

USER MANUAL

GO-DSL-N150

VERSION 1.0



D-Link[®]

BROADBAND

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1 Introduction

The GO-DSL-N150 device is an ADSL access device that supports multiple line modes. With four 10/100Base-T Ethernet interfaces at the user end, it provides high-speed ADSL broadband connection to the Internet or Intranet for high-end users such as net cafes and office users. The device provides high performance access to the Internet with a downlink of 24 Mbps and an uplink of 1 Mbps.

As a WLAN AP or WLAN router, the device supports WLAN access to the Internet. It complies with the IEEE 802.11b/g/n specifications, WEP, WPA and WPA2 security specifications.

1.1 Safety Precautions

Take the following instructions to prevent the device from risks and damage caused by fire or electric power:

- Use the type of power marked by the volume label.
- Use the power adapter packed in the device package.
- Pay attention to the power load of the outlet or prolonged lines. An overburden power outlet or damaged lines and plugs may cause electric shock or fire accident. Check the power cords regularly. If you find any damage, replace it at once.
- Proper space left for heat dissipation is necessary to avoid damage caused by overheating to the device. The long and thin holes on the device are designed for heat dissipation to ensure that the device works normally. Do not cover these heat dissipation holes.
- Do not put this device close to a place where a heat source exists or high temperature occurs. Avoid the device from direct sunshine.
- Do not put this device close to a place where it is overdamp or watery. Do not spill any fluid on this device.
- Do not connect this device to any PCs or electronic products, unless our customer engineer or your broadband provider instructs you to do this, because any wrong connection may cause power or fire risk.
- Do not place this device on an unstable surface or support.

1.2 LEDs and Interfaces

Front Panel



The following table describes the LEDs of the device.


LEDs	Color	Status	Description
Power	Green	On	The device is powered on or the initiation of the device is successful.
		Off	The device is powered off.
	Red	On	The device is self-testing, the self-test is failed or the software is upgrading.
DSL	Green	On	The device has established a connection with the physical layer of the office end.
		Slow Blinks	No signal is being detected.
		Fast Blinks	The device is handshaking with the physical layer of the office end.
Internet	Green	On	The device has a successful WAN connection (PPP dial-up is successful) in the routing mode and no data is being transmitted on the Internet.
		Blinks	Data is being transmitted on the Internet in the routing mode.
		Off	The device is in the bridged mode.
	Red	On	In the routing mode, after the successful synchronization, the WAN connection is failed (PPP dial-up is failed).
LAN4/3 /2/1	Green	On	The LAN connection is normal and activated.
		Blinks	Data is being transmitted on the LAN or data is being transmitted on the Internet in the bridged mode.

LEDs	Color	Status	Description
		Off	The LAN connection of the device is failed.
WLAN	Green	On	The device has successful WLAN connection.
		Blinks	Data is being transmitted on WLAN.
		Off	The WLAN connection is failed.
WPS	Green	Off	WPS is disabled.
		Blinks	WPS is enabled, and is waiting for client to negotiate.

Rear Panel



The following table describes the interfaces of the device:

Items	Description
	Power switch for powering on/off the device.
Power	Power interface for connecting to the power adapter.
WLAN	Press the button gently and let go after 2 seconds to enable WLAN function.
WPS	Press the button and let go after 1 second to enable WPS function.
Reset	Reset to the factory defaults. To reset to the factory defaults, keep the device powered on and push a paper clip in to the hole for over 3 seconds. Then release it, the configuration is reset to the factory defaults.
LAN4/3/2/1	RJ-45 interface for connecting to the Ethernet interface of PC or other Ethernet devices through the Ethernet cable.
DSL	RJ-11 interface for connecting to the ADSL interface or a splitter through the telephone cable.

1.3 System Requirements

Recommended system requirements are as follows:

- A 10/100 base-T Ethernet card is installed on your PC
- A hub or Switch. (connected to several PCs through one of Ethernet interfaces on the device)
- Operating system: Windows 98 SE, Windows 2000, Windows ME, Windows XP, Windows Vista, Windows 7
- Internet Explorer V5.0 or higher, Netscape V4.0 or higher, or Firefox 1.5 or higher

1.4 Features

The device supports the following features:

- Various line modes
- External PPPoE dial-up access
- Internal PPPoE/PPPoA dial-up access
- 1483Bridged/1483Routed with dynamic ip or static ip
- Multiple PVCs (the number of PVCs support is eight)
- DHCP server/relay
- Static route
- Network Address Translation(NAT)
- DMZ
- Virtual Server
- Universal plug and play (UPnP)
- Dynamic Domain Name Server(DDNS)
- One-level password and username
- Network Time Protocol(NTP)
- Firmware upgrading through Web, TFTP, or FTP
- Resetting to the factory defaults through Reset button or Web
- Diagnostic test
- Web interface
- Telnet CLI
- IP/MAC/URL Filter
- Application layer service
- QOS
- Port binding

2 Hardware Installation

Step 1 Connect the **DSL** interface of the device and the **Modem** interface of the splitter through a telephone cable. Connect the phone to the **Phone** interface of the splitter through a cable. Connect the incoming line to the **Line** interface of the splitter.

The splitter has three interfaces:

- **Line:** Connect to a wall phone jack (RJ-11 jack).
- **Modem:** Connect to the ADSL jack of the device.
- **Phone:** Connect to a telephone set.

Step 2 Connect the **LAN** interface of the device to the network card of the PC through an Ethernet cable (MDI/MDIX).



Note:

Use twisted-pair cables to connect with the hub or switch.

Step 3 Plug one end of the power adapter to the wall outlet and connect the other end to the **Power** interface of the device.

Connection 1

Figure 1 shows the application diagram for the connection of the router, PC, splitter and the telephone sets, when no telephone set is placed before the splitter.

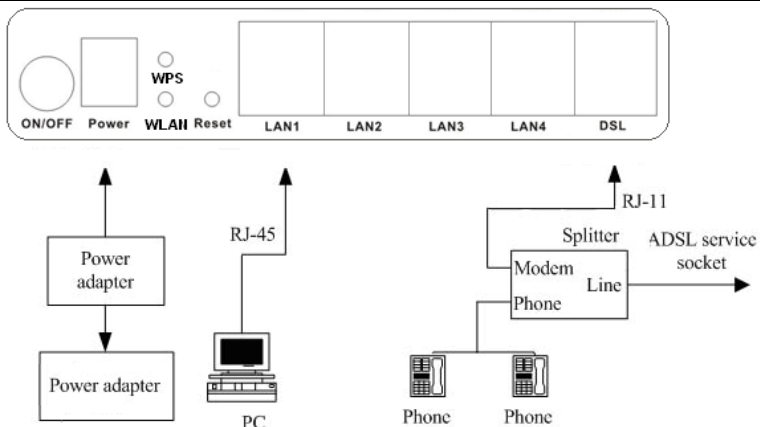


Figure 1 Connection diagram (Without connecting telephone sets before the splitter)

Connection 2

Figure 2 shows the connection when the splitter is installed close to the router.

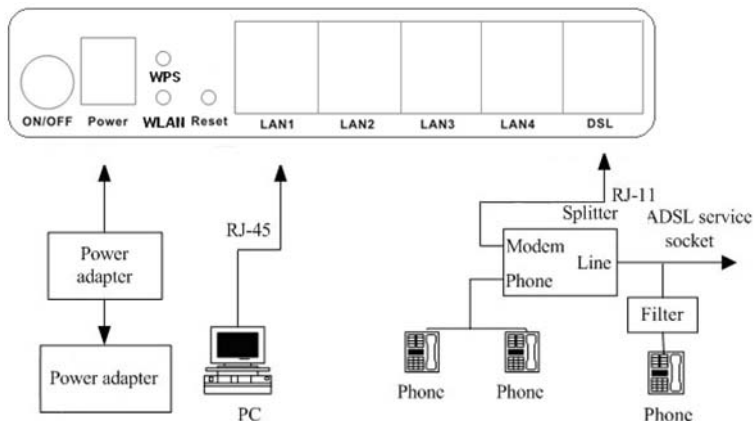


Figure 2 Connection diagram (Connecting a telephone set before the splitter)

**Note:**

When connection 2 is used, the filter must be installed close to the telephone cable. See Figure2. Do not use the splitter to replace the filter.

Installing a telephone directly before the splitter may lead to failure of connection between the device and the central office or failure of Internet access or slow connection speed. If you really need to add a telephone set before the splitter, you must add a microfilter before a telephone set. Do not connect several telephones before the splitter or connect several telephones with the microfilter.

3 About the Web Configuration

This chapter describes how to configure the router by using the Web-based configuration utility.

3.1 Access the Router

The following is the detailed description of accessing the router for the first time.

Step 1 Open the Internet Explorer (IE) browser and enter <http://192.168.1.1>.

Step 2 In the **Login** page that is displayed, enter the username and password.
The username and password of the user are admin and 1234.



When you log in, the page shown in the following figure appears. You can check, configure and modify all the settings.



Note:

In the Web configuration page, the settings can be saved permanently.

3.2 Status

In the navigation bar, click **Status**. In the **Status** page that is displayed contains **Device Info**, **System Log** and **Statistics**.

3.2.1 Device Info

Choose **Status > Device Info**. The page that is displayed shows the current status and some basic settings of the router, such as Firmware Version, LAN, WAN, ADSL and other information.

The screenshot shows the D-Link ADSL Router web interface. At the top left is the D-Link logo. On the right, it says "ADSL Router". Below the logo is a navigation menu with tabs: Quick Start, Interface Setup, Advanced Setup, Access Management, Maintenance, Status (highlighted), and Help. Under the Status tab, there are sub-tabs: Device Info (highlighted), System Log, and Statistics.

The main content area is divided into sections for different interfaces:

- Device Information:**
 - Firmware Version : EU_1.00
 - MAC Address : 00:25:12:11:11:11
- LAN:**
 - IP Address : 192.168.1.1
 - Subnet Mask : 255.255.255.0
 - DHCP Server : Enabled
- WAN:**
 - Virtual Circuit :
 - Status : Not Connected
 - Connection Type : Bridge
 - IP Address : N/A
 - Subnet Mask : N/A
 - Default Gateway : N/A
 - Primary DNS : N/A
 - Secondary DNS : N/A
- ADSL:**
 - ADSL Firmware Version : FwVer:3.16.21.0_TC3086 HwVer:T14.F7_7.0
 - Line State : Down
 - Modulation : N/A
 - Annex Mode : N/A

	Downstream	Upstream	
SNR Margin :	N/A	N/A	db
Line Attenuation :	N/A	N/A	db
Data Rate :	N/A	N/A	kbps

3.2.2 System Log

Choose **Status > System Log**, the page shown in the following figure appears. In this page, you can view or refresh the system log.

Status Quick Start Interface Setup Advanced Setup Access Management Maintenance **Status** Help

Device Info System Log Statistics

System Log

```

1/1/2000 0:0:6> SNMP TRAP 3: link up
1/1/2000 0:0:6> etherChannConfig fail
1/1/2000 0:0:7> MPOA Link Down
1/1/2000 0:0:7> LAN promiscuous mode <1>
1/1/2000 0:0:7> Last errorlog repeat 1 Times
1/1/2000 0:0:8> SNMP TRAP 0: cold start
1/1/2000 0:0:8> main: init completed
1/1/2000 0:0:8> adjtime task pause 1 day

```

CLEAR LOG SAVE LOG

3.2.3 Statistics

Choose **Status** > **Statistics**. The **Statistics** page that is displayed contains **Ethernet Statistics**, **ADSL Statistics** and **WLAN Statistics**.

3.2.3.1 Ethernet Statistics

In the Traffic Statistic page, click **Ethernet** and the page shown in the following figure appears. In this page, you can view the statistics such as total Bytes, Collision, Error Frames and CRC Errors.

Status Quick Start Interface Setup Advanced Setup Access Management Maintenance **Status** Help

Device Info System Log Statistics

Traffic Statistics

Interface : Ethernet ADSL WLAN

Transmit Statistics		Receive Statistics	
Transmit Frames	92	Receive Frames	76
Transmit Multicast Frames	85	Receive Multicast Frames	78
Transmit total Bytes	84143	Receive total Bytes	21610
Transmit Collision	0	Receive CRC Errors	0
Transmit Error Frames	0	Receive Under-size Frames	0

REFRESH

3.2.3.2 ADSL Statistics

In the Traffic Statistic page, click **ADSL** and the page shown in the following figure appears. In this page, you can view the ADSL line statistics such as total PDUs and total Error Counts.

The screenshot shows the 'Status' page with the 'Statistics' tab selected. Under 'Interface', 'ADSL' is selected. The table below shows zero counts for all metrics.

Transmit Statistics		Receive Statistics	
Transmit total PDUs	0	Receive total PDUs	0
Transmit total Error Counts	0	Receive total Error Counts	0

A 'REFRESH' button is located at the bottom of the page.

3.2.3.3 WLAN Statistics

In the Traffic Statistic page, click **WLAN** and the page shown in the following figure appears. In this page, you can view the statistics such as Transmitted Frame, Errors or Drops.

The screenshot shows the 'Status' page with the 'Statistics' tab selected. Under 'Interface', 'WLAN' is selected. The table below shows 12 received frames and zero errors or drops.

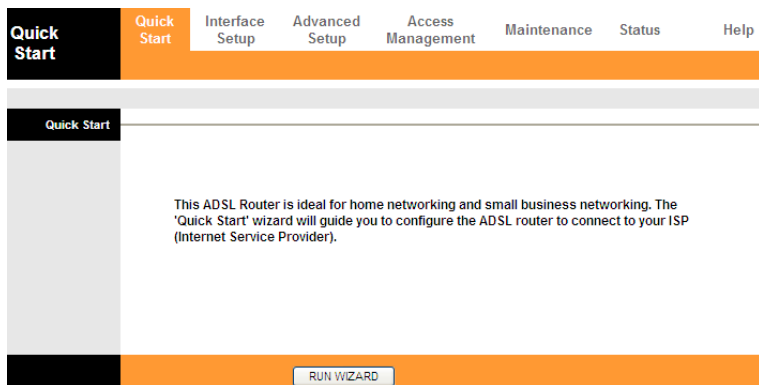
Transmit Statistics		Receive Statistics	
Tx Frames Count	0	Rx Frames Count	12
Tx Errors Count	0	Rx Errors Count	0
Tx Drops Count	0	Rx Drops Count	0

A 'REFRESH' button is located at the bottom of the page.

3.3 Quick Start

The **Quick Start** page will guide you to configure the ADSL router to connect to your ISP (Internet Service Provider). The following sections describe these various configuration parameters. Whether you configure these parameters or use the default ones, click **NEXT** to enable your Internet connection.

When subscribing to a broadband service, you should be aware of the method by which you are connected to the Internet. Your physical WAN device can be either PPP, ADSL or both. Technical information about your Internet connection properties is provided by your Internet service provider (ISP). For example, your ISP provides you with the IP address (a static or dynamic IP address) for connecting to the Internet, and the protocol for communication on the Internet. In the navigation bar, click **Quick Start**. The page as shown in the following figure appears.



Click **RUN WIZARD**, there will pop up a new page as shown in the following figure appears.



Click **NEXT**, the page as shown in the following figure appears. Click **EXIT**, this page will be closed.

Quick Start - Password

You may change the **admin** account password by entering in a new password. Click **NEXT** to continue.

New Password :

Confirmed Password :

In this page, enter a new password for the admin account. After finishing all quick start settings, it will be saved and effect immediately.

Click **NEXT**, the page as shown in the following figure appears.

Quick Start - Time Zone

Select the appropriate time zone for your location and click **NEXT** to continue.

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

In this page, you can select a local time zone.

Click **NEXT**, the page as shown in the following figure appears.

Quick Start - ISP Connection Type

Select the Internet connection type to connect to your ISP. Click **NEXT** to continue.

- Auto setup by ISP list Choose from ISP List to set your ISP information.
- Dynamic IP Address Choose this option to obtain a IP address automatically from your ISP.
- Static IP Address Choose this option to set static IP information provided to you by your ISP.
- PPPoE/PPPoA Choose this option if your ISP uses PPPoE/PPPoA. (For most DSL users)
- Bridge Mode Choose this option if your ISP uses Bridge Mode.

There are five WAN connection types: **Auto setup by ISP list**, **Dynamic IP Address**, **Static IP Address**, **PPPoE/PPPoA** and **Bridge Mode**. Select the appropriate wan connection type which is provided by your ISP.

For example, select the PPPoE/PPPoA, and then click **NEXT**, the page as shown in the following figure appears.

Quick Start - PPPoE/PPPoA

Enter the PPPoE/PPPoA information provided to you by your ISP. Click **NEXT** to continue.

Username:

Password:

VPI: (0~255)

VCI: (1~65535)

Connection Type:

The following table describes the parameters in this page:

Field	Description
Username	Enter the username for PPPoE dial-up, which is provided by your ISP.
Password	Enter the password for PPPoE dial-up, which is provided by your ISP.
VPI	Virtual path identifier (VPI) is the virtual path between two points in an ATM network. Its valid value is between 0 and 255. Enter the correct VPI provided by your ISP. By default, VPI is set to 0 .
VCI	Virtual channel identifier (VCI) is the virtual channel between two points in an ATM network. Its valid value is between 1 and 65535. Enter the correct VCI provided by your ISP. By default, VCI is set to 33 .
Connection Type	You can select LLC or VC-Mux . In this example, the encapsulation mode is set to PPPoE LLC .

After setting, click **NEXT**, the page as shown in the following figure appears.

Quick Start Complete !!

The Setup Wizard has completed. Click on **BACK** to modify changes or mistakes. Click **NEXT** to save the current settings.

BACK SAVE EXIT

Click **BACK** to modify the settings.

Click **NEXT** to save the settings.

Click **EXIT** to cancel the settings.



Note:

After you saving the settings in the **Quick Start** page, you can view this wan connection settings in the **Interface Setup > Internet** page.

3.4 Interface Setup

In the navigation bar, click **Interface Setup**. The **Interface Setup** page that is displayed contains **Internet**, **LAN** and **Wireless**.

3.4.1 Internet

Choose **Interface Setup > Internet**. The **Internet** page that is displayed contains **ATM VC**, **Qos** and **Encapsulation**. In this page, you can configure WAN interface of your router.

Interface	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Internet	LAN	Wireless				
ATM VC							
GoS	Virtual Circuit: <input type="text" value="PVC0"/> <input type="button" value="PVCs Summary"/>						
	Status: <input checked="" type="radio"/> Activated <input type="radio"/> Deactivated VPI: <input type="text" value="0"/> (range: 0-255) VCI: <input type="text" value="33"/> (range: 1-65535)						
Encapsulation	ATM GoS: <input type="text" value="UBR"/>						
	PCR: <input type="text" value="0"/> cells/second						
	SCR: <input type="text" value="0"/> cells/second						
	MBS: <input type="text" value="0"/> cells						
PPPoE/PPPoA	ISP: <input type="radio"/> Dynamic IP Address						
	<input type="radio"/> Static IP Address <input checked="" type="radio"/> PPPoA/PPPoE <input type="radio"/> Bridge Mode						
Connection Setting	Servicename: <input type="text"/> Username: <input type="text"/> Password: <input type="text"/> Encapsulation: <input type="text" value="PPPoE LLC"/>						
	Bridge Interface: <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated						
IP Address	Connection: <input checked="" type="radio"/> Always On (Recommended) <input type="radio"/> Connect On-Demand (Close if idle for <input type="text" value="0"/> minutes) <input type="radio"/> Connect Manually						
	TCP MSS Option: TCP MSS(0:default) <input type="text" value="0"/> bytes						
Get IP Address: <input type="radio"/> Static <input checked="" type="radio"/> Dynamic Static IP Address: <input type="text" value="0.0.0.0"/> IP Subnet Mask: <input type="text" value="0.0.0.0"/> Gateway: <input type="text" value="0.0.0.0"/> NAT: <input type="text" value="Enable"/> Default Route: <input checked="" type="radio"/> Yes <input type="radio"/> No TCP MTU Option: TCP MTU(0:default) <input type="text" value="0"/> bytes Dynamic Route: <input type="text" value="RIP1"/> Direction: <input type="text" value="Both"/> Multicast: <input type="text" value="Disabled"/> MAC Spoofing: <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled <input type="text" value="00:00:00:00:00:00"/>							
<input type="button" value="SAVE"/>							

The following table describes the parameters of this page:

Field	Description
Virtual Circuit	You can select a virtual circuit from the drop-list. Click PVCs Summary you can view eight PVCs (from PVC0 to PVC7), and only PVC0 status is activated by default.
Status	You can select Activated or Deactivated for currently selected virtual circuit.
VPI	The virtual path between two points in an ATM network, ranging from 0 to 255.
VCI	The virtual channel between two points in an ATM network, ranging from 1 to 65535.
ATM QoS	Select the Quality of Service types for this Virtual Circuit. The ATM QoS types include CBR (Constant Bit Rate), VBR (Variable Bit Rate) and UBR (Unspecified Bit Rate). These QoS types are all controlled by the parameters specified below, including PCR, SCR and MBS. You can choose CBR , UBR , rt-VBR or nrt-VBR .
PCR	Peak cell rate (PCR) is the maximum rate at which cells can be transmitted along a connection in the ATM network.
SCR	Sustain cell rate (SCR) is the maximum rate that traffic can pass over PVC without the risk of cell loss.
MBS	Maximum burst size (MBS) is the maximum number of cells that can be transmitted at the PCR.
ISP	You can choose Dynamic IP Address , Static IP Address , PPPoA/PPPoE or Bridge Mode .

If your ISP provides you an IP address automatically, you may select **Dynamic IP** in the **ISP** encapsulation. Dynamic IP is typically used for Cable services. Please enter the Dynamic IP information accordingly.

Interface	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Internet	LAN	Wireless				
ATM VC							
QoS	Virtual Circuit: PVC0 <input type="button" value="PVCs Summary"/>						
	Status: <input checked="" type="radio"/> Activated <input type="radio"/> Deactivated VPI: 0 (range: 0-255) VCI: 33 (range: 1-65535)						
Encapsulation	ATM QoS: UBR <input type="button" value="..."/>						
	PCR: 0 cells/second						
	SCR: 0 cells/second						
	MBS: 0 cells						
Dynamic IP	ISP: <input checked="" type="radio"/> Dynamic IP Address <input type="radio"/> Static IP Address <input type="radio"/> PPPoA/PPPoE <input type="radio"/> Bridge Mode						
	Encapsulation: 1483 Bridged IP LLC <input type="button" value="..."/> Bridge Interface: <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated NAT: Enable <input type="button" value="..."/> Default Route: <input checked="" type="radio"/> Yes <input type="radio"/> No TCP MTU Option: TCP MTU(0:default) 0 bytes Dynamic Route: RIP1 <input type="button" value="..."/> Direction: Both <input type="button" value="..."/> Multicast: Disabled <input type="button" value="..."/>						
<input type="button" value="SAVE"/>							

The following table describes the parameters of this page:

Field	Description
Encapsulation	You can choose 1483 Bridged IP LLC , 1483 Bridged IP VC-Mux , 1483 Routed IP LLC (IPoA) or 1483 Routed IP VC-Mux .
Bridge Interface	You can choose Activated or Deactivated .
NAT	Select it to enable Network Address Translation (NAT) function. If you do not select it but want to access the Internet normally, you must add a route on the uplink equipment. Otherwise, the

Field	Description
	access to the Internet fails. Normally NAT is enabled.
Default Route	You can enable or disable the default route. If enable this function, the current PVC will be the default gateway to internet from this device.
TCP MTU Option	You can set a tcp mtu value. The range is from 100 to 1500. The default is 0 .
Dynamic Route	Select this option to specify the Routing Information protocol (RIP) version. You can select RIP1 , RIP2-B or RIP2-M .
Direction	You can select None , Both , IN Only or OUT Only to specify the RIP direction. None is for disabling the RIP function. Both means the ADSL Router will periodically send routing information and accept routing information then incorporate into routing table. IN only means the ADLS router will only accept but will not send RIP packet. OUT only means the ADLS router will only send but will not accept RIP packet.
Multicast	You can choose Disabled , IGMP v1 or IGMP v2 .

Select **Static IP Address** in the **ISP** encapsulation to set static IP information. You will need to enter in the Connection type, IP address, subnet mask, and gateway address, provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which is four IP octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.

Interface	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Internet	LAN	Wireless				
ATM VC							
GoS	Virtual Circuit: PVC0 <input type="button" value="PVCs Summary"/>						
	Status: <input checked="" type="radio"/> Activated <input type="radio"/> Deactivated						
	VPI: 0 (range: 0-255) VCI: 33 (range: 1-65535)						
Encapsulation	ATM QoS: UBR						
	PCR: 0 cells/second						
	SCR: 0 cells/second						
	MBS: 0 cells						
Static IP	ISP: <input type="radio"/> Dynamic IP Address <input checked="" type="radio"/> Static IP Address <input type="radio"/> PPPoA/PPPoE <input type="radio"/> Bridge Mode						
	Encapsulation: 1483 Routed IP LLC(IPoA)						
Static IP Address: 0.0.0.0							
IP Subnet Mask: 0.0.0.0							
Gateway: 0.0.0.0							
NAT: Enable							
Default Route: <input checked="" type="radio"/> Yes <input type="radio"/> No							
TCP MTU Option: TCP MTU(0 default) 0 bytes							
Dynamic Route: RIP1 Direction: Both							
Multicast: Disabled							
<input type="button" value="SAVE"/>							

The following table describes the parameters of this page:

Field	Description
Encapsulation	You can choose 1483 Bridged IP LLC , 1483 Bridged IP VC-Mux , 1483 Routed IP LLC(IPoA) or 1483 Routed IP VC-Mux .
Default Route	You can enable or disable default route.
TCP MTU Option	You can set a tcp mtu value. The range is from 100 to 1500. The default is 0 .
Static IP Address	You can enter the ip address for dial-up, which is provided by your ISP.
IP Subnet Mask	You can enter the ip subnet mask for dial-up,

Field	Description
	which is provided by your ISP.
Gateway	You can enter the gate way ip for dial-up, which is provided by your ISP.
NAT	Select it to enable Network Address Translation (NAT) function. If you do not select it but want to access the Internet normally, you must add a route on the uplink equipment. Otherwise, the access to the Internet fails. Normally, it is enabled.
Dynamic Route	You can select RIP1 , RIP2-B or RIP2-M .
Direction	You can select None , Both , IN Only or OUT Only .
Multicast	You can choose Disabled , IGMP v1 or IGMP v2 .

Select **PPPoA/PPPoE** in the **ISP** encapsulation if your ISP requires you to use a PPPoE connection. This option is typically used for DSL services. Select Dynamic PPPoE to obtain an IP address automatically for your PPPoE connection. Select Static PPPoE to use a static IP address for your PPPoE connection. Please enter the information accordingly.

Interface	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Internet	LAN	Wireless				
ATM VC							
QoS	Virtual Circuit: PVC0 <input type="button" value="PVCs Summary"/>						
	Status: <input checked="" type="radio"/> Activated <input type="radio"/> Deactivated VPI: 0 (range: 0-255) VCI: 33 (range: 1-65535)						
Encapsulation	ATM QoS: UBR <input type="button" value="v"/> PCR: 0 cells/second SCR: 0 cells/second MBS: 0 cells						
	ISP: <input type="radio"/> Dynamic IP Address <input type="radio"/> Static IP Address <input checked="" type="radio"/> PPPoA/PPPoE <input type="radio"/> Bridge Mode						
PPPoE/PPPoA							
Connection Setting	Servicename: <input type="text"/> Username: <input type="text"/> Password: <input type="text"/> Encapsulation: PPPoE LLC <input type="button" value="v"/> Bridge Interface: <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated						
	Connection: <input checked="" type="radio"/> Always On (Recommended) <input type="radio"/> Connect On-Demand (Close if idle for <input type="text" value="0"/> minutes) <input type="radio"/> Connect Manually TCP MSS Option: TCP MSS(0:default) <input type="text" value="0"/> bytes						
IP Address	Get IP Address: <input type="radio"/> Static <input checked="" type="radio"/> Dynamic Static IP Address: <input type="text" value="0.0.0.0"/> IP Subnet Mask: <input type="text" value="0.0.0.0"/> Gateway: <input type="text" value="0.0.0.0"/> NAT: Enable <input type="button" value="v"/> Default Route: <input checked="" type="radio"/> Yes <input type="radio"/> No TCP MTU Option: TCP MTU(0:default) <input type="text" value="0"/> bytes Dynamic Route: RIP1 <input type="button" value="v"/> Direction: Both <input type="button" value="v"/> Multicast: Disabled <input type="button" value="v"/> MAC Spoofing: <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled <input type="text" value="00:00:00:00:00:00"/>						
	<input type="button" value="SAVE"/>						

The following table describes the parameters of this page:

Field	Description
Username	Enter the username for PPPoE dial-up, which is provided by your ISP.
Password	Enter the password for PPPoE dial-up, which is provided by your ISP.
Encapsulation	You can choose PPPoE LLC , PPPoE VC-Mux , PPPoA LLC or PPPoA VC-Mux .
Bridge Interface for PPPoE	You can choose Activated or Deactivated .
Connection	You can choose Always On (Recommended) , Connect On-Demand or Connect Manually .
TCP MSS Option	You can set a tcp mss value. The range is from 100 to 1452. The default is 0 .
Get IP Address	You can choose Static or Dynamic .
Static IP Address	You can enter the ip address for dial-up, which is provided by your ISP.
IP Subnet Mask	You can enter the ip subnet mask provided by your ISP.
Gateway	You can enter the gateway ip for dial-up, which is provided by your ISP.
NAT	Select it to enable Network Address Translation (NAT) function. If you do not select it and you want to access the Internet normally, you must add a route on the uplink equipment. Otherwise, the access to the Internet fails. Normally, it is enabled.
Dynamic Route	You can select RIP1 , RIP2-B or RIP2-M .
Direction	You can select None , Both , IN Only or OUT Only .
TCP MTU Option	You can set a TCP MTU value. The range is from 100 to 1500. The default is 0.
Multicast	You can choose Disabled , IGMP v1 or IGMP v2 .
MAC Spoofing	You can choose Enabled or Disabled .

After finishing, click **SAVE** to apply the settings of this PVC.

3.4.2 LAN

Choose **Interface Setup > LAN**. The **LAN** page that is displayed contains **Router Local IP**, **DHCP Server** and **DNS**. In this page, you can change IP address of the router. The default IP address is 192.168.1.1, which is the private IP address of the router.

Interface	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Internet	LAN	Wireless				
Router Local IP							
	Main IP Address: <input type="text" value="192.168.1.1"/> Main Subnet Mask: <input type="text" value="255.255.255.0"/> Alias IP Address: <input type="text" value="0.0.0.0"/> Alias Subnet Mask: <input type="text" value="0.0.0.0"/> Dynamic Route: <input type="text" value="RIP2-B"/> Direction: <input type="text" value="None"/> Multicast: <input type="text" value="Disabled"/> IGMP Snoop: <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled						
DHCP							
	DHCP: <input type="radio"/> Disabled <input checked="" type="radio"/> Enabled <input type="radio"/> Relay						
	DHCP Server Starting IP Address: <input type="text" value="192.168.1.2"/> <input type="button" value="Current Pool Summary"/> IP Pool Count: <input type="text" value="32"/> Lease Time: <input type="text" value="259200"/> seconds (0 sets to default value of 259200) Physical Ports: <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input checked="" type="checkbox"/> 4						
	DNS DNS Relay: <input type="text" value="Use Auto Discovered DNS Server Only"/> Primary DNS Server: <input type="text" value="N/A"/> Secondary DNS Server: <input type="text" value="N/A"/>						
<input type="button" value="SAVE"/> <input type="button" value="CANCEL"/>							

The following table describes the parameters of this page:

Field	Description
Main IP Address	Enter the IP address of LAN interface. It is recommended to use an address from a block reserved for private use. This address block is 192.168.1.1- 192.168.255.254.
Main Subnet Mask	Enter the subnet mask of LAN interface. The range of subnet mask is from 255.255.0.0 to 255.255.255.254.
Alias IP Address	You may enter the secondary IP Address.

Field	Description
Dynamic Route	You can select RIP1 or RIP2 .
Direction	You can select None , Both , IN Only or OUT Only .
Multicast	IGMP (Internet Group Multicast Protocol) is a session-layer protocol used to establish membership in a multicast group. You can choose Disabled , IGMP v1 or IGMP v2 .
IgmpSnoop	You may select Activated or Deactivated . After Activating this function, the packets of the IGMP broadcast will not be sent to the LAN interface not belonging to the group.
DHCP	You can choose Disabled , Enabled or Relay . If set to DHCP Server , the router can assign IP addresses, IP default gateway and DNS Servers to the host under Windows95, Windows NT and other operation systems that support the DHCP client.
Starting IP Address	The starting IP address for the DHCP server's IP assignment
IP Pool Count	The max user pool size
Lease Time	The lease time determines the period that the host retains the assigned IP addresses before the IP addresses change. The default is 259200 seconds.
DNS Relay	You can choose Use Auto Discovered DNS Server Only or Use User Discovered DNS Server Only . If you select Auto Discovered , the router accepts the first received DNS assignment from one of the PPPoA, PPPoE or MER enabled PVC(s) during the connection establishment. If select User Discovered , enter the IP addresses of the primary and secondary DNS servers.

Dynamic Host Configuration Protocol (DHCP) allows the individual PC to obtain the TCP/IP configuration from the centralized DHCP server. You can configure this router as a DHCP server or disable it. The DHCP server can assign IP address, IP default gateway and DNS server to DHCP clients. This router can

also act as a surrogate DHCP server (DHCP proxy) where it relays IP address assignment from an actual DHCP server to clients. You can enable or disable DHCP server or DHCP proxy.

In the **DHCP** field, choose **Disabled**, the page shown in the following figure appears.

Interface	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Internet	LAN	Wireless				
Router Local IP							
	Main IP Address: <input type="text" value="192.168.1.1"/> Main Subnet Mask: <input type="text" value="255.255.255.0"/> Alias IP Address: <input type="text" value="0.0.0.0"/> Alias Subnet Mask: <input type="text" value="0.0.0.0"/> Dynamic Route: RIP2-B <input type="text"/> Direction: None <input type="text"/> Multicast: Disabled <input type="text"/> IGMP Snoop: <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled						
DHCP							
	DHCP: <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled <input type="radio"/> Relay						
<input type="button" value="SAVE"/> <input type="button" value="CANCEL"/>							

In the **DHCP** field, choose **DHCP Relay**, the page shown in the following figure appears. Enter a server IP address running on WAN side.

Interface	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Internet	LAN	Wireless				
Router Local IP							
	Main IP Address: <input type="text" value="192.168.1.1"/> Main Subnet Mask: <input type="text" value="255.255.255.0"/> Alias IP Address: <input type="text" value="0.0.0.0"/> Alias Subnet Mask: <input type="text" value="0.0.0.0"/> Dynamic Route: RIP2-B <input type="text"/> Direction: None <input type="text"/> Multicast: Disabled <input type="text"/> IGMP Snoop: <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled						
DHCP							
	DHCP: <input type="radio"/> Disabled <input type="radio"/> Enabled <input checked="" type="radio"/> Relay						
DHCP Relay							
	DHCP Server IP for Relay Agent: <input type="text" value="0.0.0.0"/>						
<input type="button" value="SAVE"/> <input type="button" value="CANCEL"/>							

3.4.3 Wireless

Choose **Interface Setup > Wireless**. The page as shown in the following figure appears. The Wireless page contains **Access Point Settings**, **11n Settings**, **Multiple SSIDs Settings**, **WPS Settings** and **Wireless MAC Address Filter**.

Interface	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Internet	LAN	Wireless				
Access Point Settings	Access Point: <input checked="" type="radio"/> Activated <input type="radio"/> Deactivated Channel: Auto <input type="button" value="v"/> Current Channel: <input type="text" value="2"/> Beacon Interval(ms): <input type="text" value="100"/> (range: 20~1000) RTS/CTS Threshold: <input type="text" value="2347"/> (range: 1500~2347) Fragmentation Threshold (bytes): <input type="text" value="2346"/> (range: 256~2346, even numbers only) DTIM(ms): <input type="text" value="1"/> (range: 1~255) Wireless Mode: <input type="text" value="802.11b+g+n"/> <input type="button" value="v"/>						
11n Settings	Channel Bandwidth: <input type="text" value="20/40 MHz"/> <input type="button" value="v"/> Extension Channel: <input type="text" value="above the control channel"/> <input type="button" value="v"/> Guard Interval: <input type="text" value="AUTO"/> <input type="button" value="v"/> MCS: <input type="text" value="AUTO"/> <input type="button" value="v"/>						
Multiple SSIDs Settings	SSID Index: <input type="text" value="1"/> <input type="button" value="v"/> Broadcast SSID: <input checked="" type="radio"/> Yes <input type="radio"/> No Use WPS: <input checked="" type="radio"/> Yes <input type="radio"/> No						
WPS Settings	WPS state: Configured WPS mode: <input type="radio"/> PIN code <input checked="" type="radio"/> PBC <input type="button" value="Start WPS"/> WPS progress: Idle <input type="button" value="Reset to OOB"/> SSID: <input type="text" value="DLink"/> Authentication Type: <input type="text" value="Disabled"/> <input type="button" value="v"/>						
Wireless MAC Address Filter	Active: <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated Action: <input type="text" value="Allow Association"/> <input type="button" value="v"/> the follow Wireless LAN station(s) association. Mac Address #1: <input type="text" value="00:00:00:00:00:00"/> Mac Address #2: <input type="text" value="00:00:00:00:00:00"/> Mac Address #3: <input type="text" value="00:00:00:00:00:00"/> Mac Address #4: <input type="text" value="00:00:00:00:00:00"/> Mac Address #5: <input type="text" value="00:00:00:00:00:00"/> Mac Address #6: <input type="text" value="00:00:00:00:00:00"/> Mac Address #7: <input type="text" value="00:00:00:00:00:00"/> Mac Address #8: <input type="text" value="00:00:00:00:00:00"/>						
<input type="button" value="SAVE"/> <input type="button" value="CANCEL"/>							

The following table describes the parameters of this page:

Field	Description
Access Point	You may choose Activated or Deactivated .
Channel	Countries apply their own regulations to both the allowable channels, allowed users and maximum power levels within these frequency ranges. The default is Auto .
Beacon Interval	Beacon Interval range is from 20 to 1000 .
RTS/CTS Threshold	RTS/CTS Threshold range is from 1500 to 2347 .
Fragmentation Threshold	Fragmentation Threshold range are only even numbers between 256 and 2346 .
DTIM	DTIM range is from 1 to 255 . A delivery traffic indication message is a kind of traffic indication message (TIM) which informs the clients of the presence of buffered multicast/broadcast data on the access point.
Wireless Mode	Comply with the IEEE 802.11b/g and IEEE802.11n standards. You can select 802.11b , 802.11g , 802.11b+g , 802.11n , 802.11g+n or 802.11b+g+n .
Channel Bandwidth	Supporting 20MHz/40MHz Dual Channel.
Extension Channel	The field displays the current extension channel is above or below the current control channel.
Guard Interval	You can set 800 nsec or AUTO .
MCS	You can set an MCS index from 0 and 7 , or select AUTO .
SSID index	Supporting only a root SSID to be modified
SSID	The service set identification (SSID) is a unique name to identify the router in the wireless LAN. You may modify the SSID.
Broadcast SSID	Select whether the router broadcasts SSID or not. You can select Yes or No . <ul style="list-style-type: none"> ● Select Yes, and the wireless client searches the router through broadcasting SSID. ● Select No to hide SSID, and the wireless

Field	Description
	client can not search the SSID.
Use WPS	WPS technology allows new customers without a previously-established account to securely connect to your network at the Wi-Fi hotspot, create and pay for an account, and access the Internet.
WPS state	Support Configured mode.
WPS mode	You can set PIN code or PBC .
Start WPS	Click to start WPS progress
WPS progress	This field indicates current WPS progress status.
Reset to OOB	Click Reset to OOB (out of box) to reset all Wi-Fi setting to default.
SSID	The service set identification (SSID) is a unique name to identify the router in the wireless LAN. You may modify the SSID.
Authentication Type	You can set a type from Disabled , WEP-64Bits , WEP-128Bits , WPA-PSK , WPA2-PSK , WPA-PSKWPA2-PSK .
Active	Activate or deactivate Wireless MAC Address Filter.
Action	You can set Allow Association or Deny Association to make Wireless LAN station(s) association. This function can be used to allow or deny access to certain wireless clients based on their MAC Address.
Mac Address #1~8	You can set eight Mac Addresses at most.

3.5 Advanced Setup

In the navigation bar, click **Advanced Setup**. In the **Advanced Setup** page that is displayed contains **Firewall**, **Routing**, **NAT**, **QoS**, **VLAN** and **ADSL**.

3.5.1 Firewall

Choose **Advanced Setup > Firewall**. The page shown in the following figure appears. You can select this option to automatically detect and block Denial of Service (DoS) attacks such as Ping of Death, SYN Flood, Port Scan and Land Attack.

The screenshot shows the 'Advanced Setup' menu with 'Firewall' selected. The 'Firewall' section is active, displaying the following configuration options:

- Firewall: Enabled Disabled
- SPI: Enabled Disabled

A warning message is displayed: (WARNING: If You enabled SPI, all traffics initiated from WAN would be blocked, including DMZ, Virtual Server, and ACL WAN side.)

At the bottom, there are 'SAVE' and 'CANCEL' buttons.

3.5.2 Routing

Click **Advanced Setup > Routing**, the page shown in the following figure appears. It displays routing table information.

The screenshot shows the 'Advanced Setup' menu with 'Routing' selected. The 'Routing Table List' section is active, displaying a table with the following data:

#	Dest IP	Mask	Gateway IP	Metric	Device	Use	Edit	Drop
1	192.168.1.0	24	192.168.1.1	1	enet0	99		
2	default	0	Node1	2	Idle	0		

At the bottom, there is an 'ADD ROUTE' button.

Click **ADD ROUTE**, the page shown in the following figure appears. This page is used to configure the routing information. You may add, edit or drop the static route.

Advanced	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Firewall	Routing	NAT	QoS	VLAN	ADSL	
Static Route							
Destination IP Address : <input type="text" value="0.0.0.0"/> IP Subnet Mask : <input type="text" value="0.0.0.0"/> Gateway IP Address : <input checked="" type="radio"/> <input type="text" value="0.0.0.0"/> <input type="radio"/> PVC0 <input type="button" value="v"/> Metric : <input type="text" value="0"/> Announced in RIP : <input type="button" value="Yes"/>							
<input type="button" value="SAVE"/> <input type="button" value="DELETE"/> <input type="button" value="BACK"/> <input type="button" value="CANCEL"/>							

The following table describes the parameters and buttons of this page:

Field	Description
Destination IP Address	Enter the IP address of the destination device.
IP Subnet Mask	Enter the subnet mask of the destination device.
Gateway IP Address	You can enter the IP address of the next hop in the IP route to the destination device, or bind with a pvc interface.
Metric	The metric cost for the destination.

3.5.3 NAT

Click **Advanced Setup > NAT**, the page shown in the following figure appears. In this page, you can set up the NAT (Network Address Translation) function for your ADSL router. This function allows you to share one WAN IP address for multiple computers on your LAN.

The screenshot shows the NAT configuration page. At the top, there is a navigation bar with tabs: Advanced (selected), Quick Start, Interface Setup, Advanced Setup, Access Management, Maintenance, Status, and Help. Below this is a sub-navigation bar with tabs: Firewall, Routing, NAT (selected), QoS, VLAN, ADSL, and an empty tab. The main content area has a header 'NAT' and the following configuration options:

- Virtual Circuit: PVC0 (dropdown menu)
- NAT Status: Activated
- Number of IPs: Single Multiple
- DMZ
- Virtual Server

The following table describes the parameters and buttons of this page:

Field	Description
Virtual Circuit	Choose a Virtual Circuit Index to set up for the NAT function.
NAT Status	This field shows the current NAT status for the current VC. The status is enable or disabled, depending on the WAN connection's NAT is enable or disabled.

Demilitarized Zone (DMZ) is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains devices accessible to Internet traffic, such as web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.

In the **NAT** page, select the number of IPs as **Single** and click **DMZ**, and the page shown in the following figure appears.

The screenshot shows the DMZ configuration page. At the top, there is a navigation bar with tabs: Advanced (selected), Quick Start, Interface Setup, Advanced Setup, Access Management, Maintenance, Status, and Help. Below this is a sub-navigation bar with tabs: Firewall, Routing, NAT, QoS, VLAN, ADSL, and an empty tab. The main content area has a header 'DMZ' and the following configuration options:

- DMZ setting for: Single IP Account
- DMZ: Enabled Disabled
- DMZ Host IP Address: 0.0.0.0 (text input field)

At the bottom of the page, there are two buttons: **SAVE** and **BACK**.

The following table describes the parameters of this page:

Field	Description
DMZ	Select Enable to enable this function.
DMZ Host IP Address	Enter the specified IP Address for DMZ host on the LAN side.

In the **NAT** page, select the number of IPs as **Single** and choose **Virtual Server**, and the page shown in the following figure appears.

The Virtual Server is the server(s) behind NAT (on the LAN), for example, Web server or FTP server, which you can make visible to the outside world even though NAT makes your whole inside network appear as a single machine to the outside world.

Advanced Setup

Virtual Server

Virtual Server for: Single IP Account

Rule Index: 1

Application: -

Protocol: ALL

Start Port Number: 0

End Port Number: 0

Local IP Address: 0.0.0.0

Virtual Server Listing

Rule	Application	Protocol	Start Port	End Port	Local IP Address
1	-	-	0	0	0.0.0.0
2	-	-	0	0	0.0.0.0
3	-	-	0	0	0.0.0.0
4	-	-	0	0	0.0.0.0
5	-	-	0	0	0.0.0.0
6	-	-	0	0	0.0.0.0
7	-	-	0	0	0.0.0.0
8	-	-	0	0	0.0.0.0
9	-	-	0	0	0.0.0.0
10	-	-	0	0	0.0.0.0
11	-	-	0	0	0.0.0.0
12	-	-	0	0	0.0.0.0
13	-	-	0	0	0.0.0.0
14	-	-	0	0	0.0.0.0
15	-	-	0	0	0.0.0.0
16	-	-	0	0	0.0.0.0

SAVE DELETE BACK CANCEL

The following table describes the parameters of this page:

Field	Description
Rule Index	The Virtual server rule index for this VC. You can specify 10 rules in maximum. All the VCs with single IP will use the same Virtual Server rules.
Application	Select an application type for this VC.
Protocol	Select a protocol type for this VC
Start/End Port Number	Enter the specific Start and End Port numbers you want to forward. If it is one port only, you can enter the End port number the same as Start port number. For example, if you want to set the FTP Virtual server, you can set both the start and end port number as 21.
Local IP Address	Enter the IP Address for the Virtual Server in LAN side.
Rule	The Virtual server rule index for this VC. You can specify 10 rules in maximum. All the VCs with single IP will use the same Virtual Server rules.

In the **NAT** page, select the number of IPs as **Multiple** and choose **IP Address Mapping (for Multiple IP Service)**, and the page shown in the following figure appears.

Advanced	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Firewall	Routing	NAT	QoS	VLAN	ADSL	

IP Address Mapping

Address Mapping Rule: PVC0

Rule Index: (dropdown)

Rule Type: (dropdown)

Local Start IP: (for all local IPs, enter 0.0.0.0 for Start IP)

Local End IP: (for all local IPs, enter 255.255.255.255 for End IP)

Public Start IP: (0.0.0.0 for modem's WAN IP)

Public End IP:

Address Mapping List

Rule	Type	Local Start IP	Local End IP	Public Start IP	Public End IP
1	M-1	0.0.0.0	255.255.255.255	0.0.0.0	...
2	-	...	...	...	...
3	-	...	...	...	...
4	-	...	...	...	...
5	-	...	...	...	...
6	-	...	...	...	...
7	-	...	...	...	...
8	-	...	...	...	...

The following table describes the parameters of this page:

Field	Description
Rule Index	The Virtual server rule index for this VC. You can specify 10 rules in maximum. All the VCs with single IP will use the same Virtual Server rules.
Rule Type	There are four types of One-to-One , Many-to-One , Many-to-Many Overload and Many-to-Many No-overload .
Local Start/ End IP	Enter the local IP Address you plan to mapped to. Local Start IP is the starting local IP address and Local End IP is the ending local IP address. If the rule is for all local IPs, then the Start IP is 0.0.0.0 and the End IP is 255.255.255.255.
Public Start/ End IP	Enter the public IP Address you want to do NAT. Public Start IP is the starting public IP address and Public End IP is the ending public IP address. If you have a dynamic IP, enter 0.0.0.0 as the Public Start IP.

3.5.4 QoS

Choose **Advanced Setup > QoS**, the page shown in the following figure appears. This option provides better service of selected network traffic over various technologies.

The QoS can be set based on the physical LAN ports or wireless interfaces.

Advanced	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Firewall	Routing	NAT	QoS	VLAN	ADSL	

Quality of Service

QoS: Activated Deactivated
 Summary:

Rule

Rule Index:

Active: Activated Deactivated

Application:

Physical Ports: WLAN Enet1 Enet2 Enet3 Enet4

Destination MAC:

IP:

Mask:

Port Range: ~

Source MAC:

IP:

Mask:

Port Range: ~

Protocol ID:

Vlan ID Range: ~

IPP/DS Field: IPP/TOS DSCP

IP Precedence Range: ~

Type of Service:

DSCP Range: ~ (Value Range: 0 ~ 63)

802.1p: ~

Action

IPP/DS Field: IPP/TOS DSCP

IP Precedence Remark:

Type of Service Remark:

DSCP Remark: (Value Range: 0 ~ 63)

802.1p Remark:

Queue #:

The following table describes the parameters of this page:

Field	Description
QoS	You may select Activated or Deactivated . After activating

Field	Description
	QoS, you may set the upload bandwidth of the WAN interface.
Rule Index	You may establish at most sixteen QoS rules.
Active	You may select Activated or Deactivated . The QoS rule can be set if it is activated.
Application	Support application options such as IGMP, SIP, H.323, MGCP, SNMP, DNS, DHCP, RIP, RSTP, RTCP and RTP .
Physical Ports	Choose the Ethernet Interface.
Destination MAC	The Destination MAC address of the rule. If data packets include the MAC address, the data packets are placed into the group.
IP	The destination IP address of the rule. If data packets include the IP address, the data packets are placed into the group.
Port Range	Port Range is from 0 to 65535 .
Source MAC	The Source MAC address of the rule. If data packets include the MAC address, the data packets are placed into the group.
IP	The source IP address of the rule. If data packets include the IP address, the data packets are placed into the group.
Protocol ID	You can choose TCP/UDP, TCP, UDP, ICMP or IGMP .
Vlan ID Range	Select this option to Activated/Deactivated the 4094 VID on the 4 different queues. VID (VLAN ID) is the identification of the VLAN, which is basically used by the standard 802.1Q. It has 12 bits and allows the identification of 4096 (2^{12}) VLANs. Of the 4096 possible VIDs, a VID of 0 is used to identify priority frames and value 4095 (FFF) is reserved, so the maximum possible VLAN configurations are 4,094.
IPP/DS Field	Can set IPP/TOS or DSCP .
IP Precedence	When IPP/TOS is set, select the IP Precedence ranging from 0 to 7.

Field	Description
Range	
Type of Service	Support services including Normal service, Minimize delay, Maximize throughput, Maximize reliability and Minimize monetary cost.
DSCP Range	DSCP Range is from 0 to 63 .
802.1p	Select this option to Activate/Deactivated the 802.1p. IEEE 802.1p establishes eight levels of priority (0 ~ 7). Although network managers must determine actual mappings, IEEE has made broad recommendations. Seven is the highest priority which is usually assigned to network-critical traffic such as Routing Information Protocol (RIP) and Open Shortest Path First (OSPF) table updates. Five and six are often for delay-sensitive applications such as interactive video and voice. Data classes four through one range from controlled-load applications such as streaming multimedia and business-critical traffic - carrying SAP data, for instance - down to "loss eligible" traffic. Zero is used as a best-effort default priority, invoked automatically when no other value has been set.
Queue #	Select Low, Medium, High or Highest .

In the above page, click **Add** to save the discipline. To view the rules and actions, click **QoS Settings Summary** to enter the page shown in the following figure appears.

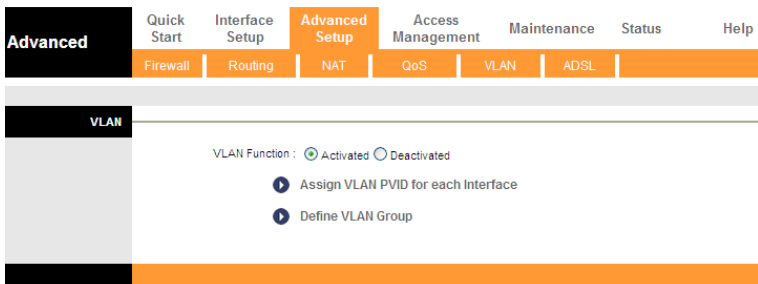
QoS Settings Summary

Rules									Actions				
#	Active	Physical Ports	Destination		Source		Protocol ID	VLAN ID	IP/PTOS (DSCP)	802.1p	IP/PTOS (DSCP) Remarking	802.1p Remarking	Queue #
			MAC IP/Mask Port Range	MAC IP/Mask Port Range	MAC IP/Mask Port Range	MAC IP/Mask Port Range							
-	N	-	-	-	-	-	-	-	-	-	-	-	-

e: ethernet, w: wlan, NS: Normal service, MD: Minimize delay, MT: Maximize throughput, MR: Maximize reliability, MC: Minimize monetary cost, HH: Highest, H: High, M: Medium, L: Low.

3.5.5 VLAN

Choose **Advanced Setup > VLAN**, the page shown in the following figure appears. Virtual LAN (VLAN) is a group of devices on one or more LANs that are configured 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. Because VLANs are based on logical instead of physical connections, it is very flexible for user/host management, bandwidth allocation and resource optimization.



In the **VLAN** page, click **Assign VLAN PVID for each Interface**, and the page shown in the following figure appears.

Advanced	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Firewall	Routing	NAT	QoS	VLAN	ADSL	

PVID Assign
ATM VC #0 : PVID <input type="text" value="1"/>
VC #1 : PVID <input type="text" value="1"/>
VC #2 : PVID <input type="text" value="1"/>
VC #3 : PVID <input type="text" value="1"/>
VC #4 : PVID <input type="text" value="1"/>
VC #5 : PVID <input type="text" value="1"/>
VC #6 : PVID <input type="text" value="1"/>
VC #7 : PVID <input type="text" value="1"/>
Ethernet Port #1 : PVID <input type="text" value="1"/>
Port #2 : PVID <input type="text" value="1"/>
Port #3 : PVID <input type="text" value="1"/>
Port #4 : PVID <input type="text" value="1"/>
Wireless LAN : PVID <input type="text" value="1"/>

The following table describes the parameters of this page:

Field	Description
PVID	Each physical port has a default VID called PVID (Port VID). PVID is assigned to untagged frames or priority tagged frames (frames with null (0) VID) received on this port.
ATM VC #	Assign the PVID to ATM VCs.
Ethernet Port #	Assign the PVID to Ethernet Ports.
Wireless LAN	Assign the PVID to Wireless LAN.
Next	Click it to go to the VLAN Group Setting page.

In the **VLAN** page, click **VLAN Group Setting**, and the page shown in the following figure appears.

Advanced	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Firewall	Routing	NAT	QoS	VLAN	ADSL	

VLAN Group Setting

VLAN Index:

Active: Yes No

VLAN ID: (Decimal)

ATM VCs:

Tagged	Port #	0	1	2	3	4	5	6	7
<input 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"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Ethernet:

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

Wireless LAN:

Tagged	Port #	0
<input type="checkbox"/>		<input checked="" type="checkbox"/>

VLAN Group Summary

Group	Active	ID	VLAN Group Ports	VLAN Tagged Ports
1	Yes	1	e1,e2,e3,e4,w0,p0,p1,p2,p3,p4,p5,p6,p7	

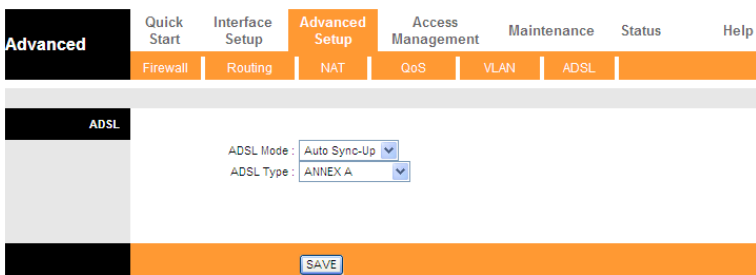
p.pvc, e.ethernet, and w.wlan

The following table describes the parameters of this page:

Field	Description
VLAN Index	Define the VLAN Group ID (1 to 8).
Active	Choose to active or deactivate the VLAN group.
VLAN ID	Input a VLAN ID for the Group.
ATM VCs	Select what ATM VCs (0 to 7) will join the VLAN group. Also choose whether it will be tagged or untagged.
Ethernet	Select what Ethernet ports (1 to 4) will join the VLAN group. Also Choose whether it will be tagged or untagged.
Wireless LAN	Choose to assign the Wireless LAN to the VLAN group.
Save	Click it to save the settings.
Delete	Click it to delete the current group setting.
Cancel	Cancel the current group setting.

3.5.6 ADSL

Click **Advanced Setup** > **ADSL**, the page shown in the following figure appears. The ADSL feature can be selected when you meet the physical connection problem. Please check the proper settings with your Internet service provider.



The router supports these modulations: **G.Lite**, **T1.413**, **G.DMT**, **ADSL2**, **ADSL2+** and **Auto Sync-Up**. The router negotiates the modulation modes with the DSLAM.

The following table describes the parameters and buttons of this page:

Field	Description
ADSL Mode	Choose Auto Sync-Up , ADSL2+ , ADSL2 , G.DMT , T1.413 or G.lite . The default is Auto Sync-Up .
ADSL Type	Choose ANNEX A , ANNEX I , ANNEX A/L , ANNEX M or ANNEX A/I/J/L/M .

3.6 Access Management

In the navigation bar, click **Access Management**. The **Access Management** page that is displayed contains **ACL**, **Filter**, **SNMP**, **UPnP** and **DDNS**.

3.6.1 ACL

Choose **Access Management** > **ACL**, and the page shown in the following figure appears. The user may remotely access the ADSL Router once setting his IP as a Secure IP Address through selected applications. With the default IP 0.0.0.0, any client would be allowed to remotely access the ADSL Router.

Access Management	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	ACL	Filter	SNMP	UPnP	DDNS		

Access Control Setup										
ACL: <input checked="" type="radio"/> Activated <input type="radio"/> Deactivated										
Access Control Editing										
ACL Rule Index: <input type="text" value="1"/>										
Active: <input type="radio"/> Yes <input checked="" type="radio"/> No										
Secure IP Address: <input type="text" value="0.0.0.0"/> ~ <input type="text" value="0.0.0.0"/> (0.0.0.0 ~ 0.0.0.0 means all IPs)										
Application: <input type="text" value="Web"/>										
Interface: <input type="text" value="Both"/>										
Access Control Listing										
<table border="1"> <thead> <tr> <th>Index</th> <th>Active</th> <th>Secure IP Address</th> <th>Application</th> <th>Interface</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>No</td> <td>0.0.0.0-0.0.0.0</td> <td>Web</td> <td>Both</td> </tr> </tbody> </table>	Index	Active	Secure IP Address	Application	Interface	1	No	0.0.0.0-0.0.0.0	Web	Both
Index	Active	Secure IP Address	Application	Interface						
1	No	0.0.0.0-0.0.0.0	Web	Both						
<div style="text-align: right;"> <input type="button" value="SAVE"/> <input type="button" value="DELETE"/> <input type="button" value="CANCEL"/> </div>										

The following table describes the parameters and buttons of this page:

Field	Description
ACL Rule Index	You can establish sixteen ACL rules at most.
Active	Click to enable or disable the rule.
Secure IP Address	The rule is valid if the IP is in this range.
Application	Support Web , FTP , Telnet , SNMP , Ping and ALL .
Interface	Support WAN , LAN and Both .
Access control Listing	Only the devices whose MAC addresses are listed in the Access Control Listing can access the router.

3.6.2 Filter

Choose **Access Management** > **Filter**, and the page shown in the following figure appears. Select IP/MAC Filter type. The user can set IP/MAC Filter, Application Filter and URL Filter.

3.6.2.1 IP/MAC Filter

Choose **Access Management** > **Filter**, and the page shown in the following figure appears. The user can set different IP filter rules of a given protocol (TCP,

UDP or ICMP) and a specific direction (incoming, outgoing, or both) to filter the packets.

Access Management	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	ACL	Filter	SNMP	UPnP	DDNS		

Filter

Filter Type

Filter Type Selection: IP / MAC Filter

IP / MAC Filter Set Editing

IP / MAC Filter Set Index: 1
 Interface: P1/C0
 Direction: Both

IP / MAC Filter Rule Editing

IP / MAC Filter Rule Index: 1
 Rule Type: IP
 Active: Yes No

Source IP Address: (0.0.0.0 means Don't care)
 Subnet Mask:
 Port Number: 0 (0 means Don't care)

Destination IP Address: (0.0.0.0 means Don't care)
 Subnet Mask:
 Port Number: 0 (0 means Don't care)

Protocol: TCP
 Rule Unmatched: Forward

IP / MAC Filter Listing

IP / MAC Filter Set Index: 1 Interface: - Direction: -

#	Active	Src Address/Mask	Dest IP/Mask	Src Port	Dest Port	Protocol	Unmatched
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-

SAVE DELETE CANCEL

The following table describes the parameters and buttons of this page:

Field	Description
Filter Type Selection	Support IP / MAC Filter , Application Filter and URL Filter .
IP/MAC Filter Rule Index	You can choose an IP / MAC Filter Set Index from 1 to 12 .
Interface	You can select an interface from the eight pvc's or the lan interface.
Direction	Choose Both , Incoming or Outgoing .

Field	Description
Rule Type	Support IP or MAC .
Source IP Address	Enter the Source IP Address. 0.0.0.0 means don't care.
Port Number	Enter the Port Number. 0 means don't care.
Destination IP Address	Enter the Destination IP Address. 0.0.0.0 means Don't care.
Protocol	Support TCP , UDP or ICMP .
Rule Unmatched	Choices are Forward and Next . Select what happens to the data in question if the rule you are currently editing is unmatched. Next means that the data is then compared to the next IP filter rule. Forward means that the data will be allowed into your system. Note that a Forward rule should be the last rule, as no data will be compared to rules after a Forward rule.

3.6.2.2 Application Filter

Choose **Access Management** > **Filter**, and the page shown in the following figure appears. Select Application Filter type. The user can set Application rules to filter the ICQ, MSN, YMSG, Real Audio/Video packets.

The screenshot displays the configuration page for an Application Filter. The navigation menu at the top includes 'Access Management', 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Maintenance', 'Status', and 'Help'. The 'Access Management' menu is expanded, showing 'ACL', 'Filter', 'SNMP', 'UPnP', and 'DDNS'. The 'Filter' section is active, showing 'Filter Type' set to 'Application Filter'. Below this, the 'Application Filter Editing' section contains the following options:

- Application Filter: Activated Deactivated
- ICQ: Allow Deny
- MSN: Allow Deny
- YMSG: Allow Deny
- Real Audio/Video: Allow Deny

At the bottom of the page, there are 'SAVE' and 'CANCEL' buttons.

The following table describes the parameters and buttons of this page:

Field	Description
Application Filter	Choose to activate or deactivate the Application Filter rule.
ICQ	Set Allow or Deny ICQ packets.
MSN	Set Allow or Deny MSN packets.
YMSG	Set Allow or Deny YMSG packets.
Real Audio/Video	Set Allow or Deny Real Audio/Video packets.

3.6.2.3 URL Filter

Choose **Access Management > Filter**, and the page shown in the following figure appears. Select URL Filter type. The user can set URL rules to prevent the LAN users to access.

The screenshot shows the 'Access Management' interface. The top navigation bar includes 'Quick Start', 'Interface Setup', 'Advanced Setup', 'Access Management' (highlighted), 'Maintenance', 'Status', and 'Help'. Below this is a sub-menu with 'ACL', 'Filter' (highlighted), 'SNMP', 'UPnP', and 'DDNS'. The left sidebar has 'Filter' selected. The main content area is titled 'Filter' and contains the following elements:

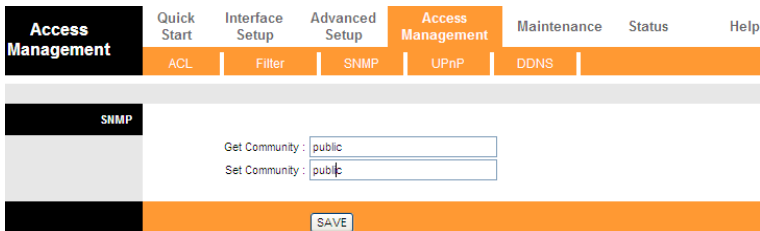
- Filter Type:** A dropdown menu showing 'URL Filter'.
- URL Filter Editing:** An 'Active' section with radio buttons for 'Yes' and 'No' (selected).
- URL Filter Listing:** A section with a 'URL Index' dropdown set to '1' and a text input field for 'URL'.
- Table:** A table with 16 rows, each with an 'Index' column (1-16) and a 'URL' column.
- Buttons:** 'SAVE', 'DELETE', and 'CANCEL' buttons at the bottom.

The following table describes the parameters and buttons of this page:

Field	Description
Active	Make URL Filter rule activated or deactivated.
URL Index	Can set an URL Filter Index from 1 to 16.
URL	Enter the URL that needs to be filtered.

3.6.3 SNMP

Choose **Access Management** > **SNMP**, and the page shown in the following figure appears. Simple Network Management Protocol is used for exchanging information between network devices.



The following table describes the parameters and buttons of this page:

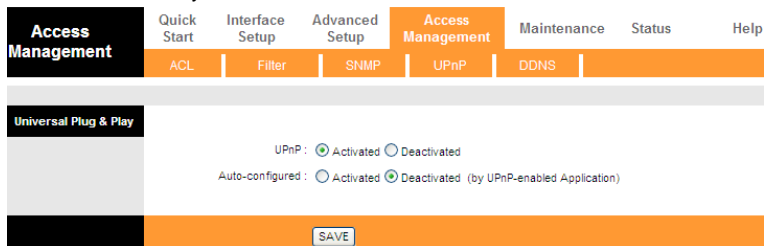
Field	Description
Get Community	Select to set the password for incoming Get requests from the management station.
Set Community	Select to set the password for incoming Set requests from the management station.

3.6.4 UPnP

Choose **Access Management** > **UPnP**, the page shown in the following figure appears. This page is used to configure the upnp parameters.

UPnP (Universal Plug and Play) is a distributed, open networking standard that uses TCP/IP for simple peer-to-peer network connectivity between devices. An

UPnP device can dynamically join a network, obtain an IP address, convey its capabilities and learn about other devices on the network. In turn, a device can leave a network smoothly and automatically when it is no longer in use. UPnP broadcasts are only allowed on the LAN.



The following table describes the parameters of this page:

Field	Description
UPnP	You can choose Activated or Deactivated .
Auto-configured	UPnP network devices can automatically configure network addressing, announce their presence in the network to other UPnP devices and enable exchange of simple product and service descriptions.

3.6.5 DDNS

Choose **Access Management** > **DDNS**, the page shown in the following figure appears.

The Dynamic Domain Name System (DDNS) lets you use a static host name with a dynamic IP address. User should type the host name, user name and password assigned to your ADSL Router by your Dynamic DNS provider. The user also can decide to turn on DYNDNS Wildcard or not.

Access Management	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	ACL	Filter	SNMP	UPnP	DDNS		
Dynamic DNS							
Dynamic DNS : <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated							
Service Provider : www.dyndns.org							
My Host Name : <input type="text"/>							
E-mail Address : <input type="text"/>							
Username : <input type="text"/>							
Password : <input type="text"/>							
Wildcard support : <input type="radio"/> Yes <input checked="" type="radio"/> No							
<input type="button" value="SAVE"/>							

The following table describes the parameters of this page:

Field	Description
Dynamic DNS	Choose to activate or deactivate DDNS function.
My Host Name	The DDNS identifier
E-mail Address	The email provided by DDNS provider
Username	The name provided by DDNS provider
Password	The password provided by DDNS provider
Wildcard support	You can choose Yes or No .

3.7 Maintenance

In the navigation bar, click **Maintenance**. The **Maintenance** page that is displayed contains **Administration**, **Time Zone**, **Firmware**, **SysRestart** and **Diagnostics**.

3.7.1 Administration

Choose **Maintenance > Administration**, the page shown in the following figure appears. There is only one account that can access Web-Management interface. The default account is "admin", and the password is "1234". Admin has read/write access privilege. In this web page, you can set new password for admin.

The screenshot shows the web interface for the GO-DSL-N150. At the top, there is a navigation bar with the following tabs: Quick Start, Interface Setup, Advanced Setup, Access Management, Maintenance (highlighted in orange), Status, and Help. Below this, there is a sub-menu for the Maintenance section with tabs for Administration, Time Zone, Firmware, SysRestart, and Diagnostics. The main content area is titled 'Administrator' and contains a form for changing the password. The form includes the following fields and buttons:

- Username: admin
- New Password:
- Confirm Password:
- SAVE button
- CANCEL button

The following table describes the parameters of this page:

Field	Description
New Password	Enter the password to which you want to change the old password.
Confirm Password	Enter the new password again.

3.7.2 Time Zone

Choose **Maintenance > Time Zone**, the page shown in the following figure appears.

The system time is the time used by the device for scheduling services. You can manually set the time or connect to a NTP (Network Time Protocol) server. If a NTP server is set, you will only need to set the time zone. If you manually set the time, you may also set Daylight Saving dates and the system time will automatically adjust on those dates.

Maintenance	Quick Start	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	Help
	Administration	Time Zone	Firmware	SysRestart	Diagnostics		
Time Zone	Current Date/Time : 01/01/2000 01:02:54						
Time Synchronization	Synchronize time with : <input checked="" type="radio"/> NTP Server automatically <input type="radio"/> PC's Clock <input type="radio"/> Manually Time Zone : (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London <input type="text" value="v"/> Daylight Saving : <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled NTP Server Address : <input type="text" value="0.0.0.0"/> (0.0.0.0: Default Value)						
	<input type="button" value="SAVE"/> <input type="button" value="CANCEL"/>						

The following table describes the parameters of this page:

Field	Description
Synchronize time with	You can choose NTP Server automatically, PC's Clock or Manually.
Time Zone	Choose the time zone in which area you are from the drop-down list.
Daylight Saving	You can enable the daylight saving time.
NTP Server Address	Set the NTP server manually.

3.7.3 Firmware

Choose **Maintenance** > **Firmware**, the page shown in the following figure appears.

You can upgrade the firmware of the Router in this page. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to browse the local hard drive and locate the firmware to be used for upgrade.

Maintenance Quick Start Interface Setup Advanced Setup Access Management **Maintenance** Status Help

Administration Time Zone Firmware SysRestart Diagnostics

Firmware/Configuration Upgrade

Current Firmware Version : EU_1.00

New Firmware Location :

New Configuration Location :

Configuration Backup :

Status :
! It might take several minutes, don't power off it during upgrading. Device will restart after the upgrade.

The following table describes the parameters of this page:

Field	Description
New Firmware Location	Click Browse to select the firmware file.
New Configuration Location	Click Browse to select the configuration file.
Configuration Backup	Click it, and select the path. Then you can save the configuration file of the router.
UPGRADE	After selecting the file, click UPGRADE to starting upgrading the file.

3.7.4 SysRestart

Choose **Maintenance > SysRestart**, the page shown in the following figure appears. User can restart the device with current settings or factory default settings.

The following table describes the parameters of this page:

Field	Description
Current Settings	Save the current settings and then reboot the router.
Factory Default Settings	Reset to the factory default settings and then reboot the router.

3.7.5 Diagnostics

Choose **Maintenance** > **Diagnostics**, the page shown in the following figure appears. The page shows the test results for the connectivity of the physical layer and protocol layer for both LAN and WAN sides.

The following table describes the parameters of this page:

Field	Description
Virtual Circuit	Choose a PVC from the drop down list to test.

3.8 Help

In the navigation bar, click **Help**. The **Help** page that is displayed contains **Quick Start**, **Interface Setup**, **Advanced Setup**, **Access Management**, **Maintenance** and **Status**. You can get information on detailed functions and parameter configuration of the device.

3.8.1 Quick Start

Choose **Help** > **Quick Start**, the page shown in the following figure appears.

Quick Start

Quick Start

The Quick Start Wizard is a useful and easy utility to help setup the device to quickly connect to your ISP (Internet Service Provider) with only a few steps required. It will guide you step by step to configure the password, time zone, and WAN settings of your device. The Quick Start Wizard is a helpful guide for first time users to the device.

3.8.2 Interface Setup

Choose **Help** > **Interface Setup**, the page shown in the following figure appears. This page that is displayed contains **Internet Settings**, **LAN Settings** and **Wireless LAN Settings**.

Interface Setup

Internet Settings

Internet :: ATM VC

ATM settings are used to connect to your ISP. Your ISP provides VPI, VCI settings to you. In this Device, you can totally setup 8 VCs on different encapsulations, if you apply 8 different virtual circuits from your ISP. You need to activate the VC to take effect. For PVCs management, you can use ATM QoS to setup each PVC traffic line's priority.

Virtual Circuit: Select the VC number you want to setup.

VPI: Virtual Path Identifier.

VCI: Virtual Channel Identifier.

ATM QoS: Select the Quality of Service types for this Virtual Circuit. The ATM QoS types include CBR (Constant Bit Rate), VBR (Variable Bit Rate) and UBR

(Unspecified Bit Rate). These QoS types are all controlled by the parameters specified below, including PCR, SCR and MBS.

PCR: Peak Cell Rate.

SCR: Sustained Cell Rate.

MBS: Maximum Burst Size.

Internet :: Encapsulation

Dynamic IP: Select this option if your ISP provides you an IP address automatically. This option is typically used for Cable services. Please enter the Dynamic IP information accordingly.

Static IP: Select this option to set static IP information. You will need to enter in the Connection type, IP address, subnet mask, and gateway address, provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four IP octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.

PPPoA/PPPoE: Select this option if your ISP requires you to use a PPPoE connection. This option is typically used for DSL services. Select Dynamic PPPoE to obtain an IP address automatically for your PPPoE connection. Select Static PPPoE to use a static IP address for your PPPoE connection. Please enter the information accordingly.

Bridge Mode: The modem can be configured to act as a bridging device between your LAN and your ISP. Bridges are devices that enable two or more networks to communicate as if they are two segments of the same physical LAN. Please set the Connection type.

Internet :: PPPoE/PPPoA

Select this option if your ISP requires you to use a PPPoE connection. This option is typically used for DSL services. Select Dynamic PPPoE to obtain an IP address automatically for your PPPoE connection. Select Static PPPoE to use a static IP address for your PPPoE connection. Please enter the information accordingly.

Username: Enter your username for your PPPoE/PPPoA connection.

Password: Enter your password for your PPPoE/PPPoA connection

Encapsulation: For both PPPoE/PPPoA connection, you need to specify the type of Multiplexing, either LLC or VC Mux.

Connection Setting: For PPPoE/PPPoA connection, you can select **Always on** or **Connect on-demand**. Connect on demand is dependent on the traffic. If there is no traffic (or **Idle**) for a pre-specified period of time), the connection will tear down automatically. And once there is traffic send or receive, the connection will be automatically on.

Static/Dynamic IP Address For PPPoE/PPPoA connection, you need to specify the public IP address for this ADSL Router. The IP address can be either dynamically (via DHCP) or given IP address provide by your ISP. For Static IP, you need to specify the IP address, Subnet Mask and Gateway IP address.

Internet :: NAT

NAT Select this option to Activate/Deactivated the NAT (Network Address Translation) function for this VC. The NAT function can be activated or deactivated per PVC basis.

Internet :: Default Route

Default Route If enable this function, the current PVC will be the default gateway to internet from this device.

Internet :: Dynamic Route

RIP (Routing Information protocol) Select this option to specify the RIP version, including **RIP-1**, **RIP-2M** and **RIP-2B**. RIP-2M and RIP-2B are both sent in RIP-2 format; the difference is that RIP-2M using Multicast and RIP-2 using Broadcast format.

RIP Direction Select this option to specify the RIP direction. **None** is for disabling the RIP function. **Both** means the ADSL Router will periodically send routing information and accept routing information then incorporate into routing table. **IN only** means the ADLS router will only accept but will not send RIP packet. **OUT only** means the ADLS router will only send but will not accept RIP packet.

Internet :: Multicast

IGMP (Internet Group Multicast Protocol) is a session-layer protocol used to establish membership in a multicast group. The ADSL ATU-R supports both IGMP version 1 (**IGMP-v1**) and **IGMP-v2**. Select **None** to disable it.

Internet :: MAC Spoofing

MAC Spoofing (Internet MAC Spoofing) is XXXX.

LAN settings

These are the IP settings of the LAN interface for the device. These settings may be referred to as Private settings. You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet.

LAN :: Dynamic Route

Please refer to **Internet::Dynamic Route**. The only difference is the interface.

LAN :: Multicast

Please refer to **Internet::Multicast**. The only difference is the interface.

LAN :: DHCP Server

DHCP stands for Dynamic Host Control Protocol. The DHCP Server gives out IP addresses when a device is booting up and request an IP address to be logged on to the network. That device must be set as a DHCP client to obtain the IP address automatically. By default, the DHCP Server is enabled. The DHCP address pool contains the range of the IP address that will automatically be assigned to the clients on the network.

Starting IP Address: The starting IP address for the DHCP server's IP assignment.

IP Pool Count: The max user pool size.

Lease Time: The length of time for the IP lease.

LAN :: DHCP Relay

A DHCP relay is a computer that forwards DHCP data between computers that request IP addresses and the DHCP server that assigns the addresses. Each of the device's interfaces can be configured as a DHCP relay. If it is enable, the DHCP requests from local PCs will forward to the DHCP server runs on WAN side. To have this function working properly, please run on router mode only, disable the DHCP server on the LAN port, and make sure the routing table has the correct routing entry.

DHCP Server IP for relay agent: The DHCP server IP Address runs on WAN side.

LAN :: DNS Server

The DNS Configuration allows the user to set the configuration of DNS

DNS Relay selection If user want to disable this feature, he just need to set both Primary and secondary DNS IP to 0.0.0.0.Using DNS relay, users can setup DNS server IP to 192.168.1.1 on their Computer. If not, device will perform as no DNS relay.

Wireless LAN settings

SSID: The SSID is a unique name to identify the ADSL Router in the wireless LAN. Wireless clients associating to the ADSL Router must have the same SSID.

Broadcast SSID: Select **No** to hide the SSID such that a station can not obtain the SSID through passive scanning. Select **Yes** to make the SSID visible so a station can obtain the SSID through passive scanning.

Channel ID: The range of radio frequencies used by IEEE 802.11b/g wireless devices is called a channel.

Wireless LAN :: WEP

WEP (Wired Equivalent Privacy) encrypts data frames before transmitting over the wireless network. Select **Disable** to allow all wireless computers to communicate with the access points without any data encryption. Select **64-bit WEP** or **128-bit WEP** to use data encryption.

Key#1~Key#4: The WEP keys are used to encrypt data. Both the ADSL Router and the wireless clients must use the same WEP key for data transmission.If you chose 64-bit WEP, then enter any 10 hexadecimal digits ("0-9", "A-F") preceded by 0x for each key (1-4). If you chose 128-bit WEP, then enter 26 hexadecimal digits ("0-9", "AF") preceded by 0x for each key (1-4).The values must be set up exactly the same on the Access Points as they are on the wireless client stations. The same value must be assigned to Key 1 on both the access point (your ADSL Router) and the client adapters, the same value must be assigned to Key 2 on both the access point and the client stations and so on, for all four WEP keys.

Wireless LAN :: WPA-PSK

Wi-Fi Protected Access, pre-shared key. Encrypts data frames before transmitting over the wireless network.

Pre-shared Key: The Pre-shared Key are used to encrypt data. Both the ADSL Router and the wireless clients must use the same WPA-PSK key for data transmission.

Wireless LAN :: Advanced setting

Beacon Interval: The Beacon Interval value indicates the frequency interval of the beacon. Enter a value between 20 and 1000. A beacon is a packet broadcast by the Router to synchronize the wireless network.

RTS Threshold: The RTS (Request To Send) threshold (number of bytes) for enabling RTS/CTS handshake. Data with its frame size larger than this value will perform the RTS/CTS handshake. Setting this attribute to be larger than the maximum MSDU (MAC service data unit) size turns off the RTS/CTS handshake. Setting this attribute to zero turns on the RTS/CTS handshake. Enter a value between 0 and 2432.

Fragment Threshold: The threshold (number of bytes) for the fragmentation boundary for directed messages. It is the maximum data fragment size that can be sent. Enter a value between 256 and 2432.

DTIM: This value, between 1 and 255, indicates the interval of the Delivery Traffic Indication Message (DTIM).

802.11b/g

Wireless LAN :: MAC Filter

You can allow or deny a list of MAC addresses associated with the wireless stations access to the ADSL Router.

Status: Use the drop down list box to enable or disable MAC address filtering.

Action: Select **Deny Association** to block access to the router, MAC addresses not listed will be allowed to access the router. Select **Allow Association** to permit access to the router, MAC addresses not listed will be denied access to the router.

3.8.3 Advanced Setup

Choose **Help > Advanced Setup**, the page shown in the following figure appears. This page that is displayed contains **Firewall, Routing, NAT, QoS** and **ADSL**.

Advanced Setup

Firewall

Select this option can automatically detect and block Denial of Service (DoS) attacks, such as Ping of Death, SYN Flood, Port Scan and Land Attack.

Routing

Select this Option will list the routing table information. You can also Add/Edit/Drop the static route.

Routing :: Static Route

Select this option to set static Routing information.

Destination IP Address: This parameter specifies the IP network address of the final destination.

IP Subnet Mask: Enter the subnet mask for this destination.

Gateway IP Address: Enter the IP address of the gateway. The gateway is an immediate neighbor of your ADSL Router that will forward the packet to the destination. On the LAN, the gateway must be a router on the same segment as your Router; over Internet (WAN), the gateway must be the IP address of one of the remote nodes.

Metric: Metric represents the "cost" of transmission for routing purposes. IP Routing uses hop count as the measurement of cost, with a minimum of 1 for directly connected networks. Enter a number that approximates the cost for this link. The number need not to be precise, but it must between 1 and 15. In practice, 2 or 3 is usually a good number.

Announced in RIP: This parameter determines if the ADSL router will include the route to this remote node in its RIP broadcasts. If set to Yes, the route to this remote node will be propagated to other hosts through RIP broadcasts. If No, this route is kept private and is not included in RIP broadcasts.

NAT

Select this option to setup the NAT (Network Address Translation) function for your ADSL router.

Virtual Circuit: Enter Virtual Circuit Index that you plan to setup for the NAT function

NAT Status: This field shows the current status of the NAT function for the current VC.

Number of IPs: This field is to specify how many IPs are provided by your ISP for current VC. It can be single IP or multiple IPs.

Note: for VCs with single IP, they share the same DMZ and Virtual servers; for VCs with multiple IPs, each VC can set DMZ and Virtual servers. Furthermore, for VCs with multiple IPs, they can define the Address Mapping rules; for VCs with single IP, since they have only one IP, there is no need to individually define the Address Mapping rule.

NAT :: DMZ

A DMZ (demilitarized zone) is a host between a private local network and the outside public network. It prevents outside users from getting direct access to a server that has company data. Users of the public network outside the company can access only the DMZ host.

DMZ Host IP Address: Enter the specified IP Address for DMZ host on the LAN side.

NAT :: Virtual Server

The Virtual Server is the server or server(s) behind NAT (on the LAN), for example, Web server or FTP server, that you can make visible to the outside world even though NAT makes your whole inside network appear as a single machine to the outside world.

Rule Index: The Virtual server rule index for this VC. You can specify 10 rules in maximum. All the VCs with single IP will use the same Virtual Server rules.

Start & End port number: Enter the specific Start and End Port number you want to forward. If it is one port only, you can enter the End port number the same as Start port number. For example, you want to set the FTP Virtual server, you can set the start and end port number to 21.

Local IP Address: Enter the IP Address for the Virtual Server in LAN side.

NAT :: IP Address Mapping

The IP Address Mapping is for those VCs that with multiple IPs. The IP Address Mapping rule is per-VC based. (only for Multiple IPs' VCs).

Rule Index: The Virtual server rule index for this VC. You can specify 10 rules in maximum. All the VCs with single IP will use the same Virtual Server rules.

Rule Type: There are four types of one-to-one, Many-to-One, Many-to-Many Overload and Many-to-Many No-overload.

Local Start & End IP: Enter the local IP Address you plan to mapped to. Local Start IP is the starting local IP address and Local End IP is the ending local IP address. If the rule is for all local IPs, then the Start IP is 0.0.0.0 and the End IP is 255.255.255.255.

Public Start & End IP: Enter the public IP Address you want to do NAT. Public Start IP is the starting public IP address and Public End IP is the ending public IP address. If you have a dynamic IP, enter 0.0.0.0 as the Public Start IP.

QoS

QoS (Quality of Service)

This option will provide better service of selected network traffic over various technologies.

QoS::802.1p

Select this option to Activate/Deactivated the 802.1p IEEE 802.1p establishes eight levels of priority(0 ~ 7). Although network managers must determine actual mappings, IEEE has made broad recommendations. Seven is the highest priority which is usually assigned to network-critical traffic such as Routing Information Protocol (RIP) and Open Shortest Path First (OSPF) table updates. Five and six are often for delay-sensitive applications such as interactive video and voice. Data classes four through one range from controlled-load applications such as streaming multimedia and business-critical traffic - carrying SAP data, for instance - down to "loss eligible" traffic. Zero is used as a best-effort default priority, invoked automatically when no other value has been set.

QoS::IP QoS

Select this option to Activated/Deactivated the IP QoS on different types(IP ToS and DiffServ). IP QoS function is intended to deliver guaranteed as well as

differentiated Internet services by giving network resource and usage control to the Network operator.

QoS::Applications QoS

Select this option to Activated/Deactivated the different application packets prioritized on the queues.

QoS::VLAN Group QoS

Select this option to Activated/Deactivated the 4094 VID on the 4 different queues. VID(VLAN ID) is the identification of the VLAN, which is basically used by the standard 802.1Q. It has 12 bits and allow the identification of 4096 (2^{12}) VLANs. Of the 4096 possible VIDs, a VID of 0 is used to identify priority frames and value 4095 (FFF) is reserved, so the maximum possible VLAN configurations are 4,094.

VLAN

Virtual LAN (VLAN) is a group of devices on one or more LANs that are configured 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. Because VLANs are based on logical instead of physical connections, it is very flexible for user/host management, bandwidth allocation and resource optimization.

1. Port-Based VLAN: each physical switch port is configured with an access list specifying membership in a set of VLANs.
2. ATM VLAN - using LAN Emulation (LANE) protocol to map Ethernet packets into ATM cells and deliver them to their destination by converting an Ethernet MAC address into an ATM address.

The key for the IEEE 802.1Q to perform the above functions is in its tags. 802.1Q-compliant switch ports can be configured to transmit tagged or untagged frames. A tag field containing VLAN (and/or 802.1p priority) information can be inserted into an Ethernet frame. If a port has an 802.1Q-compliant device attached (such as another switch), these tagged frames can carry VLAN membership information between switches, thus letting a VLAN span multiple switches. However, it is important to ensure ports with non-802.1Q-compliant

devices attached are configured to transmit untagged frames. Many NICs for PCs and printers are not 802.1Q-compliant. If they receive a tagged frame, they will not understand the VLAN tag and will drop the frame. Also, the maximum legal Ethernet frame size for tagged frames was increased in 802.1Q (and its companion, 802.3ac) from 1,518 to 1,522 bytes. This could cause network interface cards and older switches to drop tagged frames as "oversized."

PVID(Port VLAN ID)

Each physical port has a default VID called PVID (Port VID). PVID is assigned to untagged frames or priority tagged frames (frames with null (0) VID) received on this port.

ADSL

The ADSL feature can be selected when you meet the physical connection problem. Please check the proper settings with your Internet service provider.

ADSL Mode

Select the ADSL operation mode which your ADSL connection uses.

ADSL Type

Select the ADSL operation type which your ADSL connection uses.

3.8.4 Access Management

Choose **Help > Access Management**, the page shown in the following figure appears. This page that is displayed contains **ACL**, **IP Filter**, **SNMP**, **UPNP** and **DDNS**.

Access Management

ACL

You may use telnet or Web to remotely manage the ADSL Router. User just needs to enable Telnet or Web and give it an IP address that want to access the ADSL Router. The default IP 0.0.0.0 allows any client to use this service to remotely manage the ADSL Router.

IP Filter

Select Telnet, FTP, TFTP, Web, SNMP, Ping to block incoming WAN requests for the corresponding service(s).

SNMP

Simple Network Management Protocol is used for exchanging information between network devices.

Get Community: Select to set the password for the incoming Get requests from the management station.

Set Community: Select to set the password for incoming Set requests from the management station.

UPnP

UPnP (Universal Plug and Play) is a distributed, open networking standard that uses TCP/IP for simple peer-to-peer network connectivity between devices. A UPnP device can dynamically join a network, obtain an IP address, convey its capabilities and learn about other devices on the network. In turn, a device can leave a network smoothly and automatically when it is no longer in use. UPnP broadcasts are only allowed on the LAN.

Auto-Configure: UPnP network devices can automatically configure network addressing, announce their presence in the network to other UPnP devices and enable exchange of simple product and service descriptions.

DDNS

The Dynamic Domain Name System lets you use a static host name with a dynamic IP address. User should type the host name, user name and password assigned to your ADSL Router by your Dynamic DNS provider. User also can decide to turn on DYNDNS Wildcard or not.

3.8.5 Maintenance

Choose **Help > Maintenance**, the page shown in the following figure appears. This page that is displayed contains **Administration**, **Time Zone**, **Firmware**, **SysRestart** and **Diagnostics**.

Maintenance

Administration

There is only one account that can access Web-Management interface. It is admin. Admin has read/write access privilege. In this web page, you can set new password for admin.

Time Zone

The system time is the time used by the device for scheduling services. You can manually set the time or connect to a NTP (Network Time Protocol) server. If a NTP server is set, you will only need to set the time zone. If you manually set the time, you may also set Daylight Saving dates and the system time will automatically adjust on those dates.

Firmware

You can upgrade the firmware of the Router in this page. Make sure the firmware you want to use is on the local hard drive of the computer. Click on Browse to browse the local hard drive and locate the firmware to be used for upgrade.

SysRestart

User can restart the device with current settings or factory default settings.

Diagnostics

The Diagnostic Test page shows the test results for the connectivity of the physical layer and protocol layer for both LAN and WAN sides.

3.8.6 Status

Choose **Help > Status**, the page shown in the following figure appears. This page that is displayed contains **Device Info**, **System Log** and **Statistics**.

A screenshot of the Status page header, showing the word "Status" in white text on an orange background bar.

Device Info

This page displays the current information for the ADSL Router. It will display the Firmware version, LAN, WAN and MAC address information.

System Log

The ADSL Router keeps a running log of events and activities occurring on the Router. If the device is rebooted, the logs are automatically cleared.

Statistics

The ADSL Router keeps statistic of traffic that passes through it. You are able to view the amount of packets that pass through the Router on both the WAN port and the LAN port. The traffic counter will reset if the device is rebooted. You can select Ethernet/ADSL to view the statistics report of LAN/WAN.

Statistics :: ADSL

Line State: This field displays the ADSL connection process and status.

Modulation: This field displays the ADSL modulation status for G.dmt or T1.413.

Annex Mode: This field displays the ADSL annex modes for Annex A or Annex B.

Max Tx Power: This field displays the transmit output power level of the ADSL Router.

SNR Margin: Amount of increased noise that can be tolerated while maintaining the designed BER (bit error rate). The SNR Margin is set by Central Office DSLAM. If the SNR Margin is increased, bit error rate performance will improve, but the data rate will decrease. Conversely, if the SNR Margin is decreased, bit error rate performance will decrease, but the data rate will increase.

Line Attenuation: Attenuation is the decrease in magnitude of the ADSL line signal between the transmitter (Central Office DSLAM) and the receiver (Client ADSL Modem), measured in dB. It is measured by calculating the difference in dB between the signal power level received at the Client ADSL Router and the reference signal power level transmitted from the Central Office DSLAM.

Data Rate: This field displays the ADSL data rate.