

300N WLAN ADSL 2/2+ Router

User's Manual

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(March, 2012)

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Federal Communication Commission Interference Statement

FCC Part 68

This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is a label that contains the FCC Registration Number and Ringer Equivalence Number (REN) for this equipment. You must provide this information to the telephone company upon request.

The REN is useful to determine the quantity of devices you may connect to the telephone line and still have all of those devices ring when your number is called.

In most, but not all areas, the sum of the REN of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area.

If the modem causes harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance.

But if advance notice isn't practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment.

If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this modem, please contact your dealer for repair/warranty information. The telephone company may ask you to disconnect

this equipment from the network until the problem has been corrected or you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

Installation

This device is equipped with a USOC RJ11C connector.

FCC Part 15

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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:

1. Reorient or relocate the receiving antenna.
 2. Increase the separation between the equipment and receiver.
 3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 4. Consult the dealer or an experienced radio technician for help.
-

FCC Caution

This equipment must be installed and operated in accordance with provided instructions and a minimum 20 cm spacing must be provided between computer mounted antenna and person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The equipment version marketed in US is restricted to usage of the channels 1-11 only.

R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of March 9, 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE).

The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8, 2000.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

EU Countries Intended for Use

The ETSI version of this device is intended for home and office use in Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

The ETSI version of this device is also authorized for use in EFTA member states: Iceland, Liechtenstein, Norway, and Switzerland.

EU Countries Not intended for use

None.

Contents

1. INTRODUCTION.....	1
1.1. FEATURES.....	2
1.2. MINIMUM REQUIREMENTS.....	3
1.3. PACKAGE CONTENT.....	3
1.4. HARDWARE PLACEMENT.....	4
1.4.1. <i>Rear Panel</i>	4
1.4.2. <i>Front LEDs</i>	5
2. HARDWARE INSTALLATION.....	6
3. SETUP WIZARD.....	7
3.1. AUTOMATICALLY SET ISP.....	10
3.2. MANUALLY SET ISP.....	14
4. IP ADDRESS SETTING.....	20
5. WEB MANAGEMENT CONFIGURATION.....	25
5.1. QUICK START.....	27
5.2. GENERAL SETUP.....	31
5.2.1. <i>Internet Setup</i>	31
5.2.1.1. Internet Settings.....	31
5.2.1.2. LAN.....	43
5.2.1.3. Wireless.....	47
5.2.2. <i>Advanced Setup</i>	55
5.2.2.1. Firewall.....	55
5.2.2.2. Routing.....	55
5.2.2.3. NAT.....	57
5.2.2.3.1. NAT.....	57
5.2.2.3.2. DMZ.....	58
5.2.2.3.3. Virtual Server.....	59
5.2.2.4. ADSL.....	60
5.2.2.5. QoS.....	60
5.2.2.6. PortBinding.....	63

5.2.3.	<i>Access Management</i>	65
5.2.3.1.	UPnP	65
5.2.3.2.	DDNS.....	65
5.2.3.3.	ACL.....	66
5.2.3.4.	Filter	68
5.2.3.4.1.	IP/MAC Filter	69
5.2.3.4.2.	Application Filter	71
5.2.3.4.3.	URL Filter.....	71
5.3.	STATUS	73
5.3.1.	<i>Device Info</i>	73
5.3.2.	<i>System Log</i>	74
5.3.3.	<i>Statistics</i>	75
5.4.	TOOLS.....	76
5.4.1.	<i>Administrator</i>	76
5.4.2.	<i>Time Zone</i>	76
5.4.3.	<i>Firmware</i>	77
5.4.4.	<i>System Restart</i>	78
5.4.5.	<i>Diagnostics</i>	79
6.	TROUBLESHOOTING	80
7.	GLOSSARY	84

Note:

The setup images used in this manual are for reference only. The contents of these images may vary according to firmware version. The official image contents are based on the newest firmware version.



1. Introduction

Congratulations on purchasing this Wireless N ADSL2/2+ Router. This router is a cost-effective ADSL2+ router, with the combination of an ADSL2+ modem, router, Ethernet network switch and wireless access point, you can surf the Internet through your ADSL2/2+ broadband connection without investing other devices.

This router can support downstream transmission rates of up to 24Mbps and upstream transmission rates of up to 1Mbps. It supports PPPoA (RFC 2364 - PPP over ATM Adaptation Layer 5), RFC 1483/2684 encapsulation over ATM (bridged or routed) and PPP over Ethernet (RFC 2516) to establish a connection with ISP. The product also supports VC-based and LLC-based multiplexing.

With built-in IEEE 802.11b/g/n wireless network capability, all computers and wireless-enabled network devices (including PDA, cellular phone, game console, and more!) can connect to this ADSL router without additional cabling. New Draft-N wireless capability also gives you the highest speed of wireless experience ever! With a compatible wireless card installed in your PC, you can transfer file for up to 300Mbps (transfer data rate)! The radio coverage is also doubled, so don't worry if your office or house is really big!

Utilizing the web management interface, users can easily configure the various functions of the router including DHCP server, NAT, virtual server, DMZ, access control, IP/MAC/Application/URL filter, Firewall, PPTP/IPSec/L2TP pass-through, DDNS, UPnP, Wireless and etc.

This router is a high performance and high-speed device that provides a full rate of ADSL2+ standard with the superb reliability and a complete solution for home and office application.

1.1. Features

ADSL2/2+ Compliance

- Support downstream rates of up to 24Mbps and upstream rates of up to 1Mbps.
- Compliant to ITU-T G.992.1 (G.dmt), G.992.2 (G.lite), G.992.3 (ADSL2), G.992.4 (splitterless ADSL2), G.992.5 (ADSL2+) for Annex A, B. (Annex A and B are supported in different H/W platform)
- Supports Multi-Mode standard (ANSI T1.413, Issue 2; G.dmt (G.992.1); G.994.1 and G.996.1 (for ISDN only); G.991.1;G.lite (G992.2)).
- Multiple Protocols over AAL5 (RFC 1483/2684).
- PPP over AAL5 (RFC 2364).
- PPP over Ethernet (RFC 2516).

Support 802.11n Wireless Access Point

- Complies with IEEE 802.11b/g/n standards.
- Farther coverage, less dead spaces and higher throughput with MIMO technology.
- High data rate – up to 300Mbps network speed.
- Supports 64-bit/128-bit WEP, WPA-PSK and WPA2-PSK wireless security functions.
- Supports WPS (WiFi Protected Setup) to easy connect wireless network without configuring the security.
- Supports MAC address filtering.

Router

- NAT (Network Address Translation) IP Sharing
- Virtual Server
- DMZ
- VPN Pass Through (IPSec/PPTP/L2TP)
- SPI Anti-DOS Firewall
- DHCP Server and Client

Access Management

- ACL (Access Control)
-

- IP/MAC/Application/URL Filter
- UPnP (Universal Plug and Play)
- Dynamic DNS

1.2. Minimum Requirements

The following devices are necessary to configure and use the ADSL2+ Router:

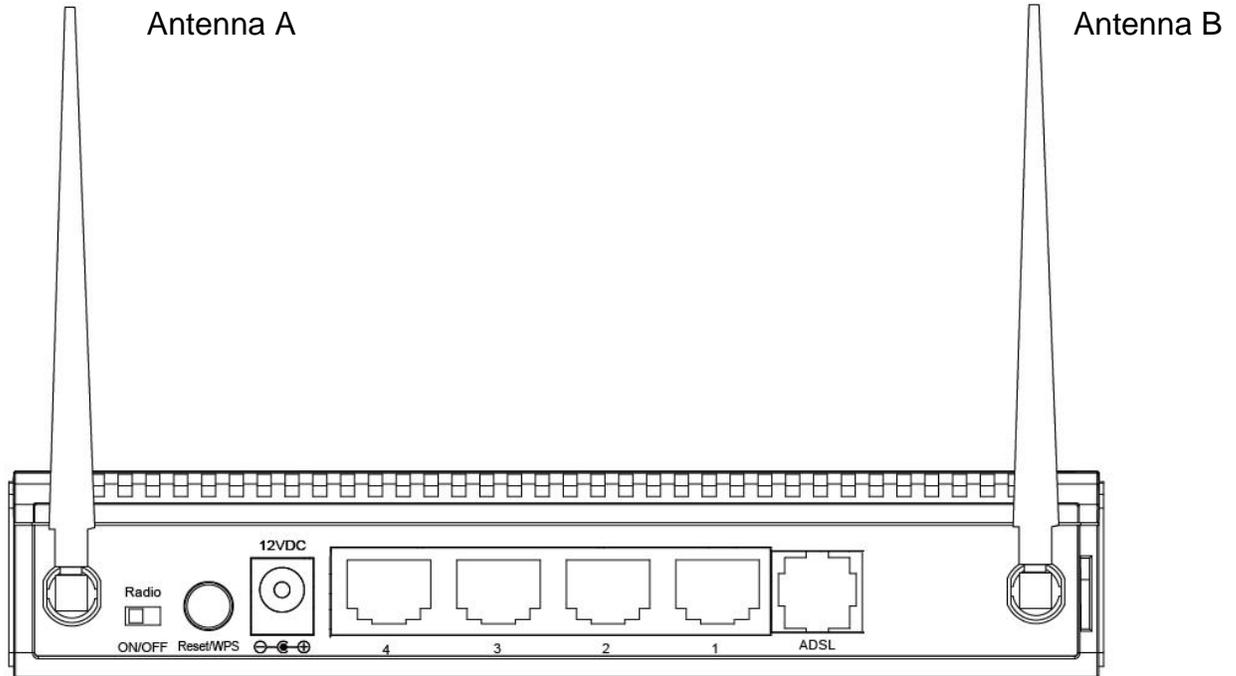
- A PC with Pre-installed Ethernet Adapter (Required) and a Web-Browser (Internet Explorer 4.0 or higher)
- RJ-45 Ethernet crossover cable (Included in the package)
- RJ-11 (ADSL Ready) phone Line

1.3. Package Content

- One ADSL2/2+ Router (Annex A or B)
- One Power Adapter (12VDC, 1A)
- One RJ-45 Ethernet Cable (50 cm)
- One RJ-11 Telephone Line (180 cm)
- One CD with full User Manual and Quick Installation Guide and Setup Wizard.

1.4. Hardware Placement

1.4.1. Rear Panel



Item Name	Description
Antenna A/B	These antennas are dipole antennas.
Radio ON/OFF	Switch the button to activate or deactivate the wireless functions.
Reset / WPS	Reset the router to factory default settings (clear all settings) or start WPS function. Press this button and hold for 10 seconds to restore all settings to factory defaults, and press this button for less than 5 seconds to start WPS function.
1 - 4	The router's 4 LAN ports are where you connect your LAN's PCs, printer servers, hubs and switches etc.
ADSL	Connect the supplied RJ-11 telephone line to this port and your ADSL/telephone network.
Power	Please plug the power adapter attached with the ADSL Router to the power jack. The power adapter is 12VDC, 1A.

1.4.2. Front LEDs

On the router's front panel there are LED lights that inform you of the router's current status. Below is an explanation of each LED and its description.



LED	Light Status	Description
PWR (Green)	On	Router is switched on and correctly powered.
WLAN (Yellow)	On	Wireless LAN WPS is on.
	Off	Wireless LAN is disabled
	Blinking	Wireless traffic is transmitting or receiving
ADSL (Green)	On	Connected to an ADSL DSLAN successfully
	Blinking	No connection
LAN LNK/ACT (Port 1-4)	On	The LAN cable is connected to the router
	Off	No network connection.
	Blinking	Network traffic transferring or receiving through the LAN port

2. Hardware Installation

Step 1. Connect the ADSL Line

Connect the router to your ADSL cable through the supplied RJ-11 telephone line.

Step 2. Connect the router to your LAN network

Connect the router to your PC, hub or switch by attached the Ethernet cable to the LAN port of the router.

Step 3. Connect the Power Adapter to the Router

Connect the power adapter to the power jack on the rear panel of router.

Step4: Check the ADSL LED on the Router

The ADSL LED will be ON if the router is connected to the ADSL cable and receives the ADSL signals successfully. If the LED is blinking, please contact with your ISP (Internet Service Provider) to check the problem.

Note: You must use the power adapter shipped along with the router, do NOT use any other power adapter from other sources.

3. Setup Wizard

This router provides a Setup Wizard tool for user to configure the ADSL settings. This wizard collects some ISP's ADSL settings so that user can easy to configure the router's ADSL settings by only selecting the ISP vendor from the wizard.

If you cannot find your ISP from the list in the wizard, please manually set the ISP information through the wizard.

Getting Started

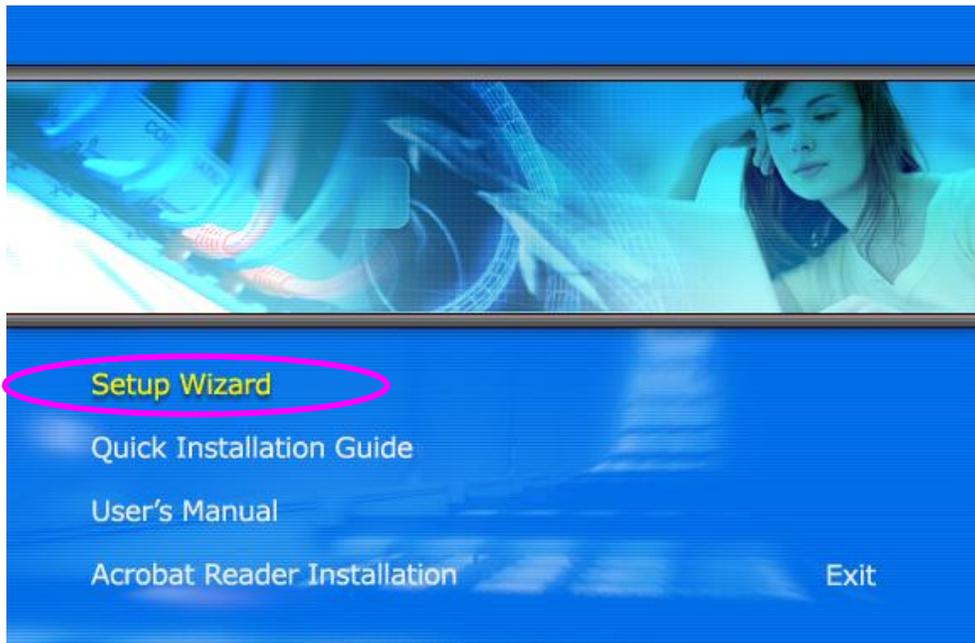
Before you start, please check the following items:

1. Please make sure that you have connected the ADSL cable to the router correctly. When the ADSL cable is worked normally, the ADSL LED will be on.
2. Uninstall all of dial up programs if you have installed previously for the USB modem or other dial up devices.
3. It is recommended to configure the router through the Ethernet cable before you have set the wireless functions correctly.

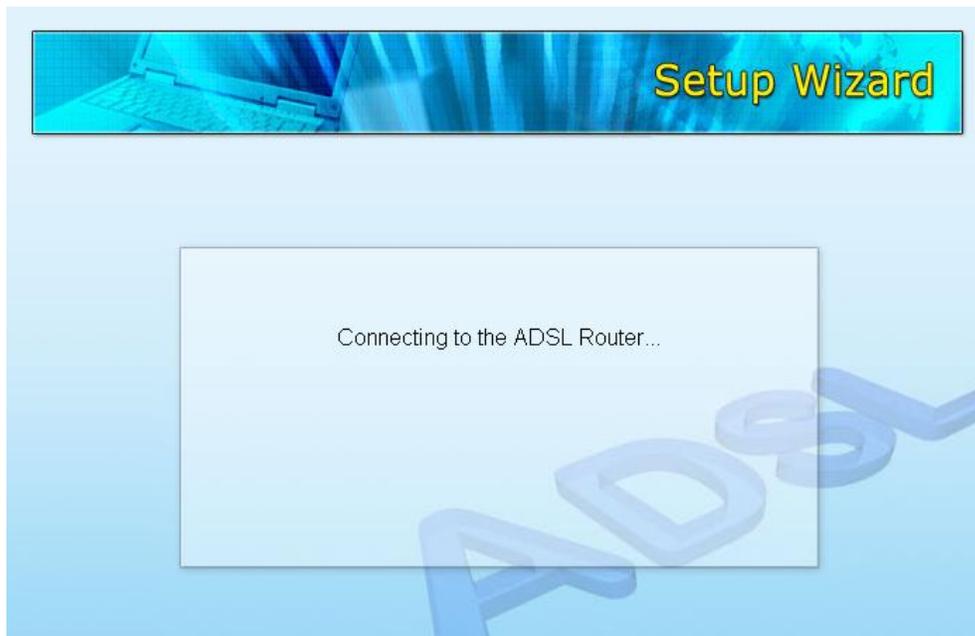
This wizard can be run in Windows XP/Vista/7. The following procedures are operated in Windows XP. (Procedures are similar for Windows Vista/7.)

1. Insert the CD shipped along with the ADSL router into your CD-ROM drive. The Autorun.exe program should be executed automatically. If not, run Autorun.exe manually from "Autorun" folder in the CD.

2. The following screen will be displayed. Click "Setup Wizard".



3. This wizard will be executed and try to search for the ADSL Router. If the ADSL Router can be searched successfully, the wizard will guide you to step 5.



4. If the router cannot be found, please enter the IP Address and the Password of the router to search again. Click “Next” to continue.



5. The wizard will automatically select the country where you are in by checking the language of the operating system in your computer and skip to the “Select ISP” page. Please select the ISP.

If you cannot find the ISP, please click “Other” to reselect the country or manual configure the ISP information.



3.1. Automatically Set ISP

If you can find the ISP from the wizard, please follow the procedures below to let the wizard set the ISP settings automatically.

1. Please select the ISP (Internet Service Provider) of your ADSL service.



2. Enter the Username and Password which your ISP has provided to you if it is needed. Click "Next".



3. Click "Save" to save the settings and reboot the router.



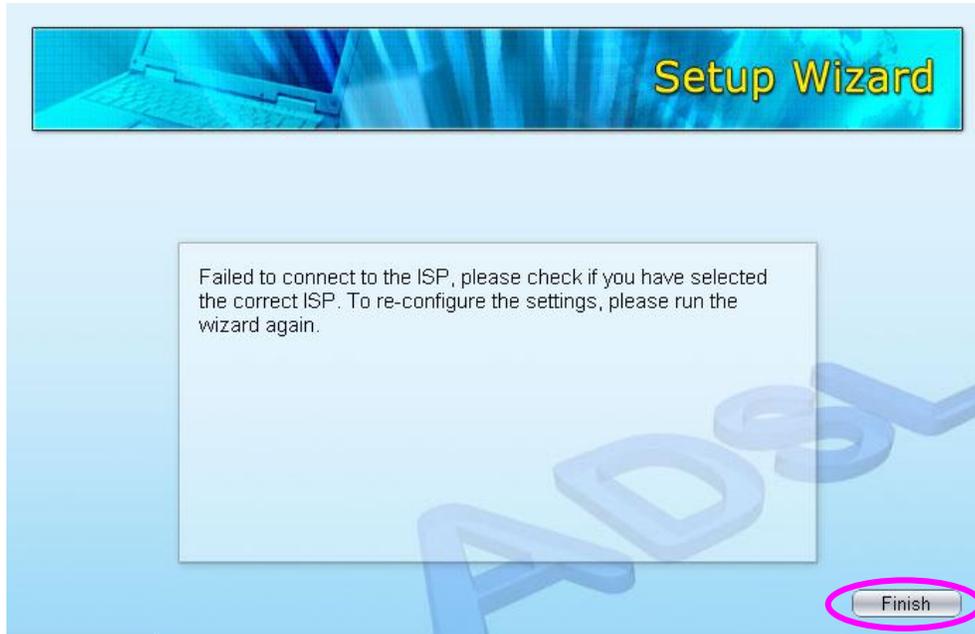
4. After saving and rebooting the router, the ISP settings are all finished. This wizard will then help to set your computer to obtain IP Address from the router automatically.

Note1: To use the router to get into the Internet, the IP Address of each PC has to be set in the same network segment as the router. This wizard will help to set the proper IP Address to your computer.

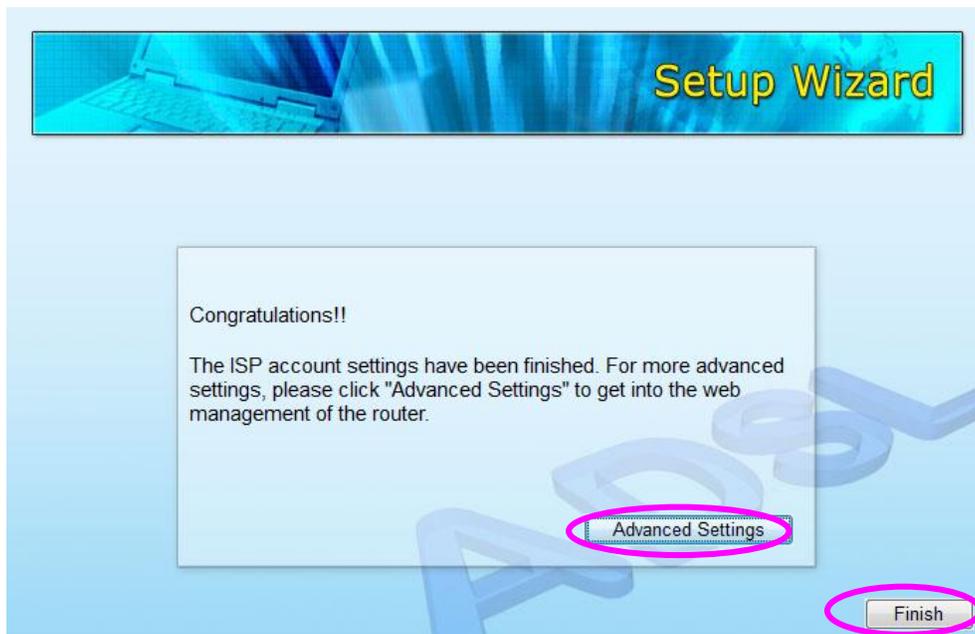
Note2: By default, the router's DHCP Server is enabled. If it is disabled before running the wizard, the wizard will enable the DHCP Server of the router automatically.



- The wizard will try to connect to the ISP you have selected. If the connection is failed, please run the wizard to select the ISP again.



- If you can successfully to connect to the ISP, you will see below page. If you want to configure more settings, please click "Advanced Settings" to get into the web management of the router or click "Finish" to close the wizard.



3.2. Manually Set ISP

If you cannot find the ISP from the wizard, please follow the procedures below to set the ISP settings manually.

Before configuring the ISP manually, please check with your ISP (Internet Service Provider) what kind of the service is provided such as PPPoE, PPPoA or RFC1483/2684. Gather the information as illustrated in the following table and keep it for reference.

PPPoE	VPI/VCI, VC-based/LLC-based multiplexing, Username, Password (and Service Name).
PPPoA	VPI/VCI, VC-based/LLC-based multiplexing, Username, Password.
RFC1483 Bridged	VPI/VCI, VC-based/LLC-based multiplexing to use Bridged Mode.
RFC1483 Routed	VPI/VCI, VC-based/LLC-based multiplexing, IP Address, Subnet Mask, Gateway Address, and Domain Name System (DNS) IP Address (It is a fixed IP Address).

1. Please select "Other".

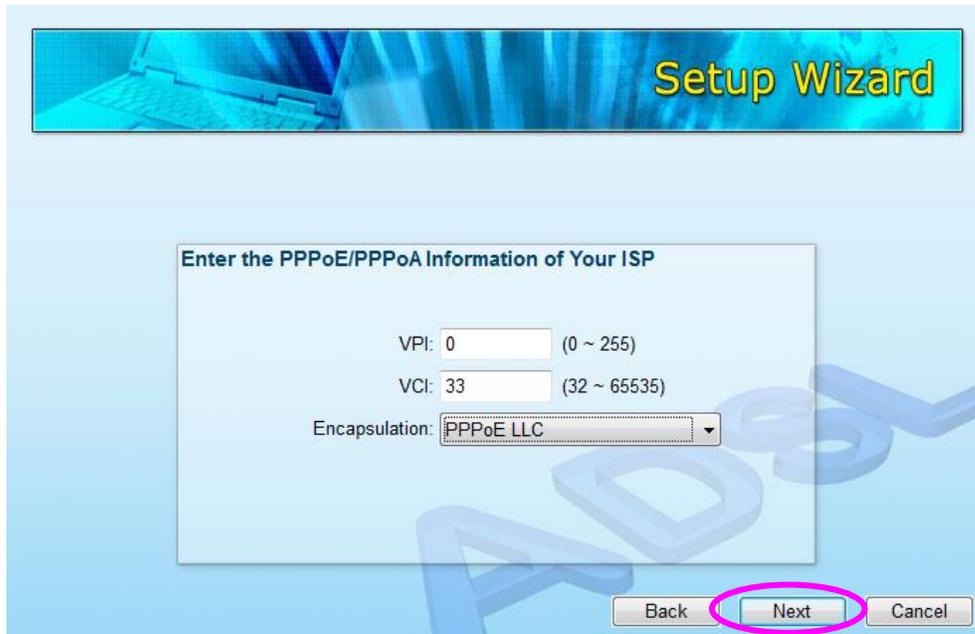


2. Please check with your ISP the connection type of the ADSL line. Select the Connection Type and click “Next”.

Note: The wizard will automatically select the country where you are in by checking the language of the operating system in your computer and skip to the “Select ISP” page. If you want to change the country, please click “Back” from this page.



3. Input the VPI, VCI and Encapsulation data supplied by your ISP. If the Connection Type is “Static IP Address”, you have to input the IP Address information supplied by your ISP. To know more about the explanation of each setting, please refer to Section 5.2 in the manual.



Setup Wizard

Enter the PPPoE/PPPoA Information of Your ISP

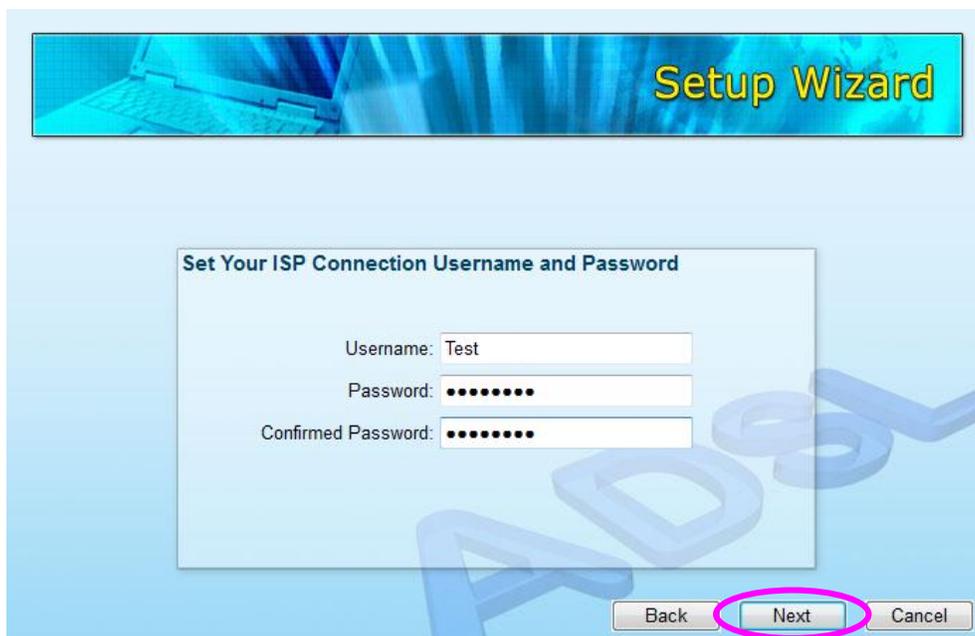
VPI: 0 (0 ~ 255)

VCI: 33 (32 ~ 65535)

Encapsulation: PPPoE LLC

Back Next Cancel

4. Enter the Username and Password which your ISP has provided to you if it is needed. Click “Next”.



Setup Wizard

Set Your ISP Connection Username and Password

Username: Test

Password: ●●●●●●

Confirmed Password: ●●●●●●

Back Next Cancel

5. Click "Save" to save the settings and reboot the router.



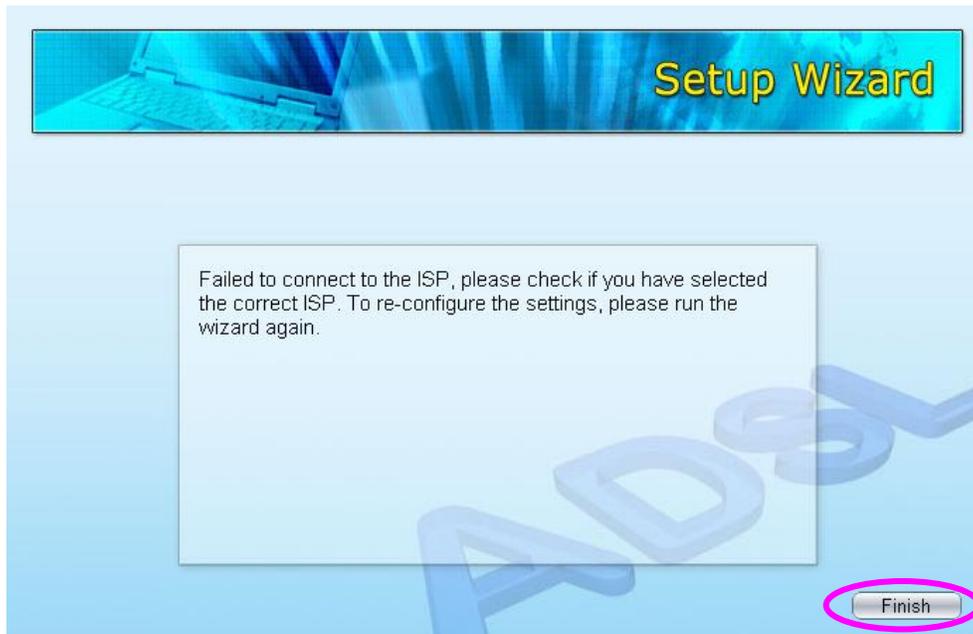
6. After saving and rebooting the router, the ISP settings are all finished. This wizard will then help to set your computer to obtain IP Address from the router automatically.

Note1: To use the router to get into the Internet, the IP Address of each PC has to be set in the same network segment as the router. This wizard will help to set the proper IP Address to your computer.

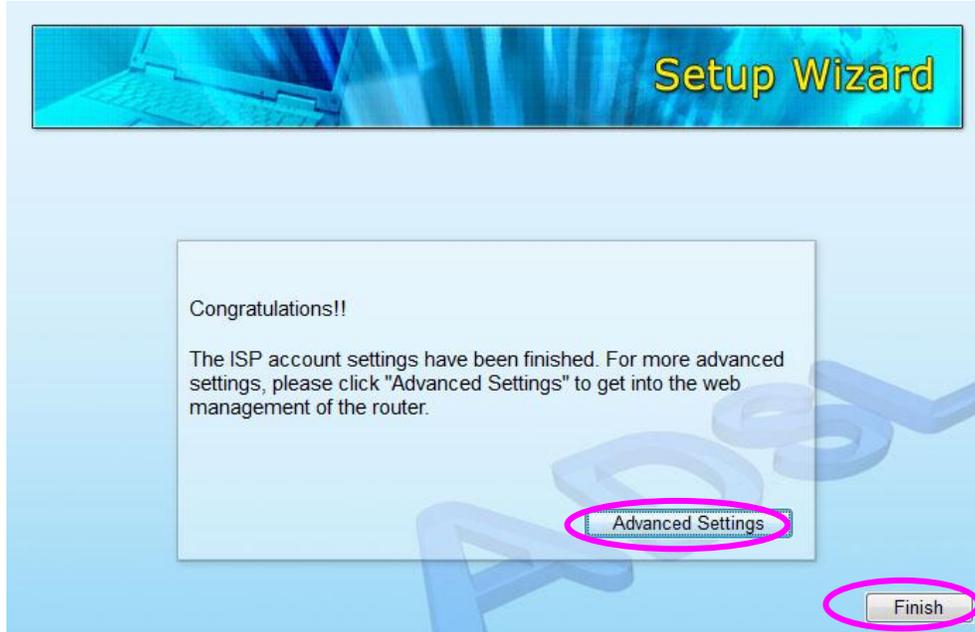
Note2: By default, the router's DHCP Server is enabled. If it is disabled before running the wizard, the wizard will enable the DHCP Server of the router automatically.



7. The wizard will try to connect to the ISP you have selected. If the connection is failed, please run the wizard to select the ISP again.



8. If you can successfully to connect to the ISP, you will see below page. If you want to configure more settings, please click “Advanced Settings” to get into the web management of the router or click “Finish” to close the wizard.



4. IP Address Setting

Using the router to get into the Internet, the PCs in the network must have Ethernet adapter installed and be connected to the router either directly or through a hub or switch. The TCP/IP protocol of each PC has to be installed and the IP Address of each PC has to be set in the same subnet as the router.

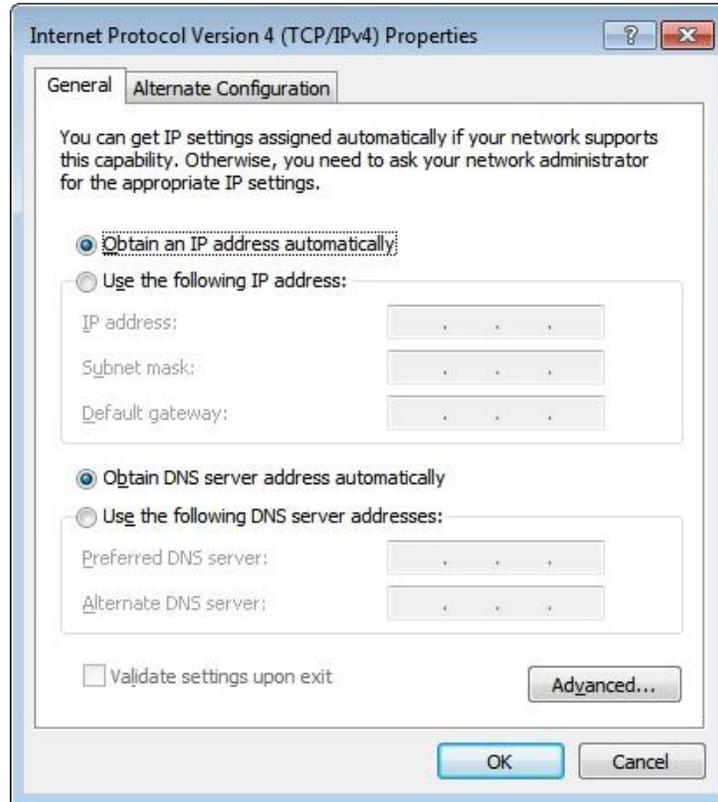
The router's default IP Address is **192.168.2.1** and the subnet mask is **255.255.255.0**. PCs can be configured to obtain IP Address automatically through the DHCP Server of the router or a fixed IP Address in order to be in the same subnet as the router. By default, the DHCP Server of the router is enabled and will dispatch IP Address to PC from **192.168.2.100** to **192.168.2.200**. It is strongly recommended to set obtaining IP address automatically.

This section shows you how to configure your PC's so that it can obtain an IP address automatically for either Windows 95/98/Me, 2000 or NT operating systems. For other operating systems (Macintosh, Sun, etc.), please follow the manual of the operating systems. The following is a step-by-step illustration on how to configure your PC to obtain an IP address automatically for **Windows 7, Windows Vista, Windows XP**.

Windows 7

1. Click the *Start* button and select *Control Panel*. Double click *Network and Internet* and click *Network and Sharing Center*, the *Network and Sharing Center* window will appear.
2. Click *Change adapter settings* and right click on the *Local Area Connection* icon and select *Properties*. The *Local Area Connection* window will appear.
3. Check your list of Network Components. You should see Internet Protocol Version 4 (TCP/IPv4) on your list. Select it and click the *Properties* button.

4. In the Internet Protocol Version 4 (TCP/IPv4) Properties window, select *Obtain an IP address automatically* and *Obtain DNS server address automatically* as shown on the following screen.



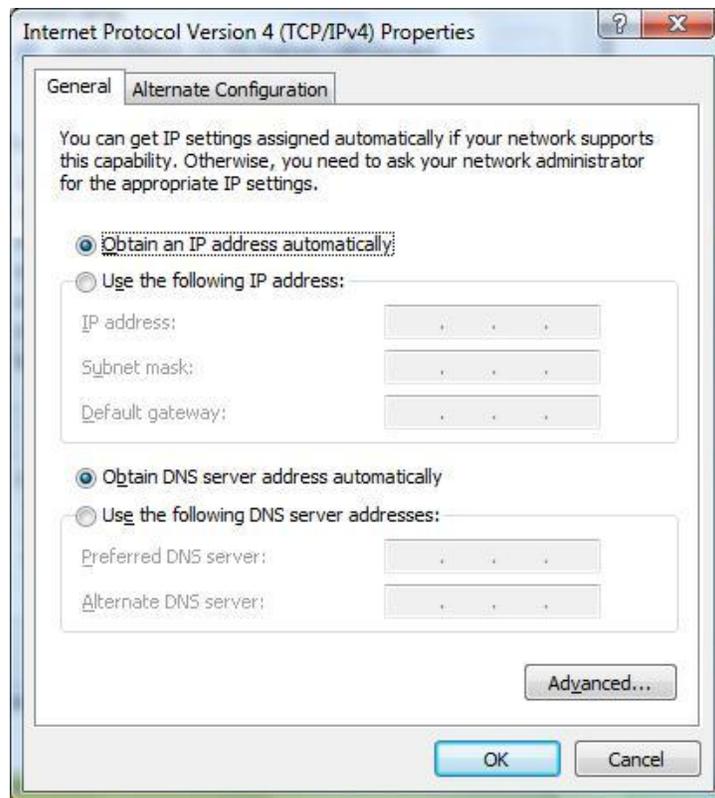
5. Click *OK* to confirm the setting. Your PC will now obtain an IP address automatically from your router's DHCP server.

Note: Please make sure that the router's DHCP server is the only DHCP server available on your LAN.

Windows Vista

1. Click the *Start* button and select *Settings* and then select *Control Panel*. Double click *Network and Sharing Center*, the *Network and Sharing Center* window will appear.

2. Click *Manage network connections* and right click on the *Local Area Connection* icon and select *Properties*. The *Local Area Connection* window will appear.
3. Check your list of Network Components. You should see Internet Protocol Version 4 (TCP/IPv4) on your list. Select it and click the *Properties* button.
4. In the Internet Protocol Version 4 (TCP/IPv4) Properties window, select *Obtain an IP address automatically* and *Obtain DNS server address automatically* as shown on the following screen.

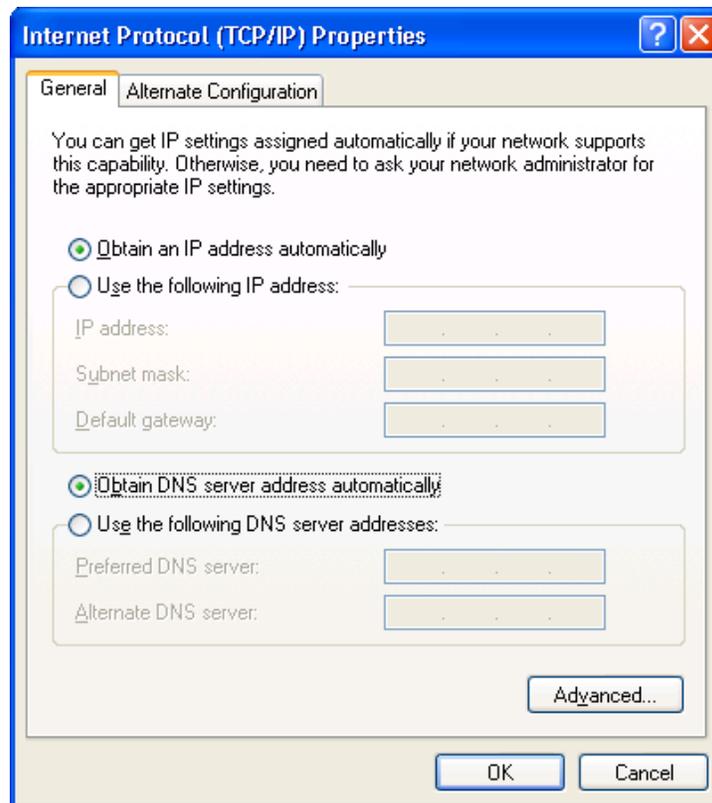


5. Click *OK* to confirm the setting. Your PC will now obtain an IP address automatically from your router's DHCP server.

Note: Please make sure that the router's DHCP server is the only DHCP server available on your LAN.

Windows XP

1. Click the *Start* button and select *Control Panel* and then double click *Network Connections*. The *Network Connections* window will appear.
2. Right click on the *Local Area Connection* icon and select *Properties*. The *Local Area Connection* window will appear.
3. Check your list of Network Components. You should see Internet Protocol [TCP/IP] on your list. Select it and click the *Properties* button.
4. In the Internet Protocol (TCP/IP) Properties window, select *Obtain an IP address automatically* and *Obtain DNS server address automatically* as shown on the following screen.



5. Click *OK* to confirm the setting. Your PC will now obtain an IP address automatically from your router's DHCP server.

Note: Please make sure that the router's DHCP server is the only DHCP server available on your LAN.

5. Web Management Configuration

Once you have configured your PCs to obtain an IP address automatically, the router's DHCP server will automatically give your LAN clients an IP address. By default the router's DHCP server is enabled so that you can obtain an IP address automatically. To see if you have obtained an IP address, see Appendix A.

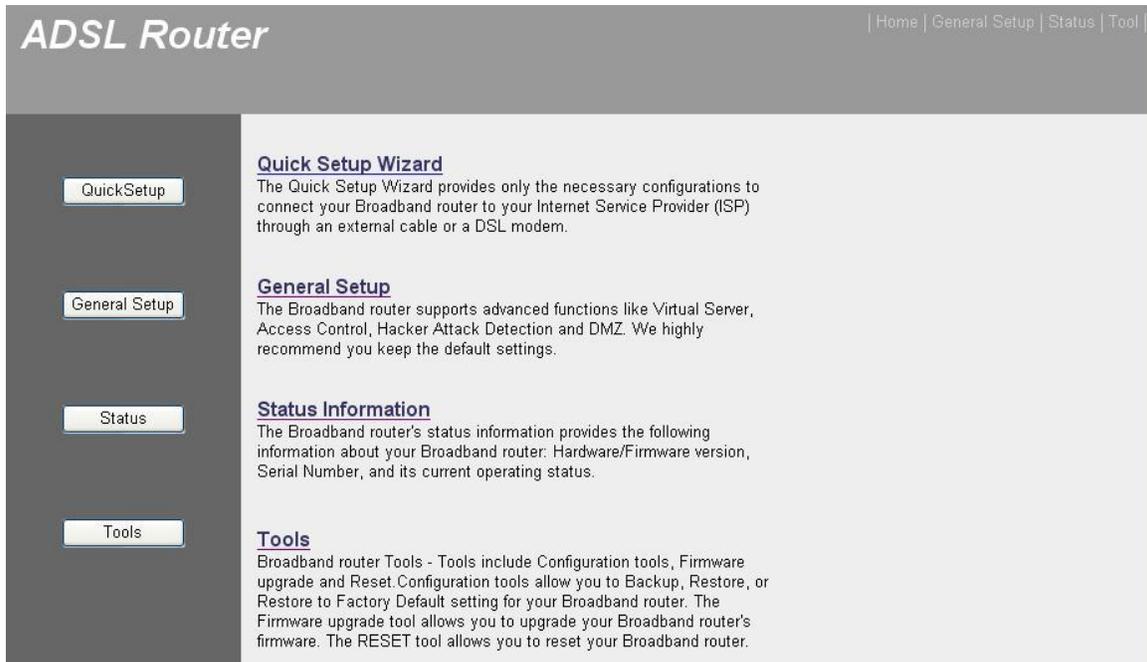
Once your PC has obtained an IP address from your router, enter the default IP address **192.168.2.1** (router's IP address) into your PC's web browser and press <enter>



The login screen below will appear. Enter the "User Name" and "Password" and then click <OK> to login. By default the user name is "**admin**" and the password is "**1234**". For security reasons it is recommended that you change the password as soon as possible.



The **HOME** page screen below will appear. The **Home Page** is divided into seven sections: **Quick Setup, General Setup, Status, Tools.**



Quick Start (Section 5.1)

Follow the setup process in the Quick Start; you can quickly set the router as an Internet Access device.

General Setup (Section 5.2)

It allows you to configure the Internet, LAN and Wireless access.

Status (Section 5.3)

This section contains configurations for the router's advanced functions such as Firewall, Virtual Server, DMZ, ADSL Mode, ADSL Type, etc.

Tools (Section 5.4)

It allows you to configure ACL, IP/MAC/Application/URL Filter, SNMP, UPnP and DDNS functions.

Help

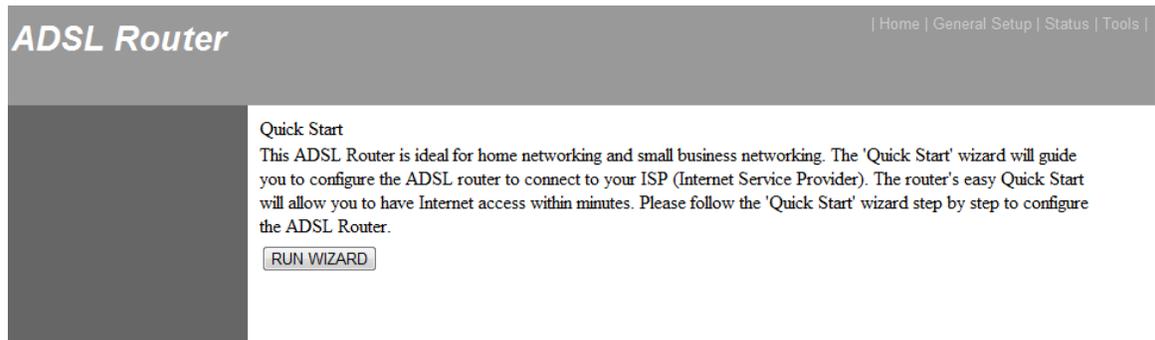
If you want to know about the settings of the router quickly, please refer to the description in the Help menu.

5.1. Quick Start

The Quick Start section is designed to get you using the router as quickly as possible. Before configuring the router, please check with your ISP (Internet Service Provider) what kind of the service is provided such as PPPoE, PPPoA or RFC1483/2684. Gather the information as illustrated in the following table and keep it for reference.

PPPoE	VPI/VCI, VC-based/LLC-based multiplexing, Username, Password (and Service Name).
PPPoA	VPI/VCI, VC-based/LLC-based multiplexing, Username, Password.
RFC1483 Bridged	VPI/VCI, VC-based/LLC-based multiplexing to use Bridged Mode.
RFC1483 Routed	VPI/VCI, VC-based/LLC-based multiplexing, IP Address, Subnet Mask, Gateway Address, and Domain Name System (DNS) IP Address (It is a fixed IP Address).

In the Quick Start, click “Run Wizard” to start the configuration.



The screenshot shows the top navigation bar of the ADSL Router configuration page with links for Home, General Setup, Status, and Tools. The main content area features a 'Quick Start' section with a descriptive paragraph and a 'RUN WIZARD' button.

ADSL Router | Home | General Setup | Status | Tools |

Quick Start
This ADSL Router is ideal for home networking and small business networking. The 'Quick Start' wizard will guide you to configure the ADSL router to connect to your ISP (Internet Service Provider). The router's easy Quick Start will allow you to have Internet access within minutes. Please follow the 'Quick Start' wizard step by step to configure the ADSL Router.

[RUN WIZARD](#)

Please follow the steps in the setup wizard to complete the configuration of the Internet connection.

Quick Start

The Wizard will guide you through these four quick steps. Begin by clicking on **NEXT**.

- Step 1. Set your new password
- Step 2. Choose your time zone
- Step 3. Set your Internet connection
- Step 4. Confirm the Configuration and Save it

Step 1: Set your new password

Please enter the new password and confirm the password again.

Quick Start - Password

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

New Password :

Confirmed Password :

Step 2: Choose your time zone

Please select the time zone where you are located.

Quick Start - Time Zone

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

(GMT+08:00) Beijing, Hong Kong, Perth, Singapore, Taipei

Step 3: Set your Internet connection

Please check with your ISP the connection type of the ADSL line.

Quick Start - ISP Connection Type

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

<input type="radio"/> Dynamic IP Address	Choose this option to obtain a IP address automatically from your ISP.
<input type="radio"/> Static IP Address	Choose this option to set static IP information provided to you by your ISP.
<input type="radio"/> PPPoE/PPPoA	Choose this option if your ISP uses PPPoE/PPPoA. (For most DSL users)
<input checked="" type="radio"/> Bridge Mode	Choose this option if your ISP uses Bridge Mode.

Step 4: Input the data supplied by your ISP

To know more about the explanation of each setting, please refer to Section 5.2.

Quick Start - PPPoE/PPPoA

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

Username:

Password:

VPI: (0~255)

VCI: (1~65535)

Connection Type: ▼

Step 5: Re-start your ADSL router

Click "Next" to save the settings and restart the router.

Quick Start Complete !!

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

5.2. General Setup

Please start your web browser and log onto the web management interface of the router, then click 'General Setup' button on the left menu, or click 'General Setup' link at the upper-right corner of web management interface.

5.2.1. Internet Setup

5.2.1.1. Internet Settings

Internet Settings

ATM VC

Virtual Circuit	PVC 0	PVCs Summary
Status	<input checked="" type="radio"/> Activated <input type="radio"/> Deactivated	
VPI	0 (range: 0~255)	
VCI	33 (range: 32~65535)	

QoS

ATM QoS	ubr	
PCR	0 cells/second	
SCR	0 cells/second	
MBS	0 cells	

IPv4/IPv6

IP Version	<input type="radio"/> IPv4 <input checked="" type="radio"/> IPv4/IPv6 <input type="radio"/> IPv6
------------	--

Encapsulation

ISP	<input checked="" type="radio"/> Dynamic IP Address
	<input type="radio"/> Static IP Address
	<input type="radio"/> PPPoA/PPPoE
	<input type="radio"/> Bridge Mode

8021q Options

802.1q	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated
VLAN ID	0 (range: 0~4095)

- **ATM VC**

Parameter	Description
-----------	-------------

Virtual Circuit	VPI (Virtual Path Identifier) and VCI (Virtual Channel Identifier) define a virtual circuit.
Status	Each PCV can be toggled Activated or Deactivated.
VPI	VPI is a virtual path determines the way an ATM cell should be routed. The VPI is an 8-bit (in UNI) or 12-bit (in NNI) number that is included in the header of an ATM cell. The valid range for the VPI is 0 to 255. Enter the VPI assigned by the ISP.
VCI	VCI is the label given to an ATM VC to identify it and determine its destination. The VCI is a 16-bit number that is included in the header of an ATM cell. The valid range for the VCI is 32 to 65535. Enter the VCI assigned by the ISP.

- **QoS**

Parameter	Description
ATM QoS	<p>UBR (Unspecified Bit Rate) – Select UBR for applications that are non-time sensitive, such as e-mail.</p> <p>CBR (Constant Bit Rate) – This class is used for emulating circuit switching. The cell rate is constant with time. Select CBR to specify fixed (always on) bandwidth for voice or data traffic.</p> <p>rtVBR (real time Variable Bit Rate) – This class is similar to nrtVBR but is designed for applications that are sensitive to cell-delay variation. Examples for real-time VBR are voice with speech activity detection (SAD) and interactive compressed video.</p> <p>nrtVBR (non-real time Variable Bit Rate) – This class allows users to send traffic at a rate that varies with time</p>

depending on the availability of user information. Statistical multiplexing is provided to make optimum use of network resources. Multimedia e-mail is an example of nrtVBR.

PCR Divide the DSL line rate (bps) by 424 (the size of an ATM cell) to find the PCR (Peak Cell Rate). This is the maximum rate at which the sender can send cells.

SCR SCR (Sustain Cell Rate) is the average rate, as measured over a long interval, in the order of the connection lifetime.

MBS MBS (Maximum Burst Size) refers to the maximum number of cells that can be sent at the peak rate. Type the MBS, which is less than 65535.

- **IPv4/IPv6**

Parameter	Description
IP Version	You can be toggled IPv4 or IPv4/IPv6 or IPv6 only.

- **Encapsulation**

The router can be connected to your service provider in any of the following ways.

Parameter	Description
Dynamic IP Address	Obtain an IP address automatically from your service provider.
Static IP Address	Uses a static IP address. Your service provider gives a static IP address to access Internet services.
PPPoE/PPPoA	PPPoE (PPP over Ethernet) and PPPoA (PPP over ATM) are common connection methods used for xDSL.
Bridge Mode	Bridge Mode is a common connection method used for xDSL modem.

- **802.1q Options**

Parameter	Description
802.1q	Toggle Activated or Deactivated 802.1q
VLAN ID	Set VLAN ID

After you have selected the ISP Type, this web page will be varied depending on the ISP Type you select. You have to continue setting some parameters. Please refer to the following table for the explanation of each parameter.

Dynamic IP

Dynamic IP

IP Common Options

Encapsulation	1483 Bridged IP LLC ▾
Bridge Interface	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated
Default Route	<input checked="" type="radio"/> Yes <input type="radio"/> No
TCP MTU Option	TCP MTU(0:default) <input type="text" value="0"/> bytes

IPv4 Options

NAT	Enable ▾
Dynamic Route	RIP1 ▾ Direction None ▾
IGMP Proxy	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

IPv6 Address

IPv6 Message Fetch Type	Dynamic Mode
DHCP IPv6 Enable	<input checked="" type="radio"/> DHCP <input type="radio"/> SLAAC
DHCP PD Enable	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
MLD Proxy	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

- **IP Common Options**

Parameter	Description
Encapsulation	Please check with your ISP the method of multiplexing. In Bridge Mode, please select “1483 Bridge IP LLC” or “1483 Bridge IP VC-Mux”.

Bridge Interface This router has built-in ADSL modem and is able to connect to ISP directly. Alternatively, if you want to use the dial up software to manually connect to the ISP, you have to activate the "Bridge Interface".

Default Route When "Default Router" is enabled, all the packets for destinations not known by the router's routing table are sent to the default route. By default, it is enabled.

TCP MSS Option The "TCP MSS Option" enables the configuration of the maximum segment size (MSS) for transient packets that traverse a router, specifically TCP segments in the SYN bit set, when PPPoE is being used in the network. Please specify the MSS range from 100 to 1452 bytes or 0 byte as the default value.

• **IPv4 Options**

Parameter	Description
NAT	NAT (Network Address Translation), an Internet standard that enables a local-area network (LAN) to use one set of IP addresses for internal traffic and a second set of addresses for external traffic. When NAT is enabled, the router will help to make all necessary IP address translations for the PC connected to the router to access the Internet.
Dynamic Route	Dynamic routing allows routing tables in routers to change as the possible routes change. This router supports RIP1, RIP2-B and RIP2-M protocols for dynamic routing. After the RIP protocol is selected, please choose the RIP direction from "None", "Both", "IN Only" or "OUT Only".
IGMP Porxy	Enable or disable IGMP proxy feature.

- **IPv6 Options**

Parameter	Description
IPv6 Message Fetch Type	The current Mode of the ISP.
DHCP IPv6 Enable	Choose DHCPv6 or (Stateless address autoconfiguration)SLAAC mode for IPv6
DHCP PD Enable	Enable or disable Prefix Delegation(PD) function of DHCPv6
MLD Proxy	Enable or disable MLD proxy feature.

Static IP Address

Static IP

IP Common Options

Encapsulation	1483 Bridged IP LLC
Bridge Interface	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated
Default Route	<input checked="" type="radio"/> Yes <input type="radio"/> No
TCP MTU Option	TCP MTU(0:default) <input type="text" value="0"/> bytes

IPv4 Options

Static IP Address	<input type="text"/>
IP Subnet Mask	<input type="text"/>
Gateway	<input type="text"/>
NAT	Enable
Dynamic Route	RIP1 Direction None
IGMP Proxy	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

IPv6 Options

IPv6 Message Fetch Type	Static Mode
IPv6 Address	<input type="text"/> / <input type="text"/>
IPv6 Default Gateway	<input type="text"/>
IPv6 DNS Server1	<input type="text"/>
IPv6 DNS Server2	<input type="text"/>
MLD Proxy	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

- **IP Common Options**

Parameter	Description
Encapsulation	Please check with your ISP the method of multiplexing. In Static IP Mode, please select “1483 Bridge IP LLC” or “1483 Bridge IP VC-Mux” or “1483 Routed IP LLC(IPoA)” or “1483 Routed IP VC-Mux”.
Bridge Interface	This router has built-in ADSL modem and is able to connect to ISP directly. Alternatively, if you want to use the dial up software to manually connect to the ISP, you have to activate the ”Bridge Interface”.
Default Route	When “Default Router” is enabled, all the packets for destinations not known by the router's routing table are sent to the default route. By default, it is enabled.
TCP MTU Option	MTU (Maximum Transmission Unit) determine the maximum size of each packet in any transmission within the network. Please specify the MTU range from 100 to 1500 bytes or 0 byte as the default value.

- **IPv4 Options**

Parameter	Description
Static IP Address	Enter the IP Address assigned by your ISP.
IP Subnet Mask	Enter the Subnet Mask assigned by your ISP.
Gateway	Enter the Gateway assigned by your ISP.
NAT	NAT (Network Address Translation), an Internet standard that enables a local-area network (LAN) to use one set of IP addresses for internal traffic and a second set of addresses for external traffic. When NAT is enabled, the router will help to make all necessary IP address translations for the PC connected to the router to access

the Internet.

Dynamic Route Dynamic routing allows routing tables in routers to change as the possible routes change. This router supports RIP1, RIP2-B and RIP2-M protocols for dynamic routing. After the RIP protocol is selected, please choose the RIP direction from “None”, “Both”, “IN Only” or “OUT Only”.

IGMP Porxy Enable or disable IGMP proxy feature.

- **IPv6 Options**

Parameter	Description
IPv6 Message Fetch Type	The current Mode of the ISP.
IPv6 Address	Enter the IPv6 Address assigned by your ISP.
IPv6 Default Getaway	Enter the IPv6 Gateway assigned by your ISP.
IPv6 DNS Server1	Enter the IPv6 DNS assigned by your ISP.
IPv6 DNS Server1	Enter the IPv6 DNS assigned by your ISP.
MLD Proxy	Enable or disable MLD proxy feature.

PPPoE/PPPoA

PPPoE/PPPoA	
Username	<input type="text"/>
Password	<input type="password"/>
Encapsulation	PPPoE LLC <input type="button" value="v"/>
Bridge Interface	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated
Connection Setting	
Connection	<input checked="" type="radio"/> Always On (Recommended) <input type="radio"/> Connect Manually
TCP MSS Option	TCP MSS(0 means use default) <input type="text" value="0"/> bytes
IP Options	
IP Common Options	
Default Route	<input type="radio"/> Yes <input checked="" type="radio"/> No
IPv4 Options	
Get IP Address	<input checked="" type="radio"/> Static <input type="radio"/> Dynamic
Static IP Address	<input type="text"/>
IP Subnet Mask	255.255.255.255
Gateway	<input type="text"/>
NAT	Disabled <input type="button" value="v"/>
Dynamic Route	RIP1 <input type="button" value="v"/> Direction None <input type="button" value="v"/>
TCP MTU Option	TCP MTU(0 means use default:1492) <input type="text" value="0"/> bytes
IGMP Proxy	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
IPv6 Options	
DHCP IPv6 Mode	<input checked="" type="radio"/> DHCP <input type="radio"/> SLAAC
DHCP PD Enable	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
MLD Proxy	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
<input type="button" value="SAVE"/> <input type="button" value="DELETE"/>	

• IP Common Options

Parameter	Description
User Name	Enter the username exactly as your ISP assigned.
Password	Enter the password that your ISP has assigned to you.
Encapsulation	Please check with your ISP the method of multiplexing. In PPPoE/PPPoA mode, please select “PPPoE LLC”, “PPPoE VC-Mux”, “PPPoA LLC”, or “PPPoA VC-Mux”.

Bridge Interface	This router has built-in ADSL modem and is able to connect to ISP directly. Alternatively, if you want to use the dial up software to manually connect to the ISP, you have to activate the "Bridge Interface".
Connection	<p>Always On – The connection will be kept always on. If the connection is interrupted, the router will re-connect automatically.</p> <p>Connect On-Demand – Only connect when you want to surf the Internet. "Close if idle for xx minutes" is set to stop the connection when the network traffic is not sending or receiving after an idle time.</p> <p>Connect Manually – After you have selected this option, please go to Status page. You will see the "Connect" button, click it and the router will connect to the ISP. If you want to stop the connection, please click "Disconnect" button.</p>
TCP MSS Option	The "TCP MSS Option" enables the configuration of the maximum segment size (MSS) for transient packets that traverse a router, specifically TCP segments in the SYN bit set, when PPPoE is being used in the network. Please specify the MSS range from 100 to 1452 bytes or 0 byte as the default value.
Default Route	When "Default Router" is enabled, all the packets for destinations not known by the router's routing table are sent to the default route. By default, it is enabled.
Get IP Address	Choose Static or Dynamic IP Address. If Static IP is selected, please set the IP Address, Subnet Mask and Gateway obtained from your ISP.

Static IP Address	Enter the IP Address assigned by your ISP. Only if you chose Static above.
IP Subnet Mask	Enter the Subnet Mask assigned by your ISP. Only if you chose Static above.
Gateway	Enter the Gateway assigned by your ISP. Only if you chose Static above.
NAT	NAT (Network Address Translation), an Internet standard that enables a local-area network (LAN) to use one set of IP addresses for internal traffic and a second set of addresses for external traffic. When NAT is enabled, the router will help to make all necessary IP address translations for the PC connected to the router to access the Internet.
Dynamic Route	Dynamic routing allows routing tables in routers to change as the possible routes change. This router supports RIP1, RIP2-B and RIP2-M protocols for dynamic routing. After the RIP protocol is selected, please choose the RIP direction from “None”, “Both”, “IN Only” or “OUT Only”.
TCP MTU Option	MTU (Maximum Transmission Unit) determine the maximum size of each packet in any transmission within the network. Please specify the MTU range from 100 to 1500 bytes or 0 byte as the default value.
IGMP Porxy	Enable or disable IGMP proxy feature.

- **IPv4 Options**

Parameter	Description
Get IP Address	Choose Static or Dynamic IP Address. If Static IP is

selected, please set the IP Address, Subnet Mask and Gateway obtained from your ISP.

Static IP Address	Enter the IP Address assigned by your ISP. Only if you chose Static above.
IP Subnet Mask	Enter the Subnet Mask assigned by your ISP. Only if you chose Static above.
Gateway	Enter the Gateway assigned by your ISP. Only if you chose Static above.
NAT	NAT (Network Address Translation), an Internet standard that enables a local-area network (LAN) to use one set of IP addresses for internal traffic and a second set of addresses for external traffic. When NAT is enabled, the router will help to make all necessary IP address translations for the PC connected to the router to access the Internet.
Dynamic Route	Dynamic routing allows routing tables in routers to change as the possible routes change. This router supports RIP1, RIP2-B and RIP2-M protocols for dynamic routing. After the RIP protocol is selected, please choose the RIP direction from “None”, “Both”, “IN Only” or “OUT Only”.
TCP MTU Option	MTU (Maximum Transmission Unit) determine the maximum size of each packet in any transmission within the network. Please specify the MTU range from 100 to 1500 bytes or 0 byte as the default value.
IGMP Porxy	Enable or disable IGMP proxy feature.

- **IPv6 Options**

Parameter	Description
DHCP IPv6 Mode	Choose DHCPv6 or (Stateless address autoconfiguration)SLAAC mode for IPv6
DHCP PD Enable	Enable or disable Prefix Delegation(PD) function of DHCPv6
MLD Proxy	Enable or disable MLD proxy feature.

Bridge Mode

Bridge Mode

Encapsulation 1483 Bridged Only LLC ▼

- **Bridge Mode**

Parameter	Description
Encapsulation	Please check with your ISP the method of multiplexing. In Bridge Mode, please select “1483 Bridge IP Only LLC” or “1483 Bridge IP Only VC-Mux”.

5.2.1.2. LAN

This page is used to configure the LAN interface of your ADSL Router. You can set IP address, subnet mask, DHCP Server and IPv6 Settings.

LAN Settings

IP Address	192.168.2.1
IP Subnet Mask	255.255.255.0
Alias IP Address	192.168.1.1
Alias IP Subnet Mask	255.255.255.0
IgmpSnoop	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated
Dynamic Route	RIP1 <input type="text"/> Direction None <input type="text"/>

DHCP Server	
DHCP	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled <input type="radio"/> Relay
Start IP	192.168.2.100
IP Pool Count	100
Lease Time	259200 seconds (0 sets to default value of 259200)

DNS	
DNS Relay	<input checked="" type="radio"/> Automatically <input type="radio"/> Manually
Primary DNS	N/A
Secondary DNS	N/A

- LAN Settings

Parameter	Description
IP Address	Enter the IP Address of the ADSL router for the local user to access the router's web page. By default, the IP Address is 192.168.2.1 .
IP Subnet Mask	Enter the Subnet Mask of the ADSL router. By default, the Subnet Mask is 255.255.255.0 .
Alias IP Address	Alias IP allows you to partition a physical network into logical networks over the same Ethernet interface. Enter the Alias IP Address of the ADSL router for the local user to access the router's web page. By default, the IP Address is 192.168.1.1.
Alias IP Subnet Mask	Enter the Alias IP Subnet Mask of the ADSL router. By default, the Subnet Mask is 255.255.255.0 .
IGMP Snoop	When "IGMP Snoop" (Internet Group Management Protocol Snoop) is enabled, the router can make

intelligent multicast forwarding decisions by examining the contents of each frame's IP header. Without the function, the router will broadcast the multicast packets to each port and may create excessive traffic on the network and degrade the performance of the network.

Dynamic Route	Dynamic routing allows routing tables in routers to change as the possible routes change. This router supports RIP1, RIP2-B and RIP2-M protocols for dynamic routing. After the RIP protocol is selected, please choose the RIP direction from "None", "Both", "IN Only" or "OUT Only".
DHCP	Select whether DHCP is Disabled, Enabled or Relay.
Start IP	If the DHCP Server is enabled, please set the "Starting IP Address" which will be the first IP Address assigned to the LAN client. By default, the "Starting IP Address" is 192.168.2.100 .
IP Pool Count	You can select a particular IP address range for your DHCP server to issue IP addresses to your LAN Clients. By default, the "IP Pool Count" is 100. The IP range is starting from IP 192.168.2.100 to 192.168.2.199.
Lease Time	In the Lease Time setting you can specify the time period that the DHCP Server lends an IP address to your LAN clients. The DHCP will change your LAN client's IP address when this time threshold period is terminated.
DNS Relay	A Domain Name System (DNS) server is like an index of IP addresses and Web addresses. If you type a Web address into your browser, such as "www.router.com", a DNS server will find that name in its index and the matching IP address. Please select "Use Auto

Discovered DNS Server Only” to auto set the DNS Server. If there is a DNS server that you would rather to use, please select “Use Discovered DNS Server Only” and you need to specify the IP address of that DNS server.

Primary DNS

Enter the ISP’s DNS Server IP Address; or you can specify your own preferred DNS Server IP Address.

Secondary DNS

This is optional. You can enter another DNS Server’s IP Address as a backup. The secondary DNS will be used should the Primary DNS fail.

Add DHCP Reservation

IP Address MAC Address :

Index	IP	MAC	Drop

DHCP Clients List

#	HostName	IP	MAC Address	Expire Time

IPv6 Address

IPv6 Global Address /

Radvd

Radvd Enable Disable Enable

Radvd Mode Auto Manual

DHCPv6

DHCP6 Server Disable Enable

DHCP6 Mode Auto Manual

- **Add DHCP Reservation**

Parameter	Description
IP Address	Set reserve IP Address for DHCP server
MAC Address	Set reserve MAC Address for DHCP server

DHCP Clients List	Show clients list which released by DHCP server
IPv6 Global Address	Set a IPv6 Global Address for LAN interface (?)
Radvd Enable	Enable or Disable Radvd
Radvd Mode	Choose Auto or Manual mode for Radvd. For Manual mode, you can set parameters of Radvd manually, like the prefix, the length of prefix, etc. For Auto mode, system will set default parameters for Radvd
DHCP6 Server	You can enable or disable the DHCP6 server. By enabling the DHCP6 server the router will automatically give your LAN clients an IPv6 address. If the DHCP is not enabled then you'll have to manually set your LAN client's IPv6 addresses.
DHCP6 Mode	Toggle DHCP Mode (Auto or Manual)

5.2.1.3. Wireless

Wireless Settings

Access Point	<input checked="" type="radio"/> Activated <input type="radio"/> Deactivated
Channel	TAIWAN 06 ▼ Current Channel : 6
Beacon Interval	<input style="width: 50px;" type="text" value="100"/> (range: 20~1000)
RTS/CTS Threshold	<input style="width: 50px;" type="text" value="2347"/> (range: 1500~2347)
Fragmentation Threshold	<input style="width: 50px;" type="text" value="2346"/> (range: 256~2346, even numbers only)
DTIM	<input style="width: 50px;" type="text" value="1"/> (range: 1~255)
Wireless Mode	802.11b+g+n ▼

- **Wireless Settings**

Parameter	Description
Access Point	Activated or deactivated the wireless function of the router. When it is activated, the router will be an access point for other wireless clients to connect wirelessly.

Channel	It is the radio channel used by the wireless LAN. All devices in the same wireless LAN should use the same channel. Please select the country you are located and designate a channel that the router will use. For product available in the USA/Canada market, only channel 1~11 can be operated. For product available in Europe market, only channel 1~13 can be operated. Selection of other channels is not permitted. If you want to let the router automatically to find an available channel with the highest signal strength, please select "Auto". The auto-selective channel will be shown in the "Current Channel" field.
Beacon Interval	The interval of time that this wireless router broadcast a beacon. Beacon is used to synchronize the wireless network. The range for the beacon period is between 20 and 1000 with a typical value of 100 (milliseconds).
RTS/CTS Threshold	When the packet size is smaller than the RTS threshold, the wireless router will not use the RTS/CTS mechanism to send this packet. The range is from 1500 to 2347.
Fragmentation Threshold	Fragment Threshold specifies the maximum size of packet during the fragmentation of data to be transmitted. If you set this value too low, it will result in bad performance. Enter a value from 256 to 2346.
DTIM	Determines the interval the Access Point will send its broadcast traffic. The range is from 1 to 255 and the default value is 3 beacons.
Wireless Mode	802.11b – It only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).

802.11g – It only allows 802.11g wireless network client to connect this router (maximum transfer rate 54Mbps).

802.11b+g – It only allows 802.11b and 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, and maximum 54Mbps for 802.11g clients).

802.11n – It only allows 802.11n wireless network client to connect this router (maximum transfer rate 300Mbps).

802.11g+n – It allows 802.11g, and 802.11n wireless network client to connect this router (maximum transfer rate 54Mbps for 802.11g clients, and maximum 300Mbps for 802.11n clients).

802.11b+g+n – It allows 802.11b, 802.11g, and 802.11n wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, maximum 54Mbps for 802.11g clients, and maximum 300Mbps for 802.11n clients).

NOTE: For 802.11b and 802.11g mode, the signals can be transmitted only by antenna 1 (The antenna in the right side of the rear panel).

For 802.11n mode: The router is operating in a 2T2R Spatial Multiplexing MIMO configuration. 2 antennas are for signal transmitting and 2 antennas are for signal receiving.

11n Settings	
Channel Bandwidth	20/40 MHz
Extension Channel	below the control channel
Guard Interval	AUTO
MCS	AUTO

- **11n Settings**

Parameter	Description
Channel Bandwidth	Set channel width of wireless radio. Do not modify default value if you don't know what it is, default setting is '20/40 MHz'.
Extension Channel	Select the extension channel to above or below the control channel while 40MHz channel bandwidth is selected. Do not modify the default value if you don't know what it is.
Guard Interval	It is one of several draft-n features designed to improve efficiency. Select 400nsec to provide a shorter delay between transmission frames in 11n network. The throughput in 400nec guard interval is better than 800nsec guard interval.
MCS	Select MCS 0-15 to configure the data rate of 11n network. When MCS 15 is selected, the data rate is up to 300Mbps. It is recommended to set "Auto" and the router will negotiate with wireless clients to operate in a proper data rate.

SSID Settings	
SSID index	1
SSID	default
Broadcast SSID	<input checked="" type="radio"/> Yes <input type="radio"/> No
Use WPS	<input checked="" type="radio"/> Yes <input type="radio"/> No

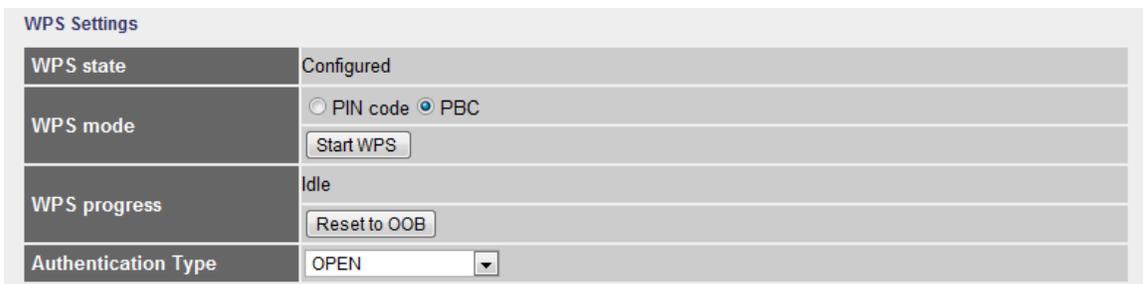
- **SSIDs Settings**

Parameter	Description
SSID Index	This router can support multiple SSIDs. By default, this function is disabled. You can only set a set of SSID.
SSID	The SSID (up to 32 printable ASCII characters) is the

unique name identified in a WLAN. The ID prevents the unintentional merging of two co-located WLANs. The default SSID of the router is “default”.

Broadcast SSID Select “Yes” to make the SSID to be visible so wireless clients can scan the router within the network. Select “No” if you want to hide the SSID of the router. Wireless clients have to set the same SSID of the router in order to access the network.

Use WPS Select “Yes” to enable WPS function, Select “No” to disable WPS.



The screenshot shows the 'WPS Settings' interface. It contains the following elements:

- WPS state:** Configured
- WPS mode:** Radio buttons for 'PIN code' and 'PBC' (selected). A 'Start WPS' button is located below the radio buttons.
- WPS progress:** Idle. A 'Reset to OOB' button is located below the progress indicator.
- Authentication Type:** A dropdown menu currently set to 'OPEN'.

- **WPS Settings**

Wi-Fi Protected Setup (WPS) is the simplest way to build connection between wireless network clients and this router. You don't have to select encryption mode and input a long encryption passphrase every time when you need to setup a wireless client, you only have to press a button on wireless client and this wireless router, and the WPS will do the setup for you.

This router supports two types of WPS: Push-Button Configuration (PBC), and PIN code. If you want to use PBC, you have to switch this wireless router to WPS mode and push a specific button on the wireless client to start WPS mode. You can push Reset/WPS button of this router, or select “PBC” and click “Start WPS” button in the WPS setup page to do this. If you want to use PIN code, you have to know the PIN code of wireless client and switch it to WPS mode, then set the

PIN code of the wireless client you wish to connect to this router in the WPS setup page and click “Start WPS” button to start WPS mode.

Parameter	Description
WPS state	If the wireless security (encryption) function of this wireless router is enabled, you’ll see ”Configured” message here. If wireless security function has not been set, you’ll see ”Unconfigured”.
WPS mode	When PIN code is selected, you have to enter the 8-digit PIN code of the wireless client you wish to connect to this router. If PBC mode is selected, just click “Start WPS” button to start WPS mode.
Authentication Type	It’s very important to set wireless security settings properly. If you don’t, hackers and malicious users can reach your network and valuable data without your consent and this will cause serious security problem. This router supports WEP, WPA-PSK and WPA2-PSK authentication type. If the router has enabled the authentication, all the wireless clients’ settings have to be consistent with the router for building the connection.

● **WEP/WPA-PSK/WPA2-PSK and WPA-PSK/WPA2-PSK**

Parameter	Description
WEP-64Bits	WEP is less level of security than WPA. WEP supports 64-bit and 128-bit key lengths to encrypt the wireless data. The longer key length will provide higher security. When “WEP-64Bits” is selected, you have to enter exactly 5 ASCII characters (“a-z” and “0-9”) or 10 hexadecimal digits (“0-9”, “a-f”) for each Key (1-4).
WEP-128Bits	When “WEP-128Bits” is selected, you have to enter exactly 13 ASCII characters (“a-z” and “0-9”) or 26 hexadecimal digits (“0-9”, “a-f”) for each Key (1-4).

WPA-PSK WPA-PSK is suitable for home and small business. It uses TKIP or AES for data encryption. When “WPA-PSK” is selected, please select the encryption method and enter 8-63 ASCII characters or 64 hexadecimal characters as the “Pre-Shared Key”.

WPA2-PSK WPA2-PSK is also for home and small business. It uses TKIP or AES for data encryption. WPA2-PSK offers the highest level of security available. When “WPA2-PSK” is selected, please select the encryption method and enter 8-63 ASCII characters or 64 hexadecimal characters as the “Pre-Shared Key”.

WPA-PSK/ WPA2-PSK When “WPA-PSK/WPA2-PSK” is selected, please select the encryption method (TKIP or AES) and enter 8-63 ASCII characters or 64 hexadecimal characters as the “Pre-Shared Key”.

Wireless MAC Address Filter

Active	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated
Action	Allow <input type="button" value="v"/> the follow Wireless LAN station(s) association.
Mac Address #1	<input type="text"/>
Mac Address #2	<input type="text"/>
Mac Address #3	<input type="text"/>
Mac Address #4	<input type="text"/>
Mac Address #5	<input type="text"/>
Mac Address #6	<input type="text"/>
Mac Address #7	<input type="text"/>
Mac Address #8	<input type="text"/>

- **Wireless MAC Address Filter**

Parameter	Description
Active	This router can prevent the wireless clients from accessing the wireless network by checking the MAC

Address of the clients. If you enable this function, please set the MAC Address of the wireless clients that you want to filter.

Action

Allow Association – Only allow the wireless clients with the MAC Address you have specified can access to the router.

Deny Association – The wireless clients with the MAC Address you have specified will be denied accessing to the router.

Mac Address #1-8

Please enter the MAC Address of the wireless clients for the filtering control.

5.2.2. Advanced Setup

5.2.2.1. Firewall

Firewall

Firewall	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
SPI	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled

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

Parameter	Description
Firewall	When you enable the firewall function, it will protect you from following attacks of WAN side: <ul style="list-style-type: none">• SYN flooding attack• Ping of Death• Teardrop• Land attack
SPI	If you enable SPI, all traffics initiated from WAN site will be blocked including DMZ, Virtual Server, etc.

5.2.2.2. Routing

Routing Table List

#	Dest IP	Mask	Gateway IP	Metric	Device	Use	Edit	Drop
0	192.168.2.0	255.255.255.0	0.0.0.0	0	br0	N/A		
1	192.168.1.0	255.255.255.0	0.0.0.0	0	br0	N/A		
2	127.0.0.0	255.255.0.0	0.0.0.0	0	lo	N/A		
3	239.0.0.0	255.0.0.0	0.0.0.0	0	eth0	N/A		

- **Routing Table List**

You can see the current routing table of the router here. If you want to add another routing rule, please click “ADD ROUTE”.

Parameter	Description
Dest IP	Show the IP Address of the destination LAN.
Mask	Show the Subnet Mask of the destination LAN. If it shows “8” that means the Subnet Mask is “255.0.0.0”; “16” means the Subnet Mask is “255.255.0.0”; “24” means the Subnet Mask is “255.255.255.0”.
Gateway IP	The next stop gateway of the path toward the destination LAN. This is the IP of the neighbor router that this router should communicate with on the path to the destination LAN.
Metric	The number of hops (routers) to pass through to reach the destination LAN. It must be between 1 and 15.
Device	Show the interface that go to the next hop (router), such as LAN port.
Use	The counter for access time.
Edit	Edit the route, this icon is not shown for system default route.
Drop	Drop the route, this icon is not shown for system default route.

- **Add Route**

If you have another router with a LAN-to-LAN connection, you may need to create a static routing on the router that is the gateway to Internet.

Static Route

Destination IP Address :	<input type="text" value="0.0.0.0"/>
IP Subnet Mask :	<input type="text" value="0.0.0.0"/>
Gateway IP Address :	<input type="radio"/> <input type="text" value="0.0.0.0"/> <input checked="" type="radio"/> <input type="text" value="PVC0"/>
Metric :	<input type="text" value="0"/>

Parameter	Description
Destination IP Address	Enter the IP Address of the destination LAN.
IP Subnet Mask	Enter the Subnet Mask address of the destination LAN.
Gateway IP Address	This is the gateway IP Address where packets are sent. Enter the gateway IP Address and select the channel (PVC) you want to configure.
Metric	The number of hops (routers) to pass through to reach the destination LAN. It must be between 1 and 15.

5.2.2.3. NAT

NAT

Virtual Circuit	<input type="text" value="PVC4"/>
NAT Status	Enable
Number of IPs	<input checked="" type="radio"/> Single

5.2.2.3.1. NAT

Network Address Translation (NAT) allows multiple users at your local site to access the Internet through a single Public IP Address or multiple Public IP

Addresses. NAT provides Firewall protection from hacker attacks and has the flexibility to allow you to map Private IP Addresses to Public IP Addresses for key services such as Websites and FTP.

Parameter	Description
Virtual Circuit	Please select the channel (PVC) you want to configure.
NAT Status	The activated or deactivated status for the NAT function will be shown here.
Number of IPs	Select "Single" if you only have a public IP Address.

5.2.2.3.2. DMZ

The DMZ Host is a local computer exposed to the Internet. When setting a particular internal IP Address as the DMZ Host, all incoming packets will be checked by the firewall and NAT algorithms then passed to the DMZ Host.

For example, if you have a local client PC that cannot run an Internet application (e.g. Games) properly from behind the NAT firewall, then you can open the client up to unrestricted two-way Internet access by defining a DMZ Host.

DMZ

DMZ setting for	Single IPs Account/ PVC4
DMZ	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
DMZ Host IP Address	<input type="text" value="0.0.0.0"/>

Parameter	Description
DMZ setting for	Show the DMZ setting is for single or multiple IP Addresses.
DMZ	Enable or disable the DMZ function.
DMZ Host IP Address	Enter a static IP Address to the DMZ Host. This IP Address will be exposed to the Internet.

5.2.2.3.3. Virtual Server

Use the Virtual Server function when you want different servers/clients in your LAN to handle different service/Internet application type (e.g. Email, FTP, Web server etc.) from the Internet. Computers use numbers called port numbers to recognize a particular service/Internet application type. The Virtual Server allows you to re-direct a particular service port number (from the Internet/WAN) to a particular LAN private IP Address and its service port number.

Virtual Server

Virtual Server for	Single IPs Account/ PVC4
Start Port Number	<input type="text"/>
End Port Number	<input type="text"/>
Local IP Address	<input type="text"/>

Virtual Server Listing

Rule	Start Port	End port	Local IP Address	Edit	Drop
0	N/A	N/A	N/A		
1	N/A	N/A	N/A		
2	N/A	N/A	N/A		
3	N/A	N/A	N/A		
4	N/A	N/A	N/A		
5	N/A	N/A	N/A		
6	N/A	N/A	N/A		
7	N/A	N/A	N/A		
8	N/A	N/A	N/A		
9	N/A	N/A	N/A		

Parameter	Description
Virtual Server for	Show the Virtual Server setting is for single or multiple IP Addresses.
Start Port Number	Enter the start port number.
End Port Number	Enter the end port number.
Local IP Address	It is recommended to enter a static IP Address for the server here. If the server's IP Address is obtained from DHCP Server, the IP Address may be changed

dynamically and will cause problem on this feature.
Please assign a static IP Address to the server and make sure that the IP Address is not in the range of IP Addresses that the DHCP Server will assign.

5.2.2.4. ADSL

ADSL

ADSL Mode	Auto Sync-Up ▾
ADSL Type	ANNEX A ▾

SAVE

Parameter	Description
ADSL Mode	Select the ADSL mode from the list.
ADSL Type	Select the ADSL type from the list.

5.2.2.5. QoS

Quality of Service

QoS	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated
Discipline	<input type="radio"/> WRR <input type="radio"/> Strict Priority
WRR weight	Highest: 8 High: 4 Medium: 2 Low: 1 (valid:1~15)

Discipline Save Rule&Action Summary

- **Quality of Service**

Parameter	Description
QoS	QoS can be toggled Activated and Deactivated. QoS must be activated before you can edit the following options.
Discipline	Toggle schedule discipline as WRR or Strict Priority.

WRR weight

Set WRR weight for 4 queues (highest, high, medium and low) separately.

Rule	
Rule Index	0
Active	<input type="radio"/> Activated <input type="radio"/> Deactivated
Application	
Physical Ports	<input type="checkbox"/> eth0 <input type="checkbox"/> eth1 <input type="checkbox"/> eth2 <input type="checkbox"/> eth3 <input type="checkbox"/> ra0
Destination MAC	
Destination IP	
Destination Mask	
Destination Port Range	~
Source MAC	
Source IP	
Source Mask	
Source Port Range	~
Protocol ID	
Vlan ID Range	~
IPP/DS Field	<input type="radio"/> IPP/TOS <input type="radio"/> DSCP
IP Precedence Range	~
Type of Service	
DSCP Range	~ (Value Range: 0 ~ 63)
802.1p	~

● Rule

Parameter	Description
Rule Index	Select 16 different rules, each rule's detail can be set and saved
Active	Select Rule is activated or deactivated. There are 16 different rules, each rule can be activated or deactivated.
Application	Select 11 different applications: There are IGMP, SIP, H.323, MGCP, SNMP, DNS, DHCP, RIP, RSTP, RTCP, RTP.
Physical Ports	Once you select the application, the associated ports will be displayed.

Destination MAC	Set the Ethernet MAC value that you want to filter in destination side.
Destination IP	Set the IP address value that you want to filter in destination side.
Destination Mask	Set the subnet mask value that you want to filter in destination side.
Destination Port Range	Set the port range value that you want to filter in destination side.
Source MAC	Set the Ethernet MAC value that you want to filter in source side.
Source IP	Set the IP address value that you want to filter in source side.
Source Mask	Set the subnet mask value that you want to filter in source side.
Source Port Range	Set the port range value that you want to filter in source side.
Protocol ID	Select the protocol ID type that you want to filter.
Vlan ID Range	Set the Vlan value that you want to filter.
IPP/DS Field	Select IP QoS format.
IP Precedence Range	Select the IP precedence range.
Type of Service	Select 5 different type of service.
DSCP Range	Set the DSCP value that you want to filter

802.1p

Set the remarked new 802.1p priority value on the packet that fulfill every detail setting condition of each rule

Action

IPP/DS Field	<input type="radio"/> IPP/TOS <input type="radio"/> DSCP
IP Precedence Remarking	<input type="text"/>
Type of Service Remarking	<input type="text"/>
DSCP Remarking	<input type="text"/> (Value Range: 0 ~ 63)
802.1p Remarking	<input type="text"/>
Queue #	<input type="text"/>

- **Action**

Parameter	Description
IPP/DS Field	Select IP QoS format.
IP Precedence Remarking	Select the remarking value of IP precedence.
Type of Service Remarking	Select the remarking value of type of service.
DSCP Remarking	Select the remarking value of DSCP.
802.1p Remarking	Select the remarking value of 802.1p.
Queue #	Select four types of Queue: Low, Medium, High, Highest.

5.2.2.6. PortBinding

Portbinding Group Setting

Active	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated																		
Group Index	0																		
ATM VCs	<table border="1"> <tr> <td>Port #</td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> </tr> </table>	Port #	<input type="checkbox"/>		0	1	2	3	4	5	6	7							
Port #	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
	0	1	2	3	4	5	6	7											
Ethernet	<table border="1"> <tr> <td>Port #</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	Port #	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1	2	3	4								
Port #	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
	1	2	3	4															
WLAN	<table border="1"> <tr> <td>Port #</td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td>1</td> </tr> </table>	Port #	<input type="checkbox"/>		1														
Port #	<input type="checkbox"/>																		
	1																		
Group Summary	<input type="button" value="PortBinding Summary"/>																		

- **Portbinding Group Setting**

Parameter	Description
Active	Toggle Activated or Deactivated Portbinding
Group Index	Select portbinding group index.
ATM VCs	Checking the Tagged and Port # boxes for each port number will add a tag to let other devices know if they need to check the packet and allow the packet through to the port in question, respectively.
Ethernet	Checking the Tagged and Port # boxes for each port number will add a tag to let other devices know if they need to check the packet and allow the packet through to the port in question, respectively.
WLAN	Checking the Tagged and Port # box will add a tag to let other devices know if they need to check the packet and allow the packet through to the port in question, respectively.
Group Summary	Press the button to display the summary of all portbinding group. Show the summary of all Portbinding Group rules.

5.2.3. Access Management

5.2.3.1. UPnP

When the UPnP function is enabled, the router can be detected by UPnP compliant system such as Windows XP. The router will be displayed in the Neighborhood of Windows XP, so you can directly double click the router or right click the router and select “Invoke” to configure the router through web browser.

Universal Plug & Play

UPnP	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated
Auto-configured	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated (by UPnP-enabled Application)

SAVE

- **Universal Plug & Play**

Parameter	Description
UPnP	Activated or deactivated the UPnP function.
Auto-configured	Select this check box to allow UPnP-enabled applications to automatically configure the router so that they can communicate through the router, for example by using NAT traversal, UPnP applications automatically reserve a NAT forwarding port in order to communicate with another UPnP enabled device; this eliminates the need to manually configure port forwarding for the UPnP enabled application.

5.2.3.2. DDNS

DDNS allows you to map the static domain name to a dynamic IP address. You must get an account, password and your static domain name from the DDNS service providers.

Dynamic DNS

Dynamic DNS	<input type="radio"/> Activated <input checked="" type="radio"/> Deactivated
Service Provider	www.dyndns.org
My Host Name	<input type="text"/>
Username	<input type="text"/>
Password	<input type="text"/>
Wildcard support	<input type="radio"/> Yes <input checked="" type="radio"/> No

- **Dynamic DNS**

Parameter	Description
Dynamic DNS	Activated or deactivated the DDNS function.
Service Provider	This router supports DynDNS service provider.
My Host Name	Enter the domain name assigned to your router by the service provider.
E-mail Address	Enter the E-mail address assigned by DDNS service provider.
Username	Enter your username.
Password	Enter the password you set for the DDNS service.
Wildcard Support	Enable or disable the wildcard to stand for some characters.

5.2.3.3. ACL

If you want to restrict users from accessing certain Internet applications/services such as Internet websites, email, FTP etc., then this is the place to set that configuration. Access Control allows users to define the traffic type permitted in

your LAN or WAN. You can control which computer can have access to these services by entering the IP Address of the computer.

Access Control Setup

ACL Activated Deactivated

Access Control Editing

ACL Rule Index: 1

Active: Yes No

Secure IP Address: 0.0.0.0 ~ 0.0.0.0 (0.0.0.0 ~ 0.0.0.0 means all IPs)

Application: ALL

Interface: Both

Access Control Listing

Index	Active	secure IP	Application	Interface
1	No	0.0.0.0-0.0.0.0	ALL	Both

SET DELETE CANCEL

- **ACL**

Parameter	Description
ACL	Activate or deactivate the Access Control function. When you have activated the function, please do make sure that you have designated the available applications/services or you will be denied to access all the services.

- **Access Control Editing**

Parameter	Description
ACL Rule Index	This is the item number to record the setting rule.
Active	Toggle the ACL rule on or off with Yes or No, respectively.
Secure IP Address	The default 0.0.0.0~0.0.0.0 allows any user to use this service to remotely manage the router. Type a range of IP Addresses to authorize access to a number of users with matching IP Addresses.

Application Choose the services that you permit to use in your LAN or WAN interface. These services include Web, FTP, Telnet, SNMP and Ping.

Interface Select the interface that the user is allowed to use services through it. It includes LAN, WAN or Both.

Access Control Listing Access Control Listing is a list of all the rules you have set for access control.

When you are done making changes, click on SET to save your changes, DELETE to delete the rule with the parameters you set or CANCEL to exit without saving.

5.2.3.4. Filter

You can forbid some users accessing to the router by filtering the users through IP Address or MAC Address. You can also restrict some applications or URLs be accessing by users through the router here. Please select the Filter Type to start configuring.

Filter

Filter Type
Filter Type Selection : IP / MAC Filter

Rule Type
Rule Type Selection : White List

IP / MAC Filter Rule Editing

IP / MAC Filter Rule Index : 1

Active : Yes No

Interface : PVC0

Direction : Both

Rule Type : IP

Source IP Address : 0.0.0.0 (0.0.0.0 means Don't care)

Subnet Mask : 0.0.0.0

Port Number : 0 (0 means Don't care)

Destination IP Address : 0.0.0.0 (0.0.0.0 means Don't care)

5.2.3.4.1. IP/MAC Filter

Filter Type
 Filter Type Selection : IP / MAC Filter

Rule Type
 Rule Type Selection : White List

IP / MAC Filter Rule Editing

IP / MAC Filter Rule Index : 1

Active : Yes No

Interface : PVC0

Direction : Both

Rule Type : IP

Source IP Address : 0.0.0.0 (0.0.0.0 means Don't care)

Subnet Mask : 0.0.0.0

Port Number : 0 (0 means Don't care)

Destination IP Address : 0.0.0.0 (0.0.0.0 means Don't care)

Subnet Mask : 0.0.0.0

Port Number : 0 (0 means Don't care)

Protocol : TCP

IP / MAC Filter Listing

#	Active	Interface	Direction	Src IP Address/Mask	Dest IP Address/Mask	Mac Address	Src Port	Dest Port	Protocol
1	No	PVC0	Both	0.0.0.0/ 0.0.0.0	0.0.0.0/ 0.0.0.0	N/A	0	0	TCP

SET DELETE CANCEL

- Rule Type**

Parameter	Description
Rule Type Selection	Select the type of filter rule as White List or Black List. If a packet matches the Black List rule, it will be dropped, or matches the White List rule, it will be forwarded.

- IP / MAC Filter Rule Editing**

Parameter	Description
IP/MAC Filter Rule Index	This is the item number to record the setting rule.
Active	Select "Yes" to enable the current rule, select "No" to

cancel the current rule.

Interface	Select which channel (PVC) to configure.
Direction	Select the access to the Internet (Outgoing) or from the Internet (Incoming), or Both.
Rule Type	Select to filter through the IP Address or MAC Address.
Source IP Address	Enter the start IP Address which will be monitored. If "0.0.0.0" is set, it means for any IP Address.
Subnet Mask	Enter the Subnet Mask based on the Source IP Address.
Port Number	LAN users use port number to distinguish one network application over another such as 21 is for FTP service. The port number range is from 0 to 65535. It is recommended that this option be configured by an advanced user.
Destination IP Address	Enter the start IP Address which will be monitored. If "0.0.0.0" is set, it means for any IP Address.
Subnet Mask	Enter the Subnet Mask based on the Destination IP Address.
Port Number	This is the port or port ranges that define the application.
Protocol	It is the packet protocol type used by the application. Please select "TCP", "UDP" or "ICMP". For example, FTP service, you have to select "TCP".
IP / MAC Filter Listing	The IP/MAC Filter Listing will list the IP/MAC Filter rules you have configured. You can review the settings here.

When you are done making changes, click on SET to save your changes,

DELETE to delete the rule with the parameters you set or CANCEL to exit without saving.

5.2.3.4.2. Application Filter

Filter Type

Filter Type Selection : Application Filter

Application Filter Editing

Application Filter : Activated Deactivated

ICQ : Allow Deny

MSN : Allow Deny

YMSG : Allow Deny

Real Audio/Video : Allow Deny

SAVE CANCEL

- **Application Filter Editing**

Parameter	Description
Application Filter	Activate or deactivate the application filter.
ICQ/MSN/YMSG/Real Audio/Video	If “Allow” is selected, the packets for these applications will be able to pass through the router. If you want to restrict these applications, please select “Deny”.

When you are done making changes, click on SAVE to save your changes, DELETE to delete the rule with the parameters you set or CANCEL to exit without saving.

5.2.3.4.3. URL Filter

Filter Type

Filter Type Selection : URL Filter

URL Filter Editing

Active : Yes No

URL Index : 1

Individual active : Yes No

URL(host) :

URL Filter Listing

Index	Active	URL
-------	--------	-----

SAVE DELETE CANCEL

- **URL Filter Editing**

Parameter	Description
Active	Activate or deactivate the URL filter.
URL Index	This is the item number to record the setting.
Individual active	Activate or deactivate the selected individual URL filter rule.
URL(host)	A URL can be thought of as the "address" of a web page and is sometimes referred to informally as a "web address." Please enter the web address here that you want to restrict to be connected.
URL Filter Listing	The URL Filter Listing will list the URL you have configured. You can review the settings here.

When you are done making changes, click on **SAVE** to save your changes, **DELETE** to delete the rule with the parameters you set or **CANCEL** to exit without saving.

5.3. Status

The status screens give you information about various aspects of your ADSL router's settings.

Status

The ADSL Router's status information provides the following information about your Wireless Router: Firmware version, Serial Number, and its current operating status.

5.3.1. Device Info

In this page, you can know the device information including firmware, MAC Address, LAN and WAN settings and also the ADSL line status.

Device Information

Firmware Version	NFR-1.00a
MAC Address	00:AA:BB:01:23:45

LAN

IPv4

IP Address	192.168.2.1
Subnet Mask	255.255.255.0
DHCP Server	Enable

IPv6

IP Address	
Prefix Length	
DHCP Server	Enable

WAN

Virtual Circuit	PVC <input type="text" value="0"/>
Connection Type	Bridge

IPv4

Status	Not Connected
IP Address	N/A
Subnet Mask	N/A
Default Gateway	N/A
DNS Server	N/A

IPv6	
Status	Not Connected
IP Address	N/A
Prefix Length	N/A
Default Gateway	N/A
DNS Server	N/A
Prefix Delegation	N/A

ADSL	
ADSL Firmware Ver	FwVer:3.16.1.0_A_TC3086 HwVer:T14.F7_7.0
Line State	down
Modulation	N/A
Annex Mode	ANNEX A

	Downstream	Upstream
SNR Margin	N/A	N/A
Line Attenuation	N/A	N/A
Data Rate	N/A	N/A

5.3.2. System Log

Display system logs accumulated up to the present time. You can also save the logs for future reviewing.

```

System Log

Jan  1 00:00:29 syslogd started: BusyBox v1.00
(2011.05.17-03:23+0000)
Jan  1 00:00:29 kernel: largeD flag=2 (0:maxD=64,
1:maxD=128, 2:maxD=511)^M
Jan  1 00:00:30 init: ^Mstarting pid 645, console
/dev/ttyS0: '/userfs/bin/ra_menu'
Jan  1 00:00:30 init: ^Mm
Jan  1 00:00:33 kernel: nas0: no IPv6 routers present
Jan  1 00:18:54 kernel: Link State: LAN_3 up.
Jan  1 00:18:55 kernel: Link State: LAN_3 down.
Jan  1 00:19:42 kernel: Link State: LAN_3 up.
Jan  1 00:19:43 kernel: Link State: LAN_3 down.
Jan  1 00:41:44 kernel: Link State: LAN_2 up.
Jan  1 00:41:45 kernel: Link State: LAN_2 down.
Jan  1 00:46:04 kernel: Link State: LAN_3 up.
Jan  1 00:46:05 kernel: Link State: LAN_3 down.
Jan  1 01:04:02 kernel: Link State: LAN_2 up.
Jan  1 01:04:03 kernel: Link State: LAN_2 down.

```

5.3.3. Statistics

Show the statistics of transmit and receive packets on the LAN port, ADSL line or WLAN port.

Traffic Statistics

Interface Ethernet ADSL WLAN

Transmit Statistics		Receive Statistics	
Transmit Frames	14801	Receive Frames	2929
Transmit Multicast Frames	4199	Receive Multicast Frame	2284
Transmit total Bytes	4364611	Receive total Bytes	396438
Transmit Collision	0	Receive CRC Errors	0
Transmit Error Frames	0	Receive Under-size Frames	0

REFRESH

5.4. Tools

Tools

Wireless Router Tools - Tools include Configuration tools, Firmware upgrade and Reset. Configuration tools allow you to Backup, Restore, or Restore to Factory Default setting for your Wireless Router. The Firmware upgrade tool allows you to upgrade your Wireless Router's firmware. The RESET tool allows you to reset your Wireless Router.

5.4.1. Administrator

Administrator

Username	admin
New Password	<input type="text"/>
Confirm Password	<input type="text"/>

Parameter	Description
Username	The username of the router is "admin" by default.
New Password	Enter up to 30-digit of the new password.
Confirm Password	Enter the new password again to confirm the setting.

When you are done making changes, click on SAVE to save your changes, DELETE to delete the rule with the parameters you set or CANCEL to exit without saving.

5.4.2. Time Zone

The Time Zone allows your router to set its time; this will affect function such as System Log.

Time Zone

Current Date/Time	N/A (Can't find NTP server)
Time Synchronization	
Synchronize time with	<input checked="" type="radio"/> NTP Server automatically <input type="radio"/> PC's Clock <input type="radio"/> Manually
Time Zone	(GMT+08:00) Beijing, Hong Kong, Perth, Singapore, Taipei
Daylight Saving	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
NTP Server Address	0.0.0.0 (0.0.0.0: Default Value)

SAVE CANCEL

Parameter	Description
Current Date/Time	Show the current date/time of the router.
Synchronize time with	NTP Server Automatically – Set the time by following with a NTP Server. PC's Clock – Set the time the same as your computer. Manually – Set the time manually.
Time Zone	Select the time zone of the country you are currently in. The router will set its time based on your selection.
Daylight Saving	Select this option if it is in daylight savings time.
NTP Server Address	Enter the IP Address of your time server.

When you are done making changes, click on SAVE to save your changes, DELETE to delete the rule with the parameters you set or CANCEL to exit without saving.

5.4.3. Firmware

If you have new firmware for some features update, please upgrade firmware of the router here.

Firmware Upgrade

romfile
 tclinux.bin

New Firmware Location

Romfile Backup

Status

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

Parameter	Description
New Firmware Location	Type in the location of the new firmware or click “Browse” to find it.
Romfile Backup	To save the current settings as a backup file, please click “ROMFILE SAVE”. Then please change the file name and select the location you want to save the file.
Status	Show the upgrade status
Upgrade	Click “Upgrade” to begin the upgrade processes or backup file restoring processes. After the router is restarted, the processes are completed. It might take several minutes, don't power off the router during upgrading or restoring.

5.4.4. System Restart

In this page, you can restart your router or restore to factory defaults. If you wish to restart the router using the factory default settings, select “Factory Default Settings” to reset to factory defaults. You can also click the “Reset” button in the rear panel of the router over 5 seconds to reset default settings.

System Restart

System Restart with

Current Settings Factory Default Settings

RESTART

5.4.5. Diagnostics

This page allows you to diagnose the connectivity of the LAN and WAN network.

Diagnostic Test

Virtual Circuit: PVC0

>> Testing Ethernet LAN connection	N/A
>> Testing ADSL Synchronization	N/A
>> Testing ATM OAM segment ping	N/A
>> Testing ATM OAM end to end ping	N/A
>> Ping DHCP Primary DNS (N/A)	N/A
>> Ping www.yahoo.com (use DHCP Pri. or Sec. DNS)	N/A
>> Ping other IP address : <input type="radio"/> Yes <input checked="" type="radio"/> No	N/A

START

6. Troubleshooting

1. The LAN LED on the front panel does not light up.

STEPS	CORRECTIVE ACTION
1	Check the Ethernet cable connections between your ADSL2+ Router and the computer or hub.
2	Check for faulty Ethernet cables.
3	Make sure your computer's Ethernet card is working properly.
4	If these steps fail to correct the problem, contact your local distributor for assistance.

2. The ADSL LED on the front panel does not light up.

STEPS	CORRECTIVE ACTION
1	Check the telephone wire and connections between ADSL2+ Router DSL port and the wall jack.
2	Make sure that the telephone company has checked your phone line and set it up for DSL service.
3	Reset your ADSL line to reinitialize your link to the DSLAM.
4	If these steps fail to correct the problem, contact your local distributor for assistance.

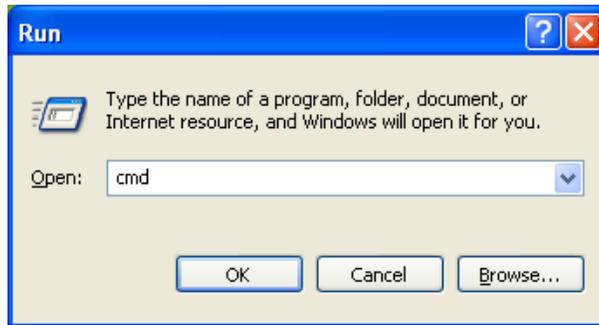
3. I cannot access the web management.

STEPS	CORRECTIVE ACTION
1	Make sure you are using the correct IP address of ADSL2+ Router. Check the IP address of ADSL2+ Router.
2	Your computer and ADSL2+ Router's IP addresses must be on the same subnet for LAN access.
3	If you have changed ADSL2+ Router's LAN IP address, then enter the new one as the URL.

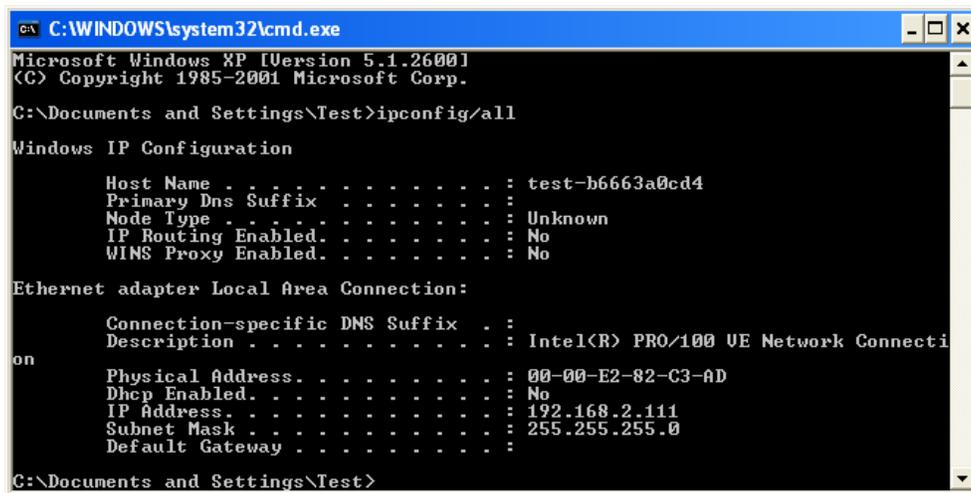
The following procedures will help you to check the current IP Address setting of your computer. You can compare if your computer and router's IP Addresses are in the same subnet.

Step 1: Click "Start" and select "Run".

Step 2: Type in "cmd" and click "OK".



Step 3: Type ipconfig /all and click enter.



- Your PC's IP address is 192.168.2.111.
- The PC's Subnet Mask is 255.255.255.0.
- Your PC's MAC Address is the one entitled Physical Address (00-00-E2-82-C3-AD).

4. I forget my login username and/or password.

STEPS	CORRECTIVE ACTION
1	If you have changed the password and have now forgotten it, you will need to upload the default configuration file. This will erase all custom configurations and restore all of the factory defaults including the password.
2	Press the Reset button for five seconds, and then release it. When the LAN LED begins to blink, the defaults have been restored.
3	The default username is "admin". The default password is "1234". The Password and Username fields are case-sensitive. Make sure that you enter the correct password and username using the proper casing.
4	It is highly recommended to change the default username and password. Make sure you store the username and password in a save place.

5. I cannot access the Web Management of the router after activating the ACL function.

STEPS	CORRECTIVE ACTION
1	When ACL is activated, you have to set the ACL rule for allowing some users to use some services. Check if you have set the rules. If not, all the users are forbidden using any of service from LAN or WAN.
2	If you cannot access the Web Management of the router, please press the Reset button over 5 seconds to restore to defaults.
3	After the router is restarting, log in the router with the default IP Address 192.168.2.1.

6. Initialization of the ADSL connection failed.

STEPS	CORRECTIVE ACTION
1	Check the cable connections between the ADSL port and the wall jack. The ADSL LED on the rear panel of the router should be on.
2	Check VPI, VCI, type of encapsulation and type of multiplexing settings are the same as what you collected from your ISP.
3	Restart the router. If you still have problems, you may need to verify your VPI, VCI, type of encapsulation and type of multiplexing settings with the ISP.

7. I cannot get a WAN IP address from the ISP.

STEPS	CORRECTIVE ACTION
1	The ISP provides the WAN IP address after authenticating you. Authentication may be through the user name and password, the MAC address or the host name.
2	The username and password apply to PPPoE and PPOA encapsulation only. Make sure that you have entered the correct Service Type, User Name and Password (be sure to use the correct casing).

8. Internet connection disconnects.

STEPS	CORRECTIVE ACTION
1	Check the schedule rules.
2	If you use PPPoA or PPPoE encapsulation, check the idle time-out setting.
3	Contact your ISP.

7. Glossary

10Base-T

It is an Ethernet standard for Local Area Network (LAN). 10Base-T uses a twisted pair cable with maximum length of 100 meters.

AAL

ATM Adaptation Layer that defines the rules governing segmentation and reassembly of data into cells. Different AAL types are suited to different traffic classes.

ADSL

Asymmetric Digital Subscriber Line, as its name showing, is an asymmetrical data transmission technology with high traffic rate downstream and low traffic rate upstream. ADSL technology satisfies the bandwidth requirement of applications, which demand “asymmetric” traffic, such as web surfing, file download and Video-on-demand (VOD).

ATM

Asynchronous Transfer Mode is a layer 2 protocol supporting high-speed asynchronous data with advanced traffic management and quality of service features.

bps

Bits per second, a standard measurement of digital transmission speeds.

Bridge

A device that connects two or more physical networks and forwards packets between them. Bridges can usually be made to filter packets, that is, to forward only certain traffic. Related devices are: repeaters which simply forward electrical signals from one cable to the other and full-fledged routers which make routing decisions based on several criteria.

CPE

Customer Premises Equipment, such as ADSL router, USB modem.

Default Gateway (Router)

Every non-router IP device needs to configure a default gateway's IP address. When the device sends out an IP packet, if the destination is not on the same network, the device has to send the packet to its default gateway, which will then send it out towards the destination.

DHCP

Dynamic Host Configuration Protocol, this protocol automatically gives every computer on your home network an IP address.

DNS Server IP Address

DNS stands for Domain Name System, which allows Internet servers to have a domain name (such as `www.Broadbandrouter.com`) and one or more IP addresses (such as `192.34.45.8`). A DNS server keeps a database of Internet servers and their respective domain names and IP addresses, so that when a domain name is requested (as in typing "`Broadbandrouter.com`" into your Internet browser), the user is sent to the proper IP address. The DNS server IP address used by the computers on your home network is the location of the DNS server your ISP has assigned to you.

DSL

Digital Line Subscriber (DSL) technology provides high-speed access over twisted copper pair for connection to the Internet, LAN interfaces, and to broadband services such as video-on-demand, distance learning, and video conferencing.

Ethernet

It is a standard for computer networks. Ethernet networks are connected by special cables and hubs or switches, and move data around at up to 10/100 million bits per second (Mbps).

FTP

File Transfer Protocol. The Internet protocol (and program) used to transfer files between hosts.

Idle Timeout

Idle Timeout is designed so that after there is no traffic to the Internet for a pre-configured amount of time, the connection will automatically be disconnected.

ISP

Internet Service Provider is a business that provides connectivity to the Internet for individuals and other businesses or organizations.

ISP Gateway Address

The ISP Gateway Address is an IP address for the Internet router located at the ISP's office.

LAN

Local Area Network is a group of computers and devices connected together in a relatively small area (such as a house or an office). Your home network is considered a LAN.

MAC Address

MAC stands for Media Access Control. A MAC address is the hardware address of a device connected to a network. The MAC address is a unique identifier for a device with an Ethernet interface. It is comprised of two parts: 3 bytes of data that corresponds to the Manufacturer ID (unique for each manufacturer), plus 3 bytes that are often used as the product's serial number.

MTU

Maximum Transmission Unit

NAT

Network Address Translator is defined by RFC 1631. Enable a LAN network to use one set of IP address for internal traffic. A NAT box located where the LAN meets the Internet provides the necessary IP address translation. This helps provide a sort of firewall and allow for a wider address range to be used internally without danger of conflict. Using the router's NAT capability, you can access the Internet from any computer on your home network without having to purchase more IP addresses from your ISP.

Port

Network Clients (LAN PC) uses port numbers to distinguish one network application/protocol over another. Below is a list of common applications and protocol/port numbers:

Application	Protocol	Port Number
Telnet	TCP	23
FTP	TCP	21
SMTP	TCP	25
POP3	TCP	110
H.323	TCP	1720
SNMP	UCP	161
SNMP Trap	UDP	162
HTTP	TCP	80
PPTP	TCP	1723
PC Anywhere	TCP	5631
PC Anywhere	UDP	5632

PPP

PPP is the Point-to-Point-Protocol. The successor to SLIP, PPP provides router-to-router and host-to-network connections over both synchronous and asynchronous circuits.

PPPoA (RFC 2364)

The Point-to-Point Protocol (PPP) provides a standard method for transporting multi-protocol data grams over point-to-point links. This document describes the use of ATM Adaptation Layer 5 (AAL5) for framing PPP encapsulated packets.

PPPoE (RFC 2516)

This document describes how to build PPP sessions and encapsulate PPP packets over Ethernet. PPP over Ethernet (PPPoE) provides the ability to connect a network of hosts over a simple bridging access device to a remote Access Concentrator.

Protocol

A protocol is a set of rules for interaction agreed upon between multiple parties so that when they interface with each other based on such a protocol, the interpretation of their behavior is well defined and can be made objectively, without confusion or misunderstanding.

PVC

Permanent Virtual Circuit, connection-oriented permanent leased line circuit between end-stations on a network over a separate ATM circuit.

RFC

Request for Comments. The document series, begun in 1969, which describes the Internet suite of protocols and related experiments. Not all RFCs describe Internet standards, but all Internet standards are written up as RFCs.

RFC 1483

Multi-protocol encapsulation over AAL-5. Two encapsulation methods for carrying network interconnect traffic over ATM AAL-5. The first method allows multiplexing of multiple protocols over a single ATM virtual circuit. The protocol of a carried PDU is identified by prefixing the PDU by an IEEE 802.2 Logical Link Control (LLC) header. This method is in the following called "LLC Encapsulation". The second method does higher-layer protocol multiplexing implicitly by ATM Virtual Circuits (VCs). It is in the following called "VC Based Multiplexing".

Router

A system responsible for making decisions about which of several paths network (or Internet) traffic will follow. To do this, it uses a routing protocol to gain information about the network and algorithms to choose the best route based on several criteria known as "routing metrics."

Subnet Mask

A subnet mask, which may be a part of the TCP/IP information provided by your ISP, is a set of four numbers (e.g. 255.255.255.0) configured like an IP address. It is used to create IP address numbers used only within a particular network (as opposed to valid IP address numbers recognized by the Internet, which must be assigned by InterNIC).

TCP/IP, UDP

Transmission Control Protocol/Internet Protocol (TCP/IP) and Unreliable Datagram Protocol (UDP). TCP/IP is the standard protocol for data transmission over the Internet. Both TCP and UDP are transport layer protocols. TCP performs proper error detection and error recovery, and thus is reliable. UDP on the other hand is not reliable. They both run on top of the IP (Internet Protocol), a network layer protocol.

TELNET

It is the virtual terminal protocol in the Internet suite of protocols. Allows users of one host to log into a remote host and act as normal terminal users of that host.

VCI

Virtual Circuit Identifier is part of the ATM cell header. A VCI is a tag indicating the channel over which a cell will travel. The VCI of a cell can be changed as it moves between switches via Signaling.

VPI

Virtual Path Identifier is part of the ATM cell header. A VPI is a pipe for a number of Virtual Circuits.

WAN

Wide Area Network is a network that connects computers located in geographically separate areas (e.g. different buildings, cities, countries). The Internet is a wide area network.

Web-based management Graphical User Interface (GUI)

Many devices support a graphical user interface that is based on the web browser. This means the user can use the familiar Netscape or Microsoft Internet Explorer to Control/configure or monitor the device being managed.