User Manual

V 1.1

CONTENTS

1.OVERVIEW

1.1 ABOUT ADSL

An ADSL MODEM is a broadband Internet access device, which utilizes the high frequency segment of the phone line to transmit high-speed data without affecting the voice transmission. The frequency of the ADSL signal is higher than that of voice, so voice and ADSL signal can coexist in one line by using a splitter to insulate each from the other. ADSL data transfer adapts the asymmetry model. It supports upload transmission speed up to 1Mbps and download speed up to 8 Mbps (24Mbps for ADSL2+). ADSL is an ideal device for broadband access.

1.2 ABOUT ADSL2/2+

Transmission performance of ADSL2 is improved comparing with the first generation of ADSL. These improvements are mainly concerned with long distance, anti-line-loss, anti-noise, etc. By doubling the transmission bandwidth, ADSL2+ has implemented a downlink rate as high as 24 Mbps. Therefore, Internet applications such as synchronous transmission of multi video stream, online games and huge capacity of downloading files are made possible.

1.3 FEATURES

1、 Support ANSI T1.413 ISSUE 2、 ITU G.992.1 (G.DMT)、ITU G.992.2 (G.LITE)、ITU G992.3、ITU G992.5
2、 Web-based configuration and monitoring.
3、 Support multiple PVCs.
4、 Routing function.
5、 NAPT、DHCP function.

2 SPECIFICATION

2.1 INTERFACE INTRODUCTION

2.1.1 INDICATOR AND INTERFACE

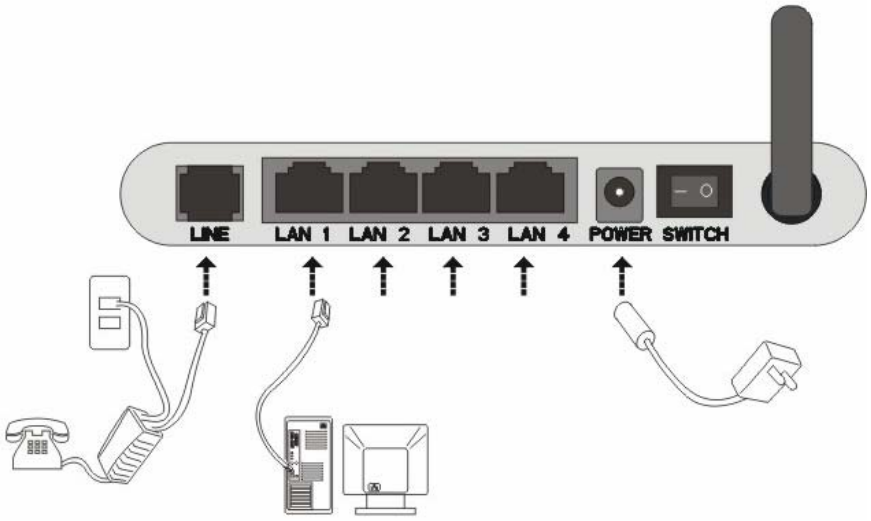


Table 2.1

ITEM	Name	State introduction
Indicator	POWER	A steady red light means the power connection works properly
	DSL	Yellow, shows DSL line status.
	INTERNET	Green, Flashing means the Modem is transmitting or receiving data
	WLAN	Green, Indicates status of connection to the wireless device
Interface	LINE	Connected with phone line or “ADSL” port of the splitter.
	ETHERNET	To be connected to a PC network card by a straight-through network cable, also can use a crossover cable to connect to Hub, Switch or Router.
	SWITCH	Power interface, Connect with power adapter.
	POWER	To turn on / off the power.
	RST	Press the reset button and turn on the power, then keep pressing the reset button for 5 seconds. Then you can reset the modem with the default settings.

2.1.2 SPLITTER SPEC

Table 2.2

Interface	Introduction
LINE	Connected with telephone line
ADSL	Connect with the LINE port of the ADSL Modem using telephone line provided.
PHONE	Connect with telephone

2.2 HARDWARE CONNECTION

Introduction：

1、**U**se a telephone cord to connect the LINE port of the splitter with the RJ-11 port (the phone jack) on the wall.
2、Use another telephone cord to connect the ADSL port of the splitter with the LINE port of the ADSL Modem.
3、Use another telephone cord to connect the telephone set with the PHONE port of the splitter.
4、Connect Ethernet port of the ADSL MODEM with 10/100BASE-T port of the computer using the network cable that comes with the modem.
5、Plug in the power cord, and turn on the power.

If you do not want Internet services and telephone voice services simultaneously, please just connect the LINE port of the ADSL Modem with the RJ-11 port (the phone jack) on the wall using a telephone cord. In this case, the splitter is not necessary.

2.3 LED STATUS INDICATION

Table 2.3

Status	POWER (red)	DSL (yellow)	INTERNET (green)	WIRELESS(green)
Steady light	Power on	The modem is in good connection	Connected with PC	Wireless is connected
Flashing	/	In handshaking status	/	/
Fast flashing	/	/	Transmitting or receiving data	Transforming data
Off	Power off	Connection not set up	Not connected with PC properly	Wireless is disabled

3. CONFIGURATION

3.1 DEFAULT CONFIGURATION

ADSL MODEM has pre-configured with the VCI/VPI which is in common use. The default dial-up mode is bridge encapsulation. For bridge mode, no need to configure any more parameter. However, the third party dial-up software is needed for connection with the Internet.

3.2 COMPUTER CONFIGURATION

The default IP address for ADSL MODEM is: **192.168.1.1**; The Subnet Mask is：**255.255.255.0**. Users can configure ADSL MODEM through an Internet browser. ADSL MODEM can be used as gateway and DNS server; users need to set the computer's TCP/IP protocol as follow:

1、 Set the computer IP address at same segment of ADSL MODEM, such as set the IP address of the network card to one of the "192.168.1.2"～ "192.168.1.254".

2、 Set the computer's gateway the same IP address as the ADSL Modem's.

3、 Set computer's DNS server the same as ADSL Modem's IP address or that of an effective DNS server.

3.3 ADSL MODEM CONFIGURATION

3.3.1 LOG IN

Open the browser; input **http://192.168.1.1** at the address column. Press "Enter" key then the entry dialog box will show up as Figure 3.1. Input Username: admin , Password: password (capital sensitive), then press Enter.

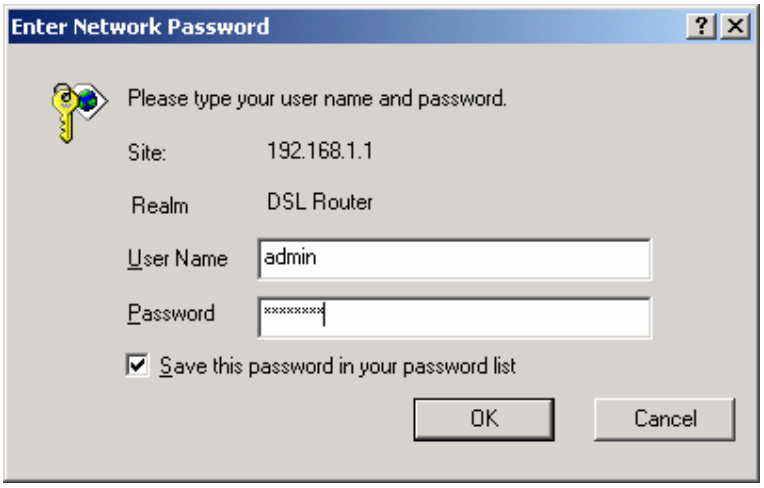


Figure 3.1

3.3.2 SAVE SETTING

After getting through each page for parameters setting, click "Save" or "Save apply" to store the value in ADSL MODEM. Briefly, we named "Save".

Note：

When you save the settings, the web page will be refreshed slowly, please wait it finished.
After you save the settings, it will take effect until next reboot.
Some settings only take effect after rebooting the router.

3.4 WAN CONFIGURATION

If the configuration is bridge encapsulation, there is no need to configure any more parameters. Only need to use the third party dial-up software to connect the Internet.

Totally, this router supports：PPPoA、PPPoE、MER、IPoA、Bridging. For detail configuration information, please check the following configuration guide.

3.4.1 CONFIGURATION GUIDE

Click “WAN” on the left page, enter into “WAN” configuration page.

- Note: At most we can have eight connections. If you need to add a new connection, please delete or modify an existing connection.

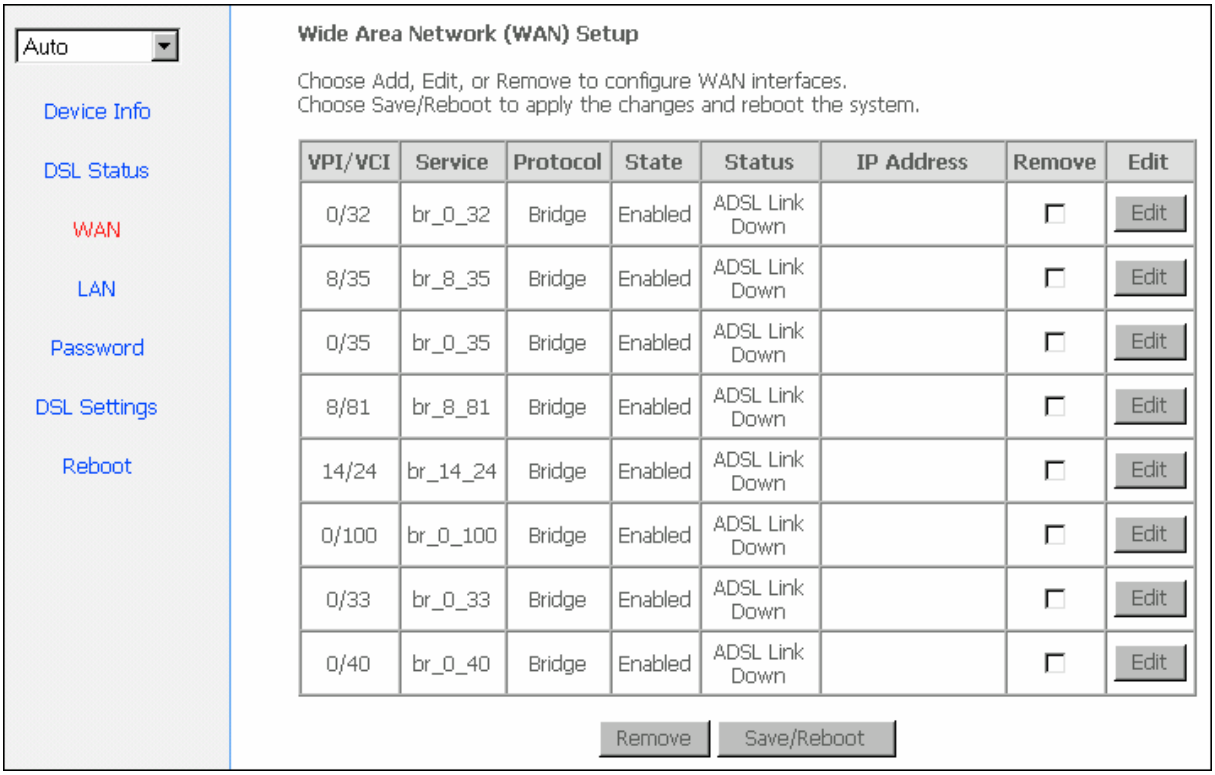


Figure 3.2

Click on the next connection which you want modify. Press “Edit” button, enter the configure guide, as Figure 3.3

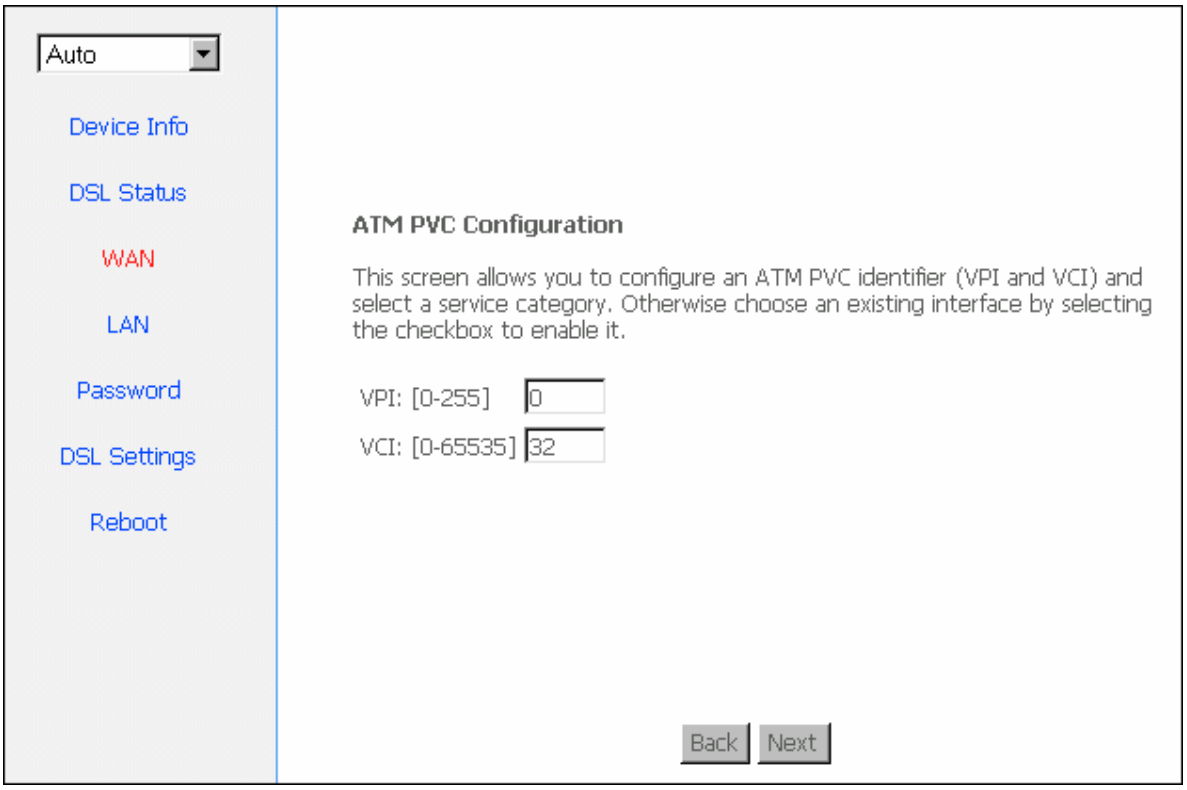


Figure 3.3

- The value for VPI/VCI is assigned by your ISP. After inputting the PVC value, press “Next” into “connection type”. As Figure 3.4.

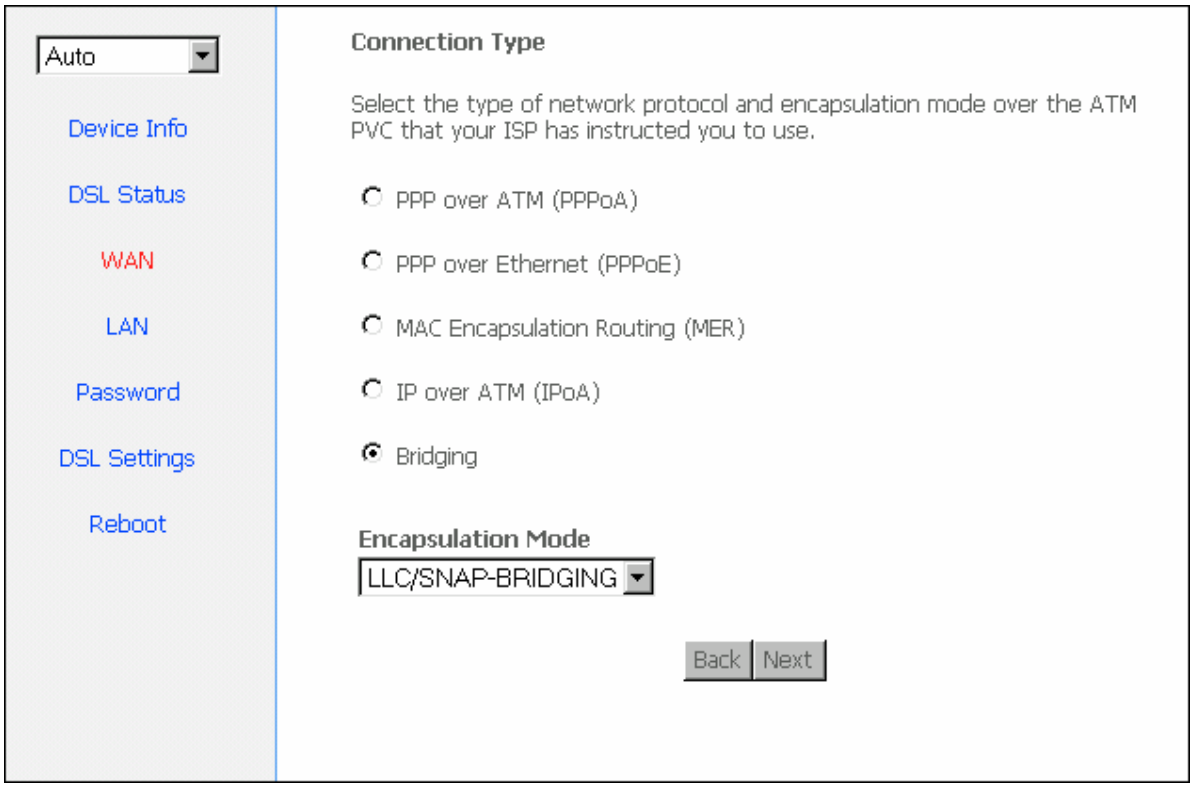


Figure 3.4

The Modem supports five ADSL protocol modes. Choose the protocol which is appointed by ISP and PVC

encapsulation, click “Next” enter to the protocol configure. Below, we introduce the configuraion of the five protocol modes.

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

- Some connection lines need to confirm the LLC or VC, if you can’t confirm, please don’t modify the default value or ask your ISP.

3.4.2 RFC1483 BRIDGE CONFIGURATION

Select the Bridging mode. Then press “Next” to specify the Service Name, and select the “Enable Service” as Figure 3.5.

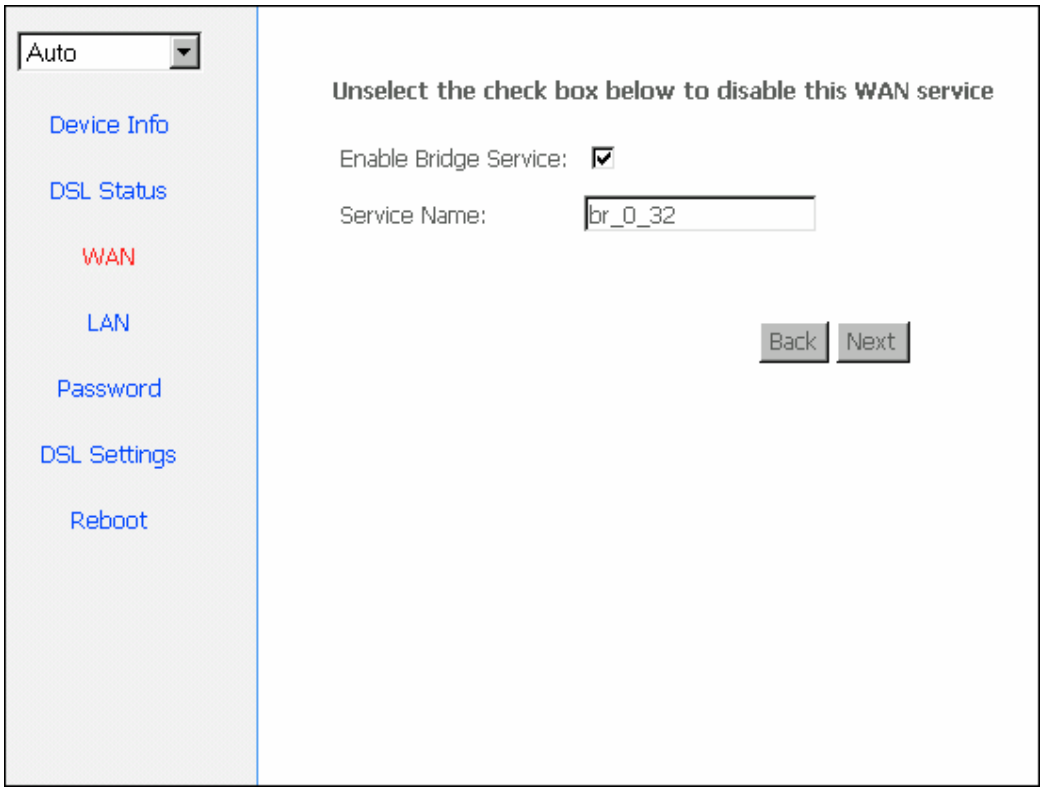


Figure 3.5

Press “Next” to enter into “WAN configuration”, click “save” to save configuration, if you need to modify the parameter, click “back” as Figure 3.6.

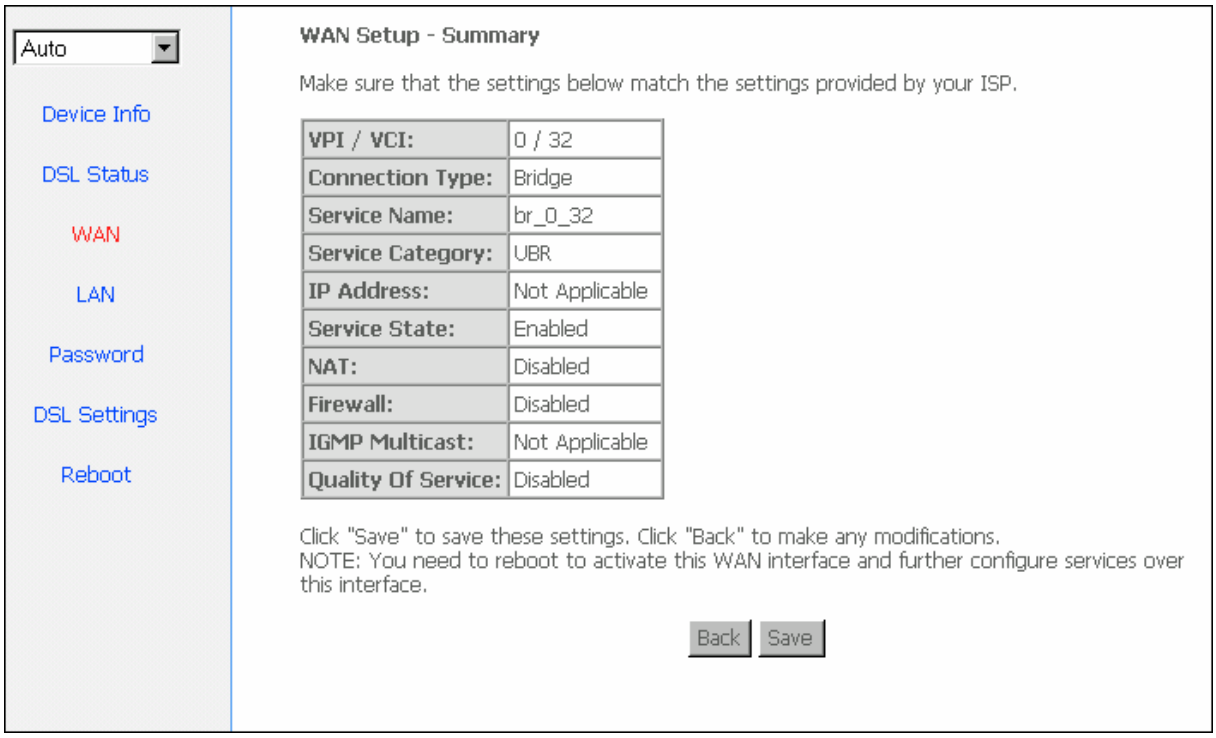


Figure 3.6

Note：When you use bridge mode, please close "DHCP SERVER", the result as Figure 3.7

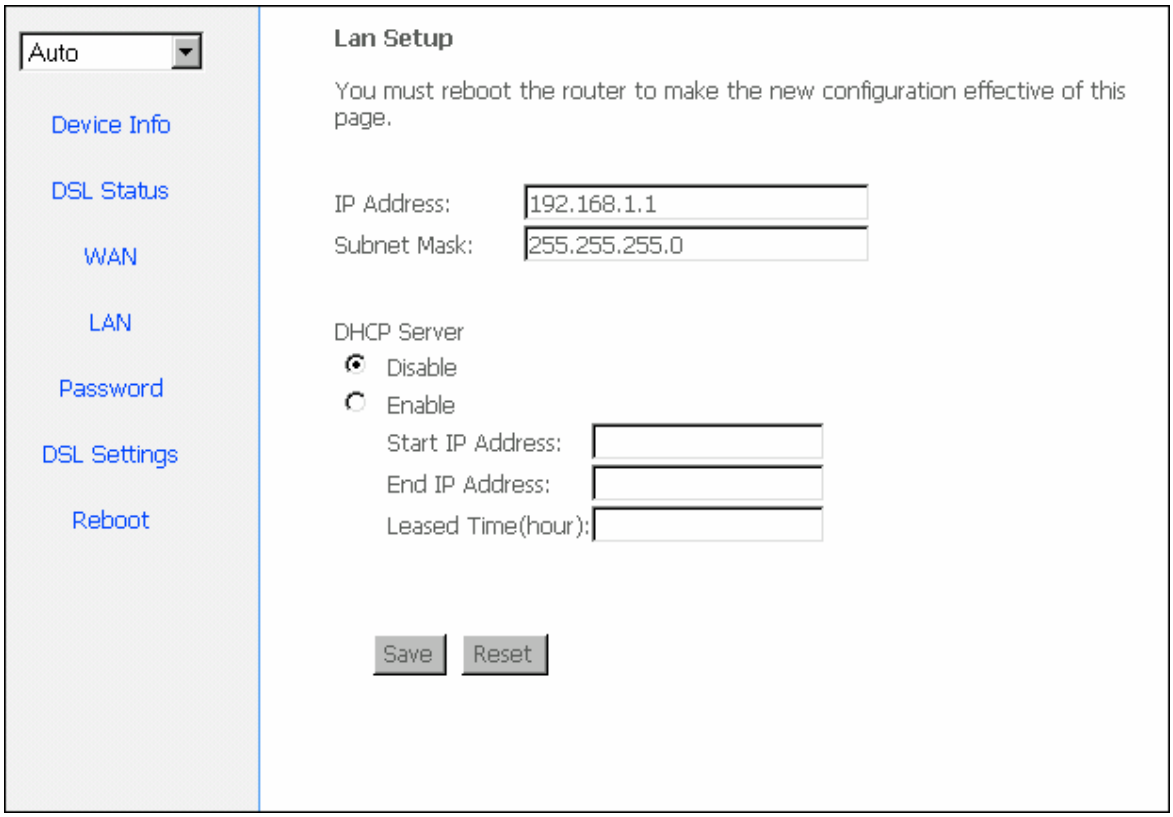


Figure 3.7

3.4.3 PPPOE CONFIGURATION

PPPoE is also known as RFC 2516. It is a method of encapsulating PPP packets over Ethernet.

PPPoA is also known as RFC2364 and named as Peer to Peer Protocol over ATM. As PPPoE, it also has all the features of PPP. Although it's based on ATM protocol, the setting of all the other parameters is similar with PPPoE. So we only introduce PPPoE in detail here.

In Figure 3.4, select PPP over Ethernet (PPPoE), press "Next step" entering the configuring interface, as Figure 3.8.

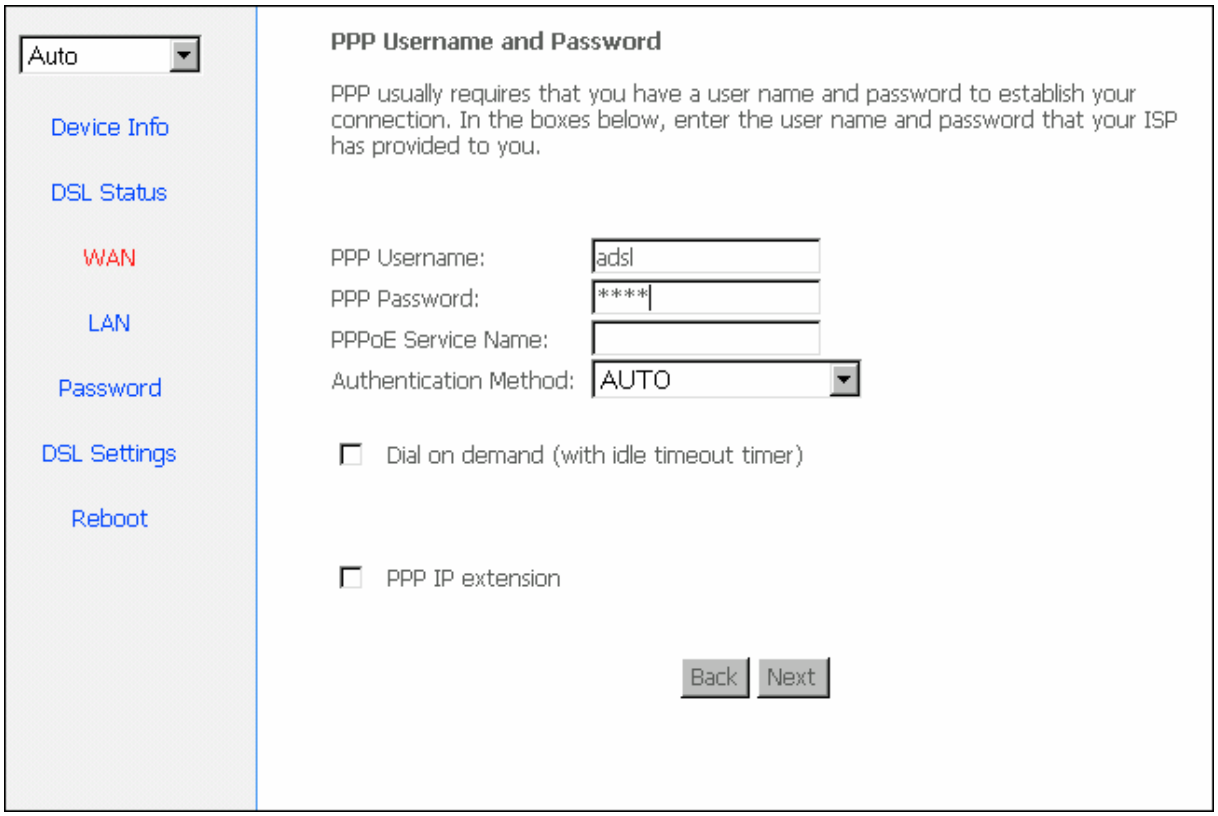


Figure 3.8

- PPP Account: Your account from ISP to access Internet.
- Password: Input the password assigned by your ISP.
- PPPoE server name: Server name of network ISP. No need to set.
- Authentication Mode: Authentication mode of network ISP. Default is AUTO.
- Connection on demand: When this mode is selected, the connection that has no traffic within assigned disconnect timeout (e.g. 1 minute) will be automatically disconnected. The connection will be activated again when traffic arrives. This function is advantageous for users who are charged with online time. It should be noticed that some programs automatically link to Internet. Computer will send data to network when infected by virus. Connection will not be disconnected under these data streams.
- Disconnect timeout: When "Connection on demand" is selected, this input box indicates that after how long the connection will be disconnected in the absence of traffic. If the value is 0, connection will not be disconnected.

Press “Next step” when configuration is finished. The following operation is same with Figure 3.5. Notice that PPPoE mode does not work until the modem is reset.

3.4.4 STATIC ADDRESS

In Figure3.4, select MAC Encapsulation Routing (MER), press “Next”, and the configuration can be queried from your ISP, the result as Figure3.9.

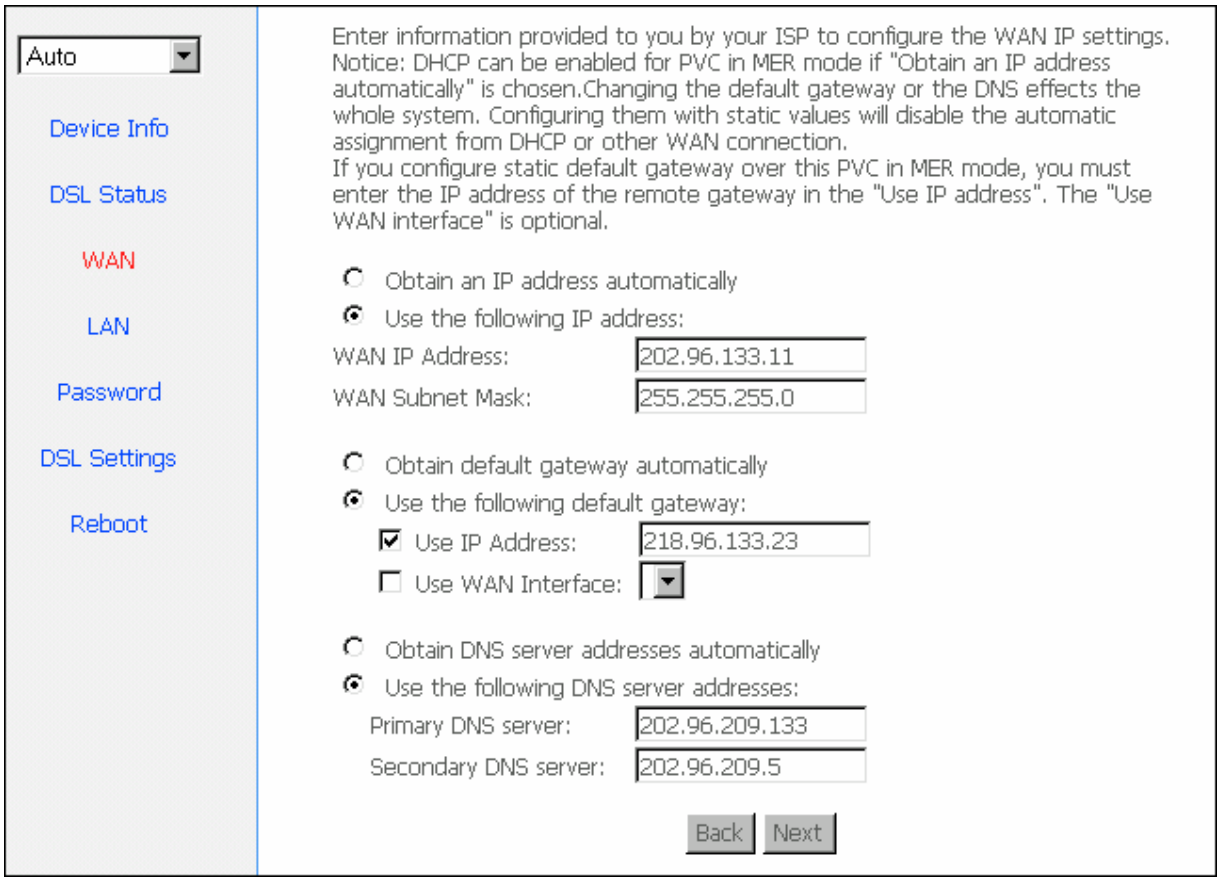
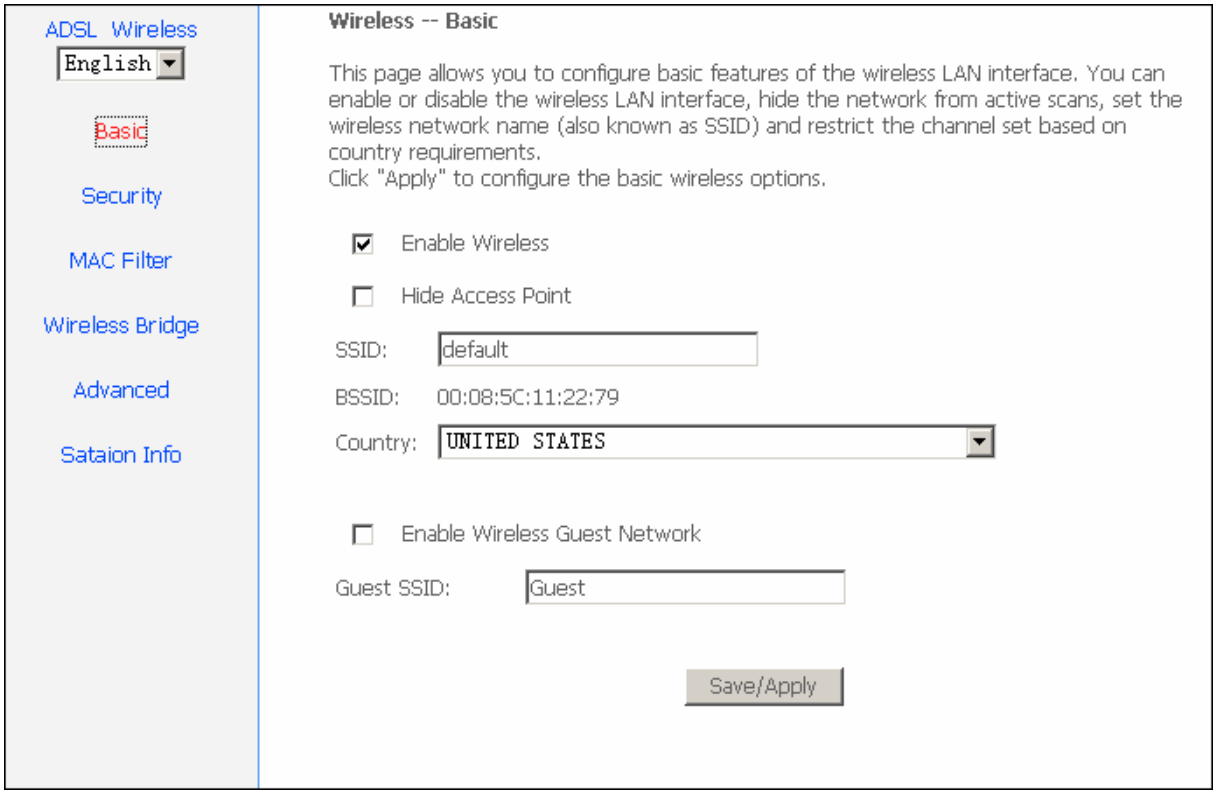


Figure 3.9

3.5 WIRELESS CONFIGURATION

Press “**Wireless**” on the top of web pages to enter wireless section. You can select to configure wireless setup, security and management.



3.5.1 WIRELESS SETUP

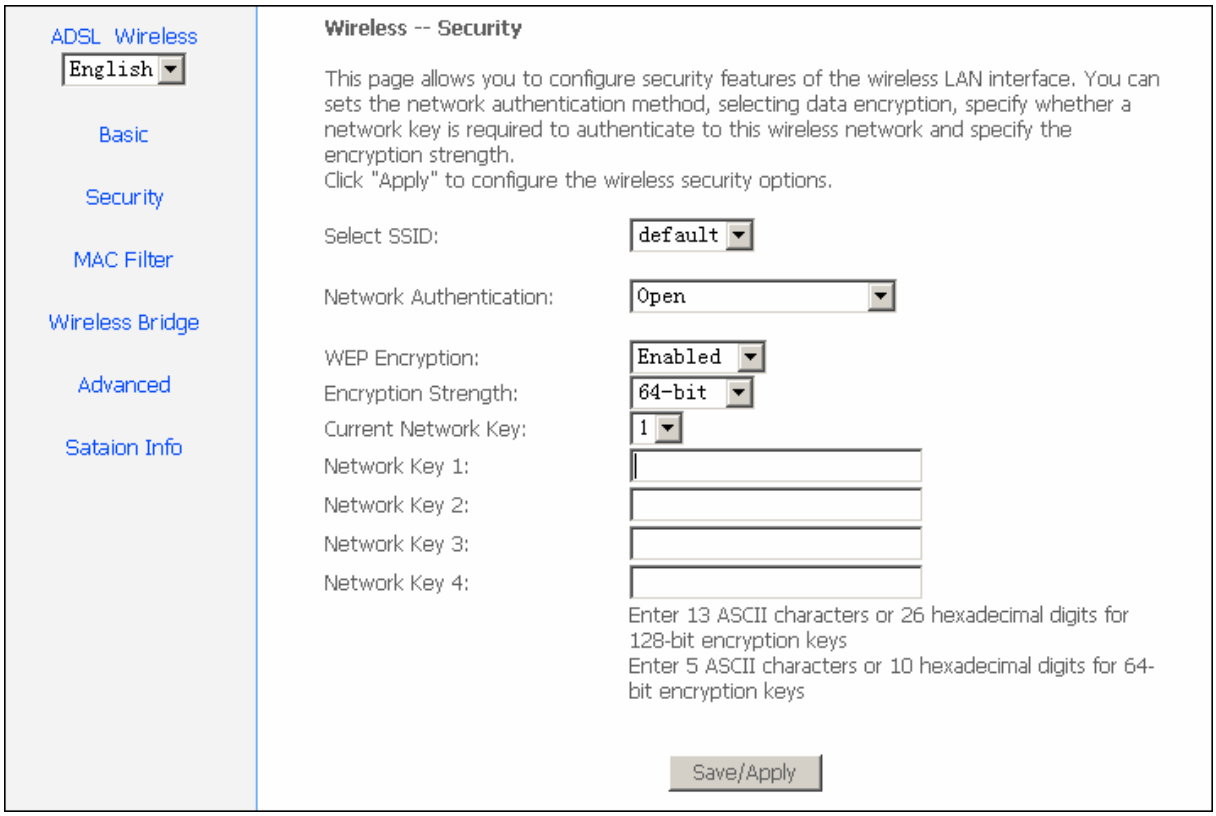
Click "**Setup**" on the left menu to setup basic wireless parameters. In default, check "Enable Wireless" box to launch wireless AP.

- **SSID (**Service Set Identifier): The mobile users cannot access WLAN until setting their SSID as the same value of the wireless ADSL. The SSID value of the ADSL is "default"
- **Hidden Access Point:** If checked, wireless station will no see SSID of the ADSL.

3.5.2 WIRELESS SECURITY

Press "**Security**" on the left menu to construct wireless security. You can select to configure WEP encryption, Shared, 802.1x, WPA, and WPA2 authentication.

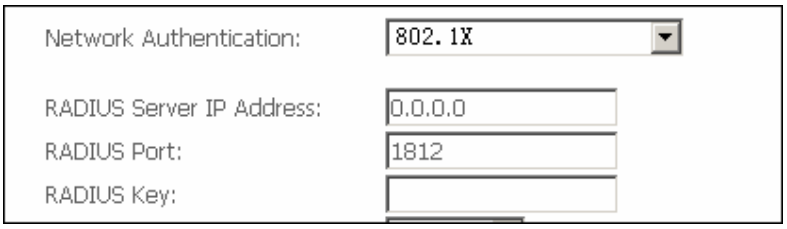
- WEP Encryption
  Select "Enabled" of the WEP encryption list. You can enter WEP encryption page.
  Encryption Strength: Key length: 128bits or 64bits.
  Network Key 1-4: Up to four keys that are in form of hex digitals could be set. Mobile users can't access the AP if they haven't set the same key as AP. For 64bits and 128bits keys, you should input 10 and 26 hexadecimal digitals or 5 and 13 ASCII characters respectively. Every two digitals should be comparted with others by a space character. For example: "7890ABCDEF" (hexadecimal digitals) or "QWERT" (ASCII characters) for a key length of 64bits.



- 802.1x Authentication

  Select “802.1x” to enter 802.1x authentication page.

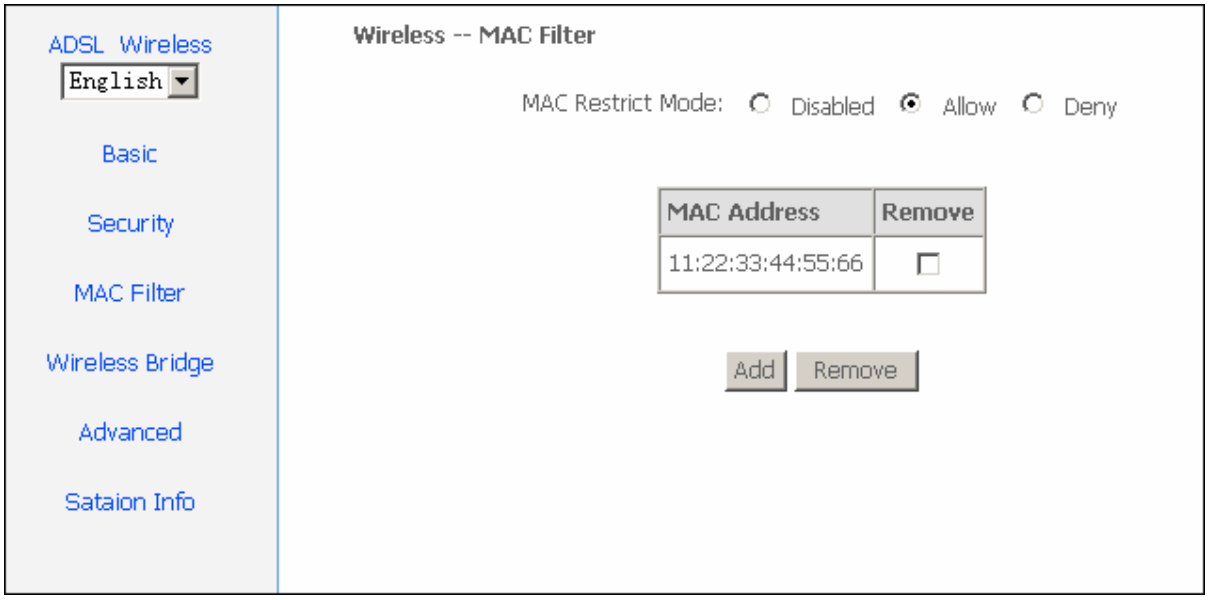
  The 802.1x authentication needs a Radius server in LAN. In this page, you can input Radius server IP address, port number and secret key.



3.5.3 WIRELESS MAC FILTER

In fact, the Access List function is just like MAC address filtering and selected to permit or forbid access of wireless station with specified MAC address.

Method: select “Allow” or “Deny” mode, and click “Add” button, and input MAC address which you want to allow or deny.



Notice: You only can select one of allow mode or deny mode.

4 OTHER CONFIGURATION

4.1 LAN CONFIGURATION

Configuration of Modem's IP address and password

4.1.1 CONFIGURATION OF MODEM'S IP ADDRESS

As a network device, ADSL Modem has its own IP address and MAC address. The factory sets the MODEM, at a default IP address of 192.168.1.1 and subnet mask of 255.255.255.0. The user can configure these addresses through the "LAN" on "Configuration" like this:

For example, change IP address to "10.10.10.10". Click "LAN", input "IP address": 10.10.10.10, then "subnet mask": 255.0.0.0, the result is as Figure4.1, press "save".

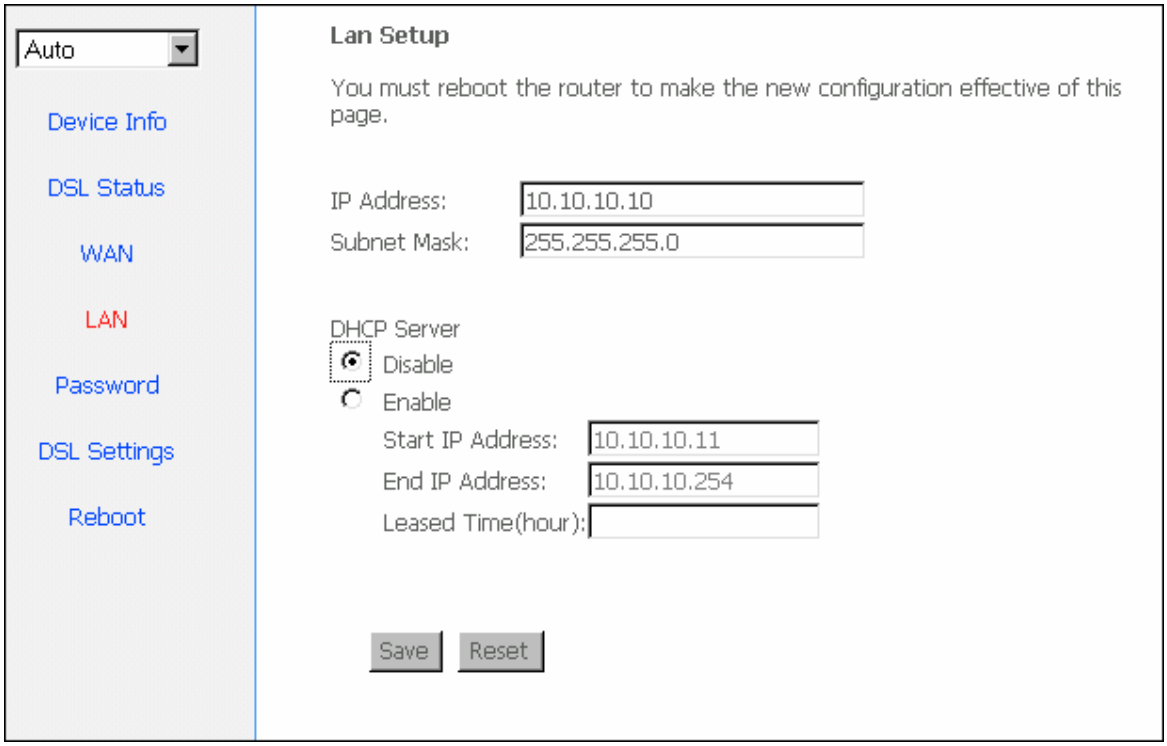


Figure 4.1

Note：If you change IP address, it will take effect after you reboot the modem. You must use the new IP address to login.

4.1.2 DHCP CONFIGURATION

- click **"LAN "**
- click **"DHCP server"**;
- Define the "Start IP address" and the "End IP address" of DHCP server (for example, from 10.10.10.11 to 10.10.10.254).
- Input the value of lease (Measured by the second, 0 indicates permanently valid).

As Figure 4.2, open DHCP server, computer will set the IP Address of network card with one of the address 10.10.10.11 ～ 10.10.10.254.

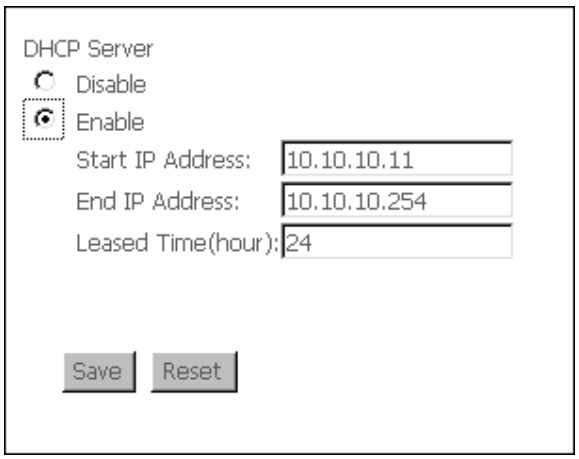


Figure 4.2

Note：When you use the DHCP Server, please pay attention to having multi-DHCP Server in one LAN.

4.2 PASSWORD CONFIGURATION

When you configure ADSL MODEM through an Internet browser, the system requires user name and password to validate access permission. The factory sets the modem at a default username of "**admin**" and the password of "**password**". The username is unchanged. You can enter the "password configuration" on Configuration column to change the password.

Attention: please remember the password after change, otherwise you will not be able to change configuration after saving setting

5. TROUBLESHOOTING

5.1 UNABLE TO ACCESS INTERNET

5.1.1 CHECK THE LINE AND THE DEVICE

1、Check the indicator of power supply is on, if not, Make sure the connection of power supply is correct; Make sure the output of power supply is correct; Make sure the switch of power supply is turned on；

2、Check the indicator of PC is on, if not, Make sure the connection of cable and network adapter; Make sure that the correct cable is used;

3、Check the LINK LED to see if it is twinkling. If no fast twinkling is observed within 3 minutes, please check whether phone line has been correctly placed; whether ADSL separator is correctly used. If multiple extensions have been installed, make sure that the separator is installed prior to the junction box of phone line. If the above items are confirmed and still no fast twinkling of WAN LED is observed, call the ISP to query whether ADSL service has been provided on your line;

4、Check the LINK LED to see whether it is unable to change status from fast twinkling to always light, or whether it changes status to fast twinkling after sometime of always light. If these phenomena occur constantly, please contact your ISP with a demand to check lines and signal quality;

If there is no problem in the above items, the line and the device shall be working. Problems may come from your computer configuration or device configuration.

5.1.2 CHECK YOUR CONFIGURATION

We explain here the configuration of PPPOE using Windows 2000 operation system as an example. For other operation systems the process is similar.

1、Enter the device manager to check if Ethernet adapter is correctly installed. If any problem exists, please re-installed it;

2、Check the configuration of Ethernet adapter in PC. Try to manually set IP address that is in band 192.168.1.x without conflict. See 3.2;

3、Try to run command “ping 192.168.1.1” on command line mode. If the response returns “time out”, please check Ethernet connection and IP settings;

4、If this modem is reachable, try to run ping with a known outer IP, e.g. the DNS server IP of ShangHai Online: “ping 202.96.209.133”.

- If ping is reachable, there shall be no problems in the modem. Please see step 5;
- If ping is not reachable, see step 6 and check if the configuration is correct.

5、Please try to ping a certain outer URL, e.g. “ping www.google.com”.

- If ping is reachable, there shall be no problems in the network settings. Please check the settings of the PC terminal, e.g. whether the security level is too high, or whether anti-virus firewall is installed;
- If ping is not reachable, check the DNS setting of Ethernet adapter. See 3.2.

Note 1：The precondition is that LAN settings in the modem has not been modified.

Note 2：We usually start command line mode in Windows 2000 as follows: click on the “RUN” item of Windows Start Menu, input characters “cmd” in the input box popped up with an “Enter”. The window

subsequently popped up is the command line window.

Note 3：The returned values of ping command in the following format show the standard of “reachable”

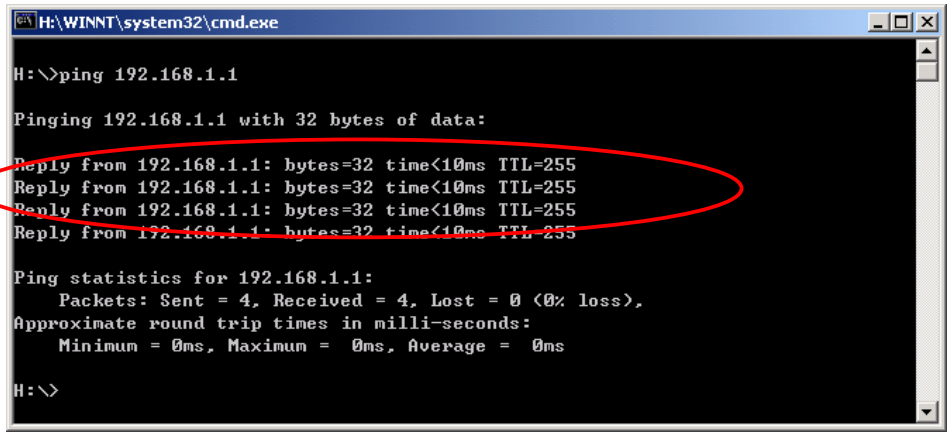


Figure 5.1

6、 If ping of the modem is reachable but ping of the outer fixed IP is unreachable, attention should be concentrated upon device settings. Please enter the configuring interface following the instructions in this manual.

（1） Check first the number of connections. If more than one connection exists, for troubleshooting , delete unused connections and remain the one connection you are using.

（2） Check the connection to see whether correct “type” is selected. It’s normal to choose login type of PPPoE. When you use PPPoE to login, the following information should be provided: VPI and VCI, which can be queried from your ISP, user name and password.

（3） Then make sure that “using NAT” and “default gateway” have been selected with a tick. Check whether “connect on demand” has been selected with a tick. If it is selected, the connection is activated only when traffic to outer networks arrives. If not selected, check “keep connection”, which should be set to 0 if you demand to keep connection

Make sure that the above parameters are saved after configuration. Internet is now available since the configuration is properly done.

ANNEX：SHIPPING LIST

ADSL MODEM	×1
Splitter	×1
User Manual	×1
Power Supply	×1
Cable Cat5 RJ45	×1
Telephone Line	×2
Warranty Certificate	×1

FCC WARNING

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

Modifications not authorized by the manufacturer may void users' authority to operate this device.