



# User Manual

## ADSL Router

DSL-321B

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# Package Contents

- DSL-321B ADSL Router
- Power Adapter
- One twisted-pair telephone cable used for ADSL connection
- One straight-through Ethernet cable
- one TAE adapter(Not needed outside Germany)

**Note:** Using a power supply with a different voltage rating than the one included with the DSL-321B will 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
  - Windows win7/vista/XP/2000
  - MAC OS
  - Internet Explorer v6 or later, FireFox v1.5
  - D-Link Click's Connect Utility
  - Computer with Windows 2000/XP

# Introduction

## **HIGH-SPEED ADSL2/2+ INTERNET CONNECTION**

Latest ADSL2/2+ standards provide Internet transmission of up to 24Mbps downstream, 1Mbps upstream.

## **TOTAL SECURITY**

Firewall protection from Internet attacks, user access control.

## **ULTIMATE INTERNET CONNECTION**

The DSL-321B ADSL2+ router is a versatile, high-performance remote router for home and the small office. With integrated ADSL2/2+ supporting up to 24Mbps download speed, firewall protection, Quality of Service (QoS), this router provides all the functions that a home or small office needs to establish a secure and high-speed remote link to the outside world.

## **FIREWALL PROTECTION & QoS**

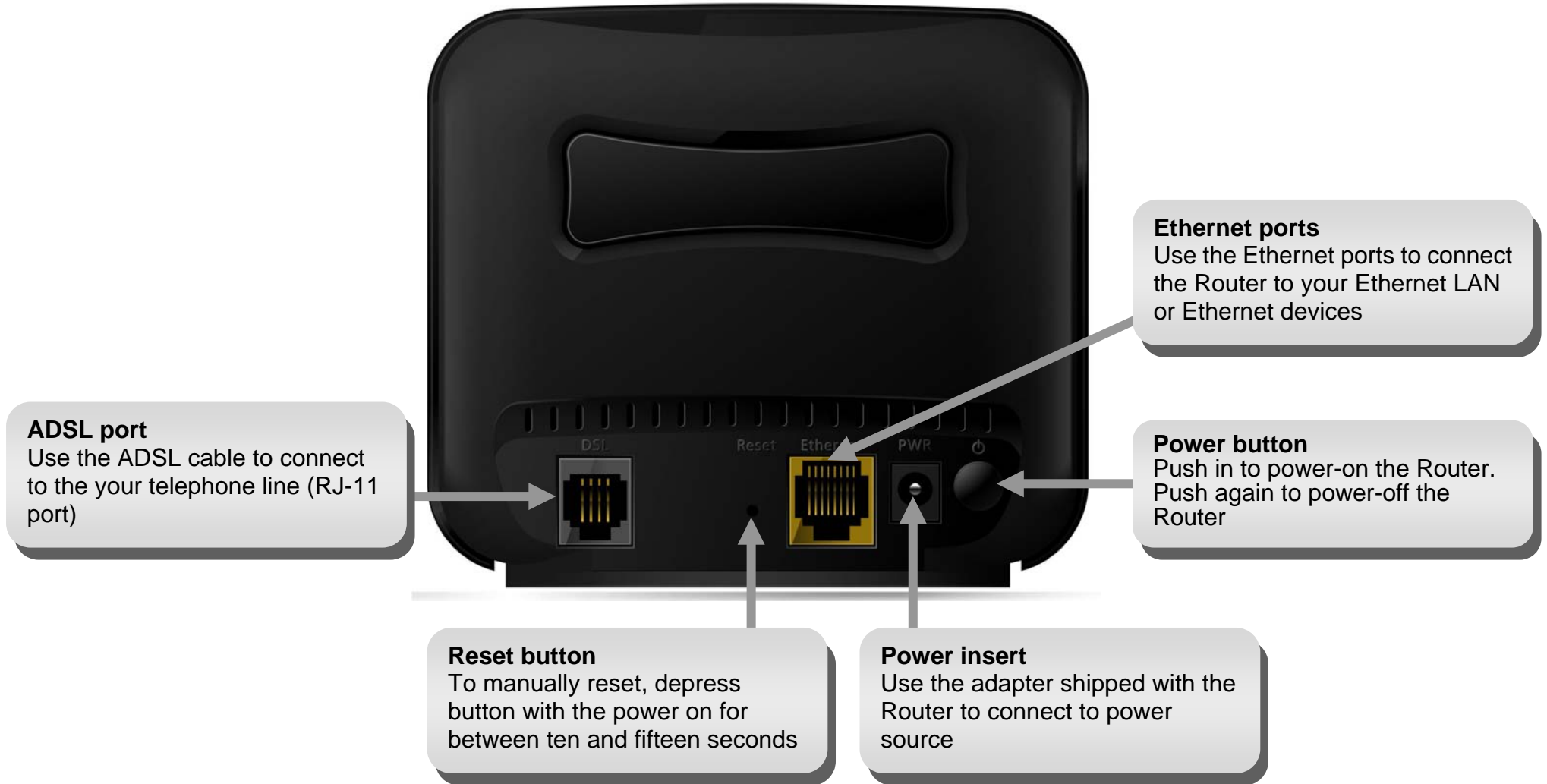
Security features prevents unauthorized access to the home and office network, be it from the LAN devices or from the Internet. The router provides firewall security using Stateful Packet Inspection (SPI) and hacker attack logging for Denial of Service (DoS) attack protection. SPI inspects the contents of all incoming packet headers before deciding what packets are allowed to pass through. Router access control is provided with packet filtering based on port and source/destination IP addresses. For Quality of Service (QoS), the router supports multiple priority queues to enable a group of home or office users to experience the benefit of smooth network connection of inbound and outbound data without concern of traffic congestion. This QoS support allows users to enjoy high ADSL transmission for applications such as VoIP and streaming multimedia over the Internet.

# Features

- **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 network topology occur.
- **Network Address Translation (NAT)** - For small office environments, the DSL-321B 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.
- **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.
- **High Performance** - Very high rates of data transfer are possible with the Router. Up to 24Mbps downstream bit rate using the G.dmt standard. (For ADSL2+)
- **Full Network Management** - The DSL-321B incorporates network management for web-based management and text-based network management via Telnet connection.
- **Easy Installation** - The DSL-321B 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

Steady green light indicates the unit is powered on. When the device is powered off this remains dark.

### DSL

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.

### LAN

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

### Internet

Steady green light indicates a successful Internet connection. Steady red light indicates failed Internet connection. Dark if no WAN protocol is configured.





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

## Operating Systems

The DSL-321B 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 2000, Windows XP, Windows Vista, Windows 7 and MAC OS.

## 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 equipment. If your computer does not have an Ethernet port, you must install an Ethernet NIC adapter before you can use the Router. If you must install an adapter, follow the installation instructions that come with the Ethernet NIC adapter.

### **Additional Software**

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

If your ADSL service is delivered through a PPPoE 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. It is commonly in the form user@isp.co.uk. 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/PPoA (PPPoE LLC, PPPoE VC-Mux, PPPoA LLC or PPPoA VC-Mux)
- Bridge Mode (1483 Bridged IP LLC or 1483 Bridged IP VC Mux)
- MER (Static IP Address)/IPoA (1483 Bridged IP LLC, 1483 Bridged IP VC Mux, 1483 Routed IP LLC or 1483 Routed IP VC-Mux)
- 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. However, if you are instructed to specify the modulation type used for the Router, you may choose among the numerous options available on the Modulation Type drop-down list on the ADSL Configuration window (Advanced > ADSL)

## **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) 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 Settings window of the web management interface.

# Information you will need about DSL-321B

## **Username**

This is the Username needed 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-321B**

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-321B**

This is the subnet mask used by the DSL-321B, 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-321B to this Ethernet port using an Ethernet cable. You can also use the Ethernet ports on the DSL-321B to connect to other computer or Ethernet devices.

## **DHCP Client status**

Your DSL-321B 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-321B will assign are from 192.168.1.2 to 192.168.1.33. 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-321B ADSL Router.

## Device Installation

The DSL-321B ADSL Router maintains two separate interfaces, an Ethernet LAN and an ADSL Internet (WAN) connection. Carefully consider the Router's location suitable for connectivity for your Ethernet devices. You must have a functioning broadband connection via a bridge device such as a Cable or ADSL modem in order to use the Router's WAN function.

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, direct sunlight 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, desktop, or other stable platform. If possible, 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. Push down the Power button, and you should see the Power LED indicator light up and remain lit.
3. If the Ethernet port is connected to a working device, check the Ethernet Link/Act LED indicators to make sure the connection is valid. The Router will attempt to establish the ADSL connection, if the ADSL line is connected and the Router is properly configured this should light up after several seconds. If this is the first time installing the device, some settings may need to be changed before the Router can establish a connection.



# Factory Reset Button

The Router may be reset to the original factory default settings by 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 10~15 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 is **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 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 10/100BASE-TX Ethernet port on the rear panel. Any connection to an Ethernet concentrating device such as a switch or hub must operate at a speed of 10/100 Mbps only. When connecting the Router to any Ethernet device that is capable of operating at speeds higher than 10Mbps, be sure that the device has auto-negotiation (NWay) enabled for the connecting port. Use standard twisted-pair cable with RJ-45 connectors. The RJ-45 port on the Router is a crossed port (MDI-X). Follow standard Ethernet guidelines when deciding what type of cable to use to make this connection. When connecting the Router directly to a PC or server use a normal straight-through cable. You should use a crossed cable when connecting the Router to a normal (MDI-X) port on a switch or hub. Use a normal straight-through cable when connecting it to an uplink (MDI-II) port on a hub or switch. The rules governing Ethernet cable lengths apply to the LAN to Router connection. Be sure that the cable connecting the LAN to the Router does not exceed 100 meters.

**Hub or Switch to Router Connection**

Connect the Router to an uplink port (MDI-II) on an Ethernet hub or switch with a straight-through cable as shown in this diagram. If you wish to reserve the uplink port on the switch or hub for another device, connect to any on the other MDI-X ports (1x, 2x, etc.) with a crossed cable.

**Computer to Router Connection**

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

# Configuration

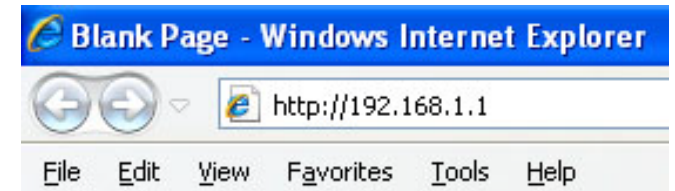
This section will show you how to configure your new D-Link ADSL router using the web-based configuration utility.

## 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.

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.



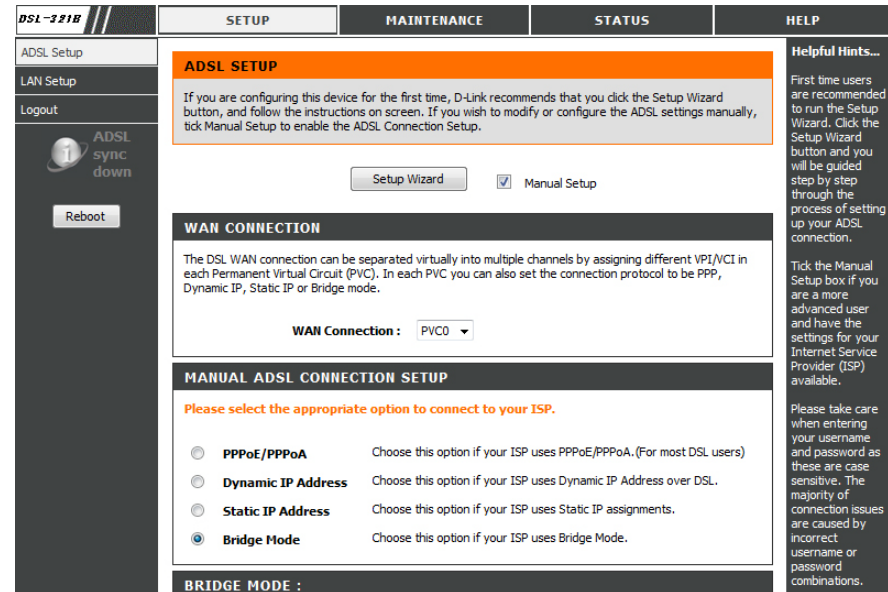
# SETUP

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.

# WIZARD

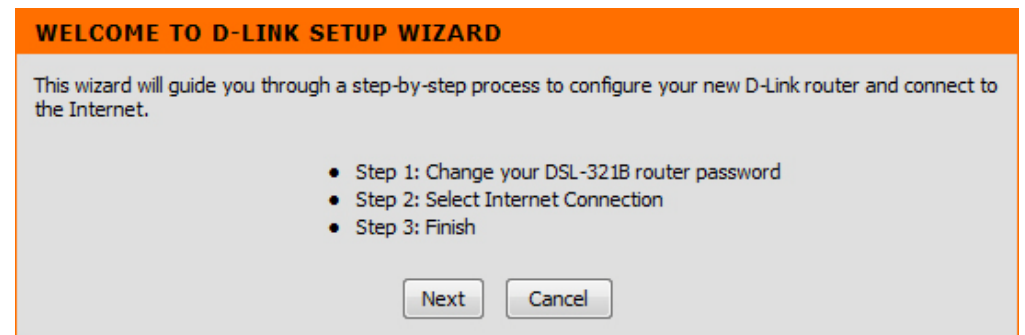
## ADSL SETUP

Click on the **Setup Wizard** button to launch the **Setup Wizard**.



## WELCOME TO D-LINK SETUP WIZARD

There are four steps to configuring your router. Click on the **Next** button to continue.



### STEP 1: CHANGE YOUR DSL-321B PASSWORD

The default password is "admin", in order to secure your network, please modify the password. Note: Confirm Password must be same as "New Password". Of course, you can click on the **Skip** to ignore the step.

**STEP 1: CHANGE YOUR PASSWORD**

The factory default password of this router is 'admin'. To help secure your network, D-Link recommends that you should choose a new password between 1 and 15 characters. If you do not wish to choose a new password now, just click Skip to continue. Click Next to proceed to next step.

Current Password :

New Password :

Confirm Password :

Back Next Skip Cancel

### STEP 2: SELECT INTERNET CONNECTION TYPE

Please select your **Country** and **ISP**. The VPI and VCI information Will display Automatically. Of course, you can modify the information.

If, you can not find the country and ISP in the list below; you can select "**Others**", and then input the "**VPI**" and "**VCI**" and Connection Type. Click on the **Next** button to go to the next **Setup Wizard** window.

**STEP 2: SELECT INTERNET CONNECTION TYPE**

Please select your Country and ISP (Internet Service Provider) from the list below. If your Country or ISP is not in the list, please select "Other".

Country :

ISP Provider :

VPI :

VCI :

Connection Type :

Back Next Cancel

## Section 3 - Configuration

### STEP 2: Setup Wizard - For PPPoE/PPPoA connection

Type in the **Username** and **Password** (and PPPoE Service Name, if required by your ISP).

Click on the **Next** button to go to the next **Setup Wizard** window.

### STEP 3: FINISH

Push the **FINISH** button to use the configuration.

#### STEP 2: SELECT INTERNET CONNECTION TYPE

Please enter your Username and Password as provided by your ISP (Internet Service Provider). Please enter the information exactly as shown taking note of upper and lower cases. Click Next to continue.

Username :

Password :

Confirm Password :

Back

Next

Cancel

#### STEP 3: FINISH

Setup complete. Click Back to review or modify settings. Click Finish to apply current settings. If your Internet connection does not work after apply the settings, you can try the Setup Wizard again with alternative settings or use Manual Setup instead if you have your Internet connection details as provided by your ISP.

Back

Finish

Cancel

# ADSL SETUP

To access the **ADSL SETUP** (WAN) settings window, click on the **ADSL Setup** button in the **SETUP** directory and select the **Manual Setup** to configure the MANUAL ADSL interface in this page:

## ADSL SETUP

If you want to type connection configuration for various types, please enable the **Manual Setup**.

### ADSL SETUP

If you are configuring this device for the first time, D-Link recommends that you click the Setup Wizard button, and follow the instructions on screen. If you wish to modify or configure the ADSL settings manually, tick Manual Setup to enable the ADSL Connection Setup.

Setup Wizard

Manual Setup

## MANUAL ADSL CONNECTION SETUP

### PPPoE/PPPoA

Choose this option if your ISP uses PPPoE/PPPoA.(For most DSL users)

### Dynamic IP Address

Choose this option if your ISP uses Dynamic IP Address over DSL.

### Static IP Address

Choose this option if your ISP uses Static IP assignments.

### Bridge

Choose this option if your ISP uses Bridge.

### MANUAL ADSL CONNECTION SETUP

Please select the appropriate option to connect to your ISP.

- PPPoE/PPPoA** Choose this option if your ISP uses PPPoE/PPPoA. (For most DSL users)
- Dynamic IP Address** Choose this option if your ISP uses Dynamic IP Address over DSL.
- Static IP Address** Choose this option if your ISP uses Static IP assignments.
- Bridge Mode** Choose this option if your ISP uses Bridge Mode.

## For PPPoE/PPPoA connection

Type in the **Username** and **Password** (and PPPoE Service Name, if required by your ISP).

Type service name which is from your ISP on the **Servername** option.

Choose **PPPoE LLC**, **PPPoE VC-mux**, **PPPoA LLC** and **PPPoA VC-mux**.

Set MTU value which you want but should be less than 1492 on the **MTU**

Set the time which your data doesn't pass through the connection, it will be disconnected on the **Idle Time Out**. The default time is 0 and it means it is always on.

Set PPP authentication method, it can be **Auto**, **PAP** and **CHAP**. The default authentication method is **Auto** and it means authentication accept PAP and CHAP both.

Set NAT to **Enable** when you want to have WAN and LAN. The default mode is **Disabled**.

Set IGMP mode when you want to let IAD to play as an IGMP proxy who can help proxy server to send IGMP query packets to the IPTV clients, it can be **disable**, **IGMP-V1** and **IGMP-V2**. The default mode is disabled.

Set **Default Route** mode to enable or disable default route, in order to access Internet, suggest enable default route. The default mode is enabled.

**PPPOE/PPPOA INTERNET CONNECTION TYPE :**

Enter the information provided by your Internet Service Provider (ISP).

**Username :**

**Password :**

**Service Name :**

**Connection Type :** PPPoE LLC

**MTU :**  (0 means default value 1492bytes)

**Idle Time Out :**  Minutes (0 = Always On)

**Authentication :** Auto

**NAT :** Enable

**IGMP :** disable

**Default Route :** Enable



### Section 3 - Configuration

Set PVC values which are from your ISP on **VPI/VCI**

Set **Virtual Circuit** to enable mode when you want to use this PVC.

For ADSL QoS setup, modify **Service Category** according to your ISP's suggestions.

Click on the **Save Settings** button to use this configuration.

<b>VPI :</b>	<input type="text" value="0"/>
<b>VCI :</b>	<input type="text" value="33"/>
<b>Virtual Circuit :</b>	Enable ▾
<b>Service Category :</b>	UBR ▾
<b>PCR :</b>	<input type="text" value="0"/> cells/second
<b>SCR :</b>	<input type="text" value="0"/> cells/second
<b>MBS :</b>	<input type="text" value="0"/> cells

Save Settings

Connect

Cancel

# LAN SETUP

You can configure the LAN IP address to suit your preference. Many users will find it convenient to use the default settings together with 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 **LAN Setup** setting window, click on the **LAN Setup** button in the **SETUP** directory.

## ROUTER SETTINGS

To change the **Router IP Address** or **Subnet Mask**, type in the desired values.

The screenshot shows the router's web interface. The top navigation bar includes 'DSL-321B', 'SETUP', 'ADVANCED', 'MAINTENANCE', 'STATUS', and 'HELP'. The left sidebar lists 'ADSL Setup', 'LAN Setup', 'Time and Date', 'Parental Control', and 'Logout'. The main area is titled 'LAN SETUP' and contains a 'ROUTER SETTINGS' section with the following text: 'Use this section to configure the local network settings of your router. The IP Address that is configured here is the IP Address that you use to access the Web-based management interface. If you change the IP Address here, you may need to adjust your PC's network settings to access the network again.' Below this text are two input fields: 'Router IP Address' with the value '192.168.1.1' and 'Subnet Mask' with the value '255.255.255.0'. A 'Reboot' button is located at the bottom left of the main content area. On the right side, there is a 'Helpful Hints...' sidebar with text: 'If you already have a DHCP server on your network or are using static IP addresses on all the devices on your network, uncheck Enable DHCP Server to disable this feature. If you have devices on your network that'.

## DHCP Mode

The **Enabled** is selected by default for the Router's Ethernet LAN interface.

If you don't want DSL-321B to be the DHCP server, you can click **Disabled** radio to disable current DHCP server.

To use outside DHCP server, click **Relay** radio, and input DHCP Relay IP address.

The screenshot shows the 'DHCP MODE' configuration page. The title is 'DHCP MODE'. The main text reads: 'Use this section to configure the built-in DHCP Server work mode: disable/enable dhcp server or dhcp relay mode.' Below this text are three radio buttons: 'DHCP : Disabled', 'Enabled', and 'Relay'. The 'Enabled' radio button is selected.

## Section 3 - Configuration

### DHCP SERVER SETTINGS (OPTIONAL)

Set the **DHCP IP Address Range** and the default is from 192.168.1.2 to 192.168.1.33. The IP address pool can be up to 253 IP addresses.

Set the value hours on the **DHCP Lease Time** and the default is 72 hours.

### DHCP TABLE

The **Host Name** can help you recognize the PC with the **MAC Address**, such as "Father's Laptop", it's recognized from dynamic assigned IP's host name.

Select the **IP Address** to let you reserve the **IP Address** for the designated PC with the configured **MAC Address**.

Drop down **Manual Configure** drop-down list to help you get the Mac address from the PC you are using now browsing this web page.

Typing MAC address nearby **Manual Configure** to add/delete MAC address + IP binding manually.

Drop down **Status** drop-down list to help you set static IP address + MAC address binding or delete exist IP address + MAC address binding group. **Static** means add IP address + MAC address binding to DHCP reservation table, **Auto** means delete exist IP address + MAC address binding from DHCP reservation table.

Click on the **Save Settings** button to save the settings.

#### DHCP SERVER SETTINGS (OPTIONAL)

Use this section to configure the built-in DHCP Server to assign IP addresses to the computers on your network.

**DHCP IP Address Range :**  to

**DHCP Lease Time :**  (seconds)

#### DHCP TABLE

Host Name	IP Address	MAC Address	Status
	<input type="text" value="192.168.1.2"/>	<input type="text"/>	<input type="text" value="Manual Config"/>

Save Settings

# TIME

The **TIME** configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the NTP (Network Time Protocol) Server. Daylight Saving can also be configured to automatically adjust the time when needed.

To access the **TIME** setting window, click on the **Time and Date** button in the **SETUP** directory

## TIME

Select your operating time zone from the **Time Zone** drop-down list.

If you need to use the daylight saving, just choose the **Enable Daylight Saving**. Daylight saving is a period from late Spring to early Fall.

Configure Daylight Saving Dates, Daylight Saving time starts in the most parts of the **United States** on the second Sunday of March. Each time zone in the United States starts Daylight Saving time at 2 A.M. Thus, in the United States you must use **March, Second, Sunday, at 2:00 A.M.**

Daylight Saving time starts in the **European Union** on the last Sunday of March. Thus, in European Union, you must select **March, Last, Sunday**. The time must depend on your country's time zone. For example, In Germany you must type 2 because Germany's time zone is 1 hour ahead of GMT or UTC (GMT+1). Thus, in Germany you must use **March, Last, Sunday, at 1:00 A.M.**

Daylight Saving time ends in the most parts of the United States on the First Sunday of November. Each time zone in the United States must use Daylight Saving time at 2:00 A.M. Thus, in the

**TIME**

The Time Configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the NTP (Network Time Protocol) Server. Daylight Saving can also be configured to automatically adjust the time when needed.

**TIME CONFIGURATION**

**Current Router Time :** Jan 01, 2000 00:03:54

**Time Zone :** (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London ▼

**Enable Daylight Saving :**

Month    Day

DST Start: Jan ▼ 1 ▼

**Daylight Saving Dates :**

DST End: Jan ▼ 1 ▼

**AUTOMATIC TIME CONFIGURATION**

**Automatically Synchronise with Internet Time Servers :**

**NTP Time Server :**

(0.0.0.0: Default Value)

### Section 3 - Configuration

United States you must set

**November, First, Sunday, at 2:00 A.M.**

Daylight Saving time ends in the European Union on the Last Sunday of October. For instance, in Germany you must type 2 because Germany's time zone is 1 hour ahead of GMT (GMT+1). Thus, in Germany you must use **March, Last, Sunday, at 1:00 A.M.**

Check the **Automatically Synchronise with Internet Time Servers.**

Type the specific NTP server name.

#### SET THE DATE AND TIME MANAULLY

You can also use the **Copy Your Computer's Time Settings** to synchronize the Date and Time to your local PC. Or, you also can adjust **Year/Month/Day/Hour/Minute/Second** manually.

Please click the **Save Settings** button to save the configuration.

**SET THE DATE AND TIME MANUALLY**

**Date:** Year: 2007 ▼ Month: 1 ▼ Day: 1 ▼

**Time:** Hour: 12am ▼ Minute: 4 ▼ Second: 58 ▼

Copy Your Computer's Time Settings

Save Settings

# PARENTAL CONTROL

Parental Control provides two useful tools for restricting Internet access. Block Websites allows you to quickly create a list of all web sites that you wish to stop users from accessing. Time Restrictions allows you to control when clients or PCs connected to Router are allowed to access the Internet

## BLOCKED WEBSITES SCHEDULING

Please type the website name which you want to block on the **Website**

Please set the day and time. After finish, please click on the **Block Website** button and then it will show in list.

**DSL-321B** // SETUP ADVANCED MAINTENANCE STATUS HELP

ADSL Setup  
LAN Setup  
Time and Date  
Parental Control  
Logout

ADSL sync down  
Reboot

**PARENTAL CONTROL**

Parental Control provides two useful tools for restricting Internet access. Block Websites Scheduling allows you to quickly create a list of all web sites that you wish to stop users from accessing and the times you want the restriction take place. Internet Access Time Restrictions allows you to control when the client or PC connected to the modem are allowed to access the Internet.

Note: Please ensure that you have set the correct time and date for your modem

**BLOCKED WEBSITES SCHEDULING**

Website :

Day(s) :  All Week  Select Day(s)  
 Sun  Mon  Tue  Wed  Thu  Fri  Sat

All Day - 24 hrs :

Start Time :  :  (hour:minute, 24 hour time)  
 End Time :  :  (hour:minute, 24 hour time)

Block Website

Website	Schedule Rule	Remove	Edit
test	Mon Tue Sun 00:00-00:00		

**Helpful Hints...**  
 Create a list of websites that you want to block access to. You can remove or edit a website from the blocked websites list.  
 You can quickly allow or deny access to the Internet during times restricted by Internet Access Time Restrictions. No selected times is enabled to access Internet by default.  
 More...

## Section 3 - Configuration

### INTERNET ACCESS TIME RESTRICTIONS

You can have the schedule plan to decide the internet access time restrictions.

INTERNET ACCESS TIME RESTRICTIONS										
Time		Mon	Tue	Wed	Thu	Fri	Sat	Sun	All	Allow/Deny
00:00 ▾	00:00 ▾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Allow ▾
00:00 ▾	00:00 ▾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Allow ▾
00:00 ▾	00:00 ▾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Allow ▾

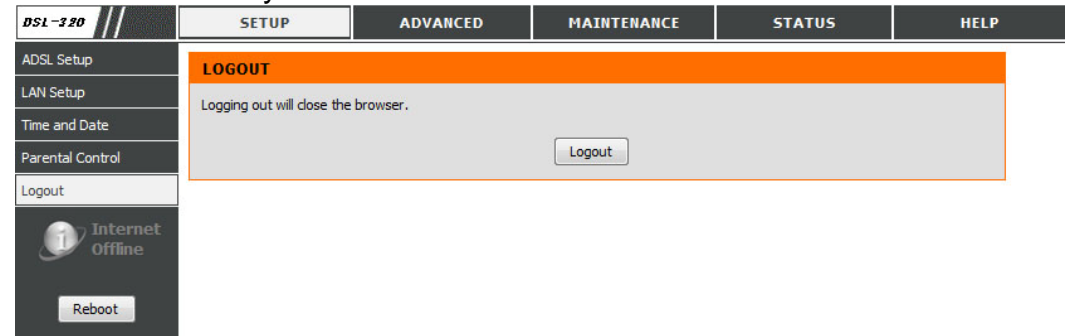
# LOGOUT

The **LOGOUT** page enables you to logout of your router configuration and closes the browser.

To access the **LOGOUT** setting window, click on the **Logout** button in the **SETUP** directory

## LOGOUT

Click on the **Logout** button to logout of the router configuration settings and close the browser.





# ADVANCED

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.

## PORT FORWARDING

Use the **PORT FORWARDING** window to open ports in your router and re-direct data through those ports to a single PC on your network (WAN-to-LAN traffic). The Port Forwarding function allows remote users to access services on your LAN such as FTP for file transfers or SMTP and POP3 for e-mail. The DSL-321B will accept remote requests for these services at your Global IP Address, using the specified TCP or UDP protocol and port number, and then redirect these requests to the server on your LAN with the LAN IP address you specify. Remember that the specified Private IP Address must be within the useable range of the subnet occupied by the Router.

To access the **PORT FORWARDING** settings window, click on the **PORT FORWARDING** button in the **ADVANCED** directory

### PORT FORWARDING RULES CONFIGURATION

Select an IP address from **Private IP** drop-down list or type an IP address in the **Private IP** input box to appoint the PC to receive the forwarded packets.

Select protocol type of the opened ports from **Protocol Type** drop-down list, it can be **All, TCP, UDP**.

Type external start port from **External Start Port** input box. It shows the start port opened for remote users in the WAN side of the router.

Type external end port from **External End Port** input box. It shows the end port opened for remote users in the WAN side of the router.

**DSL-321B** // **SETUP** **ADVANCED** MAINTENANCE STATUS HELP

Port Forwarding

**PORT FORWARDING**

This is the ability to open ports in your router and re-direct data through those ports to a single PC on your network.

Maximum number of entries which can be configured: 12

**ACTIVE PORT FORWARDING**

Private IP	Protocol Type	External Start Port	External End Port	Internal Start Port	Internal End Port	Connection
Add						

Helpful Hints...  
Use this feature if you are trying to execute one of the listed network applications and it is not communicating as expected.  
Check the Application Name drop down menu for a list of predefined applications. If you do see your application listed you can still define a new rule.  
More...

ADSL sync down  
Reboot

### Section 3 - Configuration

---

Type internal start port from **Internal Start Port** input box. It shows the start port opened in the PC with the appointed **Private IP**.

Type internal end port from **Internal End Port** input box. It shows the end port opened in the PC with the appointed **Private IP**.

Select PVC of the port forwarding rule from **Connection** drop-down list.

# QOS SETUP

Quality of Service Setup can be used to improve data flow for different applications by prioritizing the network traffic based on selected criteria.

## QOS SETUP

You have to define the service ports. For example,

**VoIP(RTP)** is from 700(**Start Port**) to 900(**End Port**)

**H.323** is 1720

**FTP** is from 20(**Start Port**) to 21(**End Port**)

**MSN messenger** is from 1863(**Start Port**) to 1864(**End Port**)

## LAN QOS RULES CONFIGURATION

Type the policy name on the **Name**

Select the priority value on the **Priority**

Select the **Protocol**, ICMP, TCP and UDP.

Set the **Source IP Range** and the **Destination IP Range**.

Set the **Source Port Range** and the **Destination Port Range**.

Click the **Add/Apply** button to add the policy to the list.

### LAN QOS RULES CONFIGURATION

Remaining number of rules that can be created:6

<b>Name</b> <input type="text"/>	<b>Priority</b> Select Priority ▼	<b>Protocol(1..255)</b> <input type="text"/> << Select Protocol ▼
<b>Source IP Range</b> <input type="text"/> Mask <input type="text"/>	<b>Source Port Range</b> <input type="text"/> to <input type="text"/>	
<b>Destination IP Range</b> <input type="text"/> Mask <input type="text"/>	<b>Destination Port Range</b> <input type="text"/> to <input type="text"/>	

# OUTBOUND FILTER

By default, all outgoing IP traffic from the LAN is allowed. The Outbound Filter allows you to create a filter rule to block outgoing IP traffic by specifying a 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.

## ADD OUTBOUND IP FILTER

Type the filter name on the **Filter Name**.

Choose TCP, UDP or ICMP on the **Protocol**.

Type **Source IP address**, **Source Subnet Mask** and **Source Port**

Type **Destination IP address**, **Destination Subnet Mask** and **Destination Port**

Please click **Add/Apply** button to add the policy in the list.

**DSL-321B**

SETUP   ADVANCED   MAINTENANCE   STATUS   HELP

Port Forwarding  
QoS Setup  
**Outbound Filter**  
Inbound Filter  
DNS Setup  
VLAN  
Firewall & DMZ  
Advanced ADSL  
Advanced LAN  
Remote Management  
Network Tools  
Logout

**OUTBOUND IP FILTER**

By default, all outgoing IP traffic from the LAN is allowed.

The Outbound Filter allows you to create a filter rule to block outgoing IP traffic by specifying a 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.

**ADD OUTBOUND IP FILTER**

**Filter Name :**

**Protocol :**

**Source IP address :**

**Source Subnet Mask :**

**Source Port :**

**Destination IP address :**

**Destination Subnet Mask :**

**Destination Port :**

**ACTIVE OUTBOUND IP FILTER**

Name	Protocol	Src. Addr./Mask	Src. Port	Dest. Addr./Mask	Dest. Port	Remove

**Helpful Hints...**

Give each rule a **Name** that is meaningful to you.

Each rule can **Deny** outgoing traffic from the LAN.

The Source IP addresses are LAN-side address and the Destination IP address are WAN-side address

Click the Save button to store a finished rule in the Rules List.

Click the **Remove** checkbox in the Rules List then click on the **Remove** button to permanently remove a rule.

[More...](#)

# INBOUND FILTER

By default, all incoming IP traffic from the internet network is allowed. The Inbound Filter allows you to create a filter rule to filter incoming IP traffic by specifying a 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.

## ADD OUTBOUND IP FILTER

Type the filter name on the **Filter Name**.

Choose TCP, UDP or ICMP on the **Protocol**.

Type **Source IP address**, **Source Subnet Mask** and **Source Port**

Type **Destination IP address**, **Destination Subnet Mask** and **Destination Port**

Please click **Add/Apply** button to add the policy in the list.

The screenshot displays the D-Link DSL-321B web interface. The left sidebar contains navigation options: Port Forwarding, QoS Setup, Outbound Filter, Inbound Filter (selected), DNS Setup, VLAN, Firewall & DMZ, Advanced ADSL, Advanced LAN, Remote Management, Network Tools, and Logout. The main area has tabs for SETUP, ADVANCED, MAINTENANCE, STATUS, and HELP. The ADVANCED tab is active, showing the 'INBOUND IP FILTER' section. A text box explains that by default, all incoming IP traffic is allowed, and the filter allows creating rules to block traffic. Below this is the 'ADD INBOUND IP FILTER' form with the following fields: Filter Name (text input), Protocol (dropdown menu), Source IP address (0.0.0.0), Source Subnet Mask (0.0.0.0), Source Port (0), Destination IP address (0.0.0.0), Destination Subnet Mask (0.0.0.0), and Destination Port (0). An 'Add/Apply' button is located below the form. Underneath is the 'ACTIVE INBOUND FILTER' table with columns: Name, Protocol, Src. Addr./Mask, Src. Port, Dest. Addr./Mask, Dest. Port, and Remove. A 'Helpful Hints...' sidebar on the right provides additional information about rule naming and the 'Remove' button.

# DNS SETUP

The DNS is used to resolve the DNS name to IPs. You can type or get automatically.

The Dynamic DNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (for example: www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter your host name to connect to your game server and your friends don't mind what your IP address is, and then just type the DDNS name to reach. You can use the D-Link DDNS server, <https://www.dlinkddns.com> to have a free DDNS.

To access the **DNS** setting window, click on the **DNS** button under the **ADVANCED** tab.

## DNS SERVER CONFIGURATION

If you are using the Router for DHCP service on the LAN and are using DNS servers on the ISP's network, check **Obtain DNS server address automatically** box.

If you have DNS IP addresses provided by your ISP, enter these IP addresses in the available entry fields for the **Preferred DNS Server** and the **Alternate DNS Server**.

DSL-321B	SETUP	ADVANCED	MAINTENANCE	STATUS	HELP	
Port Forwarding	<h3>DNS SETUP</h3> <p>Domain Name Server (DNS) is a server that translates URL/domain names to the corresponding IP address. Most users will not need to change the DNS servers from default unless instructed by your ISP.</p> <p>The DDNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter your host name to connect to your game server no matter what your IP address is.</p> <h3>DNS SERVER CONFIGURATION</h3> <p><input checked="" type="radio"/> <b>Obtain DNS server address automatically</b></p> <p><input type="radio"/> <b>Use the following DNS server addresses</b></p> <p>Preferred DNS Server: <input type="text" value="0.0.0.0"/></p> <p>Alternate DNS Server: <input type="text" value="0.0.0.0"/></p>				<b>Helpful Hints...</b> If "Enable Automatic Assigned DNS" checkbox is selected, this router will accept the first received DNS assignment from one of the Internet connection protocols. PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, enter the preferred and alternate DNS server IP addresses manually. Only do	
QoS Setup						
Outbound Filter						
Inbound Filter						
DNS Setup						
VLAN						
Firewall & DMZ						
Advanced ADSL						
Advanced LAN						
Remote Management						
Network Tools						
Logout						
ADSL sync down						

## Section 3 - Configuration

### DDNS CONFIGURATION

Please enable the **Enable Dynamic DNS** if you want to use DDNS.

Choose which DDNS web site to use on the **Server Address**.

Type which Host name which you registered with your DDNS service provider. on the **Host Name**.

Type the username/password on the **username/password** for your DDNS account.

After configure the DNS settings as desired, click on the **Apply Settings** button to apply settings.

#### DDNS CONFIGURATION

**Enable Dynamic DNS:**

**Server Address:**  <<  
 ▼

**Host Name:**  (e.g.: myhost.mydomain.net)

**Username:**

**Password:**

**Verify Password:**



# VLAN

The Virtual LAN (VLAN) allows you to configure a group of devices on one or more LANs so that they can communicate as if they were attached to the same wire, when in fact they are located on a number of different LAN segments.

## VLAN GROUP SETTING

Select configuring VLAN index from **VLAN Index** drop-down list.

Enable VLAN group on the **Enable VLAN Group**

Set VLAN ID in **VLAN ID** input box

To add **ATM VCs** port to VLAN group, check PVC's **Port**. To tag outbound traffic from **ATM VCs**, check PVC's **Tagged**.

To add **Ethernet** port to VLAN group, check Ethernet's **Port**. To tag outbound traffic from **Ethernet** port, check Ethernet's **Tagged**.

**DSL-321B** // SETUP ADVANCED MAINTENANCE STATUS HELP

**VLAN**

**Note: This is VLAN page.**

The Virtual LAN (VLAN) allows you to configure a group of devices on one or more LANs so that they can communicate as if they were attached to the same wire, when in fact they are located on a number of different LAN segments.

**Helpful Hints...**

You can choose 1~8 to set group index. The group index will be assigned as a VLAN ID. Each group should have a specific VLAN ID, different from each other.

The "Enable VLAN Group" checkbox is to choose "Yes" or "No" turn on or off the specific group index, default is on.

ATM VCs: "Port 0~7" means PVC 0~7, "Tagged" means the traffic on this PVC will take VLAN ID. Each "Port" of "ATM VCs" can only be assigned to one specific group. Ethernet: "Port 1" means Ethernet port 1, you can choose each one of

**VLAN GROUP SETTING**

VLAN Index: 1 ▾

Enable VLAN Group:

VLAN ID: 1

ATM VCs:

Tagged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Port #	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	0	1	2	3	4	5	6

Ethernet:

Tagged	<input type="checkbox"/>
Port #	<input checked="" type="checkbox"/>
	1

Add/Apply

## Section 3 - Configuration

### VLAN GROUP SUMMARY

Present current exist VLAN groups, including **Group**, **ID**, **VLAN Group Ports**, **VLAN Tagged Ports**.

To remove designate VLAN group, tick **Remove** checkbox and click **Remove Selected** to remove selected VLAN group.

VLAN GROUP SUMMARY				
Group	ID	VLAN Group Ports	VLAN Tagged Ports	Remove
1	1	e1,p0,p1,p2,p3,p4,p5,p6,p7		<input type="checkbox"/>

# FIREWALL & DMZ

The router already provides a simple firewall by virtue of the way NAT works. By default NAT does not respond to unsolicited incoming requests on any port, thereby making your WAN invisible to Internet cyber attackers.

DMZ means 'Demilitarized Zone'. DMZ allows computers behind the router firewall to be accessible to Internet traffic. Typically, your DMZ would contain Web servers, FTP servers, and others.

## FIREWALL SETTING

Enable the Firewall on the **Enable Firewall**.

## DMZ SETTING

Please enable the **Enable DMZ** and type the DMZ client IP on the **DMZ IP Address**. Or you also can choose the DMZ host by the up-down menu.

the **SYN attack**, **FIN/URG/PSH attack**, **Ping attack**, **Xmas Tree attack**; **TCP reset attack**, **Null scanning attack**, **Ping of Death attack** and **SYN/RST SYN/FIN attack**.

The screenshot shows the configuration interface for the D-Link DSL-321B router. The main content area is titled 'FIREWALL & DMZ' and contains the following sections:

- FIREWALL & DMZ:** A text box explaining that the router provides a simple firewall by virtue of NAT, making the LAN invisible to Internet cyber attackers.
- FIREWALL SETTINGS:** A section with a single checkbox labeled 'Enable Firewall'.
- DMZ SETTINGS:** A section explaining that the DMZ option lets you set a single computer on your network outside of the router's firewall protection. It includes a 'Note' about security risks and a checkbox for 'Enable DMZ'. Below this is a 'DMZ IP Address' field with a dropdown menu and navigation arrows.

At the bottom of the configuration area are 'Apply Settings' and 'Cancel' buttons. On the left sidebar, the 'Firewall & DMZ' menu item is highlighted. On the right sidebar, the 'Helpful Hints...' section provides additional information, including a warning about 'Non-UDP/TCP/ICMP LAN Sessions'.

# ADVANCED ADSL

The Advanced ADSL settings allow you to choose which ADSL modulation settings your modem router will support.

D-Link do not recommend that you change these settings unless directed to do so by your ISP.

## ADVANCED ADSL SETTINGS

Please select following ADSL profile to link.

**Modulation Model** can be **Auto Sync-Up, ADSL2+, ADSL2, G.DMT, T1.413, G.lite,**

**Type** can be **Annex B, Annex J, Annex M, Annex B/J/ M**

Please select to enable Bitswap and SRA on the Capability.

The screenshot shows the 'Advanced ADSL' configuration page for a D-Link DSL-321B router. The page is divided into several sections:

- Navigation Menu (Left):** Includes options like Port Forwarding, QoS Setup, Outbound Filter, Inbound Filter, DNS Setup, VLAN, Firewall & DMZ, **Advanced ADSL** (selected), Advanced LAN, Remote Management, Network Tools, and Logout. There is also an 'ADSL sync down' indicator.
- Page Header:** 'DSL-321B' and tabs for 'SETUP', 'ADVANCED', 'MAINTENANCE', 'STATUS', and 'HELP'.
- ADVANCED ADSL Section:** Contains a warning: 'The Advanced ADSL settings allow you to choose which ADSL modulation settings your modem router will support. D-Link do not recommend that you change these settings unless directed to do so by your ISP.'
- ADVANCED ADSL SETTINGS Section:** Includes:
  - Modulation Mode:** Auto Sync-Up (dropdown)
  - Type:** ANNEX B/J/M (dropdown)
  - Capability:** Two checkboxes:  Bitswap Enable and  SRA Enable.
- Buttons:** 'Apply Settings' and 'Cancel' at the bottom.
- Helpful Hints... (Right Sidebar):** A warning: 'Do not change these settings unless directed by your ISP. By default the D-Link router will determine your best connection. You do not need to change any settings unless instructed by D-Link Technical Support.'

# ADVANCED LAN

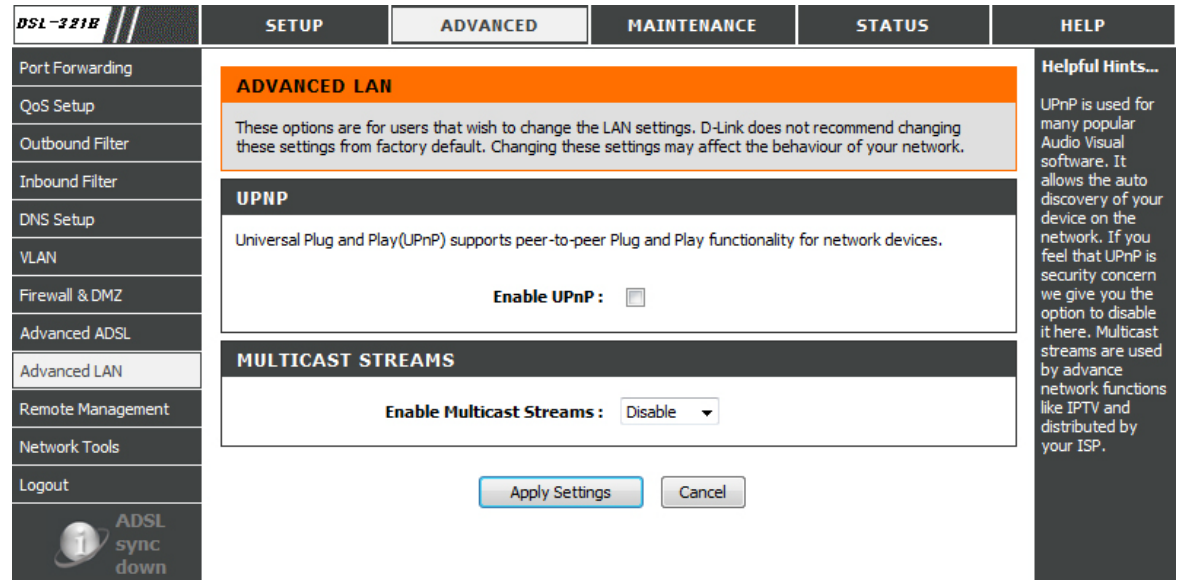
These options are for users that wish to change the LAN settings. D-Link does not recommend changing these settings from factory default. Changing these settings may affect the behavior of your network.

## UPNP

Please select the Enable UPnP when you want to have Universal Plug and Play (UPnP) supports peer-to-peer Plug and Play functionality for network devices.

## MULTICAST STREAMS

Please select the IGMP-V1, IGMP-V2 or IGMP-V3 to let IGMP stream can pass through DSL-321B.



# REMOTE MANAGEMENT

This section allows you to enable/disable remote access to the router from the Internet. Advanced access control allows you to configure access via specific services. Most users will not need to change any of these settings.

## REMOTE MANAGEMENT SETTINGS

Please enable the **ENABLE Remote Management**

Please type the port number which you want to replace the original port.

Please select **Allow All** or **Deny All** on the **Remote Admin Inbound Filter**

Please type a string to describe the action on the **Details**.

DSL-321B	SETUP	ADVANCED	MAINTENANCE	STATUS	HELP
Port Forwarding	<div style="border: 1px solid orange; padding: 5px;"> <p><b>REMOTE MANAGEMENT</b></p> <p>This section allows you to enable/disable remote access to the router from the Internet. Remote Access Control allows you to configure access via specific services. Most users will not need to change any of these settings.</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>REMOTE MANAGEMENT SETTINGS</b></p> <p><b>Enable Remote Management :</b> <input type="checkbox"/></p> <p><b>Remote Admin Port :</b> <input type="text" value="80"/></p> <p><b>Remote Admin Inbound Filter :</b> <input type="text" value="Allow All"/></p> <p><b>Details :</b> <input type="text" value="Everyone are allowed."/></p> </div>				<p><b>Helpful Hints...</b></p> <p>Remote Management by default should be disabled. However if you wish to login and manage your Router from another Internet device then you can enable the router to accept such commands from the Internet port. This option may be useful if your network administrator is</p>
QoS Setup					
Outbound Filter					
Inbound Filter					
DNS Setup					
VLAN					
Firewall & DMZ					
Advanced ADSL					
Advanced LAN					
Remote Management					

## REMOTE ACCESS CONTROL

Please select the **Service** to enable on **LAN** or **WAN**.

Please click the **Apply Settings** button to save the configuration.

Service	LAN	WAN
FTP	<input checked="" type="checkbox"/> Enabled	<input checked="" type="checkbox"/> Enabled
HTTP	<input checked="" type="checkbox"/> Enabled	<input checked="" type="checkbox"/> Enabled
ICMP (Ping)	<input checked="" type="checkbox"/> Enabled	<input checked="" type="checkbox"/> Enabled
TELNET	<input checked="" type="checkbox"/> Enabled	<input checked="" type="checkbox"/> Enabled
TFTP	<input checked="" type="checkbox"/> Enabled	<input checked="" type="checkbox"/> Enabled

# TR-069

The WAN management protocol **TR-069** allows an Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device.

To access the **TR-069** Configuration window, click on the **Network Tools** button under the **ADVANCED** tab.

## TR-069

TR-069 is a WAN management protocol which allows your ISP to perform monitoring, configuration and firmware upgrade on your router remotely.

**Inform:** Select to enable or disable TR-069 client functionality.

**Inform Interval:** Interval (seconds) between two **Inform** messages.

**ACS URL:** Enter the URL of your ISP's ACS

**ACS User Name:** Enter the authentication user name

**ACS Password:** Enter the authentication password

**Connection Request User Name:** Enter the authentication user name for the ACS to login

**Connection Request Password:** Enter the authentication password for the ACS to login

The screenshot shows the router's configuration interface. The top navigation bar includes tabs for SETUP, ADVANCED (selected), MAINTENANCE, STATUS, and HELP. A sidebar on the left lists various configuration options, with 'Network Tools' highlighted. The main content area is titled 'TR-069 CLIENT' and contains the following text: 'WAN Management Protocol(TR-069) allows an Auto-Configuration Server(ACS) to perform auto-configuration, provision, collection, and diagnostics to this device.' Below this, it says 'Select the desired values and click "Apply" to configure the TR-069 client options.' The 'TR-069 CLIENT CONFIGURATION' section includes:
 

- Inform :** Radio buttons for 'Disable' (selected) and 'Enable'.
- Inform Interval :** A text input field containing '0'.
- ACS URL :** A text input field.
- ACS User Name :** A text input field.
- ACS Password :** A text input field.
- Connection Request User Name :** A text input field.
- Connection Request Password :** A text input field.

 At the bottom right of the configuration area are 'Apply' and 'Cancel' buttons. A 'Reboot' button is located at the bottom left of the sidebar. On the far right, a 'Helpful Hints...' section provides additional information and a 'More...' link.



# MAINTENANCE

Click on the **MAINTENANCE** tab to reveal the window buttons for various functions located in this directory.

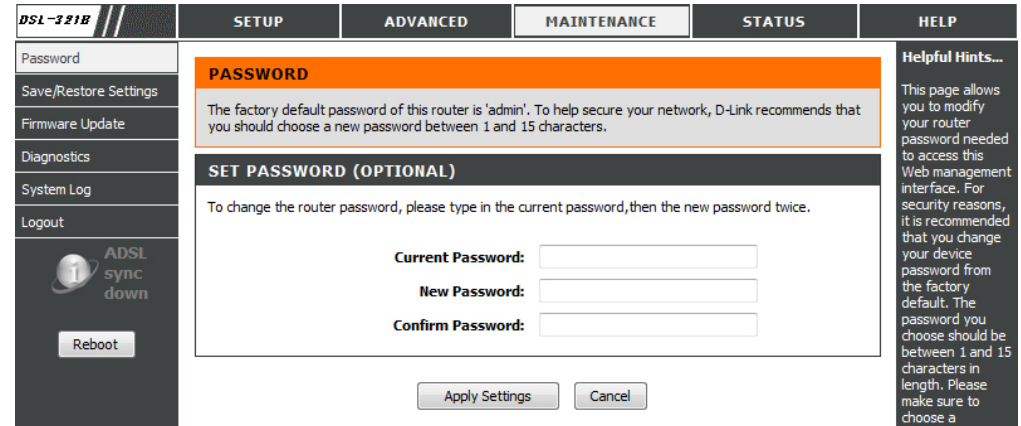
# PASSWORD

The factory default password of this router is 'admin'. To help secure your network, D-Link recommends that you should choose a new password.

## SET PASSWORD (OPTIONAL)

Please type the **Current Password**, **New Password** and **Confirm Password**.

Please click the Apply Settings button to save the settings.



# SAVE/RESTORE SETTINGS

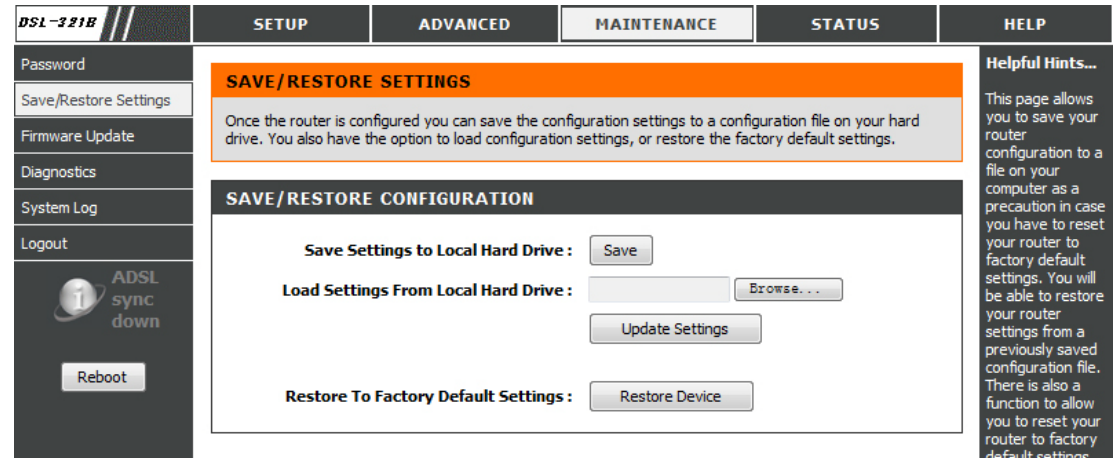
Once the router is configured and you can save the configuration settings to a configuration file on your hard drive. You also have the option to load configuration settings, or restore the factory default settings.

## SAVE/RESTORE CONFIGURATION

Please click the **Save** button on the **Save Settings to Local Hard Drive**.

Please click **Browse** button to choose the configurations file and then click the **Update Settings** button to upload.

If necessary, please click the **Restore Device** button to have the default settings.



# FIRMWARE UPDATE

Use the **FIRMWARE UPDATE** window to load the latest firmware for the device. Note that the device configuration settings may return to the factory default settings, so make sure you first save the configuration settings with the **SAVE/RESTORE SETTINGS** window described above.

To access the **FIRMWARE UPDATE** setting window, click on the **Firmware Update** button under the **MAINTENANCE** tab.

## FIRMWARE INFORMATION

It shows **Current Firmware Version** and **Current Firmware Date**

## FIRMWARE UPDATE

To update firmware, click on the **Browse...** button to search for the firmware file and then click the **Update Firmware** button to begin copying the file. The Router will load the file and restart automatically.

The screenshot shows the D-Link DSL-321B web interface. At the top, there are navigation tabs: SETUP, ADVANCED, MAINTENANCE (selected), STATUS, and HELP. The left sidebar contains a menu with options: Password, Save/Restore Settings, Firmware Update (selected), Diagnostics, System Log, and Logout. Below the menu is a 'Reboot' button and an 'ADSL sync down' indicator. The main content area is divided into three sections: 
 

- UPDATE:** A red banner with a warning: "Note: Please do not update the firmware on this router unless instructed to do so by D-Link technical support or your ISP."
- FIRMWARE INFORMATION:** Displays "Current Firmware Version : v1.04" and "Current Firmware Date : 2013/04/11".
- FIRMWARE UPDATE:** Contains another warning: "Note: Some firmware updates reset the configuration options to factory defaults. Before performing an update, be sure to save the current configuration from the Maintenance -> Save/Restore Settings screen." Below this is a "Backup Now" button. Further down, it instructs the user to have a wired connection and provides an "Upload:" field with a "Browse..." button and an "Update Firmware" button.

 On the right side, there is a "Helpful Hints..." section with explanatory text and a "More..." link.

# DIAGNOSTICS

Your router is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Re\_run Diagnostics Tests" at the bottom of this page to make sure fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.

## SYSTEM CHECK

There are **Test your Ethernet Connection** and **Test ADSL Synchronization** and they will show **PASS** or **FAIL**

## INTERNET CONNECTIVITY CHECK

There are **Test the assigned IP address**, **Ping ISP Default Gateway** and **Ping Preferred DNS server** and they will show **PASS**, **FAIL** or **N/A**

Please click the **Re\_run Diagnostics Tests** button to Diagnostic the above test items.

DSL-321B	SETUP	ADVANCED	MAINTENANCE	STATUS	HELP										
Password Save/Restore Settings Firmware Update Diagnostics System Log Logout ADSL sync down Reboot	<h3>DIAGNOSTICS</h3> <p>Your router is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Re-run Diagnostics Tests" at the bottom of this page to make sure fail status is consistent.</p> <h4>SYSTEM CHECK</h4> <table border="1"> <tr> <td>Test your Ethernet Connection:</td> <td>PASS</td> </tr> <tr> <td>Test ADSL Synchronization:</td> <td>FAIL</td> </tr> </table> <h4>INTERNET CONNECTIVITY CHECK</h4> <table border="1"> <tr> <td>Test the assigned IP address:</td> <td>N/A</td> </tr> <tr> <td>Ping ISP Default Gateway:</td> <td>N/A</td> </tr> <tr> <td>Ping Preferred DNS server:</td> <td>N/A</td> </tr> </table> <p>Re_run Diagnostics Tests</p>				Test your Ethernet Connection:	PASS	Test ADSL Synchronization:	FAIL	Test the assigned IP address:	N/A	Ping ISP Default Gateway:	N/A	Ping Preferred DNS server:	N/A	<h4>Helpful Hints...</h4> <p>This page shows the result of your router's self diagnostic and connection test results. The Internet connectivity status will only show PASS if you have correctly configured your Internet connection and your router is currently online.</p> <p>More...</p>
Test your Ethernet Connection:	PASS														
Test ADSL Synchronization:	FAIL														
Test the assigned IP address:	N/A														
Ping ISP Default Gateway:	N/A														
Ping Preferred DNS server:	N/A														

# SYSTEM LOG

The system Log allows you to view the logs that have been created.

## SYSTEM LOG

- Date/Time:** Log date and time
- Message:** All logged events will be displayed.

The screenshot shows the DSL-321B web interface. The top navigation bar includes tabs for SETUP, ADVANCED, MAINTENANCE, STATUS, and HELP. The left sidebar contains links for Password, Save/Restore Settings, Firmware Update, Diagnostics, System Log, and Logout. Below the sidebar, there is a status indicator for 'ADSL sync down' and a 'Reboot' button. The main content area is titled 'SYSTEM LOG' and contains a message: 'The system Log allows you to view the logs that have been created.' Below this message is a table with two columns: 'Date/Time' and 'Message'.

Date/Time	Message
01/01/2000 00:00:02	ADSL: down
01/01/2000 00:00:02	MPOA Link Down
01/01/2000 00:00:03	LAN promiscuous mode <1>
01/01/2000 00:00:03	Last errorlog repeat 1 Times
01/01/2000 00:00:03	SNMP TRAP 0: cold start
01/01/2000 00:00:03	main: init completed
01/01/2000 00:00:06	SNMP TRAP 3: link up
01/01/2000 00:00:06	adjtime task pause 1 day

On the right side of the interface, there is a 'Helpful Hints...' section with the text: 'This page allows you to view your router system log. The system log will keep a record of your router activity.' Below this is a 'More...' link.

# STATUS

Click on the **STATUS** tab to reveal the window buttons for various functions located in this directory. The **DEVICE STATUS** window is the first item in the **STATUS** directory. Use these windows to view system information and monitor performance.

## DEVICE INFO

The **Device Info** page displays a summary overview of your router status, including: Device firmware version and summary of your Internet configuration (both Internet and Ethernet status).

To access the **DEVICE INFO** window, click on the **Device Info** button in the **STATUS** directory.

### GENERAL

This window displays **current system time** and the **firmware version**.

The screenshot shows the D-Link DSL-321B web interface. At the top, there is a navigation bar with tabs for SETUP, ADVANCED, MAINTENANCE, STATUS, and HELP. The STATUS tab is selected. On the left side, there is a sidebar menu with options: Device Info (selected), Connected Clients, Statistics, and Logout. Below the Logout option, there is a status indicator for ADSL sync down. The main content area displays the 'DEVICE INFO' page. It has a title bar 'DEVICE INFO' and a description: 'The Device Status page allows you to check the status of your Internet connection, LAN and LAN.' Below this, there is a 'GENERAL' section showing the system time as '01.01.2000, 00:02:42, Sat' and the firmware version as 'v1.04'. On the right side, there is a 'Helpful Hints...' section with a description: 'This page shows displays a summary overview of your router status, including device software version, summary of your Internet configuration'.

### Section 3 - Configuration

#### INTERNET STATUS

This window displays WAN information including ADSL Modulation, Cable Status, Virtual Circuit, Connection Type, Network Status, Connection Up Time, Downstream Line Rate, Upstream Line Rate, MAC address, IP address, Subnet Mask, Default Gateway, and Preferred/Alternate DNS Server.

#### INTERNET STATUS

**ADSL Modulation :** Multi-Mode  
**Cable Status :** ADSL Link Down  
**Virtual Circuit :** PVC-0 ▾  
**Connection Type :** Bridge  
**Network Status :** Not Connected  
**Connection Up Time :** N/A  
**Downstream Line Rate :** 0 kbps  
**Upstream Line Rate :** 0 kbps

**MAC Address :** N/A  
**IP Address :** N/A  
**Subnet Mask :** N/A  
**Default Gateway :** N/A  
**Perferred DNS Server :** N/A  
**Alternate DNS Server :** N/A

#### LAN

This window displays LAN information including MAC Address, IP Address, Subnet Mask, and DHCP Server.

#### LAN

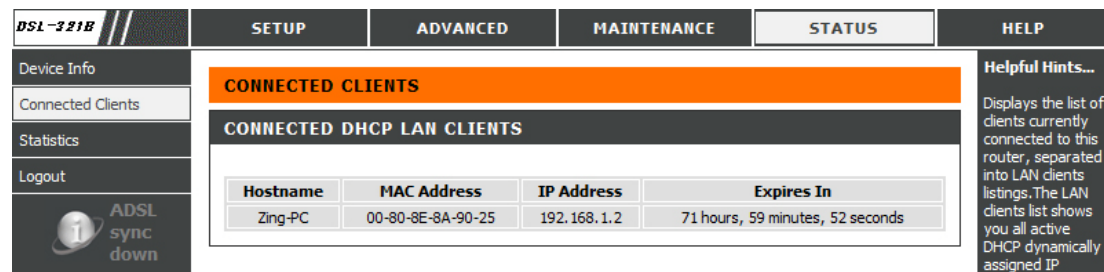
**MAC Address :** c8:d5:fe:f6:c7:88  
**IP Address :** 192.168.1.1  
**Subnet Mask :** 255.255.255.0  
**DHCP Server :** ON

# CONNECTED CLIENTS

This feature shows all the currently connected LAN computers.

## CONNECTED DHCP LAN CLIENTS

This window displays all the entities which link to the LAN interface and obtained IP address from DHCP server successfully.



Hostname	MAC Address	IP Address	Expires In
Zing-PC	00-80-8E-8A-90-25	192.168.1.2	71 hours, 59 minutes, 52 seconds

**Helpful Hints...**  
Displays the list of clients currently connected to this router, separated into LAN clients listings. The LAN clients list shows you all active DHCP dynamically assigned IP



# STATISTICS

This information reflects the current status of your router.

## WAN STATISTICS

This window displays all the **Received** and **Transmitted** packet status on the WAN interface.

## LAN STATISTICS

This window displays all the **Received** and **Transmitted** packet status on the LAN interface.

**DSL-321B** // SETUP ADVANCED MAINTENANCE **STATUS** HELP

Device Info  
Connected Clients  
Statistics  
Logout  
ADSL sync down  
Reboot

**STATISTICS**  
This information reflects the current status of your router.

**WAN STATISTICS**

Service	VPI/VCI	Protocol	Received			Transmitted		
			Pkts	Errs	Drops	Pkts	Errs	Drops
-	1/32	ENET ENCAP	0	0	0	0	0	0

**LAN STATISTICS**

Interface	Received				Transmitted			
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
Ethernet	99075	518	0	0	401768	560	0	0

**Helpful Hints...**  
This page displays your router network and data transfer statistics that is helpful for D-Link technicians to identify if your router is functioning properly. The information provided is mostly just for information and does not affect the function of your router.  
[More...](#)

## ADSL STATISTICS

This window displays all the **ADSL status**

ADSL STATISTICS		
<b>Mode:</b>	Multi-Mode	
<b>Type:</b>	ANNEX_B	
<b>Status:</b>	Down	
	<b>Downstream</b>	<b>Upstream</b>
<b>Rate (Kbps):</b>	0 kbps	0 kbps
<b>SNR Margin (dB):</b>	N/A	N/A
<b>Attenuation (dB):</b>	N/A	N/A
<b>Output Power (dBm):</b>	N/A	N/A
<b>Super Frames:</b>	0	0
<b>RS Correctable Errors:</b>	0	0
<b>RS Uncorrectable Errors:</b>	0	0
<b>HEC Errors:</b>	0	0
<b>Total Cells:</b>	0	0
<b>Data Cells:</b>	0	0
<b>Bit Errors:</b>	0	0

# Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DSL-321B. 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. Why can't I access the web-based configuration utility?

When entering the IP address of the D-Link router (192.168.1.1 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Internet Explorer 6.0 or higher
  - Firefox 1.5 or higher
- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable if possible. If the computer is turned off, the link light may not be on.
- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

## Section 4 - Troubleshooting

---

- Configure your Internet settings:
  - Go to **Start > Settings > Control Panel**. Double-click on the **Internet Options** icon. From the **Security** tab, click on the button to restore the settings to their defaults.
  - Click on the **Connection** tab and set the dial-up option to Never Dial a Connection. Click on the LAN Settings button. Make sure nothing is checked. Click on the **OK**.
  - Go to the **Advanced** tab and click on the button to restore these settings to their defaults. Click on the **OK** button three times.
  - Close your web browser (if open) and open it.
- Access the web management. Open your web browser and enter the IP address of your D-Link router in the address bar. This should open the login page for the web management.
- If you still cannot access the configuration, unplug the power to the router for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

### 2. What can I do if I forgot my password?

If you forgot your password, you must reset your router. Unfortunately this process will change all your settings back to the factory defaults.

To reset the router, locate the reset button (hole) on the rear panel of the unit. With the router powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the router will go through its reboot process.

Wait about 30 seconds to access the router. The default IP address is 192.168.1.1. When logging in, type in the default User Name “admin,” and the default Password “admin” then click on the OK button to access the web-based manager.

# Networking Basics

## Check your IP address

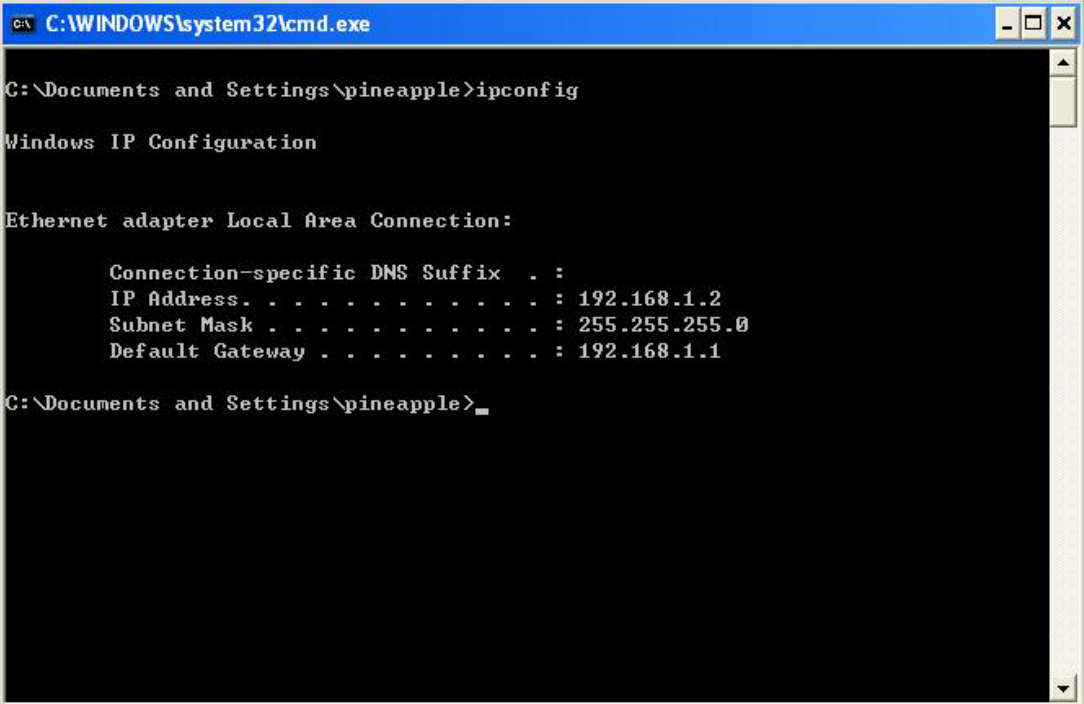
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server automatically. To verify your IP address, please follow the steps below.

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

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.



```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\pineapple>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\pineapple>
```

## Statically Assign 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 D-Link network adapter and select **Properties**.

### Step 3

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

### Step 4

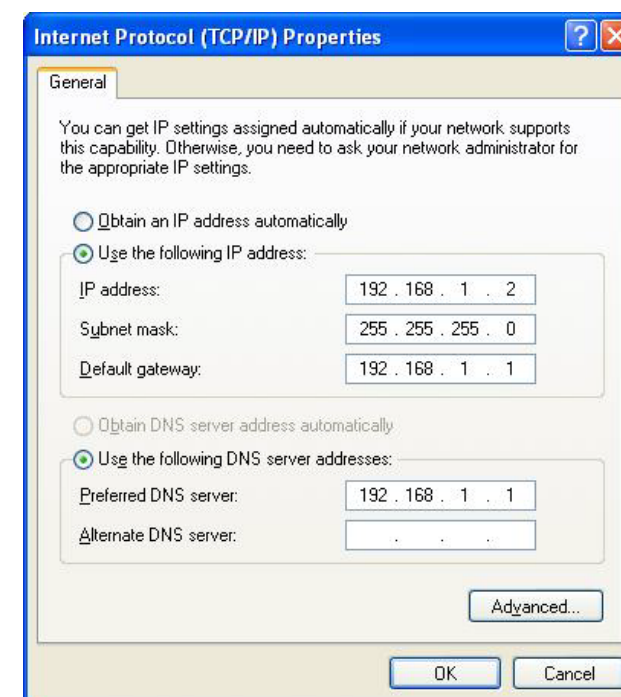
Click on the **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

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 Default Gateway the same as the LAN IP address of your router (192.168.1.1).

Set Primary DNS 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** twice to save your settings.



# Technical Specifications

## ADSL Standards

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

## ADSL2 Standards

- ITU G.992.3 (G.dmt.bis) Annex B
- ITU G.992.4 (G.lite.bis) Annex B

## 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

# Contacting Technical Support

You can find software updates and user documentation on the D-Link websites.

If you require product support, we encourage you to browse our FAQ section on the Web Site before contacting the Support line. We have many FAQ's which we hope will provide you a speedy resolution for your problem.

## For Customers within the United Kingdom & Ireland:

### **D-Link UK & Ireland Technical Support over the Internet:**

<http://www.dlink.co.uk>

<ftp://ftp.dlink.co.uk>

### **D-Link UK & Ireland Technical Support over the Telephone:**

08456 12 0003 (United Kingdom)

+1890 886 899 (Ireland)

Lines Open

8.00am-10.00pm Mon-Fri

10.00am-7.00pm Sat & Sun



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