

# USER MANUAL

DSL-2500U

VERSION 1.00



**D-Link**<sup>®</sup>

**BROADBAND**

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## Package Contents

- DSL-2500U ADSL Router
- Power Adapter
- CD-ROM with User Manual
- One twisted-pair telephone cable used for ADSL connection
- One straight-through Ethernet cable
- One Quick Installation Guide



**Note:** Using a power supply with a different voltage rating other than the one included with the DSL-2500U may cause damage and void the warranty for this product.

## System Requirements

- ADSL Internet service
- Computer with:
  - 200MHz Processor
  - 64MB Memory
  - CD-ROM Drive
  - Ethernet Adapter with TCP/IP Protocol Installed
  - Internet Explorer v6 or later, FireFox v1.5
  - Computer with Windows 2000, Windows XP, or Windows Vista
- D-Link Click'n Connect Utility

## Features

**PPP (Point-to-Point Protocol) Security** – The Router supports PAP (Password Authentication Protocol) and CHAP (Challenge Handshake Authentication Protocol) for PPP connections. The Router also supports MSCHAP.

**DHCP Support** – Dynamic Host Configuration Protocol automatically and dynamically assigns all LAN IP settings to each host on your network. This eliminates the need to reconfigure every host whenever changes in the network topology occur.

**Network Address Translation (NAT)** – For small office environments, the Router allows multiple users on the LAN to access the Internet concurrently through a single Internet account. This provides Internet access to everyone in the office for the price of a single user. NAT improves network security in effect by hiding the private network behind one global and visible IP address. NAT address mapping can also be used to link two IP domains via a LAN-to-LAN connection.

**TCP/IP (Transmission Control Protocol/Internet Protocol)** – The Router supports the TCP/IP protocol, the language used for the Internet. It is compatible with access servers manufactured by major vendors.

**RIP-1/RIP-2** – The Router supports both RIP-1 and RIP-2 exchanges with other routers. Using both versions allows the Router to communicate with all RIP enabled devices.

**Static Routing** – This allows you to select a data path to a particular network destination that will remain in the routing table and never “age out”. Create a static route if you wish to define a specific route that will always be used for data traffic from your LAN to a specific destination within your LAN (for example to another router or a server) or to a specific destination outside your network (to an ISP defined default gateway for instance).

**Default Routing** – This allows you to choose a default path for incoming data packets for which the destination address is unknown. This is particularly useful when/if the Router functions as the sole connection to the Internet.

**ATM (Asynchronous Transfer Mode)** – The Router supports Bridged Ethernet over ATM (RFC1483), IP over ATM (RFC1577), and PPP over ATM (RFC 2364).

**Precise ATM Traffic Shaping** – Traffic shaping is a method of controlling the flow rate of ATM data cells. This function helps to establish the Quality of Service for ATM data transfer.

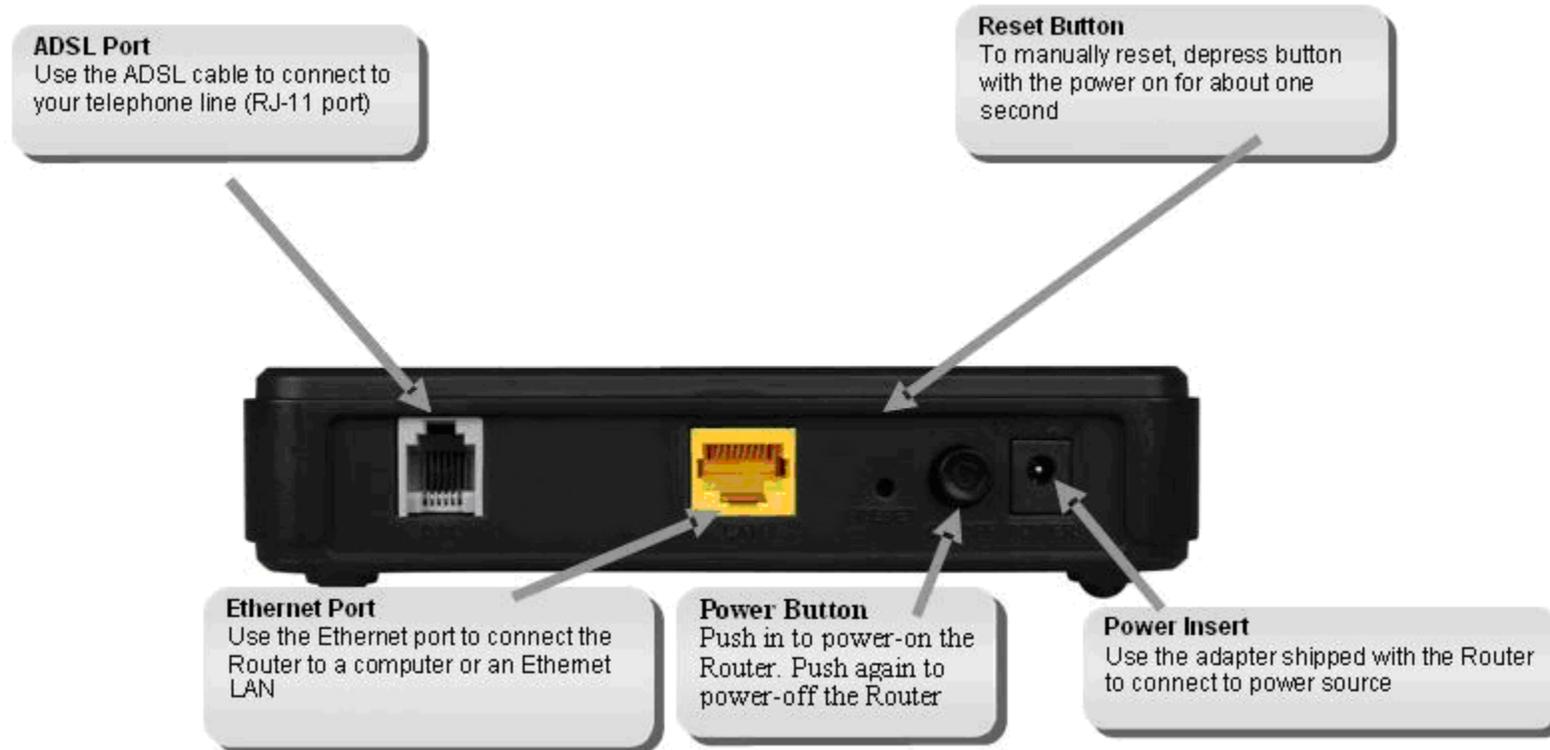
**G.hs (Auto-handshake)** – This allows the Router to automatically choose either the G.lite or G.dmt ADSL connection standards.

**High Performance** – Very high rates of data transfer are possible with the Router. Up to 8 Mbps downstream bit rate using the G.dmt standard.

**Telnet Connection** – Telnet enables a network manager to access the Router’s management software remotely.

**Easy Installation** – The Router uses a web-based graphical user interface program for convenient management access and easy set up. Any common web browser software can be used to manage the Router.

## Hardware Overview Connections



## Hardware Overview LEDs

### Power

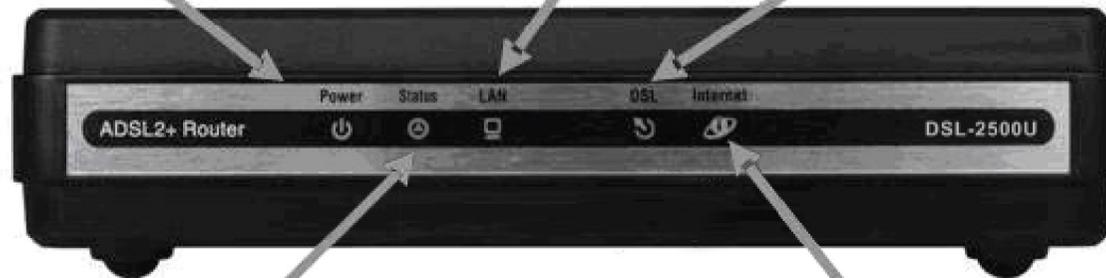
A steady green light indicates the device is powered on. The red light indicates the device is during power on self-test. The red light will blink when the software of system is during update.

### LAN

A solid green light indicates a valid link on startup. This light will blink when there is activity currently passing through the Ethernet port.

### DSL

A 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.



### Status

A blinking green light indicates that the Internet traffic is passing through the device

### Internet

A solid green light indicates device has a WAN IP address from IPCP or DHCP and DSL is up or a static IP address is configured PPP negotiation has completed successfully (if used), and DSL is up. A solid red light indicates device attempted to become IP connected and failed (no DHCP response, no PPPoE response, PPPoE authentication failed, no IP address from IPCP, etc.)

# Installation

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

## Before You Begin

Please 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 Notes

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 a standard telephone cable. Ask your service provider for more information about the use of low pass filters with your installation.

### Operating Systems

The DSL-2500U 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 SE, Windows ME, Windows 2000, Windows XP, and Windows Vista.

### 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 6.0, Netscape Navigator® version 6.2.3, 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. If your computer does not have an Ethernet port, you must install an Ethernet NIC adapter before you can use the Router. If you need to 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 as 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 or PPPoA 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.

## 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. Your ADSL service provider uses this to identify your account.

### **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.

### **WAN Setting / Connection Type**

These settings describe the method your ADSL service provider uses to transport data between the Internet and your computer. Most users will use the default settings. You may need to specify one of the following WAN Setting and Connection Type configurations (Connection Type settings listed in parenthesis):

PPPoE/PPPoA (PPPoE LLC, PPPoA LLC or PPPoA VC-Mux)

Bridge Mode (1483 Bridged IP LLC or 1483 Bridged IP VC Mux)

IPoA/MER (Static IP Address) (Bridged IP LLC, 1483 Bridged IP VC Mux, 1483 Routed IP LLC, 1483 Routed IP VC-Mux or IPoA)

MER (Dynamic IP Address) (1483 Bridged IP LLC or 1483 Bridged IP VC-Mux)

### **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 (ADSL2+ Multi-Mode) used for the Router automatically detects all types of ADSL, ADSL2 and ADSL2+ modulation.

### **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 Router supports the PAP and CHAP protocols.

### **VPI**

Most users will not be required to change this setting. The Virtual Path Identifier (VPI) is used in conjunction with the Virtual Channel Identifier (VCI) to identify the data path between your ADSL service provider's network and your computer. If you are setting up the Router for multiple virtual connections, you will need to configure the VPI and VCI as instructed by your ADSL service provider for the additional connections. This setting can be changed in the WAN Settings window of the web management interface.

### **VCI**

Most users will not be required to change this setting. The Virtual Channel Identifier (VCI) is used in conjunction with the VPI to identify the data path between your ADSL service provider's network and your computer. If you are setting up the Router for multiple virtual connections, you will need to configure the VPI and VCI as instructed by your ADSL service provider for the additional connections. This setting can be changed in the WAN Setup window of the web management interface.

## Information you will need about your DSL-2500U ADSL Router

### **Username**

This is the Username needed to access the Router'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 Router is "admin." The user cannot change this.

### **Password**

This is the Password you will be prompted to enter when you access the Router's management interface. The default Password is "admin." The user may change this.

### **LAN IP addresses for the DSL-2500U**

This is the IP address you will enter into the Address field of your web browser to access the Router's configuration graphical user interface (GUI) using a web browser. The default IP address is **192.168.1.1**. 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-2500U**

This is the subnet mask used by the DSL-2500U 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-2500U to the Ethernet port using an Ethernet cable. You can also use the Ethernet ports on the DSL-2500U to connect to other computers or Ethernet devices.

### **DHCP Client status**

Your DSL-2500U ADSL Router 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-2500U 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 you 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-2500U ADSL Router.

## Device Installation

The DSL-2500U has two separate physical interfaces, an ADSL (WAN), an Ethernet (LAN) interface. The Router can be connected to your PC via the Ethernet port. Place the Router in a location where it can be 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 procedures.

The Router 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

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

1. Insert the AC 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. Depress the Power button into the on position. 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 LAN LED indicator 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 you have installed 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 using a ballpoint or paperclip to gently push down the reset button in the following sequence:

1. Press and hold the reset button while the device is powered off.
2. Turn on the power.
3. Wait for 5~8 seconds and then release the reset button.

Remember that this will wipe out any settings stored in flash memory including user account information and LAN IP settings. The device settings will be restored to the factory default IP address **192.168.1.1** and the subnet mask **255.255.255.0**, the default management Username is “admin” and the default Password is “admin”.

## Network Connections

### **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 the instructions 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 10/100 BASE-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 cabling 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. If you wish to reserve the uplink port on the switch or hub for another device, connect to any of the other MDI-X ports (1x, 2x, etc.) with a crossed cable.

### **Computer to Router Connection**

You can either connect the Router's Ethernet interface directly to a 10/100BASE-TX Ethernet adapter card (NIC) installed in a PC using the Ethernet cable provided.

# Configuration

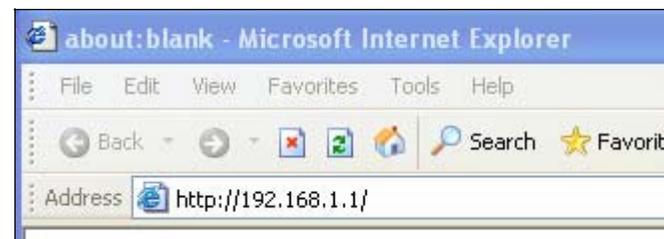
This section will show you how to configure your new D-Link Router using the web-based configuration utility.

## Web-based Configuration Utility

### 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. 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.

To access the configuration utility, open a web-browser such as Internet Explorer and enter the IP address of the router (**192.168.1.1**).



Type “**admin**” for the User Name and “**admin**” in the Password field. If you get a **Page Cannot be Displayed** error, please refer to the **Troubleshooting** section for assistance.



## Quick Setup

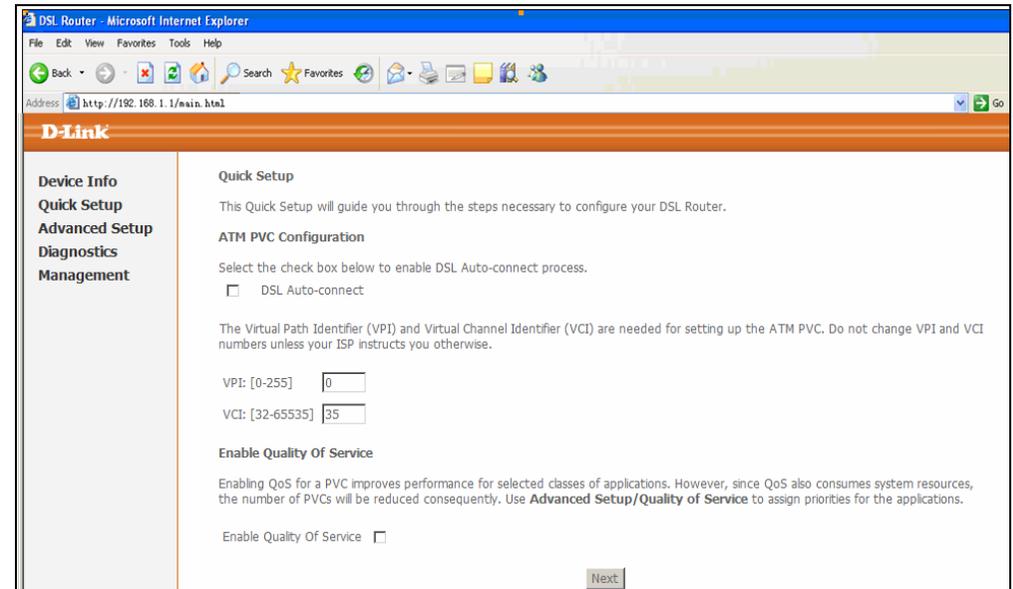
This chapter is concerned with using your computer to configure the WAN connection. The following chapter describes the various windows used to configure and monitor the Router including how to change IP settings and DHCP server setup.

### QUICK SETUP

After successfully logging into the router you will be directed to the following **Quick Setup** window. Please note that if you have already successfully established a DSL connection to the Router, this menu item will not appear.

Tick the DSL Auto-connect check box and then click the **Next** button.

If the ADSL connection is down, unselect the DSL Auto-connect checkbox and then click the **Next** button to manually assign VPI and VCI values.



### QUICK SETUP

This window allows you to set up ATM PVC configuration. Enter a Port Identifier, Virtual Path Identifier, and Virtual Channel Identifier. The VPI and VCI values should be provided by your ISP. This window also allows you to enable QoS by ticking the Enable Quality of Service check box. Click the **Next** button to continue.

### QUICK SETUP – CONNECTION TYPE

This window allows you to select the appropriate connection type. The choices include PPP over ATM (PPPoA), PPP over Ethernet (PPPoE), MAC Encapsulation Routing (MER), IP over ATM (IPoA), and Bridging (default).

This window also allows you to use the drop-down menu to select the desired Encapsulation Mode. Click the **Next** button to continue.

**Quick Setup**

This Quick Setup will guide you through the steps necessary to configure your DSL Router.

**ATM PVC Configuration**

Select the check box below to enable DSL Auto-connect process.

DSL Auto-connect

The Virtual Path Identifier (VPI) and Virtual Channel Identifier (VCI) are needed for setting up the ATM PVC. Do not change VPI and VCI numbers unless your ISP instructs you otherwise.

VPI: [0-255]

VCI: [32-65535]

**Enable Quality Of Service**

Enabling QoS for a PVC improves performance for selected classes of applications. However, since QoS also consumes system resources, the number of PVCs will be reduced consequently. Use **Advanced Setup/Quality of Service** to assign priorities for the applications.

Enable Quality Of Service

**Next**

**Connection Type**

Select the type of network protocol for IP over Ethernet as WAN interface

PPP over ATM (PPPoA)

PPP over Ethernet (PPPoE)

MAC Encapsulation Routing (MER)

IP over ATM (IPoA)

Bridging

**Encapsulation Mode**

**Back** **Next**

## Bridging

### QUICK SETUP – BRIDGING

To enable bridging, tick the Enable Bridge Service check box and enter a Service Name.

To disable WAN service, deselect the check box. Click the **Next** button to continue.

### QUICK SETUP– BRIDGING

This window allows you to configure the Router IP address and subnet mask for your LAN. Once you have entered an IP address and subnet mask, click the **Next** button to continue.

Unselect the check box below to disable this WAN service

Enable Bridge Service:

Service Name:

**Device Setup**

Configure the DSL Router IP Address and Subnet Mask for your Local Area Network (LAN).

IP Address:

Subnet Mask:

### QUICK SETUP – BRIDGING

This summary window allows you to confirm the bridging settings you have just made. Click the **Save/Reboot** button to save your new bridging settings and restart the Router.

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

<b>PORT / VPI / VCI:</b>	0 / 0 / 35
<b>Connection Type:</b>	Bridge
<b>Service Name:</b>	br_0_0_35
<b>Service Category:</b>	UBR
<b>IP Address:</b>	Not Applicable
<b>Service State:</b>	Enabled
<b>NAT:</b>	Disabled
<b>Firewall:</b>	Disabled
<b>IGMP Multicast:</b>	Not Applicable
<b>Quality Of Service:</b>	Disabled

Click "Save/Reboot" to save these settings and reboot router. Click "Back" to make any modifications.  
NOTE: The configuration process takes about 1 minute to complete and your DSL Router will reboot.

[Back](#) [Save/Reboot](#)

## PPPoA

### QUICK SETUP – PPPoA

Click the PPP over ATM (PPPoA) radio button on this window. This window also allows you to use the drop-down menu to select the desired Encapsulation Mode. Click the **Next** button to continue.

**Connection Type**

Select the type of network protocol for IP over Ethernet as WAN interface

PPP over ATM (PPPoA)

PPP over Ethernet (PPPoE)

MAC Encapsulation Routing (MER)

IP over ATM (IPoA)

Bridging

**Encapsulation Mode**

VC/MUX

Back Next

### QUICK SETUP – PPPoA

This window allows you to set the username and the password for your PPP connection. This information is obtained from your ISP. Additional settings on this window will also depend on your ISP. Click the **Next** button to continue.

**PPP Username and Password**

PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.

PPP Username:

PPP Password:

Authentication Method:

Dial on demand (with idle timeout timer)

PPP IP extension

Enable KeepAlive

Use Static IP Address

Retry PPP password on authentication error

Enable PPP Debug Mode

MTU[1-65535]:

### QUICK SETUP - PPPoA

This window allows you to enable IGMP multicasting and WAN service. Most users will want to leave the MTU value at the default setting unless your ISP advises you to change it. Click the **Next** button to continue.

#### Network Address Translation Settings

Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).

Enable NAT

Enable Firewall

#### Enable IGMP Multicast, and WAN Service

Enable IGMP Multicast

Enable WAN Service

Service Name

### QUICK SETUP - PPPoA

This window allows you to enter an IP address and subnet mask for the LAN interface. In addition, you can either enable or disable the DHCP server.

To enable the DHCP server, enter a starting IP address, an ending IP address, and a subnet mask. You may also choose to change the default value of the leased time. Click the **Next** button to continue.

#### Device Setup

Configure the DSL Router IP Address and Subnet Mask for LAN interface.

IP Address:

Subnet Mask:

Disable DHCP Server

Enable DHCP Server

Start IP Address:

End IP Address:

Subnet Mask:

Leased Time (hour):

Configure the second IP Address and Subnet Mask for LAN interface

### QUICK SETUP – PPPoA

This summary window allows you to confirm the settings you have just made. Click the **Save/Reboot** button to save your new PPP over ATM settings and restart the Router.

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

<b>PORT / VPI / VCI:</b>	0 / 0 / 35
<b>Connection Type:</b>	PPPoA
<b>Service Name:</b>	pppoa_0_0_35_1
<b>Service Category:</b>	UBR
<b>IP Address:</b>	Automatically Assigned
<b>Service State:</b>	Enabled
<b>NAT:</b>	Enabled
<b>Firewall:</b>	Enabled
<b>IGMP Multicast:</b>	Disabled
<b>Quality Of Service:</b>	Disabled

Click "Save/Reboot" to save these settings and reboot router. Click "Back" to make any modifications.  
NOTE: The configuration process takes about 1 minute to complete and your DSL Router will reboot.

[Back](#) [Save/Reboot](#)

## PPPoE

### QUICK SETUP – PPPoE

Click the PPP over Ethernet (PPPoE) radio button on this window. This window also allows you to use the drop-down menu to select the desired Encapsulation Mode. Click the **Next** button to continue.

The screenshot shows a configuration window for PPPoE. It has a title bar and a main content area. The content area is divided into two sections: 'Connection Type' and 'Encapsulation Mode'. The 'Connection Type' section has a heading and a sub-heading, followed by five radio button options. The 'Encapsulation Mode' section has a heading and a dropdown menu. At the bottom right, there are two buttons: 'Back' and 'Next'.

**Connection Type**  
Select the type of network protocol for IP over Ethernet as WAN interface

- PPP over ATM (PPPoA)
- PPP over Ethernet (PPPoE)
- MAC Encapsulation Routing (MER)
- IP over ATM (IPoA)
- Bridging

**Encapsulation Mode**  
LLC/SNAP-BRIDGING ▼

Back Next

### QUICK SETUP – PPPoE

This window allows you to set the username and the password for your PPP connection. This information is obtained from your ISP. Additional settings on this window will also depend on your ISP. Click the **Next** button to continue.

#### PPP Username and Password

PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.

PPP Username:

PPP Password:

PPPoE Service Name:

Authentication Method:

Dial on demand (with idle timeout timer)

PPP IP extension

Enable KeepAlive

Use Static IP Address

Retry PPP password on authentication error

Enable PPP Debug Mode

Bridge PPPoE Frames Between WAN and Local Ports (Default Enabled)

MTU[1-65535]:

### QUICK SETUP – PPPoE

This window allows you to enable IGMP multicasting and WAN service. Most users will want to leave the MTU value at the default setting unless your ISP advises you to change it. Click the **Next** button to continue.

#### Network Address Translation Settings

Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).

Enable NAT

Enable Firewall

#### Enable IGMP Multicast, and WAN Service

Enable IGMP Multicast

Enable WAN Service

Service Name

### QUICK SETUP – PPPoE

This window allows you to enter an IP address and subnet mask for the LAN interface. In addition, you can either enable or disable the DHCP server.

To enable the DHCP server, enter a starting IP address, an ending IP address, and a subnet mask. You may also choose to change the default value of the leased time. Click the **Next** button to continue.

#### Device Setup

Configure the DSL Router IP Address and Subnet Mask for LAN interface.

IP Address:

Subnet Mask:

Disable DHCP Server

Enable DHCP Server

Start IP Address:

End IP Address:

Subnet Mask:

Leased Time (hour):

Configure the second IP Address and Subnet Mask for LAN interface

### QUICK SETUP – PPPoE

This summary window allows you to confirm the settings you have just made. Click the **Save/Reboot** button to save your new PPP over Ethernet settings and restart the Router.

#### WAN Setup - Summary

Make sure that the settings below match the settings provided by your ISP.

<b>PORT / VPI / VCI:</b>	0 / 0 / 35
<b>Connection Type:</b>	PPPoE
<b>Service Name:</b>	pppoe_0_0_35_1
<b>Service Category:</b>	UBR
<b>IP Address:</b>	Automatically Assigned
<b>Service State:</b>	Enabled
<b>NAT:</b>	Enabled
<b>Firewall:</b>	Enabled
<b>IGMP Multicast:</b>	Disabled
<b>Quality Of Service:</b>	Disabled

Click "Save/Reboot" to save these settings and reboot router. Click "Back" to make any modifications.  
NOTE: The configuration process takes about 1 minute to complete and your DSL Router will reboot.

[Back](#)

[Save/Reboot](#)

## MER

### QUICK SETUP – MER

Click the MAC Encapsulation Routing (MER) radio button on this window. This window also allows you to use the drop-down menu to select the desired Encapsulation Mode. Click the **Next** button to continue.

**Connection Type**

Select the type of network protocol for IP over Ethernet as WAN interface

PPP over ATM (PPPoA)

PPP over Ethernet (PPPoE)

MAC Encapsulation Routing (MER)

IP over ATM (IPoA)

Bridging

**Encapsulation Mode**

LLC/SNAP-BRIDGING ▼

Back Next

### QUICK SETUP – MER

This window allows you to configure the WAN IP settings. This information is obtained from your ISP. Click the **Next** button to continue.

**WAN IP Settings**

Enter information provided to you by your ISP to configure the WAN IP settings.  
Notice: DHCP can be enabled for PVC in MER mode or IP over Ethernet as WAN interface if "Obtain an IP address automatically" is chosen. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from DHCP or other WAN connection.  
If you configure static default gateway over this PVC in MER mode, you must enter the IP address of the remote gateway in the "Use IP address". The "Use WAN interface" is optional.

Obtain an IP address automatically

Use the following IP address:

WAN IP Address:

WAN Subnet Mask:

Obtain default gateway automatically

Use the following default gateway:

Use IP Address:

Use WAN Interface: mer\_0\_0\_35/ ▼

Obtain DNS server addresses automatically

Use the following DNS server addresses:

Primary DNS server:

Secondary DNS server:

Back Next

### QUICK SETUP – MER

This window allows you to enable or disable Network Address Translation and a firewall for your Router. In addition, you can enable or disable IGMP multicasting and WAN service. Click the **Next** button to continue.

### QUICK SETUP – MER

This window allows you to enter an IP address and subnet mask for the LAN interface. In addition, you can either enable or disable the DHCP server.

To enable the DHCP server, enter a starting IP address, an ending IP address, and a subnet mask. You may also choose to change the default value of the leased time. Click the **Next** button to continue.

**Network Address Translation Settings**

Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).

Enable NAT

Enable Firewall

**Enable IGMP Multicast, and WAN Service**

Enable IGMP Multicast

Enable WAN Service

Service Name:

**Device Setup**

Configure the DSL Router IP Address and Subnet Mask for LAN interface.

IP Address:

Subnet Mask:

Disable DHCP Server

Enable DHCP Server

Start IP Address:

End IP Address:

Subnet Mask:

Leased Time (hour):

Configure the second IP Address and Subnet Mask for LAN interface

### QUICK SETUP – MER

This summary window allows you to confirm the settings you have just made. Click the **Save/Reboot** button to save your new MAC Encapsulation Routing settings and restart the Router.

#### WAN Setup - Summary

Make sure that the settings below match the settings provided by your ISP.

<b>PORT / VPI / VCI:</b>	0 / 0 / 35
<b>Connection Type:</b>	MER
<b>Service Name:</b>	mer_0_0_35
<b>Service Category:</b>	UBR
<b>IP Address:</b>	Automatically Assigned
<b>Service State:</b>	Enabled
<b>NAT:</b>	Enabled
<b>Firewall:</b>	Enabled
<b>IGMP Multicast:</b>	Disabled
<b>Quality Of Service:</b>	Disabled

Click "Save/Reboot" to save these settings and reboot router. Click "Back" to make any modifications.  
NOTE: The configuration process takes about 1 minute to complete and your DSL Router will reboot.

[Back](#) [Save/Reboot](#)

# IPoA

## QUICK SETUP – IPoA

Click the **IP over ATM (IPoA)** radio button on this window. This window also allows you to use the drop-down menu to select the desired Encapsulation Mode. Click the **Next** button to continue.

**Connection Type**

Select the type of network protocol for IP over Ethernet as WAN interface

PPP over ATM (PPPoA)

PPP over Ethernet (PPPoE)

MAC Encapsulation Routing (MER)

IP over ATM (IPoA)

Bridging

**Encapsulation Mode**

LLC/SNAP-ROUTING ▼

Back Next

## QUICK SETUP – IPoA

This window allows you to configure the WAN IP settings. This information is obtained from your ISP. Click the **Next** button to continue.

**WAN IP Settings**

Enter information provided to you by your ISP to configure the WAN IP settings.

Notice: DHCP is not supported in IPoA mode. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from other WAN connection.

WAN IP Address: 201.201.201.25

WAN Subnet Mask: 255.255.255.0

Use the following default gateway:

Use IP Address: [ ]

Use WAN Interface: ipoa\_0\_0\_35/ipa\_0\_0\_35 ▼

Use the following DNS server addresses:

Primary DNS server: [ ]

Secondary DNS server: [ ]

Back Next

### QUICK SETUP – IPoA

This window allows you to enable or disable Network Address Translation and a firewall for your Router. In addition, you can enable or disable IGMP multicasting and WAN service. Click the **Next** button to continue.

**Network Address Translation Settings**

Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).

Enable NAT

Enable Firewall

Enable IGMP Multicast, and WAN Service

Enable IGMP Multicast

Enable WAN Service

Service Name:

Back Next

### QUICK SETUP – IPoA

This window allows you to enter an IP address and subnet mask for the LAN interface. In addition, you can either enable or disable the DHCP server.

To enable the DHCP server, enter a starting IP address, an ending IP address, and a subnet mask. You may also choose to change the default value of the leased time. Click the **Next** button to continue.

**Device Setup**

Configure the DSL Router IP Address and Subnet Mask for LAN interface.

IP Address:

Subnet Mask:

Disable DHCP Server

Enable DHCP Server

Start IP Address:

End IP Address:

Subnet Mask:

Leased Time (hour):

Configure the second IP Address and Subnet Mask for LAN interface

Back Next

### QUICK SETUP – IPoA

This summary window allows you to confirm the settings you have just made. Click the **Save/Reboot** button to save your new IP over ATM settings and restart the Router.

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

<b>PORT / VPI / VCI:</b>	0 / 0 / 35
<b>Connection Type:</b>	IPoA
<b>Service Name:</b>	ipoa_0_0_35
<b>Service Category:</b>	UBR
<b>IP Address:</b>	201.201.201.25
<b>Service State:</b>	Enabled
<b>NAT:</b>	Enabled
<b>Firewall:</b>	Enabled
<b>IGMP Multicast:</b>	Disabled
<b>Quality Of Service:</b>	Disabled

Click "Save/Reboot" to save these settings and reboot router. Click "Back" to make any modifications.  
NOTE: The configuration process takes about 1 minute to complete and your DSL Router will reboot.

[Back](#) [Save/Reboot](#)

# Device Info

To access the **Device Info** window, click either the **Device Info** link. The following page opens:

This window displays different information about the Router, including Summary, WAN, Statistics, Route, ARP, and DHCP information.

**D-Link**

**Device Info**

Board ID:	DSL-2500U
Software Version:	IM_1.00
Software Date:	Jan 15 2010
Bootloader (CFE) Version:	before 1.0.37-5.12

This information reflects the current status of your DSL connection.

Line Rate - Upstream (Kbps):	
Line Rate - Downstream (Kbps):	
LAN IP Address:	192.168.1.1
MAC Address:	1C-BD-89-74-1F-B2
Default Gateway:	
Primary DNS Server:	192.168.1.1
Secondary DNS Server:	192.168.1.1

## Summary

To access the **Summary** window, click the **Summary** link in the **Device Info** directory.

This window displays the current status of your DSL connection, including the software version, LAN IP address and DNS server address.

**Device Info**

<b>Board ID:</b>	DSL-2500U
<b>Software Version:</b>	IM_1.00
<b>Software Date:</b>	Jan 15 2010
<b>Bootloader (CFE) Version:</b>	before 1.0.37-5.12

This information reflects the current status of your DSL connection.

<b>Line Rate - Upstream (Kbps):</b>	
<b>Line Rate - Downstream (Kbps):</b>	
<b>LAN IP Address:</b>	192.168.1.1
<b>MAC Address:</b>	1C-BD-89-74-1F-B2
<b>Default Gateway:</b>	
<b>Primary DNS Server:</b>	192.168.1.1
<b>Secondary DNS Server:</b>	192.168.1.1

## WAN

To access the **WAN Info** window, click the **WAN** link in the **Device Info** directory

This window displays the current status of your WAN connection.

**WAN Info**

Port/VPI/VCI	Con. ID	Category	Service	Interface	Protocol	Icmp	QoS	State	Status	IP Address

## Statistics

To access the Router's **Statistics** window, click the **Statistics** link in the **Device Info** directory.

To access LAN Statistics, click the **LAN** link in the **Statistics** directory. This window displays the Router's LAN statistics. Click the **Reset Statistics** button to refresh these statistics.

### LAN

Statistics -- LAN

Interface	Received				Transmitted			
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
Ethernet	59472	516	0	0	228955	415	0	0

Reset Statistics

To access WAN Statistics, click the **WAN** link in the **Statistics** directory. This window displays the Router's WAN statistics. Click the **Reset Statistics** button to refresh these statistics.

### WAN

Statistics -- WAN

Service	VPI/VCI	Protocol	Interface	Received				Transmitted					
				Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops		

Reset Statistics

# ATM

To access ATM Statistics, click the **ATM** link in the **Statistics** directory. This window displays the Router's ATM statistics. Click the **Reset** button to refresh these statistics.

ATM Interface Statistics											
In Octets	Out Octets	In Errors	In Unknown	In Hec Errors	In Invalid Vpi Vci Errors	In Port Not Enable Errors	In PTI Errors	In Idle Cells	In Circuit Type Errors	In OAM RM CRC Errors	In GFC Errors
0	0	0	0	0	0	0	0	0	0	0	0

AAL5 Interface Statistics							
In Octets	Out Octets	In Ucast Pkts	Out Ucast Pkts	In Errors	Out Errors	In Discards	Out Discards
0	0	0	0	0	0	0	0

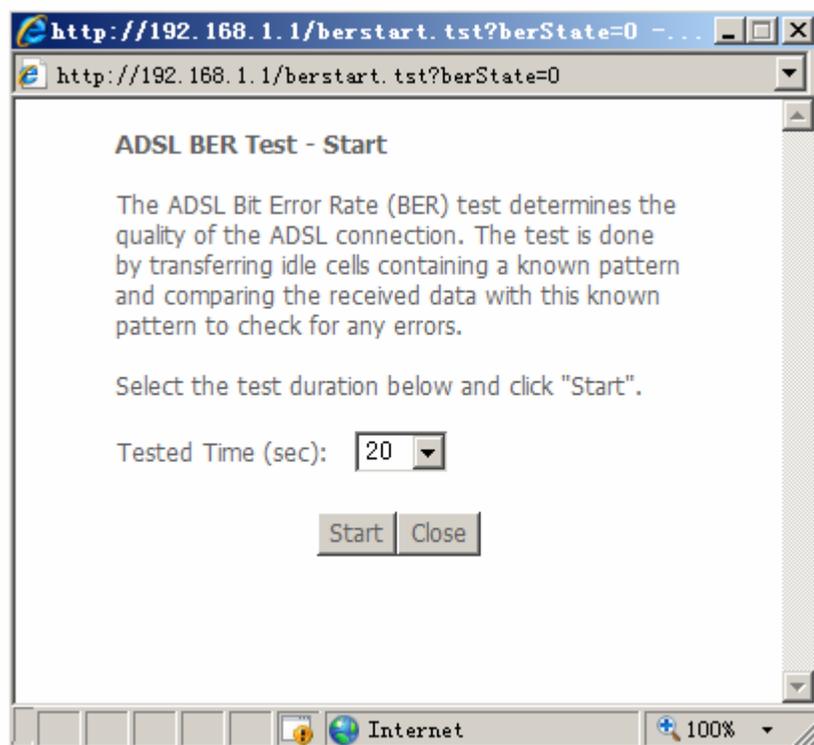
  

AAL5 VCC Statistics					
VPI/VCI	CRC Errors	SAR Timeouts	Oversized SDUs	Short Packet Errors	Length Errors

## ADSL

To access ADSL Statistics, click the **ADSL** link in the **Statistics** directory. This window displays the Router's ADSL statistics. Click the **Reset Statistics** button to refresh these statistics.

Click the **ADSL BER Test** button to access the ADSL Bit Error Rate Test window displayed below:



Statistics -- ADSL

Mode:		
Line Coding:		
Status:		Link Down
Link Power State:		LO
	Downstream	Upstream
SNR Margin (dB):		
Attenuation (dB):		
Output Power (dBm):		
Attainable Rate (Kbps):		
Rate (Kbps):		
Super Frames:		
Super Frame Errors:		
RS Words:		
RS Correctable Errors:		
RS Uncorrectable Errors:		
HEC Errors:		
OCD Errors:		
LCD Errors:		
Total Cells:		
Data Cells:		
Bit Errors:		
Total ES:		
Total SES:		
Total UAS:		
ADSL BER Test		Reset Statistics

## Route

To access the **Device Info – Route** window, click the **Route** link in the **Device Info** directory.  
 This read-only window displays routing info.

Device Info -- Route						
Flags: U - up, ! - reject, G - gateway, H - host, R - reinstate D - dynamic (redirect), M - modified (redirect).						
Destination	Gateway	Subnet Mask	Flag	Metric	Service	Interface
192.168.1.0	0.0.0.0	255.255.255.0	U	0		br0

## ARP

To access the **Device Info – ARP** window, click the **ARP** link in the **Device Info** directory.  
 This read-only window displays Address Resolution Protocol info.

Device Info -- ARP			
IP address	Flags	HW Address	Device
192.168.1.33	Complete	00:22:80:68:DE:69	br0

## DHCP

To access the **Device Info – DHCP** window, click the **DHCP** link in the **Device Info** directory.  
 This read-only window displays the current DHCP leases on the Router.

Device Info -- DHCP Leases			
Hostname	MAC Address	IP Address	Expires In

# Advanced Setup

This chapter includes the more advanced features used for network management and security as well as administrative tools to manage the Router, view status and other information used to examine performance and for troubleshooting.

## WAN

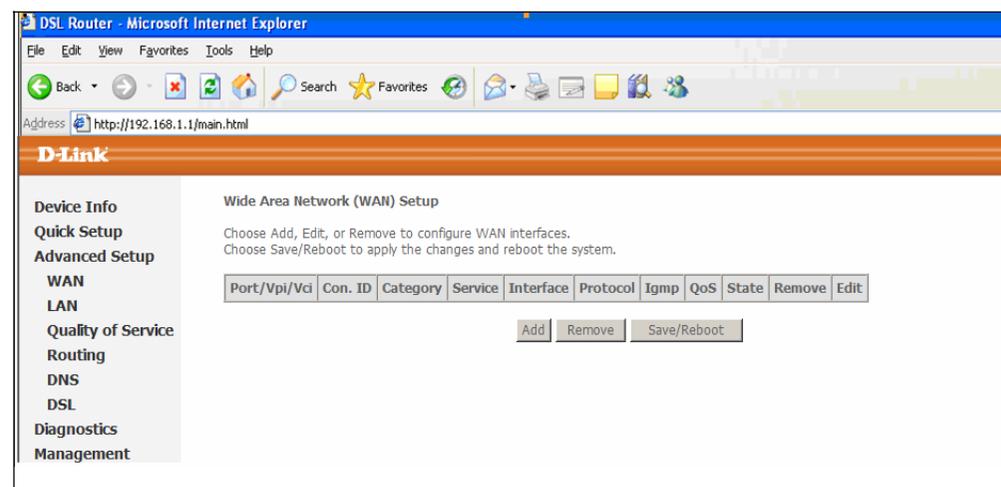
To access the **Wide Area Network (WAN) Setup** window, click the **WAN** button in the **Advanced Setup** directory.

### ADVANCED SETUP – Wide Area Network (WAN) Setup

This window is used to configure the WAN interface. You can add, delete, and modify WAN interfaces on this window.

Once the desired changes to the WAN interface are complete, click the **Save/Reboot** button.

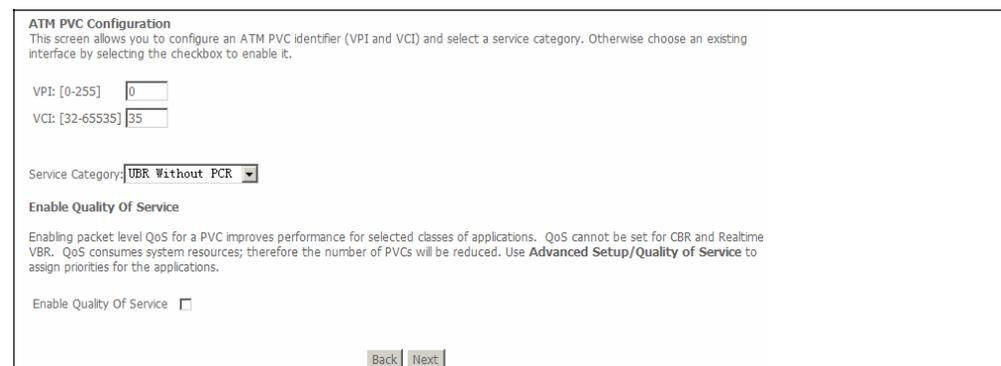
If you are setting up the WAN interface for the first time, click the **Add** button.



### ADVANCED SETUP – ATM PVC Configuration

This window allows you to set up ATM PVC configurations for the Router. Enter a Port Identifier, Virtual Path Identifier, and Virtual Channel Identifier. The VPI and VCI values should be provided by your ISP. Select the Service Category that your ISP uses from the **Service Category** drop down menu.

This window also allows you to enable QoS by ticking the **Enable Quality of Service** check box. Click the **Next** button to continue.



### ADVANCED SETUP – Connection Type

This window allows you to select the appropriate connection type. The choices include **PPP over ATM (PPPoA)**, **PPP over Ethernet (PPPoE)**, **MAC Encapsulation Routing**, **IP over ATM (IPoA)**, and **Bridging** (default).

This window also allows you to use the drop-down menu to select the desired **Encapsulation Mode**. Click the **Next** button to continue.

**Connection Type**

Select the type of network protocol for IP over Ethernet as WAN interface

PPP over ATM (PPPoA)

PPP over Ethernet (PPPoE)

MAC Encapsulation Routing (MER)

IP over ATM (IPoA)

Bridging

**Encapsulation Mode**

LLC/SNAP-BRIDGING ▾

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### ADVANCED SETUP – BRIDGING

To enable bridging, tick the **Enable Bridge Service** check box and enter a Service Name.

Click the **Next** button to continue.

**Unselect the check box below to disable this WAN service**

Enable Bridge Service:

Service Name:

Back Next

### ADVANCED SETUP – BRIDGING

This summary window allows you to confirm the bridging settings you have just made. Click the **Save** button to save your new bridging settings and restart the Router.

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

<b>PORT / VPI / VCI:</b>	0 / 0 / 35
<b>Connection Type:</b>	Bridge
<b>Service Name:</b>	br_0_0_35
<b>Service Category:</b>	UBR
<b>IP Address:</b>	Not Applicable
<b>Service State:</b>	Enabled
<b>NAT:</b>	Disabled
<b>Firewall:</b>	Disabled
<b>IGMP Multicast:</b>	Not Applicable
<b>Quality Of Service:</b>	Disabled

Click "Save" to save these settings. Click "Back" to make any modifications.  
NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.

### ADVANCED SETUP – PPPoA

Click the **PPP over ATM (PPPoA)** radio button on this window. This window also allows you to use the drop-down menu to select the desired Encapsulation Mode. Click the **Next** button to continue.

**Connection Type**

Select the type of network protocol for IP over Ethernet as WAN interface

- PPP over ATM (PPPoA)
- PPP over Ethernet (PPPoE)
- MAC Encapsulation Routing (MER)
- IP over ATM (IPoA)
- Bridging

**Encapsulation Mode**

VC/MUX

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### ADVANCED SETUP – PPPoA

This window allows you to set the username and the password for your PPP connection. This information is obtained from your ISP. Additional settings on this window will also depend on your ISP. Click the **Next** button to continue.

**PPP Username and Password**

PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.

PPP Username:

PPP Password:

Authentication Method:

- Dial on demand (with idle timeout timer)
- PPP IP extension
- Enable KeepAlive
- Use Static IP Address
- Retry PPP password on authentication error
- Enable PPP Debug Mode

MTU[1-65535]:

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### ADVANCED SETUP – PPPoA

This window allows you to enable IGMP multicasting and the WAN service. Click the **Next** button to continue.

**Network Address Translation Settings**

Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).

Enable NAT

Enable Firewall

**Enable IGMP Multicast, and WAN Service**

Enable IGMP Multicast

Enable WAN Service

Service Name

[Back](#) [Next](#)

### ADVANCED SETUP – PPPoA

This summary window allows you to confirm the settings you have just made. Click the **Save** button to save your new PPP over ATM settings and restart the Router.

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

<b>PORT / VPI / VCI:</b>	0 / 0 / 35
<b>Connection Type:</b>	PPPoA
<b>Service Name:</b>	pppoa_0_0_35_1
<b>Service Category:</b>	UBR
<b>IP Address:</b>	Automatically Assigned
<b>Service State:</b>	Enabled
<b>NAT:</b>	Enabled
<b>Firewall:</b>	Enabled
<b>IGMP Multicast:</b>	Disabled
<b>Quality Of Service:</b>	Enabled

Click "Save" to save these settings. Click "Back" to make any modifications.  
NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.

[Back](#) [Save](#)

### ADVANCED SETUP – PPPoE

Click the **PPP over Ethernet (PPPoE)** radio button on this window. This window also allows you to use the drop-down menu to select the desired Encapsulation Mode. Click the **Next** button to continue.

**Connection Type**

Select the type of network protocol for IP over Ethernet as WAN interface

PPP over ATM (PPPoA)

PPP over Ethernet (PPPoE)

MAC Encapsulation Routing (MER)

IP over ATM (IPoA)

Bridging

**Encapsulation Mode**

LLC/SNAP-BRIDGING

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### ADVANCED SETUP – PPPoE

This window allows you to set the username and the password for your PPP connection. This information is obtained from your ISP. Additional settings on this window will also depend on your ISP. Click the **Next** button to continue.

**PPP Username and Password**

PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.

PPP Username:

PPP Password:

PPPoE Service Name:

Authentication Method:

Dial on demand (with idle timeout timer)

PPP IP extension

Enable KeepAlive

Use Static IP Address

Retry PPP password on authentication error

Enable PPP Debug Mode

Bridge PPPoE Frames Between WAN and Local Ports (Default: Enabled)

MTU[1-65535]:

Back Next

### ADVANCED SETUP – PPPoE

This window allows you to enable IGMP multicasting and the WAN service. Click the **Next** button to continue.

**Network Address Translation Settings**

Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).

Enable NAT

Enable Firewall

**Enable IGMP Multicast, and WAN Service**

Enable IGMP Multicast

Enable WAN Service

Service Name

### ADVANCED SETUP – PPPoE

This summary window allows you to confirm the settings you have just made. Click the **Save** button to save your new PPP over Ethernet settings and restart the Router.

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

<b>PORT / VPI / VCI:</b>	0 / 0 / 35
<b>Connection Type:</b>	PPPoE
<b>Service Name:</b>	pppoe_0_0_35_1
<b>Service Category:</b>	UBR
<b>IP Address:</b>	Automatically Assigned
<b>Service State:</b>	Enabled
<b>NAT:</b>	Enabled
<b>Firewall:</b>	Enabled
<b>IGMP Multicast:</b>	Disabled
<b>Quality Of Service:</b>	Enabled

Click "Save" to save these settings. Click "Back" to make any modifications.  
NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.

### ADVANCED SETUP – MER

To configure MAC Encapsulation Routing click the **MAC Encapsulation Routing (MER)** radio button on this window. This window also allows you to use the drop-down menu to select the desired Encapsulation Mode. Click the **Next** button to continue.

**Connection Type**

Select the type of network protocol for IP over Ethernet as WAN interface

PPP over ATM (PPPoA)

PPP over Ethernet (PPPoE)

MAC Encapsulation Routing (MER)

IP over ATM (IPoA)

Bridging

**Encapsulation Mode**

LLC/SNMP-BRIDGING ▾

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### ADVANCED SETUP – MER

This window allows you to configure the WAN IP settings. This information is obtained from your ISP. When you have finished configuring the IP settings, click the **Next** button to continue.

**WAN IP Settings**

Enter information provided to you by your ISP to configure the WAN IP settings.  
Notice: DHCP can be enabled for PVC in MER mode or IP over Ethernet as WAN interface if "Obtain an IP address automatically" is chosen. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from DHCP or other WAN connection.  
If you configure static default gateway over this PVC in MER mode, you must enter the IP address of the remote gateway in the "Use IP address". The "Use WAN interface" is optional.

Obtain an IP address automatically

Use the following IP address:

WAN IP Address:

WAN Subnet Mask:

Obtain default gateway automatically

Use the following default gateway:

Use IP Address:

Use WAN Interface:

Obtain DNS server addresses automatically

Use the following DNS server addresses:

Primary DNS server:

Secondary DNS server:

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### ADVANCED SETUP – MER

This window allows you to enable or disable Network Address Translation and the Firewall for your Router. In addition, you can enable or disable IGMP multicasting and the WAN service. Type a Service Name in the **Service Name** field. Click the **Next** button to continue.

**Network Address Translation Settings**

Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).

Enable NAT

Enable Firewall

**Enable IGMP Multicast, and WAN Service**

Enable IGMP Multicast

Enable WAN Service

Service Name:

### ADVANCED SETUP – MER

This summary window allows you to confirm the settings you have just made. Click the **Save** button to save your new MAC Encapsulation Routing settings and restart the Router.

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

<b>PORT / VPI / VCI:</b>	0 / 0 / 35
<b>Connection Type:</b>	MER
<b>Service Name:</b>	br_0_0_35
<b>Service Category:</b>	UBR
<b>IP Address:</b>	201.201.201.21
<b>Service State:</b>	Enabled
<b>NAT:</b>	Enabled
<b>Firewall:</b>	Enabled
<b>IGMP Multicast:</b>	Disabled
<b>Quality Of Service:</b>	Disabled

Click "Save" to save these settings. Click "Back" to make any modifications.  
 NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.

### ADVANCED SETUP – IPOA

To configure IP over ATM (IPoA) click the **IP over ATM (IPoA)** radio button on this window. This window also allows you to use the drop-down menu to select the desired Encapsulation Mode. Click the **Next** button to continue.

### ADVANCED SETUP – IPOA

This window allows you to configure the WAN IP settings. This information is obtained from your ISP. When you have finished configuring the IP settings, click the **Next** button to continue.

**Connection Type**

Select the type of network protocol for IP over Ethernet as WAN interface

PPP over ATM (PPPoA)

PPP over Ethernet (PPPoE)

MAC Encapsulation Routing (MER)

IP over ATM (IPoA)

Bridging

**Encapsulation Mode**

LLC/SNAP-ROUTING ▾

Back Next

**WAN IP Settings**

Enter information provided to you by your ISP to configure the WAN IP settings.

Notice: DHCP is not supported in IPoA mode. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from other WAN connection.

WAN IP Address:

WAN Subnet Mask:

Use the following default gateway:

Use IP Address:

Use WAN Interface:

Use the following DNS server addresses:

Primary DNS server:

Secondary DNS server:

Back Next

### ADVANCED SETUP – IPOA

This window allows you to enable or disable Network Address Translation and the Firewall for your Router. In addition, you can enable or disable IGMP multicasting and the WAN service. Type a Service Name in the **Service Name** field. Click the **Next** button to continue.

**Network Address Translation Settings**

Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).

Enable NAT

Enable Firewall

**Enable IGMP Multicast, and WAN Service**

Enable IGMP Multicast

Enable WAN Service

Service Name:

### ADVANCED SETUP – IPOA

This summary window allows you to confirm the settings you have just made. Click the **Save** button to save your new IP over ATM (IPoA) settings and restart the Router.

**WAN Setup - Summary**

Make sure that the settings below match the settings provided by your ISP.

<b>PORT / VPI / VCI:</b>	0 / 0 / 35
<b>Connection Type:</b>	IPoA
<b>Service Name:</b>	br_0_0_35
<b>Service Category:</b>	UBR
<b>IP Address:</b>	201.201.201.21
<b>Service State:</b>	Enabled
<b>NAT:</b>	Enabled
<b>Firewall:</b>	Enabled
<b>IGMP Multicast:</b>	Disabled
<b>Quality Of Service:</b>	Disabled

Click "Save" to save these settings. Click "Back" to make any modifications.  
 NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.

## LAN

You can configure the LAN IP address to suit your preference. Many users will find it convenient to use the default settings together with the DHCP service to manage the IP settings for their private network. The IP address of the Router is the base address used for DHCP. In order to use the Router for DHCP on your LAN, the IP address pool used for DHCP must be compatible with the IP address of the Router. The IP addresses available in the DHCP IP address pool will change automatically if you change the IP address of the Router.

To access the **Local Area Network (LAN) Setup** window, click the **LAN** link in the **Advanced Setup** directory.

This window allows you to configure the LAN interface, Enable IGMP Snooping and Configure DHCP Server settings. To enable IGMP tick the **Enable IGMP** check box. Choose from **Standard Mode** or **Blocking Mode** by clicking the appropriate radio button. To enable the DHCP server function, tick the **Enable DHCP Server** radio button and type in the first IP address you want to use in your DHCP range in the **DHCP Start IP Address** textbox and the type in the last IP address you want to use in your DHCP range in the **End IP Address** textbox. You can also configure a second IP Address and Subnet Mask by ticking the **Configure the second IP Address and Subnet Mask for LAN interface** check box and typing in the second IP Address and Subnet Mask in the appropriate boxes. When you are finished, click either the **Save** or **Save/Reboot** button.

**Local Area Network (LAN) Setup**

Configure the DSL Router IP Address and Subnet Mask for LAN interface. Save button only saves the LAN configuration data. Save/Reboot button saves the LAN configuration data and reboots the router to make the new configuration effective.

IP Address:

Subnet Mask:

Enable UPnP

Enable IGMP Snooping

Standard Mode

Blocking Mode

Disable DHCP Server

Enable DHCP Server

Start IP Address:

End IP Address:

Subnet Mask:

Leased Time (hour):

Enable DHCP Server Relay

DHCP Server IP Address:

**Reserve IP Address**

Choose "Edit Reserved IP Address List" to configure Reserved IP Address List.  
NOTE1: You can max reserve 10 ip address and special mac.  
NOTE2: When you added a new reserve ip. You must reboot system to active it.

Configure the second IP Address and Subnet Mask for LAN interface



## Port Triggering

Click the **Port Triggering** link to add or remove Port Triggers.

Click the **Add** button to add a new Port Trigger. Click the **Remove**

button to delete a Port Trigger.

Click the **Select an application** drop-down menu to choose the application you want to setup for port triggering. When you have chosen an application the default Trigger settings will populate the table below.

If the application you want to setup isn't listed, click the **Custom application** radio button and type in a name for the trigger in the Custom application field. Configure the **Trigger Port Start**, **Trigger Port End**, **Trigger Protocol**, **Open Port Start**, **Open Port End** and **Open Protocol** settings for the port trigger you want to configure.

When you have finished click the **Save/Apply** button.

NAT -- Port Triggering Setup

Some applications require that specific ports in the Router's firewall be opened for access by the remote parties. Port Trigger dynamically opens up the 'Open Ports' in the firewall when an application on the LAN initiates a TCP/UDP connection to a remote party using the 'Triggering Ports'. The Router allows the remote party from the WAN side to establish new connections back to the application on the LAN side using the 'Open Ports'. A maximum 32 entries can be configured.

Application	Trigger		Open		Remove	
Name	Protocol	Port Range		Protocol	Port Range	
		Start	End		Start	End

NAT -- Port Triggering

Some applications such as games, video conferencing, remote access applications and others require that specific ports in the Router's firewall be opened for access by the applications. You can configure the port settings from this screen by selecting an existing application or creating your own (Custom application) and click "Save/Apply" to add it.

Remaining number of entries that can be configured:32

Application Name:

Select an application:

Custom application:

Trigger Port Start	Trigger Port End	Trigger Protocol	Open Port Start	Open Port End	Open Protocol
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP
<input type="text"/>	<input type="text"/>	TCP	<input type="text"/>	<input type="text"/>	TCP

## DMZ Host

Click the **DMZ Host** link in the **NAT** directory to add a new DMZ host entry in your Router.

Enter the IP address of the host you want to put in the DMZ in the **DMZ Host IP Address** textbox.

Press the **Save/Apply** button when you have finished.

**NAT -- DMZ Host**

The DSL router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.

Enter the computer's IP address and click "Apply" to activate the DMZ host.

Clear the IP address field and click "Apply" to deactivate the DMZ host.

DMZ Host IP Address:

## Security

To access the **Security** window, click the **Security** button in the **Advanced Setup** directory. The **Security** button appears after configuring the WAN interface.

### IP Filtering

The **IP Filtering** button appears when configuring the WAN interface in PPPoA, PPPoE, MER, or IPoA.

#### IP Filtering - Outgoing

This window allows you to create a filter rule to block outgoing IP traffic by specifying a filter name and at least one condition on this window. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Filters are used to allow or deny LAN or WAN users from accessing the Internet or your internal network.

If you are setting up the outgoing IP filtering, click the **Add** button.

Enter the information in the section. Click the **Save/Apply** button to add the entry in the active Outbound IP Filtering table.

**Outgoing IP Filtering Setup**

Choose Add or Remove to configure outgoing IP filters.

Now default policy is **ACCEPTED**

Filter Name	Protocol	Source Address / Mask	Source Port	Dest. Address / Mask	Dest. Port	DSCP. Mark	Remove

**Add IP Filter -- Outgoing**

The screen allows you to create a filter rule to identify outgoing IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the filter.

Filter Name:

Protocol:

Source IP address:

Source Subnet Mask:

Source Port (port or port:port):

Destination IP address:

Destination Subnet Mask:

Destination Port (port or port:port):

DSCP Mark:

### IP Filtering – Incoming

This window allows you to create a filter rule to allow incoming IP traffic by specifying a filter name and at least one condition on this window. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. By default, all incoming IP traffic from the Internet is blocked when the firewall is enabled.

If you are setting up the incoming IP filtering, click the **Add** button.

Enter the information in the section. Click the **Save/Apply** button to add the entry in the active Inbound IP Filtering table.

**Incoming IP Filtering Setup**

Choose Add or Remove to configure incoming IP filters.

Now default policy is **BLOCKED**

change default policy

Filter Name	VPI/VCI	Protocol	Source Address / Mask	Source Port	Dest. Address / Mask	Dest. Port	DSCP Mark	Remove
<input type="button" value="Add"/> <input type="button" value="Remove"/>								

**Add IP Filter -- Incoming**

The screen allows you to create a filter rule to identify incoming IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the filter.

Filter Name:

Protocol:

Source IP address:

Source Subnet Mask:

Source Port (port or port:port):

Destination IP address:

Destination Subnet Mask:

Destination Port (port or port:port):

DSCP Mark:

**WAN Interfaces (Configured in Routing mode and with firewall enabled only)**  
 Select at least one or multiple WAN interfaces displayed below to apply this rule.

Select All

pppoe\_0\_0\_35\_1/ppp\_0\_0\_35\_1

## MAC Filtering

The **MAC Filtering** button appears when configuring the WAN interface in Bridging.

MAC filtering is used to block or allow various types of packets through the WAN/LAN interface. This may be done for security or to improve network efficiency. The rules are configured for individual devices based on the MAC address. Filter rules can be set up for source, destination or both.

You can set up filter rules and disable the entire set of rules without losing the rules that have been configured.

Click **Change Policy** to configure the global policy as Forwarded or Blocked.

If you are setting up MAC filtering, click the **Add** button.

Select a protocol (*PPPoE, IPv4, IPv6, Apple Talk, IPX, NetBEUI or IGMP*) in the **Protocol Type** list, type in a Destination MAC, a Source MAC or both in the entry fields. Select a direction (*LAN=>WAN, WAN=>LAN, or LAN<=>WAN*) in the **Frame Direction** list. Click the **Save/Apply** button to add the entry in the active Bridge Filters table.

The screenshot shows the 'MAC Filtering Setup' page. At the top, it indicates 'MAC Filtering Global Policy: FORWARDED' with a 'Change Policy' button. Below this, a paragraph explains that 'FORWARDED' means all MAC layer frames will be forwarded except those matching specified rules, while 'BLOCKED' means all frames will be blocked except those matching specified rules. At the bottom, there is a table with columns: 'VPI/VCI', 'Protocol', 'Destination MAC', 'Source MAC', 'Frame Direction', and 'Remove'. Below the table are 'Add' and 'Remove' buttons.

The screenshot shows the 'Add MAC Filter' page. It includes a heading and a paragraph: 'Create a filter to identify the MAC layer frames by specifying at least one condition below. If multiple conditions are specified, all of them take effect. Click "Apply" to save and activate the filter.' The form contains: 'Protocol Type' (dropdown), 'Destination MAC Address' (text input), 'Source MAC Address' (text input), 'Frame Direction' (dropdown with 'LAN<=>WAN' selected), and 'WAN Interfaces (Configured in Bridge mode only)' with a checked 'Select All' checkbox. A 'Save/Apply' button is at the bottom right.

## Parental Control

Parental Control restricts a special LAN device with its MAC address by setting **Time of Day Restrictions**, or add URL List to accept or restrict LAN devices accessing URL address by setting **Url Filter**. Choose **Advanced Settings > Parental Control, Time of Day Restrictions** page appears.

**Time of Day Restrictions -- A maximum 16 entries can be configured.**

Username	MAC	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Start	Stop	Remove
<input type="button" value="Add"/> <input type="button" value="Remove"/>											

Click **Add** to configure time of day restrictions.

**Time of Day Restriction**

This page adds time of day restriction to a special LAN device connected to the Router. The 'Browser's MAC Address' automatically d the MAC address of the LAN device where the browser is running. To restrict other LAN device, click the "Other MAC Address" butt and enter the MAC address of the other LAN device. To find out the MAC address of a Windows based PC, go to command window type "ipconfig /all".

User Name

Browser's MAC Address

Other MAC Address 
  
(xx:xx:xx:xx:xx:xx)

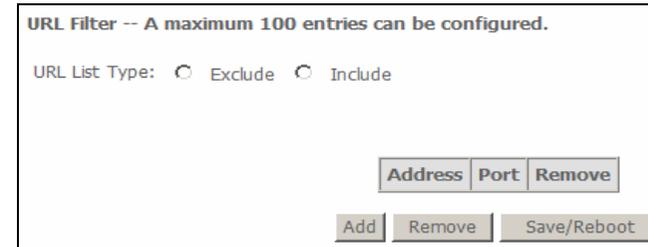
Days of the week	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Click to select	<input type="checkbox"/>						

Start Blocking Time (hh:mm)

End Blocking Time (hh:mm)

## URL Filter

Choose **Advanced Setup > Parental Control > Url Filter**, and the **Url Filter** page appears. In this page, there are two URL list types – **Exclude** and **Include**. If select Exclude, LAN devices could not access Url addresses in the list. And so if select Include, LAN devices just could access Url addresses in the list. Otherwides, one of list types should be selected.



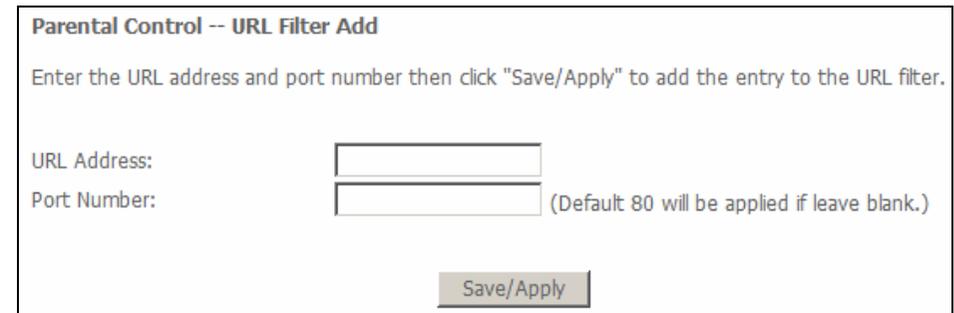
URL Filter -- A maximum 100 entries can be configured.

URL List Type:  Exclude  Include

Address Port Remove

Add Remove Save/Reboot

After proper selection, click **Add**, In this page, enter the URL address and port number then click **Save/Apply** to add the entry to the URL filter. If don't enter port number, default 80 will be applied.



Parental Control -- URL Filter Add

Enter the URL address and port number then click "Save/Apply" to add the entry to the URL filter.

URL Address:

Port Number:  (Default 80 will be applied if leave blank.)

Save/Apply

## Quality of Service

QoS or Quality of Service allows your Router to help prioritize the data packet flow in your Router and network. This is very important for time sensitive applications such as VoIP where it may help prevent dropped calls. Large amounts of non-critical data can be scaled so as not to affect these prioritized sensitive real-time programs.

To access the **QoS – Queue Management Configuration** window, click the **Quality of Service** link in the **Advanced Setup** directory.

This window allows you to set up QoS on the Router. When you are finished, click on the **Save/Apply** button.

QoS -- Queue Management Configuration

If Enable QoS checkbox is selected, choose a default DSCP mark to automatically mark incoming traffic without reference to a particular classifier. Click 'Save/Apply' button to save it.

Note: If Enable QoS checkbox is not selected, all QoS will be disabled for all interfaces.

Note: The default DSCP mark is used to mark all egress packets that do not match any classification rules.

Enable QoS

Select Default DSCP Mark:

Save/Apply

## Queue Config

To add a new QoS Queue configuration, click the **Queue Config** link.

Click the **Add** button to add a new QoS Queue Configuration table entry.

QoS Queue Configuration -- A maximum 16 entries can be configured.

Interfacename	Description	Precedence	Queue Key	Enable	Remove

Add Remove Save/Reboot

This window allows you to configure a QoS queue entry and assign it a specific network interface.

Click the **Save/Apply** button to save and activate the filter.

QoS Queue Configuration

The screen allows you to configure a QoS queue entry and assign it to a specific network interface. Each interface with QoS enabled will be allocated three queues by default. Each of the queues can be configured for a specific precedence. The queue entry configured here will be used by the classifier to place ingress packets appropriately. Note: Lower integer values for precedence imply higher priority for this queue relative to others. Click 'Save/Apply' to save and activate the filter.

Queue Configuration Status:

Queue:

Queue Precedence:

Save/Apply

## QoS Classification

To configure QoS Classification, click the **QoS Classification** link.

Click **Add** to add a new traffic class rule.

Use this window to create a traffic class rule to classify the upstream traffic, assign a queue that defines the precedence and the interface, and optionally overwrite the IP header DSCP byte. A rule consists of a class name and at least one condition. Please remember that all of the specified conditions on this window must be met for the rule to take effect.

Click the **Save/Apply** button to save and activate this rule.

Quality of Service Setup

Choose Add or Remove to configure network traffic classes.

MARK				TRAFFIC CLASSIFICATION RULES													
Class Name	DSCP Mark	Queue ID	802.1P Mark	Lan Port	Protocol	DSCP	Source Addr./Mask	Source Port	Dest. Addr./Mask	Dest. Port	Source MAC Addr./Mask	Destination MAC Addr./Mask	802.1P	Order	Enable/Disable	Remove	Edit
<input type="button" value="Add"/> <input type="button" value="Save/Apply"/>																	

**Add Network Traffic Class Rule**

The screen creates a traffic class rule to classify the upstream traffic, assign queue which defines the precedence and the interface and optionally overwrite the IP header DSCP byte. A rule consists of a class name and at least one condition below. All of the specified conditions in this classification rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the rule.

Traffic Class Name:

Rule Order:

Rule Status:

**Assign ATM Priority and/or DSCP Mark for the class**  
 If non-blank value is selected for 'Assign Differentiated Services Code Point (DSCP) Mark', the corresponding DSCP byte in the IP header of the upstream packet is overwritten by the selected value.

Assign Classification Queue:

Assign Differentiated Services Code Point (DSCP) Mark:

Mark 802.1p if 802.1q is enabled on WAN:

**Specify Traffic Classification Rules**  
 Enter the following conditions either for IP level, SET-1, or for IEEE 802.1p, SET-2.

**SET-1**

Protocol:

Differentiated Services Code Point (DSCP) Check:

IP Address

Source Subnet Mask:

UDP/TCP Source Port (port or port:port):

Destination IP Address:

Destination Subnet Mask:

UDP/TCP Destination Port (port or port:port):

Source MAC Address:

Source MAC Mask:

Destination MAC Address:

Destination MAC Mask:

**SET-2**

802.1p Priority:

# Routing

To access the **Routing** windows, click the **Routing** link in the **Advanced Setup** directory.

## Default Gateway

If the **Enable Automatic Assigned Default Gateway** check box is ticked, the Router will accept the first default gateway assignment received from one of the enabled PPPoA, PPPoE, or MER/DHCP enabled PVC(s). If this checkbox is not ticked, enter the static default gateway and/or a WAN interface. Click the **Save/Apply** button when you are finished.

**Routing -- Default Gateway**

If Enable Automatic Assigned Default Gateway checkbox is selected, this router will accept the first received default gateway assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s). If the checkbox is not selected, enter the static default gateway AND/OR a WAN interface. Click 'Save/Apply' button to save it.

NOTE: If changing the Automatic Assigned Default Gateway from unselected to selected, You must reboot the router to get the automatic assigned default gateway.

Enable Automatic Assigned Default Gateway

## Static Route

To add a new static route click on the **Static Route** link in the **Routing** directory.

Click the **Add** button to access the following window.

**Routing -- Static Route (A maximum 32 entries can be configured)**

Destination	Subnet Mask	Gateway	Interface	Remove

Enter the static routing information for an entry to the routing table.

Click the **Save/Apply** button when you are finished.

**Routing -- Static Route Add**

Enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click "Save/Apply" to add the entry to the routing table.

Destination Network Address:

Subnet Mask:

Use Gateway IP Address

Use Interface

# DNS

To access the **DNS Settings** window, click the **DNS** link in the **Advanced Setup** directory. Please note that this menu entry only appears once a DSL connection has been configured on the Router.

## DNS Server

Tick the **Enable Automatic Assigned DNS** check box if you want the Router to accept the first received DNS assignment from one of the enabled PVC's during the connection established.

To manually specify your own DNS server IP addresses, deselect the **Enable Automatic Assigned DNS** check box and type in a **Primary DNS server** IP address and **Secondary DNS server** IP address in the appropriate boxes.

**DNS Server Configuration**

If 'Enable Automatic Assigned DNS' checkbox is selected, this router will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, enter the primary and optional secondary DNS server IP addresses. Click 'Save' button to save the new configuration. You must reboot the router to make the new configuration effective.

Enable Automatic Assigned DNS

**DNS Server Configuration**

If 'Enable Automatic Assigned DNS' checkbox is selected, this router will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, enter the primary and optional secondary DNS server IP addresses. Click 'Save' button to save the new configuration. You must reboot the router to make the new configuration effective.

Enable Automatic Assigned DNS

Primary DNS server:

Secondary DNS server:

## Dynamic DNS

In this interface, you can modify the Dynamic DNS settings.

The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname in any of the many domains, allowing your DSL router to be more easily accessed from various locations on the Internet.

Click **Add** to add dynamic DDNS.

Type in the Hostname that you have registered with your D-DNS provider in the **Hostname** text box. Select the interface you want to enable DDNS from the **Interface** drop-down menu.

**Dynamic DNS**

The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname in any of the many domains, allowing your DSL router to be more easily accessed from various locations on the Internet.

Choose Add or Remove to configure Dynamic DNS.

Hostname	Username	Service	Interface	Remove

**Add dynamic DDNS**

This page allows you to add a Dynamic DNS address from DynDNS.org or TZO.

D-DNS provider

Hostname

Interface

**DynDNS Settings**

Username

Password

If your Dynamic DNS service provider is **DynDNS.org**, type in your **DynDNS.org Username** and **Password** in the appropriate text boxes. Press the **Save/Apply** button when you have finished.

**Add dynamic DDNS**

This page allows you to add a Dynamic DNS address from DynDNS.org or TZO.

D-DNS provider

Hostname

Interface

**DynDNS Settings**

Username

Password

If your Dynamic DNS service provider is **TZO**, type in the e-mail address you have registered with **TZO** in the **Email** text box. Type in the **Key** you have registered with **TZO** in the **Key** text box. Press the **Save/Apply** button when you have finished.

**Add dynamic DDNS**

This page allows you to add a Dynamic DNS address from DynDNS.org or TZO.

D-DNS provider

Hostname

Interface

**TZO Settings**

Email

Key

# DSL

To access the **DSL Settings** window, click the **DSL** option in the **Advanced Setup** directory.

In this window, you can select the Modulation according to your requirement.

The modem can negotiate the modulation mode with the DSLAM.

Choose the **Inner pair** or **Outer pair** option by clicking the appropriate radio button.

Tick the text boxes of the capability options you want to enable.

**Device Info**  
**Quick Setup**  
**Advanced Setup**  
**WAN**  
**LAN**  
**Quality of Service**  
**Routing**  
**DNS**  
**DSL**  
**Diagnostics**  
**Management**

**DSL Settings**

Select the modulation below.

- G.Dmt Enabled
- G.lite Enabled
- T1.413 Enabled
- ADSL2 Enabled
- AnnexL Enabled
- ADSL2+ Enabled
- AnnexM Enabled

Select the phone line pair below.

- Inner pair
- Outer pair

Capability

- Bitswap Enable
- SRA Enable

Save/Apply    Advanced Settings

## Section 3 – Configuration

Click the **Advanced Settings** button to select a DSL test mode.

Click the **Tone Selection** button to modify the upstream and downstream tones.

### DSL Advanced Settings

Select the test mode below.

Normal

Reverb

Medley

No retrain

L3

Select the appropriate upstream and downstream tones for your ADSL connection. Click the **Apply** button to let your settings take effect.

### ADSL Tone Settings

Upstream Tones																											
<input checked="" type="checkbox"/>																											
<input checked="" type="checkbox"/>																											

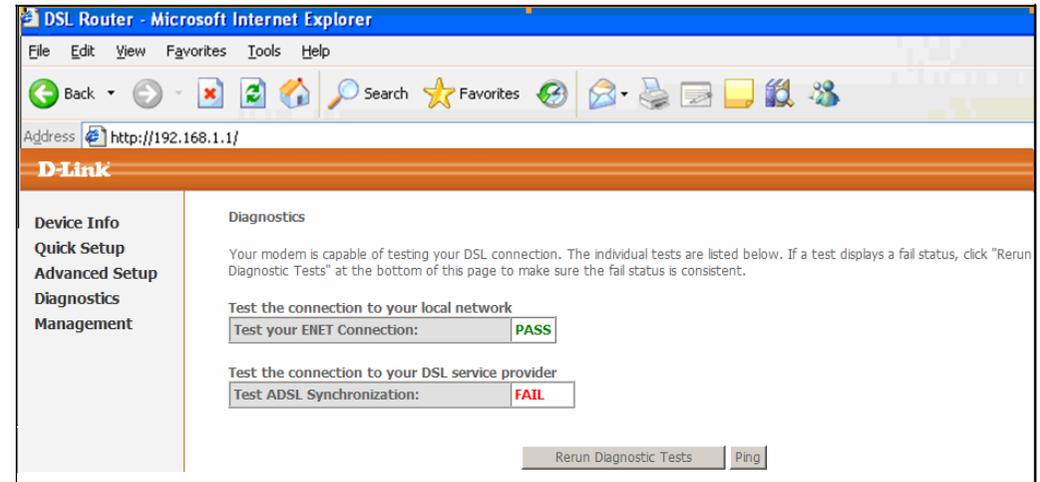
Downstream Tones																											
<input checked="" type="checkbox"/>																											
<input checked="" type="checkbox"/>																											
<input checked="" type="checkbox"/>																											
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<input checked="" type="checkbox"/>																											

# Diagnostics

To access the **Diagnostics** window, click the **Diagnostics** link.

This window is used to test connectivity of the Router. The results of the test display immediately.

Click the **Rerun Diagnostic Tests** button to rerun the tests to both your local network connection and your DSL service provider



# Management

The Management directory features an array of options designed to help you get the most out of your Router.

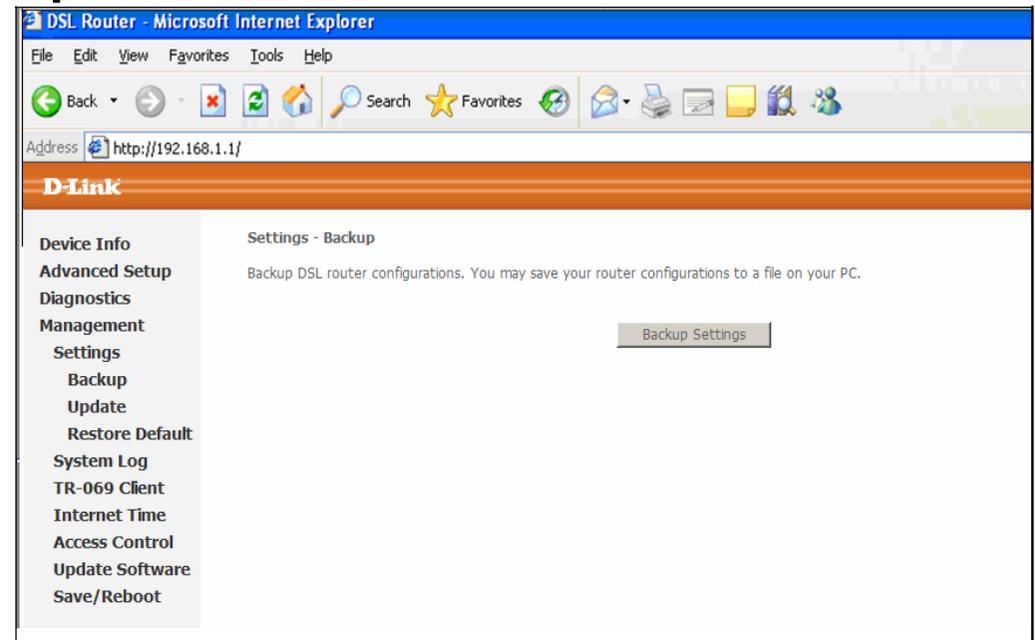
## Settings

The Settings window allows you to backup the Router configuration, update the router configuration and restore the router to default settings. To access the **Settings** windows, click the **Settings** link in the **Management** directory.

## Backup

To backup the router settings click the **Backup** link. This window allows you to backup your DSL Router configuration

Click the **Backup Settings** button to save your Router configuration to a file on your computer.



## Update Settings

To update the router configuration click the **Update** link. This window allows you to update your DSL Router configuration.

Click the **Browse** button to browse to the location where the settings file is saved on your PC. Click the **Update Settings** button to update your Router configuration.

**Tools -- Update Settings**

Update DSL router settings. You may update your router settings using your saved files.

Settings File Name:

## Restore Default

To restore the router configuration to default settings click the **Restore Default** link. This window allows you to restore your DSL Router configuration to factory default settings.

Click the **Restore Default Settings** button to restore your Router to factory default settings.

**Tools -- Restore Default Settings**

Restore DSL router settings to the factory defaults.

# System Log

These windows allow you to view the System Log and configure the System Log options. To access the **System Log** window, click the **System Log** link in the **Management** directory.

Click the **View System Log** button to view the System Log.

Click the **Configure System Log** button to configure the System Log options.

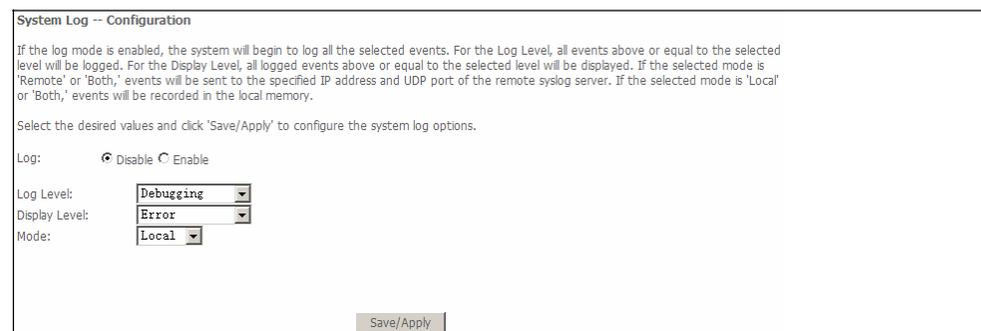
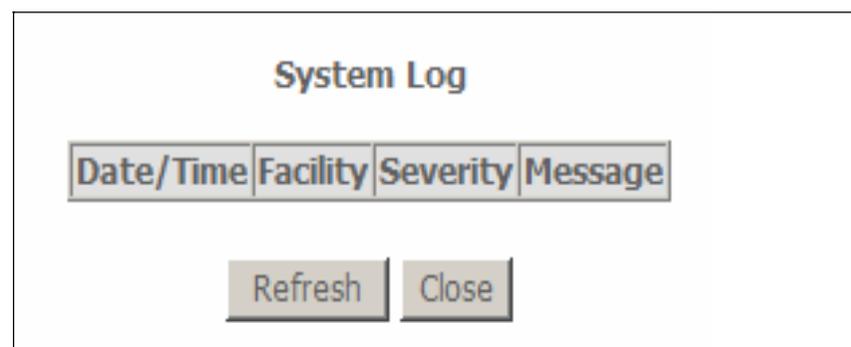
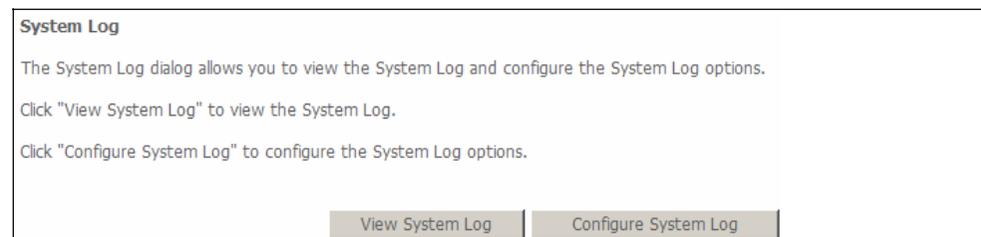
In the System Log window, click on the **Refresh** button to refresh the system log settings.

## System Log – Configuration

Click the **Configure System Log** button to configure the system log.

The system log displays chronological event log data. The event log can be read from the local host or sent to a System Log server. Click the **Enable** radio button. Select the **Log Level**, **Display Level** and **Mode** from the appropriate drop-down menus.

When you have finished configuring the system log, click the **Save/Apply** button.



## TR-069 Client

TR069 is a WAN Management Protocol that allows an Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection and diagnostics to the router. To access the **TR-069** window, click the **TR-069** link in the **Management** directory.

To configure TR-069 carry out the following:

- Select whether to Enable or Disable the Inform message by clicking the **Enable** or **Disable** radio button.
  - Type in the amount of time in seconds for the interval you want to be informed about TR069 messages in the **Inform Interval** field.
  - Type in the URL of the ACS server you want to use to carry out the auto-configuration, provision, collection and diagnostics to the device in the **ACS URL** field.
  - Type in the User Name you will use to log onto the ACS server, into the **ACS User Name** field.
  - Type in the Password you will use to log onto the ACS server, into the **ACS Password** field.
  - If you require the ACS server to authenticate to your Router, tick the **Connection Request Authentication** checkbox.
- Two text boxes will appear
  - Type in the User Name you want the Auto Configuration Server to login with in the **Connection Request User Name** field.
  - Type in the Password you want the Auto Configuration Server to login with in the **Connection Request Password** field.

TR-069 client - Configuration

WAN Management Protocol (TR-069) allows a Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device.

Select the desired values and click "Apply" to configure the TR-069 client options.

TR69c Status:  Disable  Enable  
 Inform :  Disable  Enable

Inform Interval:

ACS URL:

ACS User Name:

ACS Password:

Display SOAP messages on serial console  Disable  Enable

Connection Request Authentication

Connection Request User Name:

Connection Request Password:

TR-069 client - Configuration

WAN Management Protocol (TR-069) allows a Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device.

Select the desired values and click "Apply" to configure the TR-069 client options.

TR69c Status:  Disable  Enable  
 Inform :  Disable  Enable

Inform Interval:

ACS URL:

ACS User Name:

ACS Password:

Display SOAP messages on serial console  Disable  Enable

Connection Request Authentication

Connection Request User Name:

Connection Request Password:

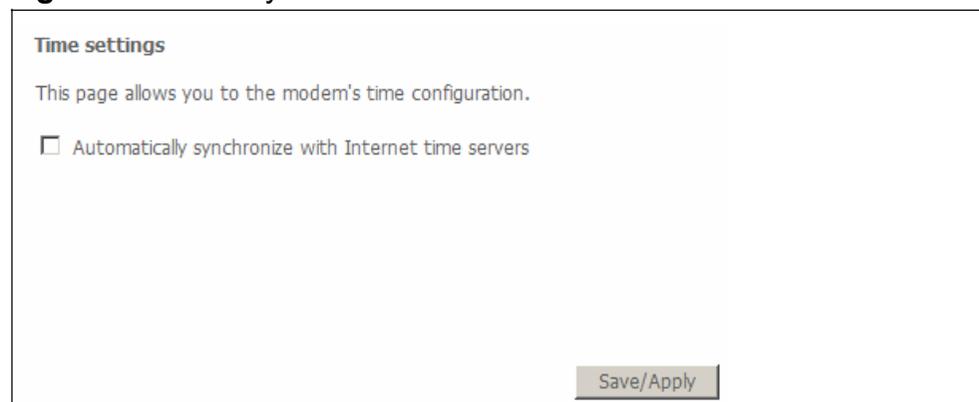
Click the **GetRPCMethods** button to populate the TR-069 settings automatically from the ISP.

When you have finished configuring the TR-069 settings, click the **Save/Apply** button.

## Internet Time

To access the **Internet Time** window, click the **Internet Time** link in the **Management** directory.

Click the **Automatically synchronize with Internet time servers** checkbox to setup automatic synchronization with Internet time servers.



**Time settings**

This page allows you to the modem's time configuration.

Automatically synchronize with Internet time servers

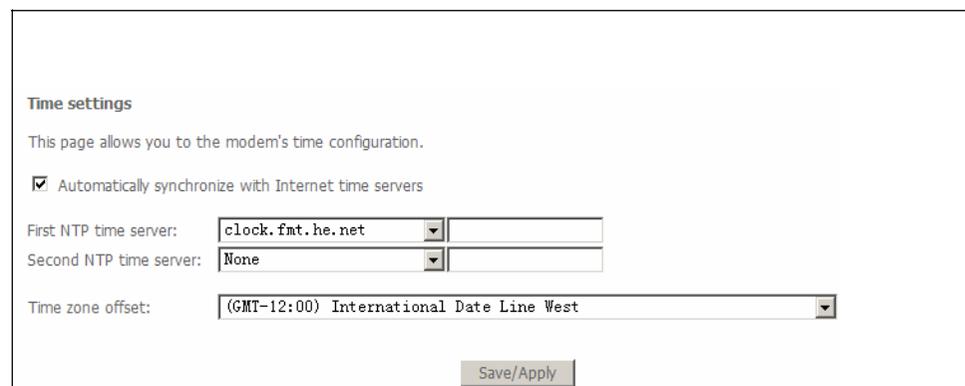
Save/Apply

Select a primary time server from the **First NTP time server** drop-down menu.

Select a secondary time server from the **Second NTP time server** drop-down menu.

Select the time zone you are in from the **Time Zone offset** drop-down menu.

When you have finished configuring the Time Settings click the **Save/Apply** button.



**Time settings**

This page allows you to the modem's time configuration.

Automatically synchronize with Internet time servers

First NTP time server:

Second NTP time server:

Time zone offset:

Save/Apply

# Access Control

To access the **Access Control** windows, click the **Access Control** link in the **Management** directory.

## Services

To configure the Service Control List click the **Services** link. Enable or disable the desired LAN and WAN services by ticking the appropriate checkboxes. When you are finished, click the **Save/Apply** button.

**Note:** When the WAN configuration is bridging mode, you can not view the WAN service.

**Access Control -- Services**

A Service Control List ("SCL") enables or disables services from being used.

Services	LAN
FTP	<input checked="" type="checkbox"/> Enable
HTTP	<input checked="" type="checkbox"/> Enable
ICMP	Enable
TELNET	<input checked="" type="checkbox"/> Enable
TFTP	<input checked="" type="checkbox"/> Enable

**Save/Apply**

## IP Addresses

To configure IP address access control click the **IP Addresses** link. Click the **Enable** or **Disable** radio button to enable or disable Access Control Mode. To add an IP address management station, click the **Add** button.

**Access Control -- IP Address**

The IP Address Access Control mode, if enabled, permits access to local management services from IP addresses contained in the Access Control List. If the Access Control mode is disabled, the system will not validate IP addresses for incoming packets. The services are the system applications listed in the Service Control List.

Access Control Mode:  Disable  Enable

**IP Address** **Remove**

Enter the IP address of the management station permitted to access the local management services in the **IP Address** field. When you are finished, click the **Save/Apply** button.

**Access Control**

Enter the IP address of the management station permitted to access the local management services, and click 'Save/Apply.'

IP Address:

**Save/Apply**

## Passwords

Click the **Passwords** link to change the passwords for the different users that are setup on the Router. Select the user you want to change from the **Username** drop-down menu. Type in the old password in the **Old Password** field, type in the new password in the **New Password** field and confirm the new password in the **Confirm Password** field. When you are finished, click the **Save/Apply** button.

**Access Control -- Passwords**

Access to your DSL router is controlled through three user accounts: admin, support, and user.

The user name "admin" has unrestricted access to change and view configuration of your DSL Router.

The user name "support" is used to allow an ISP technician to access your DSL Router for maintenance and to run diagnostics.

The user name "user" can access the DSL Router, view configuration settings and statistics, as well as, update the router's software.

Use the fields below to enter up to 16 characters and click "Apply" to change or create passwords. Note: Password cannot contain a space.

Username:

Old Password:

New Password:

Confirm Password:

**Save/Apply**

## Update Software

To access the **Update Software** window, click the **Update Software** link in the **Management** directory.

This window allows you to update the Router's software. Click the **Browse** button to navigate to the location where the updated software file is located. Once you have located the file click the **Update Software** button to update the software on the Router.

**Tools -- Update Software**

**Step 1:** Obtain an updated software image file from your ISP.

**Step 2:** Enter the path to the image file location in the box below or click the "Browse" button to locate the image file.

**Step 3:** Click the "Update Software" button once to upload the new image file.

**NOTE:** The update process takes about 2 minutes to complete, and your DSL Router will reboot.

Software File Name:  **Browse...**

**Update Software**

## Save/Reboot

To access this window, click the **Save/Reboot** link in the **Management** directory.

To save your settings and reboot the system, click the **Save/Reboot** button.

Click the button below to save and reboot the router.

Save/Reboot

# Troubleshooting

This chapter provides solutions to problems that might occur during the installation and operation of the DSL-2500U. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

## 1. How do I configure my DSL-2500U Router without the CD-ROM?

Connect your PC to the Router using an Ethernet cable.

Open a web browser and enter the address <http://192.168.1.1>

The default username is 'admin' and the default password is 'admin'.

If you have changed the password and cannot remember it, you will need to reset the Router to the factory default setting (see question 2), which will set the password back to 'admin'.

**Note:** Please refer to the next section "Networking Basics" to check your PC's IP configuration if you can't see the login windows.

## 2. How do I reset my Router to the factory default settings?

Ensure the Router is powered on.

Press and hold the reset button on the back of the device for approximately 5 to 8 seconds.

This process should take around 1 to 2 minutes.

**Note:** Resetting the Router to the factory default settings will erase the current configuration settings. To reconfigure your settings, login to the Router as outlined in question 1, and then run the Quick Setup wizard.

### 3. What can I do if my Router is not working correctly?

There are a few quick steps you can take to try and resolve any issues:

Follow the directions in Question 2 to reset the Router.

Check that all the cables are firmly connected at both ends.

Check the LEDs on the front of the Router. The Power indicator should be on, the Status indicator should flash, and the DSL and LAN indicators should be on as well.

Please ensure that the settings in the Web-based configuration manager, e.g. ISP username and password, are the same as the settings that have been provided by your ISP.

### 4. Why can't I get an Internet connection?

For ADSL ISP users, please contact your ISP to make sure the service has been enabled/connected by your ISP and that your ISP username and password are correct.

### 5. What can I do if my Router can't be detected by running the installation CD?

Ensure the Router is powered on.

Check that all the cables are firmly connected at both ends and all LEDs are working correctly.

Ensure only one network interface card on your PC is activated.

Click on **Start > Control Panel > Security Center** to disable the firewall.

**Note:** There is a potential security issue if the firewall is disabled on your PC. Please remember to turn it back on once you have finished the whole installation procedure. This will enable you to surf the Internet without any problems.

# Networking Basics

## Check Your IP Address

After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

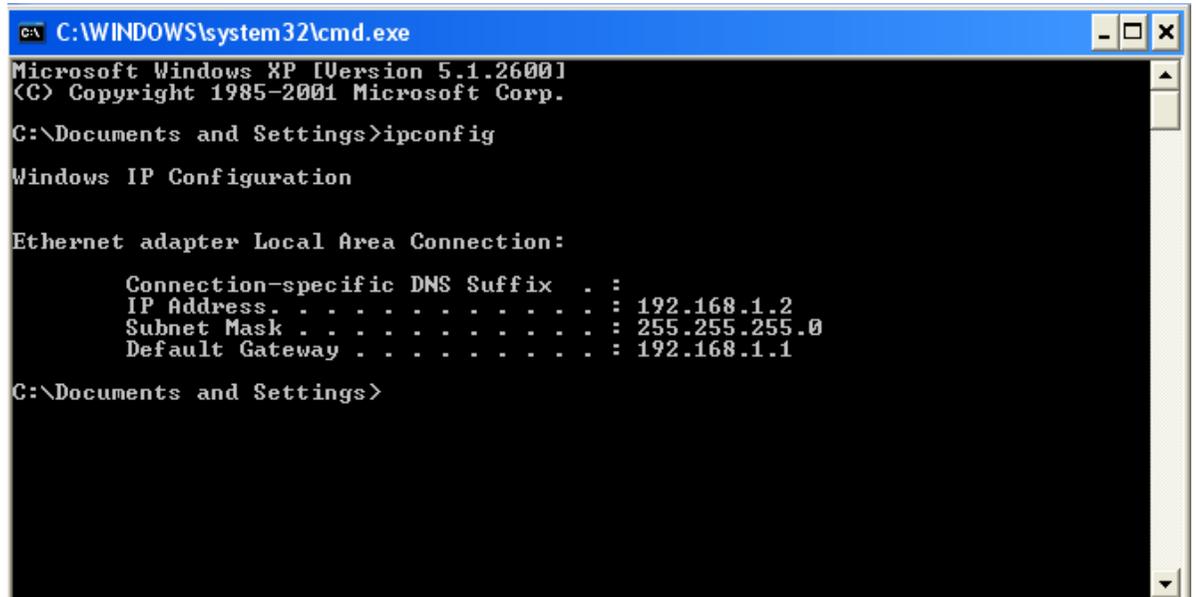
Click on **Start**  **Run**. In the run box type **cmd** and click on the **OK** button.

At the prompt, type **ipconfig** and press **Enter**.

This will display the IP address, subnet mask and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.

If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network settings.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.
C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

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

C:\Documents and Settings>
```

# Statically Assigning an IP Address

If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

## Step 1

Windows® XP - Click on **Start > Control Panel > Network Connections**.

Windows® 2000 - From the desktop, right-click on the **My Network Places > Properties**.

## Step 2

Right-click on the **Local Area Connection** which represents your network adapter and select the **Properties** button.

## Step 3

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

## Step 4

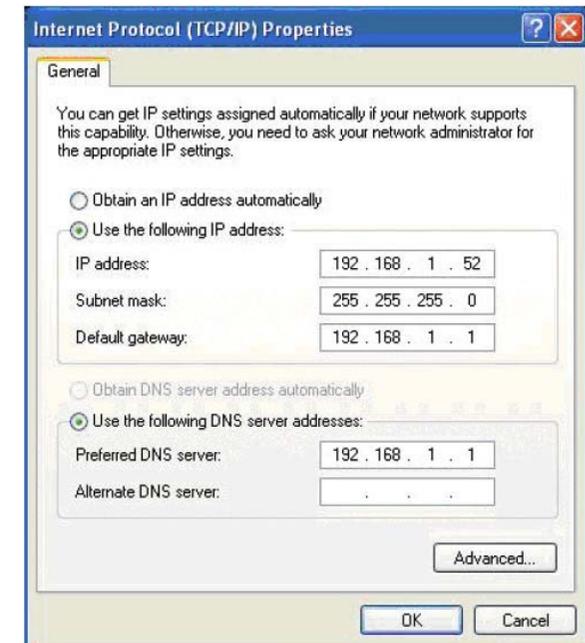
Click on the **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

Example: If the router's LAN IP address is 192.168.1.1, make your IP address 192.168.1.X where X is a number between 2 and 254. Make sure that the number you choose is not in use on the network. Set the Default Gateway to be the same as the LAN IP address of your router (192.168.1.1).

Set the Primary DNS to be the same as the LAN IP address of your router (192.168.1.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

## Step 5

Click on the **OK** button twice to save your settings.



# Technical Specifications

## ADSL Standards

ANSI T1.413 Issue 2  
ITU G.992.1 (G.dmt) Annex A  
ITU G.992.2 (G.lite) Annex A  
ITU G.994.1 (G.hs)  
ITU G.992.5 Annex A

## ADSL2 Standards

ITU G.992.3 (G.dmt.bis) Annex A  
ITU G.992.4 (G.lite.bis) Annex A

## ADSL2+ Standards

ITU G.992.5 (ADSL2+)

## Protocols

IEEE 802.1d Spanning Tree	RFC1483/2684 Multiprotocol
TCP/UDP	Encapsulation over ATM
ARP	Adaptation Layer 5 (AAL5)
RARP	RFC1661 Point to Point Protocol
ICMP	RFC1994 CHAP
RFC1058 RIP v1	RFC2131 DHCP Client /
RFC1213 SNMP v1 & v2c	DHCP Server
RFC1334 PAP	RFC2364 PPP over ATM
RFC1389 RIP v2	RFC2516 PPP over
RFC1577 Classical IP over ATM	Ethernet

## Data Transfer Rate

G.dmt full rate downstream: up to 8 Mbps / upstream: up to 1 Mbps  
G.lite: ADSL downstream up to 1.5 Mbps / upstream up to 512 Kbps  
G.dmt.bis full rate downstream: up to 12 Mbps / upstream: up to 12 Mbps  
ADSL full rate downstream: up to 24 Mbps / upstream: up to 1 Mbps

## Media Interface

ADSL interface: RJ-11 connector for connection to 24/26 AWG twisted pair telephone line  
LAN interface: RJ-45 port for 10/100BASE-T Ethernet connection