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Table of Contents

Package Contents

- DSL-526B ADSL Router
- Power Adapter
- CD-ROM with User Manual
- One twisted-pair telephone cable used for ADSL connection
- One straight-through Ethernet cable
- One USB cable
- One Quick Installation Guide

Note: Using a power supply with a different voltage rating other than the one included with the DSL-526B may cause damage and void the warranty for this product.

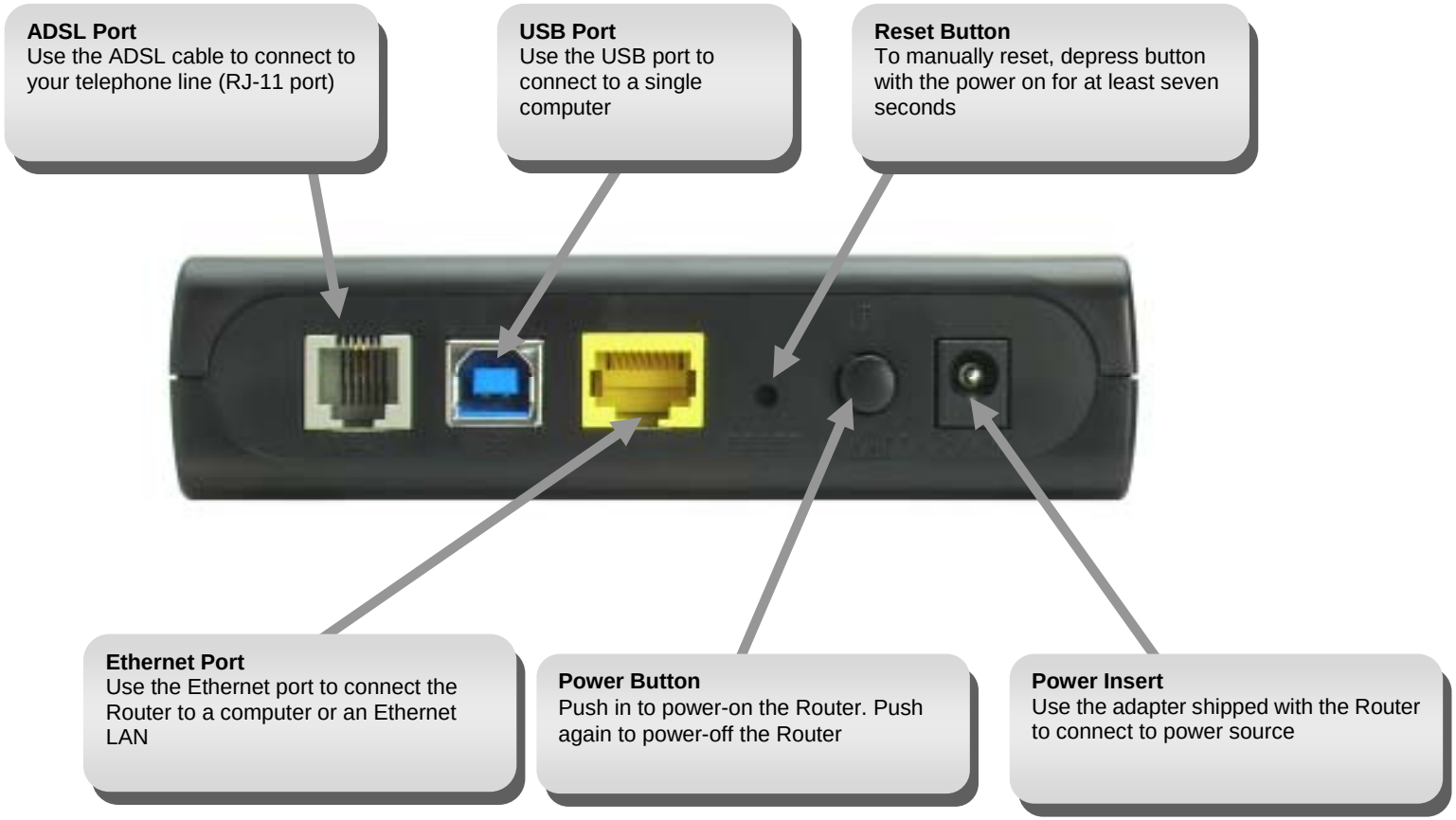
System Requirements

- 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 DSL-526B ADSL 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 DSL-526B 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 DSL-526B 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 DSL-526B 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 DSL-526B 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 DSL-526B 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 unit is powered on. When the device is powered off the LED remains dark. Lights steady green during power on self-test (POST). Once the connection status has been settled, the light will blink green. If the indicator lights steady green after the POST, the system has failed and the device should be rebooted.

USB
A solid green light indicates a valid link on startup. This light will blink when there is activity currently passing through the USB 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 the system is operating normally. System failure is indicated by either a steady green or dark light.

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.

Internet
A solid green light indicates the WAN IP address from IPCP or DHCP and DSL is up or a static IP address is configured and PPP negotiation has been successfully completed. If the indicator blinks green, this means the Router is active. If the Router is powered off, this remains dark.

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-526B 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.

USB Port or Ethernet Port (NIC Adapter)
Any computer that uses the Router must be able to connect to it through either the Ethernet port or USB port on the Router. The easiest method of installation is via the Ethernet connection, which requires your computer be equipped with an Ethernet port. 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 and you do not wish to use a USB connection, 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.

Note

If you plan to use the DSL-526B's USB port to connect to your computer, do not connect the USB cable to the Router until you have finished all of the steps to install the USB driver, and your computer has restarted.

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-526B 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-526B
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-526B
This is the subnet mask used by the DSL-526B 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-526B to the Ethernet port using an Ethernet cable. You can also use the Ethernet ports on the DSL-526B to connect to other computers or Ethernet devices.

DHCP Client status
Your DSL-526B 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-526B 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-526B ADSL Router.

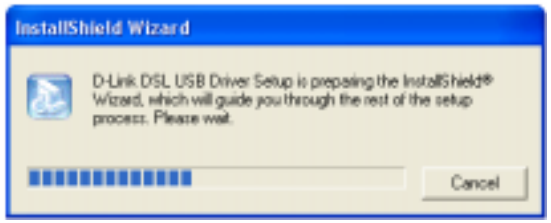
Installing the USB Driver

IMPORTANT: Do not connect the USB cable to your PC before completing the steps below!

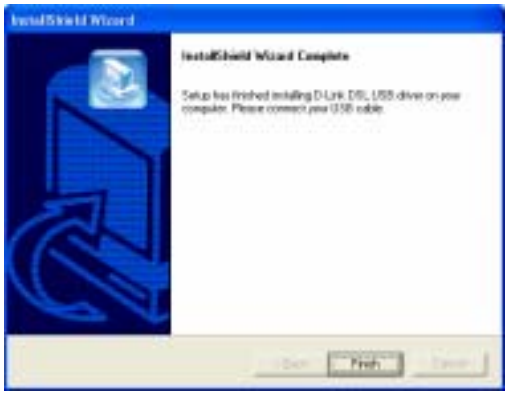
The CD-ROM shipped with the Router contains the USB driver software. Insert the DSL-526B CD-ROM into the CD drive. Within a few seconds you should see a window that offers the following options: Install DSL-526B, Quick Install Guide, View Manual, Install Acrobat Reader, and Exit. If you do not see this auto-run pop-up window, explore the CD-ROM and double-click the setup application file **autorun.exe** or find the file **Setup.exe** in the folder labeled **Setup** and double-click it to launch the installation software. The auto-run USB driver setup must be completed before connecting the router to your PC with the USB cable. To install the driver follow these instructions:

1. Double-Click the **Setup.exe** icon to launch the USB driver installation software.

2. The following window appears to indicate the InstallShield Wizard is starting.



3. Click Finish to complete the InstallShield wizard.



When the USB driver has been installed carry out the following steps:

1. Insert one end of the USB cable included with the Router into the DSL-526B Router's USB port.
2. Insert the other end of the USB cable into a spare USB port on your PC.
3. Connect the power adapter to the power input in the back panel of the DSL-526B and then plug the other end of the power adapter to a wall outlet or power strip.
4. Press the power button to switch on the Router. On the front of the device, the Power LED will turn ON to indicate proper operation.
5. Insert the telephone cable included with the Router into the ADSL port, and then connect the cable to your telephone line.
6. Check the DSL LED on the front of the Router to confirm that the connections have been made.

Device Installation

The DSL-526B has three separate physical interfaces, an ADSL (WAN), an Ethernet (LAN) interface and a USB Interface. The Router can be connected to your PC via the USB port or 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 “tot”.

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 or connect the Router to a spare USB port using the Router's USB interface.

Configuration

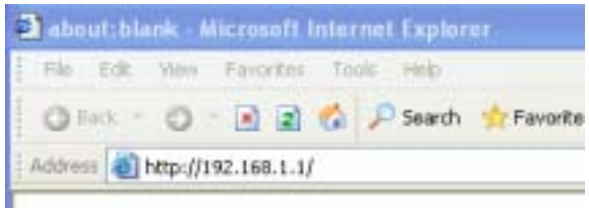
This section will show you how to configure your new D-Link Router using the web-based configuration utility.

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

Quick Setup

After successfully logging into the router you will be directed to the Quick Setup screen.

QUICK SETUP
Type in your PPP Username and PPP Password in the relevant fields.

If you need to change any additional settings click the **Advance Setup** button. This will take you to the **Advanced Setup** windows. Please refer to the Advanced Setup section in this manual for more information.

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

QUICK SETUP
The following window appears to indicate that the router is restarting.

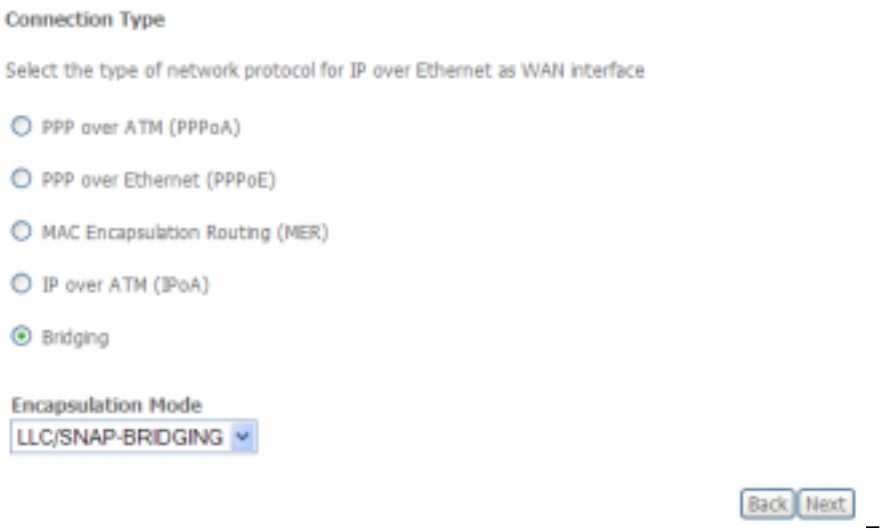
QUICK SETUP
Once the router has restarted you will be presented with the **Quick Setup** screen. This completes the **Quick Setup** of your router

Wizard

To access the Wizard click the **Wizard** link.

WIZARD
Click the **Wizard** link to access the Wizard windows. To set up an ATM PVC configuration, enter a Port Identifier in the **PORT:** field, a Virtual Path Identifier in the **VPI:** field and a Virtual Channel Identifier in the **VCI:** field. 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.

WIZARD – 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.



WIZARD – BRIDGING

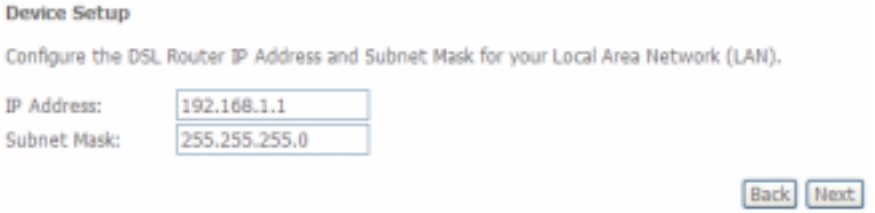
To enable bridging, tick the Enable Bridge Service check box and enter a Service Name.

To disable WAN service, unselect the check box.

Click the **Next** button to continue.

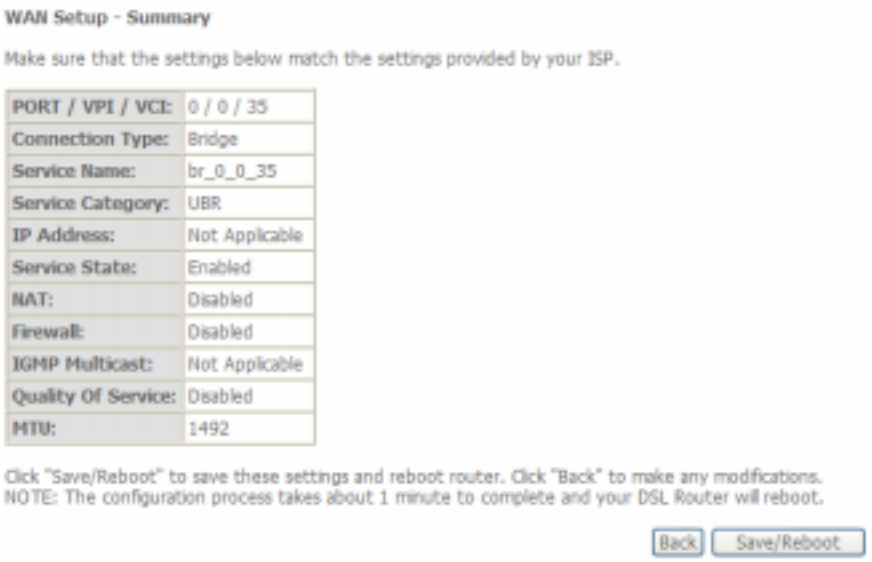
WIZARD– BRIDGING

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.



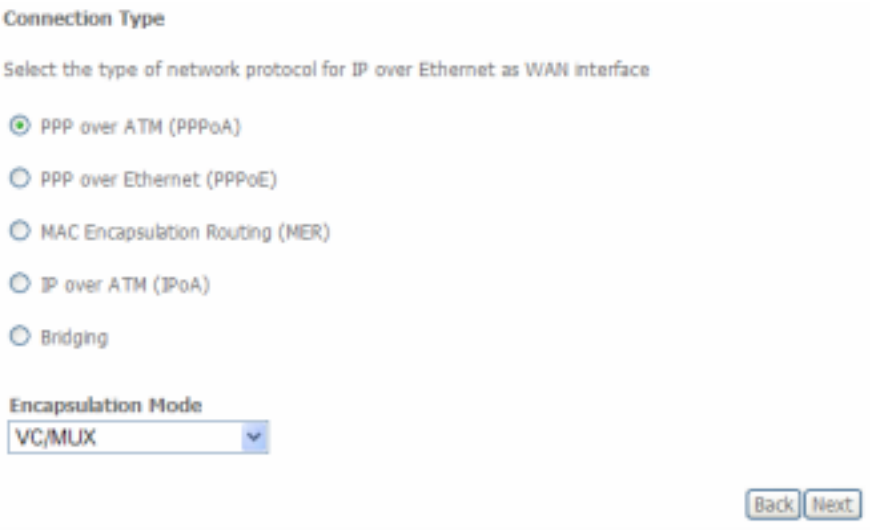
WIZARD – BRIDGING

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.



WIZARD – 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.



WIZARD – 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.

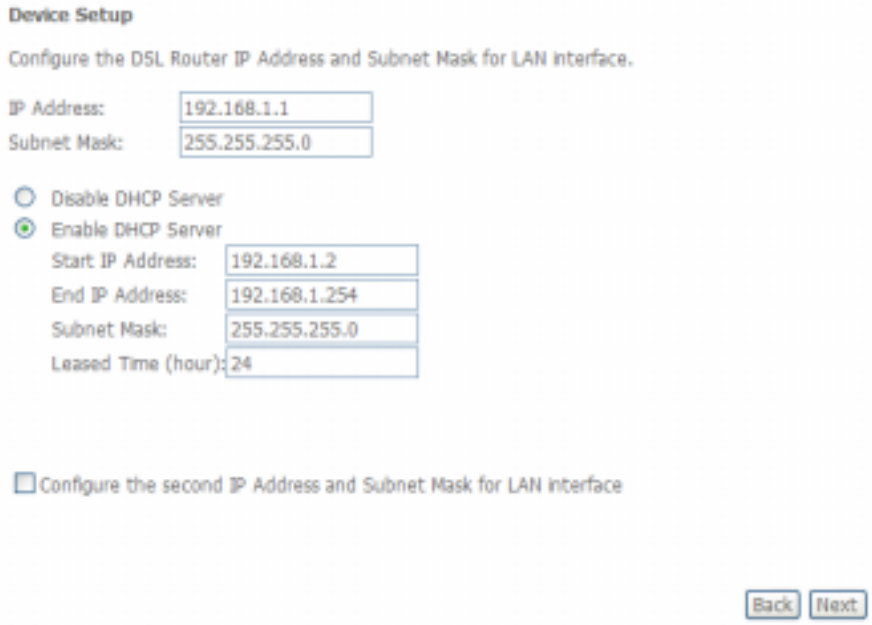
WIZARD - PPPoA

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.

WIZARD - 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.

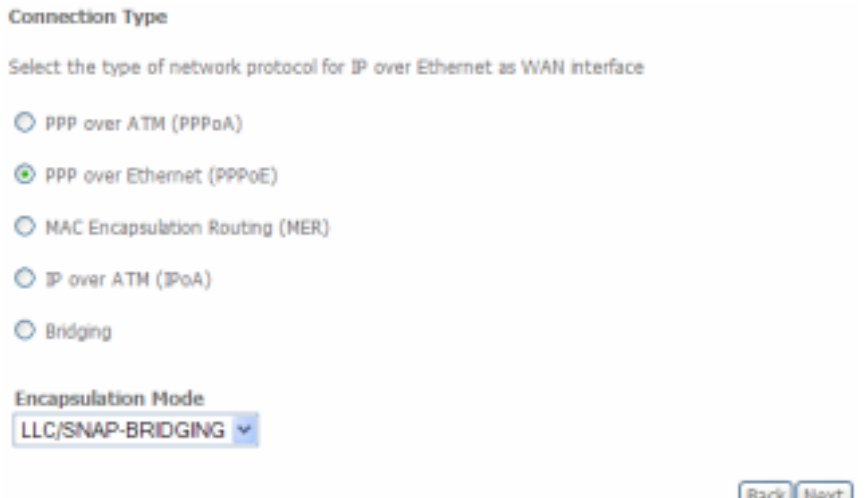


WIZARD – PPPoA

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.

WIZARD – 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.



WIZARD – 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.

WIZARD – 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.

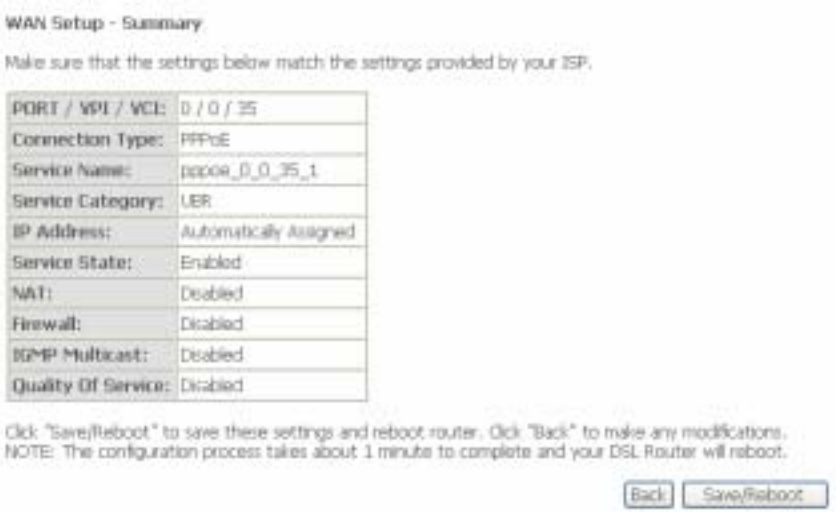
WIZARD – PPPoE

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.

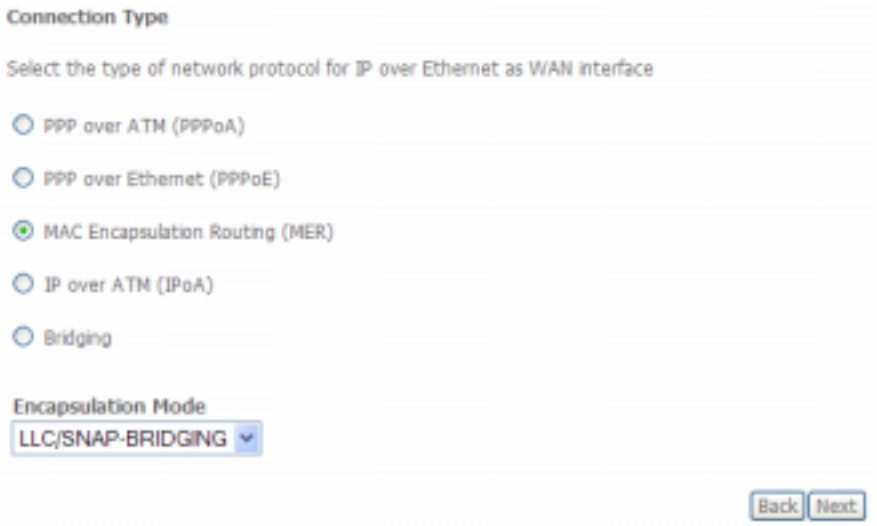
WIZARD – PPPoE

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.



WIZARD – 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.



WIZARD – MER

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

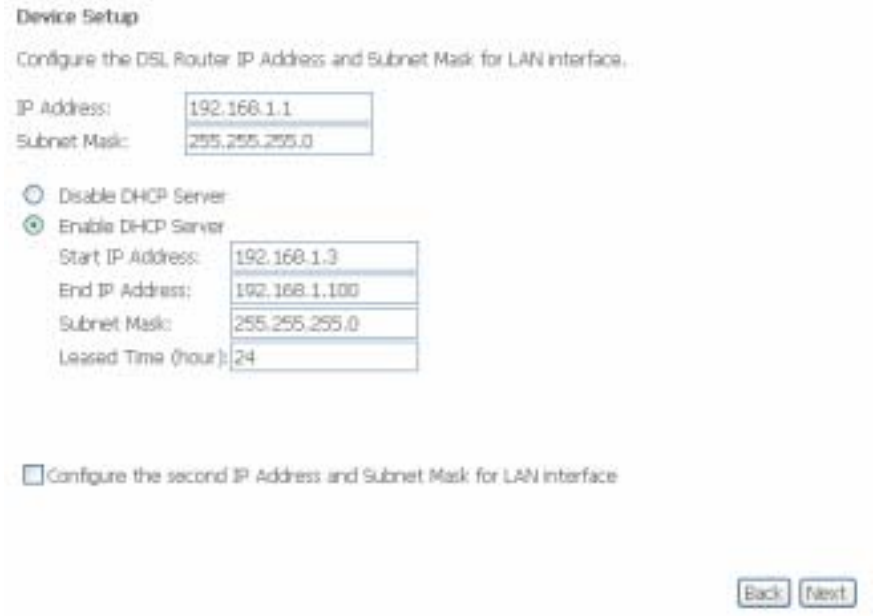
WIZARD – MER

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.

WIZARD – 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.

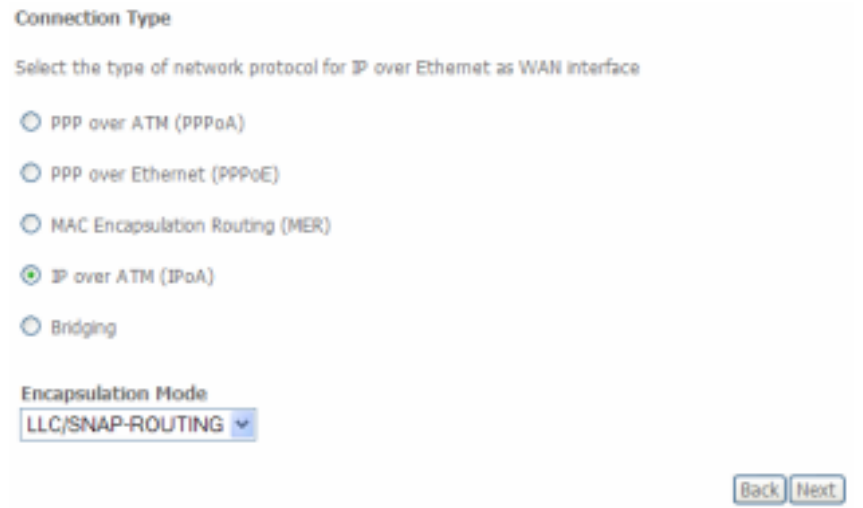


WIZARD – MER

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.

WIZARD – 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.



WIZARD – IPoA

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

WIZARD – 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.

WIZARD – 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.

WIZARD – 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.

Advanced 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.

ADVANCED SETUP

Click the **Advanced Setup** link on the left panel of the opening page to launch a series of setup windows.

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ADVANCED SETUP – Wide Area Network (WAN) Setup

Click the **WAN** link to access **Wide Area Network (WAN) Setup**. This window allows you to set up ATM PVC configurations for the Router. Click the **Add** button to start configuring a new PVC connection.

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.

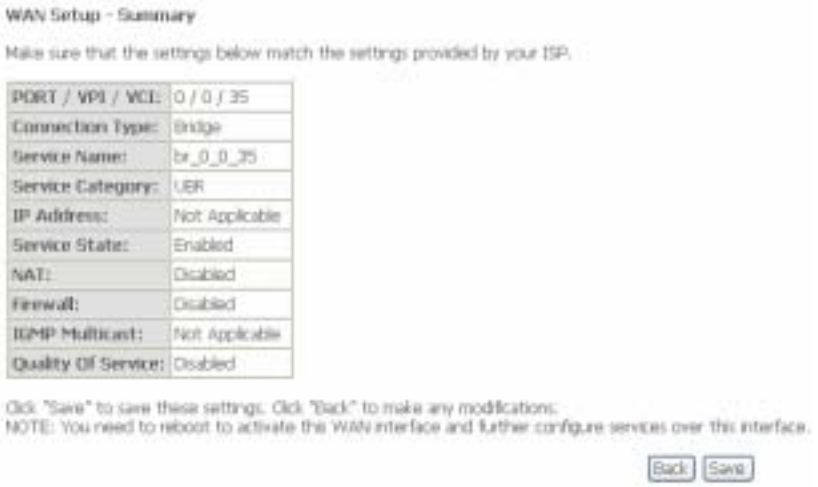
ADVANCED SETUP – BRIDGING

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

Click the **Next** button to continue.

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.



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.

ADVANCED SETUP – PPPoA

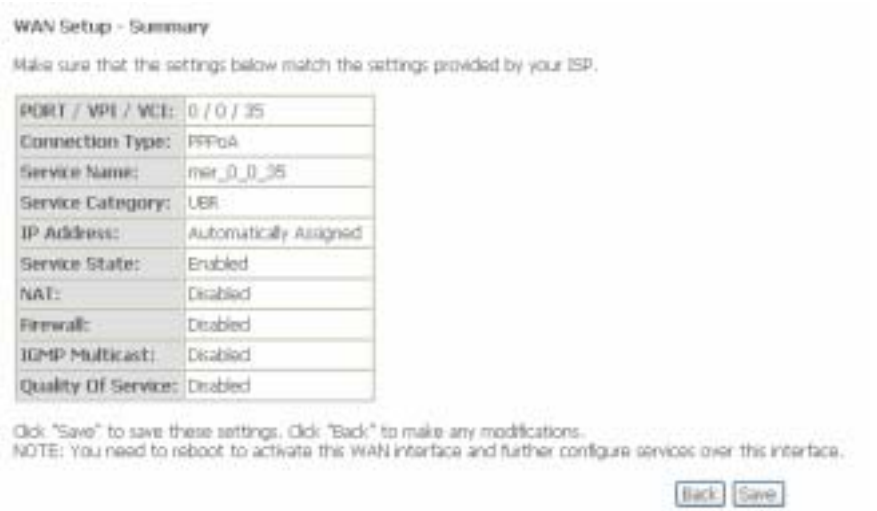
This window allows you to set the username and the password for your PPP connection. This information is obtained from your ISP. Additional settings on this window will also depend on your ISP. Most users will want to leave the MTU value at the default setting unless your ISP advises you to change it. Click the **Next** button to continue.

ADVANCED SETUP – PPPoA

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

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.



ADVANCED SETUP – PPPoE

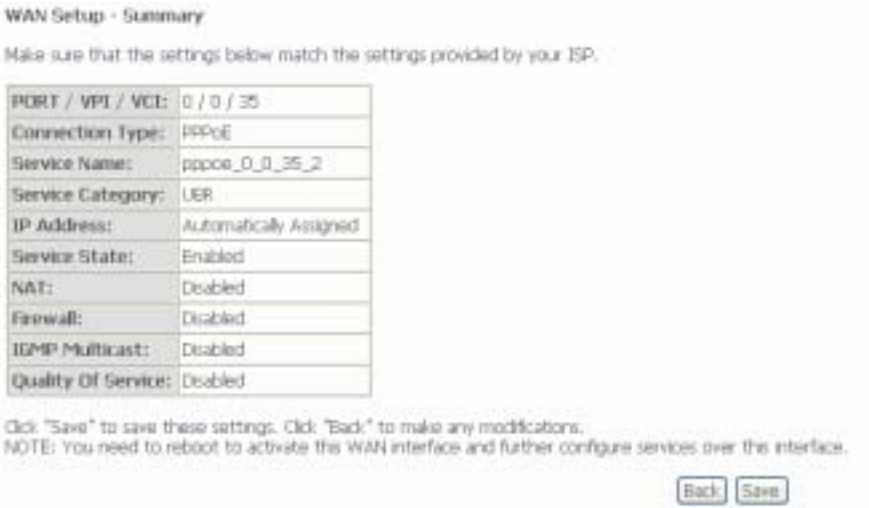
Click the **PPP over Ethernet (PPPoE)** radio button on this window. This window also allows you to use the drop-down menu to select the desired Encapsulation Mode. Click the **Next** button to continue.

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. 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.

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

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.



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.

ADVANCED SETUP – MER

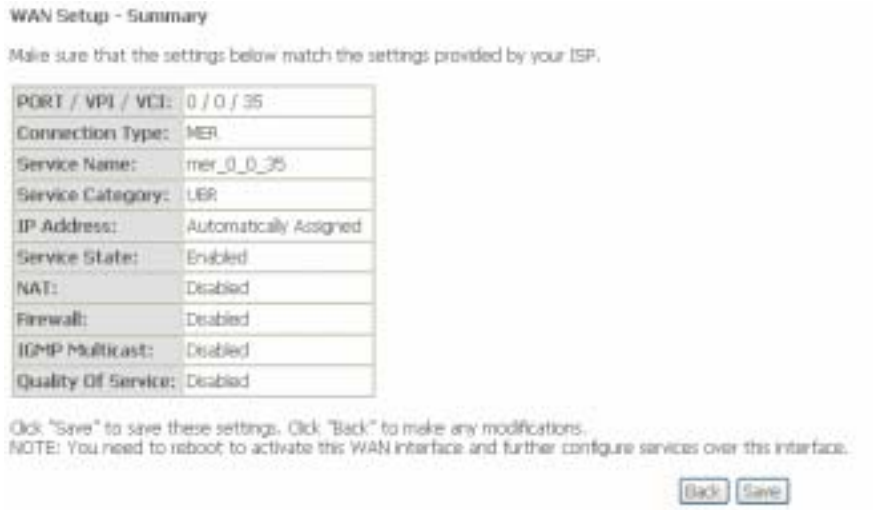
This window allows you to configure the WAN IP settings. This information is obtained from your ISP. When you have finished configuring the IP settings, click the **Next** button to continue.

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.

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.



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

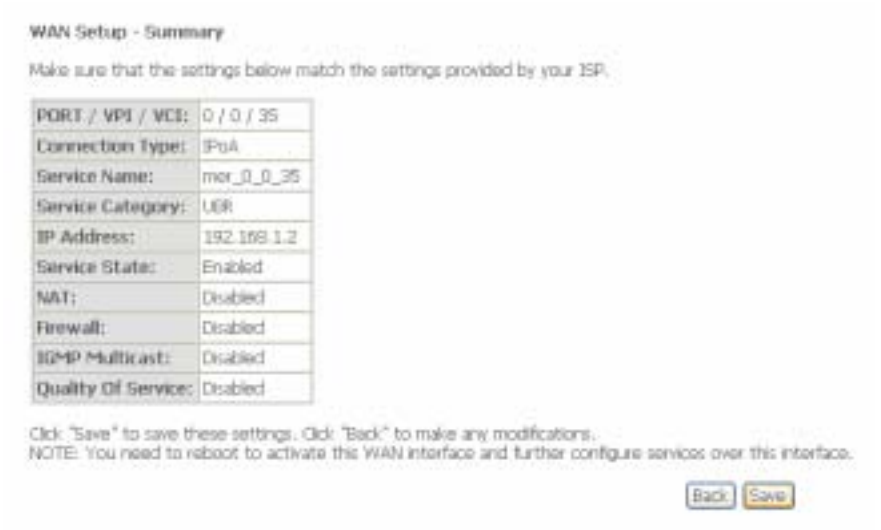
This window allows you to configure the WAN IP settings. This information is obtained from your ISP. When you have finished configuring the IP settings, click the **Next** button to continue.

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.

ADVANCED SETUP – IPOA

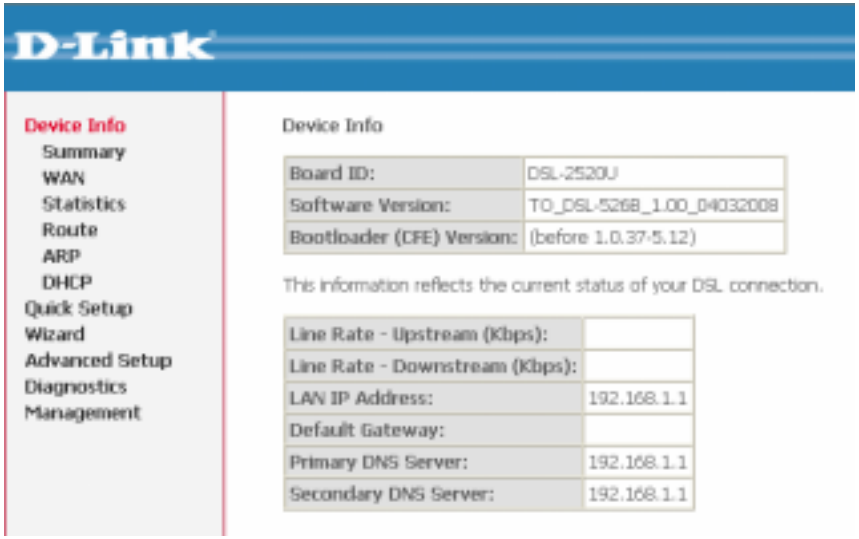
This summary window allows you to confirm the settings you have just made. Click the **Save** button to save your new IP over ATM (IPoA) settings and restart the Router.



Device Info

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

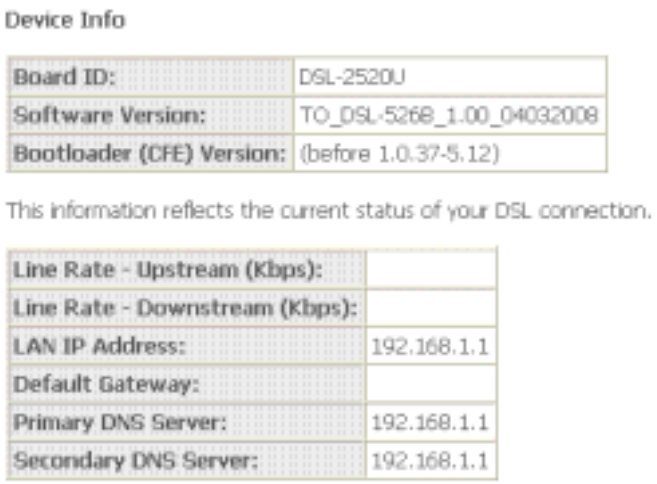
This window displays different information about the Router, including Summary, WAN, Statistics, Route, ARP and DHCP information.



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

Board ID:	DSL-2520U
Software Version:	TO_DSL-526B_1.00_04032008
Bootloader (CFE) Version:	(before 1.0.37-5.12)

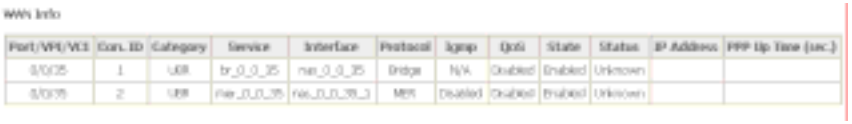
This information reflects the current status of your DSL connection.

Line Rate - Upstream (Kbps):	
Line Rate - Downstream (Kbps):	
LAN IP Address:	192.168.1.1
Default Gateway:	
Primary DNS Server:	192.168.1.1
Secondary DNS Server:	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.



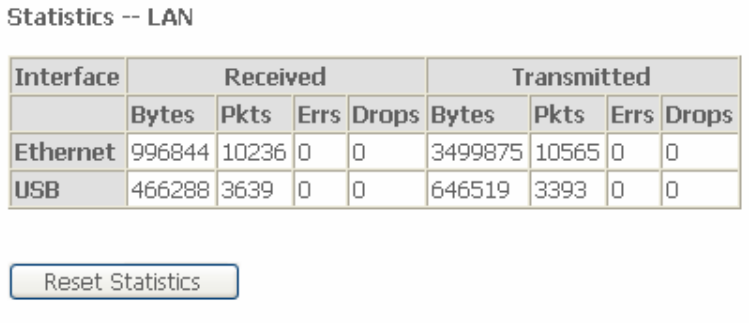
WAN Info

Port/VPI/VCI	Con. ID	Category	Service	Interface	Protocol	Igmp	QoS	State	Status	IP Address	PPP Up Time (sec.)
0/0/35	1	UBR	br_0_0_35	nas_0_0_35	Bridge	N/A	Disabled	Enabled	Unknown		
0/0/35	2	UBR	nas_0_0_35	nas_0_0_35_1	MER	Disabled	Disabled	Enabled	Unknown		

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.



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.

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.

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

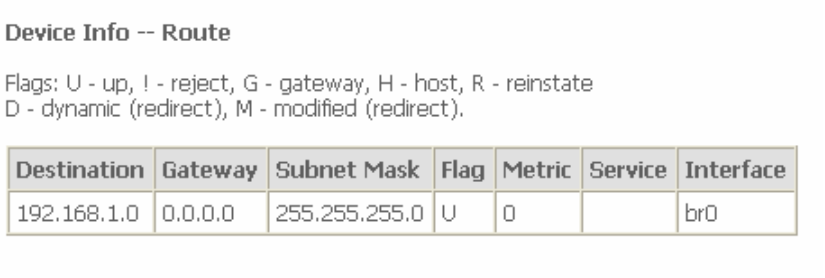
Mode:		
Type:		
Line Coding:		
Status:		Link Down
Link Power State:		L0
	Downstream	Upstream
SNR Margin (dB):		
Attenuation (dB):		
Output Power (dBm):		
Attainable Rate (Kbps):		
Rate (Kbps):		
Super Frames:		
Super Frame Errors:		
RS Words:		
RS Correctable Errors:		
RS Uncorrectable Errors:		
HEC 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.

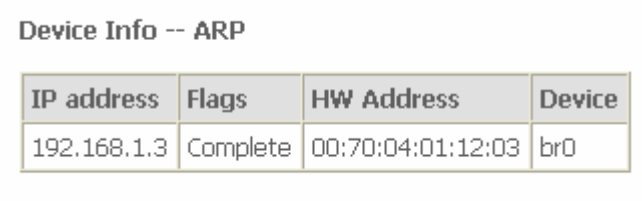
This read-only window displays routing info.



ARP

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

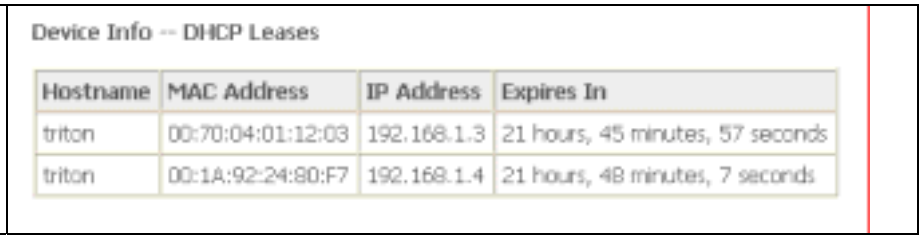
This read-only window displays Address Resolution Protocol info.



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.



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** link in the **Advanced Setup** directory.

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.

The **ATM PVC Configuration** window allows you to set up an ATM PVC configuration. Enter a Port Identifier in the **PORT** field, Virtual Path Identifier in the **VPI** field and Virtual Channel Identifier in the **VCI** field. 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.

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.

For further information about each of the five connection types available on the Router, please go to the Quick Setup section earlier in this manual as all of the windows are identical.

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 frunction, 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. To enable your network to receive IP addresses from a DHCP server from a remote subnet, select the **Enable DHCP Server Relay** radio button and input the IP address of the remoter server in the DHCP Server 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.

NAT

To access the **NAT Setup** window, click the **NAT** link in the **Advanced Setup** directory.

To configure virtual server settings, click the **Virtual Servers** link.

Click the **Add** button to add a new a new virtual server service.

Select a Service from the drop-down menu or click the **Custom Server** radio button to create a custom service.

You can also configure the **External Port Start**, **External Port End**, **Protocol**, **Internal Port Start**, **Internal Port End** and **Remote IP** settings for the service you want to setup on your Router.

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

Click the **Port Triggering** link to Add or Remove Port Triggers.

Click the **Add** button to add a new 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.

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.

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.

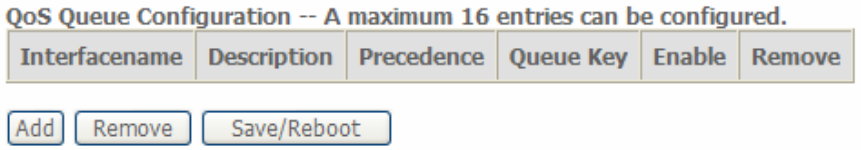
To access the **QoS – Queue Management Configuration** window, click the **Quality of Service** link in the **Advanced Setup** directory.

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

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.



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 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.

Routing

To access the **Routing** windows, click the **Routing** link in the **Advanced Setup** directory.
If the **Enable Automatic Assigned Default Gateway checkbox** 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.

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.

Enter the static routing information for an entry to the routing table.
Click the **Save/Apply** button when you are finished.

To activate the RIP protocol on the Router click on the **RIP** link in the **Routing** directory.

Select the **Enabled** radio button to enable RIP on the Router.

Configure the interfaces you want to enable RIP on and choose the **Version** and **Operation** modes from the appropriate drop-down menus. Tick the **Enabled** checkbox to enable RIP on the interface.

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

DNS

To access the **DNS Settings** window, click the **DNS** link in the **Advanced Setup** directory.

Tick the **Enable Automatic Assigned DNS** checkbox 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 checkbox and type in a **Primary DNS server** IP address and **Secondary DNS server** IP address in the appropriate boxes.

The DSL-526B router supports Dynamic DNS from two providers, DynDNS.org and TZO. This feature allows you to alias a dynamic IP address to a static hostname, allowing your DSL router to be more easily accessed from various locations on the Internet. To configure Dynamic DNS click the Dynamic DNS link in the DNS directory.

Press the Add button to add a new Dynamic DNS entry.

Select **DynDNS.org** or **TZO** from the D-DNS provider drop-down menu.

Type in the Hostname that you have registered with your D-DNS provider in the Hostname textbox.

Select the Interface you want to enable DDNS from the Interface drop-down menu.

If your Dynamic DNS service provider is **DynDNS.org** type in your **DynDNS.org Username** and **Password** in the appropriate boxes.

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

If your Dynamic DNS service provider is **TZO** type in the e-mail address you have registered with **TZO** in the **Email** textbox. Type in the **Key** you have registered with **TZO** in the **Key** textbox.

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

DSL

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

This window allows you to select the desired modulation, phone line pair, and capability. Carry out the following to configure the DSL Settings:

- Tick the text boxes of the modulation types you want to enable.
- 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.
- Click the **Save/Apply** button when you are finished.

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

Select the desired DSL test mode and then click the **Apply** button.

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

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

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

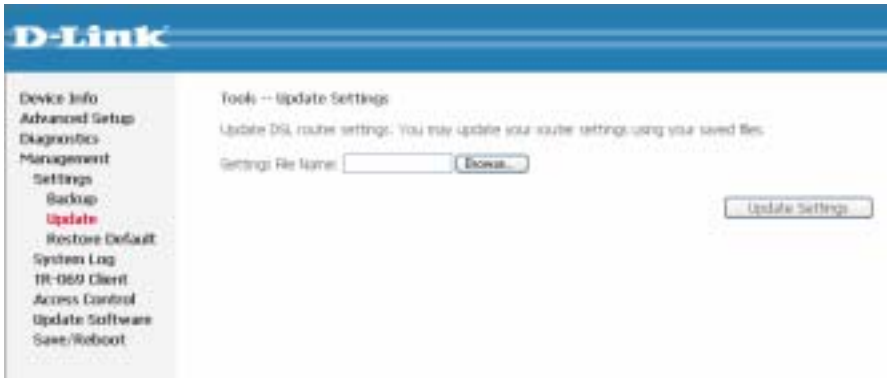
The Settings window allows you to backup the Router configuration, update the router configuration and restore the router to default settings. To access the **Settings** windows, click the **Settings** link in the **Management** directory.

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.

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.



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.

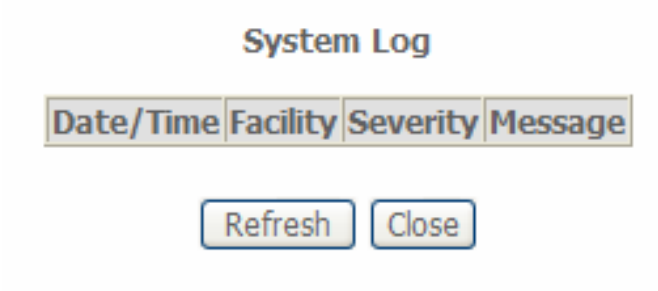
System Log

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.

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

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

Internet Time

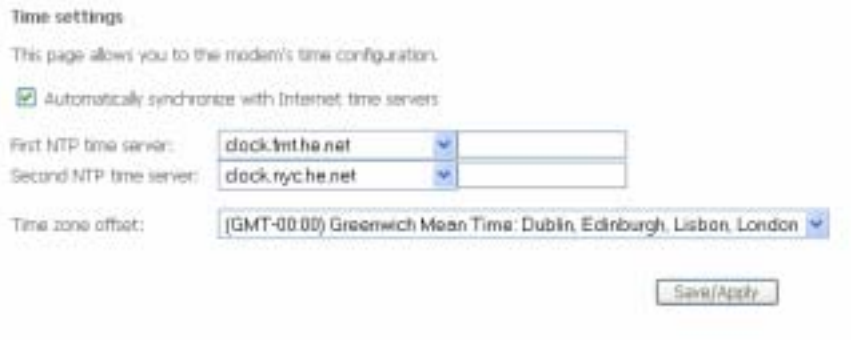
To access the **Internet Time** window, click the **Internet Time** link in the **Management** directory.

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

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.

Access Control

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

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.

Access Control – 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.

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 – 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.

Update Software

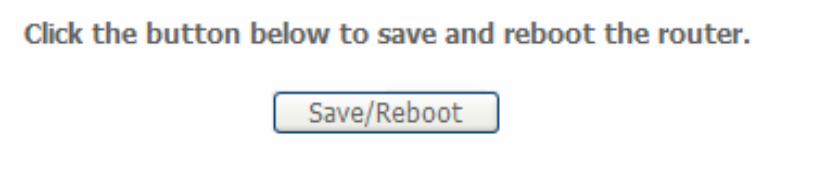
To access the **Update Software** window, click the **Update Software** link in the **Management** directory.

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.

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.



Troubleshooting

This chapter provides solutions to problems that might occur during the installation and operation of the DSL-520B. 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-526B Router without the CD-ROM?

格式化: 項目符號及編號

- 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 ‘tot’.
- 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 ‘tot’.

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?

格式化: 項目符號及編號

- 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, 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.

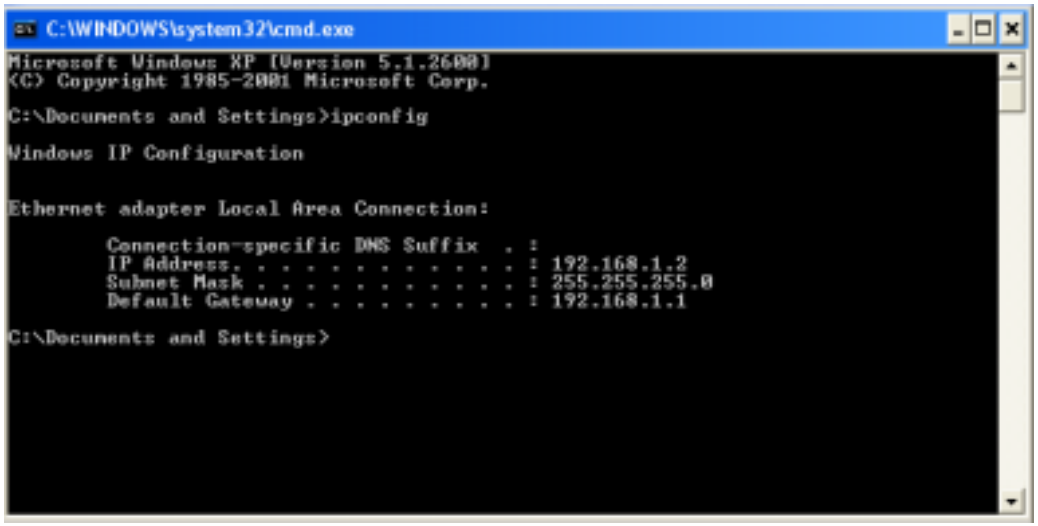
Click on **Start → Run**. In the run box type ***cmd*** and click on the **OK** button.

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.



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) AnnexA
- 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

Protocols

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