used to monitor traffic and statistics of the DI-824VUP. The DI-824VUP supports SNMP v1 or v2c.

Enable SNMP (Simple Network Management Protocol.)

Local LAN (Local Area Network).

Remote WAN (Wide Area Network).

Get Community Enter the password **public** in this field to allow "Read only" access to network administration using SNMP. You can view the network, but no configuration is possible wth this setting.

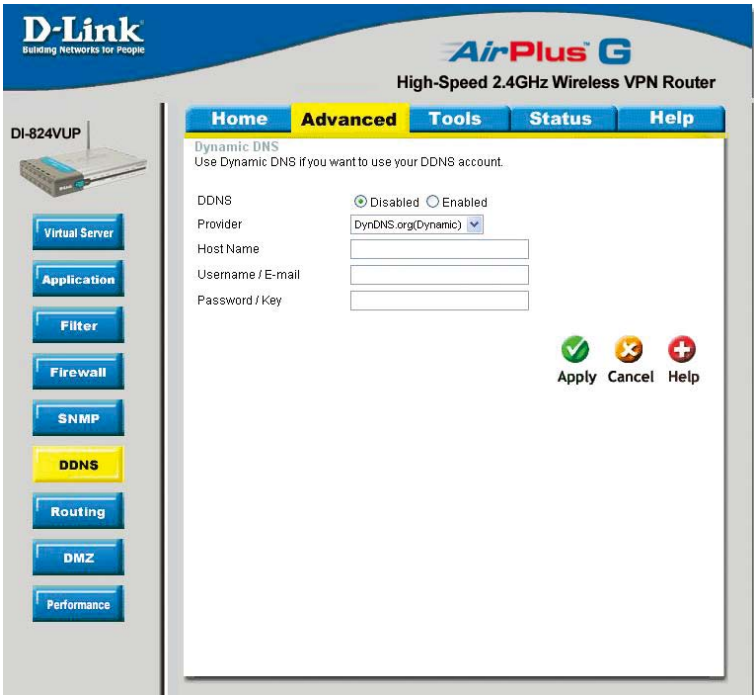
Set Community Enter the password **private** in this field to gain "Read and Write" access to the network using SNMP software. The administrator can configure the network with this setting.

SNMP v1 Simple Network Management Protocol (SNMP) is an application layer protocol that facilitates the exchange of management information between nework devices.

SNMP v2 Enhanced version of SNMP v1 with additional protocol operations such as UDP, IP, CLNS, DDP, and IPX.

Using the Configuration Menu

Advanced > DDNS



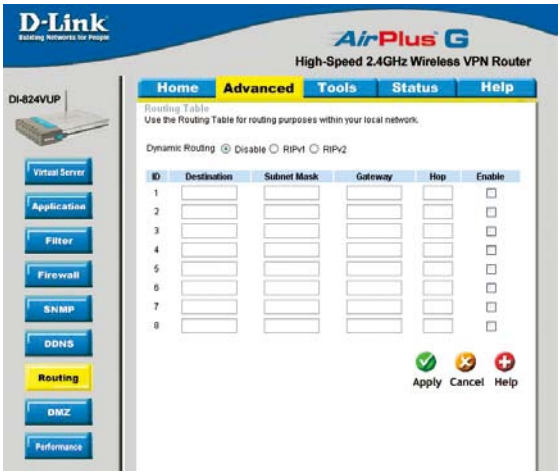
DDNS (Dynamic Domain Name System) keeps dynamic IP addresses (*e.g.*, IP addresses assigned by a DHCP capable router or server) linked to a domain name.
Users who have a Dynamic DNS account may use this feature on the DI-824VUP.

DDNS	When an IP address is automatically assigned by a DHCP server, DDNS automatically updates the DNS server. Select **Disabled** or **Enabled**.
Provider	Select from the pull-down menu.
Host Name	Enter the Host name.
Username/Email	Enter the username or email address.
Password/Key	Enter the password or key.

Using the Configuration Menu

Advanced > Routing

Static routes can be added if you require specific routes within your internal network. These routes will not apply to the WAN (Internet) network.



Dynamic Routing — Dynamic Routing Settings allow the VPN Router to route IP packets to another network automatically. The RIP protocol is applied, and broadcasts the routing information to other routers on the network regularly.

By default, it is set to disable. Check to enable (RIPv1 / RIPv2) protocol.

RIP v1 — Protocol in which the IP address is routed through the internet.

RIP v2 — Enhanced version of RIP v1with added features such as Authentication, Routing Domain, Next Hop Fowarding, and Subnet-mask Exchange.

Destination — Enter in the IP of the specified network that you want to access using the static route.

Subnet Mask — Enter in the subnet mask to be used for the specified net work.

Gateway — Enter in the gateway IP address to the specified network.

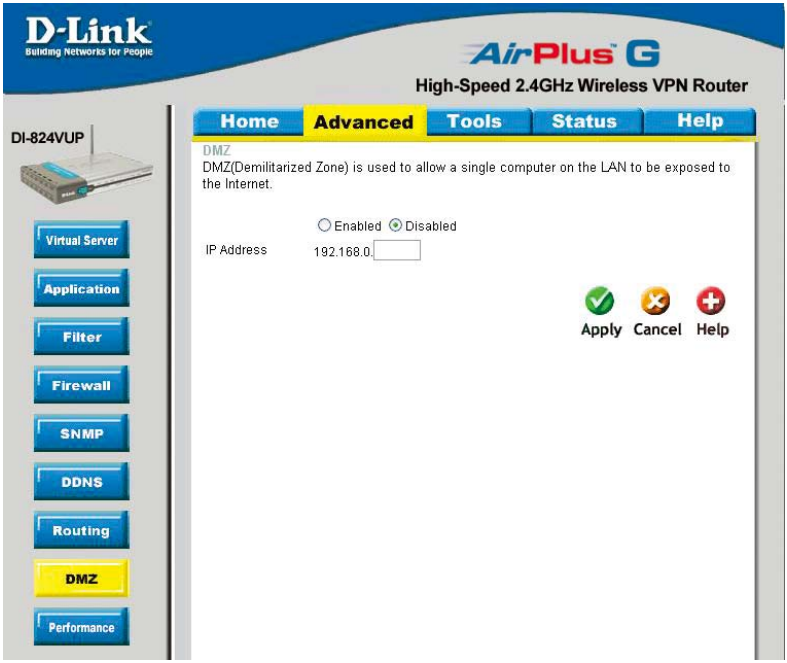
Hop — Enter in the amount of hops it will take to the specified network.

Enable — Select this option for the specified static route to take effect.

Hop Count - *In a transmission path, each link is terminated at a network device such as a router or gateway. The number of hops equals the number of routers or gateways that data must pass through before reaching the destination.*

Using the Configuration Menu

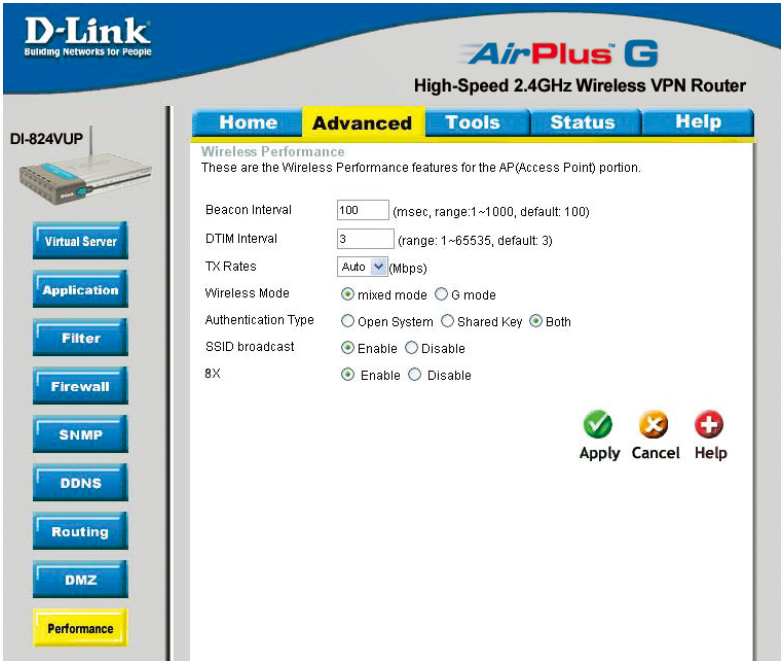
Advanced > DMZ



If you have a computer that cannot run Internet applications properly from behind the DI-824VUP, then you can allow that computer to have unrestricted Internet access. Enter the IP address of that computer as a DMZ (Demilitarized Zone) host with unrestricted Internet access. Adding a client to the DMZ may expose that computer to a variety of security risks; so only use this option as a last resort.

Using the Configuration Menu

Advanced > Performance



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.

DTIM interval (**D**elivery **T**raffic **I**ndication **M**essage) **3** is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

TX Rates Select the data rate. Default is **Auto**.

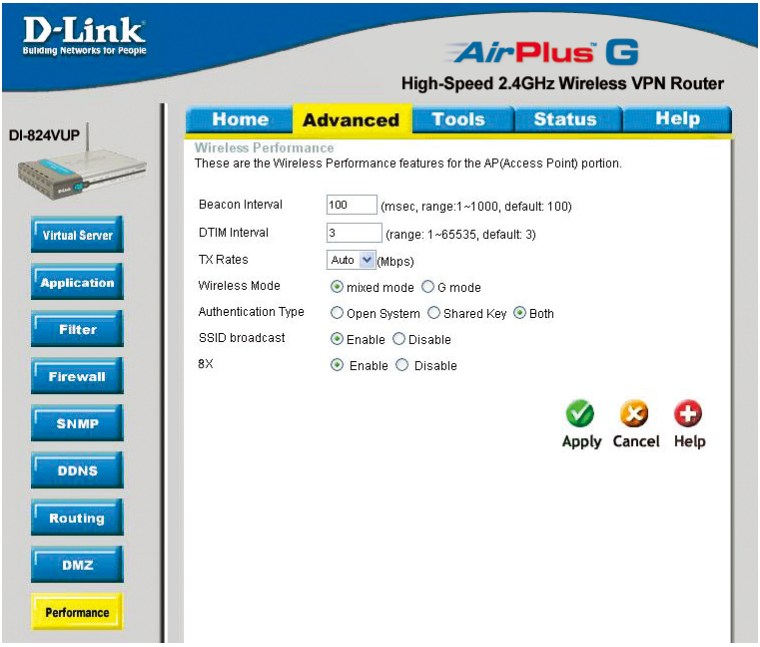
Wireless Mode Select either mix mode or G mode.

Mixed Mode The DI-824VUP will use either B or G mode depending on which mode has a stronger frequency.

G Mode The DI-824VUP will only use G mode.

Using the Configuration Menu

Advanced > Performance (Continued)



Authentication Select **Open system**, **Shared Key** or **Both**.

Open System The DI-824VUP will be visible to all devices on the network. This is the default setting.

Shared Key In this mode, in order to access the DI-824VUP on the network, the device must have the same encryption as the router in order to communicate.

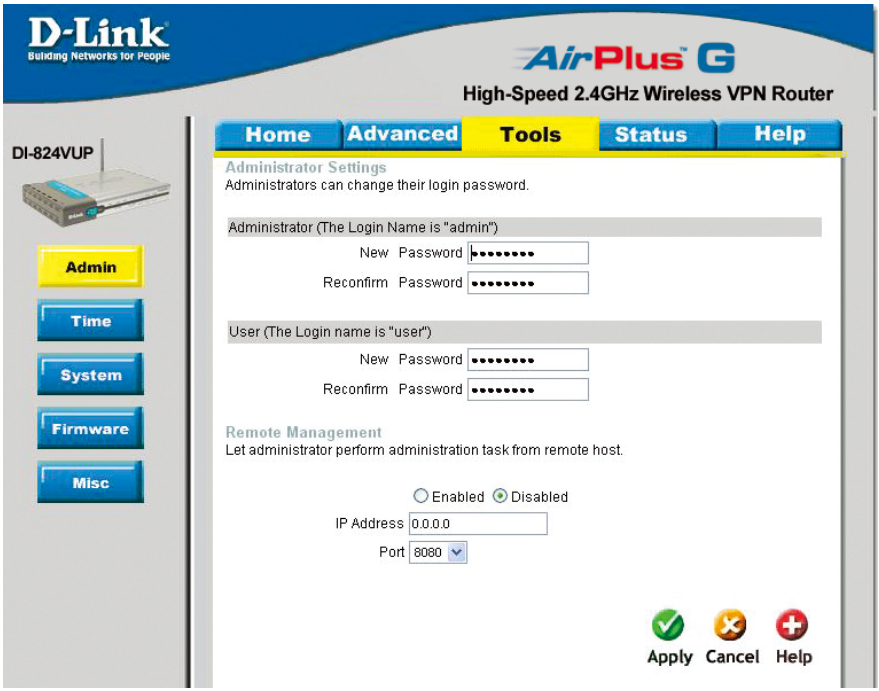
Both In this mode, all devices on the network can access the DI-824VUP.

SSID Broadcast **Enable** is the default setting. Choose **Enable** to broadcast the SSID across the network. All devices on a network must share the same SSID (Service Set Identifier) to establish communication. Choose **Disable** if you do not wish to broadcast the SSID over the network.

8x Enable 8X Mode on the wireless client and the DI-824VUP to increase data transmission speed. 8X Mode will only work with wireless devices that also support 8X Mode.

Using the Configuration Menu

Tools > Admin



You can change the administrator and user passwords here. It is recommended that you change the administrator password from the default setting.The default password is blank (nothing).

Password — To change the administrator or user password, enter the new password twice to confirm.

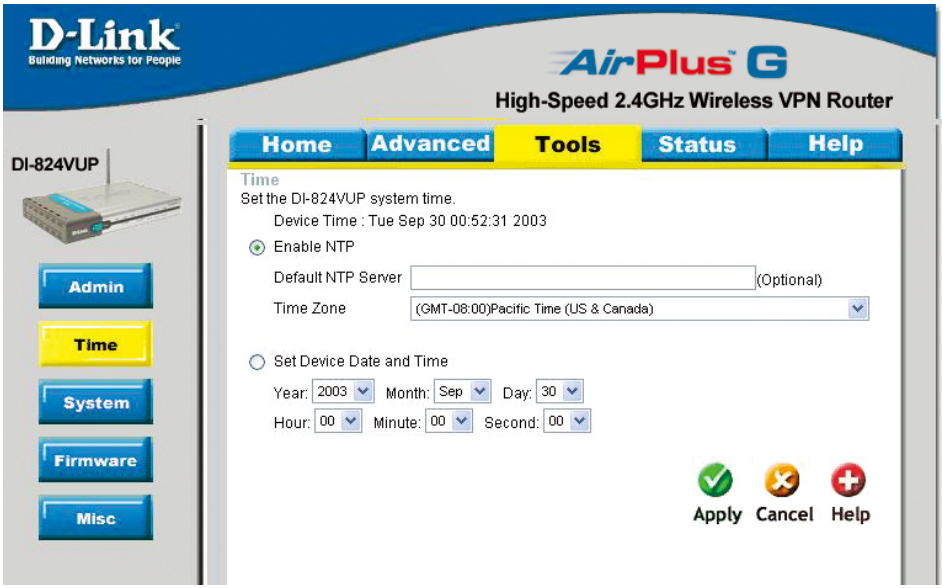
Remote Management — Remote Management allows the device to be configured through the WAN (Wide Area Network) port from the Internet using a web browser. A username and password is still required to access the browser-based management interface.

IP Address — Internet IP Address of the computer that has access to the DI-824VUP. If the IP Address is set to 0.0.0.0, this allows all Internet IP addresses to access the DI-824VUP.

Port — The port number used to access the DI-824VUP. Example:http://x.x.x.x:8080, where x.x.x.x. is the WAN IP address of the DI-824VUP and 8080 is the port used for the Web Management interface.

Using the Configuration Menu

Tools > Time



You will need to set the time zone corresponding to your location. The time can be set manually or the device can connect to a NTP (Network Time Protocol) server to retrieve the time.

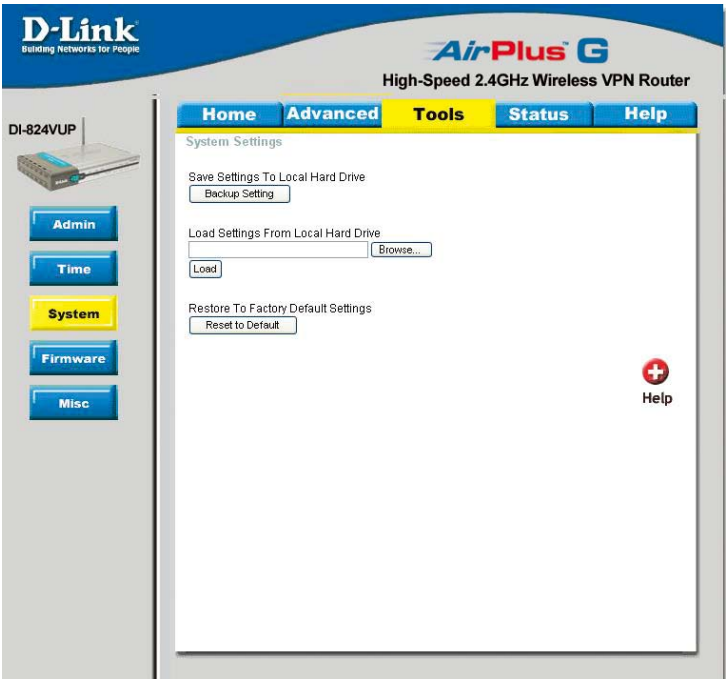
Enable NTP (Network Time Protocol). Select to synchronize the time on the DI-824VUP to an NTP server.

Set Device Date and Time You can manually set the time on your network here.

NTP is short for **N**etwork **T**ime **P**rotocol, an Internet standard protocol that assures accurate synchronization to the millisecond of computer clock times in a network of computers.

Using the Configuration Menu

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 created by the DI-824VUP can be uploaded into the unit. To reload a system settings file, click on “Browse” to search the local hard drive for the file to be used. The device can also be reset back to factory default settings by clicking on “Reset to Default” button. Use the restore feature only if necessary. This will erase previously saved settings for the unit. Make sure to save your system settings before doing a factory restore.

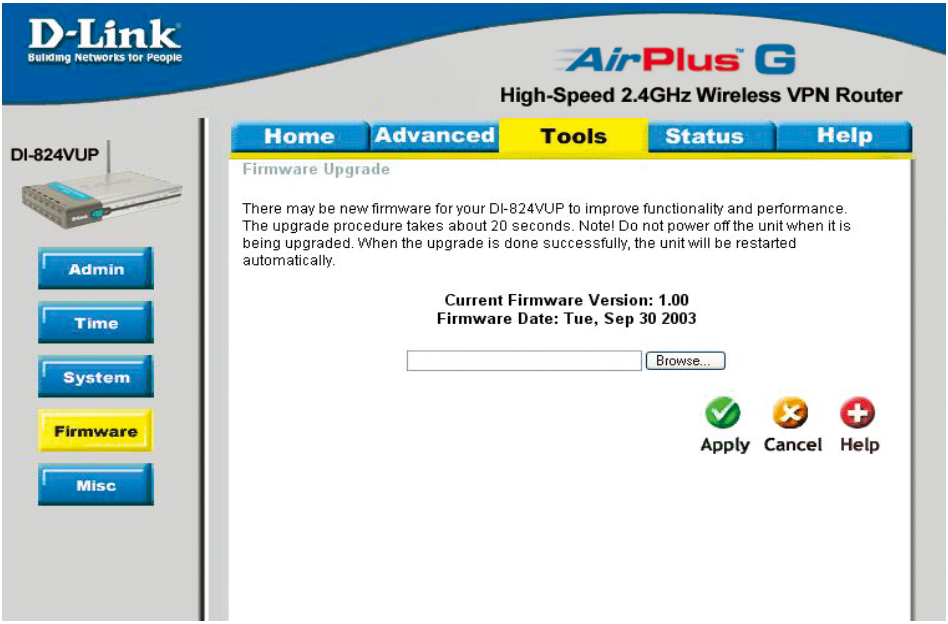
Save Settings to Local Hard Drive — Click **Save** to save the current settings to the local Hard Drive.

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

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

Using the Configuration Menu

Tools > Firmware



You can upgrade the firmware of the device using this tool. Make sure that the firmware you want to use is saved on the local hard drive of the computer. Click on “Browse” to search the local hard drive for the firmware to be used for the update. Upgrading the firmware will change the system settings of the router back to the default mode. It is recommended that you save your system settings before doing a firmware upgrade. Please check the D-Link support site for firmware updates at http://support.dlink.com.

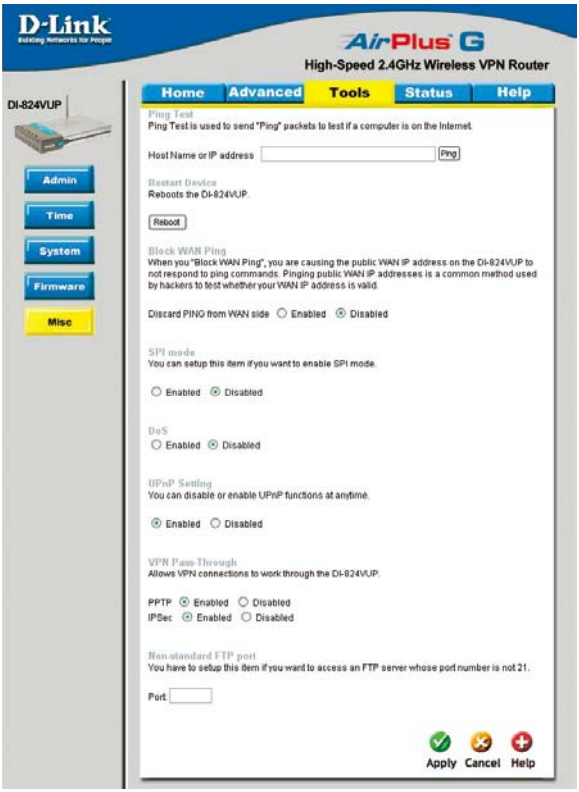
Browse

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

Note! Do not power off the unit when it is being upgraded. When the upgrade is complete, the unit will be restarted automatically.

Using the Configuration Menu

Tools > Misc



Ping Test In the open box, enter in a URL (i.e., www.dlink.com) or an IP address and click on Ping to test your internet connection.

Restart Device Click Reboot to restart the unit.

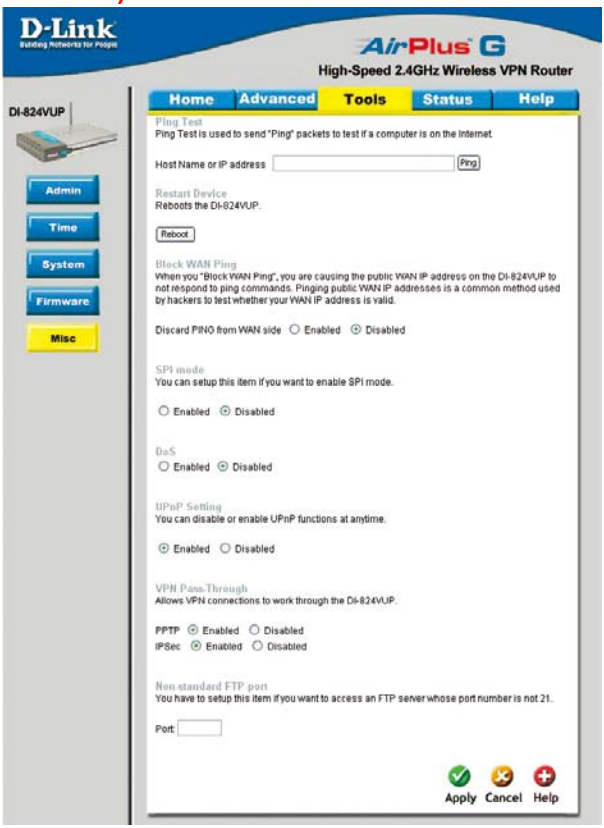
Block WAN Ping Click **Enable** to block the WAN ping. Computers on the Internet will not get a reply back from the DI-824VUP when it is being "ping"ed. This may help to increase security.

SPI Mode When this feature is enabled, the router will record the packet information passed through the router such as IP address, port address, ACK, SEQ number, and so on. The router will also check every incoming packet to detect if it is valid.

DoS When DoS is enabled, the router will prevent Denial of Service attacks on all computers connected to the DI-824VUP.

Using the Configuration Menu

Tools > Misc (Continued)



UPnP

UPnP is short for **Universal Plug and Play** which is a networking architecture that provides compatibility among networking equipment, software, and peripherals. The DI-824VUP is a UPnP enabled router and will only work with other UPnP devices/ softwares. If you do not want to use the UPnP Functionality, it can be disabled by selecting “Disabled”.

VPN Pass-Through

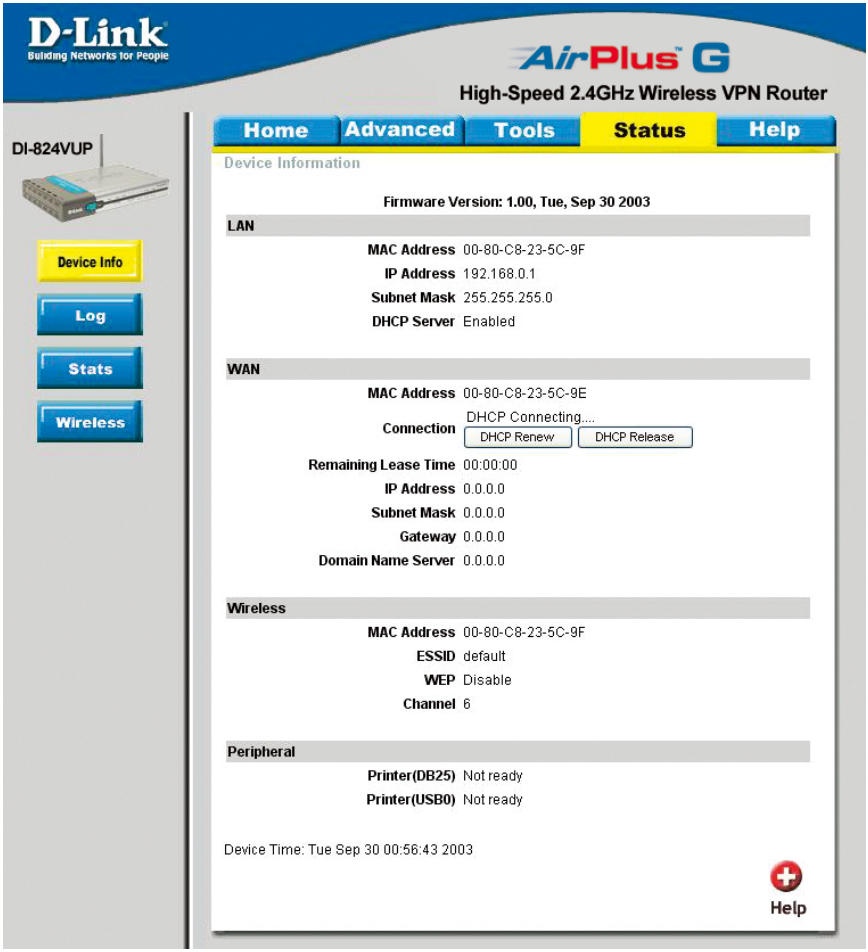
The device supports VPN (Virtual Private Network) pass-through for both PPTP (Point-to-Point Tunneling Protocol) and IPSec (IP Security). Once VPN pass-through is enabled, there is no need to open up virtual services. Multiple VPN connections can be made through the device. This is useful when you have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

Non-standard FTP port

If an FTP server you want to access is not using the standard port 21, then enter in the port number that the FTP server is using instead.

Using the Configuration Menu

Status > Device Info



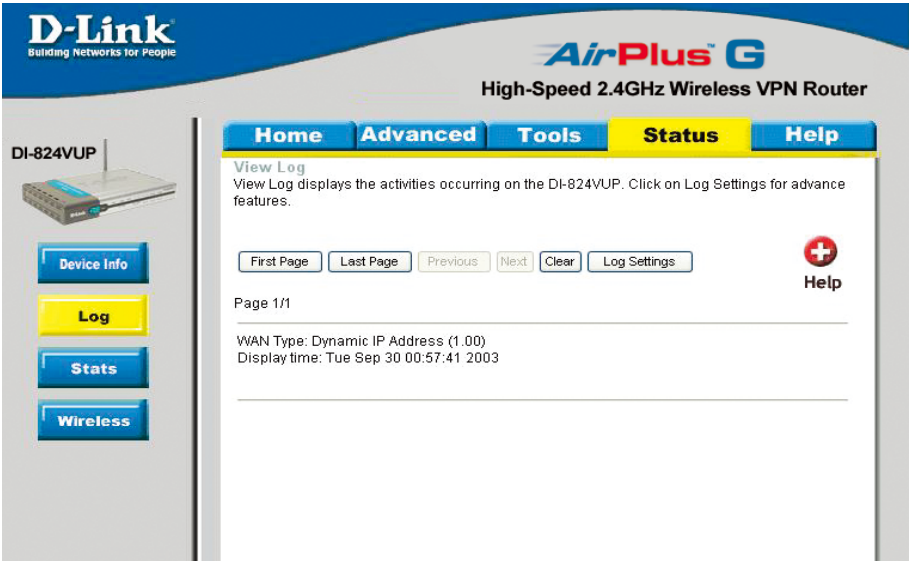
This screen displays information about the DI-824VUP such as WAN, LAN, and Wireless status.

DHCP Renew Use this button to reconnect to your ISP, if your WAN connection is set up for DHCP.

DHCP Release Use this button to disconnect from your ISP, if your WAN connection is set up for DHCP.

Using the Configuration Menu

Status > Log



This screen displays activities occurring on the DI-824VUP.

First Page Click **First Page** to go to the first page of the log.

Last Page Click **Last Page** to go to the last page of the log.

Previous Click **Previous** to go to the previous page of the log.

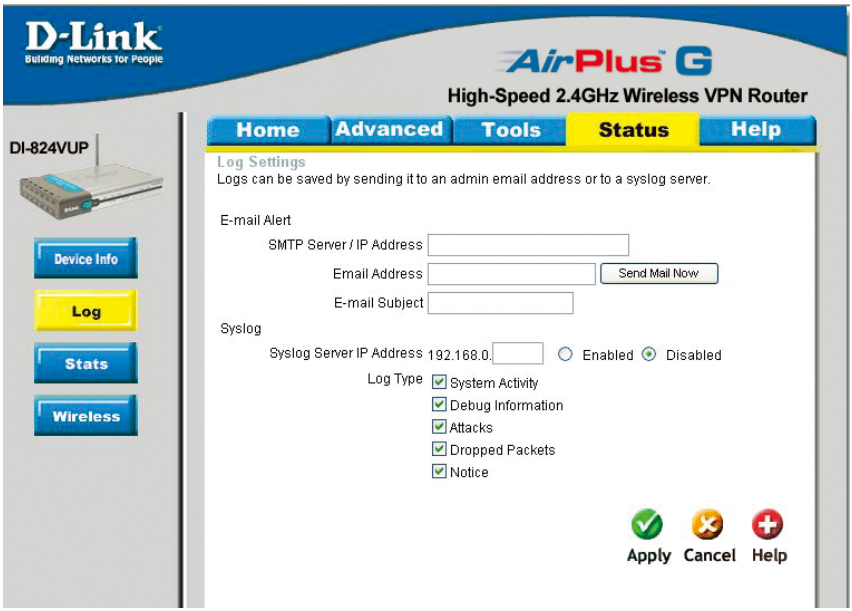
Next Click **Next** to go to the next page of the log.

Clear Click **Clear** to clear the entire log.

Log Settings Click for advanced features (see next page).

Using the Configuration Menu

Status > Log > Log Settings



E-Mail Alert — The DI-824VUP can be set up to send the log files to a specific email address.

SMTP Server IP — Enter in the IP address of the mail server.

Email Address — Enter in the email address of the recipient who will receive the email log.

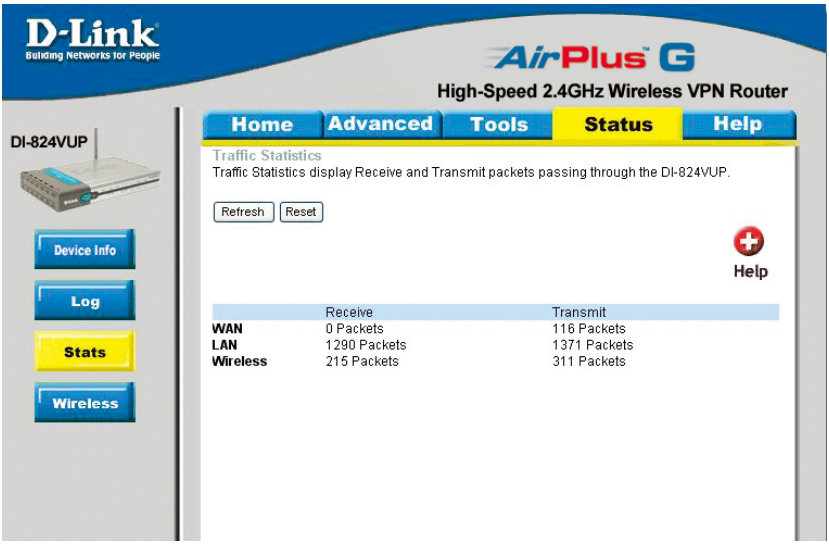
Send Mail Now — Click to send mail immediately.

IP Address of the Syslog Server — Enter in the IP address of a syslog server within the network. Click **Enable** to activate the policy. The DI-824VUP will send all of it's logs to the specified syslog server.

Log Type — Select the types of activity to log. By default, all values are selected.

Using the Configuration Menu

Status > Stats



In the Stats section, traffic statistics are displayed.

Refresh This will update the page.

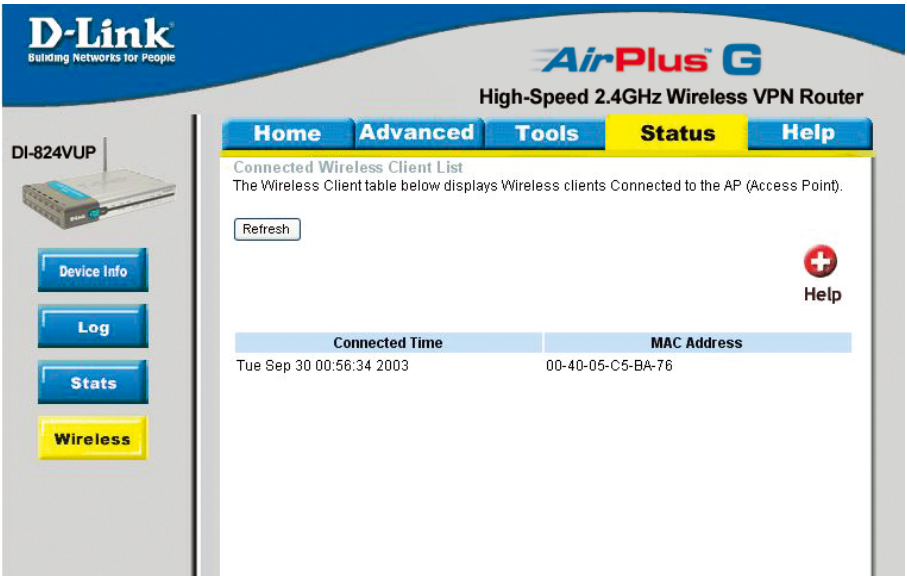
Reset This will reset the packet counter to zero.

WAN Displays Received / Transmitted packets from the WAN port.

LAN Displays Received / Transmitted packets from the LAN port.

Using the Configuration Menu

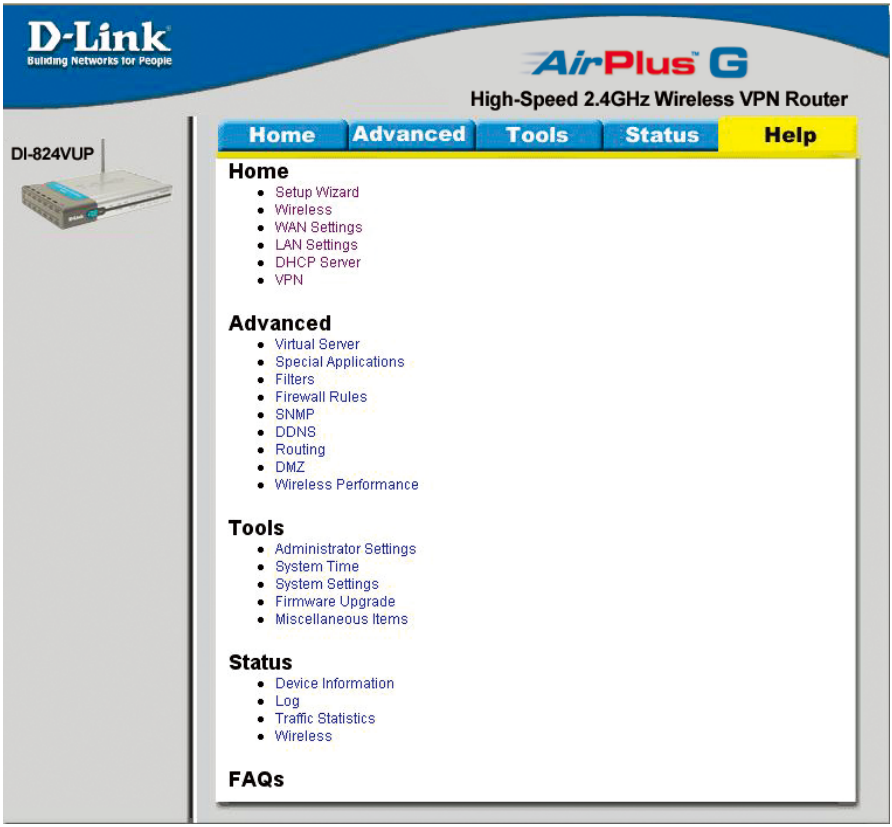
Status > Wireless



This screen displays the connection time and the MAC Address of the connected wireless clients. Click on **Refresh** for the most recent information.

Using the Configuration Menu

Help

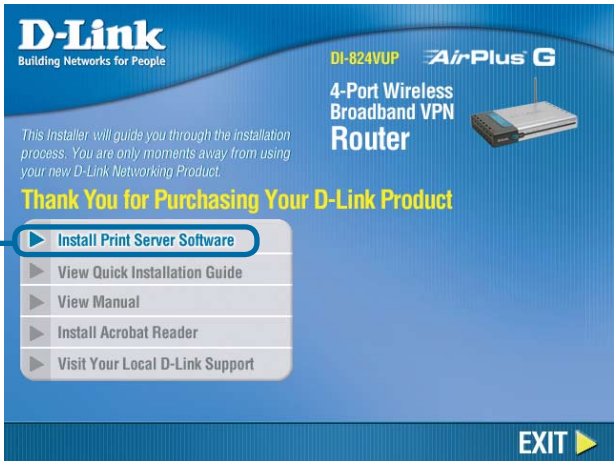


This screen displays the complete **Help** menu. For help at anytime, click the **Help** tab in the Configuration menu.

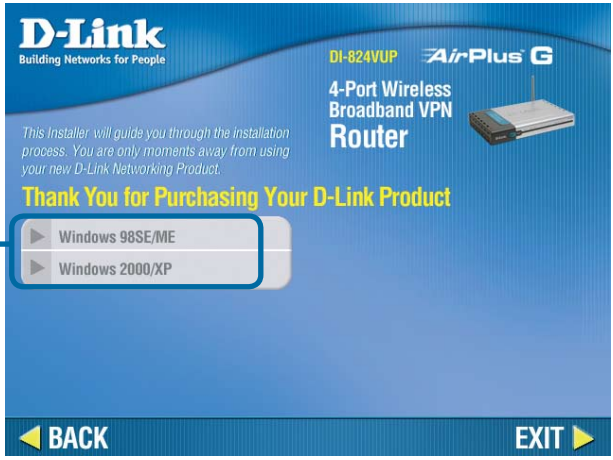
Installing the Print Server Software

Insert the installation CD-ROM into the CD-ROM drive. The following window will be shown automatically. If it is not, please run “autorun.exe” on the CD-ROM.

Click Install Print Server Software

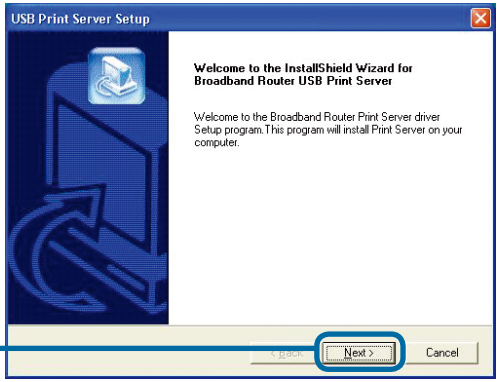


Select your Windows operating system



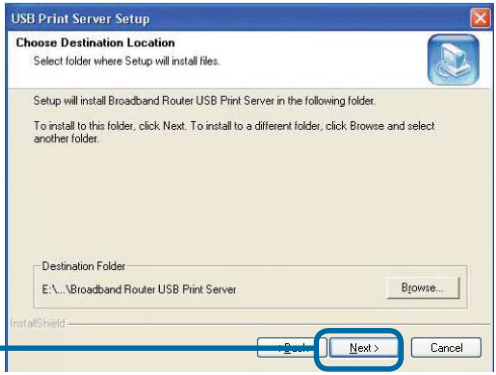
Installing the Print Server Software (continued)

Wait until the following ***Welcome*** dialog appears.



Click Next

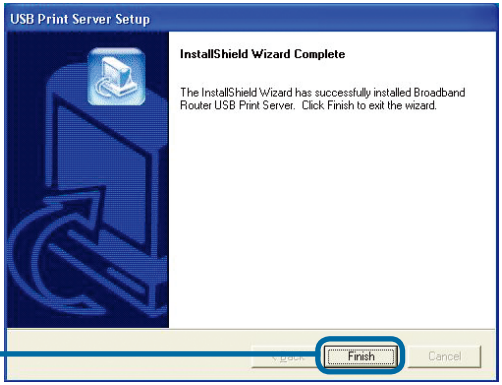
Select the destination folder.



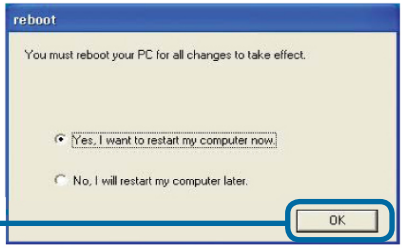
Click Next

Then, the setup program will begin to install the programs into the destination folder.

When the following window is displayed.



Click Fin-

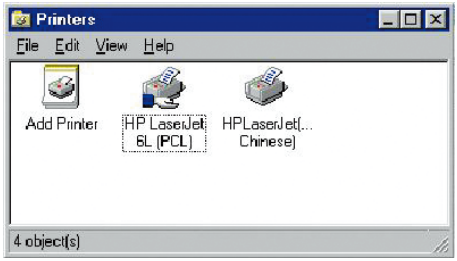


After rebooting your computer, the software installation procedure is finished.

Click OK

Configuring on Windows 98se/Me Platforms

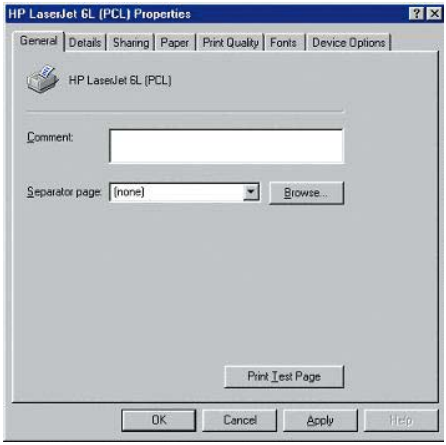
After you finish the software installation procedure, your computer will be capable of network printing provided by the DI-824VUP. For convenience, we call the printer connected to the printer port of the DI-824VUP a *printer server*. On a Windows 95/98 platform, open the ***Printers*** window in the ***My Computer*** menu.



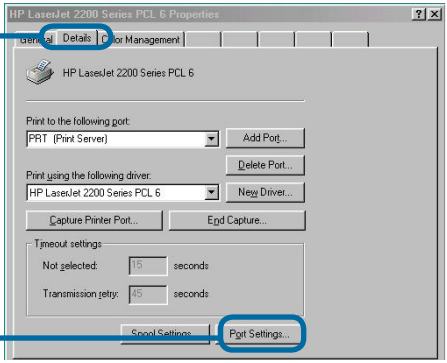
Now, you can configure the print server of the DI-824VUP:

Find out the corresponding icon of your *printer*, for example, the **HP LaserJet 6L**. Right click on that icon, and then select ***Properties.***

The following screen appears:



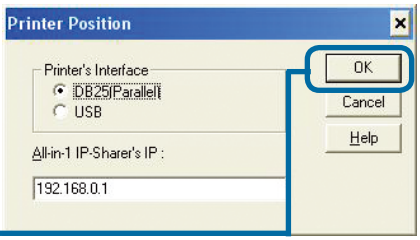
Click on the Details tab



Choose the “PRTmate: (All-in-1)” from the list attached at the ***Print To*** item. Be sure that the ***Printer Driver*** item is configured to the correct driver of your *printer server.*

Click Port Settings

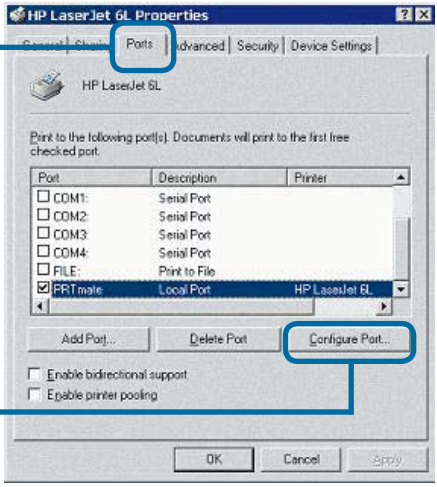
Choose your printer interface.
Type in the IP address of the DI-824VUP.



Click OK

Configuring on Windows 2000/XP Platforms

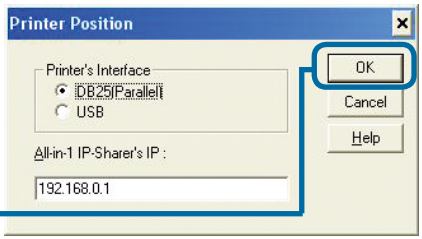
Click Port



The configuration procedure for a Windows 2000/XP platform is similar to that of Windows 95/98 except the screen of printer ***Properties***.

Click Configure Port

Choose your printer interface.
Type in the IP address of the DI-824VUP.



Click OK

(Note: Screen shots are taken in Windows 2000, similar screens will appear in Windows XP.)

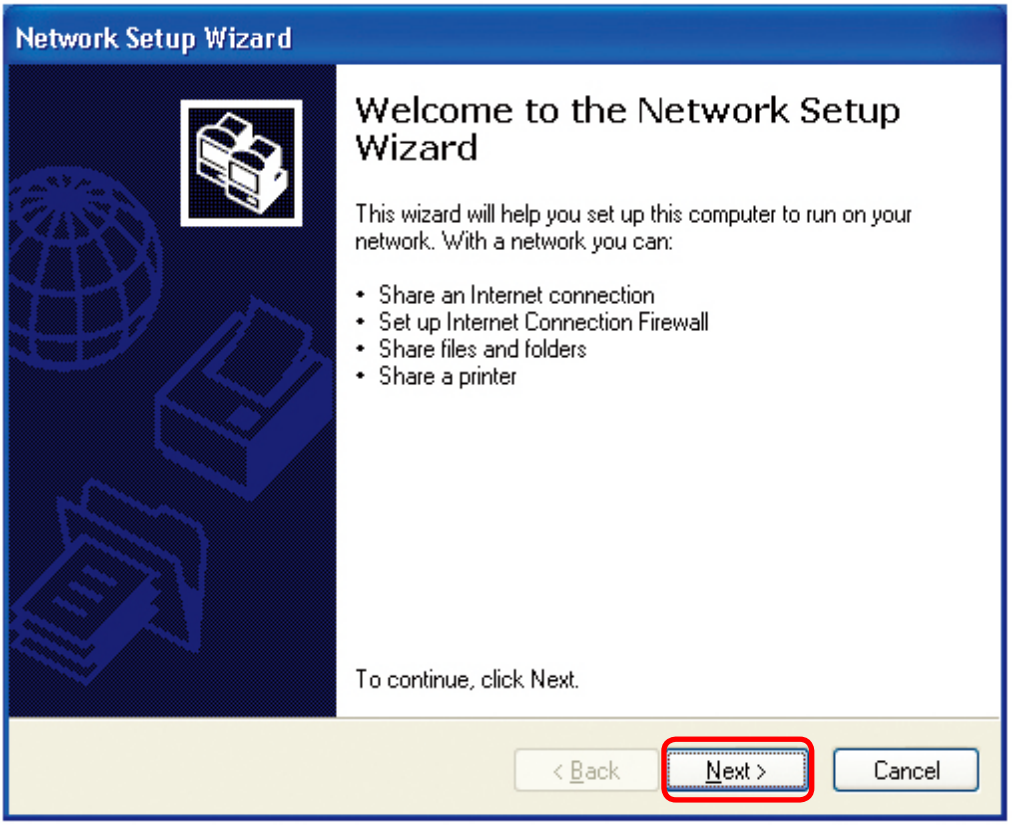
Networking Basics

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.**

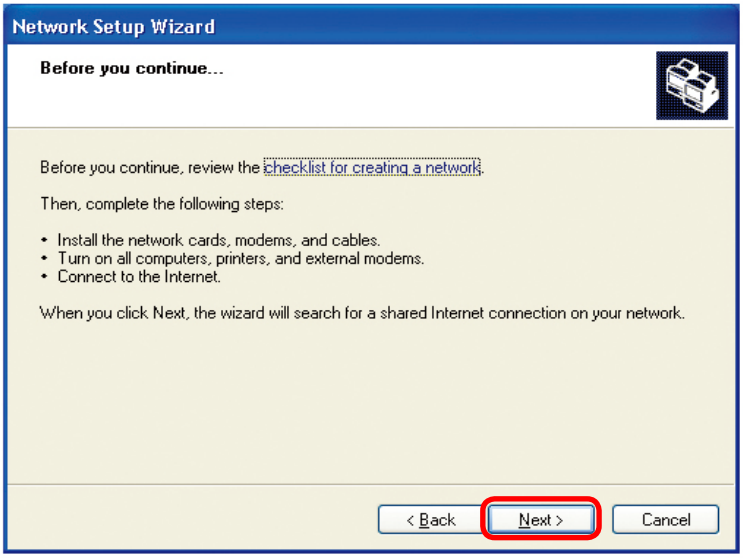
Note: Please refer to websites such as http://www.homenethelp.com and http://www.microsoft.com/windows2000 for information about networking computers using Windows 2000, ME or 98.

Go to **Start > Control Panel > Network Connections**
Select **Set up a home or small office network**



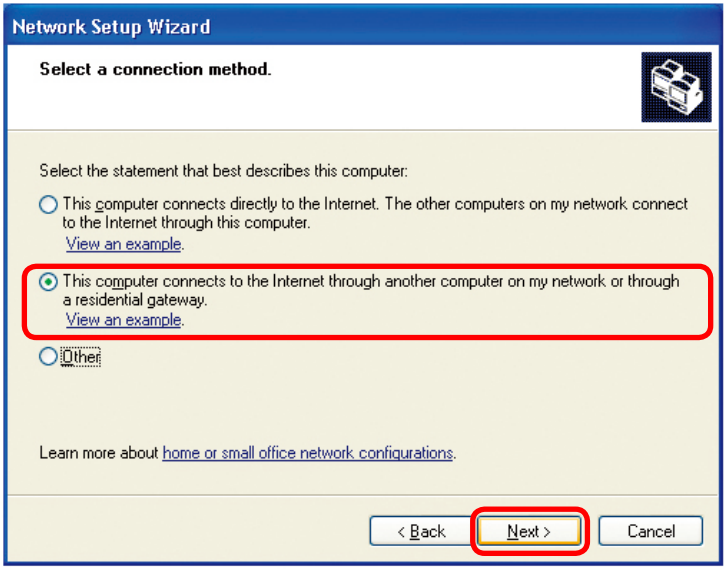
When this screen appears, **Click Next.**

Please follow all the instructions in this window:



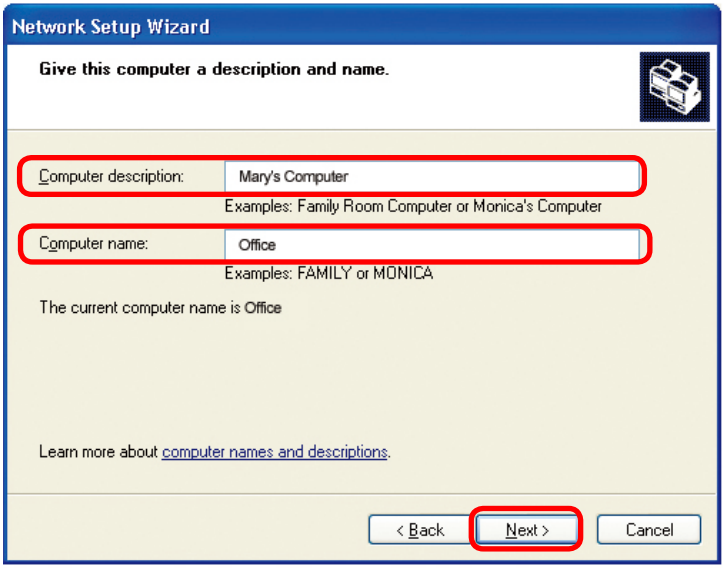
Click **Next**.

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 shown.



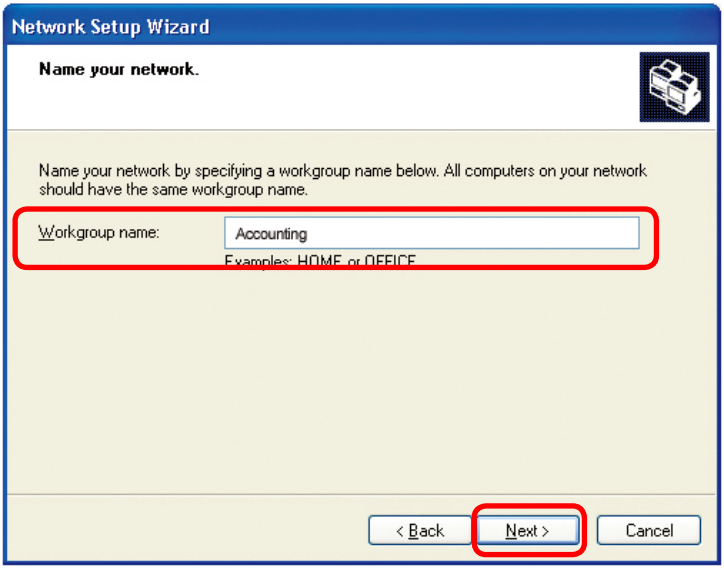
Click **Next**.

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



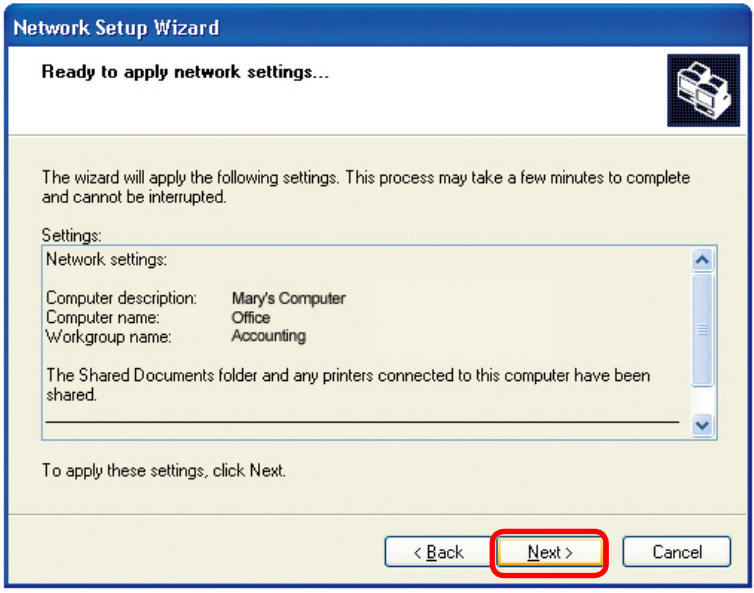
Click **Next**.

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



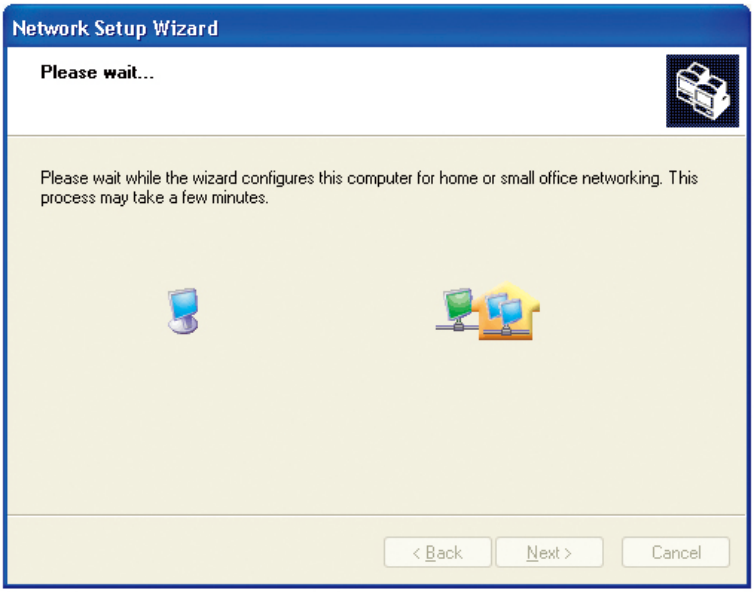
Click **Next**.

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

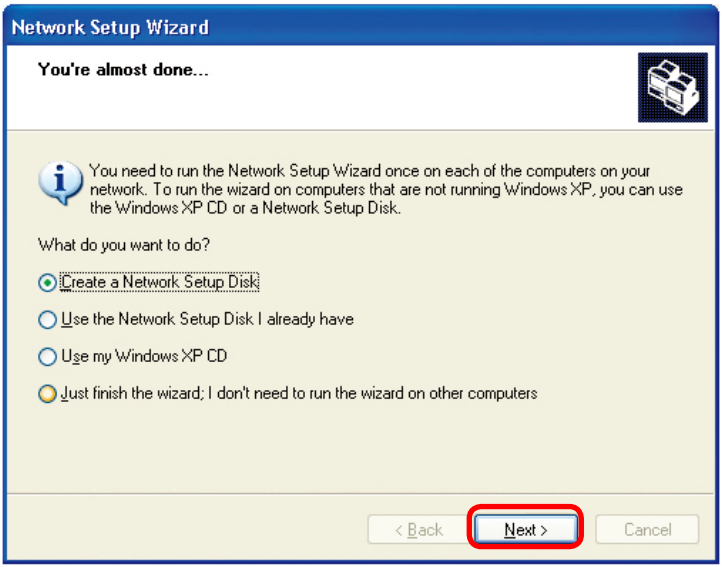


When the changes are complete, click **Next**.

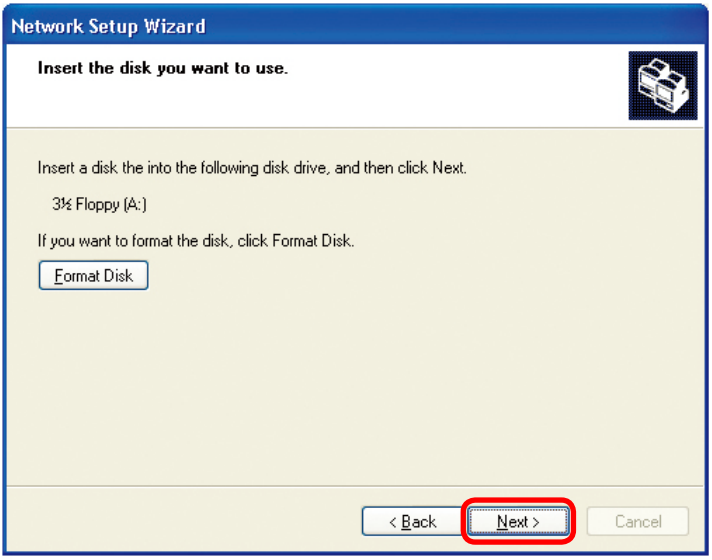
Please wait while the **Network Setup Wizard** configures the computer. This may take a few minutes.

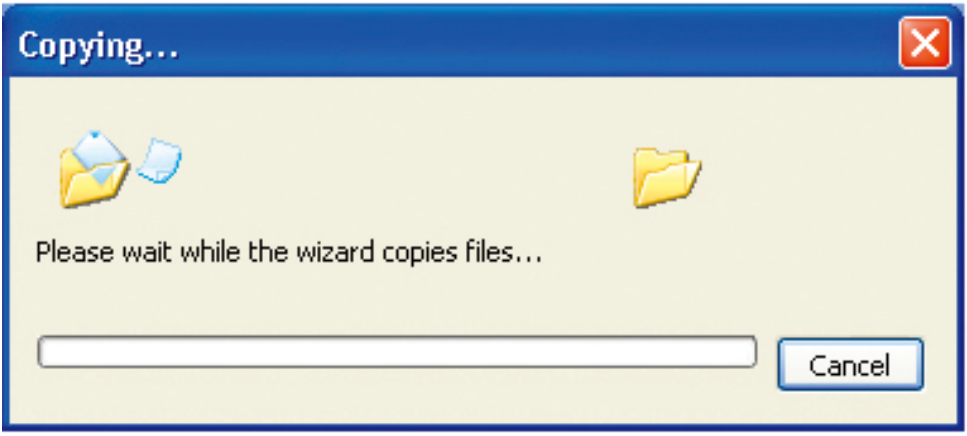


In the window below, select the option that fits your needs. In this example, **Create a Network Setup Disk** has been selected. You will run this disk on each of the computers on your network. Click **Next**.

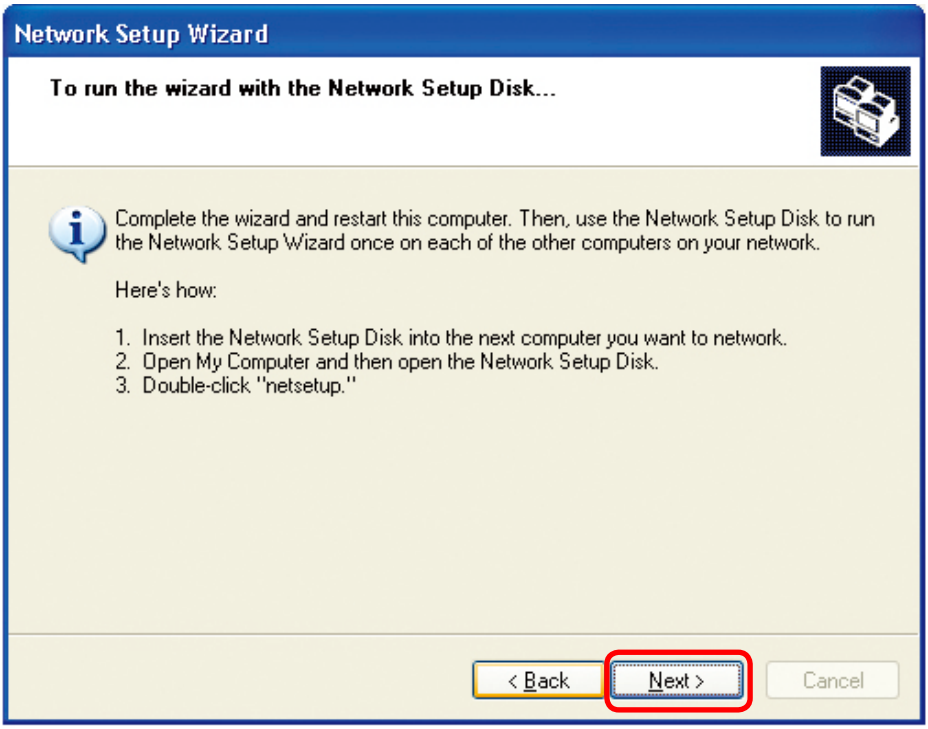


Insert a disk into the Floppy Disk Drive, in this case drive **A**.



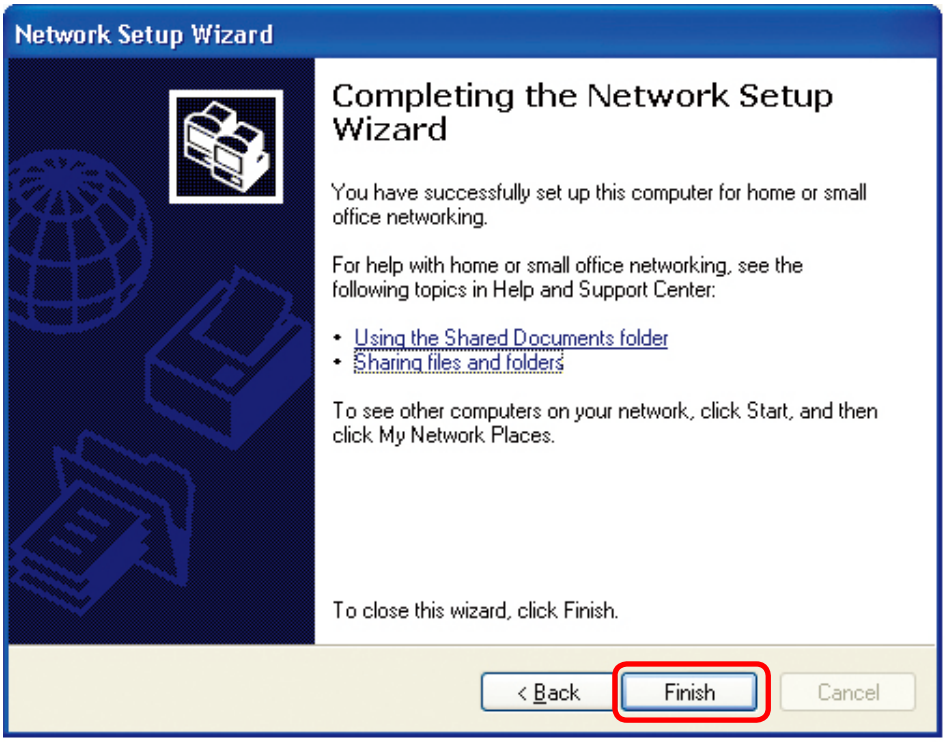


Please read the information under **Here's how** in the screen below. After you complete the **Network Setup Wizard** you will use the **Network Setup Disk** to run the **Network Setup Wizard** once on each of the computers on your network. To continue click **Next.**

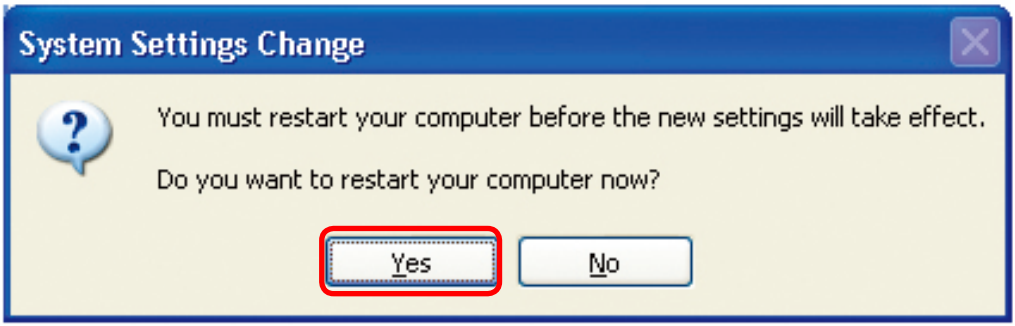


Networking Basics

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.

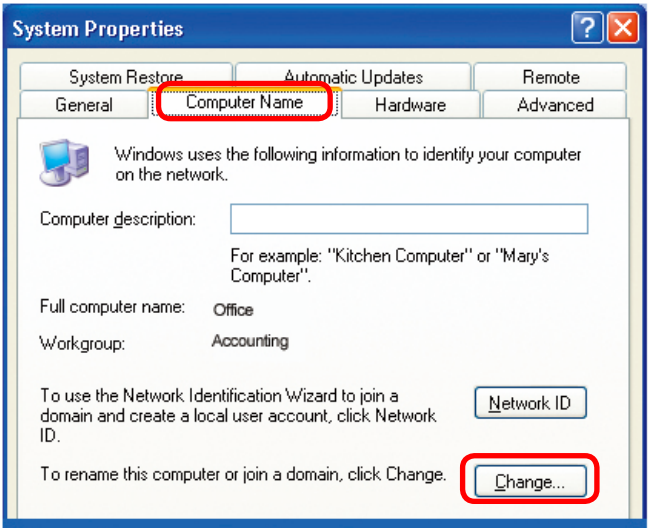
Networking Basics

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.

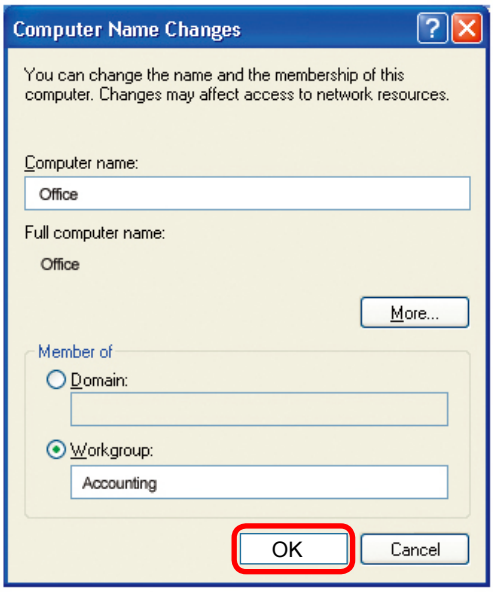


- You may enter a **Computer Description** if you wish; this field is optional.

- To rename the computer and join a domain, Click **Change**.

Naming your Computer

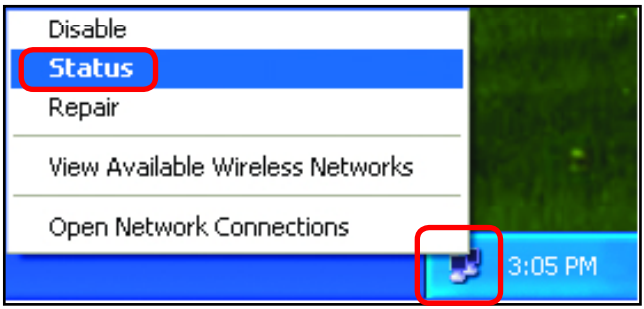
- In this window, enter the **Computer name**.
- Select **Workgroup** and enter the name of the **Workgroup**.
- All computers on your network must have the same **Workgroup** name.
- Click **OK**.



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:

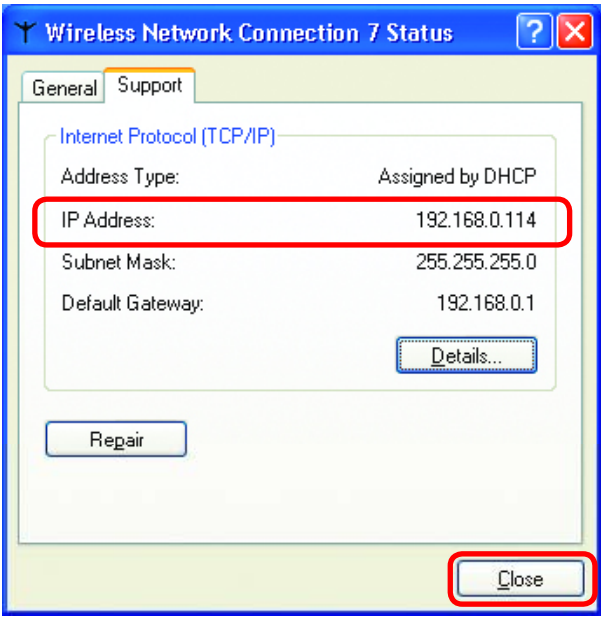
- Right-click on the ***Local Area Connection icon*** in the task bar.
- Click on **Status**.



Networking Basics

Checking the IP Address in Windows XP

This window will appear.



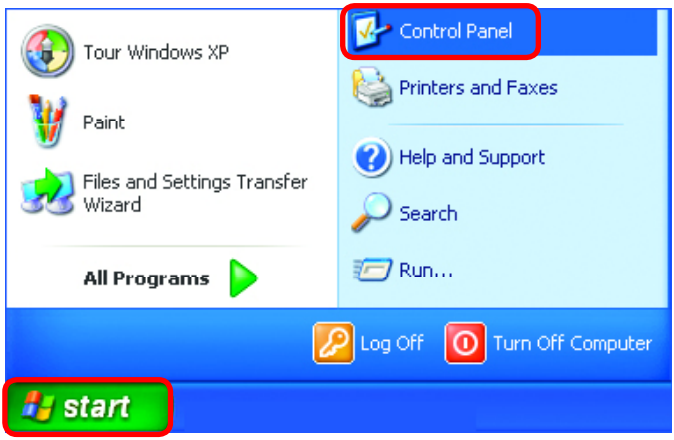
- Click the **Support tab**.
- Click **Close**.

Assigning a Static IP Address in Windows XP/2000

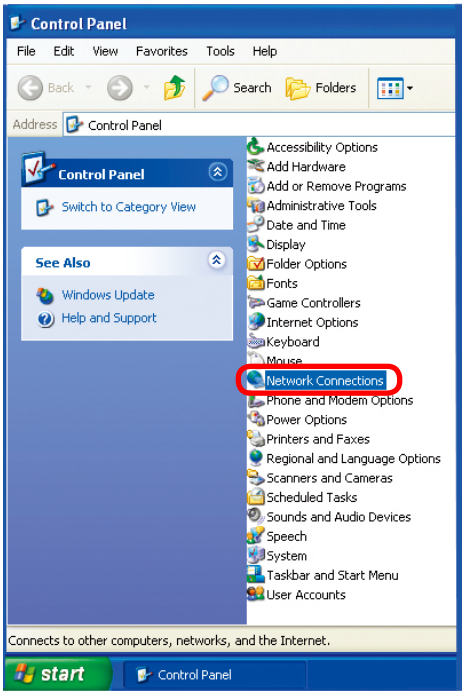
Note: Residential Gateways/Broadband Routers will automatically assign IP Addresses to the computers on the network, using DHCP (Dynamic Host Configuration Protocol) technology. If you are using a DHCP-capable Gateway/ Router you will not need to assign Static IP Addresses.

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**.

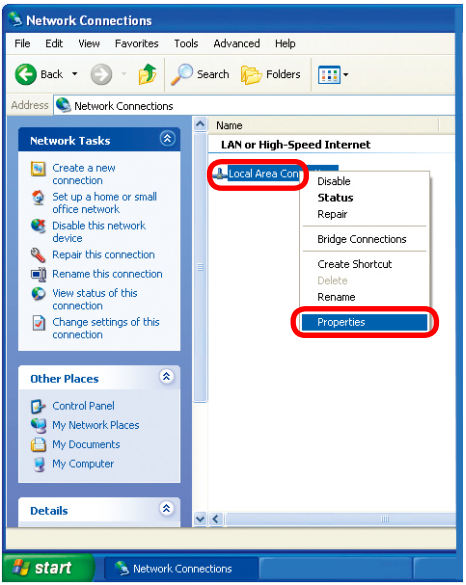


- Double-click on **Network Connections**.



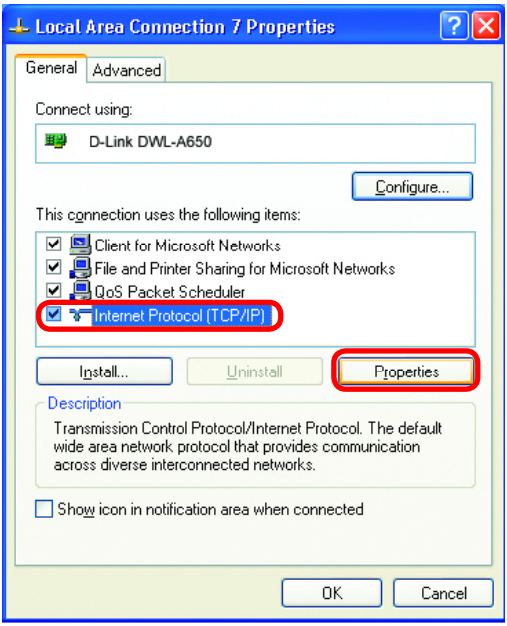
- Right-click on **Local Area Connections**.

- Single-click on **Properties**.



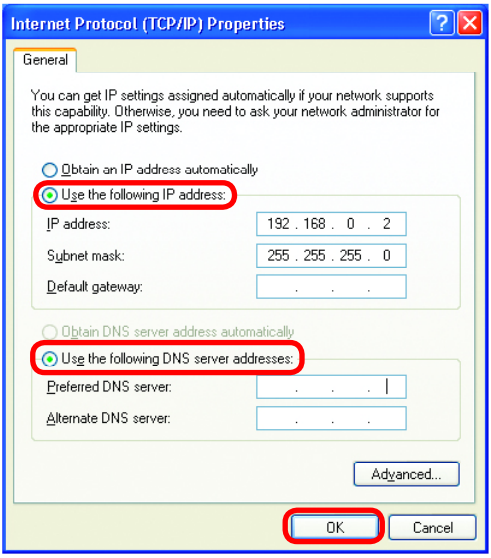
Networking Basics

Assigning a Static IP Address in Windows XP/2000



- 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.)**

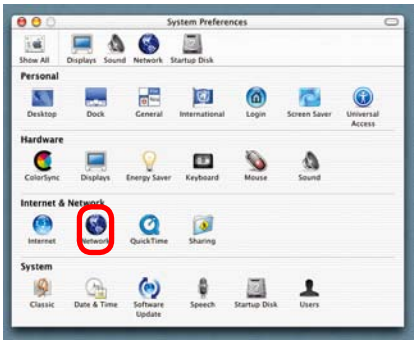
The DNS server information will be supplied by your ISP (Internet Service Provider).

- Click **OK**.

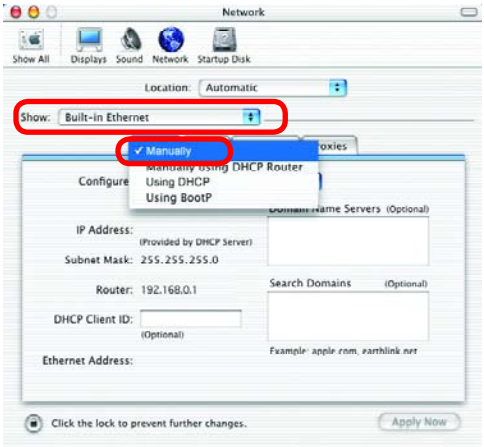
Networking Basics

Assigning a Static IP Address with Macintosh OSX

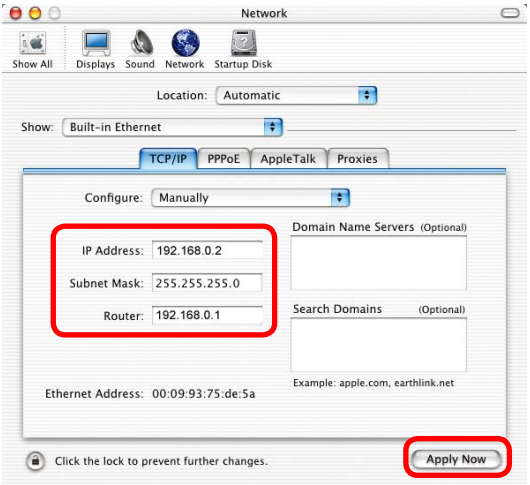
- Go to the **Apple Menu** and select **System Preferences**.
- Click on **Network**.



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

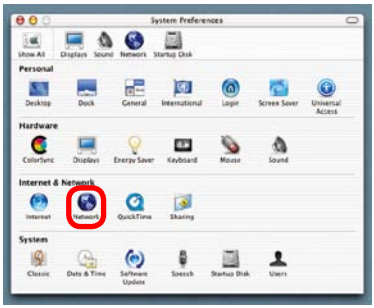


- Input the **Static IP Address**, the **Subnet Mask** and the **Router IP Address** in the appropriate fields.
- Click **Apply Now**.



Selecting a Dynamic IP Address with Macintosh OSX

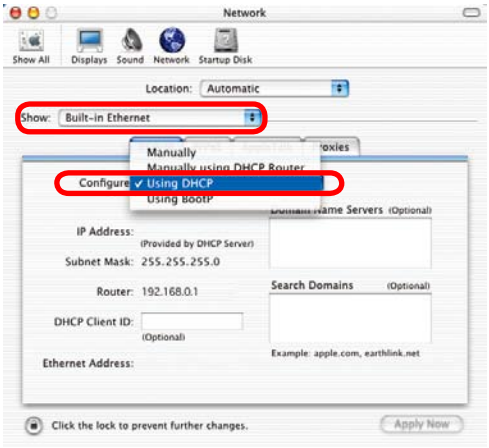
- Go to the **Apple Menu** and select **System Preferences**.



- Click on **Network**.

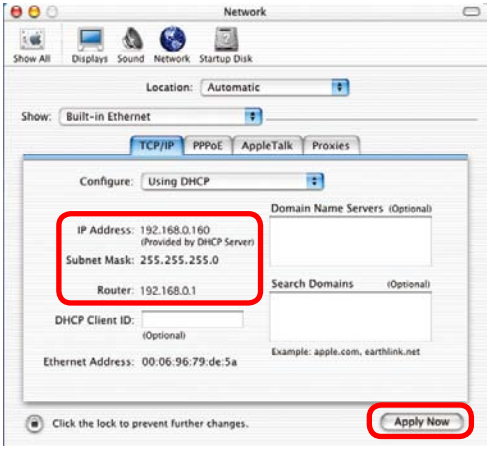
- Select **Built-in Ethernet** in the **Show** pull-down menu.

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



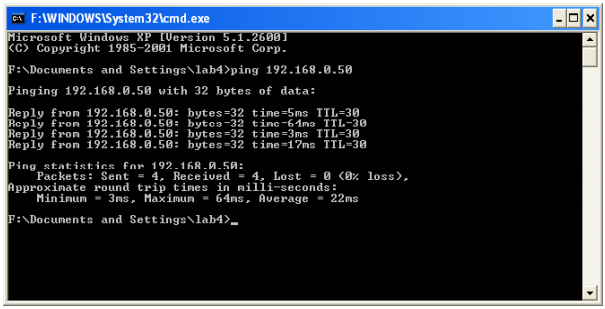
- Click **Apply Now**.

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



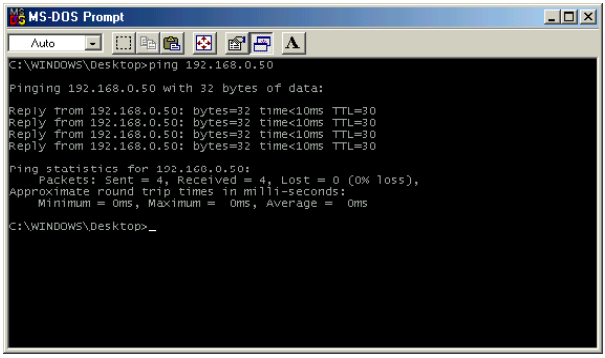
Checking the Wireless Connection by Pinging in Windows XP and 2000

- 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.



Networking Basics

Adding and Sharing Printers in Windows XP

After you have run the **Network Setup Wizard** on all the computers in your network (please see the **Network Setup Wizard** section at the beginning of **Networking Basics**), you can use the **Add Printer Wizard** to add or share a printer on your network.

Whether you want to add a **local printer** (a printer connected directly to one computer), share an **LPR printer** (a printer connected to a print server), or share a **network printer** (a printer connected to your network through a Gateway/Router), use the **Add Printer Wizard**. Please follow the directions below:

First, make sure that you have run the Network Setup Wizard on all of the computers on your network.

On the following pages, we will show you these 3 ways to use the **Add Printer Wizard:**

1. **Adding a local printer**
2. **Sharing an network printer**
3. **Sharing an LPR printer**

(Other Networking Tasks)

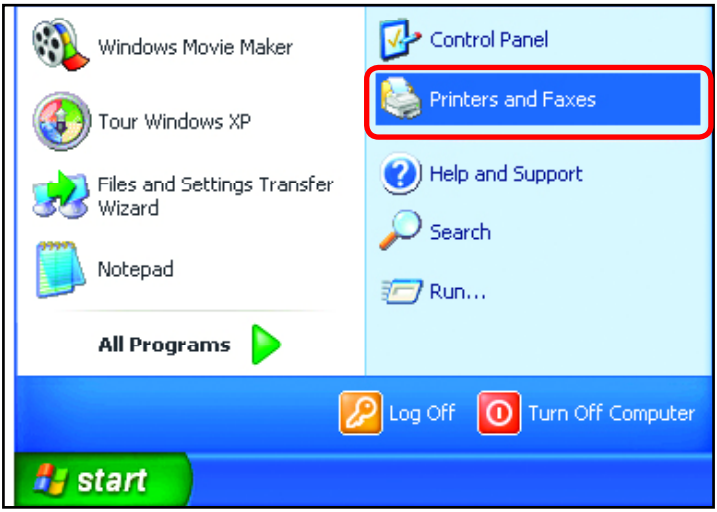
For help with other tasks, that we have not covered here, in home or small office networking, see **Using the Shared Documents** folder and **Sharing files and folders** in the **Help and Support Center** in Microsoft **Windows XP**.

Networking Basics

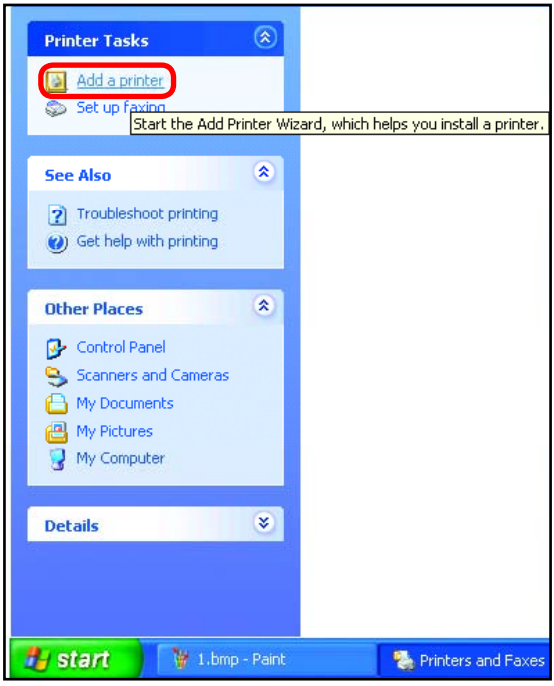
Adding a local printer *(a printer connected directly to a computer)*

A printer that is not shared on the network and is connected directly to one computer is called a **local printer**. If you do not need to share your printer on a network, follow these directions to add the printer to one computer.

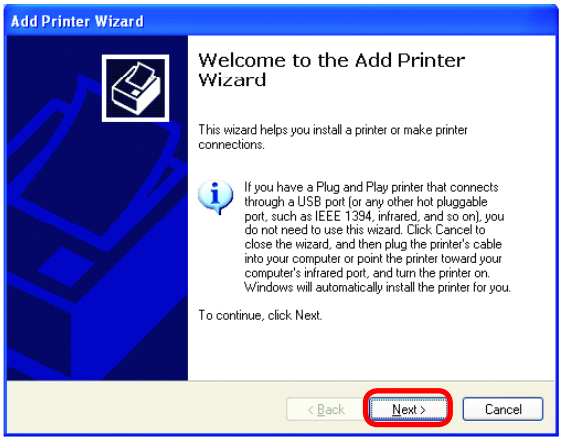
- Go to **Start > Printers and Faxes**



- Click on **Add a printer**.

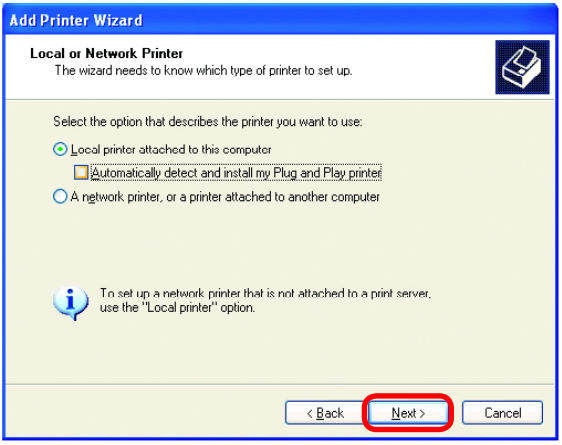


Adding a local printer



- Click **Next.**

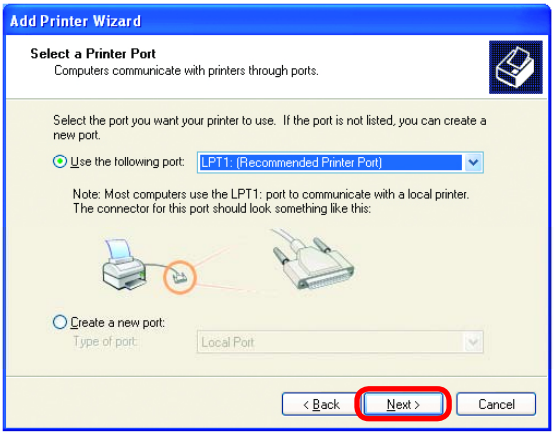
- Select **Local printer attached to this computer**.
- *(Deselect **Automatically detect and install my Plug and Play printer** if it has been selected.)*



- Click **Next**.

- Select **Use the following port:**
- From the pull-down menu **select the correct port** for your printer.

*(Most computers use the **LPT1:** port, as shown in the illustration.)*

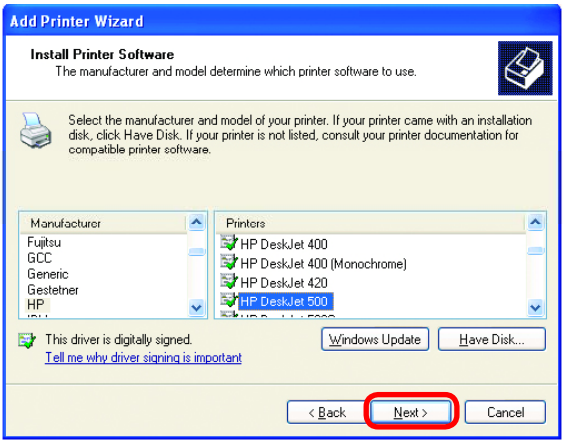


- Click **Next**.

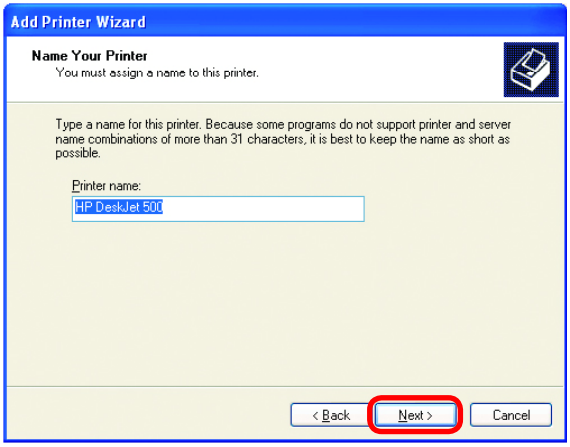
- Select and highlight the **correct driver** for your printer.

- Click **Next**.

*(If the correct driver is not displayed, insert the CD or floppy disk that came with your printer and click **Have Disk**.)*

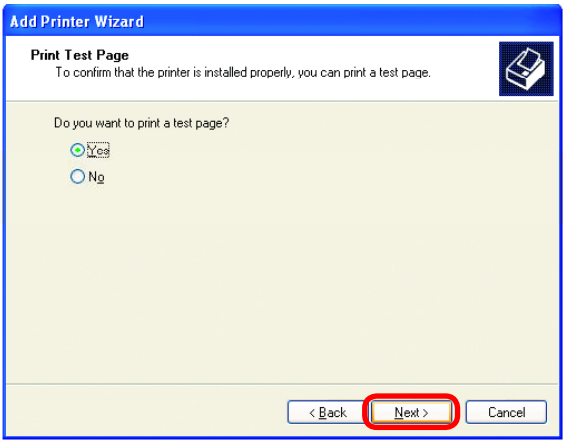


- At this screen, you can change the name of the printer (optional).



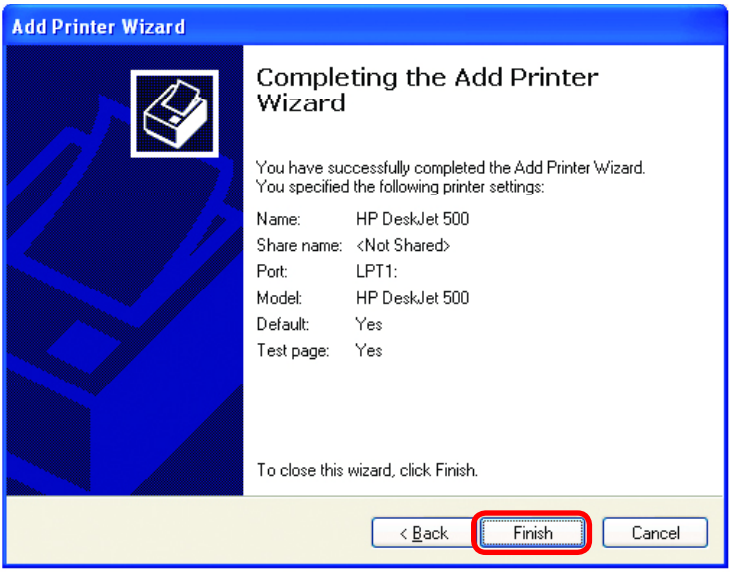
- Click **Next**.

- Select **Yes**, to print a test page. A successful printing will confirm that you have chosen the correct driver.



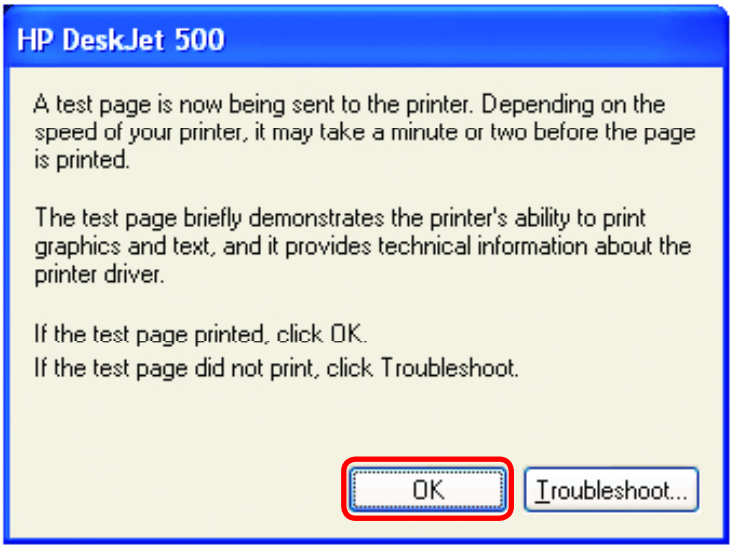
- Click **Next**.

This screen gives you information about your printer.



Click **Finish**.

When the test page has printed,

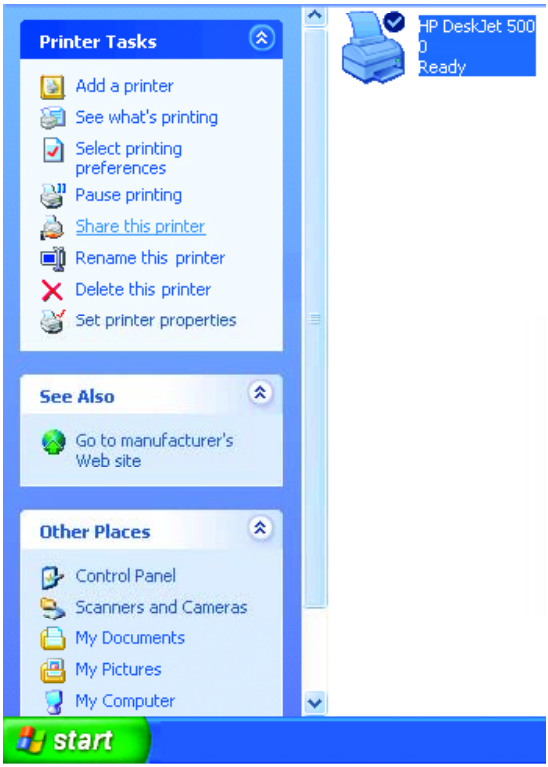


Click **OK**.

Adding a local printer

- Go to **Start** > **Printers and Faxes**.

A successful installation will display the printer icon as shown at right.

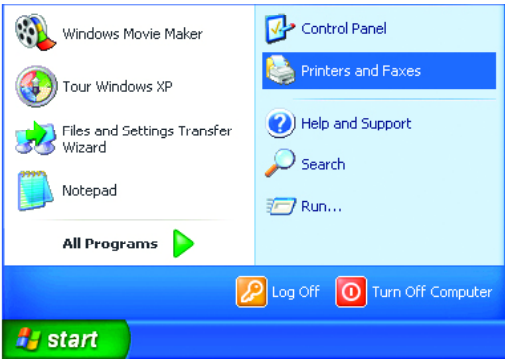


You have successfully added a local printer.

Sharing a network printer

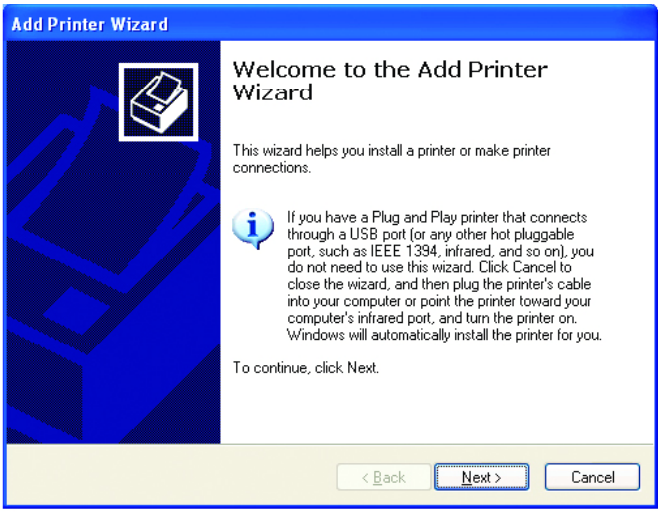
After you have run the **Network Setup Wizard** on all the computers on your network, you can run the **Add Printer Wizard** on all the computers on your network. Please follow these directions to use the **Add Printer Wizard** to share a printer on your network:

- Go to **Start** > **Printers and Faxes**

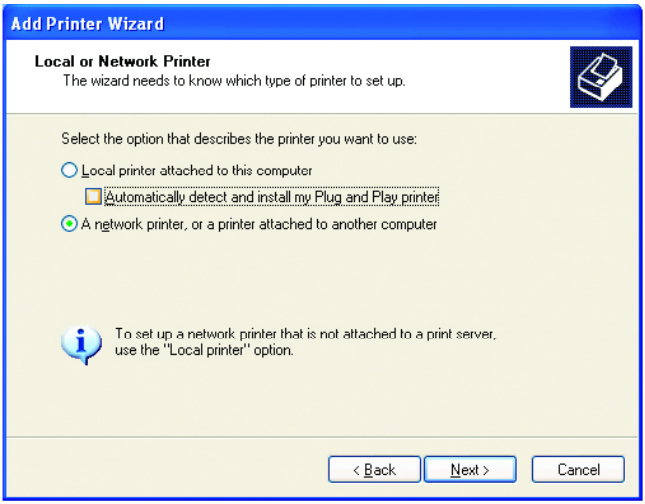


- Click on **Add a printer**.

- Click **Next**.



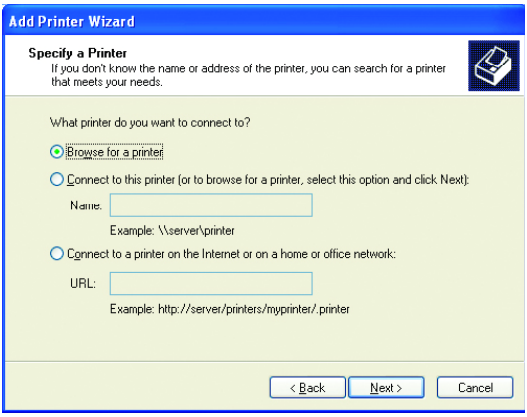
- Select **Network Printer**.



- Click **Next**.

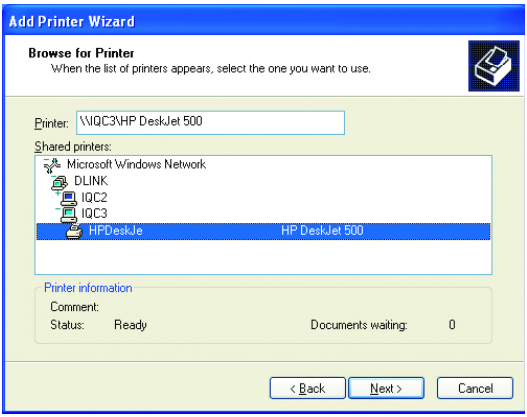
Networking Basics
Sharing a network printer

- Select **Browse for a printer**.

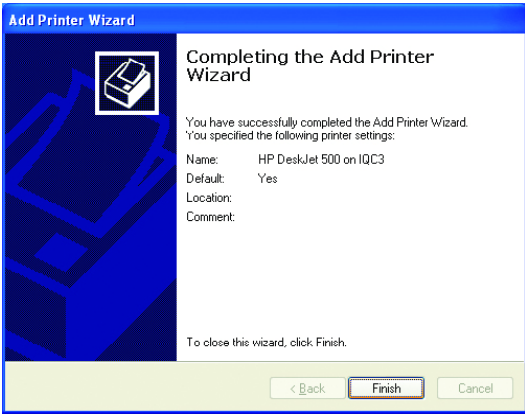


- Click **Next**.

- Select the **printer** you would like to share.



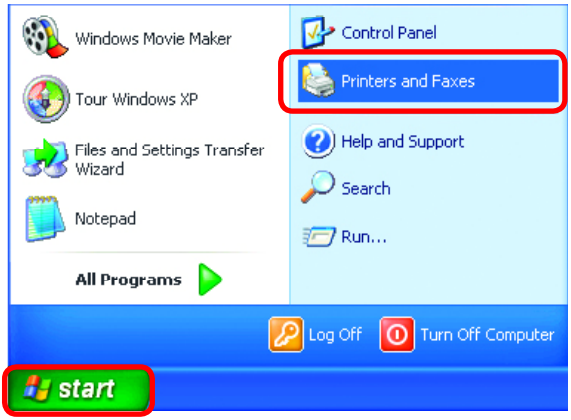
- Click **Next**.



- Click **Finish**.

Sharing a network printer

- To check for proper installation:
- Go to **Start** > **Printers and Faxes**.



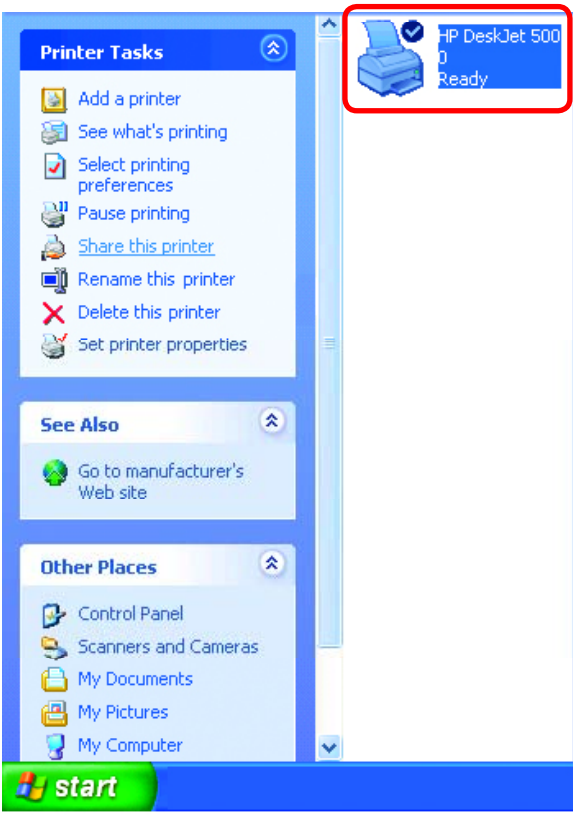
The printer icon will appear at right, indicating proper installation.

You have completed adding the printer.

To share this printer on your network:

- Remember the **printer name**.
- Run the **Add Printer Wizard** on all the computers on your network.
- Make sure you have already run the **Network Setup Wizard** on all the network computers.

After you run the **Add Printer Wizard** on all the computers in the network, you can share the printer.

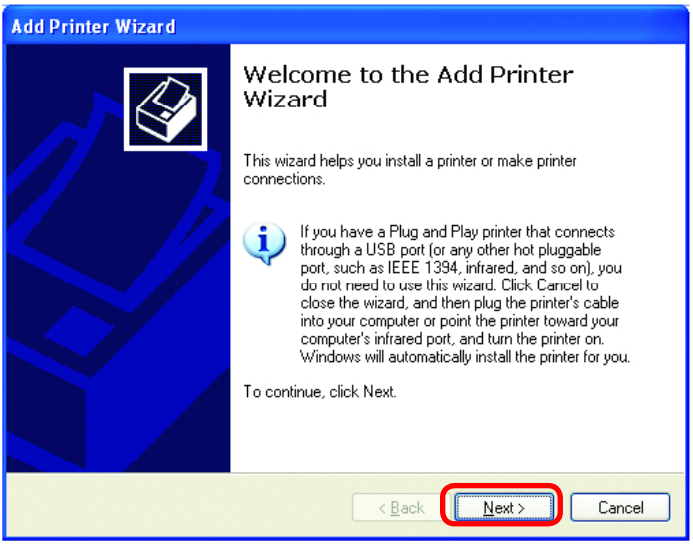


Sharing an LPR printer

To share an **LPR printer** (using a print server,) you will need a Print Server such as the **DP-101P+**. Please make sure that you have run the **Network Setup Wizard** on all the computers on your network. To share an **LPR printer**, please follow these directions:

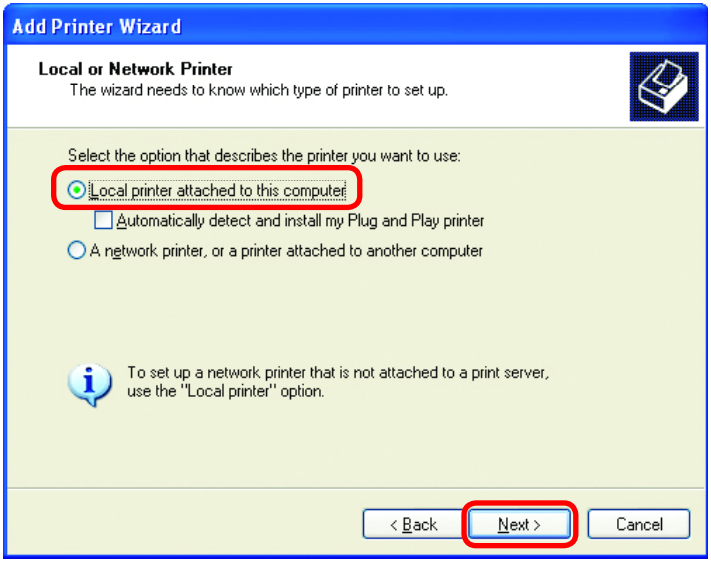
- Go to **Start** > **Printers and Faxes**.
- Click on **Add a Printer**.

The screen to the right will appear.



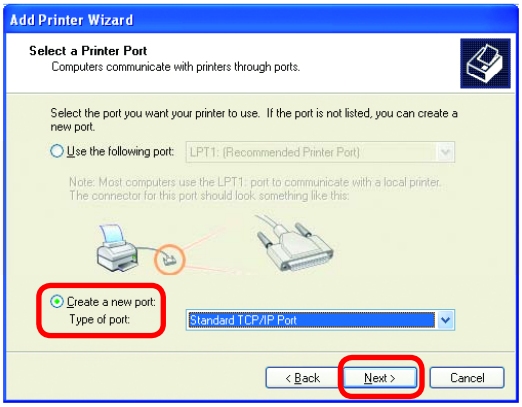
- Click **Next**.

- Select **Local Printer.**



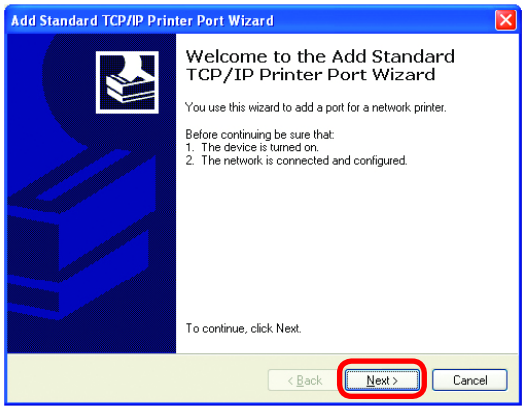
- Click **Next**.

- Select **Create a new port**.
- From the pull-down menu, select **Standard TCP/IP Port**, as shown.



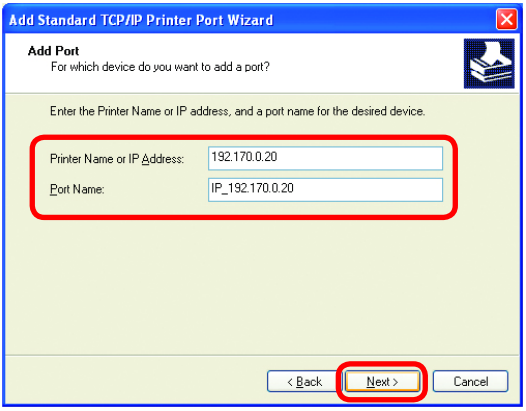
- Click **Next**.

- Please read the instructions on this screen.



- Click **Next**.

- Enter the **Printer IP Address** and the **Port Name**, as shown.

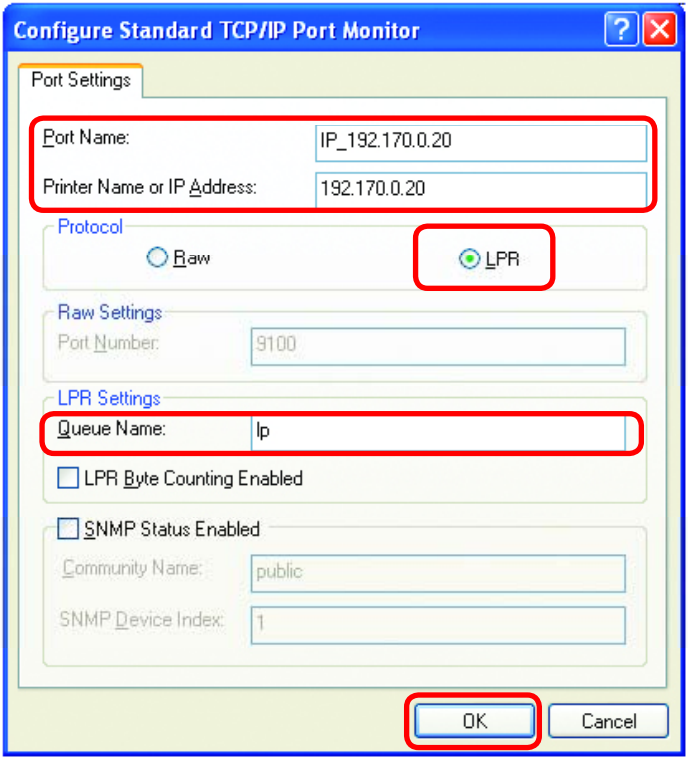


- Click **Next**.

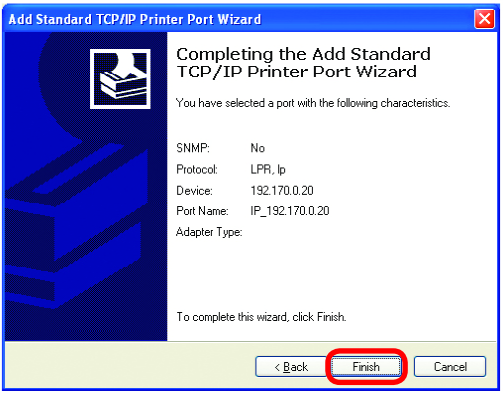
- In this screen, select **Custom**.

- Click **Settings**.

- Enter the **Port Name** and the **Printer Name** or **IP Address**.
- Select **LPR**.
- Enter a **Queue Name** (if your Print-Server/ Gateway has more than one port, you will need a **Queue name**).
- Click **OK**.



- This screen will show you information about your printer.

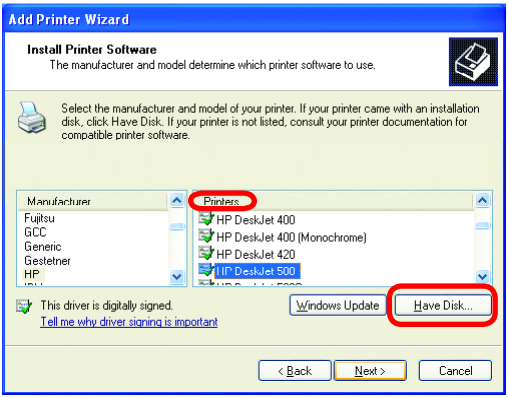


- Click **Finish**.

- Select the **printer** you are adding from the list of **Printers**.

- Insert the printer driver disk that came with your printer.

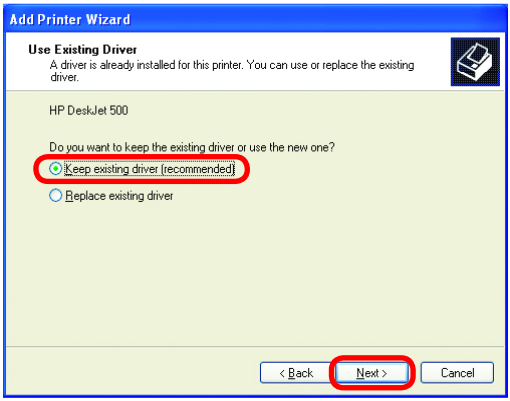
- Click **Have Disk**.



If the printer driver is already installed, do the following:

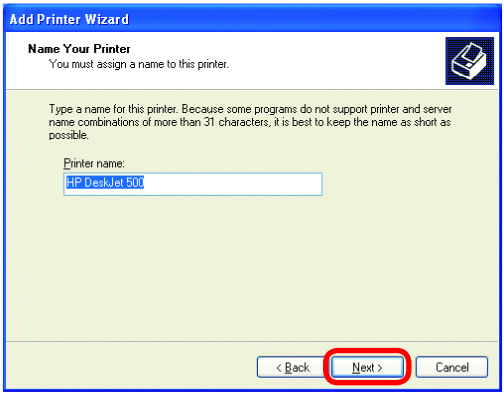
- Select **Keep existing driver**.

- Click **Next**.

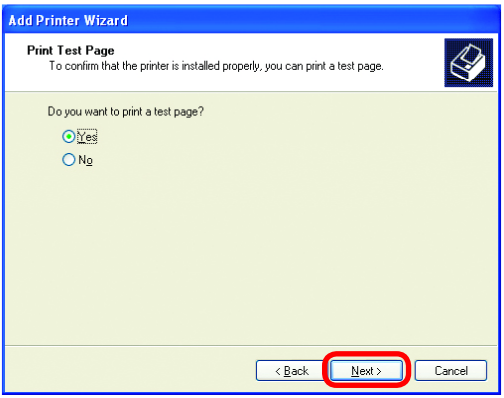


Sharing an LPR printer

- You can rename your printer if you choose. It is optional.
- *Please remember the name of your printer. You will need this information when you use the **Add Printer Wizard** on the other computers on your network.*
- Click **Next**.

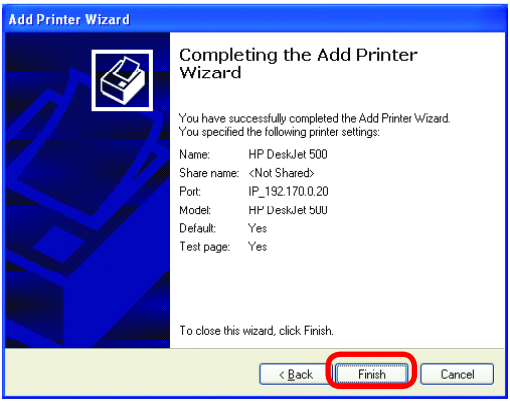


- Select **Yes**, to print a test page.
- Click **Next**.



This screen will display information about your printer.

- Click **Finish** to complete the addition of the printer.
- Please run the **Add Printer Wizard** on all the computers on your network in order to share the printer.



*Note: You must run the **Network Setup Wizard** on all the computers on your network before you run the **Add Printer Wizard**.*

Resetting the DI-824VUP to the Factory Default Settings

After you have tried other methods for troubleshooting your network, you may choose to **Reset** the DI-824VUP to the factory default settings.

To hard-reset the D-Link DI-824VUP to the Factory Default Settings, please do the following:

- Locate the **Reset** button on the back of the DI-824VUP.
- Use a paper clip to press the **Reset** button and power on.
- Hold for about 5 seconds (do not hold for too long) and then release. (Or, release when the status LEDflashes.)
- After you have completed the above steps, the DI-824VUP will be reset to the factory default settings.

Technical Specifications

Standards

- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u 100BASE-TX Fast Ethernet
- IEEE 802.11g
- USB 1.1

VPN Pass Through Function

- PPTP
- L2TP
- IPSec

LEDs

- Power
- WAN
- LAN
- WLAN
- Status
- COM
- USB
- LPT

Operating Temperature

- 32°F to 131°F (0°C to 55°C)

Humidity

- 10-90%

Power

- 5V DC / 2.5A

Dimensions

- L = 9.25 inches (233mm)
- W = 6.5 inches (165mm)
- H = 1.375 inches (35mm)

Weight

- ~2.0oz. (907g)

Ports

- 4 x 10/100 LAN Ports (MDI/MDIX)
- 1 x 10/100 WAN Port (MDI/MDIX
- 1 COM Port (Dial-up Modem)
- 1 Parallel Port (DB25)
- 1 USB Port

Frequently Asked Questions

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

When entering the IP Address of the DI-824VUP (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.”

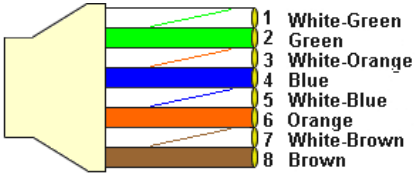
Why can´t I access the Web-based configuration? (continued)

What type of cable should I be using? (continued)

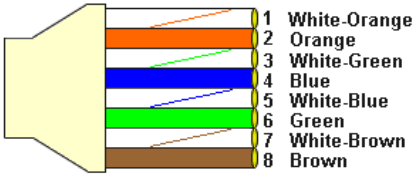
What´s the difference between a crossover cable and a straight-through cable?

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.

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



568A CABLE END



568B CABLE END

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

Why can´t I access the Web-based configuration? (continued)

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 **Default Level** 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 **Restore Defaults** button to restore these settings to their facotry defaults.

Click **OK**. Go to the desktop and close any open windows.

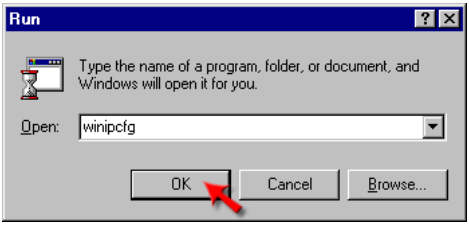
Why can´t I access the Web-based configuration? (continued)

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?

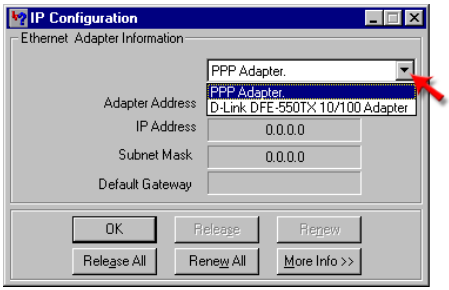
Step 1 Click on **Start**, then click on **Run**.

Step 2 The Run Dialogue Box will appear. Type **winipcfg** in the text field and click **OK**.



Step 3 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.



Step 4 After selecting your adapter, it will display your IP Address, subnet mask, and default gateway.

Step 5 Click **OK** to close the IP Configuration window

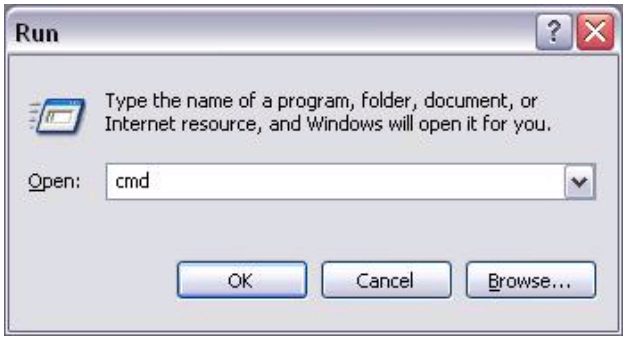
Why can´t I access the Web-based configuration? (continued)

Step 4 (continued) 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.

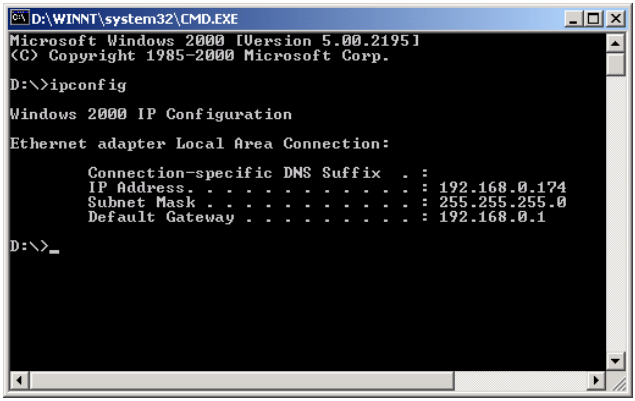
How can I find my IP Address in Windows 2000/XP?

Step 1 Click on **Start** and select **Run**.

Step 2 Type **cmd** then click **OK**.



Step 3 From the Command Prompt, enter **ipconfig**. It will return your IP Address, subnet mask, and default gateway



Step 4 Type **exit** to close the command prompt.

Why can´t I access the Web-based configuration? (continued)

Step 4 (continued) 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.

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 XP?

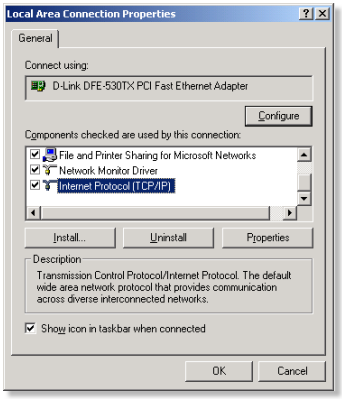
Step 1
Click on **Start > Control Panel > Network and Internet Connections > Network connections**.

Step 2 See Step 2 for Windows 2000 and continue from there.

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

Step 1 Right-click on **My Network Places** and select **Properties**.

Step 2 Right-click on the **Local Area Connection** which represents your network card and select **Properties**.

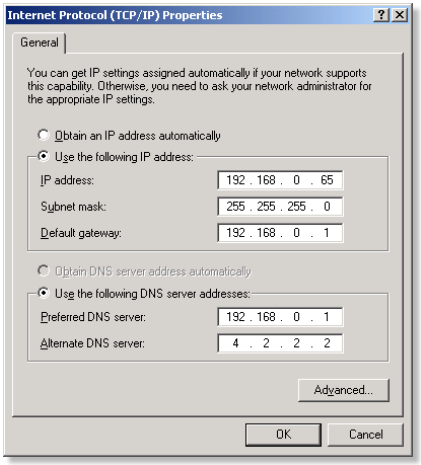


Highlight **Internet Protocol (TCP/IP)** and click **Properties.**

Why can´t I access the Web-based configuration? (continued)

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

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 Preferred DNS server** to be the same as the LAN IP address of your router (192.168.0.1).

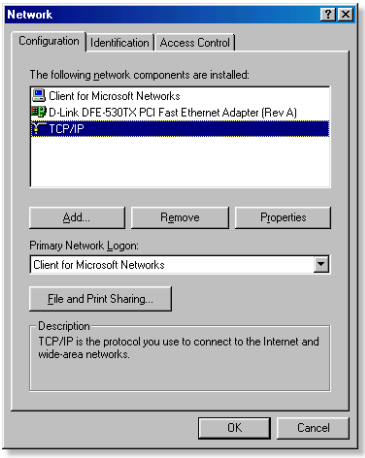
The Alternate DNS server is not needed or enter a DNS server from your ISP.

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 98/Me?

Step 1 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 one adapter, then there will be a TCP/IP "Binding" for each adapter. Highlight **TCP/IP > (your network adapter)** and then click **Properties**.

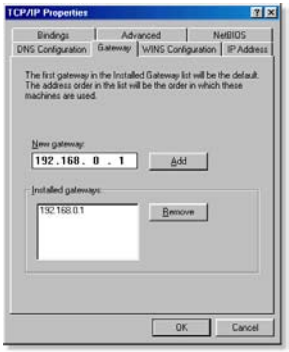


Why can´t I access the Web-based configuration? (continued)

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

Step 2 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.



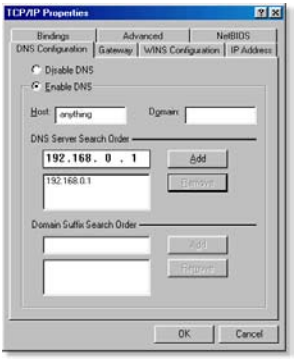
Step 3 Click on the **Gateway** tab.

Enter the LAN IP Address of your router here (192.168.0.1).

Click **Add** when finished.

Step 4 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**.



Step 5 Click **OK** twice.

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

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 log-in page for the web management. Follow instructions to log in and complete the configuration.

How can I setup my DI-824VUP to work with a cable modem connection?

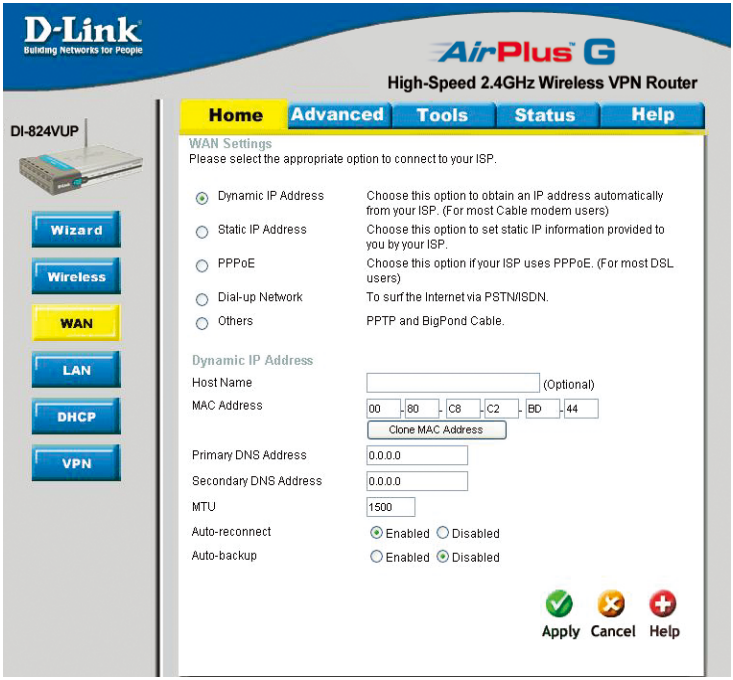
Dynamic Cable connection

(*i.e.* 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.



How can I setup my DI-824VUP to work with a cable modem connection? (continued)

Step 3 Power cycle the cable modem and router:

First turn the cable modem off. Then turn the router off Leave them off for 2 minutes.** Next turn the cable modem on. Wait until you get a solid cable light on the cable modem, and then turn the router on. Wait 30 seconds.

** If you have a DCM-201modem, leave off for at least 5 minutes.

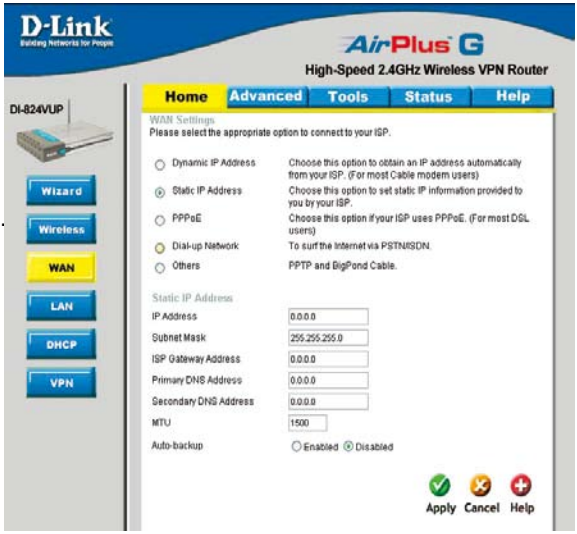
Step 4 Follow step 1 again and log back into the web configuration. Click the **Status** tab and click the **Device Info** button. If you do not already have a public IP Address under the **WAN** heading, click on the **DHCP Renew** and **Continue** buttons.

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 (empty).

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.

How can I setup my DI-824VUP 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.

How can I setup my DI-824VUP to work with Earthlink DSL or any PPPoE connection? (continued)

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 to a server and has been assigned an IP Address.

Can I use my DI-824VUP to share my Internet connection provided by AOL DSL Plus?

In most cases yes. AOL DSL Plus 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.

How do I establish a VPN connection between two DI-824VUP Routers?

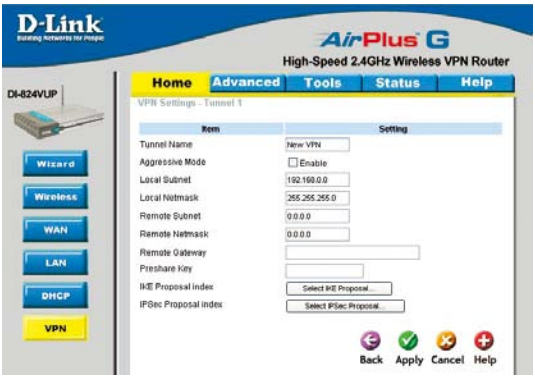
Step 1 Log into the web based configuration of the router by typing in the IP address of the router (default: 192.168.0.1) in your web browser. By default the username is **admin** and there is no password.

Step 2 Click the **VPN** button on the left column, select the checkbox to Enable the VPN, and then in the box next to Max. number of tunnels, enter the maximum numbers of VPN tunnels that you would like to have connected.

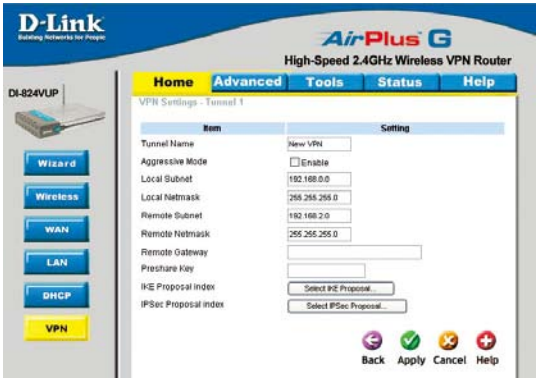
Step 3 In the space provided, enter the Tunnel Name for ID number 1, select IKE, and then click More.

How do I establish a VPN connection between two DI-824VUP Routers? (continued)

Step 4 In the **Local Subnet** and **Local Netmask** fields enter the network identifier for the local DI-824VUP´s LAN and the corresponding subnet mask.



Step 5 In the **Remote Subnet** and **Remote Netmask** fields enter the network identifier for the remote DI-824VUP´s LAN and the corresponding subnet mask.



Step 6 In the **Remote Gateway** field enter the WAN IP address of the remote DI-824VUP and in the **Preshare Key** field, enter a key which must be exactly the same as the Preshare Key that is configured on the remote DI-824VUP.

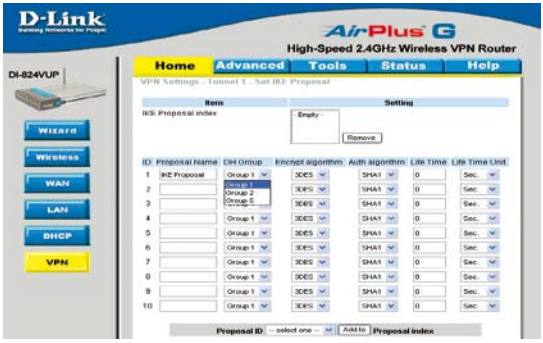
Step 7 Click Apply.

How do I establish a VPN connection between two DI-824VUP Routers? (continued)

Step 8 The device will restart. Click on the Continue button.

Step 9 Click on Select IKE Proposal.

Step 10 Enter a name for proposal ID number 1 and select Group 1, 2, or 5 from the DH Group dropdown menu.



How do I establish a VPN connection between two DI-824VUP Routers? (continued)

Step 11 Select DES or 3DES as the Encryption Algorithm.

Step 12 Select SHA-1 or MD5 as the Authentication Algorithm.

Step 13 Enter a Lifetime value of 2800 and then either select Sec. or KByte as the unit for the lifetime value.

How do I establish a VPN connection between two DI-824VUP Routers? (continued)

Step 14 Select 1 out of the Proposal ID dropdown menu and click Add To, which will add the proposal that was just configured to the IKE Proposal Index. Click Apply.

Step 15 The device will restart. Click on the Continue button.Then click Back.

Step 16 Click on Select IPSec Proposal.

How do I establish a VPN connection between two DI-824VUP Routers? (continued)

Step 17 Enter a name for proposal ID number 1 and select Group 1, 2, 5, or None from the DH Group dropdown menu.

Step 18 Select ESP or AH as the Encapsulation Protocol.

Step 19 Select DES or 3DES as the Encryption Algorithm.

How do I establish a VPN connection between two DI-824VUP Routers? (continued)

Step 20 Select SHA-1, MD5, or None as the Authentication Algorithm.

Step 21 Enter a Lifetime value and then either select Sec. or KB as the unit for the lifetime value.

Step 22 Select 1 out of the Proposal ID dropdown menu and click Add To, which will add the proposal that was just configured to the IPSec Proposal Index. Click Apply and the device will restart.

How do I establish a VPN connection between two DI-824VUP Routers? (continued)

Step 23 Follow these instructions to configure your other DI-824VUP using the exact same settings for the IKE Proposal and the IPSec Proposal. Also make sure that Step 4 is configured to reflect the LAN settings for what is now the Local DI-824VUP and that Steps 5 & 6 are configured to reflect the Subnet and WAN IP of what is now the remote DI-824VUP.

Step 24 To establish the connection, open a command prompt and ping an IP address of a computer on the remote LAN. Once you receive replies the tunnel has been established.

How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router?

You need to first configure your DI-824VUP router.

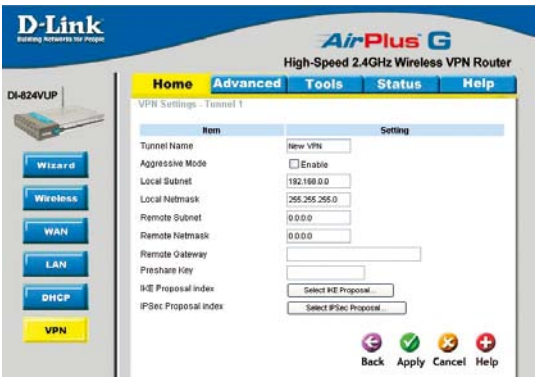
Step 1 Log into the Web-based configuration of the router by typing in the IP address of the router (default: 192.168.0.1) in your web browser. By default the username is “admin” and there is no password.

Step 2 Click the VPN button on the left column, select the checkbox to Enable the VPN, and then in the box next to Max. number of tunnels, enter the maximum numbers of VPN tunnels that you would like to have connected.

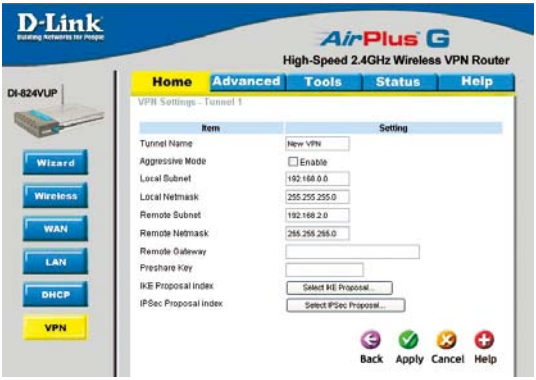
How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router? (continued)

Step 3 In the space provided, enter the Tunnel Name for ID number 1, select IKE, and then click More.

Step 4 In the **Local Subnet** and **Local Netmask** fields enter the network identifier for DI-824VUP´s LAN and the corresponding subnet mask.



Step 5 In the **Remote Subnet** and **Remote Netmask** fields enter the network identifier for the DI-804V or DI-804HV's LAN and the corresponding subnet mask. Click Apply.



How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router? (continued)

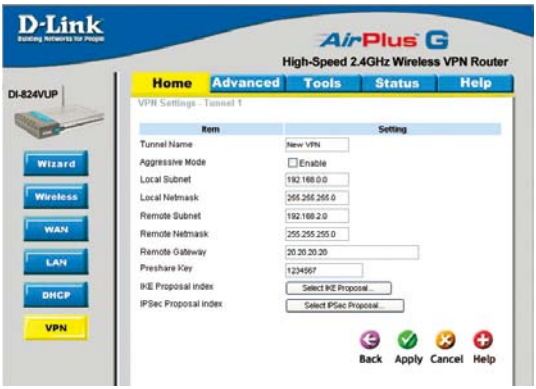
Step 6 The device will restart. Click on the Continue button.

Step 7 In the **Remote Gateway** field enter the WAN IP address of the remote DI-804V or DI-804HV and in the **Preshare Key** field, enter a key which must be exactly the same as the Preshare Key that is configured on the DI-804V or DI-804HV.

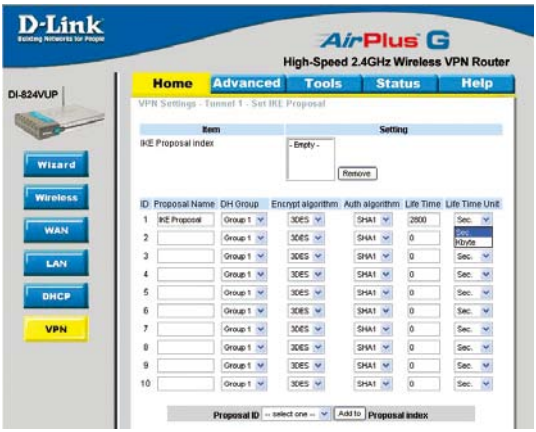
Step 8 Click Apply and then click on Select IKE Proposal.

Step 9 Enter a name for proposal ID number 1 and select Group 2 from the DH Group drop down menu.

Step 10 Select 3DES as the Encryption Algorithm and SHA-1 as the Authentication Algorithm.



Step 11 Enter a Lifetime value of 28800 and then select Sec. as the unit for the lifetime value.



How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router? (continued)

Step 12 Select 1 out of the Proposal ID dropdown menu and click Add To, which will add the proposal that was just configured to the IKE Proposal Index. Click Apply.

Step 13 The device will restart. Click on the Continue button.

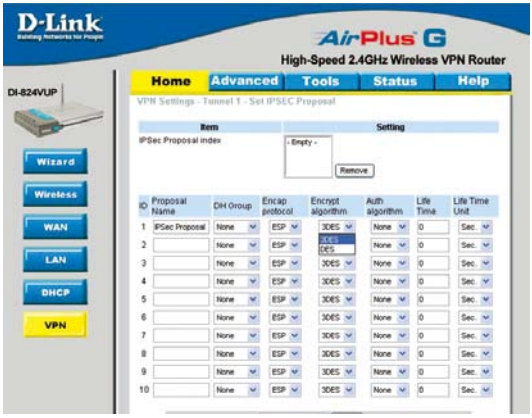
Step 14 Click Back and click on Select IPSec Proposal.

Step 15 Enter a name for proposal ID number 1 and select None from the DH Group drop-down menu.

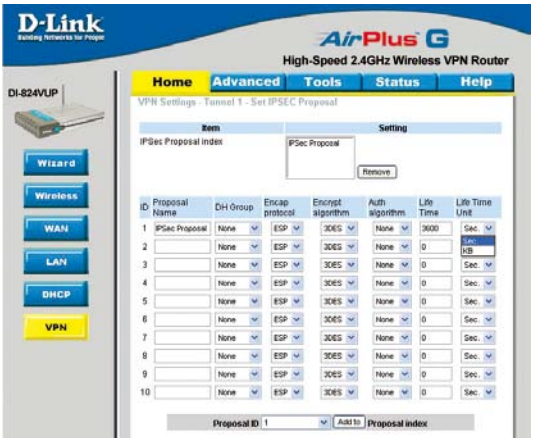
Step 16 Select ESP as the Encapsulation Protocol.

How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router? (continued)

Step 17 Select 3DES as the Encryption Algorithm and MD5 as the Authentication Algorithm. Click Apply.



Step 18 Enter a Lifetime value of 3600 and then select Sec. as the unit for the lifetime value.



Step 19 Select 1 out of the Proposal ID dropdown menu and click Add To, which will add the proposal that was just configured to the IPSec Proposal Index. Click Apply. The device will restart. Click on the Continue button.

How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router? (continued)

Next you need to configure the DI-804V or DI-804HV Router.

To configure the DI-804V router:

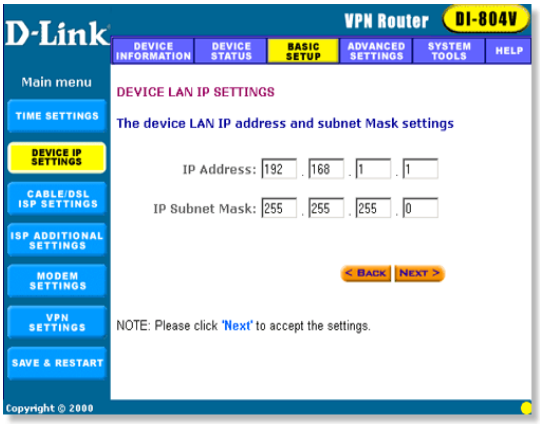
Step 1 Access the router's web configuration by entering the router's IP address in your web browser. The default IP address is 192.168.0.1. Login using your password. The default username is "admin" and the password is blank.

Step 2 Click on Basic Setup and then select Device IP Settings on the left.

Step 3 Change the LAN IP address so that it is on a different subnet than the LAN of the DI-824VUP.

Step 4 Click Next until you reach the Save & Restart screen. Click Save & restart and then click Basic Setup once until the unit has rebooted.

Step 5 Click on VPN Settings.



Step 6 Name your VPN connection and click ADD.

Step 7 In Remote IP Network and Remote IP Netmask fields enter the network identifier and corresponding subnet mask of the DI-824VUP´s LAN.

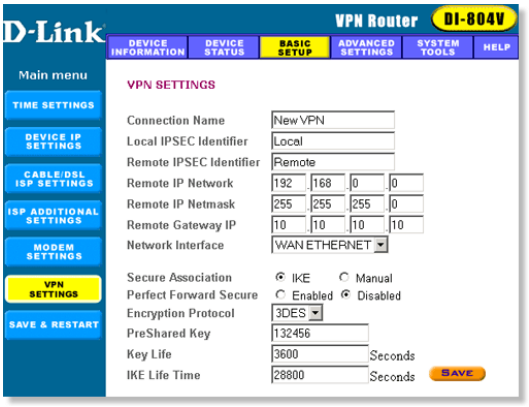
Step 8 In the Remote Gateway IP field enter the WAN IP address of the DI-824VUP and make sure that the Network Interface is set to WAN Ethernet.

Step 9 Verify that Secure Association is set to IKE and that Perfect Forward Secure is Disabled.

How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router? (continued)

Step 10 Verify the Encryption Protocol is set to 3DES and enter in your Preshared Key.

Note: The Preshared Key needs to be identical to the one configured on the DI-824VUP.



Step 11 Leave the Key Life and IKE Life Time values at their default levels and click SAVE.

Step 12 Click Next and then click on Save & Restart.

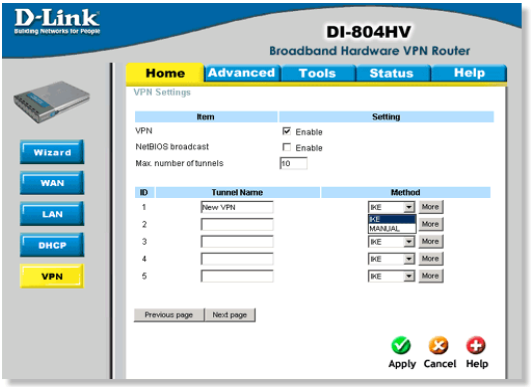
To configure the DI-804HV router:

Step 1 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. By default the username is “admin” and there is no password.

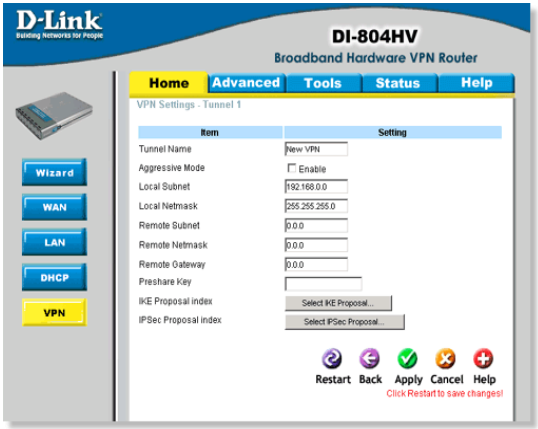
Step 2 Click the VPN button on the left column, select the checkbox to Enable the VPN, and then in the box next to Max. number of tunnels, enter the maximum numbers of VPN tunnels that you would like to have connected.

How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router? (continued)

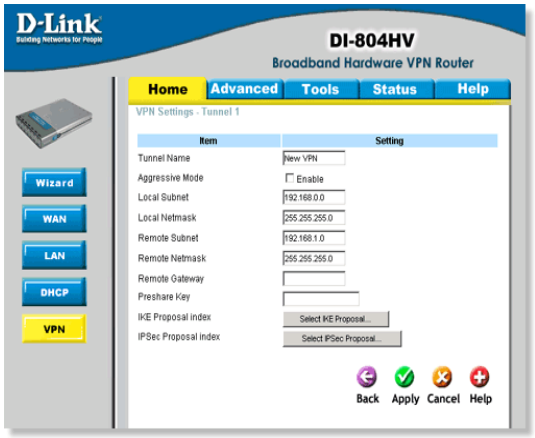
Step 3 In the space provided, enter the Tunnel Name for ID number 1, select IKE, and then click More.



Step 4 In the Local Subnet and Local Netmask fields enter the network identifier for DI-804HV´s LAN and the corresponding subnet mask.

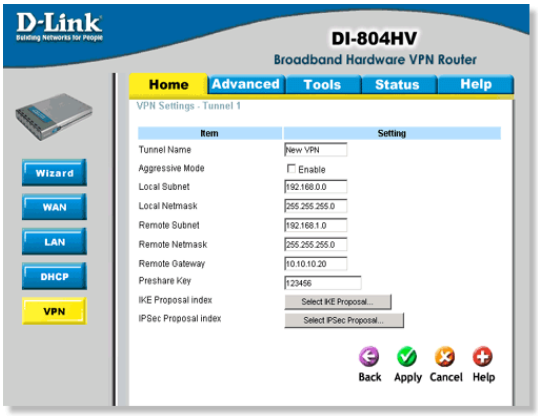


Step 5 In the Remote Subnet and Remote Netmask fields enter the network identifier for the DI-804V´s LAN and the corresponding subnet mask.



How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router? (continued)

Step 6 In the Remote Gateway field enter the WAN IP address of the remote DI-804V and in the Preshared Key field, enter a key which must be exactly the same as the Preshared Key that is configured on the DI-804V.

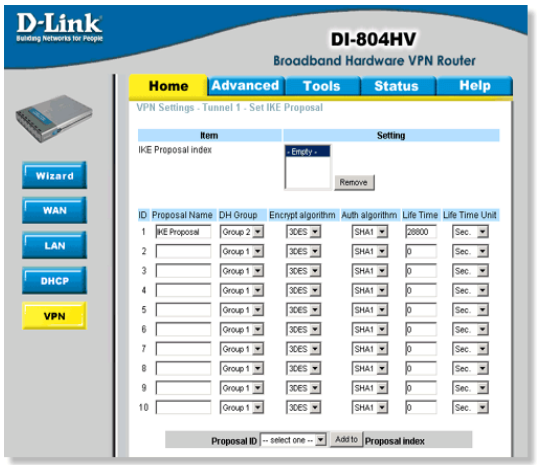


Step 7 Click Apply and then click on Select IKE Proposal...

Step 8 Enter a name for proposal ID number 1 and select Group 2 from the DH Group drop down menu.

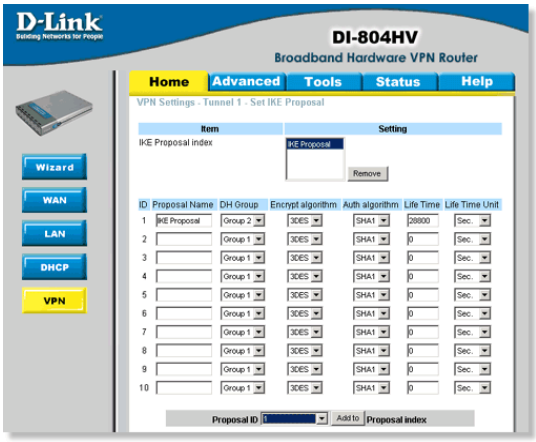
Step 9 Select 3DES as the Encryption Algorithm and SHA-1 as the Authentication Algorithm.

Step 10 Enter a Lifetime value of 28800 and then select Sec. as the unit for the lifetime value.



How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router? (continued)

Step 11 Select 1 out of the Proposal ID dropdown menu and click Add To, which will add the proposal that was just configured to the IKE Proposal Index. Click Apply and then click Back.



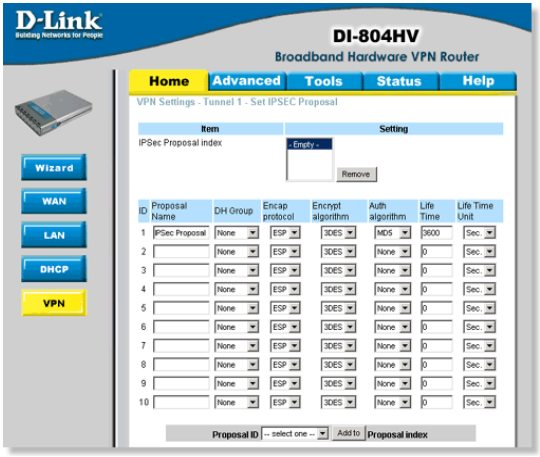
Step 12 Click on Select IPSec Proposal...

Step 13 Enter a name for proposal ID number 1 and select None from the DH Group dropdown menu.

Step 14 Select ESP as the Encapsulation Protocol.

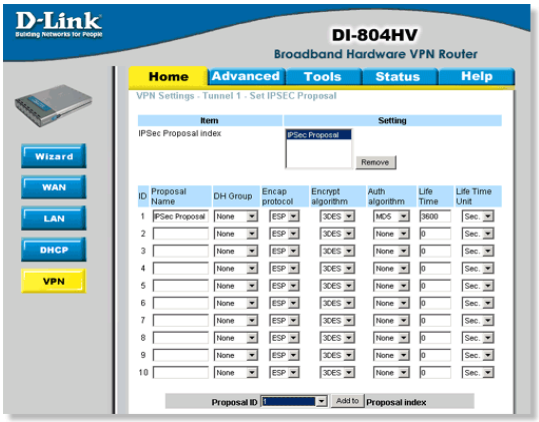
Step 15 Select 3DES as the Encryption Algorithm and MD5 as the Authentication Algorithm.

Step 16 Enter a Lifetime value of 3600 and then select Sec. as the unit for the lifetime value.



How can establish a VPN connection between my DI-824VUP and a DI-804V or DI-804HV Router? (continued)

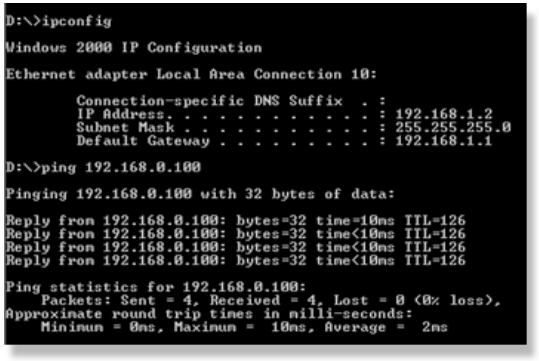
Step 17 Select 1 out of the Proposal ID dropdown menu and click Add To, which will add the proposal that was just configured to the IPSec Proposal Index. Click Apply and then click Restart.



After you have configured both routers, you need to establish a connection.

Step 1 Open a command prompt and from a computer on the internal LAN of the DI-824VUP and ping the IP address of a computer that is on the internal LAN of the DI-804V or DI-804HV, or vice versa.

Step 2 Once you begin to receive replies, the VPN connection has been established.

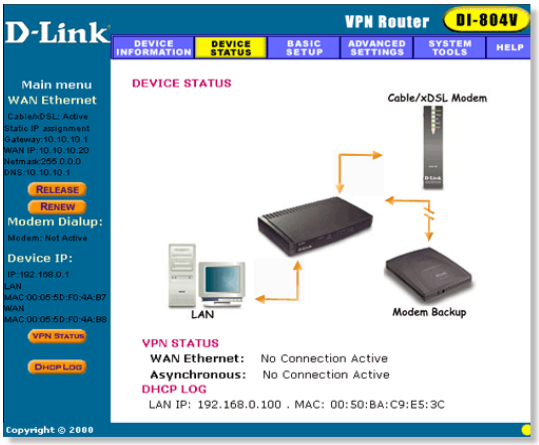


How can I set up my DI-824VUP to work with a DI-804V or DI-804HV router? (continued)

Step 3 To view the Status of the VPN on the DI-804V or DI-804HV, click on Device Status.

Step 4 From the Device Status screen click on VPN Status.

Step 5 When the VPN has been established the Status will be Active.



How can I establish a VPN connection between my DI-824VUP and a DFL-300 Firewall?

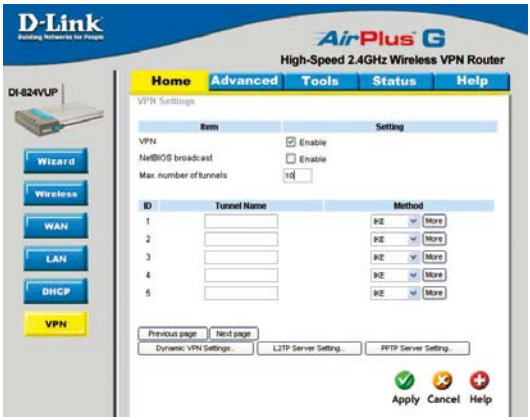
You need to first configure your DI-824VUP router.

Step 1 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. By default the username is “admin” and there is no password.

Step 2 Click the VPN button on the left column, select the checkbox to Enable the VPN, and then in the box next to Max. number of tunnels, enter the maximum numbers of VPN tunnels that you would like to have connected.

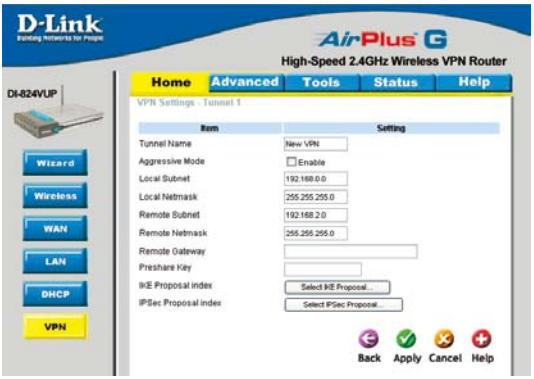
How can I establish a VPN connection between my DI-824VUP and a DFL-300 Firewall? (continued)

Step 3 In the space provided, enter the Tunnel Name for ID number 1, select IKE, and then click More.



Step 4 In the **Local Subnet** and **Local Netmask** fields enter the network identifier for DI-824VUP´s LAN and the corresponding subnet mask.

Step 5 In the **Remote Subnet** and **Remote Netmask** fields enter the network identifier for the DFL-300´s Internal interface and the corresponding subnet mask.



How can I establish a VPN connection between my DI-824VUP and a DFL-300 Firewall? (continued)

Step 6 In the Remote Gateway field enter the WAN IP address of the remote DFL-300 and in the Preshared Key field, enter a key which must be exactly the same as the Preshared Key that is configured on the DFL-300.

Step 7 Click Apply. The device will restart. Click on the Continue button and then click on Select IKE Proposal.

Step 8 Enter a name for proposal ID number 1 and select Group 2 from the DH Group dropdown menu.

Step 9 Select 3DES as the Encryption Algorithm and SHA-1 as the Authentication Algorithm.

Step 10 Enter a Lifetime value of 28800 and then select Sec. as the unit for the lifetime value.

How can I establish a VPN connection between my DI-824VUP and a DFL-300 Firewall? (continued)

Step 11 Select 1 out of the Proposal ID dropdown menu and click Add To, which will add the proposal that was just configured to the IKE Proposal Index. Click Apply. The device will restart. Click on the Continue button and then click Back.

Step 12 Click on Select IPSec Proposal.

Step 13 Enter a name for proposal ID number 1 and select None from the DH Group dropdown menu.

Step 14 Select ESP as the Encapsulation Protocol.

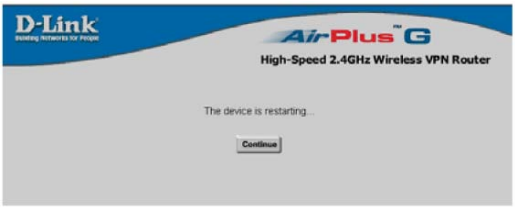
Step 15 Select 3DES as the Encryption Algorithm and MD5 as the Authentication Algorithm.

Step 16 Enter a Lifetime value of 28800 and then select Sec. as the unit for the lifetime value.

How can I establish a VPN connection between my DI-824VUP and a DFL-300 Firewall? (continued)

Step 17 Select 1 out of the Proposal ID dropdown menu and click Add To, which will add the proposal that was just configured to the IPSec Proposal Index. Click Apply and then click Restart.

Step 18 The device will restart. Click on the Continue button.

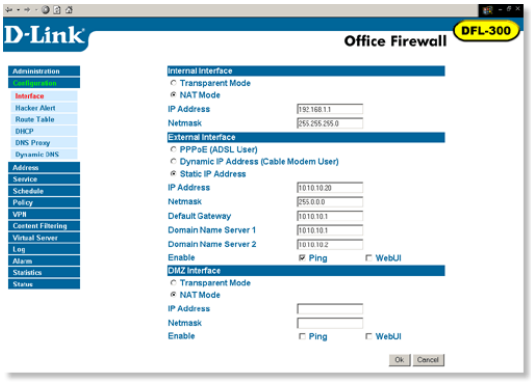


Next you need to configure the DFL-300 firewall.

Step 1 Access the configuration screen of the DFL-300 by opening a web browser such as Internet Explorer and type the IP address of the DFL-300 in the address bar (192.168.1.1).

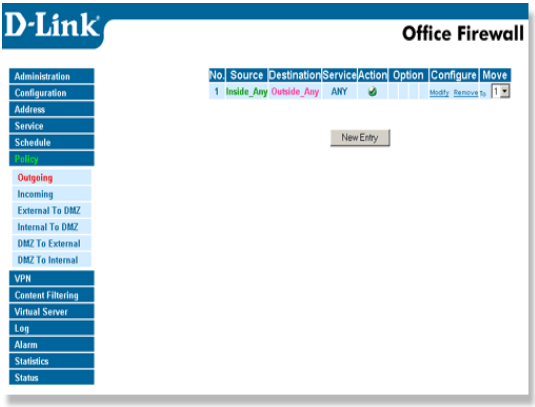
Step 2 Enter the username (admin) and the password (admin). Click OK.

Step 3 Click on Configuration and take note of the IP address that your ISP has assigned you.



How can I establish a VPN connection between my DI-824VUP and a DFL-300 Firewall? (continued)

Step 4 Click on Policy and verify that you have an Outgoing policy configured. If not, click on New Entry, accept the default values, and click OK.



Step 5 Click on VPN and then click New Entry.

Step 6 Give the VPN connection a name with no spaces.

Step 7 Enter the network identifier and subnet mask of the Internal interface.

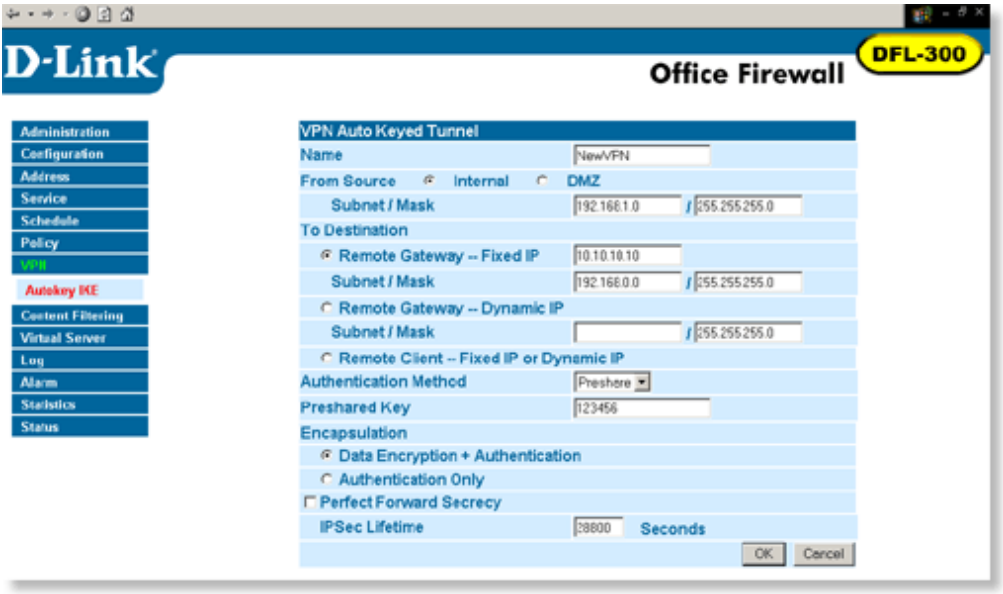
Step 8 In the To Destination section, select either Remote Gateway—Fixed IP or Remote Gateway—Dynamic IP. Enter the WAN IP address of the DI-824VUP if Remote Gateway—Fixed IP is selected.

Step 9 Enter the network identifier corresponding subnet mask of the DI-824VUP´s LAN.

Step 10 Enter a Preshared Key. The Preshared Key needs to be identical to the one configured on the DI-824VUP.

Step 11 Select Data Encryption and Authentication as the Encapsulation and click OK.

How can I establish a VPN connection between my DI-824VUP and a DFL-300 Firewall? (continued)



After you have configured both the router and firewall, you need to establish a connection.

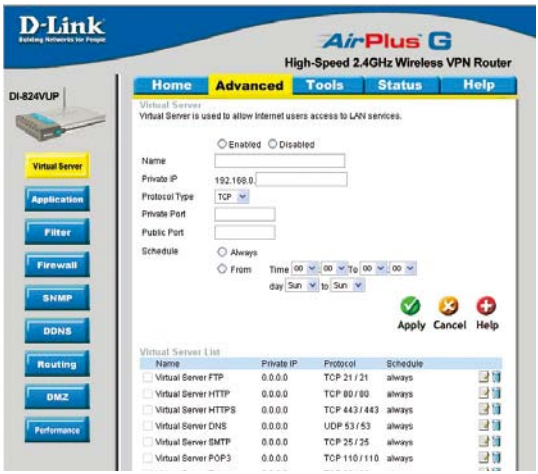
Step 1 Open a command prompt and from a computer connected to the Internal interface of the DFL-300 and ping the IP address of a computer that is on the internal LAN of the DI-824VUP, or vice versa.

```
D:\>ipconfig

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection 10:

        Connection-specific DNS Suffix  . :
        IP Address. . . . . . . . . . . . : 192.168.1.2
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 192.168.1.1

D:\>ping 192.168.0.100

Pinging 192.168.0.100 with 32 bytes of data:

Reply from 192.168.0.100: bytes=32 time=10ms TTL=126
Reply from 192.168.0.100: bytes=32 time<10ms TTL=126
Reply from 192.168.0.100: bytes=32 time<10ms TTL=126
Reply from 192.168.0.100: bytes=32 time<10ms TTL=126

Ping statistics for 192.168.0.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  10ms, Average =  2ms
```

Step 2 Once you begin to receive replies, the VPN connection has been established.

How do I open ports on my DI-824VUP?

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.

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.

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).

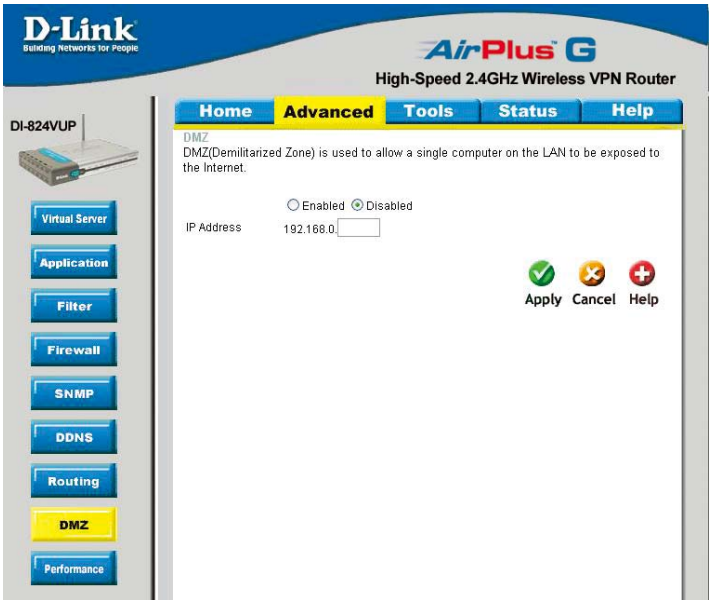
How do I configure the DMZ Host? (continued)

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 (empty).

Step 3 Click the **Advanced** tab and then click on the **DMZ** button. Select **Enable** and type in the IP Address from 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.



How do I open a range of ports on my DI-824VUP using Firewall rules?

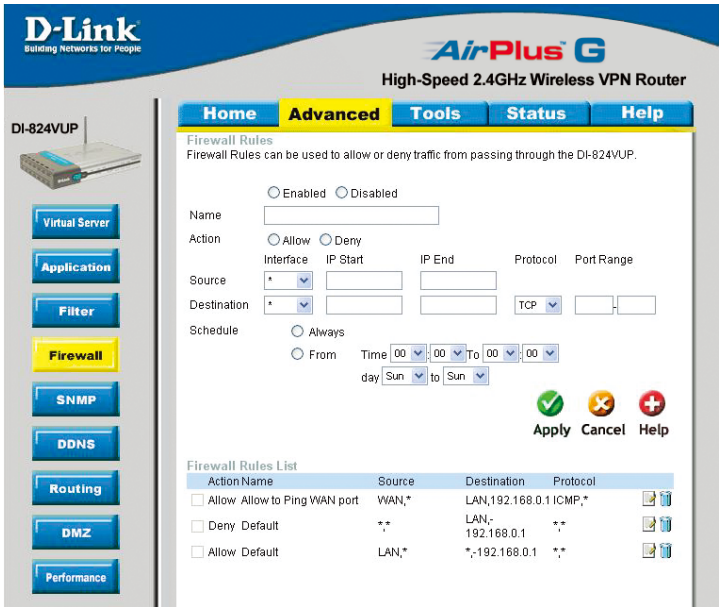
Step 1 Access the router's web configuration by entering the router's IP Address in your web browser. The default IP Address is **192.168.0.1**. Login using your password. The default username is **"admin"** and the password is blank.

If you are having difficulty accessing web management, please see the first question in this section.

Step 2 From the web management Home page, click the **Advanced** tab then click the **Firewall** button.

Step 3 Click on **Enabled** and type in a name for the new rule.

Step 4 Choose **WAN** as the **Source** and enter a range of IP Addresses out on the internet that you would like this rule applied to. If you would like this rule to allow all internet users to be able to access these ports, then put an **Asterisk** in the first box and leave the second box empty.



Step 5 Select **LAN** as the **Destination** and enter the IP Address of the computer on your local network that you want to allow the incoming service to. This will not work with a range of IP Addresses.

Step 6 Enter the port or range of ports that are required to be open for the incoming service.

Step 7 Click **Apply** and then click **Continue**.

Note: Make sure DMZ host is disabled.

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.

What are virtual servers?

A Virtual Server is defined as a service port, and all requests to this port will be redirected to the computer specified by the server IP. For example, if you have an FTP Server (port 21) at 192.168.0.5, a Web server (port 80) at 192.168.0.6, and a VPN (port 1723) server at 192.168.0.7, then you need to specify the following virtual server mapping table:

Server Port	Server IP	Enable
21	192.168.0.5	X
80	192.168.0.6	X
1723	192.168.0.7	X

How do I use *PC Anywhere* with my DI-824VUP?

You will need to open 3 ports in the Virtual Server section of your D-Link router.

Step 1 Open your web browser and enter the IP Address of the router (192.168.0.1).

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

Step 3 Enter the information as seen below. The **Private IP** is the IP Address of the computer on your local network that you want to connect to.

Step 4 The first entry will read as shown here:

Step 5 Click **Apply** and then click **Continue**.

How do I use *PC Anywhere* with my DI-824VUP? (continued)

Step 6 Create a second entry as shown here:

Step 7 Click **Apply** and then click **Continue**.

Step 8 Create a third and final entry as shown here:

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

Step 10 Run *PCAnywhere* from the remote site and use the WAN IP Address of the router, not your computer´s IP Address.

How can I use *eDonkey* behind my DI-824VUP?

You must open ports on your router to allow incoming traffic while using *eDonkey.*

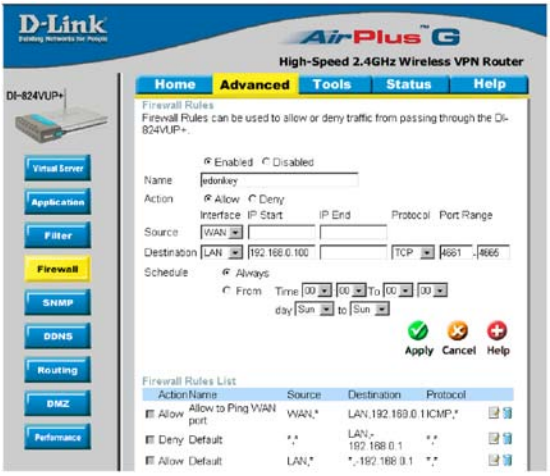
eDonkey uses three ports (4 if using CLI):

4661 (TCP) To connect with a server
4662 (TCP) To connect with other clients
4665 (UDP) To communicate with servers other than the one you are connected to.
4663 (TCP) *Used with the command line (CLI) client when it is configured to allow remote connections. This is the case when using a Graphical Interface (such as the Java Interface) with the client.

Step 1 Open your web browser and enter the IP Address of your router (192.168.0.1). Enter username (admin) and your password (leave blank).

Step 2 Click on **Advanced** and then click **Firewall**.

Step 3 Create a new firewall rule:
Click **Enabled**.
Enter a name (edonkey).
Click **Allow**.
Next to Source, select **WAN** under interface. In the first box, enter an *****. Leave the second box empty.



Next to Destination, select **LAN** under interface. Enter the IP Address of the computer you are running eDonkey from. Leave the second box empty. Under Protocol, select *****. In the port range boxes, enter **4661** in the first box and then **4665** in the second box.

Click **Always** or set a schedule.

Step 4 Click **Apply** and then **Continue**.

How do I set up my DI-824VUP for SOCOM on my Playstation 2?

To allow you to play SOCOM and hear audio, you must download the latest firmware for the router (if needed), enable Game Mode, and open port 6869 to the IP Address of your Playstation.

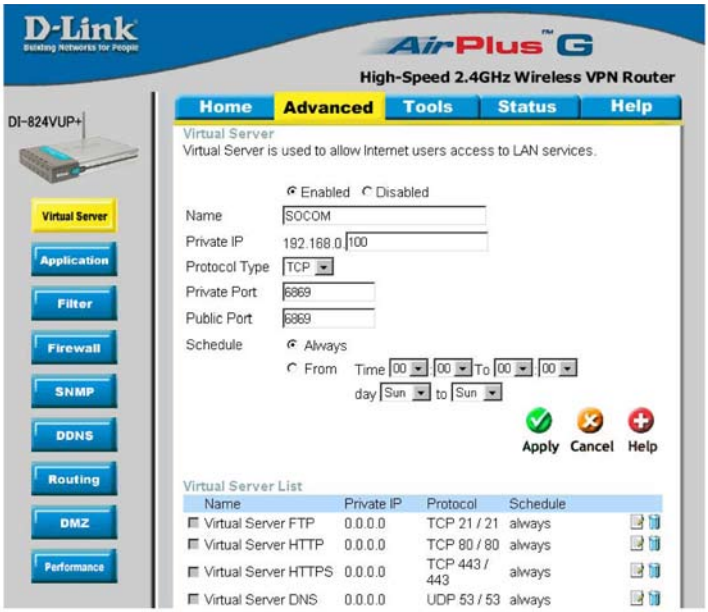
Step 1 Upgrade firmware (follow link above).

Step 2 Open your web browser and enter the IP Address of the router (192.168.0.1). Enter username (admin) and your password (blank by default).

Step 3 Click on the **Advanced** tab and then click on **Virtual Server** on the left side.

Step 4 You will now create a new Virtual Server entry. Click **Enabled** and enter a name (socom). Enter the IP Address of your Playstation for **Private IP**.

Step 5 For **Protocol Type** select Both. Enter **6869** for both the **Private Port** and **Public Port**. Click **Always**. Click **Apply** to save changes and then **Continue**



Step 6 Click on the **Tools** tab and then **Misc** on the left side.

Step 7 Make sure **Gaming Mode** is Enabled. If not, click **Enabled**. Click **Apply** and then **Continue**.

How can I use Gamespy behind my DI-824VUP?

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

Step 2 Click on the Advanced tab and then click Virtual Server on the left side.

Step 3 You will create 2 entries.

Step 4 Click Enabled and enter Settings:

NAME - Gamespy1

PRIVATE IP - The IP Address of your computer that you are running Gamespy from.

PROTOCOL TYPE - Both

PRIVATE PORT - 3783

Click **Apply** and then **continue**

Step 5 Enter 2nd entry:
Click Enabled

NAME - Gamespy2

PRIVATE IP - The IP Address of your computer that you are running Gamespy from.

PROTOCOL TYPE - Both

PRIVATE PORT - 6500

PUBLIC PORT - 6500

SCHEDULE - Always.

Click **Apply** and then **continue**.

How do I configure my DI-824VUP for KaZaA and Grokster?

The following is for KaZaA, Grokster, and others using the FastTrack P2P file sharing system.

In most cases, you do not have to configure anything on the router or on the Kazaa software. If you are having problems, please follow steps below:

Step 1 Enter the IP Address of your router in a web browser (192.168.0.1).

Step 2 Enter your username (admin) and your password (blank by default).

Step 3 Click on Advanced and then click Virtual Server.

Step 4 Click Enabled and then enter a Name (kazaa for example).

Step 5 Enter the IP Address of the computer you are running KaZaA from in the Private IP box. Select TCP for the Protocol Type.

Step 6 Enter 1214 in the Private and Public Port boxes. Click Always under schedule or set a time range. Click Apply.

Make sure that you did not enable proxy/firewall in the KaZaA software.

How do I configure my DI-824VUP to play Warcraft 3?

To hose a Warcraft 3 game, you must open ports on your router to allow incoming traffic. To play a game, you do not have to configure your router.

Warcraft 3 (Battlenet) uses port 6112.

For the DI-824VUP:

Step 1 Open your web browser and enter the IP Address of your router (192.168.0.1). Enter username (admin) and your password (leave blank).

Step 2 Click on **Advanced** and then click **Virtual Server**.

Step 3 Create a new entry: Click **Enabled**. Enter a name (warcraft3). Private IP - Enter the IP Address of the computer you want to host the game. Select **Both** for Protocol Type Enter **6112** for both Private Port and Public Port Click **Always** or set a schedule.

Step 4 Click **Apply** and then **Continue**.

Note: If you want multiple computers from you LAN to play in the same game that you are hosting, then repeat the steps above and enter the IP Addresses of the other computers. You will need to change ports. Computer #2 can use port 6113, computer #3 can use 6114, and so on.

You will need to change the port information within the Warcraft 3 software for computers #2 and up.

Configure the Game Port information on each computer:
Start Warcraft 3 on each computer, click **Options** > **Gameplay**. Scroll down and you should see **Game Port**. Enter the port number as you entered in the above steps.

How do I use NetMeeting with my DI-824VUP?

Unlike most TCP/IP applications, NetMeeting uses **DYNAMIC PORTS** instead of STATIC PORTS. That means that each NetMeeting connection is somewhat different than the last. For instance, the HTTP web site application uses port 80. NetMeeting can use any of over 60,000 different ports.

All broadband routers using (only) standard NAT and all internet sharing programs like Microsoft ICS that use (only) standard NAT will NOT work with NetMeeting or other h.323 software packages.

The solution is to put the router in DMZ.

Note: A few hardware manufacturers have taken it on themselves to actually provide H.323 compatibility. This is not an easy task since the router must search each incoming packet for signs that it might be a netmeeting packet. This is a whole lot more work than a router normally does and may actually be a **weak point in the firewall**. D-Link is not one of the manufacturers.

To read more on this visit http://www.HomenetHelp.com

How do I set up my DI-824VUP to use iChat? -for Macintosh users-

You must open ports on your router to allow incoming traffic while using iChat.

iChat uses the following ports: 5060 (UDP), 5190 (TCP), and File Sharing 16384-16403 (UDP) to video conference with other clients.

Step 1 Open your web browser and enter the IP Address of your router (192.168.0.1). Enter username (admin) and your password (leave blank).

Step 2 Click on **Advanced** and then click **Firewall**.

How do I set up my DI-824VUP to use iChat? -for Macintosh users- (continued)

Step 3 Create a new firewall rule:

Click **Enabled**.
Enter a name (ichat1).
Click **Allow**.
Next to Source, select **WAN** under interface.
In the first box, enter an *.
Leave the second box empty.
Next to Destination, select **LAN** under interface.
Enter the IP Address of the computer you are running iChat from.

Leave the second box empty. Under Protocol, select **UDP**. In the port range boxes, enter **5060** in the first box and leave the second box empty.
Click **Always** or set a schedule.

Step 4 Click **Apply** and then **Continue**.

Step 5
Repeat steps 3 and 4 enter **ichat2** and open ports **16384-16403** (UDP).

How do I set up my DI-824VUP to use iChat? -for Macintosh users- (continued)

For File Sharing:

Step 1 Click on **Advanced** and then **Virtual Server**.

Step 2 Check **Enabled** to activate entry.

Step 3 Enter a name for your virtual server entry (ichat3).

Step 4 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 5 Select **TCP** for Protocol Type.

Step 6 Enter **5190** next to Private Port and Public Port.

Stsp 7 Click **Always** or configure a schedule.

Step 8 Click **Apply** and then **Continue**.

If using Mac OS X Firewall, you may need to temporarily turn off the firewall in the Sharing preference pane on both computers.

To use the Mac OS X Firewall, you must open the same ports as in the router:

Step 1 Choose **Apple menu** > **System Preferences**.
Step 2 Choose **View** > **Sharing**.
Step 3 Click the **Firewall** tab.
Step 4 Click **New**.
Step 5 Choose **Other** from the Port Name pop-up menu.
Step 6 In the Port Number, Range or Series field, type in: **5060**, **16384-16403**.
Step 7 In the Description field type in: **iChat AV**
Step 8 Click **OK**.

How do I send or receive a file via iChat when the Mac OSX firewall is active? - for Macintosh users - Mac OS X 10.2 and later

The following information is from the online Macintosh AppleCare knowledge base:

“iChat cannot send or receive a file when the Mac OS X firewall is active in its default state. If you have opened the AIM port, you may be able to receive a file but not send them.

In its default state, the Mac OS X firewall blocks file transfers using iChat or America Online AIM software. If either the sender or receiver has turned on the Mac OS X firewall, the transfer may be blocked.

The simplest workaround is to temporarily turn off the firewall in the Sharing preference pane on both computers. This is required for the sender. However, the receiver may keep the firewall on if the AIM port is open. To open the AIM port:

Step 1 Choose Apple menu > System Preferences.

Step 2 Choose View > Sharing.

Step 3 Click the Firewall tab.

Step 4 Click New.

Step 5 Choose AOL IM from the Port Name pop-up menu. The number 5190 should already be filled in for you.

Step 6 Click OK.

If you do not want to turn off the firewall at the sending computer, a different file sharing service may be used instead of iChat. The types of file sharing available in Mac OS X are outlined in technical document 106461, “Mac OS X: File Sharing” in the *AppleCare Knowledge base* online.

Note: If you use a file sharing service when the firewall is turned on, be sure to click the Firewall tab and select the service you have chosen in the “Allow” list. If you do not do this, the firewall will also block the file sharing service. “

What is NAT?

NAT stands for **Network Address Translator**. It is proposed and described in RFC-1631 and is used for solving the IP Address depletion problem. Each NAT box has a table consisting of pairs of local IP Addresses and globally unique addresses, by which the box can “translate” the local IP Addresses to global address and vice versa. Simply put, it is a method of connecting multiple computers to the Internet (or any other IP network) using one IP Address.

D-Link´s broadband routers (ie: DI-824VUP) support NAT. With proper configuration, multiple users can access the Internet using a single account via the NAT device.

For more information on RFC-1631: The IP Network Address Translator (NAT), visit http://www.faqs.org/rfcs/rfc1631.html

Contacting Technical Support

You can find the most recent software and user documentation on the D-Link website.

D-Link provides free technical support for customers within the United States for the duration of the warranty period on this product.

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

D-Link Technical Support over the Telephone:
(877) 453-5465
24 hours a day, seven days a week.

D-Link Technical Support over the Internet:
http://support.dlink.com

When contacting technical support, you will need the information below. (Please look on the back side of the unit.)

- *Serial number of the unit*
- *Model number or product name*
- *Software type and version number*