DG-HR3400

300Mbps Wireless Broadband Home Router

User Manual

V1.0

2013-09-13

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Trademarks:

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.

INDEX

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helpdesk@digisol.com sales@digisol.com www.digisol.com

1. Product Introduction

1-1 Introduction and Safety Information

Thank you for purchasing DG-HR3400 300Mbps 802.11n Wireless Broadband Home Router! DG-HR3400 is the best choice for Small office / Home office users, all computers and network devices can share a single xDSL / cable modem internet connection at high speed. Easy install procedures allow computer users to setup a network environment in very short time - within minutes, even inexperienced users. When the number of your computers and network-enabled devices grow, you can also expand the number of network slots by simply connecting a hub or switch, to extend the scope of your network.

All computers and IEEE 802.11b/g/n wireless-enabled network devices (including PDA, cellular phone, game console and more) can connect to this wireless router without additional cabling. With a compatible wireless card installed in your PC, you can transfer files up to 300Mbps (transfer data rate).

Other features of this router include:

- High Internet Access throughput.
- Wireless speed up to 300Mbps.
- Allows multiple users to share a single Internet line.
- Shares a single Cable or xDSL internet connection.
- Access private LAN servers from the internet.
- Four wired LAN ports (10/100M) and one WAN port (10/100M).
- Works with IEEE 802.11b/g/n wireless LAN devices.
- Supports DHCP (Server/Client) for easy IP-address setup.
- Supports multiple wireless modes like: AP, Client, Wireless Bridge and Universal Repeater.
- Advanced network and security features like: Special Applications, QoS, DMZ, Virtual Servers, Access Control, Firewall.
- Allows you to monitor the router's status like: DHCP Client Log, System Log, Security Log and Device/Connection Status.
- Easy to use Web-based GUI for network configuration and management purposes.
- Remote management function allows configuration and upgrades from a remote computer (over the Internet).
- Provides Auto MDI / MDI-X function for all wired Ethernet ports.

1-2 Safety Information

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

1. This router is designed for indoor use only; **DO NOT** place this router outdoor.
2. **DO NOT** place this router close to a hot or humid area, like kitchen or bathroom. Also, do not leave this router in the car during summer.
3. **DO NOT** pull any connected cable with force; disconnect it from the router first.
4. If you want to place this Router at a height or mount on the wall, please make sure it is firmly secured. Falling from a height would damage the router and its accessories and warranty will be void.
5. Accessories of this router, like antenna and power supply, are dangerous to small children. **KEEP THIS ROUTER OUT OF REACH OF CHILDREN**.
6. The Router will get heated up when used for long time (This is normal and is not a malfunction). **DO NOT** put this Access Point on paper, cloth, or other flammable materials.
7. There's no user-serviceable part inside the router. If you find that the router is not working properly, please contact your dealer of purchase and ask for help. **DO NOT** disassemble the router, warranty will be void.
8. If the router falls into water when it's powered, **DO NOT** use your hands to pick it up. Switch the electrical power off before you do anything, or contact an experienced electrical technician for help.
9. If you smell something strange, or even see some smoke coming out from the router or power supply, remove the power supply or switch the electrical power off immediately, and call the dealer of purchase for help.

1-3 System Requirements

- Notebook or desktop computer with network adapter (wired/wireless)
- Internet connection, provided by xDSL or cable modem with a RJ-45 Ethernet port.
- Windows 98/ME/2000/XP/Vista
- Web browser (Microsoft Internet Explorer 4.0 or above, Netscape Navigator 4.7 or above, Opera web browser, or Safari web browser).
- An available AC power socket (100 – 240V, 50/60Hz)

1-4 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-HR3400 Wireless Broadband Home Router
- Power adapter (5V DC, 1A)
- Rubber feet (4 Nos.)
- Quick Installation Guide
- Installation Guide CD (includes User Manual, QIG &Utility)
- Patch Cord (1 No.)

2. Hardware Installation

2-1 Get Familiar with your new wireless broadband router

2-1-1 Front Panel

LED Name	LED Status	Indication
Power (PWR)	On	Router is switched on and correctly powered.
WAN	On	WAN port is connected.
	Off	WAN port is not connected.
	Blinking	WAN activity (transferring or receiving data).
LAN(1-4)	On	LAN port is connected.
	Off	LAN port is not connected.

	Blinking	LAN activity (transferring or receiving data).
WLAN	On	Wireless network is switched on.
	Off	Wireless network is switched off.
	Blinking	Wireless LAN activity (transferring or receiving data).
WPS	On	A wireless device has been successfully added to the network by WPS function.
	Off	WPS process is not initiated.
	Blinking	A wireless device is connecting to the network by WPS function.

2-1-2 Back Panel

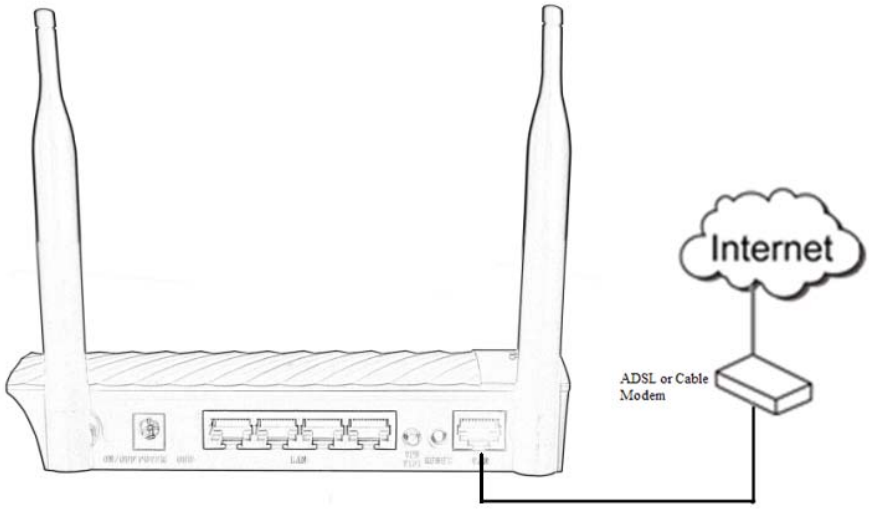
Interfaces	Description
Antennas	These antennas are 5dBi dipole antennas.
Power on/off button	Press this button to power on/off the router.
Power	The Power socket is where you will connect the power adapter. Please use the power adapter provided with this Wireless Router.
LAN (1 – 4)	Local Area Network (LAN) ports 1 to 4.
WPS/WIFI	The WPS/WIFI button has two functions. WPS: Press this button for more than 5 seconds to initiate WPS. WIFI: Press this button for less than 5 seconds to enable WLAN.
Reset	Reset the router to factory default settings (clear all settings). Press this button and hold for 5 seconds to restore all settings to factory defaults.
WAN	Wide Area Network (WAN / Internet) port.

2-2 Typical install

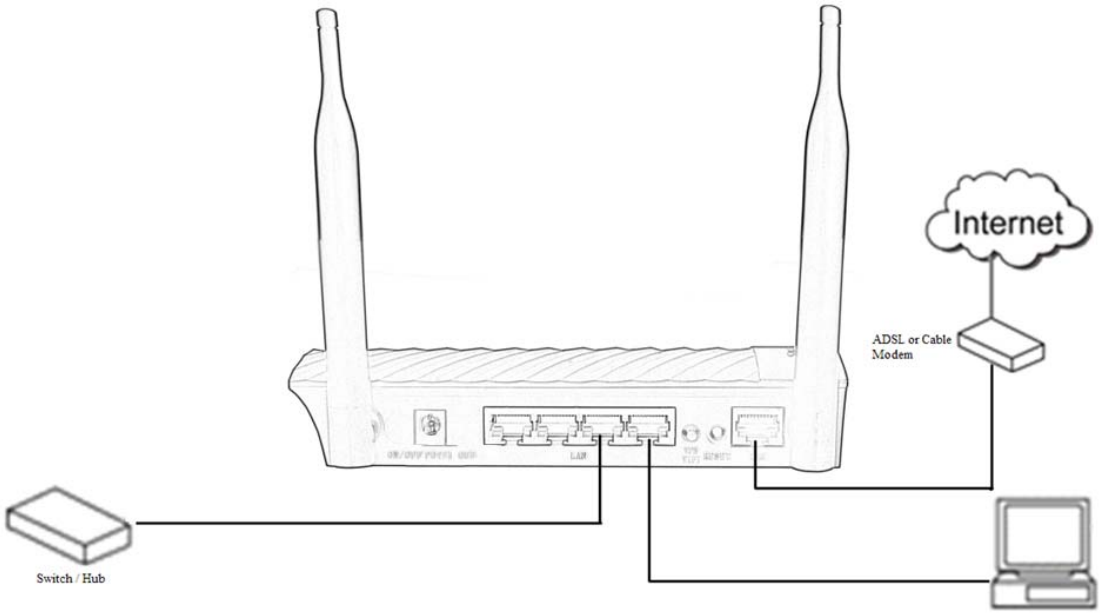
Hardware Installation:

Please follow the below mentioned instructions to build the network connection between your new WIRELESS router and your computers, network devices:

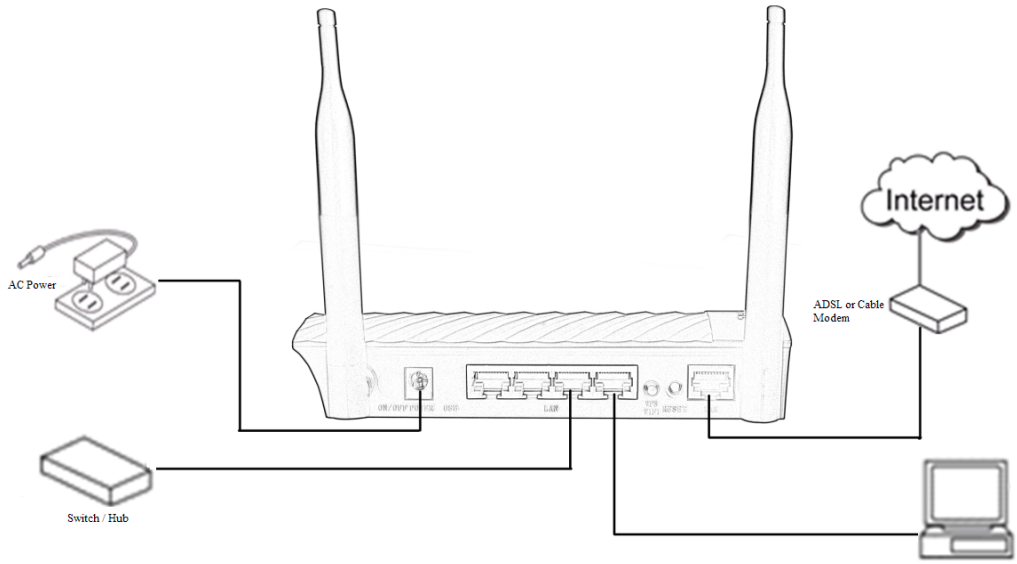
1. Connect your xDSL / cable modem to the WAN port of the router by an Ethernet cable.



2. Connect all your computers, network devices (switch / hub) to the LAN port of the router.



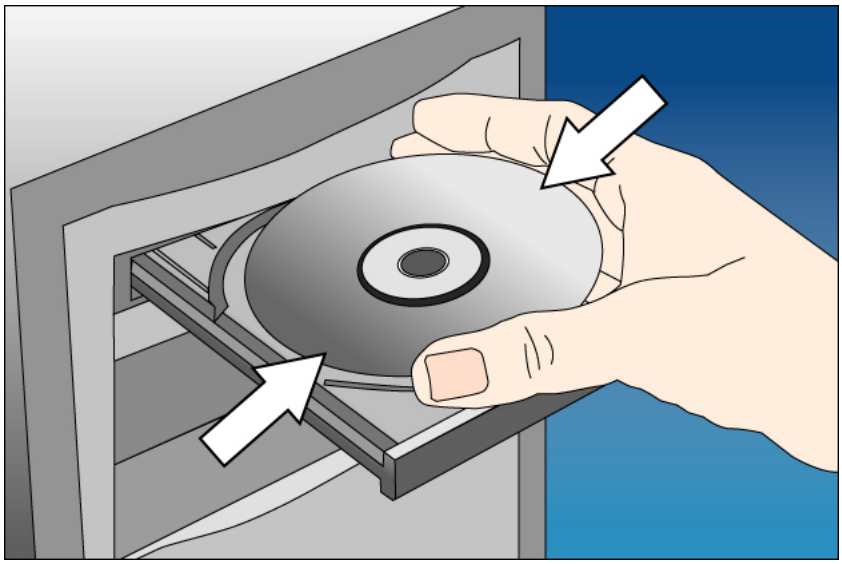
3. Connect the power adapter (5V DC / 1A) to the wall socket, and then connect it to the ‘Power’ socket of the router.



4. Please check all LEDs on the front panel. Power LED ‘PWR’ should be steadily ON, WAN and LAN LEDs should be ON. Check if the computer/network device connected to the respective port of the router is powered ON and correctly connected. If power LED ‘PWR’ is not ON, or any LED you expected is not ON, please recheck the cabling.

2-3 Software Installation

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



- Explore the CD and execute the "**AutoRun.exe**" file. Below given screen will appear. Click '**Start**' to Continue.

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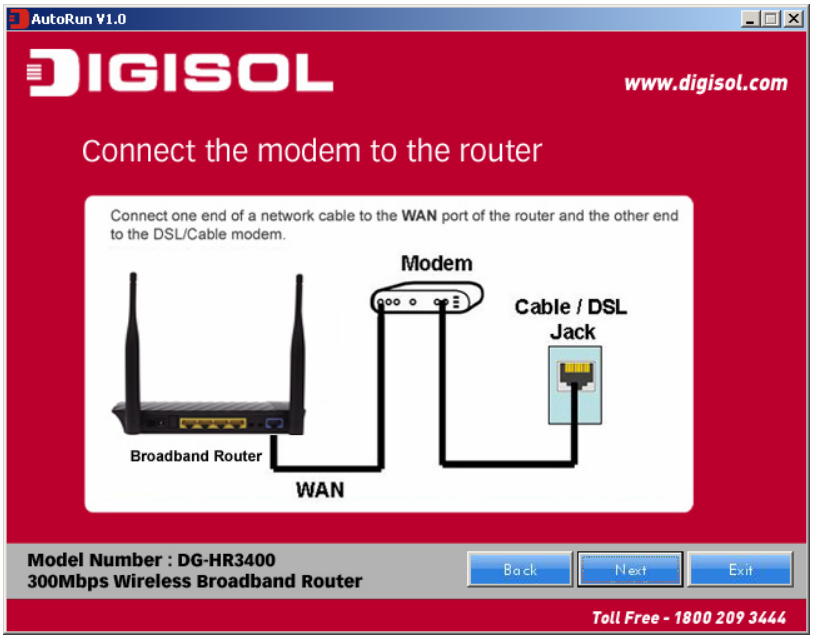
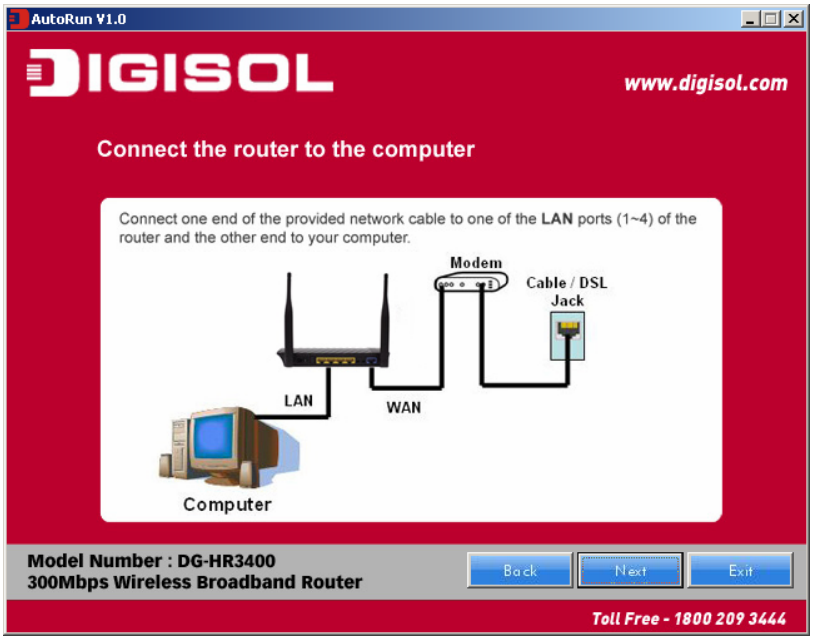
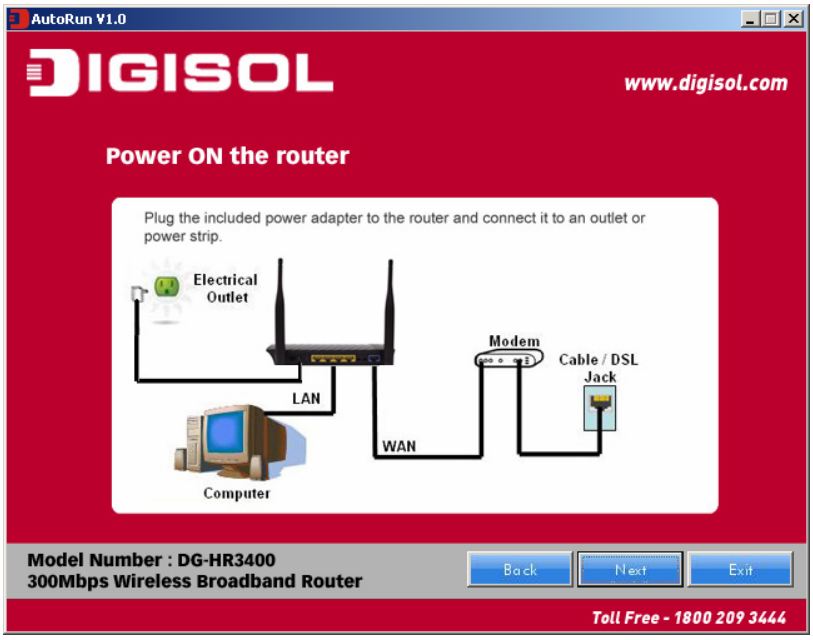
- Connect one end of a network cable to the WAN port of the router and the other end to the DSL/Cable modem. Click '**Next**' to continue.



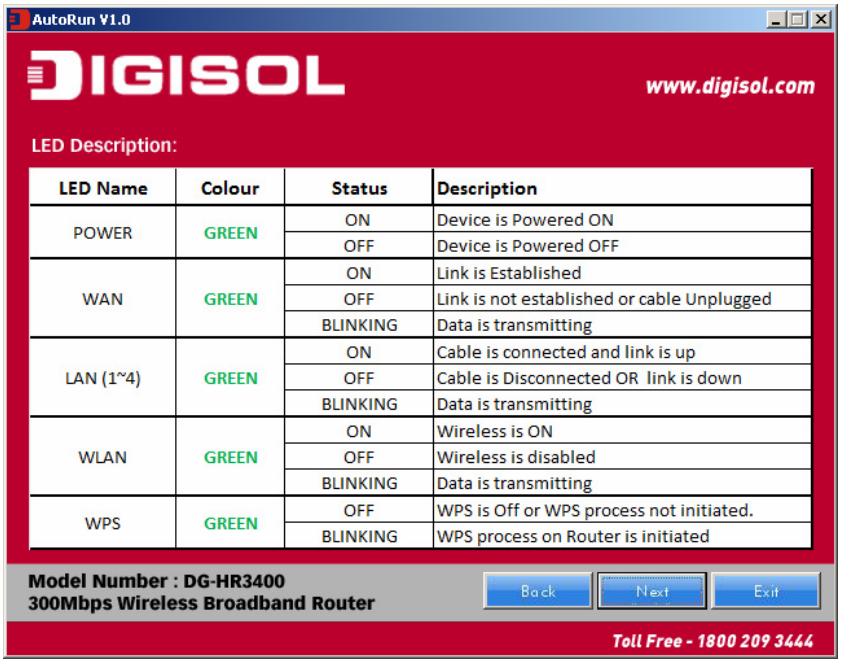
- Connect one end of the provided network cable to one of the LAN ports (1~4) of the router and the other end to your computer. Click '**Next**' to continue with the installation.



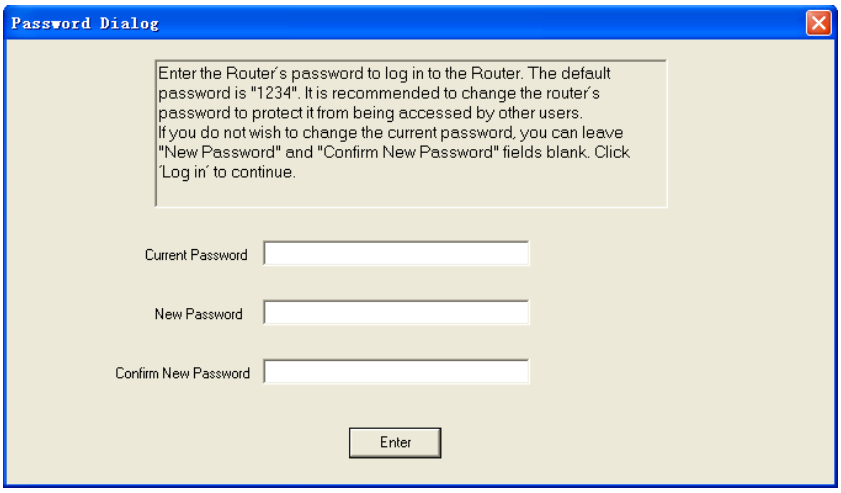
- Power on the Router. It will take approximately 30 seconds for the router to boot up completely. Click '**Next**' to continue with the installation.



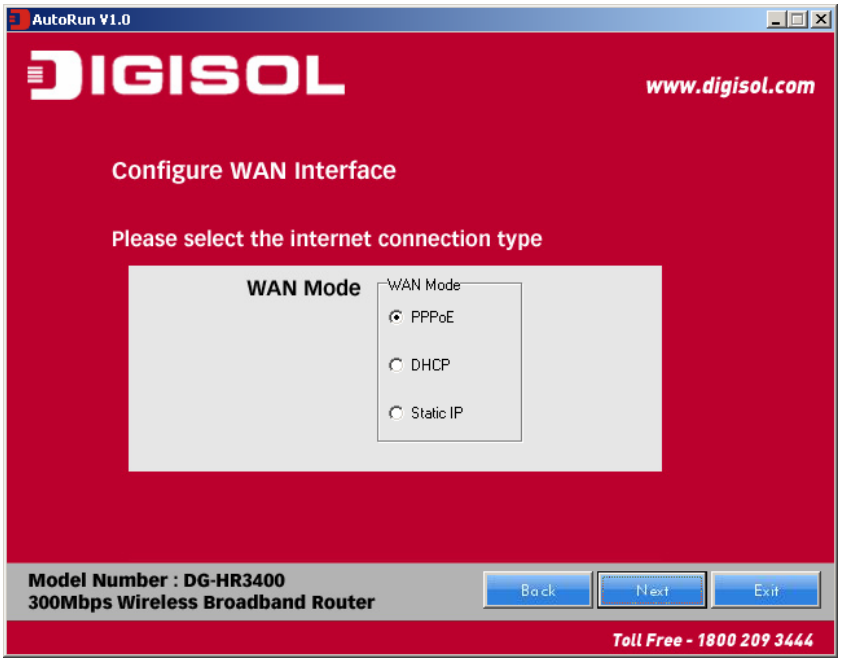
- Ensure the normal indication of all LED's on the router. If not, try the above steps again else click '**Next**' to continue.



- Enter the Router's password to log in to the Router. The default password is "**1234**". It is recommended to change the router's password to protect it from being accessed by other users. If you do not wish to change the current password, you can leave "**New Password**" and "**Confirm New Password**" fields blank. Click '**Enter**' to continue.



- Please select the internet connection type. Click '**Next**' to continue.

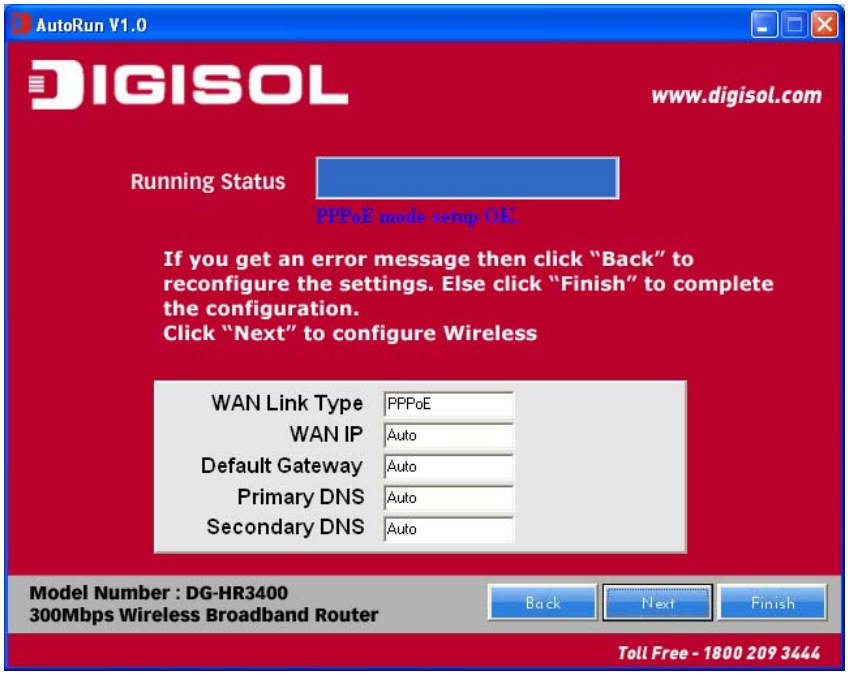


NOTE: The steps mentioned till here are the common steps to be followed for all the three modes. Following steps below describe how to configure the respective modes.

PPPoE (DSL users)

- Choose PPPoE. (Point to Point Protocol over Ethernet) If your ISP uses a PPPoE connection you will be provided with a username and password. This option is typically used for DSL services.

- Once the user name and password is entered click on '**Next**', the screen shown below will appear. Click on '**Next**'.



- Enter the '**SSID**' and click on '**Next**'.

- Configure the wireless security. Enter the security mode i.e. either '**None**' or '**WPA2 Mixed**' and click on '**Next**'.

- The screen as shown below will appear. Click on '**Finish**'.

- Lastly, the router will reboot as shown below.

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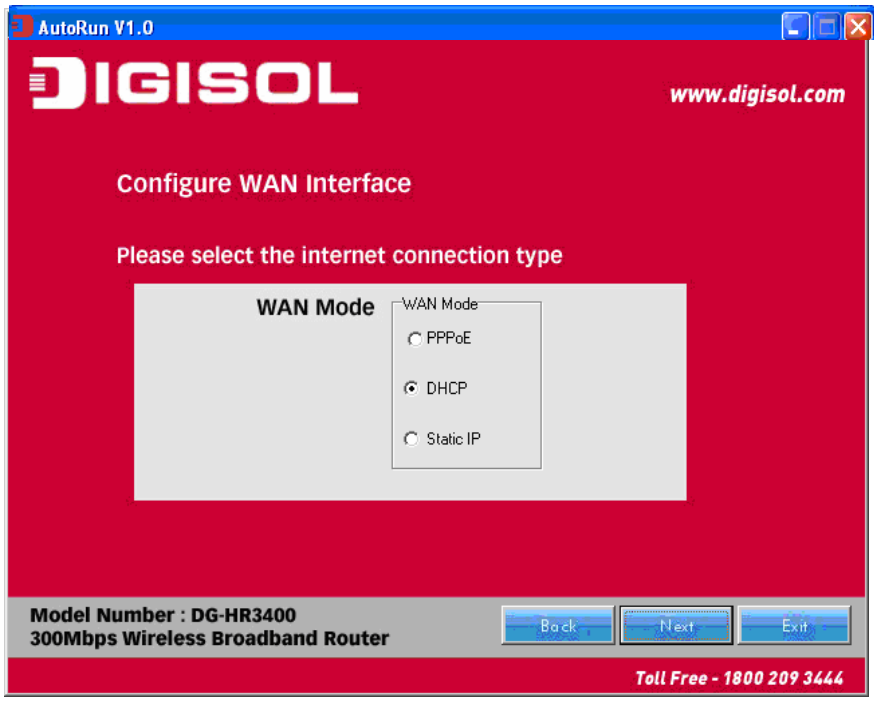
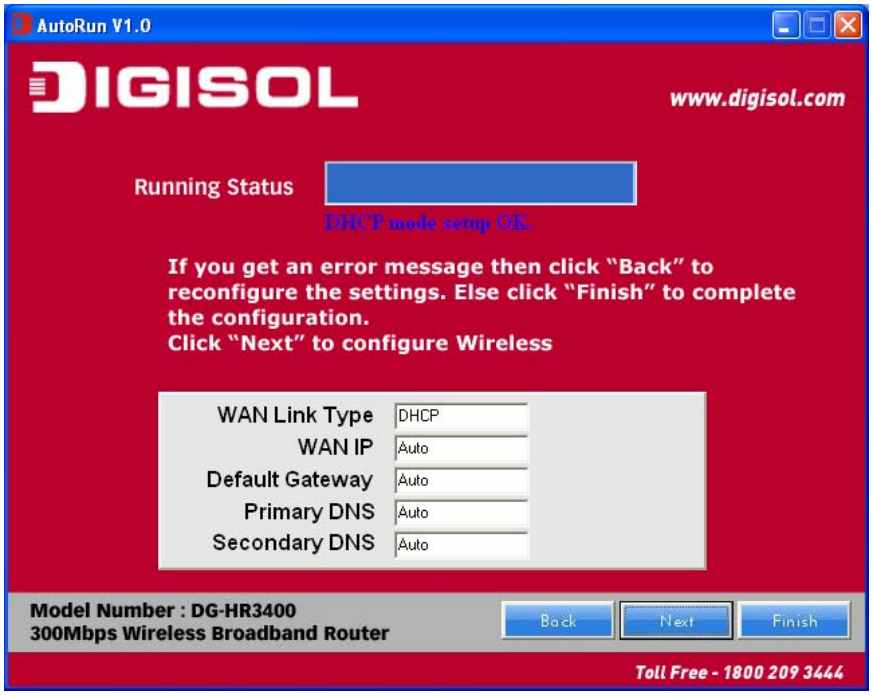
DHCP (Cable Modem users)

- Select DHCP Client to obtain IP Address information automatically from your ISP. Click on '**Next**'.



- The screen shown below will appear. Click on '**Next**'.

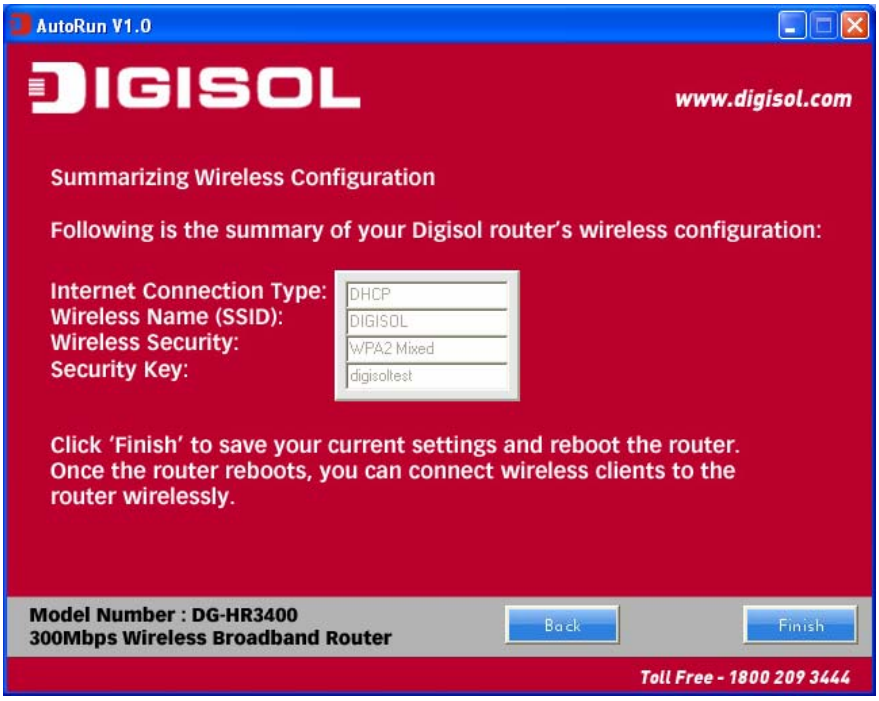
- Below mentioned screen will appear. Click on '**Next**'.



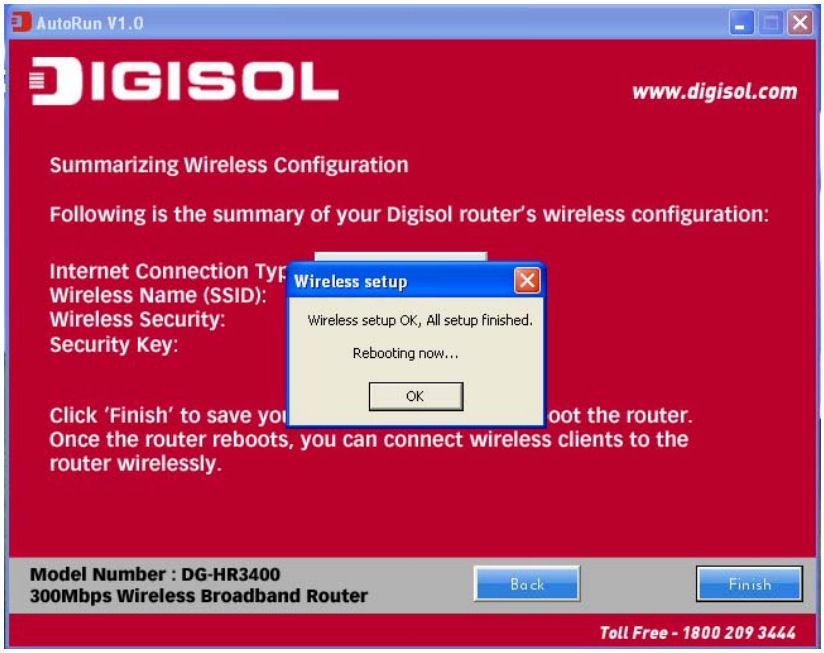
- Enter the '**SSID**' and click on '**Next**'.

- Configure the wireless security. Enter the security mode i.e. either '**None**' or '**WPA2 Mixed**' and click on '**Next**'.

- Following screen will appear. Click on '**Finish**'.

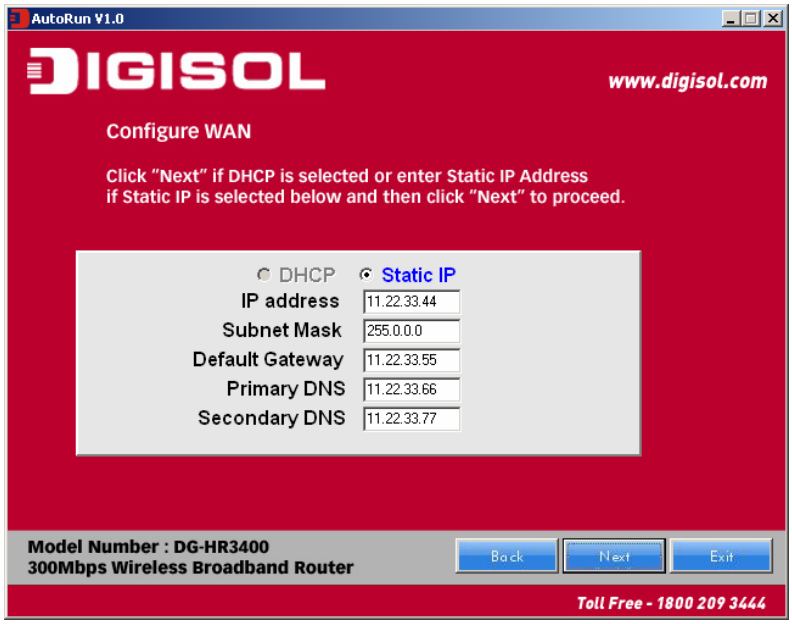


- Lastly, the router will reboot as shown below.

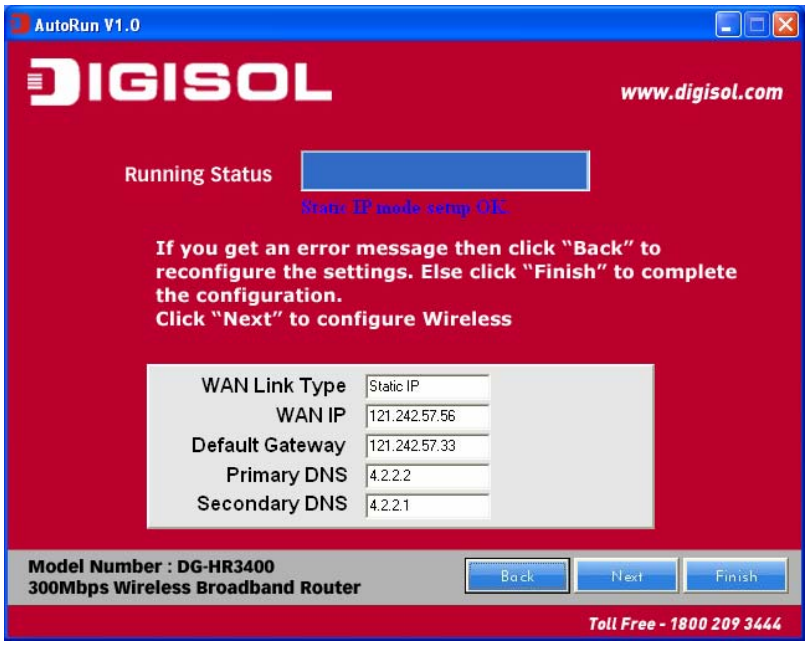


Static IP (Cable Modem users)

- Select Static IP Address if all the Internet port's IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address and DNS address provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format. Click on '**Next**'.



- The screen shown below will appear. Click on '**Next**'.



- Enter the '**SSID**' and click on '**Next**'.

- Configure the wireless security. Enter the security mode i.e. either '**None**' or '**WPA2 Mixed**' and click on '**Next**'.

- You can view the information about the wireless configuration in the next screen. Click '**Finish**' to save your current settings and reboot the router.

3. Quick Install Guide

3-1 Connecting to wireless broadband router by web browser

After the network connection is setup, next step is to setup the router with proper network parameters, so it can work properly in your network environment.

Please use the web browser to configure the router. A computer with wired Ethernet connection to the router is required for this first-time configuration.

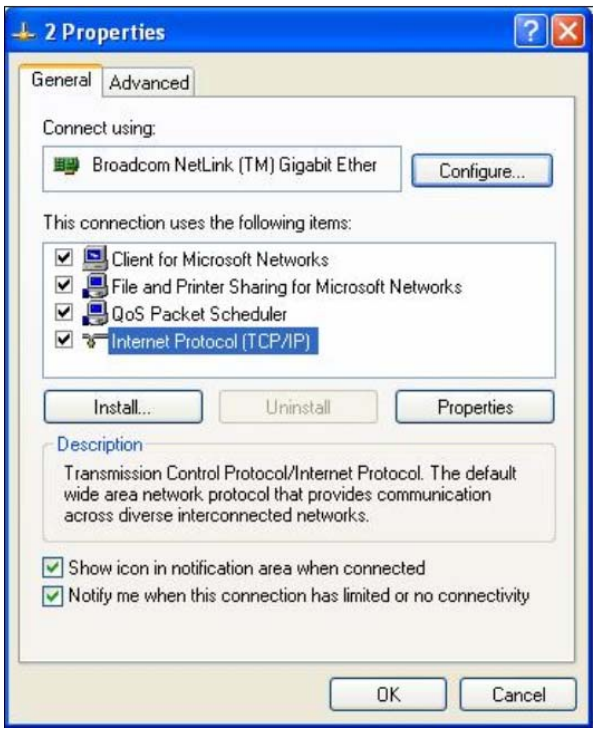
Before you start to configure the router (**default IP 192.168.2.1**), please configure the IP address of the computer in the same network class as that of the router.

Set the Network Configurations:

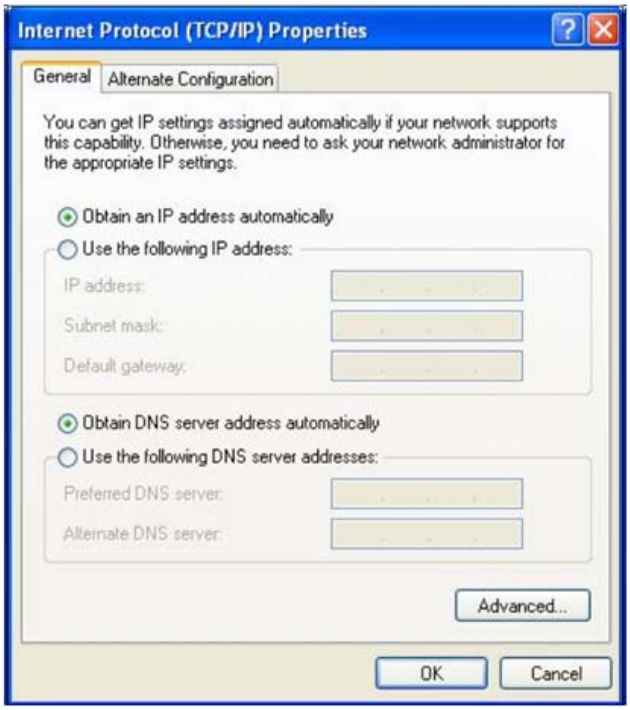
1. On your computer desktop right click "**My Network Places**" and select "**Properties**".

2. Right click "**local Area Network Connection**" and select "**Properties**".

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



4. Select "Obtain an IP address automatically" or select "Use the following IP address(S)".
   A. Select "Obtain an IP address automatically" and "Obtain DNS server address automatically". Click "OK".



B. “Use the following IP address (S)"

IP Address: 192.168.2.XXX (XXX is a number from 2~254)

Subnet Mask: 255.255.255.0

Gateway: 192.168.2.1

DNS Server: You need to input the DNS server address provided by you ISP. Otherwise, you can use the Router's default gateway as the DNS proxy server. Click "OK" to save the configurations.

Click "**OK**" to save the configurations.

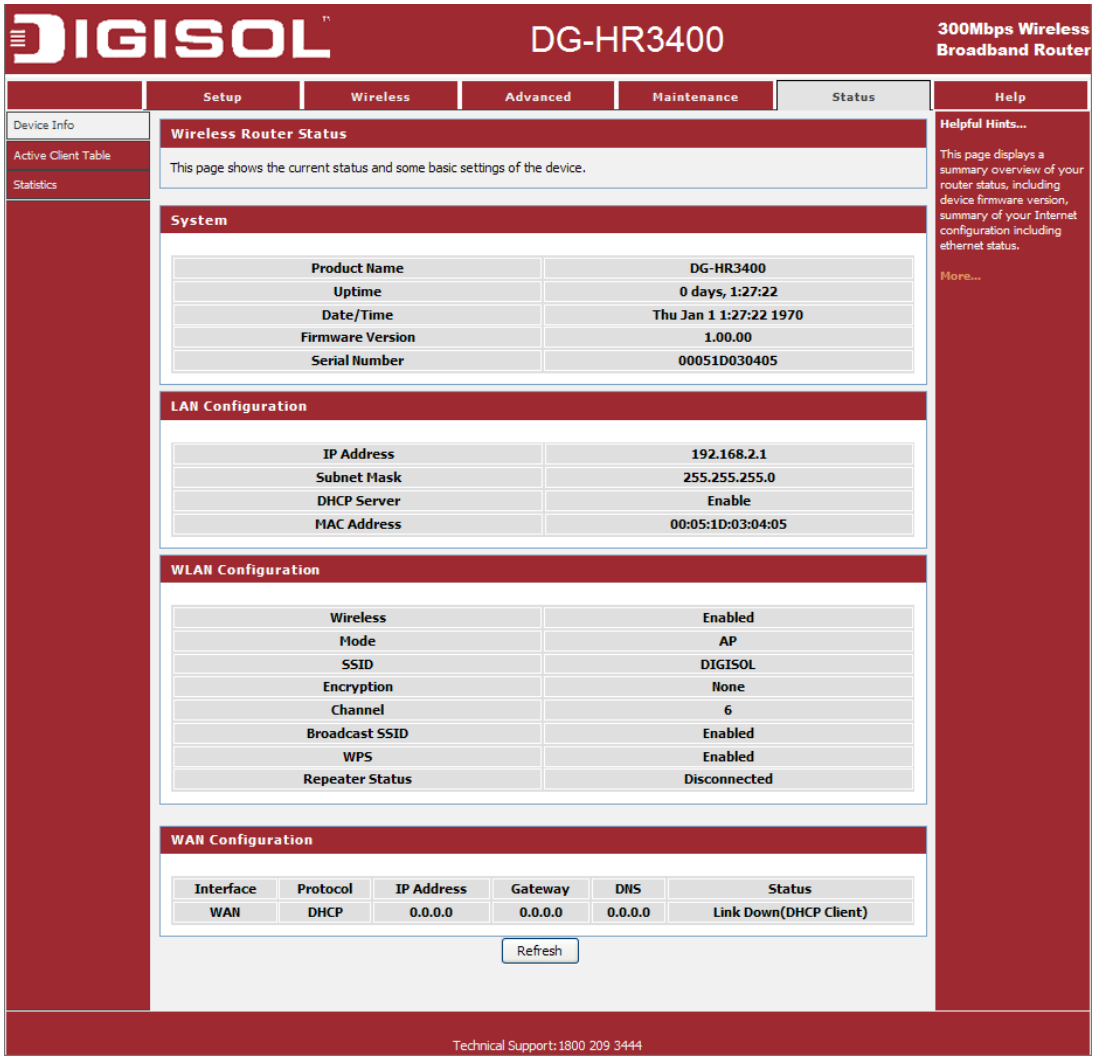
3-2 Getting Started

Connecting the router's management interface by web browser:

After you assign an IP address to the computer, open the web browser, and type the IP address of the router in the address bar as '**http://192.168.2.1**'.

The following message should be shown:

Please input user name and password in the field respectively, default user name is '**admin**', and default password is '**1234**', then press '**Login**' button, and you can see the web management interface of this router:



NOTE: If you can't see the web management interface, and you're being prompted to input user name and password again, it means you didn't input username and password correctly. Please retype user name and password again.

TIP: This page shows the current status and some basic settings of the device.

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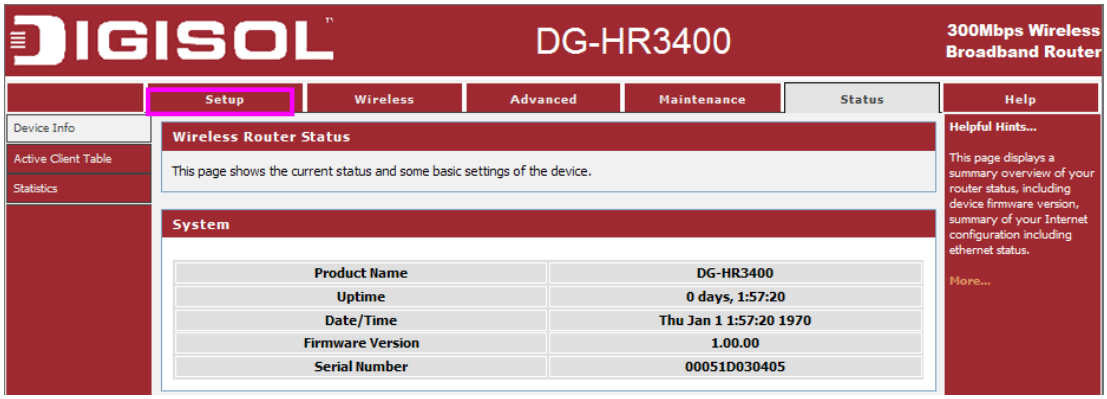
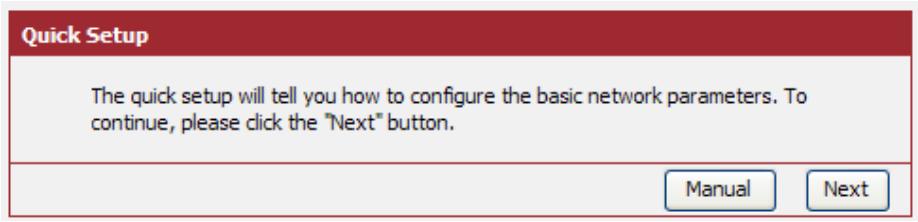
3-3 Using Quick Setup

This router provides a 'Quick Setup' procedure, which will help you to complete all required settings you need to access the Internet in very short time. Please follow the instructions mentioned below to complete the '**Quick Setup**':

Please go to Quick Setup menu by clicking '**Setup**' button.



And the following message will be displayed:

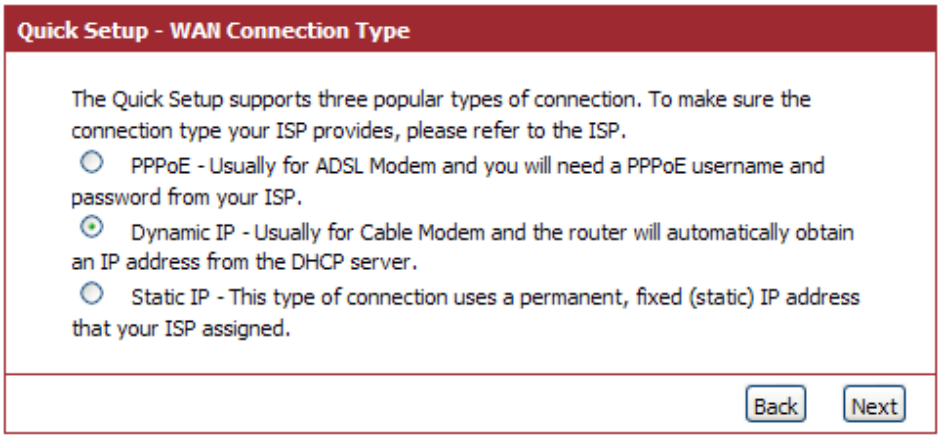


Click the "**Next**" button to continue.

Please follow the steps and complete the router configuration.

Step 1 Setup WAN Connection Type:

Below given 'WAN Connection Type' screen will appear.



Please choose the broadband (Internet connection) type you're using in this page. There are three types of Internet connection, PPPoE, Dynamic IP and Static IP.

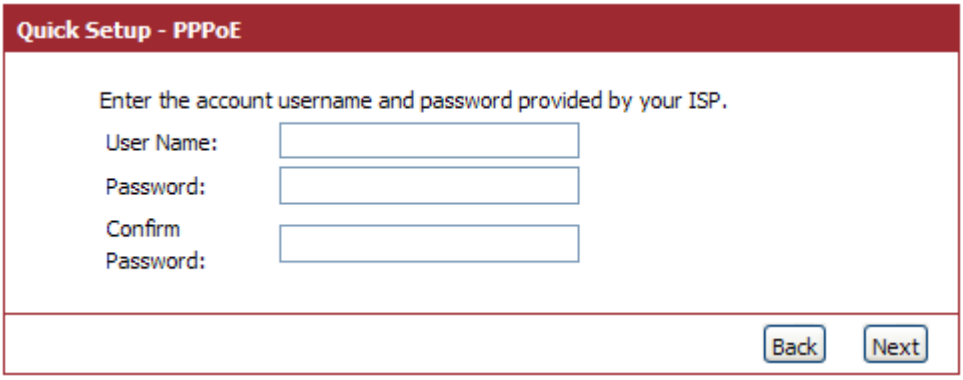
If you're not sure, please contact your Internet service provider. A wrong Internet connection type will cause connection problem, and you will not be able to connect to the internet.

If you want to go back to previous step, please press 'Back' button.

NOTE: Some service providers use 'DHCP' (Dynamic Host Configuration Protocol) to assign IP address to your router. In this case, you can choose 'Dynamic IP' as Internet connection type.

Setup procedure for 'PPPoE':

Choose PPPoE. (Point to Point Protocol over Ethernet) If your ISP uses a PPPoE connection it will provide you with a username and password. This option is typically used for DSL services. Below given screen will be displayed.



Here is the description of every setup item:

Parameter	Description
User Name	Please input user name assigned by your Internet service provider here.
Password	Please input the password assigned by your Internet service provider here.
Confirm Password	Re-enter the password in this field for confirmation.

When you finish with all settings, press 'Next'; if you want to go back to previous menu, click 'Back'.

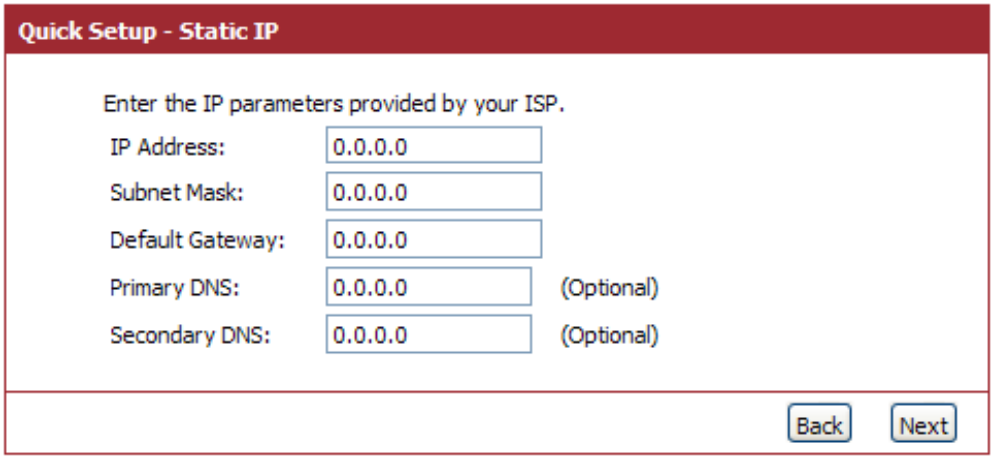
Setup procedure for 'Dynamic IP':

Select Dynamic IP to obtain IP Address information automatically from your ISP.

Usually Cable Modem and the router will automatically obtain an IP address from the DHCP server.

Setup procedure for 'Static IP':

Select Static IP Address if IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address and DNS address provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format. Below given screen will be displayed.



Here is the description of every setup item:

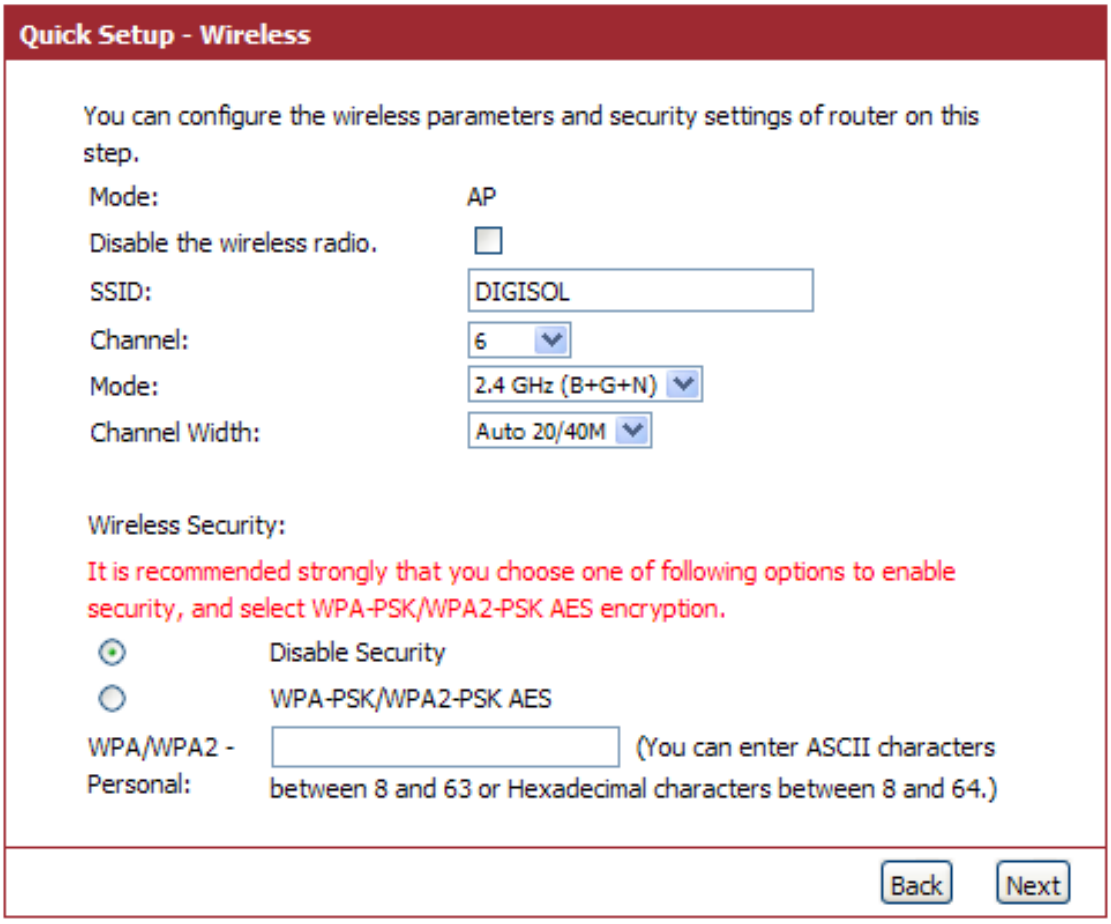
Parameter	Description
IP address	Please input IP address assigned by your service provider.
Subnet Mask	Please input subnet mask assigned by your service provider
Default Gateway	Please input the default gateway assigned by your service provider.
Primary DNS	Please input the DNS IP address in dotted-decimal notation provided by your ISP.
Secondary DNS	Please input another DNS IP address in dotted-decimal notation provided by your ISP.

NOTE: You must use the addresses provided by your Internet service provider, wrong setting value will cause connection problem.

When you finish with all settings, press 'Next'; if you want to go back to previous menu, click 'Back'.

Step 2 Setup Wireless:

Below given '**Wireless**' screen will appear.



Here is the description of every setup item:

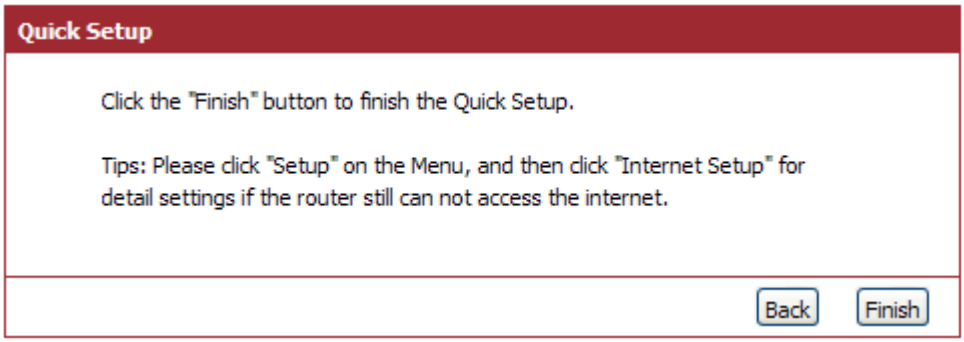
Parameter	Description
Disable the wireless radio	The wireless radio of this Router can be enabled or disabled to allow wireless stations access.
SSID	This is the name of wireless network. Input the SSID name that your wireless ISP has provided you with.
Channel	This is the radio frequency used to transmit and receive the wireless signal. The wireless devices in the same network should follow the same setting. Select the channel designated by your wireless ISP.
Mode	Select the desired mode. The default setting is 2.4GHz (B+G+N).
Channel Width	Select any channel width from the pull-down list. The

	default setting is Auto 20/40M, which can adjust the channel width for your clients automatically.
Wireless Security	If the access point enables wireless security, you have to follow the same settings in order to access the access point.

When you finish with all settings, press 'Next'; if you want to go back to previous menu, click 'Back'.

Step 3 Finish the Quick Setup:

Below given '**Finish**' screen will appear.



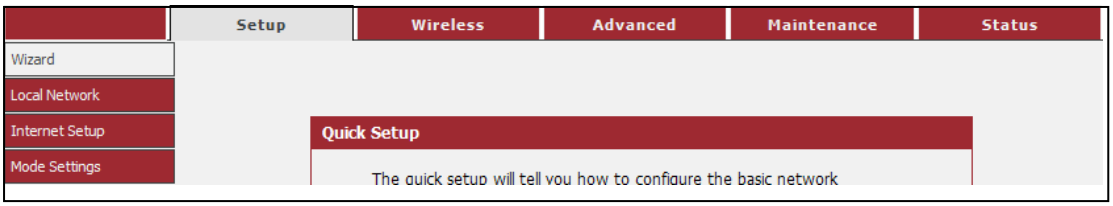
You can click the "Finish" button to finish the Quick Setup; if you want to go back to previous menu, click 'Back'.

4. Configuring the Router

This chapter will show each Web page's key functions and the configuration way. After your successful login, you will see the five main menus on the top of the Web-based utility. On the right, there are corresponding explanations and instructions.

4-1 Setup

Click '**Setup**' menu on the top of the web management interface, and the following message will be displayed on your web browser:

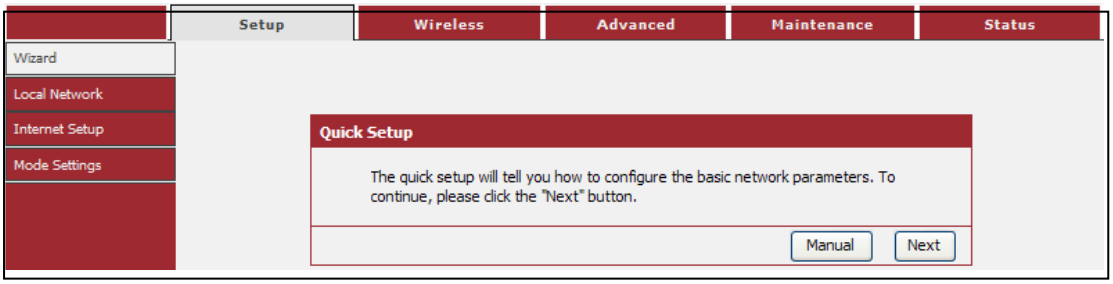


There are four submenus under the Setup menu: **Wizard, Local Network, Internet Setup, Mode Settings**. Click any of them, and you will be able to configure the corresponding function.

4-1-1 Wizard

If you are new to networking and have never configured a router before, click on Wizard and the router will guide you through a few simple steps to get your network up and running.

Choose menu "**Setup→Wizard**", below given screen will be displayed.

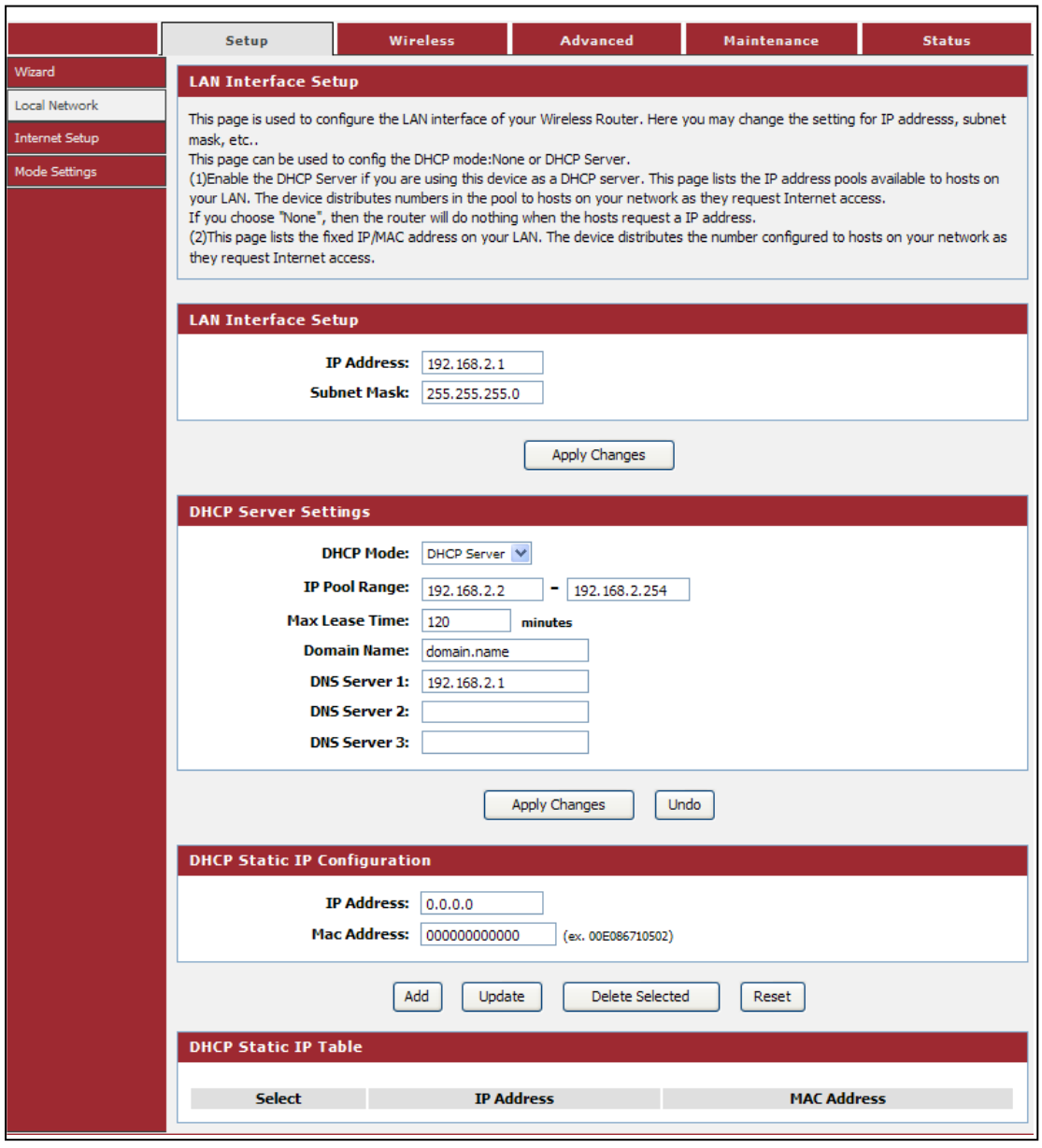


For details please refer to **3.3 Using Quick Setup** on above.

4-1-2 Local Network

These are the settings of the LAN (Local Area Network) interface for the router.

Choose menu "**Setup→Local Network**", below given screen will be displayed.



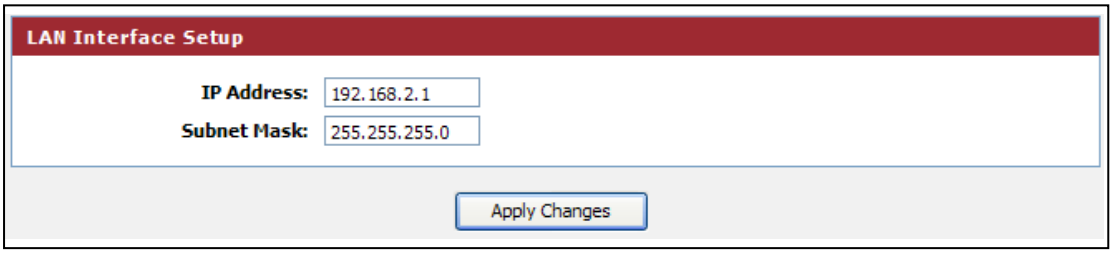
This page is used to configure the LAN interface of your Wireless Router. Here you may change the setting for IP address, subnet mask, etc.

This page can be used to configure the DHCP mode: None or DHCP Server.
(1) Enable the DHCP Server if you are using this device as a DHCP server. This page lists the IP address pools available to hosts on your LAN. The device distributes numbers in the pool to hosts on your network as they request Internet access.

If you choose "None", then the router will do nothing when the hosts request an IP address.

(2) This page lists the fixed IP/MAC address on your LAN. The device distributes the number configured to hosts on your network as they request Internet access.

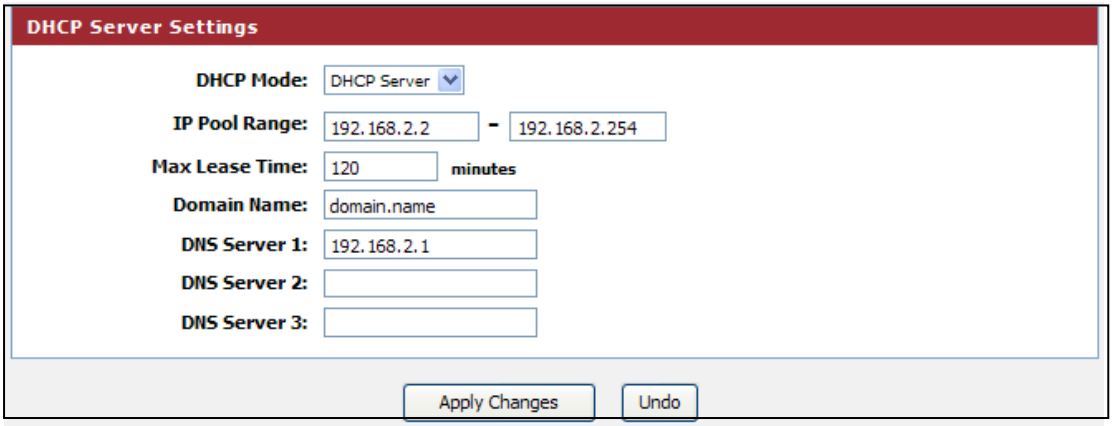
LAN Interface Setup:



Here is the description of every setup item:

Parameter	Description
IP address	Please input the IP address of this router.
Subnet Mask	Please input subnet mask for this network.

DHCP Server Settings:



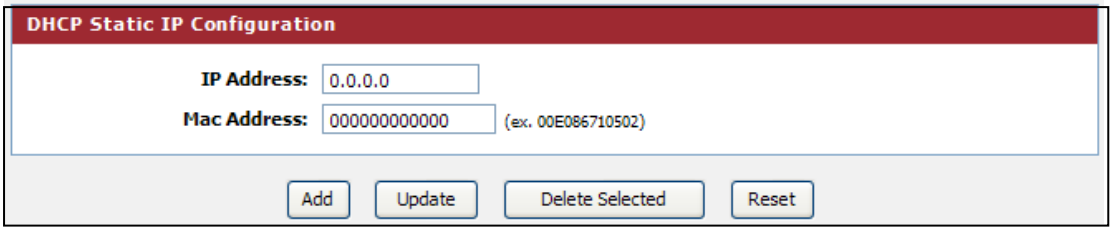
These settings are only available when 'DHCP Server' in 'LAN IP' section is 'Enabled', and here is the description of every setup item.

Parameter	Description
DHCP Mode	Enable or Disable the DHCP Server.
IP Pool Range	These two IP values (from and to) define a range of IP addresses that the DHCP Server uses when assigning addresses to computers and devices on your Local Area Network. Any address that does not fall in this range are not managed by the DHCP Server; these could, therefore, be used for manually configured devices or devices that cannot use DHCP to obtain

	network address details automatically.
Max Lease Time	The amount of time that a computer may have an IP address before it is required to renew the lease. The lease functions, just as a lease on an apartment would. The initial lease designates the amount of time before the lease expires. If the tenant wishes to retain the address when the lease is expired then a new lease is established. If the lease expires and the address is no longer needed then another tenant may use the address.
Domain Name	Domain name for the dhcp server scope.
DNS Server	DNS Server address for the dhcp server scope.

DHCP Static IP Configuration:

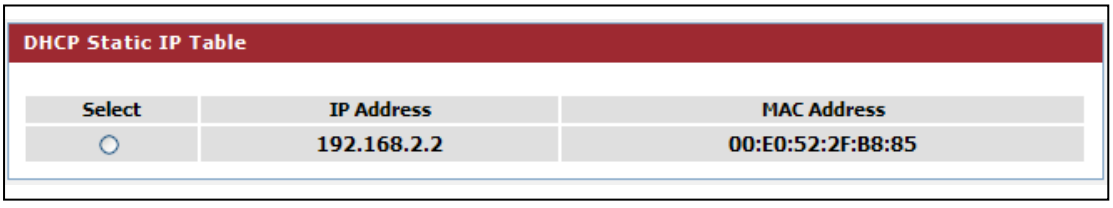
If you need to assign static ip for your computer or device on the local area network, configure static ip with the mac address.



Here is the description of every setup item:

Parameter	Description
IP address	The IP address to be configured for your computer or device on the local area network. For example, 192.168.2.2.
Mac Address	After you enter MAC address and IP address pair, click this button to add the pair to static DHCP leases table.

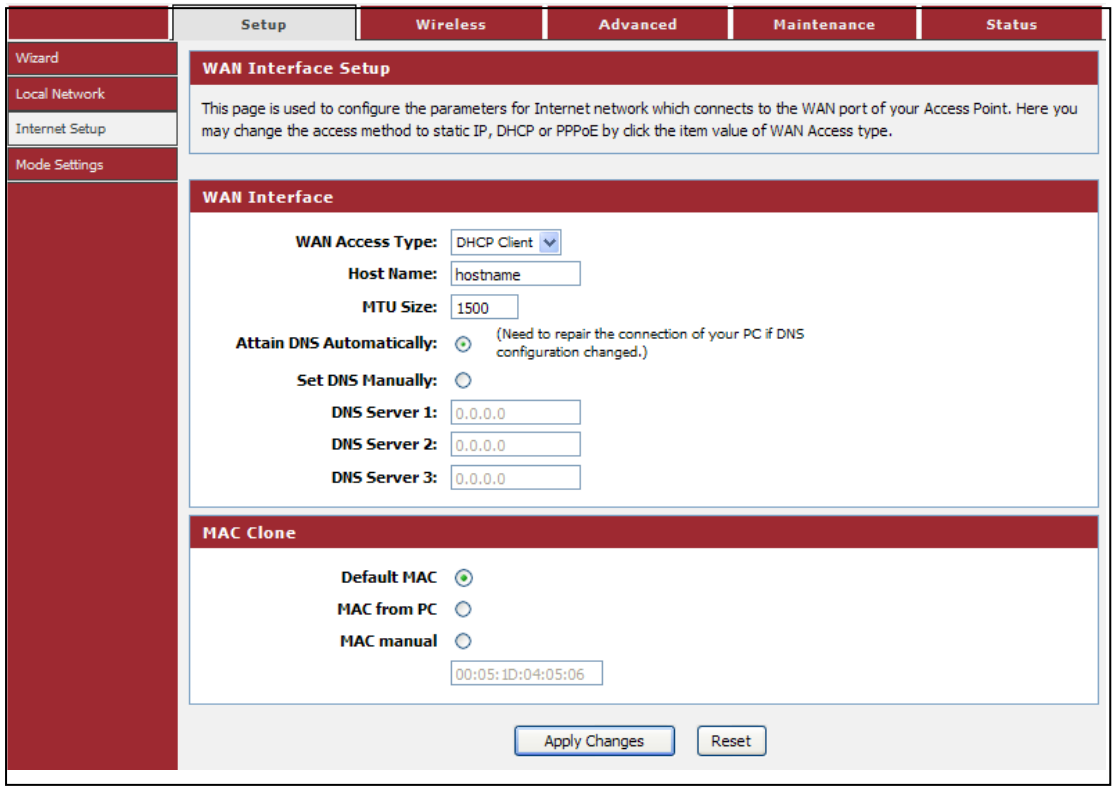
After you clicked ‘Add’, the MAC address and IP address mapping will be added to ‘DHCP Static IP Table’ section.



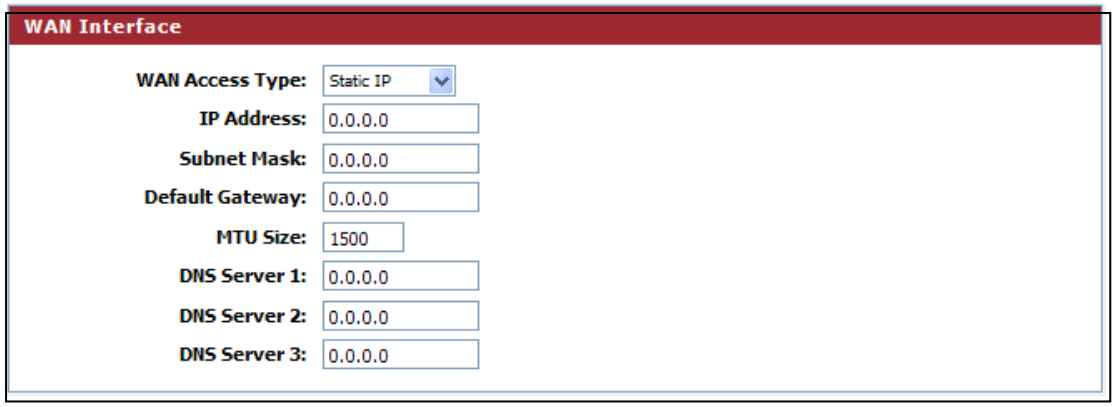
4-1-3 Internet Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP client or PPPoE by clicking the item value of WAN Access type.

Choose menu "**Setup→Internet Setup**", below given screen will be displayed.



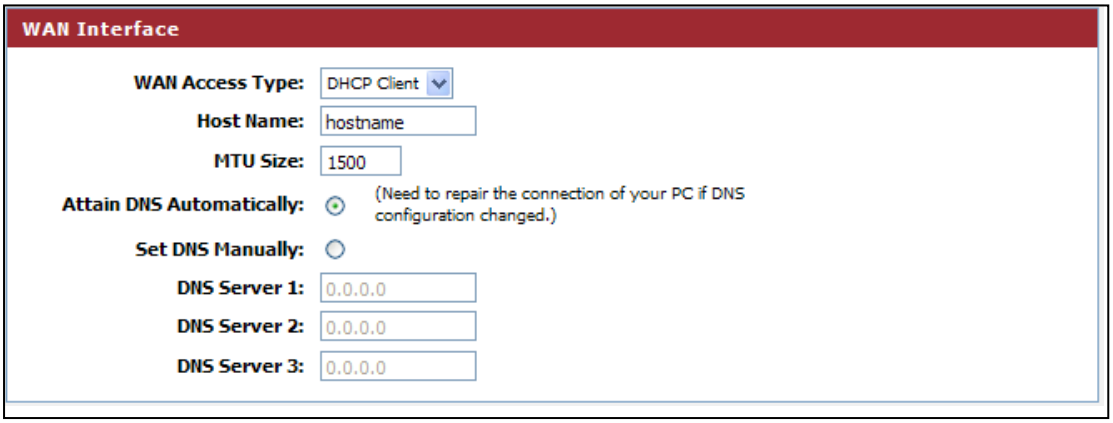
Setup procedure for 'Static IP':



Here is the description of every setup item:

Parameter	Description
IP Address	Please input the IP address assigned by your service provider.
Subnet Mask	Please input the subnet mask assigned by your service provider
Default Gateway	Please input the IP address of the gateway provided by your service provider.
MTU Size	Please input the MTU value of your network connection here. If you don't know, you can use default value.
DNS Servers 1/2/3	Please input the IP address of DNS servers provided by your service provider.

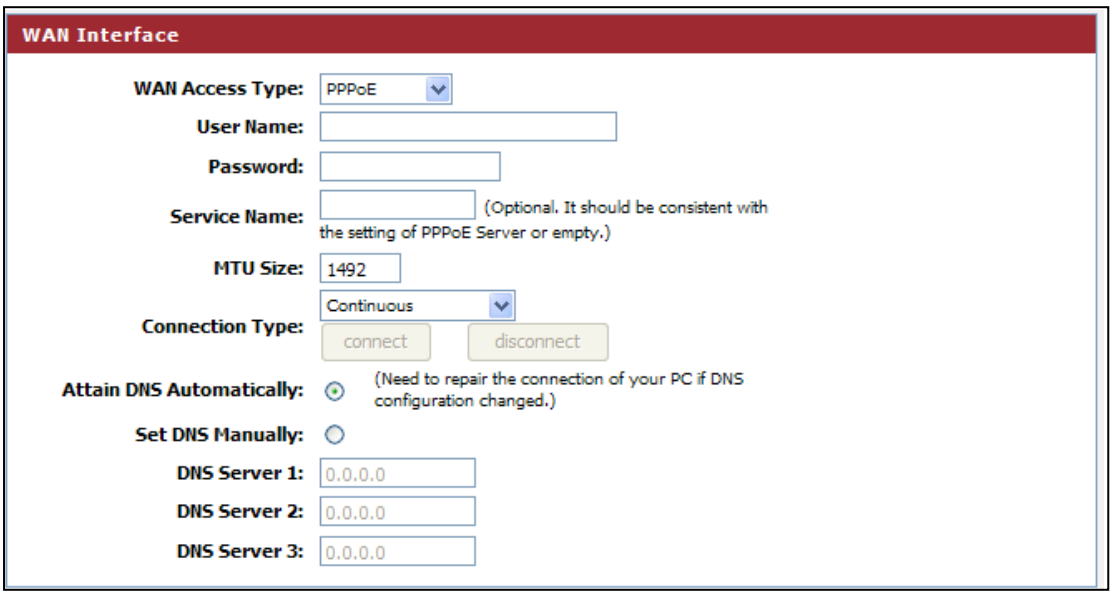
Setup procedure for 'DHCP Client':



Here is the description of every setup item:

Parameter	Description
Host Name	Please input the host name of your computer. This is optional, and is only required if your service provider asks you to do so.
MTU Size	Please input the MTU value of your network connection here. If you don't know, you can use default value.
Attain DNS Automatically	If your ISP specifies a DNS server IP address for you, click the checkbox.
Set DNS Manually	Enter the DNS IP address manually provided by your ISP.

Setup procedure for 'PPPoE':



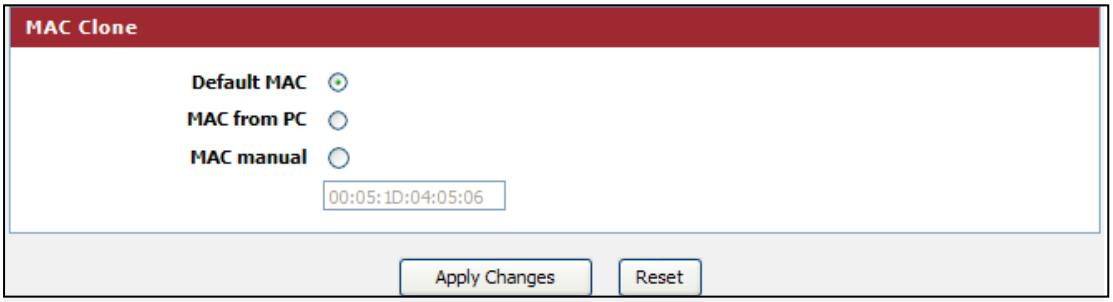
Here is the description of every setup item:

Parameter	Description
User Name	Please input user name assigned by your Internet service provider here.
Password	Please input the password assigned by your Internet service provider here.
Service Name	Please give a name to this Internet service, this is optional.
MTU Size	Please input the MTU value of your network connection here. If you don't know, you can use default value.
Connection Type	Please select the connection type of Internet connection you wish to use. **Continuous** – The connection will be kept always On. If the connection is interrupted, the router will re-connect automatically. **Connect On-Demand** – Only connect when you want to surf the Internet. "Idle Time Out" is set to stop the connection when the network traffic is not sending or receiving after an idle time. **Manual** – After you have selected this option, you will see the "Connect" button and "Disconnect" button, click "'Connect" and the router will connect to the ISP. If you want to stop the connection, please click "Disconnect" button.
Attain DNS	If your ISP specifies a DNS server IP address for you, click

Automatically	the checkbox.
Set DNS Manually	Enter the DNS IP address manually provided by your ISP.

MAC Clone:

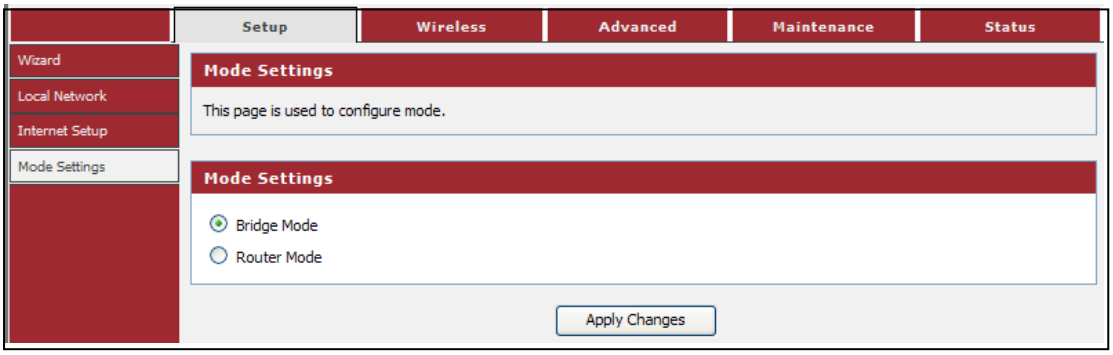
You can configure the MAC address of the WAN.



4-1-4 Mode Settings

This page is used to configure mode.

Choose menu "**Setup→Mode Settings**", below given screen will be displayed.



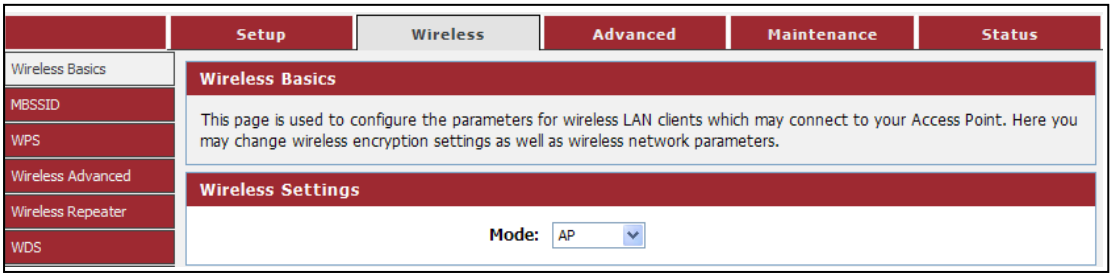
Here is the description of every setup item:

Parameter	Description
Bridge Mode	The device works as a bridge. All ethernet wired ports and wireless ports are bridged together.
Router Mode	The device works as a router. It can access to the Internet by Static IP/DHCP Client/PPPoE.

NOTE: The device would reboot if you change the mode.

4-2 Wireless

Click '**Wireless**' menu on the top of web management interface, and the following message will be displayed on your web browser:

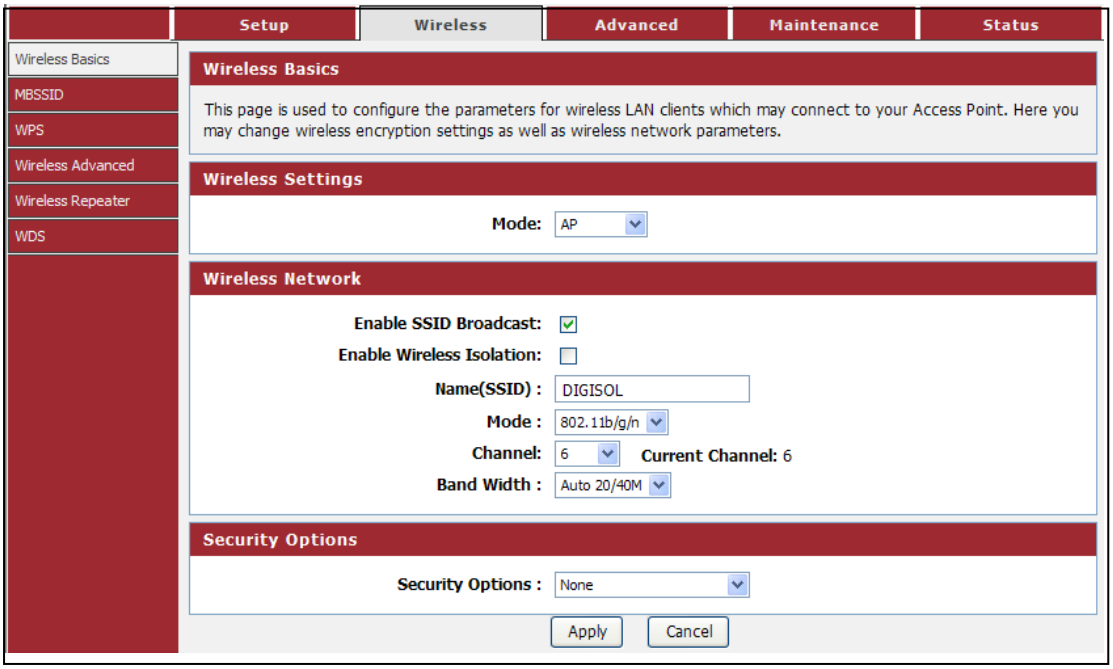


There are six submenus under the Wireless menu: **Wireless Basics, MBSSID, WPS, Wireless Advanced, Wireless Repeater, WDS.** Click any of them, and you will be able to configure the corresponding function.

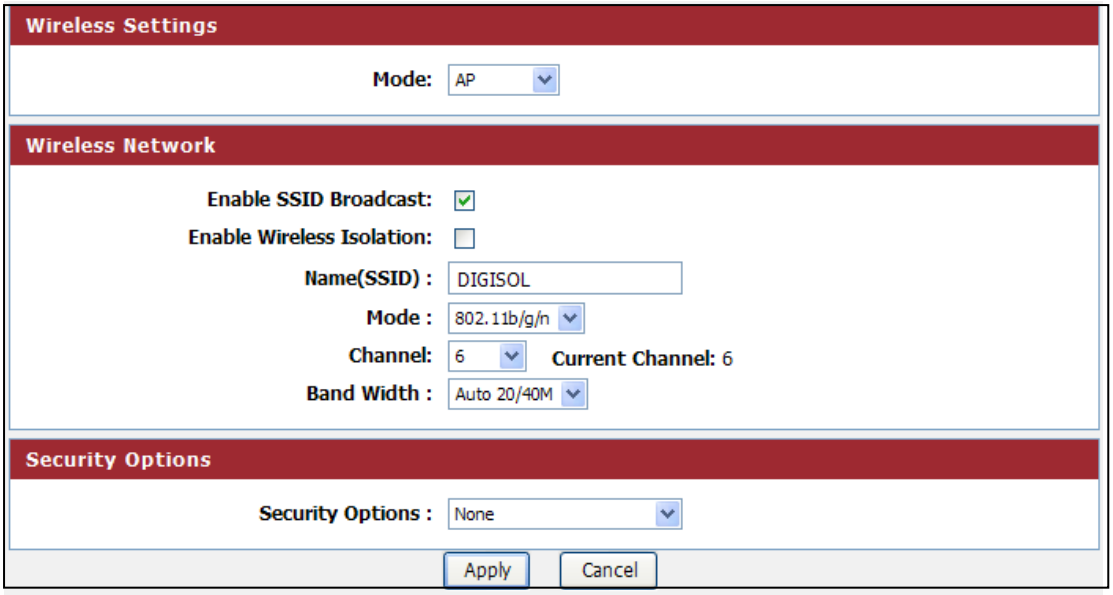
4-2-1 Wireless Basics

This page is used to configure the parameters for wireless LAN clients which may connect to your Access Point. Here you may change wireless encryption settings as well as wireless network parameters.

Choose menu "**Wireless→Wireless Basics**", below given screen will be displayed.



Setup procedure for AP:



Here is the description of every setup item:

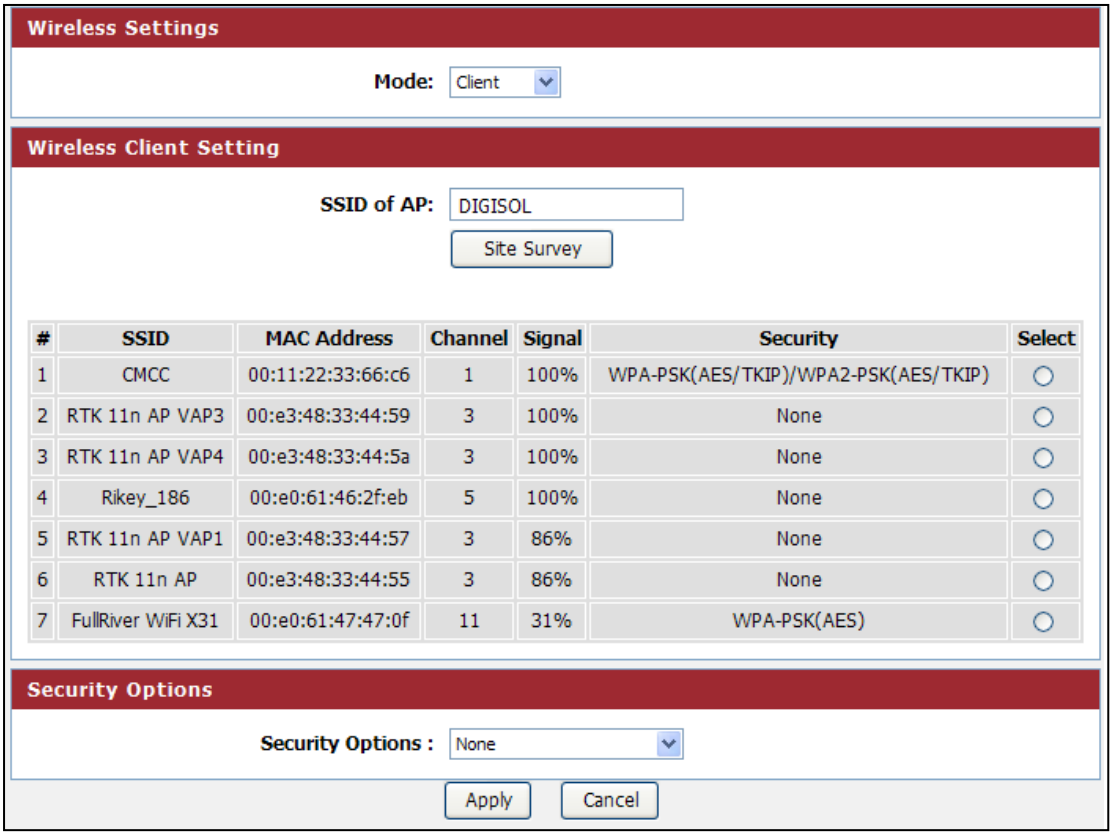
Parameter	Description
Enable SSID Broadcast	If Enabled, the Wireless Access Point will broadcast its name (SSID) to all Wireless Stations. Stations which have no SSID (or a null value) can then adopt the correct SSID for connections to

	this Access Point.
Enable Wireless Isolation	If checked, the wireless client under this SSID can only access internet and it can`t access other wireless clients even under the same SSID, Ethernet clients or this device. Other clients can`t access the wireless client, either.
Name(SSID)	Enter a value of up to 32 alphanumeric characters. The same name (SSID) must be assigned to all wireless devices in your network. The default SSID is "DIGISOL", but we strongly recommend that you change your network`s name (SSID) to a different value. This value is case-sensitive. For example, SSID is not the same as SsiD.
Mode	Select the wireless mode you want to use. The options are: • 802.11b mode. With a maximum speed of up to 11 Mbps. • 802.11g mode. With a maximum speed of up to 54 Mbps. • 802.11n mode. The band width is 20M, with a maximum speed of up to 130 Mbps(short preamble, with a maximum speed of up to 150 Mbps); The band width is 40M, with a maximum speed of up to 270 Mbps(short preamble, with a maximum speed of up to 300 Mbps). • 802.11b/g mode. With a maximum speed of up to 54 Mbps. • 802.11n/g mode. The band width is 20M, with a maximum speed of up to 130 Mbps(short preamble, with a maximum speed of up to 150 Mbps); The band width is 40M, with a maximum speed of up to 270 Mbps(short preamble, with a maximum speed of up to 300 Mbps). • 802.11b/g/n mode. The band width is 20M, with a maximum speed of up to 130 Mbps(short preamble, with a maximum speed of up to 150 Mbps); The band width is 40M, with a maximum speed of up to 270 Mbps(short preamble, with a maximum speed of up to 300 Mbps).
Channel	This field determines which operating frequency will be used. It should not be necessary to change the wireless channel unless you notice interference problems with another nearby access point.

Band Width	Select any channel width from the pull-down list. The default setting is Auto 20/40M, which can adjust the channel width for your clients automatically.
Security Options	There are six wireless security modes supported by the Router: WEP, WPA-PSK [TKIP], WPA-PSK [AES], WPA2-PSK [AES], WPA2-PSK [TKIP], WPA-PSK/WPA2-PSK AES.

Setup procedure for Client:

In this mode, you can connect the router to Ethernet devices such us TV, Game player, HDD & DVD to enable the Ethernet device to be a wireless station and join to a wireless network through an access point or AP router.



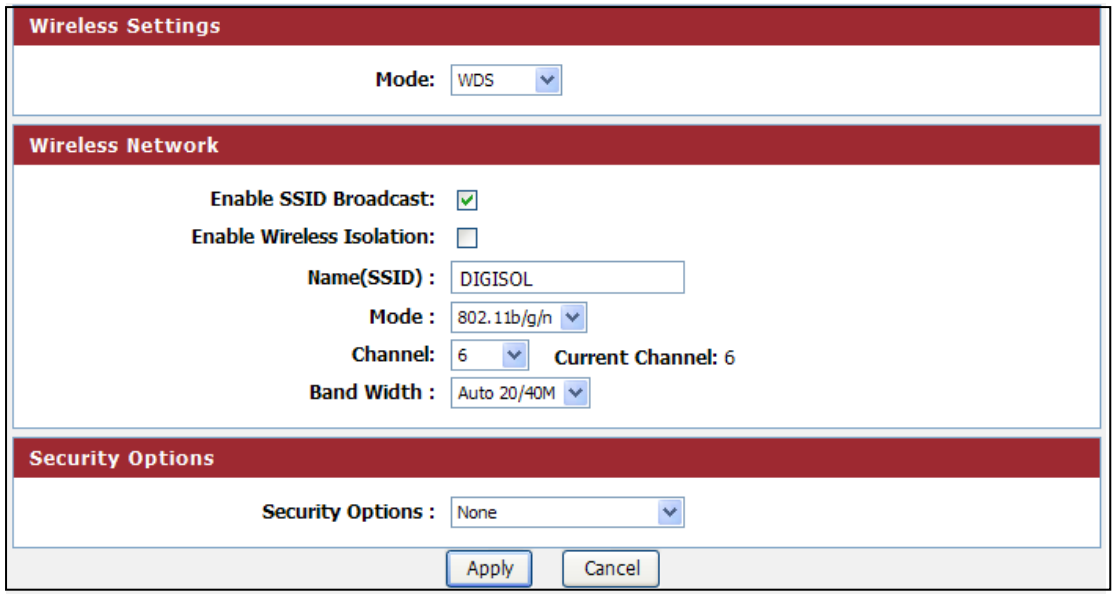
Here is the description of every setup item:

Parameter	Description
SSID of AP	This is the name of wireless network. Input the SSID name that your wireless ISP has provided you with.

Site Survey	Click 'Site Survey' button, then a "Wireless Site Survey Table" will pop up. It will list all available access points nearby. Select the access point designated by your wireless ISP in the table and the router will join wireless network through this access point.
Security Options	If the access point enables wireless security, you have to follow the same settings in order to access the access point.

Setup procedure for WDS or WDS+AP:

In this mode, you can expand the scope of network by combining up to four other access points together.



Here is the description of every setup item:

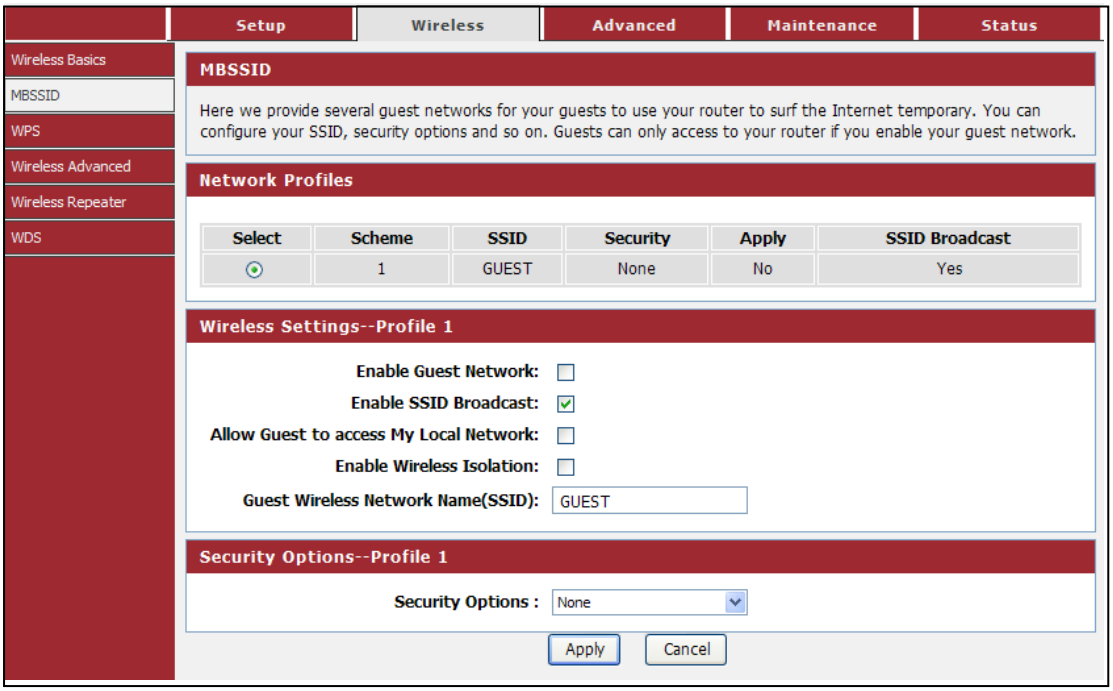
Parameter	Description
Enable SSID Broadcast	If Enabled, the Wireless Access Point will broadcast its name (SSID) to all Wireless Stations. Stations which have no SSID (or a null value) can then adopt the correct SSID for connections to this Access Point.
Enable Wireless Isolation	If checked, the wireless client under this SSID can only access internet and it can`t access other wireless clients even under the same SSID, Ethernet clients or this device. Other clients can`t access the wireless client, either.

Name(SSID)	Input the SSID of your wireless router, the setting should be the same with other wireless routers for the convenience of roaming.
Mode	Select the mode you want to use; all the wireless routers must use the same setting.
Channel	Select the channel you want to use; all the wireless routers must use the same setting.
Band Width	Select any channel width from the pull-down list. The default setting is Auto 20/40M, which can adjust the channel width for your clients automatically.
Security Options	If the wireless bridge point enables wireless security, you have to follow the same settings in order to access the access point.

4-2-2 MBSSID

Here we provide several guest networks for your guests to use your router to surf the Internet temporary. You can configure your SSID, security options and so on. Guests can only access your router if you enable your guest network.

Choose menu "**Wireless→MBSSID**", below given screen will be displayed.



Here is the description of every setup item:

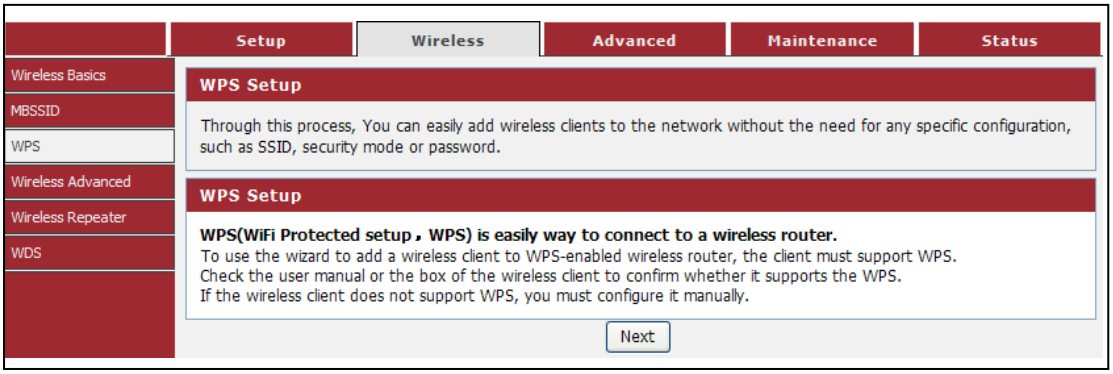
Parameter	Description
Network Profiles	You can click radio button of each profile to check detail info or change settings of each profile. The table is a brief summary of how many profiles you can create, it provides profile number, SSID of this profile, Security type of this profile, this guest wireless network is Enabled or Not, and the SSID will be displayed or not.
Enable Guest Network	If this feature is checked, then this guest network is enabled. You and your visitors can connect to your network via the SSID of this profile.
Enable SSID Broadcast	If Enabled, the Wireless Access Point will broadcast its name (SSID) to all Wireless Stations. Stations which have no SSID (or a null value) can then adopt the correct SSID for connections to this Access Point.
Allow Guest to access My Local Network	If Unchecked, any user that connects to this SSID can only access internet, but can not access gateway management UI, such as Web Server, Telnet, etc. .All clients in this SSID are not allowed to access clients of other SSIDs and Ethernet network. If Checked, any user who connects to this SSID can access not only internet but also local networks of this wireless router like users in primary SSID.
Enable Wireless Isolation	If checked, the wireless clients under this SSID can't access other wireless clients under the same SSID. If unchecked, the wireless client under this SSID can access other wireless clients under the same SSID.
Guest Wireless Network Name (SSID)	Enter a value of up to 32 alphanumeric characters. The same Name (SSID) must be assigned to all wireless devices in your network. The default SSID is SSID_N, N is profile number, but we strongly recommend that you change your network`s Name (SSID) to a different value. This value is also case-sensitive. For example, SSID is not the same as SsiD.
Security Options	• None - no data encryption • WEP - Wired Equivalent Privacy, use WEP 64- or 128-bit data encryption Note: Wi-Fi Protected Setup function is disabled when the security setting is WEP with Shared-Key authentication • WPA-PSK [TKIP] - Wi-Fi Protected Access with Pre-Shared Key, use WPA-PSK standard encryption with TKIP encryption type • WPA2-PSK [AES] - Wi-Fi Protected Access version 2 with Pre-Shared Key, use WPA2-PSK standard encryption with the AES encryption type

	• WPA-PSK [AES] + WPA2-PSK [AES] - Allow clients using either WPA-PSK [AES] or WPA2-PSK [AES] To achieve the best performance with 11N wireless adapters under robust security network, we recommends that you change your network`s security option to WPA2-PSK.

4-2-3 WPS

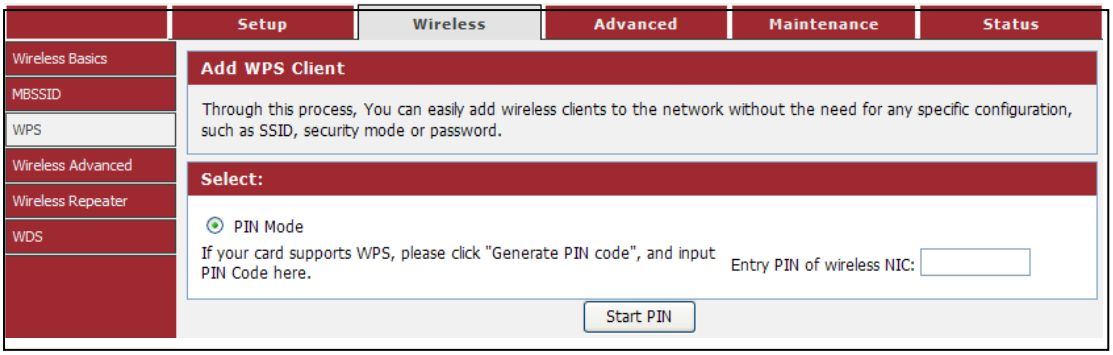
Through this process, you can easily add wireless clients to the network without the need for any specific configuration, such as SSID, security mode or password.

Choose menu "**Wireless→WPS**", below given screen will be displayed.



WPS (WiFi Protected Setup) is easy way to connect to a wireless router.
To use the wizard to add a wireless client to WPS-enabled wireless router, the client must support WPS.
Check the user manual or the box of the wireless client to confirm whether it supports the WPS.
If the wireless client does not support WPS, you must configure it manually.

Click the "Next" button to continue.



You can add wireless client by PIN mode. If you use PIN mode, you should input client PIN code. Meanwhile you should start client WPS process. You can find client

PIN code on client manager.

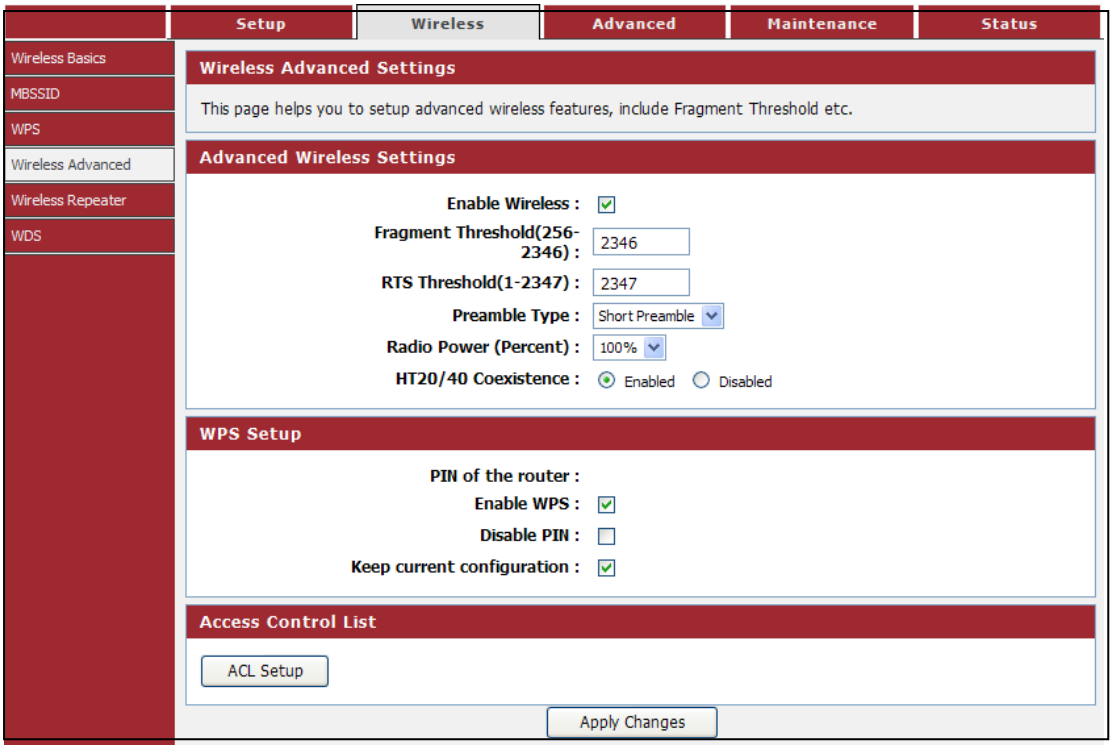
Here is the description of every setup item:

Parameter	Description
Entry PIN of wireless NIC	The length of PIN is limited to four or eight numeric digits. If the AP and Station input the same PIN and click "Start PIN" button in two minutes, they will establish connection and setup their security key.

4-2-4 Wireless Advanced

This page helps you to setup advanced wireless features, include Fragment Threshold etc.

Choose menu "**Wireless→Wireless Advanced**", below given screen will be displayed.

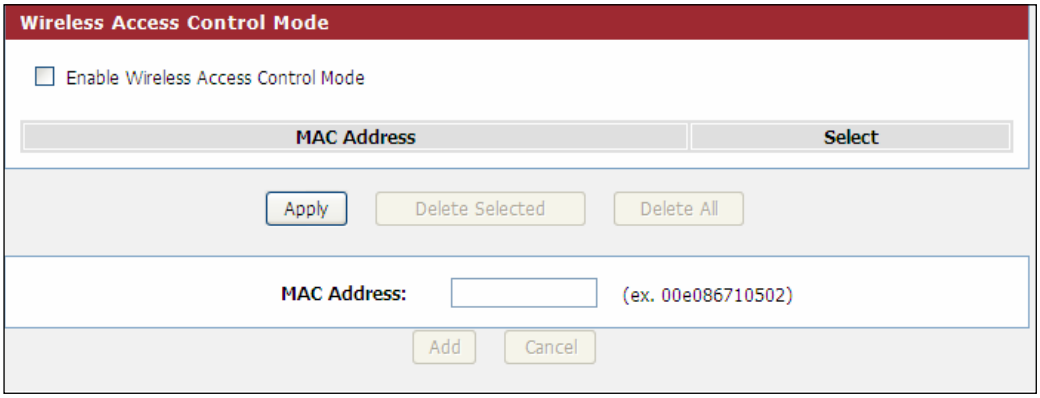


Here is the description of every setup item:

Parameter	Description
Enable Wireless	Check this box to enable the Router's wireless features; uncheck to disable it.
Fragment Threshold	Used to fragment packets which help improve performance in the presence of radio frequency (RF) interference.
RTS Threshold	Determines the packet size of a transmission through the use of the router to help control traffic flow.
Preamble Type	This is the length of the CRC (Cyclic Redundancy Check) block for communication between the router and wireless clients. High network traffic areas should select Short preamble type.
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%.
HT20/40 Coexistence	Enable this option to reduce interference from other wireless networks in your area. If the channel width is operating at 40MHz and there is another wireless network's channel over-lapping and causing interference, the router will automatically change to 20MHz.

ACL Set up

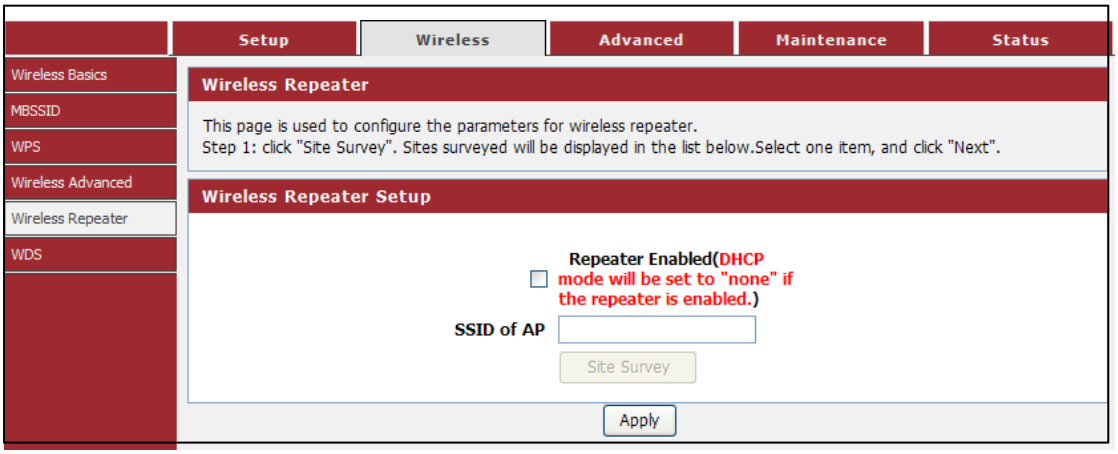
You can specify what kind of service should be enabled in WAN on this page.
Packets available in the list or from IP specified can enter the AP router.



4-2-5 Wireless Repeater

This page is used to configure the parameters for wireless repeater.

Choose menu "**Wireless→Wireless Repeater**", below given screen will be displayed.



DHCP server will automatically shut down if relay mode is enabled (DHCP server will be enabled if relay mode is disabled). We recommend that the computer's IP address and DNS address is set to automatically obtain. You need to manually set the IP address of the computer if you want to access the device, while your PC got IP address from the upstream AP.

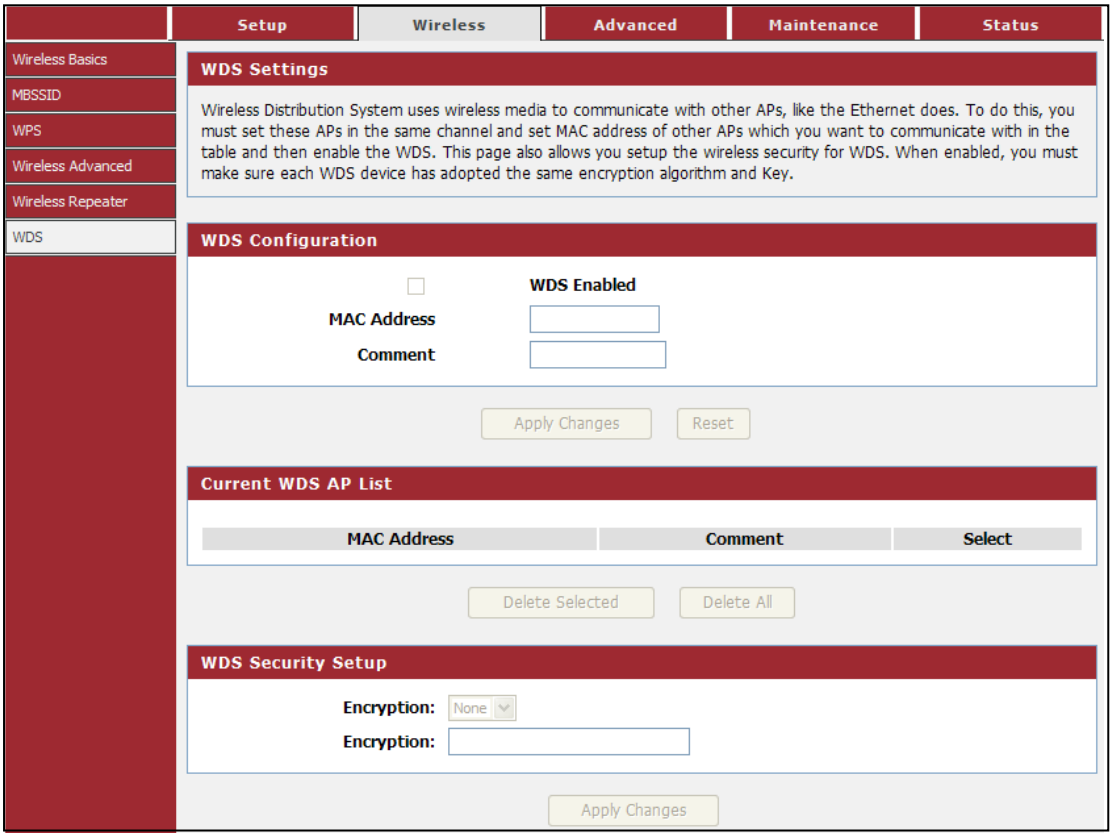
In order to complete these settings, please follow the steps below:

1. Click "Site Survey". Sites surveyed will be displayed in the list below. Select one item, and click "Next".
2. Setup the wireless security. Turn on WEP or WPA by using Encryption Keys which could prevent any unauthorized access to your wireless network.
3. Click "Finish" to save the configuration.

4-2-6 WDS

Wireless Distribution System uses wireless media to communicate with other APs, like the Ethernet does. To do this, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS. This page also allows you setup the wireless security for WDS. When enabled, you must make sure each WDS device has adopted the same encryption algorithm and Key.

Choose menu "**Wireless→WDS**", below given screen will be displayed.

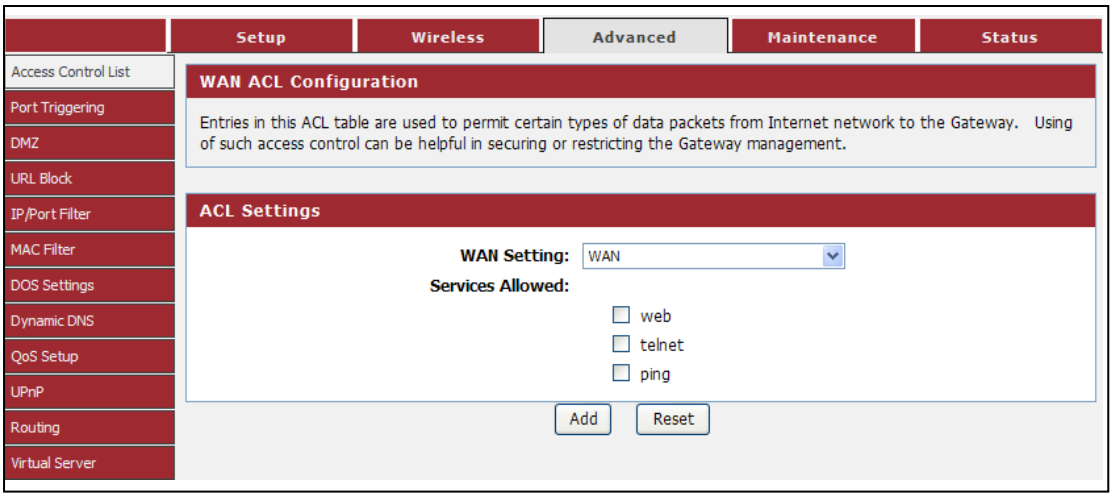


Here is the description of every setup item:

Parameter	Description
MAC Address	Input the MAC address of other wireless routers.
Comment	You can add some comment for this item.
WDS Security Setup	All base stations in a wireless distribution system must be configured to use the same radio channel, method of encryption (none, WEP, TKIP or AES) and the same encryption keys.

4-3 Advanced

Click '**Advanced**' menu on the top of web management interface, and the following message will be displayed on your web browser:

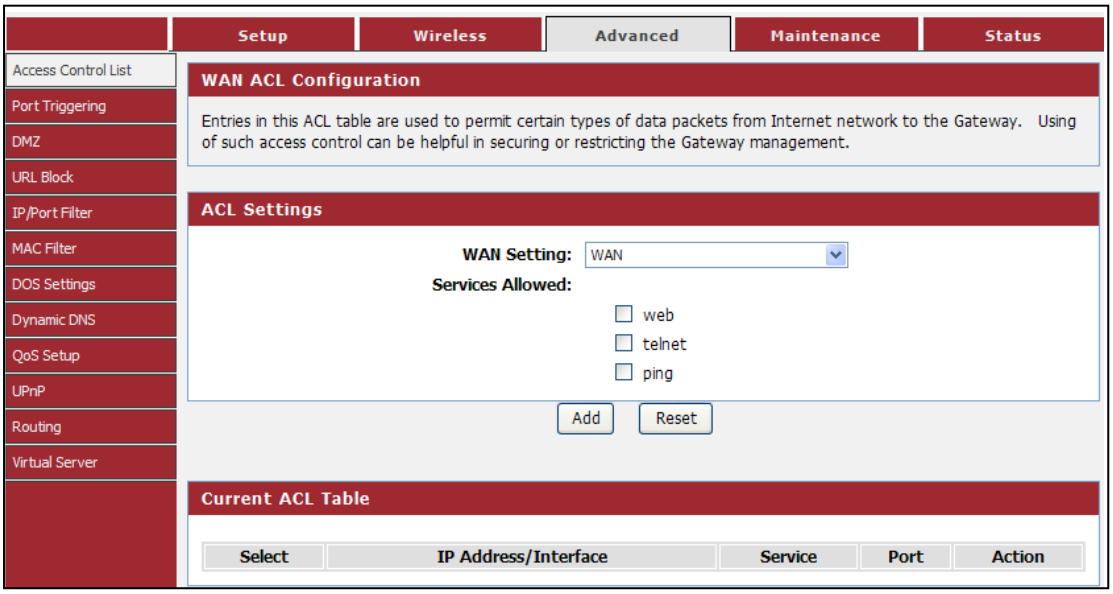


There are twelve submenus under the Advanced menu: **Access Control List, Port Triggering, DMZ, URL Block, IP/Port Filter, MAC Filter, DOS Settings, Dynamic DNS, QoS Setup, UPnP, Routing, Virtual Server**. Click any of them, and you will be able to configure the corresponding function.

4-3-1 Access Control List

You can specify what kind of service should be enabled in WAN on this page. Packets available in the ACL list or from IP specified can enter the AP Router.

Choose menu "**Advanced→Access Control List**", below given screen will be displayed.



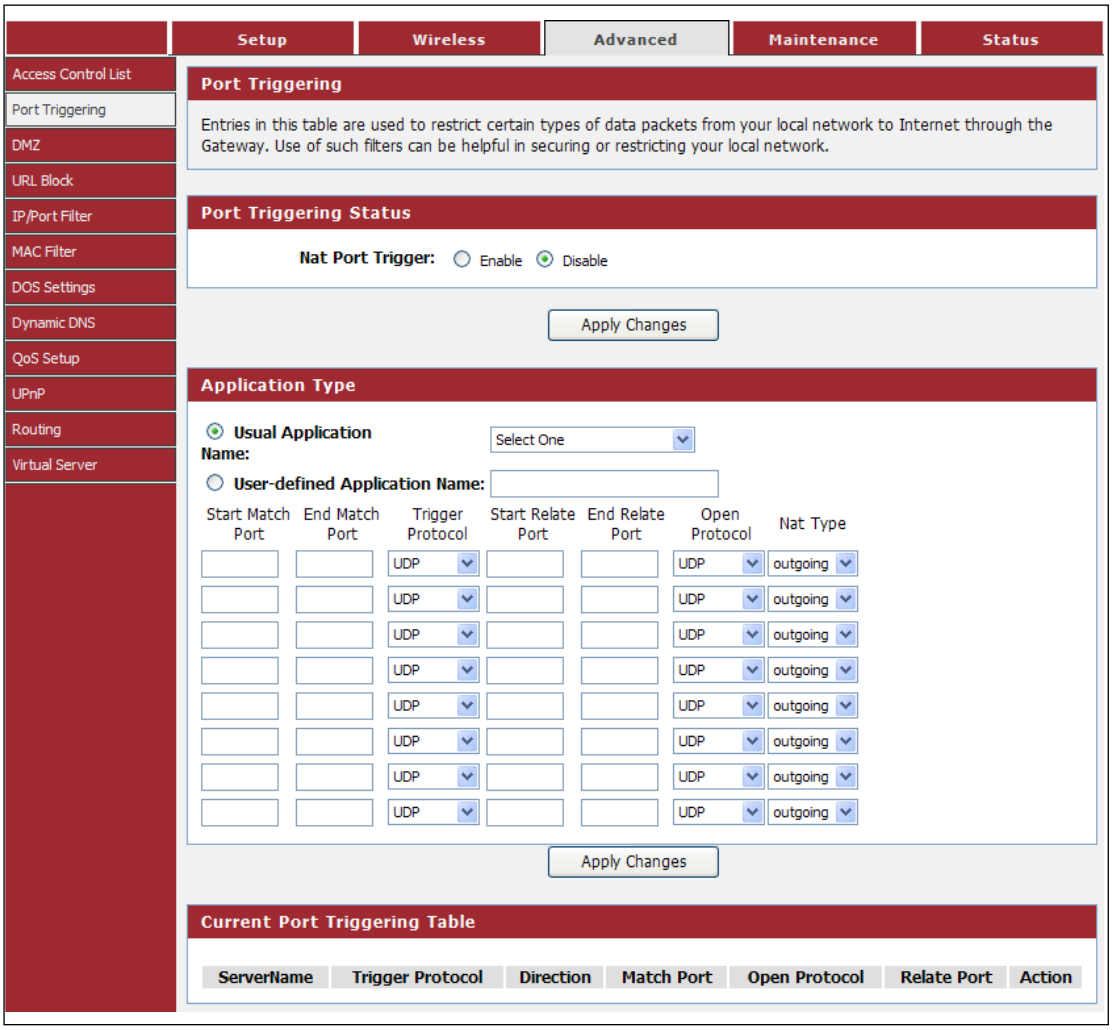
Here is the description of every setup item:

Parameter	Description
WAN Setting	Select WAN or a specific IP address range.
Services Allowed	Specify what kind of service should be enabled in WAN.

4-3-2 Port Triggering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Choose menu "**Advanced→Port Triggering**", below given screen will be displayed.



Here is the description of every setup item:

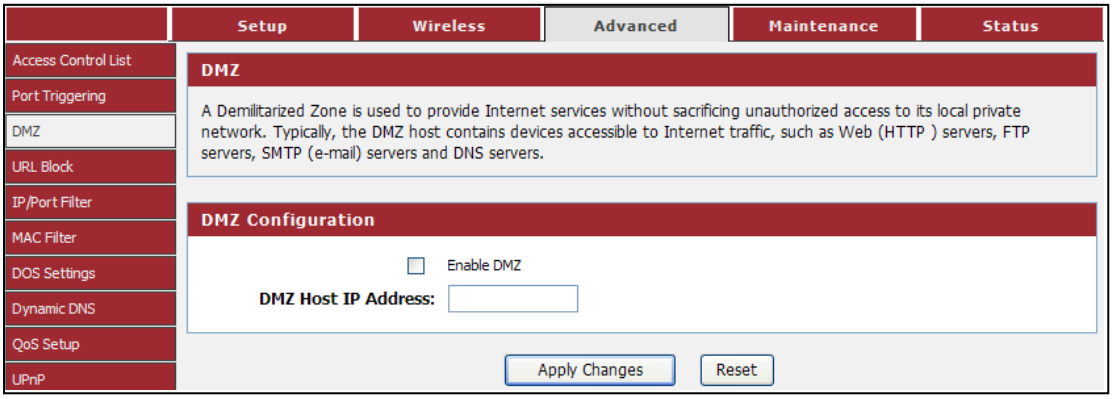
Parameter	Description
Nat Port Trigger	If you want to enable Nat Port Trigger function, please select 'Enable'; otherwise please select 'Disable'.

Usual Application Name	You can choose the type for the Usual Application Name on the pull-down list.
User-defined Application Name	Enter an application name for the rule.
Start Match Port - End Match Port	The port range for outgoing traffic. An outgoing connection using this port will "Match" this rule.
Trigger Protocol	The protocol used for Trigger Ports, either TCP, UDP, or TCP/UDP.
Start Relate Port - End Relate Port	The port range used by the remote system when it responds to the outgoing request. A response using one of these ports will be forwarded to the PC that triggered this rule.
Open Protocol	The protocol used for Incoming Ports Range, either TCP or UDP, or TCP/UDP.
Nat Type	Incoming mode will allow inbound traffic to specific incoming port. Outgoing mode will allow outbound traffic to specific outgoing port.

4-3-3 DMZ

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

Choose menu "**Advanced→DMZ**", below given screen will be displayed.



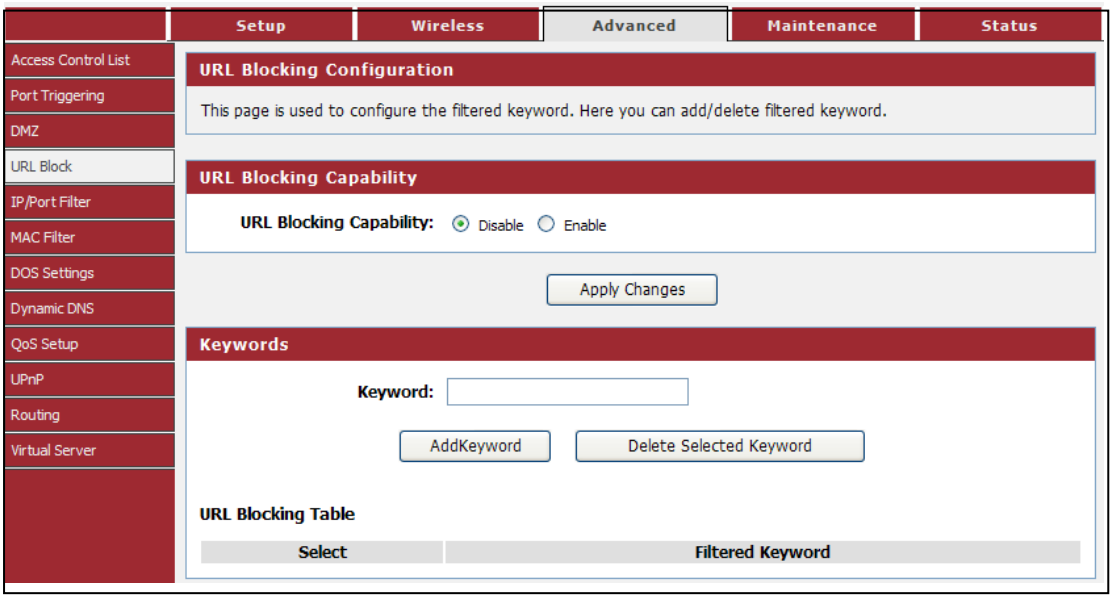
Here is the description of every setup item:

Parameter	Description
Enable DMZ	Check this box to enable DMZ function, uncheck this box to disable DMZ function.
DMZ Host IP Address	Enter DMZ host IP Address. Specify the LAN IP address of the PC on which you want to have unrestricted Internet communication.

4-3-4 URL Block

This page is used to configure the filtered keyword. Here you can add/delete filtered keyword.

Choose menu "**Advanced→URL Block**", below given screen will be displayed.



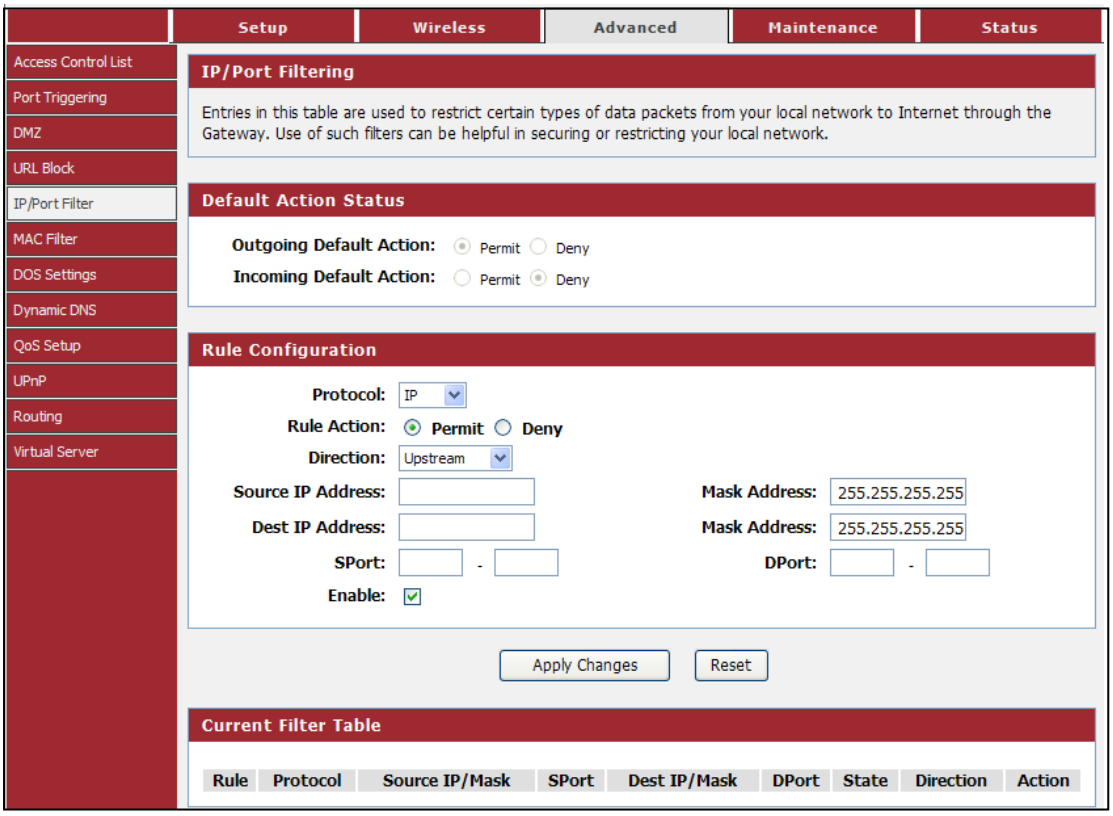
Here is the description of every setup item:

Parameter	Description
URL Blocking Capability	If you want to enable URL Blocking Capability function, please select 'Enable'; otherwise please select 'Disable'.
Keyword	Enter the keyword that you want to block.

4-3-5 IP/Port Filter

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Choose menu "**Advanced→IP/Port Block**", below given screen will be displayed.



Here is the description of every setup item:

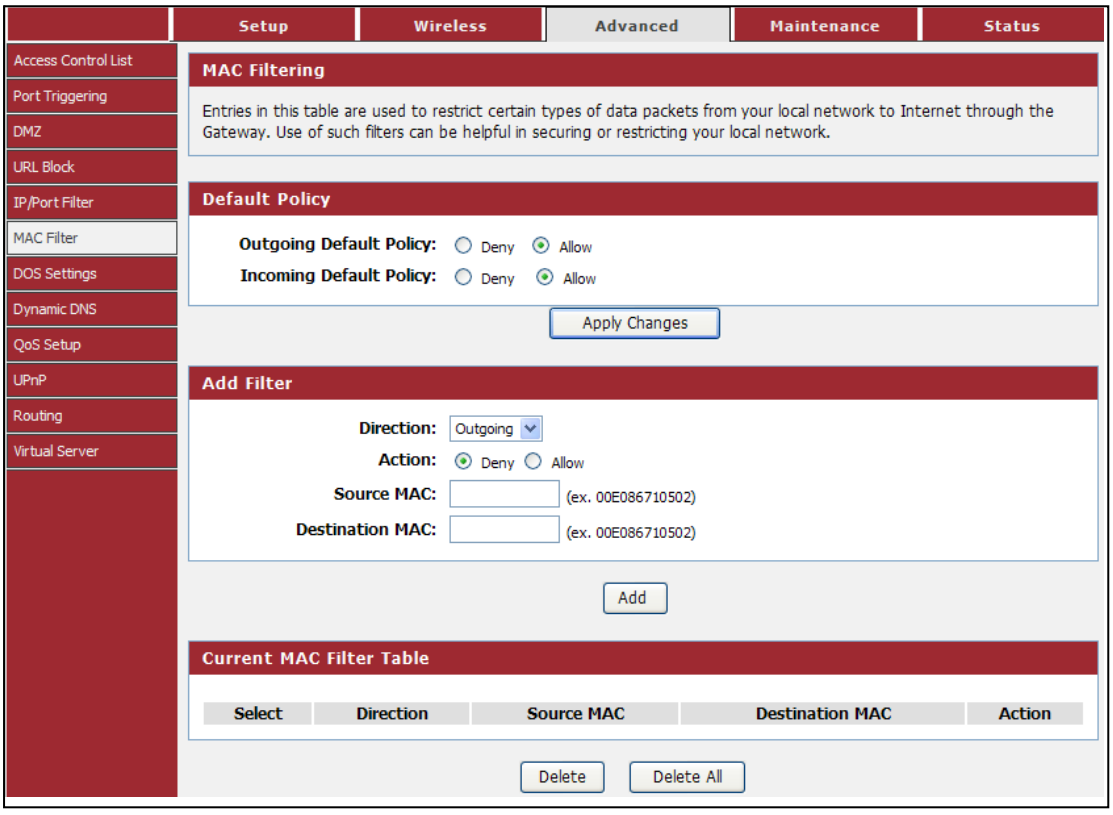
Parameter	Description
Default Action Status	Select Deny or Permit.
Protocol	The protocol used to filter, either IP, ICMP, TCP, or UDP.
Rule Action	Select Permit or Deny.
Direction	You can choose the type for the IP/Port Filter on the pull-down list.
Source IP Address	Specify the source IP address that will be affected by this rule.
Dest IP Address	Specify the destination IP address that will be affected by this rule.

SPort	Specify the source port range that will be affected by this rule.
DPort	Specify the destination port range that will be affected by this rule.
Enable	Check this box to to enable the IP/Port Filter features; uncheck to disable it.

4-3-6 MAC Filter

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Choose menu "**Advanced→MAC Filter**", below given screen will be displayed.



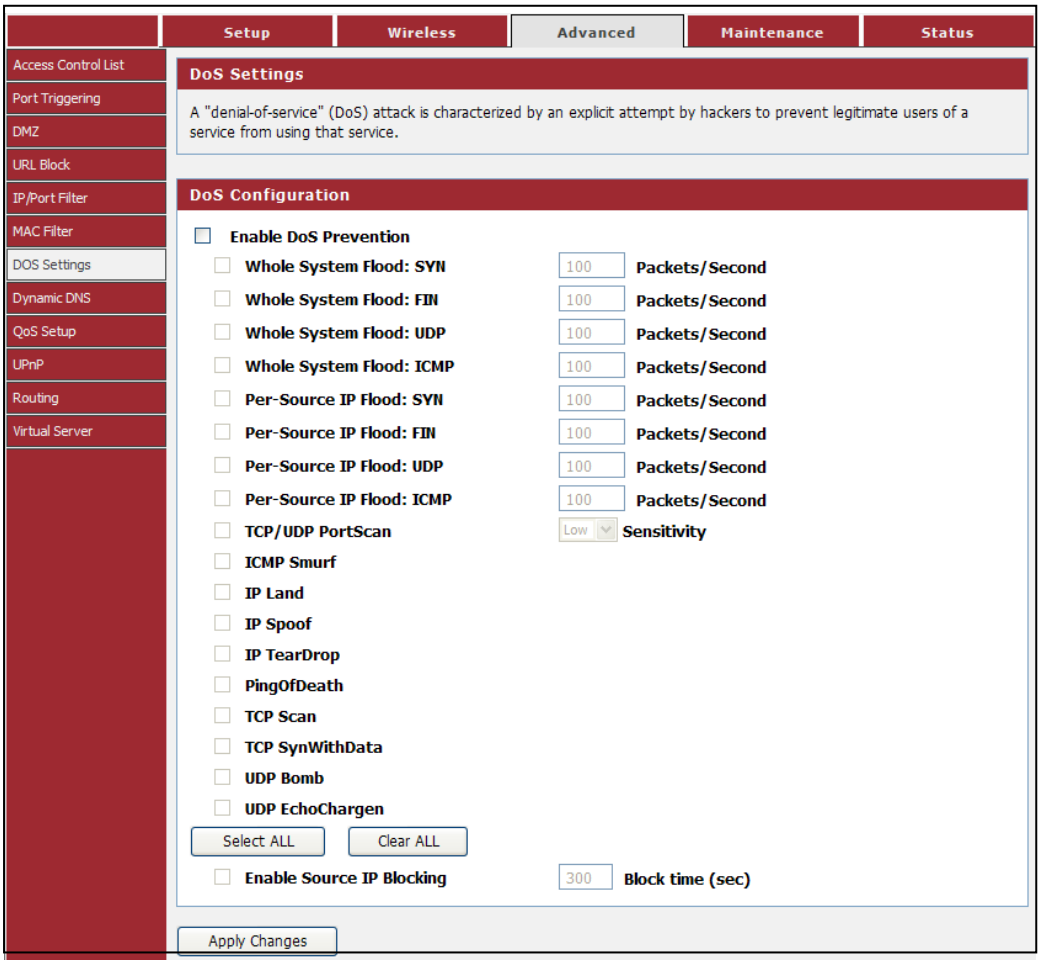
Here is the description of every setup item:

Parameter	Description
Default Policy	Select Deny or Permit.
Direction	You can choose the type for the MAC Filter on the pull-down list.
Action	Select Deny or Permit.
Source MAC	Specify a source MAC address.
Destination MAC	Specify a destination MAC address.

4-3-7 DOS Settings

A "denial-of-service" (DoS) attack is characterized by an explicit attempt by hackers to prevent legitimate users of a service from using that service.

Choose menu “Advanced→DOS Settings”, below given screen will be displayed.



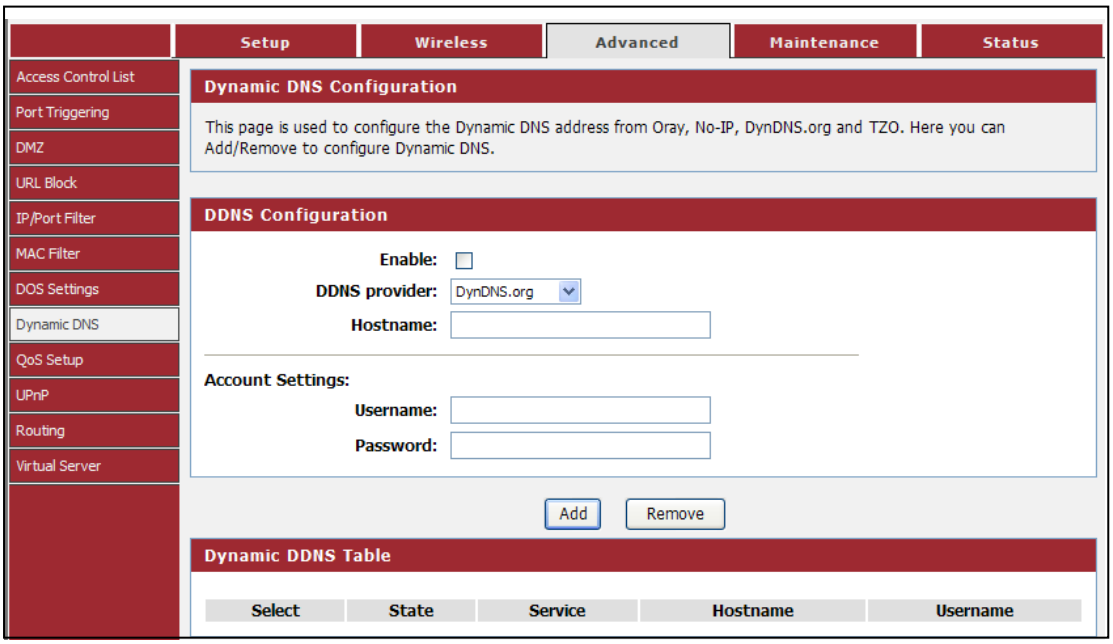
Here is the description of every setup item:

Parameter	Description
Enable Dos Prevention	Check this box to enable the Dos Prevention features; uncheck to disable it.
Enable source IP blocking	The Router will block the IP Address of source which sends the DoS attack for specified time.

4-3-8 Dynamic DNS

This page is used to configure the Dynamic DNS address from Oray, No-IP, DynDNS.org and TZO. Here you can Add/Remove to configure Dynamic DNS.

Choose menu "**Advanced→Dynamic DNS**", below given screen will be displayed.



Here is the description of every setup item:

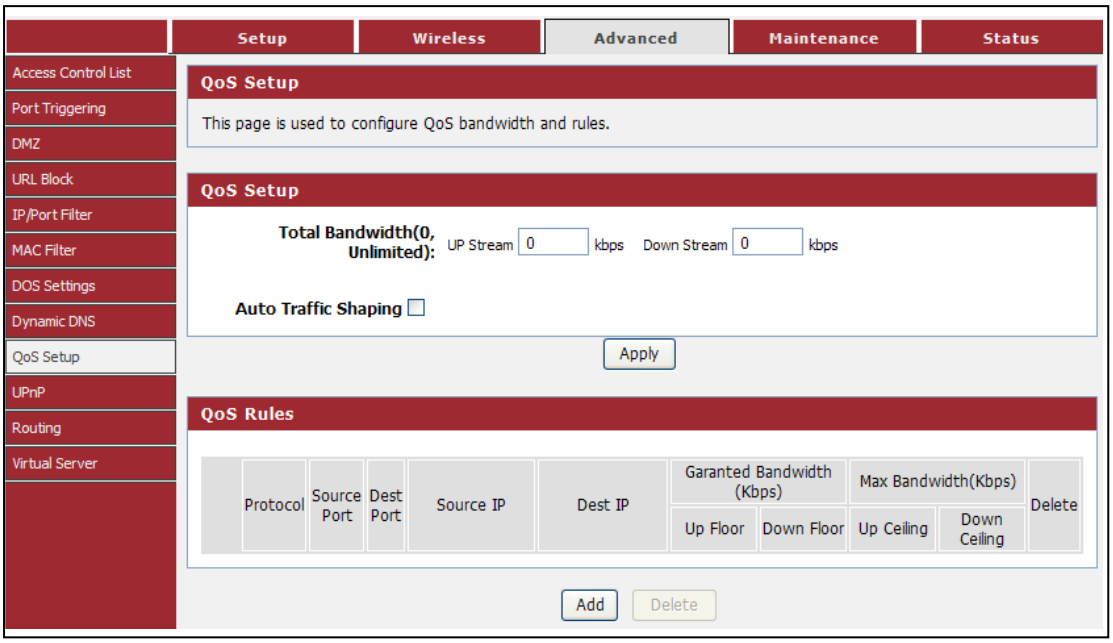
Parameter	Description
Enable	Check this box to enable the DDNS features; uncheck to disable it.

DDNS Provider	Choose your DDNS Provider from the drop down menu.
Host Name	Enter the Host Name that you have registered with your DDNS service provider.
Username	Enter the Username for your DDNS account.
Password	Enter the Password for your DDNS account.

4-3-9 Qos Setup

This page is used to configure QoS bandwidth and rules.

Choose menu "**Advanced→Qos Setup**", below given screen will be displayed.



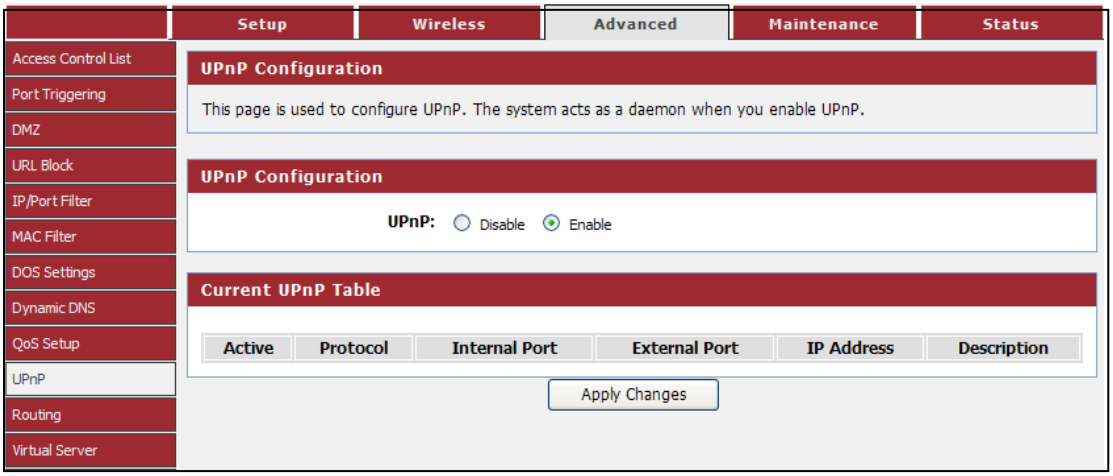
Here is the description of every setup item:

Parameter	Description
Up Stream	The upload speed through the WAN port.
Down Stream	The download speed through the WAN port.
Auto Traffic Shaping	Check this box to to enable the Auto Traffic Shaping features; uncheck to disable it.

4-3-10 UPnP

This page is used to configure UPnP. The system acts as a daemon when you enable UPnP.

Choose menu "**Advanced→UPnP**", below given screen will be displayed.



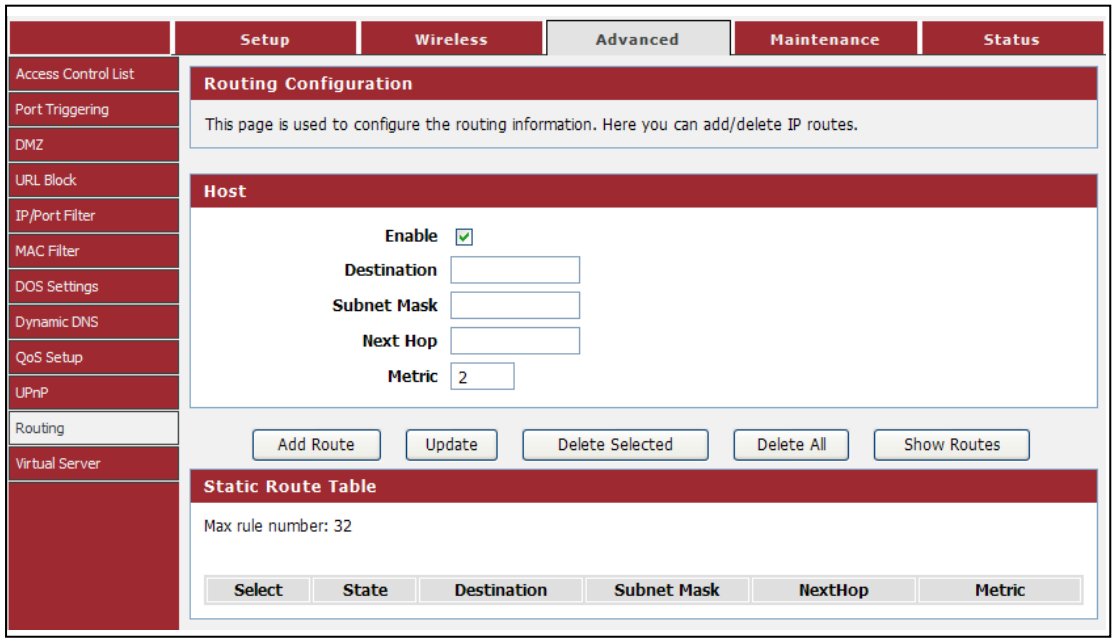
Here is the description of every setup item:

Parameter	Description
UPnP	Select Enable or Disable to enable or disable UPnP function.

4-3-11 Routing

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

Choose menu "**Advanced→Routing**", below given screen will be displayed.



Here is the description of every setup item:

Parameter	Description
Enable	Check this box to enable the Routing features; uncheck to disable it.
Destination	Enter the remote destination LAN IP.
Subnet Mask	Enter the remote LAN subnet mask.
Next Hop	Enter the next hop IP.
Metric	Determines the priority of the route. If multiple routes to the same destination exist, the route with the lowest metric is chosen.

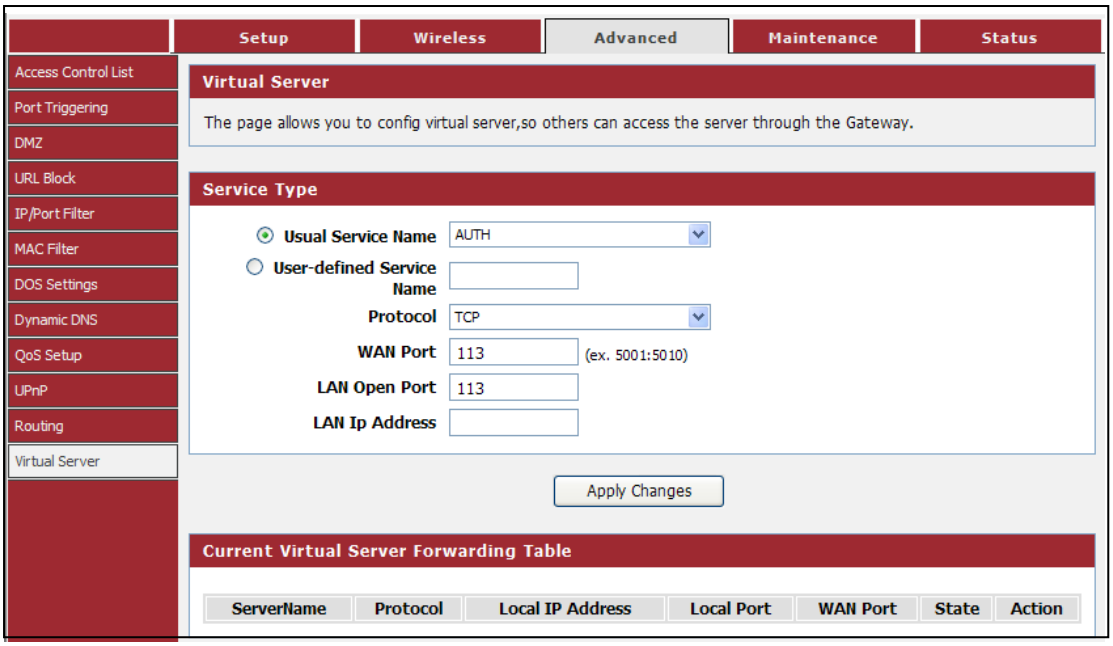
Static route table

Parameter	Description
State	Shows if Routing rule is Disabled or Enabled.
Destination	Shows the remote destination LAN IP.
Subnet Mask	Shows the remote LAN subnet mask.
Next Hop	Shows the next hop IP.
Metric	Shows metric in numeric form.

4-3-12 Virtual Server

The page allows you to configure virtual server, so others can access the server through the Gateway.

Choose menu "**Advanced→Virtual Server**", below given screen will be displayed.

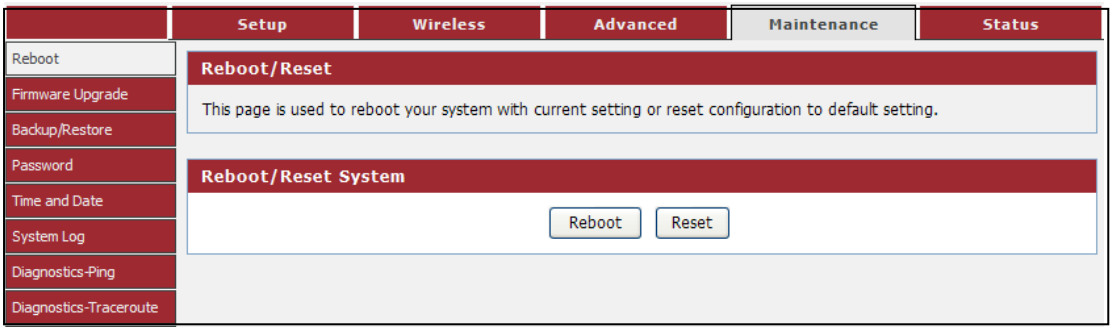


Here is the description of every setup item:

Parameter	Description
Usual Service Name	You can choose the type for the Usual Application Name on the pull-down list.
User-defined Service Name	Enter a name for the rule.
Protocol	The protocol used for this application, either TCP, UDP.
WAN Port	Enter the port that you want to open next to WAN port.
LAN Open Port	Enter the port that you want to open next to LAN port.
LAN IP Address	Enter the IP address of the computer on your local network that you want to allow the incoming service to.

4-4 Maintenance

Click '**Maintenance**' menu on the top of web management interface, and the following message will be displayed on your web browser:

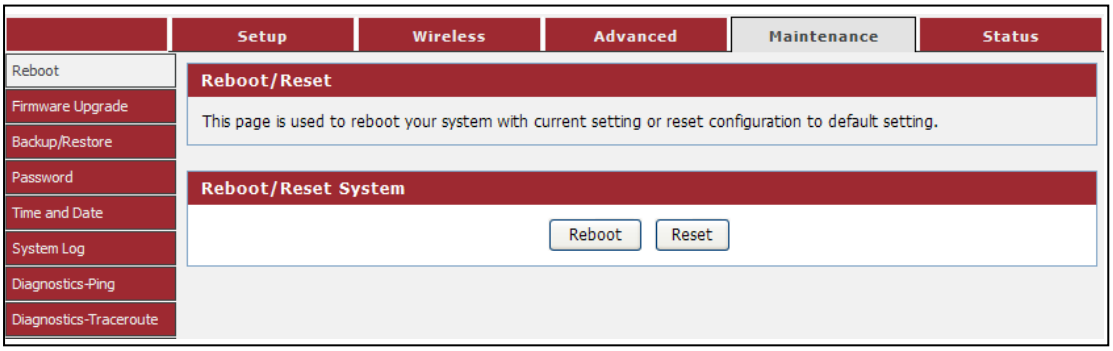


There are eight submenus under the Maintenance menu: **Reboot, Firmware Upgrade, Backup/Restore, Password, Time and Date, System Log, Diagnostics-Ping, Diagnostics-Traceroute.** Click any of them, and you will be able to configure the corresponding function.

4-4-1 Reboot

This page is used to reboot your system with current setting or reset configuration to default setting.

Choose menu "**Maintenance→Reboot**", below given screen will be displayed.



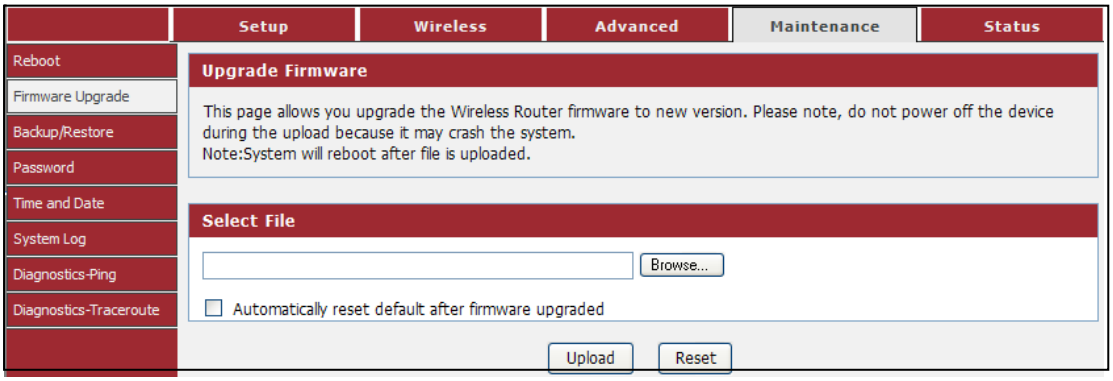
Here is the description of every setup item:

Parameter	Description
Reboot	Restarts the router for the settings to take effect.
Reset	Restarts the router with factory default setting.

4-4-2 Firmware Upgrade

The Firmware Upgrade section can be used to upgrade to the latest firmware code to improve functionality and performance.

Choose menu "**Maintenance→Firmware Upgrade**", below given screen will be displayed.



The Firmware Upgrade section can be used to upgrade to the latest firmware code to improve functionality and performance.

To update the firmware, follow these steps:

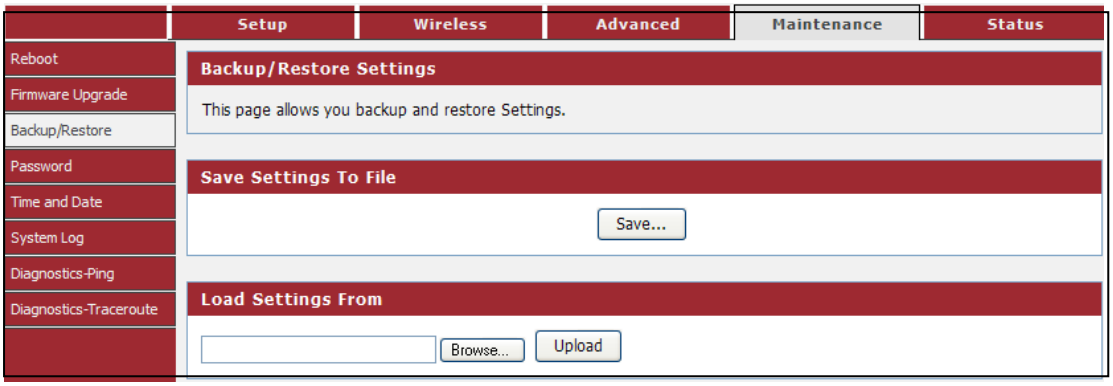
1 Click the Browse button to locate the upgrade file on your computer.
2 Once you have found the file to be used, click the Upload button below to start the firmware update process. This can take a minute or more.
3 Wait for the router to reboot. This can take another minute or more.

NOTE: Some firmware updates reset the configuration options to the factory defaults. Before performing any update, be sure to save the current configuration.

4-4-3 Backup/Restore

Save your configurations in a file on your computer so that it may be accessed again later if your current settings are changed. Be sure to save the configuration before performing a firmware update.

Choose menu "**Maintenance→Backup/Restore**", below given screen will be displayed.



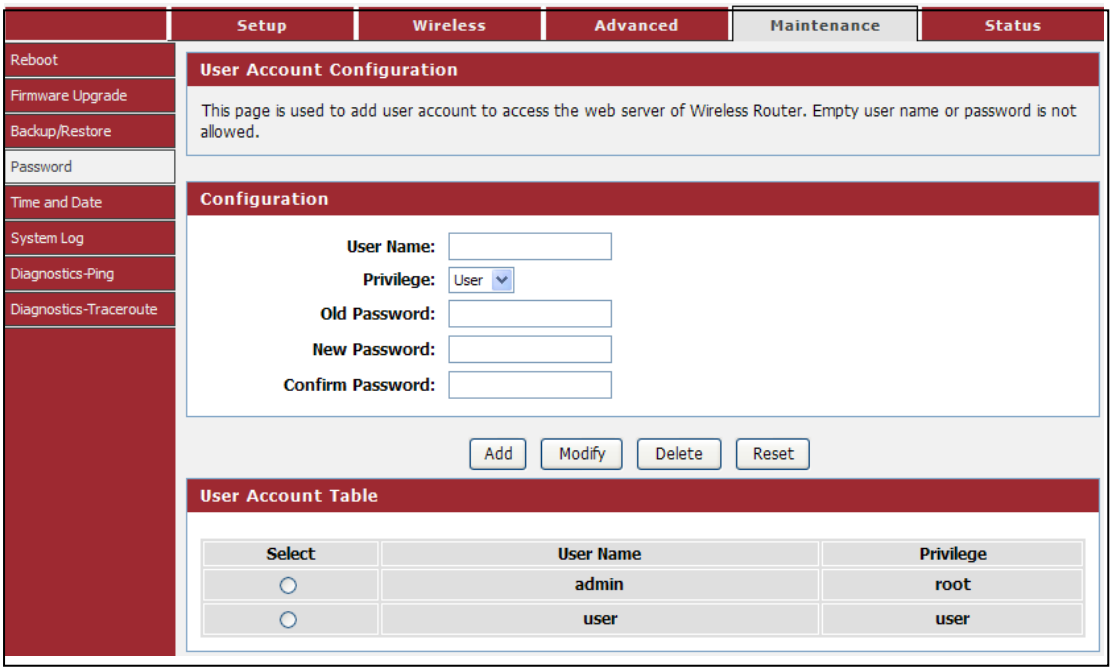
Here is the description of every setup item:

Parameter	Description
Save Settings to File	Press 'Save' button, and you'll be prompted to download the configuration as a file, default filename is 'config.img', you can save it as another filename for different versions, and keep it in a safe place.
Load Settings From	Press 'Browse…' to pick a previously-saved configuration file from your computer, and then click 'Upload' to transfer the configuration file to the router. After the configuration is uploaded, the router's configuration will be replaced by the file you just uploaded.

4-4-4 Password

This page is used to add user account to access the web server of Wireless Router. Empty user name or password is not allowed.

Choose menu "**Maintenance→Password**", below given screen will be displayed.



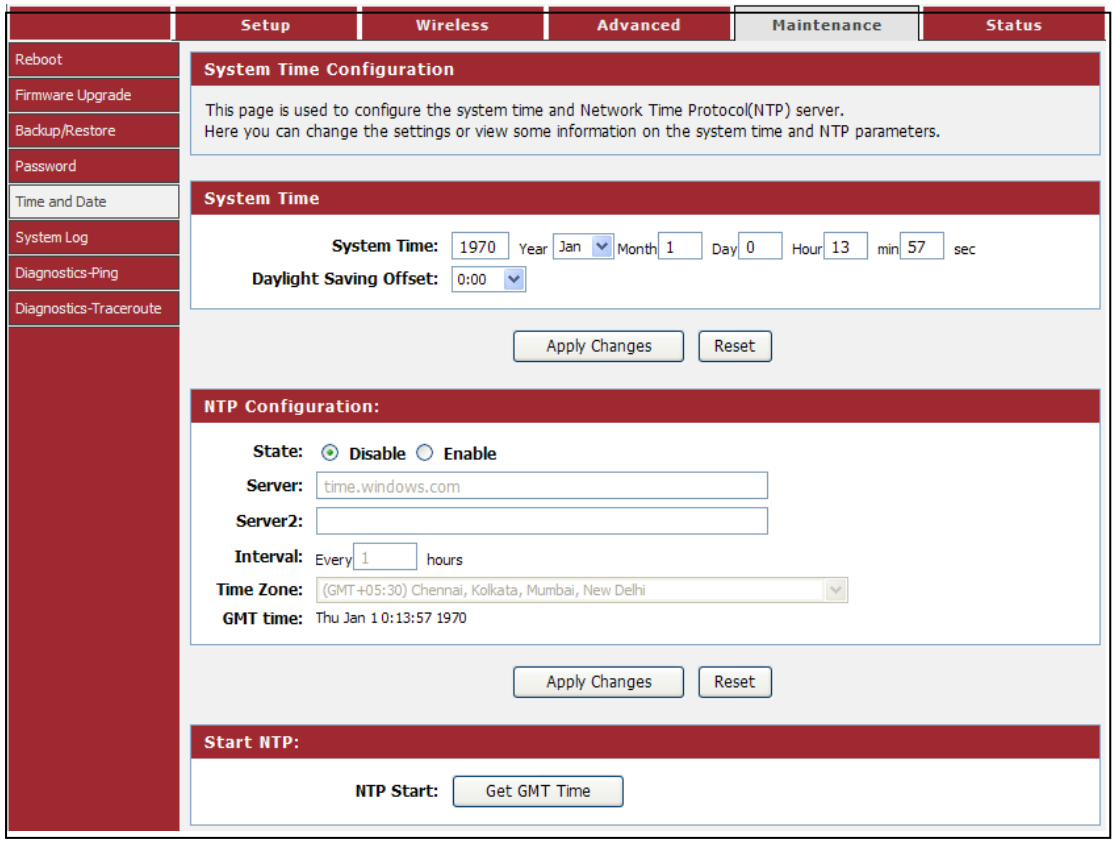
Here is the description of every setup item:

Parameter	Description
User Name	Please input new User Name here.
Privilege	Please select the privilege of account you wish to use.
Old Password	Please input current password here.
New Password	Please input new password here.
Confirm Password	Please input new password here again.

4-4-5 Time and Date

This page is used to configure the system time and Network Time Protocol (NTP) server.

Choose menu "**Maintenance→Time and Date**", below given screen will be displayed.



Here is the description of every setup item:

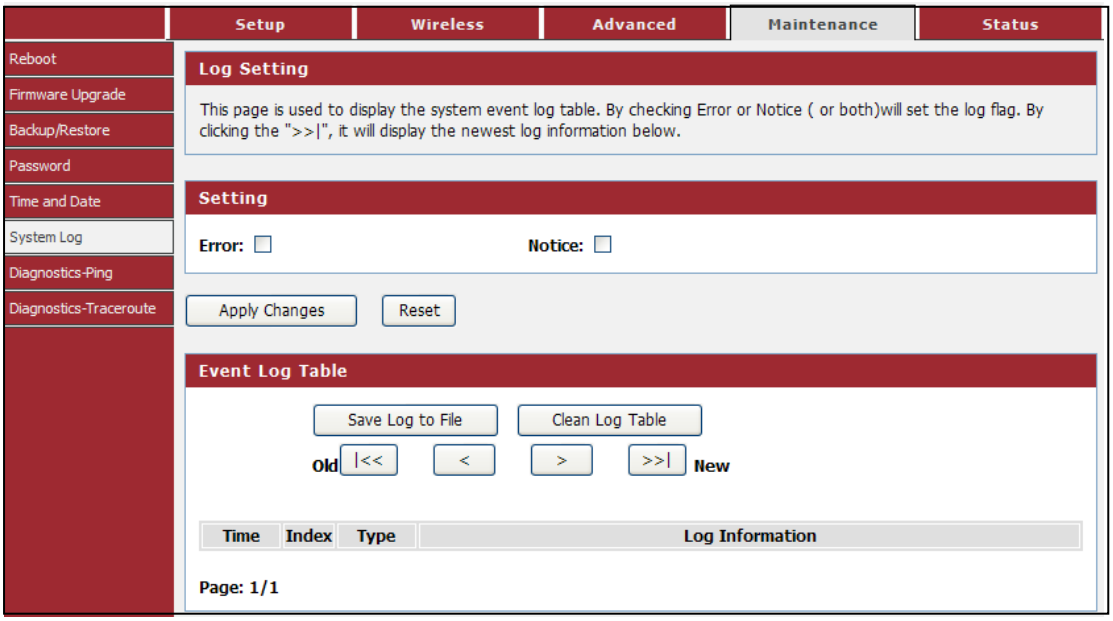
Parameter	Description
System Time	Displays the current time of the router. If the time is incorrect, please fill in the correct time.
Daylight Saving Offset	Check this option if your location observes daylight saving time. Daylight saving time begins in the southern hemisphere between September–November 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.

State	There are two options here: Enable or Disable. The default value is disable.
Server	You can fill the address used for clock synchronization of network time server.
Time Zone	You can select your time zone drop-down box.
Start NTP	You can click Get GMT Time from network time server.

4-4-6 System Log

This page is used to display the system event log table. By checking Error or Notice (or both) will set the log flag.

Choose menu "**Maintenance→System Log**", below given screen will be displayed.



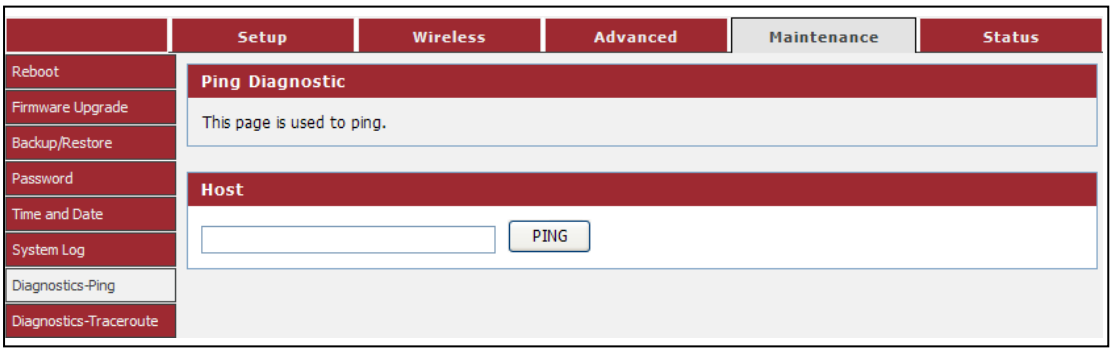
Here is the description of every setup item:

Parameter	Description
Setting	By selecting the log type, only logs of this type will be shown.
Save Log to File	Save current event log to a text file.
Clean Log Table	Delete all event logs displayed here.

4-4-7 Diagnostics-Ping

This page is used to ping. Diagnostic Ping can check network reachable or not.

Choose menu "**Maintenance→Diagnostics Ping**", below given screen will be displayed.



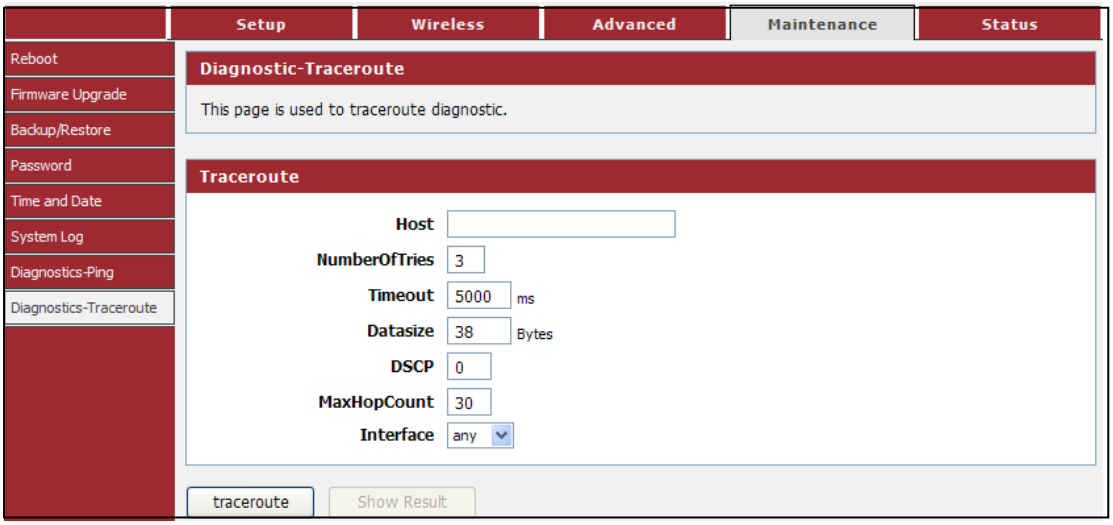
Here is the description of every setup item:

Parameter	Description
Host	Type the destination IP address.

4-4-8 Diagnostics-Traceroute

This page is used to traceroute diagnostic. Diagnostic traceroute can check network reachable or not, and find the route path between user and the host under check.

Choose menu "**Maintenance→Diagnostics Traceroute**", below given screen will be displayed.

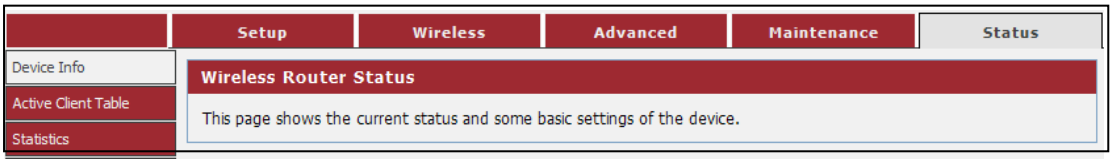


Here is the description of every setup item:

Parameter	Description
Host	Type the destination IP address.
Numberoftries	Type the number of tries.
Timeout	Set the waiting time for the reply of each packet. If there is no reply in the specified time, the connection is overtime.
Datasize	The size of packet.
DSCP	Configure the DSCP parameters.
MaxHopCount	The max number of hops for a traceroute connection.
Interface	By selecting the Interface type.

4-5 Status

Click 'Status' menu on the top of web management interface and the following message will be displayed on your web browser:

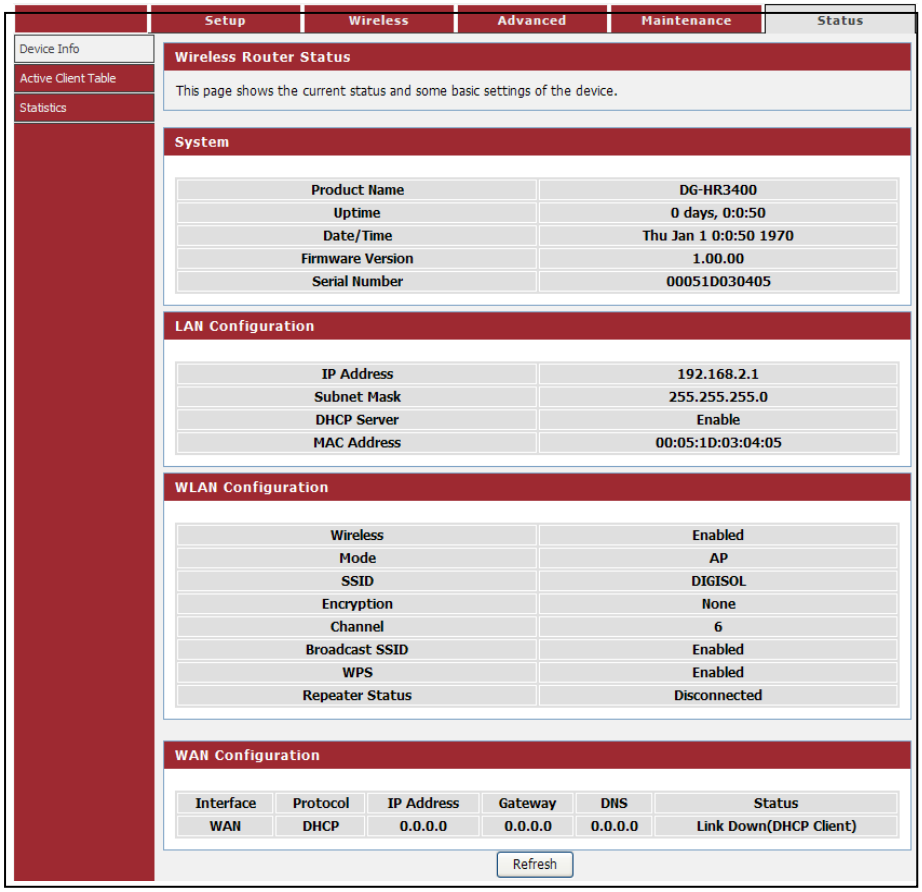


There are three submenus under the Status menu: **Device Info, Active Client Table and Statistics**. Click any of them, and you will be able to view the corresponding status.

4-5-1 Device Info

This page shows the current status and some basic settings of the device.

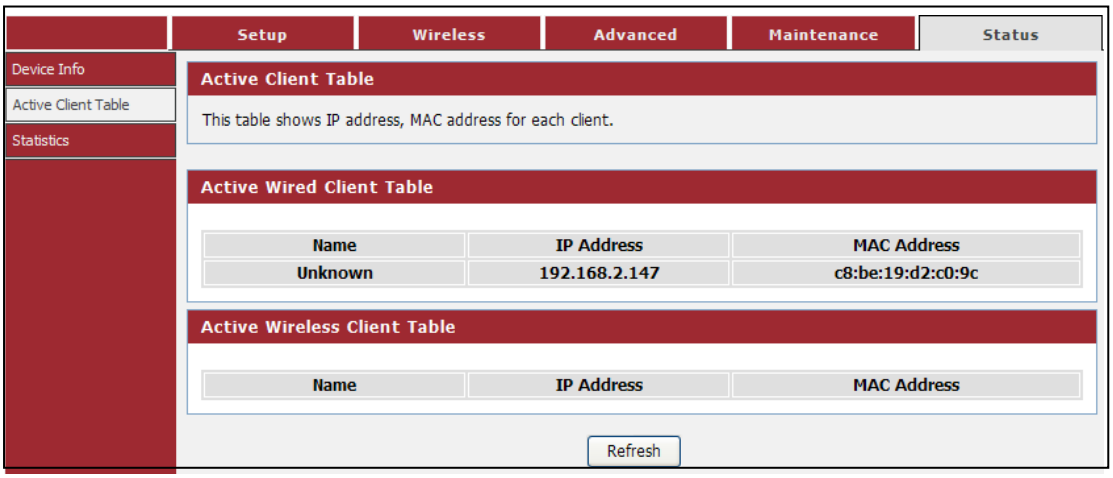
Choose menu "**Maintenance→Device Info**", below given screen will be displayed.



4-5-2 Active Client Table

This table shows IP address, MAC address for each client.

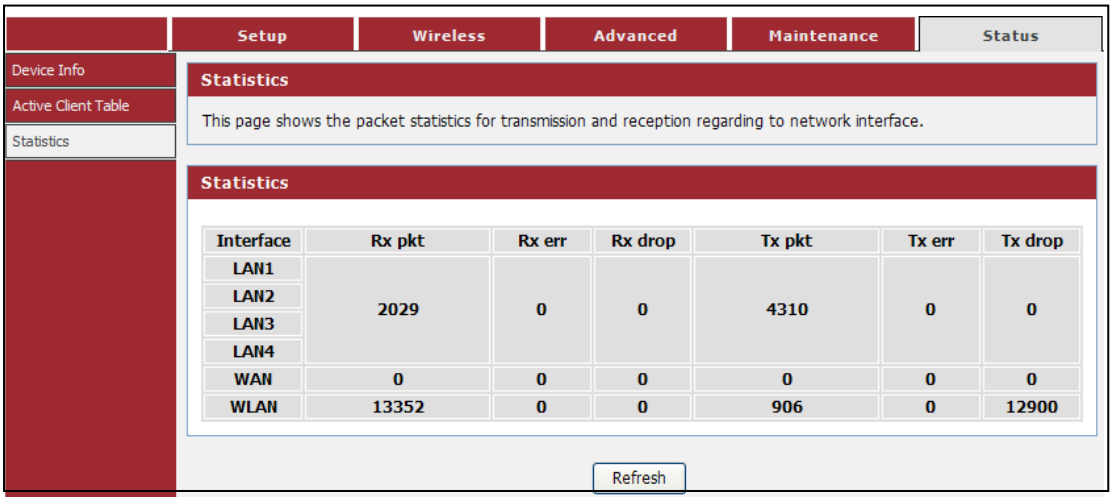
Choose menu "**Status→Active Client Table**", below given screen will be displayed.



4-5-3 Statistics

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

Choose menu "**Status→Statistics**", below given screen will be displayed.



5. Appendix

- **Hardware Specifications**
  - Flash: 2MB
  - SDRAM: 16MB
  - Antenna: Two fixed 5 dBi antenna
  - WPS Push Button
  - Factory reset button

- **Network Ports**
  - 1 * 10/100Mbps UTP WAN Port
  - 4 * 10/100Mbps UTP LAN Ports

- **Status LED**
  - Power, WAN, LAN (1-4), WLAN, WPS

- **Standards Compliance**
  - IEEE802.3 10 Base-T Ethernet
  - IEEE802.3u 100 Base-TX Ethernet
  - IEEE802.3 11b, IEEE802.11g, IEEE802.11n

- **Frequency Band**
  - 2.4000 ~ 2.4835 GHz

- **WLAN Data Transfer Rates**
  - IEEE802.3 11b up to 11Mbps
  - IEEE802.11g up to 54Mbps
  - IEEE802.11n up to 300Mbps

- **Wireless Output Power**
  - IEEE802.3 11b: 23 +/- 1 dBm
  - IEEE802.11g: 19 +/- 1 dBm
  - IEEE802.11n: 18 +/- 1 dBm

- **Environmental Specifications**
  - Operating temperature: 0 to 40°C
  - Storage Temperature: -40 to 70°C
  - Operating Humidity: 10 % to 90 %
  - Storage Humidity: 5% to 95%

- **Power Supply**
  - 5V DC, 1A Switching Power Adapter

6. 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.

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 be either 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:

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).

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.