DG-BG4100N

150Mbps Wireless ADSL2/2+ Broadband Router

User Manual

V1.0

2012-11-06

As our products undergo continuous development the specifications are subject to change without prior notice

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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 manufacturer must therefore be allowed at all times to ensure the safe use of the equipment.

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1 Product Information

The ADSL access device supports multiple line modes. It provides four 10/100Base-T Ethernet interfaces at the user end. Utilizing the high-speed ADSL connection, the device provides users with broadband connectivity to the Internet or the Intranet for high-end users like net bars and office users. It provides a downlink speed up to 24 Mbit/s and an uplink speed up to 1 Mbit/s.

The device supports WLAN access, as WLAN AP or WLAN router, to internet. It is compliant with IEEE 802.11,802.11b/g/n specifications and complies with WEP, WPA and WPA2 security specifications.

Other features of this wireless broadband router include:

- Supports various line modes.
- Supports external PPPoE dial-up access.
- Supports internal PPPoE/PPPoA dial-up access.
- Supports leased line mode.
- Supports 1483B/1483R/MER access.
- Supports multiple PVCs (eight at most) and these PVCs can be isolated from each other.
- Supports single PVC with multiple sessions.
- Supports multiple PVCs with multiple sessions.
- Supports the binding of the ports and the PVCs.
- Supports the 802.1Q and 802.1P protocol.
- Supports DHCP server.
- Supports NAT / NAPT.
- Supports static route.
- Supports firmware upgrade: WEB/tftp/ftp.
- Supports reset to factory default: reset, WEB.
- Supports DNS relay.
- Supports Virtual server.
- Supports DMZ functions.
- Supports two-level passwords and usernames.

- Supports WEB interface.
- Supports telnet CLI.
- Supports System status display.
- Supports PPP session PAP / CHAP.
- Supports IP filter function.
- Supports IP QoS function.
- Supports remote access control.
- Supports line connection status test.
- Supports remote management (Telnet; HTTP).
- Supports configuration file backup and restoration function.
- Ethernet supported such as Crossover Detection, Auto-Correction and polarity correction.

1.1 Safety Precautions

In order to keep the safety of users and your properties, please follow the safety instructions as mentioned below:

- Use the type of power marked in the volume label.
- Use the power adapter packed within the device package.
- Pay attention to the power load of the outlet or prolonged lines. An overburden power outlet or damaged lines and plugs may cause electric shock or fire accident. Check the power cords regularly. If you find any damage, replace it at once.
- Proper space left for heat radiation is necessary to avoid any damage caused by overheating the device. The long and thin holes on the Access Point are designed for heat radiation to make sure the device works normally. **DO NOT** cover these heat radiant holes.
- **DO NOT** put this device close to a place where a heat source exists or high temperature occurs. Avoid exposing the device to direct sunlight.
- **DO NOT** put this device close to a place which is over damp. **DO NOT** spill any fluid on this device.
- **DO NOT** connect this device to any PC or electronic product, unless our customer engineer or your broadband provider instructs you to do this, because any wrong connection may cause any power or fire risk.

- **DO NOT** place this device on an unstable surface.

1.2 System Requirements

The following system requirements are recommended:

- A 10BaseT/100BaseT Ethernet card installed on your PC.
- A hub or switch is available for connecting one Ethernet interface on the device and several PCs.
- Operating system: Windows Vista, Windows 7, Windows 98SE, Windows 2000, Windows ME or Windows XP.
- Internet Explorer V7.0 or higher, or Netscape V4.0 or higher, or firefox 1.5 or higher.

1.3 Package contents

Before you start using this router, please check if there's anything missing in the package, and contact your dealer of purchase to claim for missing items:

- DG-BG4100N 150MBPS WIRELESS ADSL2+ BROADBAND ROUTER
- Switching Power Adapter
- POTS Splitter
- Two RJ-11 cables
- One RJ-45 patch cord
- Quick Installation Guide
- Installation Guide CD

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1.4 LEDs and Interfaces

Top Panel

The following table describes the LEDs of the device.

LEDs	Color	Status	Description
Power	Green	On	The initialization of the Router is successful.
		Off	The Router is powered off.
	Amber	On	The Router is booting, or software upgrade is under progress.
ADSL	Green	On	ADSL Signal between the Router and Exchange is established.
		Slow Blink	No signal from Exchange is being detected.
		Fast Blink	The Router is syncronising with the Exchange.
Internet	Green	Blink	Internet data is being transmitted or received (Routing mode)
		On	Internet Connection is established (Routing Mode)
		Off	The Router is in bridged mode.
	Red	On	The Internet connection failed/password error.
LAN 1/2/3/4	Green	On	The LAN connection is established and activated.

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		Blink	LAN data is being transmitted.
		Off	The LAN interface/cable is disconnected.
WLAN	Green	On	Wireless connection has been activated.
		Blink	Wireless data is being transmitted.
		Off	The Wireless connection is not activated.
WPS	Green	Blink	WPS process on the Router is initiated.
		Off	WPS is disabled OR WPS process not initiated.

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Rear Panel

The following table describes the interfaces of the device.

Item	Description
WLAN / WPS	Press the button and hold it for 1 second to enable WLAN. Press the button and hold it for at least 3 seconds, to initialize WPS negotiation.
ADSL	RJ-11 interface, for connecting to the ADSL interface or a splitter through a telephone cable.
LAN4/3/2/1	RJ-45 interface, for connecting to the Ethernet interface of a computer or the Ethernet devices through an Ethernet cable.
Power	Power interface, for connecting to the power adapter.
ON / OFF	Power switch, power on or power off the device.
Reset	Reset to the factory default configuration. Keep the device powered on, and insert a pin into the reset hole for 3 seconds, then release it. The device is reset to the factory default configuration.

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2 Hardware Installation

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

The splitter has three interfaces:

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

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

Note:

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

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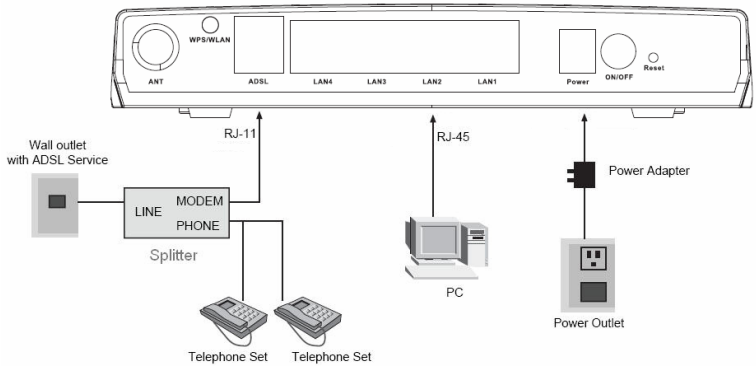
Step 3 Plug one end of the power adapter to the wall outlet and connect the other end to the Power interface of the device.

The following figure shows the application diagram for the connection of the router, PC, splitter and the telephone sets.



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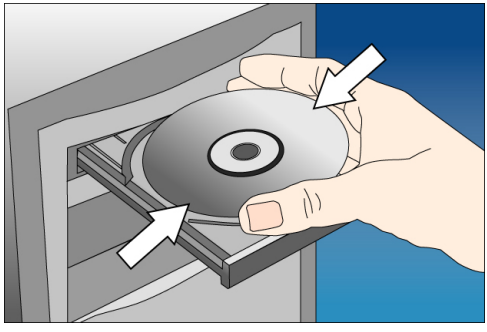
2.1 Software Installation

- Insert the Setup CD into your CD-ROM drive of notebook/desktop computer.



- Explore the CD and execute the "**India_autorun.exe**" file. Screen given below will be displayed. Click '**Start'** to continue.

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➢ Connect the ADSL line and the phone line to the router. Click '**Next**'.

➢ Connect the power adapter to the AC Mains and the other end to the power interface on the router. Push the power button on the router to power up the device. Click '**Next**'.

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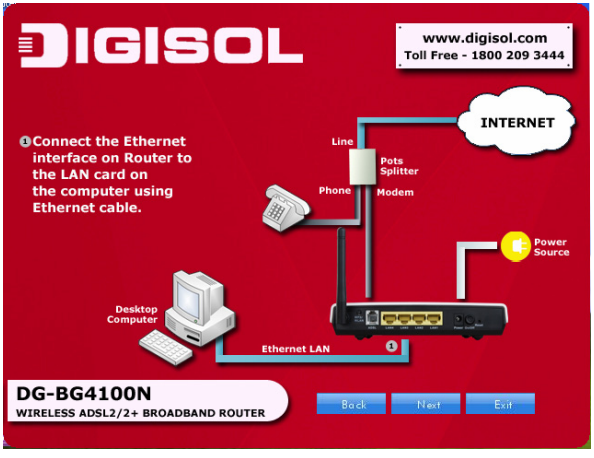
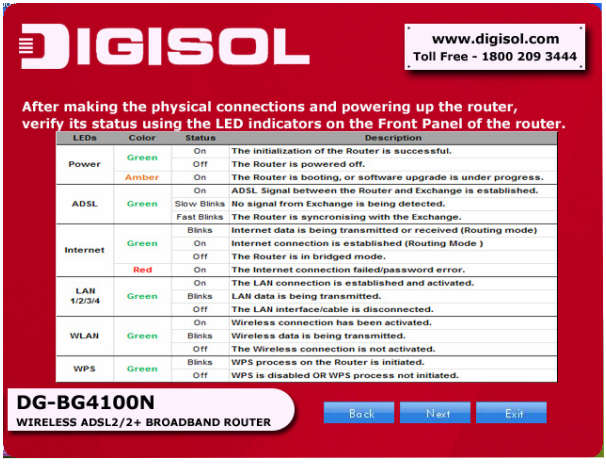
➢ Connect the Ethernet interface on the router to the LAN card on the computer using the Ethernet cable. Click '**Next**'.



➢ After powering up the router, verify the status of the LED indicators on the front panel of the router. Click '**Next**'.



LEDs	Color	Status	Description
Power	Green	On	The initialization of the Router is successful.
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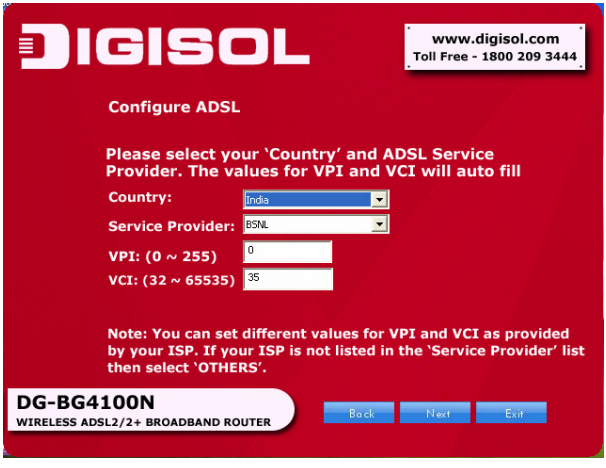
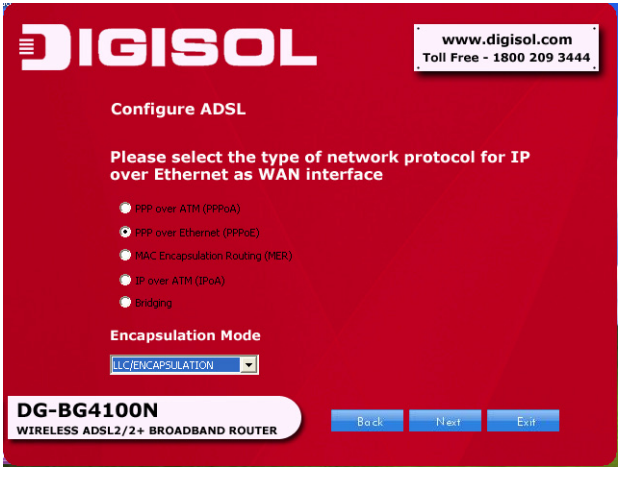
	Amber	On	The Router is booting, or software upgrade is under progress.
ADSL	Green	On	ADSL Signal between the Router and Exchange is established.
		Slow Blinks	No signal from Exchange is being detected.
		Fast Blinks	The Router is syncronising with the Exchange.
Internet	Green	Blinks	Internet data is being transmitted or received (Routing mode)
		On	Internet connection is established (Routing Mode)
		Off	The Router is in bridged mode.
	Red	On	The Internet connection failed/password error.
LAN 1/2/3/4	Green	On	The LAN connection is established and activated.
		Blinks	LAN data is being transmitted.
		Off	The LAN interface/cable is disconnected.
WLAN	Green	On	Wireless connection has been activated.
		Blinks	Wireless data is being transmitted.
		Off	The Wireless connection is not activated.
WPS	Green	Blinks	WPS process on the Router is initiated.
		Off	WPS is disabled OR WPS process not initiated.

➢ Please select your '**Country**' and ADSL service provider. VPI and VCI values will auto fill.



➢ Select the network protocol for WAN interface. Click '**Next**'.



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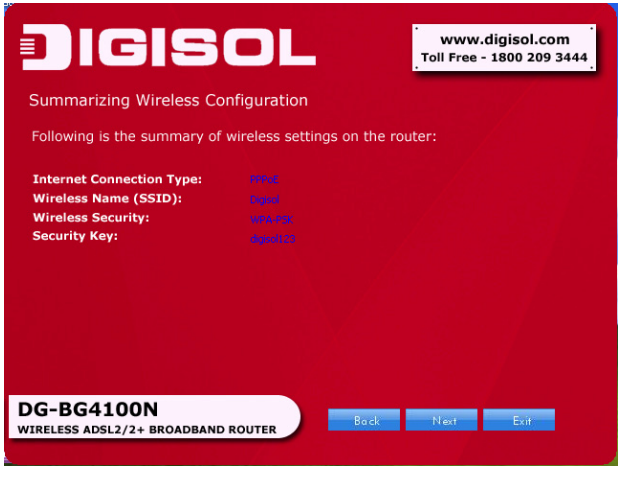
All the utility installation steps till here are the common steps to be followed for the modes. Following are the steps for configuring ***PPPoE connection***:

- Enter the username and password provided by your ISP. Click '**Next**'.

- Configure a wireless name (SSID) for your router. Click '**Next**'.

➢ Configure the wireless security. Click '**Next**'.

➢ The next screen is a summary of the wireless settings of the router.



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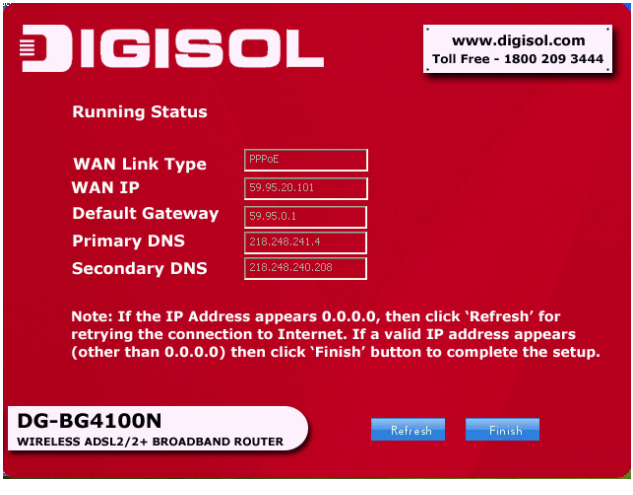
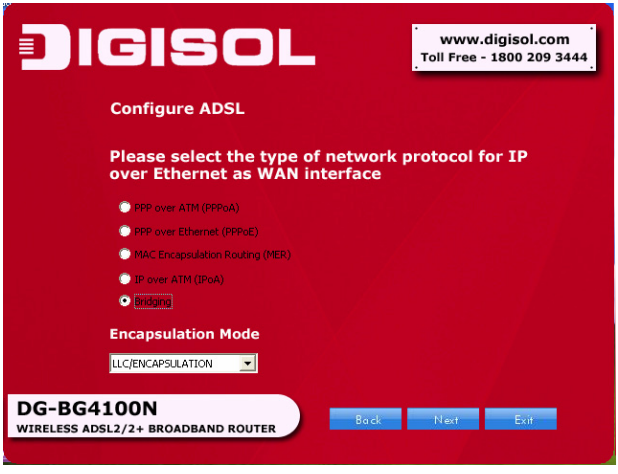
➢ Click on '**Next**', the following screen will appear.

➢ Once the connection is established, the router connection status will appear.



Bridging Mode:

- To configure the router in bridge mode select "**Bridging**" option. Click '**Next**'.



- Configure a wireless name (SSID) for your router. Click '**Next**'.

➢ Configure the wireless security.

➢ Click on '**Next**' the following screen will appear.

- Click on '**Finish**' to complete the configuration of the router in Bridge mode.

3 About the Web Configuration

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

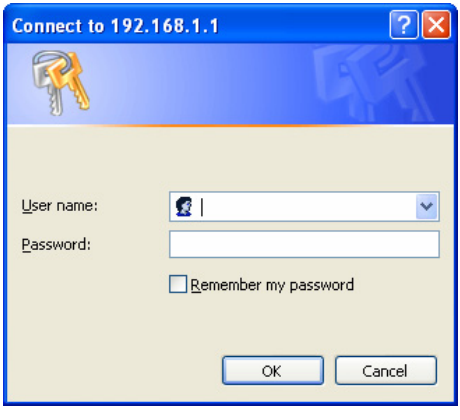
3.1 Access the Router

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

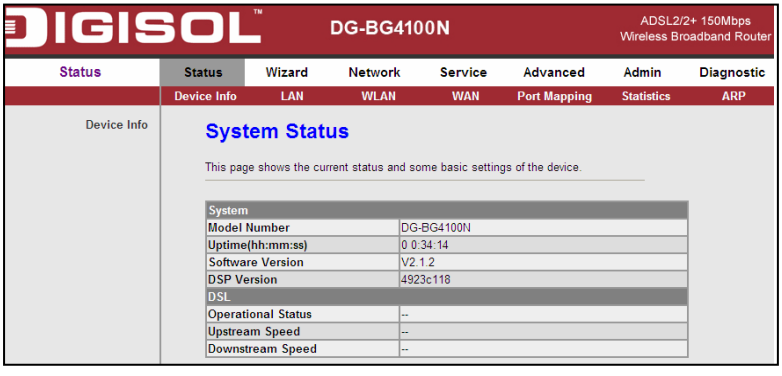
Step 1 Open the Internet Explorer (IE) browser and enter http://192.168.1.1.

Step 2 In the Login page that is displayed, enter the username and password.

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



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



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

Note:

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

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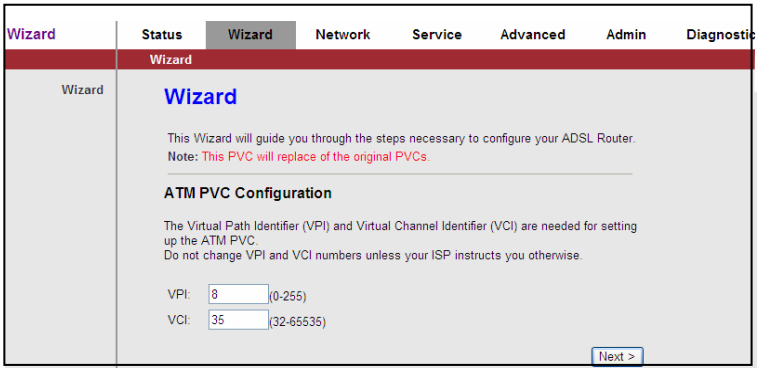
3.2 Wizard

When subscribing to a broadband service, you should be aware of the method by which you are connected to the Internet. Your physical WAN device can be either PPP, ADSL or both. The technical information about the properties of your Internet connection is provided by your Internet Service Provider (ISP). For example, your ISP should inform you whether you are connected to the Internet using a static or dynamic IP address, and the protocol that you use to communicate on the Internet.

In the navigation bar, choose Wizard. The page shown in the following figure appears. The Wizard page guides fast and accurate configuration of the Internet connection and other important parameters. The following sections describe these various configuration parameters. Whether you configure these parameters or use the default ones, click **NEXT** to enable your Internet connection.



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The following table describes the parameters in this page:

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

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

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

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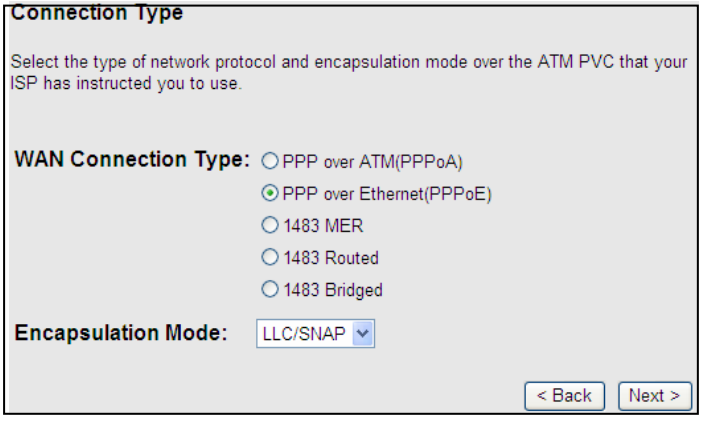
PPPoE/PPPoA

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



The following table describes the parameters in this page:

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

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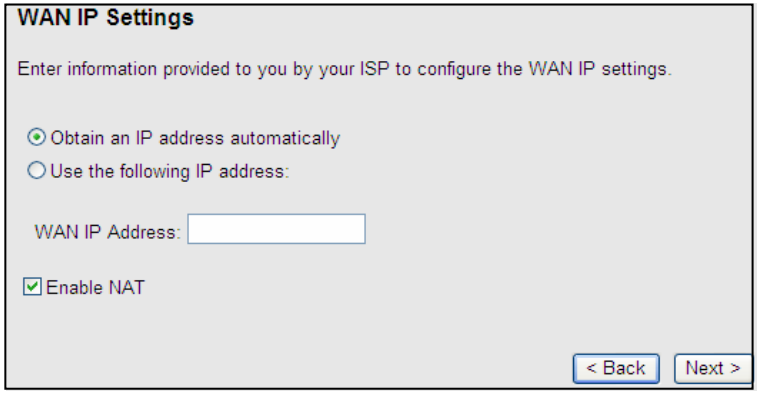
After the settings are done, click **Next**, the page as shown in the following figure appears.



The following table describes the parameters in this page:

Field	Description
Obtain an IP address automatically	Select it, the DHCP assigns the IP address for PPPoE connection.
Use the following IP address	Select it, you need to enter the IP address for PPPoE connection, which is provided by your ISP.
WAN IP Address	Enter the WAN IP address here.
Enable NAT	Select the checkbox to enable network address translation (NAT). If you do not select it and you want to access the Internet normally, you must add a route on the uplink equipment. Otherwise, the access to the Internet fails. Normally, it is required to enable NAT.

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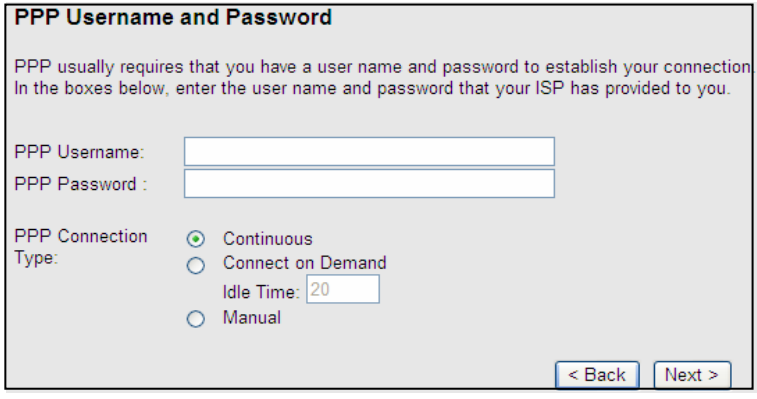
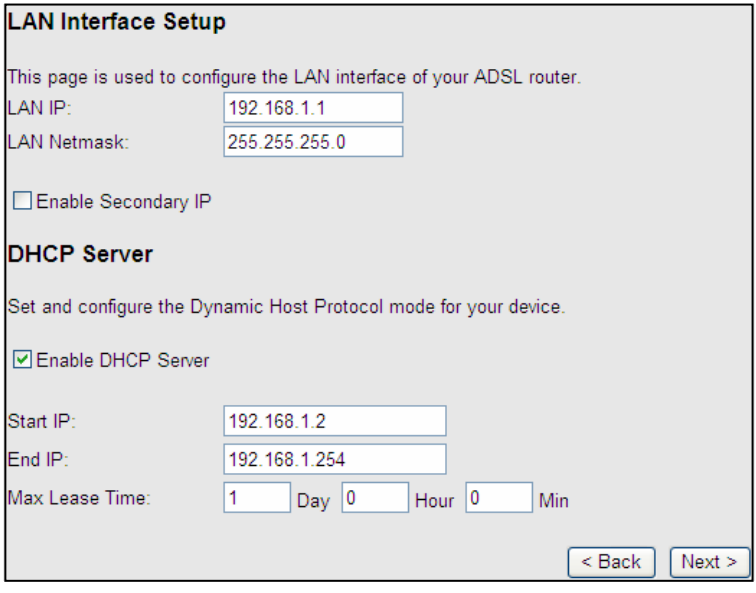
After the settings are done, click **Next**, the page as shown in the following figure appears.



The following table describes the parameters in this page:

Field	Description
PPP Username	Enter the username for PPPoE dial-up, which is provided by your ISP.
PPP Password	Enter the password for PPPoE dial-up, which is provided by your ISP.
PPP Connection Type	You can select Continuous, Connect on Demand, or Manual. • **Continuous:** After dial-up is successful, PPPoE connection is always on-line, no matter whether the data is being transmitted or not. It is recommended to select it. • **Connect on Demand:** After dial-up is successful, within the preset idle time, no data is being transmitted; the router automatically disconnects the PPPoE connection. In this case, you need to enter the idle time. • **Manual:** Select it, you need to dial up and disconnect the connection mannually.

After the settings are done, click **Next**, the page as shown in the following figure appears.



The following table describes the parameters in this page:

Field	Description
LAN Interface Setup	
LAN IP	Enter the IP address of LAN interface. Its valid value is in the range of 192.168.1.1 to 192.168.1.254. The default IP address is 192.168.1.1.
LAN Netmask	Enter the subnet mask of LAN interface. Its valid value is in the range of 255.255.255.0 to 255.255.255.254.
Enable Secondary IP	Select the checkbox to enable the secondary LAN IP. The two LAN IP addresses must be in different networks.
DHCP Server	

Enable DHCP Server	Select the checkbox to enable DHCP server.
Start IP	Enter the start IP address that the DHCP sever assigns.
End IP	Enter the end IP address that the DHCP server assigns.
Max Lease Time	The lease time determines the period that the PCs retain the assigned IP addresses before the IP addresses change.

After the settings are done, click **Next**, the page as shown in the following figure appears.

fast configure - Summary

Click "Finish" to save these settings. Click "Back" to make any modifications. Click "Reset" to drop these settings.

The parameters you set:

WAN Setup:

VPI:	0
VCI:	35
Encapsulation:	LLC/SNAP
Connection Type:	pppoe Continuous
NAPT:	Enabled
WAN IP:	auto assigned
Reserved Gateway:	auto assigned
DNS Server:	auto assigned

LAN Setup:

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

< Back Finish Reset

Click **BACK** to modify the settings.

Click **FINISH** to save the settings.

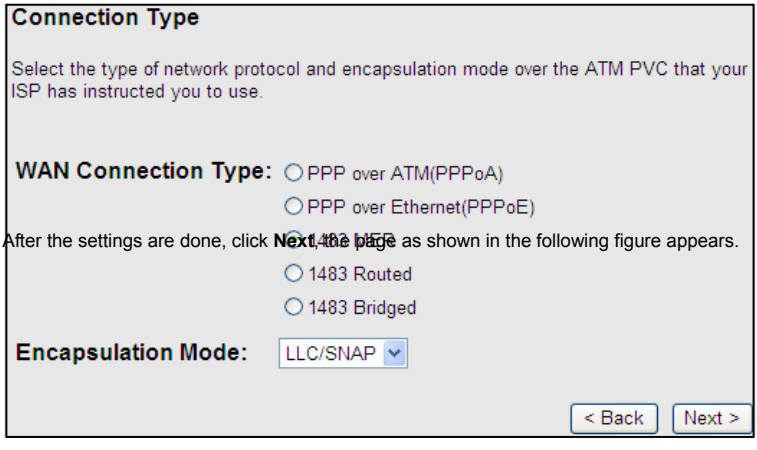
Click **RESET** to cancel the settings.

Note:

If the WAN connection type is set to PPPoA, the parameters of the WAN connection type are the same as that of PPPoE.

1483 MER / 1483 Routed

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



After the settings are done, click **Next**, the page as shown in the following figure appears.

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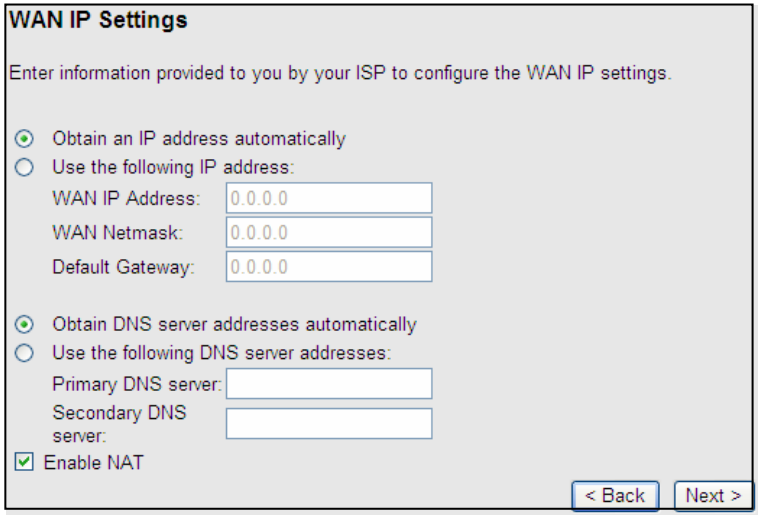


The following table describes the parameters in this page:

Field	Description
Obtain an IP address automatically	Select it, DHCP automatically assigns the IP address for WAN connection.
Use the following IP address	Select it, you need to manually enter the IP address, subnet mask and default gateway for WAN connection, which are provided by your ISP.
Obtain DNS server addresses automatically	Select it, DHCP automatically assigns DNS server address.
Use the following DNS server addresses	Select it, you need to manually enter the primary DNS server address and secondary DNS server address.
Enable NAT	Select it to enable network address translation (NAT). If you do not select it and you want to access the Internet normally, you must add a route

	on the uplink equipment. Otherwise, the access to the Internet fails. Normally, it is required to enable NAT.

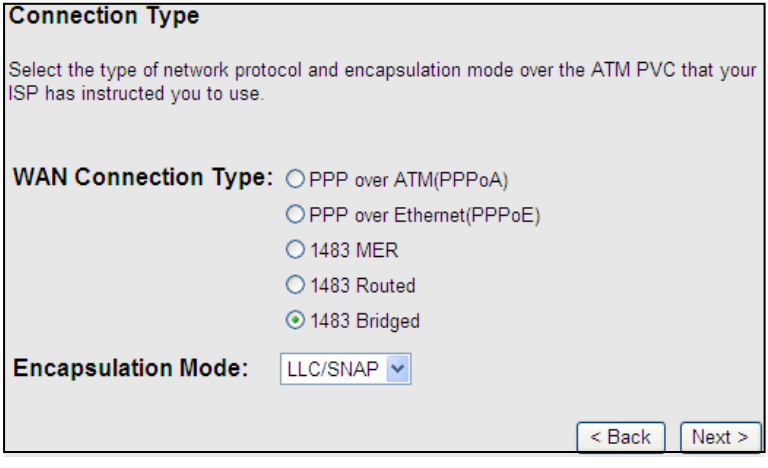
For subsequent configuration, refer to the description in the above section PPPoE/PPPoA.

Note:

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

1483 Bridged

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



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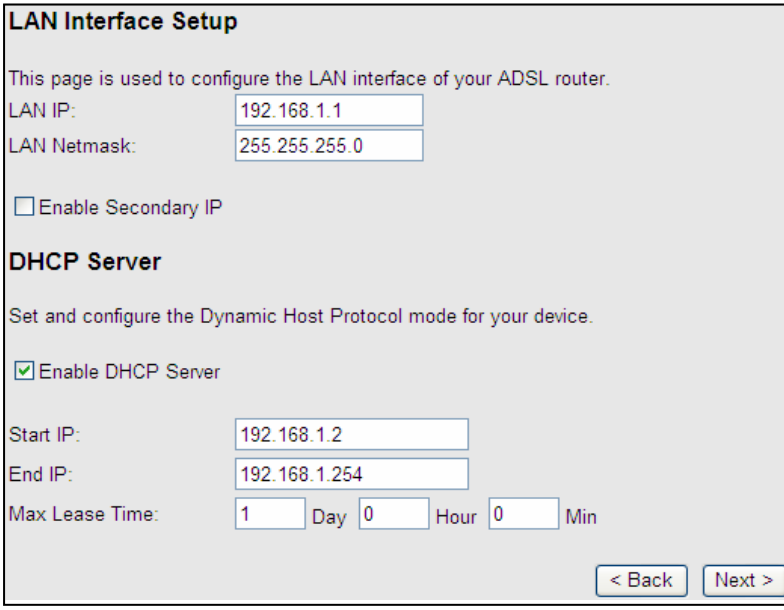
After the settings are done, click **Next**, the page as shown in the following figure appears.



The following table describes the parameters in this page:

Field	Description
LAN Interface Setup	
LAN IP	Enter the IP address of LAN interface. Its valid value is in the range of 192.168.1.1 to 192.168.255.254. The default IP address is 192.168.1.1.
LAN Netmask	Enter the subnet mask of LAN interface. Its valid value is in the range of 255.255.0.0 to 255.255.255.254.
Enable Secondary IP	Select the checkbox to enable the secondary LAN IP. The two LAN IP addresses must be in the different network.

DHCP Server	
Enable DHCP Server	Select the checkbox to enable DHCP server.
Start IP	Enter the start IP address that the DHCP sever assigns.
End IP	Enter the end IP address that the DHCP server assigns.
Max Lease Time	The lease time determines the period that the PCs retain the assigned IP addresses before the IP addresses change.

For subsequent configuration, refer to the description in the above section PPPoE/PPPoA.

Note:

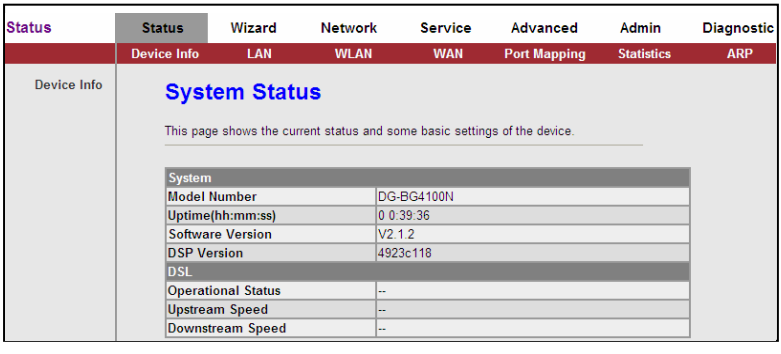
You may configure at most eight ATM VCs. To add an ATM VC, refer section 3.4.2.1WAN

3.3 Status

In the navigation bar, choose Status. The Status page that is displayed contains: Device Info, LAN, WLAN, WAN, Port Mapping, Statistics and ARP.

3.3.1 Device Info

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



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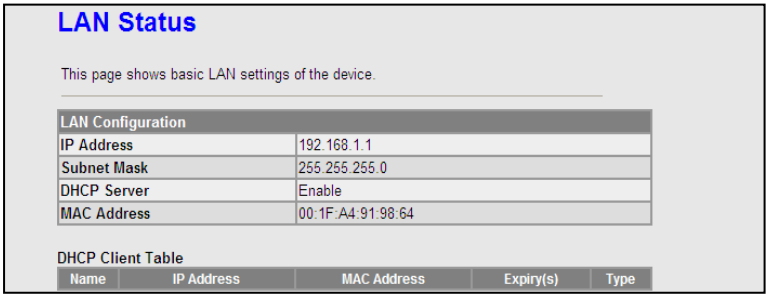
3.3.2 LAN

Choose **Status > LAN**. The page that is displayed shows some basic LAN settings of the router. In this page, you can view the LAN IP address, DHCP server status, MAC address, and DHCP client table. If you want to configure the LAN network, refer to section 3.4.1.1 LAN IP



LAN Status

This page shows basic LAN settings of the device.

LAN Configuration	
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enable
MAC Address	00:1F:A4:91:98:64

DHCP Client Table

Name	IP Address	MAC Address	Expiry(s)	Type

3.3.3 WLAN

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

WLAN Status

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

Wireless Configuration	
Wireless	Enabled
Band	2.4 GHz (B+G+N)
Mode	AP
Broadcast	Enabled
Root	
Status	Enabled
SSID	DIGISOL
Authentication Mode	Auto
Encryption Mode	None
VAP0	
Status	Disabled
VAP1	
Status	Disabled
VAP2	
Status	Disabled
VAP3	
Status	Disabled

Wireless Client List

MAC Address	Tx Packet	Rx Packet	Tx Rate (Mbps)	Power Saving	Expired Time (s)
None	---	---	---	---	---

Current Access Control List	
Mode	Disabled

3.3.4 WAN

Choose **Status > WAN**. The page that is displayed shows some basic WAN settings of the router. In this page, you can view basic status of WAN and DNS server. If you want to configure the WAN network, refer to section 3.4.2.1 WAN

WAN Status

This page shows some basic WAN settings.

WAN IPv4 Configuration							
Interface	VPI/VCI	Encapsulation	Default Route	Protocol	IP Address	Gateway	Status
a0	8/35	LLC	Off	br1483	0.0.0.0	0.0.0.0	down
DNS Servers							

WAN IPv6 Configuration							
Interface	VPI/VCI	Encap	Protocol	IPv6 Address	Gateway	Droute	Status
a0	8/35	LLC	br1483				down
IPv6 DNS Servers							

3.3.5 Port Mapping

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

Port Mapping

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

Status: Disabled

Mapping Relation

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

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3.3.6 Statistics

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

3.3.6.1 Statistics

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

Statistics

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

Interface	Rx Packet	Rx Error	Rx Drop	Tx Packet	Tx Error	Tx Drop
e1	1245	0	0	1324	0	0
a0	0	0	0	0	0	0
a1	0	0	0	0	0	0
a2	0	0	0	0	0	0
a3	0	0	0	0	0	0
a4	0	0	0	0	0	0
a5	0	0	0	0	0	0
a6	0	0	0	0	0	0
a7	0	0	0	0	0	0
w1	271453	0	0	10470	0	22597
w2	0	0	0	0	0	0
w3	0	0	0	0	0	0
w4	0	0	0	0	0	0
w5	0	0	0	0	0	0
w6	0	0	0	0	0	0
w7	0	0	0	0	0	0
w8	0	0	0	0	0	0
w9	0	0	0	0	0	0
w10	0	0	0	0	0	0
w11	0	0	0	0	0	0
w12	0	0	0	0	0	0
w13	0	0	0	0	0	0

Refresh

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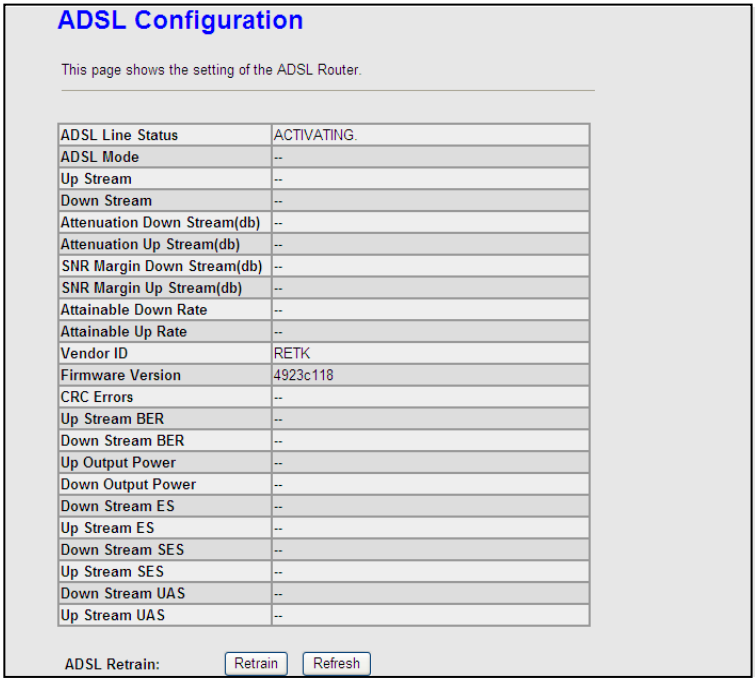
3.3.6.2 ADSL Statistics

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



ADSL Configuration

This page shows the setting of the ADSL Router.

ADSL Line Status	ACTIVATING.
ADSL Mode	--
Up Stream	--
Down Stream	--
Attenuation Down Stream(db)	--
Attenuation Up Stream(db)	--
SNR Margin Down Stream(db)	--
SNR Margin Up Stream(db)	--
Attainable Down Rate	--
Attainable Up Rate	--
Vendor ID	RETK
Firmware Version	4923c118
CRC Errors	--
Up Stream BER	--
Down Stream BER	--
Up Output Power	--
Down Output Power	--
Down Stream ES	--
Up Stream ES	--
Down Stream SES	--
Up Stream SES	--
Down Stream UAS	--
Up Stream UAS	--

ADSL Retrain: Retrain Refresh

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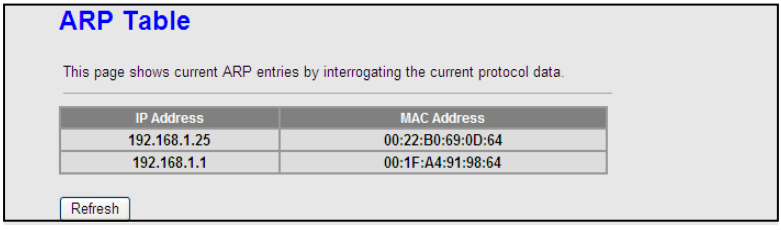
3.3.7 ARP Table

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



3.4 Network

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

3.4.1 LAN

Choose **Network > LAN**. The LAN page that is displayed contains LAN IP, IPv6 LAN Config, DHCP and DHCP Static IP.

3.4.1.1 LAN IP

Click **LAN IP** in the left pane, the page shown in the following figure appears.
In this page, you can change IP address of the router. The default IP address is 192.168.1.1, which is the private IP address of the router.

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Network | Status | Wizard | Network | Service | Advanced | Admin | Diagnostic

LAN | WAN | WLAN

LAN IP
IPv6 LAN Config
DHCP
DHCP Static IP

LAN Interface Setup

This page is used to configure the LAN interface of your ADSL Router. Here you may change the setting for IP addresss, subnet mask, etc..

Interface Name: Ethernet1
IP Address: 192.168.1.1
Subnet Mask: 255.255.255.0
☐ Secondary IP

IGMP Snooping: ◉ Disable ○ Enable

Apply Changes

LAN Port:
Link Speed/Duplex Mode:
Modify

ETHERNET Status Table:

Select	Port	Link Mode
○	LAN1	Auto Negotiation
○	LAN2	Auto Negotiation
○	LAN3	Auto Negotiation
○	LAN4	Auto Negotiation

MAC Address Control: ☐LAN1 ☐LAN2 ☐LAN3 ☐LAN4 ☐WLAN

Apply Changes

New MAC Address: Add

Current Allowed MAC Address Table:

MAC Addr	Action

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The following table describes the parameters of this page:

Field	Description
IP Address	Enter the IP address of LAN interface. It is recommended to use an address from a block that is reserved for private use. This address block is 192.168.1.1 - 192.168.1.254.
Subnet Mask	Enter the subnet mask of LAN interface. The range of subnet mask is from 255.255.0.0-255.255.255.254.
Secondary IP	Select it to enable the secondary LAN IP address. The two LAN IP addresses must be in different networks
IGMP Snooping	When IGMP snooping is enabled, only hosts that belong to the group receive the multicast packets. If a host is deleted from the group, the host cannot receive the multicast packets any more.
LAN Port	You can choose the LAN interface you want to configure.
Link Speed / Duplex Mode	You can select the following modes from the drop-downlist:100Mbps/FullDuplex,100Mbps/Half Duplex,10Mbps/FullDuplex,10Mbps/HalfDuplex,Auto Negotiation.
MAC Address Control	It is the access control based on MAC address. Select it, and the host whose MAC address is listed in the Current Allowed MAC Address table can access the router.
Add	Enter MAC address, and then click it to add a new MAC address.
Current allowed MAC address table	All the allowed MAC addresses added will be listed here.

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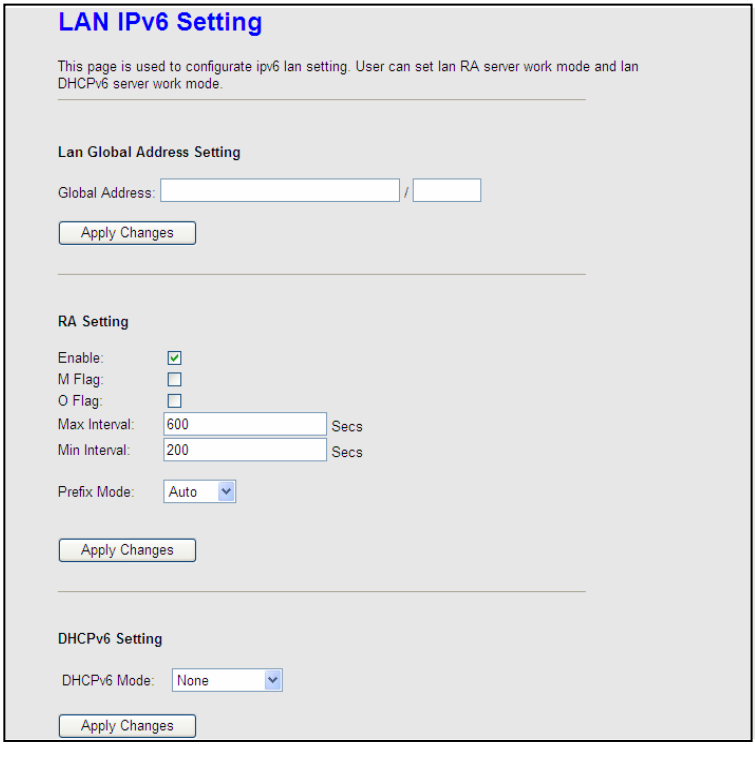
3.4.1.2 IPv6 LAN Config

Click **LAN IP** in the left pane, the page shown in the following figure appears. In this page, you can change IP address of the router. The default IP address is 192.168.1.1, which is the private IP address of the router.



The following table describes the RA parameters of this page.

Field	Description
Global Address	Specify the LAN global ipv6 address, which may be assigned by ISP.
RA Setting	
Enable	Enable or disable the Router Advertisement feature.
M Flag	Enable or disable the “Managed address configuration” flag in RA packet.
O Flag	Enable or disable the “Other configuration” flag in RA packet.
Max interval	The maximum time allowed between sending unsolicited multicast Router Advertisements from the interface, in seconds. Note: The Max Interval must not be less than 4 seconds and not greater than 1800 seconds.
Min Interval	The minimum time allowed between sending unsolicited multicast Router Advertisements from the interface, in seconds. Note: The Min Interval must not be less than 3 seconds and not greater than 0.75 * Max Interval.
Prefix Mode	Specify the RA feature prefix mode: “Auto”: The RA prefix will use Wan dhcp-pd prefix. “Manual”: User will specify the prefix Address, Length, Preferred time and Valid time.
DHCPv6 Setting	
DHCPv6 Mode	Specify the dhcpv6 server mode: “None”: Close dhcpv6 server. “Manual”: dhcpv6 server is opened and user specifies the dhcpv6 server address pool and other parameters. “Auto”: dhcpv6 server is opened and it can use Wan dhcp-pd prefix to generate address pool.

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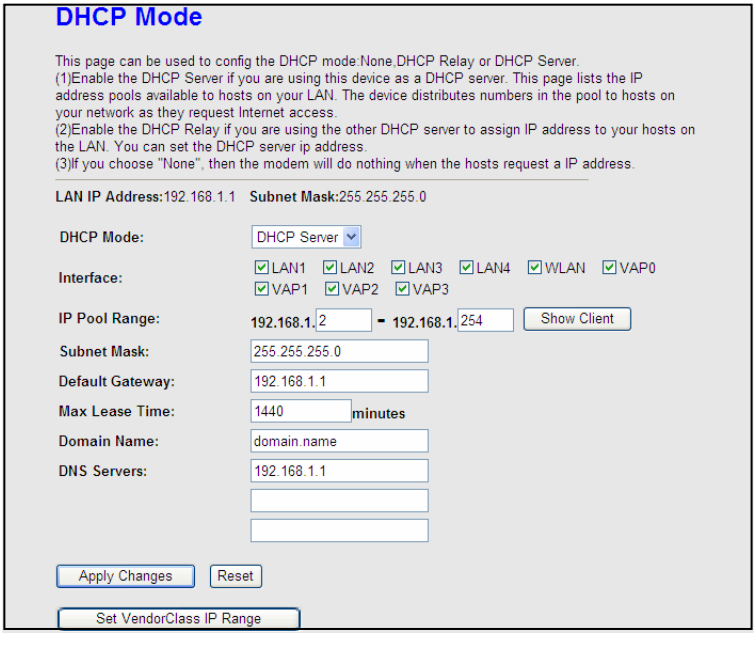
3.4.1.3 DHCP

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

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



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The following table describes the parameters of this page:

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

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

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

Field	Description
IP Address	It displays the IP address assigned to the DHCP client from the router.
MAC Address	It displays the MAC address of the DHCP client. Each Ethernet device has a unique MAC address. The MAC address is assigned at the factory and it consists of six pairs of hexadecimal character, for example, 00-17-7C-00-02-12.
Expiry (s)	It displays the lease time. The lease time determines the period that the host retains the assigned IP addresses before the IP addresses change.
Type	Automatic, means if the IP / MAC of the client are not binded using the Static DHCP option. Manual, means the IP/MAC are binded using the Static DHCP Option.
Refresh	Click it to refresh this page.
Close	Click it to close this page.

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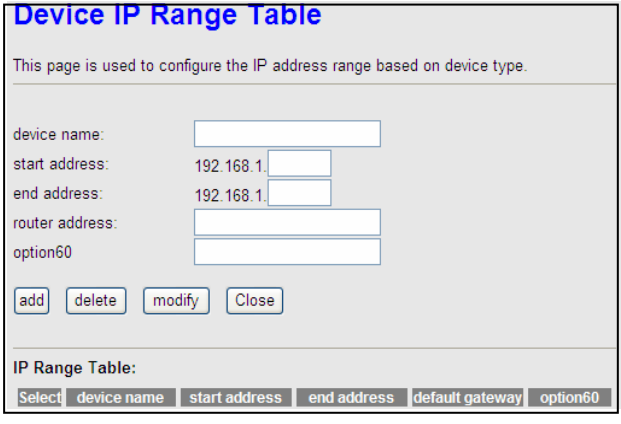
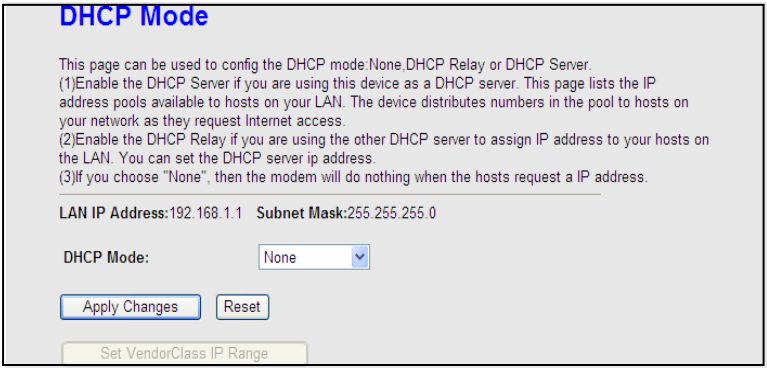
Click **Set VendorClass IP Range** in the **DHCP Mode** page, the page as shown in the following figure appears. In this page, you can configure the IP address range based on the device type.



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



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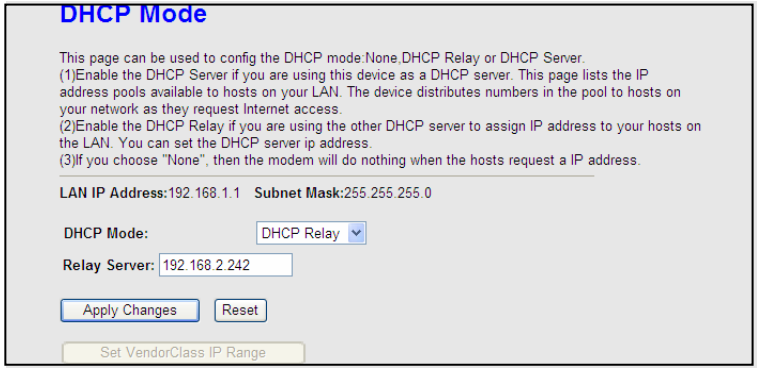
In the **DHCP Mode field**, choose **DHCP Relay**. The page shown in the following figure appears.

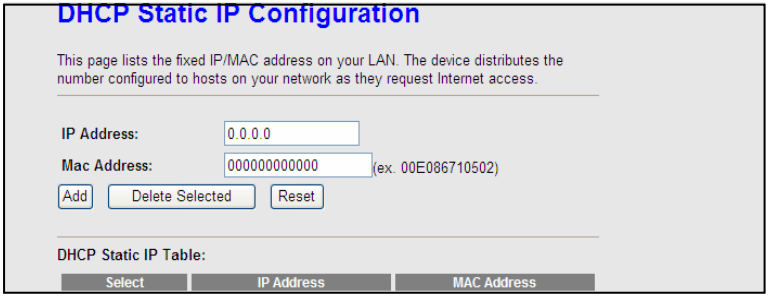


The following table describes the parameters and buttons of this page:

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

3.4.1.4 DHCP Static IP

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



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

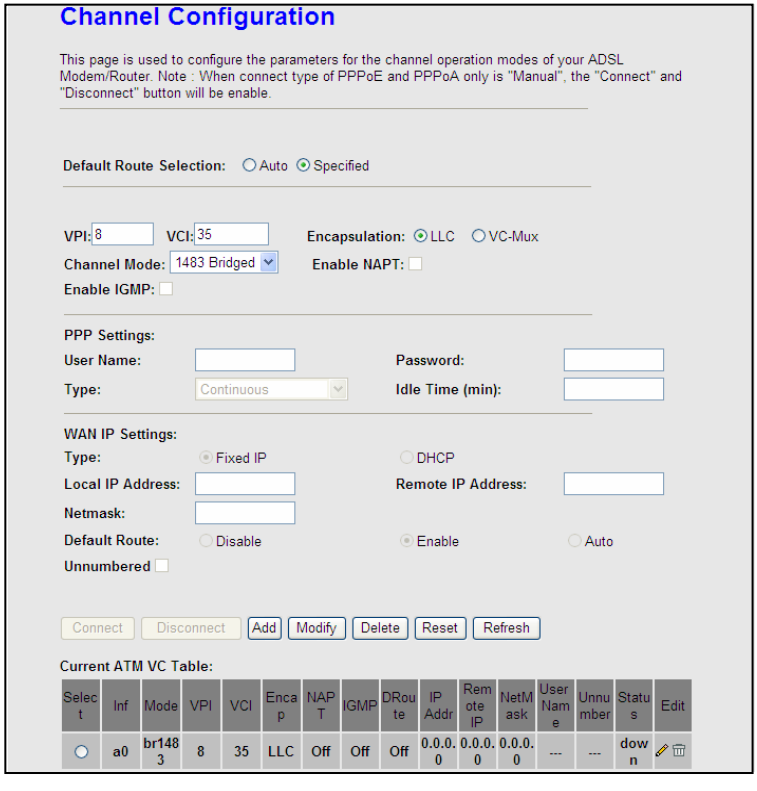
Field	Description
IP Address	Enter the specified IP address in the IP pool range, which is assigned to the host.
MAC Address	Enter the MAC address of a host on the LAN.
Add	After entering the IP address and MAC address, click it. A row will be added in the DHCP Static IP Table.
Delete Selected	Select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

3.4.2 WAN

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

3.4.2.1 WAN

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



The following table describes the parameters of this page:

Field	Description
Default Route Selection	You can select Auto or Specified.
VPI	The virtual path between two points in an ATM network, ranging from 0 to 255.
VCI	The virtual channel between two points in an ATM network, ranging from 32 to 65535 (1 to 31 are reserved for known protocols)
Encapsulation	You can choose LLC and VC-Mux.
Channel Mode	You can choose 1483 Bridged, 1483 MER, PPPoE, PPPoA, 1483 Routed or IPoA.
Enable NAPT	Select it to enable Network Address Port Translation (NAPT) function. If you do not select it and you want to access the Internet normally, you must add a route on the uplink equipment. Otherwise, the access to the Internet fails. Normally, it is enabled.
Enable IGMP	You can enable or disable Internet Group Management Protocol (IGMP) function.
PPP Settings	
User Name	Enter the correct user name for PPP dial-up, which is provided by your ISP.
Password	Enter the correct password for PPP dial-up, which is provided by your ISP.
Type	You can choose Continuous, Connect on Demand, or Manual.
Idle Time (min)	If set the type to Connect on Demand, you need to enter the idle timeout time. Within the preset minutes, if the router does not detect the flow of the user continuously, the router automatically disconnects the PPPoE connection.

WAN IP Settings	
Type	You can choose Fixed IP or DHCP. ● If select Fixed IP, you should enter the local IP address, remote IP address and subnet mask. ● If select DHCP, the router is a DHCP client, the WAN IP address is assigned by the remote DHCP server.
Local IP Address	Enter the IP address of WAN interface provided by your ISP.
Netmask	Enter the subnet mask of the local IP address.
Unnumbered	Select this checkbox to enable IP unnumbered function.
Add	After configuring the parameters of this page, click it to add a new PVC into the Current ATM VC Table.
Modify	Select a PVC in the Current ATM VC Table, then modify the parameters of this PVC. After finishing, click it to apply the settings of this PVC.
Delete	Select a PVC in the Current ATM VC Table, then delete the PVC.
Reset	Click reset to undo the settings entered in this page and retain them to default settings.
Current ATM VC Table	This table shows the existing PVCs. It shows the interface name, channel mode, VPI/VCI, encapsulation mode, local IP address, remote IP address and other information. The maximum item of this table is eight.

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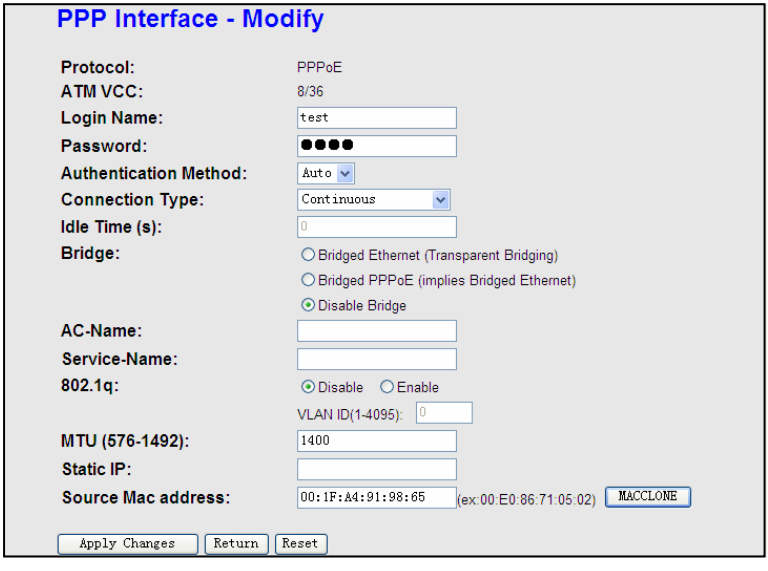
After adding a PPPoE ATM VC to the table, click in the PPPoE mode, the page shown in the following figure appears. In this page, you can configure parameters of this PPPoE PVC.



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

Field	Description
Protocol	It displays the protocol type used for this WAN connection.
ATM VCC	The ATM virtual circuit connection assigned for this PPP interface (VPI/VCI).
Login Name	The user name provided by your ISP.
Password	The password provided by your ISP.
Authentication Method	You can choose AUTO, CHAP, or PAP.
Connection Type	You can choose Continuous, Connect on Demand, or

	Manual.
Idle Time (s)	If you choose Connect on Demand, you need to enter the idle timeout time. Within the preset minutes, if the router does not detect the flow of the user continuously, the router automatically disconnects the PPPoE connection.
Bridge	You can select Bridged Ethernet, Bridged PPPoE, or Disable Bridge.
AC-Name	The accessed equipment type.
Service-Name	The service name.
802.1q	You can select Disable or Enable. After enable it, you need to enter the VLAN ID. The value ranges from 1 to 4095.
MTU (576-1492)	Maximum transfer unit is the Optimal MTU configuration for PPPoE ADSL Connections, which is set by ISP.
Apply Changes	Click it to save the settings of this page temporarily.
Return	Click it to return to the Channel Configuration page.
Reset	Click it to refresh this page.
Source Mac address	The MAC address you want to clone.
MAC Clone	Click it to enable the MAC Clone function with the MAC address that is configured.

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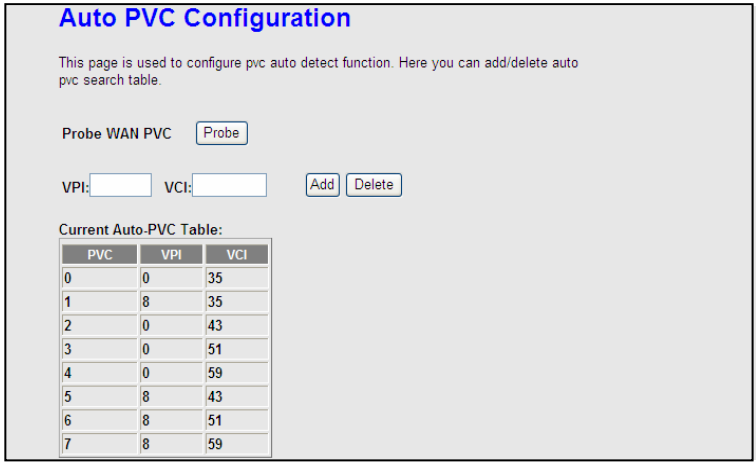
3.4.2.2 Auto PVC

Click **Auto PVC** in the left pane, page shown in the following figure appears. In this page, you can get PVC automatically through detecting function, and add or delete the PVC that you want or do not want.



PVC	VPI	VCI
0	0	35
1	8	35
2	0	43
3	0	51
4	0	59
5	8	43
6	8	51
7	8	59

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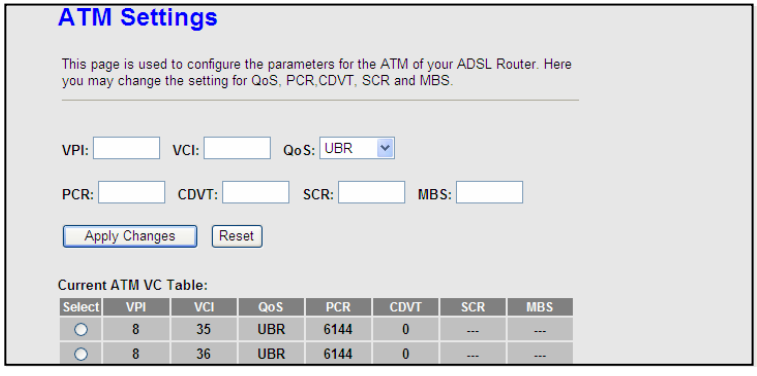
3.4.2.3 ATM Settings

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



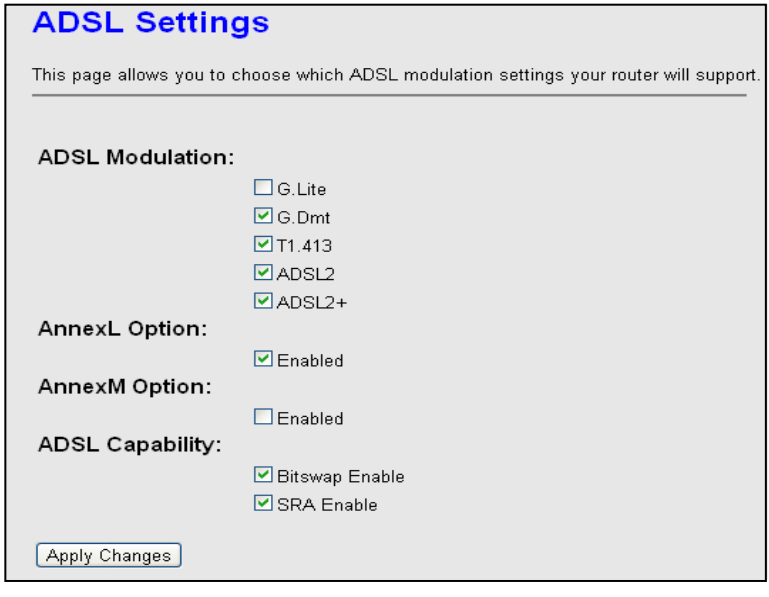
The following table describes the parameters of this page:

Field	Description
VPI	The virtual path identifier of the ATM PVC.
VCI	The virtual channel identifier of the ATM PVC.
QoS	The QoS category of the PVC. You can choose UBR, CBR, rt-VBR or nrt-VBR.
PCR	Peak cell rate (PCR) is the maximum rate at which cells can be transmitted along a connection in the ATM network. Its value ranges from 1 to 65535.
CDVT	Cell delay variation tolerance (CDVT) is the amount of delay permitted between ATM cells (in microseconds). Its value ranges from 0 to 4294967295.
SCR	Sustained cell rate (SCR) is the maximum rate that traffic can pass over a PVC without the risk of cell loss. Its value ranges from 0 to 65535.

MBS	Maximum burst size (MBS) is the maximum number of cells that can be transmitted at the PCR. Its value ranges from 0 to 65535.

3.4.2.4 ADSL Settings

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

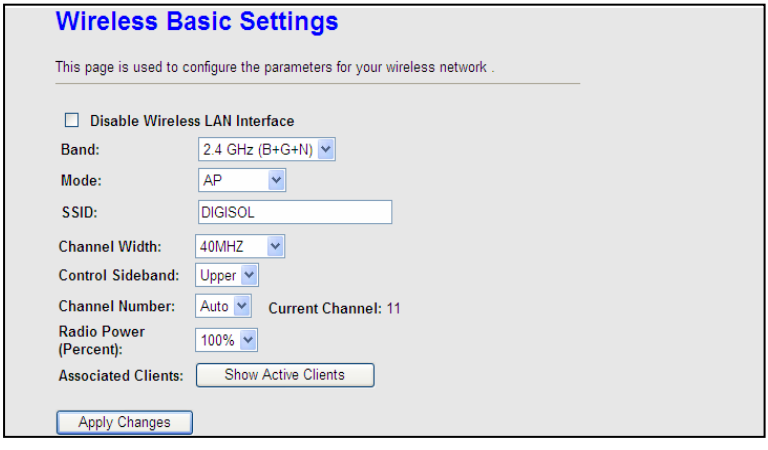


3.4.3 WLAN

Choose **Network > WLAN**. The WLAN page that is displayed contains Basic, Security, Access Control List, MBSSID, Advanced, WPS, WDS and WDS Security.

3.4.3.1 Basic

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



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The following table describes the parameters of this page:

Field	Description
Band	Choose the working mode of the router. You can choose from drop-down list. 2.4 GHz (B+G+N) 2.4 GHz (B) 2.4 GHz (G) 2.4 GHz (B+G) 2.4 GHz (N) 2.4 GHz (G+N) 2.4 GHz (B+G+N)
Mode	Choose the network model of the router, which is varied according to the software. By default, the network model of the router is AP.
SSID	The service set identification (SSID) is a unique name to identify the router in the wireless LAN. Wireless stations associating to the router must have the same SSID. Enter a descriptive name that is used when the wireless client is connecting to the router.
Channel Width	Options available are 40 MHZ, 20 MHz and 40/20 MHz
Control Sideband	There are two sidebands upper and lower bands. The lower band comprises of channel numbers 1-9. The upper band comprises of channel numbers 5-13.
Channel Number	A channel is the radio frequency used by 802.11b/g wireless devices. There are 11 channels (from 1 to 11) available depending on the geographical area. When You may have a choice of channels (for your region) you should use a different channel from an adjacent AP to reduce the interference. Interference and degrading performance occurs when radio signal from different APs overlap. Choose a channel from the drop-down list box.
Radio Power (Percent)	You can choose the transmission power of the radio

	signal. The default one is 100%. It is recommended to choose the default value 100%.
Show Active Clients	Click it to view the information of the wireless clients that are connected to the router.
Apply Changes	Click it to apply the settings temporarily. If you want to save the settings of this page permanently, click Save in the lower left corner which appears only after we apply changes.

3.4.3.2 Security

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

The following table describes the parameters of this page:

Field	Description
Encryption	Configure the wireless encryption mode. You can choose None, WEP, WPA (TKIP), WPA (AES), WPA2 (AES), WPA2 (TKIP) or WPA2 Mixed. • Wired equivalent privacy (WEP) encrypts data frames before transmitting over the wireless network. • Wi-Fi protected access (WPA) is a subset of the IEEE802.11i security specification draft. • WPA2 Mixed is the collection of WPA and WPA2 encryption modes. The wireless client establishes the connection between the router through WPA or WPA2. Key differences between WPA and WEP are user authentication and improved data encryption.
Set WEP Key	It is available when you set the encryption mode to WEP. Click it, the Wireless WEP Key Setup page appears.
WPA Authentication Mode	• Select Personal (Pre-Shared Key), enter the pre-shared key in the Pre-Shared Key field. • Select Enterprise (RADIUS), enter the port, IP address, and password of the Radius server. You need to enter the username and password provided by the Radius server when the wireless client connects the router. If the encryption is set to WEP, the router uses 802.1x authentication, which is Radius authentication.

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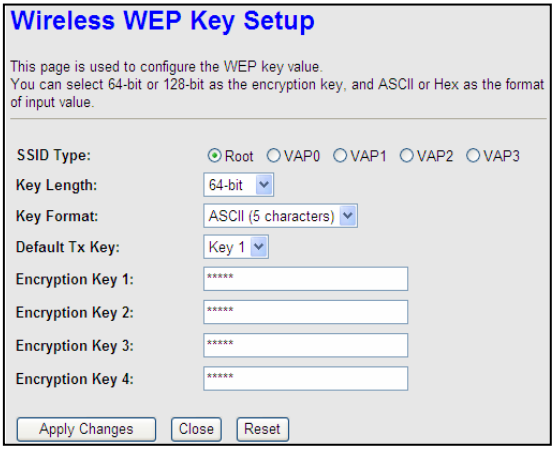
Click **Set WEP Key**, as shown in the screen above and the following screen appears.



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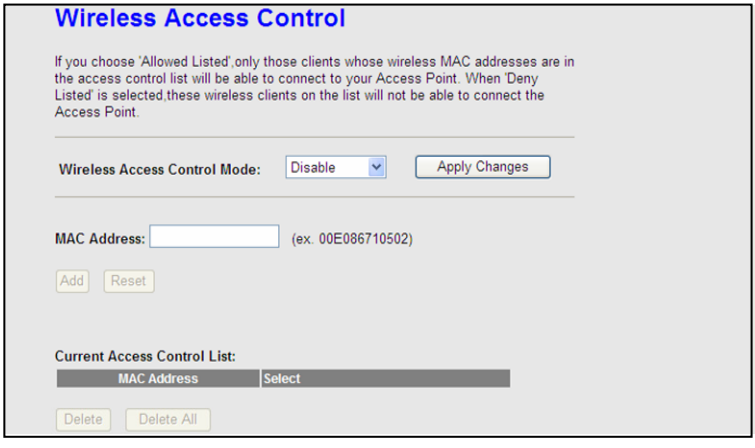
3.4.3.3 Access Control List

Choose **WLAN > Access Control** List and the following page appears. In this page, you can configure the access control of the wireless clients.

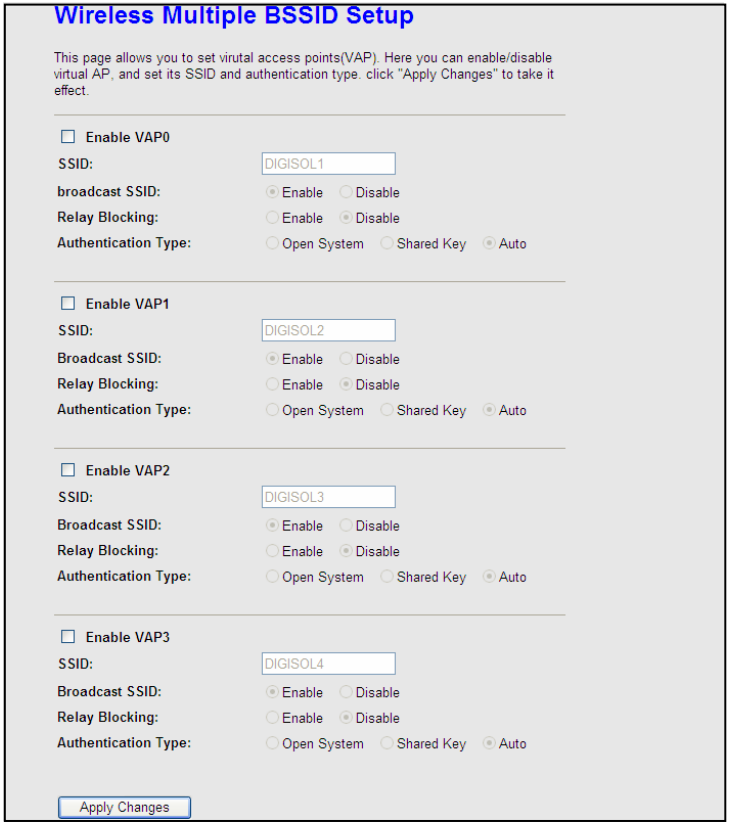


Choose **Allow Listed** as the access control mode to enable white list function. Only the devices whose MAC addresses are listed in the Current Access Control List can access the router.

Choose **Deny Listed** as the access control mode to enable black list function. The devices whose MAC addresses are listed in the Current Access Control List are denied to access the router.

3.4.3.4 MBSSID

Choose **Wireless > MBSSID** and the following page appears. In this page, you can configure the multiple SSID of the wireless clients.



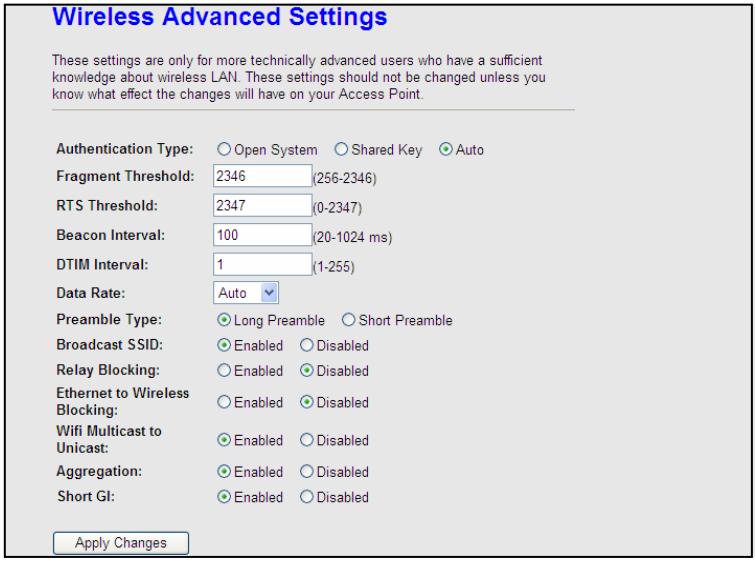
It supports four virtual access points (VAPs). It is a unique name to identify the router in the wireless LAN. Wireless stations associating to the router must have the same name. Enter a descriptive name that is used when the wireless client connecs to the router.

3.4.3.5 Advanced

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

Note:

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



The following table describes the parameters of this page:

Field	Description
Authentication type	Select the router operating in the open system or encryption authentication. You can choose Open System, Shared Key, or Auto.

	• In the open system, the wireless client can directly connect to the device. • In Shared key, the wireless client connects to the router using the shared key. • The default is set to Auto, which allows either Open System or Shared Key authentication to be used.
Fragment treshold	This value should remain at its default setting of 2346. It specifies the maximum size for a packet before data is fragmented into multiple packets. If you experience a high packet error rate, you may slightly increases the “Fragment Threshold” value within the value range of 256 to 2346. Setting this value too low may result in poor network performance. Only minor modifications of this value are recommended.
RTS Treshold	This value should remain at its default setting of 2347. If you encounter inconsistent data flow, only minor modifications are recommended. If a network packet is smaller than the preset “RTS threshold” size, the RTS/CTS mechanism will not be enabled.
Beacon Interval	The Beacon Interval value indicates the frequency interval of the beacon. Enter a value between 20 and 1024.
DTIM Interval	Data beacon proportion (transmission quantity indication). Its value range is 1—255 and the default value is 100.
Data Rate	Choose the transmission rate of the wireless data. You can choose Auto, 1 M, 2 M, 5.5 M, 11 M, 6 M, 9 M, 12 M, 18 M, 24 M, 36 M, 48 M, 54M, MSC0 ~ MSC7.
PreambleType	• Long Preamble: It means this card always uses long preamble. • Short Preamble: It means this card can support short preamble capability.
Broadcast SSID	Select whether the router broadcasts SSID or not. You can select Enable or Disable. • Select Enable, the wireless client searches the router

	through broadcasting SSID. • Select Disable to hide SSID, the wireless clients can not find the SSID.
Relay Blocking	Wireless isolation. Once this field is Enabled, the wireless clients that are connected to the router cannot intercommunicate.
Ethernet to Wireless Blocking	Whether the wireless network can communicate with the Ethernet network or not.
Wifi Multicast to Unicast	Enable it to use unicast to transmit multicast packets.
Aggregation	It is applied when the destination end of all MPDU are for one STA.
Short GI	It is not recommended to enable GI in obvious environment of Multi-path effect.
Apply Changes	Click it to apply the settings temporarily. If you want to save the settings of this page permanently, click Save in the lower left corner of the webpage. The save button appears only after the 'Apply Changes' button has been clicked.

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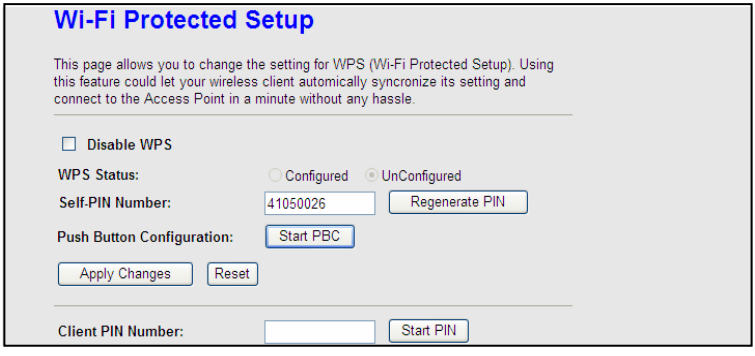
3.4.3.6 WPS

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



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

Note:

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

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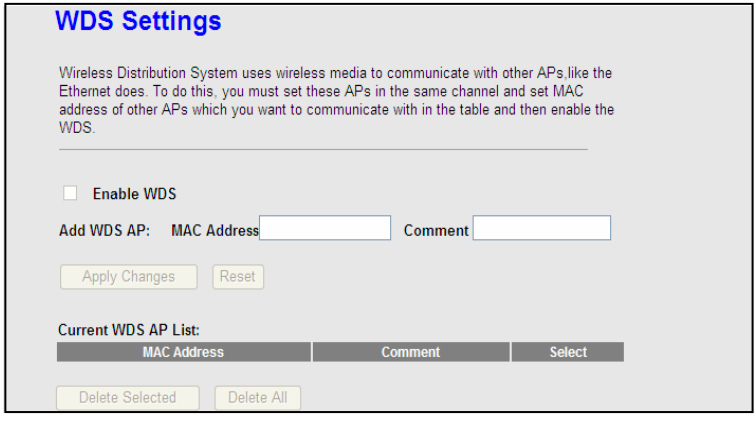
3.4.3.7 WDS

Choose **WLAN > WDS**, and the following page appears. In this page you can enable wireless distribution system (WDS) so that the router can communicate with another AP.

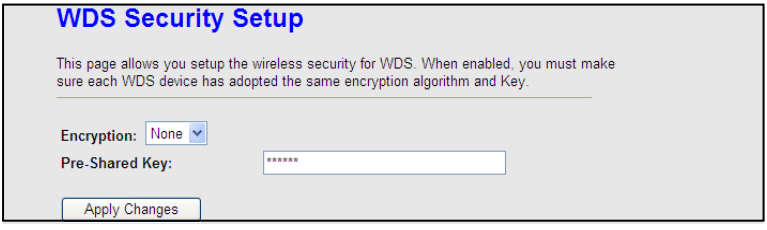


The following table describes the parameters of this page:

Field	Description
Enable WDS	Check this box to enable WDS
MAC Address	Wireless MAC address of the AP to be connected.
Comment	Add comment for the WDS AP.
Current WDS AP List	All the MAC addresses of the AP to be connected will be listed here

3.4.3.8 WDS Security

Choose **WLAN > WDS Security**, and the following page appears. In this page, you can set up wireless security for WDS.



The following table describes the parameters of this page:

Field	Description
Encryption	Choose a WDS encryption algorithm from None, WEP, TKIP and AES.
Pre-shared Key	Enter an encryption key.

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3.5 Service

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

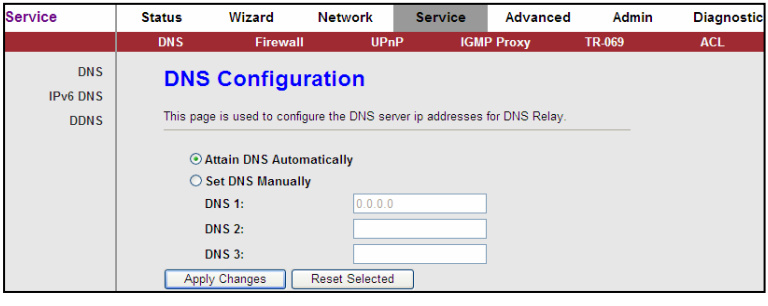
3.5.1 DNS

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

Choose **Service > DNS**. The DNS page that is displayed contains DNS, IPv6 DNS and DDNS.

3.5.1.1 DNS

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



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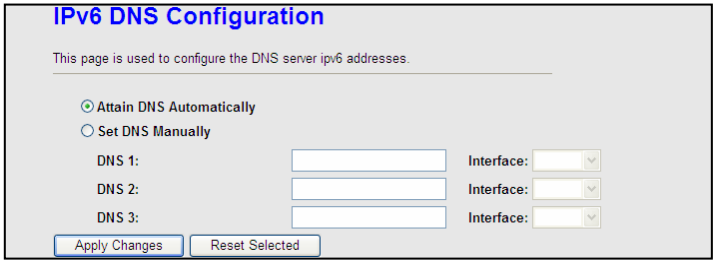
The following table describes the parameters and buttons of this page:

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

3.5.1.2 IPv6 DNS

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

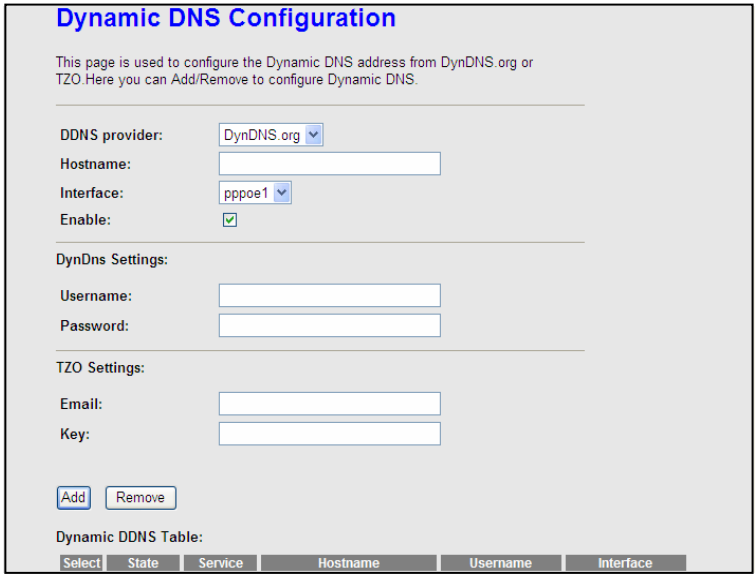


The following table describes the parameters and buttons of this page.

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

3.5.1.3 DDNS

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



The following table describes the parameters of this page:

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

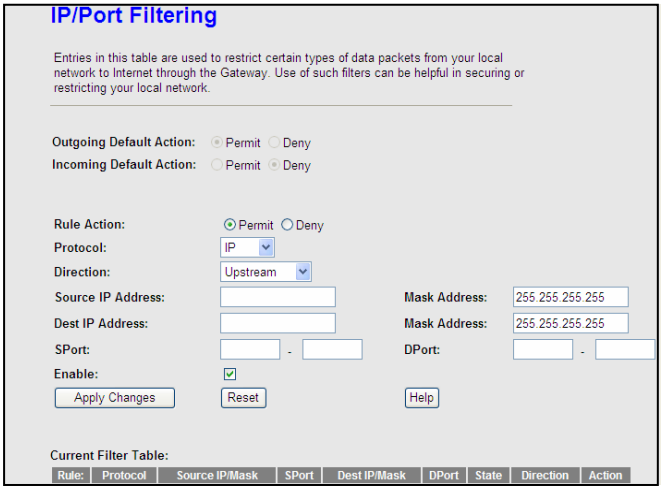
Password	The password provided by DDNS provider.
Email	The email provided by DDNS provider.
Key	The key provided by DDNS provider.

3.5.2 Firewall

Choose **Service > Firewall**. The Firewall page that is displayed contains IP/Port Filter, IPv6/Port Filter, MAC Filter, URL Filter, Anti-DoS and Software Forbidden.

3.5.2.1 IP/Port Filter

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



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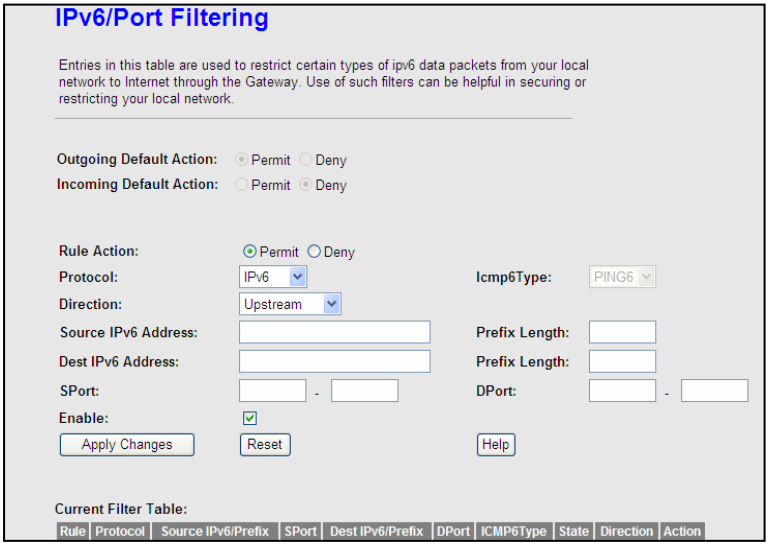
3.5.2.2 IPv6/Port Filter

Click **IPv6/Port** Filter in the left pane, and the page shown in the following figure appears. Entries in this table are used to restrict certain types of ipv6 data packets from your local network to the Internet through the Gateway.



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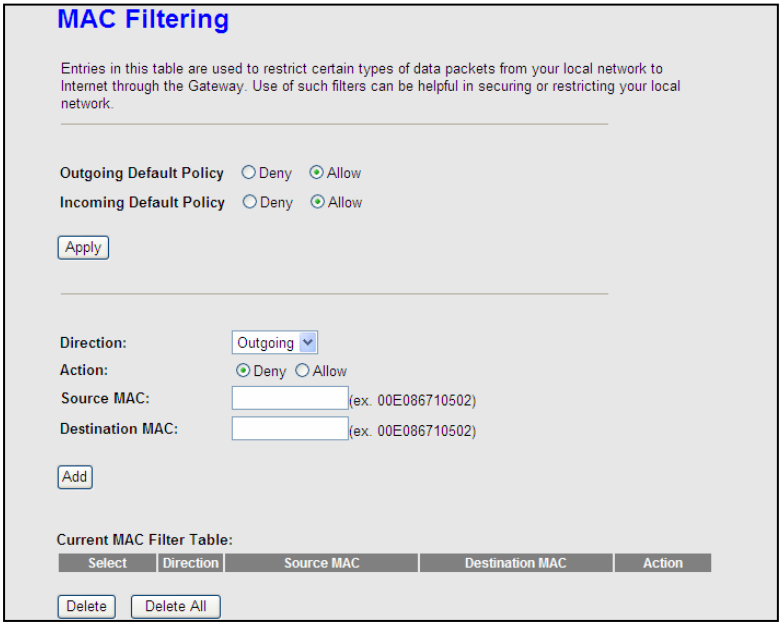
3.5.2.3 MAC Filter

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



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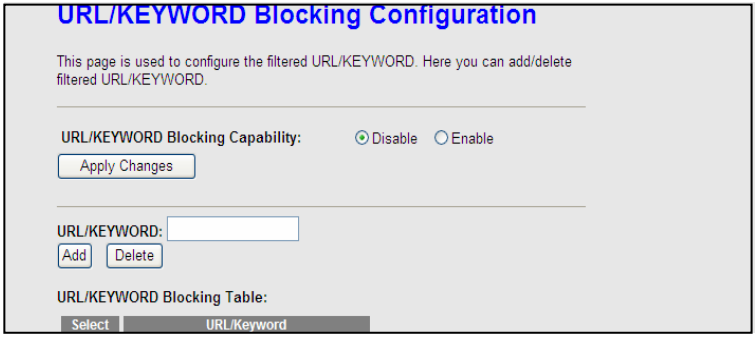
3.5.2.4 URL Filter

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



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

Field	Description
URL/KEYWORD Blocking Capability	You can choose Disable or Enable. • Select Disable to disable URL/KEYWORD blocking function and keyword filtering function. • Select Enable to block access to the URLs and keywords specified in the URL/KEYWORD Blocking Table.
URL/Keyword	Enter the URL/keyword to block.
Add	Click it to add a URL/keyword to the URL/KEYWORD Blocking Table.
Delete	Select a row in the URL/KEYWORD Blocking Table and click Delete to delete the row.
URL/KEYWORD Blocking Table	A list of URL (s) to which access is blocked will be displayed in this table.

3.5.2.5 Anti-DoS

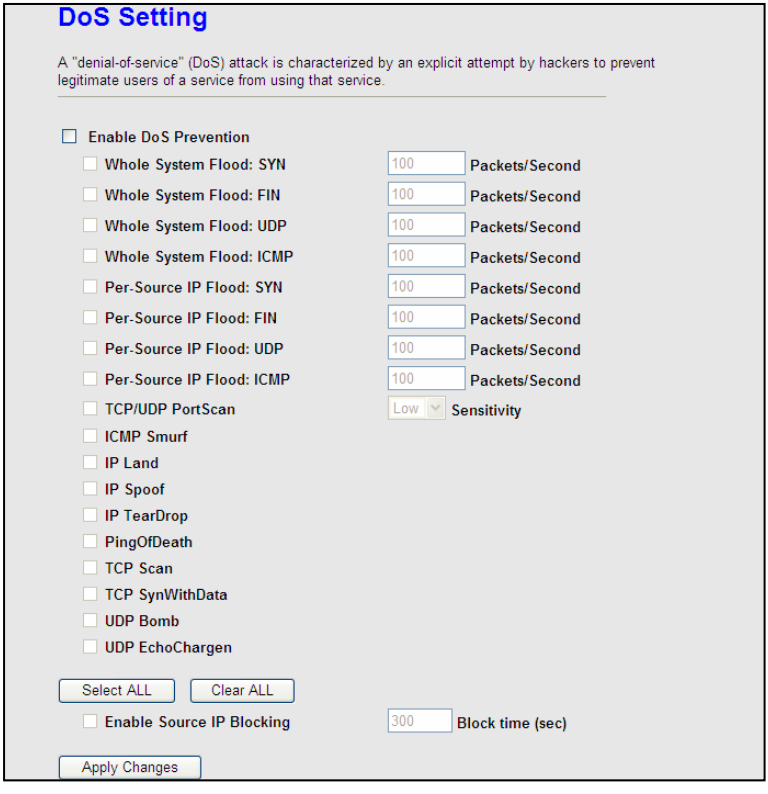
Denial-of-Service Attack (DoS attack) is a type of attack on a network that is designed to bring the network to its knees by flooding it with useless traffic.

A denial-of-service attack (DoS attack) is an attempt to make a computer resource unavailable to its intended users. One common method of attack involves saturating the target machine with external communications requests, such that it cannot respond to legitimate traffic, or responds so slowly as to be rendered effectively unavailable. Such attacks usually lead to a server overload.

In general terms, DoS attacks are implemented by either forcing the targeted computer(s) to reset, or consuming its resources so that it can no longer provide its intended service or obstructing the communication media between the intended users and the victim so that they can no longer communicate adequately.

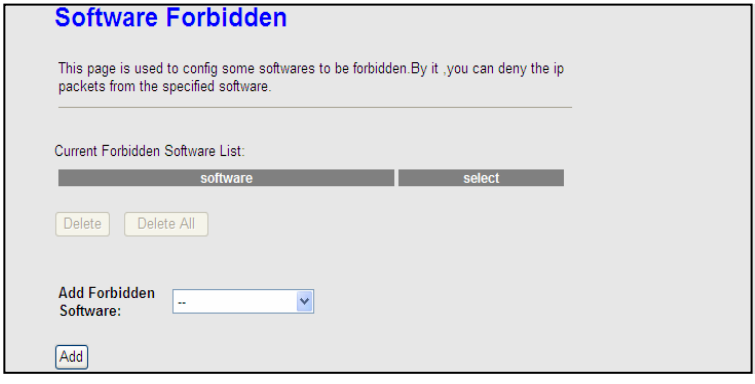
Enable DoS Preventionto detect and prevent denial of service attacks through automatic rate filtering or rules toprotect legitimate users during the DoS attacks.

Click **Anti-DoS** in the left pane, and the page shown in the following figure appears. In this page, you can prevent DoS attacks.



3.5.2.6 Software Forbidden

Click **Software Forbidden** in the left pane, the page shown in the following figure appears. This interface realizes application control. Select an application from the drop-down list to prohibit the application from accessing network resources.

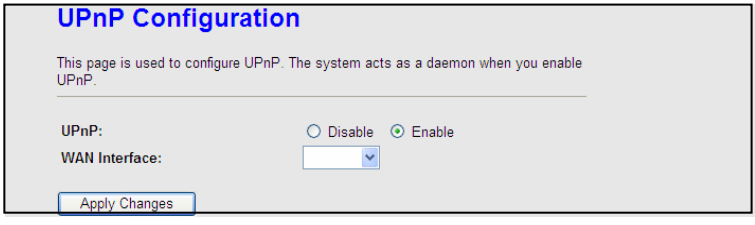


The following table describes the parameters and buttons of this page:

Field	Description
Current Forbidden Software List	A list of currently forbidden applications for accessing the network.
Add Forbidden Software	Select an application to be forbidden from accessing the network.

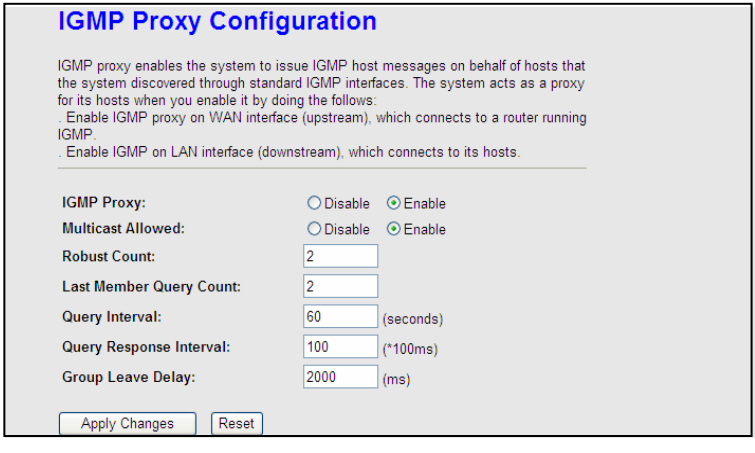
3.5.3 UPnP

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



3.5.4 IGMP Proxy

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



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Field	Description
Robust Count	The Robust Count allows tuning for expected packet loss on a network. By default, the value is set to 2.
Last member query count	This parameter indicates last member query interval. It is the maximum response time in seconds for an IGMP host in reply to group-specific queries. By default, the value is set to 2
Query Interval	This parameter indicates the query interval. It is the interval in seconds (s) between general queries sent by the querier.. Default is 60 sec.
Query response Interval	This parameter indicates the query response interval. It is the maximum response time in seconds for an IGMP host in reply to general queries. By default, the value is set to 100.
Group Leave delay	The message is sent when a host leaves a group. Default value is 2000.

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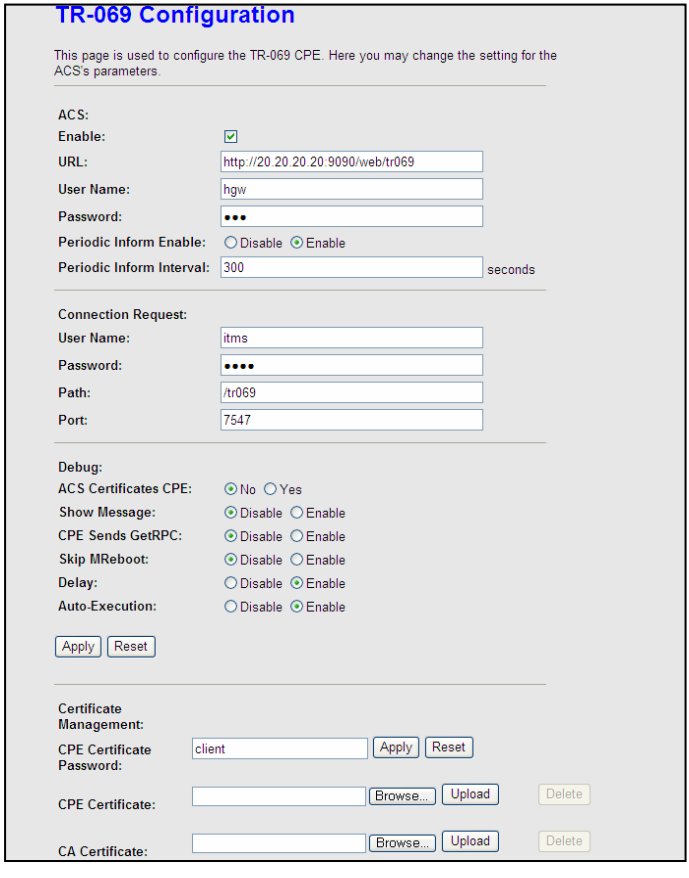
3.5.5 TR-069

TR-069 is a protocol for communication between a CPE and Auto-Configuration Server (ACS).

Choose **Service > TR-069**, and the page shown in the following page appears. In this page, you can configure the TR-069 CPE.



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The following table describes the parameters of this page:

Field	Description
ACS	
URL	The URL of the auto-configuration server to connect to.
User Name	The user name for logging in to the ACS.
Password	The password for logging in to the ACS.
Periodic Inform Enable	Select Enable to periodically connect to the ACS to check whether the configuration updates.
Periodic Inform Interval	Specify the amount of time between connections to ACS.
Connection Request	
User Name	The connection username provided by TR-069 service.
Password	The connection password provided by TR-069 service.
Path	Identifies the PATH that the service should use.
Port	Identifies the port number that the service should use.
Debug	
ACS Certificates CPE	As vital data (like user names and passwords) may be transmitted to CPE via TR-069 protocol it is essential to provide secure transport channel and always authenticate the CPE against the ACS. Secure transport and authentication of the ACS identity can easily be provided by usage of HTTPS and verification of ACS certificate.
Show Message	Select Enable to display ACS SOAP messages on the serial console.
CPE sends GetRPC	Select Enable, the router contacts the ACS to obtain configuration updates.

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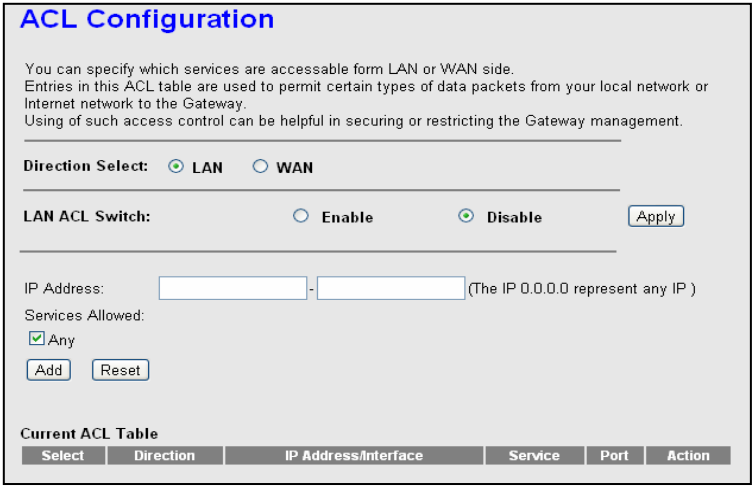
Skip MReboot	Specify whether to send an MReboot event code in the inform message.
Delay	Specify whether to start the TR-069 program after a short delay.
Auto-Execution	Specify whether to automatically start the TR-069 after the router is powered on.

3.5.6 ACL

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

Note:

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



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

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

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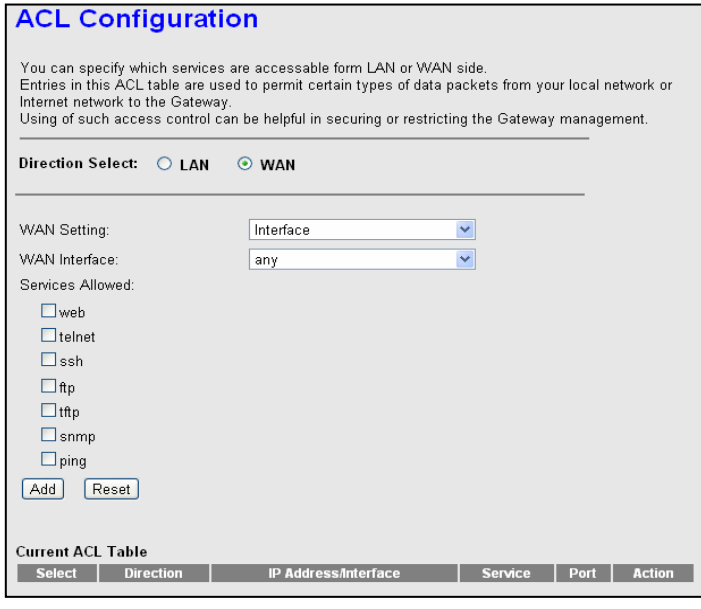
Set direction of the data packets to WAN, the page shown in the following figure appears.



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

Field	Description
Direction Select	Select the router interface. You can select LAN or WAN. In this example, WAN is selected.
WAN Setting	You can choose Interface or IP Address. When IP address option is selected only then IP address field will appear.
IP Address	Enter the IP address on the WAN. Only the IP address that is in the same network segment with the IP address on the WAN can access the router.
WAN Interface	Choose the interface that permits data packets from

	WAN to access the router.
Services Allowed	You can choose the following services from WAN: Web, Telnet, SSH, FTP, TFTP, SNMP or PING. You can also choose all the services.
Add	After setting the parameters, click it to add an entry to the Current ACL Table.
Reset	Click it to refresh this page.
Current ACL Table	Displays the services that are added and are active.

3.6 Advanced

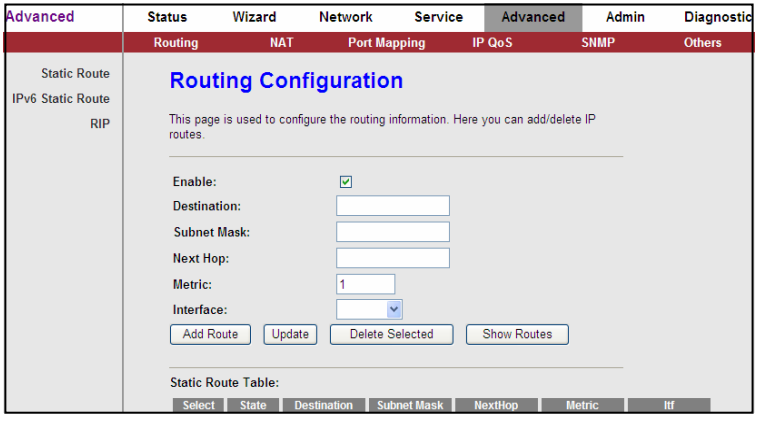
In the navigation bar, click Advanced. In the Advanced page that is displayed contains Bridge setting Routing, NAT, Port Mapping, IP QoS, SNMP and Others.

3.6.1 Routing

Choose **Advance > Routing**, and the page shown in the following figure appears. The page that is displayed contains Static Route, IPv6 Static Route and RIP.

3.6.1.1 Static Route

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



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

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

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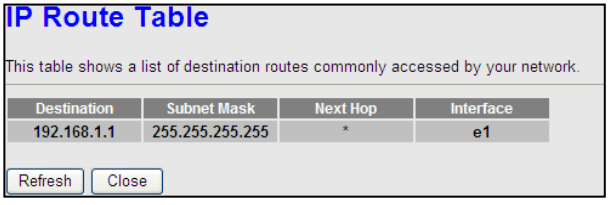
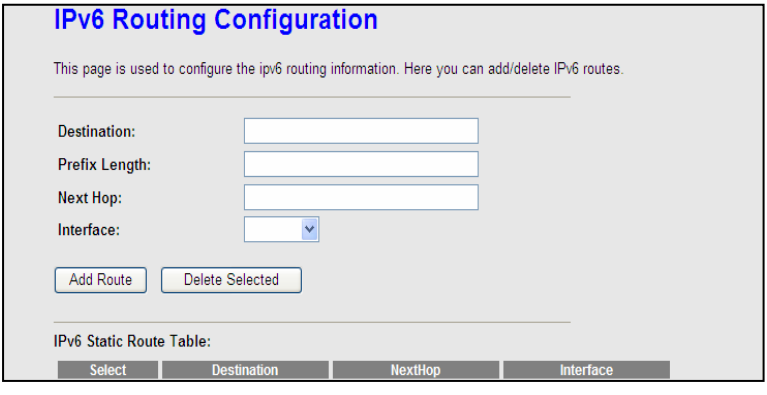
Click **Show Routes**, the page shown in the following figure appears. The table shows a list of destination routes commonly accessed by your network.



3.6.1.2 IPv6 Static Route

Click **IPv6 Static Route** in the left pane, and the page shown in the following figure appears. This page is used to configure the routing information. You can add or delete IP routes.



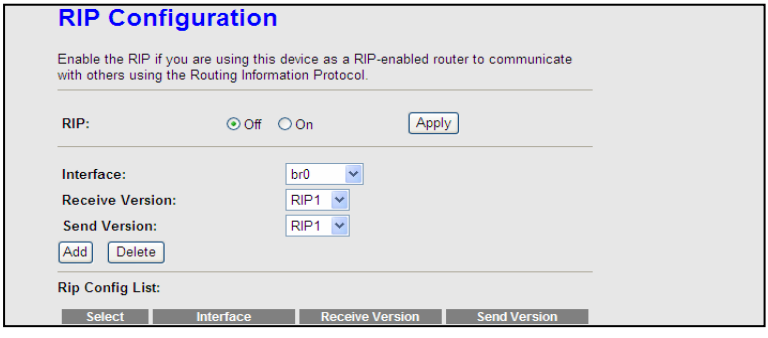
The following table describes the parameters and buttons of this page.

Field	Description
Destination	Enter the IPv6 address of the destination device.
Prefix Length	Enter the prefix length of the IPv6 address.
Next Hop	Enter the IP address of the next hop in the IPv6 route to the

	destination address.
Interface	The interface for the specified route.
Add Route	Click it to add the new static route to the IPv6 Static Route Table.
Delete Selected	Select a row in the IPv6 Static Route Table and click it to delete the row.

3.6.1.3 RIP

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



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

Field	Description
RIP	Select Enable, the router communicates with other RIP-enabled devices.
Apply	Click it to save the settings of this page.
Interface	Choose the router interface that uses RIP.
Receive Version	Choose the interface version that receives RIP messages. You can choose RIP1, RIP2, or Both.

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	• Choose RIP1 indicates the router receives RIP v1 messages. • Choose RIP2 indicates the router receives RIP v2 messages. • Choose Both indicates the router receives RIP v1 and RIP v2 messages.
Send Version	The working mode for sending RIP messages. You can choose RIP1 or RIP2. • Choose RIP1 indicates the router broadcasts RIP1 messages only. • Choose RIP2 indicates the router multicasts RIP2 messages only.
Add	Click it to add the RIP interface to the Rip Config List.
Delete	Select a row in the Rip Config List and click it to delete the row.

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3.6.2 NAT

Choose **Advanced > NAT**, and the page shown in the following figure appears. The page that is displayed contains Setup DMZ, Virtual Server, NAT Forwarding, ALG, NAT Exclude IP, Port Trigger, FTP ALG Port and NAT IP Mapping.

3.6.2.1 Setup DMZ

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

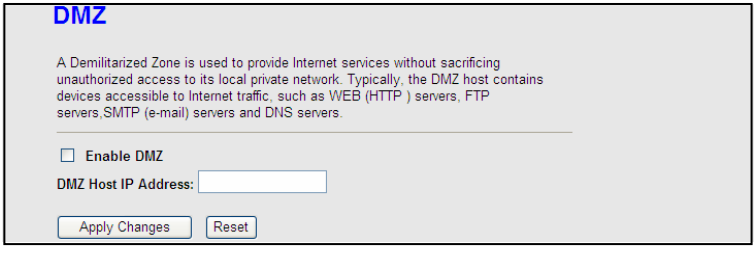
Click **DMZ** in the left pane, the page shown in the following figure appears.

The following steps describe how to configure manual DMZ.

Step 1 Select Enable DMZ to enable this function.

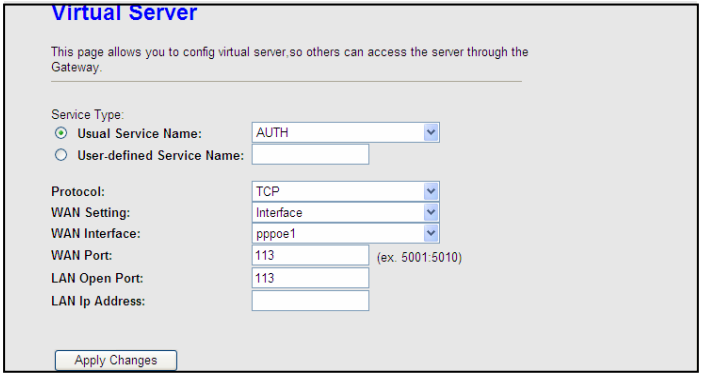
Step 2 Enter an IP address of the DMZ host.

Step 3 Click Apply Changes to save the settings of this page temporarily.



3.6.2.2 Virtual Server

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

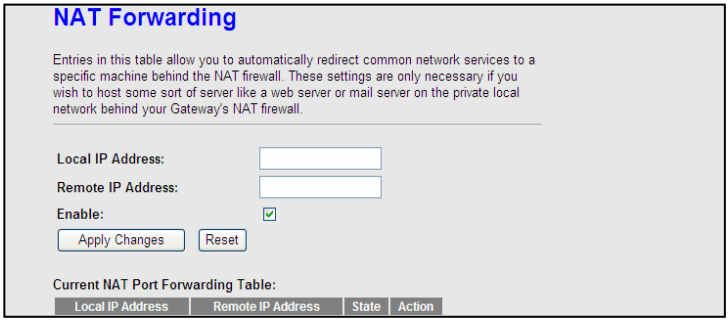


The following table describes the parameters of this page.

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

3.6.2.3 NAT Forwarding

Click **NAT Forwarding** in the left pane, the page shown in the following figure appears. Under 1483MER or 1483Routed mode, if NAPT (Network Address Port Translation) is enabled, the Local IP Address is configured as 192.168.1.3 and the Remote IP Address is configured as 202.32.0.2, the PC with the LAN IP 192.168.1.3 will use 202.32.0.2 when it is connected to the Internet via the router without NAPT control.



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

Field	Description
Local IP Address	Input a local IP address.
Remote IP Address	Input a remote IP address
Enable	Enable the current configured rule.
Apply Changes	Submit the configurations.
Reset	Cancel the modification and reconfigure the settings.
Current NAT Port Forwarding Table	Current configuration rule list.

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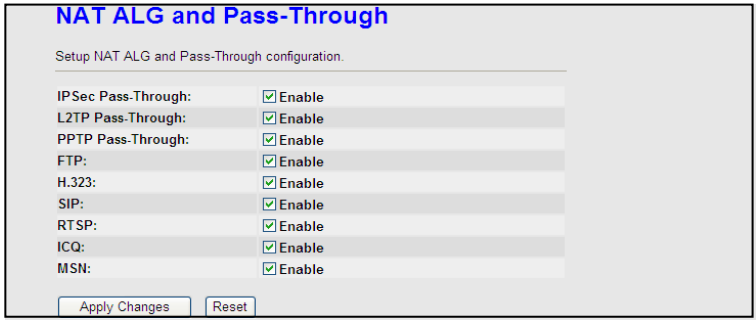
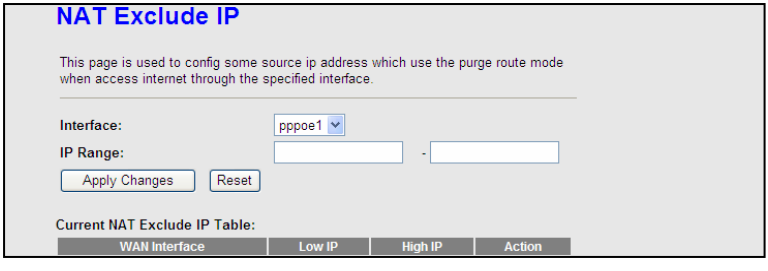
3.6.2.4 ALG

Click **ALG** in the left pane, and the page shown in the following figure appears. Choose the NAT ALG and Pass-Through options, and then click Apply Changes.



3.6.2.5 NAT Exclude IP

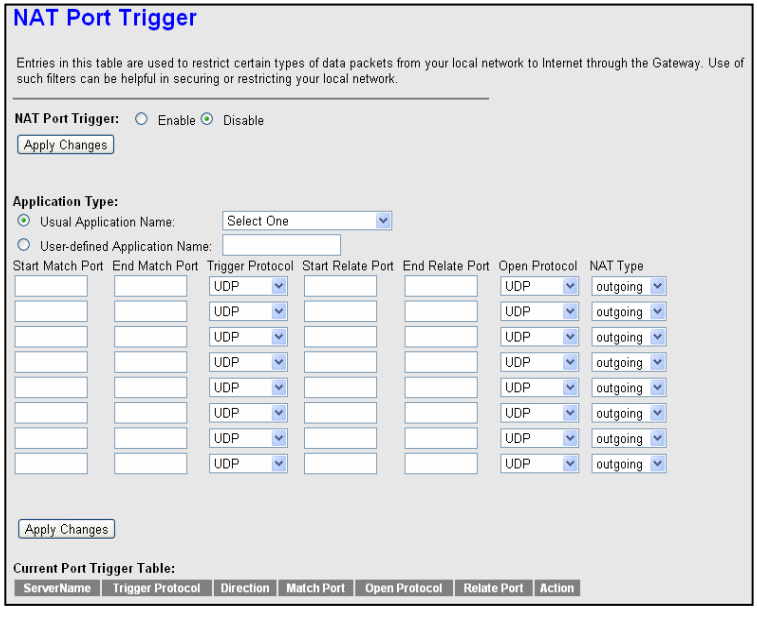
Click **NAT** Exclude IP in the left pane, and the page shown in the following figure appears. In the page, you can configure some source IP addresses which use the purge route mode when accessing internet through the specified interface.



Field	Description
IP range	Enter the IP address range, which do not require NAT translation entries to be permitted by the router.

3.6.2.6 Port Trigger

Click **Port Trigger** in the left pane, and the page shown in the following figure appears.



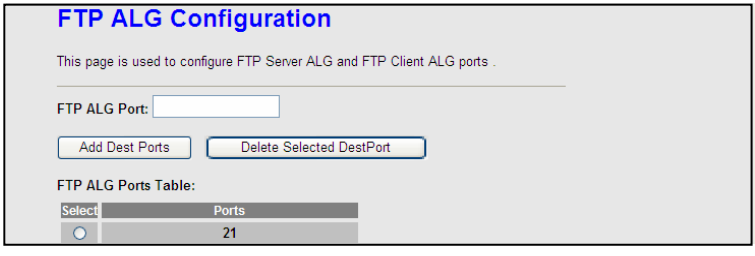
Click the Usual Application Name drop-down menu to choose the application you want to setup for port triggering. When you have chosen an application the default Trigger settings will populate the table below.

If the application you want to setup isn't listed, click the User-defined Application Name radio button and type in a name for the trigger in the Custom application field. Configure the Start Match Port, End Match Port, Trigger Protocol, Start Relate Port, End Relate Port, Open Protocol and Nat type settings for the port trigger you want to configure.

When you have finished click the **Apply changes** button.

3.6.2.7 FTP ALG Port

Click **FTP ALG Port** in the left pane, the page shown in the following figure appears. The common port for FTP connection is port 21, and a common ALG monitors the TCP port 21 to ensure NAT pass-through of FTP. By enabling this function, when the FTP server connection port is not a port 21, the FTP ALG module will be informed to monitor other TCP ports to ensure NAT pass-through of FTP.



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

Field	Description
FTP ALG port	Set an FTP ALG port.
Add Dest Ports	Add a port configuration.
Delete Selected DestPort	Delete a selected port configuration from the list.

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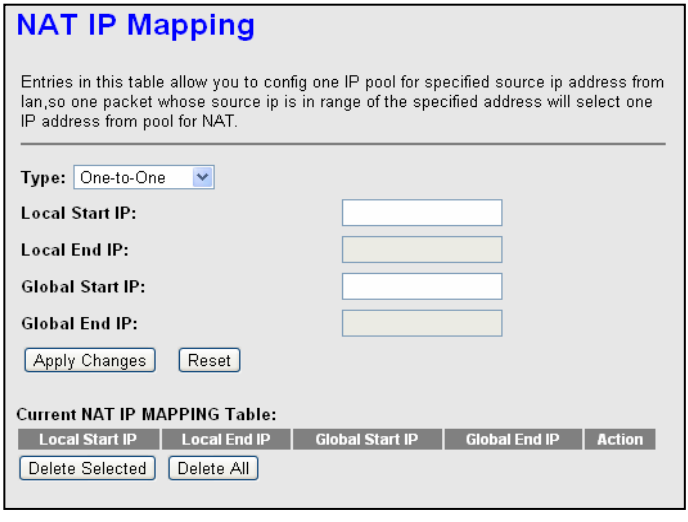
3.6.2.8 NAT IP Mapping

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

Click **NAT IP** Mapping in the left pane, the page shown in the following figure appears. Entries in this table allow you to configure one IP pool for specified source IP address from LAN, so one packet whose source IP is in range of the specified address will select one IP address from the pool for NAT.



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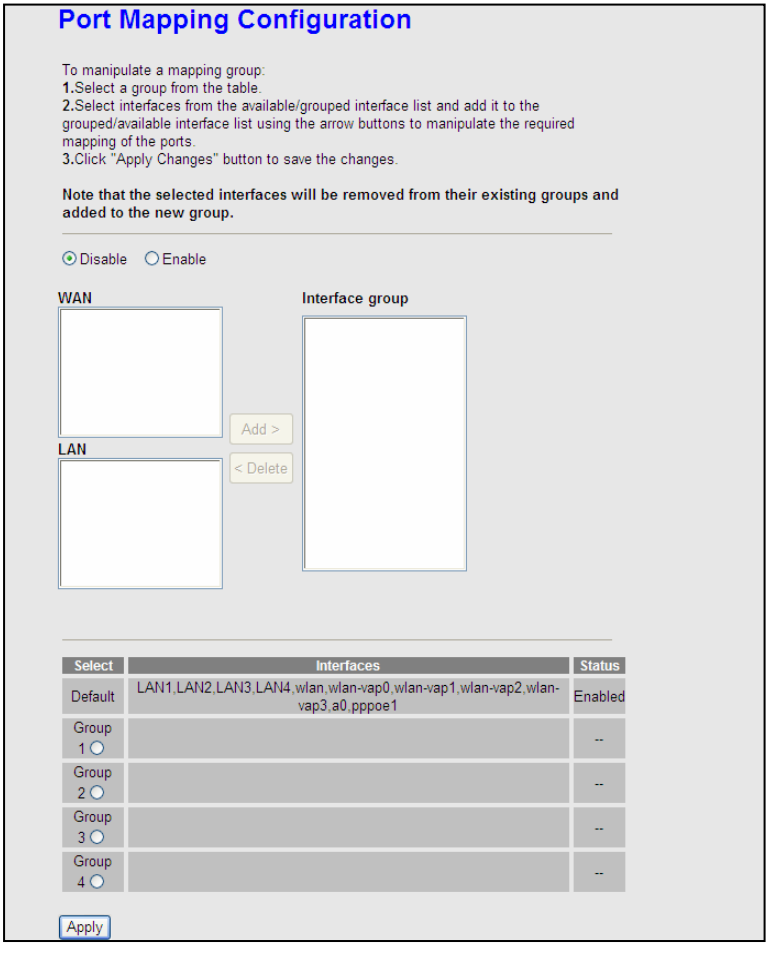
3.6.3 Port Mapping

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



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The procedure for manipulating a mapping group is as follows:

Step 1 Select Enable to enable this function.

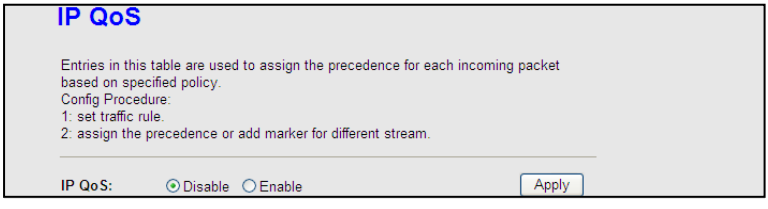
Step 2 Select a group from the table.

Step 3 Select interfaces from the WAN and LAN interface list and add them to the grouped interface list using the arrow buttons to manipulate the required mapping of the ports.

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

3.6.4 IP QoS

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



Step 1 Enable IP QoS and click Apply to enable IP QoS function.

Step 2 Click add rule to add a new IP QoS rule.

The page shown in the following figure appears.

IP QoS

Entries in this table are used to assign the precedence for each incoming packet based on specified policy.
Config Procedure:
1: set traffic rule.
2: assign the precedence or add marker for different stream.

IP QoS: ○ Disable ◉ Enable Apply

QoS Policy: Stream based

Schedule Mode: Strict Prior

QoS Rule List:

Stream Rule						Behavior			
Source IP	Source Port	Destination IP	Destination Port	Protocol	Phy port	Prior	DSCP	802.1p	Select

Add Rule Delete Delete All

Add QoS Rule

Source IP: 0.0.0.0 Source Mask: 255.255.255.255

Destination IP: Destination Mask:

Source Port: Destination Port:

Protocol Phy Port:

set priority: p3(Lowest)

☑ insert or modify QoS mark

DSCP: (0-63)

802.1p:

Add Rule

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

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

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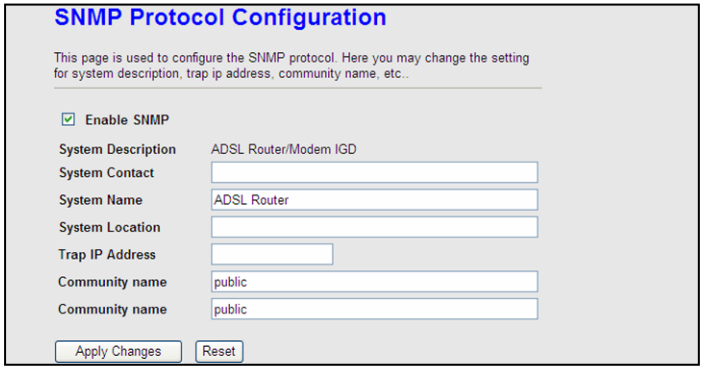
3.6.5 SNMP

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



The following table describes the parameters of this page:

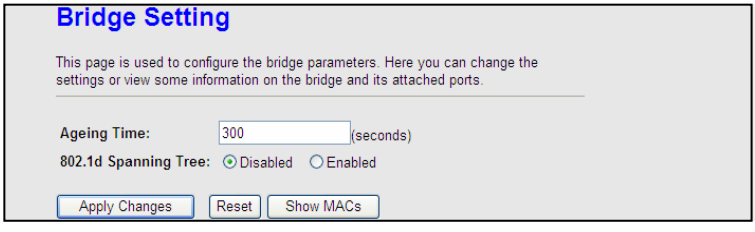
Field	Description
Enable SNMP	Select it to enable SNMP function. You need to enable SNMP, and then you can configure the parameters of this page.
System Description	System description of the DSL device.
System Contact	Contact person and/or contact information for the DSL device.
System Name	An administratively assigned name for the DSL device.
System Location	The physical location of the DSL device.
Trap IP Address	Enter the trap IP address. The trap information is sent to the corresponding host.
Community Name (Read-only)	The network administrators must use this password to read the information of this router.
Community Name (Read-Write)	The network administrators must use this password to configure the information of the router.

3.6.6 Others

Choose **Advance > Others**, and the page shown in the following figure appears. The page that is displayed contains Bridge Setting, Client Limit, Tunnel and Others.

3.6.6.1 Bridge Setting

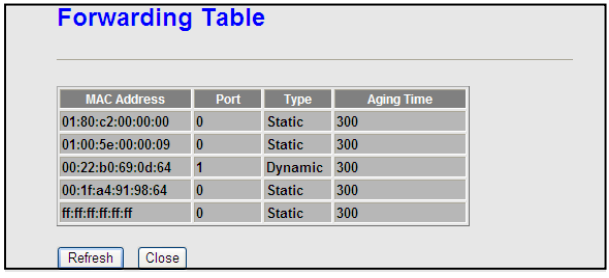
Choose **Advance > Bridge Setting**, and the page shown in the following figure appears. This page is used to configure the bridge parameters. You can change the settings or view some information on the bridge and its attached ports.



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

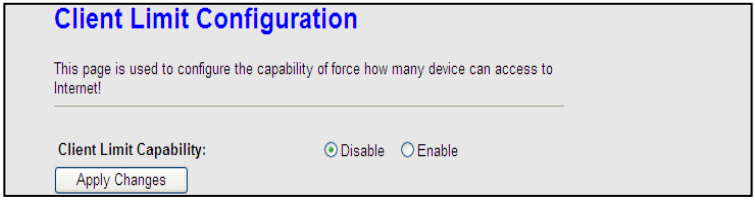
Field	Description
Ageing Time	If the host is idle for 300 seconds (default value), its entry is deleted from the bridge table.
802.1d Spanning Tree	You can select Disable or Enable. Select Enable to provide path redundancy while preventing undesirable loops in your network.
Show MACs	Click it to show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

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



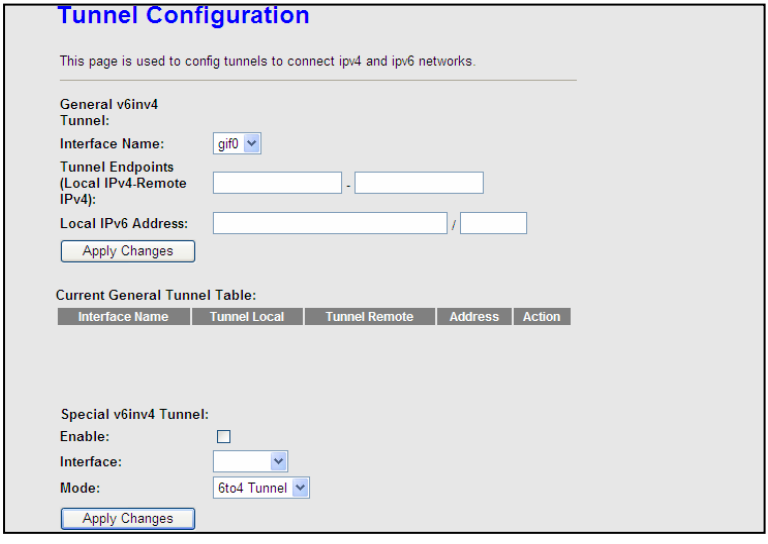
3.6.6.2 Client Limit

Choose **Client Limit** in the left pane, and the page shown in the following figure appears. This page is used to configure the capability of forcing how many devices can access to the Internet.



3.6.6.3 Tunnel

Choose **Tunnel** in the left pane, and the page shown in the following figure appears. You may configure tunnels to connect to ipv4 and ipv6 networks.



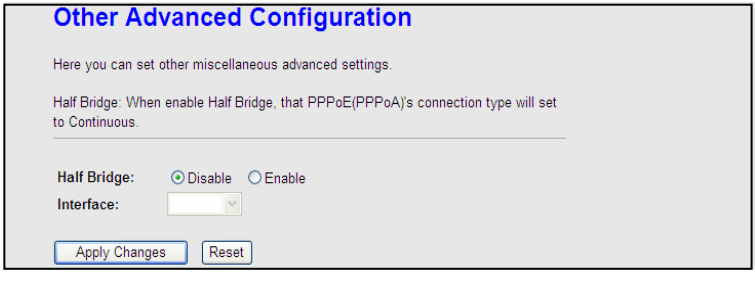
The following table describes the parameters and button of this page.

Field	Description
General v6inv4 Tunnel	Specify the general v6inv4 tunnel, ipv6 packet is encapsulated in ipv4 packets,
Interface Name	Select the tunnel interface name, user can set 2 v6inv4 tunnel.
Tunnel Endpoints	Specify the ipv4 address for tunnel endpoints.
Local IPv6 Address	Specify the ipv6 address for tunnel local.

Current General Tunnel Table	Display current general v6inv4 tunnel setting.
Enable	Enable or disable the DS-Lite tunnel.
Interface	Select current wan interface used as tunnel interface.
Mode: 6to4 Tunnel	Enable or disable special tunnel.

3.6.6.4 Others

Choose **Others** in the left pane, and the page shown in the following figure appears. You can enable half bridge so that the PPPoE or PPPoA connection will set to Continuous.

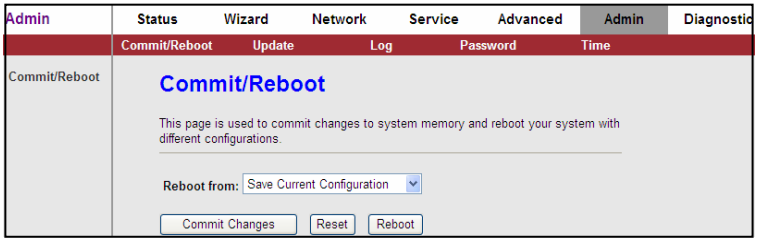


3.7 Admin

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

3.7.1 Commit/Reboot

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



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

Field	Description
Reboot from	You can choose Save current configuration or Factory default configuration. ● Save current configuration: Save the current settings, and then reboot the router. ● Factory default configuration: Reset to the factory default settings, and then reboot the router.
Commit Changes	Click it to apply the changes
Reset	Click it to undo the selection.
Reboot	Click it to reboot the router.

3.7.2 Update

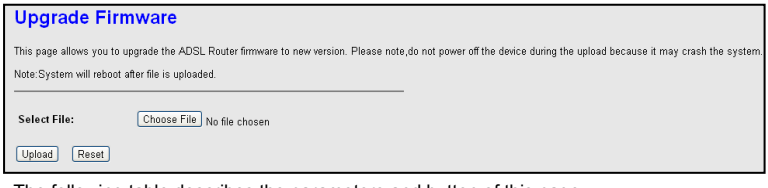
Choose **Admin > Update**. The Update page that is displayed contains Upgrade Firmware and Backup/Restore.

Caution:

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

3.7.2.1 Upgrade Firmware

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

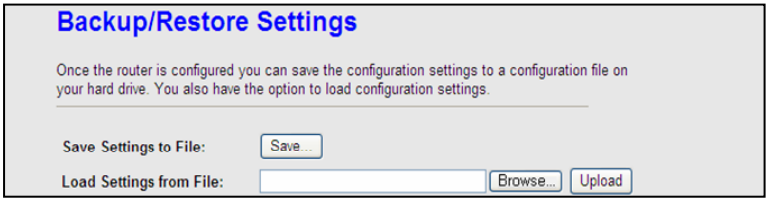


The following table describes the parameters and button of this page:

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

3.7.2.2 Backup/Restore

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

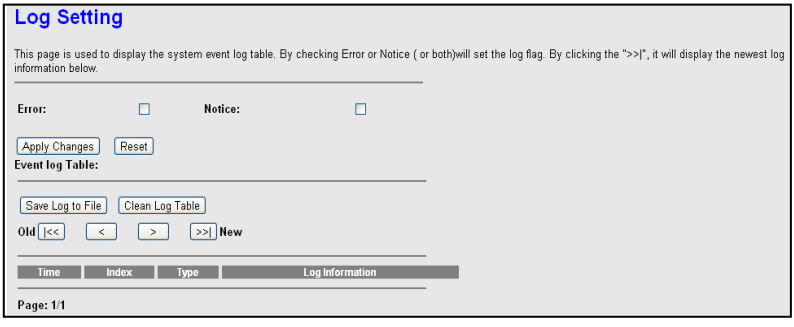


The following table describes the parameters and button of this page:

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

3.7.3 Log

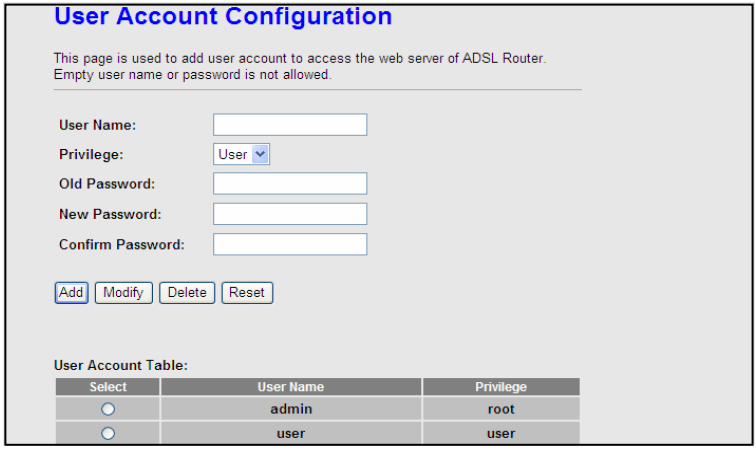
Choose **Admin > Log**, and the page shown in the following figure appears. In this page, you can enable or disable system log function and view the system log.



Field	Description
Error	Enabling this option will display the errors such as wrong configuration or password is wrong.
Notice	Enabling this will capture the events such as Web management login , Link is down etc.

3.7.4 Password

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



The following table describes the parameters of this page:

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

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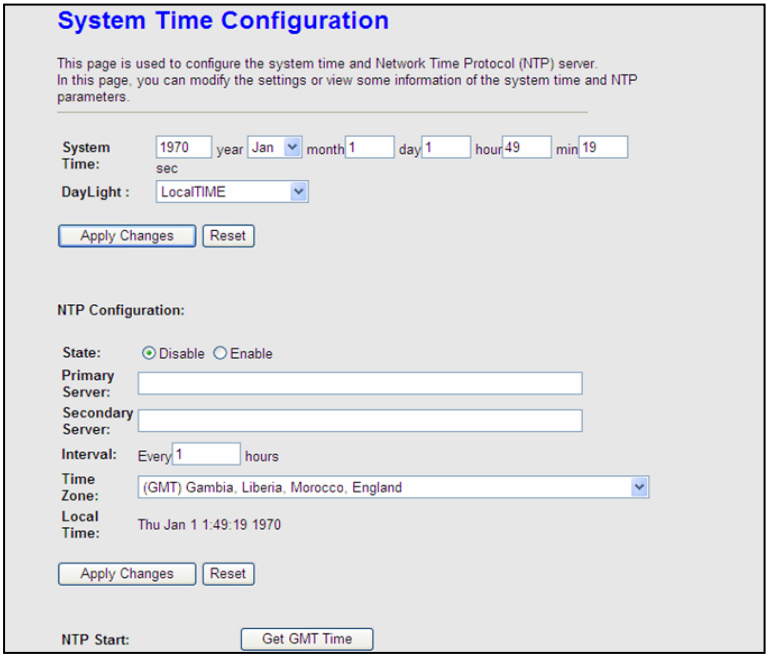
3.7.5 Time

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



The following table describes the parameters of this page:

Field	Description
System Time	Set the system time manually.
Day Light	Check this option if your location observes daylight saving time. Daylight saving time begins in the southern hemisphere between September–November and ends

	between March–April. Standard time begins in the southern hemisphere between March–April and ends between September–November. Many countries in the southern hemisphere may observe DST.
NTP Configuration	
State	Select enable or disable NTP function. You need to enable NTP if you want to configure the parameters of NTP.
Primary Server	Set the primary NTP server manually.
Secondary Server	Set the secondary NTP server manually.
Interval	Time when the NTP client will synchronise with NTP server.
Time Zone	Choose the time zone in which area you are from the drop down list.

3.8 Diagnostic

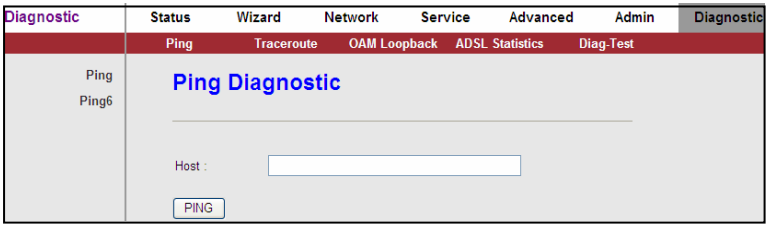
In the navigation bar, click Diagnostic. The Diagnostic page that is displayed contains Ping, Traceroute, OAM Loopback, ADSL Statistics and Diag-Test.

3.8.1 Ping

Choose **Diagnostic > Ping**. The Ping page that is displayed contains Ping and Ping6.

3.8.1.1 Ping

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

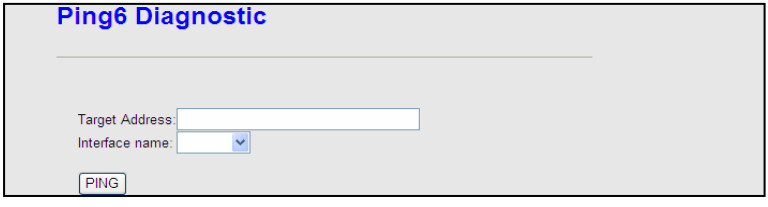


The following table describes the parameter and button of this page:

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

3.8.1.2 Ping6

Click **Ping6** in the left pane, and the page shown in the following figure appears

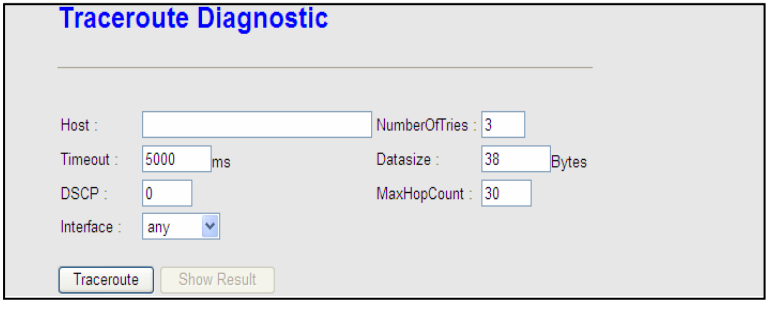


The following table describes the parameter and button of this page:

Field	Description
Target Address	Enter an IP address for Ping6 diagnostic.
Interface name	Enter an interface through which the Ping6 diagnostic is performed.

3.8.2 Traceroute

Click **Traceroute** in the left pane, and the following page appears. By Traceroute Diagnostic, you can track the route path of information flow from your computer to the other side host.

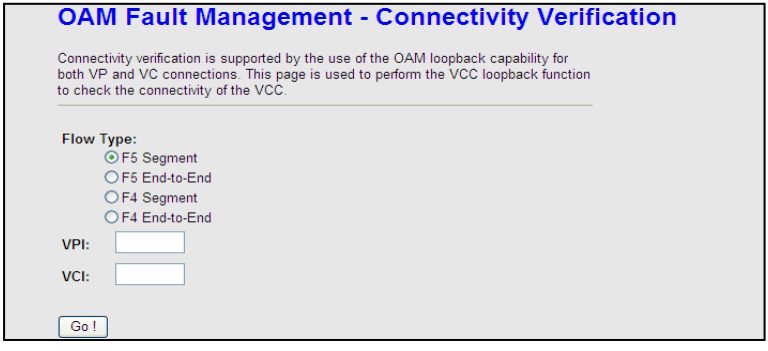


The following table describes the parameters and buttons of this page.

Field	Description
Host	Enter the destination host address for diagnosis.
NumberOfTries	Number of repetitions.
Timeout	Put in the timeout value.
Datasize	Packet size.
DSCP	Differentiated Services Code Point, You should set a value between 0-63.
MaxHopCount	Maximum number of routes.
Interface	Select the interface.
Traceroute	Click start traceroute.

3.8.3 OAM Loopback

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



Click Go! to start testing.

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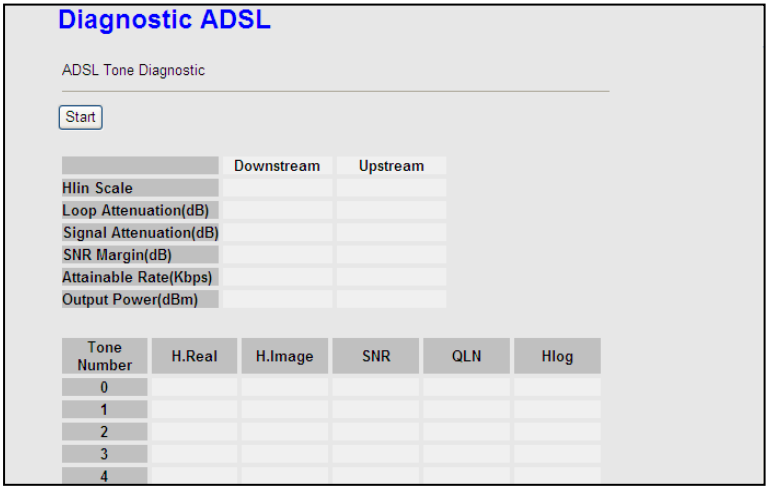
3.8.4 ADSL Statistics

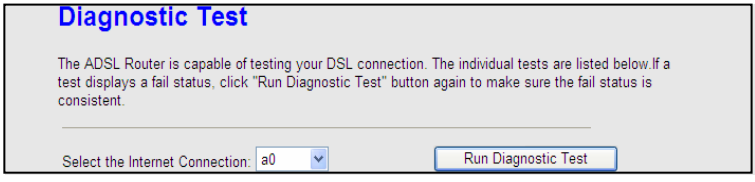
Choose **Diagnostic > ADSL Statistics**. The page shown in the following figure appears. It is used for ADSL tone diagnostics.



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

3.8.5 Diag-Test

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



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

4 Appendix

4.1 Technical Specifications

Wireless Features Standard: IEEE802.11b/g/n

Frequency band: - 802.11b: ISM band 2.400 GHz—2.484 GHz (according to the local regulations)

- 802.11g: ISM band 2.400 GHz—2.484 GHz (according to the local regulations)
- 802.11n draft:
  - ISM band
  - 2422 MHz—2452 MHz (channel BW=40 MHz)
  - 2400 MHz—2483.5 MHz (channel BW=20 MHz)

Modulation schemes: 802.11g: 64QAM, 16QAM, QPSK, BPSK, DSSS

802.11b: CCK, DQPSK, DBPSK

HT20 and HT40: 64 QAM, 16QAM, QPSK, BPSK

Wireless data rate: 802.11b: 11, 5.5, 2, 1 Mbps per channel, auto fallback for extended range

802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps per channel, auto fallback for extended range

HT20: up to 150 Mbps

HT40: up to 300 Mbps

Operating channels: 802.11b: 4: France

11: USA and Canada

13: Most European countries

14: Japan

: 802.11g: 11: USA and Canada

13: Most European countries

14: Japan

: HT20: 11: USA and Canada

13: Most European countries

14: Japan

: HT40: 3—9: USA and Canada

3—9: Most European countries

Transmission distance: 100m indoors coverage area

300m outdoors coverage area

Security: 64-bit, 128-bit WEP, AES, TKIP, WPA, WPA2, 802.1x

External Connectors: 1 x RJ11 DSL interface

1 x WLAN/WPS button

1 x reset button

4 x RJ45 Ethernet interfaces

1 x power interface

1 x power switch

Ethernet Interface Features: Fully compliant with IEEE802.3/802.3u standards

10Base-T and 100Base-TX

Half duplex and full duplex

Auto MDI/MDIX

Flow control

Consumption: 10 W

Environment Requirement:	Operating Temperature	0ºC—40ºC
	Storage Temperature	-20ºC—70ºC
	Operating Humidity	10%—95%, non-condensing
	Storage Humidity	5%—95%, non-condensing

Power Supply: 12 V DC, 500mA

Physical Dimension: L x W x H: 274 mm x 170 mm x 95 mm

Weight: 880 gms (including power adapter)

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4.2 Troubleshooting

If you encounter any problem when you are using this wireless broadband router, don't panic. Before you call your dealer of purchase for help, please check this troubleshooting section, the solution of your problem could be very simple, and you can solve the problem yourself.

Scenario	Solution
All the indicators are off.	• Check the connection between the power adapter and the power socket. • Check whether the power switch is turned on.
No proper LAN connection indication.	Check the following: • The connection between the device and the PC, the hub, or the switch • The running status of the computer, hub, or switch • The cables connecting the device and other devices. Use a cross-over cable to connect the device to a computer. Use a straight-through cable to connect the device to a hub or a switch,
ADSL indicator is not on.	• Check the connection between the ADSL interface of the device and the socket.
Unable to access Internet even when the ADSL indicator is on.	Ensure that the following information is entered correctly. • VPI and VCI • User name and password
Cannot access the web page.	Choose Start > Run from the desktop. Enter Ping 192.168.1.1 (the default IP address of the device) in the DOS window. If the web configuration page still cannot be accessed, check the following configuration. • The type of network cable

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	• The connection between the device and the computer • The TCP/IP properties of the network card of the computer

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4.3 Glossary

Default Gateway (Router): Every non-router IP device needs to configure a default gateway IP address. When the device sends out an IP packet, if the destination is not on the same network, the device has to send the packet to its default gateway, which will then send it to the destination.

DHCP: Dynamic Host Configuration Protocol. This protocol automatically gives every computer on your home network an IP address.

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

DSL Modem: DSL stands for Digital Subscriber Line. A DSL modem uses your existing phone lines to transmit data at high speeds.

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

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

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IP Address and Network (Subnet) Mask: IP stands for Internet Protocol. An IP address consists of a series of four numbers separated by periods, which identifies a single, unique Internet computer host in an IP network. Example: 192.168.2.1. It consists of 2 portions: the IP network address and the host identifier.

The IP address is a 32-bit binary pattern, which can be represented as four cascaded decimal numbers separated by ".": aaa.aaa.aaa.aaa, where each "aaa" can be anything from 000 to 255, or as four cascaded binary numbers separated by ".": bbbbbbbb.bbbbbbbb.bbbbbbbb.bbbbbbbb, where each "b" can either be 0 or 1.

A network mask is also a 32-bit binary pattern, and consists of consecutive leading

1's followed by consecutive trailing 0's, such as

11111111.11111111.11111111.00000000. Therefore sometimes a network mask can also be described simply as "x" number of leading 1's.

When both are represented side by side in their binary forms, all bits in the IP address that correspond to 1's in the network mask become part of the IP network address, and the remaining bits correspond to the host ID.

For example, if the IP address for a device is, in its binary form,

11011001.10110000.10010000.00000111, and if its network mask is,
11111111.11111111.11110000.00000000

It means the device's network address is

11011001.10110000.10010000.00000000, and its host ID is,

00000000.00000000.00000000.00000111.

This is a convenient and efficient method for routers to route IP packets to their destination.

ISP Gateway Address: (see ISP for definition). The ISP Gateway Address is an IP address for the Internet router located at the ISP's office.

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

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

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

NAT: Network Address Translation. This process allows all the computers on your home network to use one IP address. Using the broadband router's NAT capability, you can access Internet from any computer on your home network without having to purchase more IP addresses from your ISP.

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

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

PPPoE: (Point-to-Point Protocol over Ethernet.) Point-to-Point Protocol is a secure data transmission method originally created for dial-up connections; PPPoE is for Ethernet connections. PPPoE relies on two widely accepted standards, Ethernet and the Point-to-Point Protocol. It is a communications protocol for transmitting information over Ethernet between different manufacturers.

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

Router: A router is an intelligent network device that forwards packets between different networks based on network layer address information such as IP addresses.

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

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

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

Web-based management Graphical User Interface (GUI): Many devices support a graphical user interface that is based on the web browser. This means the user can use the familiar Netscape or Microsoft Internet Explorer to Control/configure or monitor the device being managed.

This product comes with Life time warranty. For further details about warranty policy and Product Registration, please visit support section of www.digisol.com

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