MSW300Np4 ADSL2+ Modem Router
User Manual

4-PORT ADSL2+ MODEM ROUTER w/Realtek rtl8676chipset

NOTICE

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Introduction

The MSW300N51P4 is an ADSL2+ access device that supports multiple line modes. The device provides high-speed ADSL2+ broadband connection to the Internet or Intranet for high-end users. downlink up to 24 Mbps and uplink up to 1 Mbps.
The device supports WLAN access. It can connect to the Internet through a WLAN AP or WLAN device. It complies with IEEE 802.11, 802.11b/g/n specifications, WEP, WPA, and WPA2 security specifications.

Packing List

- 1 x MSW300Np4
- 1 x external splitter
- 1 x power adapter
- 1 x telephone cables (RJ11)
- 1 x Ethernet cable (RJ45)

Safety Precautions

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

- Use the power adapter packed within 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 over damp or watery. Do not spill any fluid on this device.
- Do not connect this device to any external power source because any wrong connection may cause power or fire risk.
- Do not place this device on an unstable surface or support.

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 98SE, Windows 2000, Windows ME, Windows XP
- Internet Explorer V8.0 or higher or Netscape / Firefox equivalent
- Subscription for ADSL service. Your ADSL service provider should provide you with at least one valid IP address (static assignment or dynamic).
- One or more computers, each containing an Ethernet 10/100M Base-T network interface card (NIC).
- A hub or switch, if you are connecting the device to more than one (1) computer.

Features

The device supports the following features:

- Various line modes
- External PPPoE dial-up access
- Internal PPPoE/PPPoA dial-up access
- 1483Briged/1483Routed/MER/IPoA access
- Multiple PVCs (up to eight) and these PVCs can be isolated from each other
- A single PVC with multiple sessions
- Multiple PVCs with multiple sessions
- 802.1Q and 802.1P protocol
- DHCP server
- NAPT
- Static route
- Firmware upgrading through Web, TFTP, or FTP
- Resetting to the factory defaults through Reset button or Web
- DNS
- Virtual server
- DMZ
- Two-level passwords and usernames
- Web interface
- Telnet CLI
- System status display
- PPP session PAP/CHAP
- IP filter
- IP quality of service (QoS)
- Remote access control
- Line connection status test
- Remote managing through Telnet or HTTP
- Backup and restoration of configuration file
- Ethernet interface supporting crossover detection, auto-correction, and polarity correction
- Universal plug and play (UPnP)

Operating Systems

- All versions of Windows, Mac and Linux

ATM Capabilities

- All ATM Connection
- VPI Range: 0-255
- VCI Range: 32-65535
- AESA (E.164, DCC, ICD)
- PVC Support, UNI 3.0 & 3.1 Signaling
- Support AAL 5

Management Support

- Web Based GUI 192.168.1.1
- Upgrade or update via FTP/HTTP
- Command Line Interface via Telnet
- Diagnostic Test
- Firmware upgradeable

Factory Defaults

- IP Address: 192.168.1.1
- Subnet Mask: 255.255.255.0
- Encapsulation: RFC 1483 LLC
- VPI/VCI: 0/35 MER Bridge mode

Environmental

- Operating humidity: 10%-90% non-condensing
- Non-operating storage humidity: 5%-95% non-condensing

Front Panel

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.

LED	Color	Function
PWR	Green	On: Power Off: No power or system boot failed
DSL	Green	On: ADSL link established and active Blinking: ADSL is trying to establish a connection Off: No ADSL link
ACT	Green	Blinking: ADSL data activity occurs. Off: No ADSL data is being sent or received.
LAN	Green	On: LAN link established and active Blinking: ADSL data activity occurs. Off: No LAN link.

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).

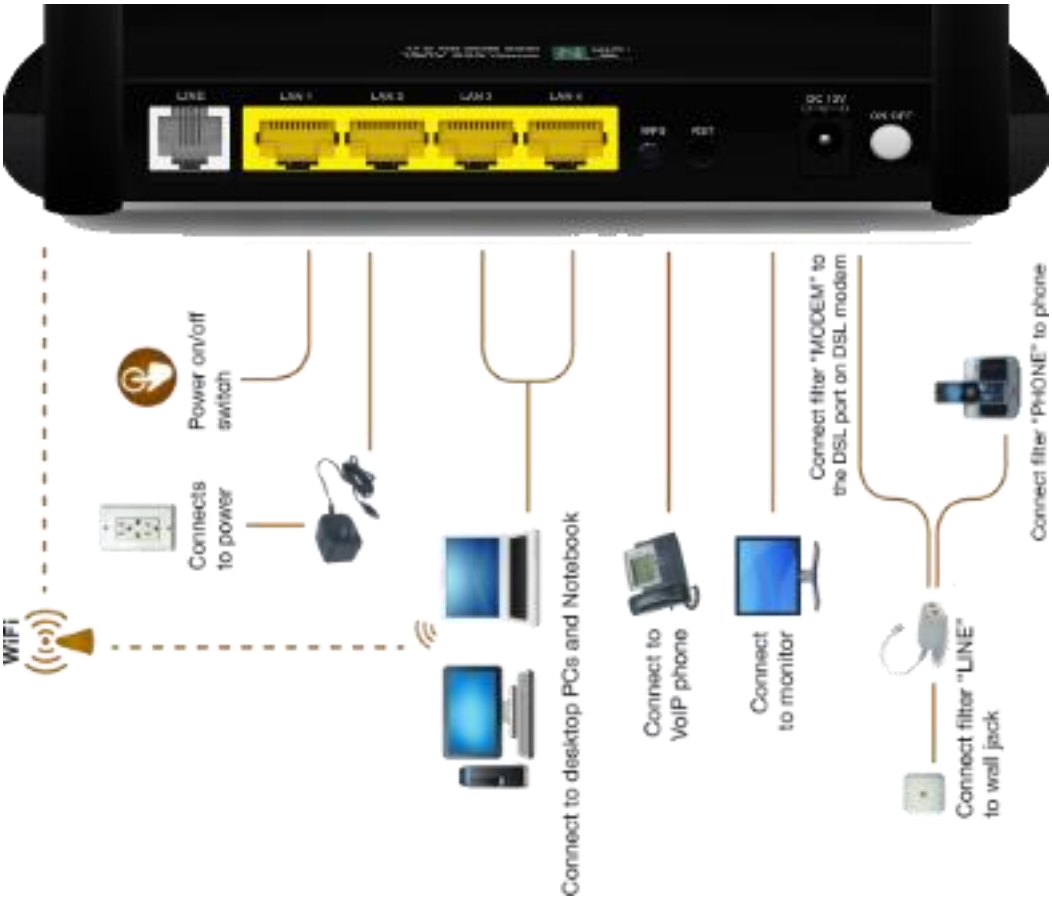
Note:

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.

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.

Port	Function
DSL	Connects the device to an ADSL telephone jack or splitter using a RJ-11 telephone cable
LAN	Connects the device to your PC's Ethernet port, or to the uplink port on your hub/switch, using a RJ-45 cable
Reset	System reset or reset to factory defaults.
POWER	Connects to the supplied power adapter
⏻	Switches the unit on and off



Note: Without the splitter, transient noise from the telephone can interfere with the operation of the ADSL router. As a result, the ADSL router may introduce noise to the telephone line. To prevent this from happening, a small external splitter must be connected to each telephone.

Web Configuration

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

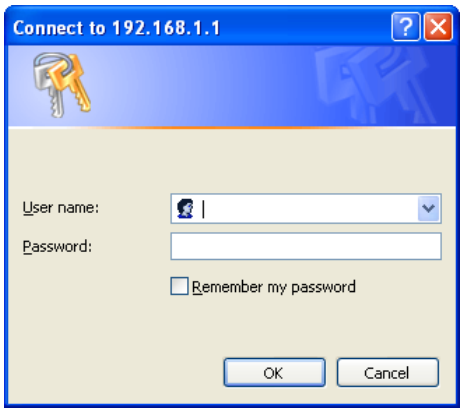
Access the Router

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

Step 4 Open the Internet Explorer (IE) browser and enter **http://192.168.1.1**.

Step 5 In the **Login** page that is displayed, enter the username and password.

- The username and password of the super user are **admin** and **admin**.
- The username and password of the common user are **user** and **user**.



If you log in as a super user, the page shown in the following figure appears. You can check, configure and modify all the settings.

If you log in as a common user, you can check the status of the router, but can not configure the most of the settings.

Note:

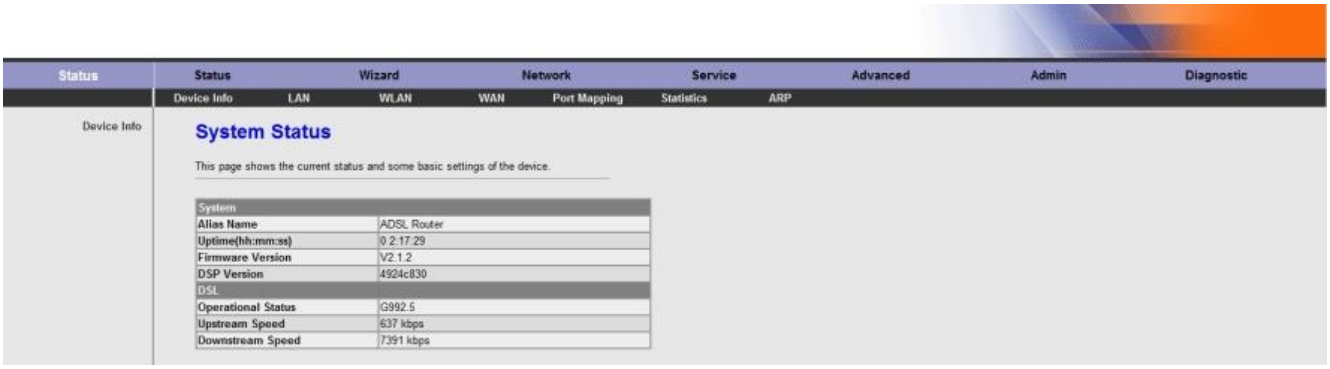
In the Web configuration page, you can click **Apply Changes** to save the settings temporarily. If you want to save the settings of this page permanently, click **save** of **Attention** that appears at the bottom of the Web page after the configuration.

Status

In the navigation bar, choose **Status**. In the **Status** page that is displayed contains: **System, LAN, WLAN, WAN, Port Mapping, Statistics and ARP Table.**

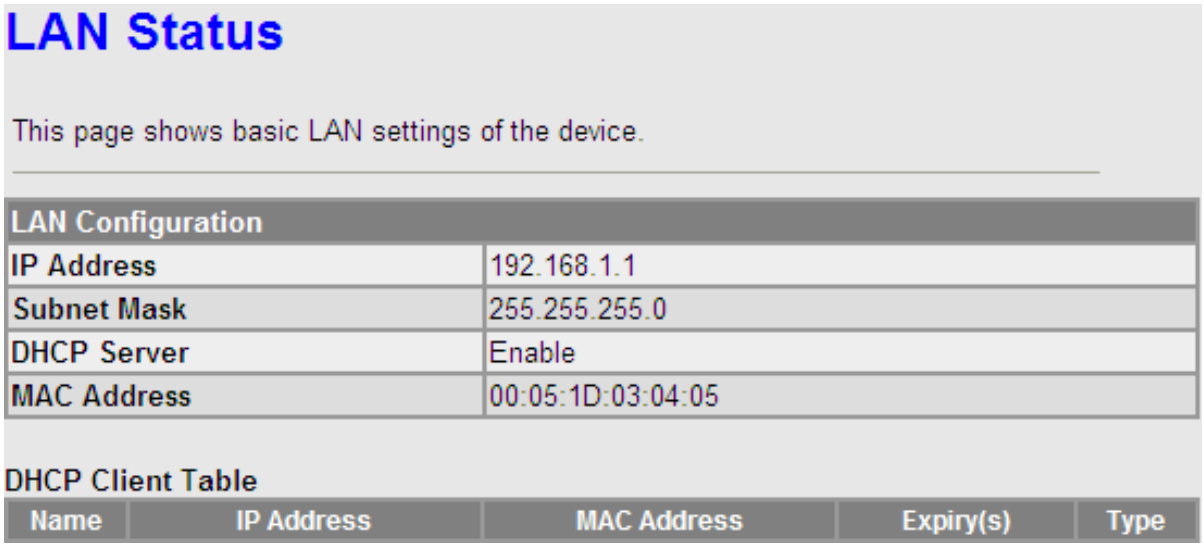
System

Choose **Status** > **System**. The page that is displayed shows the current status and some basic settings of the router, such as *software version*, *DSP version*, *uptime*, *upstream speed* and *downstream speed*.



LAN

Choose **Status** > **LAN**. The page that is displayed shows some basic LAN settings of the router. In this page, you can view the LAN IP address, DHCP server status, MAC address and DHCP client table. If you want to configure the LAN network, refer to chapter 0 LAN IP.



WLAN

Choose **Status** > **WLAN**. The page that is displayed shows some basic settings of wireless LAN (WLAN).

WLAN Status

This page shows some basic settings of wireless LAN (WLAN).

Wireless Configuration	
Wireless	Enabled
Band	2.4 GHz (B+G+N)
Mode	AP
Broadcast	Enabled
Root	
Status	Enabled
SSID	DCOMTECH
Authentication Mode	Auto
Encryption Mode	WPA2 Mixed
VAP0	
Status	Disabled
VAP1	
Status	Disabled
VAP2	
Status	Disabled
VAP3	
Status	Disabled

Wireless Client List					
MAC Address	Tx Packet	Rx Packet	Tx Rate (Mbps)	Power Saving	Expired Time (s)
7c:e9:d3:ef:3e:73	153607	137215	150	no	300

Current Access Control List	
Mode	Disabled

WAN

Choose **Status** > **WAN**. The page that is displayed shows some basic WAN settings of the router. In this page, you can view basic status of WAN and DNS server. If you want to configure the WAN network, refer to chapter 0 WAN.

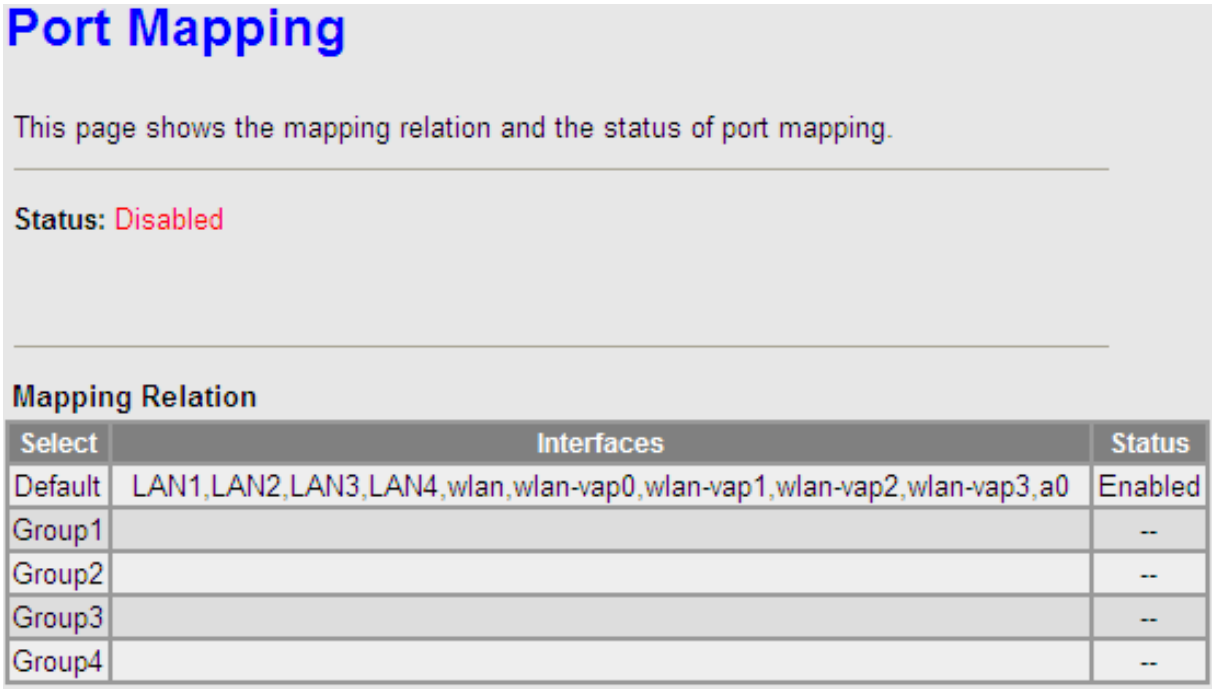
WAN Status

This page shows some basic WAN settings.

Interface	VPI/VCI	Encapsulation	Default Route	Protocol	IP Address	Gateway	Status
a0	8/35	LLC	Off	br1483	0.0.0.0	0.0.0.0	down
DNS Servers							

Port Mapping

Choose **Status** > **Port Mapping**. In this page, you can view the mapping relation and the status of port mapping.



Port Mapping

This page shows the mapping relation and the status of port mapping.

Status: Disabled

Mapping Relation

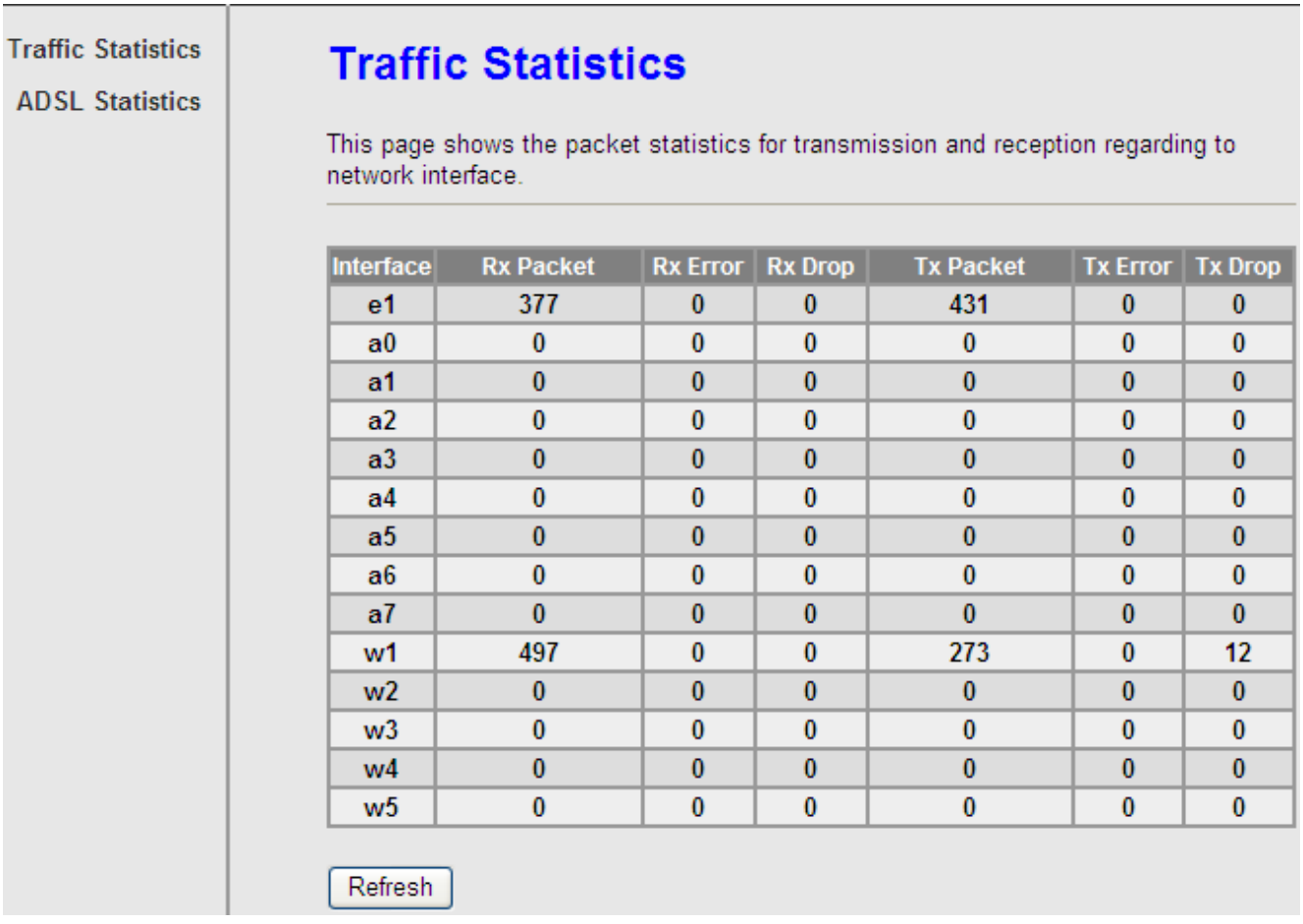
Select	Interfaces	Status
Default	LAN1,LAN2,LAN3,LAN4,wlan,wlan-vap0,wlan-vap1,wlan-vap2,wlan-vap3,a0	Enabled
Group1		--
Group2		--
Group3		--
Group4		--

Statistics

Choose **Status** > **Statistics.** The **Statistics** page that is displayed contains **Traffic Statistic** and **ADSL Statistic**.

Traffic Statistic

Click **Traffic Statistic** in the left pane. The page shown in the following figure appears. In this page, you can view the statistics of each network port.



Traffic Statistics

ADSL Statistics

Traffic Statistics

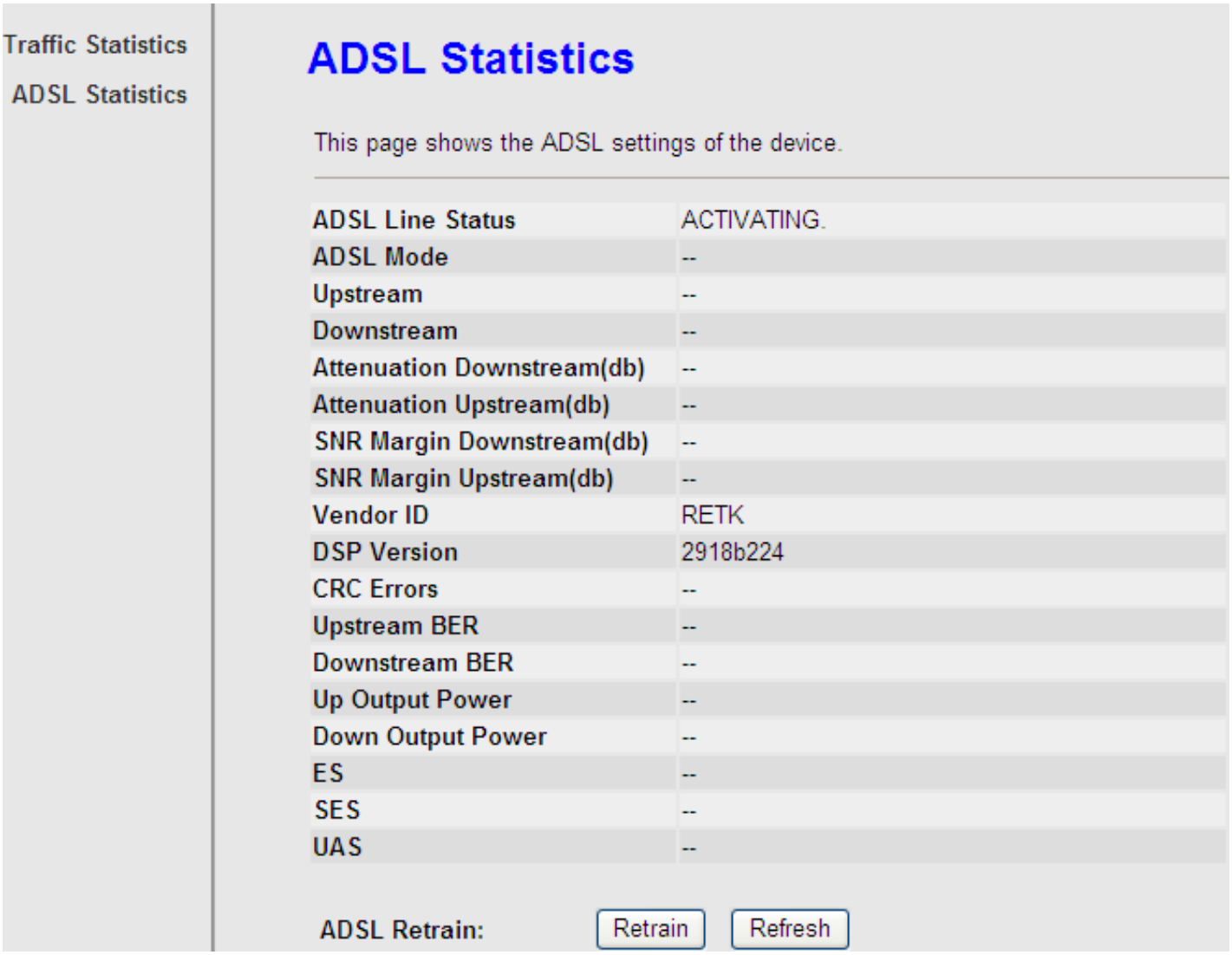
This page shows the packet statistics for transmission and reception regarding to network interface.

Interface	Rx Packet	Rx Error	Rx Drop	Tx Packet	Tx Error	Tx Drop
e1	377	0	0	431	0	0
a0	0	0	0	0	0	0
a1	0	0	0	0	0	0
a2	0	0	0	0	0	0
a3	0	0	0	0	0	0
a4	0	0	0	0	0	0
a5	0	0	0	0	0	0
a6	0	0	0	0	0	0
a7	0	0	0	0	0	0
w1	497	0	0	273	0	12
w2	0	0	0	0	0	0
w3	0	0	0	0	0	0
w4	0	0	0	0	0	0
w5	0	0	0	0	0	0

Refresh

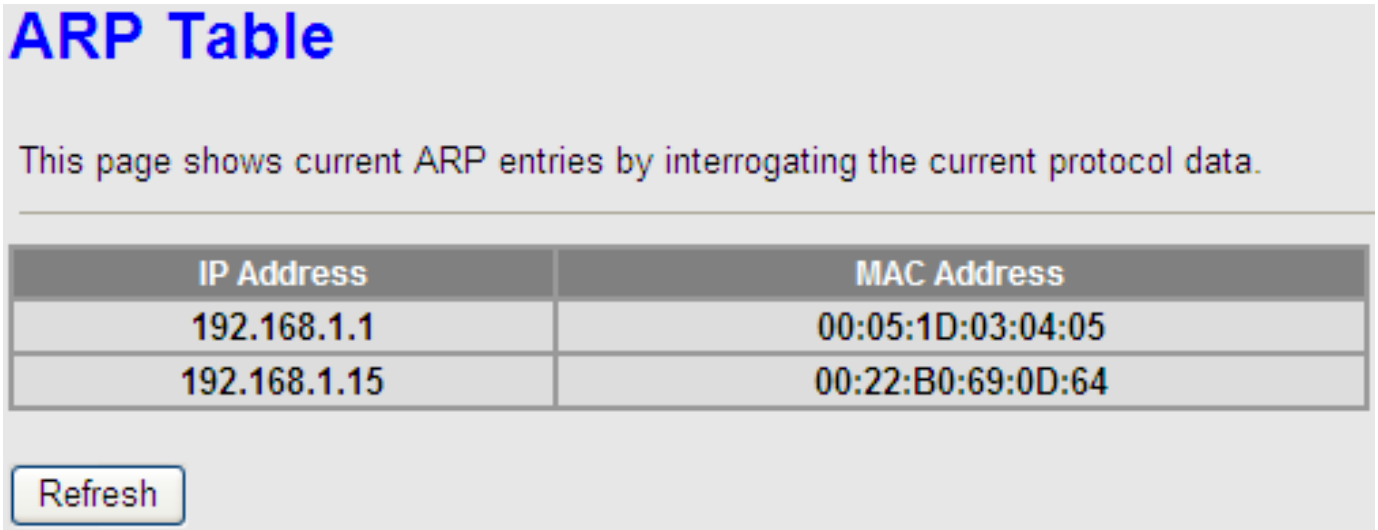
ADSL Statistic

Click **ADSL Statistic** in the left pane. The page shown in the following figure appears. In this page, you can view the ADSL line status, upstream rate, downstream rate and other information.



ARP Table

Choose **Status** > **ARP Table.** In the **ARP Table** page, you can view the table that shows a list of learned MAC addresses.

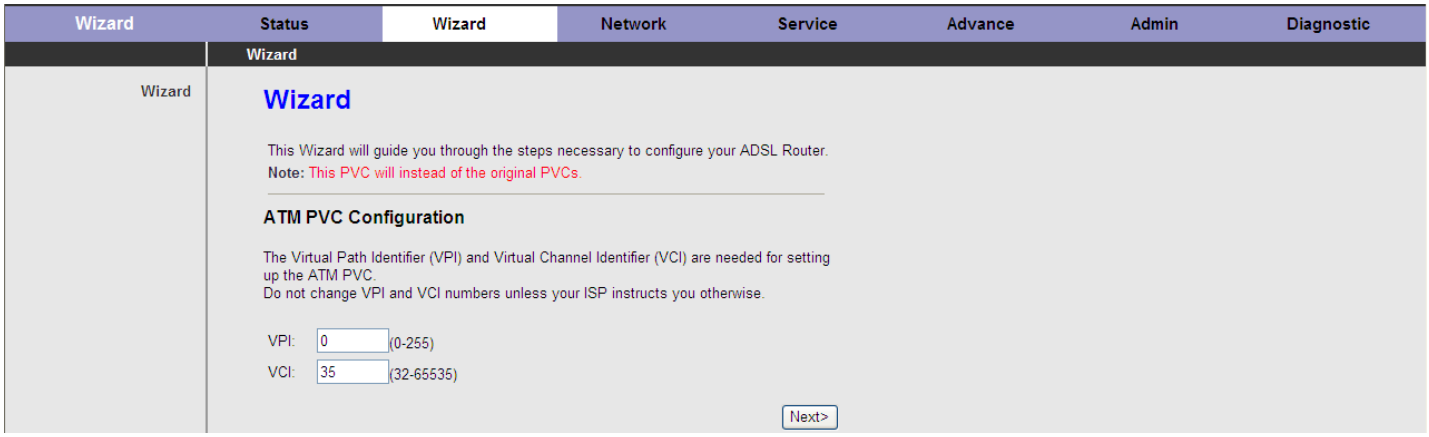


Wizard

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. The technical information about the properties of your Internet connection is provided by your Internet Service Provider (ISP). For example, your ISP should inform you whether you are connected to the Internet using a static or dynamic IP address, and the protocol that you use to communicate on the Internet.

The **Wizard** page guides fast and accurate configuration of the Internet connection and other important parameters. 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.

In the navigation bar, choose **Wizard**. The page shown in the following figure appears.



The following table describes the parameters in this page:

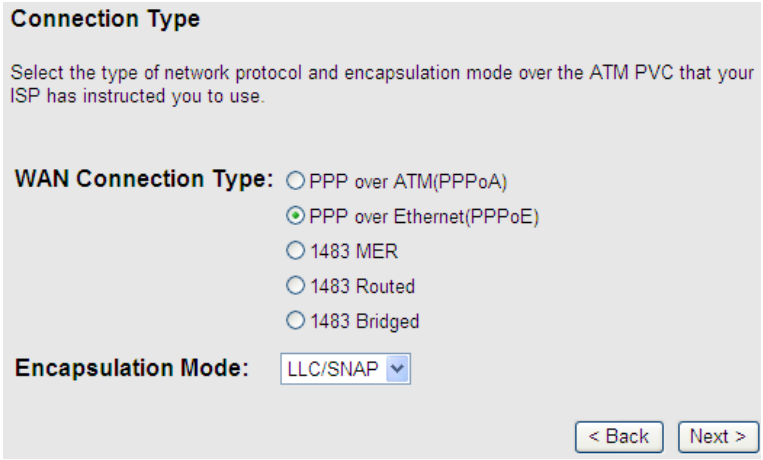
Field	Description
VPI	Virtual path identifier (VPI) is the virtual path between two points in an ATM network. Its valid value is in the range of 0 to 255. Enter the correct VPI provided by your ISP. By default, VPI is set to **0**.
VCI	Virtual channel identifier (VCI) is the virtual channel between two points in an ATM network. Its valid value is in the range of 32 to 65535. (0 to 31 is reserved for local management of ATM traffic) Enter the correct VCI provided by your ISP. By default, VCI is set to **35**.

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

There are five WAN connection types: **PPP over ATM (PPPoA)**, **PPP over Ethernet (PPPoE)**, **1483 MER**, **1483 Routed** and **1483 Bridged**. The following describes them respectively.

PPPoE/PPPoA

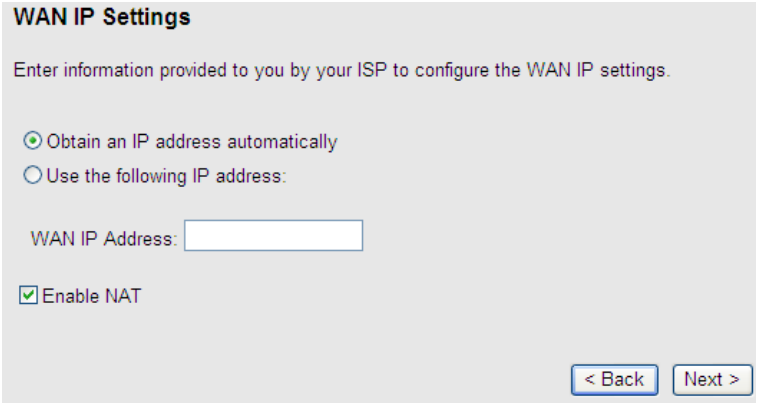
In the **Connection Type** page, set the WAN connection type to **PPP over Ethernet (PPPoE)**, the encapsulation mode to **LLC/SNAP**.



The following table describes the parameters in this page:

Field	Description
WAN Connection Type	There are five WAN connection types: **PPP over ATM (PPPoA)**, **PPP over Ethernet (PPPoE)**, **1483 MER**, **1483 Routed**, and **1483 Bridged**. In this example, the connection type is set to **PPPoE**.
Encapsulation Mode	You can select **LLC/SNAP** or **VC-Mux**. In this example, the encapsulation mode is set to **LLC/SNAP**.

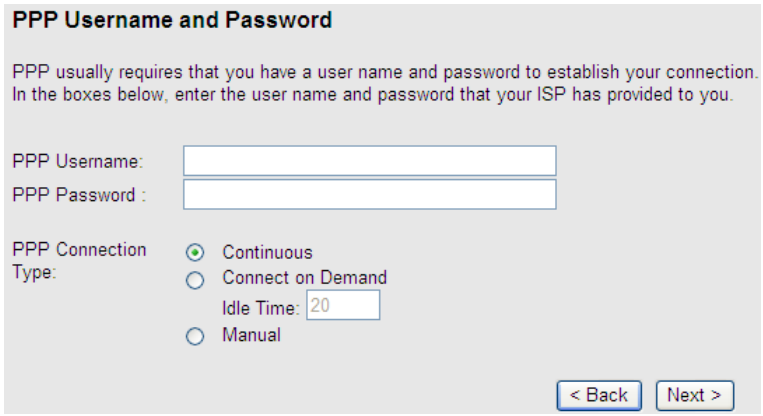
After setting, click **Next**, the page as shown in the following figure appears.



The following table describes the parameters in this page:

Field	Description
Obtain an IP address automatically	Select it, the DHCP assigns the IP address for PPPoE connection.
Use the following IP address	Select it, you need to enter the IP address for PPPoE connection, which is provided by your ISP.
Enable NAT	Select the checkbox to enable network address translation (NAT). 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 required to enable NAT.

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

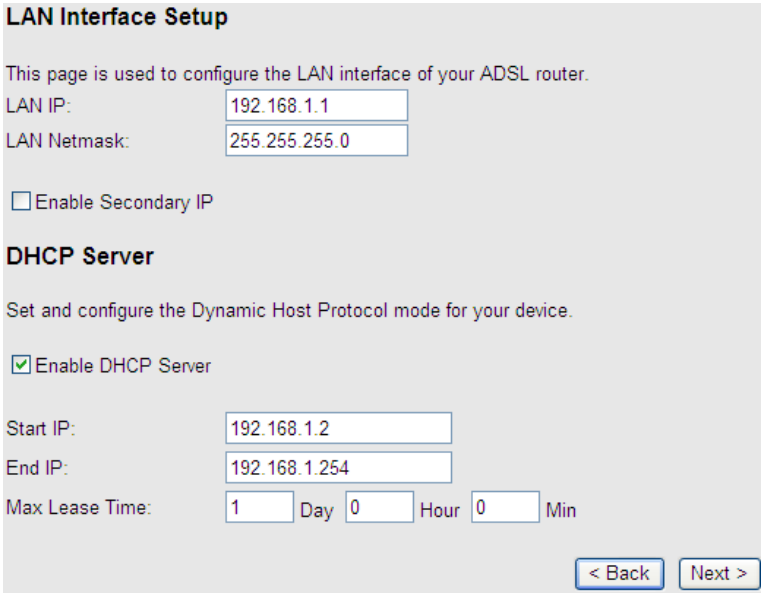


The following table describes the parameters in this page:

Field	Description
PPP Username	Enter the username for PPPoE dial-up, which is provided by your ISP.
PPP Password	Enter the password for PPPoE dial-up, which is provided by your ISP.
PPP Connection Type	You can select **Continuous**, **Connect on Demand**, or **Manual**.

Field	Description
	● **Continuous:** After dial-up is successful, PPPoE connection is always on-line, no matter whether the data is being transmitted or not. It is recommended to select it. ● **Connect on Demand:** After dial-up is successful, within the preset idle time, no data is being transmitted, the router automatically disconnects the PPPoE connection. In this case, you need to enter the idle time. ● **Manual:** Select it, you need to dial up and disconnect the connection mannually.

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

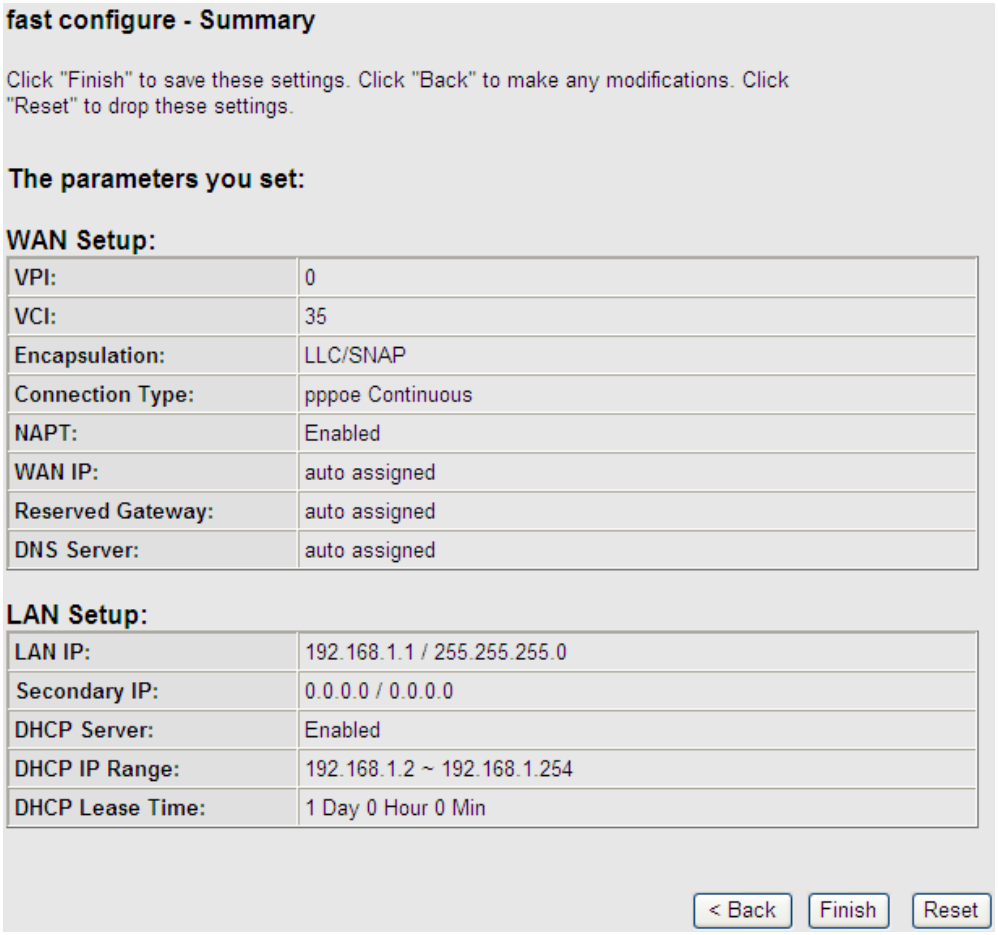


The following table describes the parameters in this page:

Field	Description
LAN Interface Setup	
LAN IP	Enter the IP address of LAN interface. Its valid value is in the range of 192.168.1.1 to 192.168.255.254. The default IP address is **192.168.1.1**.
LAN Netmask	Enter the subnet mask of LAN interface. Its valid value is in the range of 255.255.0.0 to 255.255.255.254.
Enable Secondary IP	Select the checkbox to enable the secondary LAN IP. The two LAN IP addresses must be in the different network.
DHCP Server	
Enable DHCP Server	Select the checkbox to enable DHCP server.
Start IP	Enter the start IP address that the DHCP sever assigns.
End IP	Enter the end IP address that the DHCP server assigns.
Max Lease Time	The lease time determines the period that the PCs retain the assigned IP addresses before the IP addresses change.
LAN Interface Setup	
LAN IP	Enter the IP address of LAN interface. Its valid value is in the range of 192.168.1.1 to 192.168.255.254. The default IP address is **192.168.1.1**.
LAN Netmask	Enter the subnet mask of LAN interface. Its valid value is in the range of 255.255.0.0 to 255.255.255.254.

Field	Description
Enable Secondary IP	Select the checkbox to enable the secondary LAN IP. The two LAN IP addresses must be in the different network.
DHCP Server	
Enable DHCP Server	Select the checkbox to enable DHCP server.
Start IP	Enter the start IP address that the DHCP sever assigns.

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



Click **BACK** to modify the settings.

Click **FINISH** to save the settings.

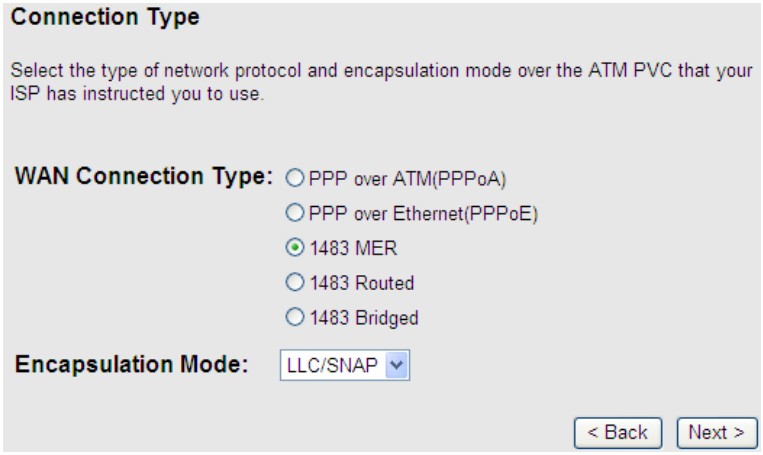
Click **RESET** to cancel the settings.

Note:

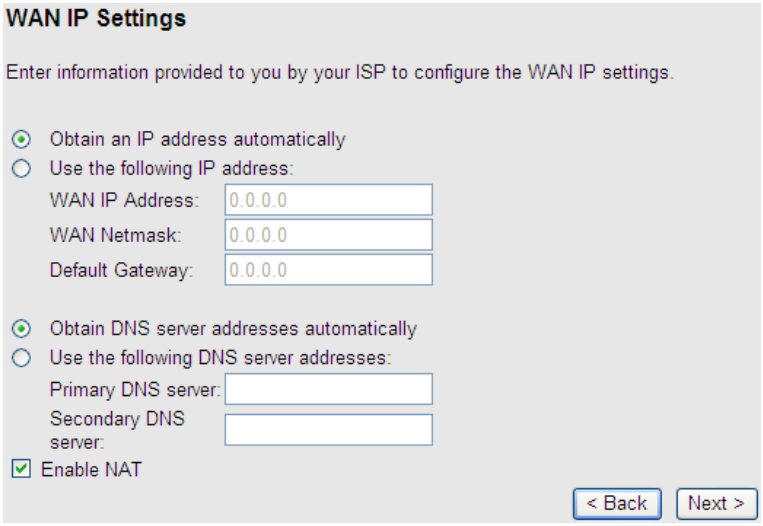
If the WAN connection type is set to **PPPoA**, the parameters of the WAN connection type are the same as that of **PPPoE**. For the parameters in these pages, refer to the parameter description of **PPPoE**.

1483 MER/1483 Routed

In the **Connection Type** page, set the WAN connection type to **1483 MER**, the encapsulation mode to **LLC/SNAP**.



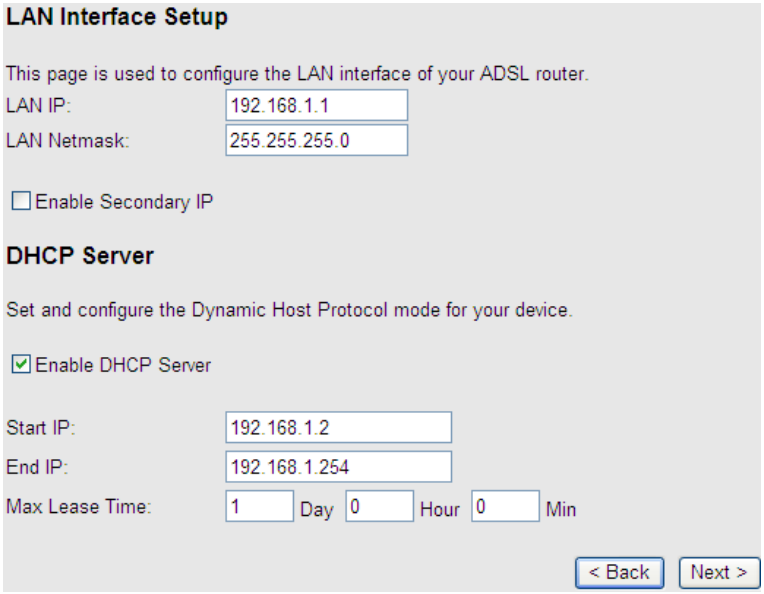
After setting, click **Next**, the page as shown in the following figure appears.



The following table describes the parameters in this page:

Field	Description
Obtain an IP address automatically	Select it, DHCP automatically assigns the IP address for WAN connection.
Use the following IP address	Select it, you need to manually enter the IP address, subnet mask, and default gateway for WAN connection, which are provided by your ISP.
Obtain DNS server addresses automatically	Select it, DHCP automatically assigns DNS server address.
Use the following DNS server addresses	Select it, you need to manually enter the primary DNS server address and secondary DNS server address.
Enable NAT	Select it to enable network address translation (NAT). 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 required to enable NAT.
Enable NAT	Select it to enable network address translation (NAT). 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 required to enable NAT.

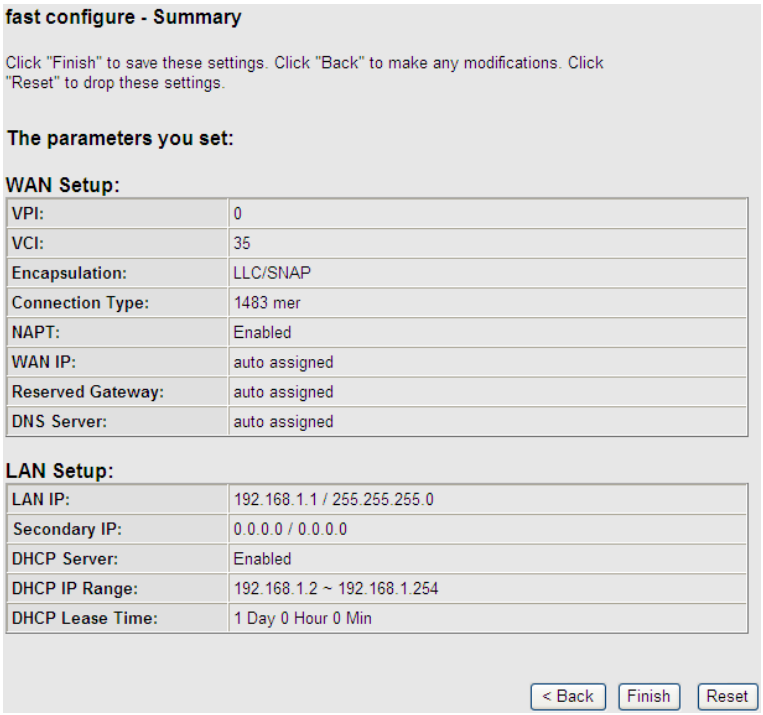
After setting, click **Next**, the page as shown in the following figure appears.



The following table describes the parameters in this page:

Field	Description
LAN Interface Setup	
LAN IP	Enter the IP address of LAN interface. Its valid value is in the range of 192.168.1.1 to 192.168.255.254. The default IP address is **192.168.1.1**.
LAN Netmask	Enter the subnet mask of LAN interface. Its valid value is in the range of 255.255.0.0 to 255.255.255.254.
Enable Secondary IP	Select the checkbox to enable the secondary LAN IP. The two LAN IP addresses must be in the different network.
DHCP Server	
Enable DHCP Server	Select the checkbox to enable DHCP server.
Start IP	Enter the start IP address that the DHCP sever assigns.
End IP	Enter the end IP address that the DHCP server assigns.
Max Lease Time	The lease time determines the period that the PCs retain the assigned IP addresses before the IP addresses change.

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



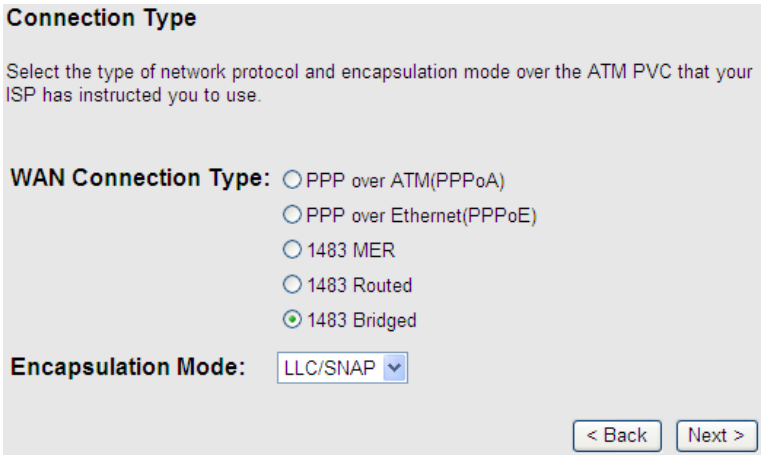
Click **BACK** to modify the settings.
Click **FINISH** to save the settings.
Click **RESET** to cancel the settings.

Note:

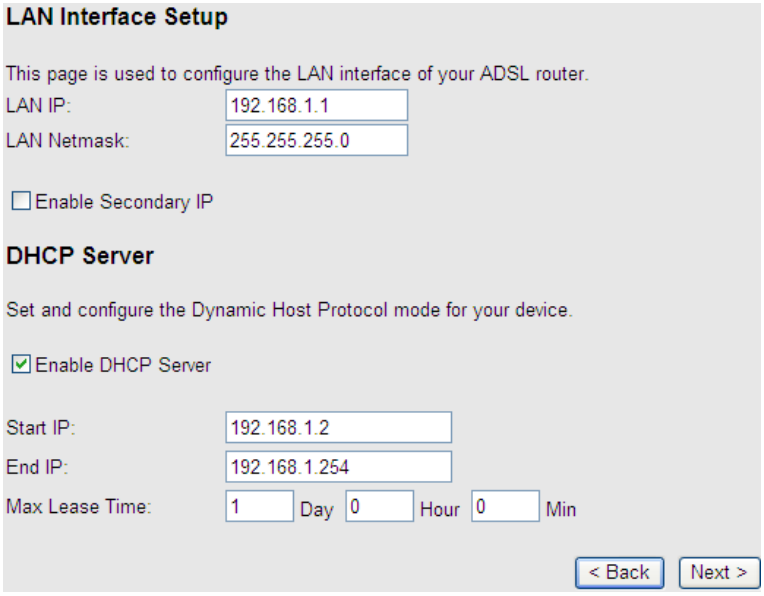
If the WAN connection type is set to **1483 Routed**, the parameters of the WAN connection type are the same as that of **1483 MER**. For the parameters in these pages, refer to the parameter description of **1483 MER**.

1483 Bridged

In the **Connection Type** page, set the WAN connection type to **1483 Bridged**, the encapsulation mode to **LLC/SNAP**.



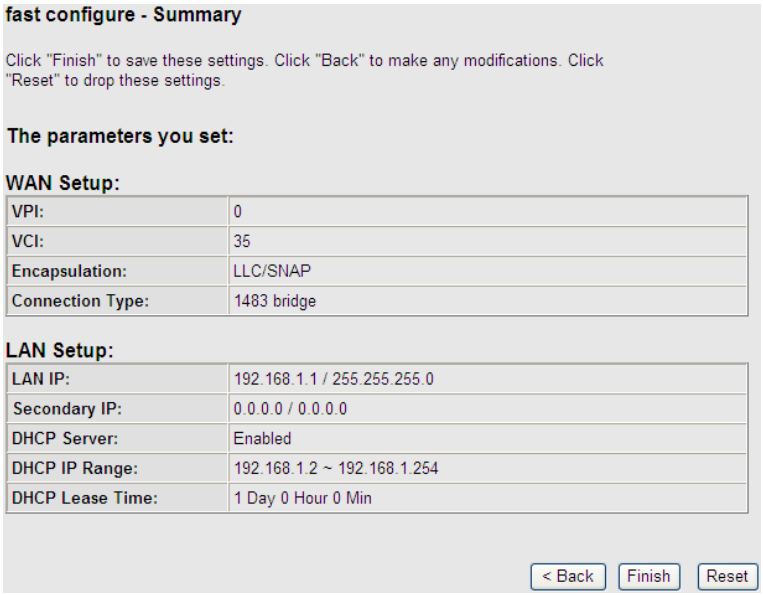
After setting, click **Next**, the page as shown in the following figure appears.



The following table describes the parameters in this page:

Field	Description
LAN Interface Setup	
LAN IP	Enter the IP address of LAN interface. Its valid value is in the range of 192.168.1.1 to 192.168.255.254. The default IP address is **192.168.1.1**.
LAN Netmask	Enter the subnet mask of LAN interface. Its valid value is in the range of 255.255.0.0 to 255.255.255.254.
Enable Secondary IP	Select the checkbox to enable the secondary LAN IP. The two LAN IP addresses must be in the different network.
DHCP Server	
Enable DHCP Server	Select the checkbox to enable DHCP server.
Start IP	Enter the start IP address that the DHCP sever assigns.
End IP	Enter the end IP address that the DHCP server assigns.
Max Lease Time	The lease time determines the period that the PCs retain the assigned IP addresses before the IP addresses change.

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



Click **BACK** to modify the settings.
Click **FINISH** to save the settings.
Click **RESET** to cancel the settings.

Note:

After you saving the settings in the **Wizard** page, the PVC in the **Wizard** page replaces that in the **Channel Configuration** page. The preset PVCs in the **Channel Configuration** page do not take effect any more.

Network

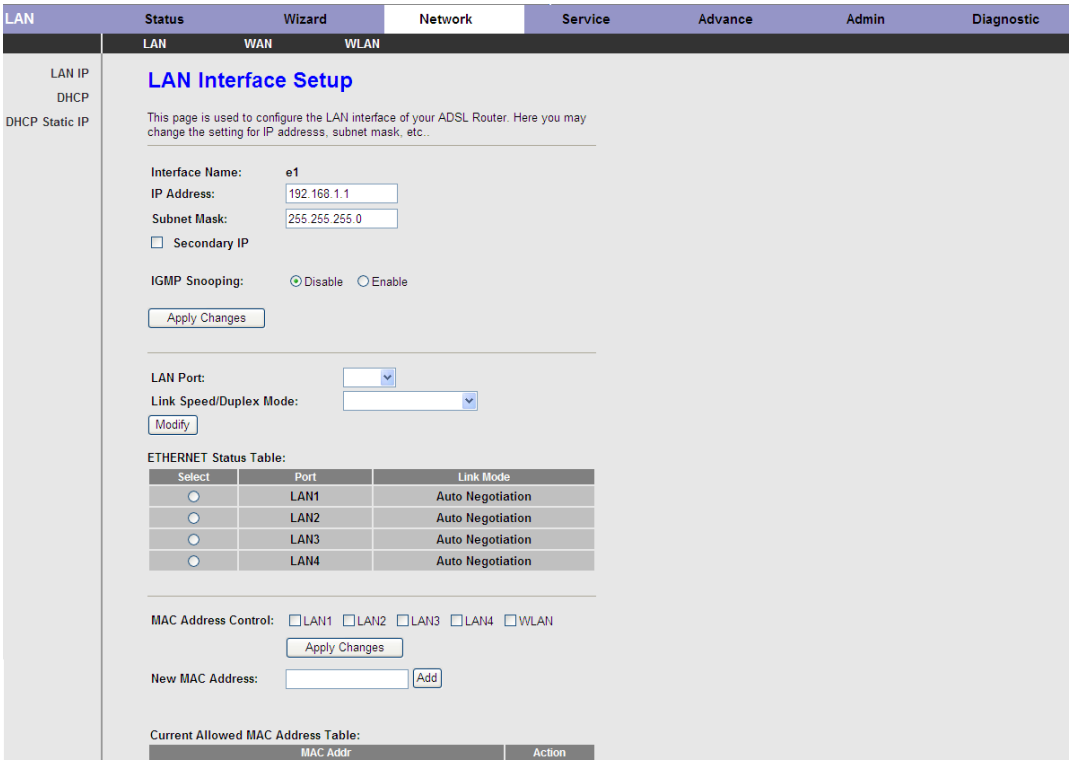
In the navigation bar, click **Network**. The **Network** page displayed contains **LAN, WAN** and **WLAN.**

LAN

Choose **Network** > **LAN**. The **LAN** page that is displayed contains **LAN IP**, **DHCP** and **DHCP Static IP**.

LAN IP

Click **LAN IP** in the left pane, the page shown in the following figure appears.
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.



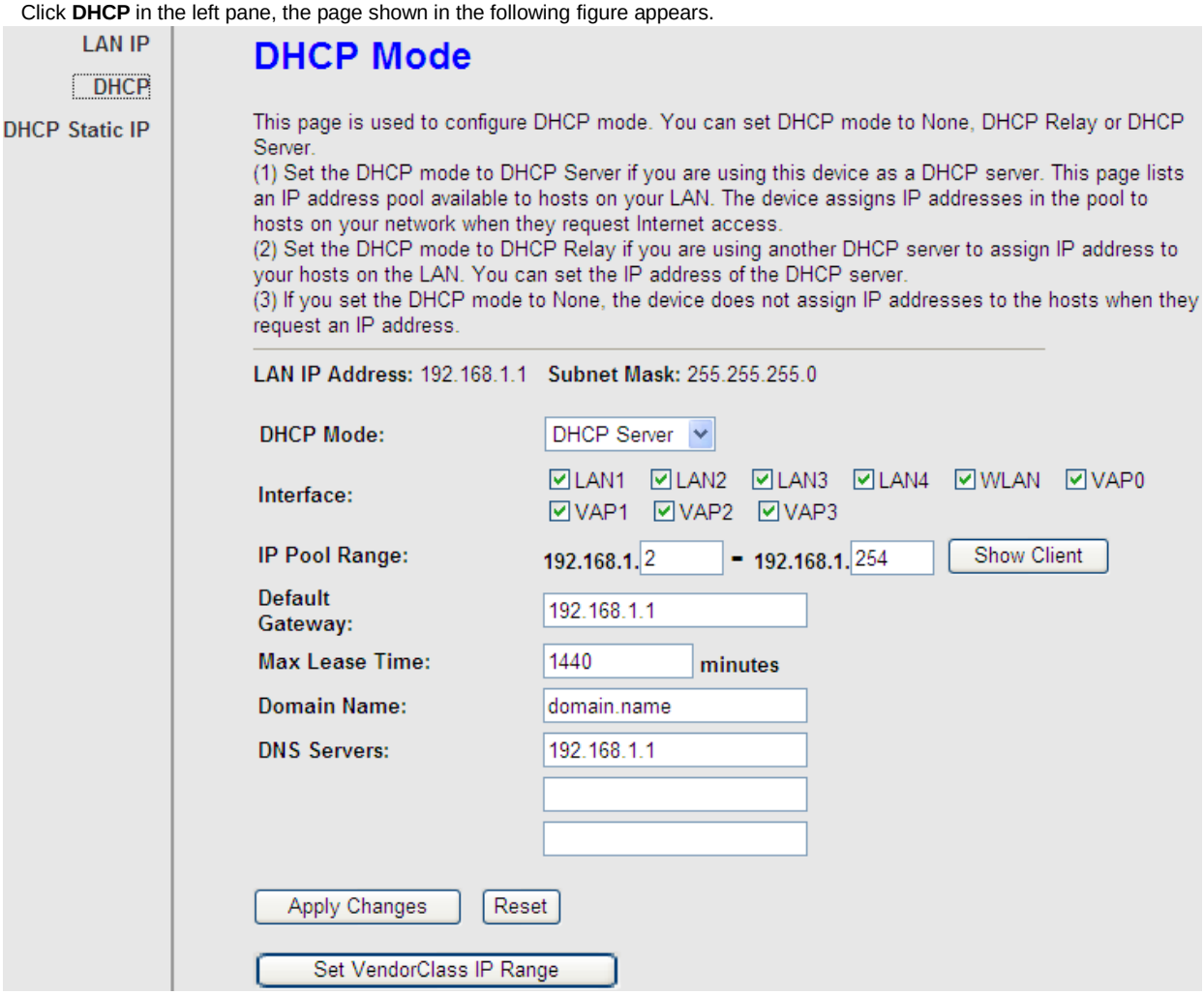
The following table describes the parameters of this page:

Field	Description
IP Address	Enter the IP address of LAN interface. It is recommended to use an address from a block that is reserved for private use. This address block is 192.168.1.1- 192.168.255.254.
Subnet Mask	Enter the subnet mask of LAN interface. The range of subnet mask is from 255.255.0.0-255.255.255.254.
Secondary IP	Select it to enable the secondary LAN IP address. The two LAN IP addresses must be in the different network.
LAN Port	You can choose the LAN interface you want to configure.
Link Speed/Duplex Mode	You can select the following modes from the drop-downlist:**100Mbps/FullDuplex**,**100Mbps/Half Duplex**,**10Mbps/FullDuplex**,**10Mbps/Half Duplex**, **Auto Negotiation**.
MAC Address Control	It is the access control based on MAC address. Select it, and the host whose MAC address is listed in the **Current Allowed MAC Address Table** can access the modem.
Add	Enter MAC address, and then click it to add a new MAC address.

DHCP

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 Relay) where it relays IP address assignment from an actual real DHCP server to clients. You can enable or disable DHCP server.

Click **DHCP** in the left pane, the page shown in the following figure appears.



The following table describes the parameters of this page:

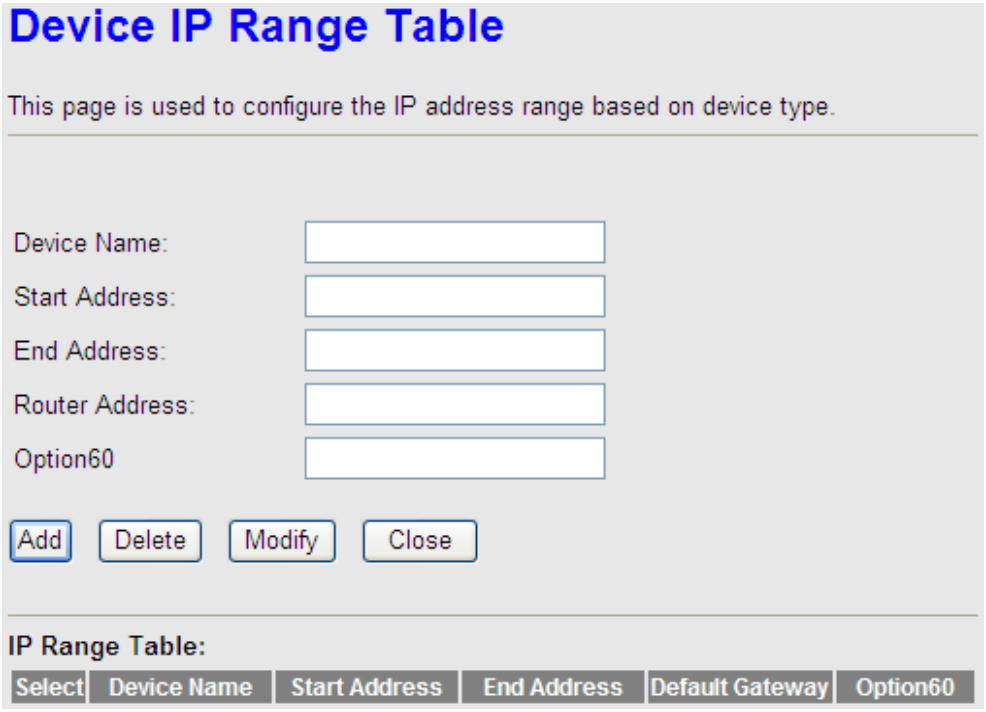
Field	Description
DHCP Mode	If set to **DHCP Server**, the router can assign IP addresses, IP default gateway and DNS Servers to the host in Windows95, Windows NT and other operation systems that support the DHCP client.
IP Pool Range	It specifies the first and the last IP address in the IP address pool. The router assigns IP address that is in the IP pool range to the host.
Show Client	Click it, the **Active DHCP Client Table** appears. It shows IP addresses assigned to clients.
Default Gateway	Enter the default gateway of the IP address pool.
Max Lease Time	The lease time determines the period that the host retains the assigned IP addresses before the IP addresses change.
Domain Name	Enter the domain name if you know. If you leave this blank, the domain name obtained by DHCP from the ISP is used. You must enter host name (system name) on each individual PC. The domain name can be assigned from the router through the DHCP server.
DNS Servers	You can configure the DNS server ip addresses for DNS Relay.
Set VendorClass IP Range	Click it, the **Device IP Range Table** page appears. You can configure the IP address range based on the device type.

Click **Show Client** in the **DHCP Mode** page, the page shown in the following figure appears. You can view the IP address assigned to each DHCP client.

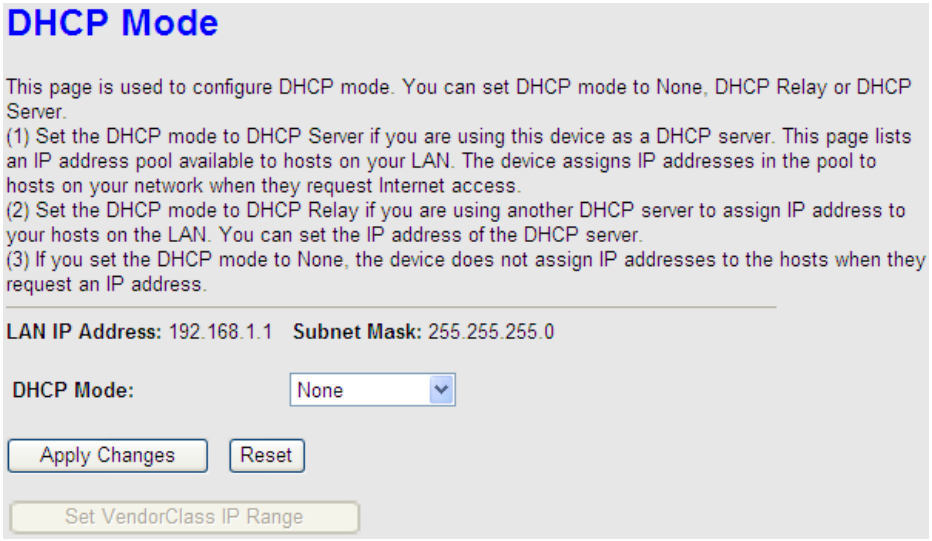
The following table describes the parameters and buttons in this page:

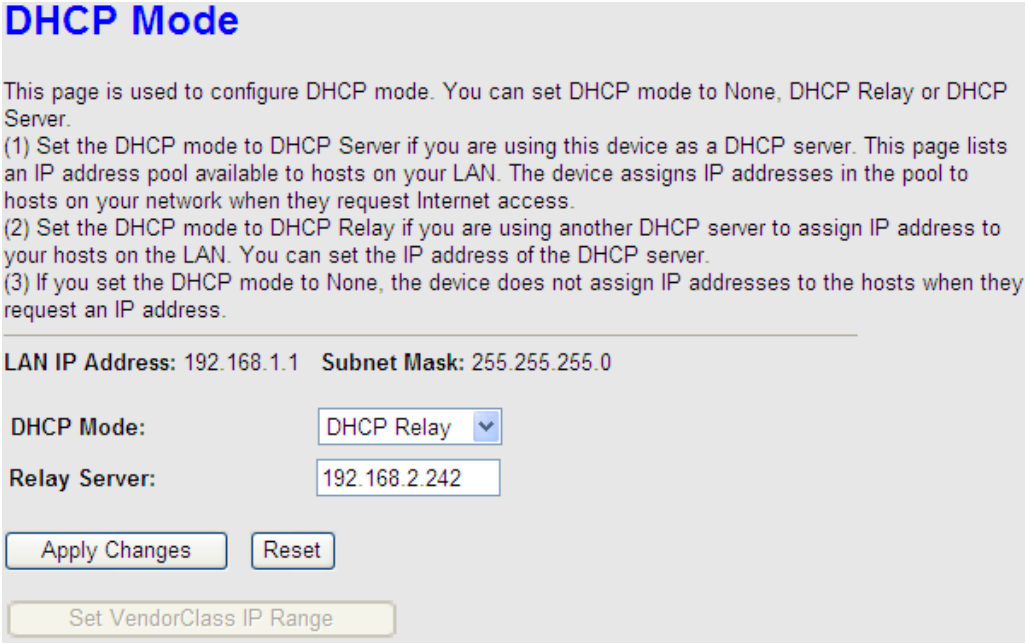
Field	Description
IP Address	It displays the IP address assigned to the DHCP client from the router.
MAC Address	It displays the MAC address of the DHCP client. Each Ethernet device has a unique MAC address. The MAC address is assigned at the factory and it consists of six pairs of hexadecimal character, for example, 00-A0-C5-00-02-12.
Expiry (s)	It displays the lease time. The lease time determines the period that the host retains the assigned IP addresses before the IP addresses change.
Refresh	Click it to refresh this page.
Close	Click it to close this page.

Click **Set Vendor Class IP Range** in the **DHCP Mode** page, the page as shown in the following figure appears. In this page, you can configure the IP address range based on the device type.

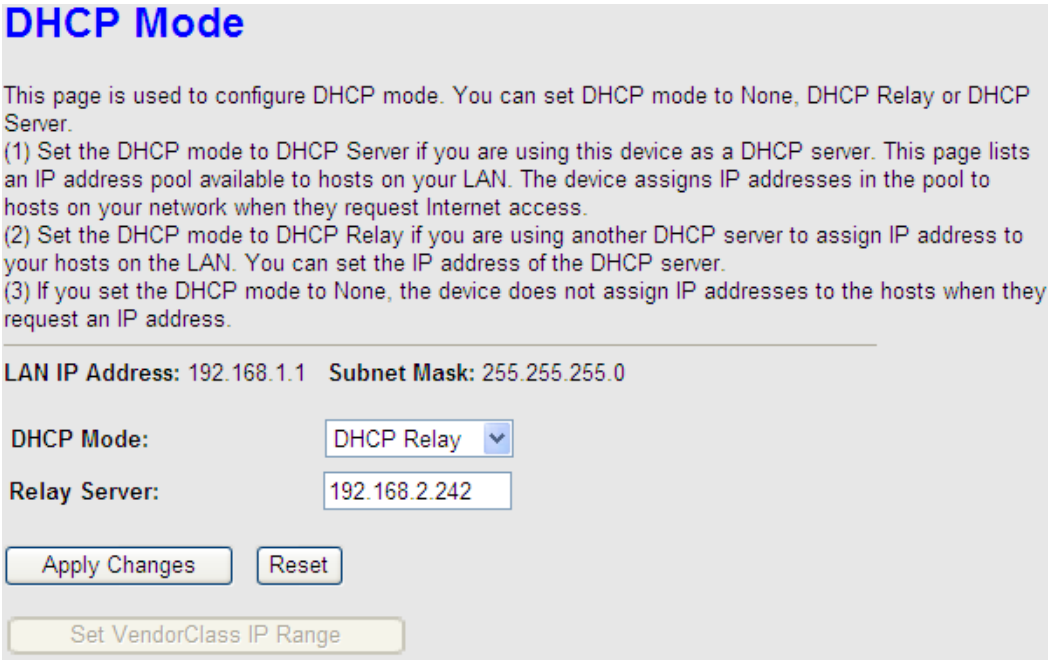


In the **DHCP Mode** field, choose **None**. The page shown in the following figure appears.





In the **DHCP Mode** field, choose **DHCP Relay**. The page shown in the following figure appears.

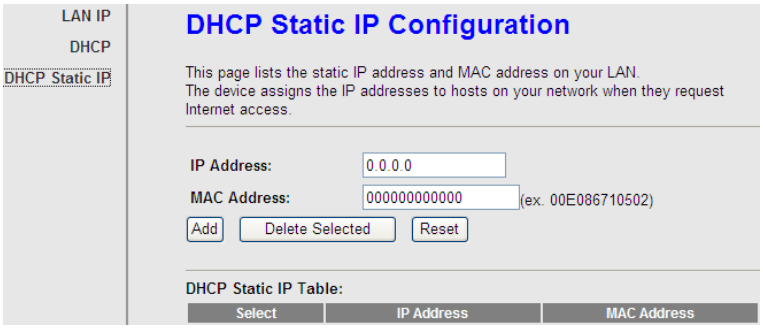


The following table describes the parameters and buttons of this page:

Field	Description
DHCP Mode	If set to **DHCP Relay**, the router acts a surrogate DHCP Server and relays the DHCP requests and reponses between the remote server and the client.
Relay Server	Enter the DHCP server address provided by your ISP.
Apply Changes	Click it to save the settings of this page.
Reset	Click it to refresh this page.

DHCP Static IP

Click **DHCP Static IP** in the left pane, the page shown in the following figure appears. You can assign the IP addresses on the LAN to the specific individual PCs based on their MAC address.



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

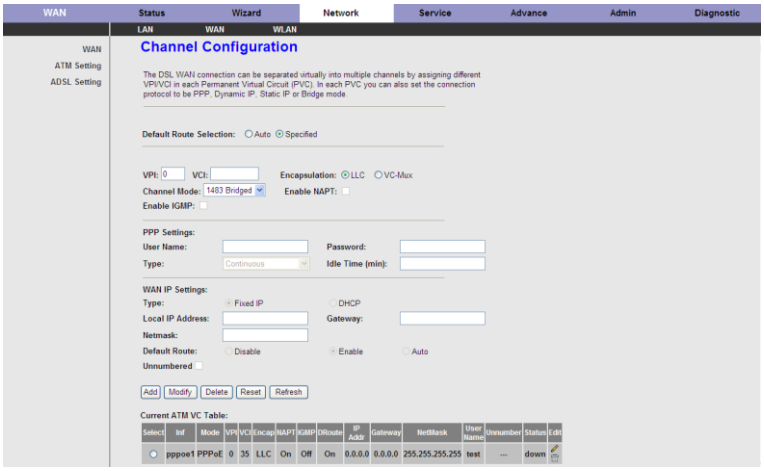
Field	Description
IP Address	Enter the specified IP address in the IP pool range, which is assigned to the host.
MAC Address	Enter the MAC address of a host on the LAN.
Add	After entering the IP address and MAC address, click it. A row will be added in the **DHCP Static IP Table**.
Delete Selected	Select a row in the **DHCP Static IP Table**, then click it, this row is deleted.
Reset	Click it to refresh this page.
DHCP Static IP Table	It shows the assigned IP address based on the MAC address.

WAN

Choose **Network** > **WAN**. The **WAN** page that is displayed contains **WAN**, **ATM Setting** and **ADSL Setting**.

WAN

Click **WAN** in the left pane, the page shown in the following figure appears.
In this page, you can configure WAN interface of your router.

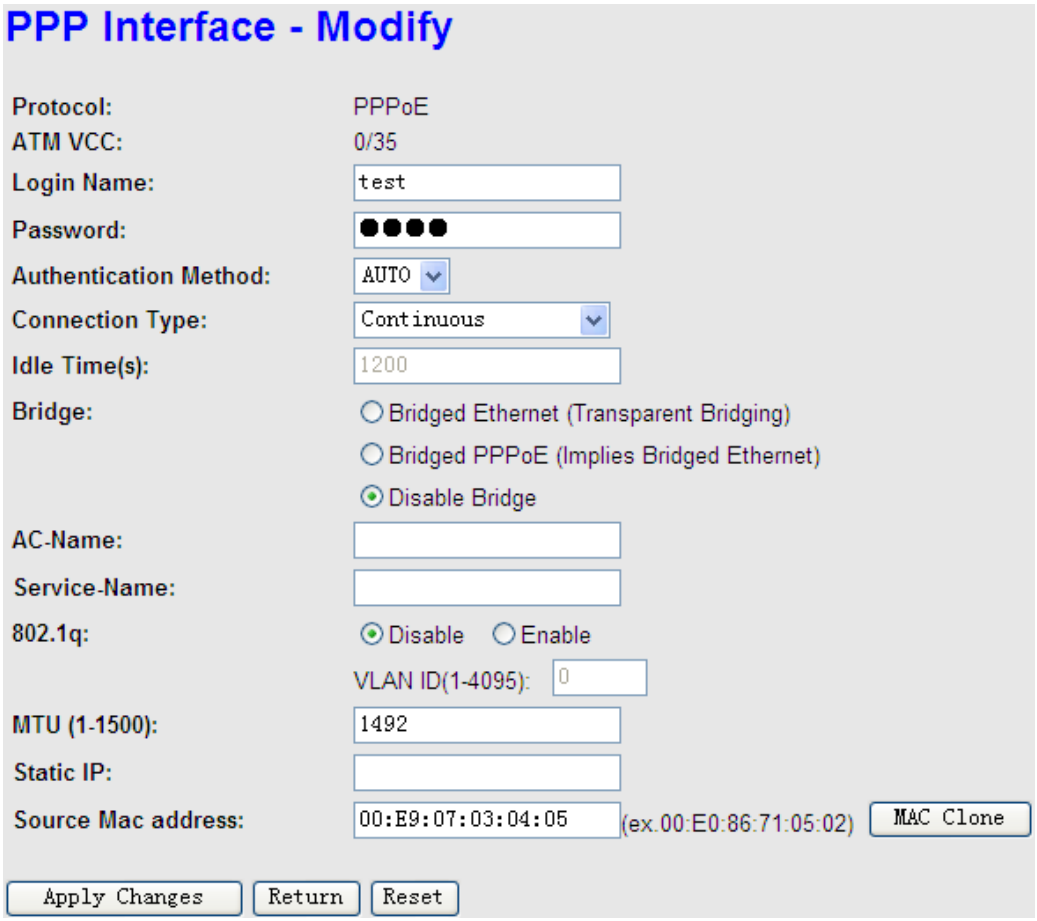


The following table describes the parameters of this page:

Field	Description
Default Route Selection	You can select **Auto** or **Specified**.
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 32 to 65535 (1 to 31 are reserved for known protocols)
Encapsulation	You can choose **LLC** and **VC-Mux**.
Channel Mode	You can choose **1483 Bridged**, **1483 MER**, **PPPoE**, **PPPoA**, **1483 Routed** or **IPoA**.
Enable NAPT	Select it to enable Network Address Port Translation (NAPT) 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.
Enabel IGMP	You can enable or disable Internet Group Management Protocol (IGMP) function.
PPP Settings	
User Name	Enter the correct user name for PPP dial-up, which is provided by your ISP.
Password	Enter the correct password for PPP dial-up, which is provided by your ISP.
Type	You can choose **Continuous**, **Connect on Demand**, or **Manual**.
Idle Time (min)	If set the type to **Connect on Demand**, you need to enter the idle timeout time. Within the preset minutes, if the router does not detect the flow of the user continuously, the router automatically disconnects the PPPoE connection.
WAN IP Settings	
Type	You can choose **Fixed IP** or **DHCP**. ● If select **Fixed IP**, you should enter the local IP address, remote IP address and subnet mask. ● If select **DHCP**, the router is a DHCP client, the WAN IP address is assigned

Field	Description
	by the remote DHCP server.
Local IP Address	Enter the IP address of WAN interface provided by your ISP.
Netmask	Enter the subnet mask of the local IP address.
Unnumbered	Select this checkbox to enable IP unnumbered function.
Add	After configuring the parameters of this page, click it to add a new PVC into the **Current ATM VC Table**.
Modify	Select a PVC in the **Current ATM VC Table**, then modify the parameters of this PVC. After finishing, click it to apply the settings of this PVC.
Current ATM VC Table	This table shows the existed PVCs. It shows the interface name, channel mode, VPI/VCI, encapsulation mode, local IP address, remote IP address and other information. The maximum item of this table is eight.

Click in the **PPPoE** mode, the page shown in the following figure appears. In this page, you can configure parameters of this PPPoE PVC.



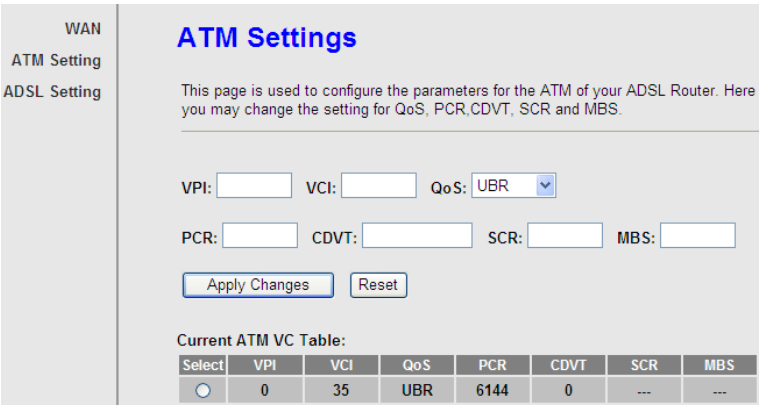
The following table describes the parameters and buttons of this page:

Field	Description
Protocol	It displays the protocol type used for this WAN connection.
ATM VCC	The ATM virtual circuit connection assigned for this PPP interface (VPI/VCI).
Login Name	The user name provided by your ISP.
Password	The password provided by your ISP.

Field	Description
Authentication Method	You can choose **AUTO**, **CHAP**, or **PAP**.
Connection Type	You can choose **Continuous**, **Connect on Demand**, or **Manual**.
Idle Time (s)	If choose **Connect on Demand**, you need to enter the idle timeout time. Within the preset minutes, if the router does not detect the flow of the user continuously, the router automatically disconnects the PPPoE connection.
Bridge	You can select **Bridged Ethernet**, **Bridged PPPoE**, or **Disable Bridge**.
AC-Name	The accessed equipment type.
Service-Name	The service name.
802.1q	You can select **Disable** or **Enable**. After enable it, you need to enter the VLAN ID. The value ranges from 1 to 4095.
Apply Changes	Click it to save the settings of this page temporarily.
Return	Click it to return to the **Channel Configuration** page.
Reset	Click it to refresh this page.
Source Mac address	The MAC address you want to clone.
MAC Clone	Click it to enable the MAC Clone function with the MAC address that is configured.

ATM Setting

Click **ATM Setting** in the left pane, the page shown in the following figure appears. In this page, you can configure the parameters of the ATM, including QoS, PCR, CDVT, SCR and MBS.

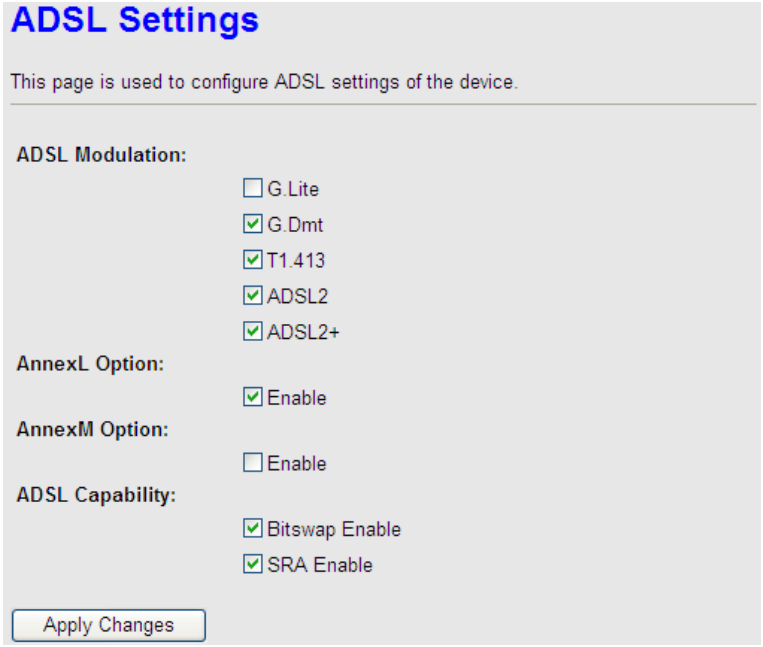


The following table describes the parameters of this page:

Field	Description
VPI	The virtual path identifier of the ATM PVC.
VCI	The virtual channel identifier of the ATM PVC.
QoS	The QoS category of the PVC. You can choose **UBR**, **CBR**, **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. Its value ranges from 1 to 65535.
CDVT	Cell delay variation tolerance (CDVT) is the amount of delay permitted between ATM cells (in microseconds). Its value ranges from 0 to 4294967295.
SCR	Subtain cell rate (SCR) is the maximum rate that traffic can pass over a PVC without the risk of cell loss. Its value ranges from 0 to 65535.
MBS	Maximum burst size (MBS) is the maximum number of cells that can be transmitted at the PCR. Its value ranges from 0 to 65535.

ADSL Setting

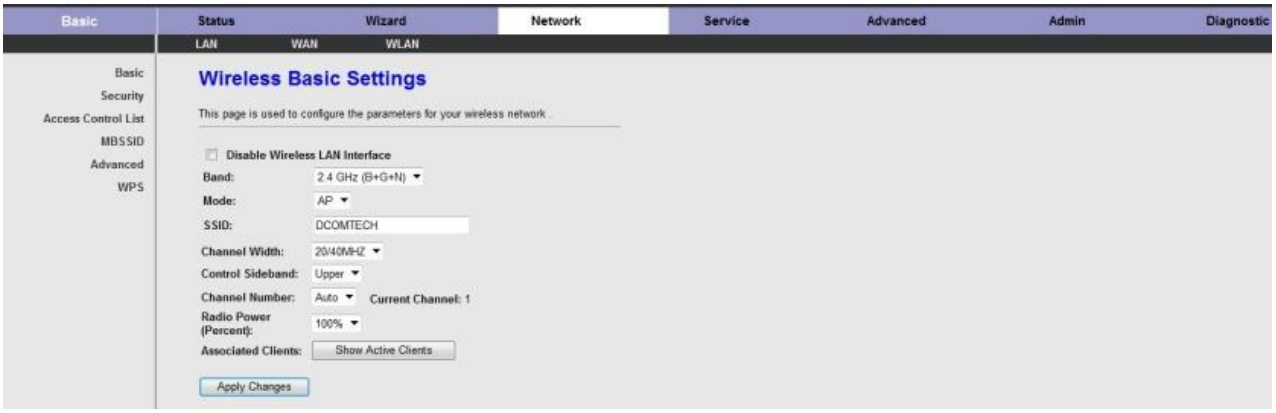
Click **ADSL Setting** in the left pane, the page shown in the following figure appears. In this page, you can select the DSL modulation. Mostly, you need to remain this factory default settings. The router supports these modulations: **G.Lite**, **G.Dmt**, **T1.413**, **ADSL2**, **ADSL2+**, **AnnexL** and **AnnexM**. The router negotiates the modulation modes with the DSLAM.



WLAN

Basic Setting

Choose **WLAN** > **Basic Setting** and the following page appears. In this page, you can configure the parameters for wireless LAN clients that may connect to the modem.



The following table describes the parameters of this page:

Field	Description
Band	Choose the working mode of the modem. You can choose from drop-down list. 2.4 GHz (B+G+N) 2.4 GHz (B) 2.4 GHz (G) 2.4 GHz (B+G) 2.4 GHz (N) 2.4 GHz (G+N) 2.4 GHz (B+G+N)
Mode	Choose the network model of the modem, which is varied according to the software. By default, the network model of the modem is **AP**.
SSID	The service set identification (SSID) is a unique name to identify the modem in the wireless LAN. Wireless stations associating to the modem must

Field	Description
	have the same SSID. Enter a descriptive name that is used when the wireless client connecting to the modem.
Channel Number	A channel is the radio frequency used by 802.11b/g/n wireless devices. There are 13 channels (from 1 to 13) available depending on the geographical area. You may have a choice of channels (for your region) and you should use a different channel from an adjacent AP to reduce the interference. Interference and degrading performance occurs when radio signal from different APs overlap. Choose a channel from the drop-down list box.
Radio Power	You can choose the transmission power of the radio signal. The default one is **100%**. It is recommended to choose the default value**100%**.
Show Active Clients	Click it to view the information of the wireless clients that are connected to the modem.
Apply Changes	Click it to apply the settings temporarily. If you want to save the settings of this page permanently, click **Save** in the lower left corner.

Security

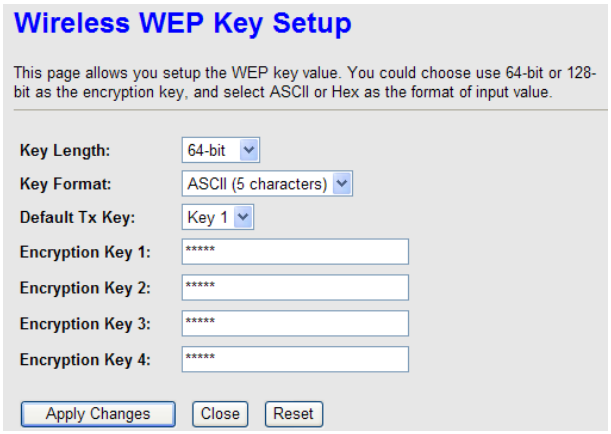
Choose **WLAN** > **Security** and the following page appears.

The following table describes the parameters of this page:

Field	Description
Encryption	Configure the wireless encryption mode. You can choose **None**, **WEP**, **WPA (TKIP)**, **WPA (AES)**, **WPA2 (AES)**, **WPA2 (TKIP)**, or **WPA2 Mixed**. ● Wired equivalent privacy (WEP) encrypts data frames before transmitting over the wireless network. ● Wi-Fi protected access (WPA) is a subset of the IEEE802.11i security specification draft. ● WPA2 Mixed is the collection of WPA and WPA2 encryption modes. The wireless client establishes the connection between the modem through WPA or WPA2. Key differences between WPA and WEP are user authentication and improved data encryption.
Set WEP Key	It is available when you set the encryption mode to **WEP**. Click it, the **Wireless WEP Key Setup** page appears.
WPA Authentication Mode	● Select **Personal (Pre-Shared Key)**, enter the pre-shared key in the **Pre-Shared Key** field.

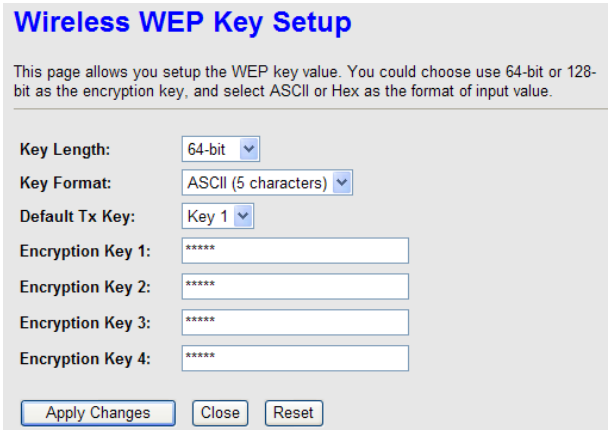
Field	Description
	● Select **Enterprise (RADIUS)**, enter the port, IP address, and password of the Radius server. You need to enter the username and password provided by the Radius server when the wireless client connects the modem. If the encrypton is set to **WEP**, the modem uses 802.1 X authentication, which is Radius authentication.

Click **Set WEP Key**, and the following page appears.



The following describes the parameters of this page:

Field	Description
Key Length	Choose the WEP key length. You can Choose **64-bit** or **128-bit**.
Key Format	● If you choose **64-bit**, you can choose ASCII (5 characters) or Hex (10 characters). ● If you choose **128-bit**, you can choose ASCII (13 characters) or Hex (26 characters).
Default Tx Key	Choose the index of WEP Key. You can choose **Key 1**, **Key 2**, **Key 3**, or **Key 4**.
Encryption Key 1 to 4	The Encryption keys are used to encrypt the data. Both the modem and wireless stations must use the same encryption key for data transmission. ● If you choose **64-bit** and **ASCII (5 characters)**, enter any 5 ASCII characters. ● If you choose **64-bit** and **Hex (10 characters)**, enter any 10 hexadecimal characters. ● If you choose **128-bit** and **ASCII (13 characters)**, enter any 13 ASCII characters. ● If you choose **128-bit** and **Hex (26 characters)**, enter any 26 hexadecimal characters.
Apply Changes	Click it to apply the settings temporarily. If you want to save the settings of this page permanently, click **Save** in the lower left corner.



The following describes the parameters of this page:

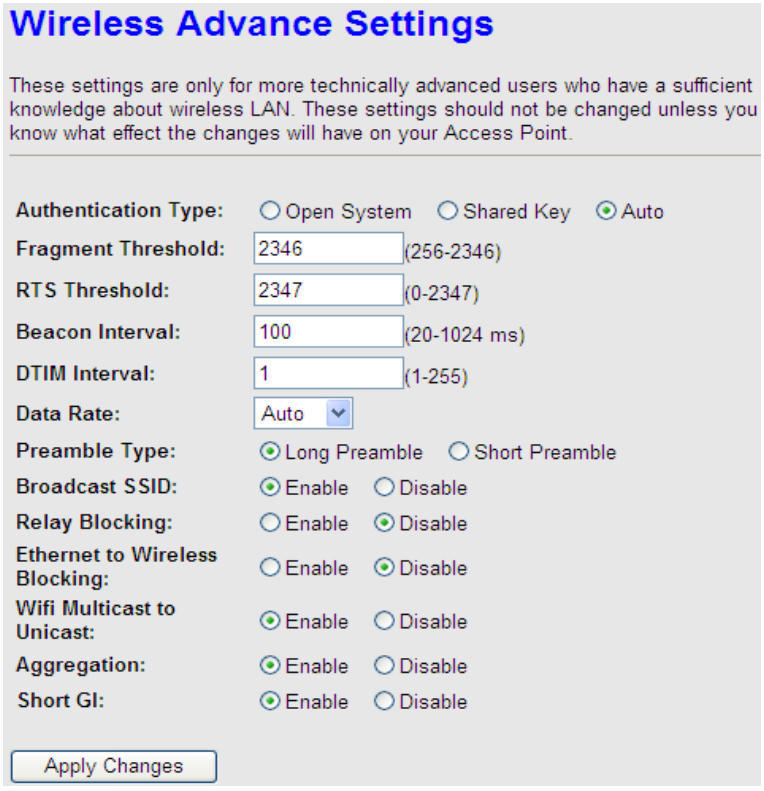
Field	Description
Key Length	Choose the WEP key length. You can Choose **64-bit** or **128-bit**.
Key Format	● If you choose **64-bit**, you can choose ASCII (5 characters) or Hex (10 characters). ● If you choose **128-bit**, you can choose ASCII (13 characters) or Hex (26 characters).
Default Tx Key	Choose the index of WEP Key. You can choose **Key 1**, **Key 2**, **Key 3**, or **Key 4**.
Encryption Key 1 to 4	The Encryption keys are used to encrypt the data. Both the modem and wireless stations must use the same encryption key for data transmission. ● If you choose **64-bit** and **ASCII (5 characters)**, enter any 5 ASCII characters. ● If you choose **64-bit** and **Hex (10 characters)**, enter any 10 hexadecimal characters. ● If you choose **128-bit** and **ASCII (13 characters)**, enter any 13 ASCII characters. ● If you choose **128-bit** and **Hex (26 characters)**, enter any 26 hexadecimal characters.
Apply Changes	Click it to apply the settings temporarily. If you want to save the settings of this page permanently, click **Save** in the lower left corner.

Advanced Settings

Choose **WLAN** > **Advanced Setting** and the following page appears. In this page, you can configure the wireless advanced parameters. It is recommended to use the default parameters.

Note:

The parameters in the **Advanced Setting** are modified by the professional personnel, it is recommended to keep the default values.

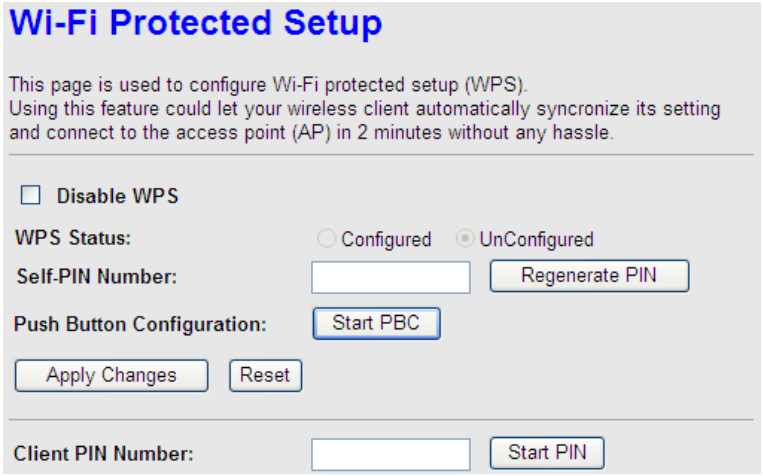


The following table describes the parameters of this page:

Field	Description
Authentication	Select the modem operating in the open system or encryption authentication. You can choose **Open System, Shared Key**, or **Auto**. ● In the open system, the wireless client can directly connect to the device ● In the encryption authentication, the wireless client connects to the modem through the shared key.
Data Rate	Choose the transmission rate of the wireless data. You can choose **Auto**, **1 M**, **2 M**, **5.5 M**, **11 M**, **6 M**, **9 M**, **12 M**, **18 M**, **24 M**, **36 M**, **48 M**, **54M, MSC0-MSC15.**
PreambleType	● **Long Preamble**: It means this card always use long preamble. ● **Short Preamble**: It means this card can support short preamble capability.
Broadcast SSID	Select whether the modem broadcasts SSID or not. You can select **Enable** or **Disable**. ● Select **Enable**, the wireless client searches the modem through broadcasting SSID. ● Select **Disable** to hide SSID, the wireless clients can not find the SSID.
Relay Blocking	Wireless isolation. Select **Enable**, the wireless clients that are connected to the modem can not intercommunication.
Ethernet to Wireless Blocking	Whether the wireless network can communicate with the Ethernet network or not.
Wifi Multicast to Unicast	Enable it to using unicast to transmit multicast packet
Aggregation	It is applied when the destination end of all MPDU are for one STA.
Short GI	It is not recommended to enable GI in obvious environment of Multi-path effect.
Apply Changes	Click it to apply the settings temporarily. If you want to save the settings of this page permanently, click **Save** in the lower left corner.

WPS

Choose **WLAN** > **WPS** and the following page appears.



There are two ways for the wireless client to establish the connection with the modem through WPS. The modem generates PIN, see the above figure. Click **Regenerate PIN** to generate a new PIN, and then click **Start PBC**, In the wireless client tool, enter the PIN which is generated by the modem，start connection. The client will automatically establish the connection with the modem through the encryption mode, and you need not to enter the key. The other way is the wireless client generates

PIN. In the above figure, enter PIN of the wireless client in the **Client PIN Number** field, then click **Start PIN** to establish the connection.

Note:

The wireless client establishes the connection with the modem through WPS negotiation.The wireless client must support WPS

Service

In the navigation bar, click **Service**. In the **Service** page that is displayed contains **DNS**, **Firewall**, **UPNP**, **IGMP Proxy**, **TR-069** and **ACL**.

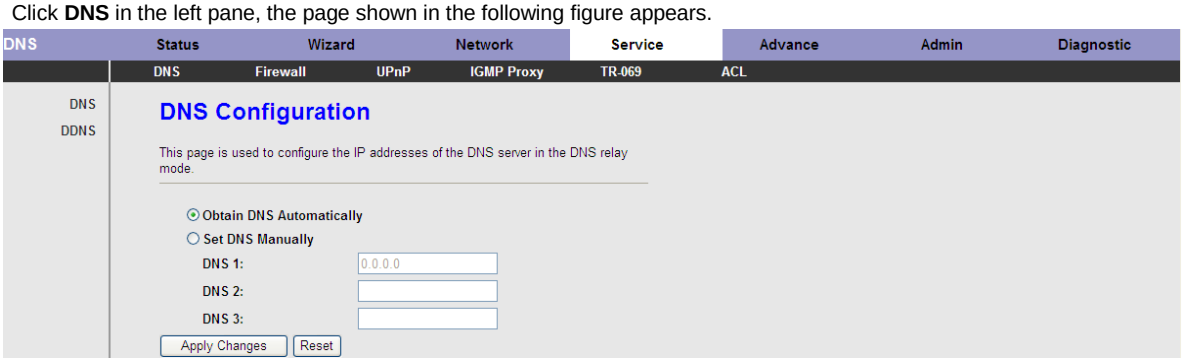
DNS

Domain Name System (DNS) is an Internet service that translates the domain name into IP address. Because the domain name is alphabetic, it is easier to remember. The Internet, however, is based on IP addresses. Every time you use a domain name, DNS translates the name into the corresponding IP address. For example, the domain name www.example.com might be translated to 198.105.232.4. The DNS has its own network. If one DNS server does not know how to translate a particular domain name, it asks another one, and so on, until the correct IP address is returned.

Choose **Service** > **DNS**. The **DNS** page that is displayed contains **DNS** and **DDNS**.

DNS

Click **DNS** in the left pane, the page shown in the following figure appears.

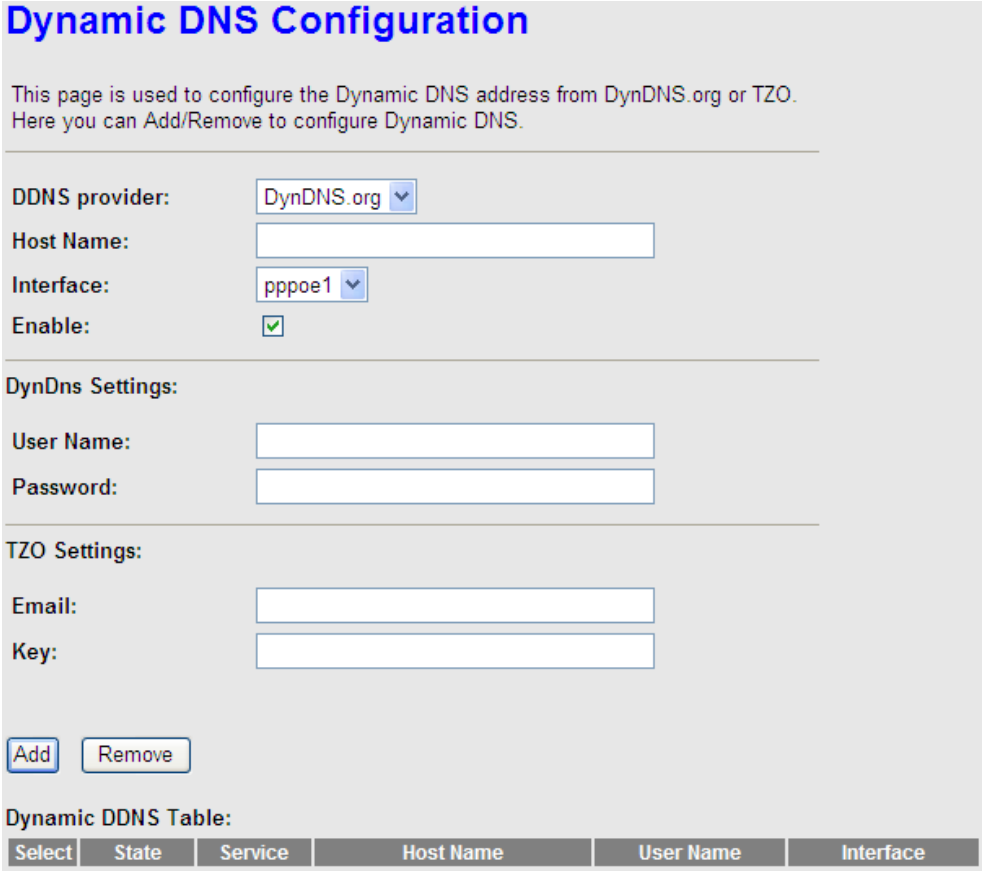


The following table describes the parameters and buttons of this page:

Field	Description
Obtain DNS Automatically	Select it, the router accepts the first received DNS assignment from one of the PPPoA, PPPoE or MER enabled PVC(s) during the connection establishment.
Set DNS Manually	Select it, enter the IP addresses of the primary and secondary DNS server.
Apply Changes	Click it to save the settings of this page.
Reset	Click it to start configuring the paremters in this page.

DDNS

Click **DDNS** in the left pane, the page shown in the following figure appears. This page is used to configure the dynamic DNS address from DynDNS.org or TZO. You can add or remove to configure dynamic DNS.



The following table describes the parameters of this page:

Field	Description
DDNS provider	Choose the DDNS provider name. You can choose **DynDNS.org** or **TZO**.
Host Name	The DDNS identifier.
Interface	The WAN interface of the router.
Enable	Enable or disable DDNS function.
Username	The name provided by DDNS provider.
Password	The password provided by DDNS provider.
Email	The email provided by DDNS provider.
Key	The key provided by DDNS provider.

Firewall

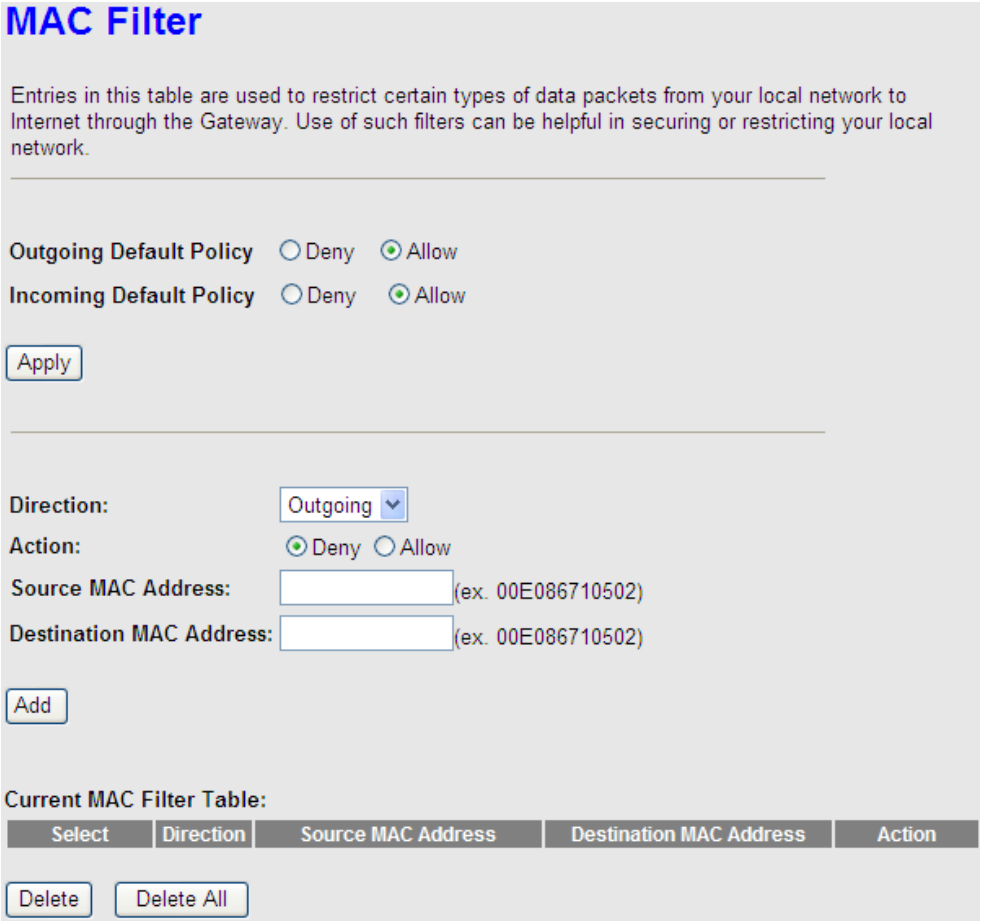
Choose **Service > Firewall**. The **Firewall** page that is displayed contains **IP/Port Fileter**, **MAC Filter**, **URL Blocking**, **Virtual Server, IP Address Mapping**, **DMZ Setting**, **NAT EXCLUDE IP**, **ALG Setting** and **Anti-DoS**.

IP/Port Filter

Click **IP/Port Filter** in the left pane, the page shown in the following figure appears. Entries in the table are used to restrict certain types of data packets through the gateway. These filters are helpful in securing or restricting your local network.

MAC Filter

Click **MAC Filter** in the left pane, the page shown in the following figure appears. Entries in the table are used to restrict certain types of data packets from your local network to Internet through the gateway. These filters are helpful in securing or restricting your local network.



URL Blocking

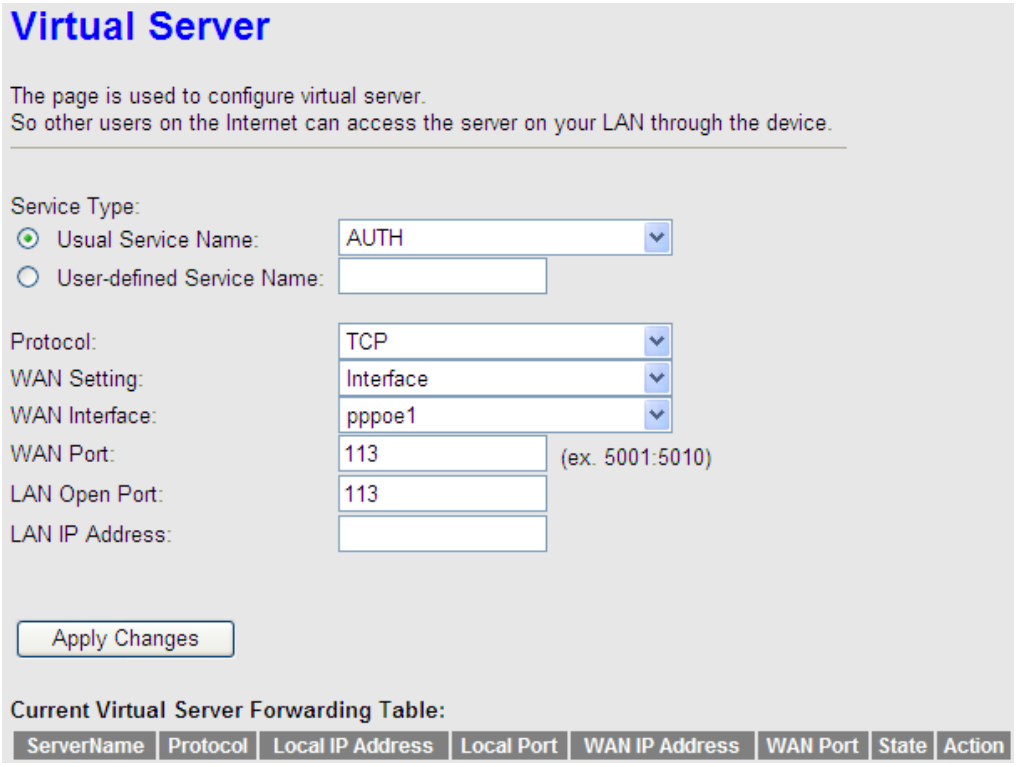
Click **URL Blocking** in the left pane, the page shown in the following figure appears. This page is used to block a fully qualified domain name, such as tw.yahoo.comand and filtered keyword. You can add or delete FQDN and filtered keyword.

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

Field	Description
URL Blocking Capability	You can choose **Disable** or **Enable**. ● Select **Disable** to disable URL blocking function and keyword filtering function. ● Select **Enable** to block access to the URLs and keywords specified in the **URL Blocking Table**.
Keyword	Enter the keyword to block.
AddKeyword	Click it to add a keyword to the **URL Blocking Table**.
Delete Selected Keyword	Select a row in the **URL Blocking Table** and click it to delete the row.
URL Blocking Table	A list of the URL (s) to which access is blocked.

Virtual Server

Click **Virtual Server** in the left pane, the page shown in the following figure appears.



The following table describes the parameters of this page:

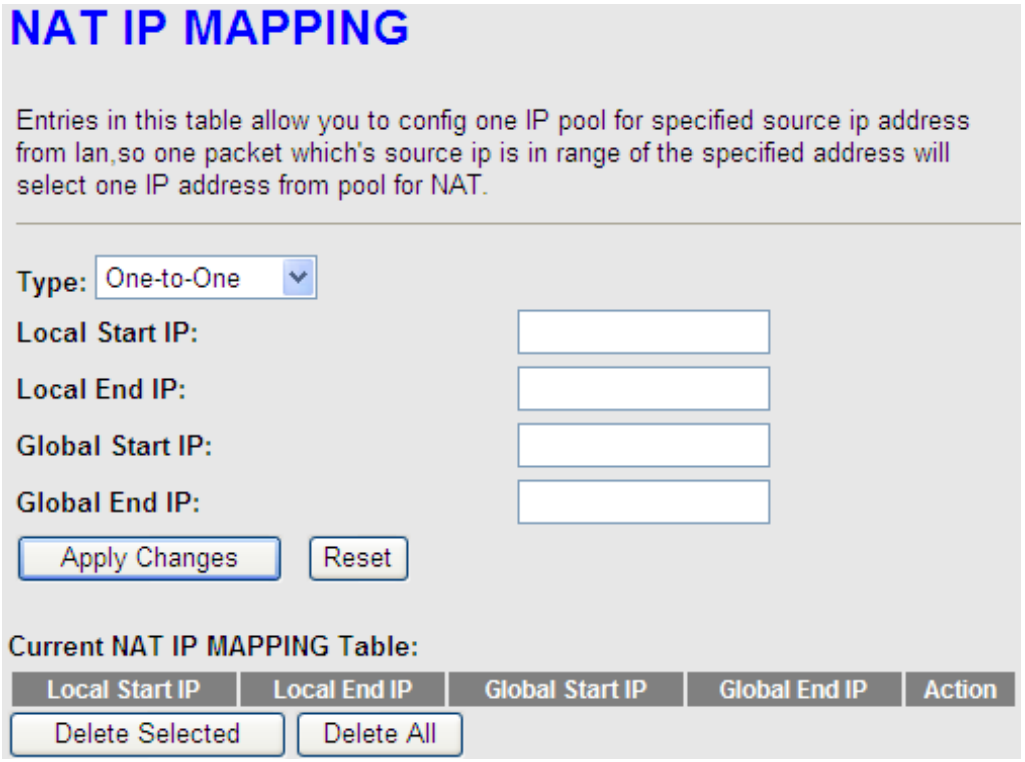
Field	Description
Service Type	You can select the common service type, for example, **AUTH**, **DNS**, or **FTP**. You can also define a service name. ● If you select **Usual Service Name**, the corresponding parameter has the default settings. ● If you select **User-defined Service Name**, you need to enter the corresponding parameters.
Protocol	Choose the transport layer protocol that the service type uses. You can choose **TCP** or **UDP**.
WAN Setting	You can choose **Interface** or **IP Address**.
WAN Interface	Choose the WAN interface that will apply virtual server.
WAN Port	Choose the access port on the WAN.
LAN Open Port	Enter the port number of the specified service type.
LAN IP Address	Enter the IP address of the virtual server. It is in the same network segment with LAN IP address of the router.

IP Address Mapping

NAT is short for Network Address Translation. The Network Address Translation Settings window allows you to share one WAN IP address for multiple computers on your LAN.

Click **IP Address Mapping** in the left pane, the page shown in the following figure appears.

Entries in this table allow you to configure one IP pool for specified source IP address from LAN, so one packet whose source IP is in range of the specified address will select one IP address from the pool for NAT.



DMZ Setting

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.

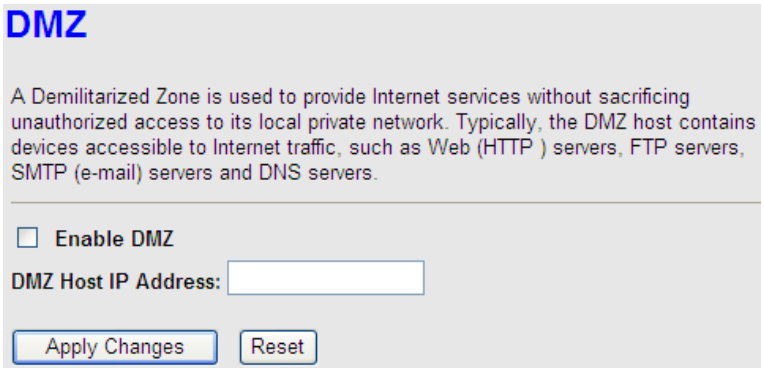
Click **DMZ Setting** in the left pane, the page shown in the following figure appears.

The following describes how to configure DMZ.

Step 6 Select **Enable DMZ** to enable this function.

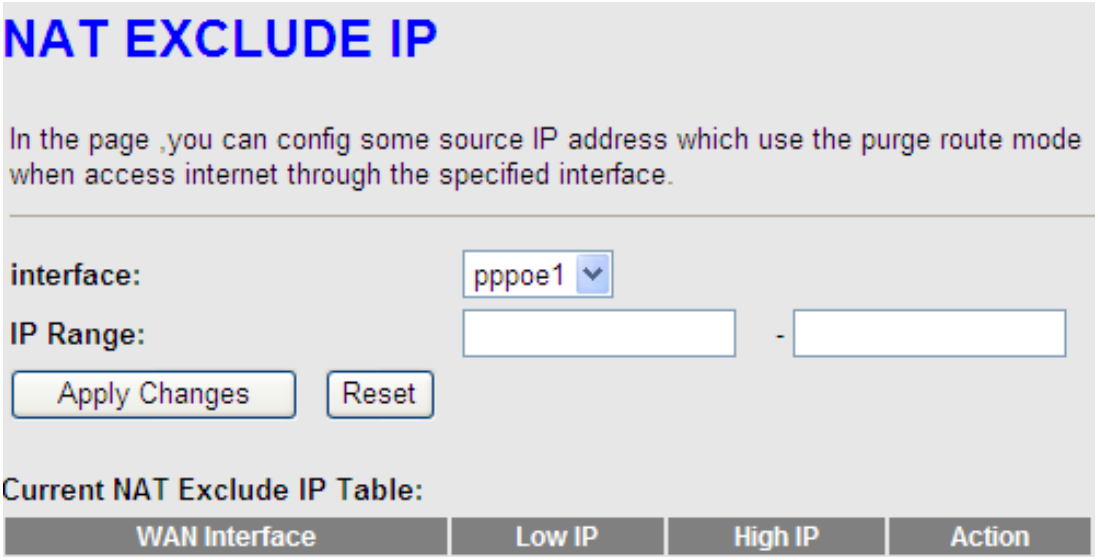
Step 7 Enter an IP address of the DMZ host.

Step 8 Click **Apply Changes** to save the settings of this page temporarily.



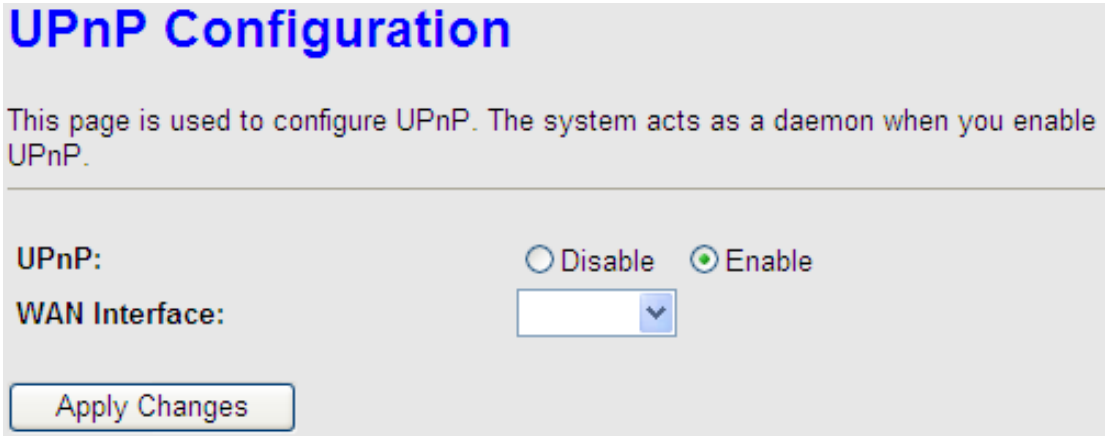
NAT EXCLUDE IP

Click **NAT EXCLUDE IP** in the left pane, the page shown in the following figure appears.
In the page, you can configure some source IP addresses which use the purge route mode when accessing internet through the specified interface.



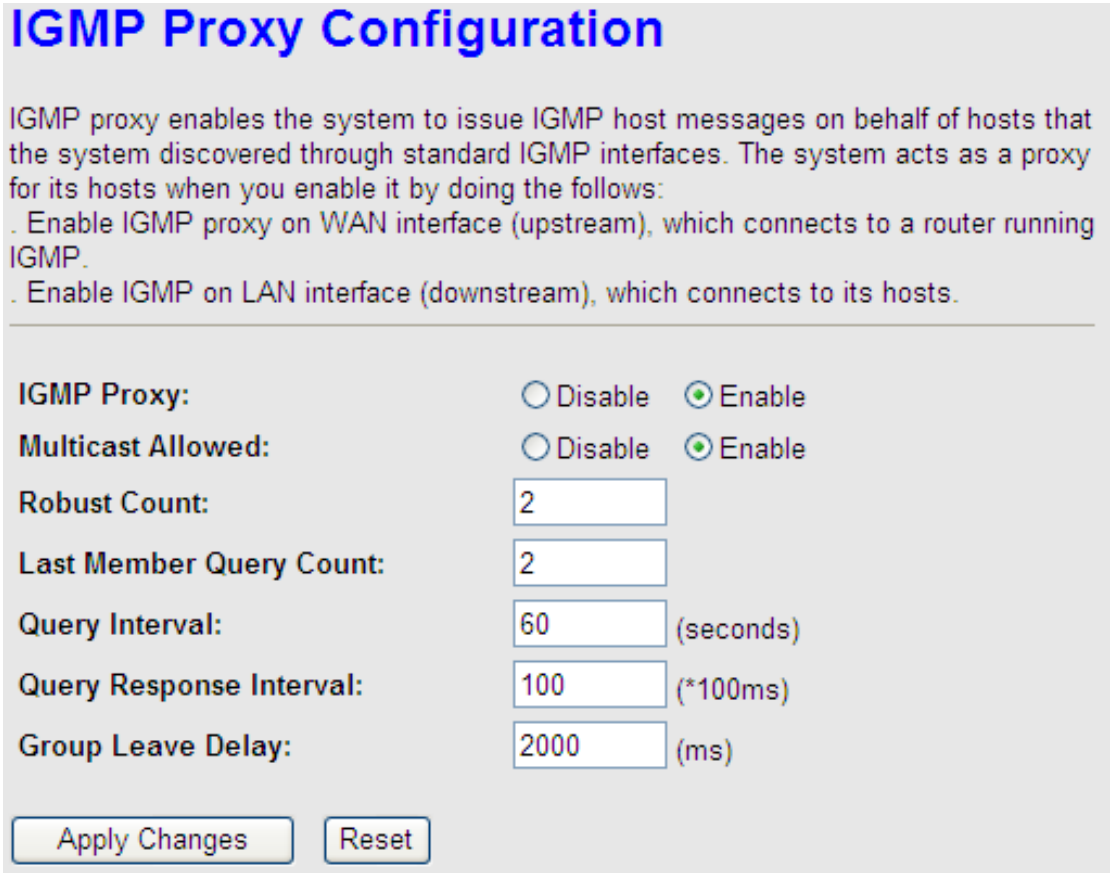
UPNP

Choose **Service** > **UPnP**, the page shown in the following figure appears. This page is used to configure UPnP. The system acts as a daemon after you enable it.



IGMP Proxy

Choose **Service** > **IGMP Proxy**, the page shown in the following figure appears. IGMP proxy enables the system to issue IGMP host messages on behalf of hosts that the system discovered through standard IGMP interfaces. The system acts as a proxy for its hosts after you enable it.

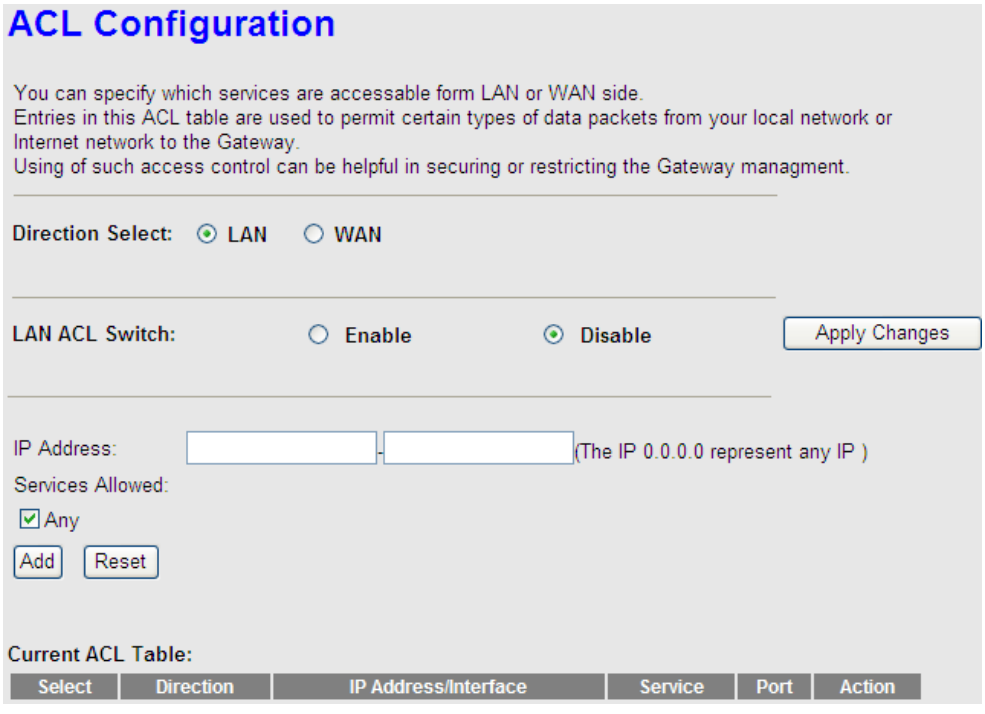


ACL

Choose **Service** > **ACL**, the page shown in the following figure appears. In this page, you can permit the data packets from LAN or WAN to access the router. You can configure the IP address for Access Control List (ACL). If ACL is enabled, only the effective IP address in the ACL can access the router.

Note:

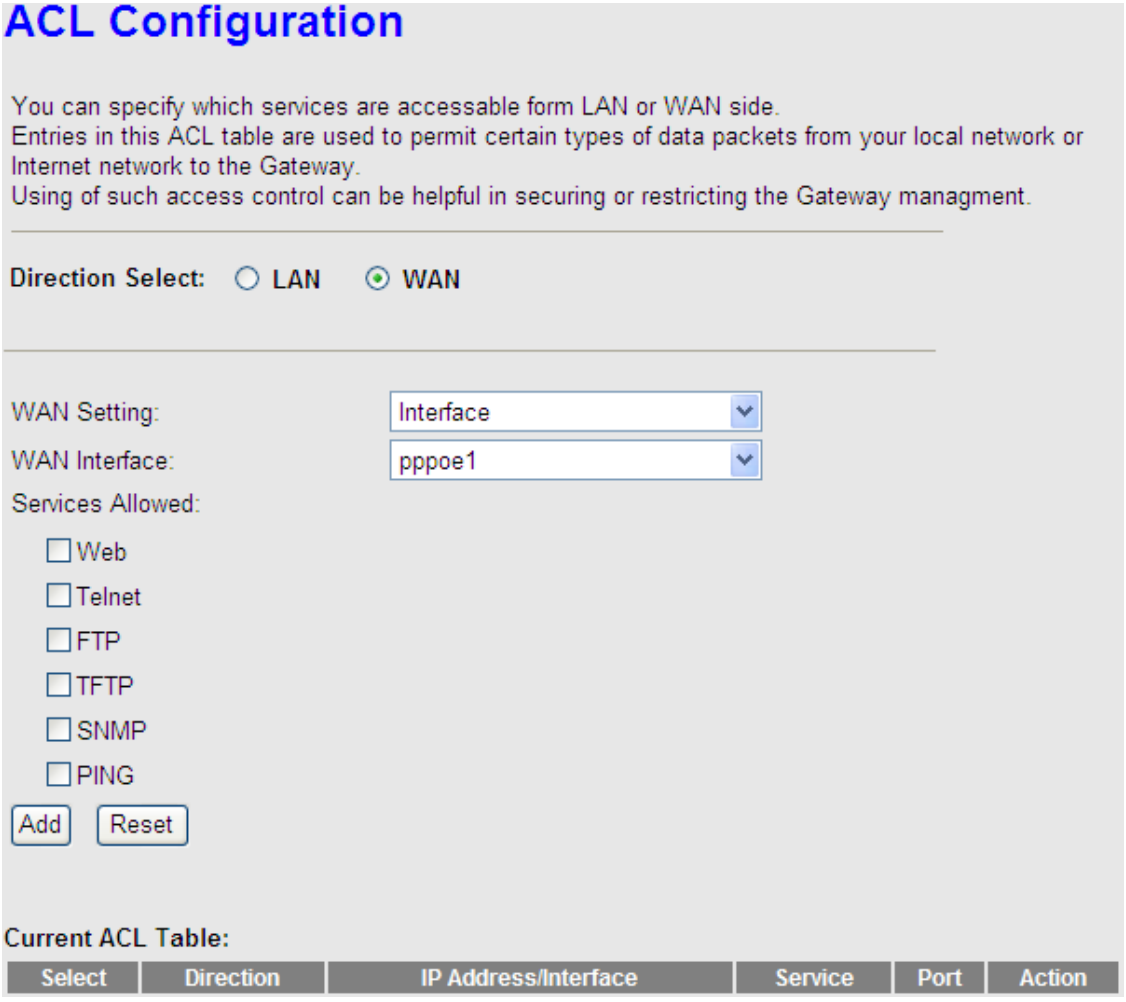
If you select **Enable** in ACL capability, ensure that your host IP address is in ACL list before it takes effect.



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

Field	Description
Direction Select	Select the router interface. You can select **LAN** or **WAN**. In this example, **LAN** is selected.
LAN ACL Switch	Select it to enable or disable ACL function.
IP Address	Enter the IP address of the specified interface. Only the IP address that is in the same network segment with the IP address of the specified interface can access the router.
Services Allowed	You can choose the following services from LAN: **Web**, **Telnet**, **FTP**, **TFTP**, **SNMP**, or **PING**. You can also choose all the services.
Add	After setting the parameters, click it to add an entry to the **Current ACL Table**.
Reset	Click it to refresh this page.

Set direction of the data packets to **WAN**, the page shown in the following figure appears.



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

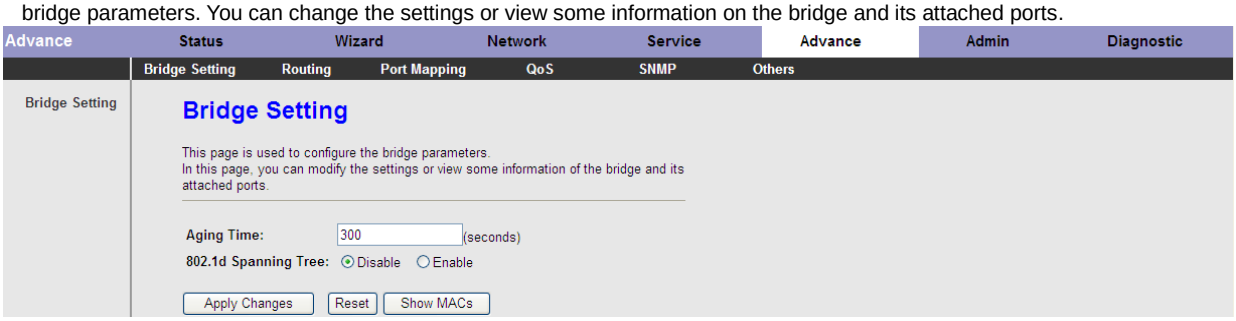
Field	Description
Direction Select	Select the router interface. You can select **LAN** or **WAN**. In this example, **WAN** is selected.
WAN Setting	You can choose **Interface** or **IP Address**.
WAN Interface	Choose the interface that permits data packets from WAN to access the router.
IP Address	Enter the IP address on the WAN. Only the IP address that is in the same network segment with the IP address on the WAN can access the router.
Services Allowed	You can choose the following services from WAN: **Web**, **Telnet**, **FTP**, **TFTP**, **SNMP**, or **PING**. You can also choose all the services.
Add	After setting the parameters, click it to add an entry to the **Current ACL Table**.
Reset	Click it to refresh this page.

Advanced

In the navigation bar, click **Advanced**. In the **Advanced** page that is displayed contains **Bridge Setting**, **Routing**, **Port Mapping**, **QoS**, **SNMP** and **Others**.

Bridge Setting

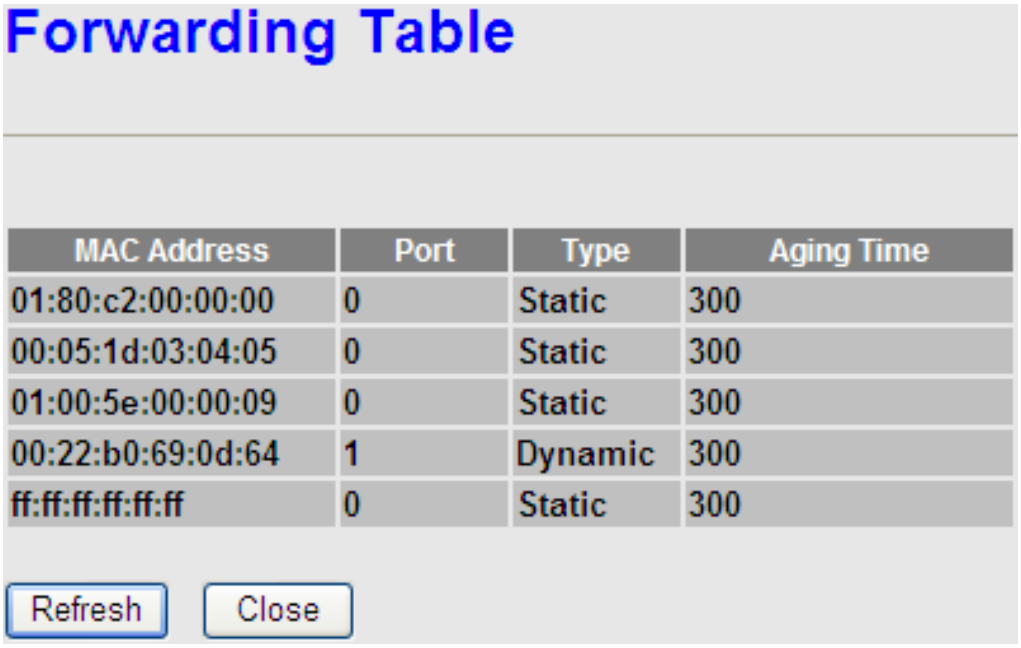
Choose **Advanced** > **Bridge Setting**, the page shown in the following figure appears. This page is used to configure the bridge parameters. You can change the settings or view some information on the bridge and its attached ports.



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

Field	Description
Aging Time	If the host is idle for 300 seconds (default value), its entry is deleted from the bridge table.
802.1d Spanning Tree	You can select **Disable** or **Enable**. Select **Enable** to provide path redundancy while preventing undesirable loops in your network.
Show MACs	Click it to show a list of the learned MAC addresses for the bridge.

Click **Show MACs**, the page shown in the following figure appears. This table shows a list of learned MAC addresses for this bridge.



Routing

Choose **Advanced > Routing**, the page shown in the following figure appears. The page that is displayed contains **Static Route** and **RIP.**

Static Route

Click **Static Route** in the left pane, the page shown in the following figure appears. This page is used to configure the routing information. You can add or delete IP routes.

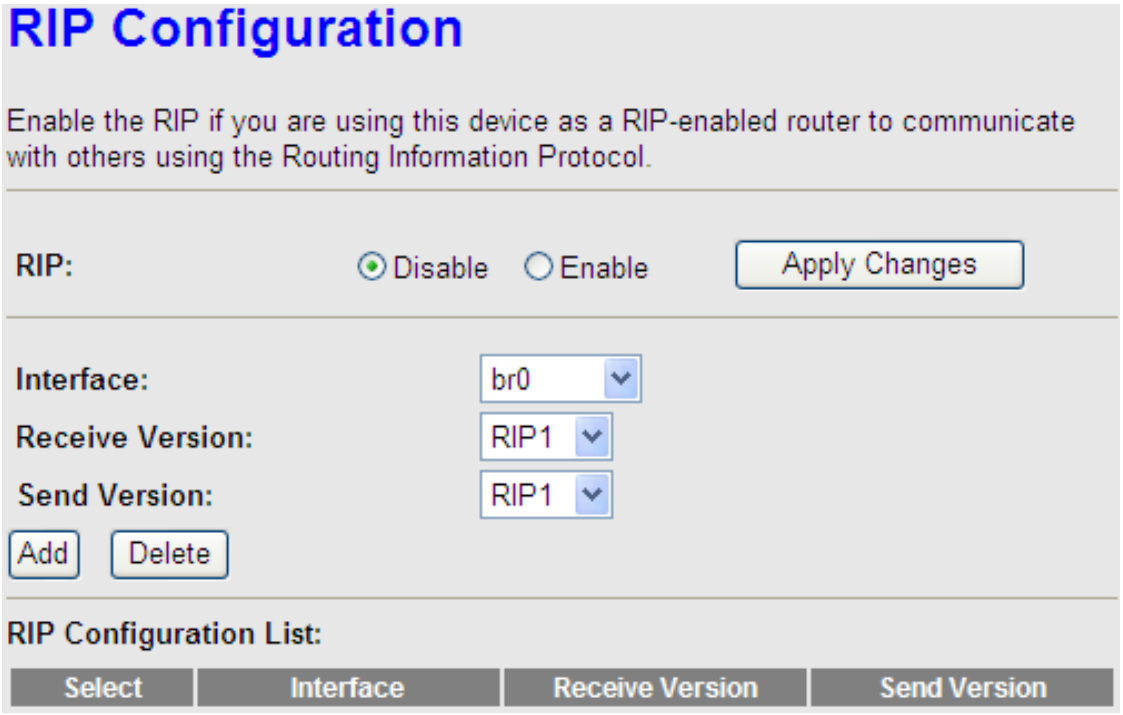
The following table describes the parameters and buttons of this page:

Field	Description
Enable	Select it to use static IP routes.
Destination	Enter the IP address of the destination device.
Subnet Mask	Enter the subnet mask of the destination device.
Next Hop	Enter the IP address of the next hop in the IP route to the destination device.
Metric	The metric cost for the destination.
Interface	The interface for the specified route.
Add Route	Click it to add the new static route to the **Static Route Table**.
Update	Select a row in the **Static Route Table** and modify the parameters. Then click it to save the settings temporarily.
Delete Selected	Select a row in the **Static Route Table** and click it to delete the row.
Show Routes	Click it, the **IP Route Table** appears. You can view a list of destination routes commonly accessed by your network.
Static Route Table	A list of the previously configured static IP routes.

Click **Show Routes**, the page shown in the following figure appears. The table shows a list of destination routes commonly accessed by your network.

RIP

Click **RIP** in the left pane, the page shown in the following figure appears. If you are using this device as a RIP-enabled router to communicate with others using Routing Information Protocol (RIP), enable RIP. This page is used to select the interfaces on your devices that use RIP, and the version of the protocol used.

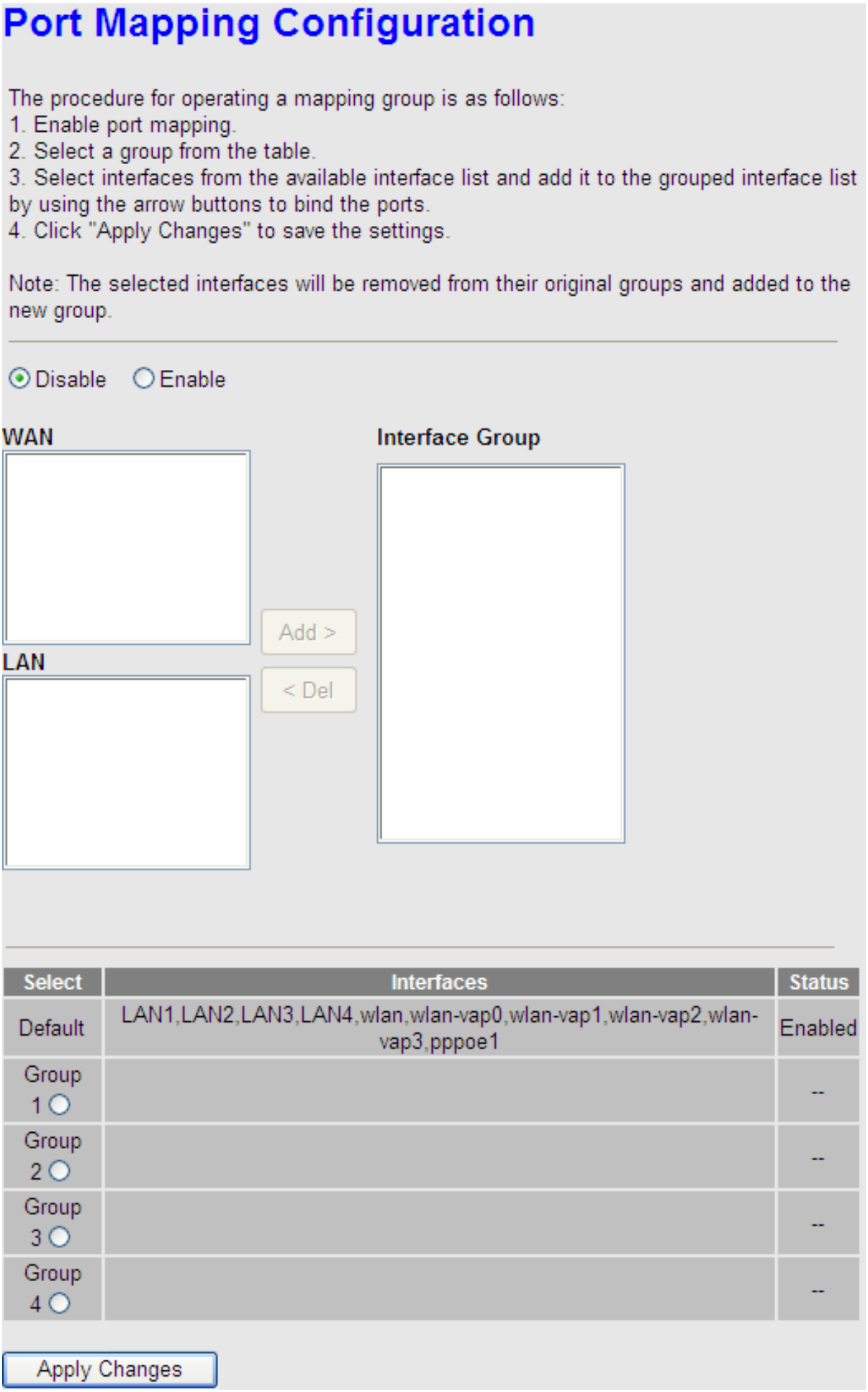


The following table describes the parameters and buttons of this page:

Field	Description
RIP	Select **Enable**, the router communicates with other RIP-enabled devices.
Apply Changes	Click it to save the settings of this page.
Interface	Choose the router interface that uses RIP.
Receive Version	Choose the interface version that receives RIP messages. You can choose **RIP1**, **RIP2**, or **Both**. ● Choose **RIP1** indicates the router receives RIP v1 messages. ● Choose **RIP2** indicates the router receives RIP v2 messages. ● Choose **Both** indicates the router receives RIP v1 and RIP v2 messages.
Send Version	The working mode for sending RIP messages. You can choose **RIP1** or **RIP2**. ● Choose **RIP1** indicates the router broadcasts RIP1 messages only. ● Choose **RIP2** indicates the router multicasts RIP2 messages only.
Add	Click it to add the RIP interface to the **Rip Configration List**.
Delete	Select a row in the **Rip Configration List** and click it to delete the row.

Port Mapping

Choose **Advanced** > **Port Mapping**. The page shown in the following figure appears. In this page, you can bind the WAN interface and the LAN interface to the same group.



The procedure for manipulating a mapping group is as follows:

Step 9 Select **Enable** to enable this function.

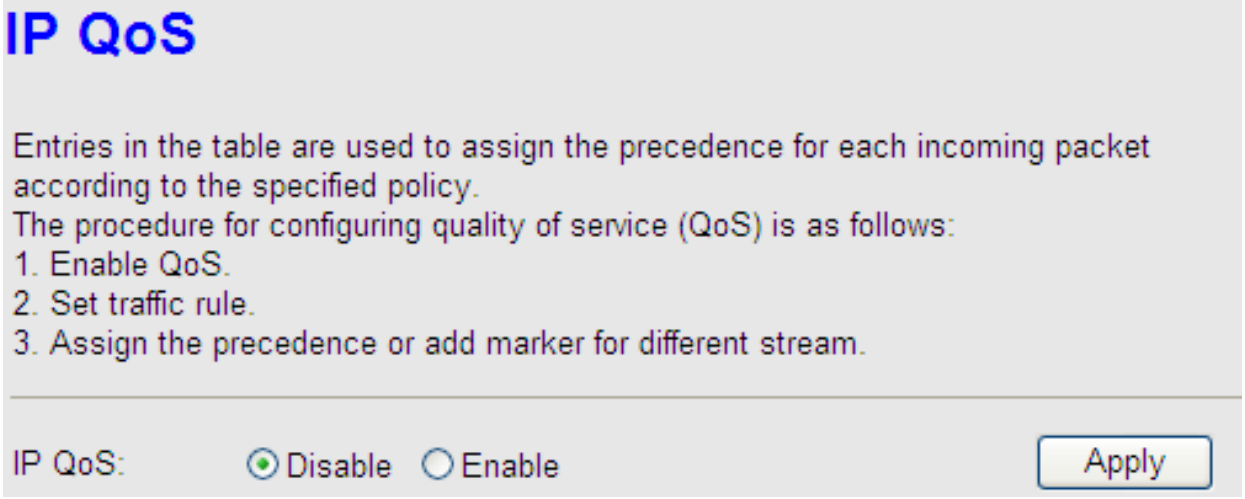
Step 10 Select a group from the table.

Step 11 Select interfaces from the WAN and LAN interface list and add them to the grouped interface list using the arrow buttons to manipulate the required mapping of the ports.

Click **Apply Changes** to save the changes.

QoS

Choose **Advanced > QoS**, the page shown in the following figure appears. Entries in the **QoS Rule List** are used to assign the precedence for each incoming packet based on physical LAN port, TCP/UDP port number, source IP address, destination IP address and other information.



Step 12 Enable IP QoS and click **Apply** to enable IP QoS function.

Step 13 Click **add rule** to add a new IP QoS rule.

The page shown in the following figure appears.

IP QoS

Entries in the table are used to assign the precedence for each incoming packet according to the specified policy.
The procedure for configuring quality of service (QoS) is as follows:
1. Enable QoS.
2. Set traffic rule.
3. Assign the precedence or add marker for different stream.

IP QoS: ○ Disable ◉ Enable Apply

QoS Policy: Stream based

Schedule Mode: Strict prior

QoS Rule List:

Stream Rule						Behavior					
Src IP	Src Port	Dest IP	Dest Port	Proto	Phy Port	Prior	IP Preced	IP ToS	802.1p	WAN Itf	Sel

Add Rule Delete Delete All

Add QoS Rule

Source IP: 0.0.0.0 Source Mask: 255.255.255.255

Destination IP: Destination Mask:

Source Port: Destination Port:

Protocol: Physical Port:

Set Priority: p3(Lowest)

☐ Insert or Modify QoS Mark

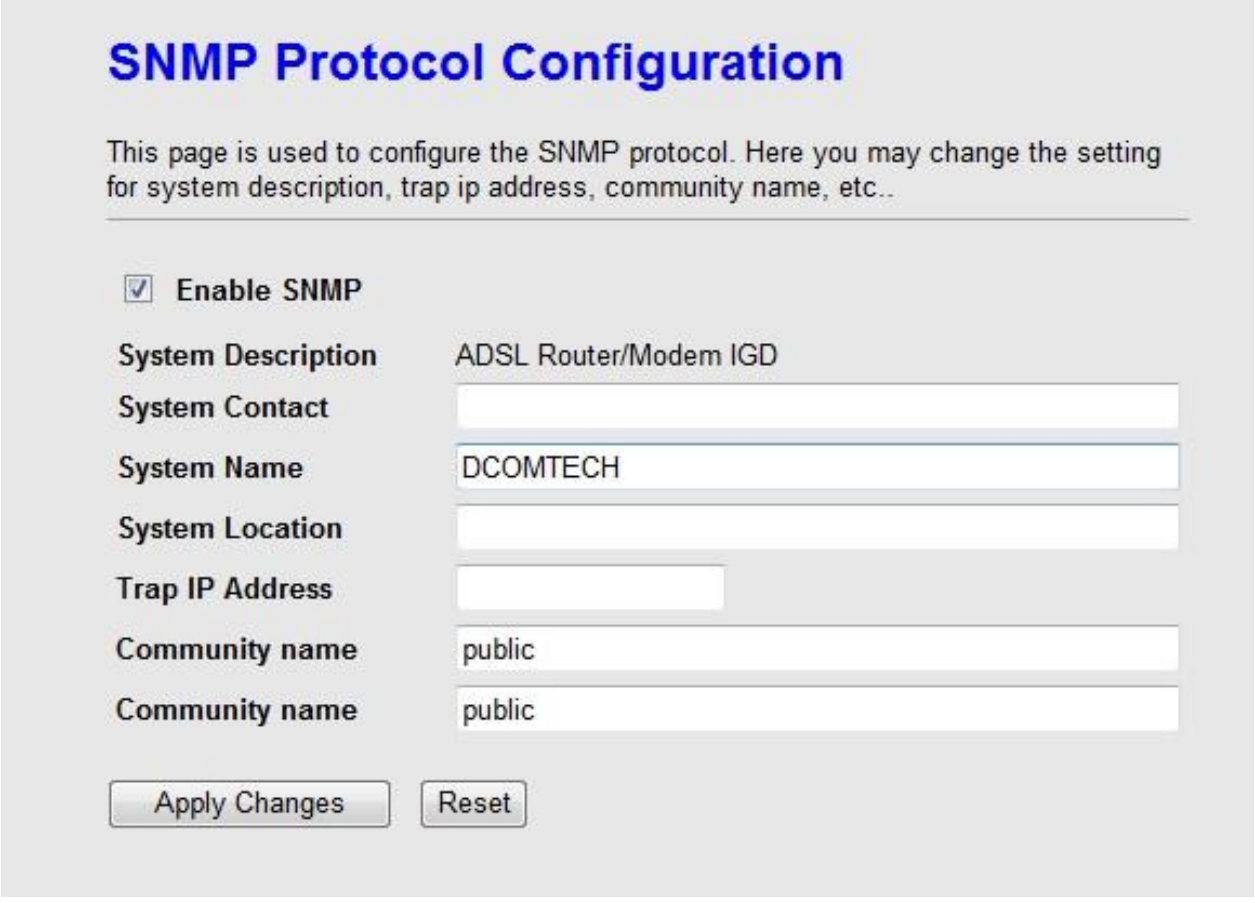
Add Rule

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

Field	Description
IP QoS	Select to enable or disable IP QoS function. You need to enable IP QoS if you want to configure the parameters of this page.
QoS Policy	You can choose **stream based**, **802.1p based**, or **DSCP based**.
Schedule Mode	You can choose **strict prior** or **WFQ (4:3:2:1)**.
Source IP	The IP address of the source data packet.
Source Mask	The subnet mask of the source IP address.
Destination IP	The IP address of the destination data packet.
Destination Mask	The subnet mask of the destination IP address.
Source Port	The port of the source data packet.
Destination Port	The port of the destination data packet.
Protocol	The protocol responds to the IP QoS rules. You can choose **TCP**, **UDP**, or **ICMP**.
Physical Port	The LAN interface responds to the IP QoS rules.
Set priority	The priority of the IP QoS rules. P0 is the highest priority and P3 is the lowest.
IP Precedence	You can choose from 0 to 7 define the priority in the ToS of the IP data packet.
IP ToS	The type of IP ToS for classifying the data package You can choose **Normal Service**, **Minimize Cost**, **Maximize Reliability**, **Maximize Throughput**, or **Minimize Delay**.
802.1p	You can choose from 0 to 7.
Delete	Select a row in the **QoS rule list** and click it to delete the row.
Delete all	Select all the rows in the **QoS rule list** and click it to delete the rows.

SNMP

Choose **Advanced** > **SNMP**, the page shown in the following figure appears. You can configure the SNMP parameters.

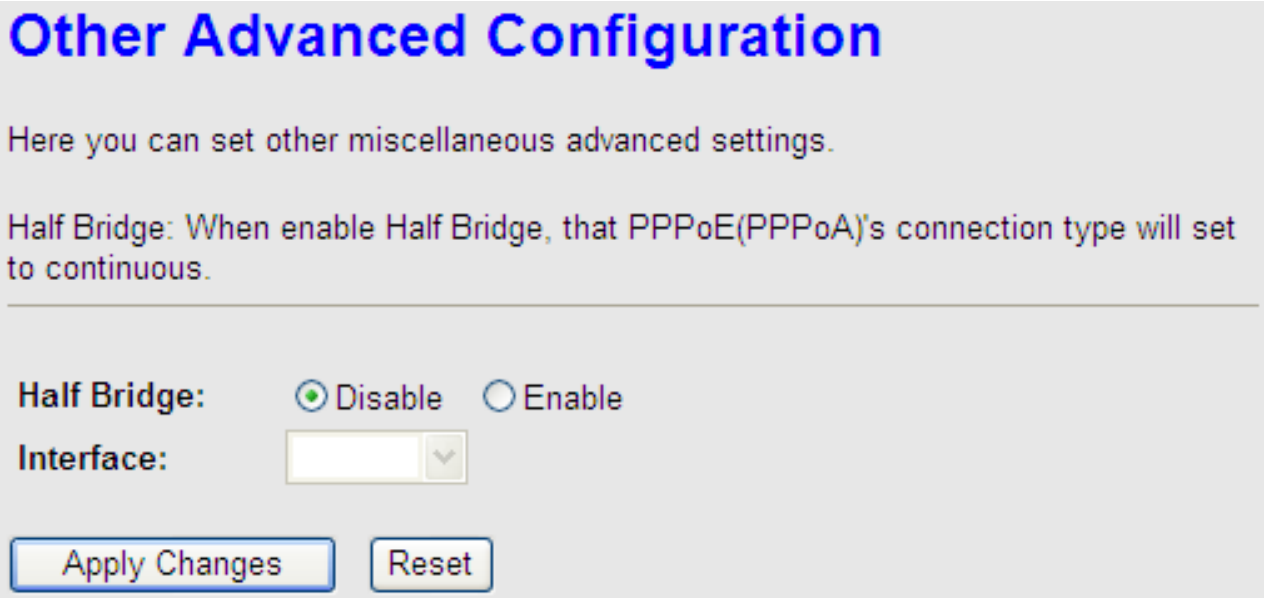


The following table describes the parameters of this page:

Field	Description
Enable SNMP	Select it to enable SNMP function. You need to enable SNMP, and then you can configure the parameters of this page.
Trap IP Address	Enter the trap IP address. The trap information is sent to the corresponding host.
Community Name (Read-only)	The network administrators must use this password to read the information of this router.
Community Name (Read-Write)	The network administrators must use this password to configure the information of the router.

Others

Choose **Advanced** > **Others**, the page shown in the following figure appears.

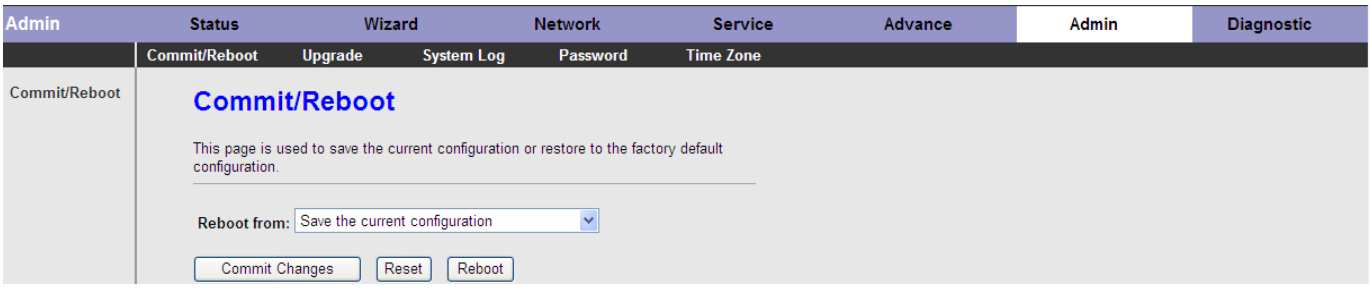


Admin

In the navigation bar, click **Admin**. The **Admin** page that is displayed contains **Commit/Reboot**, **Upgrade**, **System Log**, **Password** and **Time Zone.**

Commit/Reboot

Choose **Admin** > **Commit/Reboot**, the page shown in the following figure appears. You can set the router reset to the default settings or set the router to commit the current settings.



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

Field	Description
Reboot from	You can choose **Save the current configuration** or **Restore to the factory default configuration**. ● **Save the current configuration**: Save the current settings, and then reboot the router. ● **Restore to the factory default configuration**: Reset to the factory default settings, and then reboot the the router.
Reboot	Click it to reboot the router.

Upgrade

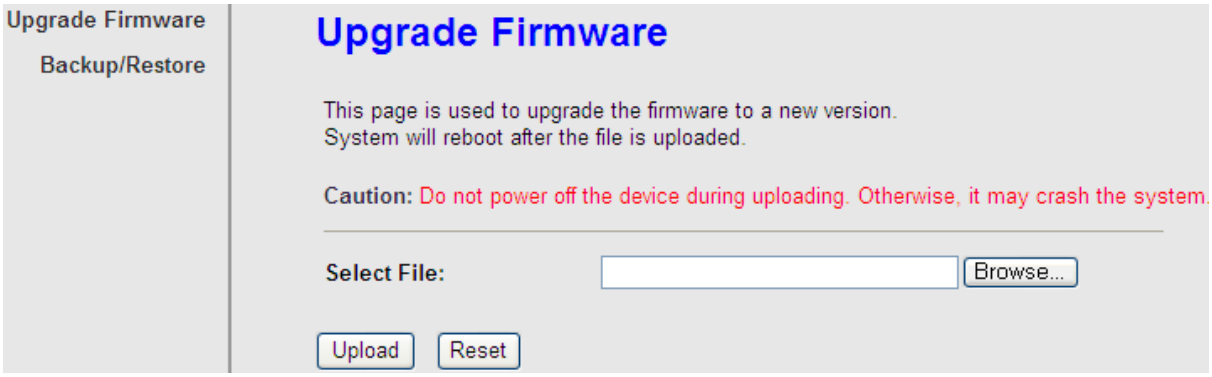
Choose **Admin** > **Upgrade**. The **Upgrade** page that is displayed contains **Upgrade Firmware** and **Backup/Restore**.

Caution:

Do not turn off the router or press the Reset button while the procedure is in progress.

Upgrade Firmware

Click **Upgrade Firmware** in the left pane, the page shown in the following figure appears. In this page, you can upgrade the firmware of the router.

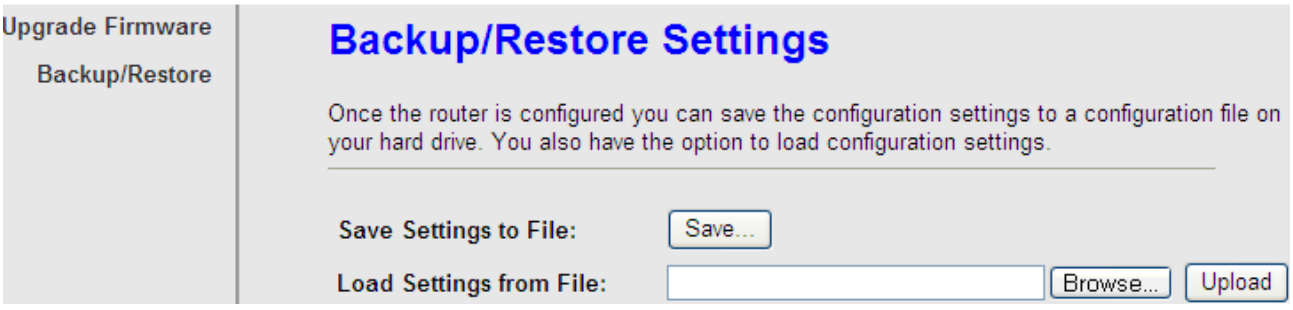


The following table describes the parameters and button of this page:

Field	Description
Select File	Click **Browse** to select the firmware file.
Upload	After selecting the firmware file, click **Upload** to starting upgrading the firmware file.
Reset	Click it to starting selecting the firmware file.

Backup/Restore

Click **Backup/Restore** in the left pane, the page shown in the following figure appears. You can backup the current settings to a file and restore the settings from the file that was saved previously.

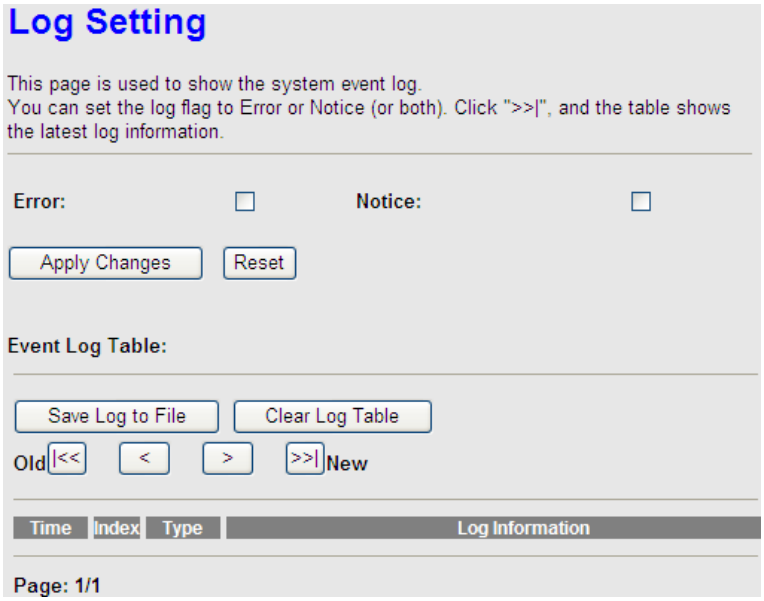


The following table describes the parameters and button of this page:

Field	Description
Save Settings to File	Click it, and select the path. Then you can save the configuration file of the router.
Load Settings from File	Click **Browse** to select the configuration file.
Upload	After selecting the configuration file of the router, click **Upload** to start uploading the configuration file of the router.

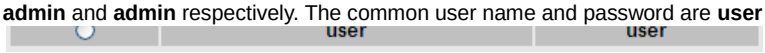
System Log

Choose **Admin** > **System Log**, the page shown in the following figure appears. In this page, you can enable or disable system log function and view the system log.



Password

Choose **Admin** > **Password**, the page shown in the following figure appears. By default, the user name and password are **admin** and **admin** respectively. The common user name and password are **user** and **user** respectively.

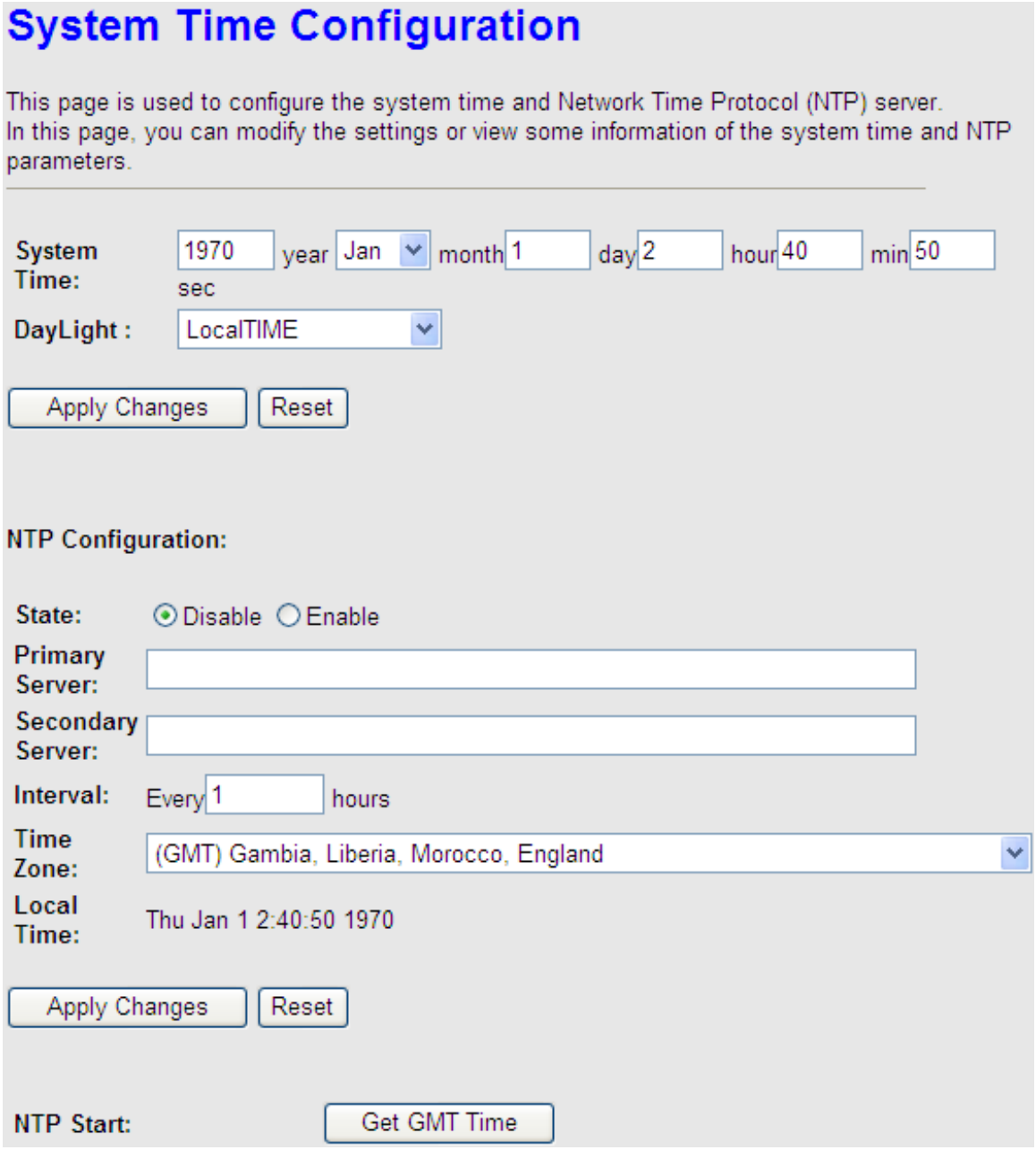


The following table describes the parameters of this page:

Field	Description
User Name	Choose the user name for accessing the router. You can choose **admin** or **user**.
Privilege	Choose the privilege for the account.
Old Password	Enter the old password
New Password	Enter the password to which you want to change the old password.
Confirm Password	Enter the new password again.

Time Zone

Choose **Admin** > **Time Zone**, the page shown in the following figure appears. You can configure the system time manually or get the system time from the time server.



The following table describes the parameters of this page:

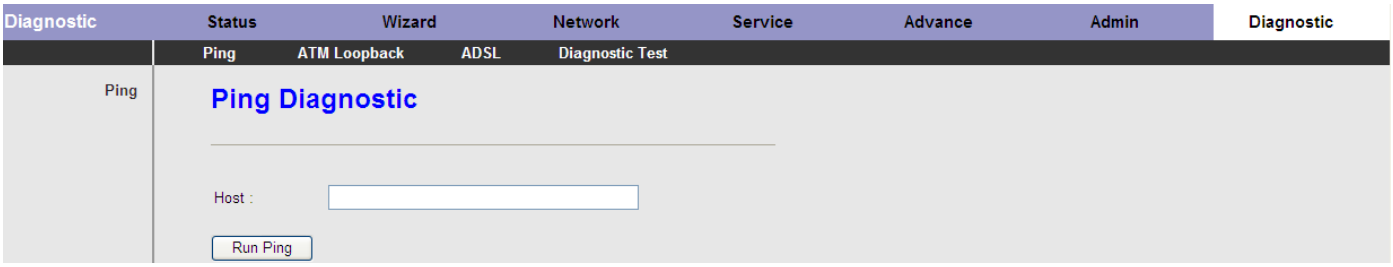
Field	Description
System Time	Set the system time manually.
NTP Configuration	
State	Select enable or disable NTP function. You need to enable NTP if you want to configure the parameters of NTP.
Primary Server	Set the primary NTP server manually.
Secondary Server	Set the secondary NTP server manually.
Time Zone	Choose the time zone in which area you are from the drop down list.

Diagnostic

In the navigation bar, click **Diagnostic**. The **Diagnostic** page that is displayed contains **Ping**, **ATM Loopback**, **ADSL** and **Diagnostic Test**.

Ping

Choose **Diagnostic** > **Ping**. The page shown in the following figure appears.

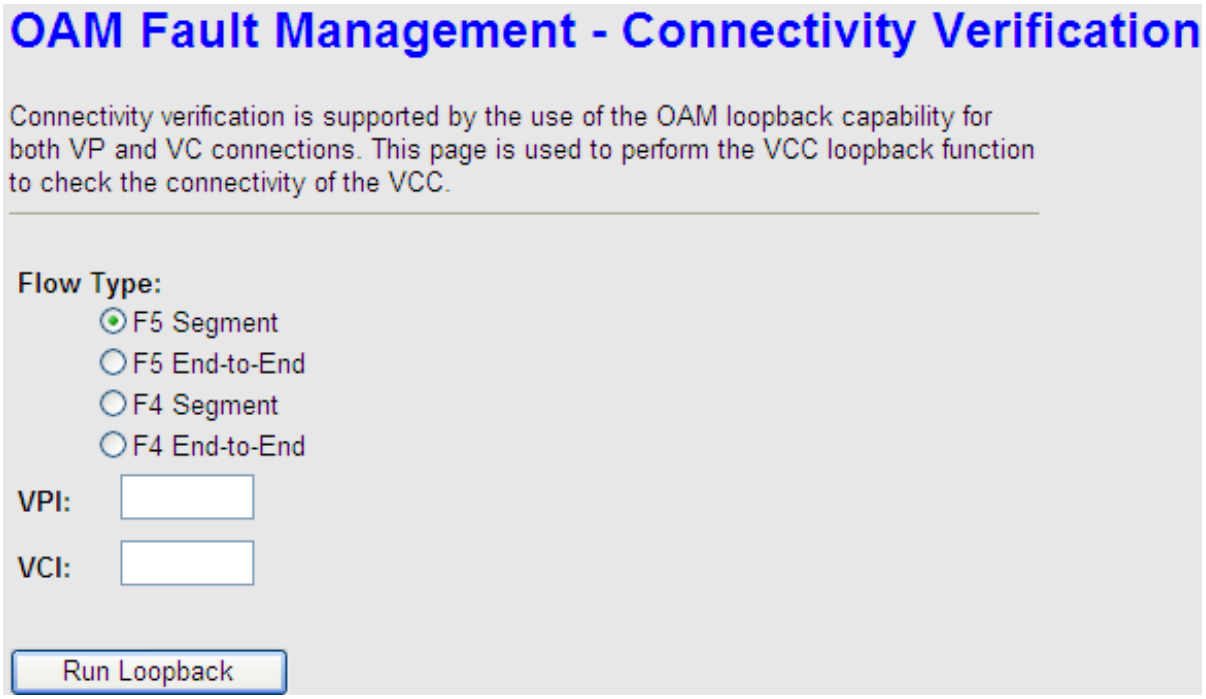


The following table describes the parameter and button of this page:

Field	Description
Host	Enter the valid IP address or domain name.
Run Ping	Click it to start to Ping.

ATM Loopback

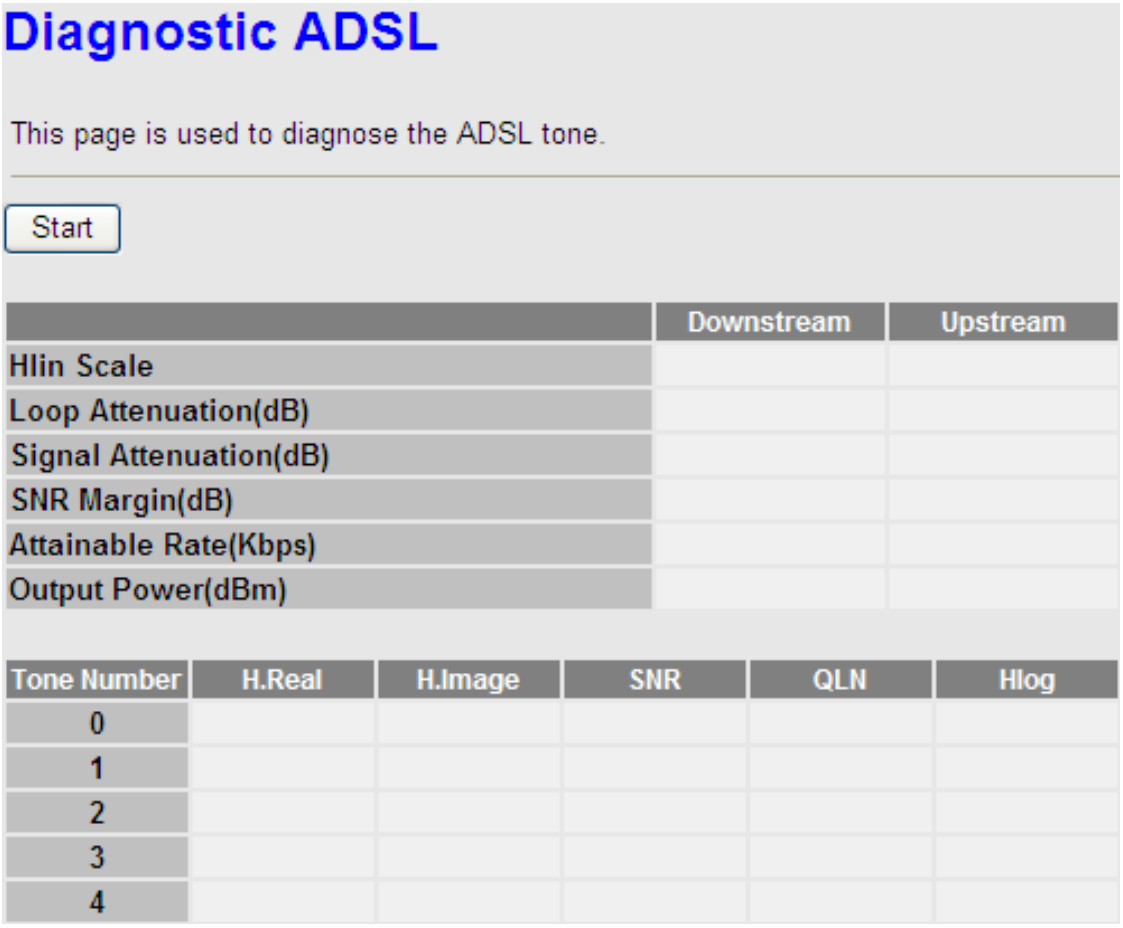
Choose **Diagnostic** > **ATM Loopback**. The page shown in the following figure appears. In this page, you can use VCC loopback function to check the connectivity of the VCC. The ATM loopback test is useful for troubleshooting problems with the DSLAM and ATM network.



Click **Run Loopback** to start testing.

ADSL

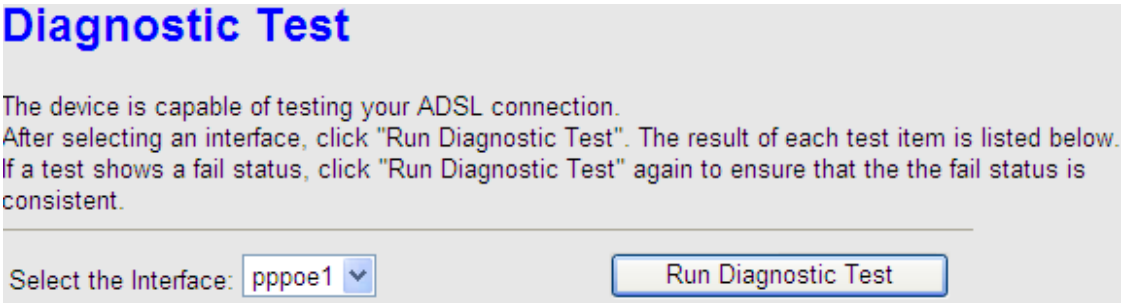
Choose **Diagnostic** > **ADSL**. The page shown in the following figure appears. It is used for ADSL tone diagnostics.



Click **Start** to start ADSL tone diagnostics.

Diagnostic Test

Choose **Diagnostic** > **Diagnostic Test**, the page shown in the following figure appears. In this page, you can test the DSL connection. You can also view the LAN status connection and ADSL connection.



Click **Run Diagnostic Test** to start testing.