

Wired / Wireless ADSL 2/2+ Router

Gaw9.2Z18-4 Gaw9B.2Z18-4

User's Manual

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Federal Communication Commission Interference Statement

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

To assure continued compliance (example-use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

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 20 cm (8 inches) during normal operation.

R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF 9 March 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.

WEEE Regulation



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

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.

Revision

User's Manual for Wired / Wireless ADSL 2/2+ Router

Model: Gaw9.2Z18-4, Gaw9B.2Z18-4

Rev: 1.0 (Nov. 2007)

Part No. EM-ADE3400v3_v1

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1. Introduction

The PLANET Wired / Wireless ADSL 2/2+ Router, the Gaw9.2Z18-4, Gaw9B.2Z18-4, provides office and residential users the ideal solution for sharing a High-Speed ADSL 2/2+ broadband Internet connection on the 10/100Mbps Fast Ethernet Interface and the 54Mbps wireless network. It can support downstream transmission rates up to 24Mbps and upstream transmission rates up to 3.5Mbps. The product supports PPPoA (RFC 2364 - PPP over ATM Adaptation Layer 5), PPP over Ethernet (RFC 2516), and RFC 1483 encapsulation over ATM (MER, bridged or routed) to establish a connection with ISP.

Via the user-friendly management interface, the Gaw9.2Z18-4, Gaw9B.2Z18-4 can be managed by workstations running standard web browsers. Furthermore, the device provides DHCP server, NAT, Virtual Server, DMZ, access control, IP filter, VPN Pass-Through, and UPnP capability.

The device also serves as an Internet firewall, protecting your network from being accessed by outside users. It provides the natural firewall function (Network Address Translation, NAT). All incoming and outgoing IPs are monitored and filtered by this product. In addition, it can be configured to block internal users from accessing to the Internet.

1.1 Feature

Internet Access Features

- ♦ **Shared Internet Access** All users on the LAN or WLAN can access the Internet through the Gaw9.2Z18-4, Gaw9B.2Z18-4 using only a single external IP Address. The local (invalid) IP Addresses are hidden from external sources. This process is called NAT (Network Address Translation).
- ♦ **Built-in ADSL 2/2+ Modem** The device provides ADSL 2/2+ modem, and supports all common ADSL connections.
- ♦ **PPPoE, PPPoA, Direct Connection Support** Various WAN connections are supported by Gaw9.2Z18-4, Gaw9B.2Z18-4.
- ♦ **Auto-detection of Internet Connection Method** In most situations, the device can test your ADSL and Internet connection to determine the connection method used by your ISP.
- ♦ **Fixed or Dynamic IP Address** On the Internet (WAN port) connection, the device supports both Dynamic IP Address (IP Address is allocated on connection) and Fixed IP Address.

Advanced Internet Functions

- ♦ **Virtual Servers** This feature allows Internet users to access Internet servers on your LAN. The required setup is quick and easy.
- ♦ **DMZ Support** The device can translate public IP addresses to private IP address to allow unrestricted 2-way communication with Servers or individual users on the Internet. This provides the most flexibility to run programs, which could be incompatible in NAT environment.
- ♦ **Firewall** Supports simple firewall with NAT technology and provides option for blocking access from Internet, like Web, FTP, Telnet, SNMP, and ICMP. It also supports MAC and IP filtering.
- ♦ **Universal Plug and Play (UPnP)** UPnP allows automatic discovery and configuration of the Broadband Router. UPnP is supported by Windows ME, XP, or later.
- ♦ **VPN Pass through Support** PCs with VPN (Virtual Private Networking) software are transparently supported - no configuration is required.
- ♦ **RIP1/2 Routing** It supports RIPv1/2 routing protocol for routing capability.
- ♦ **Simple Network Management Protocol (SNMP)** It is an easy way to remotely manage the router via SNMP.

LAN Features

- ♦ **Ethernet Port** The Gaw9.2Z18-4, Gaw9B.2Z18-4 provides one Ethernet port, making it easy to create or extend your LAN.
- ♦ **4-Port Switch** The Gaw9.2Z18-4, Gaw9B.2Z18-4 incorporates a 4-Port 10/100Base-TX switching hub, making it easy to create or extend your LAN.
- ♦ **DHCP Server Support** Dynamic Host Configuration Protocol provides a dynamic IP address to PCs and other devices upon request. The device can act as a DHCP Server for devices on your local LAN and WLAN.

Wireless Features (ADW-4401v4 only)

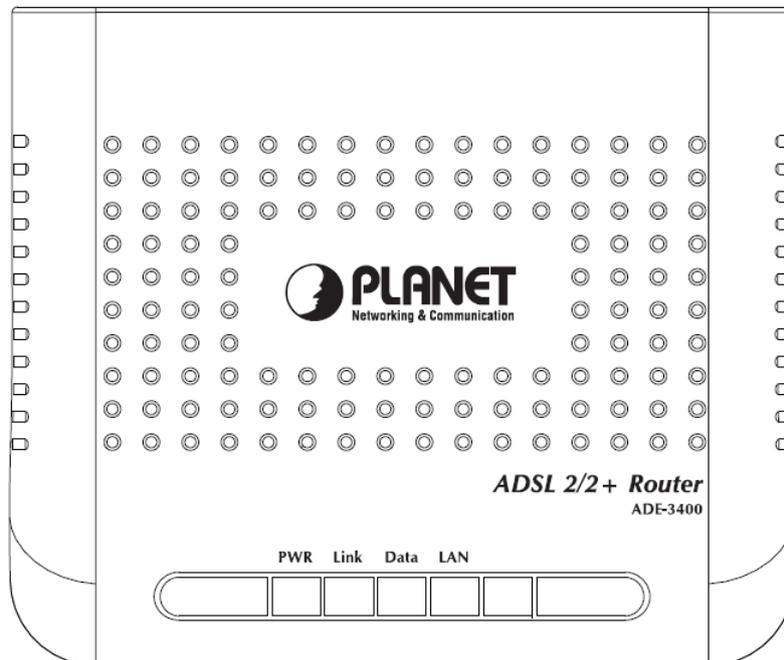
- ♦ **Standards Compliant** The ADW-4401v4 complies with the IEEE 802.11g (DSSS) specifications for Wireless LANs. Maximum of 54Mbps are supported.
- ♦ **Supports both 802.11b and 802.11g Wireless Stations** The 802.11g standard provides for backward compatibility with the 802.11b standard, so both 802.11b and 802.11g Wireless stations can be used simultaneously.
- ♦ **WEP support** Supports for WEP (Wired Equivalent Privacy) is included. Key sizes of 64 Bit and 128 Bit are supported.
- ♦ **WPA-PSK support** WPA_TKIP and WPA2_AES encryption are supported.
- ♦ **Wireless MAC Access Control** The Wireless Access Control feature can check the MAC address (hardware address) of Wireless stations to ensure that only trusted Wireless Stations can access your LAN

1.2 Package Contents

- ADE-3400v3 / ADE-4400v3 / ADW-4401v4 Unit x 1
- Power Adapter x 1
- Quick Installation Guide x 1
- User's Manual CD x 1
- RJ-11 cable x 2
- RJ-45 cable x 1
- Splitter x 1
- Antenna x 1 (ADW-4401v4)

1.3 Physical Details

Front Panel of ADE-3400v3

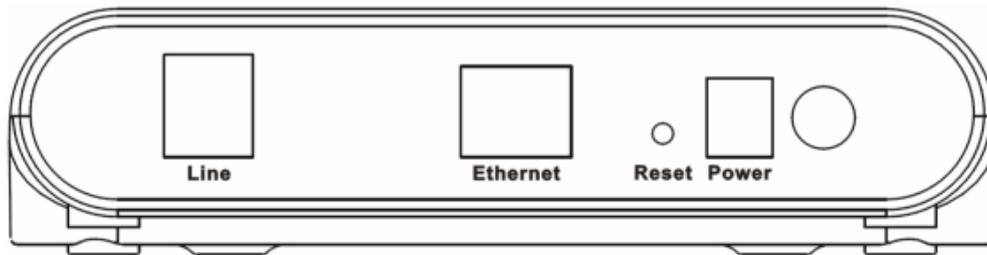


Front Panel LED definition

LED	State	Description
PWR	ON	When the router is powered on and in ready state.
	Red	The device is being turned on and booting.
	OFF	When the router is powered off.
Link	ON	Successful connection between ADSL modem and telecom's

		network.
	Flashing	Modem is trying to establish a connection to telecom's network.
Data	Flashing	Data is transferred between Router and Internet.
LAN	ON	Link
	Flashing	TX or RX activity.

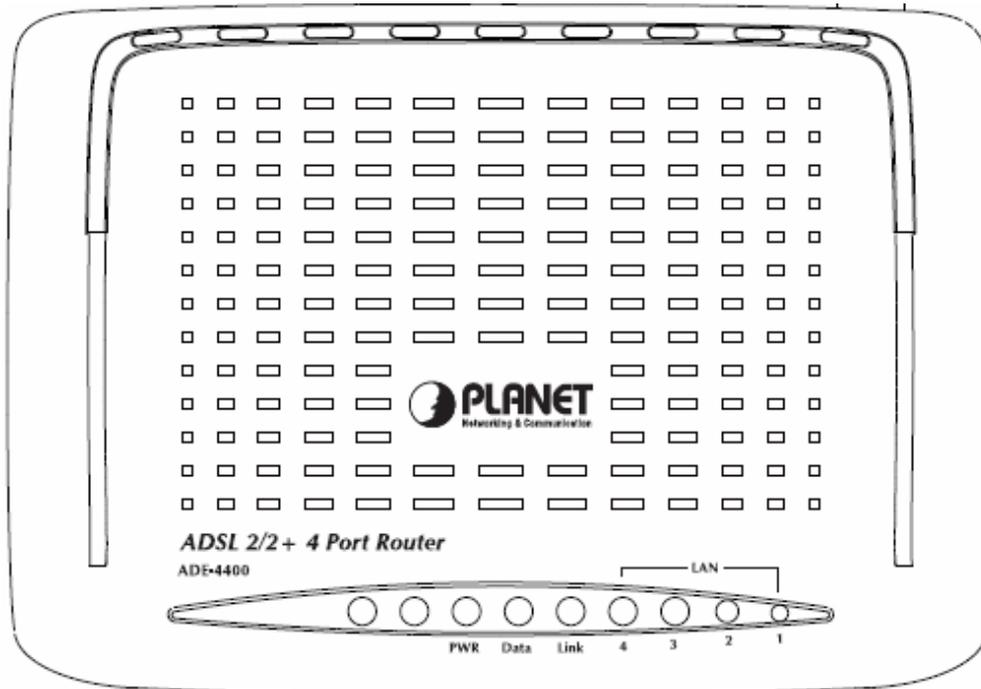
Rear Panel



Rear Panel Port and Button Definition

Connector	Description
POWER Button	The power button is for turn on or turns off the router.
Power	Power connector with 10V DC 1.0 A
Reset	The reset button can restore the default settings of device. To restore factory defaults, keep the device powered on and push a paper clip into the hole. Press down the button over 5 seconds and then release.
Ethernet	Router is successfully connected to a device through the Ethernet port. If the LED is flashing, the Router is actively sending or receiving data over that port.
Line	The RJ-11 connector allows data communication between the modem and the ADSL network through a twisted-pair phone wire.

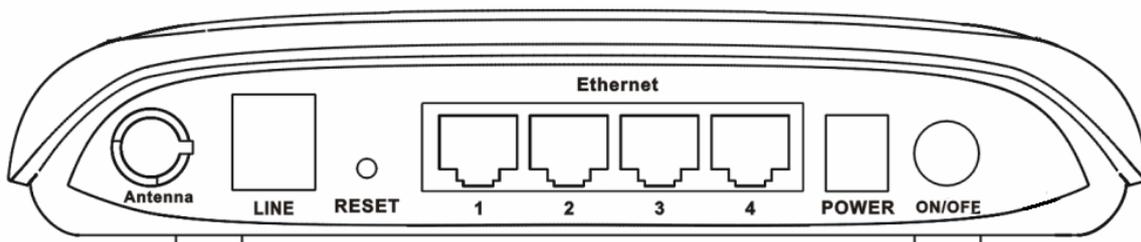
Front Panel of ADE-4400v3



Front Panel LED definition

LED	State	Description
PWR	Green	When the router is powered on and in ready state.
	Red	The device is being turned on and booting.
	OFF	When the router is powered off.
Link	ON	Successful connection between ADSL modem and telecom's network.
	Flashing	Modem is trying to establish a connection to telecom's network.
Data	Flashing	Data is transferred between Router and Internet.
LAN 1-4	ON	Link
	Flashing	TX or RX activity

Rear Panel

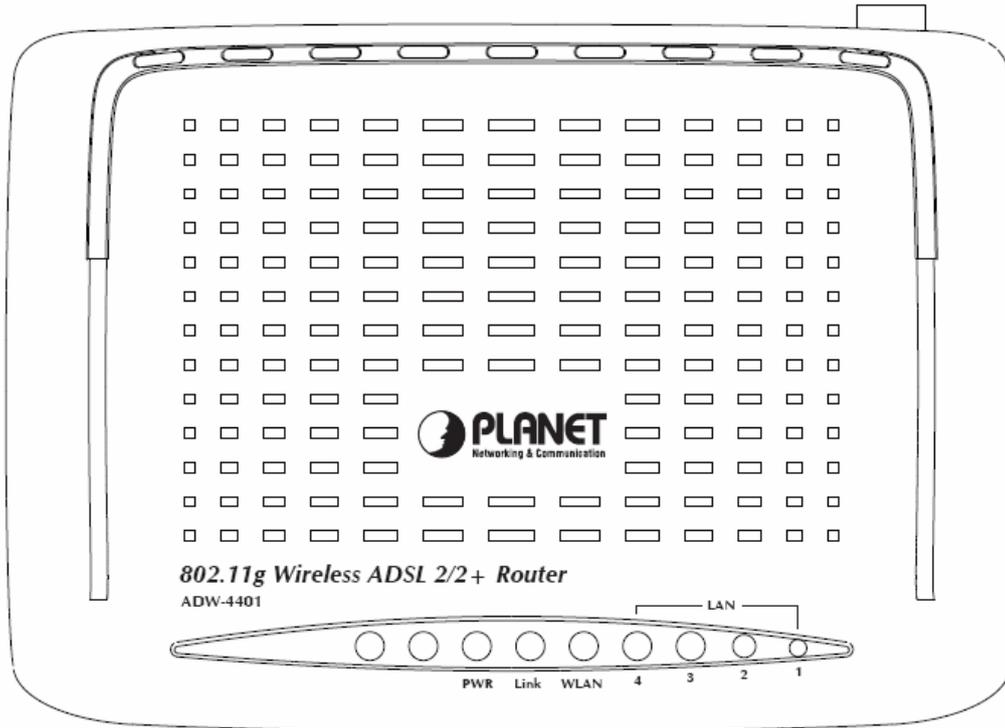


Rear Panel Port and Button Definition

Connector	Description
POWER Button	The power button is for turn on or turns off the router.
Reset	The reset button can restore the default settings of device. To restore factory

	defaults, keep the device powered on and push a paper clip into the hole. Press down the button over 5 seconds and then release.
Power	Power connector with 12V DC 1.0 A
Ethernet 1-4	Router is successfully connected to a device through the corresponding port (1, 2, 3, or 4). If the LED is flashing, the Router is actively sending or receiving data over that port.
Line	The RJ-11 connector allows data communication between the modem and the ADSL network through a twisted-pair phone wire.

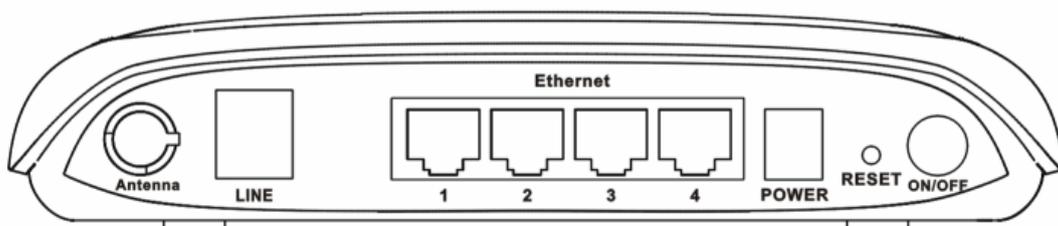
Front Panel of ADW-4401v4



Front Panel LED definition

LED	State	Description
PWR	Green	When the router is powered on and in ready state
	Red	The device is being turned on and booting
	OFF	When the router is powered off
Link	ON	Successful connection between ADSL modem and telecom's network
	Flashing	Modem is trying to establish a connection to telecom's network
WLAN	ON	The Wireless Interface is ready
	Flashing	The Wireless data is transmitting
	OFF	The Wireless Interface is disabled
LAN 1-4	ON	Link
	Flashing	TX or RX activity

Rear Panel



Rear Panel Port and Button Definition

Connector	Description
POWER Button	The power button is for turn on or turns off the router.
Reset	The reset button can restore the default settings of device. To restore factory defaults, keep the device powered on and push a paper clip into the hole. Press down the button over 5 seconds and then release.
Power	Power connector with 12V DC 1.0 A
Ethernet 1-4	Router is successfully connected to a device through the corresponding port (1, 2, 3, or 4). If the LED is flashing, the Router is actively sending or receiving data over that port.
Line	The RJ-11 connector allows data communication between the modem and the ADSL network through a twisted-pair phone wire.

2. Installation

This chapter offers information about installing your router. If you are not familiar with the hardware or software parameters presented here, please consult your service provider for the values needed.

2.1 System Requirement

1. Personal computer (PC)
2. Pentium III 266 MHz processor or higher
3. 128 MB RAM minimum
4. 20 MB of free disk space minimum
5. RJ45 Ethernet Port

2.2 Hardware Installation

Please connect the device to you computer as follow:

- If connecting to the splitter, connect the “Line” splitter to wall jack using one telephone cable
- Use another telephone cable to connect “MODEM” port of the splitter and “LINE” port of the modem. The “Phone” port of the splitter can be use to connect the telephone by a telephone cable.
- Use Ethernet cable to connect “LAN” port of the modem and “LAN” port of your computer.

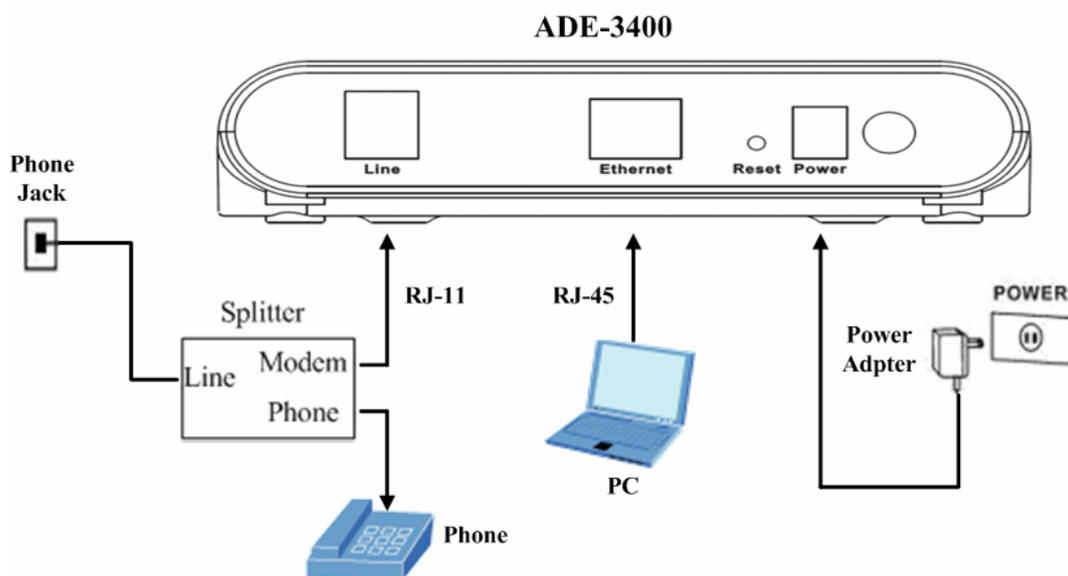


Figure 1 ADE-3400 connection diagram

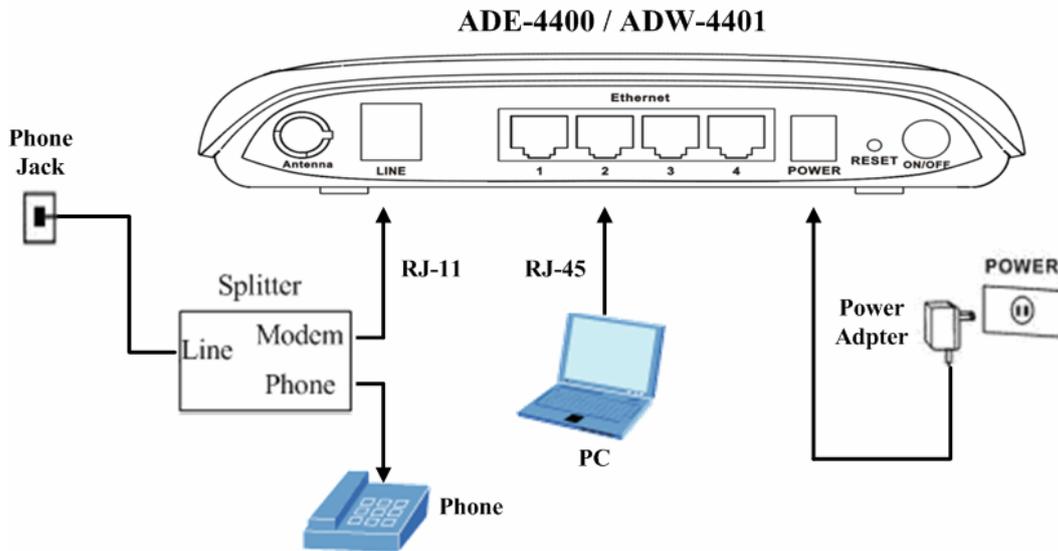


Figure 2 ADE-4400 / ADW-4401 connection diagram

If do not need to connect to the splitter,

- Connect the modem to wall jack with a telephone cable.
- Use Ethernet cable to connect “LAN” port of the modem and network adaptor of your computer.

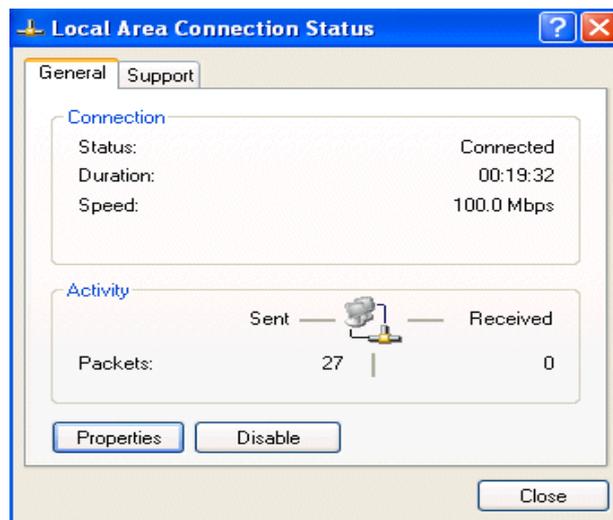
2.3 Configuring the Network Properties

Configuring PC in Windows XP

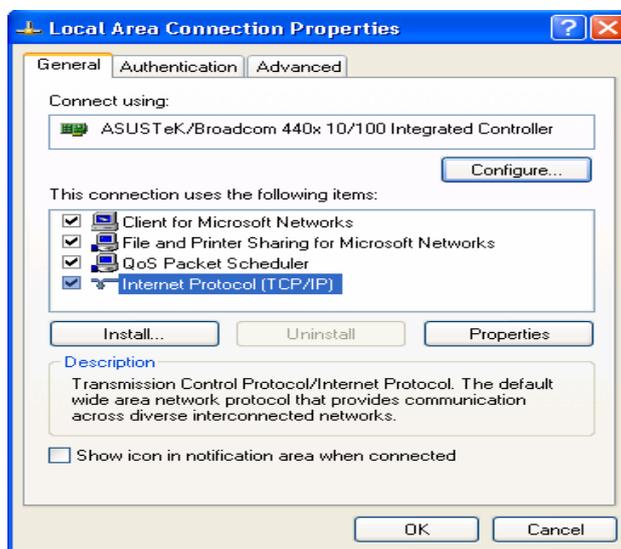
1. Go to **Start / Control Panel (in Classic View)**. In the Control Panel, double-click on **Network Connections**
2. Double-click **Local Area Connection**.



3. In the **Local Area Connection Status** window, click **Properties**.

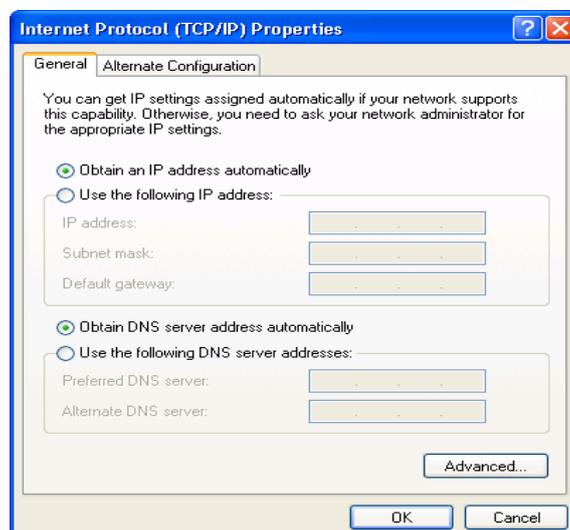


4. Select **Internet Protocol (TCP/IP)** and click **Properties**.



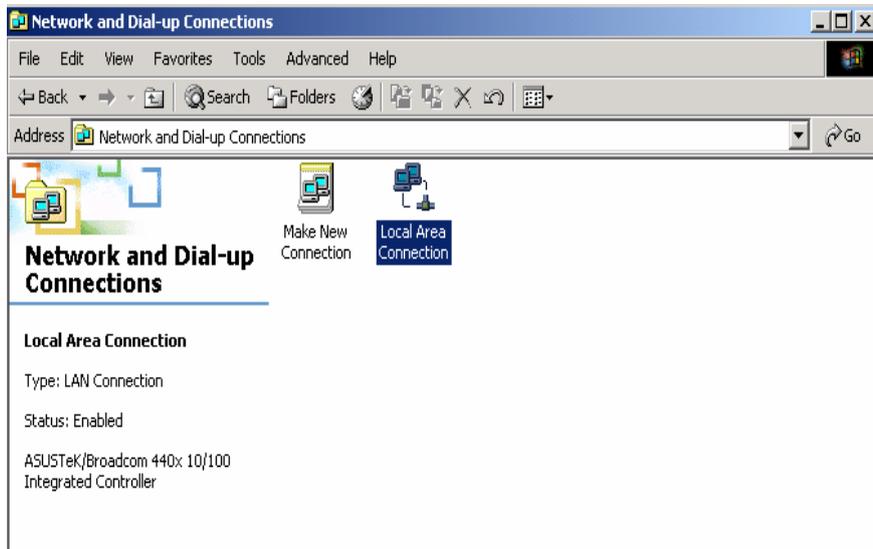
5. Select the **Obtain an IP address automatically** and the **Obtain DNS server address automatically** radio buttons.

6. Click **OK** to finish the configuration.

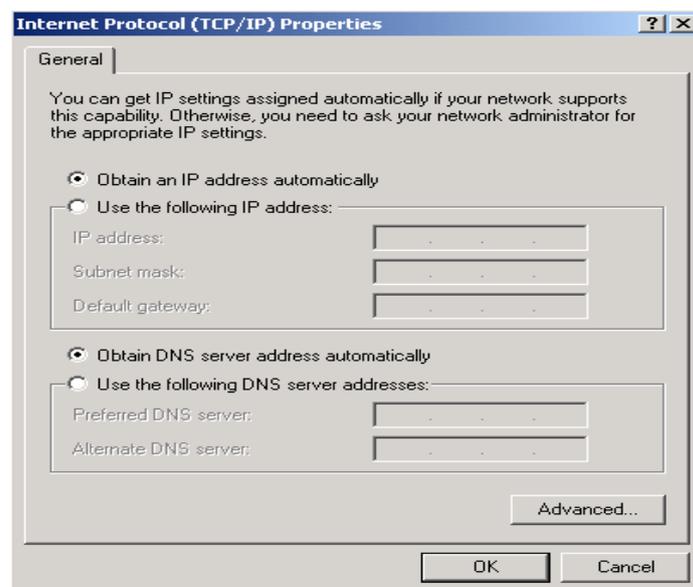


Configuring PC in Windows 2000

1. Go to **Start / Settings / Control Panel**. In the Control Panel, double-click on **Network and Dial-up Connections**.
2. Double-click **Local Area Connection**.

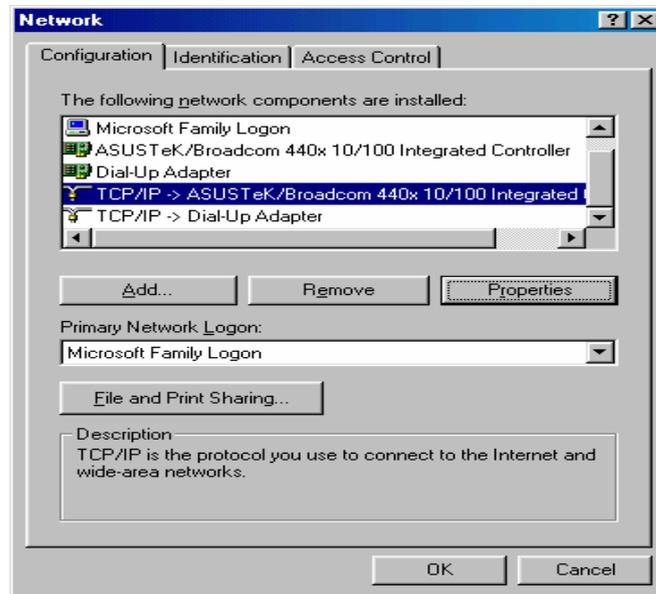


3. In the **Local Area Connection Status** window click **Properties**.
4. Select **Internet Protocol (TCP/IP)** and click **Properties**.
5. Select the **Obtain an IP address automatically** and the **Obtain DNS server address automatically** radio buttons.
6. Click **OK** to finish the configuration.

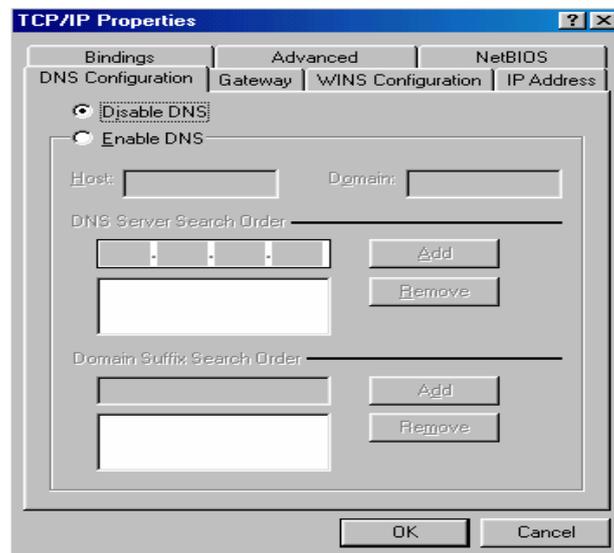


Configuring PC in Windows 98/Me

1. Go to **Start / Settings / Control Panel**. In the Control Panel, double-click on **Network** and choose the **Configuration** tab.
2. Select **TCP/IP → NE2000 Compatible**, or the name of your Network Interface Card (NIC) in your PC.



3. Select the **Obtain an IP address automatically** radio button.
4. Then select the **DNS Configuration** tab.
5. Select the **Disable DNS** radio button and click **OK** to finish the configuration.



3. Web Configuration Management

Determine your connection settings

Before you configure the router, you need to know the connection information supplied by your ADSL service provider.

Connecting the ADSL Router to your network

Unlike a simple hub or switch, the setup of the ADSL Router consists of more than simply plugging everything together. Because the Router acts as a DHCP server, you will have to set some values within the Router, and also configure your networked PCs to accept the IP Addresses the Router chooses to assign them.

Generally there are several different operating modes for your applications. And you can know which mode is necessary for your system from ISP. These modes are router, bridge, PPPoE+NAT, and PPPoA+NAT.

Configuring with Web Browser

It is advisable to change the administrator password to safeguard the security of your network.

To configure the router, open your browser, type “**http://192.168.1.1**” into the address bar and click “**Go**” to get to the login page.

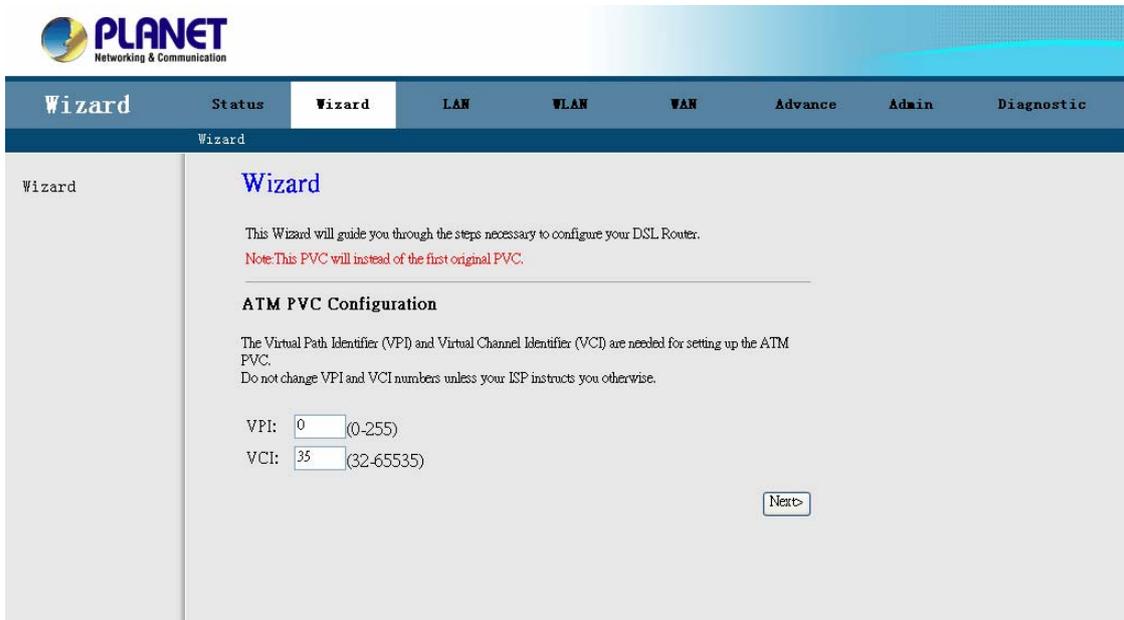
Save this address in your Favorites for future reference.



At the User name prompt, type “**admin**”. And the Password prompt, type “**admin**”. You can change these later if you wish. Click “**OK**”.



Once you have powered on ADE-3400v3 / ADE-4400v3 / ADW-4401v4, system will boot up and connect to DSLAM automatically. In login dialog, enter “**admin**” as user name and “**admin**” as default password. After log in, you will see the following page. The default screen is **Wizard** setting screen. You can configure the device step by step.

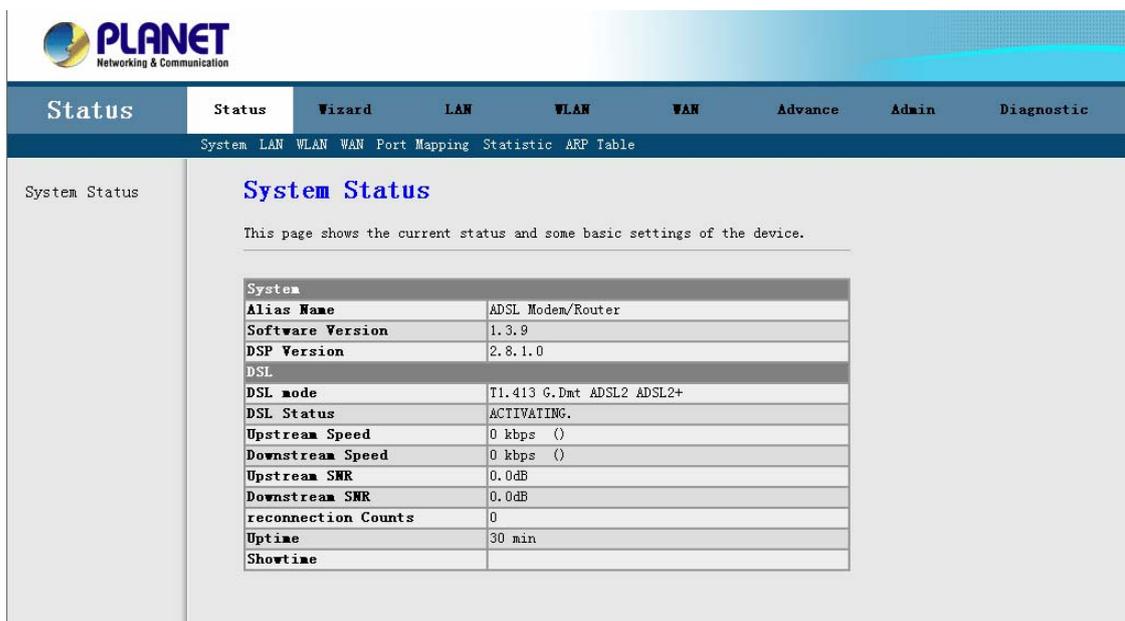


3.1 ADSL Router Status

The Status screen display system information of your Router. It includes the System, LAN, WLAN, WAN, Port Mapping, Statistic and ART Table. You can see the information of the router via these screens.

3.1.1 System Status

It shows the Firmware Version, WAN, LAN, ADSL, and MAC address information. Note that these fields are read-only and are not meant for diagnostic purposes.



3.1.2 LAN Status

You can see the LAN IP address, Mask, DHCP status, MAC and DHCP Client Table in this screen.

The screenshot shows the PLANET web interface for LAN Status. The top navigation bar includes 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', 'Admin', and 'Diagnostic'. Below this, a secondary bar shows 'System', 'LAN', 'WLAN', 'WAN', 'Port Mapping', 'Statistic', and 'ARP Table'. The main content area is titled 'Lan Status' and contains a table for LAN Configuration and a DHCP Client Table.

LAN Configuration	
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled
MAC Address	00-30-4f-60-5e-92

DHCP Client Table		
IP Address	MAC Address	Time Expired(s)
192.168.1.3	00-0c-6e-a5-bf-98	23 Hr 26 min 48 sec
192.168.1.4	00-30-4f-27-60-ef	22 Hr 33 min 33 sec

3.1.3 WLAN Status (ADW-4401 only)

You can see the basic settings and status of wireless Interface in this screen. It includes the wireless band, mode, SSID and client list etc.

The screenshot shows the PLANET web interface for WLAN Status. The top navigation bar includes 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', 'Admin', and 'Diagnostic'. Below this, a secondary bar shows 'System', 'LAN', 'WLAN', 'WAN', 'Port Mapping', 'Statistic', and 'ARP Table'. The main content area is titled 'WLAN Status' and contains a table for Wireless Configuration.

Wireless Configuration	
Wireless	Enabled
band	802.11 b+g
Mode	AP
Broadcast SSID	Enabled
root	
Status	Enabled
SSID	adsl-805e92
Authentication Mode	Auto
Encrypt Mode	None
vap0	
Status	Disabled
vap1	
Status	Disabled
vap2	
Status	Disabled
vap3	

3.1.4 WAN Status

You can see the VPI/VCI, Encapsulation type, Protocol, WAN IP address, Gateway and DNS information in this screen.

PLANET Networking & Communication

Status | Status | Wizard | LAN | WLAN | WAN | Advance | Admin | Diagnostic

System LAN WLAN WAN Port Mapping Statistic ARP Table

WAN Status

WAN Status

This page shows some basic status of Wan.

Interface	VPI/VCI	Encap	Protocol	IP Address	Gateway	Status
Internet_R_0_33	0/33	LLC	PPPoE			down 0sec / 00:11:36
Default Gateway						
DNS Servers	139.175.55.244, 139.175.252.16					

3.1.5 Port Mapping

You can see the Port Mapping information in this screen. It includes the status and Mapping Relation.

PLANET Networking & Communication

Status | Status | Wizard | LAN | WLAN | WAN | Advance | Admin | Diagnostic

System LAN WLAN WAN Port Mapping Statistic ARP Table

Port Mapping

Port Mapping

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

Status: Disabled

Mapping Relation

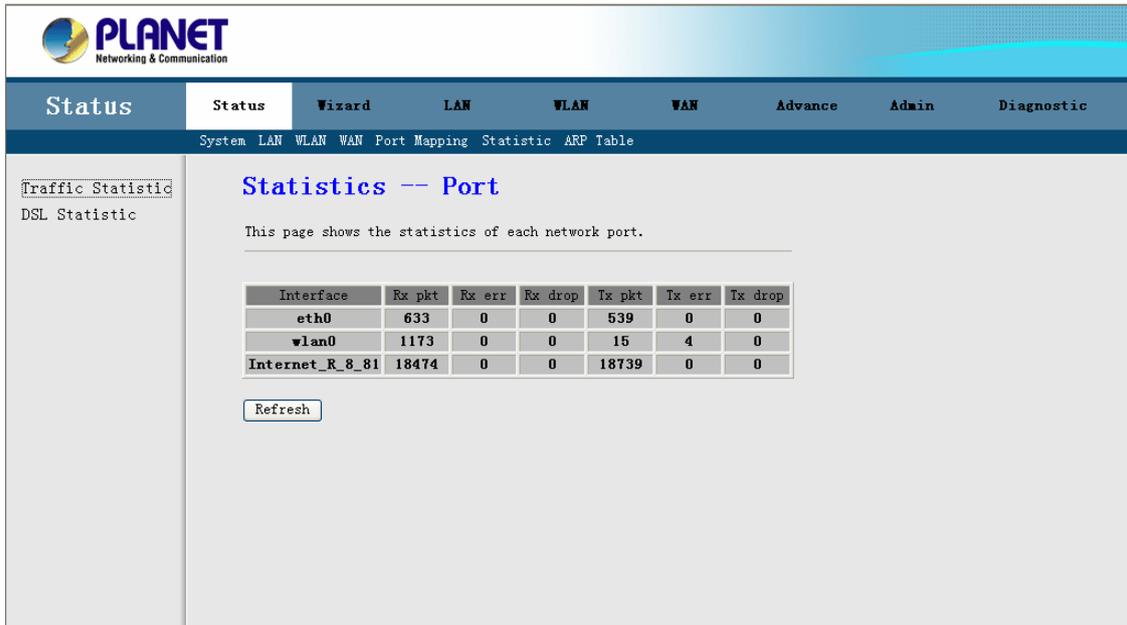
Select	Interface	Priority
Default	LAN4, LAN3, LAN2, LAN1, wlan0, vap0, vap1, vap2, vap3, Internet_R_0_33	low
Group1		low
Group2		low
Group3		low
Group4		low

3.1.6 Statistic

You can see the Statistic information in this screen. It includes the Traffic and DSL statistic.

Traffic Statistic Screen

The screen shows the statistic of LAN, WLAN and WAN Port. Click the **Refresh** button to refresh the information.



The screenshot shows the PLANET web interface. The top navigation bar includes 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', 'Admin', and 'Diagnostic'. The 'Status' menu is expanded, showing 'System', 'LAN', 'WLAN', 'WAN', 'Port Mapping', 'Statistic', and 'ARP Table'. The 'Statistic' option is selected, leading to the 'Statistics -- Port' page. The page title is 'Statistics -- Port' and it contains the text: 'This page shows the statistics of each network port.' Below this is a table with the following data:

Interface	Rx pkt	Rx err	Rx drop	Tx pkt	Tx err	Tx drop
eth0	633	0	0	539	0	0
wlan0	1173	0	0	15	4	0
Internet_R_8_81	18474	0	0	18739	0	0

Below the table is a 'Refresh' button.

DSL Statistic

The screen shows the ADSL line statistic.



The screenshot shows the PLANET web interface. The top navigation bar is the same as in the previous screenshot. The 'Status' menu is expanded, and the 'Statistic' option is selected, leading to the 'Statistics -- ADSL' page. The page title is 'Statistics -- ADSL' and it contains the text: 'Adsl line statistics.' Below this is a table with the following data:

Mode	ADSL2+	
Latency	Interleave	
Trellis Coding	Enable	
Status	SHOWTIME, L0	
Power Level	L0	
	Downstream	Upstream
SNR Margin (dB)	6.4	7.0
Attenuation (dB)	2.5	1.5
Output Power (dBm)	6.5	2.5
Attainable Rate (Kbps)	25008	1096
Rate (Kbps)	23857	989
K (number of bytes in DMT frame)	251	29
R (number of check		

3.1.7 ARP Table

You can see the ARP information in this screen. Click the **Refresh** button to refresh the information.



The screenshot displays the PLANET web interface. At the top left is the PLANET logo with the tagline "Networking & Communication". Below the logo is a navigation menu with tabs: Status, Wizard, LAN, WLAN, WAN, Advance, Admin, and Diagnostic. Under the "Status" tab, there is a sub-menu with options: System, LAN, VLAN, WAN, Port Mapping, Statistic, and ARP Table. The "ARP Table" option is selected, and the page content is as follows:

ARP Table

This table shows a list of learned MAC addresses.

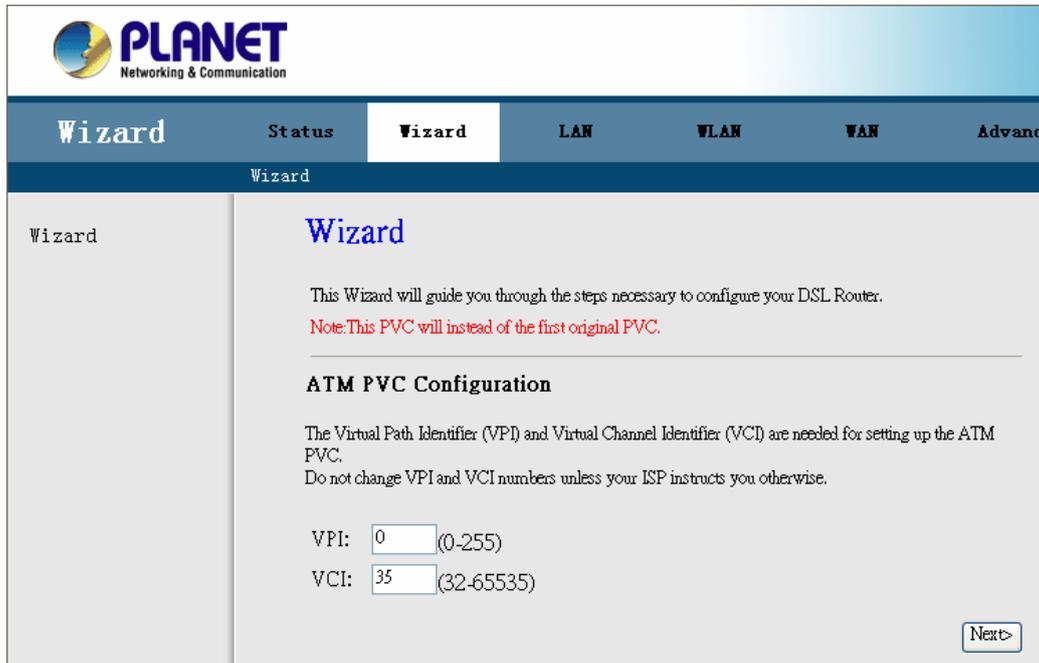
IP Address	MAC Address
210.66.155.94	00-30-4F-11-22-33
210.66.155.87	00-30-4F-EP-5A-28
210.66.155.74	00-30-4F-22-34-A0
192.168.1.4	00-30-4F-45-26-BE

Below the table is a "Refresh" button.

3.2 Wizard

You can use "**Wizard**" to setup the router as follows, and the router will connect to the Internet via ADSL line.

Step 1. Click "**Wizard**" to get into the quick setup procedures. It will show the below screen. Enter the VPI / VCI value that provided by your ISP.



The screenshot shows the Planet Wizard interface. At the top left is the Planet logo with the text "PLANET Networking & Communication". Below the logo is a navigation bar with tabs: "Wizard", "Status", "Wizard", "LAN", "WLAN", "WAN", and "Advance". The "Wizard" tab is selected. The main content area is titled "Wizard" and contains the following text:

This Wizard will guide you through the steps necessary to configure your DSL Router.
Note: This PVC will instead of the first original PVC.

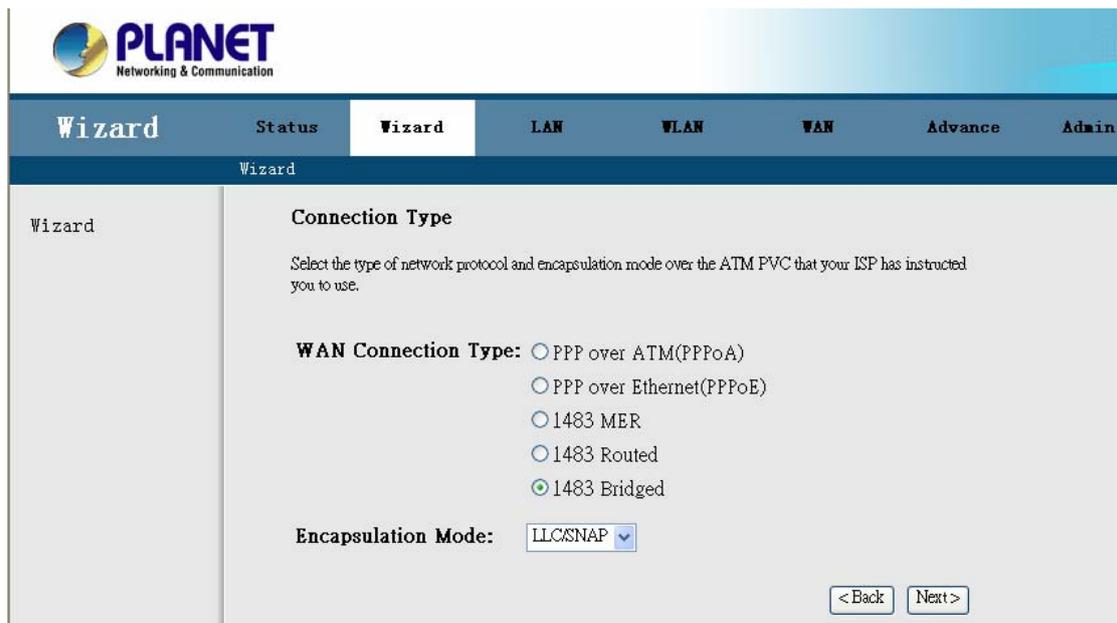
ATM PVC Configuration

The Virtual Path Identifier (VPI) and Virtual Channel Identifier (VCI) are needed for setting up the ATM PVC.
Do not change VPI and VCI numbers unless your ISP instructs you otherwise.

VPI: (0-255)
VCI: (32-65535)

At the bottom right, there is a "Next >" button.

Step 2. Click "**Next**" to setup your Internet connection type. You can have this information from your Internet Service Provider.



The screenshot shows the Planet Wizard interface. At the top left is the Planet logo with the text "PLANET Networking & Communication". Below the logo is a navigation bar with tabs: "Wizard", "Status", "Wizard", "LAN", "WLAN", "WAN", "Advance", and "Admin". The "Wizard" tab is selected. The main content area is titled "Wizard" and contains the following text:

Connection Type

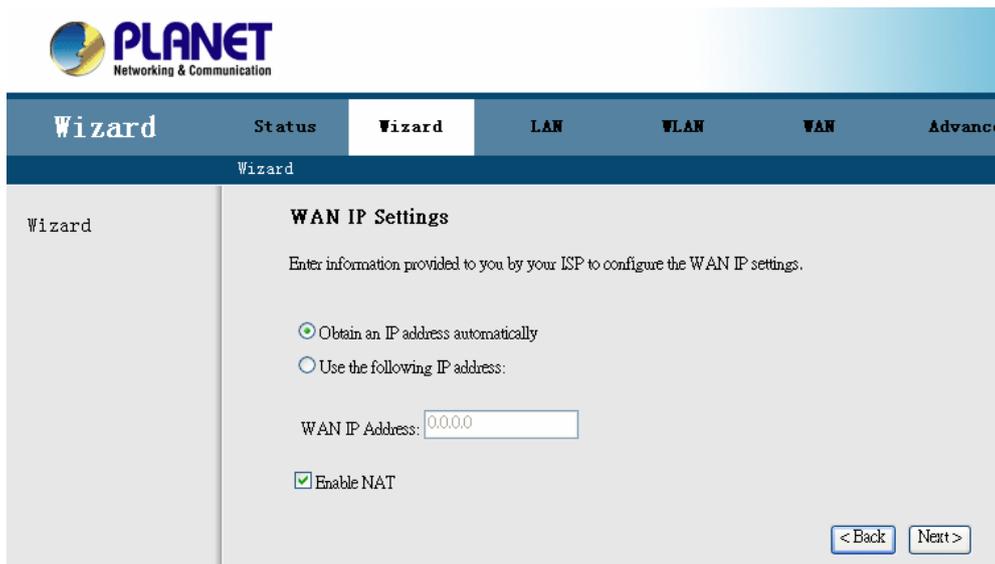
Select the type of network protocol and encapsulation mode over the ATM PVC that your ISP has instructed you to use.

WAN Connection Type: PPP over ATM(PPPoA)
 PPP over Ethernet(PPPoE)
 1483 MER
 1483 Routed
 1483 Bridged

Encapsulation Mode:

At the bottom right, there are "< Back" and "Next >" buttons.

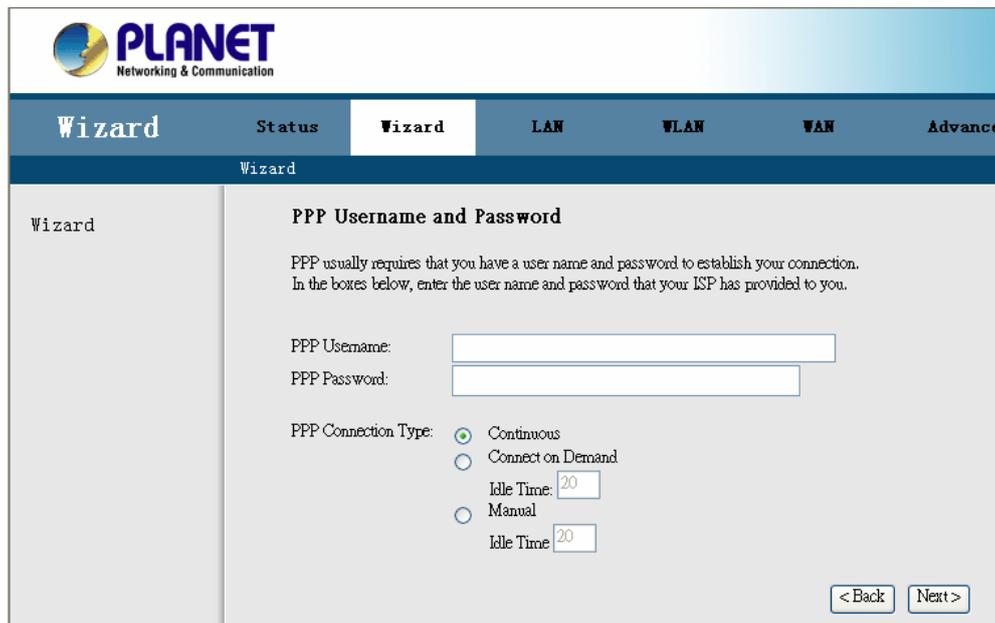
Step 3. Select the WAN IP type; select the WAN IP setting provided by your ISP.



The screenshot shows the PLANET Networking & Communication Wizard interface. The top navigation bar includes 'Wizard', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', and 'Advanced'. The 'Wizard' tab is active. The main content area is titled 'WAN IP Settings' and contains the following elements:

- Instruction: 'Enter information provided to you by your ISP to configure the WAN IP settings.'
- Radio button selection:
 - Obtain an IP address automatically
 - Use the following IP address:
- Text input field: 'WAN IP Address: 0.0.0.0'
- Checkbox: Enable NAT
- Navigation buttons: '< Back' and 'Next >'

Step 4. Enter the user name and password that your ISP has provided to you. Select the connection type that you want to use. There are three types for your selection – Continuous, Connect on Demand and Manual.



The screenshot shows the PLANET Networking & Communication Wizard interface. The top navigation bar includes 'Wizard', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', and 'Advanced'. The 'Wizard' tab is active. The main content area is titled 'PPP Username and Password' and contains the following elements:

- Instruction: 'PPP usually requires that you have a user name and password to establish your connection. In the boxes below, enter the user name and password that your ISP has provided to you.'
- Text input fields: 'PPP Username:' and 'PPP Password:'
- Radio button selection for 'PPP Connection Type':
 - Continuous
 - Connect on Demand
 - Manual
- Text input fields for 'Idle Time' (both set to '20'):
- Navigation buttons: '< Back' and 'Next >'

Step 5. Click "Next" to setup your LAN IP and DHCP Server setting.

The screenshot shows the PLANET Wizard interface for LAN configuration. The navigation tabs include Wizard, Status, Wizard (selected), LAN, WLAN, WAN, and Advance. The main content area is titled "LAN Interface Setup" and contains the following fields and options:

- LAN IP: 192.168.1.1
- LAN Netmask: 255.255.255.0
- Enable Secondary IP
- DHCP Server**
- Set and configure the Dynamic Host Protocol mode for your device.
- Enable DHCP Server
- Start IP: 192.168.1.2
- Eng IP: 192.168.1.254
- Max Lease Time: 1 Day 0 Hour 0 Min (If all is -1, Max Lease Time is not limited)

Buttons for "< Back" and "Next >" are located at the bottom right of the configuration area.

Step 6. Enter the **Finish** to save settings and reboot the device or click **Back** to modify your settings.

The screenshot shows the PLANET Wizard interface for the "WAN Setup - Summary" page. The navigation tabs include Wizard, Status, Wizard (selected), LAN, WLAN, WAN, Advance, Admin, and Diagnostic. The main content area displays a summary of the WAN and LAN configurations:

Make sure that the settings below match the settings provided by your ISP.

WAN Setup:

VPI/VCI	0 / 35
Connect Type	PPPoE/LLCSNAP, connect forever
NAPT	Enabled
WAN IP	auto assigned
Reserved Gateway	auto assigned
DNS Server	auto assigned

LAN Configure:

LAN IP	192.168.1.1 / 255.255.255.0
Secondary IP	0.0.0.0 / 0.0.0.0
DHCP Server	Enabled
DHCP IP Range	192.168.1.2 ~ 192.168.1.254
DHCP Lease Time	1 day 0 hour 0 min

3.3 LAN

The LAN setup includes two parts – LAN Interface and DHCP Settings.

3.3.1 LAN Interface Settings

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

You can change the LAN IP address for your requirements. The default LAN IP is 192.168.1.1. You can also enable the Secondary LAN IP function in this page. It will allow LAN Interface to have the alias IP for management.



The screenshot displays the PLANET Networking & Communication web interface. The top navigation bar includes 'LAN', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', 'Admin', and 'Diagnostic'. Below this, there are sub-tabs for 'LAN Settings' and 'DHCP Settings'. The main content area is titled 'LAN Interface Setup' and contains the following text: 'This page is used to configure the LAN interface of your ADSL Router. Here you may change the setting for IP address, subnet mask, etc..' A red note states: 'Note: Please Commit/Reboot if you want to make this settings effective immediately.' The configuration fields are: 'Interface Name: br0', 'IP Address: 192.168.1.1', 'Subnet Mask: 255.255.255.0', and a checkbox for 'Secondary IP' which is unchecked. The 'ICMP Snooping' section has 'Disabled' selected with a radio button. An 'Apply Changes' button is located at the bottom of the form.

IP Address: Enter the IP address of your ADSL router in dotted decimal notation, for example, 192.168.1.1 (default setting).

IP Subnet Mask: Your ADSL router will automatically calculate the subnet mask based on the IP address that you assign. Unless you are implementing sub netting, use the subnet mask computed by the ADSL router.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.3.2 DHCP Server Settings

Enable the DHCP Server if you are using this device as a DHCP server. This page lists the IP address pools available to hosts on your LAN. The device distributes numbers in the pool to hosts on your network as they request Internet access.

You can setup DHCP server to assign IP address to your PC automatically. You can also manually assign an IP according to the MAC address of PC's network card. The ADSL

Router supports DHCP Relay and Server mode, or select **Disable** to disable the DHCP Server.



IP Pool Range: Enter the start IP and end IP address you wish to use as the DHCP server's IP assignment.

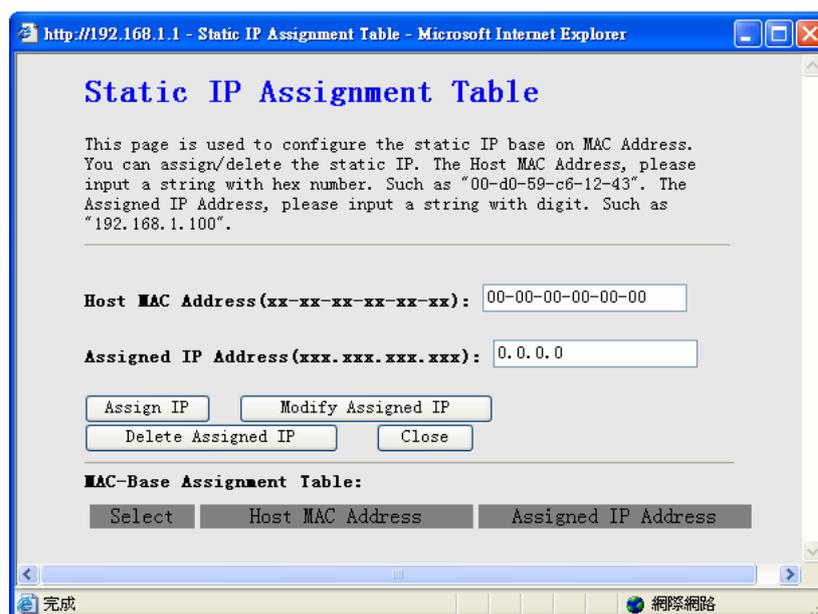
Max Lease Time: Enter the amount of time you wish to lease out a given IP address.

Domain Name: Enter your domain name.

Gateway Address: Enter the default gateway IP address. Default is the LAN IP address.

Note: Please Commit/Reboot if you want to make this settings effective immediately

MAC-Base Assignment: Click this button will pop-up a new window to assign IP address according to MAC address.



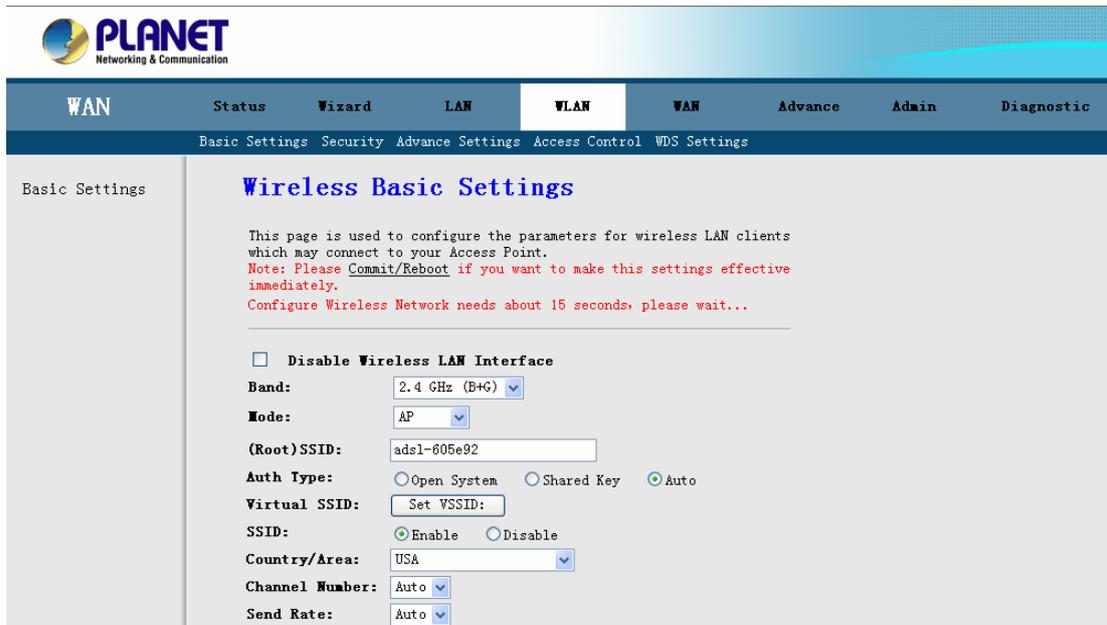
Enter the MAC address and the IP address that you wish to assign in the fields. Click the **“Assign IP”** button to add it in the MAC-Base Assignment Table.

3.4 WLAN (For ADW-4401 only)

Click “WLAN” and it will open out the Sub-Menu. It includes the “Basic Settings”, “Security”, “Advanced Settings”, “Access Control”, and “WDS”.

3.4.1 Basic Settings

Go to **WLAN** → **Basic Settings** to setup the wireless parameters.



The screenshot shows the PLANET Networking & Communication web interface. The top navigation bar includes tabs for WAN, Status, Wizard, LAN, WLAN (selected), WAN, Advance, Admin, and Diagnostic. Below this is a sub-menu for Basic Settings, Security, Advance Settings, Access Control, and WDS Settings. The main content area is titled "Wireless Basic Settings" and contains the following configuration options:

- Disable Wireless LAN Interface**
- Band:** 2.4 GHz (B+G)
- Mode:** AP
- (Root) SSID:** adsl-605e92
- Auth Type:** Open System Shared Key Auto
- Virtual SSID:** Set VSSID:
- SSID:** Enable Disable
- Country/Area:** USA
- Channel Number:** Auto
- Send Rate:** Auto

Function buttons in this page:

Disable Wireless LAN Interface: Click it will disable your Wireless LAN Interface. The Wireless Interface default is **Enable**.

Band: You can select the proper wireless type for your requirements and environment. There are following types: **2.4GHz (B) / 2.4GHz (G) / 2.4GHz (B + G)** .

Mode: The Wireless ADSL Router can work like an AP or WDS. The Default setting is AP.

SSID: The SSID (Service Set Identification) is the unique name shared among all devices in a wireless network. The SSID must be identical for all devices in the wireless network. Set a string up to 32 letters to identify AP.

Broadcast SSID: Select **Disable** to hide the SSID such that a station can not obtain the SSID through passive scanning. Select **Enable** to make the SSID visible so a station can obtain in the SSID through Passive scanning.

Country / Area: The channel will adjust according to nations to adapt to each nation's frequency provision.

Channel Number: Select the appropriate channel to correspond with your network settings. Auto is the default setting. All devices in your wireless network must use the same channel in order to function correctly.

Send Rate: Select the Wireless Data Rate that you want to use.

Radio Power: 10%, 25%, 50%, 80%, 100%.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.4.2 Security

This page allows you can configure security features of the wireless LAN interface. You can set the network authentication method, selecting data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength.

This device is equipped with 802.1X and WPA/WPA2 (Wi-Fi Protected Access), the latest security standard. It also supports the legacy security standard, WEP (Wired Equivalent Privacy). By default, wireless security is disabled and authentication is open. Before enabling the security, consider your network size, complexity, and existing authentication infrastructure and then determine which solution applies to it.

The screenshot shows the PLANET Networking & Communication web interface. The top navigation bar includes tabs for WAN, Status, Wizard, LAN, WLAN (selected), WAN, Advance, Admin, and Diagnostic. Below this is a sub-menu with Basic Settings, Security (selected), Advance Settings, Access Control, and WDS Settings. The main content area is titled "Wireless Security Setup" and contains the following information:

- Introduction text: "This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network." followed by a red note: "Note: Please Commit/Reboot if you want to make this settings effective immediately." and "Configure Wireless Network needs about 15 seconds, please wait..."
- SSID Type: Radio button selected for "Root".
- Encryption: A dropdown menu set to "None" and a "Set WEP Key" button.
- Use 802.1x Authentication: An unchecked checkbox.
- WPA Authentication Mode: Radio buttons for "Enterprise (RADIUS)" and "Personal (Pre-Shared Key)".
- Pre-Shared Key Format: A dropdown menu set to "Passphrase".
- Pre-Shared Key: A text input field containing "ccfc83ac".
- Authentication RADIUS Server: Fields for Port (1812), IP Address (0.0.0.0), and Password (empty).

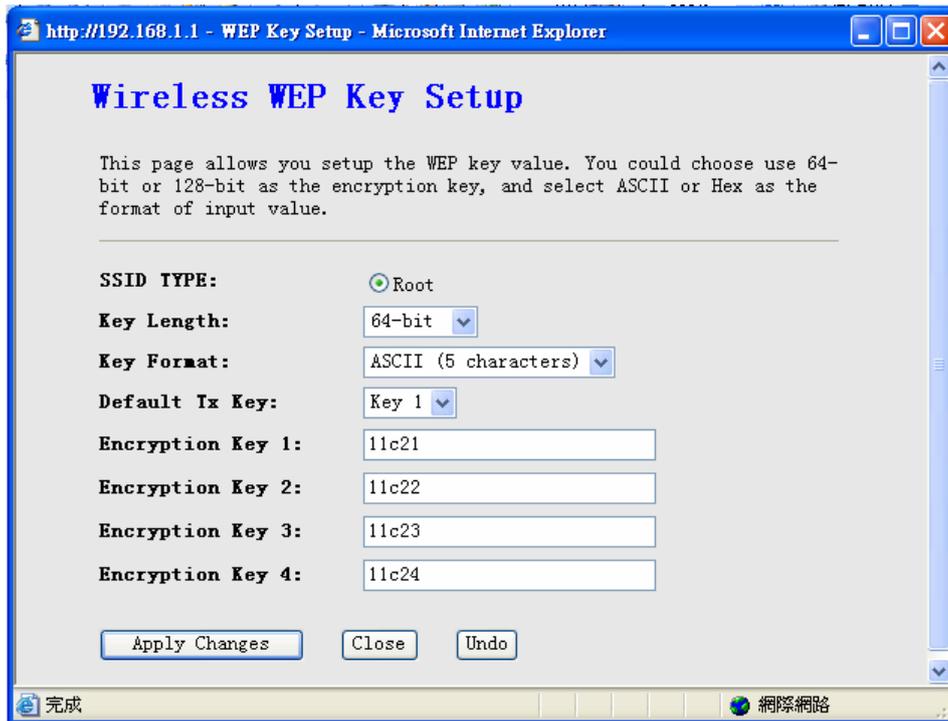
Encryption: Select the Encryption mode for Authentication. There are five modes for select. **None / WEP / WPA (TKAP) / WPA2 (AES) / WPA2 Mixed.**

None:

The data is not encrypted when it is transferred from the device to the client station. This is the default option.

WEP (Wired Equivalent Privacy):

Encrypts data frames before transmitting over the wireless network. After you select WEP, you can click the “**Set WEP Key**” button for further settings.



Following is a description of the different options:

1. **Key Length:** Select **64-bit WEP** or **128-bit WEP** to use data encryption.
2. **Key Format:** Select the **ASCII** or **Hex** format for encryption.
3. **Default Tx Key:** Select Key 1 ~ 4 for your default Encryption Key.
4. **Network Key 1 to 4:** Enter 5 ASCII characters or 10 hexadecimal digits for 64-bit encryption keys to fill out WEP keys box. Or enter 13 ASCII characters or 26 hexadecimal digits for 128-bit encryption keys to fill out WEP keys box. The system allows you to type in 4 kinds of the WEP key.

Click "**Apply Changes**" to save the wireless security options and then click "**Close**" to return the Security Setup screen.

Use 802.1x Authentication: Enable the 802.1x Authentication and select WEP 64bits or WEP 128bits for 802.1x authentication.

Radius Port: Enter the port number of the authentication server. The default port number is 1812.

Radius Server IP Address: Enter the IP Address of the authentication server.

Radius Password: Enter the same key as the Radius server's.

Click "**Apply Changes**" again to save the wireless security options and make the change take effect.

WPA(TKIP) / WPA2(AES):

Wi-Fi Protected Access, encrypts data frames before transmitting over the wireless network.

WPA Authentication Mode: Select the **Enterprise (RADIUS)** or **Personal (Pre-Shared Key)**.

Pre-shared Key Format: Select the Passphrase or Hex format.

Pre-shared Key: Enter the pre-shared key for WPA. Client stations must use the same key in order to connect with this device. Check the table below for instructions when entering the key.

Radius Port: Enter the port number of the authentication server. The default port number is 1812.

Radius Server IP Address: Enter the IP Address of the authentication server.

Radius Password: Enter the same key as the Radius server's.

Click "**Apply Changes**" again to save the wireless security options and make the change take effect.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.4.3 Advance Setting

These settings are only for more technically advanced users who have a sufficient knowledge about wireless LAN. These settings should not be changed unless you know what effect the changes will have on your Access Point.

The screenshot shows the PLANET Networking & Communication web interface. The top navigation bar includes 'WAN', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', and 'Advance'. Below this, there are sub-tabs for 'Basic Settings', 'Security', 'Advance Settings', 'Access Control', and 'WDS Settings'. The main content area is titled 'Wireless Advanced Settings' and contains a warning message: 'These settings are only for more technically advanced users who have a sufficient knowledge about wireless LAN. These settings should not be changed unless you know what effect the changes will have on your Access Point. Note: Please Commit/Reboot if you want to make this settings effective immediately. Configure Wireless Network needs about 15 seconds, please wait...'. Below the warning, there are several configuration fields: 'Fragment Threshold' (2346, range 256-2346), 'RTS Threshold' (2347, range 0-2347), 'Beacon Interval' (100, range 20-1024 ms), 'Preamble Type' (radio buttons for Long, Short, and Auto, with Auto selected), 'Relay Interval' (radio buttons for Enable and Disable, with Disable selected), and 'LAN/WLAN Interval' (radio buttons for Enable and Disable, with Disable selected). An 'Apply Changes' button is located at the bottom of the form.

Fragment Threshold: The threshold (number of bytes) for the fragmentation boundary for directed messages. It is the maximum data fragment size that can be sent. Enter a value between 256 and 2346.

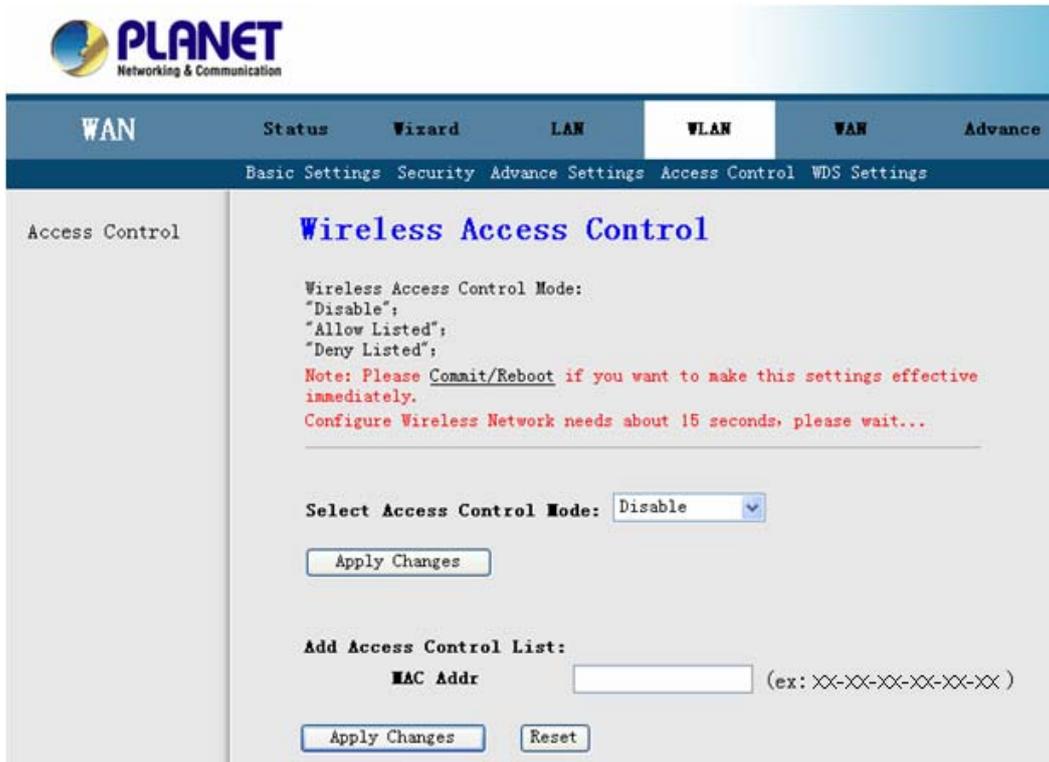
RTS Threshold: The RTS (Request To Send) threshold (number of bytes) for enabling RTS/CTS handshake. Data with its frame size larger than this value will perform the RTS/CTS handshake. Set this attribute to be larger than the **maximum MSDU** (MAC Service Data Unit) size **TURNS OFF** the RTS/CTS handshake. Set this attribute to **ZERO** **TURNS ON** the RTS/CTS handshake. Enter a value between 0 and 2347.

Beacon Interval: The Beacon Interval value indicates the frequency interval of the beacon. Enter a value between 20 and 1024. A beacon is a packet broadcast by the Router to synchronize the wireless network.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.4.4 Wireless Access Control

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



Wireless Access Control Mode: Select the **Disabled** to disable this function. Select the **Allow** to make any wireless MAC address in the Wireless Access Control List can be linked to. And select the **Deny** to ban any wireless MAC address in the Wireless Access Control List to be linked to.

Add MAC Access Control: To add a new MAC address to your wireless MAC address filters, type in the MAC Address in the entry field provided. And then click on the “**Apply Changes**” button to add the MAC address to the list. The MAC address will appear listed in the table below.

You can click the “**Delete**” to delete the MAC address that you selected, or click “**Delete All**” to delete all MAC address in the list table.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.4.5 WDS (Wireless Distribution System)

Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS.

The Wireless Distribution System (WDS) allows you to extend the range of your wireless network by introducing one or more WDS-enabled devices into your wireless network. You can only establish WDS links with WDS-enabled devices.

The screenshot shows the PLANET Networking & Communication web interface. The top navigation bar includes tabs for WAN, Status, Wizard, LAN, WLAN (selected), WAN, and Advance. Below this is a sub-menu with Basic Settings, Security, Advance Settings, Access Control, and WDS Settings (selected). The main content area is titled 'WDS Settings' and contains the following elements:

- Text: "other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS."
- Note: "Note: Please Commit/Reboot if you want to make this settings effective immediately."
- Text: "Configure Wireless Network needs about 15 seconds, please wait..."
- Checkbox: "Enable WDS" (unchecked)
- Section: "ADD WDS AP:"
- Form fields: "MAC Addr" (with a hint "(ex: xx-xx-xx-xx-xx-xx)") and "Comment"
- Buttons: "Apply Changes" and "Reset"
- Section: "Current WDS AP List:"
- Table with columns: "MAC Address", "Comment", and "Select"
- Buttons: "Delete" and "Delete All"

You need to select the WDS mode in the Wireless Basic settings screen and then the WDS Settings will be modified.

Choose **Enable WDS** to enable the WDS function.

Type in the MAC address and Comment in the entry fields. And then click on the “**Apply Changes**” button to add the MAC address to the WDS AP list.

You can click the “**Delete Selected**” to delete the MAC address that you selected, or click “**Delete All**” to delete all MAC address in the list table.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.5 WAN

3.5.1 WAN Interface

ADSL 2/2+ Router provide 8 PVCs with different channel mode. You can select the Bridge / MER / PPPoE / PPPoA mode for your environment.

PLANET
Networking & Communication

WAN Status Wizard LAN WLAN **WAN** Advance Admin Diagnostic

WAN Interface ADSL Settings

WAN Interface

Channel Configuration

This page is used to configure the parameters for the channel operation modes of your ADSL Modem/Router.

Note: Please Commit/Reboot if you want to make this settings effective immediately.

Current ATM VC Table:

Select	Inf	Mode	VPI	VCI	Encap	NAPT	IP Addr	Remote IP	User Name	Droute	Status	Action
<input type="radio"/>	Internet_R	mer	148	8	81	LLC	On	210.66.155.80	210.66.155.94		On	Enable

VPI: VCI:

Encapsulation: LLC VC-Mux

Channel Mode:

Application Mode:

Admin Status: Enable Disable

Enable NAPT:

PPP Settings Login Name: Password:

Bridge Mode

The device can be configured to act as a bridging device between your LAN and your ISP. Bridges are devices that enable 2 or more networks to communicate as if they are 2 segments of the same physical LAN.

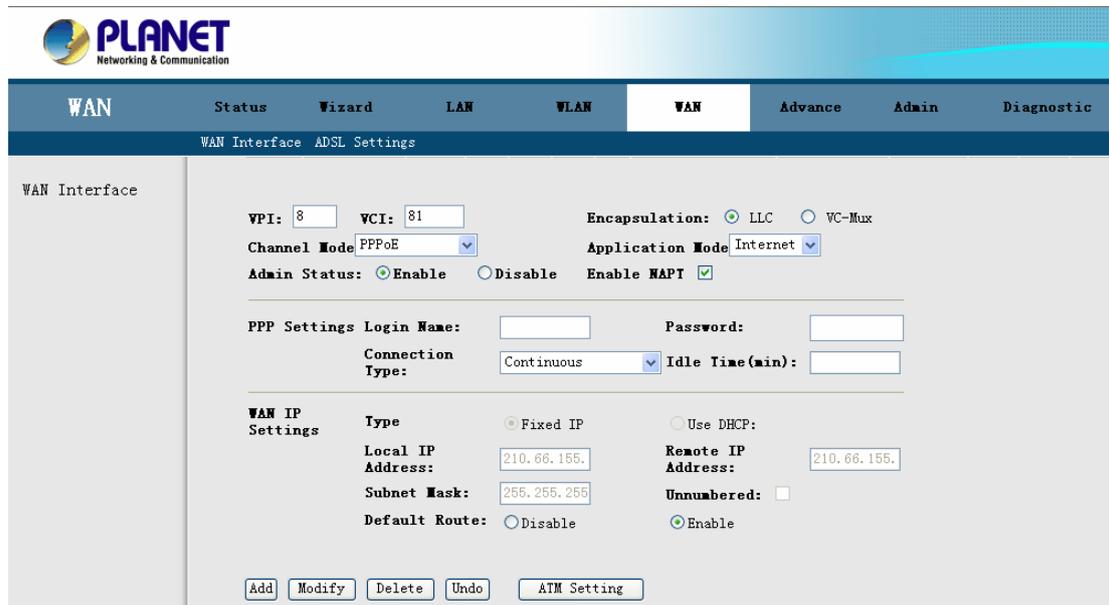
ADSL 2/2+ Router is bridge mode enabled by factory default.

1. Open the WEB page in “**WAN → WAN Interface**”.
2. Select the Channel Mode to “**1483 Bridged**”. Set the parameters **VPI / VCI** and **Encapsulation** mode according to the ISP provided.
3. Click “**Add**” button to add this channel into VC table. You can use the “**Modify**” and “**Delete**” button to manage your PVC.
4. Go to “**Admin → Commit/Reboot**” menu, click “**Commit and Reboot**” button. The device will reboot and apply this setting.

Note: “**Commit and Reboot**”: Whenever you use the web console to change system settings, the changes are initially placed in temporary storage. To save your changes for future use, you need to use the commit function. This function saves your changes from RAM to flash memory and then reboot the system.

PPPoE / PPPoA Mode

Select this option if your ISP requires you to use a PPPoE / PPPoA connection. This option is typically used for DSL service. Please enter the proper information in the fields.



The screenshot shows the PLANET WAN Interface configuration page. The navigation bar includes WAN, Status, Wizard, LAN, WLAN, WAN (selected), Advance, Admin, and Diagnostic. The sub-menu shows WAN Interface and ADSL Settings. The main content area is titled 'WAN Interface' and contains the following settings:

- VPI: 8, VCI: 81
- Encapsulation: LLC, VC-Mux
- Channel Mode: PPPoE
- Application Mode: Internet
- Admin Status: Enable, Disable
- Enable NAPT:
- PPP Settings: Login Name: [], Password: [], Connection Type: Continuous, Idle Time (min): []
- WAN IP Settings: Type: Fixed IP, Use DHCP: []
- Local IP Address: 210.66.155.
- Subnet Mask: 255.255.255
- Remote IP Address: 210.66.155.
- Unnumbered:
- Default Route: Disable, Enable

Buttons at the bottom: Add, Modify, Delete, Undo, ATM Setting.

1. Open the WEB page at “WAN → WAN Interface”.
2. Select the Channel Mode to “PPPoE”. Set the value of VPI / VCI and select the Encapsulation mode from your ISP.
3. Enter the User Name / Password from your ISP.
4. Select the PPP connection type: Continuous, Connect on demand and Manual. If you select “Connect on demand” type, specify how many minutes the connection may be idle before it disconnects. If you select “Manual” type, use “Connect” and “Disconnect” buttons to start / stop PPP connection.
5. Click “Add” button to add this channel. You can use the “Modify” and “Delete” button to manage your PVC.
6. Go to “Admin → Commit/Reboot” menu, click “Commit and Reboot” button. The device will reboot and apply this setting.

Your ISP should provide the above information. Note that you must enter the user name exactly as your ISP assigned it. If the assigned name is in the form of `user@domain` where domain identifies a service name, enter it exactly as given.

MER Mode

Select this option to set static IP information. You will need to enter in the encapsulation type, IP address, subnet mask, and gateway address provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which is 4 IP octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.

PLANET
Networking & Communication

WAN Status Wizard LAN WLAN WAN Advance Admin Diagnostic

WAN Interface ADSL Settings

WAN Interface

VPI: 8 VCI: 81 Encapsulation: LLC VC-Mux
 Channel Mode: 1483 MER Application Mode: Internet
 Admin Status: Enable Disable Enable NAPT:

PPP Settings Login Name: Password:
 Connection Type: Continuous Idle Time (min):

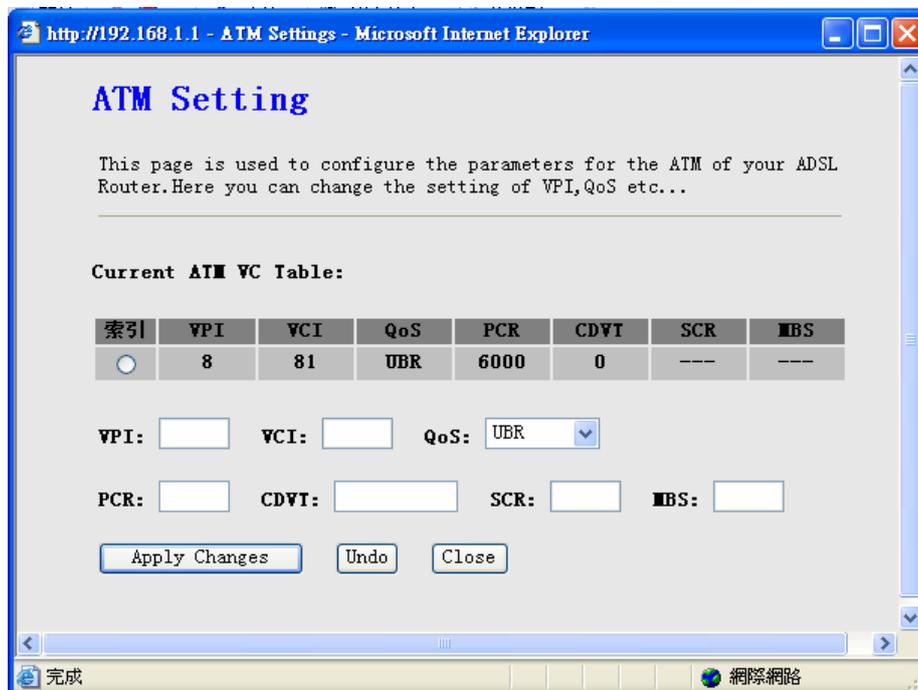
WAN IP Settings Type: Fixed IP Use DHCP:
 Local IP Address: 210.66.155 Remote IP Address: 210.66.155
 Subnet Mask: 255.255.255 Unnumbered:
 Default Route: Disable Enable

Add Modify Delete Undo ATM Setting

1. Open the WEB page at “WAN → WAN Interface”.
2. Select the Channel Mode to “1483 MER”. Set the value of VPI / VCI and select the **Encapsulation mode** from your ISP.
3. Select the WAN IP type: **DHCP** or **Fixed IP**.
4. Select **Fixed IP** to set static IP information. You will need to enter in the IP address, subnet mask, and gateway address provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are 4 IP octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.
5. Select **DHCP** if your ISP provides you an IP address automatically. The router will obtain an IP address automatically.
6. Click “Add” button to add this channel. You can use the “Modify” and “Delete” button to manage your PVC.
7. Go to “Admin → Commit/Reboot” menu, click “Commit and Reboot” button. The device will reboot and apply this setting

3.5.2 ATM Settings

The page is for ATM PVCs' QoS mode setting. The device supports 4 QoS mode — UBR / CBR /rt-VBR / nrt-VBR. You can click the “**ATM Setting**” on the WAN Interface setting screen.



ATM QoS: Select the Quality of Service types for this Virtual Circuit. The ATM QoS types include CBR(Constant Bit Rate), VBR(Variable Bit Rate) and UBR (Unspecified Bit Rate). These QoS types are all controlled by the parameters specified below, including PCR, SCR, and MBS.

CBR is for connections that support constant rates of data transfer. The only parameter you need to worry about in CBR is PCR.

UBR is for connections that have variable traffic. The only parameter you need to worry about in UBR is PCR.

rt-VBR is for connections that, while having variable traffic, require precise timing between traffic source and destination. PCR, SCR and MBS must all be set for rt-VBR.

nrt-VBR is for connections that have variable traffic, do not require precise timing, but still require a set bandwidth availability. PCR, SCR and MBS must all be set for nrt-VBR.

PCR: Peak Cell Rate (PCR) is the maximum rate at which the sender can send cells. This parameter may be lower (but not higher) than the maximum line speed. 1 ATM cell is 53 bytes (424 bits), so a maximum speed of 832 Kbps gives a maximum PCR of 1962 cells/sec. This rate is not guaranteed because it is dependent on the line speed.

SCR: Sustained Cell Rate (SCR) is the mean cell rate of a bursty, on-off traffic source that can be sent at the peak rate, and a parameter for burst-type traffic. SCR may not be greater than the PCR; the system default is 0 cells/sec.

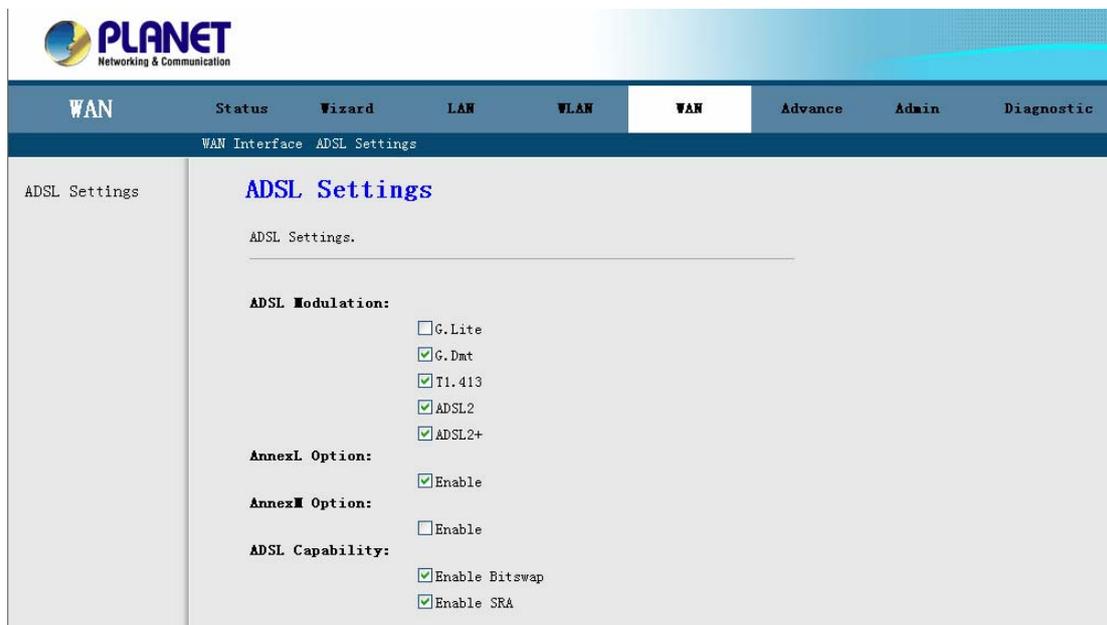
MBS: Maximum Burst Size (MBS) is the maximum number of cells that can be sent at the PCR. After MBS is reached, cell rates fall below SCR until cell rate averages to the SCR again. At this time, more cells (up to the MBS) can be sent at the PCR again.

“Apply Changes”: Set new PVC QoS mode and values for the selected PVC.

“Undo”: Discard your settings.

3.5.3 ADSL Settings

You can set ADSL connect mode here. It supports G.Lite, G.Dmt, T1.413, ADSL2 and ADSL2+. You can also set Annex L, M Option, ADSL Capability and ADSL Tone Mask in this page.



3.6 Advance

You can configure different advanced services in this part. It includes **DNS, Firewall, Virtual Server, Routing, IP QoS, Anti-DoS, Port Mapping** and **Other**.

3.6.1 DNS

In this screen, you can modify the DNS server settings. It includes the DNS and DDNS functions.



The screenshot shows the PLANET Networking & Communication web interface. The top navigation bar includes 'Advance', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', 'Admin', and 'Diagnostic'. Below this, a secondary menu lists 'DNS', 'Firewall', 'Virtual Server', 'Routing', 'IP QoS', 'Anti-dos', 'Port Mapping', and 'Other'. The main content area is titled 'DNS Configuration' and contains the following text: 'This page is used to configure the DNS server ip addresses for DNS Relay.' There are two radio button options: 'Attain DNS Automatically' (unselected) and 'Set DNS Manually' (selected). Under 'Set DNS Manually', there are three input fields for 'DNS 1', 'DNS 2', and 'DNS 3'. The 'DNS 1' field contains '139.175.55.244' and the 'DNS 2' field contains '139.175.252.16'. At the bottom, there are two buttons: 'Apply Changes' and 'Reset Selected'.

Attain DNS Automatically: If “Attain DNS Automatically” checkbox is selected, this router will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment.

Set DNS Manually: Select this method; you need to enter the DNS Server IP address manually. You can enter three entries in these fields.

DDNS

In this screen, you can modify the Dynamic DNS settings.

The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname in any of the many domains, allowing your DSL router to be more easily accessed from various locations on the Internet.

The screenshot shows the 'Dynamic DNS Configuration' page in the Planet Networking & Communication web interface. The page has a navigation menu at the top with tabs for 'Advance', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', 'Admin', and 'Diagnostic'. Below the navigation menu, there are sub-tabs for 'DNS', 'Firewall', 'Virtual Server', 'Routing', 'IP QOS', 'Anti-dos', 'Port Mapping', and 'Other'. The main content area is titled 'Dynamic DNS Configuration' and contains the following fields:

- Enable:** A checkbox that is checked.
- DDNS provider:** A dropdown menu with 'DynDNS.org' selected.
- Hostname:** A text input field.
- Interface:** A dropdown menu with 'Internet_R_8_81' selected.
- DynDns Settings:**
 - Username:** A text input field.
 - Password:** A text input field.
- TZO Settings:**
 - Email:** A text input field.

Enable: Enable or disable DDNS.

DDNS Provider: Choose the option of provider. It supports the DynDns and TZO.

Hostname: Type the domain name assigned to your ADSL by your Dynamic DNS provider.

DynDns Settings:

Username: Type your user name.

Password: Type the password assigned to you.

TZO Settings:

E-mail Address: Type your e-mail address.

Key: Type your key number.

Click the **"Add"** to add this DDNS entry or click **"Remove"** to delete the DDNS entry.

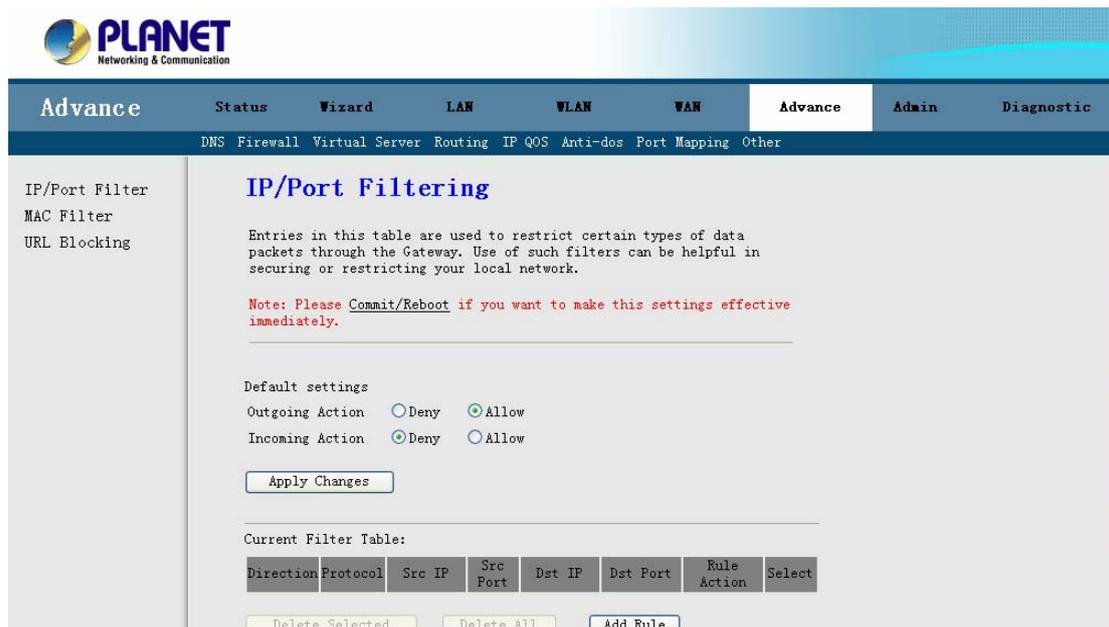
Note: Please Commit/Reboot if you want to make this settings effective immediately

3.6.2 Firewall

Firewall is an advance feature used to deny or allow traffic from passing through the device. ADSL router support some firewall related functions. It includes the IP/Port Filter, MAC Filter and URL Blocking.

3.6.2.1 IP/Port filtering

Use the IP/Port filters to deny / allow particular LAN IP addresses from accessing the Internet. You can deny / allow specific port numbers or all ports for a specific IP address.



Default Setting: Specify default filtering rule action to be either **Deny** or **Allow** if no other rules can be applied. You can specify the direction on **Outgoing** and **Incoming**. Click the **“Apply Changes”** to apply your setting. By default, all outgoing IP traffic from LAN is allowed, and all IP traffic from WAN is deny.

Click the **“Add Rule”** button to show filtering rule field, Enter the rule information that you want to use.

The screenshot shows the configuration form for adding a new rule. It includes the following fields and options:

- Rule Action: Deny Allow
- Direction: (dropdown)
- Protocol: (dropdown)
- Src IP Address: (Subnet Mask)
- Src Subnet Mask:
- Src Port: -
- Dst IP Address: (Subnet Mask)
- Dst Subnet Mask:
- Dst Port: -
- Buttons:

Rule Action: Select the Deny or Allow for your rules.

Direction: Select the Outgoing or Incoming.

Protocol: Set protocol type to be blocked or allowed.

Src IP Address / Mask / Port: Set the subnet of source side computers to be denied / allowed access to the destination side computers. An individual source IP address can be designated for filtering.

If all IP addresses must be filtered, leave this box blank. Enter the IP/subnet mask address in the form of XXX.XXX.XXX.XXX. Example: The IP address is 192.168.1.21 and the net mask 255.255.255.0. The IP address 0.0.0.0 and the net mask 255.255.255.255 is not care.

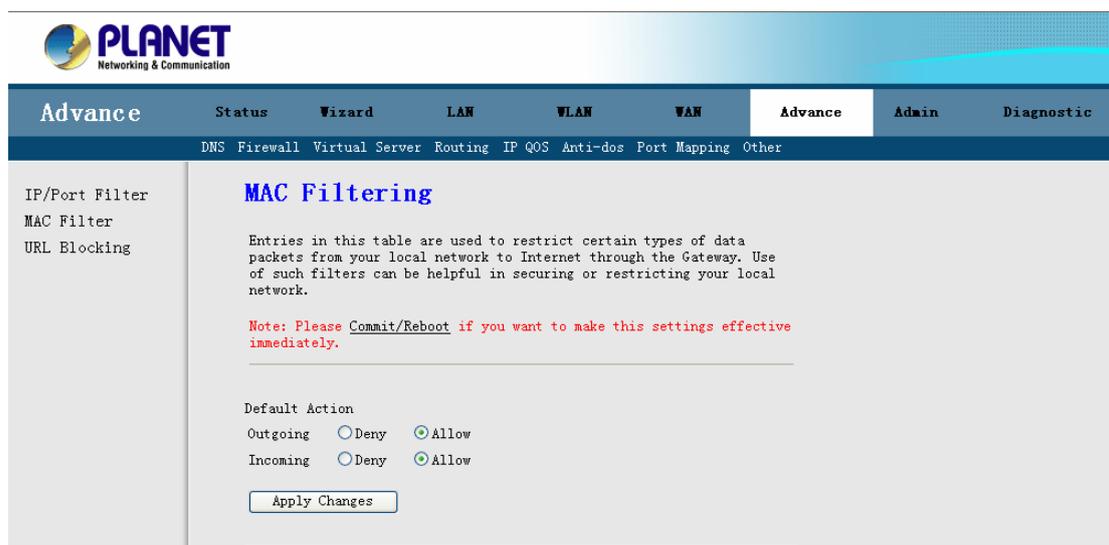
Dst IP Address / Mask / Port: Set the subnet of destination side computers to be denied/allowed access to the source side computers. The destination IP address to be filtered is set. If all IP addresses must be filtered, leave this box blank. Enter the IP/subnet mask address in the form of XXX.XXX.XXX.XXX. Example: The IP address is 211.95.68.121 and the net mask 255.255.255.0. The IP address 0.0.0.0 and the net mask 255.255.255.255 is not care.

Click “**Add**” button to add this filtering rule.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.6.2.2 Mac Filtering

Use the MAC filters to deny computers within the local area network from accessing the Internet. Entries in Filter Table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.



Default Action: Specify default filtering rule action to be either *Deny* or *Allow* if no other rules can be applied. Click the “**Apply Changes**” to apply your setting. By default, all

Outgoing and Incoming action is allowed.

Click the “**Add Rule**” button to show filtering rule field, enter the rule information that you want to use.

Current Filter Table:

Direction	Src MAC	Dst MAC	Rule Action	Select
Outgoing	00-30-4f-33-58-a9	-----	Deny	<input type="radio"/>

Action: Deny Allow

Direction:

Src MAC Address: (Such as 00-11-22-33-44-55)

Dst MAC Address: (Such as 00-12-23-34-45-56)

Rule Action: Specify this filtering rule action to be either *Deny* or *Allow*.

Direction: Set direction type to be blocked or allowed.

Src MAC Address: Set the MAC address of source side computers to be denied/allowed access to the destination side computers.

Dst MAC Address: Set the MAC address of destination side computers to be denied/allowed access to the source side computers.

Click “**Add**” button to add this filtering rule.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.6.2.3 URL Block

This page is used to configure the Blocked FQDN (Such as tw.yahoo.com) and filtered keyword. Here you can add / delete FQDN and filtered keyword.

The screenshot shows the PLANET Networking & Communication web interface. The top navigation bar includes 'Advance', 'Status', 'Wizard', 'LAN', 'VLAN', 'WAN', 'Advance', 'Admin', and 'Diagnostic'. Below this, a secondary menu lists 'DNS', 'Firewall', 'Virtual Server', 'Routing', 'IP QoS', 'Anti-dos', 'Port Mapping', and 'Other'. The main content area is titled 'URL Blocking Configuration'. It contains a sidebar with 'IP/Port Filter', 'MAC Filter', and 'URL Blocking'. The main panel has a description: 'This page is used to configure the Blocked FQDN (Such as tw.yahoo.com) and filtered keyword. Here you can add/delete FQDN and filtered keyword.' Below this is a red note: 'Note: Please Commit/Reboot if you want to make this settings effective immediately.' The 'URL Blocking:' section has radio buttons for 'Disabled' and 'Enabled', with 'Enabled' selected. An 'Apply Changes' button is present. The 'FQDN:' section has a text input field containing 'www.xxx.xxx', an 'Add FQDN' button, and a 'Delete FQDN' button. The 'URL Blocking Table:' section shows a table with a 'Select' column and an 'FQDN' column.

URL Blocking: Enable or Disable URL Blocking. Click the “**Apply Changes**” to apply your setting.

URL Blocking: Enter the FQDN in the field and click the “**Add FQDN**” button to add this rule.

Keyword Filtering: Enter the keyword which you want to block. Click “**Add keyword**” button to add this filtering rule.

Note: Please Commit/Reboot if you want to make this settings effective immediately

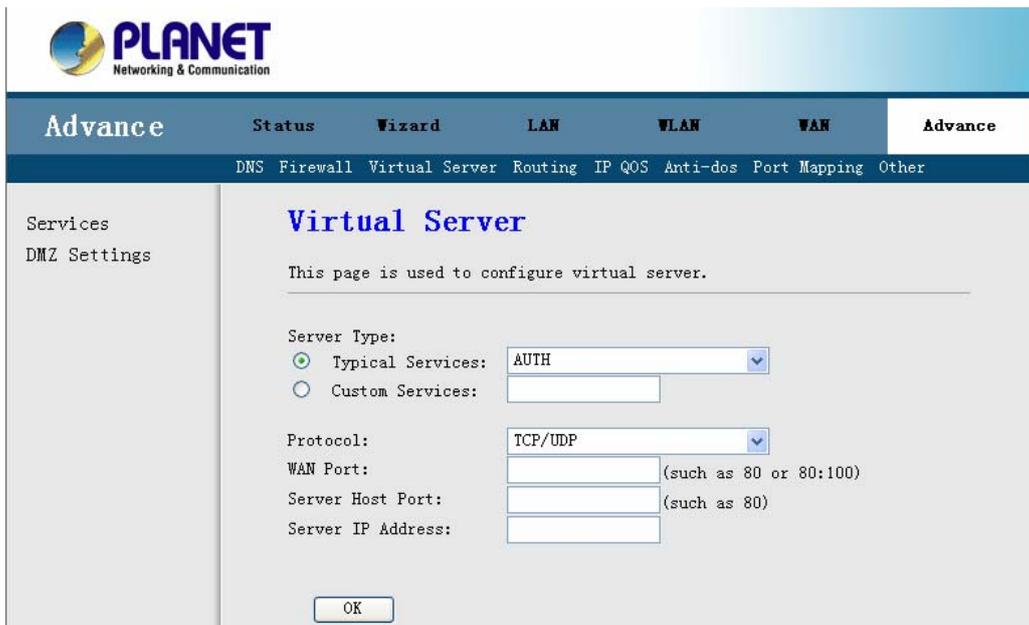
3.6.3 Virtual Server

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

The Virtual Server includes two parts – **Services** and **DMZ**.

3.6.3.1 Services

Click “**Add**” to show the Virtual Server setting screen.



Service Type: Select one service item, such as Mail (SMTP), Mail (POP3), Web Server (HTTP), FTP Server, and DNS, from the list. The information about the selected item will appear in the box below.

Customized services: Enter a new service name to establish a specified user service category.

Protocol: Choose proper protocols for your services.

WAN Port start / end: When you have already selected one service, the port number will appear automatically. You can change it as you need.

Server Host Port: When you have already selected one service, the port number will appear automatically. You can change it as you need.

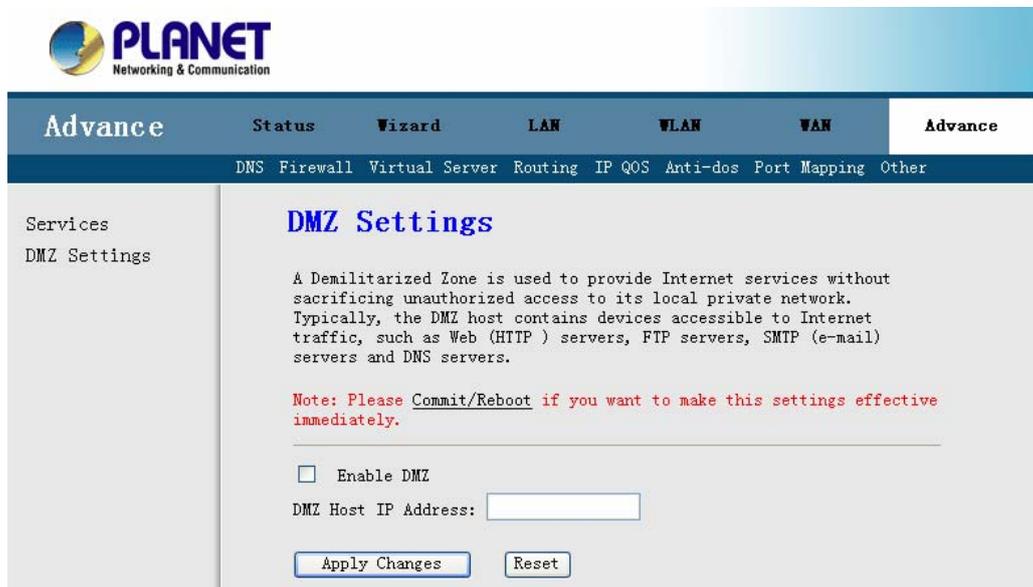
Server IP Address: When you intend to assign a specified address to the virtual server, enter the server IP address here.

Click “**OK**” button to add this Virtual Server entry.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.6.3.2 DMZ

A **DMZ (Demilitarized Zone)** allows a single computer on your LAN to expose ALL of its ports to the Internet. Enter the IP address of that computer as a DMZ (Demilitarized Zone) host with unrestricted Internet access. When doing this, the DMZ host is no longer behind the firewall.



The screenshot shows the PLANET Networking & Communication web interface. The top navigation bar includes 'Advance', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', and 'Advance'. Below this, a secondary menu lists 'DNS', 'Firewall', 'Virtual Server', 'Routing', 'IP QOS', 'Anti-dos', 'Port Mapping', and 'Other'. The main content area is titled 'DMZ Settings' and contains the following text: 'A Demilitarized Zone is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.' Below this is a red note: 'Note: Please Commit/Reboot if you want to make this settings effective immediately.' There is a checkbox labeled 'Enable DMZ' which is currently unchecked. Below the checkbox is a text input field labeled 'DMZ Host IP Address:'. At the bottom of the form are two buttons: 'Apply Changes' and 'Reset'.

Enable DMZ: Click it to enable the DMZ function.

Enter “DMZ Host IP Address” and click “Apply Changes” to activate the DMZ host.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.6.4 Routing

You have two ways to manage the device's routing information. It includes **RIP** and **Static Route**.

3.6.4.1 RIP

Enable the RIP if you are using this device as a RIP-enabled router to communicate with others using the Routing Information Protocol. This page is used to select the interfaces on your devices that use RIP, and the version of the protocol used.

The screenshot shows the PLANET web interface. The top navigation bar includes 'Advance', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', and 'Advance'. Below this is a secondary menu with 'DNS', 'Firewall', 'Virtual Server', 'Routing', 'IP QOS', 'Anti-dos', 'Port Mapping', and 'Other'. The main content area is titled 'RIP Configuration' and contains the following elements:

- A sidebar on the left with 'RIP' and 'Static Route' options.
- A main heading 'RIP Configuration' with a descriptive paragraph: 'Enable the RIP if you are using this device as a RIP-enabled router to communicate with others using the Routing Information Protocol. This page is used to select the interfaces on your devices that use RIP, and the version of the protocol used.'
- A 'RIP:' section with radio buttons for 'Disable' (selected) and 'Enable'.
- An 'Apply Changes' button.
- Configuration fields for 'Interface' (set to 'br0'), 'Receive Mode' (set to 'None'), and 'Send Mode' (set to 'None').
- 'Add' and 'Delete Selected Entry' buttons.
- A 'RIP Config Table:' section with a table header: 'Select', 'Interface', 'Receive Mode', and 'Send Mode'.

To activate RIP for the device, select the “**Enabled**” radio button for RIP Mode and click “**Apply Changes**” to apply it.

To configure an individual interface, select the **Interface**, **desired RIP version** and **Send mode**. Click the “**Add**” button to save the configuration, and to start or stop RIP based on the Global RIP mode selected.

3.6.4.2 Static Route

This page is used to configure the routing information. Here you can add / delete IP routes.

The screenshot shows the PLANET Networking & Communication web interface. The top navigation bar includes 'Advance', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', and 'Admin'. Below this is a secondary navigation bar with 'DNS', 'Firewall', 'Virtual Server', 'Routing', 'IP QOS', 'Anti-dos', 'Port Mapping', and 'Other'. The main content area is titled 'Routing Configuration' and contains the following fields and buttons:

- Enable:**
- Destination:**
- Subnet Mask:**
- Next Hop:**
- Metric:**
- Interface:**

Buttons: Add Route, Update, Delete Selected, Show Routes

Static Route Table:

Select	State	Destination	Subnet Mask	Next Hop	Metric	Interface
--------	-------	-------------	-------------	----------	--------	-----------

Click “**Enable**” to enable the Static Routing function, you can query the preset static routes, delete an existing static route, or add a new static route. By default, the system has no static route information.

Destination: The IP address where packets will go to.

Subnet Mask: The subnet mask of the destination IP address.

Next Hop: The gateway that the packets will pass by during transmission.

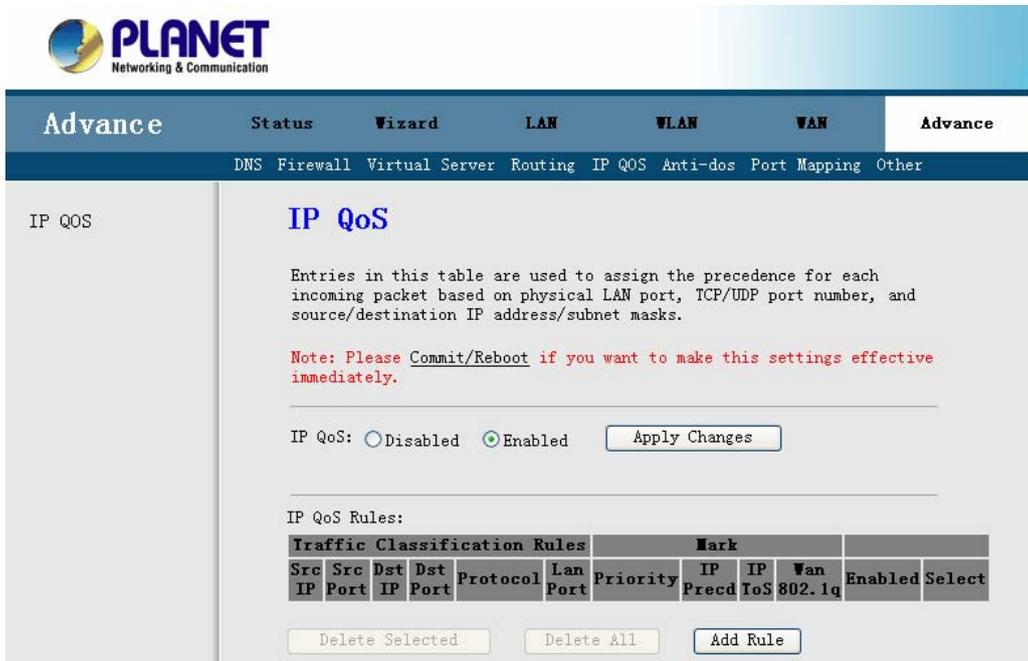
Metric: Metric represents the “cost” of transmission for routing purposes. IP Routing uses hop count as the measurement of cost, with a minimum of 1 for directly connected networks. Enter a number that approximates the cost for this link. The number need not to be precise, but it must between 1 and 15.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

Interface: The interface that the packets pass through on the device.

Click “**Add Route**” to add this routing information.

3.6.5 IP QoS

Entries in this table are used to assign the precedence for each incoming packet based on physical LAN port, TCP / UDP port number, and source / destination IP address / subnet masks.



IP QoS: Enable or Disable IP QoS function. Click the **“Apply Changes”** to apply your setting.

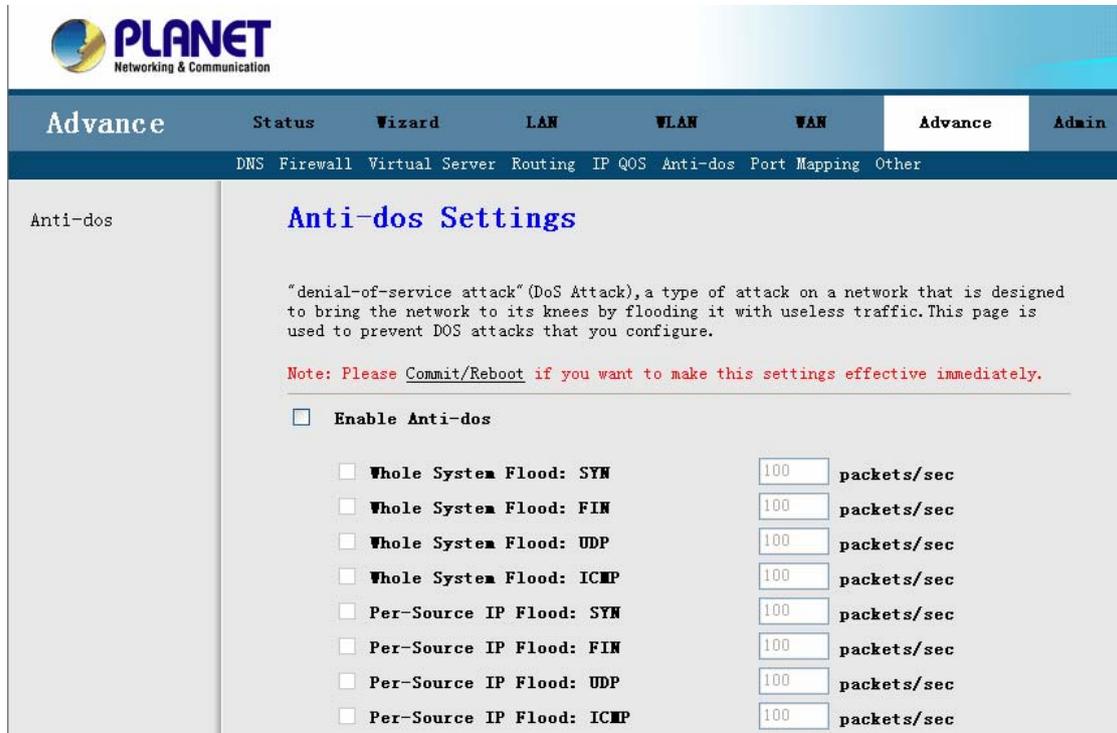
When you click **“Add Rule”** button, the IP QoS Setting screen will appear. You can specify the network Outbound Priority on this setting.

IP QoS Rules:

Traffic Classification Rules						Mark					
Src IP	Src Port	Dst IP	Dst Port	Protocol	Lan Port	Priority	IP Preced	IP ToS	Wan 802.1q	Enabled	Select
<input type="button" value="Delete Selected"/> <input type="button" value="Delete All"/> <input type="button" value="Add Rule"/>											
Specify Traffic Classification Rules											
Source IP:	<input type="text" value="0.0.0.0"/>	Source Netmask:	<input type="text" value="255.255.255.0"/>								
Destination IP:	<input type="text"/>	Destination Netmask:	<input type="text"/>								
Source Port:	<input type="text" value="0"/>	Destination Port:	<input type="text"/>								
Protocol:	<input type="text" value=""/>	Physical Port:	<input type="text" value=""/>								
Outbound Priority	<input type="text" value="p3(lowest)"/>										
<input type="checkbox"/> QoS Tag											
<input type="button" value="Apply Changes"/>											

3.6.6 Anti-DoS

"denial-of-service attack" (DoS Attack), a type of attack on a network that is designed to bring the network to its knees by flooding it with useless traffic. This page is used to prevent DOS attacks that you configure.

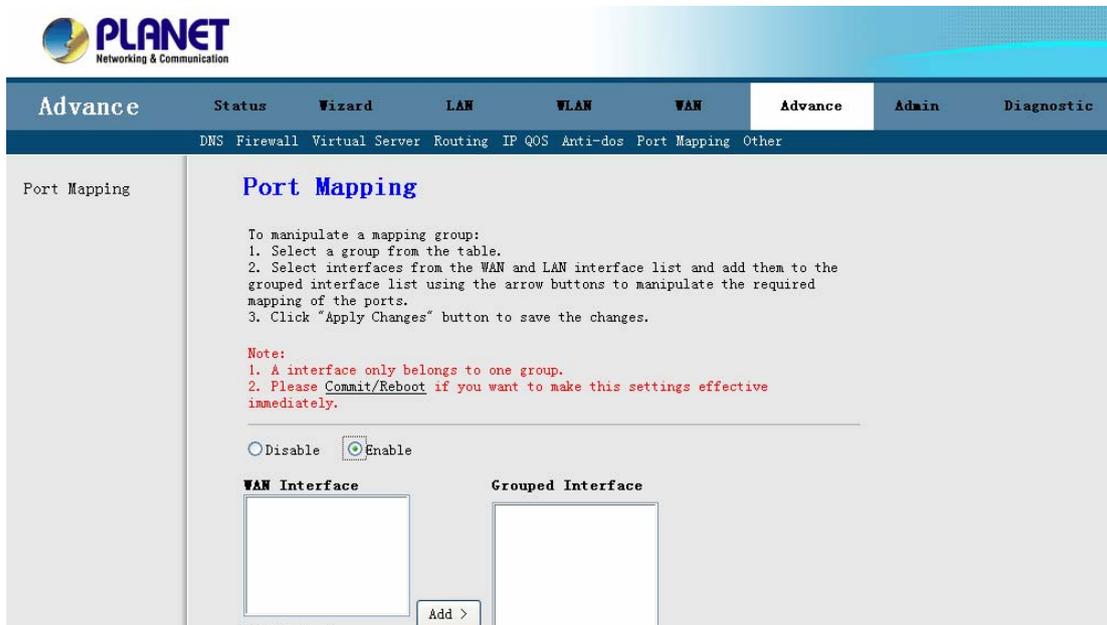


Select "Enable" can automatically detect and block Denial of Service (DoS) attacks, such as Ping of Death, SYN Flood, Port Scan and Land Attack. Select the attack types that you want to block and click "Apply Changes" to apply your settings.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.6.7 Port Mapping

Port Mapping supports multiple ports to PVC and bridging groups. Each group will perform as an independent network. To support this feature, you must create mapping groups with appropriate LAN and WAN interfaces using the **Add** button. The **Delete** button will remove the grouping and add the ungrouped interfaces to the Default group.



To manipulate a mapping group:

1. Select a group from the table.
2. Select interfaces from the WAN and LAN interface list and add them to the grouped interface list using the arrow buttons to manipulate the required mapping of the ports.
3. Click "**Apply Changes**" button to save the changes.

Note:

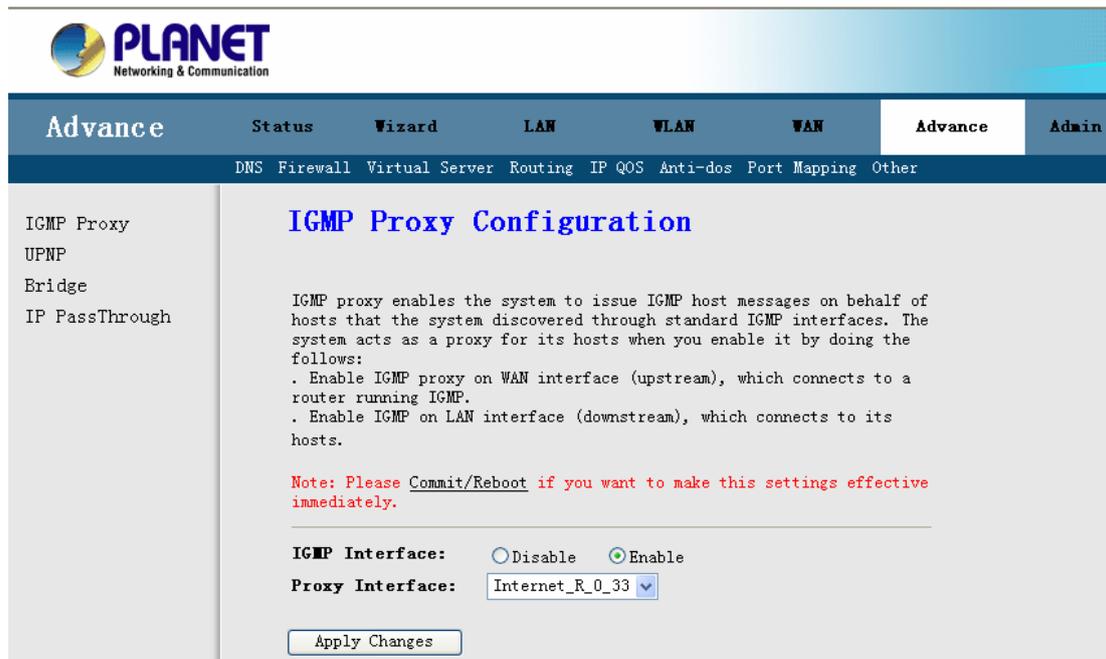
1. An interface only belongs to one group.
2. Please Commit/Reboot if you want to make this settings effective immediately.

3.6.8 Other

This function includes as following parts – IGMP Proxy, UPnP and Bridge.

3.6.8.1 IGMP Proxy

IGMP Proxy enables the system to issue IGMP host messages on behalf of hosts that the system discovered through standard IGMP interfaces.



The system acts as a proxy for its hosts when you enable it by doing the follows:

- Enable IGMP proxy on WAN interface (upstream), which connects to a router running IGMP.
- .Enable IGMP on LAN interface (downstream), which connects to its hosts.

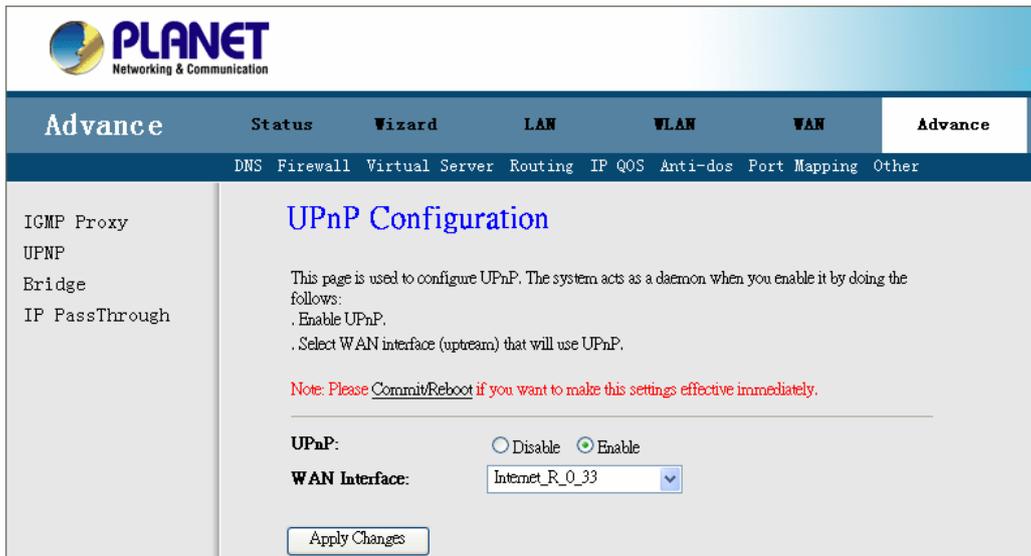
Note: Please Commit/Reboot if you want to make this settings effective immediately

3.6.8.2 UPnP

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

How do I know if I'm using UPnP?

UPnP hardware is identified as an icon in the Network Connections folder (in Windows XP & Windows ME). Each UPnP-compatible device that is installed on your network will appear as a separate icon.

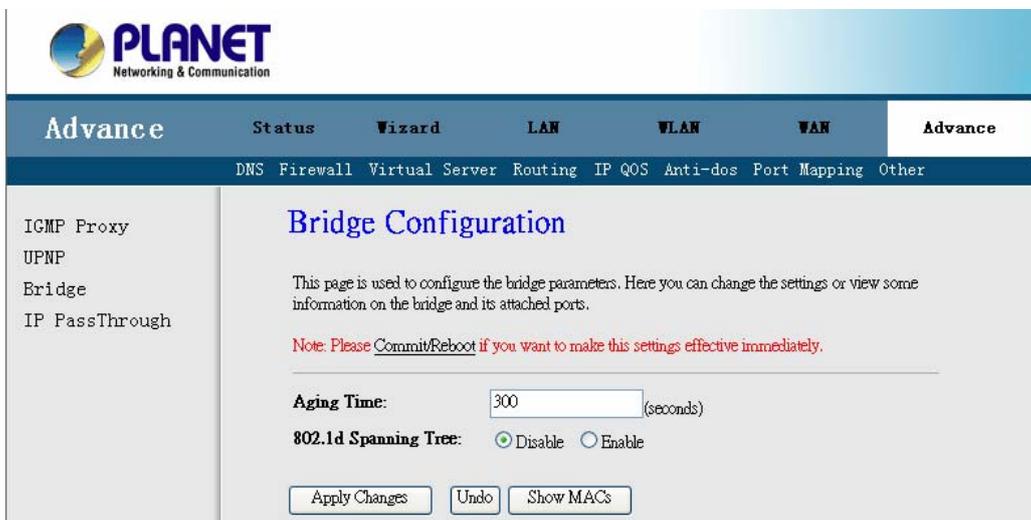


Click “**Enable**” to enable UPnP function and select the WAN Interface. Click “**Apply Changes**” to apply your setting.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.6.8.3 Bridge

This page is used to configure the bridge parameters. Here you can change the settings or view some information on the bridge and its attached ports.



Aging Time: Enter the time for the bridge.

802.1d Spanning Tree: You can Enable or Disable the 802.1d Spanning Tree Protocol.

Click “**Apply Changes**” to apply your setting.

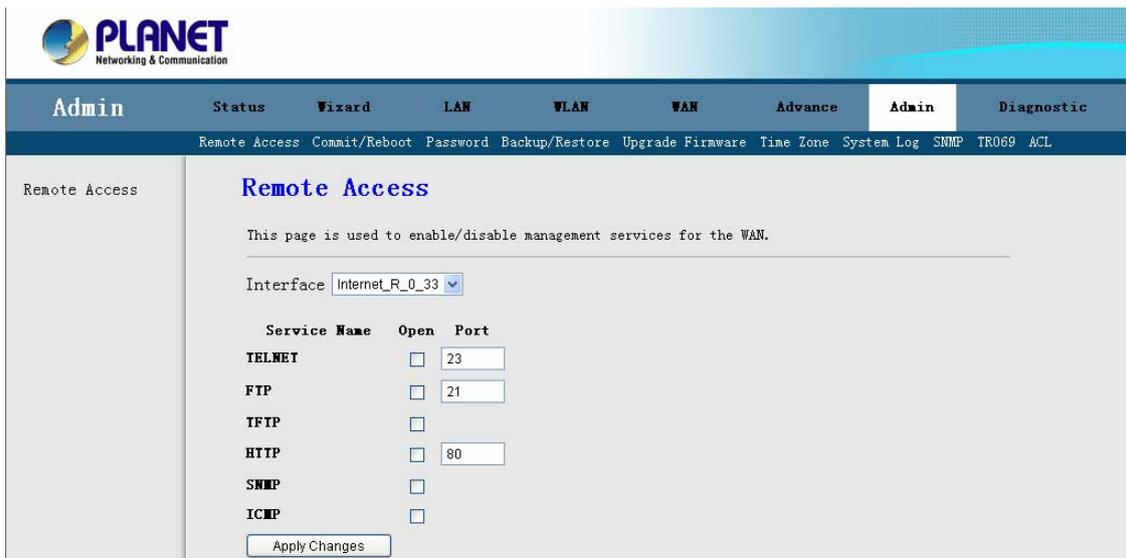
Note: Please Commit/Reboot if you want to make this settings effective immediately

3.7 Admin

You can configure admin management in this part. It includes Remote Access, Commit / Reboot, Password, Backup / Restore, Update Firmware, Time Zone, System Log, SNMP TR-069 (For ADW-4401), and ACL.

3.7.1 Remote Access

User can enable or disable remote management services for the LAN and WAN.



The screenshot shows the PLANET Admin web interface. The top navigation bar includes 'Admin', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', 'Admin' (highlighted), and 'Diagnostic'. Below this is a secondary menu with 'Remote Access', 'Commit/Reboot', 'Password', 'Backup/Restore', 'Upgrade Firmware', 'Time Zone', 'System Log', 'SNMP', 'TR069', and 'ACL'. The main content area is titled 'Remote Access' and contains the following elements:

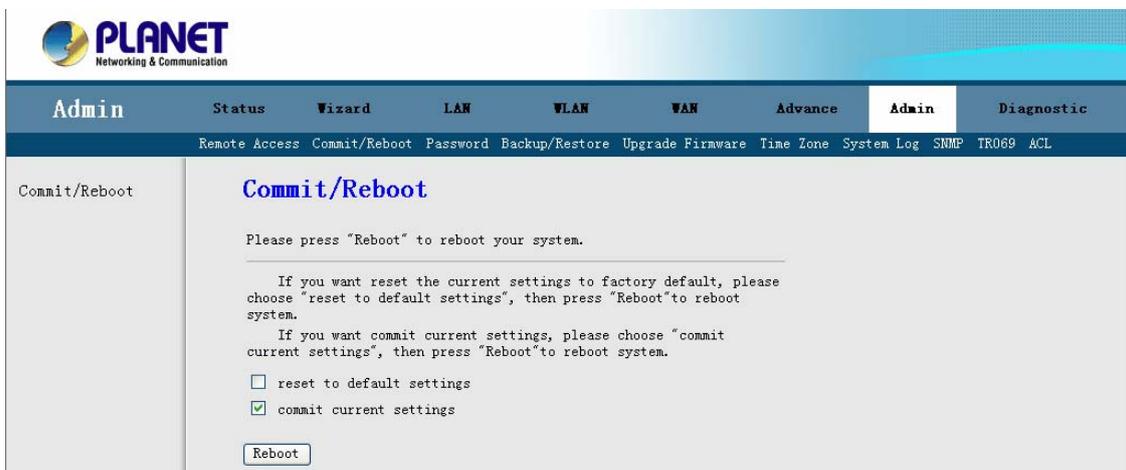
- A description: "This page is used to enable/disable management services for the WAN."
- An 'Interface' dropdown menu set to 'Internet_R_0_33'.
- A table with columns 'Service Name', 'Open', and 'Port':

Service Name	Open	Port
TELNET	<input type="checkbox"/>	23
FTP	<input type="checkbox"/>	21
TFTP	<input type="checkbox"/>	
HTTP	<input type="checkbox"/>	80
SNMP	<input type="checkbox"/>	
ICMP	<input type="checkbox"/>	
- An 'Apply Changes' button at the bottom.

Select the service items which you want to remote management. Click “**Apply Changes**” to apply your setting.

3.7.2 Commit / Reboot

The **Comit / Reboot** screen allows you to restart your router with its current settings or the factory default settings.



The screenshot shows the PLANET Admin web interface. The top navigation bar is identical to the previous screenshot. The main content area is titled 'Commit/Reboot' and contains the following elements:

- A description: "Please press 'Reboot' to reboot your system."
- Instructions: "If you want reset the current settings to factory default, please choose 'reset to default settings', then press 'Reboot' to reboot system."
- Instructions: "If you want commit current settings, please choose 'commit current settings', then press 'Reboot' to reboot system."
- Two radio button options:
 - reset to default settings
 - commit current settings
- A 'Reboot' button at the bottom.

- If you want reset the current settings to factory default, please choose "**reset to default settings**", and then press "**Reboot**" to reboot system.
- If you want commit current settings, please choose "**commit current settings**", and then press "**Reboot**" to reboot system.

3.7.3 Password

This page is used to set the account to access the web server of ADSL Router. The new password will be availability after system reboot.

The screenshot shows the PLANET web interface. The top navigation bar includes 'Admin', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', 'Admin', and 'Diagnostic'. Below this is a secondary menu with 'Remote Access', 'Commit/Reboot', 'Password', 'Backup/Restore', 'Upgrade Firmware', 'Time Zone', 'System Log', 'SNMP', 'TR069', and 'ACL'. The main content area is titled 'User/Password Management' and contains the following text: 'This page is used to set the account to access the web server of ADSL Router. The new password will be availability after system reboot.' Below the text are four input fields: 'User Name' (a dropdown menu showing 'admin'), 'Old Password', 'New Password', and 'Confirmed Password'. At the bottom of the form are two buttons: 'Apply Changes' and 'Reset'.

User Name: There are two level user accounts for your selection. The admin account have full rights for device management, and the user account only can see the status information of this device.

Old Password: Enter the old password.

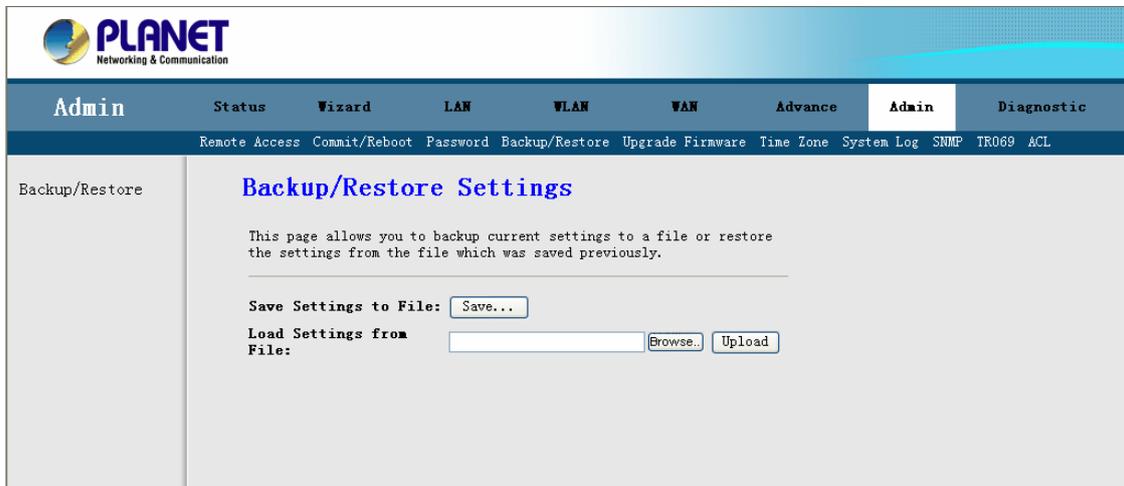
New Password: Enter your new password.

Confirmed Password: Enter your new password again.

Click "**Apply Changes**" to apply your setting.

3.7.4 Backup / Restore

This page allows you to backup current settings to a file or restore the settings from the file which was saved previously.

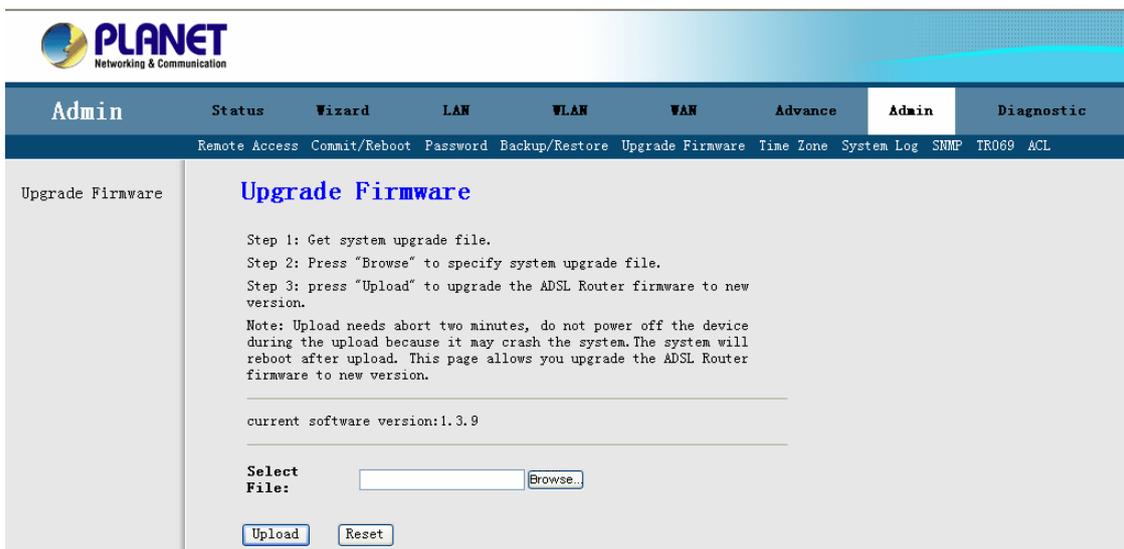


Backup: Click the “Save...” button to backup the configuration of router.

Restore: Click the “Browsing...” button, select the correct update configure settings file. Then click the “Upload” to update the configurations.

3.7.5 Upgrade Firmware

You can upgrade the **firmware** of the router in this page. Make sure the firmware you want to use is on the local hard drive of the computer.

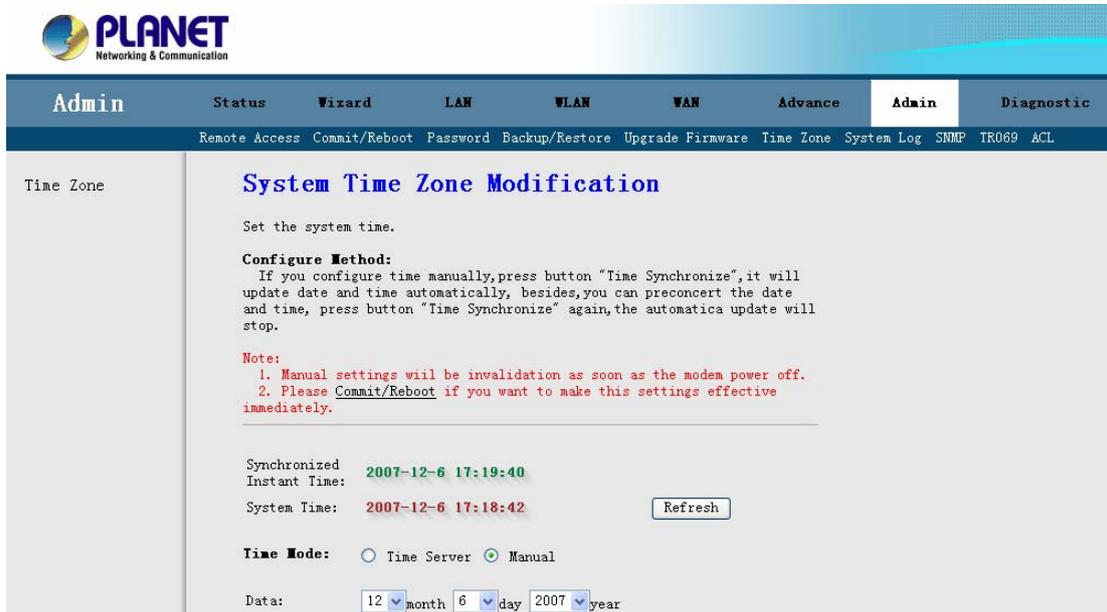


Click on **Browse** to browse the local had drive and locate the firmware to be used for the update. Then press “**Upload**” to upload new Firmware.

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

3.7.6 Time Zone

The system time is the time used by the device for scheduling services. You can manually set the time or connect to a NTP (Network Time Protocol) server. If an NTP server is set, you will only need to set the time zone.



Time Mode: You can choose **"Time Server"** or **"Manually"** to coordinate the time.

SNTP Server: Select the NTP Server from the slide down menu or enter the NTP IP address manually.

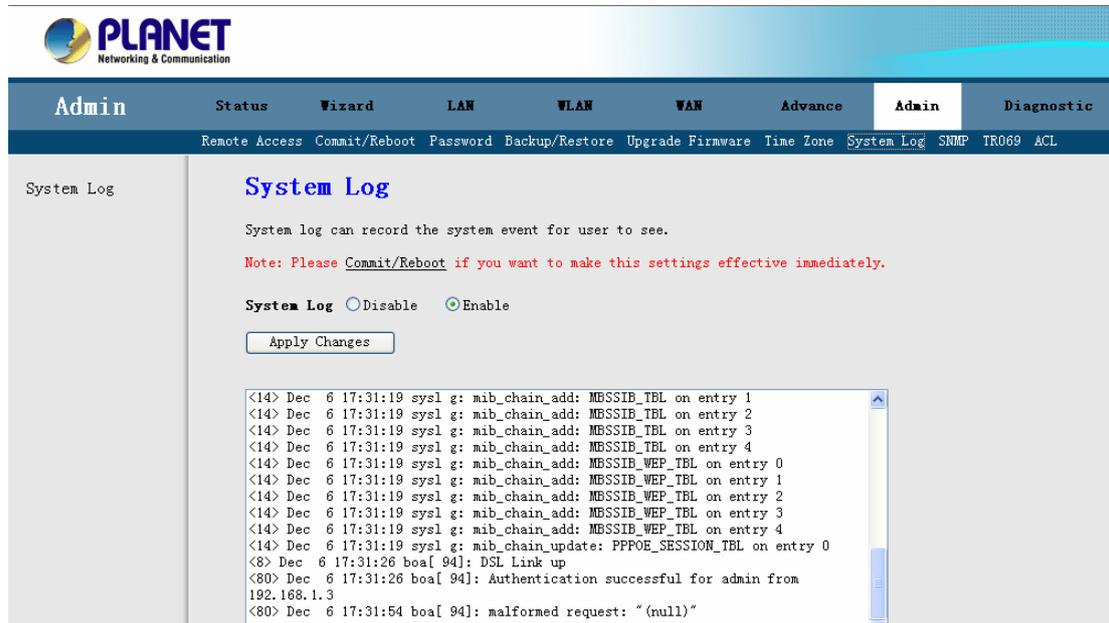
Time Zone: Choose the Time Zone of your location. This will set the time difference between your time zone and Greenwich Mean Time (GMT).

Click **"Apply Changes"** to apply your setting.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.7.7 System Log

Click “**System Log**” to show the log information of device. The system log dialog allows you to view the system log and click the “**Refresh**” button to fresh the system event logs.

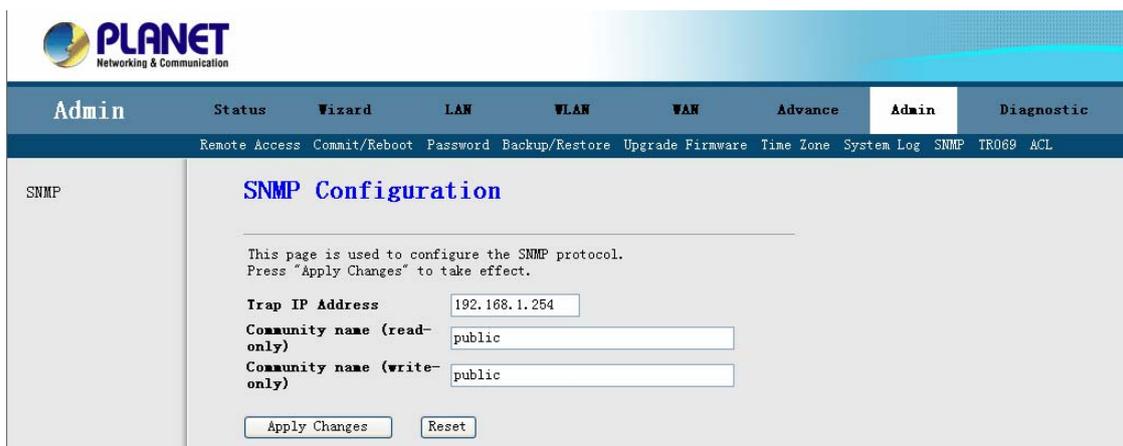


System Log: You can Enable or Disable the System Log Function. Click “**Apply Changes**” to apply your setting.

Note: Please Commit/Reboot if you want to make this settings effective immediately

3.7.8 SNMP

This page is used to configure the SNMP protocol. You can set SNMP related information here.



Read Community: Select to set the password for incoming Get- and GetNext request from management station.

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

The default password is “**public**”. When you are done making changes, click “**Apply Changes**” to apply your setting.

3.7.9 TR-069 (ADW-4401 only)

This page is used to configure the TR-069 CPE. Here you may change the setting for the ACS's parameters.

The screenshot shows the PLANET Admin interface with the 'Admin' tab selected. The main content area is titled 'TR-069 Configuration'. It contains the following fields and options:

- ACS**
 - URL:** http://
 - User Name:** username
 - Password:** password
 - Periodic Inform Enable:** Disabled Enabled
 - Periodic Inform Interval(s):** 300
- Connection Request**
 - User Name:** [text input]
 - Password:** [text input]

3.7.10 ACL

Access Control List Configuration

If enabled, permits access to local management services from IP addresses contained in the Access Control List.

The screenshot shows the PLANET Admin interface with the 'Admin' tab selected. The main content area is titled 'ACL Configuration'. It contains the following fields and options:

- ACL Capability:** Disable Enable
- Apply Changes** (button)
- Enable:**
- Interface:** LAN (dropdown menu)
- IP Address:** 211.75.117.114 (text input)
- Add** (button), **modify** (button), **Delete** (button)

If enable ACL, and then only the effective IP in ACL can access the router.

- Step1** If you want to enable ACL, please choose "Enable" and then press "Apply Changes" to apply your setting.
- Step2** Click the Enable checkbox.
- Step3** Enter the host IP address that you want to permit and click "Add".
- Step4** Press "take effect" to enable the configuration.

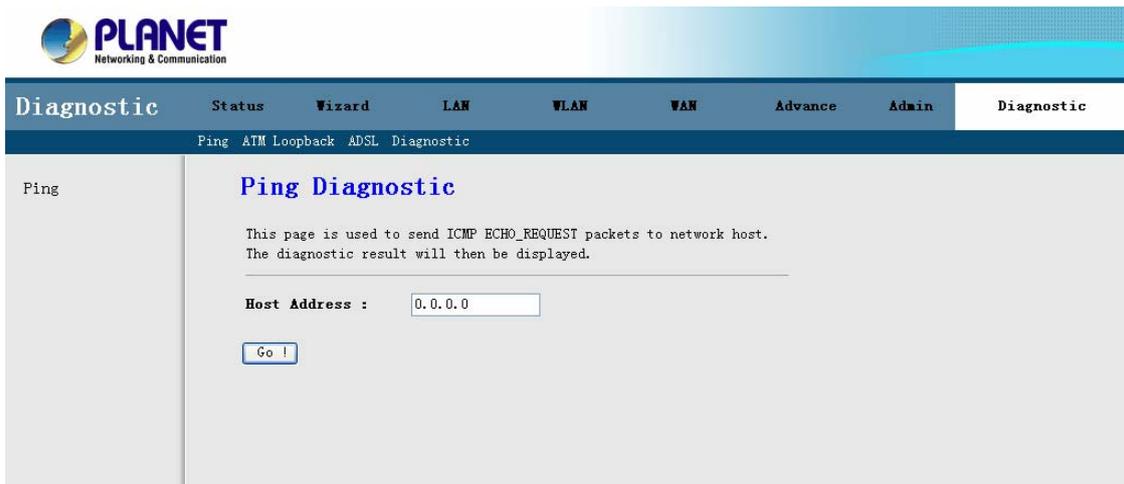
Note: If you choose "Enable" in ACL Capability, please make sure that your host IP is in ACL before it takes effect. Or you will not manage the device from your PC.

3.8 Diagnostic

Your router is capable of testing your network and DSL connection. The individual tests are listed as Ping, ATM Loopback, ADSL and Diagnostic.

3.8.1 Ping

This page is used to send ICMP ECHO_REQUEST packets to network host. The diagnostic result will then be displayed.



The screenshot shows the PLANET router's web interface. The top navigation bar includes 'Diagnostic', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', 'Admin', and 'Diagnostic'. Below this, a sub-menu shows 'Ping', 'ATM Loopback', 'ADSL', and 'Diagnostic'. The main content area is titled 'Ping Diagnostic' and contains the following text: 'This page is used to send ICMP ECHO_REQUEST packets to network host. The diagnostic result will then be displayed.' Below the text is a form with a label 'Host Address :' and a text input field containing '0.0.0.0'. A 'Go !' button is located below the input field.

Host Address: Enter the IP address that you wish to test. And then click “Go” button for testing.

3.8.2 ATM Loopback

Connectivity verification is supported by the use of the OAM loopback capability for both VP and VC connections. This page is used to perform the VCC loopback function to check the connectivity of the VCC.



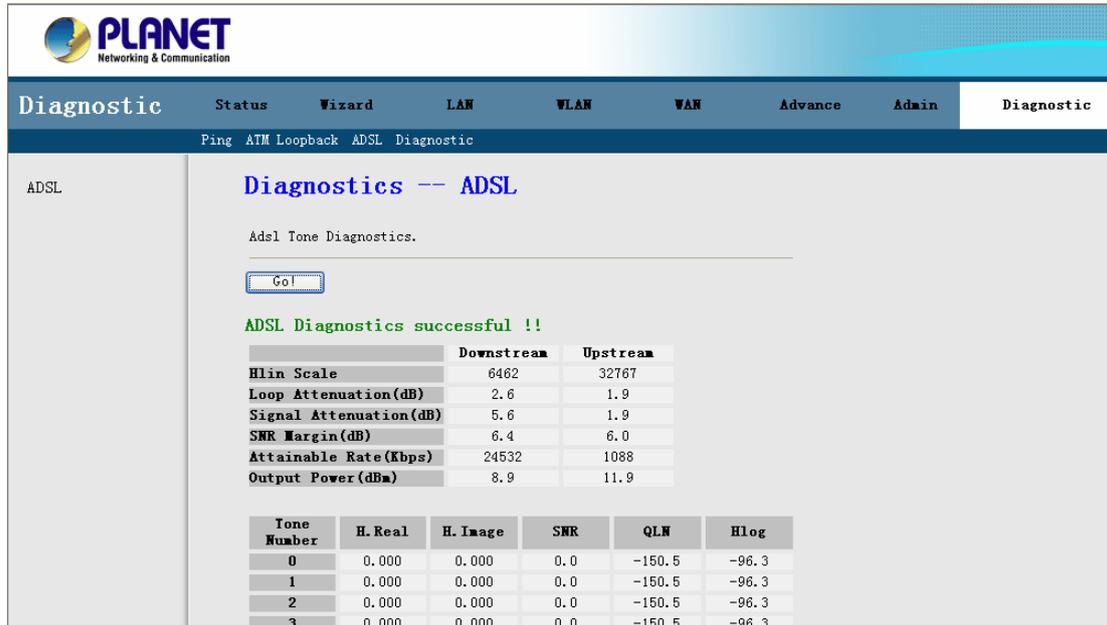
The screenshot shows the PLANET router's web interface. The top navigation bar includes 'Diagnostic', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', 'Admin', and 'Diagnostic'. Below this, a sub-menu shows 'Ping', 'ATM Loopback', 'ADSL', and 'Diagnostic'. The main content area is titled 'OAM Fault Management - Connectivity Verification' and contains the following text: 'Connectivity verification is supported by the use of the OAM loopback capability for both VP and VC connections. This page is used to perform the VCC loopback function to check the connectivity of the VCC.' Below the text is a form with the following fields: 'Select PVC:' with radio buttons for '8/81' (selected) and '0/33'; 'Flow Type:' with radio buttons for 'F5 Segment' (selected) and 'F5 End-to-End'; and 'Loopback Location ID:' with a text input field containing 'FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF'. A 'Go !' button is located below the input field.

Select your **PVC** and **Flow Type** that you want to test. Enter the Loopback Location IP and then click “Go” for testing.

3.8.3 ADSL

In this page, you can test the ADSL line tone status. Click "Go" to start testing. The test result will come out about 3 minutes later and the page will refresh itself automatically.

Note: This test is for ADSL 2 / 2+ Line only.



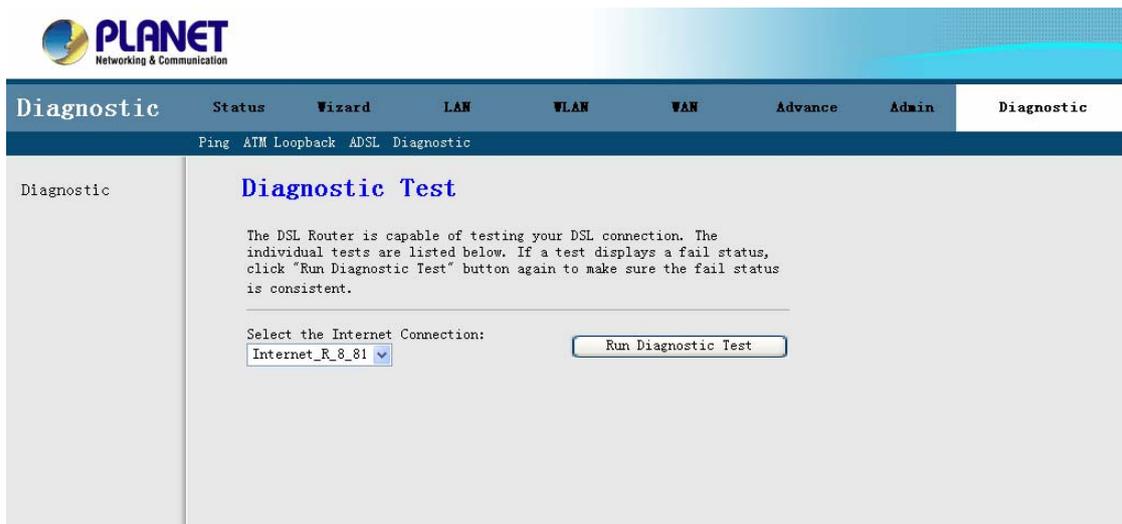
The screenshot shows the PLANET Networking & Communication web interface. The top navigation bar includes 'Diagnostic', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', and 'Admin'. The 'Diagnostic' menu is expanded to show 'Ping', 'ATM Loopback', 'ADSL', and 'Diagnostic'. The main content area is titled 'Diagnostics -- ADSL' and contains the text 'Adsl Tone Diagnostics.' followed by a 'Go!' button. Below the button, a green message states 'ADSL Diagnostics successful !!'. Two tables are displayed: the first table shows ADSL parameters for Downstream and Upstream, and the second table shows tone test results for tones 0, 1, 2, and 3.

	Downstream	Upstream
Hlin Scale	6462	32767
Loop Attenuation(dB)	2.6	1.9
Signal Attenuation(dB)	5.6	1.9
SNR Margin(dB)	6.4	6.0
Attainable Rate(Kbps)	24532	1088
Output Power(dBa)	8.9	11.9

Tone Number	H. Real	H. Image	SNR	QLN	Hlog
0	0.000	0.000	0.0	-150.5	-96.3
1	0.000	0.000	0.0	-150.5	-96.3
2	0.000	0.000	0.0	-150.5	-96.3
3	0.000	0.000	0.0	-150.5	-96.3

3.8.4 Diagnostic

The DSL Router is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Run Diagnostic Test" button again to make sure the fail status is consistent.



The screenshot shows the PLANET Networking & Communication web interface. The top navigation bar includes 'Diagnostic', 'Status', 'Wizard', 'LAN', 'WLAN', 'WAN', 'Advance', and 'Admin'. The 'Diagnostic' menu is expanded to show 'Ping', 'ATM Loopback', 'ADSL', and 'Diagnostic'. The main content area is titled 'Diagnostic Test' and contains the text: 'The DSL Router is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Run Diagnostic Test" button again to make sure the fail status is consistent.' Below this text, there is a dropdown menu labeled 'Select the Internet Connection:' with 'Internet_R_8_81' selected, and a 'Run Diagnostic Test' button.

Appendix A: Glossary

Address mask

A bit mask select bits from an Internet address for subnet addressing. The mask is 32 bits long and selects the network portion of the Internet address and one or more bits of the local portion. Sometimes it called subnet mask.

AAL5

ATM Adaptation Layer - This layer maps higher layer user data into ATM cells, making the data suitable for transport through the ATM network.

ADSL

Asymmetric digital subscriber line

ATM

Asynchronous Transfer Mode - A cell-based data transfer technique in which channel demand determines packet allocation. ATM offers fast packet technology, real time, and demand led switching for efficient use of network resources.

AWG

American Wire Gauge - The measurement of thickness of a wire

Bridge

A device connects two or more physical networks and forward 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.

Broadband

Characteristic of any network multiplexes independent network carriers onto a single cable. Broadband technology allows several networks to coexist on one single cable; traffic from one network does not interfere with traffic from another. Broadcast a packet delivery system where a copy of a given packet is given to all hosts attached to the network. Example: Ethernet.

CO

Central Office. Refers to equipment located at a Telco or service provider's office.

CPE

Customer Premises Equipment located in a user's premises

DHCP (Dynamic Host Configuration Protocol)

DHCP is software that automatically assigns IP addresses to client stations logging onto a TCP/IP network. DHCP eliminates having to manually assign permanent IP addresses to every device on your network. DHCP software typically runs in servers and is also found in network devices such as Routers.

DMT

Discrete Multi-Tone frequency signal modulation

Downstream rate

The line rate for return messages or data transfers from the network machine to the user's premises machine.

DSLAM

Digital Subscriber Line Access Multiplex

Dynamic IP Addresses

A dynamic IP address is an IP address that is automatically assigned to a client station (computer, printer, etc.) in a TCP/IP network. Dynamic IP addresses are typically assigned by a DHCP server, which can be a computer on the network or another piece of hardware, such as the Router. A dynamic IP address may change every time your computer connects to the network.

Encapsulation

The technique layer protocols in which a layer adds header information to the protocol data unit (PDU) from the layer above. As an example, in Internet terminology, a packet would contain a header from the physical layer, followed by a header from the network layer (IP), followed by a header from the transport layer (TCP), and followed by the application protocol data.

Ethernet

One of the most common local area network (LAN) wiring schemes, Ethernet has a transmission rate of 10 Mbps.

FTP

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

Hop count

A measure of distance between two points on the Internet. It is equivalent to the number of gateways that separate the source and destination.

HTML

Hypertext Markup Language - The page-coding language for the World Wide Web.

HTML browser

A browser used to traverse the Internet, such as Netscape or Microsoft Internet Explorer.

http

Hypertext Transfer Protocol - The protocol carry world-wide-web (www) traffic between a www browser computer and the www server being accessed.

ICMP

Internet Control Message Protocol - The protocol handle errors and control messages at the IP layer. ICMP is actually part of the IP protocol.

Internet address

An IP address is assigned in blocks of numbers to user organizations accessing the Internet. These addresses are established by the United States Department of Defense's Network Information Center. Duplicate addresses can cause major problems on the network, but the NIC trusts organizations to use individual addresses responsibly. Each address is a 32-bit address in the form of x.x.x.x where x is an eight-bit number from 0 to 255. There are three classes: A, B and C, depending on how many computers on the site are likely to be connected.

Internet Protocol (IP)

The network layer protocol for the Internet protocol suite

IP address

The 32-bit address assigned to hosts that want to participate in a TCP/IP Internet.

ISP

Internet service provider - A company allows home and corporate users to connect to the Internet.

MAC

Media Access Control Layer - A sub-layer of the Data Link Layer (Layer 2) of the ISO OSI Model responsible for media control.

MIB

Management Information Base - A collection of objects can be accessed via a network management protocol, such as SNMP and CMIP (Common Management Information Protocol).

NAT

Network Address Translation - A proposal for IP address reuse, where the local IP address is mapped to a globally unique address.

NVT

Network Virtual Terminal

PAP

Password Authentication Protocol

PORT

The abstraction used in Internet transport protocols to distinguish among multiple simultaneous connections to a single destination host.

POTS

Plain Old Telephone Service - This is the term describe basic telephone service.

PPP

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

PPPoE

PPP over Ethernet is a protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dial-up connection.

Remote server

A network computer allows a user to log on to the network from a distant location.

RFC

Request for Comments - Refers to documents published by the Internet Engineering Task Force (IETF) proposing standard protocols and procedures for the Internet. RFC can be found at www.ietf.org.

Route

The path that network traffic takes from its source to its destination. The route a datagram may follow can include many gateways and many physical networks.

In the Internet, each datagram is routed separately.

Router

A system is 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".

Routing Table

Information stored within a router that contains network path and status information. It is used to select the most appropriate route to forward information along.

Routing Information Protocol

Routers periodically exchange information with one another so that they can determine minimum distance paths between sources and destinations.

SNMP

Simple Network Management Protocol - The network management protocol of choice for TCP/IP-based Internet.

SOCKET

- (1) The Berkeley UNIX mechanism for creating a virtual connection between processes.
- (2) IBM term for software interfaces that allow two UNIX application programs to talk via TCP/IP protocols.

Spanning-Tree Bridge Protocol (STP)

Spanning-Tree Bridge Protocol (STP) - Part of an IEEE standard. A mechanism for detecting and preventing loops from occurring in a multi-bridged environment.

When three or more LAN's segments are connected via bridges, a loop can occur. Because of a bridge forwards all packets that are not recognized as being local, some packets can circulate for long periods of time, eventually degrading system performance. This algorithm ensures only one path connects any pair of stations, selecting one bridge as the 'root' bridge, with the highest priority one as identifier, from which all paths should radiate.

Spoofing

A method of fooling network end stations into believing that keep alive signals have come from and returned to the host. Polls are received and returned locally at either end

Static IP Address

A static IP address is an IP address permanently assigned to computer in a TCP/IP network. Static IP addresses are usually assigned to networked devices that are consistently accessed by multiple users, such as Server PCs, or printers. If you are using your Router to share your cable or DSL Internet connection, contact your ISP to see if they have assigned your home a static IP address. You will need that address during your Router's configuration.

Subnet

For routing purposes, IP networks can be divided into logical subnets by using a subnet mask. Values below those of the mask are valid addresses on the subnet.

TCP

Transmission Control Protocol - The major transport protocol in the Internet suite of protocols provides reliable, connection-oriented full-duplex streams.

TFTP

Trivial File Transfer Protocol. A simple file transfer protocol (a simplified version of FTP) that is often boot diskless workstations and other network devices such as routers over a network (typically a LAN).

Telnet

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.

Transparent bridging

The intelligence necessary to make relaying decisions exists in the bridge itself and is thus transparent to the communicating workstations. It involves frame forwarding, learning workstation addresses, and ensuring no topology loops exist (in conjunction with the Spanning-Tree algorithm).

UDP

User Datagram Protocol - A connectionless transport protocol that runs on top of TCP/IP's IP. UDP, like TCP, uses IP for delivery; however, unlike TCP, UDP provides for exchange of datagram without acknowledgments or guaranteed delivery. Best suited for small, independent requests, such as requesting a MIB value from an SNMP agent, in which first

setting up a connection would take more time than sending the data.

UNI signaling

User Network Interface signaling for ATM communications.

Virtual Connection (VC)

A link that seems and behaves like a dedicated point-to-point line or a system that delivers packets in sequence, as happens on an actual point-to-point network. In reality, the data is delivered across a network via the most appropriate route. The sending and receiving devices do not have to be aware of the options and the route is chosen only when a message is sent. There is no pre-arrangement, so each virtual connection exists only for the duration of that one transmission.

WAN

Wide area network - A data communications network that spans any distance and is usually provided by a public carrier (such as a telephone company or service provider).

Important Note

According to Annex3 of the ERC/REC 70-03 publication, the use of Wideband Data Transmission systems has the following National Restrictions:

Frequency range: 2400-2483.5MHz

Country	Restriction	Reason/Remark
France	Outdoor use limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz	Military Radiolocation use. Refarming of the 2.4 GHz band has been ongoing in recent years to allow current relaxed regulation. Full implementation planned 2012
Italy		If used outside of own premises, general authorization is required
Luxembourg	None	General authorization required for network and service supply(not for spectrum)
Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20km from the centre of Ny-Alesund
Russian Federation		Only for indoor applications