D-Link®

DSL-G804V

Wireless ADSL Router

User's Guide

(August 2005)

TABLE OF CONTENTS

About This User's Guide

This user's guide provides instructions on how to install the DSL-G804V Wireless ADSL Router and use it to connect a computer or Ethernet LAN to the Internet.

If you are using a computer with a functioning Ethernet port, the quickest and easiest way to set up the DSL-G804V is to insert the Installation CD into the CD-ROM drive of your computer and follow the instructions provided in the **Quick Installation Guide**.

Before You Start

Please read and make sure you understand all the prerequisites for proper installation of your new Router. Have all the necessary information and equipment on hand before beginning the installation.

Installation Overview

The procedure to install the Router can be described in general terms in the following steps:

1. Gather information and equipment needed to install the device. Before you begin the actual installation make sure you have all the necessary information and equipment.
2. Install the hardware, that is, connect the cables (Ethernet and telephone) to the device and connect the power adapter.
3. Check the IP settings on your computer and change them if necessary so the computer can access the web-based software built into the Router.
4. Use the web-based management software to configure the device to suit the requirements of your ADSL account.

Installation Requirements

In order to establish a connection to the Internet it will be necessary to provide information to the Router that will be stored in its memory. For some users, only their account information (Username and Password) is required. For others, various parameters that control and define the Internet connection will be required. You can print out the two pages below and use the tables to list this information. This way you have a hard copy of all the information needed to setup the Router. If it is necessary to reconfigure the device, all the necessary information can be easily accessed. Be sure to keep this information safe and private.

Low Pass Filters

Since ADSL and telephone services share the same copper wiring to carry their respective signals, a filtering mechanism may be necessary to avoid mutual interference. A low pass filter device can be installed for each telephone that shares the line with the ADSL line. These filters are easy to install passive devices that connect to the ADSL device and/or telephone using standard telephone cable. Ask your service provider for more information about the use of low pass filters with your installation.

Operating Systems

The DSL-G804V uses an HTML-based web interface for setup and management. The web configuration manager may be accessed using any operating system capable of running web browser software, including Windows 98, Windows NT, Windows 2000, Windows XP and Me.

Web Browser

Any common web browser can be used to configure the Router using the web configuration management software. The program is designed to work best with more recently released browsers such as Opera, Microsoft Internet Explorer® version 5.0, Netscape Navigator® version 4.5, or later versions. The web browser must have JavaScript enabled. JavaScript is enabled by default on many browsers. Make sure JavaScript has not been disabled by other software (such as virus protection or web user security packages) that may be running on your computer.

Ethernet Port (NIC Adapter)

Any computer that uses the Router must be able to connect to it through the Ethernet port on the Router. This connection is an Ethernet connection and therefore requires that your computer be equipped with an Ethernet port as well. Most notebook computers are now sold with an Ethernet port already installed. Likewise, most fully assembled desktop computers come with an Ethernet NIC adapter as standard equipment. If your computer does not have an Ethernet port, you must install an Ethernet NIC adapter before you can use the Router. If you must install an adapter, follow the installation instructions that come with the Ethernet NIC adapter.

Additional Software

It may be necessary to install software on your computer that enables the computer to access the Internet. Additional software must be installed if you are using the device a simple bridge. For a bridged connection, the information needed to make and maintain the Internet connection is stored on another computer or gateway device, not in the Router itself.

If your ADSL service is delivered through a PPPoE, PPPoA or CLIP (IPoA) connection, the information needed to establish and maintain the Internet connection can be stored in the Router. In this case, it is not necessary to install software on your computer. It may however be necessary to change some settings in the device, including account information used to identify and verify the connection.

All connections to the Internet require a unique global IP address. For bridged connections, the global IP settings must reside in a TCP/IP enabled device on the LAN side of the bridge, such as a PC, a server, a gateway device such as a router or similar firewall hardware. The IP address can be assigned in a number of ways. Your network service provider will give you instructions about any additional connection software or NIC configuration that may be required.

About CLIP Connections (RFC 1577)

Classical IP over ATM (CLIP) connections may require global IP settings for the device. Your service provider will give you IP settings information if needed. Some CLIP connections function like peer-to-peer connections and therefore do not require IP settings on the WAN interface.

Information you will need from your ADSL service provider:

Username	This is the Username used to log on to your ADSL service provider's network. It is commonly in the form – user@isp.com. Your ADSL service provider uses this to identify your account.	Record info here
Password	This is the Password used, in conjunction with the Username above, to log on to your ADSL service provider's network. This is used to verify the identity of your account.	
Connection Protocol	This is the method your ADSL service provider uses to send and receive data between the Internet and your computer. Your Modem supports the following connection protocols: PPPoE, PPPoA, PPPoA with DHCP, Bridge, and CLIP (IPoA).	
Modulation Type	ADSL uses various standardized modulation techniques to transmit data over the allotted signal frequencies. Some users may need to change the type of modulation used for their service. The default DSL modulation (MMODE) used for the Router automatically detects all types of ADSL modulation. However, if you are instructed to specify the modulation type used for the Router, you have three alternatives: G.LITE, G.DMT and T1.413	
Security Protocol	This is the method your ADSL service provider will use to verify your Username and Password when you log on to their network. Your Modem supports the PAP and CHAP protocols.	
VPI	This is the Virtual Path Identifier (VPI). It is used in conjunction with the Virtual Channel Identifier (VCI) below, to identify the data path between your ADSL service provider's network and your computer.	
VCI	This is the Virtual Channel Identifier (VCI). It is used in conjunction with the VPI above to identify the data path between your ADSL service provider's network and your computer.	

Information you will need about your DSL-G804V Wireless ADSL Router:

Username	This is the Username needed access the Modem's management interface. When you attempt to connect to the device through a web browser you will be prompted to enter this Username. The default Username for the Modem is **admin**. This may be changed by the user.	Record info here
Password	This is the Password you will be prompted to enter when you access the Modem's management interface. The default Password is **admin**. This may be changed by the user.	
LAN IP addresses for the DSL-G804V	This is the IP address you will enter into the Address field of your web browser to access the Modem's configuration graphical user interface (GUI) using a web browser. The default IP address is 192.168.1.1 and it is referred to as the "Management IP" address in this User's Manual. This may be changed to suit any IP address scheme the user desires. This address will be the base IP address used for DHCP service on the LAN when DHCP is enabled.	
LAN Subnet Mask for the DSL-G804V	This is the subnet mask used by the DSL-G804V, and will be used throughout your LAN. The default subnet mask is **255.255.255.0**. This can be changed later.	

Information you will need about your LAN or computer:

Ethernet NIC	If your computer has an Ethernet NIC, you can connect the DSL-G804V to this Ethernet port using an Ethernet cable. You can also use the Ethernet port on the DSL-G804V to connect to other Ethernet devices, such as a Wireless Access Point.	Record info here
DHCP Client status	Your DSL-G804V ADSL Modem is configured, by default, to be a DHCP server. This means that it can assign an IP address, subnet mask, and a default gateway address to computers on your LAN. The default range of IP addresses the DSL-G804V will assign are from **192.168.1.2** to **192.168.1.254**. Your computer (or computers) needs to be configured to **Obtain an IP address automatically** (that is, they need to be configured as DHCP clients.)	

It is recommended that your collect and record this information here, or in some other secure place, in case you have to re-configure your ADSL connection in the future.

Once you have the above information, you are ready to setup and configure your DSL-G804V ADSL Router.

Note

The Modem may be reset to its factory default settings by performing a Restore settings operation within the management interface. If you cannot gain access to the management interface, you may opt to use the Reset button on the rear panel of the device).

1

Introduction

This section provides a brief description of the Router, its associated technologies and a list of Router features.

Router Description and Operation

The DSL-G804V Wireless ADSL Router is designed to provide a simple and cost-effective ADSL Internet connection for individual computers through the Ethernet ports, or use it to bridge your Ethernet LAN to the Internet. The DSL-G804V combines the benefits of high-speed ADSL technology and LAN IP management in one compact and convenient package. ADSL technology enables many interactive multi-media applications such as video conferencing and collaborative computing.

The Router is easy to install and use. The DSL-G804V connects to computers or an Ethernet LAN via a standard Ethernet interface. The ADSL connection is made using ordinary twisted-pair telephone line with standard connectors. Multiple PCs can be networked and connected to the Internet using a single Wide Area Network (WAN) interface and single global IP address.

It supports the latest ADSL2/2+ technology enabling high-speed data rates of up to 24Mbps, Its powerful QoS feature for traffic priority and bandwidth management, and security features including multiple VPN tunnels with 3DES make the device a perfect mate to the office user or for anyone who has the compelling needs to transmit sensitive data more securely. With integrated 54Mbps 802.11g Access Point in this device, the router brings up the productivity and mobility to office users.

The Router supports transparent bridging and can be used for IP packet routing over the Internet. Cost saving features of the Router such as NAT (Network Address Translator) and DHCP (Dynamic Host Configuration Protocol) improve administration efficiency and improve security for your private network.

What is ADSL?

Asymmetric Digital Subscriber Line (ADSL) is an access technology that utilizes ordinary copper telephone lines to enable broadband high-speed digital data transmission and interactive multimedia applications for business and residential customers.

ADSL greatly increases the signal carrying capacity of copper telephone lines without interfering with regular telephone services. For the ADSL user, this means faster downloads and more reliable connectivity. ADSL devices make it possible to enjoy benefits such as high-speed Internet access without experiencing any loss of quality or disruption of voice/fax telephone capabilities.

ADSL provides a dedicated service over a single telephone line operating at speeds of up to 8 Mbps downstream and up to 640 Kbps upstream, depending on local telephone line conditions. A secure point-to-point connection is established between the user and the central office of the service provider.

D-Link ADSL devices incorporate the recommendations of the ADSL Forum regarding framing, data format, and upper layer protocols.

Router Features

The DSL-G804V ADSL Router utilizes the latest ADSL enhancements to provide a reliable Internet portal suitable for most small to medium sized offices. DSL-G804V advantages include:

- **Express Internet Access – capable of ADSL2/2+ –**The router complies with ADSL worldwide standards. It supports downstream rates up to 8Mbps with ADSL, capable of up to 12/24 Mbps with ADSL2/2+, and upstream rates up to 1 Mbps. Users enjoy not only high-speed ADSL services but also broadband multimedia applications such as interactive gaming, video streaming and real-time audio much easier and faster than ever. It is compliant with Multi-Mode standard (ANSI T1.413, Issue 2; G.dmt (ITU G.992.1); G.hs (ITU G994.1); G.dmt.bis (ITU G.992.3); G.dmt.bisplus (ITU G.992.5)).

- **Wireless Ethernet 802.11g –** With integrated 802.11g Wireless Access Point in the router, the device offers a quick and easy access among wired network, wireless network and broadband connection (ADSL) with single device simplicity, and as a result, mobility to the users. In addition to 54 Mbps 802.11g data rate, it also interoperates backward with existing 802.11b equipment. The Wireless Protected Access (WPA) and Wireless Encryption Protocol (WEP) supported features enhance the security level of data protection and access control via Wireless LAN.

- **Fast Ethernet Switch** – A 4-port 10/100Mbps fast Ethernet switch is built in with automatic switching between MDI and MDI-X for 10Base-T and 100Base-TX ports. An Ethernet straight or crossover cable can be used directly for auto detection.

- **Multi-Protocol to Establish A Connection –** Supports PPPoA (RFC 2364 - PPP over ATM Adaptation Layer 5), RFC 1483 encapsulation over ATM (bridged or routed), PPP over Ethernet (RFC 2516) and IPoA (RFC1577) to establish a connection with the ISP. The product also supports VC-based and LLC-based multiplexing.

- **Quick Installation Wizard –** Supports a WEB GUI page to install this device quickly. With this wizard, end users can enter the information easily which they get from their ISP, then surf the Internet immediately.

- **Universal Plug and Play (UPnP) and UPnP NAT Traversal –**This protocol is used to enable simple and robust connectivity among stand-alone devices and PCs from many different vendors. It makes network simple and affordable for users. UPnP architecture leverages TCP/IP and the Web to enable seamless proximity networking in addition to control and data transfer among networked devices. With this feature enabled, users can now connect to Net meeting or MSN Messenger seamlessly.

- **Network Address Translation (NAT) –** Allows multi-users to access outside resources such as the Internet simultaneously with one IP address/one Internet access account. Many application layer gateway (ALG) are supported such as web browser, ICQ, FTP, Telnet, E-mail, News, Net2phone, Ping, NetMeeting, IP phone and others.

- **Firewall –** Supports SOHO firewall with NAT technology. Automatically detects and blocks Denial of Service (DoS) attacks. The URL blocking, packet filtering and SPI (Stateful Packet Inspection) are also supported. The hacker's attack will be recorded associated with timestamp in the security logging area. More firewall functions will always be implemented through updated firmware releases.

- **Domain Name System (DNS) relay –** Provides an easy way to map the domain name (a friendly name for users such as www.yahoo.com) and IP address. When local machine sets its DNS server with this router's IP address, every DNS conversion request packet from the PC to this router will be forwarded to the real DNS in the outside network.

- **Dynamic Domain Name System (DDNS) –** The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname. This dynamic IP address is the WAN IP address. For example, to use the service, you must first apply for an account from a DDNS service like http://www.dyndns.org/. More than 5 DDNS servers are supported.

- **PPP over Ethernet (PPPoE) –** Provides embedded PPPoE client function to establish a connection. Users can get greater access speed without changing the operation concept, sharing the same ISP account and paying for one access account. No PPPoE client software is required for local computer. The Automatic Reconnect and Disconnect Timeout (Idle Timer) functions are provided, too.

- **Virtual Private Network (VPN) –** Allows user to make a tunnel with a remote site directly to secure the data transmission among the connection. User can use embedded PPTP and L2TP client/server, IKE and IPSec which are supported by this router to make a VPN connection or users can run the PPTP client in PC and the router already provides IPSec and PPTP pass through function to establish a VPN connection if the user likes to run the PPTP client in his local computer.
- **Virtual Server ("port forwarding") –** Users can specify some services to be visible from outside users. The router can detect incoming service requests and forward either a single port or a range of ports to the specific local computer to handle it. For example, a user can assign a PC in the LAN acting as a WEB server inside and expose it to the outside network. Outside users can browse inside web servers directly while it is protected by NAT. A DMZ host setting is also provided to a local computer exposed to the outside network, Internet.
- **Rich Packet Filtering –** Not only filters the packet based on IP address, but also based on Port numbers. It will filter packets from and to the Internet, and also provides a higher level of security control.
- **Dynamic Host Configuration Protocol (DHCP) client and server –** In the WAN site, the DHCP client can get an IP address from the Internet Service Provider (ISP) automatically. In the LAN site, the DHCP server can allocate a range of client IP addresses and distribute them including IP address, subnet mask as well as DNS IP address to local computers. It provides an easy way to manage the local IP network.
- **Static and RIP1/2 Routing –** Supports an easy static routing table or RIP1/2 routing protocol to support routing capability.
- **Simple Network Management Protocol (SNMP) –** It is an easy way to remotely manage the router via SNMP.
- **Web based GUI –** Supports web based GUI for configuration and management. It is user-friendly and comes with on-line help. It also supports remote management capability for remote users to configure and manage this product.
- **Firmware Upgradeable –** Device can be upgraded to the latest firmware through the WEB based GUI.
- **Rich management interfaces –** Supports flexible management interfaces with local console port, LAN port, and WAN port. Users can use terminal applications through the console port to configure and manage the device, or Telnet, WEB GUI, and SNMP through LAN or WAN ports to configure and manage the device.

Packing List

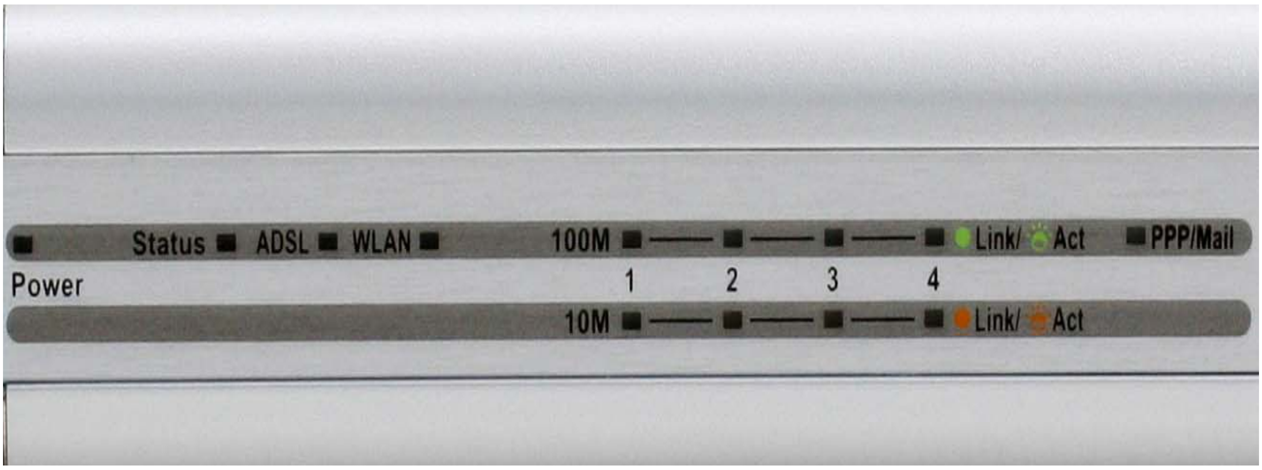
Open the shipping carton and carefully remove all items. In addition to this User's Guide, ascertain that you have:

- One DSL-G804V ADSL Router
- One twisted-pair telephone cable used for ADSL connection
- One straight-through Ethernet cable
- One Console (PS2-RS232) Cable
- One DC power adapter suitable for your electric service
- An Installation CD-ROM containing this User's Guide

Front Panel Display

Place the Router in a location that permits an easy view of the LED indicators on the front panel.

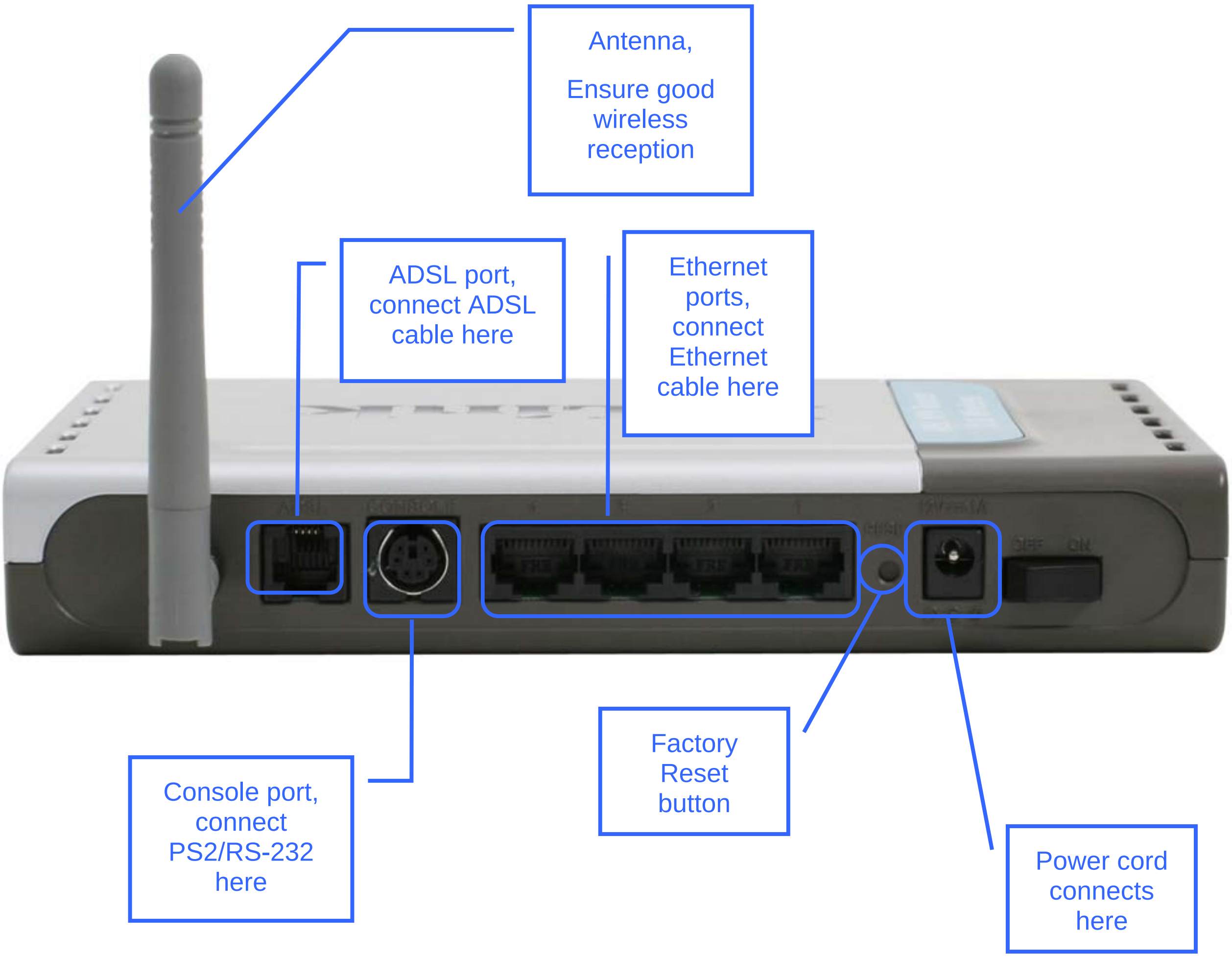
The LED indicators on the front panel include the **Power**, **Status**, **ADSL Link/Act, WLAN, LAN (1-4) Link/Act** and **PPP/Mail** indicators. The ADSL and Ethernet indicators monitor link status and activity (Link/Act).



Power	Steady green light indicates the unit is powered on. When the device is powered off this remains dark.
Status	Lights steady green during power on self-test (POST). Once the connection status has been settled, the light will blink green. If the indicator lights steady green after the POST, the system has failed and the device should be rebooted.
ADSL: Link/Act	Steady green light indicates a valid ADSL connection. This will light after the ADSL negotiation process has been settled. A blinking green light indicates activity on the WAN (ADSL) interface.
WLAN	Lit green when the wireless connection is established. A blinking green when sending/receiving data.
LAN 1 - 4: Link/Act	Green: The router has a successful 100Mb Ethernet connection. A solid green light indicates a valid link on startup. These lights blink when there is activity currently passing through the Ethernet port. Orange: The router has a successful 10Mb Ethernet connection. A solid green light indicates a valid link on startup. These lights blink when there is activity currently passing through the Ethernet port.
PPP / MAIL	Lit steady when there is a PPPoA / PPPoE connection. Lit and flashed periodically when there is email in the Inbox

Rear Panel Connections

All cable connections to the Router are made at the rear panel. Connect the power adapter here to power on the Router. Use the Reset button to restore the settings to the factory default values.


Antenna,
Ensure good wireless reception
ADSL port, connect ADSL cable here
Ethernet ports, connect Ethernet cable here
Console port, connect PS2/RS-232 here
Factory Reset button
Power cord connects here

2

Hardware Installation

The DSL-G804V maintains five separate interfaces, four Ethernet and one ADSL interface. Place the Router in a location where it can be safely connected to the various devices as well as to a power source. The Router should not be located where it will be exposed to moisture or excessive heat. Make sure the cables and power cord are placed safely out of the way so they do not create a tripping hazard. As with any electrical appliance, observe common sense safety precautions.

The access point can be placed on a shelf or desktop, ideally you should be able to see the LED indicators on the front if you need to view them for troubleshooting.

Power on Router

⚠ **CAUTION:** The Router must be used with the power adapter included with the device.

To power on the Router:

1. Insert the DC Power Adapter cord into the power receptacle located on the rear panel of the Router and plug the adapter into a suitable nearby power source.
2. You should see the Power LED indicator light up and remain lit. The Status LED should light solid green and begin to blink after a few seconds.
3. If the Ethernet port is connected to a working device, check the Ethernet Link/Act LED indicators to make sure the connection is valid. The Router will attempt to establish the ADSL connection, if the ADSL line is connected and the Router is properly configured this should light up after several seconds. If this is the first time installing the device, some settings may need to be changed before the Router can establish a connection.

Factory Reset Button

The Router may be reset to the original factory default settings by depressing the reset button for a few seconds while the device is powered on. Use a ballpoint or paperclip to gently push down the reset button. Remember that this will wipe out any settings stored in flash memory including user account information and LAN IP settings. The factory default IP address of the Router is 192.168.1.1 and the subnet mask is 255.255.255.0, the default management Username is **admin** and the default Password is **admin**.

Network Connections

Network connections are provided through the ADSL port and the four Ethernet ports on the back of the Router. See the Rear Panel diagram above and the illustrations below for examples.

Connect ADSL Line

Use the ADSL cable included with the Router to connect it to a telephone wall socket or receptacle. Plug one end of the cable into the ADSL port (RJ-11 receptacle) on the rear panel of the Router and insert the other end into the RJ-11 wall socket. If you are using a low pass filter device, follow the instructions included with the device or given to you by your service provider. The ADSL connection represents the WAN interface, the connection to the Internet. It is the physical link to the service provider's network backbone and ultimately to the Internet.

Connect Router to Ethernet

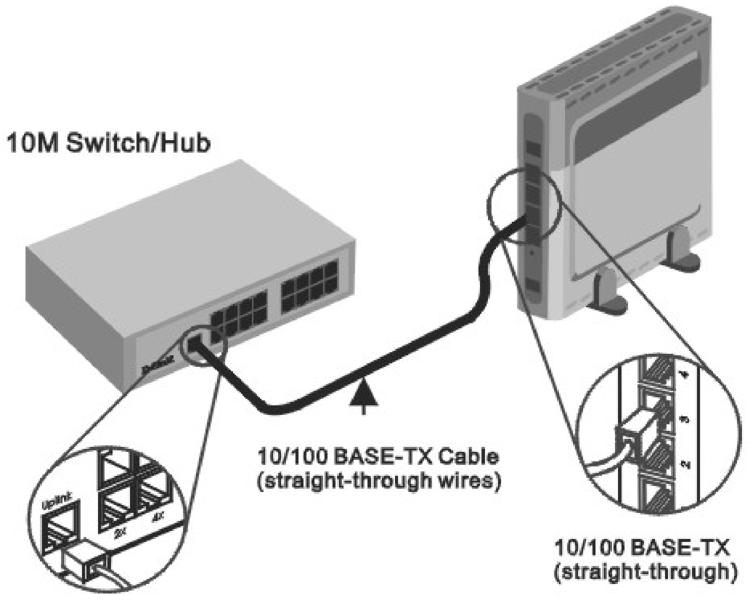
The Router may be connected to a single computer or Ethernet device through the 10BASE-TX Ethernet port on the rear panel. Any connection to an Ethernet concentrating device such as a switch or hub must operate at a speed of 10/100 Mbps only. When connecting the Router to any Ethernet device that is capable of operating at speeds higher than 10Mbps, be sure that the device has auto-negotiation (NWay) enabled for the connecting port.

Use standard twisted-pair cable with RJ-45 connectors. The RJ-45 port on the Router is a crossed port (MDI-X). Follow standard Ethernet guidelines when deciding what type of cable to use to make this connection. When connecting the Router directly to a PC or server use a normal straight-through cable. You should use a crossed cable when connecting the Router to a normal (MDI-X) port on a switch or hub. Use a normal straight-through cable when connecting it to an uplink (MDI-II) port on a hub or switch.

The rules governing Ethernet cable lengths apply to the LAN to Router connection. Be sure that the cable connecting the LAN to the Router does not exceed 100 meters.

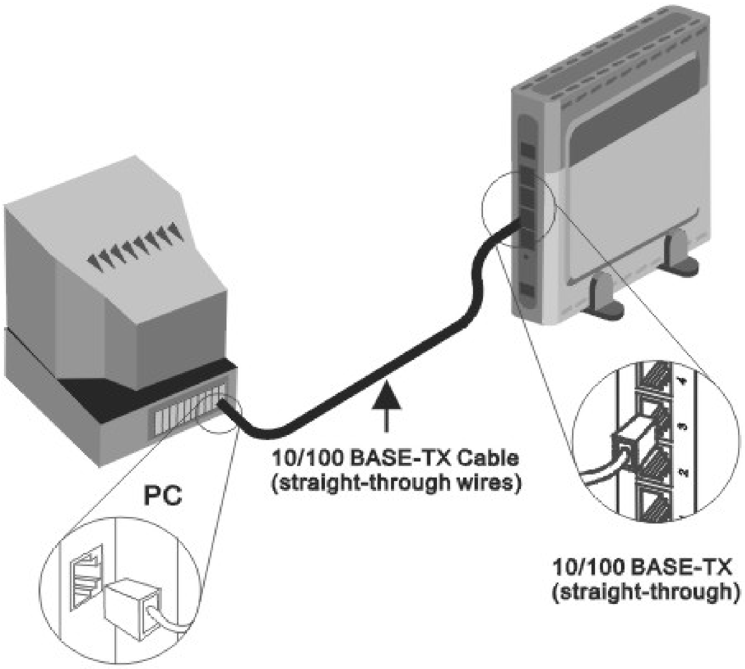
Hub or Switch to Router Connection

Connect the Router to an uplink port (MDI-II) on an Ethernet hub or switch with a straight-through cable as shown in the diagram below:



If you wish to reserve the uplink port on the switch or hub for another device, connect to any on the other MDI-X ports (1x, 2x, etc.) with a crossed cable.

Computer to Router Connection



You can connect the Router directly to a 10/100BASE-TX Ethernet adapter card (NIC) installed on a PC using the Ethernet cable provided as shown in this diagram.

Power On Router

To power on the Router:

1. Insert the DC Power Adapter cord into the power receptacle located on the rear panel of the Router and plug the adapter into a suitable nearby power source.
2. You should see the Power LED indicator light up and remain lit. The Status LED should light solid green and begin to blink after a few seconds.
3. If you have the Router connected to your network you can look at the Ethernet Link/Act LED indicators to make sure they have valid connections. The Router will attempt to establish the ADSL connection, if the ADSL line is connected and the connection is properly configured this should light up after several seconds.

Factory Reset Button

The Router may be reset to the original factory default settings by depressing the reset button for a few seconds while the device is powered on. Use a ballpoint or paperclip to push down the reset button. Remember that this will wipe out any settings stored in flash memory including IP settings. The factory default IP address of the Router is 192.168.1.1 and the subnet mask is 255.255.255.0.

3

Basic Router Configuration

The first time you setup the Router it is recommended that you configure the WAN connection using a single computer making sure that both the computer and the Router are not connected to the LAN. Once the WAN connection is functioning properly, you may continue to make changes to Router configuration including IP settings and DHCP setup. This chapter is concerned with using your computer to configure the WAN connection. The following chapter describes the various menus used to configure and monitor the Router including how to change IP settings and DHCP server setup.

Wan Configuration Summary

1. **Connect to the Router** To configure the WAN connection used by the Router it is first necessary to communicate with the Router through its management interface, which is HTML-based and can be accessed using a web browser. To access the management software your computer must be able to "see" the Router. Your computer can see the Router if it is in the same "neighborhood" or subnet as the Router. This is accomplished by making sure your computer has IP settings that place it in the same subnet as the Router. The easiest way to make sure your computer has the correct IP settings is to configure it to use the DHCP server in the Router. The next section describes how to change the IP configuration for a computer running a Windows operating system to be a DHCP client.
2. **Configure the WAN Connection** Once your are able to access the configuration software you can proceed to change the settings required to establish the ADSL connection and connect to the service provider's network. There are different methods used to establish the connection to the service provider's network and ultimately to the Internet. You should know what Encapsulation and connection type you are required to use for your ADSL service. It is also possible that you must change the PVC settings used for the ADSL connection. Your service provider should provide all the information you need to configure the WAN connection.

Configuring IP Settings on Your Computer

In order to configure your system to receive IP settings from the Router it must first have the TCP/IP protocol installed. If you have an Ethernet port on your computer, it probably already has TCP/IP protocol installed. If you are using Windows XP the TCP/IP is enabled by default for standard installations. Below is an illustrated example of how to configure a Windows XP system to automatically obtain IP settings from the Router. Following this example is a step-by-step description of the procedures used on the other Windows operating systems to first check if the TCP/IP protocol has been installed; if it is not, instructions are provided for installing it. Once the protocol has been installed you can configure the system to receive IP settings from the Router.

For computers running non-Windows operating systems, follow the instructions for your OS that configure the system to receive an IP address from the Router, that is, configure the system to be a DHCP client.

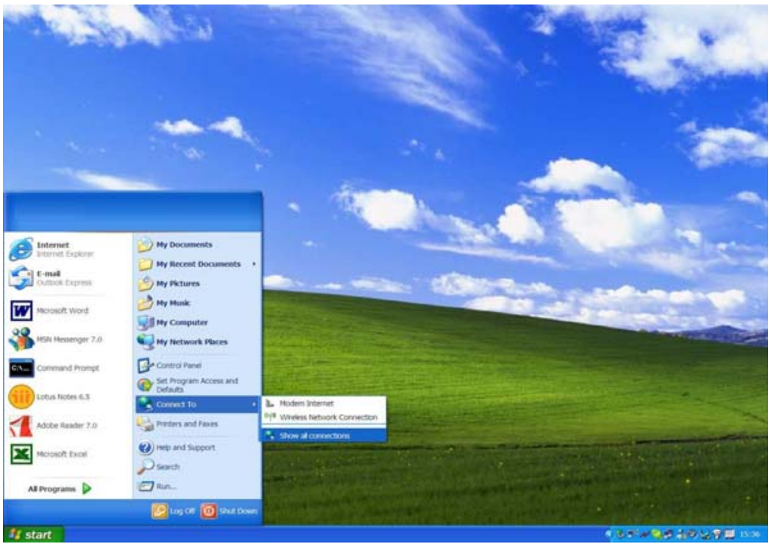
Note

If you are using this Router to provide Internet access for more than one computer, you can use these instructions later to change the IP settings for the other computers. However, you cannot use the same IP address since every computer must have its own IP address that is unique on the local network.

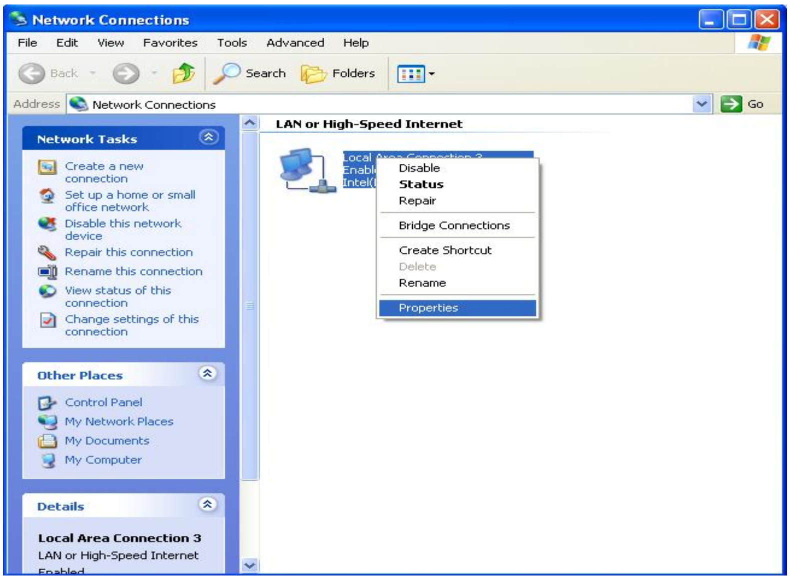
Configure Windows XP for DHCP

Use the following steps to configure a computer running Windows XP to be a DHCP client.

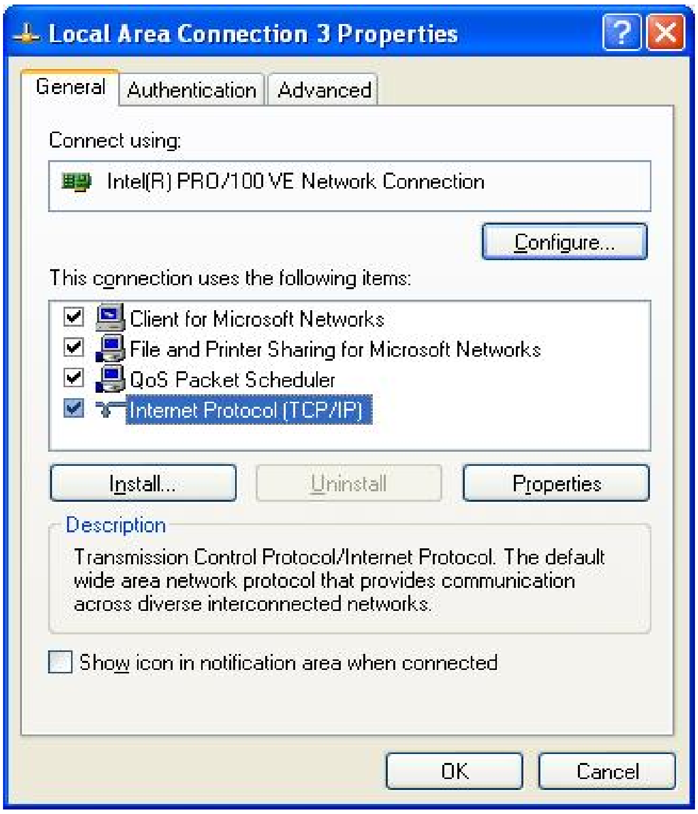
1. From the **Start** menu on your desktop, go to **Settings**, then click on **Network Connections**.



2. In the **Network Connections** window, right-click on **LAN** (Local Area Connection), then click **Properties**.



3. In the **General** tab of the **Local Area Connection Properties** menu, highlight **Internet Protocol (TCP/IP)** under "This connection uses the following items:" by clicking on it once. Click on the **Properties** button.



Connect using:

Intel(R) PRO/100 VE Network Connection

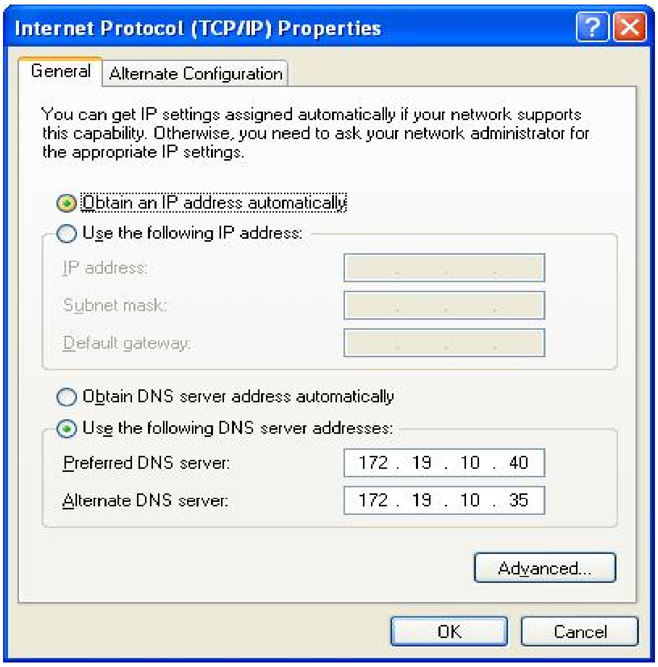
This connection uses the following items:

☑ Client for Microsoft Networks
☑ File and Printer Sharing for Microsoft Networks
☑ QoS Packet Scheduler
☑ Internet Protocol (TCP/IP)

Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

□ Show icon in notification area when connected

4. Select "Obtain an IP address automatically" by clicking once in the circle. Click the **OK** button.



You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

● Obtain an IP address automatically
○ Use the following IP address:

IP address: . . .
Subnet mask: . . .
Default gateway: . . .

○ Obtain DNS server address automatically
● Use the following DNS server addresses:

Preferred DNS server: 172 . 19 . 10 . 40
Alternate DNS server: 172 . 19 . 10 . 35

Your computer is now ready to use the Router's DHCP server.

Windows 2000

First, check for the IP protocol and, if necessary, install it:

1. In the **Windows** task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Network and Dial-up Connections** icon.
3. In the **Network and Dial-up Connections** window, right-click the **Local Area Connection** icon, and then select **Properties**.
4. The **Local Area Connection Properties** dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled, skip ahead to *Configure Windows 2000 for DHCP*.
5. If Internet Protocol (TCP/IP) does not display as an installed component, click **Install**.
6. In the **Select Network Component Type** dialog box, select **Protocol**, and then click **Add**.
7. Select **Internet Protocol (TCP/IP)** in the Network Protocols list, and then click **OK**.
8. You may be prompted to install files from your Windows 2000 installation CD or other media. Follow the instructions to install the files.
9. If prompted, click **OK** to restart your computer with the new settings.

Configure Windows 2000 for DHCP

1. In the Control Panel, double-click the **Network and Dial-up Connections** icon.
2. In **Network and Dial-up Connections** window, right-click the **Local Area Connection** icon, and then select **Properties**.
3. In the **Local Area Connection Properties** dialog box, select **Internet Protocol (TCP/IP)**, and then click **Properties**.
4. In the **Internet Protocol (TCP/IP) Properties** dialog box, click the button labeled **Obtain an IP address automatically**.
5. Double-click **OK** to confirm and save your changes, and then close the Control Panel.

Your computer is now ready to use the Router's DHCP server.

Windows ME

First, check for the IP protocol and, if necessary, install it:

1. In the **Windows** task bar, click the **Star**t button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Network and Dial-up Connections** icon.
3. In the **Network and Dial-up Connections** window, right-click the **Network** icon, and then select **Properties**.
4. The **Network Properties** dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip ahead to *Configure Windows ME for DHCP*.
5. If Internet Protocol (TCP/IP) does not display as an installed component, click **Add**.
6. In the **Select Network Component Type** dialog box, select **Protocol**, and then click **Add**.
7. Select **Microsoft** in the Manufacturers box.
8. Select **Internet Protocol (TCP/IP)** in the Network Protocols list, and then click **OK**.
9. You may be prompted to install files from your Windows Me installation CD or other media. Follow the instructions to install the files.
10. If prompted, click **OK** to restart your computer with the new settings.

Configure Windows ME for DHCP

1. In the **Control Panel**, double-click the **Network and Dial-up Connections** icon.

2. In the **Network and Dial-up Connections** window, right-click the **Network** icon, and then select **Properties**.
3. In the **Network Properties** dialog box, select **TCP/IP**, and then click **Properties**.
4. In the **TCP/IP Settings** dialog box, click the **Obtain and IP address automatically** option.
5. Double-click **OK** twice to confirm and save your changes, and then close the Control Panel.

Your computer is now ready to use the Router's DHCP server.

Windows 95 and Windows 98

First, check for the IP protocol and, if necessary, install it:

1. In the **Windows** task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**. Double-click the **Network** icon.
2. The **Network** dialog box displays with a list of currently installed network components. If the list includes TCP/IP, and then the protocol has already been enabled, skip to *Configure IP Information Windows 95, 98*.
3. If TCP/IP does not display as an installed component, click **Add**. The **Select Network Component Type** dialog box displays.
4. Select **Protocol**, and then click **Add**. The **Select Network Protocol** dialog box displays.
5. Click on **Microsoft** in the Manufacturers list box, and then click **TCP/IP** in the Network Protocols list box.
6. Click **OK** to return to the Network dialog box, and then click **OK** again. You may be prompted to install files from your Windows 95/98 installation CD. Follow the instructions to install the files.
7. Click **OK** to restart the PC and complete the TCP/IP installation.

Configure Windows 95 and Windows 98 for DHCP

1. Open the **Control Panel** window, and then click the **Network** icon.
2. Select the network component labeled TCP/IP, and then click **Properties**.
3. If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.
4. In the **TCP/IP Properties** dialog box, click the **IP Address** tab.
5. Click the **Obtain an IP address automatically** option.
6. Double-click **OK** to confirm and save your changes. You will be prompted to restart Windows.
7. Click **Yes**.

When it has restarted your computer is ready to use the Router's DHCP server.

Windows NT 4.0 Workstations

First, check for the IP protocol and, if necessary, install it:

1. In the **Windows NT** task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. In the **Control Panel** window, double-click the **Network** icon.
3. In the **Network** dialog box, click the **Protocols** tab.
4. The **Protocols** tab displays a list of currently installed network protocols. If the list includes TCP/IP, then the protocol has already been enabled. Skip to "Configure IP Information"
5. If TCP/IP does not display as an installed component, click **Add**.
6. In the **Select Network Protocol** dialog box, select **TCP/IP**, and then click **OK**. You may be prompted to install files from your Windows NT installation CD or other media. Follow the instructions to install the files.
7. After all files are installed, a window displays to inform you that a TCP/IP service called DHCP can be set up to dynamically assign IP information.
8. Click **Yes** to continue, and then click **OK** if prompted to restart your computer.

Configure Windows NT 4.0 for DHCP

1. Open the **Control Panel** window, and then double-click the **Network** icon.
2. In the **Network** dialog box, click the **Protocols** tab.
3. In the **Protocols** tab, select **TCP/IP**, and then click **Properties**.
4. In the **Microsoft TCP/IP Properties** dialog box, click the **Obtain an IP address automatically** option.
5. Click **OK** twice to confirm and save your changes, and then close the Control Panel.

Access the Configuration Manager

Now that your computer's IP settings allow it to communicate with the Router, you can access the configuration software.

Note

Be sure that the web browser on your computer is not configured to use a proxy server in the Internet settings. In Windows Internet Explorer, you can check if a proxy server is enabled using the following procedure:

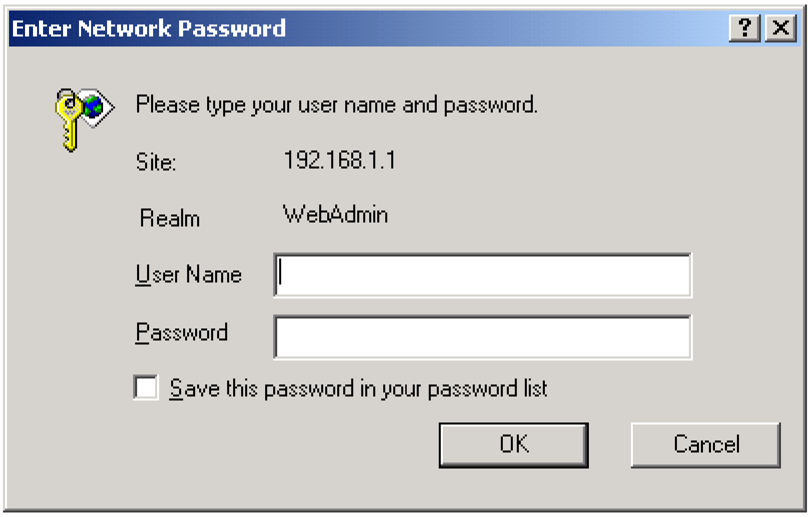
1. *In Windows, click on the* ***Start*** *button, go to* ***Settings*** *and choose* ***Control Panel****.*
2. *In the* ***Control Panel*** *window, double-click on the* ***Internet Options*** *icon.*
3. *Click the* ***Connections*** *tab and click on the* ***LAN Settings*** *button.*
4. *Verify that the "Use proxy server" option is NOT checked. If it is checked, click in the checked box to deselect the option and click OK.*

Alternatively, you can access this ***Internet Options*** *menu using the* ***Tools*** *pull-down menu in Internet Explorer.*

To use the web-based management software, launch a suitable web browser and direct it to the IP address of the Router. Type in **http://** followed by the default IP address, **192.168.1.1** in the address bar of the browser. The URL in the address bar should read: **http://192.168.1.1**.

Login to Home Page

A new window will appear and you will be prompted for a user name and password to access the web-based manager.



Enter Network Password

Please type your user name and password.

Site: 192.168.1.1

Realm WebAdmin

User Name

Password

□ Save this password in your password list

Figure 3-1. Home - Login window

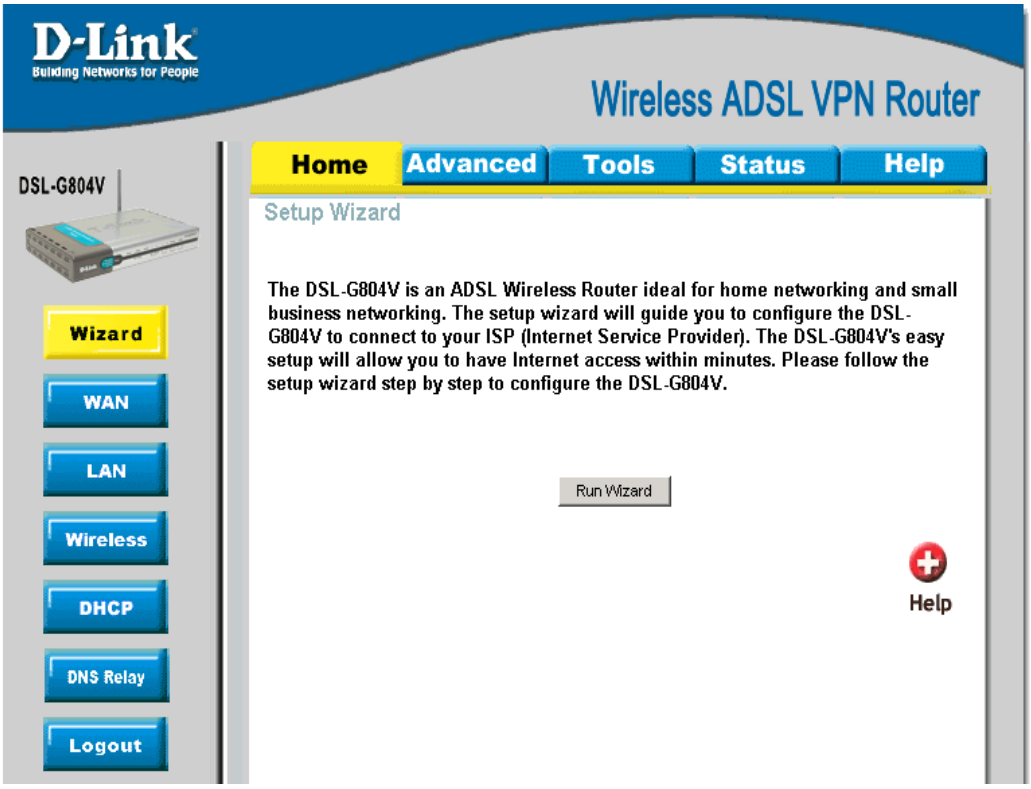
Use the default user name **admin** and password **admin** for first time setup. You should change the web-based manager access user name and password once you have verified that a connection can be established. The user name and password allow any PC within the same subnet as the Modem to access the web-based manger.

Note

Do not confuse the user name and password used to access the web-based manager with the ADSL account user name and password needed for PPP connections to access the service provider's network.

Configure the Router

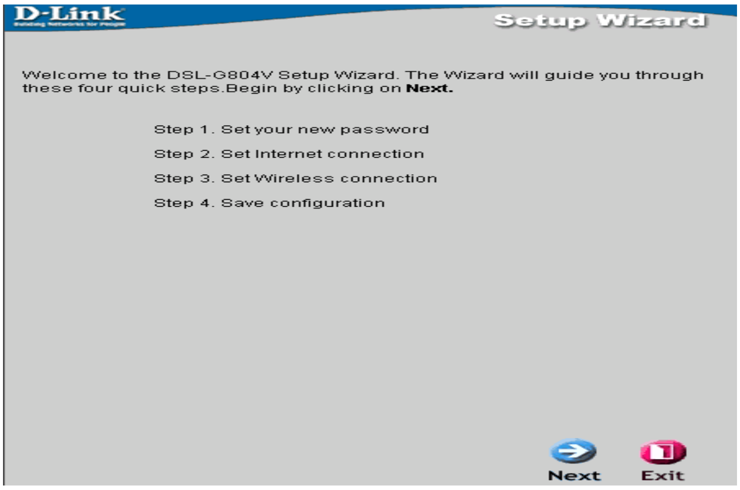
The first page that appears after you successfully login displays information about the Router and its connection status. Tabs across the top of the screen show other available menus: **Home**, **Advanced**, **Tools**, **Status**, and **Help**.



The DSL-G804V is an ADSL Wireless Router ideal for home networking and small business networking. The setup wizard will guide you to configure the DSL-G804V to connect to your ISP (Internet Service Provider). The DSL-G804V's easy setup will allow you to have Internet access within minutes. Please follow the setup wizard step by step to configure the DSL-G804V.

Figure 3-2. Home – Status Information window

When the Router is used to provide Internet access it actually must first access your service provider's network, that is, it must communicate with computers and other routers owned by your service provider. These computers and routers then provide access to the Internet. The Router must be configured to communicate with the systems that give it access to the larger network. Click the **Run Wizard** tab; the Setup Wizard window will appear.



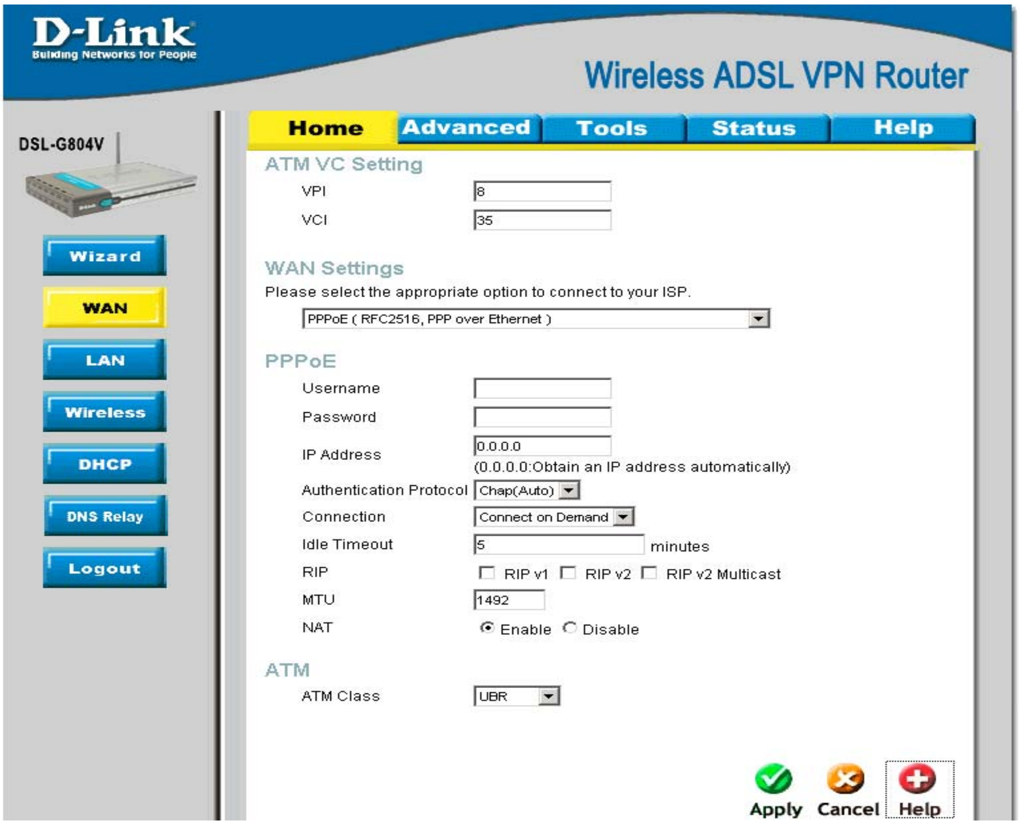
Welcome to the DSL-G804V Setup Wizard. The Wizard will guide you through these four quick steps.Begin by clicking on **Next.**

Step 1. Set your new password
Step 2. Set Internet connection
Step 3. Set Wireless connection
Step 4. Save configuration

Figure 3-3. Home – Setup Wizard window

WAN

The **WAN** windows provide needed information to the WAN (Wide Area Network) Settings in order to get connected to your ISP (Internet Service Provider). The WAN settings are given by your ISP; please contact your ISP for more information if needed.



ATM VC Setting

VPI: 8

VCI: 35

WAN Settings

Please select the appropriate option to connect to your ISP.

PPPoE (RFC2516, PPP over Ethernet)

PPPoE

Username:

Password:

IP Address: 0.0.0.0
(0.0.0.0:Obtain an IP address automatically)

Authentication Protocol: Chap(Auto)

Connection: Connect on Demand

Idle Timeout: 5 minutes

RIP: □ RIP v1 □ RIP v2 □ RIP v2 Multicast

MTU: 1492

NAT: ● Enable ○ Disable

ATM

ATM Class: UBR

Figure 3-4. WAN Setup window - PPPoE

ATM VC Setting
VC, known as *Virtual Circuit or Virtual Channel,* is a virtual path in which a communication session is established. Check with your ISP for information.

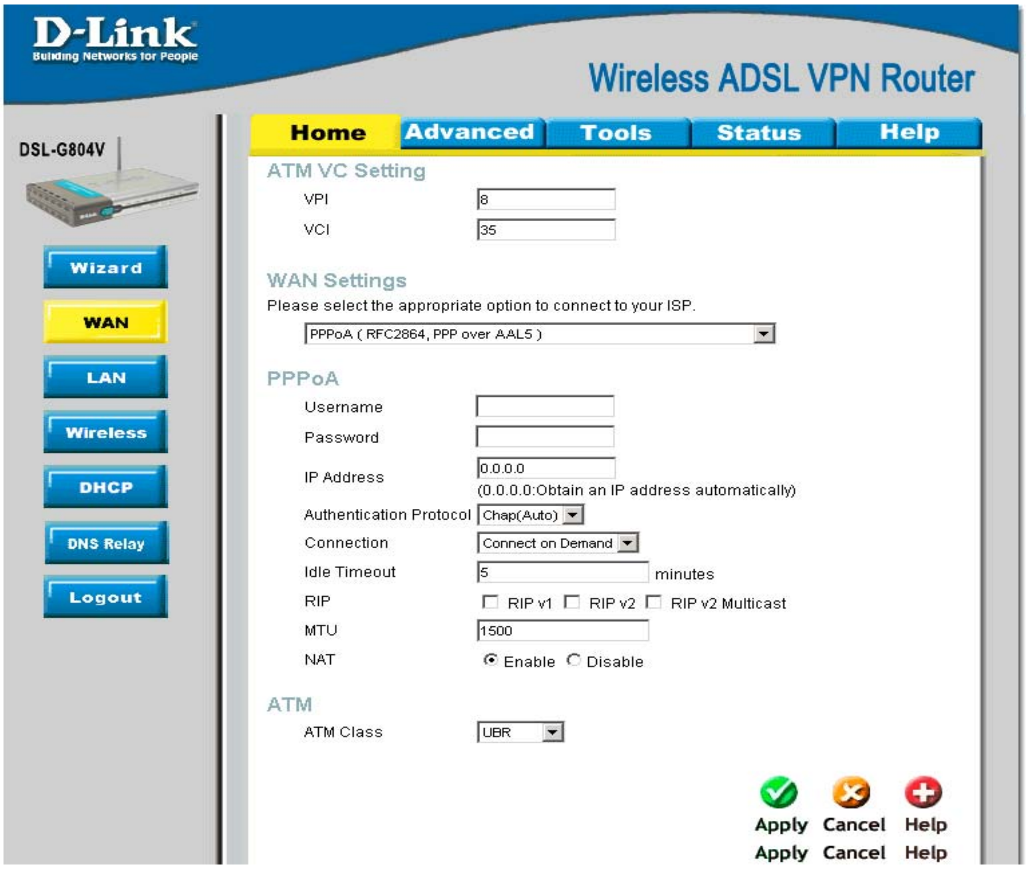
WAN Setting – Please select the appropriate option to connect to your ISP. There are five options: PPPoA (RFC 2864, PPP over AAL5), PPPoE (RFC2516, PPP over Ethernet), MPoA (RFC 1483/RFC 2684, Multiprotocol Encapsulation over AAL5), IPoA (RFC 1577, Classic IP and ARP over ATM) and Pure Bridge.

PPPoE (RFC2516, PPP over Ethernet)
Select this option if your ISP requires you to use the PPPoE (Point-to-Point Protocol over Ethernet) connection.

Parameter	Description
Username	Enter your username given by your ISP. This is case sensitive and uses the format of "**username**" instead of username@ispname.
Password	Enter your password given by your ISP. This is case sensitive.
Service Name	(optional) This is for identification purpose. If this is requested, you will get informed by your ISP. Maximum input is 20 alphanumeric characters.
IP Address	(optional) This option is only available if you have given a fixed IP address from your ISP. Enter 0.0.0.0 to get a random assigned IP from your ISP; Username and Password must be entered.
Authentication Protocol	Default is **Chap(Auto**). Your ISP will advise you whether to use **Chap** or **Pap.**
Connection	How you like establish your PPPoE connection, Always on or Connect on Demand. **Always on:** If you want the router to establish a PPPoE session when starting up and to automatically re-establish the PPPoE session when disconnected by the ISP. **Connect to Demand:** If you want to establish a PPPoE session only when there is a packet requesting access to the Internet (i.e. when a program on your computer attempts to access the Internet).
Idle Timeout	Auto-disconnect the PPPoE connection when there is no activity on the line for a predetermined period of time.
RIP (Routing Information Protocol)	It is an interior routing protocol for router to exchange routing information. **MTU (Maximum Transmission Unit):** This is the size of largest datagram (excluding media-specific headers) that IP will attempt to send through the interface. The default setting is 1492.
NAT (Network Address Translation)	This allows multiple users to access the Internet through a single ISP account, sharing a single IP address. If users on your LAN have public IP addresses and can access the Internet directly, the NAT function can be disabled.
ATM Class	The Quality of Service for ATM layer.

PPPoA (RFC2864, PPP over AAL5)

Select this option if your ISP requires you to use the PPPoA (Point-to-Point Protocol over ATM) connection.



ATM VC Setting

VPI 8

VCI 35

WAN Settings

Please select the appropriate option to connect to your ISP.

PPPoA (RFC2864, PPP over AAL5)

PPPoA

Username

Password

IP Address 0.0.0.0
(0.0.0.0:Obtain an IP address automatically)

Authentication Protocol Chap(Auto)

Connection Connect on Demand

Idle Timeout 5 minutes

RIP □ RIP v1 □ RIP v2 □ RIP v2 Multicast

MTU 1500

NAT ● Enable ○ Disable

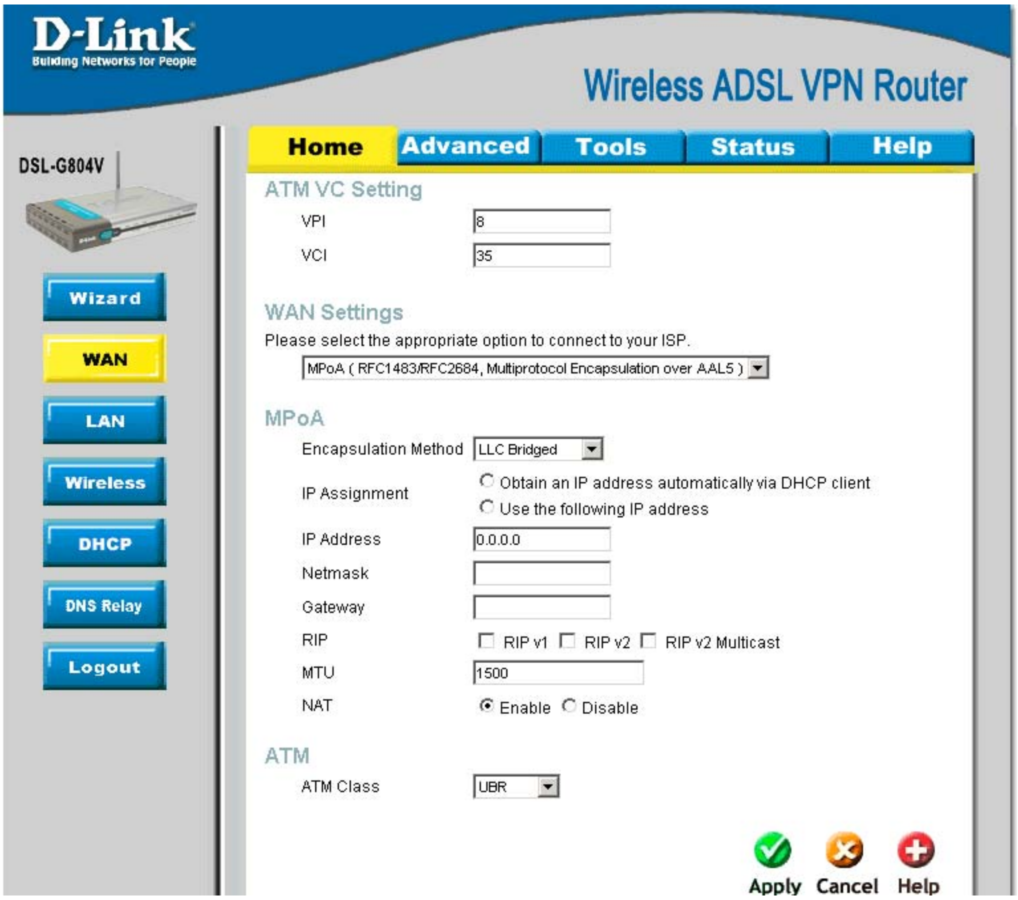
ATM

ATM Class UBR

Figure 3-5. WAN Setup window - PPPoA

Parameter	Description
Username	Enter your username given by your ISP. This is case sensitive and uses the format of "**username**" instead of username@ispname.
Password	Enter your password given by your ISP. This is case sensitive.
Service Name	(optional) This is for identification purpose. If this is requested, you will get informed by your ISP. Maximum input is 20 alphanumeric characters.
IP Address	(optional) This option is only available if you have given a fixed IP address from your ISP. Enter 0.0.0.0 to get a random assigned IP from your ISP; Username and Password must be entered.
Authentication Protocol	Default is **Chap(Auto**). Your ISP will advise you whether to use **Chap** or **Pap.**
Connection	How you like establish your PPPoA connection, Always on or Connect on Demand. **Always on:** If you want the router to establish a PPPoA session when starting up and to automatically re-establish the PPPoE session when disconnected by the ISP. **Connect to Demand:** If you want to establish a PPPoA session only when there is a packet requesting access to the Internet (i.e. when a program on your computer attempts to access the Internet).
Idle Timeout	Auto-disconnect the PPPoA connection when there is no activity on the line for a predetermined period of time.
RIP (Routing Information Protocol)	It is an interior routing protocol for router to exchange routing information.
MTU (Maximum Transmission Unit)	This is the size of largest datagram (excluding media-specific headers) that IP will attempt to send through the interface. The default setting is 1500.
NAT (Network Address Translation)	This allows multiple users to access the Internet through a single ISP account, sharing a single IP address. If users on your LAN have public IP addresses and can access the Internet directly, the NAT function can be disabled.
ATM Class	The Quality of Service for ATM layer.

MPoA (RFC1483/RFC2684, Multi protocol Encapsulation over AAL5)



ATM VC Setting

VPI: 8

VCI: 35

WAN Settings

Please select the appropriate option to connect to your ISP.

MPoA (RFC1483/RFC2684, Multiprotocol Encapsulation over AAL5)

MPoA

Encapsulation Method: LLC Bridged

IP Assignment: ○ Obtain an IP address automatically via DHCP client ○ Use the following IP address

IP Address: 0.0.0.0

Netmask:

Gateway:

RIP: □ RIP v1 □ RIP v2 □ RIP v2 Multicast

MTU: 1500

NAT: ● Enable ○ Disable

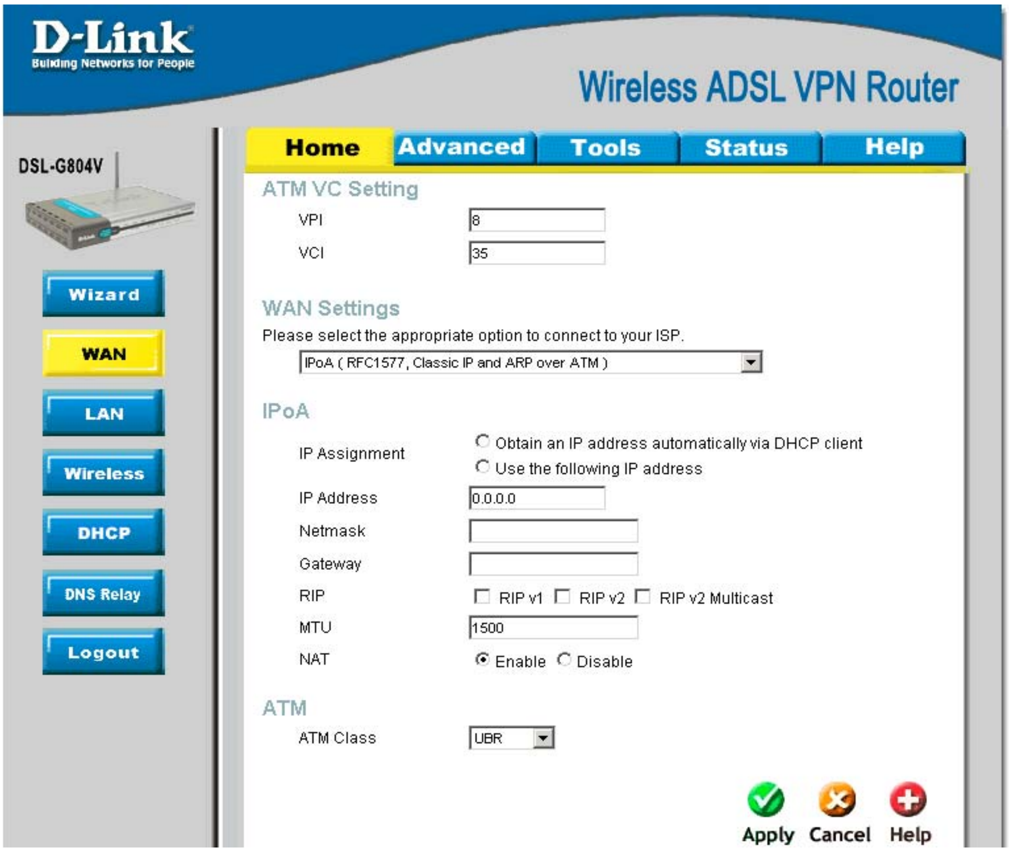
ATM

ATM Class: UBR

Figure 3-6. WAN Setup window - MPoA

Parameter	Description
Encapsulation Method	Select the encapsulation format, this is provided by your ISP.
IP Assignment	Please click **Obtain an IP address automatically via DHCP client** to enable the DHCP client function or click **Specify an IP address** to disable the DHCP client function, and specify the **IP address, Netmask** and **Gateway** manually. The setting of this item is specified by your ISP.
RIP (Routing Information Protocol)	It is an interior routing protocol for router to exchange routing information.
MTU (Maximum Transmission Unit)	This is the size of largest datagram (excluding media-specific headers) that IP will attempt to send through the interface. The default setting is 1500.
NAT (Network Address Translation)	This allows multiple users to access the Internet through a single ISP account, sharing a single IP address. If users on your LAN have public IP addresses and can access the Internet directly, the NAT function can be disabled.
ATM Class	The Quality of Service for ATM layer.

IPoA (RFC1577, Classic IP and ARP over ATM)



ATM VC Setting

VPI	8
VCI	35

WAN Settings

Please select the appropriate option to connect to your ISP.

IPoA (RFC1577, Classic IP and ARP over ATM)

IPoA

IP Assignment	○ Obtain an IP address automatically via DHCP client ○ Use the following IP address
IP Address	0.0.0.0
Netmask	
Gateway	
RIP	□ RIP v1 □ RIP v2 □ RIP v2 Multicast
MTU	1500
NAT	● Enable ○ Disable

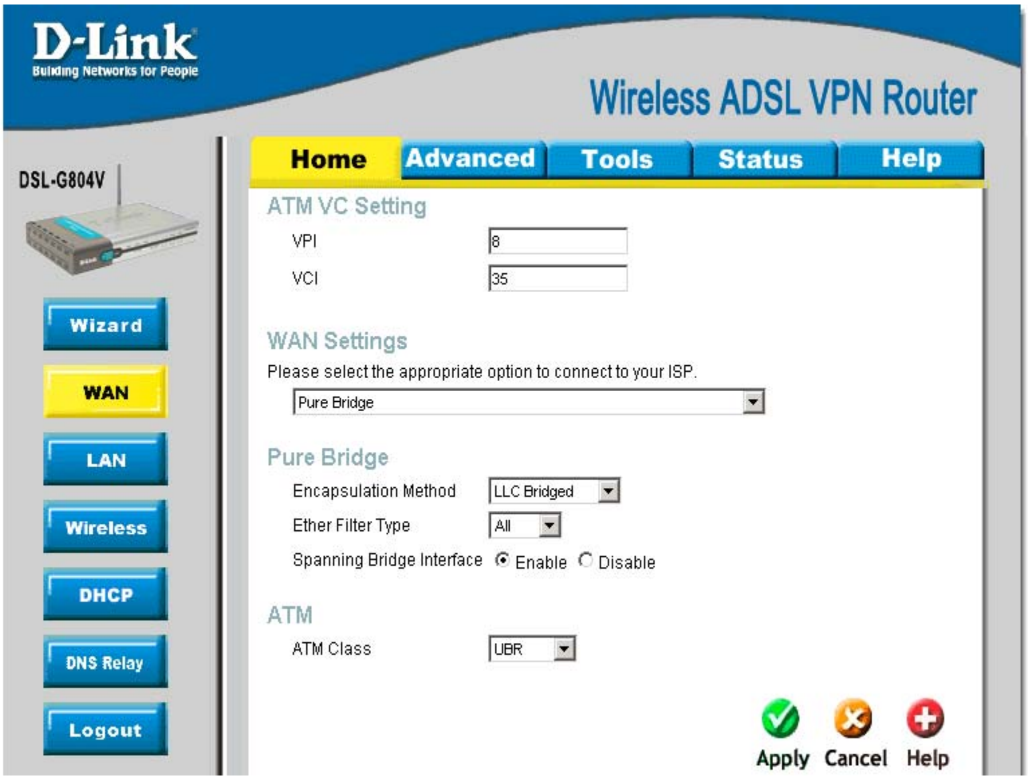
ATM

ATM Class	UBR

Figure 3-7. WAN Setup window - IPoA

Parameter	Description
IP Assignment	Please click **Obtain an IP address automatically via DHCP client** to enable the DHCP client function or click **Specify an IP address** to disable the DHCP client function, and specify the **IP address, Netmask** and **Gateway** manually. The setting of this item is specified by your ISP.
RIP (Routing Information Protocol)	It is an interior routing protocol for router to exchange routing information.
MTU (Maximum Transmission Unit)	This is the size of largest datagram (excluding media-specific headers) that IP will attempt to send through the interface. The default setting is 1500.
NAT (Network Address Translation)	This allows multiple users to access the Internet through a single ISP account, sharing a single IP address. If users on your LAN have public IP addresses and can access the Internet directly, the NAT function can be disabled.
ATM Class	The Quality of Service for ATM layer.

Pure Bridge



ATM VC Setting

VPI 8

VCI 35

WAN Settings

Please select the appropriate option to connect to your ISP.

Pure Bridge

Pure Bridge

Encapsulation Method LLC Bridged

Ether Filter Type All

Spanning Bridge Interface ● Enable ○ Disable

ATM

ATM Class UBR

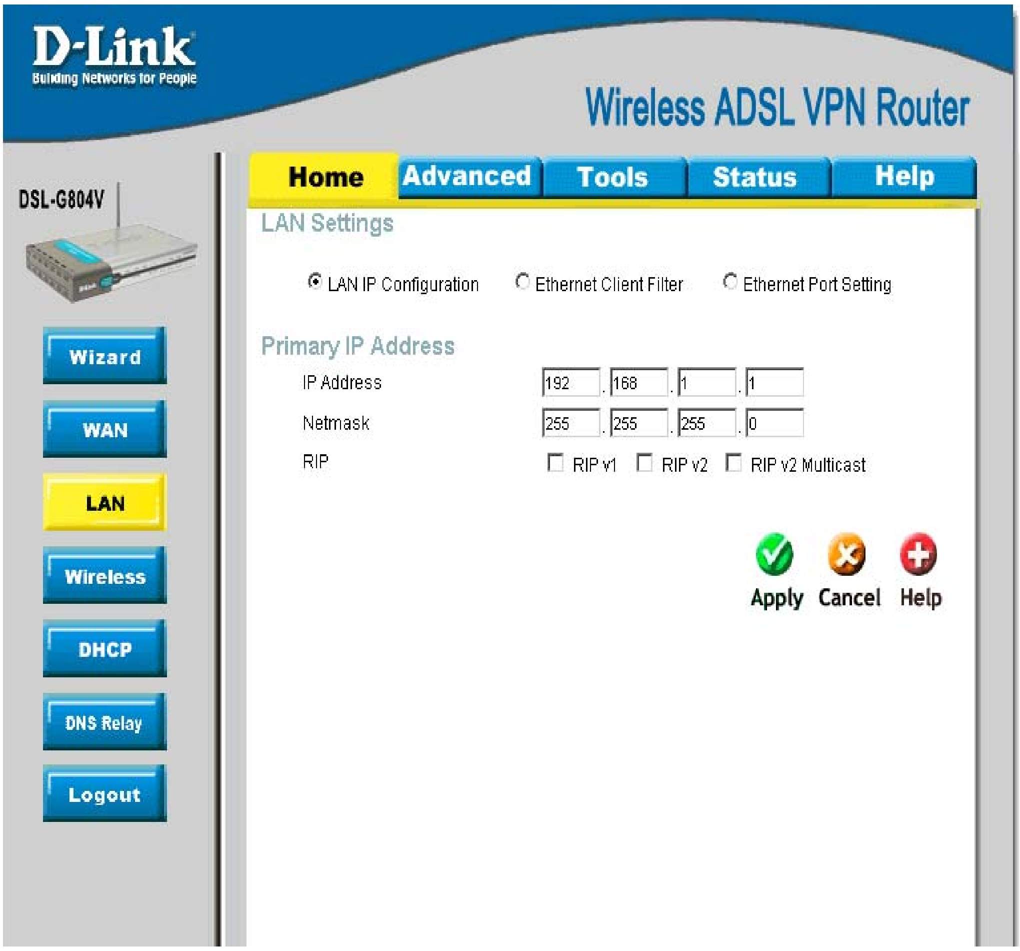
Figure 3-8. WAN Setup window – Pure Bridge

Parameter	Description
Encapsulation Method	Select the encapsulation format, this is provided by your ISP.
Ether Filter Type	Specify the type of Ethernet filtering performed by the named bridge interface.
Spanning Bridge Interface	Select Enable/Disable radio button to choose spanning tree function of modem.
ATM Class	The Quality of Service for ATM layer.

LAN Settings

LAN (Local Area Network) setting is private to your internal network and cannot be seen from outside world, Internet. You may configure your LAN by given a LAN IP address to your network.

LAN Settings – LAN IP Configuration



LAN Settings

● LAN IP Configuration ○ Ethernet Client Filter ○ Ethernet Port Setting

Primary IP Address

IP Address 192 . 168 . 1 . 1

Netmask 255 . 255 . 255 . 0

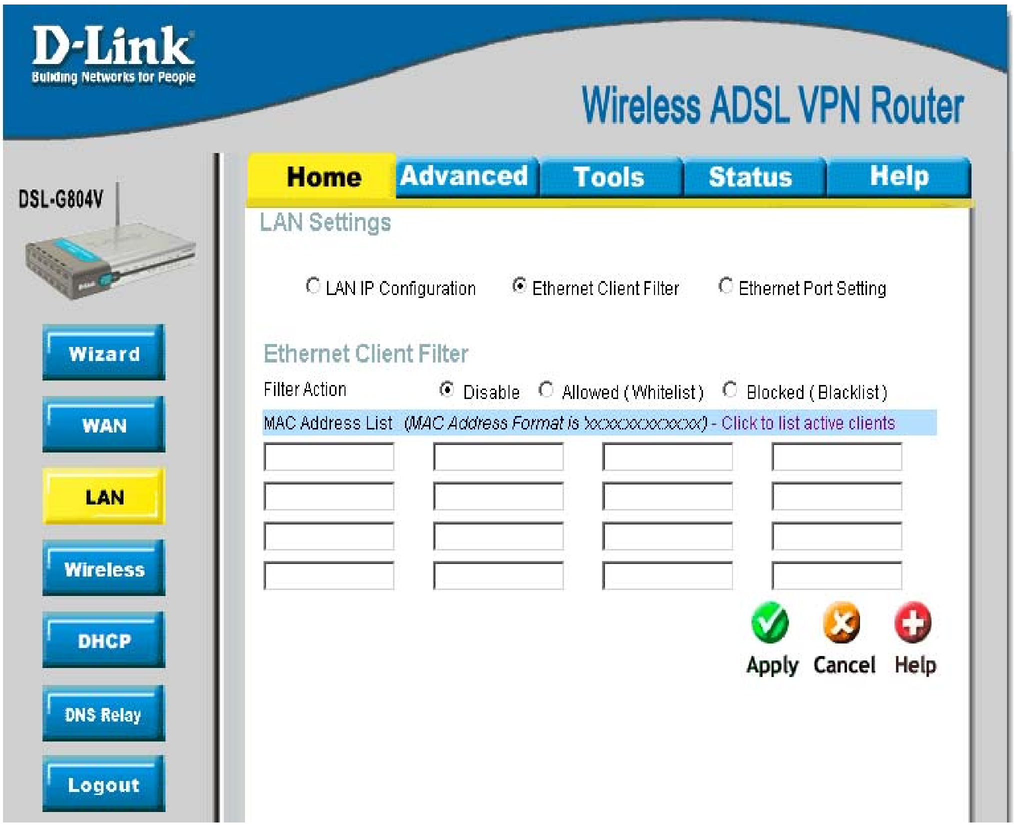
RIP □ RIP v1 □ RIP v2 □ RIP v2 Multicast

Figure 3-9. Home – LAN Settings (LAN IP Configuration)

Parameter	Description
IP Address	Default setting is 192.168.1.1.
Subnet Mask	Default setting is 255.255.255.0.
RIP (Routing Information Protocol)	It is an interior routing protocol for router to exchange routing information.

LAN Settings – Ethernet Client Filter

LAN (Local Area Network) setting is private to your internal network and cannot be seen from outside world, Internet. You may configure your LAN by given a LAN IP address to your network.



LAN Settings

○ LAN IP Configuration ● Ethernet Client Filter ○ Ethernet Port Setting

Ethernet Client Filter

Filter Action ● Disable ○ Allowed (Whitelist) ○ Blocked (Blacklist)

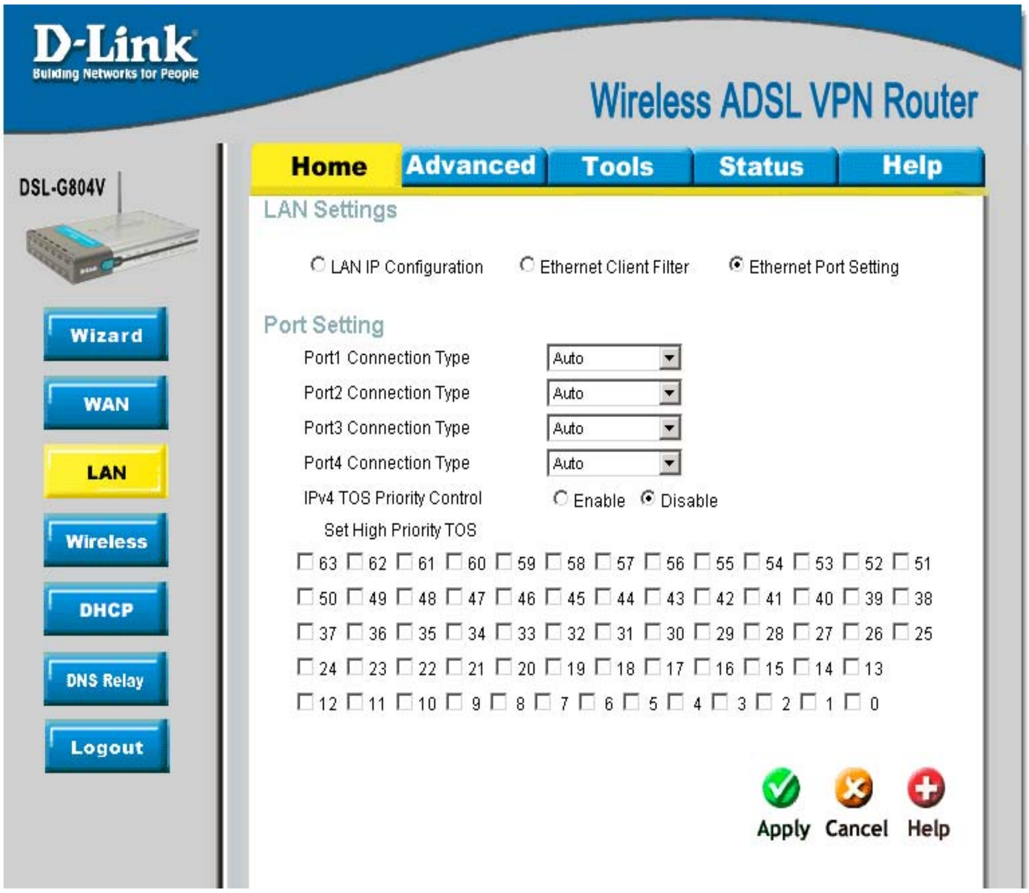
MAC Address List (*MAC Address Format is 'xxxxxxxxxxxx'*) - Click to list active clients

Figure 3-10. Home – LAN Settings (Ethernet Client Filter)

Parameter	Description
Filter Action	Select an appreciated filter action, Disable, Allowed (White list), and Blocked (Blacklist)
Disabled	This inactivates the Ethernet Client Filter function.
Allowed (White list)	This authorizes specific device accessing your LAN by insert the MAC Address in the space provided. Make sure you PC's MAC is listed.
Blocked (Blacklist)	Check to prevent unwanted device accessing your LAN by insert the MAC Address in the space provided. Make sure your PC's MAC is NOT listed.
Click to list active clients	Active PC in LAN displays a list of individual Ethernet device's IP Address & MAC Address which connecting to the router. You can easily by checking the box next to the IP address to be blocked or allowed. Then **Apply** to insert to the Ethernet Client Filter table. The maximum Ethernet client is 16.

LAN Setting – Ethernet Port Setting

This allows you to configure the settings for the router's Ethernet ports to solve some of the compatibility problems that may be encountered while connecting to the Internet, as well allowing users to tweak the performance of their network.



LAN Settings

○ LAN IP Configuration ○ Ethernet Client Filter ● Ethernet Port Setting

Port Setting

Port1 Connection Type: Auto

Port2 Connection Type: Auto

Port3 Connection Type: Auto

Port4 Connection Type: Auto

IPv4 TOS Priority Control: ○ Enable ● Disable

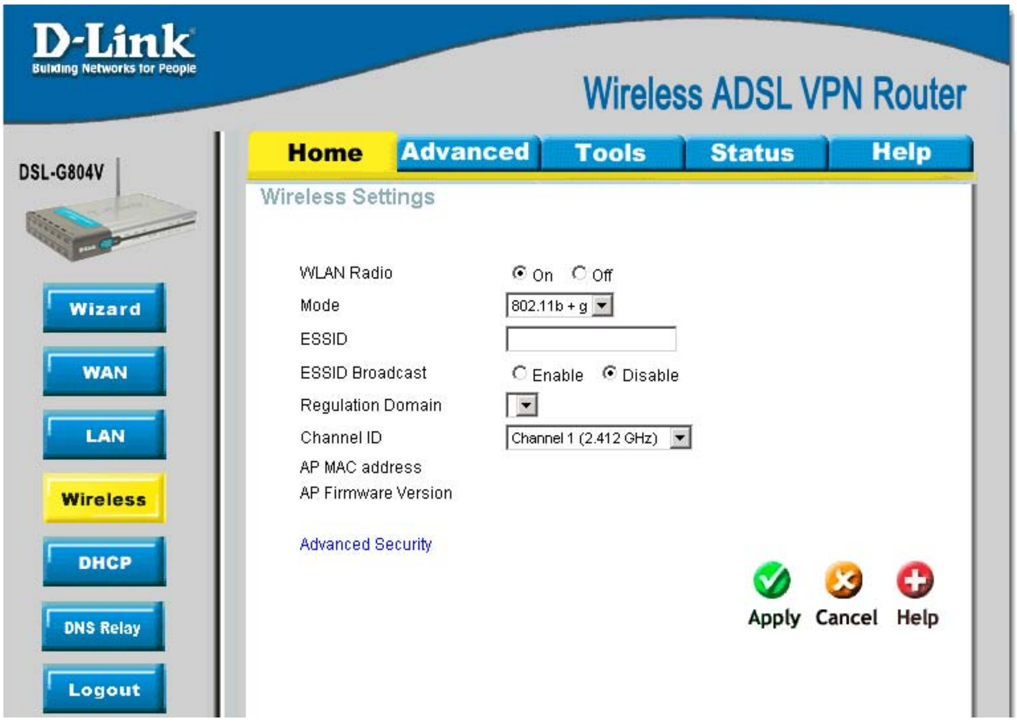
Set High Priority TOS

□ 63 □ 62 □ 61 □ 60 □ 59 □ 58 □ 57 □ 56 □ 55 □ 54 □ 53 □ 52 □ 51
□ 50 □ 49 □ 48 □ 47 □ 46 □ 45 □ 44 □ 43 □ 42 □ 41 □ 40 □ 39 □ 38
□ 37 □ 36 □ 35 □ 34 □ 33 □ 32 □ 31 □ 30 □ 29 □ 28 □ 27 □ 26 □ 25
□ 24 □ 23 □ 22 □ 21 □ 20 □ 19 □ 18 □ 17 □ 16 □ 15 □ 14 □ 13
□ 12 □ 11 □ 10 □ 9 □ 8 □ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1 □ 0

Figure 3-11. Home – LAN Settings (Ethernet Port Setting)

Parameter	Description
Port # Connection Type	Five options to choose from: Auto, 10M half-duplex, 10M full-duplex, 100M half-duplex or 100M full-duplex. Sometimes, there are Ethernet compatibility problems with legacy Ethernet devices, and you can configure different types to solve compatibility issues. The default is **Auto**, which users should keep unless there are specific problems with PCs not being able to access your LAN.
IPv4 TOS priority Control (Advanced users)	TOS, Type of Services, is the 2nd octet of an IP packet. Bits 6-7 of this octet are reserved and bit 0-2 are used to specify the priority (precedence) of the packet, and bits 3-5 are specified the delay, throughput and reliability.
Set High Priority TOS	This feature uses bits 0-2 to classify the packet's priority. If the packet is high priority, it will flow first. Therefore, when this feature is enabled, the router's Ethernet switch will check the 2nd octet of each IP packet. If the value in the Precedence of TOS field matches the checked values in the table (0 to 7), this packet will be treated as high priority.

Wireless Settings



Wireless Settings

WLAN Radio ● On ○ Off

Mode 802.11b + g

ESSID

ESSID Broadcast ○ Enable ● Disable

Regulation Domain

Channel ID Channel 1 (2.412 GHz)

AP MAC address

AP Firmware Version

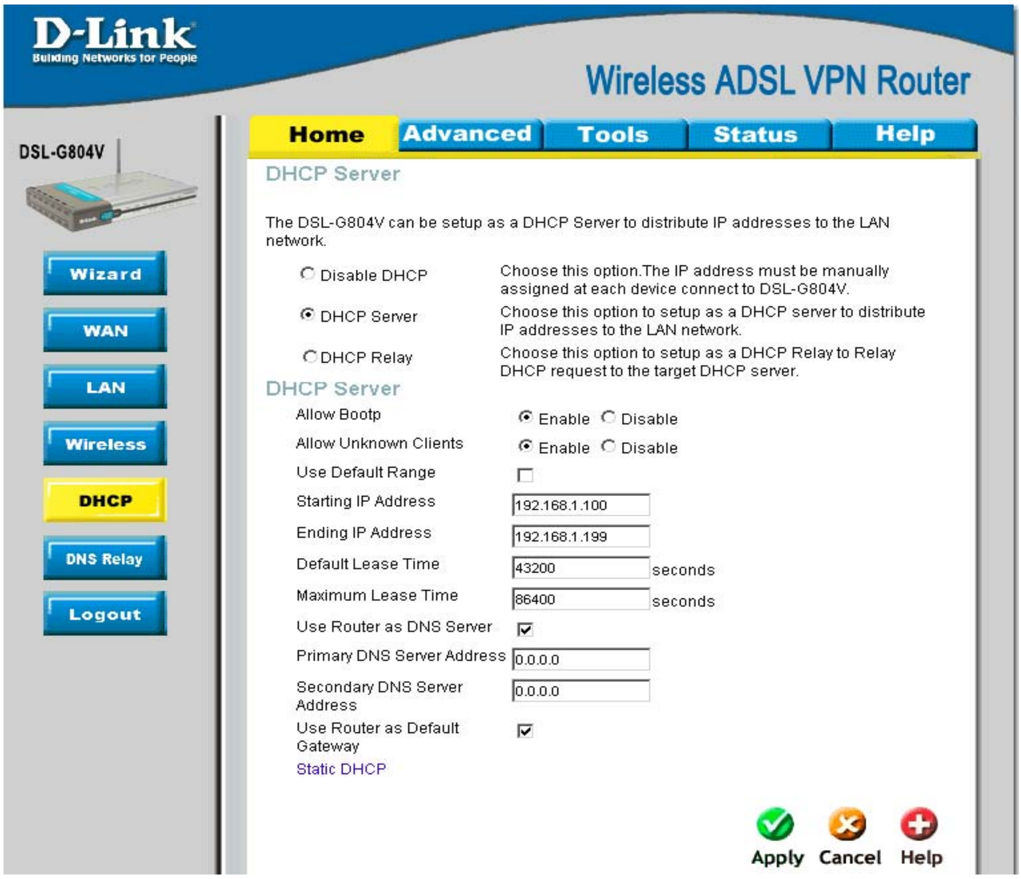
Advanced Security

Figure 3-12. Home – Wireless Settings

Parameter	Description
WLAN Radio	Default setting is set to **On**. If you do not have any wireless, both 802.11g and 802.11b, device in your network, select **Off.**
Mode	The default setting is **802.11b+g** (Mixed mode). If you do not know or have both 11g and 11b devices in your network, then keep the default in **mixed mode**. From the drop-down manual, you can select **802.11g** if you have only 11g card. If you have only 11b card, then select **802.11b**.
ESSID	This is the Network ID is used for identifying the WLAN. It is case sensitive and must not excess 32 characters. Make sure your wireless clients have exactly the ESSID as the device, in order to get connected to your network. Client stations can roam freely over this product and other Access Points that have the same Network ID.
ESSID Broadcast	It is function in which transmits its ESSID to the air so that when wireless client searches for a network, router can then be discovered and recognized. Default setting is **Enable.**
Channel ID	The radio channel number. The permissible channels depend on the Regulatory Domain. (The factory setting is channel **6**)
AP MAP address	It is a unique hardware address of the Access Point.
AP Firmware Version	The Access Point firmware version.
Advanced Security	A link or shortcut to **Advanced - Wireless** page to configure wireless security, e.g. WEP, WPA or WLAN filtering.

DHCP

DHCP stands for Dynamic Host Control Protocol. The DHCP protocol allows your router to dynamically assign IP addresses to PCs on your network if they are configured to obtain IP addresses automatically.



DHCP Server

The DSL-G804V can be setup as a DHCP Server to distribute IP addresses to the LAN network.

○ Disable DHCP	Choose this option.The IP address must be manually assigned at each device connect to DSL-G804V.
● DHCP Server	Choose this option to setup as a DHCP server to distribute IP addresses to the LAN network.
○ DHCP Relay	Choose this option to setup as a DHCP Relay to Relay DHCP request to the target DHCP server.

DHCP Server

Allow Bootp	● Enable ○ Disable
Allow Unknown Clients	● Enable ○ Disable
Use Default Range	□
Starting IP Address	192.168.1.100
Ending IP Address	192.168.1.199
Default Lease Time	43200 seconds
Maximum Lease Time	86400 seconds
Use Router as DNS Server	☑
Primary DNS Server Address	0.0.0.0
Secondary DNS Server Address	0.0.0.0
Use Router as Default Gateway	☑

Static DHCP

Figure 3-13. Home – DHCP Server

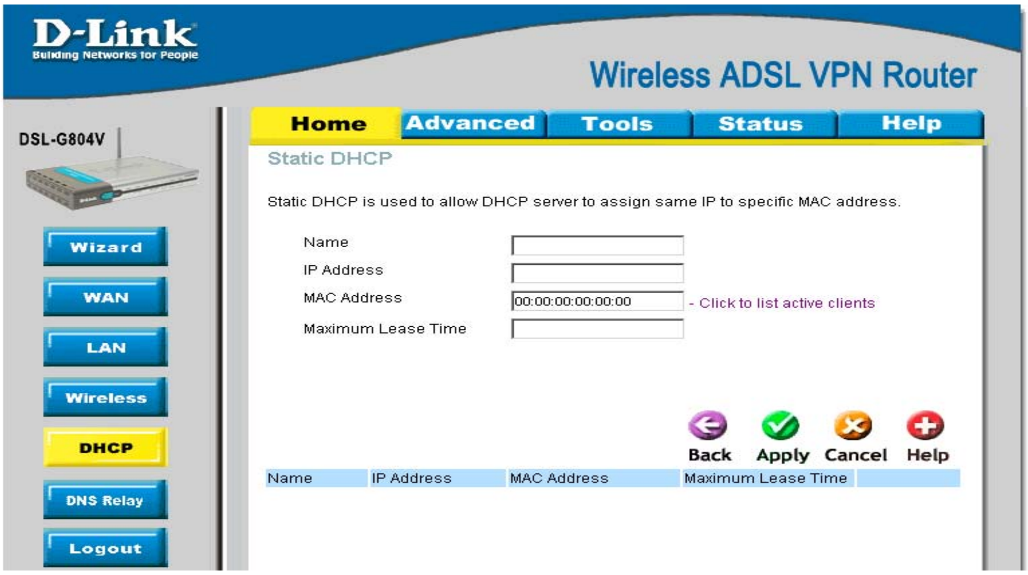
Disable DHCP

The DHCP Server is disabled; you will need to manually assign a fixed IP address to each PCs on your network, and set the default gateway for each PCs to the IP address of the router.

DHCP Server
You can configure parameters of the DHCP Server including the IP pool (starting IP address and ending IP address to be allocated to PCs on your network), lease time for each assigned IP address (the period of time the IP address assigned will be valid), DNS IP address and the gateway IP address. These details are sent to the DHCP client (i.e. your PC) when it requests an IP address from the DHCP server. If you check "**Use Router as a DNS Server**", the ADSL Router will perform the domain name lookup, find the IP address from the outside network automatically and forward it back to the requesting PC in the LAN (your Local Area Network).

Static DHCP

It is used to allow DHCP server to assign the same IP to specific MAC address. This is useful when you setup public servers (Web Server, FTP Server, for instance) inside LAN.



Static DHCP

Static DHCP is used to allow DHCP server to assign same IP to specific MAC address.

Name	
IP Address	
MAC Address	00:00:00:00:00:00 - Click to list active clients
Maximum Lease Time	

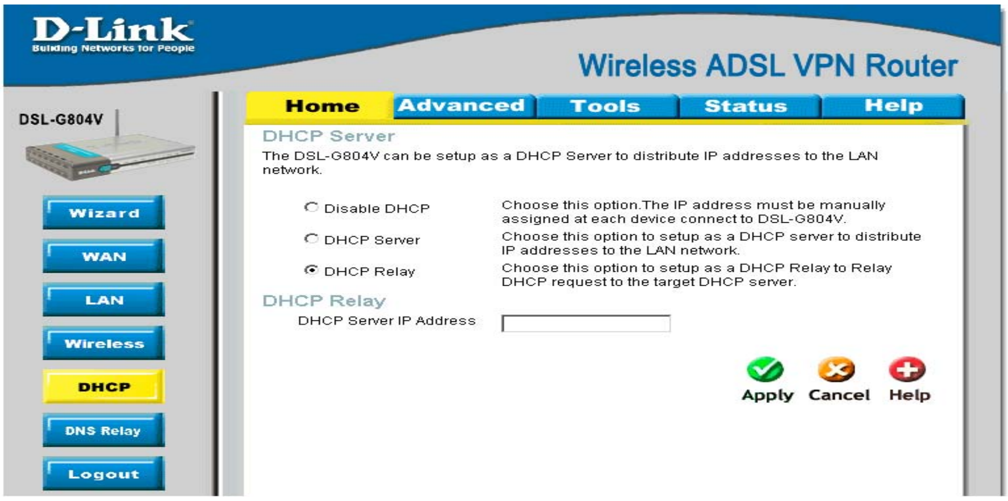
Name	IP Address	MAC Address	Maximum Lease Time	

Figure 3-14. Home – DHCP Server (Static DHCP)

Parameter	Description
Name	The name referencing the static IP assignment.
IP Address	The IP address for the specific node in LAN.
MAC Address	The MAC address of the specific node in LAN.
Maximum Lease Time	The maximum time interval you allow the specific MAC user to obtain this IP address.

DHCP Relay

You can enter the IP address of the DHCP server that will assign an IP address back to the DHCP client in the LAN. Use this function only if advised to do so by your network administrator or ISP.



DHCP Server

The DSL-G804V can be setup as a DHCP Server to distribute IP addresses to the LAN network.

○ Disable DHCP	Choose this option.The IP address must be manually assigned at each device connect to DSL-G804V.
○ DHCP Server	Choose this option to setup as a DHCP server to distribute IP addresses to the LAN network.
● DHCP Relay	Choose this option to setup as a DHCP Relay to Relay DHCP request to the target DHCP server.

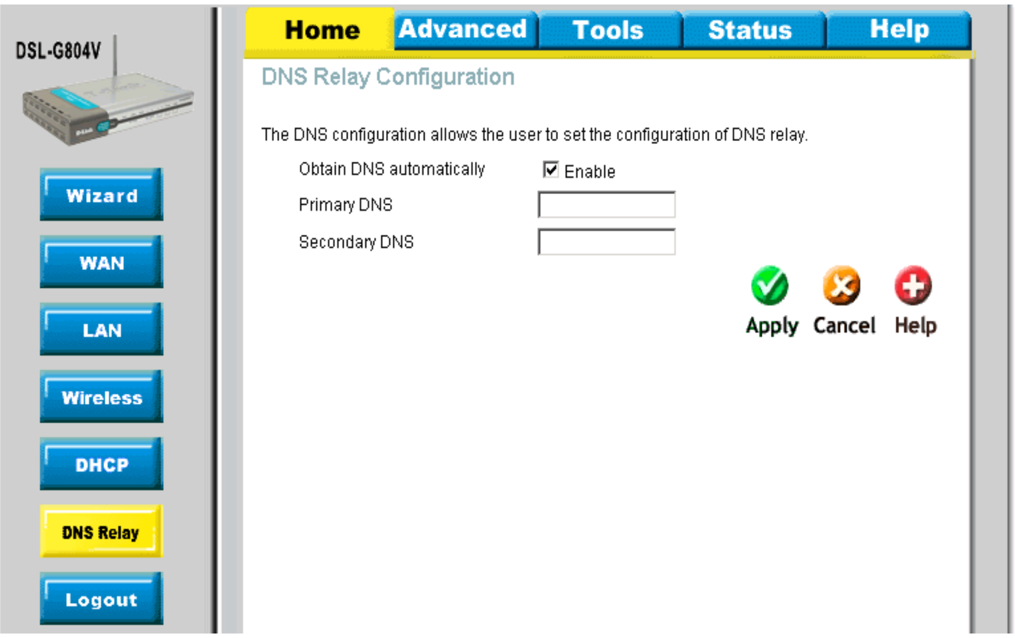
DHCP Relay

DHCP Server IP Address

Figure 3-15. Home – DHCP Server (DHCP Relay)

DNS Relay Configuration

A Domain Name System (DNS) contains a mapping table for domain name and IP addresses. On the Internet, every host has a unique and user-friendly name (domain name) such as www.helloworld.com and an IP address. An IP address is a 32-bit number in the form of *xxx.xxx.xxx.xxx*, for example 192.168.1.1. You can think of an IP address as a telephone number for devices on the Internet, and the DNS will allow you to find the telephone number for any particular domain name. As an IP Address is hard to remember, the DNS converts the friendly name into its equivalent IP Address.



DNS Relay Configuration

The DNS configuration allows the user to set the configuration of DNS relay.

Obtain DNS automatically ☑ Enable

Primary DNS

Secondary DNS

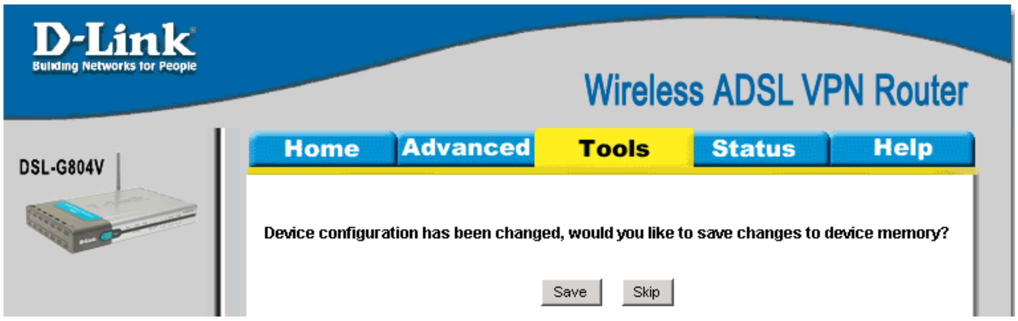
Figure 3-16. Home – DNS Configuration

You can obtain a Domain Name System (DNS) IP address automatically if your ISP has provided it when you logon, check the **Enable** box. Usually when you choose PPPoE or PPPoA as your WAN - ISP protocol, the ISP will provide the DNS IP address automatically. You may leave the configuration field blank.

Alternatively, your ISP may provide you with an IP address of their DNS. If this is the case, you must enter the DNS IP address manually

Logout

To exit the router's web interface, choose **Logout**. Please ensure that you have saved the configuration settings before you logout.



Device configuration has been changed, would you like to save changes to device memory?

4

Advanced Router Management

Click the **Advanced** tab to access menus used to configure **Virtual Server**, **Firewall**, **VPN**, **DDNS**, **Routing**, **Wireless**, **ADSL**, **IP QoS**, **Time Schedule**, **Email**, **Device, IGMP and Logout**.

Virtual Server

NAT can act as a "natural" Internet firewall; your router protects your network from being accessed by outside users. When using NAT, all incoming connection attempts will point to your router, unless you specifically create Virtual Server entries to forward those ports to a PC on your network. Virtual Sever utilizes protocol, TCP/IP and UDP types, which is port with 16-bit number that used to identify which the application program (usually a server) should be delivered from an incoming connections should be delivered to. Some ports have numbers that are pre-assigned to them by the IANA (the Internet Assigned Numbers Authority), and these are referred to as "well-known ports". Servers follow the well-known port assignments so clients can locate them.

Note

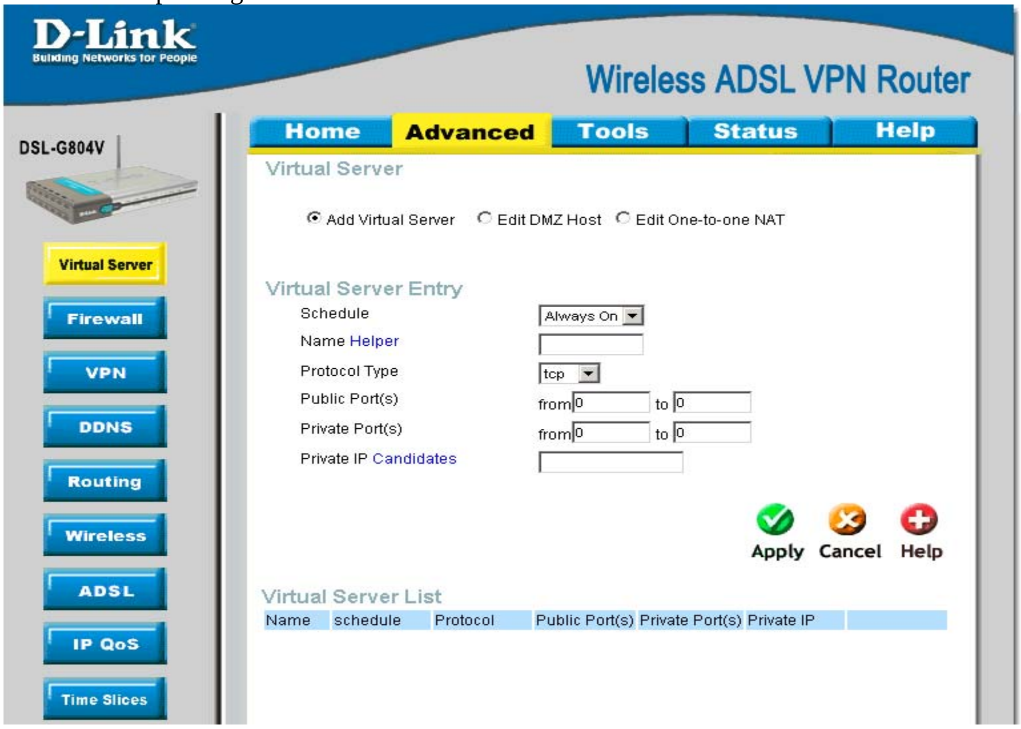
If you have disabled the NAT option in the WAN-ISP section, the Virtual Server function will hence be invalid.

Note

If the DHCP server option is enabled, you have to be very careful in assigning the IP addresses of the virtual servers in order to avoid conflicts. The easiest way of configuring Virtual Servers is to manually assign static IP address to each virtual server PC, with an address that does not fall into the range of IP addresses that are to be issued by the DHCP server. You can configure the virtual server IP address manually, but it must still be in the same subnet as the router.

Add Virtual Server

When your router needs to allow outside users to access internal servers, e.g. a web server, FTP server, Email server or game server, the router can act as a "virtual server". You can set up a local server with a specific port number for the service to use, e.g. web/HTTP (port 80), FTP (port 21), Telnet (port 23), SMTP (port 25), or POP3 (port 110). When an incoming access request to the router for a specified port is received, it will be forwarded to the corresponding internal server.



Virtual Server

● Add Virtual Server ○ Edit DMZ Host ○ Edit One-to-one NAT

Virtual Server Entry

Schedule	Always On
Name Helper	
Protocol Type	tcp
Public Port(s)	from 0 to 0
Private Port(s)	from 0 to 0
Private IP Candidates	

Virtual Server List

Name	schedule	Protocol	Public Port(s)	Private Port(s)	Private IP	

Figure 4-1. Virtual Server – Add Virtual Server

Parameter	Description
Schedule	A self-defined time period to enable your virtual server. You may specify a time schedule or Always on for the usage of this Virtual Server Entry. For setup and detail, refer to **Time Schedule** section.
Name	Users-defined description to identify this entry or click **Helper** to select existing predefined rules. **Helper:** 20 predefined rules are available. Click the Radio button to select the rule; Application, Protocol and External/Redirect Ports will be filled after the selection.
Protocol Type	It is the supported protocol for the virtual server. In addition to specifying the port number to be used, you will also need to specify the protocol used. The protocol used is determined by the particular application. Most applications will use TCP or UDP.
Public Port(s)	The Port number on the Remote/WAN side used when accessing the virtual server.
Private Port(s)	The Port number used by the Local server in the LAN network.
Private IP	The private IP in the LAN network that will be providing the virtual server application. **Candidates:** List all existing PCs connecting to the network. You may assign a PC with IP address and MAC from this list.

Example:

If you like to remote access your Router through the Web/HTTP at all time, you would need to enable port number 80 (Web/HTTP) and map to Router's IP Address. Then all incoming HTTP requests from you (Remote side) will be forwarded to the Router with IP address of 192.168.0.1. Since port number 80 has already been predefined, next to the **Application** click **Helper.** A list of predefined rules window will pop and select **HTTP_Sever**.

Name: HTTP_Sever

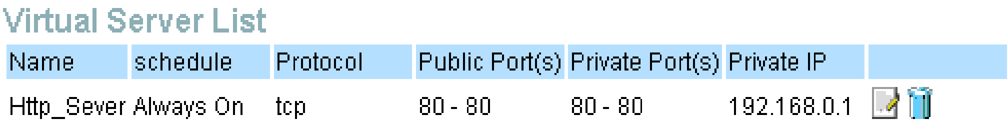
Time Schedule: Always On

Protocol: tcp

External Port: 80-80

Redirect Port: 80-80

IP Address: 192.168.0.1



Virtual Server List

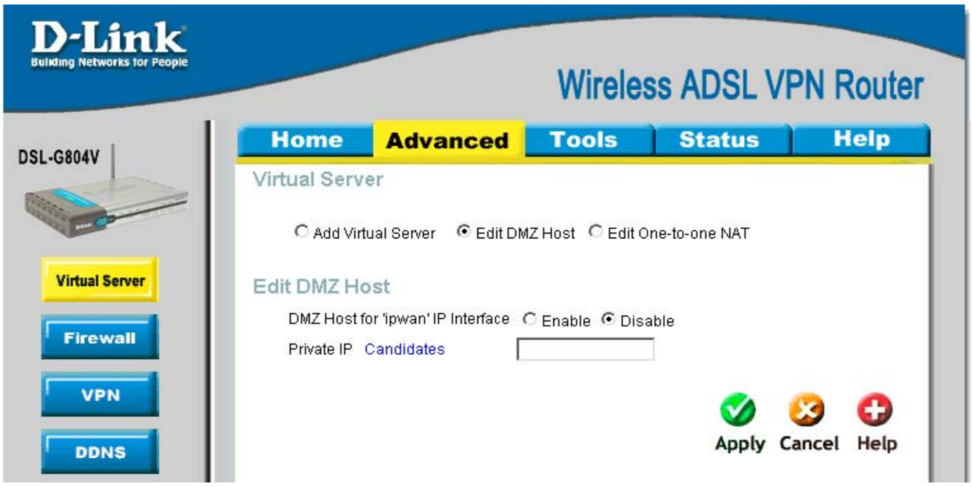
Name	schedule	Protocol	Public Port(s)	Private Port(s)	Private IP	
Http_Sever	Always On	tcp	80 - 80	80 - 80	192.168.0.1	

Edit DMZ Host

The DMZ Host is a local computer exposed to the Internet. When setting a particular internal IP address as the DMZ Host, all incoming packets will be checked by the Firewall and NAT algorithms then passed to the DMZ host, when a packet received does not use a port number used by any other Virtual Server entries.

Note

This Local computer exposing to the Internet may face varies of security risks.



Virtual Server

○ Add Virtual Server ● Edit DMZ Host ○ Edit One-to-one NAT

Edit DMZ Host

DMZ Host for 'ipwan' IP Interface ○ Enable ● Disable

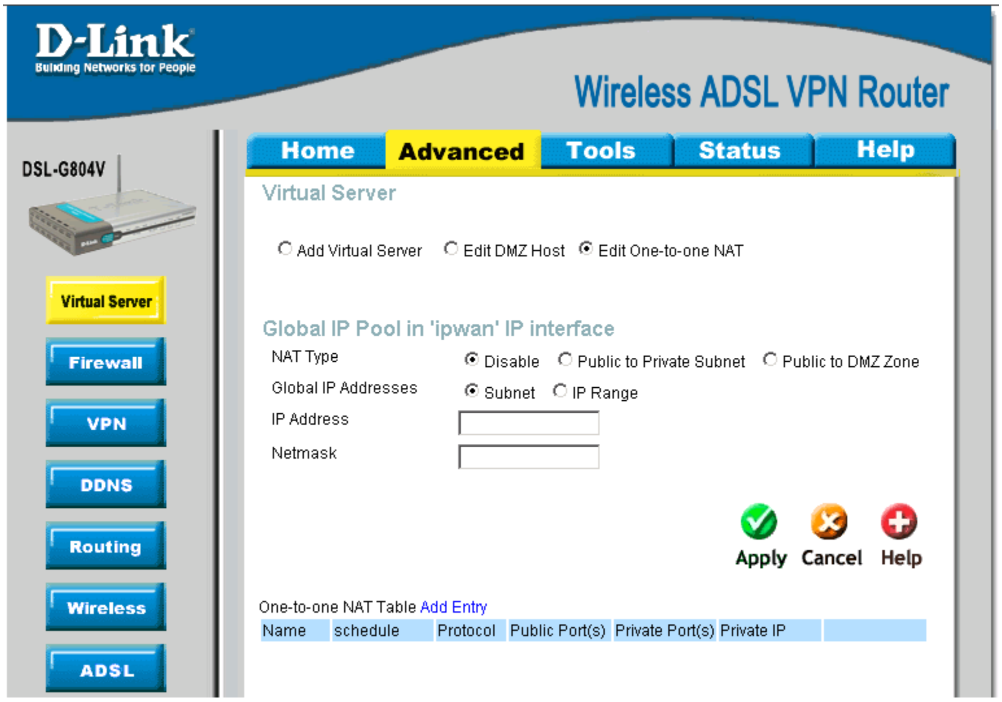
Private IP Candidates

Figure 4-2. Virtual Server – Edit DMZ Host

Parameter	Description
DMZ Host for 'ipwan' IP Interface	Disable or activate the DMZ function.
Private IP	Give a static IP address to the DMZ Host when **Enabled** radio button is checked. Be aware that this IP will be exposed to the WAN/Internet. **Candidates:** List all existing PCs connecting to the network. You may assign a PC with IP address and MAC from this list.

Edit One-to-One NAT

One-to-One NAT maps a specific private/local IP address to a global/public IP address. If you have multiple public/WAN IP addresses from you ISP, you are eligible for One-to-One NAT to utilize these IP addresses.



Virtual Server

○ Add Virtual Server ○ Edit DMZ Host ● Edit One-to-one NAT

Global IP Pool in 'ipwan' IP interface

NAT Type ● Disable ○ Public to Private Subnet ○ Public to DMZ Zone

Global IP Addresses ● Subnet ○ IP Range

IP Address

Netmask

One-to-one NAT Table Add Entry

Name	schedule	Protocol	Public Port(s)	Private Port(s)	Private IP	

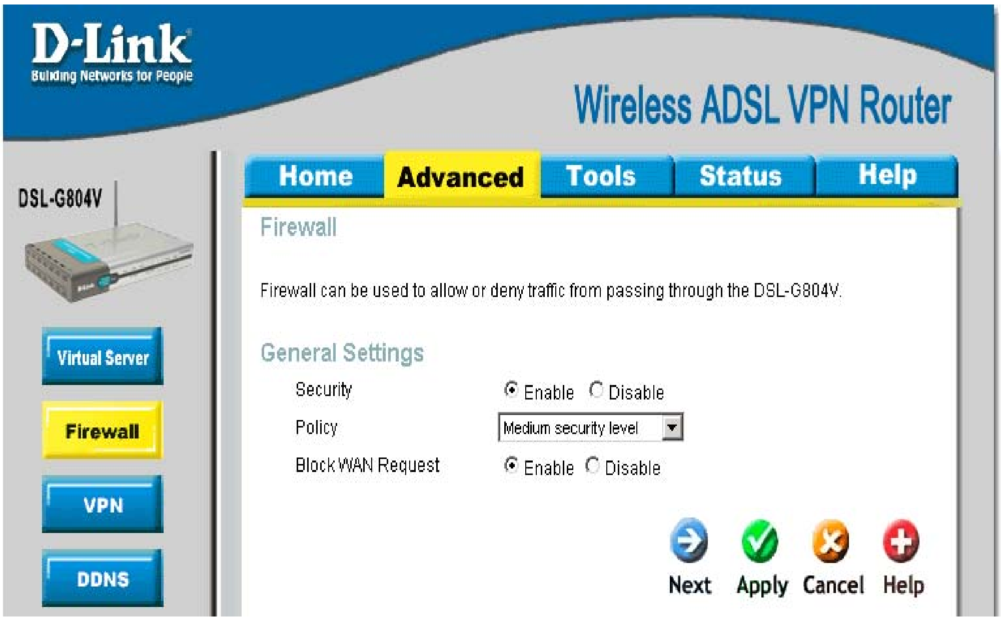
Figure 4-3. Virtual Server – **Edit One-to-One NAT**

Parameter	Description
NAT Type	Select desired NAT type. As set in default setting, it disables the One-to-One NAT function.
Global IP Addresses	**Subnet:** The subnet of the public/WAN IP address given by your ISP. If your ISP has provided this information, you may insert it here. Otherwise, use IP Range method. **IP Range:** The IP address range of your public/WAN IP addresses. For example, IP: 192.168.1.1, end IP: 192.168.1.10.
Add Entry (Virtual Server Entry)	You can create a new One-to-One NAT rule. **Schedule:** A self-defined time period to enable your virtual server. You may specify a time schedule or Always on for the usage of this Virtual Server Entry. For setup and detail, refer to **Time Schedule** section. **Name:** Users-defined description to identify this entry or click **Helper** to select existing predefined rules. **Protocol Type:** It is the supported protocol for the virtual server. In addition to specifying the port number to be used, you will also need to specify the protocol used. The protocol used is determined by the particular application. **Public Port(s):** The Port number on the Remote/WAN side used when accessing the virtual server. **Private Port(s):** The Port number used by the Local server in the LAN network **Private IP:** The private IP in the LAN network which will be providing the virtual server application.

Firewall

Firewall is used to allow or deny traffic from passing through your local network. If Firewall is enabled, the Packet Filter will be used to filter packets based-on Applications (Port) or IP addresses.

General Setting
VC, known as *Virtual Circuit or Virtual Channel*, is a virtual path in which a communication session is established. Check with your ISP for information.



Firewall

Firewall can be used to allow or deny traffic from passing through the DSL-G804V.

General Settings

Security ● Enable ○ Disable

Policy Medium security level

Block WAN Request ● Enable ○ Disable

Figure 4-4. Firewall – General Setting

Note

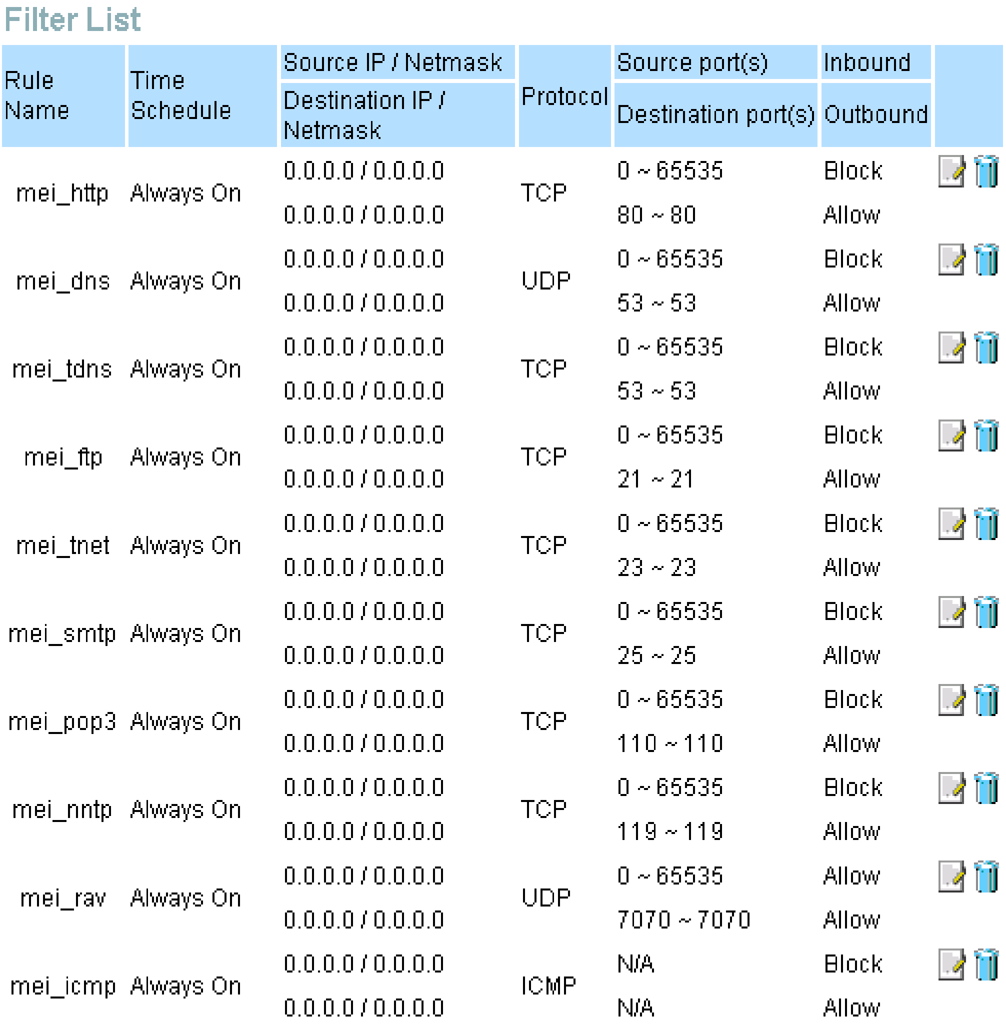
Any remote user who is attempting to perform this action may result in blocking all the accesses to configure and manage of the device from the Internet.

Parameter	Description
Security	Disable or activate the Firewall function.
Policy	There are four options when you enable the Firewall, they are: **All blocked/User-defined**: no pre-defined port or address filter rules by default, meaning that all inbound (Internet to LAN) and outbound (LAN to Internet) packets **will be blocked**. Users have to add their own filter rules for further access to the Internet. **High/Medium/Low security level:** the predefined port filter rules for High, Medium and Low security are displayed in Port Filters of Packet Filter.
Block WAN Request	This is a stand-alone function and not related to whether security is enabled or disabled. Mostly it is for preventing any scan tools from WAN site initiated by a hacker.

Click **Apply** and then click **Next** to process.

Packet Filter

This function is only available when the Firewall is enabled and one of these four security levels is chosen (All blocked, High, Medium and Low). The predefined port filter rules in the Packet Filter must modify accordingly to the level of Firewall, which is selected. See **Table1: Predefined Port Filter** for more detailed information.



Filter List

Rule Name	Time Schedule	Source IP / Netmask	Protocol	Source port(s)	Inbound	
		Destination IP / Netmask		Destination port(s)	Outbound	
mei_http	Always On	0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535	Block	✎ 🗑
		0.0.0.0 / 0.0.0.0		80 ~ 80	Allow	
mei_dns	Always On	0.0.0.0 / 0.0.0.0	UDP	0 ~ 65535	Block	✎ 🗑
		0.0.0.0 / 0.0.0.0		53 ~ 53	Allow	
mei_tdns	Always On	0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535	Block	✎ 🗑
		0.0.0.0 / 0.0.0.0		53 ~ 53	Allow	
mei_ftp	Always On	0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535	Block	✎ 🗑
		0.0.0.0 / 0.0.0.0		21 ~ 21	Allow	
mei_tnet	Always On	0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535	Block	✎ 🗑
		0.0.0.0 / 0.0.0.0		23 ~ 23	Allow	
mei_smtp	Always On	0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535	Block	✎ 🗑
		0.0.0.0 / 0.0.0.0		25 ~ 25	Allow	
mei_pop3	Always On	0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535	Block	✎ 🗑
		0.0.0.0 / 0.0.0.0		110 ~ 110	Allow	
mei_nntp	Always On	0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535	Block	✎ 🗑
		0.0.0.0 / 0.0.0.0		119 ~ 119	Allow	
mei_rav	Always On	0.0.0.0 / 0.0.0.0	UDP	0 ~ 65535	Allow	✎ 🗑
		0.0.0.0 / 0.0.0.0		7070 ~ 7070	Allow	
mei_icmp	Always On	0.0.0.0 / 0.0.0.0	ICMP	N/A	Block	✎ 🗑
		0.0.0.0 / 0.0.0.0		N/A	Allow	

Example: Predefined Port Filters Rules

The predefined port filter rules for High, Medium and Low security levels are listed. See Table 1.

Note

Firewall – All Blocked/User-defined*, you must define and create the port filter rules yourself. No predefined rule is set.*

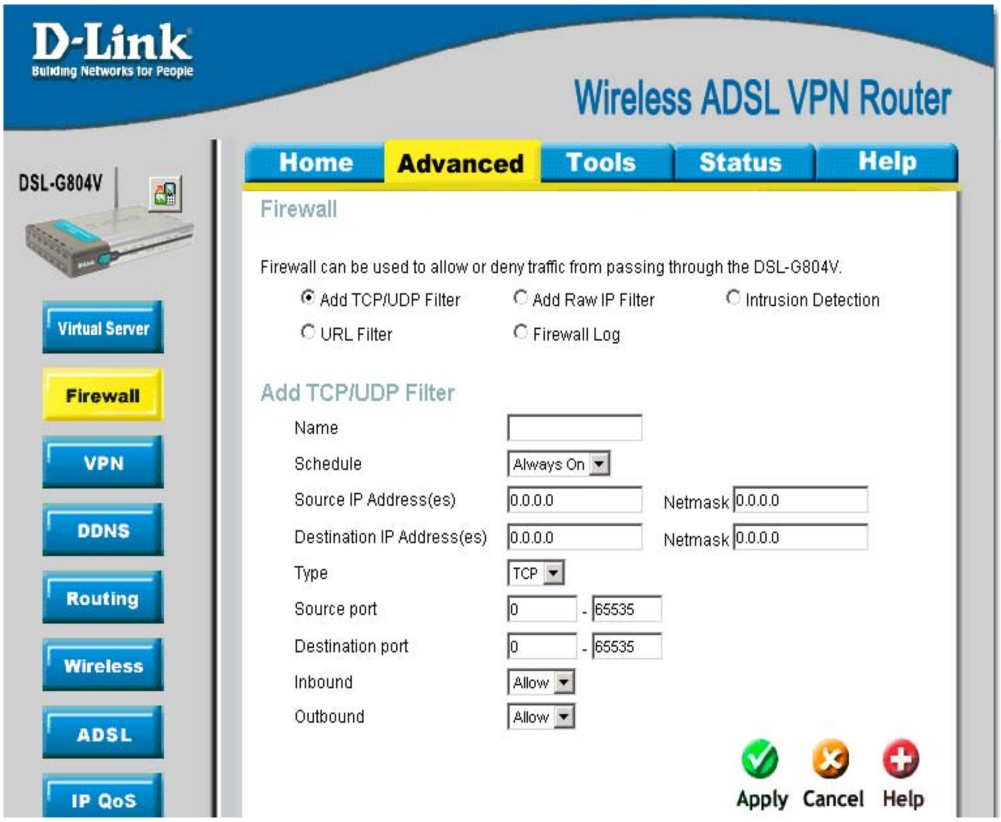
Table 1: Predefined Port Filter

Application	Protocol	Port Number		Firewall - High		Firewall - Medium		Firewall – Low	
		Start	End	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
HTTP(80)	TCP(6)	80	80	NO	**YES**	NO	**YES**	NO	**YES**
DNS (53)	UDP(17)	53	53	NO	**YES**	NO	**YES**	**YES**	**YES**
tDNS (53)	TCP(6)	53	53	NO	**YES**	NO	**YES**	**YES**	**YES**
FTP(21)	TCP(6)	21	21	NO	NO	NO	**YES**	NO	**YES**
Telnet(23)	TCP(6)	23	23	NO	NO	NO	**YES**	NO	**YES**
SMTP(25)	TCP(6)	25	25	NO	**YES**	NO	**YES**	NO	**YES**
POP3(110)	TCP(6)	110	110	NO	**YES**	NO	**YES**	NO	**YES**
NEWS(119) (Network News Transfer for Protocol)	TCP(6)	119	119	NO	NO	NO	**YES**	NO	**YES**
RealAudio/ RealVideo (7070)	UDP(17)	7070	7070	NO	NO	**YES**	**YES**	**YES**	**YES**
PING	ICMP(1)	N/A	N/A	NO	**YES**	NO	**YES**	NO	**YES**
H.323(1720)	TCP(6)	1720	1720	NO	NO	NO	**YES**	**YES**	**YES**
T.120(1503)	TCP(6)	1503	1503	NO	NO	NO	**YES**	**YES**	**YES**
SSH(22)	TCP(6)	22	22	NO	NO	NO	**YES**	**YES**	**YES**
NTP(123)	UDP(17)	123	123	NO	**YES**	NO	**YES**	NO	**YES**
HTTPS(443)	TCP(6)	443	443	NO	NO	NO	**YES**	NO	**YES**

Inbound: Internet to LAN

Outbound: LAN to Internet.

Packet Filter - Add TCP/UDP Filter



Firewall

Firewall can be used to allow or deny traffic from passing through the DSL-G804V.

● Add TCP/UDP Filter ○ Add Raw IP Filter ○ Intrusion Detection

○ URL Filter ○ Firewall Log

Add TCP/UDP Filter

Name			
Schedule	Always On		
Source IP Address(es)	0.0.0.0	Netmask	0.0.0.0
Destination IP Address(es)	0.0.0.0	Netmask	0.0.0.0
Type	TCP		
Source port	0 - 65535		
Destination port	0 - 65535		
Inbound	Allow		
Outbound	Allow		

Figure 4-5. Firewall – Add TCP/UDP Filter

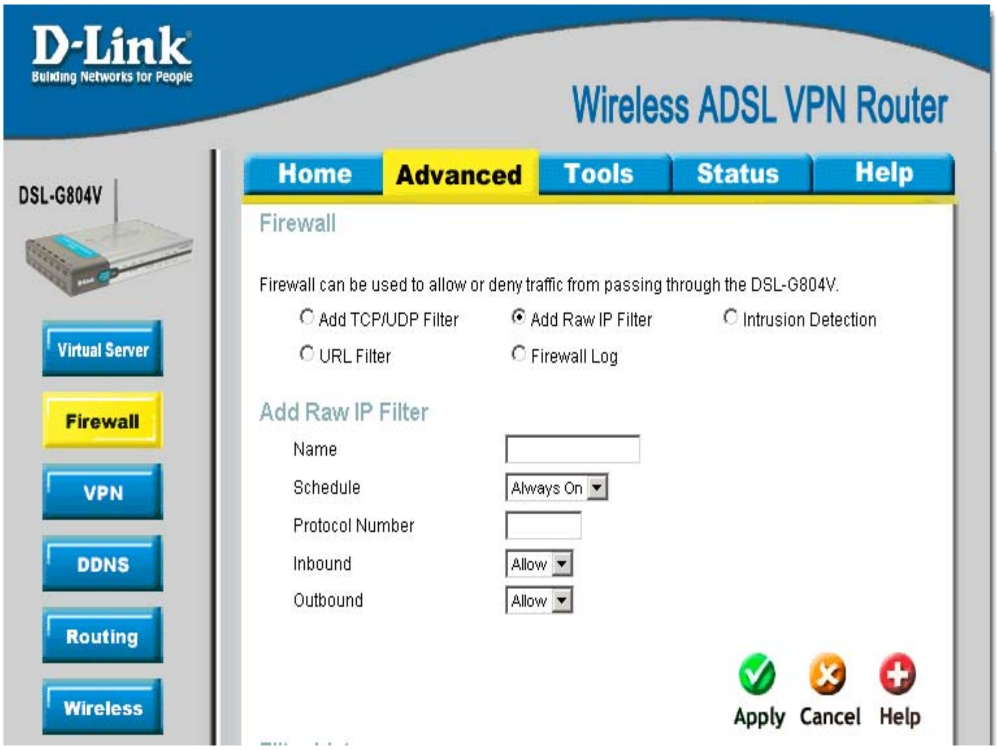
Parameter	Description
Name	A user defined name for identifying the rule.
Schedule	It is self-defined time period. You may specify a time schedule for your prioritization policy. For setup and detail, refer to **Time Schedule** section**.**
Sources IP Adderss(es) / Destination IP Address(es)	This is the Address-Filter used to allow or block traffic to/from particular IP address (es). Selecting the **Subnet Mask** of the IP address range you wish to allow/block the traffic to or form; set IP address and Subnet Mask to **0.0.0.0** to inactive the Address-Filter rule.

Note

*To block access, to / from a single IP address, enter that IP address as the **Host IP Address** and use a **Host Subnet Mask** of "255.255.255.255".*

Source port / Destination port	This is the Address-Filter used to allow or block traffic to/from particular IP address(es). Selecting the **Subnet Mask** of the IP address range you wish to allow/block the traffic to or form; set IP address and Subnet Mask to **0.0.0.0** to inactive the Address-Filter rule.
Inbound / Outbound	Select **Allow** or **Block** the access to the Internet (**"Outbound"**) or from the Internet (**"Inbound"**).

Packet Filter - Add Raw Filter



Firewall

Firewall can be used to allow or deny traffic from passing through the DSL-G804V.

○ Add TCP/UDP Filter ● Add Raw IP Filter ○ Intrusion Detection
○ URL Filter ○ Firewall Log

Add Raw IP Filter

Name	
Schedule	Always On
Protocol Number	
Inbound	Allow
Outbound	Allow

Figure 4-6. Firewall – Add Raw Filter

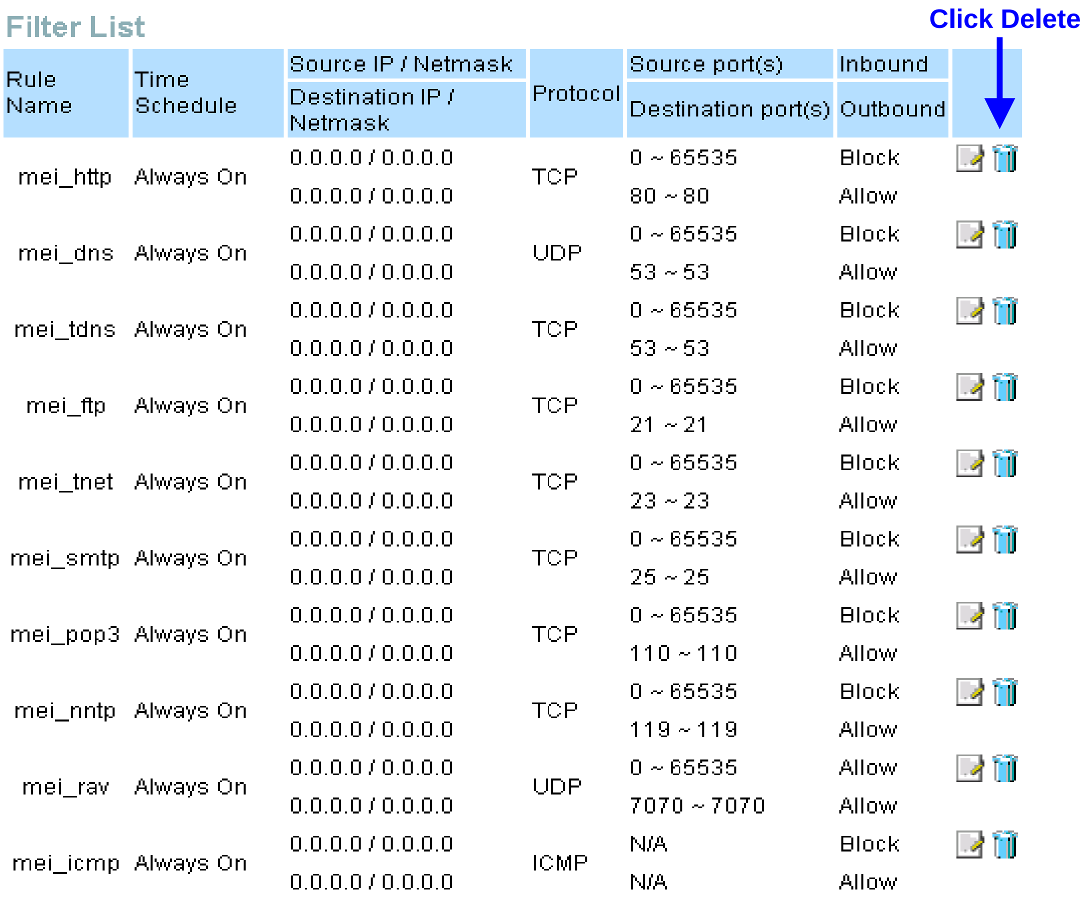
Parameter	Description
Name	A user defined name for identifying the rule.
Schedule	It is self-defined time period. You may specify a time schedule for your prioritization policy. For setup and detail, refer to **Time Schedule** section**.**
Protocol Number	Insert the port number, i.e. GRE 47.
Inbound / Outbound	Select **Allow** or **Block** the access to the Internet (**"Outbound"**) or from the Internet (**"Inbound"**).

Configuring Packet Filter:

1. Click **Port Filters**. You will then be presented with the predefined port filter rules screen (in this case for the low security level), shown below:

Note

*You may click **Edit** the predefined rule instead of **Delete** it. This is an example to show to how you add a filter on your own.*



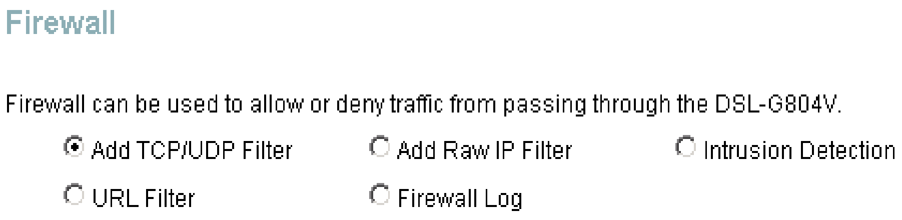
Filter List

Click Delete

Rule Name	Time Schedule	Source IP / Netmask Destination IP / Netmask	Protocol	Source port(s) Destination port(s)	Inbound Outbound
mei_http	Always On	0.0.0.0 / 0.0.0.0 0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535 80 ~ 80	Block Allow
mei_dns	Always On	0.0.0.0 / 0.0.0.0 0.0.0.0 / 0.0.0.0	UDP	0 ~ 65535 53 ~ 53	Block Allow
mei_tdns	Always On	0.0.0.0 / 0.0.0.0 0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535 53 ~ 53	Block Allow
mei_ftp	Always On	0.0.0.0 / 0.0.0.0 0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535 21 ~ 21	Block Allow
mei_tnet	Always On	0.0.0.0 / 0.0.0.0 0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535 23 ~ 23	Block Allow
mei_smtp	Always On	0.0.0.0 / 0.0.0.0 0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535 25 ~ 25	Block Allow
mei_pop3	Always On	0.0.0.0 / 0.0.0.0 0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535 110 ~ 110	Block Allow
mei_nntp	Always On	0.0.0.0 / 0.0.0.0 0.0.0.0 / 0.0.0.0	TCP	0 ~ 65535 119 ~ 119	Block Allow
mei_rav	Always On	0.0.0.0 / 0.0.0.0 0.0.0.0 / 0.0.0.0	UDP	0 ~ 65535 7070 ~ 7070	Allow Allow
mei_icmp	Always On	0.0.0.0 / 0.0.0.0 0.0.0.0 / 0.0.0.0	ICMP	N/A N/A	Block Allow

2. Click **Delete** to delete the existing HTTP rule.

3. Click **Add TCP/UDP Filter**.



Firewall

Firewall can be used to allow or deny traffic from passing through the DSL-G804V.

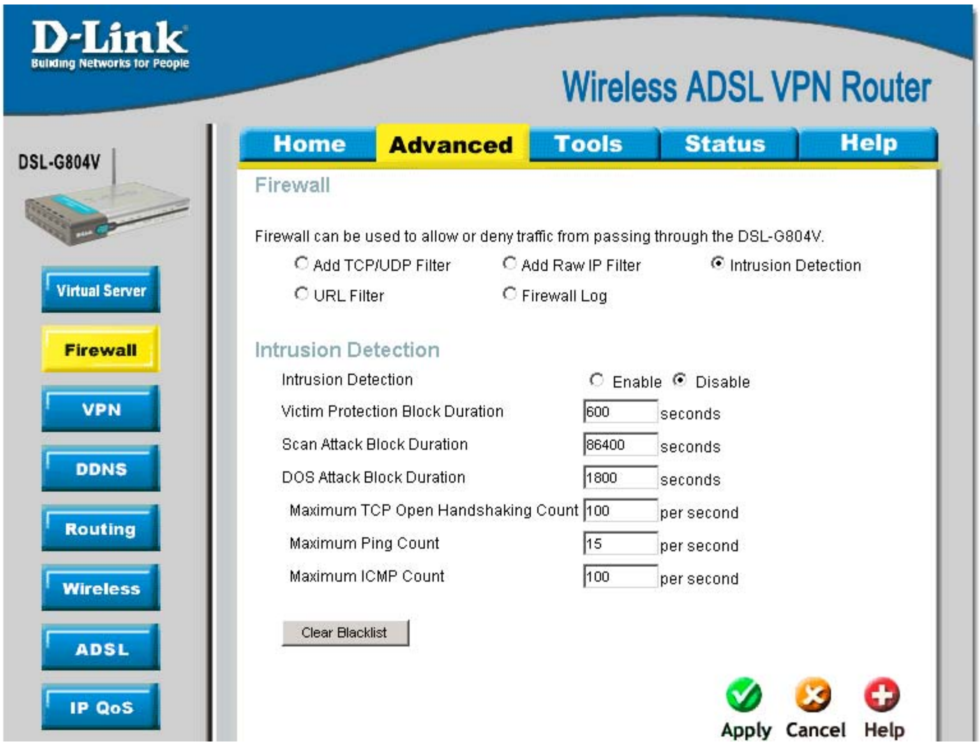
● Add TCP/UDP Filter ○ Add Raw IP Filter ○ Intrusion Detection

○ URL Filter ○ Firewall Log

Input the Rule Name, Time Schedule, Source/Destination IP, Type, Source/Destination Port, Inbound and Outbound.

Intrusion Detection.

The router's *Intrusion Detection System* (IDS) is used to detect hacker attacks and intrusion attempts from the Internet. If the IDS function of the firewall is enabled, inbound packets are filtered and blocked depending on whether they are detected as possible hacker attacks, intrusion attempts or other connections that the router determines to be suspicious.



Firewall

Firewall can be used to allow or deny traffic from passing through the DSL-G804V.

○ Add TCP/UDP Filter ○ Add Raw IP Filter ● Intrusion Detection
○ URL Filter ○ Firewall Log

Intrusion Detection

Intrusion Detection	○ Enable ● Disable
Victim Protection Block Duration	600 seconds
Scan Attack Block Duration	86400 seconds
DOS Attack Block Duration	1800 seconds
Maximum TCP Open Handshaking Count	100 per second
Maximum Ping Count	15 per second
Maximum ICMP Count	100 per second

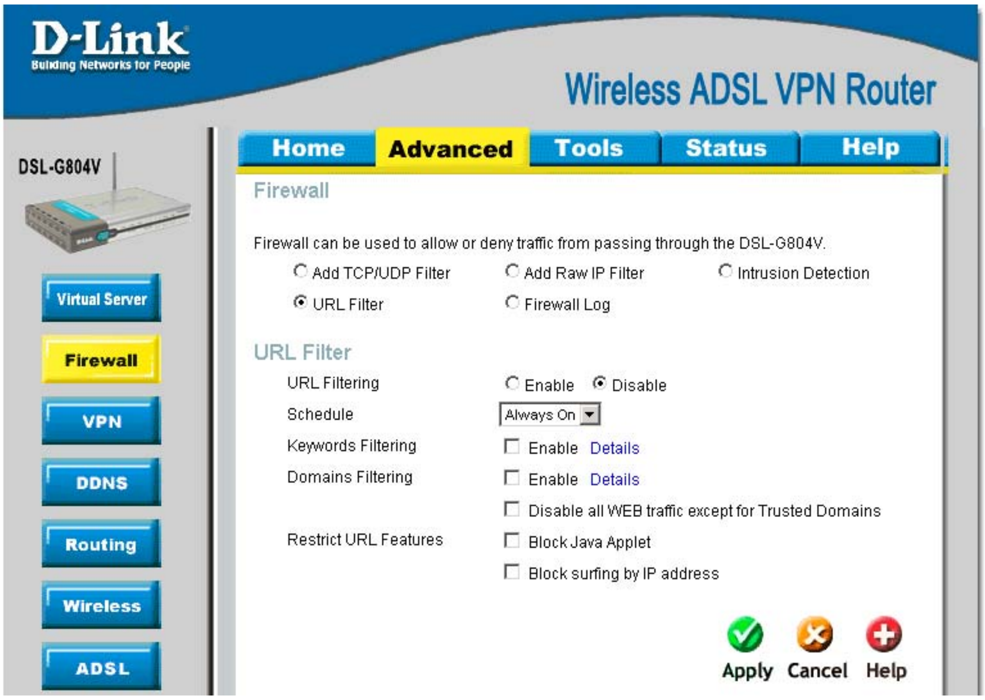
Clear Blacklist

Figure 4-7. Firewall – Intrusion Detection

Parameter	Description
Intrusion Detection	Disable or activate this function.
Victim Protection Block Duration (seconds)	This is the duration for blocking Smurf attacks.
Scan Attack Block Duration (seconds)	This is the duration for blocking hosts that attempt a possible Scan attack. Scan attack types include X'mas scan, IMAP SYN/FIN scan and similar attempts
DOS Attack Block Duration (seconds)	This is the duration for blocking hosts that attempt a possible Denial of Service (DoS) attack. Possible DoS attacks this attempts to block include Ascend Kill and WinNuke.
Maximum TCP Open Handshaking Count (per second))	This is a threshold value to decide whether a SYN Flood attempt is occurring or not.
Maximum Ping Count (per second)	This is a threshold value to decide whether an ICMP Echo Storm is occurring or not.
Maximum ICMP Count (per second)	This is a threshold to decide whether an ICMP flood is occurring or not.
Clear Blacklist	If the router detects a possible attack, the source IP or destination IP address will be added to the Blacklist. Any further attempts using this IP address will be blocked for the time period specified as the **Block Duration**. Click it to remove the detected IP addresses from the blacklist.

URL Filter

URL (Uniform Resource Locator – e.g. an address in the form of http://www.abcde.com or http://www.example.com) filter rules allow you to prevent users on your network from accessing particular websites by their URL. There are no predefined URL filter rules; you can add filter rules to meet your requirements.



Firewall

Firewall can be used to allow or deny traffic from passing through the DSL-G804V.

○ Add TCP/UDP Filter ○ Add Raw IP Filter ○ Intrusion Detection
● URL Filter ○ Firewall Log

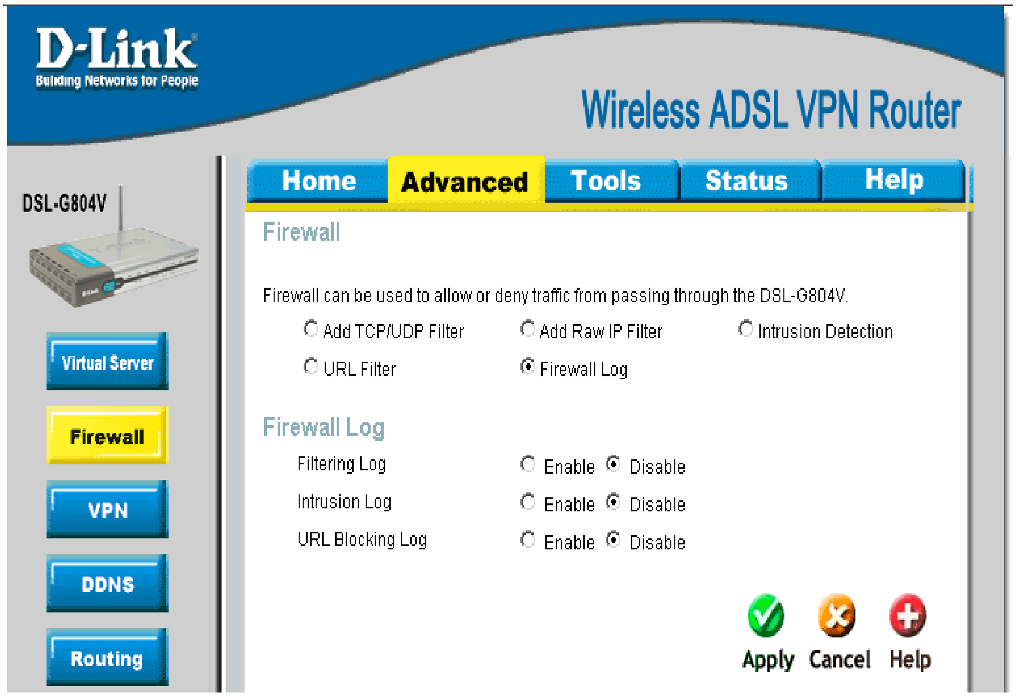
URL Filter

URL Filtering	○ Enable ● Disable
Schedule	Always On
Keywords Filtering	□ Enable Details
Domains Filtering	□ Enable Details
	□ Disable all WEB traffic except for Trusted Domains
Restrict URL Features	□ Block Java Applet
	□ Block surfing by IP address

Figure 4-8. Firewall – URL Filter

Parameter	Description
URL Filtering	Disable or activate this function.
Schedule	It is self-defined time period. Check **Disable** radio button to inactivate the URL Filtering function, or keep the URL Filtering as **Always on.** You may also specify a time schedule for your prioritization policy. For setup and detail, refer to **Time Schedule** section**.**
Keywords Filtering	Allows blocking by specific keywords within a particular URL rather than having to specify a complete URL (e.g. to block any image called "advertisement.gif"). When enabled, your specified keywords list will be checked to see if any keywords are present in URLs accessed to determine if the connection attempt should be blocked.
Domain Filtering	This function checks the domain name only, not the IP address, in URLs accessed against your list of domains to block or allow. If it is matched, the URL request will be sent (Trusted) or dropped (Forbidden). For this function to be activated, both **Enable** and **Disable all WEB traffic except for Trusted Domain** must be checked.
Restrict URL Features	This function enhances the restriction to your URL rules. **Block Java Applet:** This function can block Web content which includes the Java Applet. It is to prevent someone who wants to damage your system via standard HTTP. **Block surfing by IP address:** Preventing someone who uses the IP address as URL for skipping **Domain Filtering** function. Activate only if Domain Filtering is **Enable.**

Firewall Log
Firewall Log displays log information of any unexpected action with your firewall settings.
Check the **Enable** box to activate the logs.
Log information can be seen in the **Status – Event Log** after enabling.



Firewall

Firewall can be used to allow or deny traffic from passing through the DSL-G804V.

○ Add TCP/UDP Filter ○ Add Raw IP Filter ○ Intrusion Detection
○ URL Filter ● Firewall Log

Firewall Log

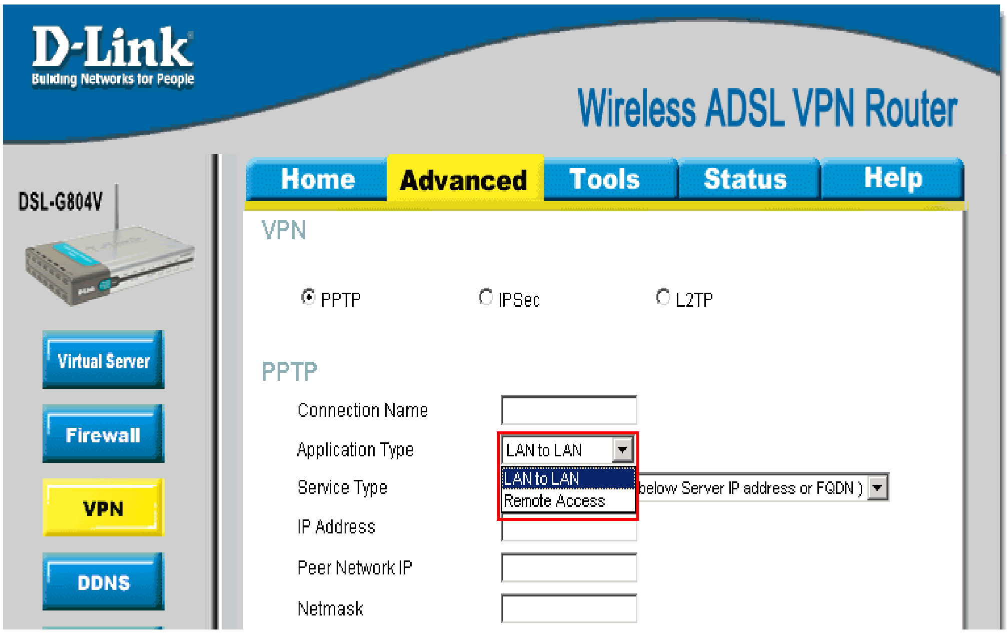
Filtering Log	○ Enable	● Disable
Intrusion Log	○ Enable	● Disable
URL Blocking Log	○ Enable	● Disable

Figure 4-9. Firewall – Firewall Log

VPN

Virtual Private Networks is a way to establish secured communication tunnels to an organization's network via the Internet. Each type of VPN has its form of encryption. In the router which supports three main types of VPN (Virtual Private Network), **PPTP**, **IPSec** and **L2TP.**

PPTP (Point-to-Point Tunneling Protocol)
There are two types of PPTP VPN supported: **Remote Access and LAN-to-LAN.**



VPN

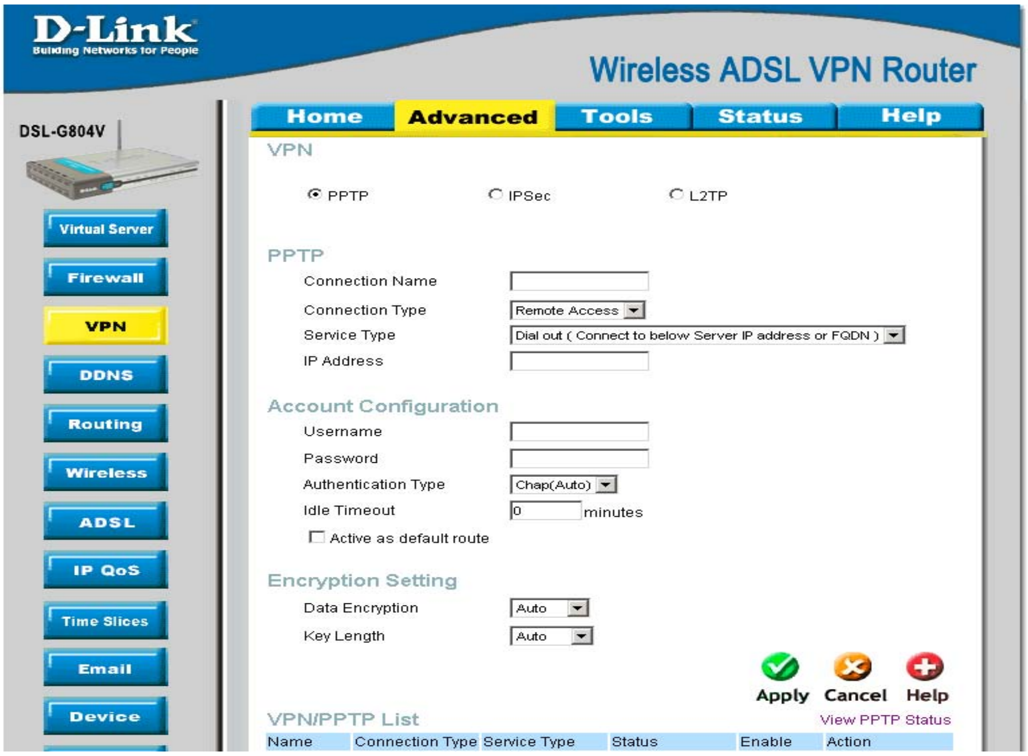
● PPTP ○ IPSec ○ L2TP

PPTP

Connection Name
Application Type: LAN to LAN
LAN to LAN
Remote Access
Service Type: below Server IP address or FQDN)
IP Address
Peer Network IP
Netmask

Figure 4-10. VPN – PPTP

PPTP – Remote Access



VPN

● PPTP ○ IPSec ○ L2TP

PPTP

Connection Name
Connection Type: Remote Access
Service Type: Dial out (Connect to below Server IP address or FQDN)
IP Address

Account Configuration

Username
Password
Authentication Type: Chap(Auto)
Idle Timeout: 0 minutes
□ Active as default route

Encryption Setting

Data Encryption: Auto
Key Length: Auto

VPN/PPTP List

View PPTP Status

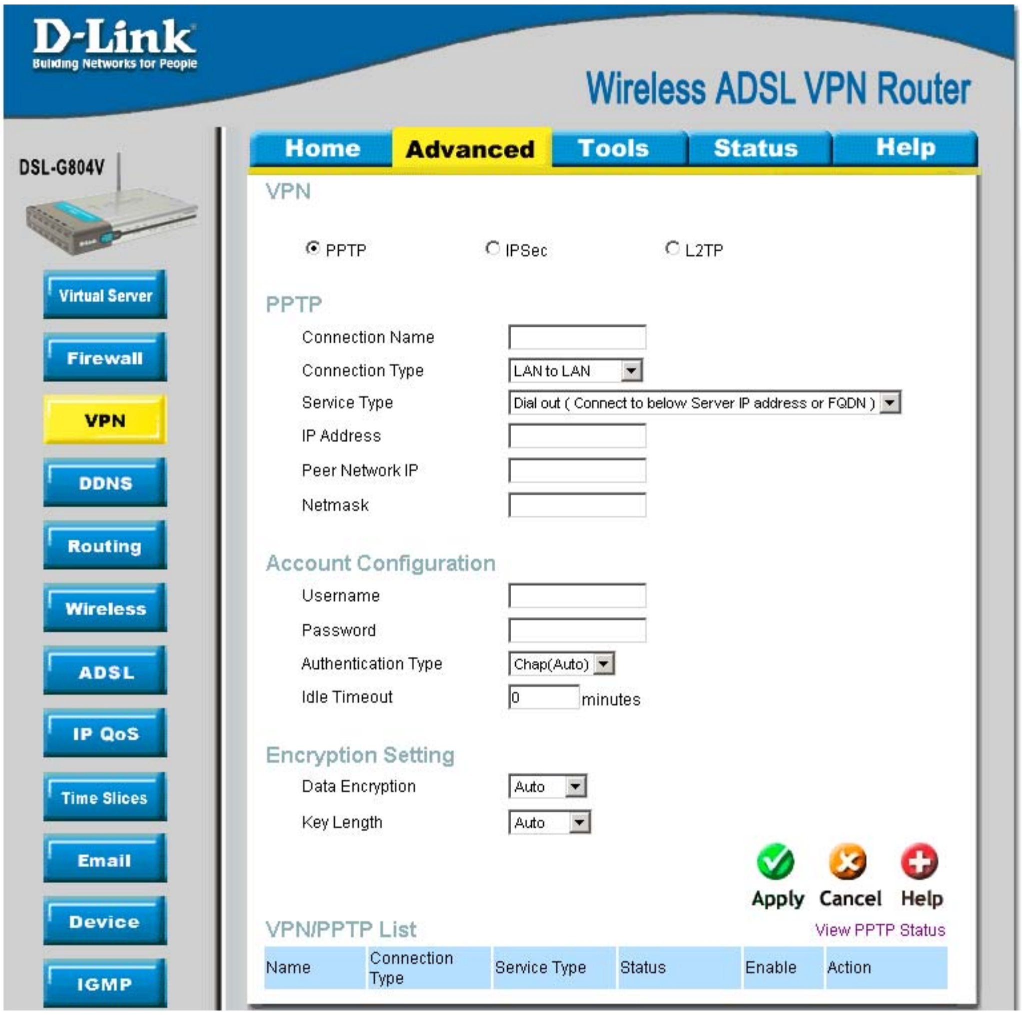
Name	Connection Type	Service Type	Status	Enable	Action

Figure 4-11. VPN – PPTP Remote Access

Parameter	Description
Connection Name	A user-de fined name for the connection (e.g. "connection to office").
Service Type	Check **Dial Out** if you want your router to operate as a client (connecting to a remote VPN server, e.g. your office server), check **Dial In** operates as a VPN server by assigning IP address to dial-in user.
IP Address	If uses **Dial Out** as a client to the remote server, enter **Server IP Address** of the remote server IP address. If uses **Dial In** as a server, enter a **Private IP Address Assigned to the Dial-in user**.
Account Configuration	
Username	If you are a Dial-Out user (client), enter the username provided by your Host. If you are a Dial-In user (server), enter your own username.
Password	If you are a Dial-Out user (client), enter the password provided by your Host. If you are a Dial-In user (server), enter your own password.
Authentication Type	Default is **Auto** if you want the router to determine the authentication type to use, or else manually specify CHAP (Challenge Handshake Authentication Protocol) or PAP (Password Authentication Protocol) if you know which type the server is using (when acting as a client), or else the authentication type you want clients connecting to you to use (when acting as a server). When using PAP, the password is sent unencrypted, whilst CHAP encrypts the password before sending, and also allows for challenges at different periods to ensure that the client has not been replaced by an intruder.
Idle Timeout (in minutes)	Auto-disconnect the VPN connection when there is no activity on the connection for a predetermined period of time. 0 means this connection is always on.
Activate as default route	Enables the default route.
Encryption Setting	
Data Encryption	Data sent over the VPN connection can be encrypted by an MPPE algorithm. Default is **Auto,** so that this setting is negotiated when establishing a connection, or else you can manually **Enable** or **Disable** encryption.
Key Length	The data can be encrypted by MPPE algorithm with 40 bits or 128 bits. Default is **Auto**, it is negotiated when establishing a connection. 128 bit keys provide stronger encryption than 40 bit keys.
View PPTP Status	PPTP Status shows details of your configured PPTP VPN connections.

Click **Apply** to save the setting**.**

PPTP – LAN-to-LAN



VPN

● PPTP ○ IPSec ○ L2TP

PPTP

Connection Name	
Connection Type	LAN to LAN
Service Type	Dial out (Connect to below Server IP address or FQDN)
IP Address	
Peer Network IP	
Netmask	

Account Configuration

Username	
Password	
Authentication Type	Chap(Auto)
Idle Timeout	0 minutes

Encryption Setting

Data Encryption	Auto
Key Length	Auto

VPN/PPTP List

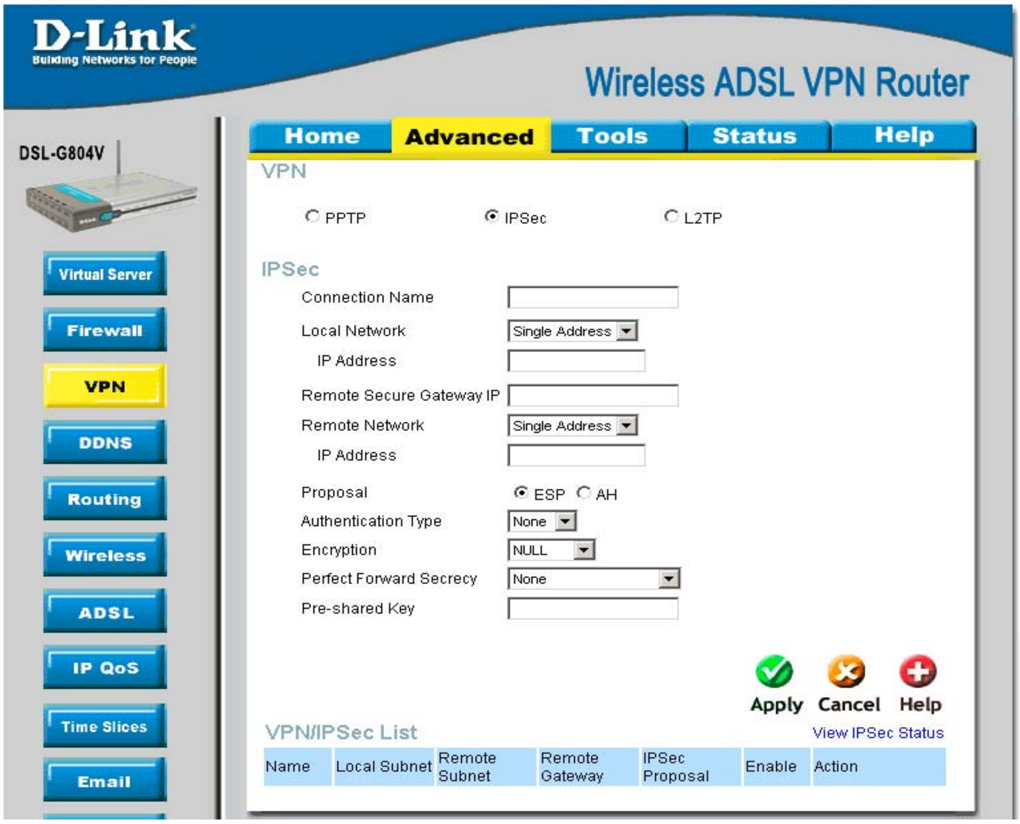
Name	Connection Type	Service Type	Status	Enable	Action

Figure 4-12. VPN – PPTP LAN to LAN

Parameter	Description
Connection Name	A user-defined name for the connection (e.g. "connection to office").
Service Type	Check **Dial Out** if you want your router to operate as a client (connecting to a remote VPN server, e.g. your office server), check **Dial In** operates as a VPN server by assigning IP address to dial-in user.
IP Address	If uses **Dial Out** as a client to the remote server, enter **Server IP Address** of the remote server IP address.
Peer Network	Enter Peer network IP address.
Net Mask	Enter the subnet mask of peer network based on the Peer Network IP setting. If uses **Dial In** as a server, enter a **Private IP Address Assigned to the Dial-in user**.
Account Configuration	
Username	If you are a Dial-Out user (client), enter the username provided by your Host. If you are a Dial-In user (server), enter your own username.
Password	If you are a Dial-Out user (client), enter the password provided by your Host. If you are a Dial-In user (server), enter your own password.
Authentication Type	Default is **Auto** if you want the router to determine the authentication type to use, or else manually specify CHAP (Challenge Handshake Authentication Protocol) or PAP (Password Authentication Protocol) if you know which type the server is using (when acting as a client), or else the authentication type you want clients connecting to you to use (when acting as a server). When using PAP, the password is sent unencrypted, whilst CHAP encrypts the password before sending, and also allows for challenges at different periods to ensure that the client has not been replaced by an intruder.
Idle Timeout (in minutes)	Auto-disconnect the VPN connection when there is no activity on the connection for a predetermined period of time. 0 means this connection is always on.
Encryption Setting	
Data Encryption	Data sent over the VPN connection can be encrypted by an MPPE algorithm. Default is **Auto,** so that this setting is negotiated when establishing a connection, or else you can manually **Enable** or **Disable** encryption.
Key Length	The data can be encrypted by MPPE algorithm with 40 bits or 128 bits. Default is **Auto**, it is negotiated when establishing a connection. 128 bit keys provide stronger encryption than 40 bit keys.
View PPTP Status	PPTP Status shows details of your configured PPTP VPN connections.

Click **Apply** to save the setting**.**

IPSec (IP Security Protocol)



VPN

○ PPTP ● IPSec ○ L2TP

IPSec

Connection Name	
Local Network	Single Address
IP Address	
Remote Secure Gateway IP	
Remote Network	Single Address
IP Address	
Proposal	● ESP ○ AH
Authentication Type	None
Encryption	NULL
Perfect Forward Secrecy	None
Pre-shared Key	

VPN/IPSec List

Name	Local Subnet	Remote Subnet	Remote Gateway	IPSec Proposal	Enable	Action

Figure 4-13. VPN – IPSec

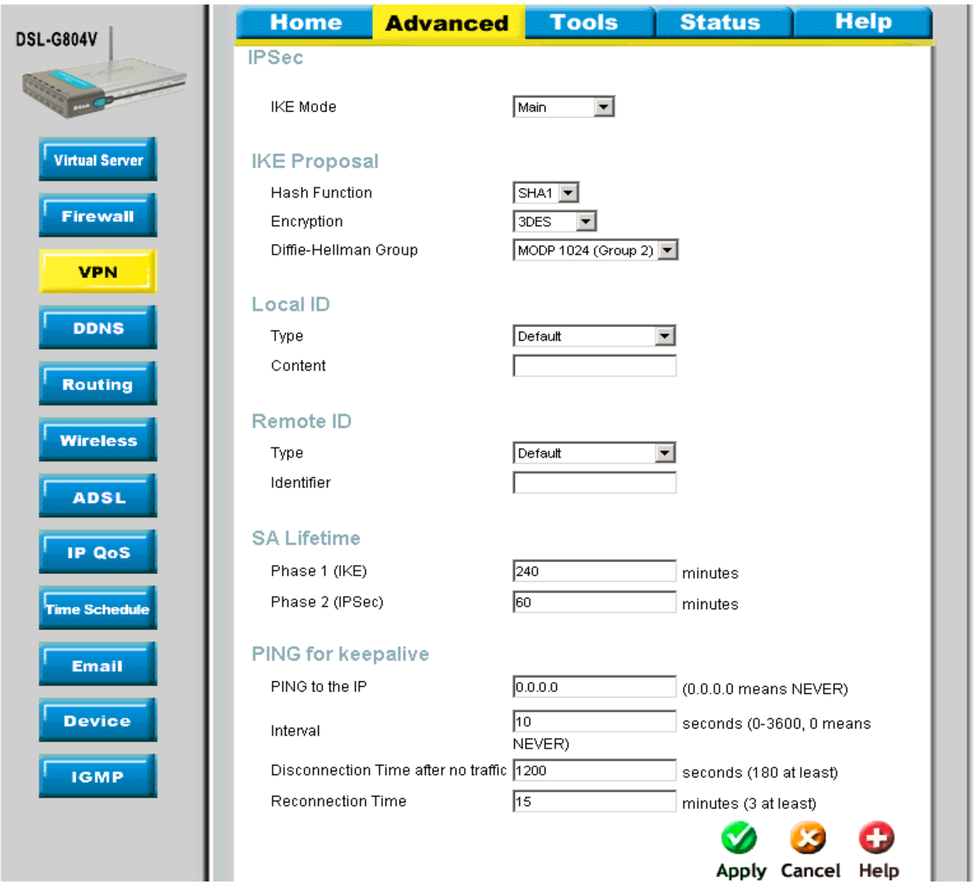
Parameter	Description
Connection Name	A user-defined name for the connection. No digital number is allowed.
Local Network	Set the Single address, subnet or IP range of the local network. **IP Address:** The IP address of the local host. **Netmask:** The subnet of the local network. For example, IP: 192.168.0.0 with netmask 255.255.255.0 specifies one class C subnet starting from 192.168.0.1 (i.e. 192.168.1.1 through to 192.168.1.254) **End IP:** The IP address range of the local network. For example, IP: 192.168.0.1, end IP: 192.168.0.10
Remote Secure Gateway IP	The IP address or hostname of the remote VPN device that is connected and establishes a VPN tunnel.
Remote Network	Set the Single address, subnet or IP range of the remote network. **IP Address:** The IP address of the remote host. **Netmask:** The subnet of the remote network. For example, IP: 192.168.1.0 with netmask 255.255.255.0 specifies one class C subnet starting from 192.168.1.1 (i.e. 192.168.1.1 through to 192.168.1.254). **End IP:** The IP address range of the remote network. For example, IP: 192.168.1.1, end IP: 192.168.1.10.
Proposal	Select the IPSec security method. There are two methods of checking the authentication information, AH (authentication header) and ESP (Encapsulating Security Payload). Use ESP for greater security so that data will be encrypted and authenticated. Using AH data will be authenticated but not encrypted.

Parameter	Description
Authentication Type	Authentication establishes the integrity of the datagram and ensures it is not tampered with in transmit. There are three options, Message Digest 5 (**MD5**), Secure Hash Algorithm (**SHA1**) or **NONE**. SHA-1 is more resistant to brute-force attacks than MD5, however it is slower.
Encryption	Select the encryption method from the pull-down menu. There are several options, **DES**, **3DES**, **AES (128, 192 and 256)** and **NULL**. NULL means it is a tunnel only with no encryption. 3DES and AES are more powerful but increase latency.
Perfect Forward Secrecy	Choose whether to enable PFS using Diffie-Hellman public-key cryptography to change encryption keys during the second phase of VPN negotiation. This function will provide better security, but extends the VPN negotiation time. Diffie-Hellman is a public-key cryptography protocol that allows two parties to establish a shared secret over an unsecured communication channel (i.e. over the Internet). There are three modes, MODP 768-bit, MODP 1024-bit and MODP 1536-bit. MODP stands for Modular Exponentiation Groups.
Pre-shared Key	This is for the Internet Key Exchange (IKE) protocol, a string from 4 to 128 characters. Both sides should use the same key. IKE is used to establish a shared security policy and authenticated keys for services (such as IPSec) that require a key. Before any IPSec traffic can be passed, each router must be able to verify the identity of its peer. This can be done by manually entering the pre-shared key into both sides (router or hosts).
View IPSec Status	IPSec Status shows details of your configured IPSec VPN connections.

Click **Apply** to save the setting**.**

IPSec - Advanced Option (In the VPN/IPSec List, select a IPSec rule then click the **Edit** to modify)

This function is only available after completed creating an IPSec account. Click **Advanced Option** to change the following settings:



IPSec

IKE Mode: Main

IKE Proposal

Hash Function: SHA1

Encryption: 3DES

Diffie-Hellman Group: MODP 1024 (Group 2)

Local ID

Type: Default

Content:

Remote ID

Type: Default

Identifier:

SA Lifetime

Phase 1 (IKE): 240 minutes

Phase 2 (IPSec): 60 minutes

PING for keepalive

PING to the IP: 0.0.0.0 (0.0.0.0 means NEVER)

Interval: 10 seconds (0-3600, 0 means NEVER)

Disconnection Time after no traffic: 1200 seconds (180 at least)

Reconnection Time: 15 minutes (3 at least)

Figure 4-14. VPN – IPSec Advanced Option

Parameter	Description
IKE Mode	Select IKE (Internet Key Exchange) mode to Main mode or Aggressive mode. IKE provides secured key generation and key management.
IKE Proposal	
Hash Function	It is a Message Digest algorithm which coverts any length of a message into a unique set of bits. It is widely used MD5 (Message Digest) and SHA-1 (Secure Hash Algorithm) algorithms.
Encryption	Select the encryption method from the pull-down menu. There are several options, **DES**, **3DES** and **AES (128, 192 and 256)**. 3DES and AES are more powerful but increase latency.
Diffie-Hellman Group	It is a public-key cryptography protocol that allows two parties to establish a shared secret over an unsecured communication channel (i.e. over the Internet). There are three modes, MODP 768-bit, MODP 1024-bit and MODP 1536-bit. MODP stands for Modular Exponentiation Groups.
Local ID	
Type	Specify Local ID type.
Content	Input Local ID's information, either email or domain name.

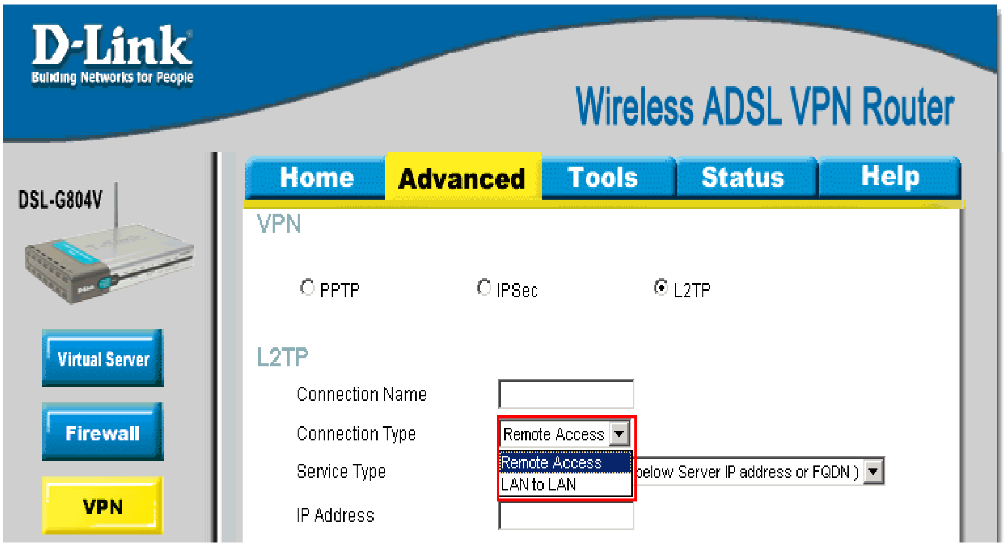
Parameter	Description
Remote ID	
Type	Specify Remote ID type.
Content	Input remote ID's information, either email or domain name.
SA Lifetime	
Phase 1 (IKE)	To issue an initial connection request for a new VPN tunnel. The range can be from 5 to 15,000 minutes.
Phase 2 (IPSec)	To negotiate and establish secure authentication. The range can be from 5 to 15,000 minutes.
Note	*A short SA time increases security by forcing the two parties to update the keys. However, every time the VPN tunnel re-negotiates, access through the tunnel will be temporarily disconnected.*
PING for keepalive	It is used to detect IPSec tunnel connection failure. Connection failure is defined as abort or in NO response state. In such event Ping to Keepalive takes proper action to ensure the connection quality of IPSec.
PING to the IP	It is able to IP Ping the remote PC with the specified IP address and alert when the connection fails. Once alter message is received, Router will drop this tunnel connection. Re-establish of this connection is required. 0.0.0.0 which disables the function.
Interval	This sets the time interval between **Pings to the IP** function to monitor the connection status. Time interval can be set from 0 to 3600 second, 0 second disables the function.

Ping to the IP	**Internal (sec)**	***Ping to the IP* Action**
0.0.0.0	0	No
0.0.0.0	2000	No
xxx.xxx.xxx.xxx (A valid IP Address)	0	No
xxx.xxx.xxx.xxx(A valid IP Address)	2000	Yes, activate it in every 2000 second.

Disconnection Time after no traffic	It is the NO Response time clock. When no traffic stage time is beyond the Disconnection time set, Router will automatically halt the tunnel connection and re-establish it base on the **Reconnection Time** set. **180 seconds** is minimum time interval for this function.
Reconnection Time	It is the reconnecting time interval after NO TRAFFIC is initiated. Default setting is **15 minutes**; **3 minutes** is minimum time interval for this function.

L2TP (Layer2 Tunneling Protocol)

There are two types of L2TP VPN supported: **Remote Access and LAN-to-LAN.**



VPN

○ PPTP ○ IPSec ● L2TP

L2TP

Connection Name

Connection Type: Remote Access ▾

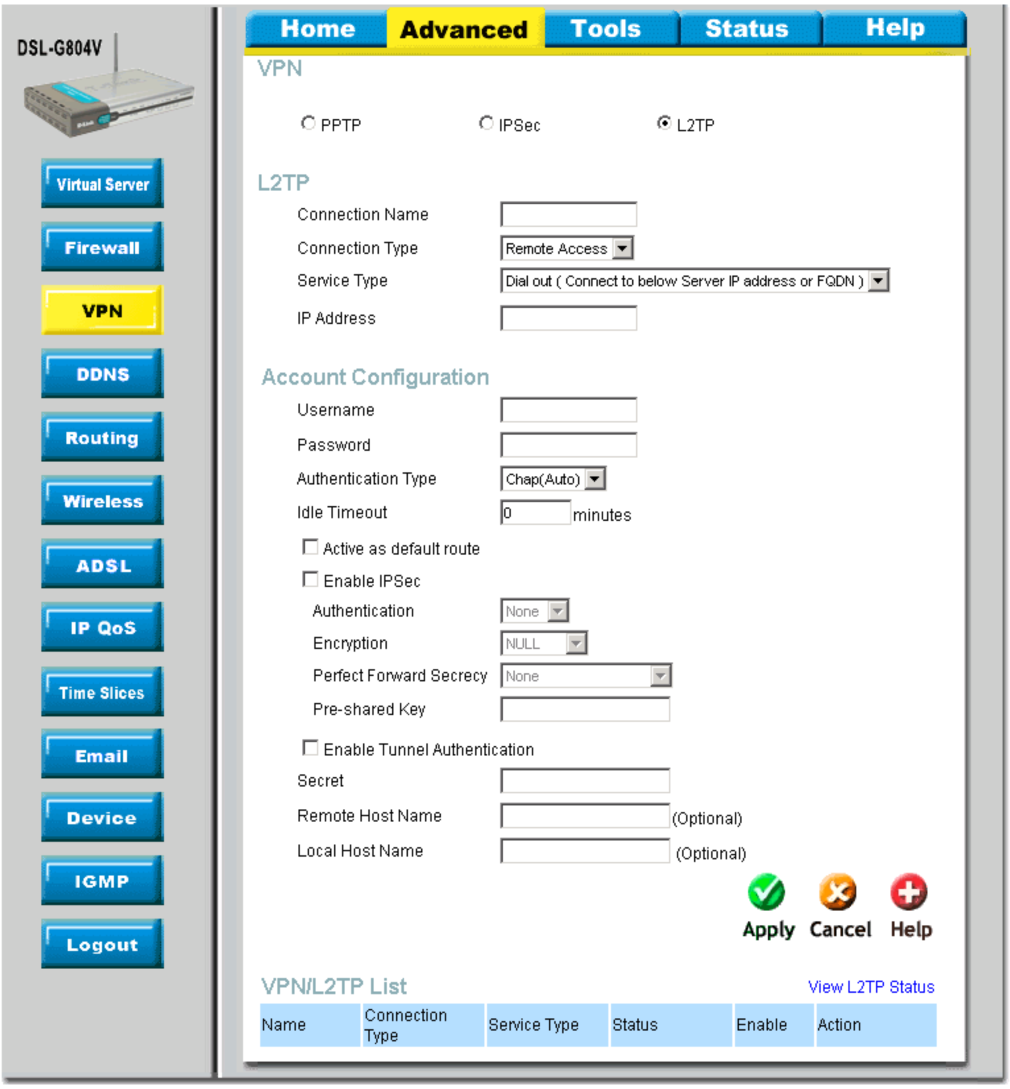
Remote Access
LAN to LAN

Service Type: below Server IP address or FQDN) ▾

IP Address

Figure 4-15. VPN – L2TP

L2TP – Remote Access



VPN

○ PPTP ○ IPSec ● L2TP

L2TP

Connection Name

Connection Type: Remote Access

Service Type: Dial out (Connect to below Server IP address or FQDN)

IP Address

Account Configuration

Username

Password

Authentication Type: Chap(Auto)

Idle Timeout: 0 minutes

□ Active as default route

□ Enable IPSec

Authentication: None

Encryption: NULL

Perfect Forward Secrecy: None

Pre-shared Key

□ Enable Tunnel Authentication

Secret

Remote Host Name (Optional)

Local Host Name (Optional)

VPN/L2TP List

View L2TP Status

Name	Connection Type	Service Type	Status	Enable	Action

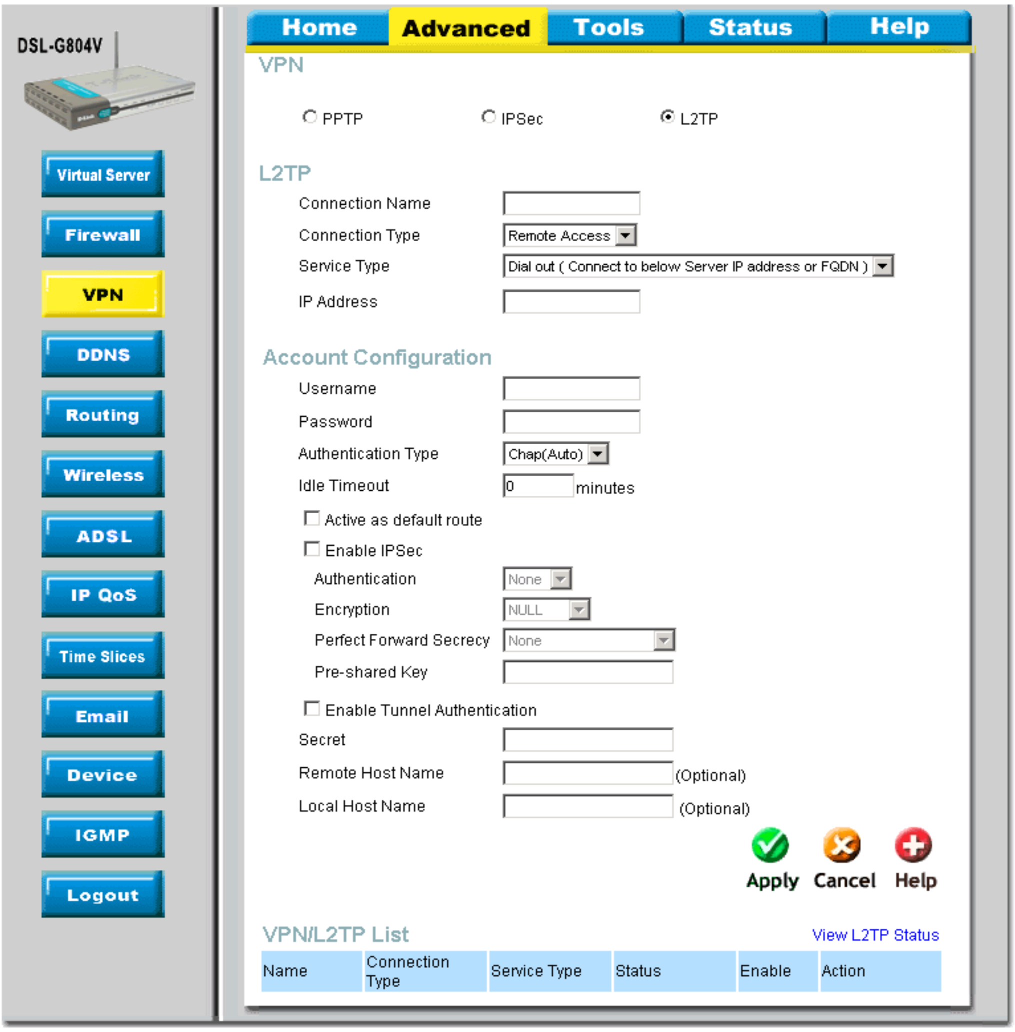
Figure 4-16. VPN – L2TP Remote Access

Parameter	Description
Connection Name	A user-defined name for the connection.
Service Type	Check **Dial Out** if you want your router to operate as a client (connecting to a remote VPN server, e.g. your office server), check **Dial In** operates as a VPN server by assigning IP address to dial-in user.
IP Address	If uses **Dial Out** as a client to the remote server, enter **Server IP Address** of the remote server IP address. If uses **Dial In** as a server, enter a **Private IP Address Assigned to the Dial-in user**.
Account Configuration	
Username	If you are a Dial-Out user (client), enter the username provided by your Host. If you are a Dial-In user (server), enter your own username.
Password	If you are a Dial-Out user (client), enter the password provided by your Host. If you are a Dial-In user (server), enter your own password.

Parameter	Description
Authentication Type	Default is **Auto** if you want the router to determine the authentication type to use, or else manually specify CHAP (Challenge Handshake Authentication Protocol) or PAP (Password Authentication Protocol) if you know which type the server is using (when acting as a client), or else the authentication type you want clients connecting to you to use (when acting as a server). When using PAP, the password is sent unencrypted, whilst CHAP encrypts the password before sending, and also allows for challenges at different periods to ensure that the client has not been replaced by an intruder.
Idle Timeout (in minutes)	Auto-disconnect the VPN connection when there is no activity on the connection for a predetermined period of time. 0 means this connection is always on.
Activate as default route	Enables the default route.
Enable IPSec	Enable for enhancing your LT2P VPN security. Check the box to active these functions.
When Enable IPSec is activated	
Authentication	Authentication establishes the integrity of the datagram and ensures it is not tampered with in transmit. There are three options, Message Digest 5 (**MD5**), Secure Hash Algorithm (**SHA1**) or **NONE**. SHA-1 is more resistant to brute-force attacks than MD5, however it is slower.
Encryption	Select the encryption method from the pull-down menu. There are several options, **DES**, **3DES**, **AES(128, 192 and 256)** and **NULL**. NULL means it is a tunnel only with no encryption. 3DES and AES are more powerful but increase latency.
Perfect Forward Secrecy	Choose whether to enable PFS using Diffie-Hellman public-key cryptography to change encryption keys during the second phase of VPN negotiation. This function will provide better security, but extends the VPN negotiation time. Diffie-Hellman is a public-key cryptography protocol that allows two parties to establish a shared secret over an unsecured communication channel (i.e. over the Internet). There are three modes, MODP 768-bit, MODP 1024-bit and MODP 1536-bit. MODP stands for Modular Exponentiation Groups.
Pre-shared Key	This is for the Internet Key Exchange (IKE) protocol, a string from 4 to 128 characters. Both sides should use the same key. IKE is used to establish a shared security policy and authenticated keys for services (such as IPSec) that require a key. Before any IPSec traffic can be passed, each router must be able to verify the identity of its peer. This can be done by manually entering the pre-shared key into both sides (router or hosts).
When Enable Tunnel Authentication is activated	
Secret	The secure password length should be 16 characters which may include numbers and characters.
Remote Host Name	(Option) Enter hostname of remote VPN device. It is a tunnel identifier from the Remote VPN device matches with the Remote hostname provided. If remote hostname matches, tunnel will be connected; otherwise, it will be dropped. **Cautious:** This is only when the router performs as a VPN server. This option should be used by advanced users only.
Local Host Name	(Option) Enter hostname of Local VPN device that is connected / establishes a VPN tunnel. As default, Router's default Hostname is **home.gateway.**
View L2TP Status	L2TP Status shows details of your configured L2TP VPN connections.

Click **Apply** to save the setting**.**

L2TP – LAN-to-LAN



VPN

○ PPTP ○ IPSec ● L2TP

L2TP

Connection Name	
Connection Type	Remote Access
Service Type	Dial out (Connect to below Server IP address or FQDN)
IP Address	

Account Configuration

Username	
Password	
Authentication Type	Chap(Auto)
Idle Timeout	0 minutes

□ Active as default route

□ Enable IPSec

Authentication	None
Encryption	NULL
Perfect Forward Secrecy	None
Pre-shared Key	

□ Enable Tunnel Authentication

Secret	
Remote Host Name	(Optional)
Local Host Name	(Optional)

VPN/L2TP List — View L2TP Status

Name	Connection Type	Service Type	Status	Enable	Action

Figure 4-17. VPN – L2TP LAN to LAN

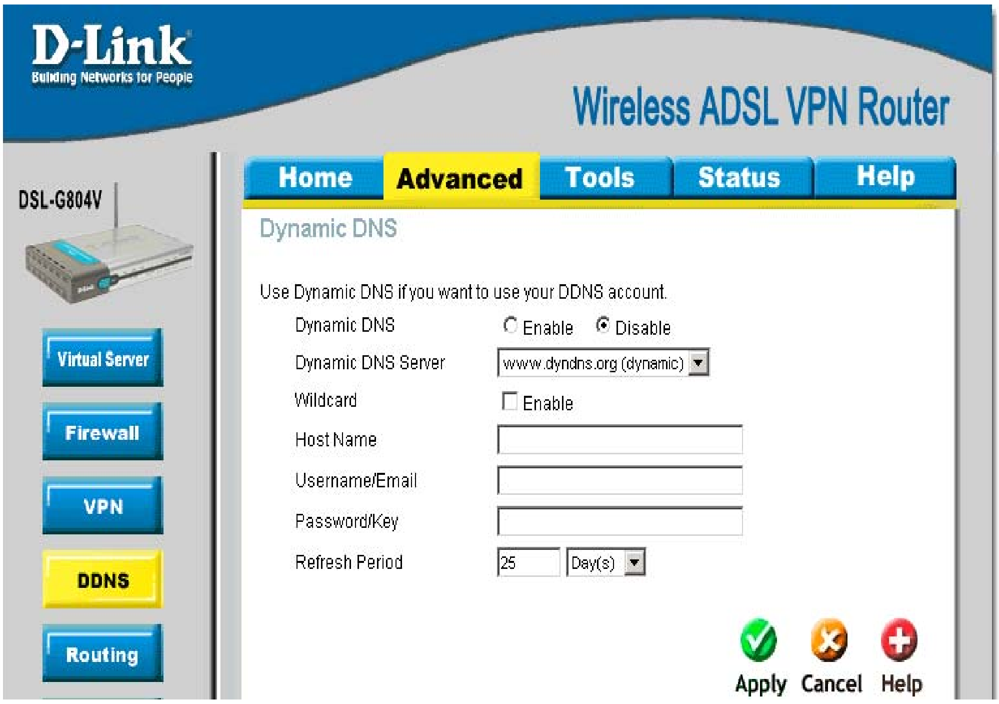
Parameter	Description
Connection Name	A user-defined name for the connection (e.g. "connection to office").
Service Type	Check **Dial Out** if you want your router to operate as a client (connecting to a remote VPN server, e.g. your office server), check **Dial In** operates as a VPN server by assigning IP address to dial-in user.
IP Address	If uses **Dial Out** as a client to the remote server, enter **Server IP Address** of the remote server IP address. If uses **Dial In** as a server, enter a **Private IP Address Assigned to the Dial-in user**.
Peer Network	Enter Peer network IP address.
Net Mask	Enter the subnet mask of peer network based on the Peer Network IP setting.
Account Configuration	
Username	If you are a Dial-Out user (client), enter the username provided by your Host. If you are a Dial-In user (server), enter your own username.
Password	If you are a Dial-Out user (client), enter the password provided by your Host. If you are a Dial-In user (server), enter your own password.

Parameter	Description
Authentication Type	Default is **Auto** if you want the router to determine the authentication type to use, or else manually specify CHAP (Challenge Handshake Authentication Protocol) or PAP (Password Authentication Protocol) if you know which type the server is using (when acting as a client), or else the authentication type you want clients connecting to you to use (when acting as a server). When using PAP, the password is sent unencrypted, whilst CHAP encrypts the password before sending, and also allows for challenges at different periods to ensure that the client has not been replaced by an intruder.
Idle Timeout (in minutes)	Auto-disconnect the VPN connection when there is no activity on the connection for a predetermined period of time. 0 means this connection is always on.
Enable IPSec	Enable for enhancing your LT2P VPN security. Check the box to active these functions.
When Enable IPSec is activated	
Authentication	Authentication establishes the integrity of the datagram and ensures it is not tampered with in transmit. There are three options, Message Digest 5 (**MD5**), Secure Hash Algorithm (**SHA1**) or **NONE**. SHA-1 is more resistant to brute-force attacks than MD5, however it is slower.
Encryption	Select the encryption method from the pull-down menu. There are several options, **DES**, **3DES**, **AES(128, 192 and 256)** and **NULL**. NULL means it is a tunnel only with no encryption. 3DES and AES are more powerful but increase latency.
Perfect Forward Secrecy	Choose whether to enable PFS using Diffie-Hellman public-key cryptography to change encryption keys during the second phase of VPN negotiation. This function will provide better security, but extends the VPN negotiation time. Diffie-Hellman is a public-key cryptography protocol that allows two parties to establish a shared secret over an unsecured communication channel (i.e. over the Internet). There are three modes, MODP 768-bit, MODP 1024-bit and MODP 1536-bit. MODP stands for Modular Exponentiation Groups.
Pre-shared Key	This is for the Internet Key Exchange (IKE) protocol, a string from 4 to 128 characters. Both sides should use the same key. IKE is used to establish a shared security policy and authenticated keys for services (such as IPSec) that require a key. Before any IPSec traffic can be passed, each router must be able to verify the identity of its peer. This can be done by manually entering the pre-shared key into both sides (router or hosts).
When Enable Tunnel Authentication is activated	
Secret	The secure password length should be 16 characters which may include numbers and characters.
Remote Host Name	(Option) Enter hostname of remote VPN device. It is a tunnel identifier from the Remote VPN device matches with the Remote hostname provided. If remote hostname matches, tunnel will be connected; otherwise, it will be dropped. **Cautious:** This is only when the router performs as a VPN server. This option should be used by advanced users only.
Local Host Name	(Option) Enter hostname of Local VPN device that is connected / establishes a VPN tunnel. As default, Router's default Hostname is **home.gateway.**
View L2TP Status	L2TP Status shows details of your configured L2TP VPN connections.

Click **Apply** to save the setting**.**

DDNS (Dynamic DNS)

The Dynamic DNS function allows you to alias a dynamic IP address to a static hostname, allowing users whose ISP does not assign them a static IP address to use a domain name. This is especially useful for hosting servers via your ADSL connection, so that anyone wishing to connect to you may use your domain name, rather than having to use your dynamic IP address, which changes from time to time. This dynamic IP address is the WAN IP address of the router, which is assigned to you by your ISP.



Dynamic DNS

Use Dynamic DNS if you want to use your DDNS account.

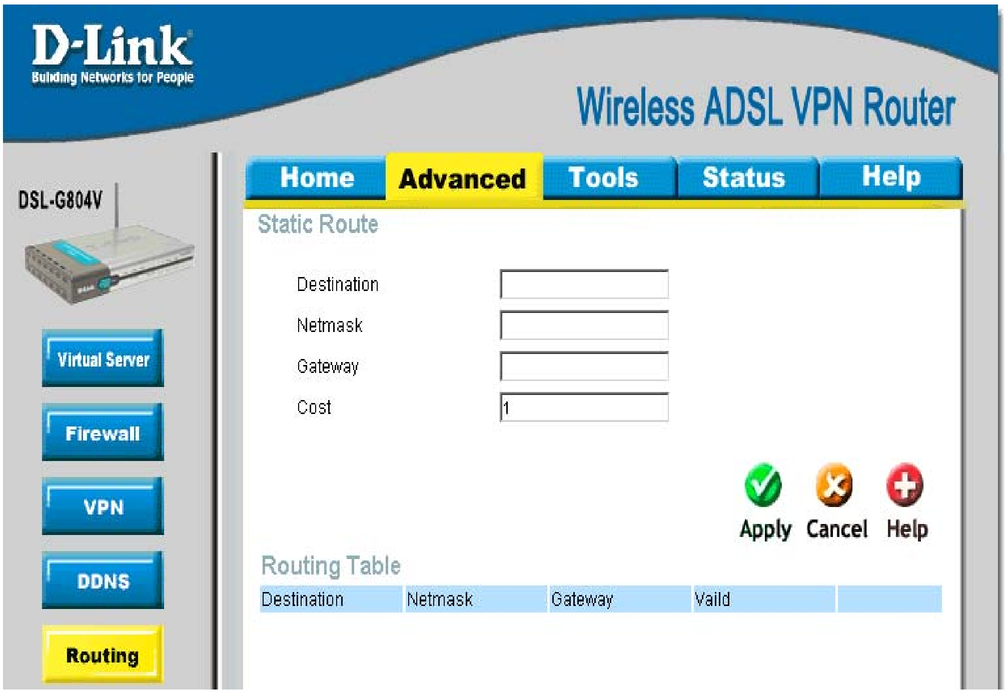
Dynamic DNS	○ Enable ● Disable
Dynamic DNS Server	www.dyndns.org (dynamic)
Wildcard	□ Enable
Host Name	
Username/Email	
Password/Key	
Refresh Period	25 Day(s)

Figure 4-18. DDNS

Parameter	Description
Dynamic DNS	Disable or activate this feature.
Dynamic DNS Server	Select the DDNS service you have established an account with.
Wildcard	When wildcard is enabled, a multiple matching to the Host Name will be point to the same IP. **Example:** You have a host **abce.no-ip.com.** When the wildcard enabled, **xxxxx.abce.no-ip.com** would point to the same IP address as your **abce.no-ip.com.**
Host Name, Username/Email and Password/Key	Enter your registered domain name and your username and password for this service.
Reflash Period	Set the time period between updates, for the Router to exchange information with the DDNS server. In addition to updating periodically as per your settings, the router will perform an update when your dynamic IP address changes.

Routing (Static Route)

Manually adds a static route to router routing table.



Static Route

Destination

Netmask

Gateway

Cost 1

Routing Table

Destination	Netmask	Gateway	Vaild	

Figure 4-19. Routing (Static Route)

Parameter	Description
Destination	This is the destination subnet IP address.
Netmask	Subnet mask of the destination IP addresses based on above destination subnet IP.
Gateway	This is the gateway IP address to which packets are to be forwarded.
Interface	Select the interface through which packets are to be forwarded.
Cost	This is the same meaning as Hop. This should usually be left at 1.

Wireless

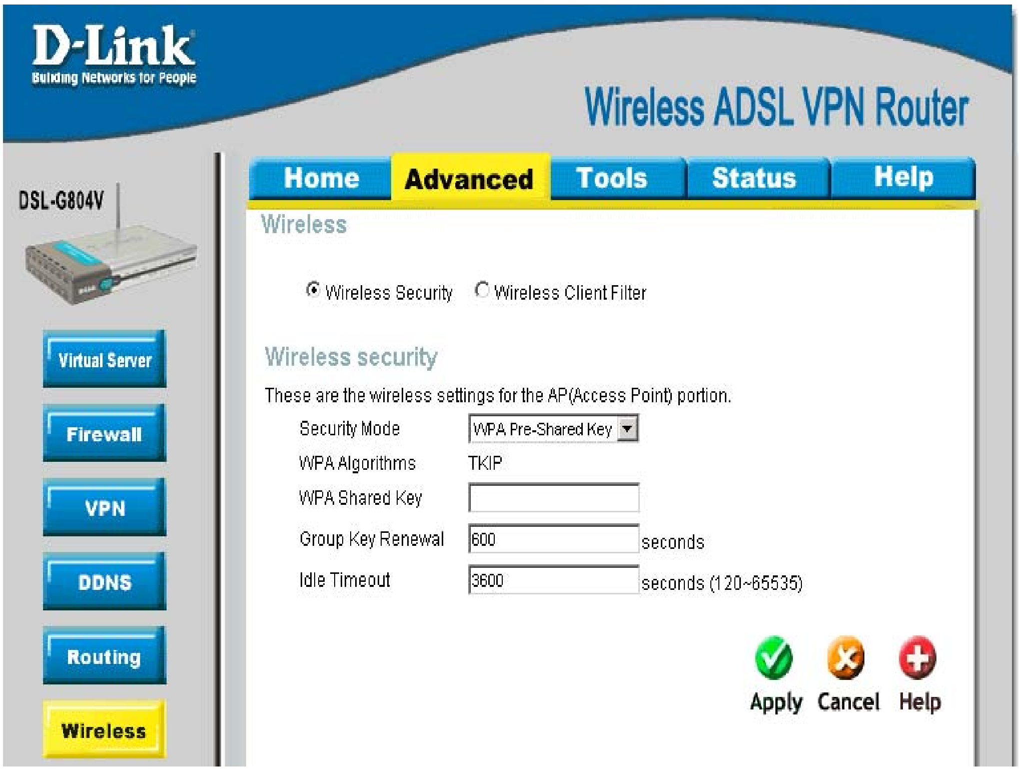
Wireless Security, Client Filter and Distribution System parameter setup.

Wireless Security

The default mode of your wireless (access point) security is inactivated. You may choose either WPA or WEP to protect your wireless network.

Wireless Security – WPA Pre-Shared Key

WPA Algorithms utilize the TKIP (Temporal Key Integrity Protocol), a stronger encryption method and incorporates Message Code (MIC), to protect against hackers and security your wireless network.



Wireless

● Wireless Security ○ Wireless Client Filter

Wireless security

These are the wireless settings for the AP(Access Point) portion.

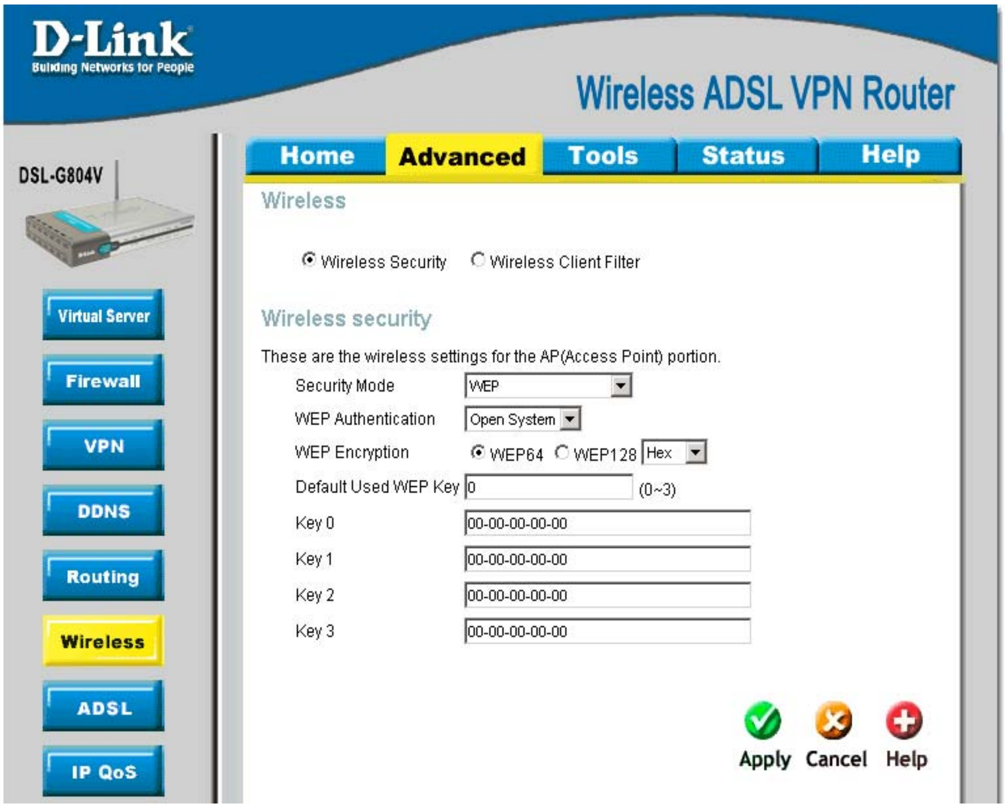
Security Mode	WPA Pre-Shared Key	
WPA Algorithms	TKIP	
WPA Shared Key		
Group Key Renewal	600	seconds
Idle Timeout	3600	seconds (120~65535)

Figure 4-20. Wireless Security – WPA Pre-Shared Key

Parameter	Description
WPA Shared Key	The key for network authentication. The input format is in character style and key size should be in the range between 8 and 63 characters.
Group Key Renewal (in seconds)	The period of renewal time for changing the security key automatically between wireless client and Access Point (AP)
Idle Timeout (in seconds)	A Timeout value base on the case of no data traffic is send or received. If Router detects no traffic in the wireless, it will start timing the clock and drop the session as it reaches to the defined timeout value. New session will be re-established after the old session. Minimum value is 120 seconds to Maximum 65535 seconds.

Wireless Security – WEP

A WEP encryption algorithm is defined by a set of respective *Key* and *Key String* for the wireless network.



Wireless

● Wireless Security ○ Wireless Client Filter

Wireless security

These are the wireless settings for the AP(Access Point) portion.

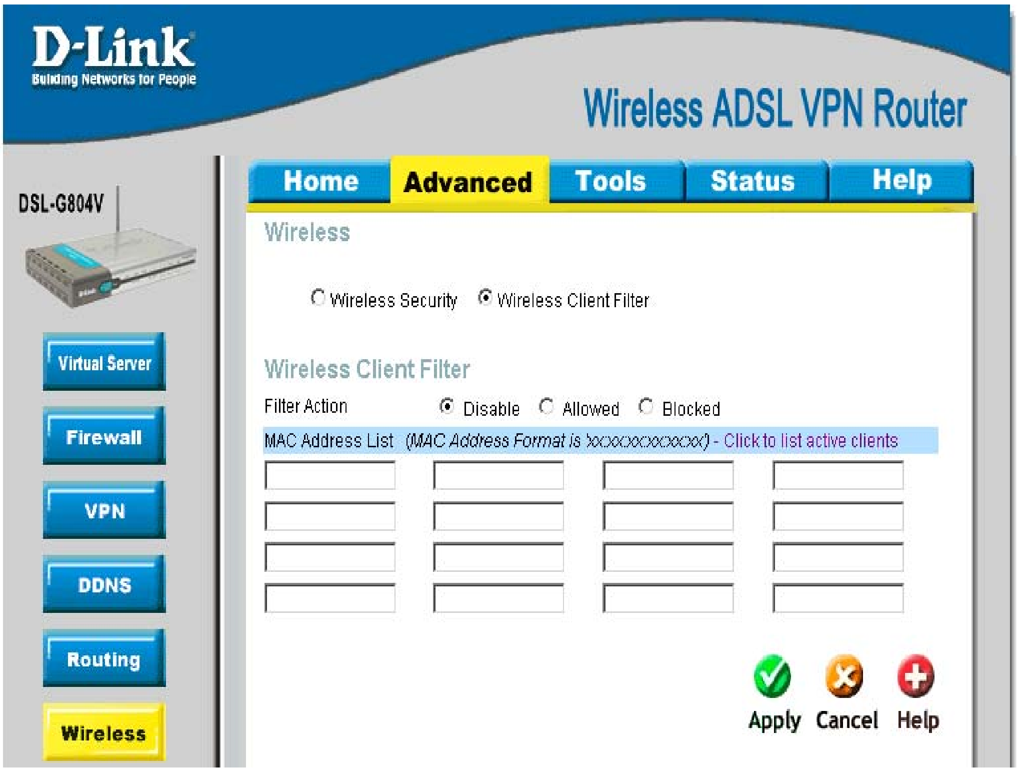
Security Mode: WEP
WEP Authentication: Open System
WEP Encryption: ● WEP64 ○ WEP128 Hex
Default Used WEP Key: 0 (0~3)
Key 0: 00-00-00-00-00
Key 1: 00-00-00-00-00
Key 2: 00-00-00-00-00
Key 3: 00-00-00-00-00

Figure 4-21. Wireless Security – WEP

Parameter	Description
WEP Authentication	Three types of authentication are available, **Open System, Shared Key** and **Open System/ShareKey (Both).** **Open System:** Authentication is a void authentication; it is easy to use. As long as the wireless client uses the same WEP key will be able to communicate with router's Access Point. The AP will remain visible to all devices on the network. **Share Key:** It is more secure than the Open System. Wireless client must use the same authentication and the Web Key to be able to communicate with router's Access Point. **Open System / Share Key (Both):** With this setting both open and share key are employed. Wireless client may have selected open or share key setting and still can get access to the Access point, only if correct WEP Key is presented.
WEP Encryption	To prevent unauthorized wireless stations from accessing data transmitted over the network, the router offers highly secure data encryption, known as WEP. If you require high security for transmissions, there are two alternatives to select from: **WEP 64 and WEP 128**. WEP 128 will offer increased security over WEP 64.
Default Used WEP Key (0-3)	Enter the key to encrypt wireless data. To allow encrypted data transmission, the WEP Encryption Key values on all wireless stations must be the same as the router. There are four keys for your selection. The input format is in HEX style, 5 and 13 HEX codes are required for WEP64 and WEP128 respectively, the separator is "-". For example, using WEP64, 11-22-33-44-55 is a valid key, whilst 1122334455 is invalid.

Wireless Client (MAC) Filter

The MAC Address supports up to 16 wireless network machines and helps you to manage your network control to accept traffic from specific authorized machines or to restrict unwanted machine(s) to access your Wireless LAN.



Wireless

○ Wireless Security ● Wireless Client Filter

Wireless Client Filter

Filter Action ● Disable ○ Allowed ○ Blocked

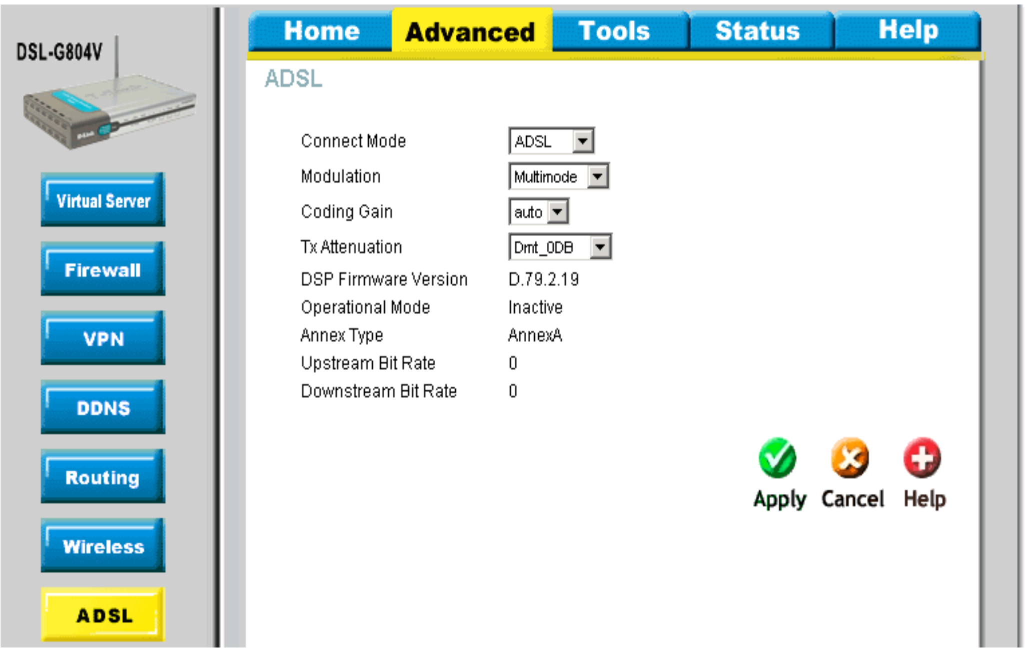
MAC Address List (*MAC Address Format is xxxxxxxxxxxx*) - Click to list active clients

Figure 4-22. Wireless Client (MAC) Filter

Parameter	Description
Filter Action	Select an appreciated filter action, Disable, Allowed (Whitelist), and Blocked (Blacklist): **Disabled:** This inactivates the Wireless Client Filter function. **Allowed (White List):** This authorizes specific device accessing your wireless by insert the wireless AP MAC Address in the space provided. Make sure your wireless AP MAC is listed. **Blocked (Blacklist):** check to prevent unwanted device accessing your wireless by insert the wireless AP MAC Address in the space provided. Make sure your wireless AP MAC is NOT listed. **Click to list active clients:** Associated Wireless Clients displays a list of individual Wireless AP MAC address which connecting to the router. You can easily check the box next to the IP address to be blocked or allowed. Then **Apply** to insert to the Wireless Client Filter table. The maximum Wireless client is 16.

ADSL

This is the ADSL parameter adjustment and information section. The parameter is already being pre-defined and not necessary to reconfigure if you do not understand this feature.



Connect Mode: ADSL
Modulation: Multimode
Coding Gain: auto
Tx Attenuation: Dmt_0DB
DSP Firmware Version: D.79.2.19
Operational Mode: Inactive
Annex Type: AnnexA
Upstream Bit Rate: 0
Downstream Bit Rate: 0

Figure 4-23. ADSL

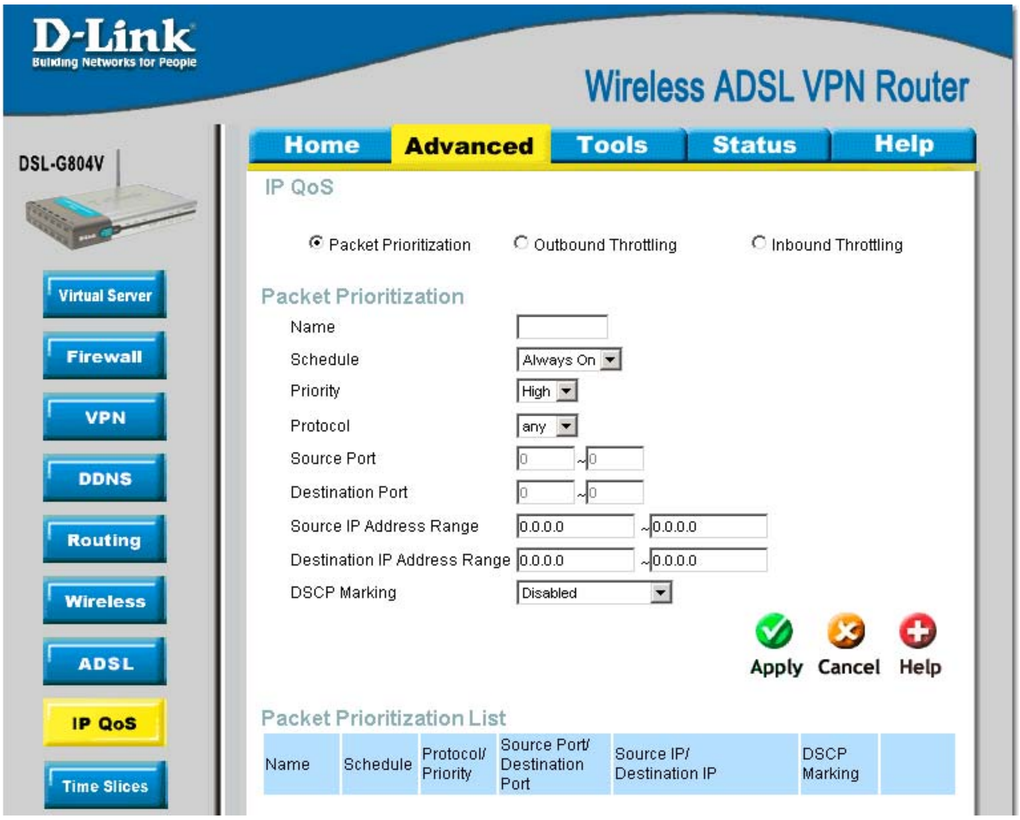
Parameter	Description
Connect Mode	Connection line mode **ADSL/ADSL2/ADSL2+**. When you select ADSL2, the device will try to use ADSL2 mode to negotiate with DSLAM; if failed, will auto-fallback to try ADSL mode. Similar auto-fallback behavior when select ADSL2+ mode.
Modulation	For ADSL connection, this mode will automatically detect your ADSL line code, G.dmt, G.lite, and T1.413. But in some area, multimode cannot detect the ADSL line code well. If it is the case, please adjust the ADSL line code to G.dmt or T1.413 first. If it still fails, please try the other values such as ALCTL, ADI, etc. For ADSL2 connection, this mode automatically detects your line code to G.DMT.Bis.
Coding Gain	Configure the ADSL coding gain from 0 dB to 7dB, or automatic.
Tx Attenuation	Setting ADSL transmission attenuation.
DSP Firmware Version	Firmware version of the Digital Signal Processor.
Connected Operational Mode	Display current ADSL line sync status.
Annex Type	ADSL Annex A, which works over a standard telephone line. Annex B, which works over an ISDN line.
Upstream Bit Rate	Display current upstream rate of your ADSL line.
Downstream Bit Rate	Display current downstream rate of your ADSL line.

IP QoS

IP QoS function helps you to control your network traffic for each application from LAN (Ethernet and/or Wireless) to WAN (Internet). It facilitates you to control the different quality and speed of throughput for each application when the system is running with full loading of upstream.

You can find three items under the **QoS** section: **Prioritization** and **Outbound / Inbound IP Throttling** (bandwidth management).

Packet Prioritization
Prioritization categorizes in **High** (utilized 60% of the total bandwidth), **Normal** (utilized 30% of the total bandwidth), **Low** (utilized 10% of the total bandwidth).



IP QoS

● Packet Prioritization ○ Outbound Throttling ○ Inbound Throttling

Packet Prioritization

Name	
Schedule	Always On
Priority	High
Protocol	any
Source Port	0 ~ 0
Destination Port	0 ~ 0
Source IP Address Range	0.0.0.0 ~ 0.0.0.0
Destination IP Address Range	0.0.0.0 ~ 0.0.0.0
DSCP Marking	Disabled

Packet Prioritization List

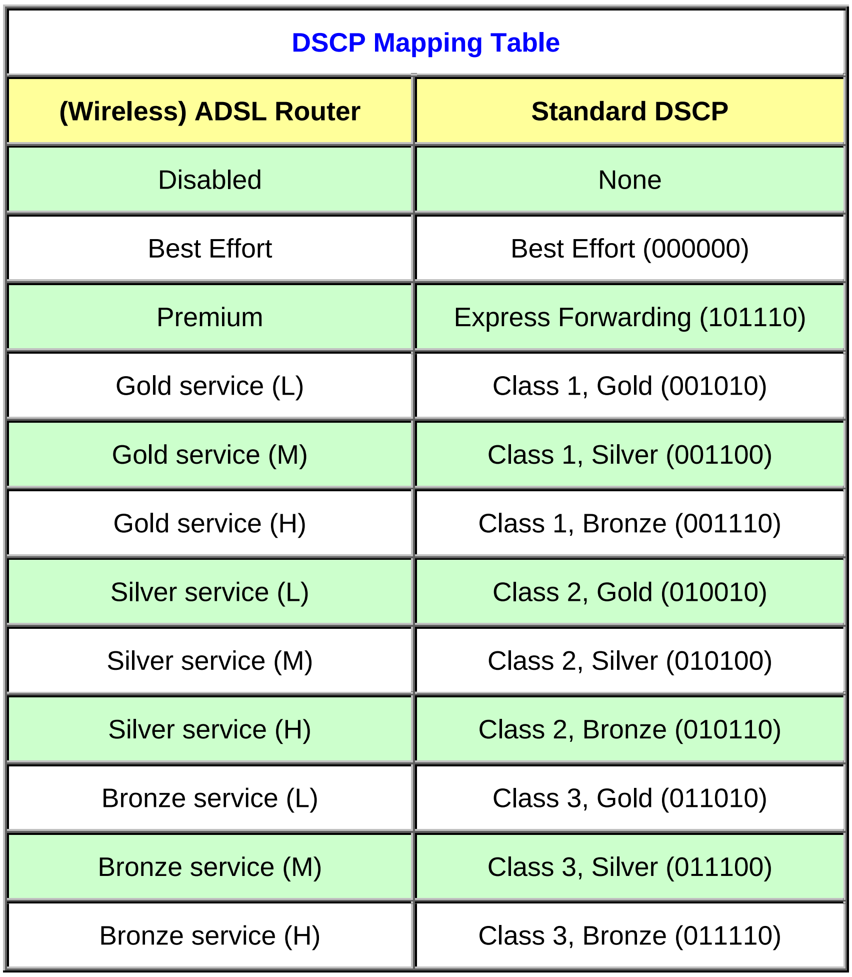
Name	Schedule	Protocol/ Priority	Source Port/ Destination Port	Source IP/ Destination IP	DSCP Marking	

Figure 4-24. IP QoS – Packet Prioritization

Parameter	Description
Name	A user-defined description to identify this new policy/application.
Schedule	Check **Disable** radio button to inactivate the URL Filtering function, or keep the URL Filtering as **Always on.** You may also specify a time schedule for your prioritization policy. For setup and detail, refer to **Time Schedule** section**.**
Priority	The priority given to each policy/application. Its default setting is set to High; you may adjust this setting to fit your policy/application.
Protocol	The name of supported protocol.
Source Port	The source port of packets to be monitored.
Destination Port	The destination port of packets to be monitored.

Parameter	Description
Source IP Address Range	The source IP address or range of packets to be monitored.
Destination IP Address Range	The destination IP address or range of packets to be monitored.
DSCP Marking	Differentiated Services Code Point (DSCP), it is the first 6 bits in the ToS byte. DSCP Marking allows users to classify traffic based on DSCP value and send packets to next Router.

DSCP Mapping Table

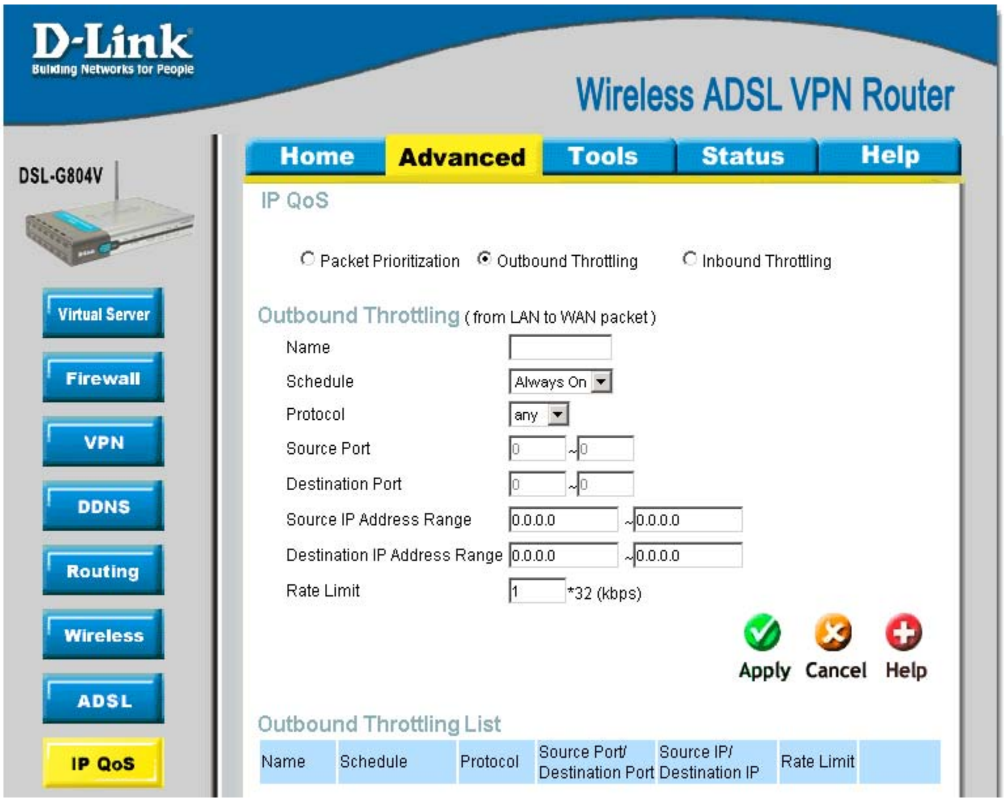


DSCP Mapping Table

(Wireless) ADSL Router	Standard DSCP
Disabled	None
Best Effort	Best Effort (000000)
Premium	Express Forwarding (101110)
Gold service (L)	Class 1, Gold (001010)
Gold service (M)	Class 1, Silver (001100)
Gold service (H)	Class 1, Bronze (001110)
Silver service (L)	Class 2, Gold (010010)
Silver service (M)	Class 2, Silver (010100)
Silver service (H)	Class 2, Bronze (010110)
Bronze service (L)	Class 3, Gold (011010)
Bronze service (M)	Class 3, Silver (011100)
Bronze service (H)	Class 3, Bronze (011110)

Outbound Throttling (Packet from LAN to WAN)

IP Outbound Throttling allows you to limit the speed of IP traffic. The value entered will limit the speed of the application that you set to the specified value's multiple of 32kbps.



IP QoS

○ Packet Prioritization ● Outbound Throttling ○ Inbound Throttling

Outbound Throttling (from LAN to WAN packet)

Name	
Schedule	Always On
Protocol	any
Source Port	0 ~ 0
Destination Port	0 ~ 0
Source IP Address Range	0.0.0.0 ~ 0.0.0.0
Destination IP Address Range	0.0.0.0 ~ 0.0.0.0
Rate Limit	1 *32 (kbps)

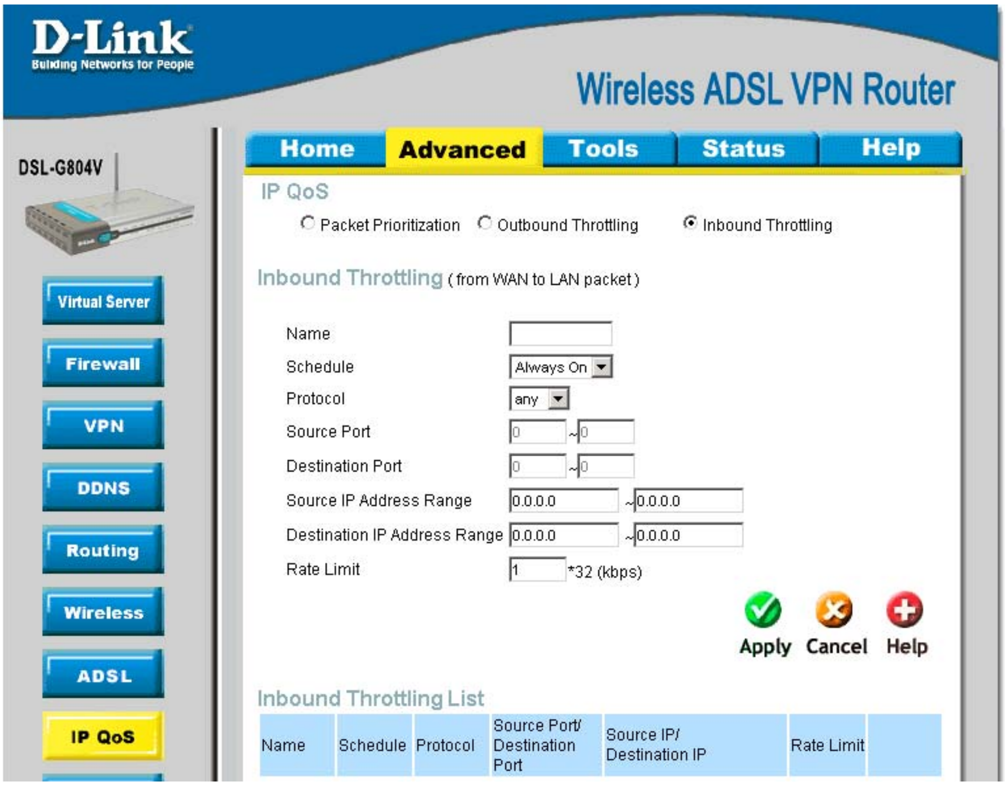
Outbound Throttling List

Name	Schedule	Protocol	Source Port/ Destination Port	Source IP/ Destination IP	Rate Limit	

Figure 4-25. IP QoS – Outbound Throttling

Parameter	Description
Name	A user-defined description to identify this new policy/application.
Schedule	Check **Disable** radio button to inactivate the URL Filtering function, or keep the URL Filtering as **Always on.** You may also specify a time schedule for your prioritization policy. For setup and detail, refer to **Time Schedule** section**.**
Protocol	The name of supported protocol.
Source Port	The source port of packets to be monitored.
Destination Port	The destination port of packets to be monitored.
Source IP Address Range	The source IP address or range of packets to be monitored.
Destination IP Address Range	The destination IP address or range of packets to be monitored.
Rate Limit	The limited speed of outbound traffic.

Inbound Throttling (Packet from WAN to LAN)
IP Inbound Throttling allows you to limit the speed of IP traffic. The value entered will limit the speed of the application that you set to the specified value's multiple of 32kbps.



IP QoS

○ Packet Prioritization ○ Outbound Throttling ● Inbound Throttling

Inbound Throttling (from WAN to LAN packet)

Name	
Schedule	Always On
Protocol	any
Source Port	0 ~ 0
Destination Port	0 ~ 0
Source IP Address Range	0.0.0.0 ~ 0.0.0.0
Destination IP Address Range	0.0.0.0 ~ 0.0.0.0
Rate Limit	1 *32 (kbps)

Inbound Throttling List

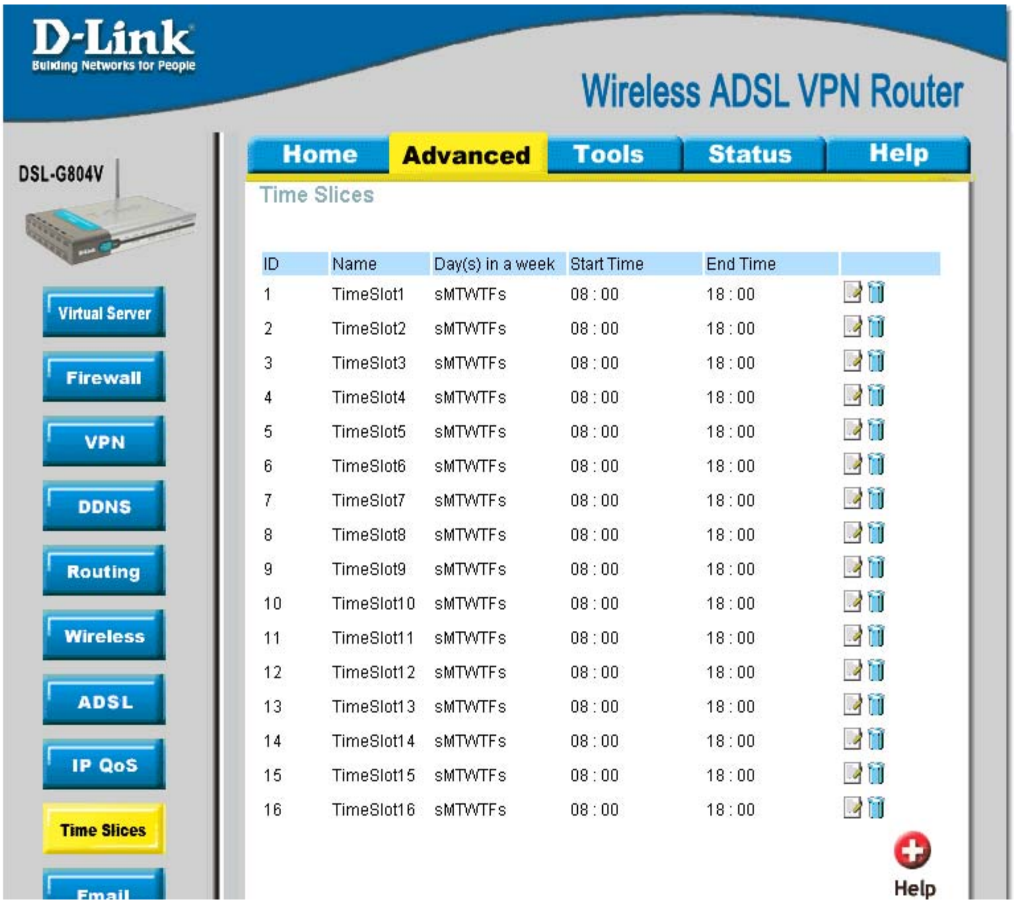
Name	Schedule	Protocol	Source Port/ Destination Port	Source IP/ Destination IP	Rate Limit	

Figure 4-26. IP QoS – Inbound Throttling

Parameter	Description
Name	A user-defined description to identify this new policy/application.
Schedule	Check **Disable** radio button to inactivate the URL Filtering function, or keep the URL Filtering as **Always on.** You may also specify a time schedule for your prioritization policy. For setup and detail, refer to **Time Schedule** section**.**
Protocol	The name of supported protocol.
Source Port	The source port of packets to be monitored.
Destination Port	The destination port of packets to be monitored.
Source IP Address Range	The source IP address or range of packets to be monitored.
Destination IP Address Range	The destination IP address or range of packets to be monitored.
Rate Limit	The limited speed of inbound traffic.

Time Slices

The Time Slices allows you to define up to 16 time slots that help you to manage your device to open (or to enable) specific services within the time you specified in these time slots. The services can be controlled under Time Slices feature are Virtual Servers, Packet Filter Rules in Firewall, and IP QoS rules. E.g. you can specify your FTP virtual server is only valid from Monday to Friday and from 8:00 AM to 5:00 PM only.
The Time Slices correlates closely with router's time, since router does not have a real time clock on board; it uses the Simple Network Time Protocol (SNTP) to get the current time from an SNTP server from the Internet. Refer to **Time Zone** for details. You router time should correspond with your local time. If the time is not set correctly, your Time Schedule will not function properly.



Time Slices

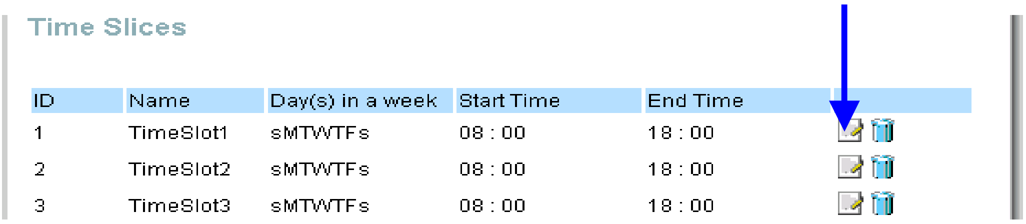
ID	Name	Day(s) in a week	Start Time	End Time	
1	TimeSlot1	sMTWTFs	08 : 00	18 : 00	
2	TimeSlot2	sMTWTFs	08 : 00	18 : 00	
3	TimeSlot3	sMTWTFs	08 : 00	18 : 00	
4	TimeSlot4	sMTWTFs	08 : 00	18 : 00	
5	TimeSlot5	sMTWTFs	08 : 00	18 : 00	
6	TimeSlot6	sMTWTFs	08 : 00	18 : 00	
7	TimeSlot7	sMTWTFs	08 : 00	18 : 00	
8	TimeSlot8	sMTWTFs	08 : 00	18 : 00	
9	TimeSlot9	sMTWTFs	08 : 00	18 : 00	
10	TimeSlot10	sMTWTFs	08 : 00	18 : 00	
11	TimeSlot11	sMTWTFs	08 : 00	18 : 00	
12	TimeSlot12	sMTWTFs	08 : 00	18 : 00	
13	TimeSlot13	sMTWTFs	08 : 00	18 : 00	
14	TimeSlot14	sMTWTFs	08 : 00	18 : 00	
15	TimeSlot15	sMTWTFs	08 : 00	18 : 00	
16	TimeSlot16	sMTWTFs	08 : 00	18 : 00	

Figure 4-27. Time Slices

Configuration of Time Schedule

Editing a Time Slot

1. Choose any Time Slot (ID 1 to ID 16) to edit, click **Edit.**



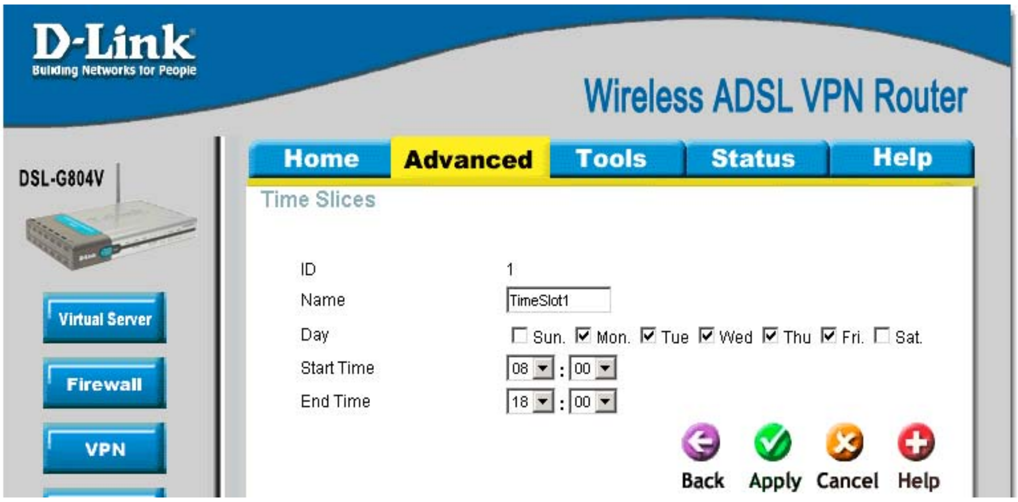
Click Edit

Time Slices

ID	Name	Day(s) in a week	Start Time	End Time	
1	TimeSlot1	sMTWTFs	08 : 00	18 : 00	
2	TimeSlot2	sMTWTFs	08 : 00	18 : 00	
3	TimeSlot3	sMTWTFs	08 : 00	18 : 00	

Note: Watch it carefully, the days you have selected will present in capital letter. Lower case letter shows the day(s) is not selected, and no rule will apply on this day(s).

2. A detailed setting of this Time Slot will be shown.



Time Slices

ID 1

Name TimeSlot1

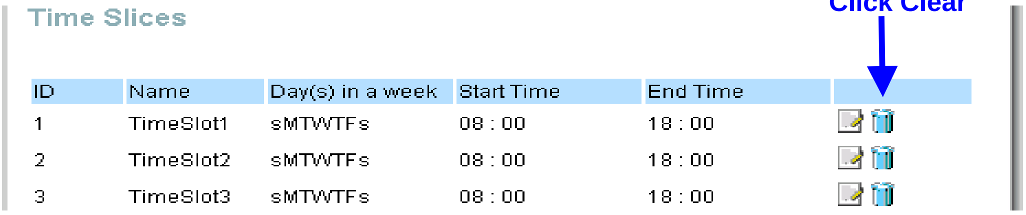
Day ☐ Sun. ☑ Mon. ☑ Tue ☑ Wed ☑ Thu ☑ Fri. ☐ Sat.

Start Time 08 : 00

End Time 18 : 00

Parameter	Description
ID	This is the index of the time slot.
Name	A user-define description to identify this time portfolio.
Day	The default is set from Monday through Friday. You may specify the days for the schedule to be applied.
Start Time	The default is set at 8:00 AM. You may specify the start time of the schedule.
End Time	The default is set at 18:00 (6:00PM). You may specify the end time of the schedule.

Delete a Time Slot



Click Clear

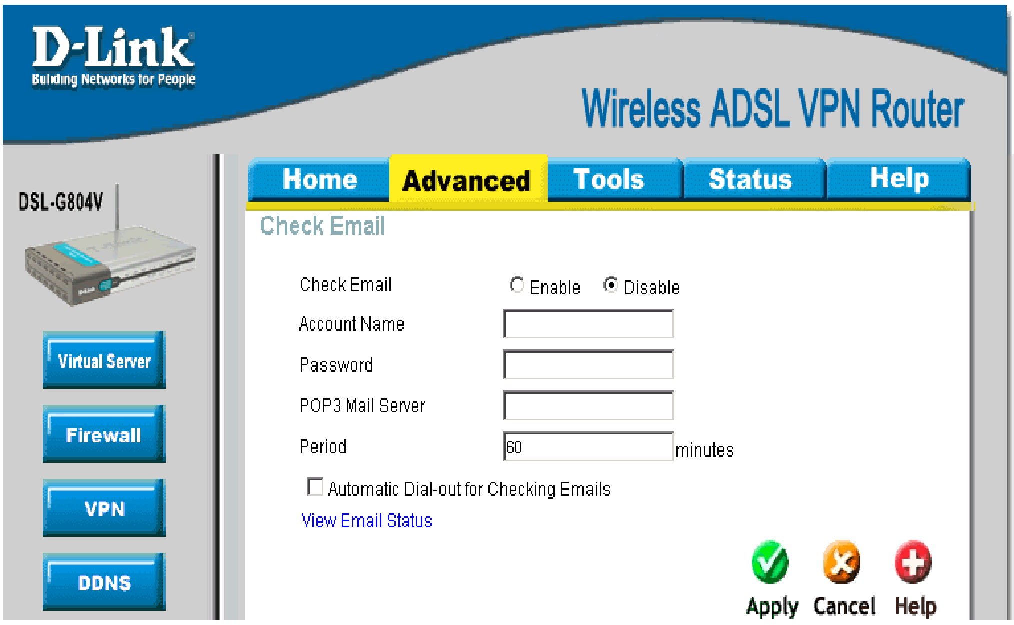
Time Slices

ID	Name	Day(s) in a week	Start Time	End Time	
1	TimeSlot1	sMTWTFs	08 : 00	18 : 00	
2	TimeSlot2	sMTWTFs	08 : 00	18 : 00	
3	TimeSlot3	sMTWTFs	08 : 00	18 : 00	

Click **Clear** to delete the existing Time profile, i.e. erase the Day and back to default setting of Start Time / End Time.

Email

Check Email allows you to have the router checks your POP3 mailbox for new Email messages. The **Mail** LED on your router will light when it detects new messages waiting for download. You may also view the status of this function using the **Status – Email Checking** section of the web interface, which also provides details on the number of new messages waiting. See the **Status** section of this manual for more information.



Check Email

Check Email ○ Enable ● Disable

Account Name

Password

POP3 Mail Server

Period 60 minutes

□ Automatic Dial-out for Checking Emails

View Email Status

Figure 4-28. Check Email

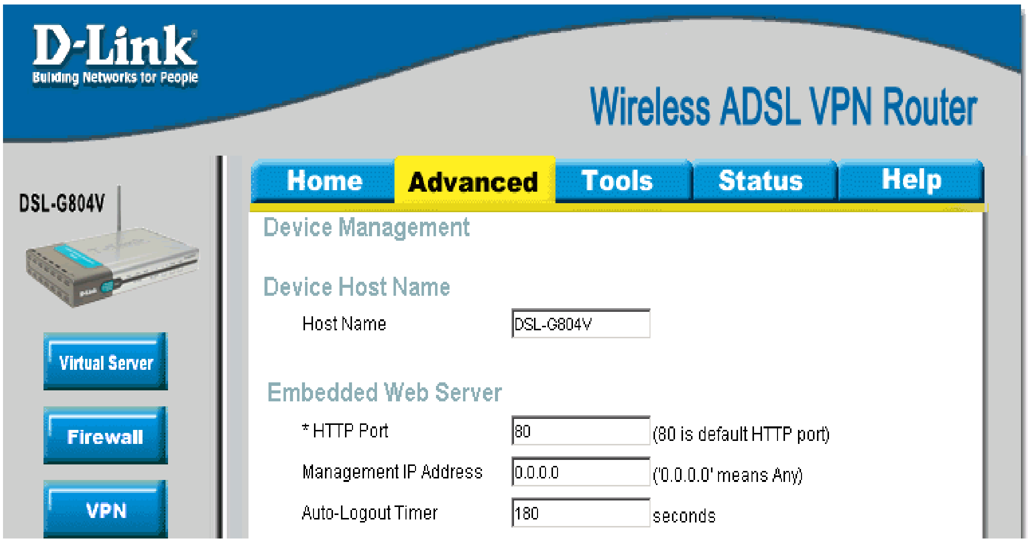
Parameter	Description
Check Email	Disable or activate the Email Checking function.
Account Name	Enter the name (login) of the POP3 account you wish to check. Normally, it is the text in your email address before the "@" symbol. If you have trouble with it, please contact your ISP (Internet Service Provider).
Password	Enter the account's password.
POP3 Mail Server	Enter your (POP) mail server name. Your ISP or network administrator will be able to supply you with this.
Period (minutes)	Set up a time interval to check your mail.
Automatically	When the function is enabled, your ADSL router will connect to your ISP automatically to check your emails if the Internet connection dropped. If your ADSL service is charged by time online, you ought to be careful when using this feature.
View Email Status	Email Status displays details and status of the Email Account you configured in **Advanced –Email.**

Device Management

The Device Management advanced configuration settings allow you to control your router's security options and device monitoring features.

Device Host Name
This is a given name to your router easily identify the router.

Embedded Web Server



Device Management

Device Host Name

Host Name: DSL-G804V

Embedded Web Server

* HTTP Port: 80 (80 is default HTTP port)

Management IP Address: 0.0.0.0 ('0.0.0.0' means Any)

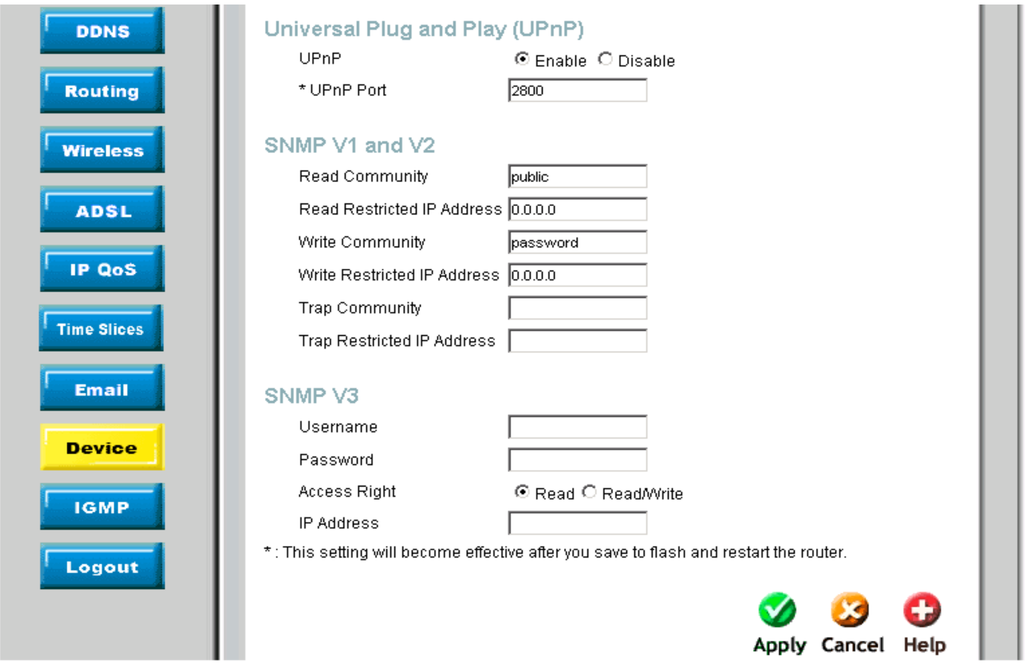
Auto-Logout Timer: 180 seconds

Figure 4-29. Device Management – Host Name and Embedded Web Server

Parameter	Description
HTTP Port	This is the port number the router's embedded web server (for web-based configuration) will use. The default value is the standard HTTP port, 80. Users may specify an alternative if, for example, they are running a web server on a PC within their LAN. **(Important:** This setting will become effective after you Save to flash and restart the router**).**
Management IP Address	You may specify an IP address allowed to logon and access the router's web server. Setting the IP address to 0.0.0.0 will disable IP address restrictions, allowing users to login from any IP address.
Expire to auto-logout	Specify a time frame for the system to auto-logout the user's configuration session.

Example:

A User changes HTTP port number to **100**, specifies their own IP address of **192.168.0.55**, and sets the logout time to be **100** seconds. The router will only allow User A access from the IP address **192.168.0.55** to logon to the Web GUI by typing: http://**192.168.0.1** in their web browser. After 100 seconds, the device will automatically logout User A. (192.168.0.1 is your router IP address).



Universal Plug and Play (UPnP)

UPnP ● Enable ○ Disable

* UPnP Port 2800

SNMP V1 and V2

Read Community public

Read Restricted IP Address 0.0.0.0

Write Community password

Write Restricted IP Address 0.0.0.0

Trap Community

Trap Restricted IP Address

SNMP V3

Username

Password

Access Right ● Read ○ Read/Write

IP Address

* : This setting will become effective after you save to flash and restart the router.

Figure 4-30. Device Management – UPnP, SNMP V1 and V2, and SNMP V3

Universal Plug and Play (UPnP)

UPnP offers peer-to-peer network connectivity for PCs and other network devices, along with control and data transfer between devices. UPnP offers many advantages for users running NAT routers through UPnP NAT Traversal, and on supported systems makes tasks such as port forwarding much easier by letting the application control the required settings, removing the need for the user to control advanced configuration of their device.

Parameter	Description
UPnP	Disable or activate the router's UPnP functionality.
UPnP Port	Its default setting is 2800. It is highly recommended for users to use this port value. If this value conflicts with other ports already being used you may wish to change the port. **(Important:** This setting will become effective after you Save to flash and restart the router).

SNMP V1 and V2 (Simple Network Management Protocol Version 1 and Version 2)

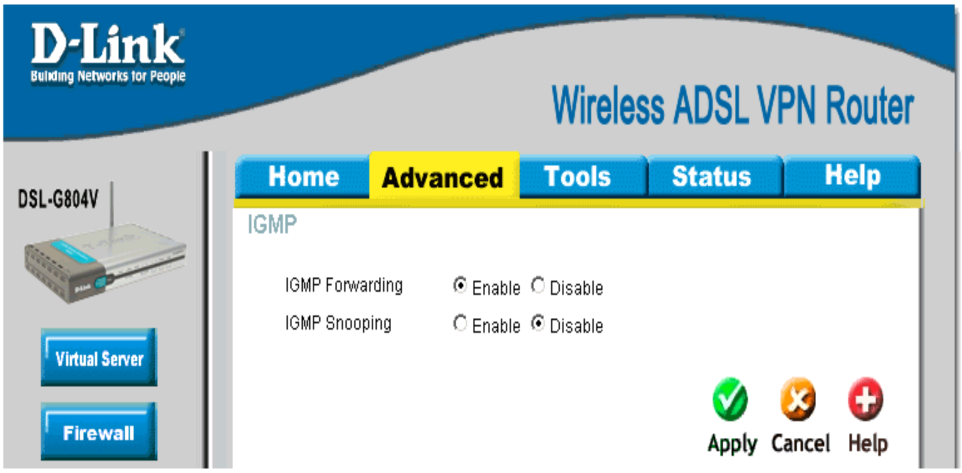
Parameter	Description
Read Community	Specify a name to be identified as the Read Community, and an IP address. This community string will be checked against the string entered in the configuration file. Once the string name is matched, user obtains this IP address will be able to view the data.
Write Community	Specify a name to be identified as the Write Community, and an IP address. This community string will be checked against the string entered in the configuration file. Once the string name is matched, users from this IP address will be able to view and modify the data.
Trap Community	Specify a name to be identified as the Trap Community, and an IP address. This community string will be checked against the string entered in the configuration file. Once the string name is matched, users from this IP address will be sent SNMP Traps.

SNMP V3 (Simple Network Management Protocol Version 3)

Specify a name and password for authentication. And define the access right from identified IP address. Once the authentication has succeeded, users from this IP address will be able to view and modify the data.

IGMP

IGMP, known as *Internet Group Management Protocol*, is used to management hosts from multicast group.



IGMP

IGMP Forwarding ● Enable ○ Disable

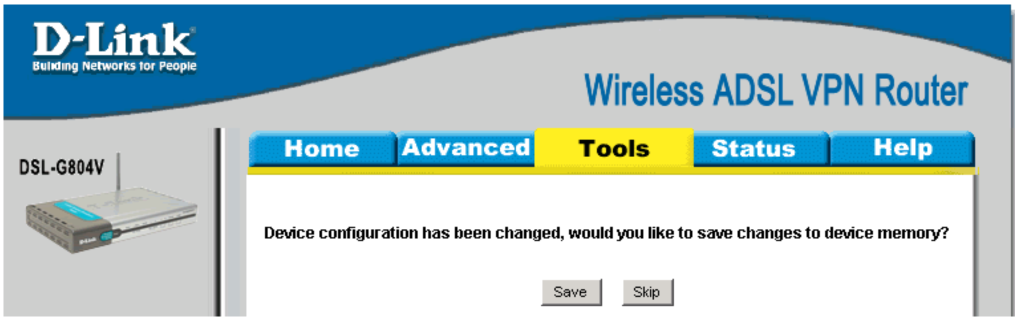
IGMP Snooping ○ Enable ● Disable

Figure 4-31. IGMP

Parameter	Description
IGMP Forwarding	Accepting multicast packet. Default is set to **Enable.**
IGMP Snooping	Allowing switched Ethernet to check and make correct forwarding decisions. Default is set to **Disable.**

Logout

To exit the router's web interface, choose **Logout**. Please ensure that you have saved the configuration settings before you logout.



Device configuration has been changed, would you like to save changes to device memory?

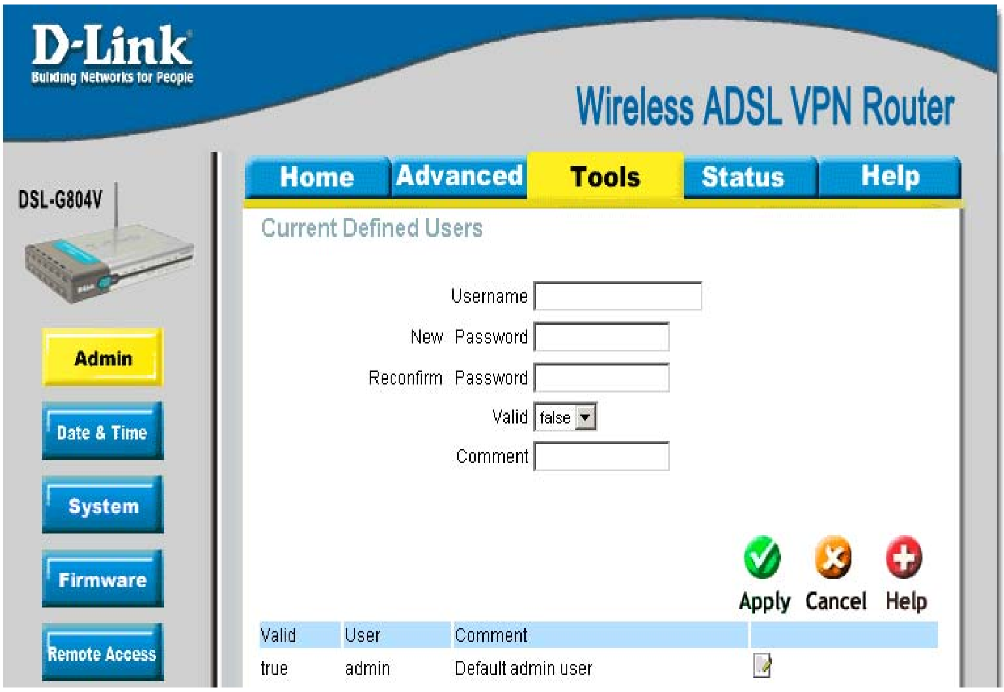
5

Tools

Click the **Tools** tab to access menus used to configure **Admin, Data & Time, System, Firmware, Remote Access, Reboot, Save Config and Logout**.

Admin – Current Defined Users

You can change the user's **password**, whether their account is active and inactive, as well as add a comment to each user account. These options are the same when creating a user account, with the exception that once created you cannot change the username.



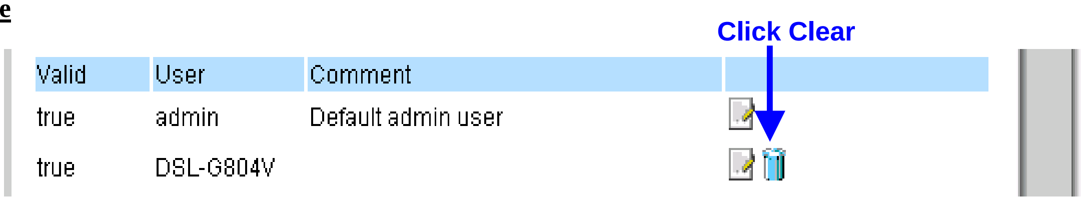
Current Defined Users

Username
New Password
Reconfirm Password
Valid false
Comment

Valid	User	Comment	
true	admin	Default admin user	

Figure 5-1. Admin – Current Defined Users

Delete

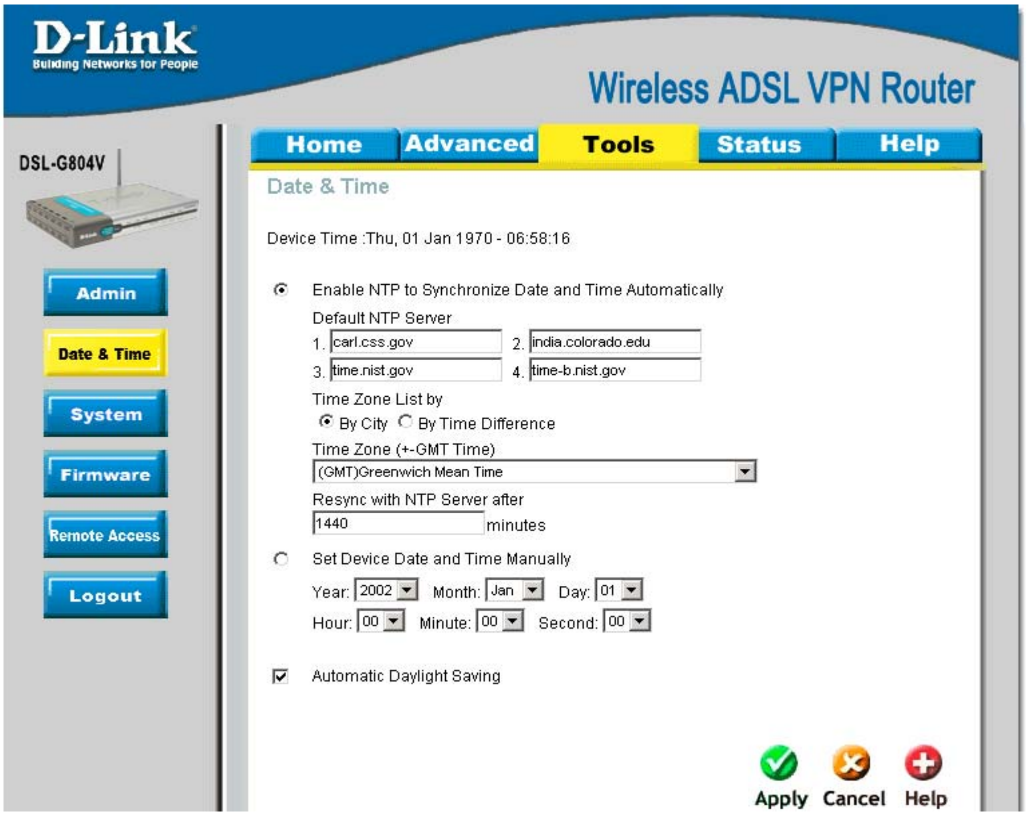

Click Clear

Valid	User	Comment	
true	admin	Default admin user	
true	DSL-G804V		

You can delete any other created accounts by clicking **Clear** when editing the user. Noted that you cannot delete the default admin account.

System Date & Time

The router does not have a real time clock on board. You may either select **Enable NTP** or **Set Device Date and Time** manually. **Enable NTP** uses the Simple Network Time Protocol (SNTP) to get the current time from an SNTP server outside your network. Also, You can choose **Time Zone List by City** or **By Time Difference.** After a successful connection to the Internet, the router will retrieve the correct local time from the SNTP server you have specified.



Date & Time

Device Time :Thu, 01 Jan 1970 - 06:58:16

● Enable NTP to Synchronize Date and Time Automatically

Default NTP Server

1. carl.css.gov 2. india.colorado.edu

3. time.nist.gov 4. time-b.nist.gov

Time Zone List by

● By City ○ By Time Difference

Time Zone (+-GMT Time)

(GMT)Greenwich Mean Time

Resync with NTP Server after

1440 minutes

○ Set Device Date and Time Manually

Year: 2002 Month: Jan Day: 01

Hour: 00 Minute: 00 Second: 00

☑ Automatic Daylight Saving

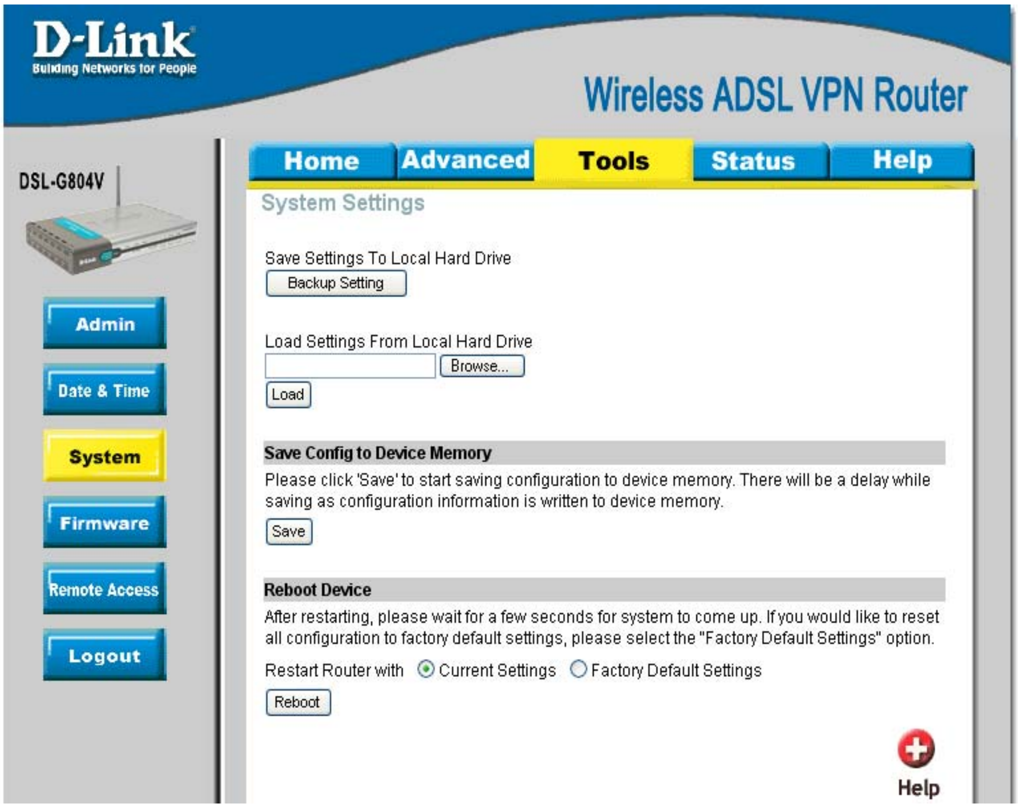
Figure 5-2. Date & Time

Resync Period (in minutes) is the periodic interval the router will wait before it re-synchronizes the router's time with that of the specified SNTP server. In order to avoid unnecessarily increasing the load on your specified SNTP server you should keep the poll interval as high as possible – at the absolute minimum every few hours or even days.

Daylight Saving is also known as ***Summer Time Period.*** Many places in the world adapt it during summer time to move one hour of daylight from morning to the evening in local standard time. Check **Automatic Daylight Saving** box to auto set your local time.

System Settings

System Setting allows you to save and backup your router's current settings to a file on your PC, or to restore a previously saved backup. This is useful if you wish to experiment with different settings, knowing that you have a backup handy in the case of any mistakes. It is advisable to backup your router's settings before making any significant changes to your router's configuration.



System Settings

Save Settings To Local Hard Drive

Backup Setting

Load Settings From Local Hard Drive

Browse...

Load

Save Config to Device Memory

Please click 'Save' to start saving configuration to device memory. There will be a delay while saving as configuration information is written to device memory.

Save

Reboot Device

After restarting, please wait for a few seconds for system to come up. If you would like to reset all configuration to factory default settings, please select the "Factory Default Settings" option.

Restart Router with ● Current Settings ○ Factory Default Settings

Reboot

Figure 5-3. System Settings

Press **Backup Setting** to select where on your local PC to save the settings file. You may also change the name of the file when saving if you wish to keep multiple backups.

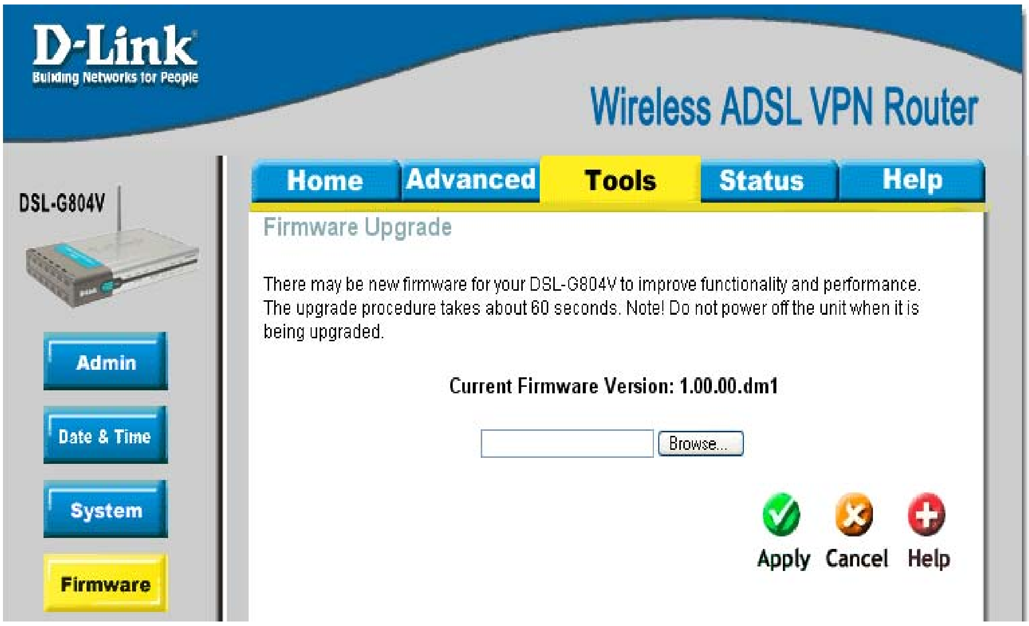
Load Setting From Local Hard Drive: Press **Browse** to select a file from your PC to restore. You should only restore settings files that have been generated by the Backup function, and that were created when using the **current version** of the router's firmware. **Settings files saved to your PC should not be manually edited in any way.**

Save Config to Device Memory: After changing the router's configuration settings, you must save all of the configuration parameters to FLASH to avoid them being lost after turning off or resetting your router. Press **Save** to start the saving and it will takes around 10 seconds.

Reboot Device: Click **Reboot** with option ***Current Settings*** to reboot your router with last saved configuration. If you wish to restart the router using the factory default settings (for example, after a firmware upgrade or if you have saved an incorrect configuration), select ***Factory Default Settings*** to reset to factory default settings. You may also reset your router to factory settings by holding the small Reset pinhole button on the back of your router in for 10-12 seconds whilst the router is turned on.

Firmware Upgrade

Your router's "firmware" is the software that allows it to operate and provides all its functionality. Over time this software may be improved and modified, and your router allows you to upgrade the software it runs to take advantage of these changes.



Firmware Upgrade

There may be new firmware for your DSL-G804V to improve functionality and performance. The upgrade procedure takes about 60 seconds. Note! Do not power off the unit when it is being upgraded.

Current Firmware Version: 1.00.00.dm1

Figure 5-4. Firmware Upgrade

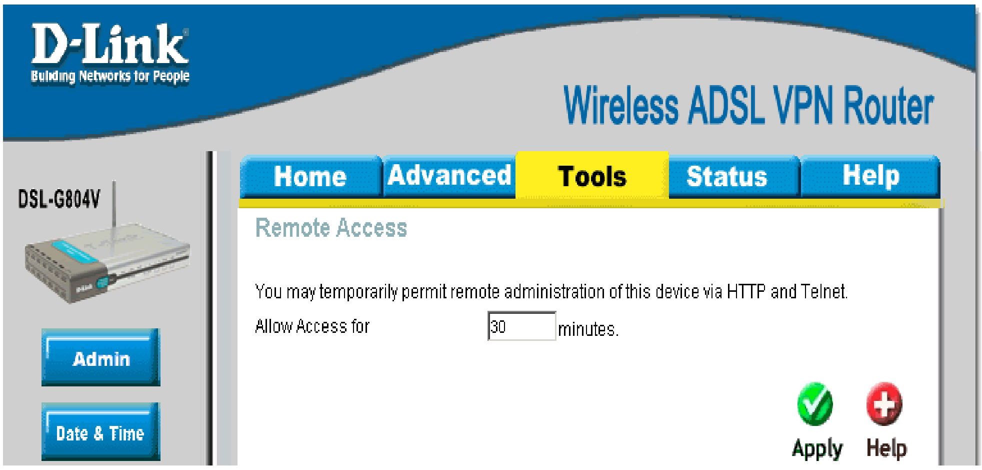
Clicking on **Browse** will allow you to select the new firmware image file you have downloaded to your PC.

Note

DO NOT power off the router or interrupt the firmware upgrading while it is still in process. Improper operation could damage the router.

Remote Access

To temporarily permit remote administration of the router (i.e. from outside your LAN), select a time period the router will permit remote access**.** You may change other configuration options for the web administration interface using **Device** options in the **Advanced** section of the GUI.



Remote Access

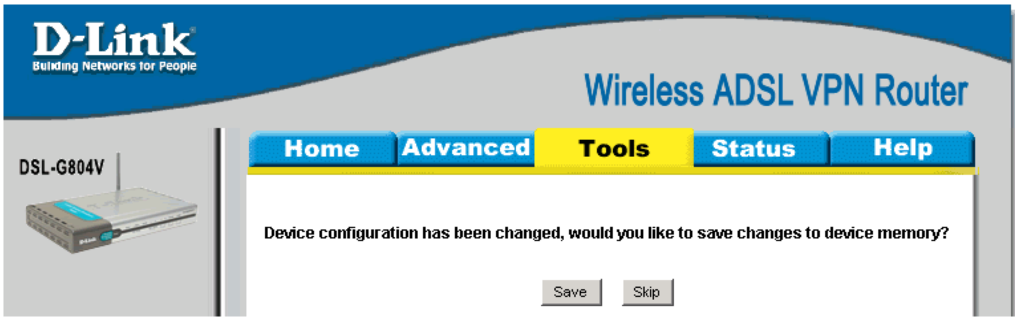
You may temporarily permit remote administration of this device via HTTP and Telnet.

Allow Access for 30 minutes.

Figure 5-5. Remote Access

Logout

To exit the router’s web interface, choose **Logout**. Please ensure that you have saved the configuration settings before you logout.



Device configuration has been changed, would you like to save changes to device memory?

Be aware that the router is restricted to only one PC accessing the configuration web pages at a time. Once a PC has logged into the web interface, other PCs cannot get access until the current PC has logged out of the web interface. If the previous PC forgets to logout, the second PC can access the page after a user-defined period, by default 3 minutes. You can modify this value using the **Advanced – Device** section of the web interface.

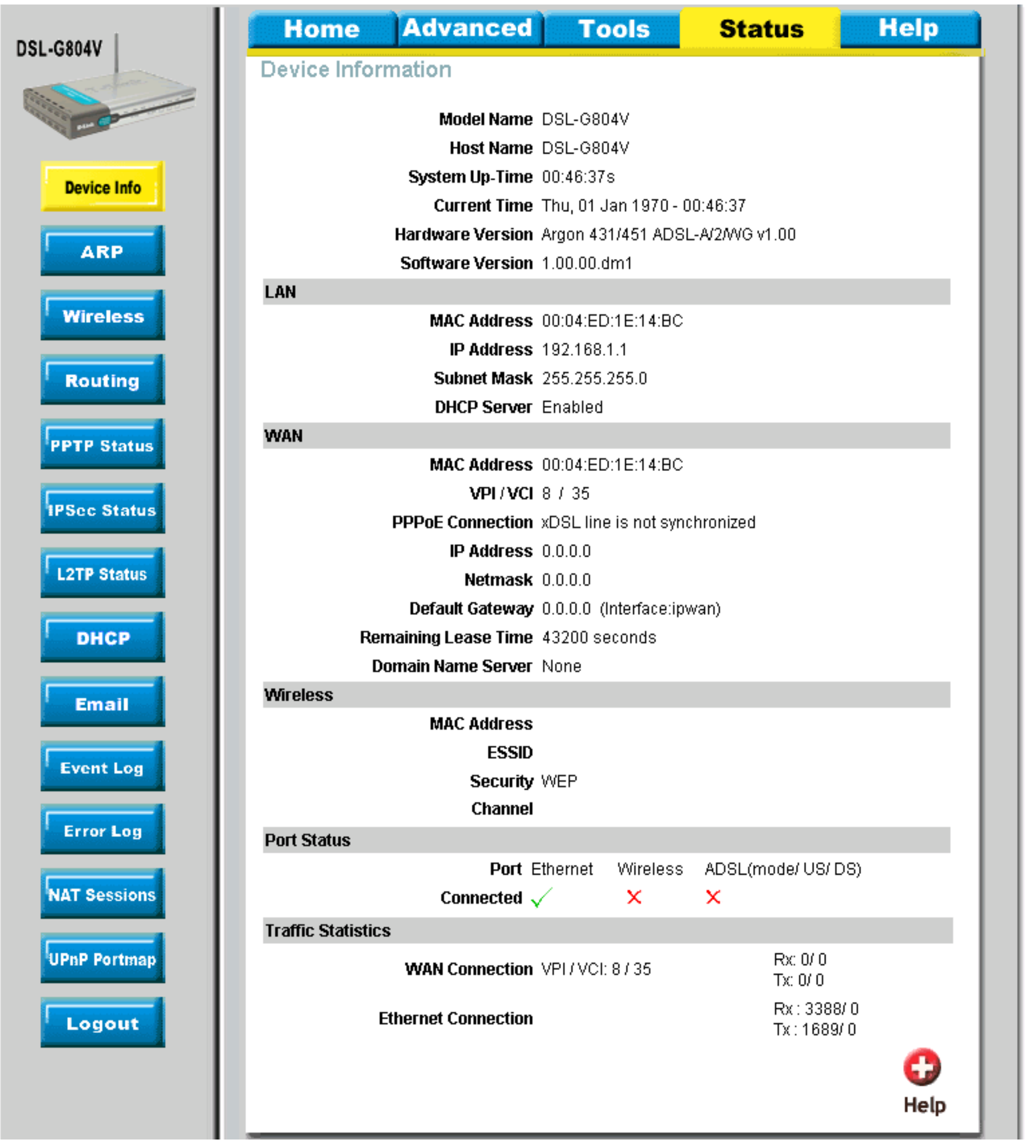
6

Status

Click the **Status** tab to access menus used to configure **Device Info, ARP, Wireless, Routing, PPTP Status, IPSec Status, L2TP Status, DHCP, Email, Event Log, Error log, NAT Sessions, UPnP Portmap** and **Logout**.

Device Information

Device Information detailed displays the current setting of your router such as LAN, WAN, Wireless, Port Status and Traffic Statistic.



Device Information

Model Name DSL-G804V
Host Name DSL-G804V
System Up-Time 00:46:37s
Current Time Thu, 01 Jan 1970 - 00:46:37
Hardware Version Argon 431/451 ADSL-A/2/WG v1.00
Software Version 1.00.00.dm1

LAN

MAC Address 00:04:ED:1E:14:BC
IP Address 192.168.1.1
Subnet Mask 255.255.255.0
DHCP Server Enabled

WAN

MAC Address 00:04:ED:1E:14:BC
VPI / VCI 8 / 35
PPPoE Connection xDSL line is not synchronized
IP Address 0.0.0.0
Netmask 0.0.0.0
Default Gateway 0.0.0.0 (Interface:ipwan)
Remaining Lease Time 43200 seconds
Domain Name Server None

Wireless

MAC Address
ESSID
Security WEP
Channel

Port Status

Port	Ethernet	Wireless	ADSL(mode/ US/ DS)
Connected	✓	✗	✗

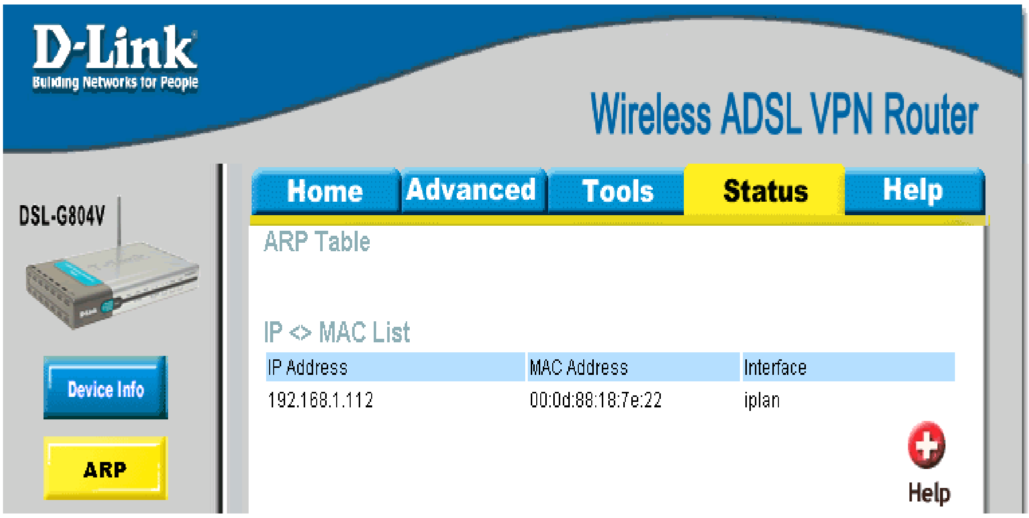
Traffic Statistics

WAN Connection	VPI / VCI: 8 / 35	Rx: 0/ 0 Tx: 0/ 0
Ethernet Connection		Rx : 3388/ 0 Tx : 1689/ 0

Figure 6-1. Device Information

ARP

ARP (Address Resolution Protocol) Table shows the mapping of Internet (IP) addresses to Ethernet (MAC) addresses. This is useful as a quick way of determining the MAC address of the network interface of your PCs. **Static** – **no** means the ARP table entry is dynamically generated. **Yes** means the ARP table entry is added by the users.



ARP Table

IP <> MAC List

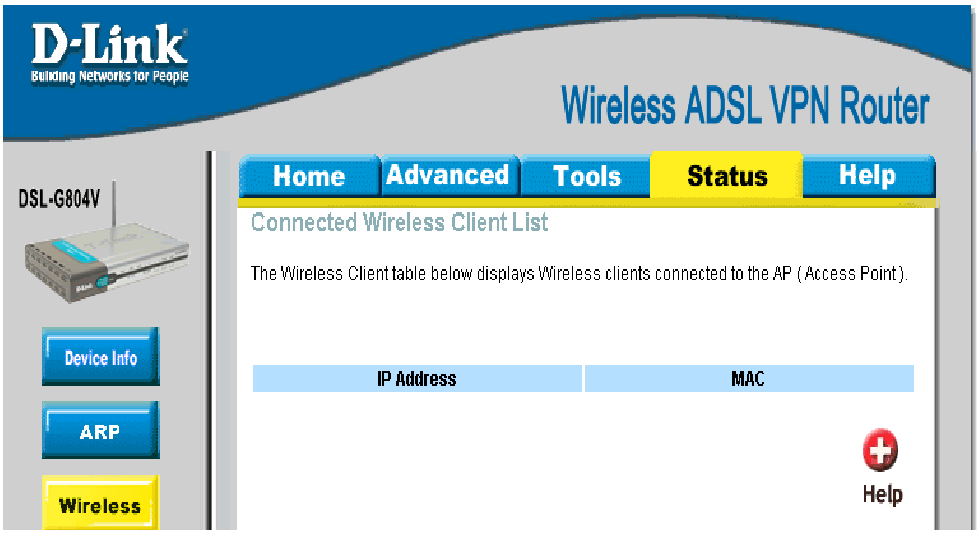
IP Address	MAC Address	Interface
192.168.1.112	00:0d:88:18:7e:22	iplan

Figure 6-2. ARP Table

Parameter	Description
IP Address	A list of IP addresses of devices on your LAN (Local Area Network)
MAC Address	The MAC (Media Access Control) addresses for each device on your LAN.
Interface	The interface name (on the router) that this IP Address connects to.

Wireless (Connect Wireless Client List)

Wireless Client table displays information of the AP client that is connect to the router.



Connected Wireless Client List

The Wireless Client table below displays Wireless clients connected to the AP (Access Point).

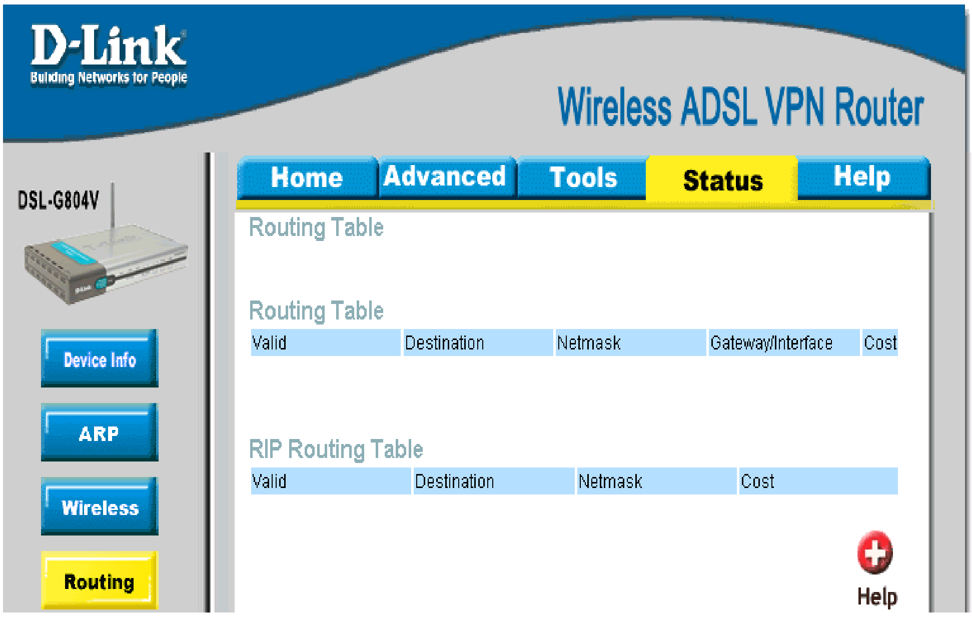
IP Address	MAC

Figure 6-3. Connect Wireless Client List

Parameter	Description
IP Address	It is IP address of wireless client that joins this network.
MAC	The MAC address of wireless client.

Routing Table

Two routing tables are displayed, **Routing Table** and **RIP Routing Table.**



Routing Table

Routing Table

Valid	Destination	Netmask	Gateway/Interface	Cost

RIP Routing Table

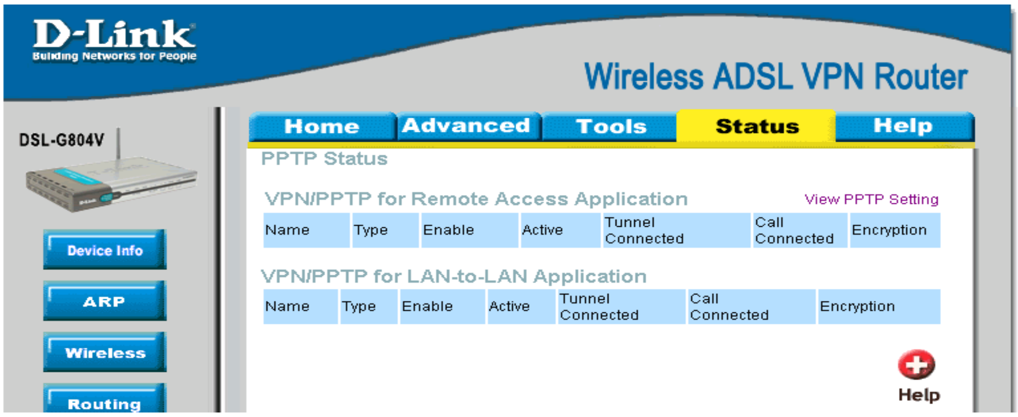
Valid	Destination	Netmask	Cost

Figure 6-4. Routing Table

Parameter	Description
Routing Table	
Valid	It indicates a successful routing status.
Destination	The IP address of the destination network.
Netmask	The destination netmask address.
Gateway/Interface	The IP address of the gateway or existing interface that this route will use.
Cost	The number of hops counted as the cost of the route.
RIP Routing Table	
Destination	The IP address of the destination network.
Netmask	The destination netmask address.
Gateway	The IP address of the gateway that this route will use.
Cost	The number of hops counted as the cost of the route.

PPTP Status

PPTP Status shows details of your configured PPTP VPN connections.



PPTP Status

VPN/PPTP for Remote Access Application

View PPTP Setting

Name	Type	Enable	Active	Tunnel Connected	Call Connected	Encryption

VPN/PPTP for LAN-to-LAN Application

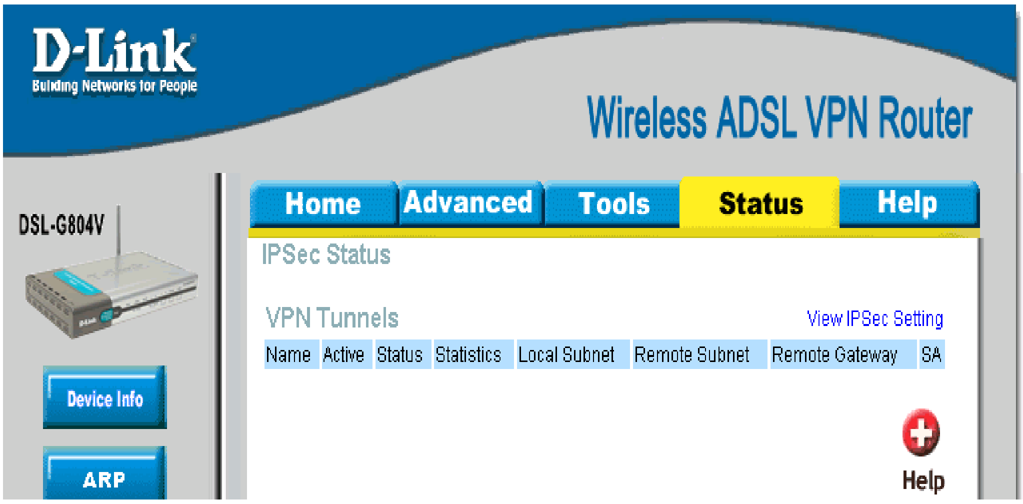
Name	Type	Enable	Active	Tunnel Connected	Call Connected	Encryption

Figure 6-5. PPTP Status

Parameter	Description
Name	The name you assigned to the particular PPTP connection in your VPN configuration.
Type	The type of connection (dial-in/dial-out).
Enable	Whether the connection is currently enabled.
Active	Whether the connection is currently active.
Tunnel Connected	Whether the VPN Tunnel is currently connected.
Call Connected	If the Call for this VPN entry is currently connected.
Encryption	The encryption type used for this VPN connection.
View PPTP Setting	You can modify PPTP Setting value using the **Advanced – VPN** section of the web interface.

IPSec Status

IPSec Status shows details of your configured IPSec VPN connections.



IPSec Status

VPN Tunnels

View IPSec Setting

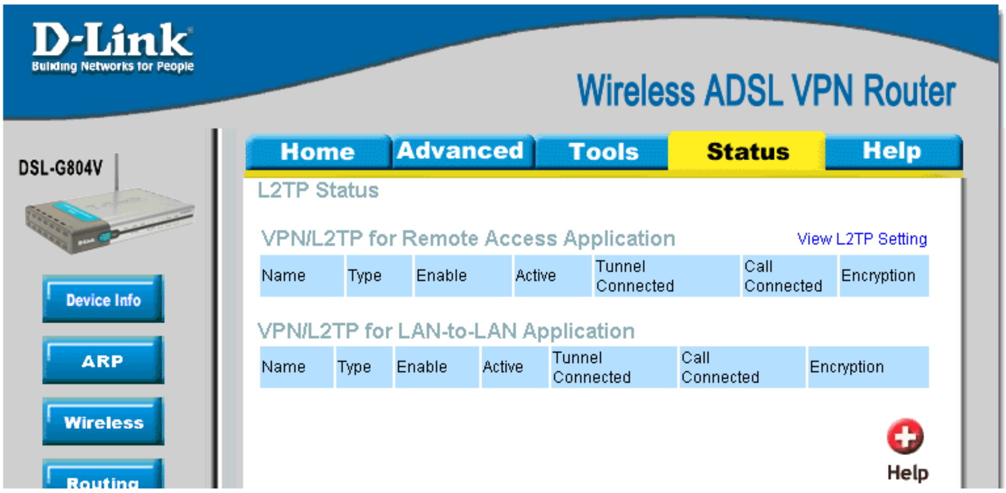
Name	Active	Status	Statistics	Local Subnet	Remote Subnet	Remote Gateway	SA

Figure 6-6. IPSec Status

Parameter	Description
Name	The name you assigned to the particular VPN entry.
Active	Whether the VPN Connection is currently Active.
Connection State	Whether the VPN is Connected or Disconnected.
Statistics	Statistics for this VPN Connection.
Local Subnet	The local IP Address or Subnet used.
Remote Subnet	The Subnet of the remote site.
Remote Gateway	The Remote Gateway IP address.
SA	The Security Association for this VPN entry.
View IPSec Setting	You can modify IPSec Setting value using the **Advanced – VPN** section of the web interface.

L2TP Status

L2TP Status shows details of your configured L2TP VPN connections.



L2TP Status

VPN/L2TP for Remote Access Application

View L2TP Setting

Name	Type	Enable	Active	Tunnel Connected	Call Connected	Encryption

VPN/L2TP for LAN-to-LAN Application

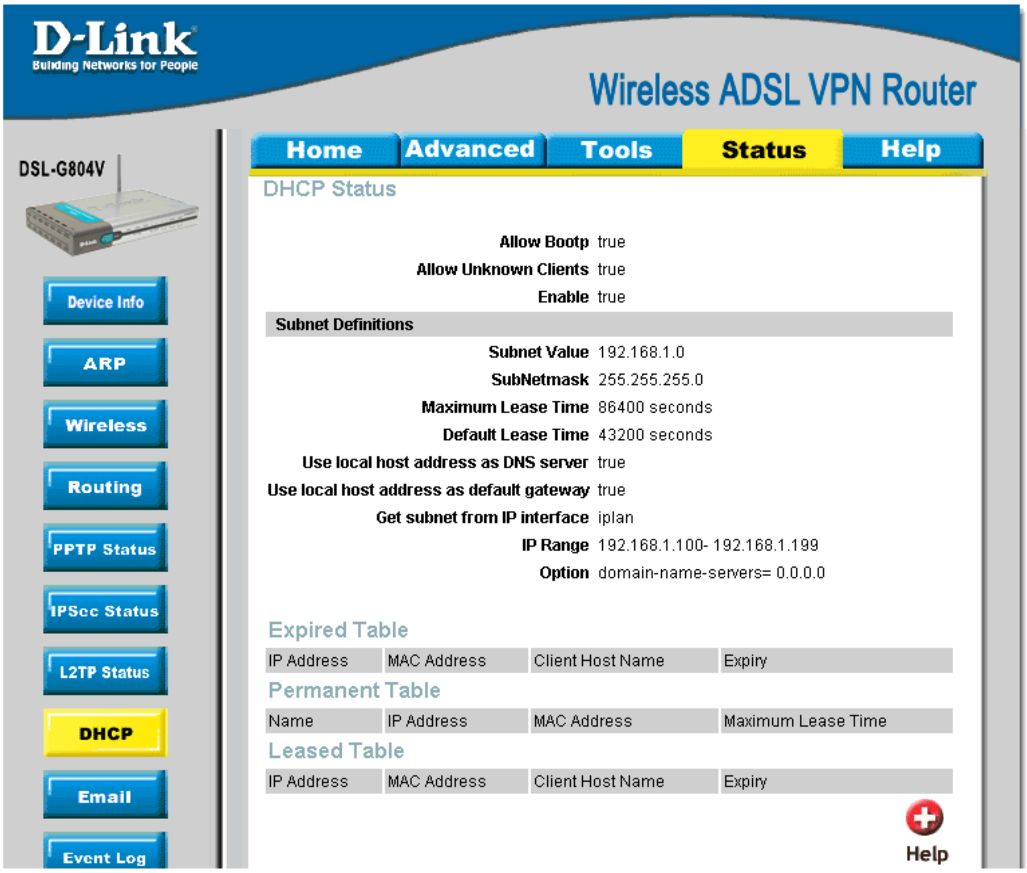
Name	Type	Enable	Active	Tunnel Connected	Call Connected	Encryption

Figure 6-7. L2TP Status

Parameter	Description
Name	The name you assigned to the particular L2TP connection in your VPN configuration.
Type	The type of connection (dial-in/dial-out).
Enable	Whether the connection is currently enabled.
Active	Whether the connection is currently active.
Tunnel Connected	Whether the VPN Tunnel is currently connected.
Call Connected	If the Call for this VPN entry is currently connected.
Encryption	The encryption type used for this VPN connection.
View L2TP Setting	You can modify L2TP Setting value using the **Advanced – VPN** section of the web interface.

DHCP Status

DHCP Status table displays DHCP Server assigned IP address information and Subnet Definitions.



DHCP Status

Allow Bootp true
Allow Unknown Clients true
Enable true

Subnet Definitions

Subnet Value 192.168.1.0
SubNetmask 255.255.255.0
Maximum Lease Time 86400 seconds
Default Lease Time 43200 seconds
Use local host address as DNS server true
Use local host address as default gateway true
Get subnet from IP interface iplan
IP Range 192.168.1.100- 192.168.1.199
Option domain-name-servers= 0.0.0.0

Expired Table

IP Address	MAC Address	Client Host Name	Expiry

Permanent Table

Name	IP Address	MAC Address	Maximum Lease Time

Leased Table

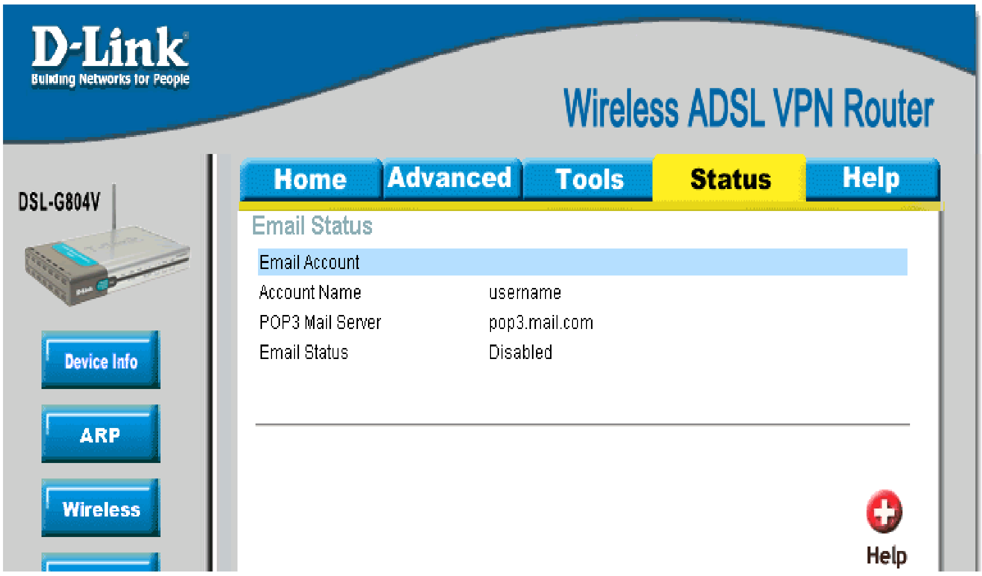
IP Address	MAC Address	Client Host Name	Expiry

Figure 6-8. DHCP Status

Parameter	Description
Allow Bootp	It shows in **true** or **false**.
Allow Unknown Clients	It shows in **true** or **false.**
Enable	It shows in **true** or **false**, if DHCP Server is enabled.
Subnet Value/Subnetmask	This is the information of your DHCP Server IP subnet information.
Maximum Lease Time	The maximum lease time interval you allow. For more information, check "DHCP" under "Home" section.
Default Lease Time	The default lease time interval you allow. For more information, check "DHCP" under "Home" section.
Use local host address as DNS Server	It shows in **true** or **false.**
Use local host address as default gateway	It shows in **true** or **false**
Get subnet from IP interface	**Iplan** tells the subnet is based on the IP interface.

Email Status

Email Status displays details and status of the Email Account you configured in **Advanced –Email.**



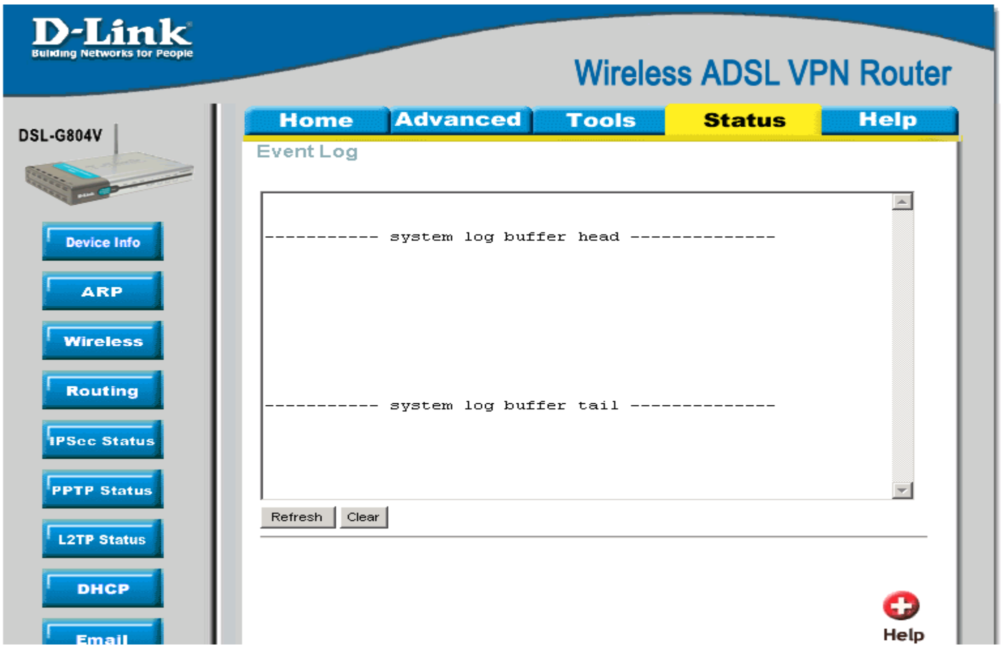
Email Status

Email Account	
Account Name	username
POP3 Mail Server	pop3.mail.com
Email Status	Disabled

Figure 6-9. Email Status

Event Log

Event Log detailed displays router's event entries. Major events are logged to this window, such as when the router's ADSL connection is disconnected, as well as Firewall events when you have enabled Intrusion or Blocking Logging in the **Advanced – Firewall** section of the interface. Please see the **Firewall** section of this manual for more details on how to enable Firewall logging.



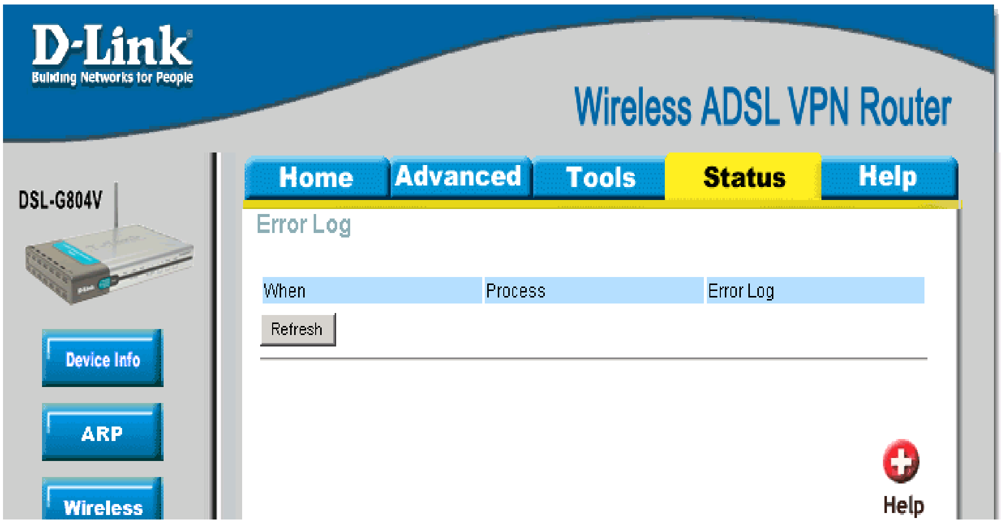
Event Log

```
----------- system log buffer head --------------



----------- system log buffer tail --------------
```

Figure 6-10. Event Log

Error Log

Error Log displays any errors encountered by the router (e.g. invalid names given to entries) are logged to this window.



Error Log

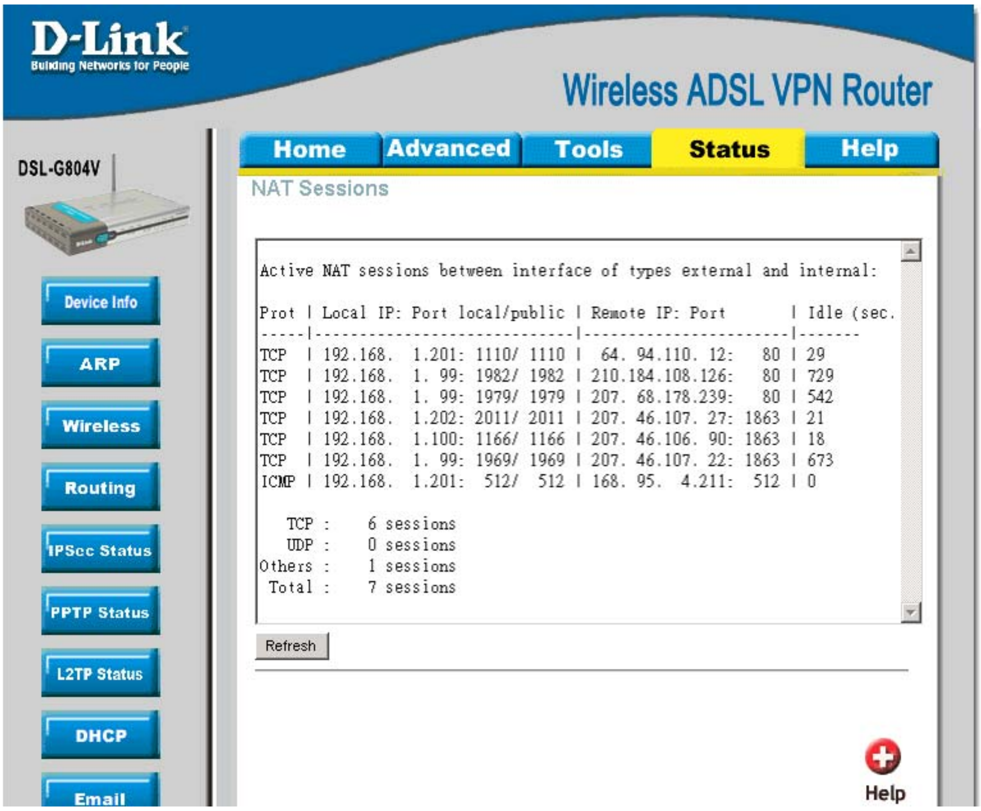
When	Process	Error Log

Refresh

Figure 6-11. Error Log

NAT Sessions

NAT Sessions list all current NAT session between interface of types external (WAN) and internal (LAN).



NAT Sessions

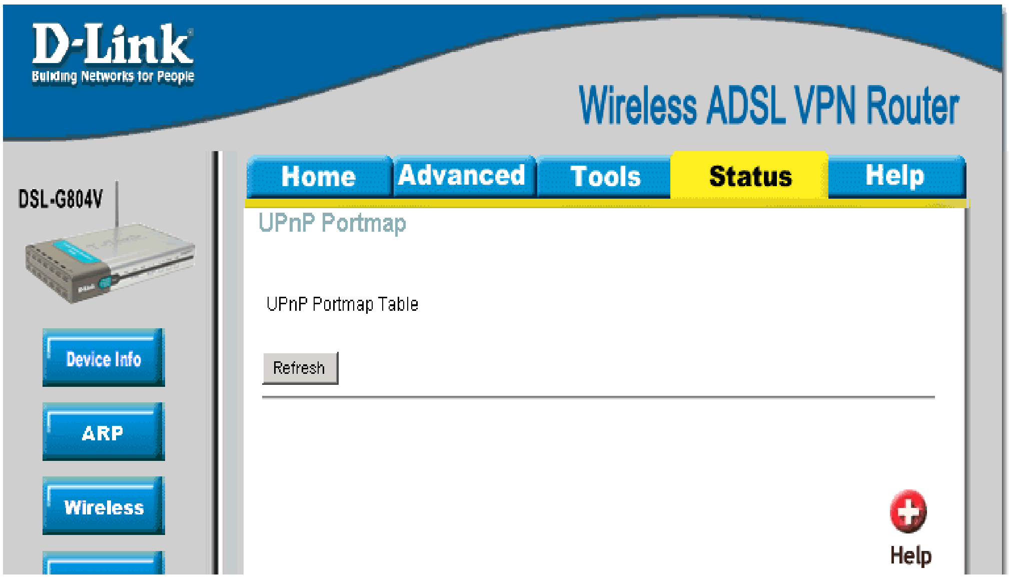
```
Active NAT sessions between interface of types external and internal:

Prot | Local IP: Port local/public | Remote IP: Port        | Idle (sec.
-----|----------------------------|-----------------------|-------
TCP  | 192.168.  1.201: 1110/ 1110 |  64. 94.110. 12:   80 | 29
TCP  | 192.168.  1. 99: 1982/ 1982 | 210.184.108.126:   80 | 729
TCP  | 192.168.  1. 99: 1979/ 1979 | 207. 68.178.239:   80 | 542
TCP  | 192.168.  1.202: 2011/ 2011 | 207. 46.107. 27: 1863 | 21
TCP  | 192.168.  1.100: 1166/ 1166 | 207. 46.106. 90: 1863 | 18
TCP  | 192.168.  1. 99: 1969/ 1969 | 207. 46.107. 22: 1863 | 673
ICMP | 192.168.  1.201:  512/  512 | 168. 95.  4.211:  512 | 0

   TCP :    6 sessions
   UDP :    0 sessions
Others :    1 sessions
 Total :    7 sessions
```

Refresh

Figure 6-12. NAT Sessions

UPnP Portmap

UPnP Portmap list all port-mapping established using UPnP (Universal Plug and Play).



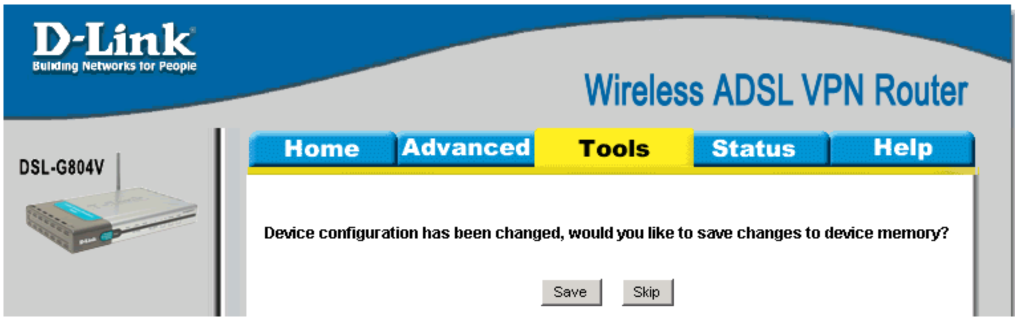
UPnP Portmap

UPnP Portmap Table

Figure 6-13. UPnP Portmap

Logout

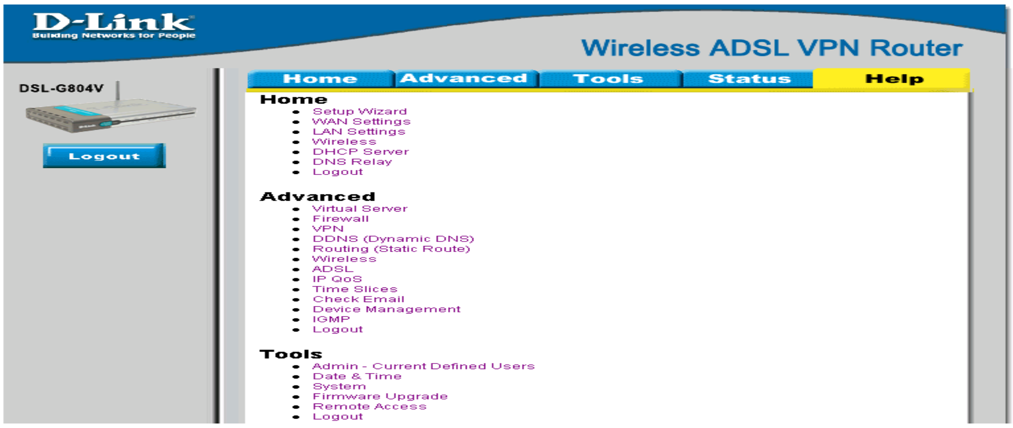
To exit the router's web interface, choose **Logout**. Please ensure that you have saved the configuration settings before you logout.



Device configuration has been changed, would you like to save changes to device memory?

Help

Help menu links provide more information for configuring various Router functions.



Home
- Setup Wizard
- WAN Settings
- LAN Settings
- Wireless
- DHCP Server
- DNS Relay
- Logout

Advanced
- Virtual Server
- Firewall
- VPN
- DDNS (Dynamic DNS)
- Routing (Static Route)
- Wireless
- ADSL
- IP QoS
- Time Slices
- Check Email
- Device Management
- IGMP
- Logout

Tools
- Admin - Current Defined Users
- Date & Time
- System
- Firmware Upgrade
- Remote Access
- Logout

Figure 6-14. Help

A

Technical Specifications

GENERAL		
Standards:	ITU G.992.1 (G.dmt) Annex A ITU G.992.2 (G.lite) Annex A ITU G.994.1 (G.Hs) ITU G.992.3 (G.dmt.bis) ITU G.992.5 (G.dmt.bisplus) ITU-T Rec. I.361 ITU-T Rec. I.610 IEEE 802.3 IEEE 802.3u IEEE 802.1d RFC 791 (IP Routing) RFC 792 (UDP) RFC 826 (ARP) RFC 1058 (RIP 1) RFC 1389 (RIP 2) RFC 1213 compliant RFC 1483 (Bridged Ethernet)	RFC 1577 (IP over ATM) RFC 1661 (PPP) RFC 1994 (CHAP) RFC 1334 (PAP) RFC 2364 (PPP over ATM) RFC 1631 (NAT) RFC 1877 (Automatic IP assignment) RFC 2516 (PPP over Ethernet) Supports RFC 2131 (DHCP) Compatible with all T1.413 issue 2 (full rate DMT over analog POTS), and CO DSLAM equipment Supports ATM Forum UNI V3.1 PVC
Protocols:	TCP/IP UDP RIP-1 RIP-2 IGMP	DHCP BOOTP ARP AAL5
Data Transfer Rate:	G.dmt full rate: Downstream up to 8 Mbps Upstream up to 640 Kbps G.dmt.bis full rate: Downstream up to 12 Mbps Upstream up to1 Mbps G.dmt.bisplus full rate: Downstream up to 24 Mbps Upstream up to1 Mbps G.lite: Downstream up to 1.5 Mbps Upstream up to 512 Kbps	
Media Interface:	RJ-11 port ADSL telephone line connection RJ-45 port for 10/100BASET Ethernet connection	

Physical and Environmental	
DC Inputs: **Power Adapter:**	Input: 100V ~ 240V AC 50 ~ 60Hz Output: 12V DC, 1A
Power Consumption:	12 Watts (max)
Operating Temperature:	0° to 40° C (32° - 104° F)
Humidity:	20 to 95% (non-condensing)
Dimensions:	193 x 118 x 31 mm
Device Weight:	270 g
EMI:	CE Class B, FCC Class B (Part 15)
Safety:	CE, LVD
Reliability:	Mean Time Between Failure (MTBF) min. 260,881 hours

B

IP Address Setup

The DSL-G804V is designed to provide network administrators maximum flexibility for IP addressing on the Ethernet LAN. The easiest IP setup choice in most cases is to let the Router do it using DHCP, which is enabled by default. This appendix briefly describes various options including DHCP, used for IP setup on a LAN. If you are new to IP networking, the next appendix provides some background information on basic IP concepts.

Assigning Network IP Addresses

The IP address settings, which include the IP address, subnet mask and gateway IP address are the first and most important internal network settings that need to be configured. The Router is assigned a default LAN IP address and subnet mask. If you do not have a preexisting IP network and are setting one up now, using the factory default IP address settings can greatly ease the setup process. If you already have a preexisting IP network, you can adjust the IP settings for the Router to fit within your existing scheme.

Using the Default IP Address

The Router is shipped with a preset default IP address setting of 192.168.1.1 for the LAN port. There are two ways to use this default IP address, you can manually assign an IP address and subnet mask for each PC on the LAN or you can instruct the Router to automatically assign them using DHCP. The simplest method is to use DHCP. The DHCP function is active by default.

Manual IP Address Assignment

Manually configuring IP settings for the LAN means you must manually set an IP address, subnet mask and IP address of the default gateway (the Router’s IP address) on each networked computer. The example listed below describes IP configuration for computers running Windows 95 or Windows 98. Regardless of what operating system is used on each workstation, the three network IP settings must be defined so the network interface used by each workstation can be identified by the Router, and vice versa. For detailed information about configuring your workstations IP settings, consult the user’s guide included with the operating system or the network interface card (NIC).

1. In Windows 95/98, click on the **Start** button, go to **Settings** and choose **Control Panel**.

2. In the window that opens, double-click on the **Network** icon.

3. Under the Configuration tab, select the **TCP/IP** component and click *Properties*.

4. Choose the *Specify an IP address* option and edit the address settings accordingly. Consult the table below for IP settings on a Class C network.

Using Default IP without DHCP			
Host	**IP Address**	**Subnet Mask**	**Gateway IP**
Router	192.168.1.1	255.255.255.0	
Computer #1	192.168.0.2	255.255.255.0	192.168.1.1
Computer #2	192.168.0.3	255.255.255.0	192.168.1.1
Computer #3	192.168.0.4	255.255.255.0	192.168.1.1

IP Setup - Example #1

Please note that when using the default IP address as in the above example, the first three numbers in the IP address must always be the same with only the fourth number changing. The first three numbers define the network IP address (all machines must belong to the same IP network), while the last number denotes the host IP address (each computer must have a unique address to distinguish it on the network). The IP address scheme used in Example #1 can be used for any LAN that requires up to 253 separate IP addresses (excluding the Router). Notice that the subnet mask is the same for all machines and the default gateway address is the LAN IP address of the Router.

It is a good idea to make a note of each device's IP address for reference during troubleshooting or when adding new stations or devices.

Using DHCP

The second way to use the default settings is to allow the Router to automatically assign IP settings for workstation using DHCP. To do this, simply make sure your computers' IP addresses are set to 0.0.0.0 (under Windows, choose the option Obtain an IP address automatically in the TCP/IP network component described above). When the computers are restarted, their IP settings will automatically be assigned by the Router. The Router is set by default to use DHCP. See the discussion in Chapter 5 for information on how to use configure the Router for DHCP.

Changing the IP Address of the Router

When planning your LAN IP address setup, you may use any scheme allowed by rules that govern IP assignment. It may be more convenient or easier to remember an IP scheme that use a different address for the Router. Or you may be installing the Router on a network that has already established the IP settings. Changing the IP address is a simple matter and can be done using the web manager (see *LAN IP Address* in Chapter 5). If you are incorporating the Router into a LAN with an existing IP structure, be sure to disable the DHCP function. Also, consider the effects of the NAT function which is enable by default.

An IP addressing scheme commonly used for Ethernet LANs establishes 10.0.0.1 as the base address for the network. Using Example #2 below, the Router is assigned the base address 10.0.0.1 and the remaining addresses are assigned manually or using DHCP.

Alternative IP Assignment			
Host	**IP Address**	**Subnet Mask**	**Gateway IP**
Router	10.0.0.1	255.255.255.0	
Computer #1	10.0.0.2	255.255.255.0	192.168.1.1
Computer #2	10.0.0.3	255.255.255.0	192.168.1.1
Computer #3	10.0.0.4	255.255.255.0	192.168.1.1

IP Setup - Example #2

These two examples are only examples you can use to help you get started. If you are interested in more advanced information on how to use IP addressing on a LAN there are numerous resources freely available on the Internet. There are also many books and chapters of books on the subject of IP address assignment, IP networking and the TCP/IP protocol suite.

C

IP Concepts

This appendix describes some basic IP concepts, the TCP/IP addressing scheme and show how to assign IP Addresses.

When setting up the Router, you must make sure it has a valid IP address. Even if you will not use the WAN port (ADSL port), you should, at the very least, make sure the Ethernet LAN port is assigned a valid IP address. This is required for telnet, in-band SNMP management, and related functions such as “trap” handling and TFTP firmware download.

IP Addresses

The Internet Protocol (IP) was designed for routing data between network sites all over the world, and was later adapted for routing data between networks within any site (often referred to as “subnetworks” or “subnets”). IP includes a system by which a unique number can be assigned to each of the millions of networks and each of the computers on those networks. Such a number is called an IP address.

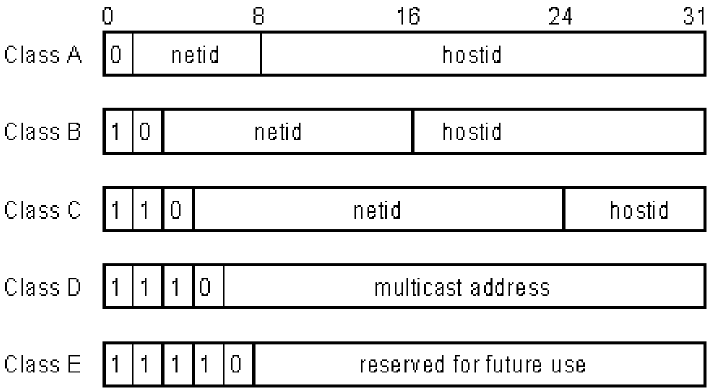
To make IP addresses easy to understand, the originators of IP adopted a system of representation called “dotted decimal” or “dotted quad” notation. Below are examples of IP addresses written in this format:

201.202.203.204   189.21.241.56   125.87.0.1

Each of the four values in an IP address is the ordinary decimal (base 10) representation of a value that a computer can handle using eight “bits” (binary digits — 1s and 0s). The dots are simply convenient visual separators.

Zeros are often used as placeholders in dotted decimal notation; 189.21.241.56 can therefore also appear as 189.021.241.056.

IP networks are divided into three classes on the basis of size. A full IP address contains a network portion and a “host” (device) portion. The network and host portions of the address are different lengths for different classes of networks, as shown in the table below.



Networks attached to the Internet are assigned class types that determine the maximum number of possible hosts per network. The previous figure illustrates how the net and host portions of the IP address differ among the three classes. Class A is assigned to networks that have more than 65,535 hosts; Class B is for networks that have 256 to 65534 hosts; Class C is for networks with less than 256 hosts.

IP Network Classes

Class	Maximum Number of Networks in Class	Network Addresses (Host Portion in Parenthesis)	Maximum Number of Hosts per Network
A	126	1(.0.0.0) to 126(.0.0.0)	16,777,214
B	16,382	128.1(.0.0) to 191.254(.0.0)	65,534
C	2,097,150	192.0.1(.0) to 223.255.254(.0)	254

Note: *All network addresses outside of these ranges (Class D and E) are either reserved or set aside for experimental networks or multicasting.*

When an IP address's host portion contains only zero(s), the address identifies a network and not a host. No physical device may be given such an address.

The network portion must start with a value from 1 to 126 or from 128 to 223. Any other value(s) in the network portion may be from 0 to 255, except that in class B the network addresses 128.0.0.0 and 191.255.0.0 are reserved, and in class C the network addresses 192.0.0.0 and 223.255.255.0 are reserved.

The value(s) in the host portion of a physical device's IP address can be in the range of 0 through 255 as long as this portion is not all-0 or all-255. Values outside the range of 0 to 255 can never appear in an IP address (0 to 255 is the full range of integer values that can be expressed with eight bits).

The network portion must be the same for all the IP devices on a discrete physical network (a single Ethernet LAN, for example, or a WAN link). The host portion must be different for each IP device — or, to be more precise, each IP-capable port or interface — connected directly to that network.

The network portion of an IP address will be referred to in this manual as a **network number**; the host portion will be referred to as a **host number**.

To connect to the Internet or to any private IP network that uses an Internet-assigned network number, you must obtain a registered IP network number from an Internet-authorized network information center. In many countries you must apply through a government agency, however they can usually be obtained from your Internet Service Provider (ISP).

If your organization's networks are, and will always remain, a closed system with no connection to the Internet or to any other IP network, you can choose your own network numbers as long as they conform to the above rules.

If your networks are isolated from the Internet, e.g. only between your two branch offices, you can assign any IP Addresses to hosts without problems. However, the Internet Assigned Numbers Authority (IANA) has reserved the following three blocks of IP Addresses specifically for private (stub) networks:

Class	Beginning Address	Ending Address
A	10.0.0.0	10.255.255.255
B	172.16.0.0	172.31.255.255
C	192.168.0.0	192.168.255.255

It is recommended that you choose private network IP Addresses from the above list. For more information on address assignment, refer to RFC 1597, *Address Allocation for Private Internets* and RFC 1466, *Guidelines for Management of IP Address Space*.

Subnet Mask

In the absence of subnetworks, standard TCP/IP addressing may be used by specifying subnet masks as shown below.

IP Class	Subnet Mask
Class A	255.0.0.0
Class B	255.255.0.0
Class C	255.255.255.0

Subnet mask settings other than those listed above add significance to the interpretation of bits in the IP address. The bits of the subnet mask correspond directly to the bits of the IP address. Any bit an a subnet mask that is to correspond to a net ID bit in the IP address must be set to 1.

D

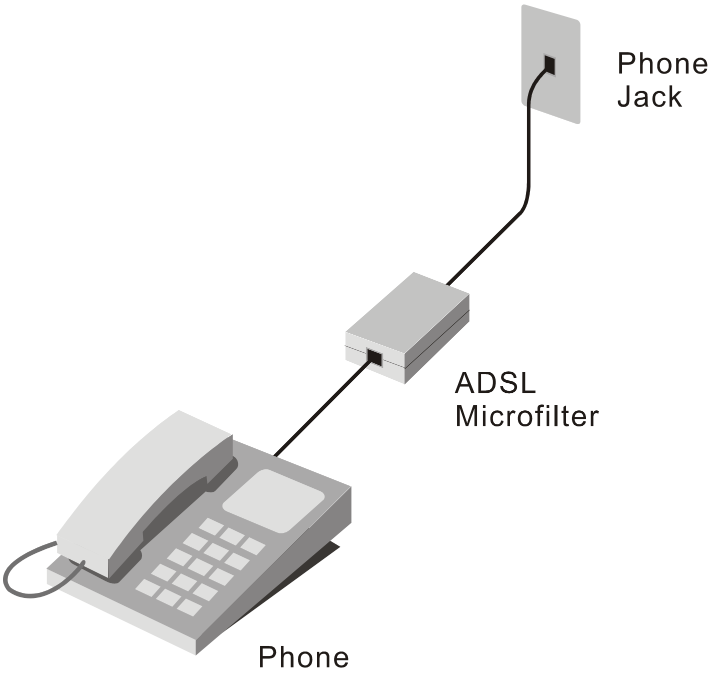
Microfilters and Splitters

Most ADSL clients will be required to install a simple device that prevents the ADSL line from interfering with regular telephone services. These devices are commonly referred to as microfilters or sometimes called (inaccurately) line splitters. They are easy to install and use standard telephone connectors and cable.

Some ADSL service providers will send a telecommunications technician to modify the telephone line, usually at the point where the telephone line enters the building. If a technician has divided or split your telephone line into two separate lines - one for regular telephone service and the other for ADSL – then you do not need to use any type of filter device. Follow the instructions given to you by your ADSL service provider about where and how you should connect the Modem to the ADSL line.

Microfilters

Unless you are instructed to use a "line splitter" (see below), it will be necessary to install a microfilter (low pass filter) device for each telephone or telephone device (answering machines, Faxes etc.) that share the line with the ADSL service. Microfilters are easy-to-install, in-line devices, which attach to the telephone cable between the telephone and wall jack. Microfilters that install behind the wall plate are also available. A typical in-line microfilter installation is shown in the diagram below.



Microfilter Installation

Important: **Do not install the microfilter between the Modem and the telephone jack. Microfilters are only intended for use with regular telephones, Fax machines and other regular telephone devices.**

Line Splitter

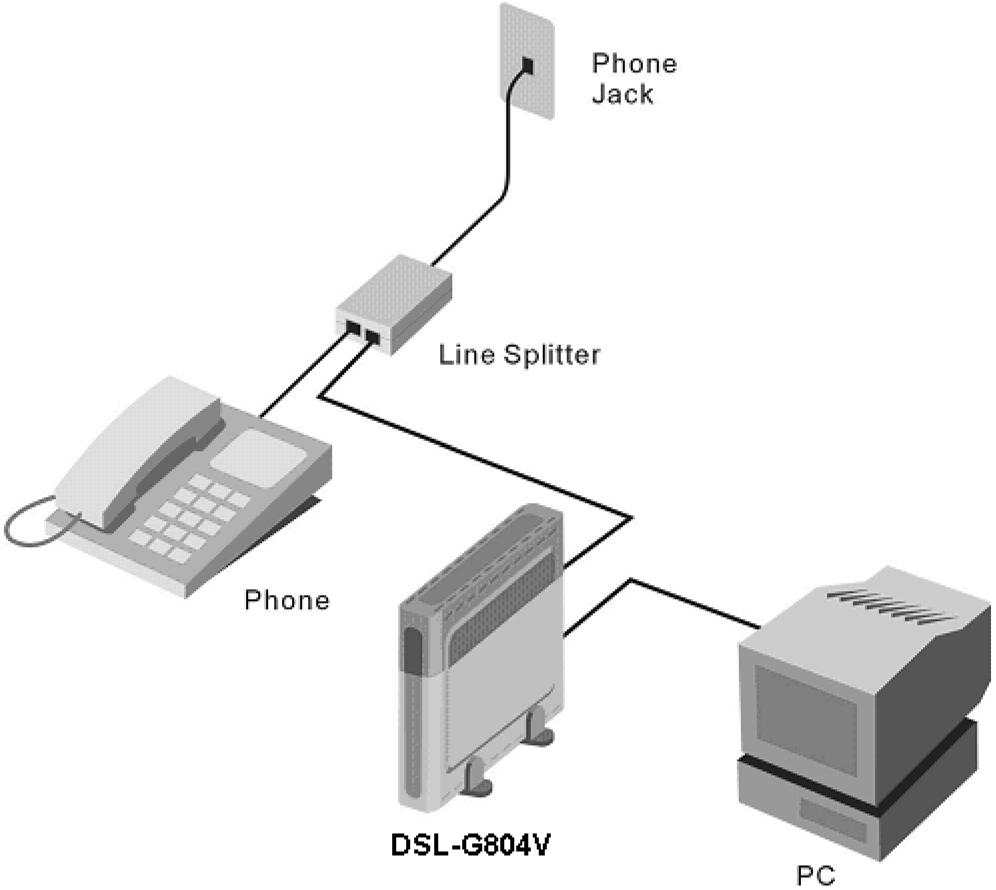
If you are instructed to use a "line splitter", you must install the device between the Modem and the phone jack. Use standard telephone cable with standard RJ-11 connectors. The splitter has three RJ-11 ports used to connect to the wall jack, the Modem and if desired, a telephone or telephone device. The connection ports are typically labeled as follows:

Line - This port connects to the wall jack.

ADSL – This port connects to the Modem.

Phone – This port connects to a telephone or other telephone device.

The diagram below illustrates the proper use of the splitter.



Line Splitter Installation

D-Link Offices

Australia
D-Link Australia
1 Giffnock Avenue, North Ryde, NSW 2113,
Sydney, Australia
TEL: 61-2-8899-1800 FAX: 61-2-8899-1868
TOLL FREE (Australia): 1800-177100
URL: www.dlink.com.au
E-MAIL: support@dlink.com.au & info@dlink.com.au

Brazil
D-Link Brasil Ltda.
Edificio Manoel Tabacow Hydal,
Rua Tavares Cabral 102 Sala 31, 05423-030
Pinheiros, Sao Paulo, Brasil
TEL: (55 11) 3094 2910 to 2920 FAX: (55 11) 3094 2921
E-MAIL: efreitas@dlink.cl

Canada
D-Link Canada
2180 Winston Park Drive, Oakville,
Ontario, L6H 5W1 Canada
TEL: 1-905-829-5033 FAX: 1-905-829-5095
TOLL FREE: 1-800-354-6522 URL: www.dlink.ca
FTP: ftp.dlinknet.com E-MAIL: techsup@dlink.ca

Chile
D-Link South America (Sudamérica)
Isidora Goyenechea 2934 Of. 702, Las Condes Fono,
2323185, Santiago, Chile, S. A.
TEL: 56-2-232-3185 FAX: 56-2-232-0923
URL: www.dlink.cl
E-MAIL: ccasassu@dlink.cl & tsilva@dlink.cl

China
D-Link China
15th Floor, Science & Technology Tower,
No.11, Baishiqiao Road, Haidan District, 100081 Beijing, China
TEL: 86-10-68467106 FAX: 86-10-68467110
URL: www.dlink.com.cn
E-MAIL: liweii@digitalchina.com.cn

Denmark
D-Link Denmark
Naverland Denmark, Naverland 2, DK-2600 Glostrup, Copenhagen, Denmark
TEL: 45-43-969040 FAX:45-43-424347
URL: www.dlink.dk E-MAIL: info@dlink.dk

Egypt
D-Link Middle East
7 Assem Ebn Sabet Street, Heliopolis, Cairo, Egypt
TEL: 202-245-6176 FAX: 202-245-6192
URL: www.dlink-me.com
E-MAIL: support@dlink-me.com & fateen@dlink-me.com

Finland
D-Link Finland
Pakkalankuja 7A, FIN–0150 Vantaa, Finland
TEL: 358-9-2707-5080 FAX: 358-9-2707-5081
URL: www.dlink-fi.com

France
D-Link France
Le Florilege, No. 2, Allée de la Fresnerie,
78330 Fontenay-le-Fleury, France
TEL: 33-1-3023-8688 FAX: 33-1-3023-8689
URL: www.dlink-france.fr
E-MAIL: info@dlink-france.fr

Germany
D-Link Central Europe (D-Link Deutschland GmbH)
Schwalbacher Strasse 74, D-65760 Eschborn, Germany
TEL: 49-6196-77990 FAX: 49-6196-7799300
URL: www.dlink.de
BBS: 49-(0) 6192-971199 (analog)
BBS: 49-(0) 6192-971198 (ISDN)
INFO: 00800-7250-0000 (toll free)
HELP: 00800-7250-4000 (toll free)
REPAIR: 00800-7250-8000 E-MAIL: info@dlink.de

India
D-Link India
Plot No.5, Bandra-Kurla Complex Rd., Off Cst Rd.,
Santacruz (East), Mumbai, 400 098 India
TEL: 91-022-652-6696/6578/6623
FAX: 91-022-652-8914/8476
URL: www.dlink-india.com & www.dlink.co.in
E-MAIL: service@dlink.india.com & tushars@dlink-india.com

Italy
D-Link Mediterraneo Srl/D-Link Italia
Via Nino Bonnet n. 6/B, 20154, Milano, Italy
TEL: 39-02-2900-0676 FAX: 39-02-2900-1723
URL: www.dlink.it E-MAIL: info@dlink.it

Japan
D-Link Japan
10F, 8-8-15 Nishi-Gotanda, Shinagawa-ku, Tokyo 141, Japan
TEL: 81-3-5434-9678 FAX: 81-3-5434-9868
URL: www.d-link.co.jp E-MAIL: kida@d-link.co.jp

Netherlands
D-Link Benelux
Fellenoord 130 5611 ZB, Eindhoven, The Netherlands
TEL: 31-40-2668713 FAX: 31-40-2668666
URL: www.d-link-benelux.nl & www.dlink-benelux.be
E-MAIL: info@dlink-benelux.nl & info@dlink-benelux.be

Norway
D-Link Norway
Waldemar Thranesgate 77, 0175 Oslo, Norway
TEL: 47-22-99-18-90 FAX: 47-22-20-70-39 SUPPORT: 800-10-610
URL: www.dlink.no

Russia
D-Link Russia
Michurinski Prospekt 49, 117607 Moscow, Russia
TEL: 7-095-737-3389 & 7-095-737-3492
FAX: 7-095-737-3390 URL: www.dlink.ru
E-MAIL: vl@dlink.ru

Singapore
D-Link International
1 International Business Park, #03-12 The Synergy,
Singapore 609917
TEL: 6-6774-6233 FAX: 6-6774-6322
E-MAIL: info@dlink.com.sg URL: www.dlink-intl.com

South Africa
D-Link South Africa
Unit 2, Parkside, 86 Oak Avenue, Highveld Technopark,
Centurion, Gauteng, South Africa
TEL: 27-12-665-2165 FAX: 27-12-665-2186
URL: www.d-link.co.za E-MAIL: attie@d-link.co.za

Spain
D-Link Iberia (Spain and Portugal)
Sabino de Arana, 56 bajos, 08028 Barcelona, Spain
TEL: 34 93 409 0770 FAX: 34 93 491 0795
URL: www.dlink.es E-MAIL: info@dlink.es

Sweden
D-Link Sweden
P. O. Box 15036, S-167 15 Bromma, Sweden
TEL: 46-8-564-61900 FAX: 46-8-564-61901
URL: www.dlink.se E-MAIL: info@dlink.se

Taiwan
D-Link Taiwan
2F, No. 119 Pao-chung Road, Hsin-tien, Taipei, Taiwan
TEL: 886-2-2910-2626 FAX: 886-2-2910-1515
URL: www.dlinktw.com.tw E-MAIL: dssqa@tsc.dlinktw.com.tw

Turkey
D-Link Middle East
Deniz Bilgisayar, Buyukdere Cad. Naci Kasim Sk., No. 5
Mecidiyekoy, Istanbul, Turkey
TEL: 90-212-213-3400 FAX: 90-212-213-3420
E-MAIL: smorovati@dlink-me.com

U.A.E.
D-Link Middle East
CHS Aptec (Dubai), P.O. Box 33550 Dubai, United Arab Emirates

TEL: 971-4-366-885 FAX: 971-4-355-941
E-MAIL: Wxavier@dlink-me.com

U.K. **D-Link Europe (United Kingdom) Ltd**
4th Floor, Merit House, Edgware Road, Colindale, London
NW9 5AB United Kingdom
TEL: 44-020-8731-5555 SALES: 44-020-8731-5550
FAX: 44-020-8731-5511 SALES: 44-020-8731-5551
BBS: 44 (0) 181-235-5511
URL: www.dlink.co.uk E-MAIL: info@dlink.co.uk

U.S.A. **D-Link U.S.A.**
17575 Mt. Herrmann, Fountain Valley, CA 92708
TEL: 1-714-885-6000 FAX: 1-866-743-4905
INFO: 1-800-326-1688 URL: www.dlink.com
E-MAIL: tech@dlink.com & support@dlink.com

Registration Card

Print, type or use block letters.
Your name: Mr./Ms____
Organization: ____Dept.___________________________
Your title at organization:____
Telephone:______________________________________ Fax:_______________________________
Organization's full address:____
____
Country:____
Date of purchase (Month/Day/Year):____________________________________

Product Model	Product Serial No.	* Product installed in type of computer (e.g., Compaq 486)	* Product installed in computer serial No.

(* Applies to adapters only)
Product was purchased from:
Reseller's name:____
Telephone:______________________________________ Fax:_______________________________
Reseller's full address:____
____

Answers to the following questions help us to support your product:

1. Where and how will the product primarily be used?
□Home □Office □Travel □Company Business □Home Business □Personal Use

2. How many employees work at installation site?
□1 employee □2-9 □10-49 □50-99 □100-499 □500-999 □1000 or more

3. What network protocol(s) does your organization use ?
□XNS/IPX □TCP/IP □DECnet □Others____

4. What network operating system(s) does your organization use ?
□D-Link LANsmart □Novell NetWare □NetWare Lite □SCO Unix/Xenix □PC NFS □3Com 3+Open
□Banyan Vines □DECnet Pathwork □Windows NT □Windows NTAS □Windows '95
□Others____

5. What network management program does your organization use ?
□D-View □HP OpenView/Windows □HP OpenView/Unix □SunNet Manager □Novell NMS
□NetView 6000 □Others____

6. What network medium/media does your organization use ?
□Fiber-optics □Thick coax Ethernet □Thin coax Ethernet □10BASE-T UTP/STP
□100BASE-TX □100BASE-T4 □100VGAnyLAN □Others____

7. What applications are used on your network?
□Desktop publishing □Spreadsheet □Word processing □CAD/CAM
□Database management □Accounting □Others____

8. What category best describes your company?
□Aerospace □Engineering □Education □Finance □Hospital □Legal □Insurance/Real Estate □Manufacturing
□Retail/Chainstore/Wholesale □Government □Transportation/Utilities/Communication □VAR
□System house/company □Other____

9. Would you recommend your D-Link product to a friend?
□Yes □No □Don't know yet

10.Your comments on this product? ____
____
____
____

PLEASE
PLACE STAMP
HERE

TO:

D-Link®