DG-BG4300NU

300Mbps Wireless ADSL2/2+
Broadband Router with USB port

User Manual

V1.0
2013-11-12

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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.

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1. Product Information

1-1 Introduction and Safety Information

Thank you for purchasing DG-BG4300NU 300Mbps Wireless ADSL2/2+ Broadband Router with USB port! This router is the best choice for Small office / Home office users, all computers and network devices can share a single Internet connection at high speed. Easy Installation wizard provided with this router is designed to setup an Internet connection in a very short time by accessing the web configuration of the router. With its wireless speed up to 300Mbps users can experience uninterrupted Internet and multimedia access.

Other features of this Router include:

- High Internet Access throughput. Downstream up to 24 Mbps and Upstream up to 1 Mbps.
- Wireless speed up to 300Mbps.
- Robust WLAN Security.
- Supports URL blocking & Firewall.
- Dedicated WPS and WLAN push button.
- Dynamic DNS and VPN Pass through support.
- USB2.0 Port for 3G Dongle & Mass Storage.
- Allows multiple users to share a single ADSL internet connection.
- Access private LAN servers from the Internet.
- Four wired LAN ports (10/100M) and one WAN port (RJ-11).
- Works with IEEE 802.11b/g/n wireless LAN devices.
- Supports IPv6.
- Supports DHCP (Server/Client) for easy IP-address setup.

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 a long time (This is normal and is not a malfunction). **DO NOT** put this Router 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 PC with network adapter (wired/WLAN)
- Windows 98/Me/2000/XP/Vista
- Web browser
- 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-BG4300NU ADSL 2/2+ Broadband Router With 3G
- POTS splitter
- AC power adapter
- Quick Installation Guide
- Installation Guide CD (includes user manual & QIG)
- Patch cord (1 No.)
- RJ-11 cables (2 Nos.)

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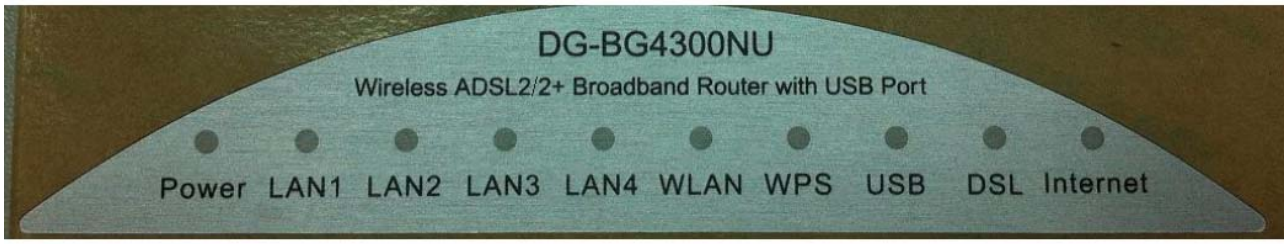
1-5 Get Familiar with your new ADSL2+ Wireless broadband router

Top Panel



LED Name	LED Color	Light Status	Description
Power	Red	ON	Device is initializing or initialization has failed.
	Green	OFF	Power is OFF.
		ON	Power is ON.
LAN (1~4)	Green	ON	PC is connected on LAN Port.
		OFF	PC is Unplugged / Not Connected.
WPS	Green	Blinking	WPS negotiation is enabled, waiting for the clients.
		OFF	WPS negotiation is not enabled on the device.
WLAN	Green	ON	Wireless is enabled.
		Blinking	Data is being transmitted or received.
		OFF	Wireless is not enabled.
USB	Green	ON	USB device is plugged.
		OFF	USB device is not plugged.
DSL	Green	ON	Physical link is UP.
		Blinking	ADSL handshaking process is ON or ADSL Line is unplugged.
Internet	Green	ON	Internet connection is established.
		Blinking	Data is being transmitted or received.
		OFF	Device is not connected to Internet.

Rear Panel

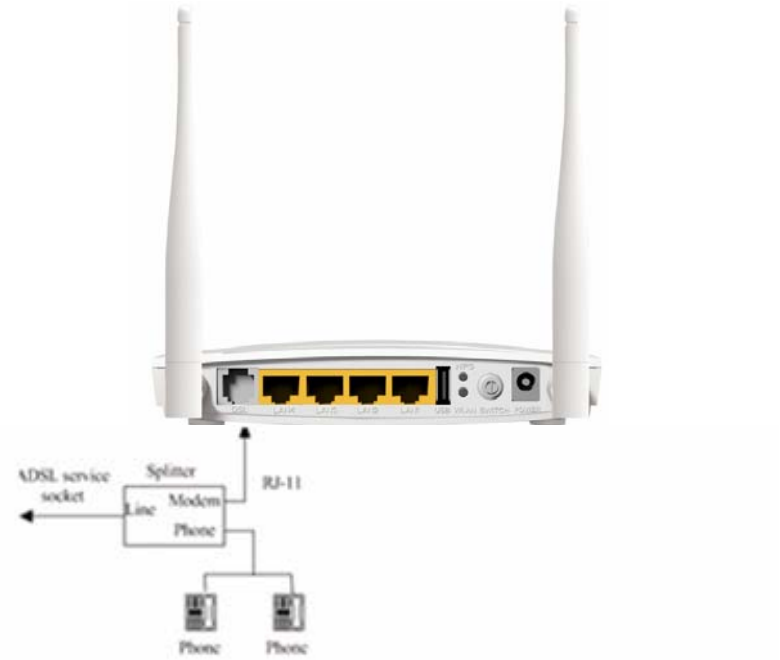
Interfaces	Description
Antennas	They are 5dBi fixed antennas.
Power	Power connector, connects to A/C power adapter.
Switch	Press this button to power on/off the router.
WPS	Press this button for less than 3 seconds to start WPS function.
WLAN	Press this button up to 3 seconds to ON/OFF WLAN.
USB	USB port is provided for 3G dongle connection or USB disk mass storage.
LAN (1~4)	Local Area Network (LAN) ports 1 to 4.
DSL	Connect ISP line to the Line port.

Note: Kindly note that the Reset button for resetting the device to factory default settings is provided on the back panel/bottom side of the device.

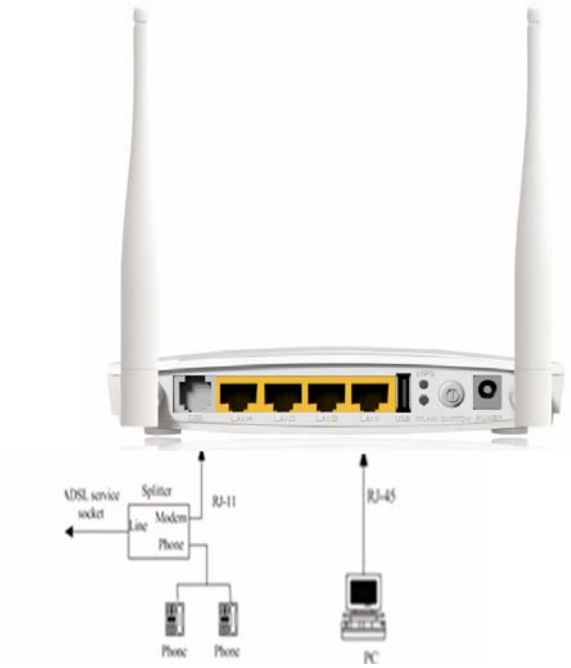
2. System and Network Setup

2-1 Hardware Installation

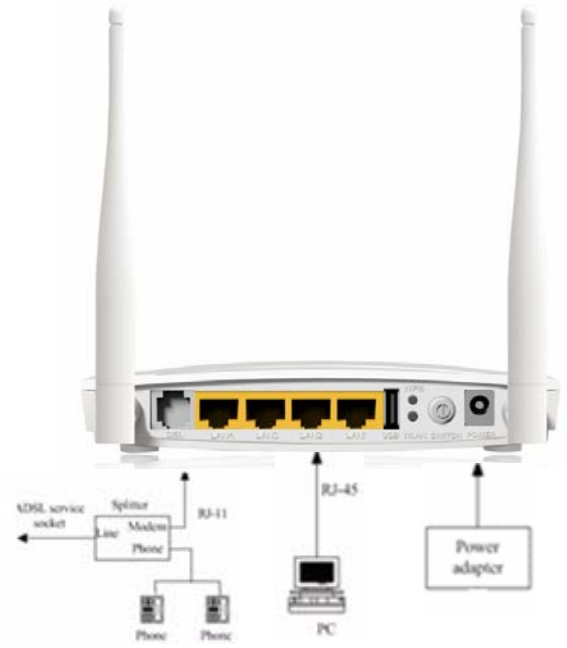
Step 1 Connect the Line interface of the device and the Modem interface of the splitter with a telephone cable. Connect the phone set to the Phone interface of the splitter through a telephone cable. Connect the input cable to the Line interface of the splitter.



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



Step 3 Connect the power adapter (12V DC / 1A) to the wall socket, and then connect it to the '**Power**' socket of the router.



Step 4 Please check all LEDs on the front panel. '**Power LED**' should be steadily ON, ADSL and LAN 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 is not ON, or any LED you expected is not ON, please recheck the cabling.

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3. Web Browser Configuration

The DSL device is an ADSL2+ wireless router.

- LAN IP address: **192.168.1.1**, Netmask: **255.255.255.0**
- Default VPI/VCI for ATM (maximum 8 sets): **0/32, 1/32, 0/35**
- ADSL Line mode: Auto-detect.

User can change settings via WEB browser. The following sections describe the set up procedures.

Please set your PC's Ethernet port as follows:

- IP address: **192.168.1.XXX (e.g. 192.168.1.10)**
- Netmask: **255.255.255.0**
- Default Gateway: **192.168.1.1**

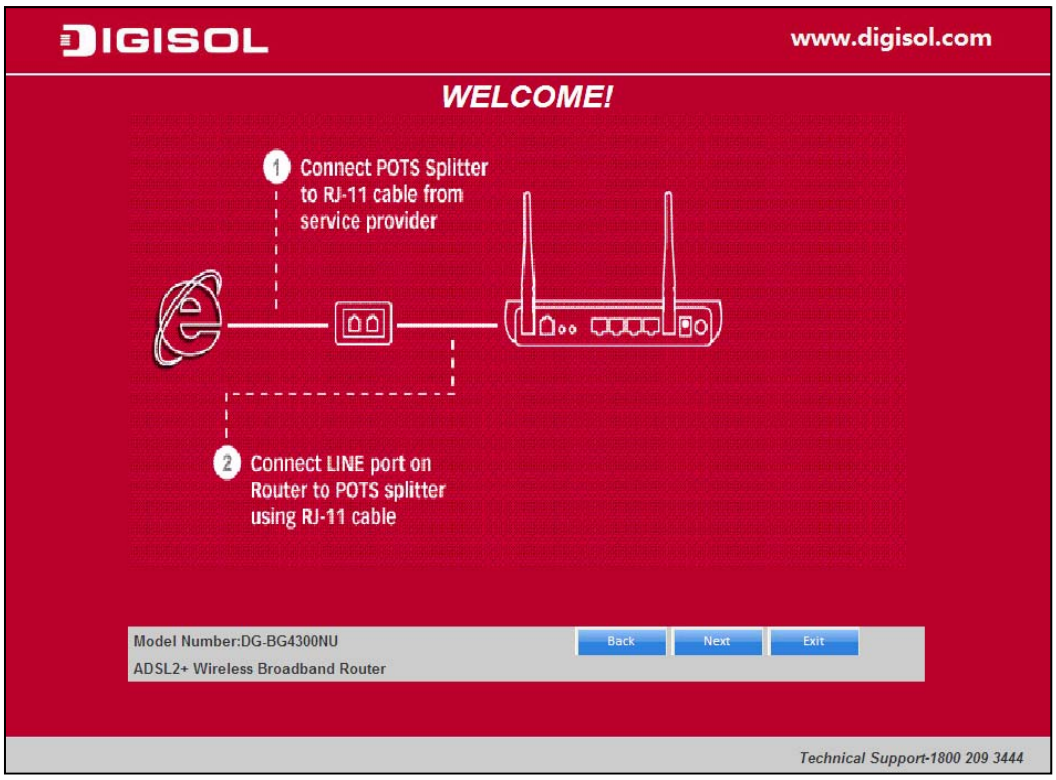
Access the Web Console:

- Start your web browser.
- Type the Ethernet IP address of the modem/router on the address bar of the browser. Default IP address is 192.168.1.1.
- Enter Password in the dialog box when it appears. Default Username: **admin** Password: **admin**

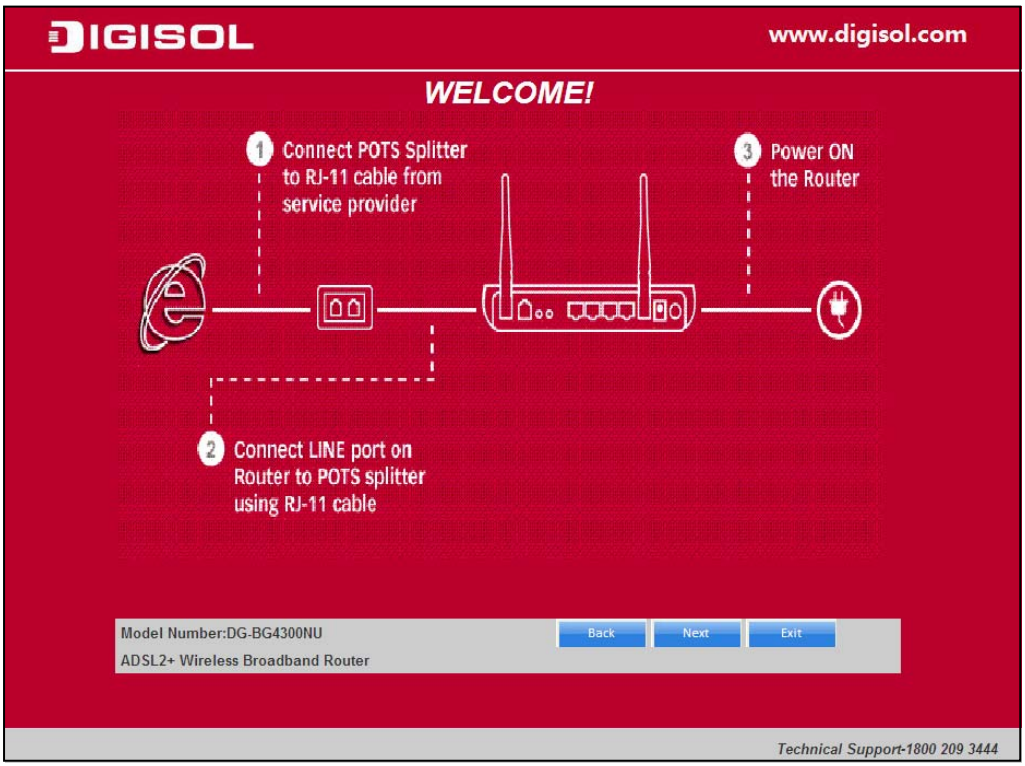
Please note that the below welcome screen will appear when the router configuration is factory defaults. Click "**Start**" to use the Quick setup wizard for basic settings or click "**Advanced**" to setup advanced features and skip the Wizard.

- Once you login the following screen will appear.

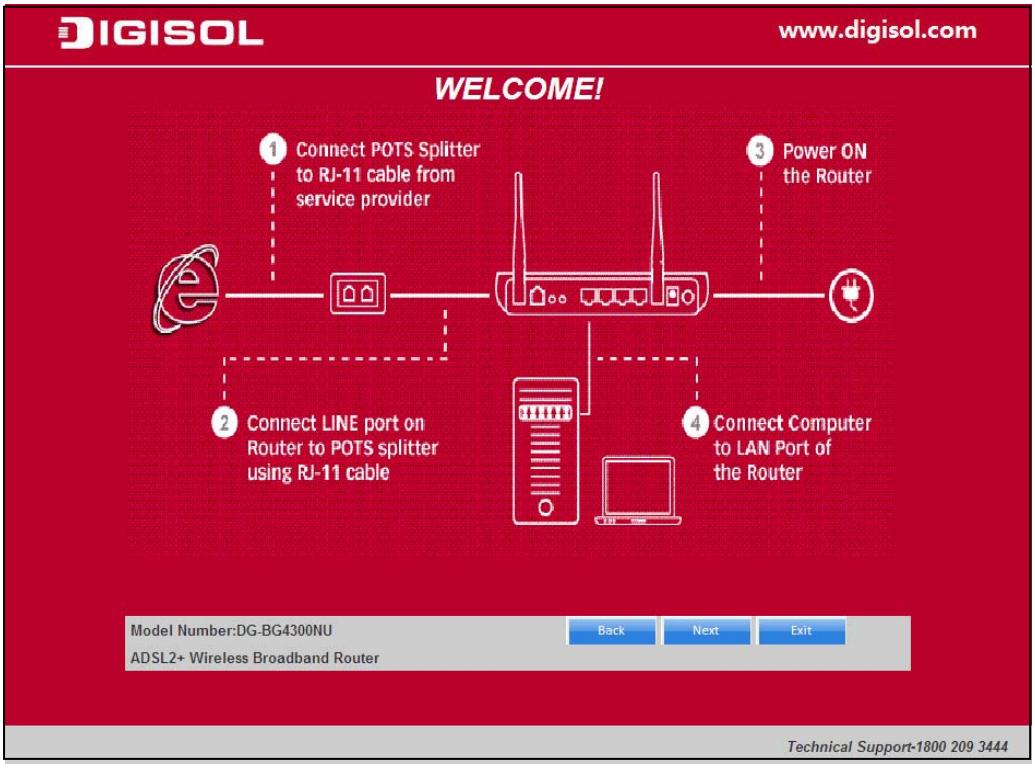
- Click on "**Start**", the following screen will appear. Connect one end of the RJ-11 telephone cable into the ADSL port provided on the splitter from the service provider and connect the other telephone cable from the splitter to the LINE port on the router. Click '**Next**' to continue.



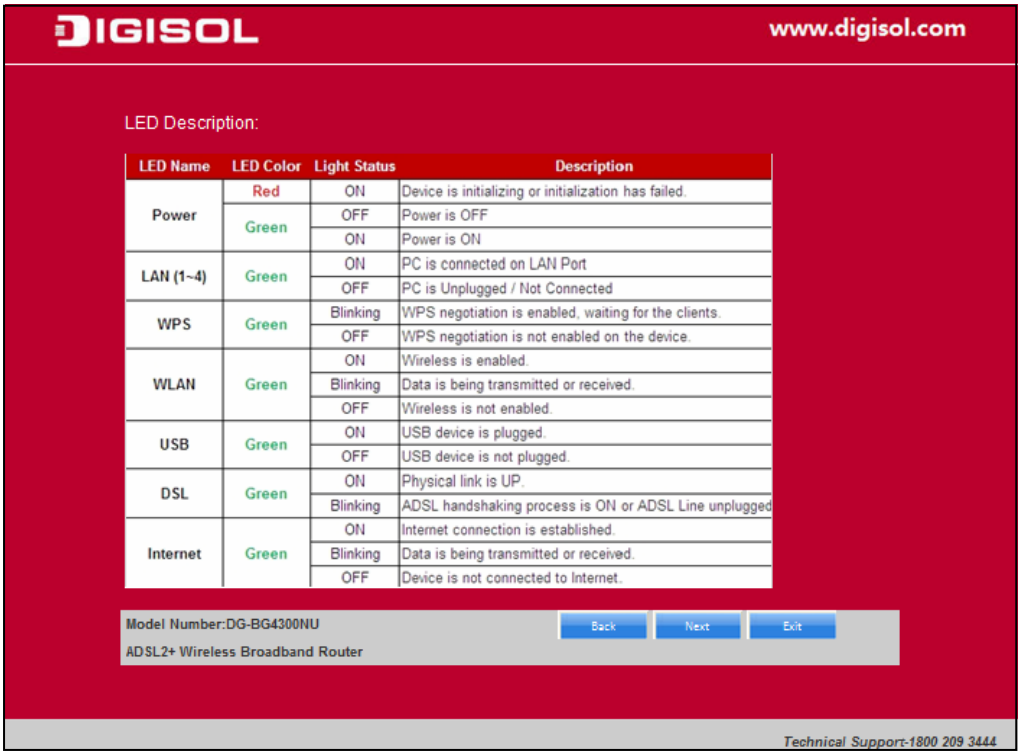
- Power ON the router. Ensure that all the LED's on the router are ON. If not, try the above steps again else click '**Next**' to continue.



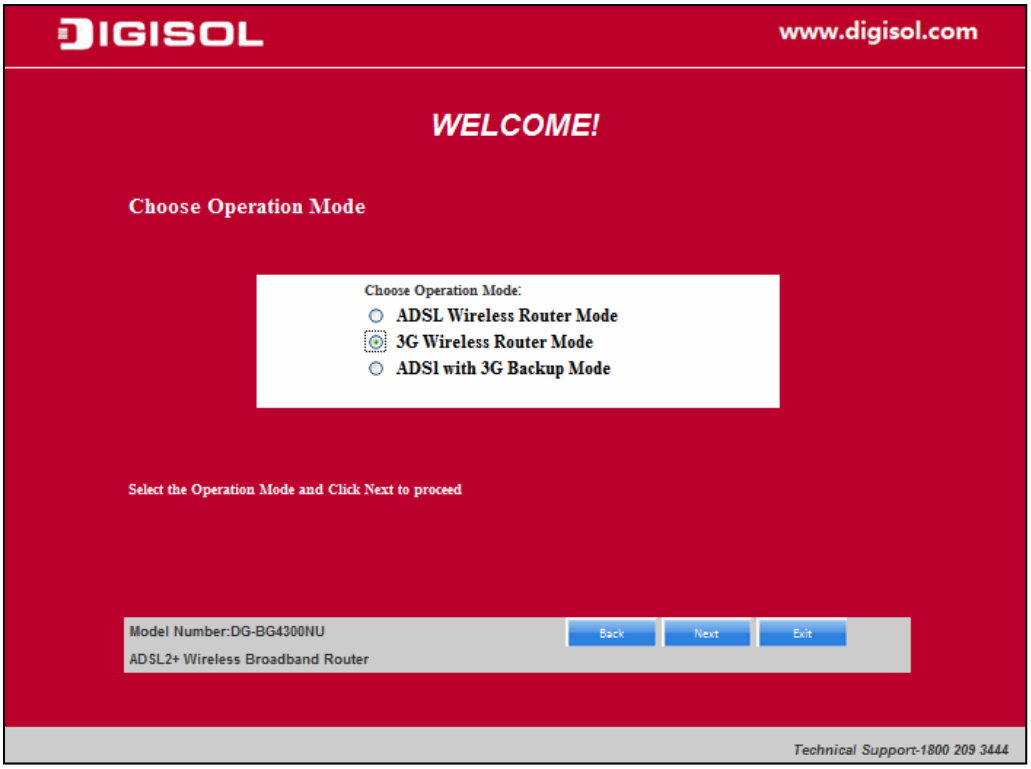
- Connect one end of the network cable to one of the LAN ports (1~4) of the router and the other end to your computer. Click '**Next**' to continue with the installation.



- Click on "**Next**". The LED description table will appear.



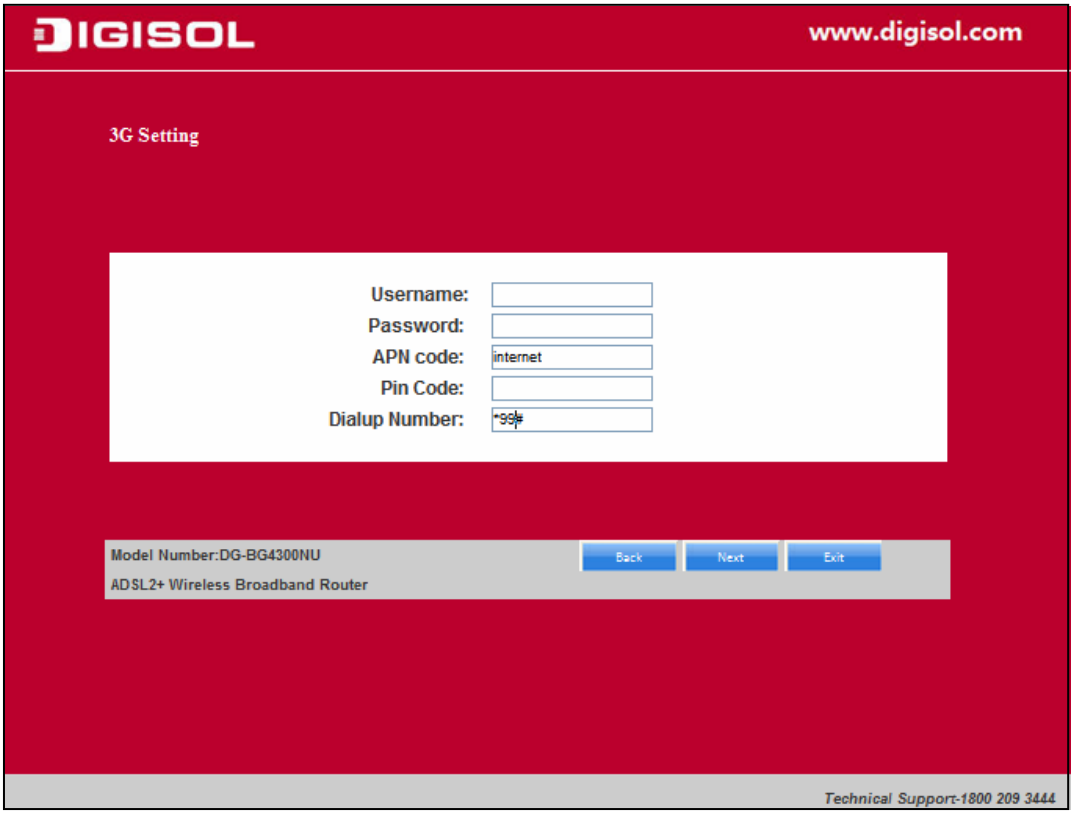
- Click on "**Next**". The screen shown below will appear.



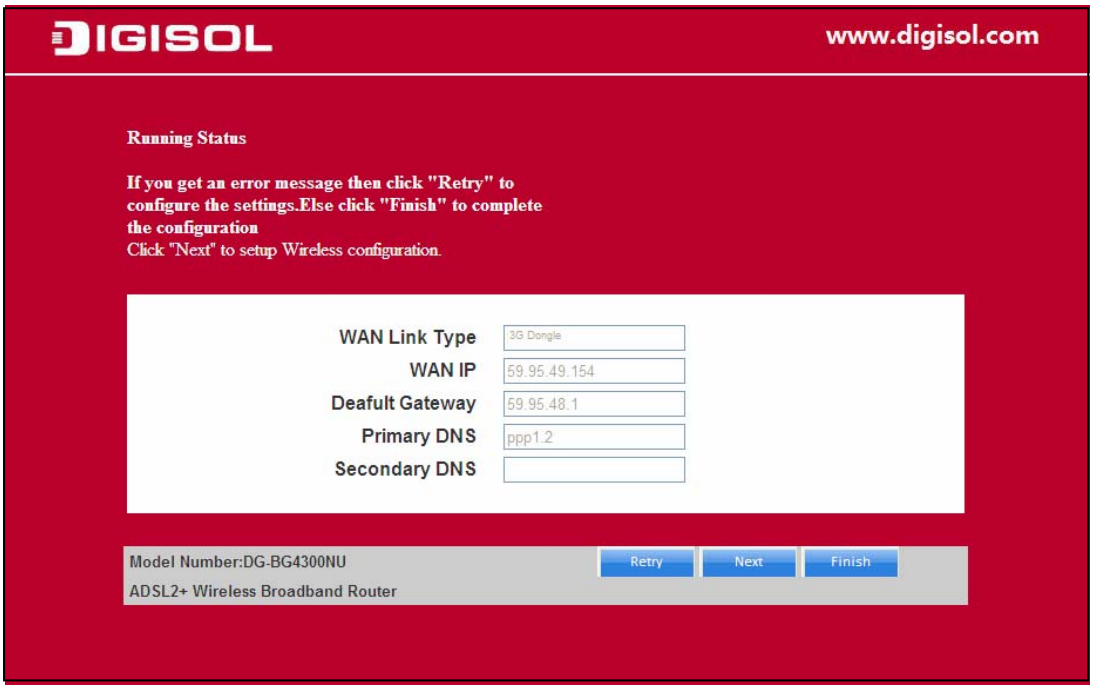
Note: The steps mentioned till here are common for all the modes.

The Options/Modes configurations have been explained below.

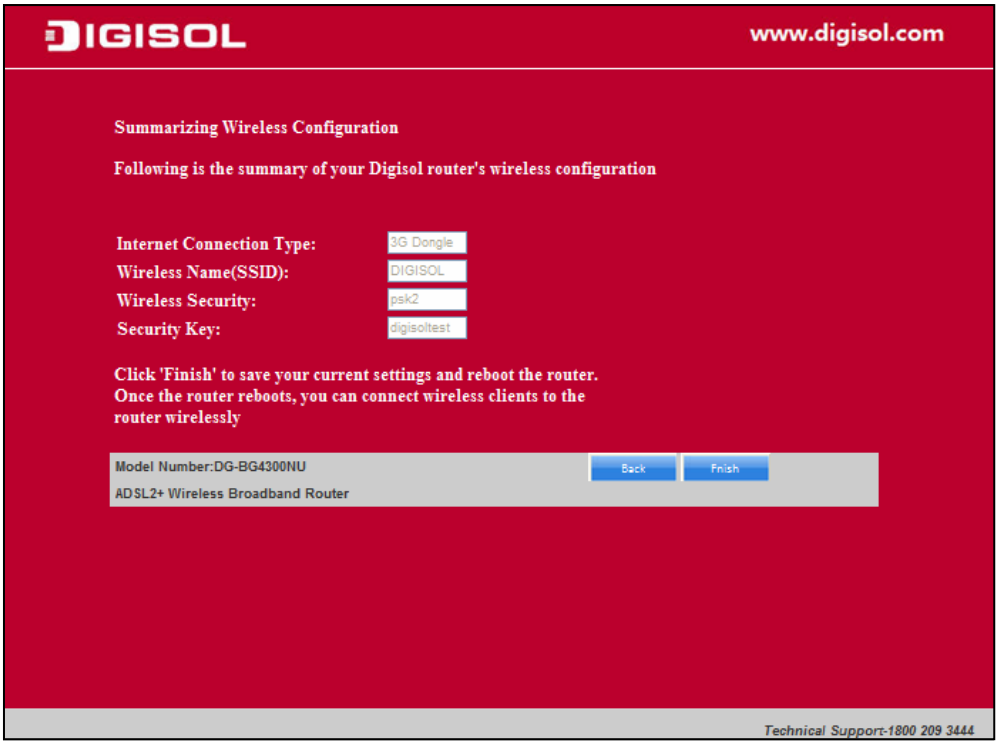
I) Select the operation mode "**3G wireless Router Mode**". Click on "**Next**". The screen shown below will appear. Enter the "**APN code**" and "**Dialup Number**" as shown below.



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

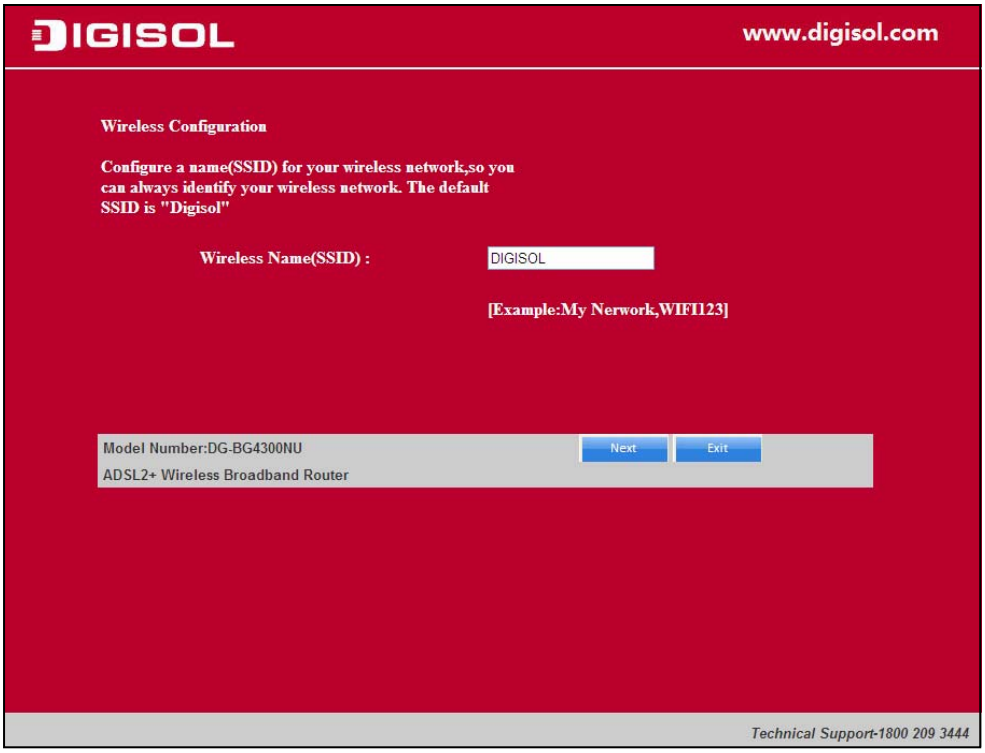


- Click on "**Next**". The WAN connection summary will appear. Click on "**Finish**" or "**Next**" to configure wireless settings.



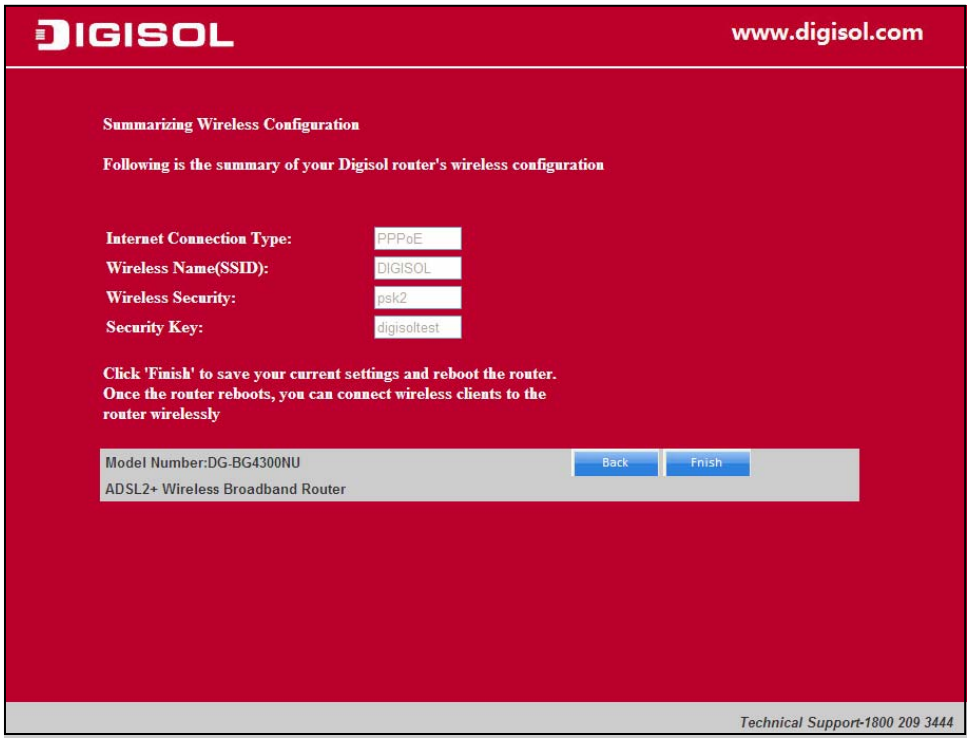
Note: **The Wireless configuration steps mentioned below are common for all the modes.**

- Click "**Next**" to configure the wireless settings. In this page, you can set the SSID for wireless network.

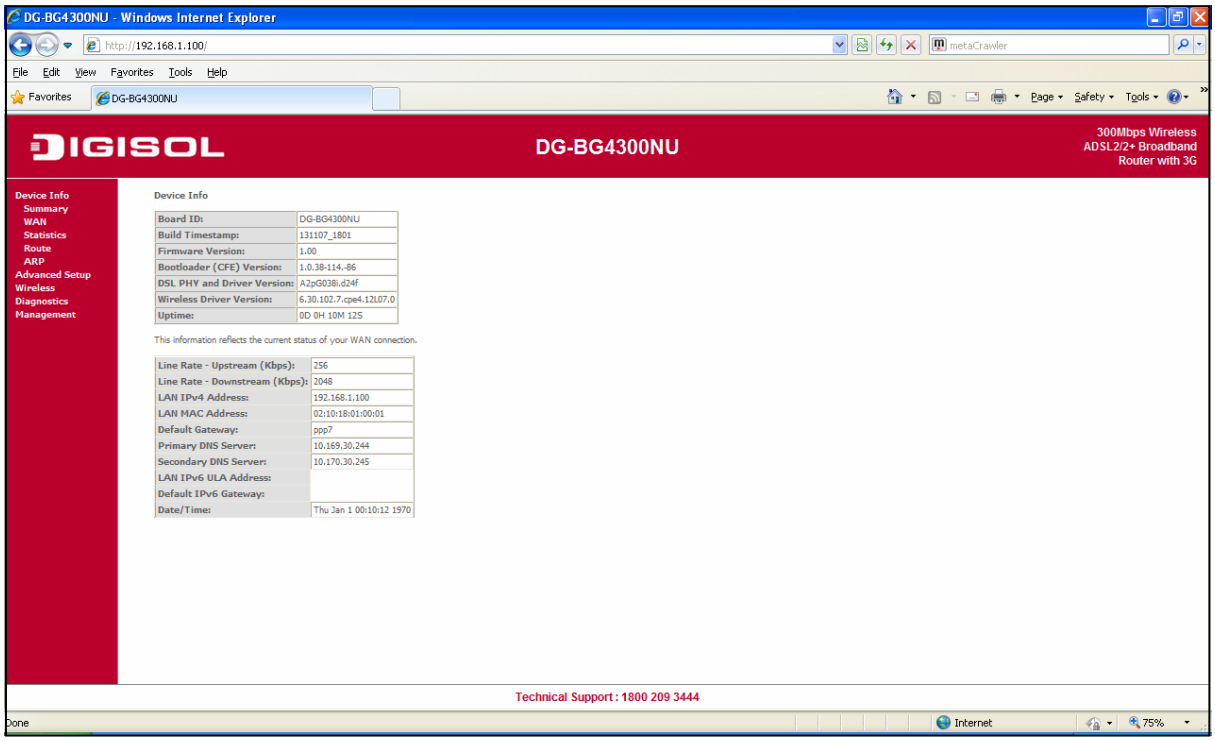


- Click '**Next**' and the following page appears. In this page, you can select **WPA2-PSK** as the security mode.

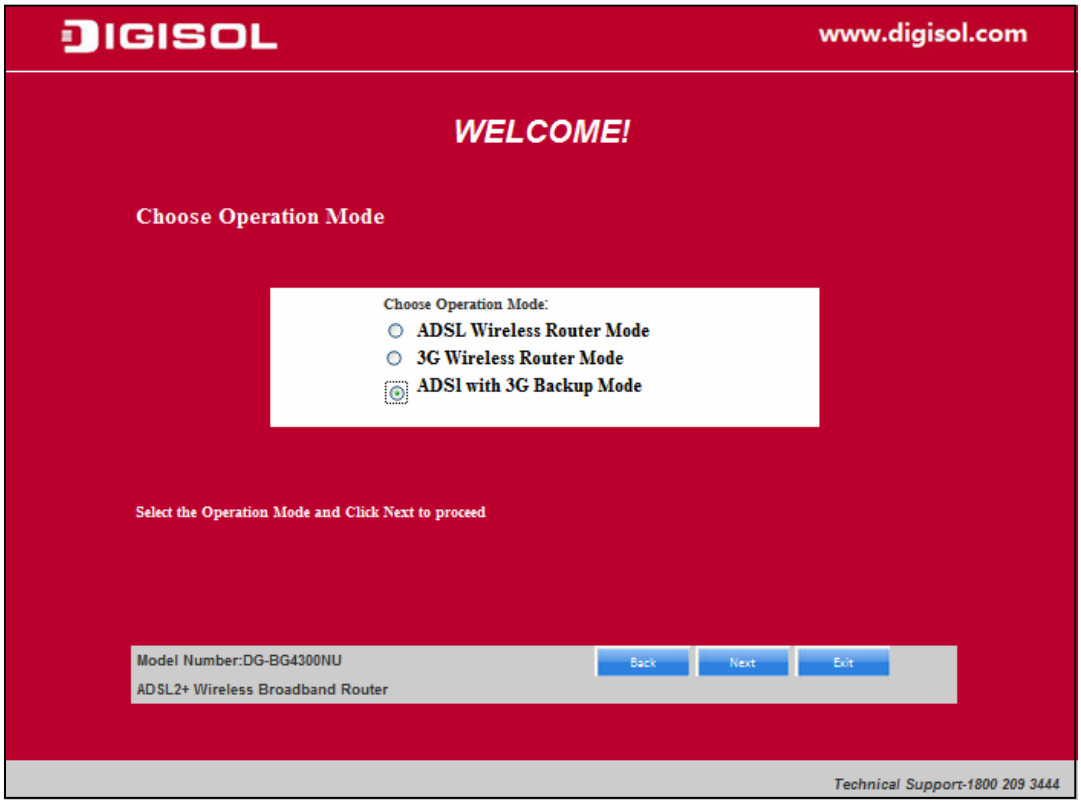
- Click '**Next**' and the following page appears. In this page, you can view the configuration summary.



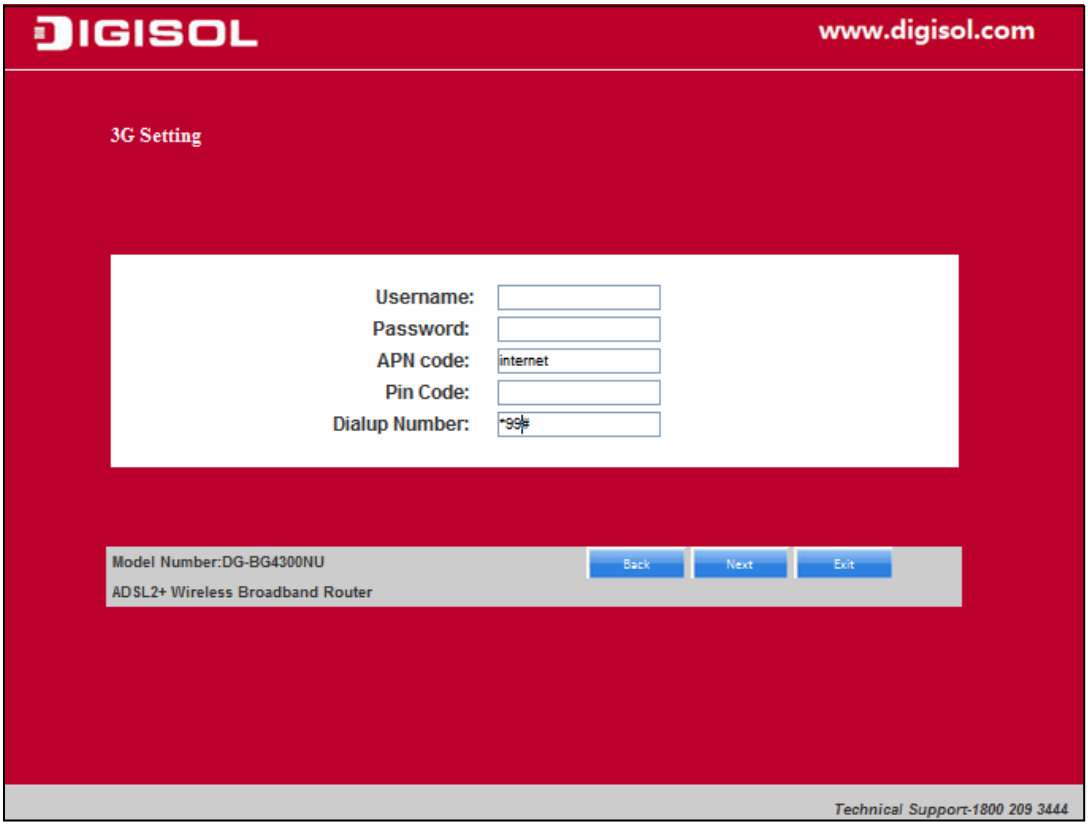
- Click '**Finish**' to save your settings and reboot the router. Once the settings are applied the following screen will appear.



II) Select the operation mode "**ADSL with 3G Backup Mode**". Click on "**Next**". The screen shown below will appear.

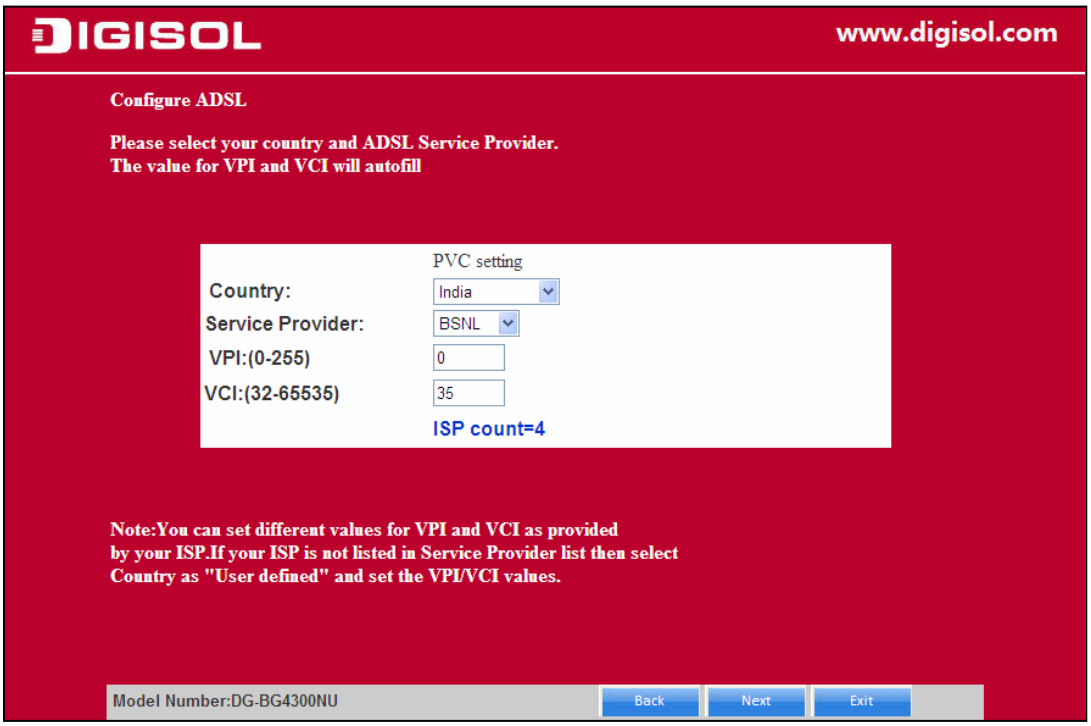


- Enter the "**APN code**" and "**Dialup Number**" as shown below. Click on "**Next**".

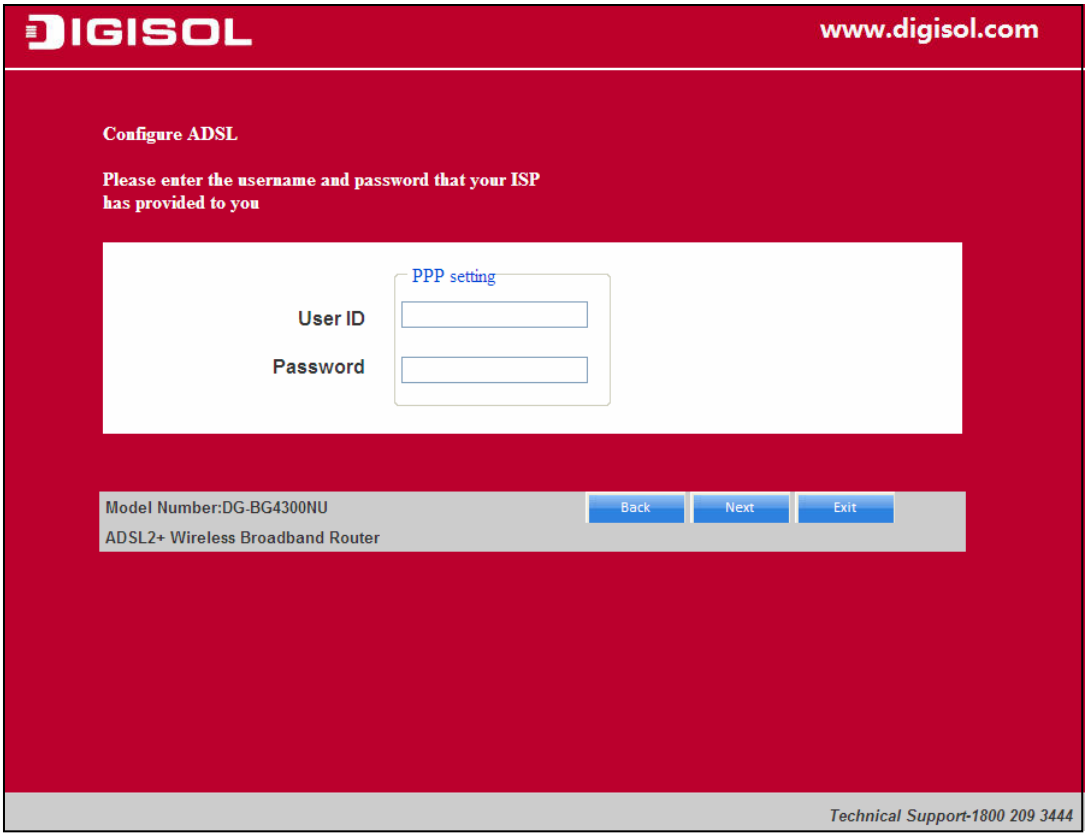


- Select the type of network protocol and click '**Next**' to continue with the installation.

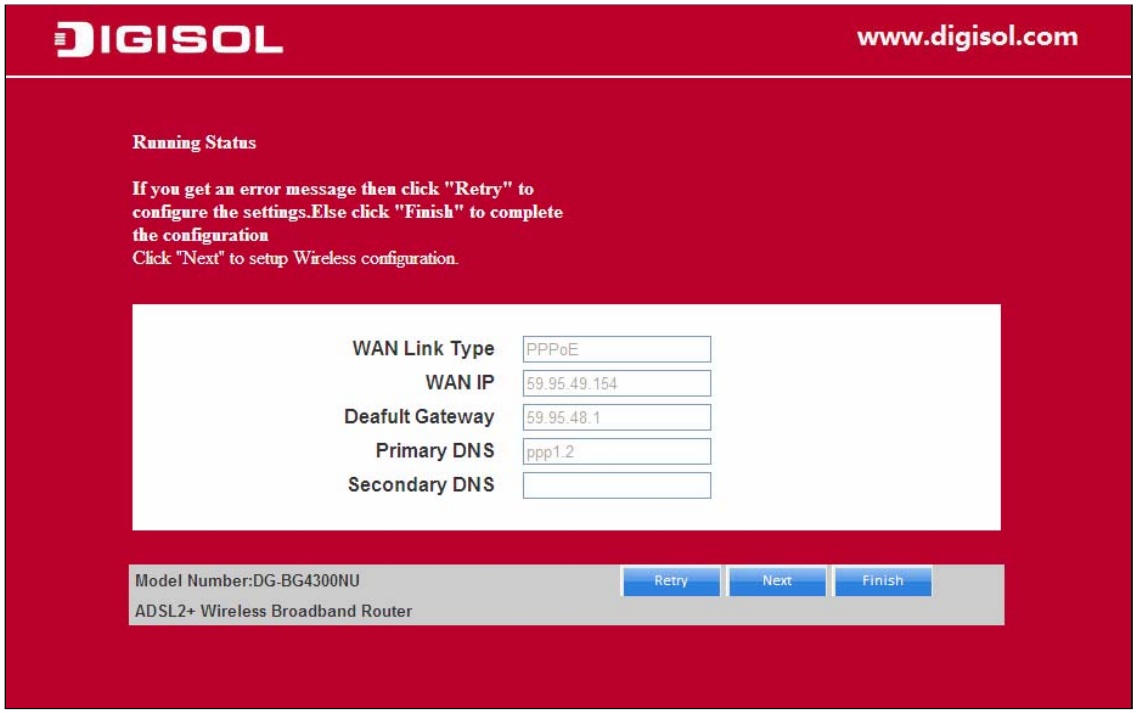
- Select the Country: India and then select the service provider from the drop-down list. You can change the VPI/VCI values as instructed by your ISP.



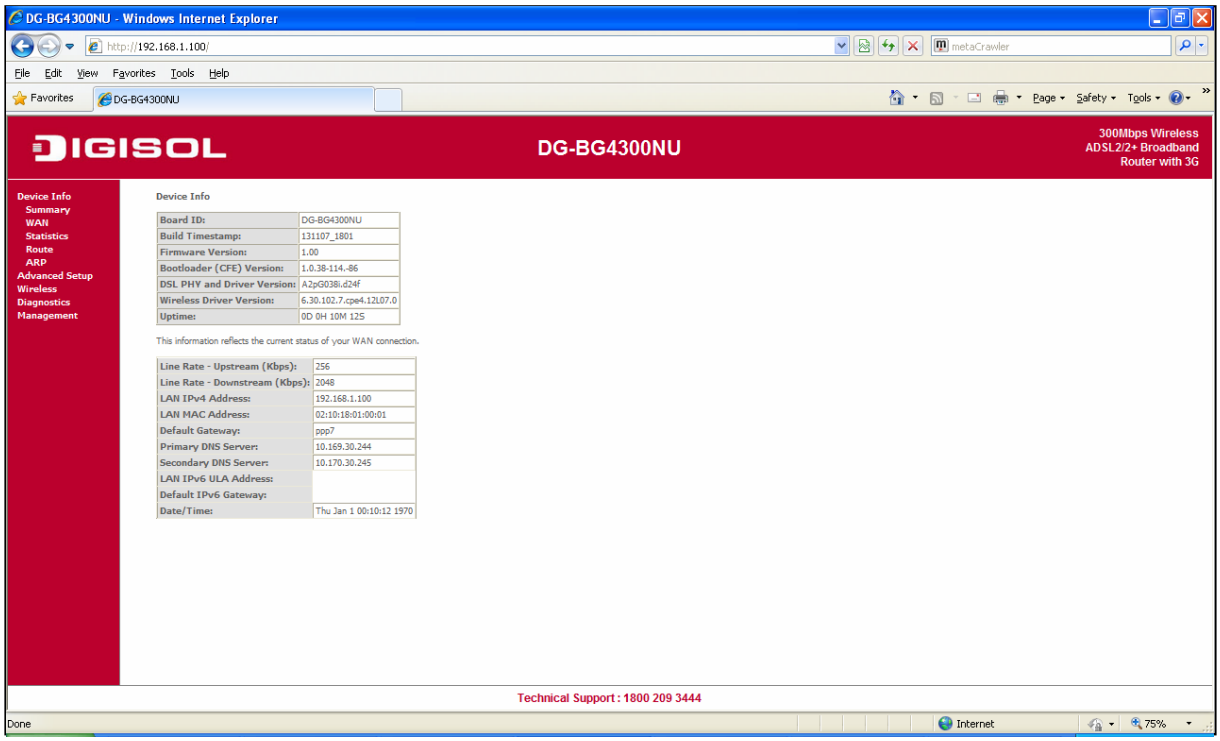
- Click on **"Next"** and enter the correct user ID and password for PPPoE mode that is provided by your ISP. After the settings are done, click '**Next**' to continue with the installation.



- Following page appears showing the WAN status.

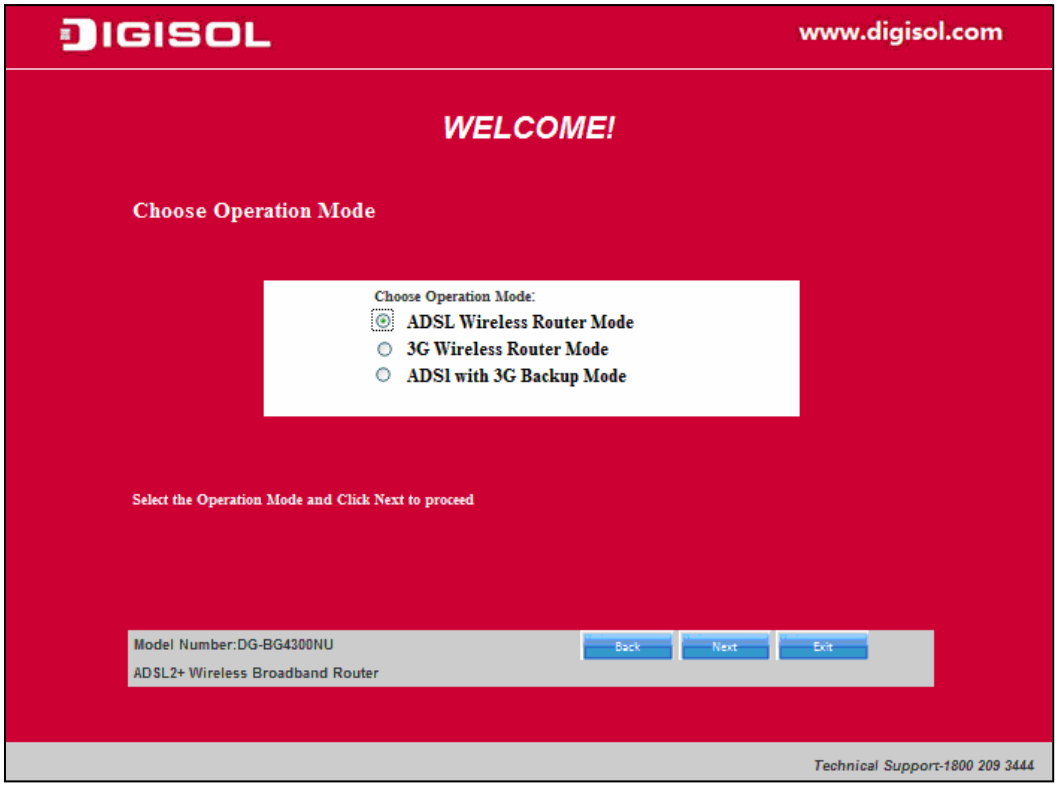


Once the settings are applied the following screen will appear.



For wireless configuration settings refer to steps mentioned on **page 17**.

III) Select the operation mode "**ADSL Wireless Router Mode**". Click on "**Next**". The screen shown below will appear.



- Select the type of network protocol and click '**Next**' to continue with the installation.

You can select **LLC** or **VC-Mux** as the encapsulation mode according to the uplink equipment or use the default setting.

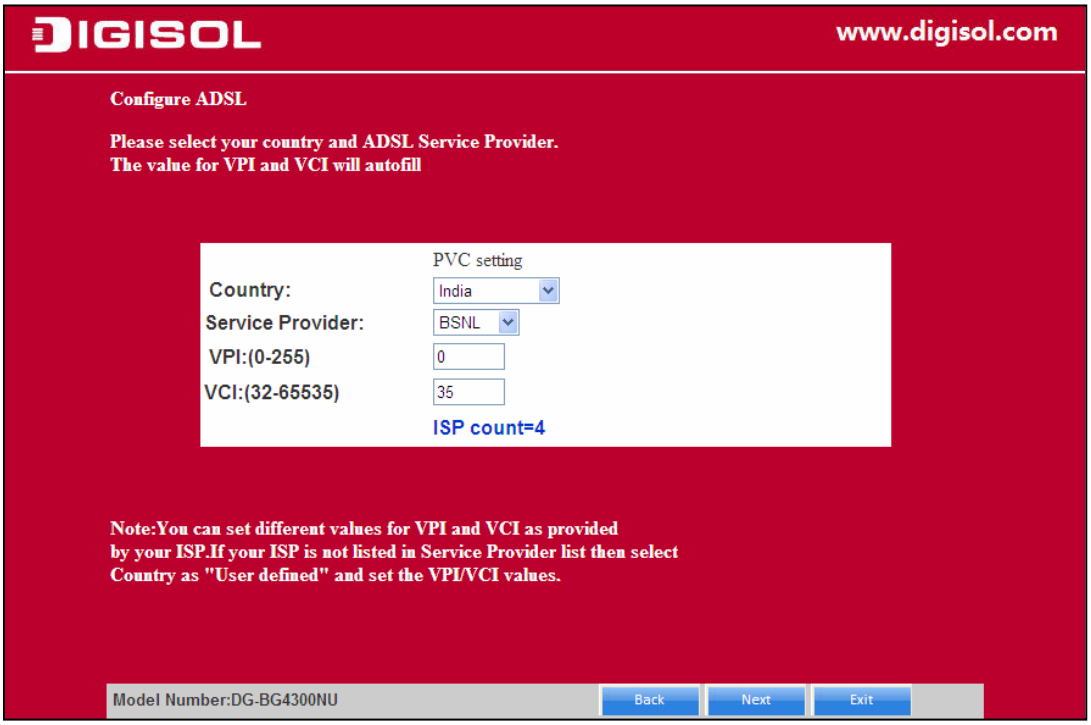
- **1483 Bridged:** If you select 1483 Bridged as the WAN protocol, you must use the third party Dial-up software or Windows New Connection Wizard to configure the Internet dial-up access.

- **1483 MER:** If you select 1483 MER as the WAN protocol, the router obtains an IP address automatically.

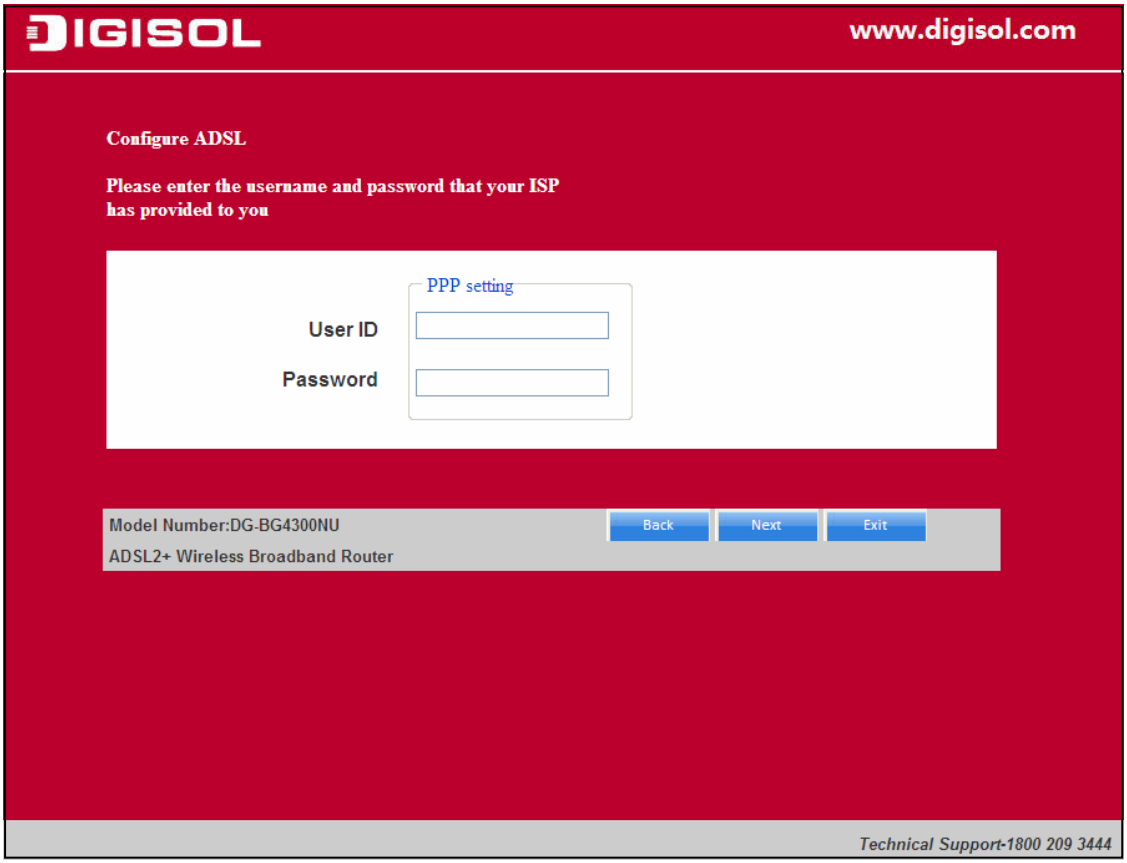
- **PPPoE /PPPoA:** If you select PPPoE or PPPoA as the WAN protocol, click Next, and the following page appears.

- **1483 Routed:** If you select 1483 Routed as the WAN protocol, you cannot use the DHCP service. You need to enter the IP address, subnet mask, default gateway and DNS that is provided by your ISP.

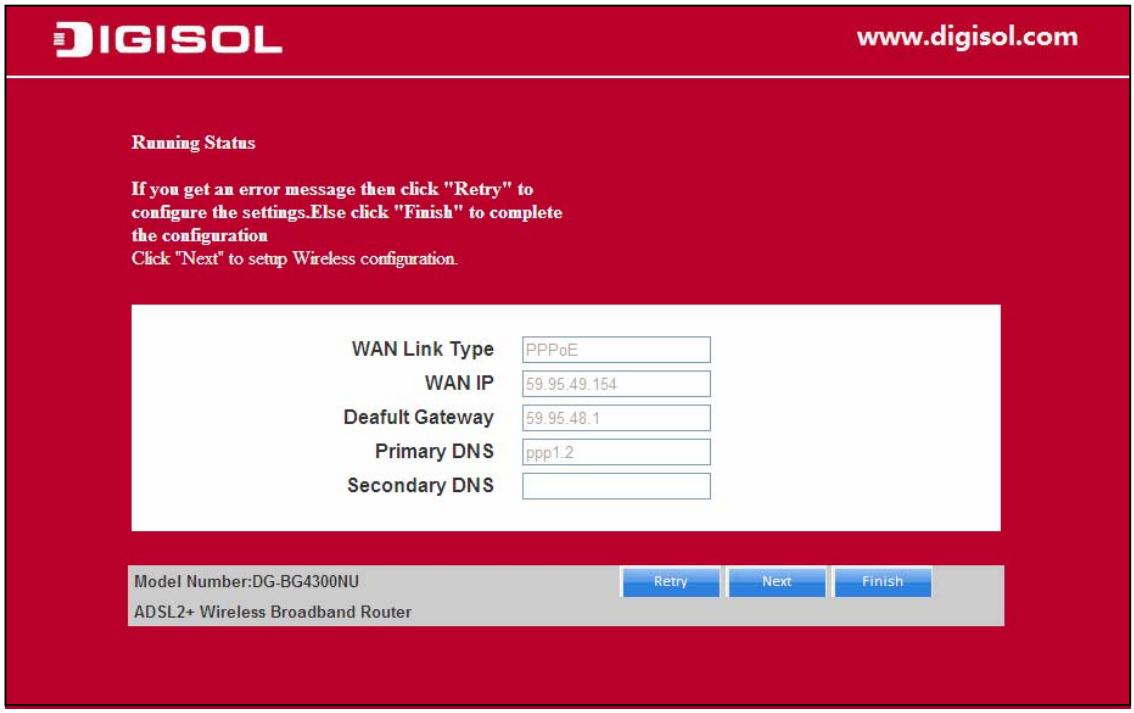
  - Select the Country: India and then select the service provider from the drop-down list. You can change the VPI/VCI values as instructed by your ISP.



- **PPPoE Mode**: In this page, enter the correct user ID and password that is provided by your ISP. After the settings are done, click '**Next**' to continue with the installation.

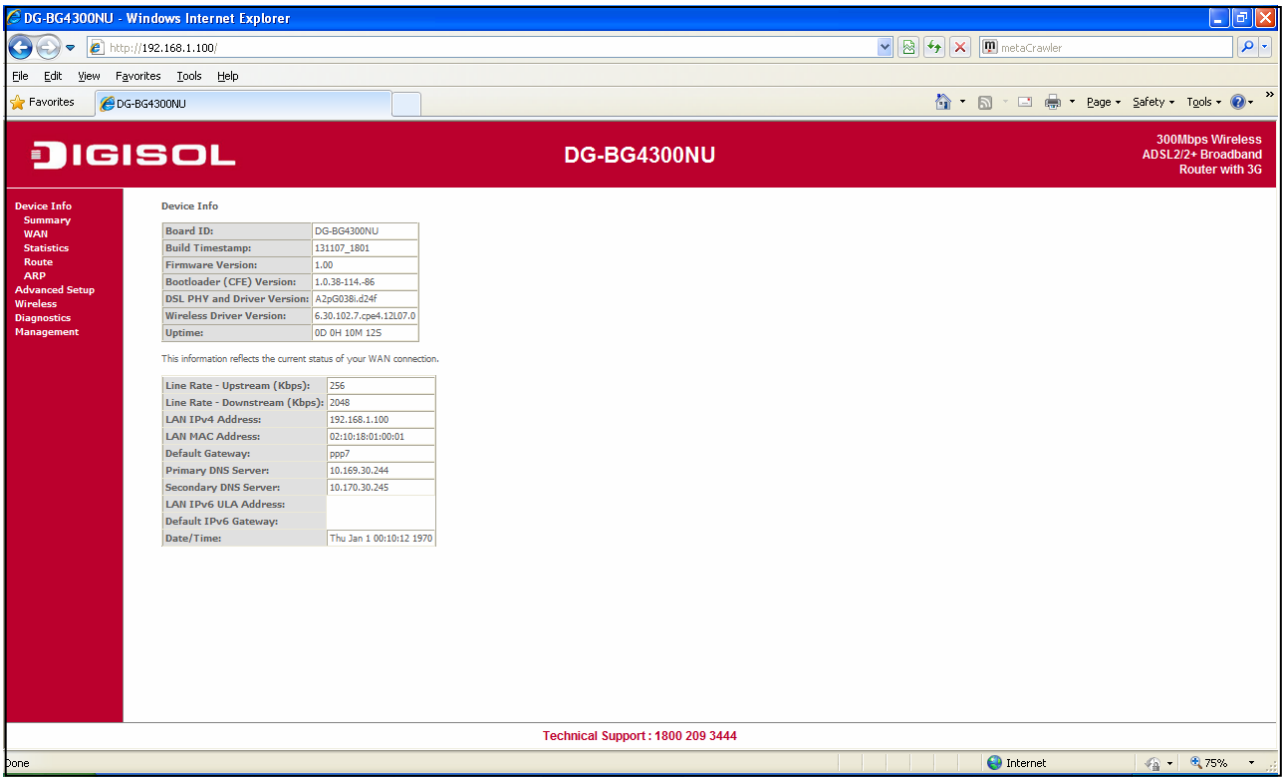


- Following page appears showing the WAN status.



For wireless configuration settings refer to steps mentioned on page 17.

- Click '**Finish**' to save your settings and reboot the router. Once the settings are applied the following screen will appear.



4. Setup

4-1 WAN Configuration

WAN Info

Interface	Description	Type	VlanMuxId	IPv6	Igmp	MLD	NAT	Firewall	Status	IPv4 Address	IPv6 Address
eth4	3G dongle	IPoE	Disabled	Disabled	Disabled	Disabled	Enabled	Disabled	Unconfigured		
ppp7	3G dongle	PPPoE	Disabled	Disabled	Disabled	Disabled	Enabled	Disabled	Unconfigured		

4-2 Statistics

Click on statistics the following options will appear.

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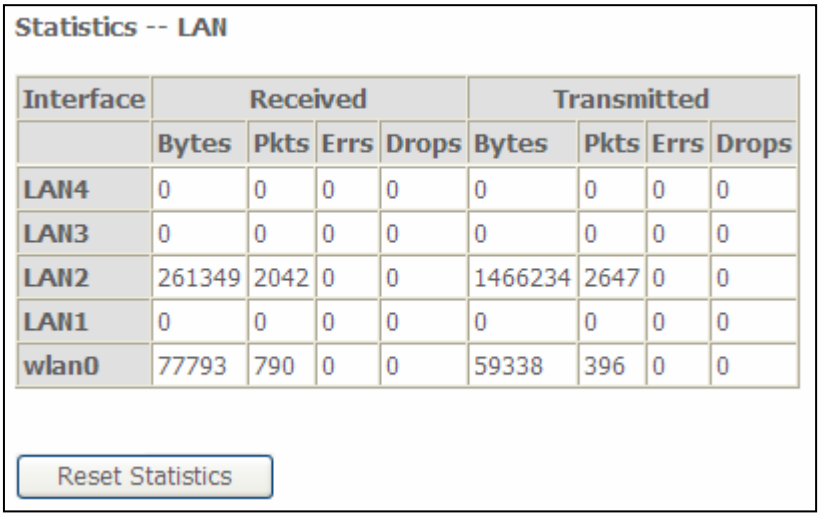
4-2-1 LAN

The table below displays the statistics of ports through which the data is transferred and received.

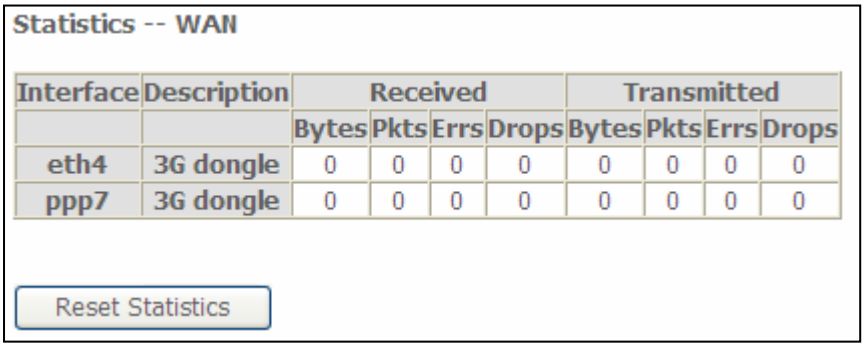


Statistics -- LAN

Interface	Received				Transmitted			
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
LAN4	0	0	0	0	0	0	0	0
LAN3	0	0	0	0	0	0	0	0
LAN2	261349	2042	0	0	1466234	2647	0	0
LAN1	0	0	0	0	0	0	0	0
wlan0	77793	790	0	0	59338	396	0	0

Reset Statistics

4-2-2 WAN Service



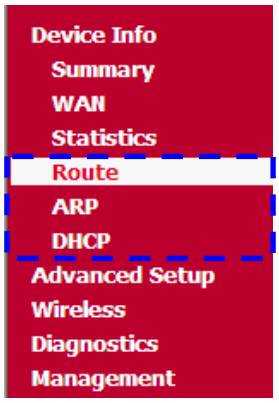
Statistics -- WAN

Interface	Description	Received				Transmitted			
		Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
eth4	3G dongle	0	0	0	0	0	0	0	0
ppp7	3G dongle	0	0	0	0	0	0	0	0

Reset Statistics

Parameter	Description
Interface	Lists the WAN interfaces.
Description	Displays WAN type info.
Received	Displays the counters for received pkts /bytes.
Transmitted	Displays the counters for transmitted pkts /bytes.

4-3 Route



4-3-1 Device Info Route

The below table shows the dynamic route entry/entries.

Device Info -- Route

Flags: U - up, ! - reject, G - gateway, H - host, R - reinstate
D - dynamic (redirect), M - modified (redirect).

Destination	Gateway	Subnet Mask	Flag	Metric	Service	Interface
192.168.1.0	0.0.0.0	255.255.255.0	U	0		br0

4-3-2 Device Info ARP

The below table displays the ARP entries of devices connected to the router.

Device Info -- ARP

IP address	Flags	HW Address	Device
192.168.1.8	Complete	d0:27:88:5e:bc:f2	br0
192.168.1.2	Complete	80:1f:02:11:f4:6c	br0

4-3-3 Device Info DHCP

Device Info -- DHCP Leases

Hostname	MAC Address	IP Address	Expires In
ITLAPTOP	80:1f:02:11:f4:6c	192.168.1.2	23 hours, 46 minutes, 57 seconds
	18:20:32:58:77:f5	192.168.1.3	23 hours, 47 minutes, 18 seconds
MININT-7FD9U2S	00:1f:1f:f2:c9:3b	192.168.1.4	23 hours, 47 minutes, 37 seconds

Parameter	Description
Hostname	Displays PC / client name.
MAC Address	Displays MAC address of Host / PC.
IP Address	Displays IP address of Host /PC.
Expires In	Displays the DHCP Lease time remaining.

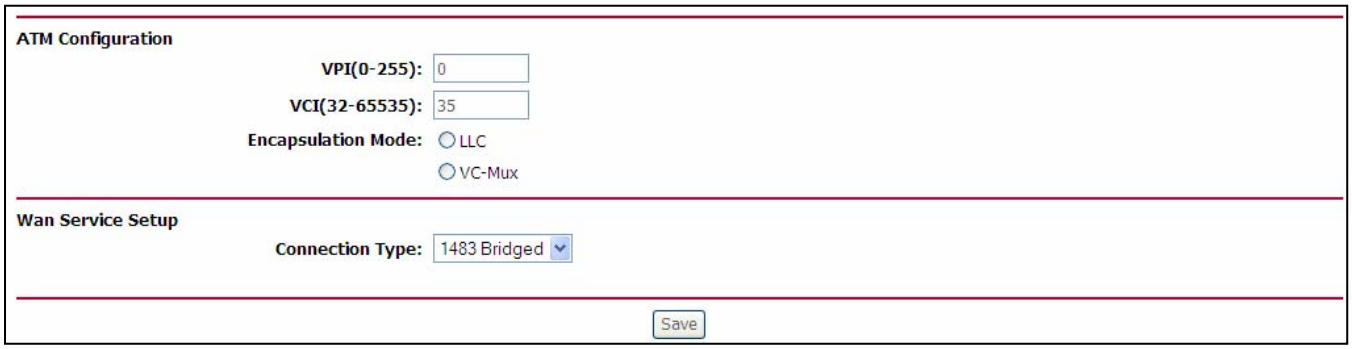
4-4 Advanced Setup

Click on the link and the following options will appear under "**Advanced Settings**".

4-4-1 WAN Service

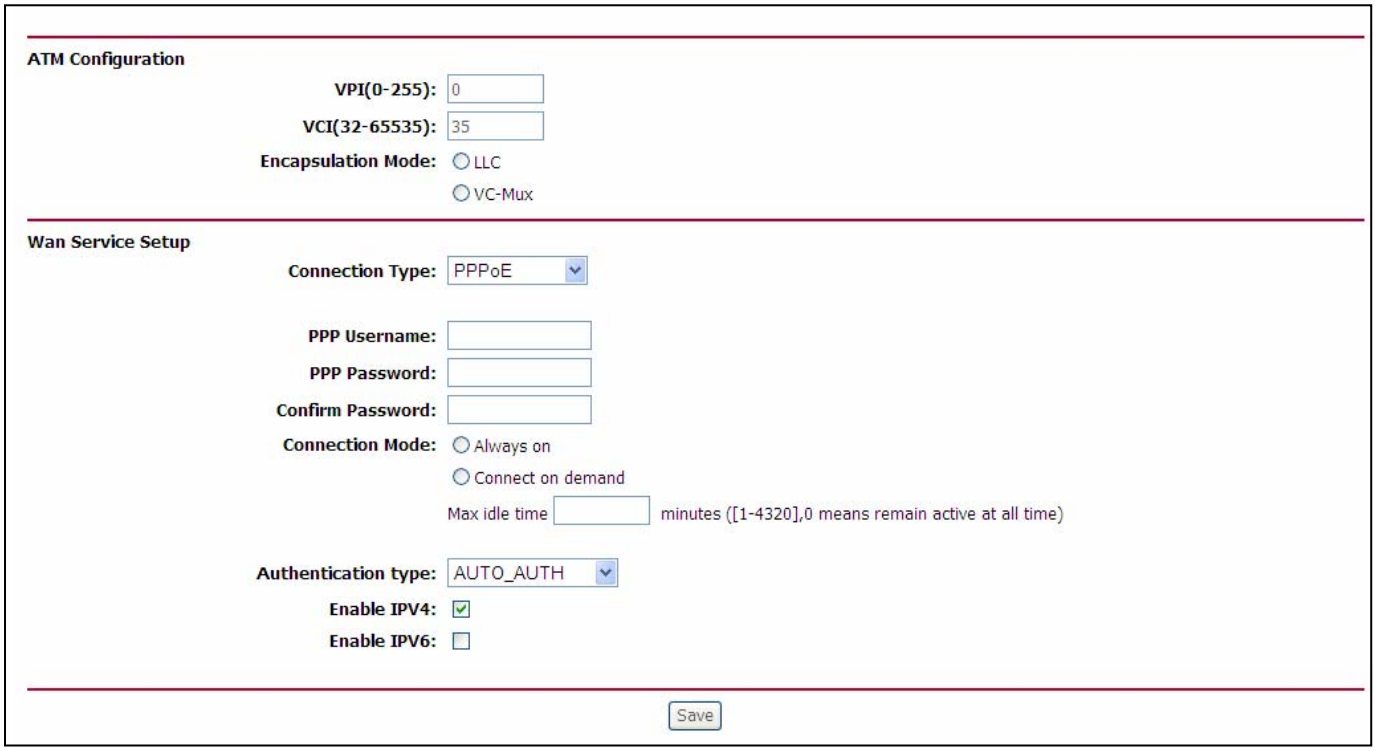
I) 1483 Bridged Mode

If you select 1483 Bridged as the WAN protocol, you can use the third party Dial-up software or Windows New Connection Wizard to configure the Internet dial-up access.



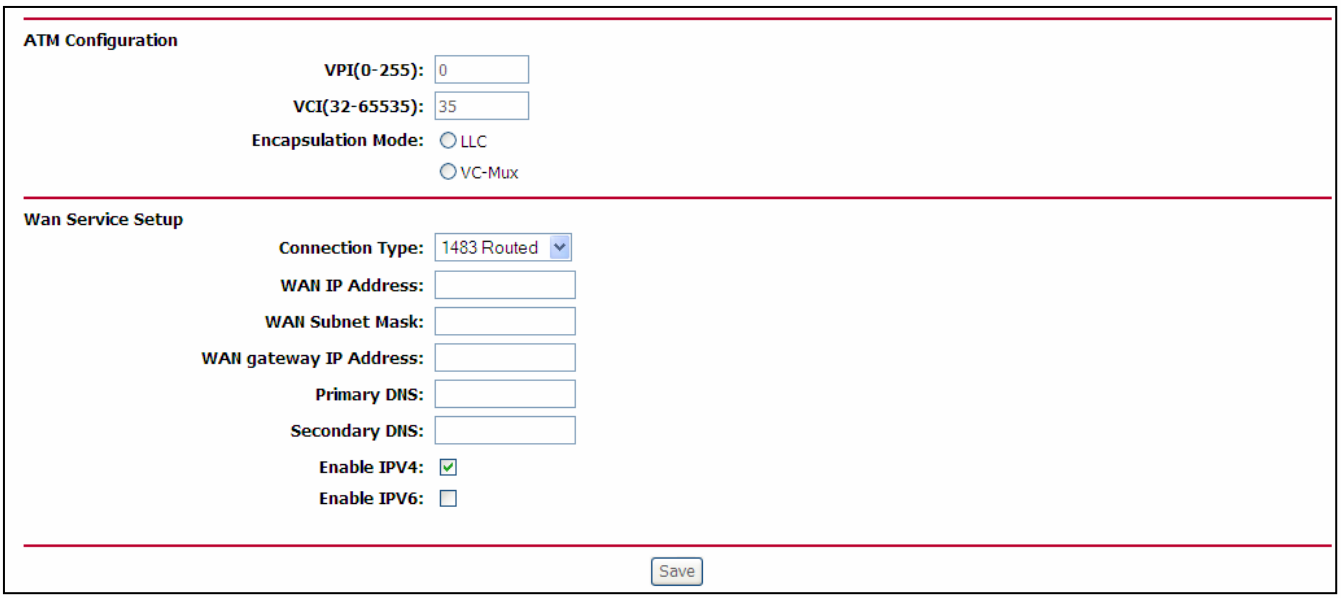
II) PPPoE Mode

The PPPoE mode will require the PPPoE Username and Password which is provided from the ISP.



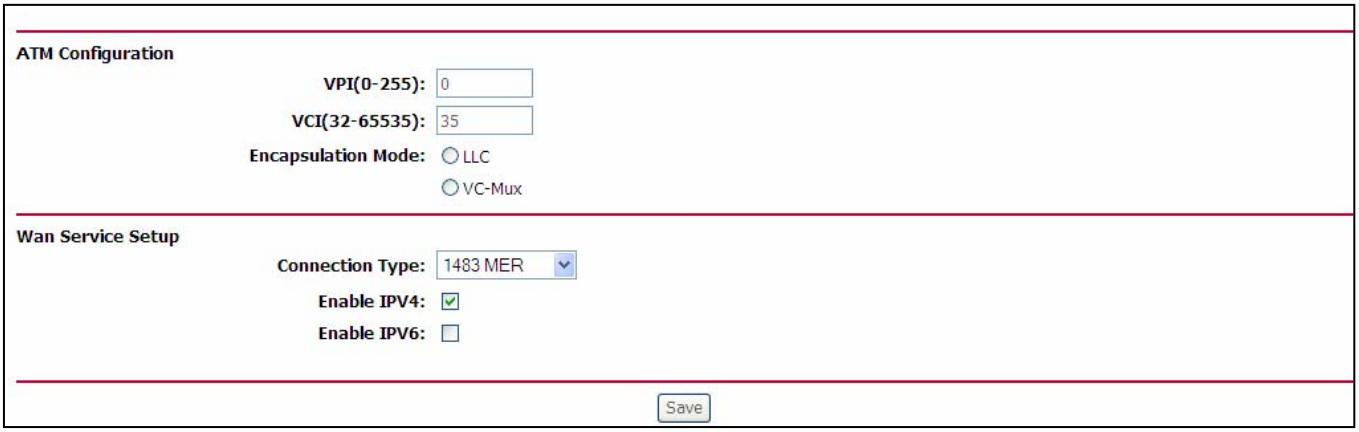
III) 1483 Routed Mode

If you select 1483 Routed as the WAN protocol, you cannot use the DHCP service. You need to enter the IP address, subnet mask, default gateway and DNS that is provided by your ISP.



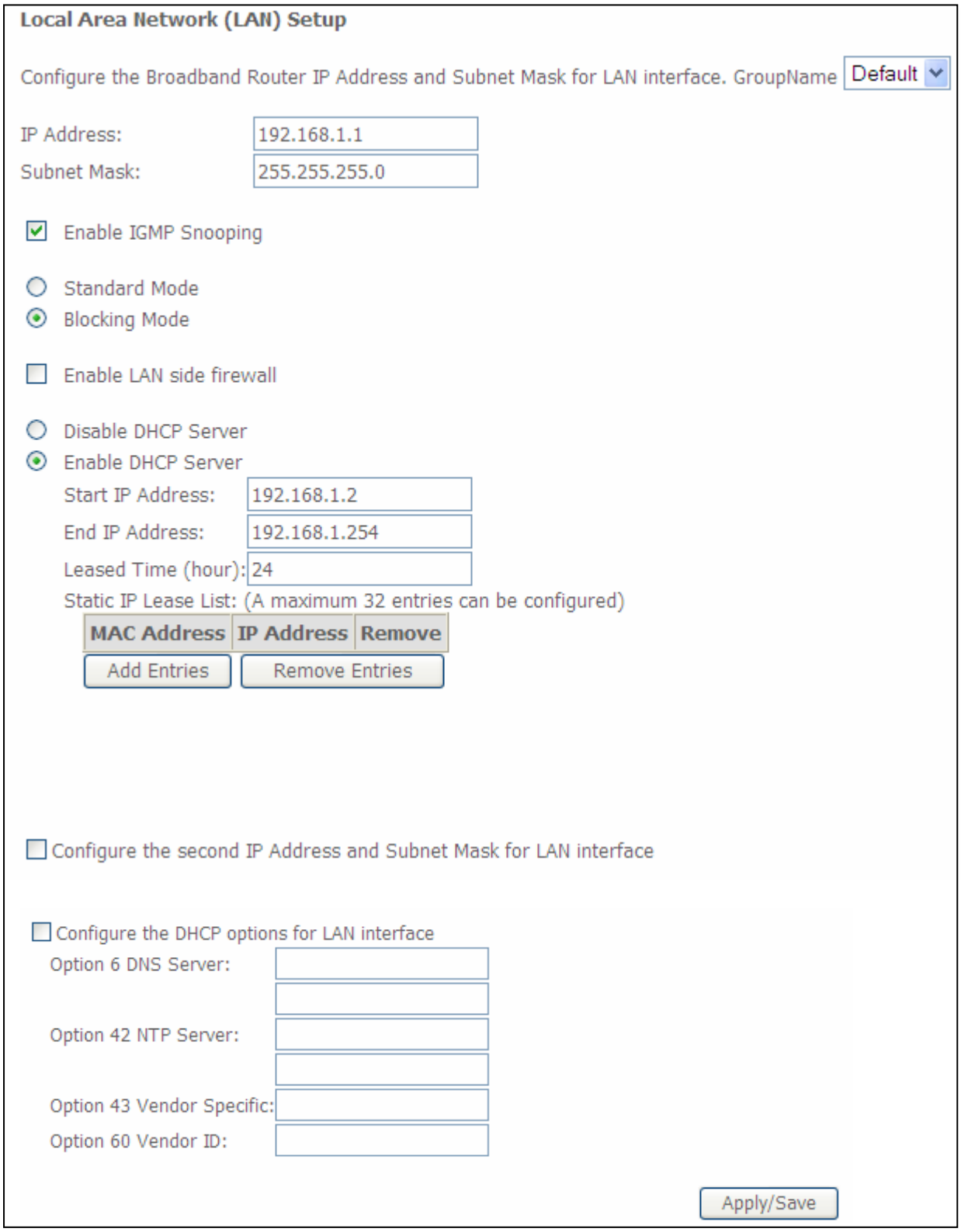
IV) 1483 MER

If you select 1483 MER as the WAN protocol, the router obtains an IP address automatically.



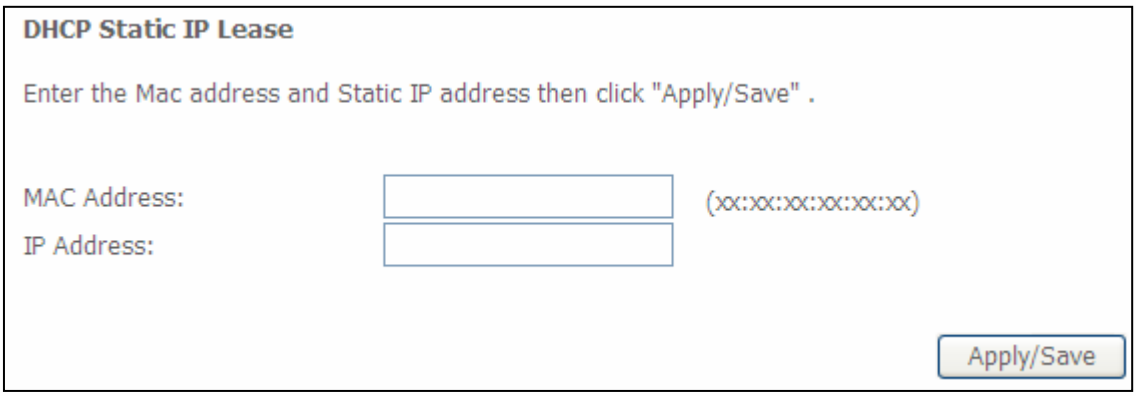
4-4-2 LAN

Configure the broadband router IP address and subnet mask for LAN interface.



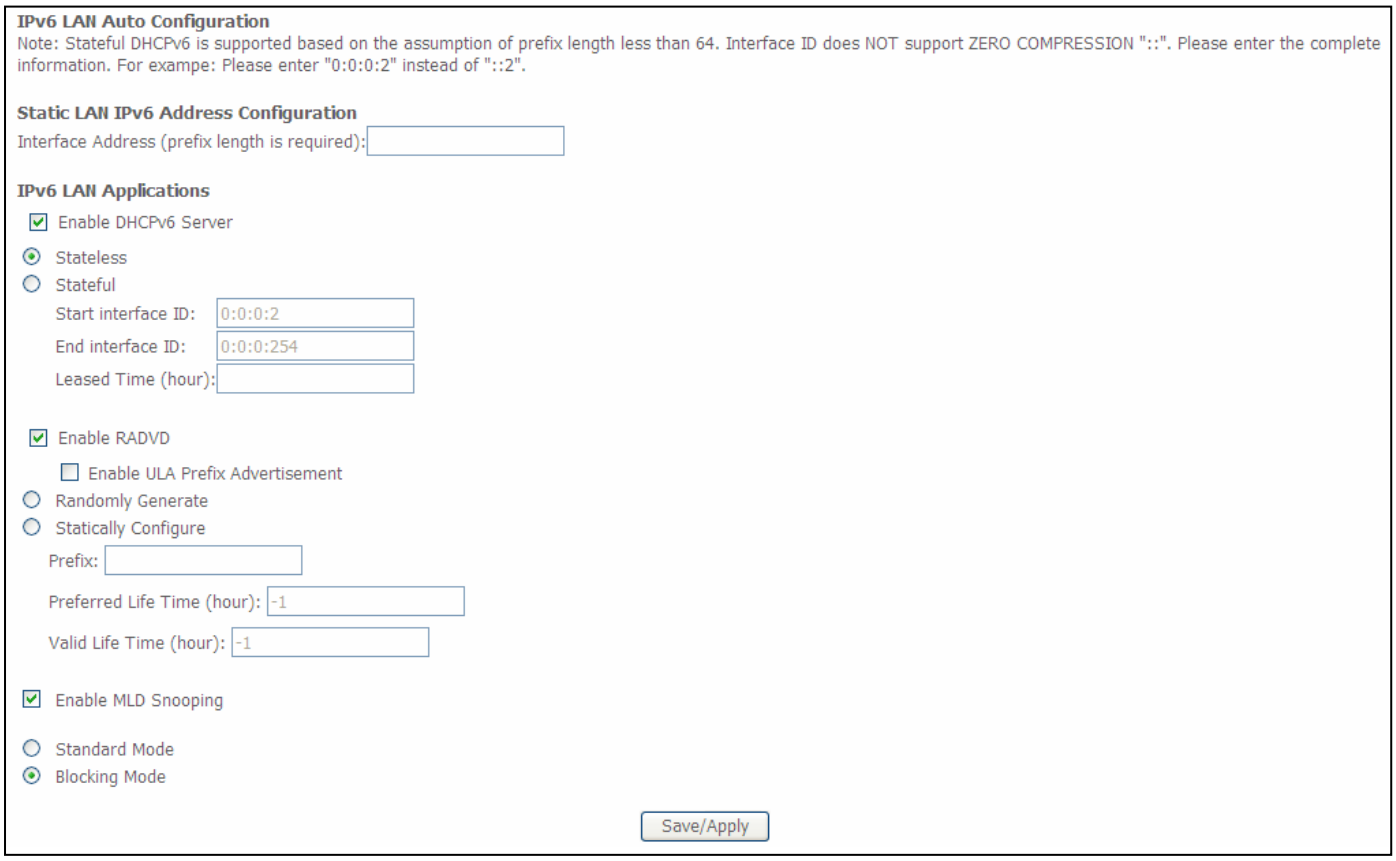
Parameter	Description
Leased Time (hour)	Set the DHCP lease time.
Static IP lease list	Will list the Reserved IP for specified MAC address.
Option 6 DNS address	DNS IP provided by DHCP server.
Option 42 NTP server	Network TIME server address.
Option 43 Vendor Specific	Provided by the vendor.
Option 60 Vendor ID	Provided by the vendor.

Click on MAC address "**Add Entries**" button. The screen shown below will appear. Enter the MAC address and static IP address and click on "**Apply/Save**" button.



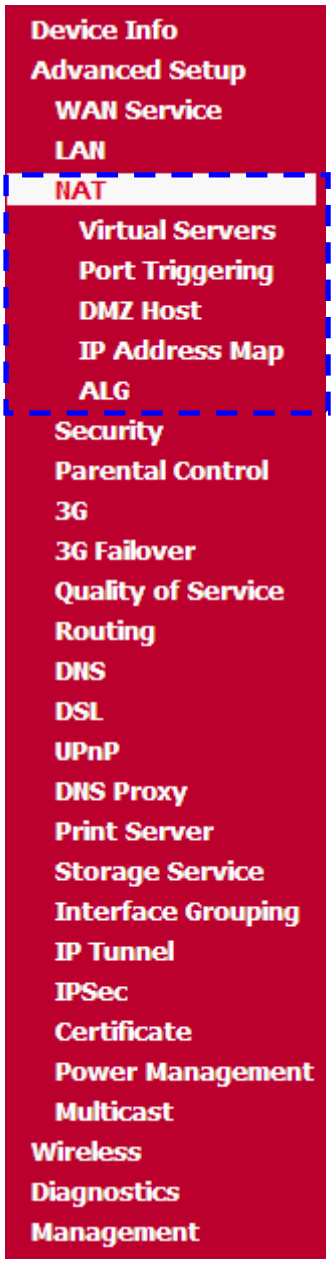
4-4-2-1 IPv6 Auto Config

This page allows the user to configure the IPv6 LAN parameters of the router such as DHCPv6 server, IPv6 LAN IP, Router Advertisement daemon (RADVD), IPv6 Multicast snooping (MLD).



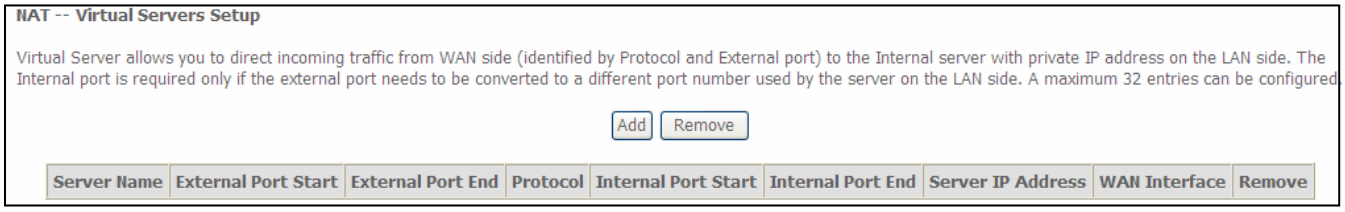
4-4-3 NAT

Below screenshot shows the options available under NAT.

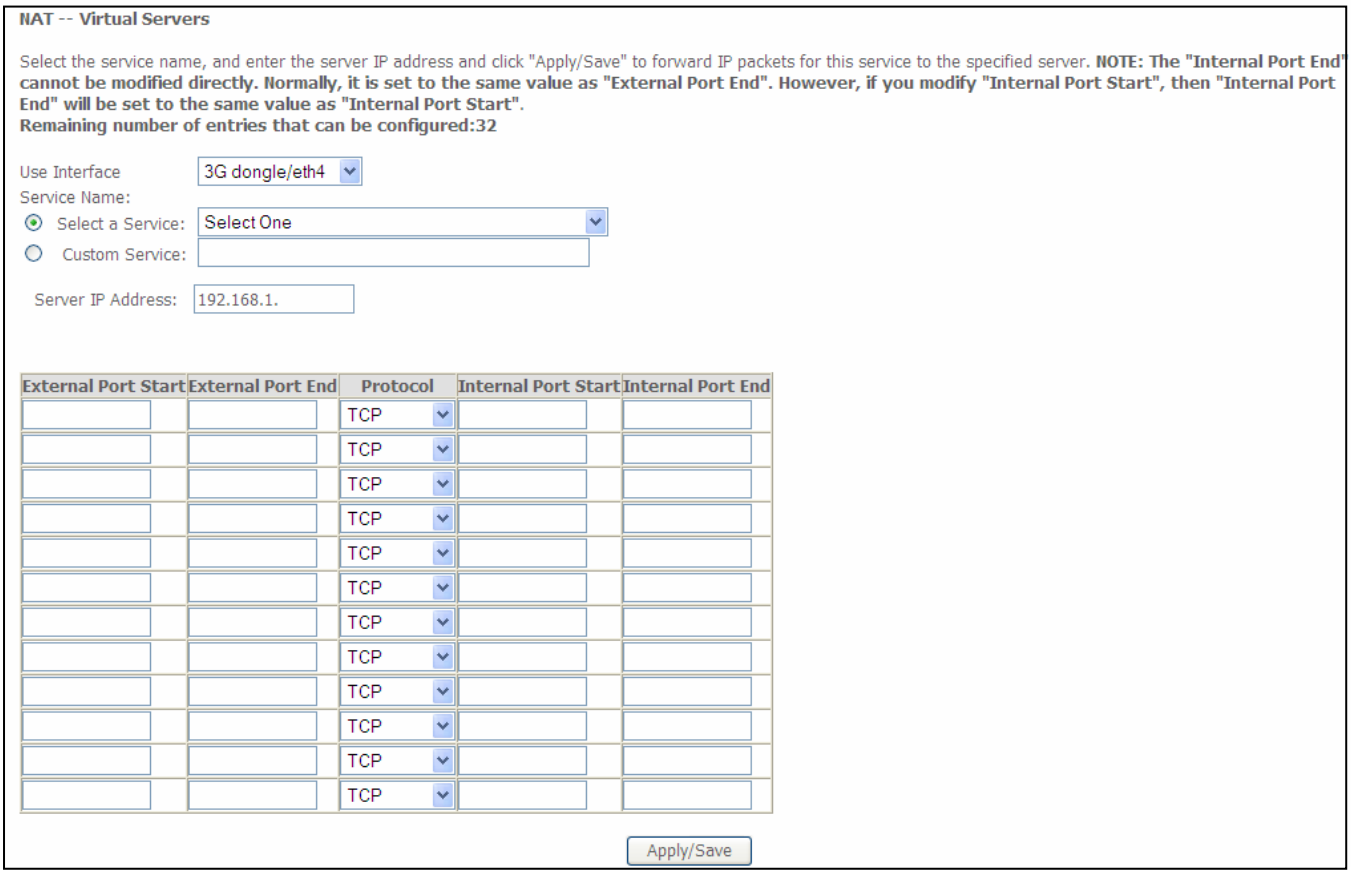


4-4-3-1 Virtual Servers

Virtual server allows you to direct incoming traffic from the WAN side to the internal server with private IP address on the LAN side. The internal port is required if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum 32 entries can be configured.



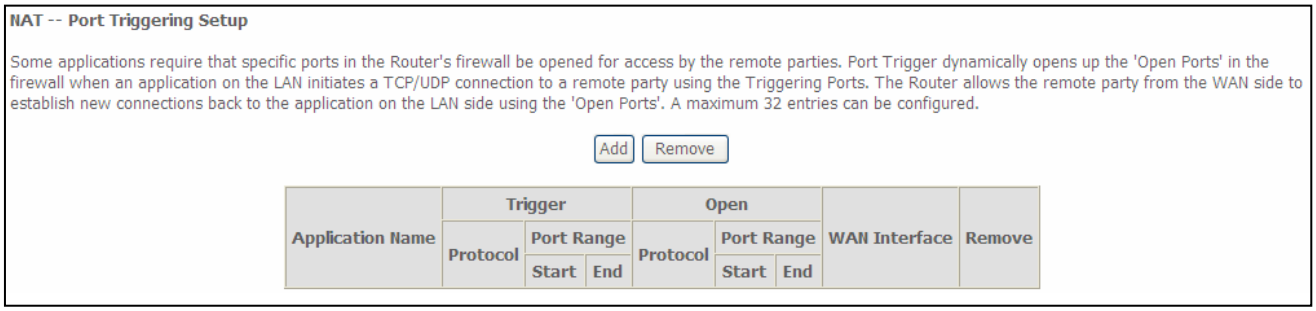
When you click on "**Add**" the following screen will appear.



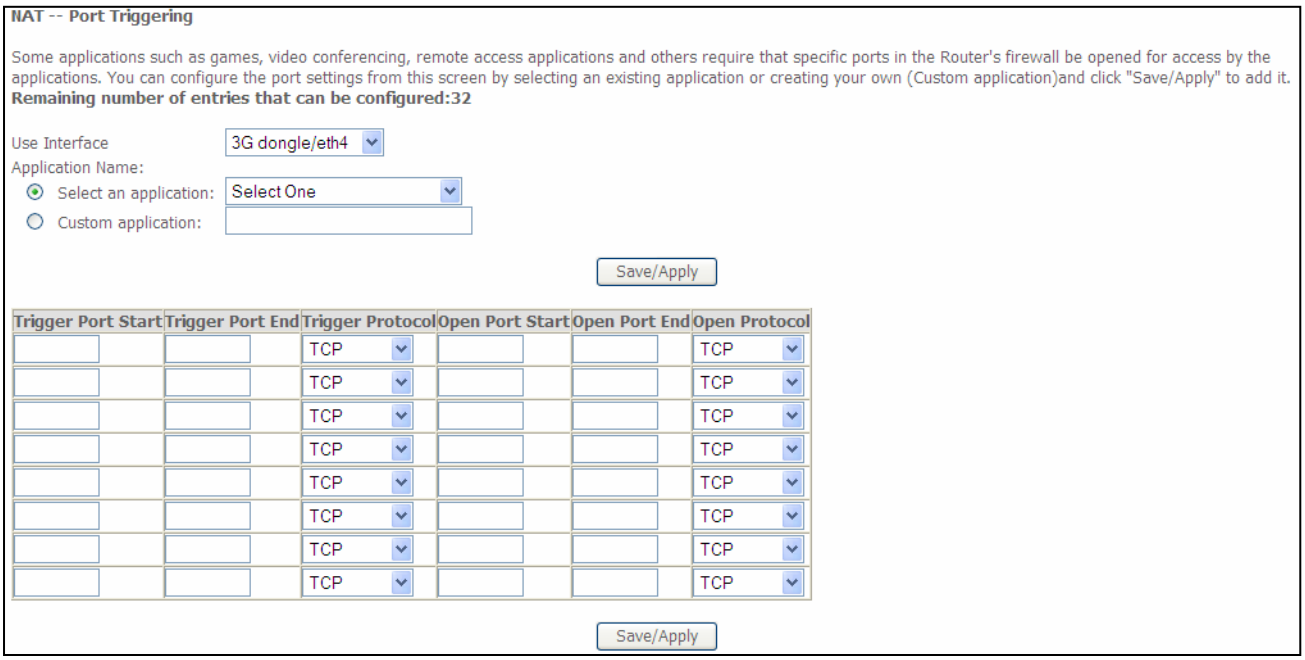
Parameter	Description
User Interface	Select the WAN interface on which the Port forwarding is required.
Service Name	Name of Port forwarding service.
External Port Start & External Port End	Port number accessible on public.
Protocol	Select TCP or UDP or both.
Internal Port Start & Internal Port End	Type the port number of the server for port forwarding.

4-4-3-2 Port Triggering

Port triggering is a way to automate port forwarding in which outbound traffic on predetermined ports ('triggering ports') causes inbound traffic to specific incoming ports to be dynamically forwarded to the initiating host, while the outbound ports are in use. This allows computers behind a NAT-enabled router on a local network to provide services that would normally require the computer to have a fixed address on the local network. Port triggering triggers can open an incoming port when a client on the local network makes an outgoing connection on a predetermined port or range of ports.

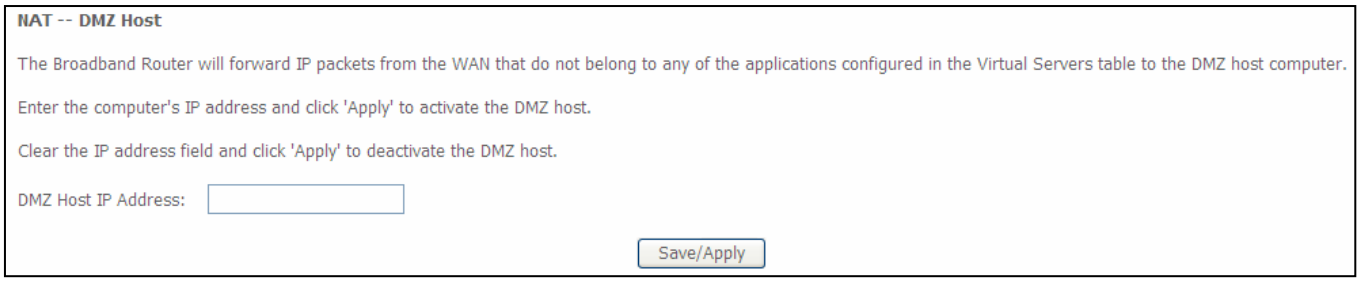


When you click on "**Add**" the following screen will appear.



4-4-3-3 DMZ Host

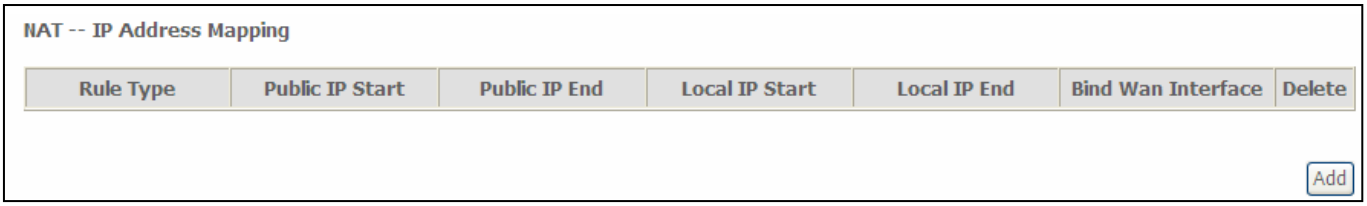
A DMZ (Demilitarized Zone) allows a single computer on your LAN to expose ALL of its ports to the Internet. Enter the IP address of computer as a DMZ (Demilitarized Zone) host with unrestricted Internet access. When doing this, the DMZ host is no longer behind the firewall.



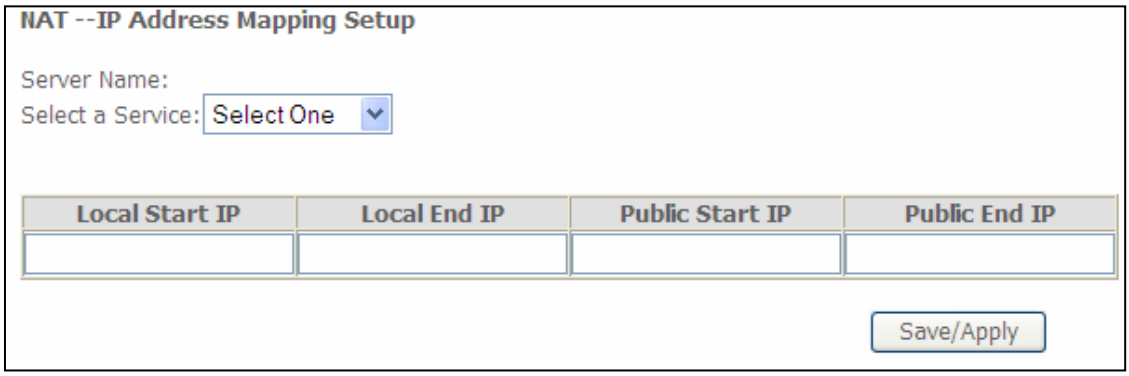
Enter the DMZ Host IP address which is the IP address of the local host. This feature sets a local host to be exposed to the Internet.

4-4-3-4 IP Address Map

Advanced users can use this feature for outgoing traffic, creating "**NAT IP MAPPING**" rules that divert all traffic that is destined for a certain IP address to a different IP address. Entries in this table allow you to configure one Global IP Pool for specified Local IP address from LAN.



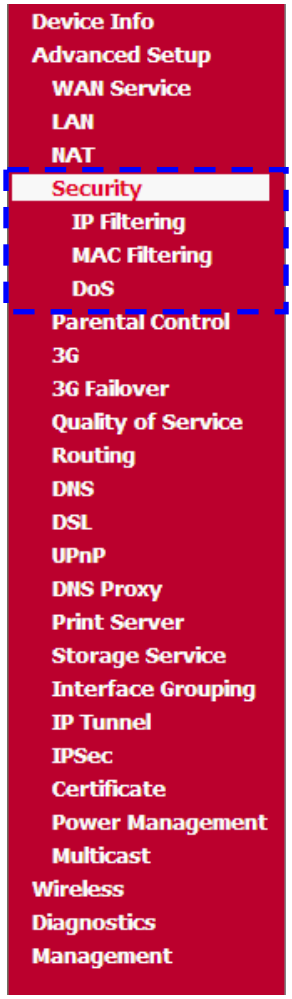
When you click on "**Add**" the following screen will appear.



4-4-3-5 ALG

An application-level gateway (also known as ALG or application layer gateway) consists of a security component that augments a firewall or NAT employed in a computer network.

4-4-4 Security



4-4-4-1 IP Filtering

I) Outgoing IP filtering

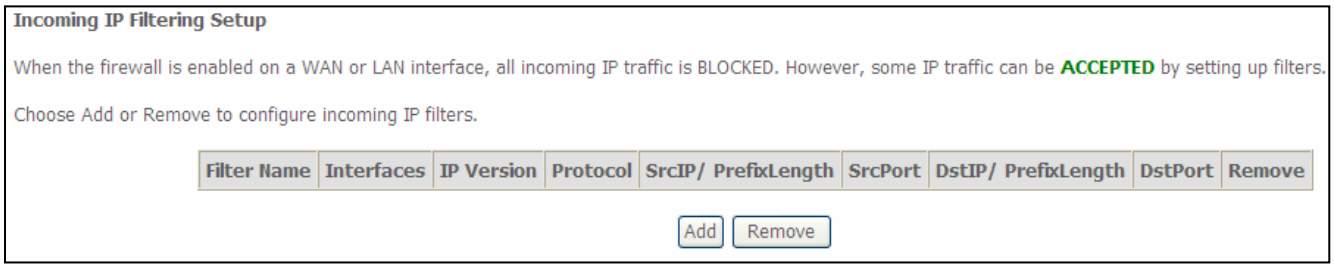
By default all outgoing IP traffic from LAN is allowed, but some IP traffic can be blocked by setting up filters.

Click on "**Add**". The following screen will appear.

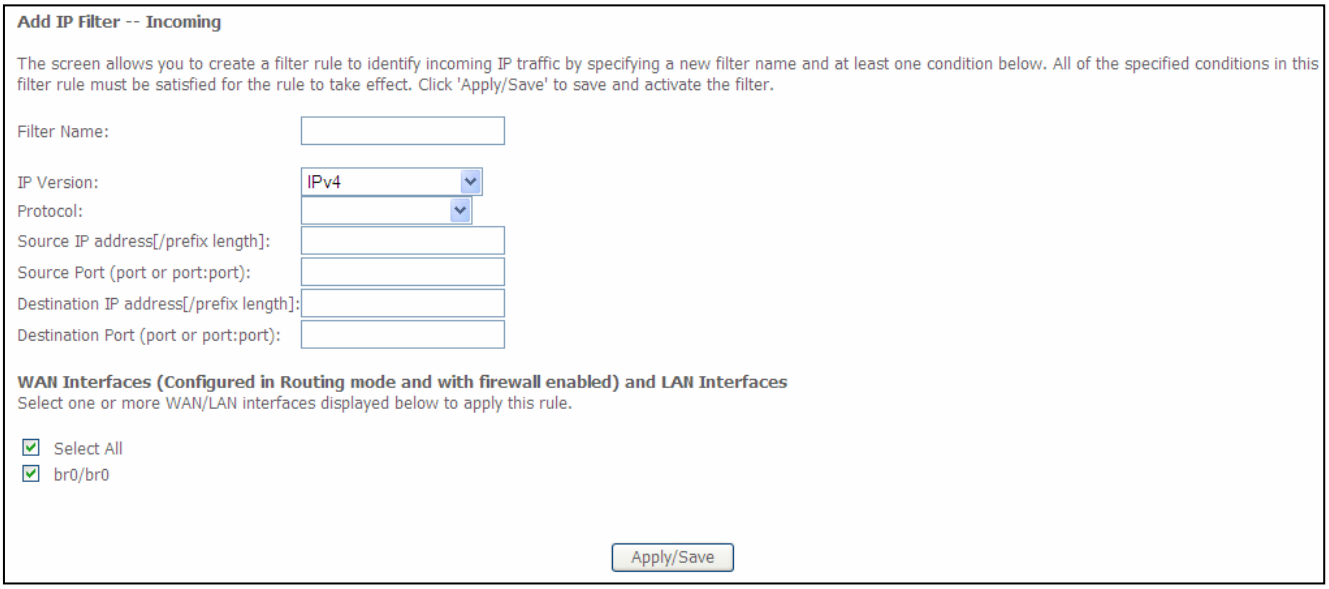
Parameter	Description
Filter Name	Any name for rule.
IP version	Select the IPV4 /IPV6.
Protocol	Select the protocol for which the rule is applied.
Source IP address/prefix length	Enter the source IP address.
Source Port	Enter the source port.
Destination IP address/prefix length	Enter the Destination IP address.
Destination Port	Enter the Destination port.

II) Incoming IP filtering

When the firewall is enabled on a WAN or LAN interface, all incoming traffic is blocked. However, some IP traffic can be accepted by setting up filters.



Click on "**Add**". The following screen will appear.

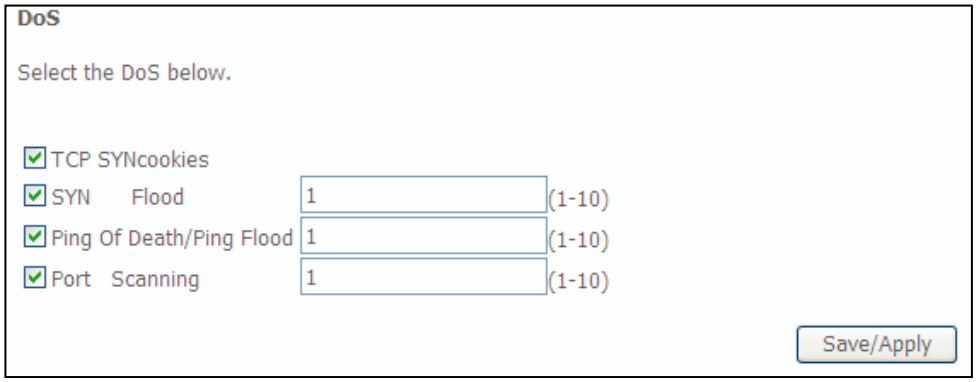


4-4-4-2 MAC Filtering

4-4-4-3 DoS

A denial-of-service attack (DoS attack) is an attempt to make a computer resource unavailable to its intended users.

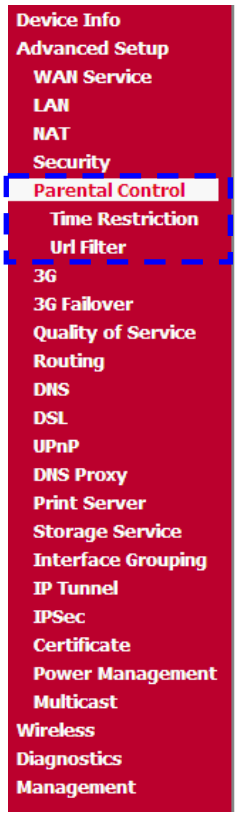
Enable DoS Prevention to detect and prevent denial of service attacks through automatic rate filtering or rules to protect legitimate users during the DoS attacks.



Parameter	Description
TCP SYNcookies	Will block the TCP Sync cookies when enabled.
SYN Flood	Will block the SYN flood when enabled.
Ping of Death/Ping Flood	Will block ping from source IP when enabled.
Port Scanning	Will block Port scanning from source when enabled.

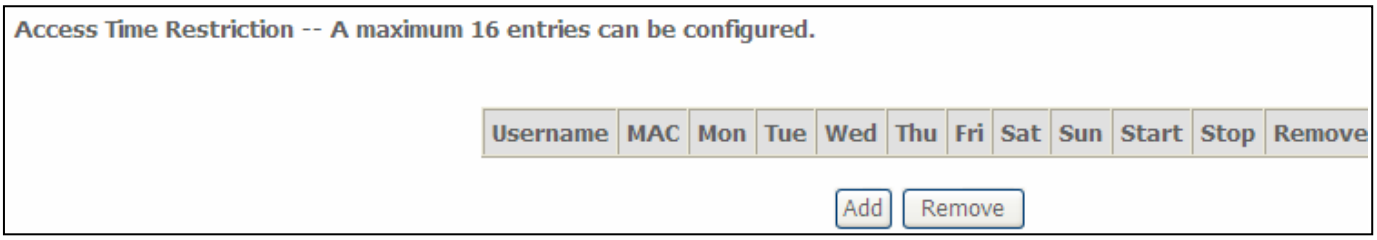
4-4-5 Parental Control

If you want to allow access to Internet in the specific time, click on Parental Control and the following page appears. It is used to configure the filtered URL and domain. You can also add/delete the excluded IP, from which packets free from these URL filtering rules.

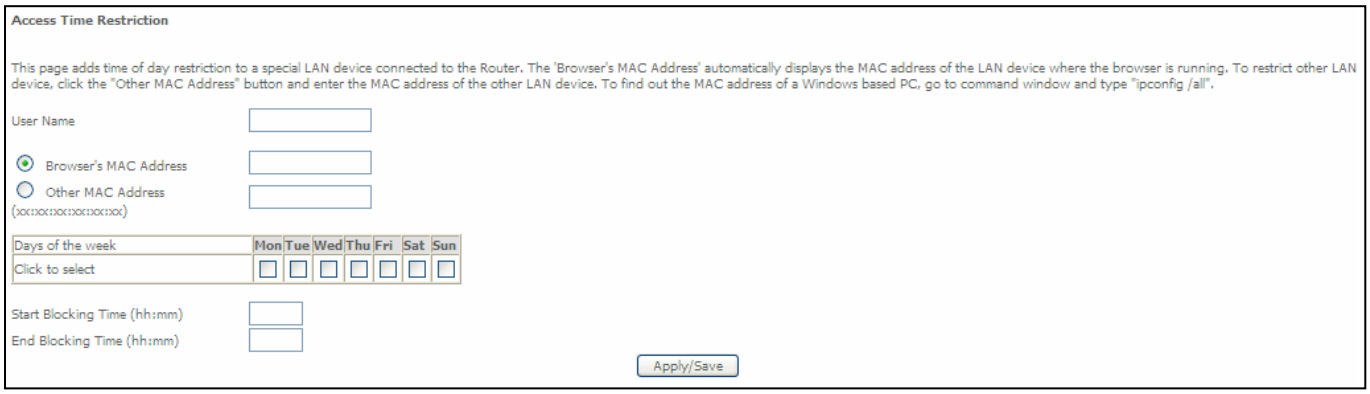


4-4-5-1 Time Restriction

This feature adds time of restriction to a special LAN device to the router. The browser's MAC address automatically displays the MAC address of the LAN device when the browser is running.
To restrict other LAN devices, click "**other MAC Address**" button and enter the MAC address of the other LAN device. To find out the MAC address of a Windows based PC, go to command window and type "**ipconfig/all**".



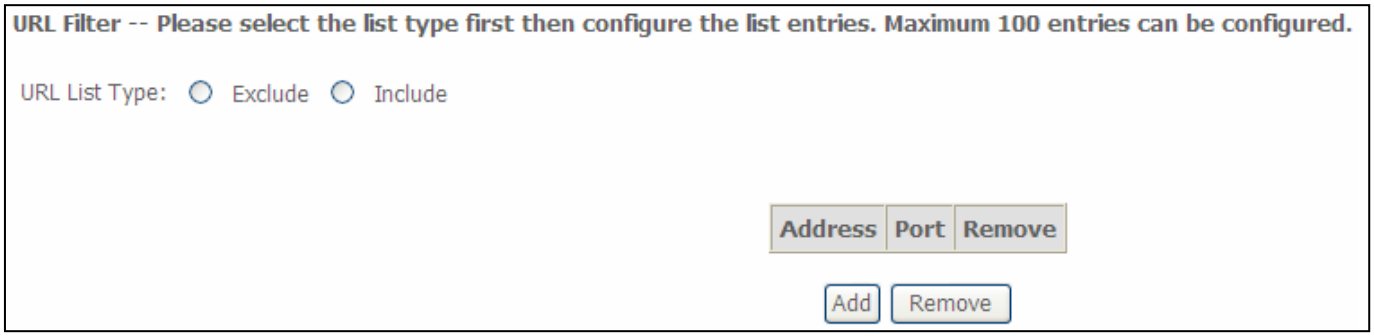
Click on "**Add**". The below given screen will appear.



Parameter	Description
Browser's MAC address	Enter the MAC address of PC to be restricted.
Other MAC address	Enter the MAC address of PC to be restricted.
Days of the week	Select the days for restricted access.
Start Blocking time	Select the time for restriction.
End Blocking time	Select the time for restriction.

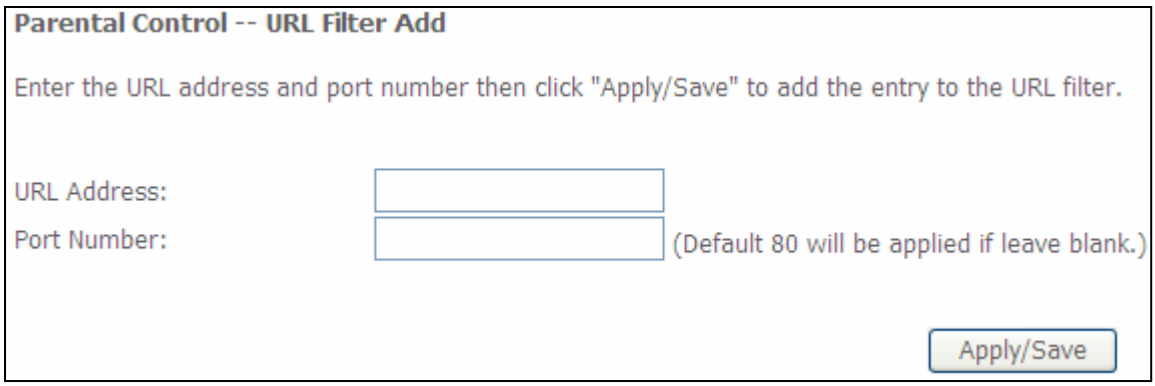
4-4-5-2 URL Filter

The URL Blocking is the web filtering solution. The firewall has the ability to block access to specific web URLs based on string matches. This can allow large number of URLs to be blocked by specifying only a FQDN (such as tw.yahoo.com). The URL Blocking enforces a Web usage policy to control content downloaded from, and uploaded to the Web.



Please select the list type first then configure the list entries. Maximum 100 entries can be configured.

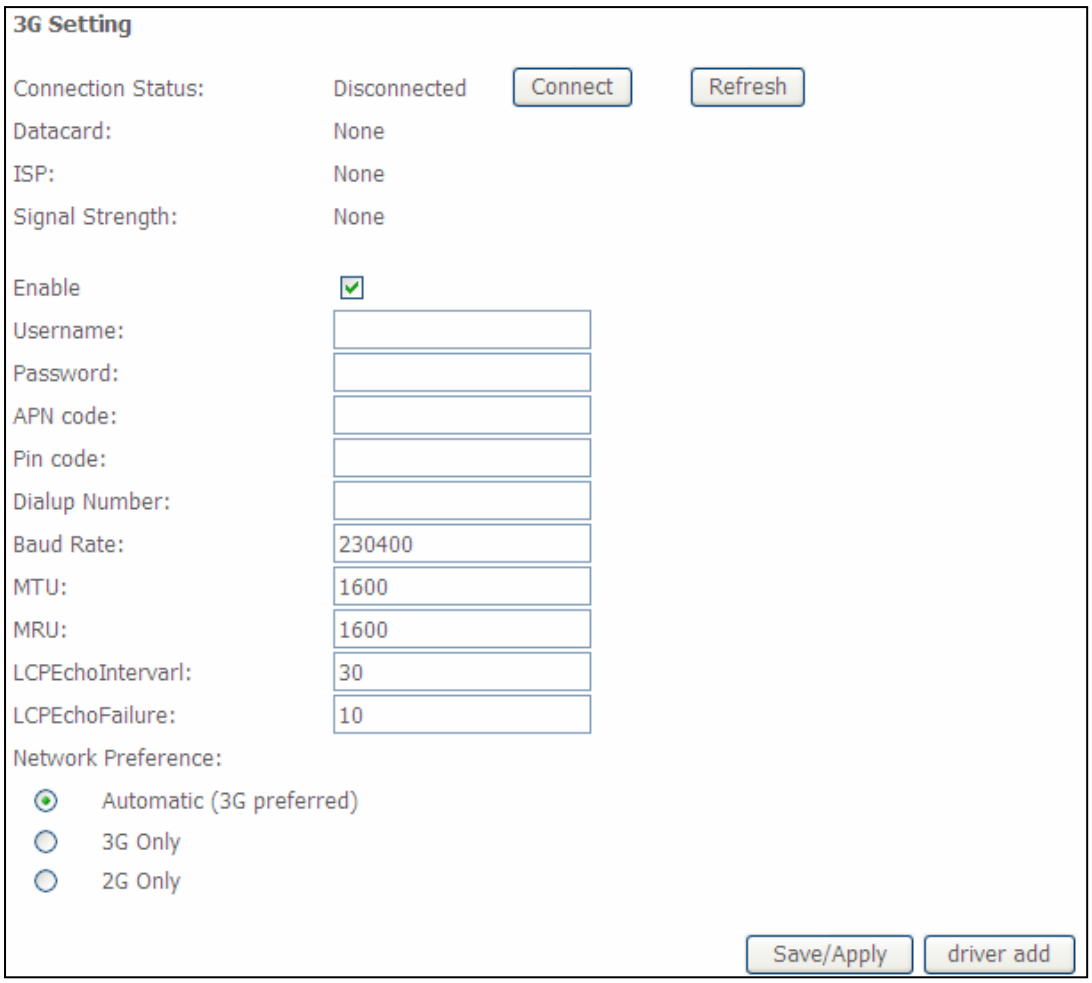
Click on "**Add**". The below given screen will appear. Enter the URL address and port number to add the entry to the URL filter.



4-4-6 3G

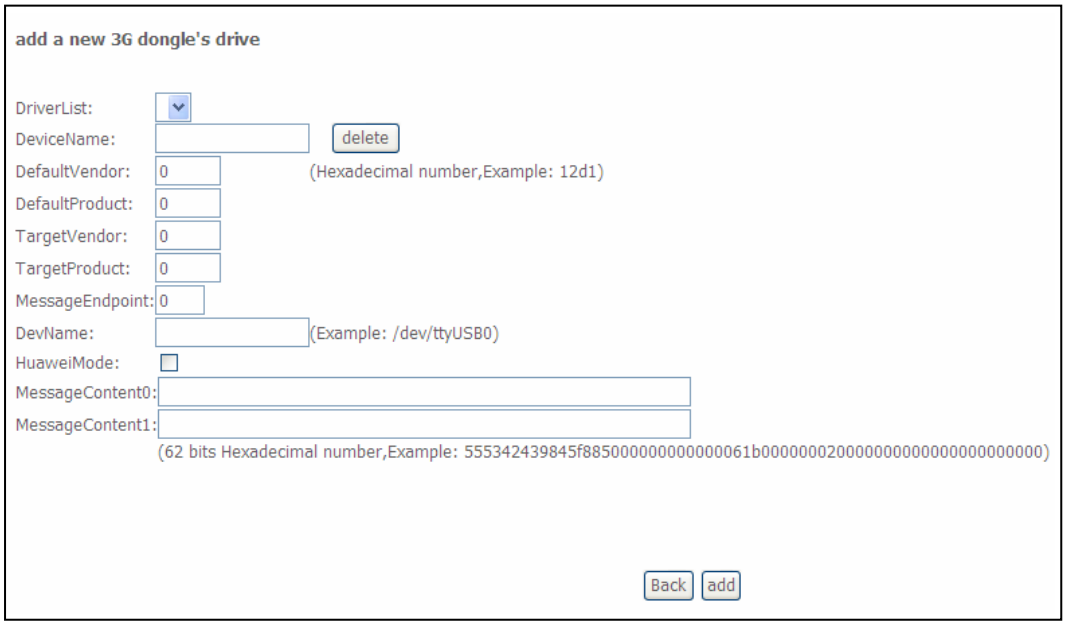
This page allows the user to set the 2G and 3G parameters of the USB Datacard with an active SIM plugged to the USB port of the router. These Parameters are provided by the 2G/3G internet service provider. Also check the 3G dongle compatibility list on the website or call Digisol technical support. Basically username, password, dial Number and APN code is required. Some ISP's do not require username and password. The below parameters may need to be confirmed with ISP.

NOTE: Switch off the router to plug/unplug USB 2G/3G Dongle.



Parameter	Description
Username	Type Username, provided by 3G ISP.
Password	Type Password, provided by 3G ISP.
APN Code	Type APN code, provided by 3G ISP.
Pin Code	Pin code is provided by ISP.
Dialup Number	Type Dialup number provided by ISP (e.g.: *99# or #777 etc.)
Baud Rate	Baud rate do not change.
MTU	Maximum Transfer unit – Set by ISP.
MRU	MRU. Do not change the default.
LCP Echo Interval	LCP Interval – Do not change the default.
LCP Echo failure	LCP Failure – Do not change the default.
Network Preference	Can Set 3G / 2G / Automatic mode.

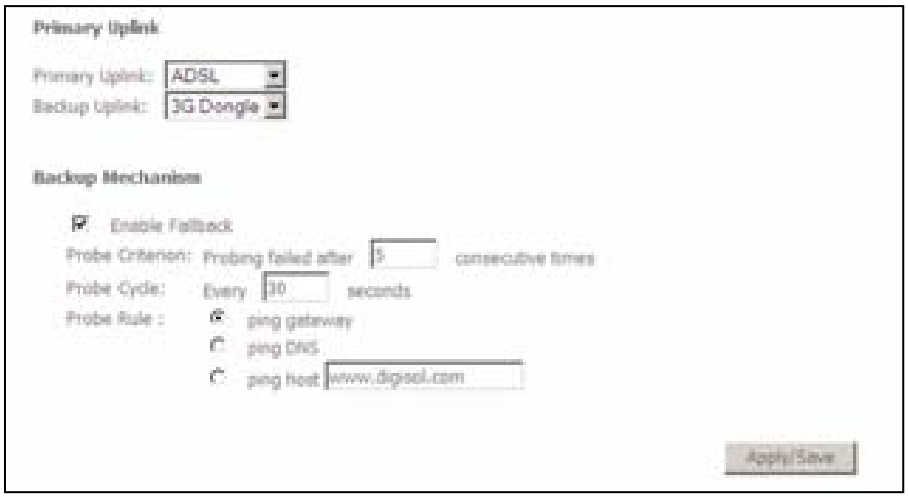
Click on "**driver add**". Below given screen will appear to add a new 3G dongle drive.



Parameter	Description
Driver List	Lists the Driver added manually by user.
Device Name	Enter the name of Driver to be added.
Default Vendor	Here type the Vendor ID of the USB Dongle for Mass Storage.
Default Product	Here type the Product ID of the USB Dongle for Mass Storage.
Target Vendor	Here type the Vendor ID of the USB Dongle for USB Modem.
Target Product	Here type the Product ID of the USB Dongle for USB Modem.
Message Endpoint	Endpoint of Mass Storage device.
Dev Name	Type the Device name (E.g./dev/ttyUSB2), use USB sniffer tool.
Huawei Mode	Select only if card is Huawei make.
Message Content0	Type 62bit Hexadecimal No. (Use Bushound tool)
Message Content1	Type 62bit Hexadecimal No. (Use Bushound tool)

4-4-6-1 3G Failover

On this page, the user or administrator can set WAN type as Primary or Backup Uplink.



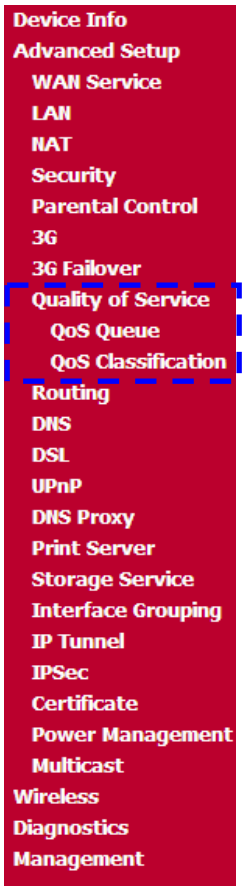
Parameter	Description
Primary Uplink	Set the preferred WAN type
Backup Uplink	Set the backup/secondary WAN type
Backup mechanism	The failover settings can be edited.

Note: It is not recommended to change the Backup mechanism settings

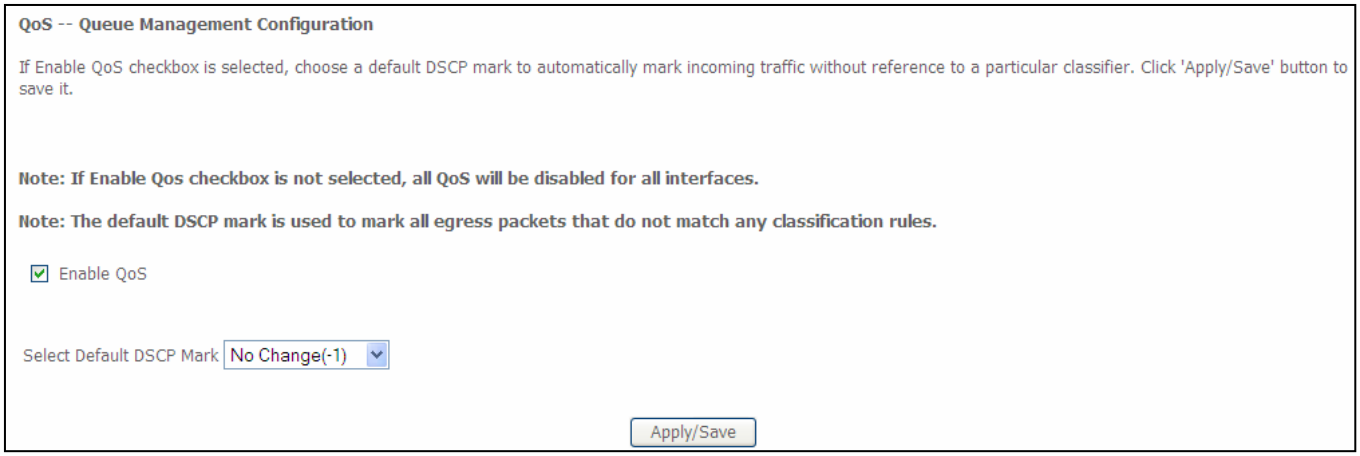
4-4-7 Quality Of Service

The QoS is enforced by the QoS rules in the QoS table. A QoS rule contains two configuration blocks:

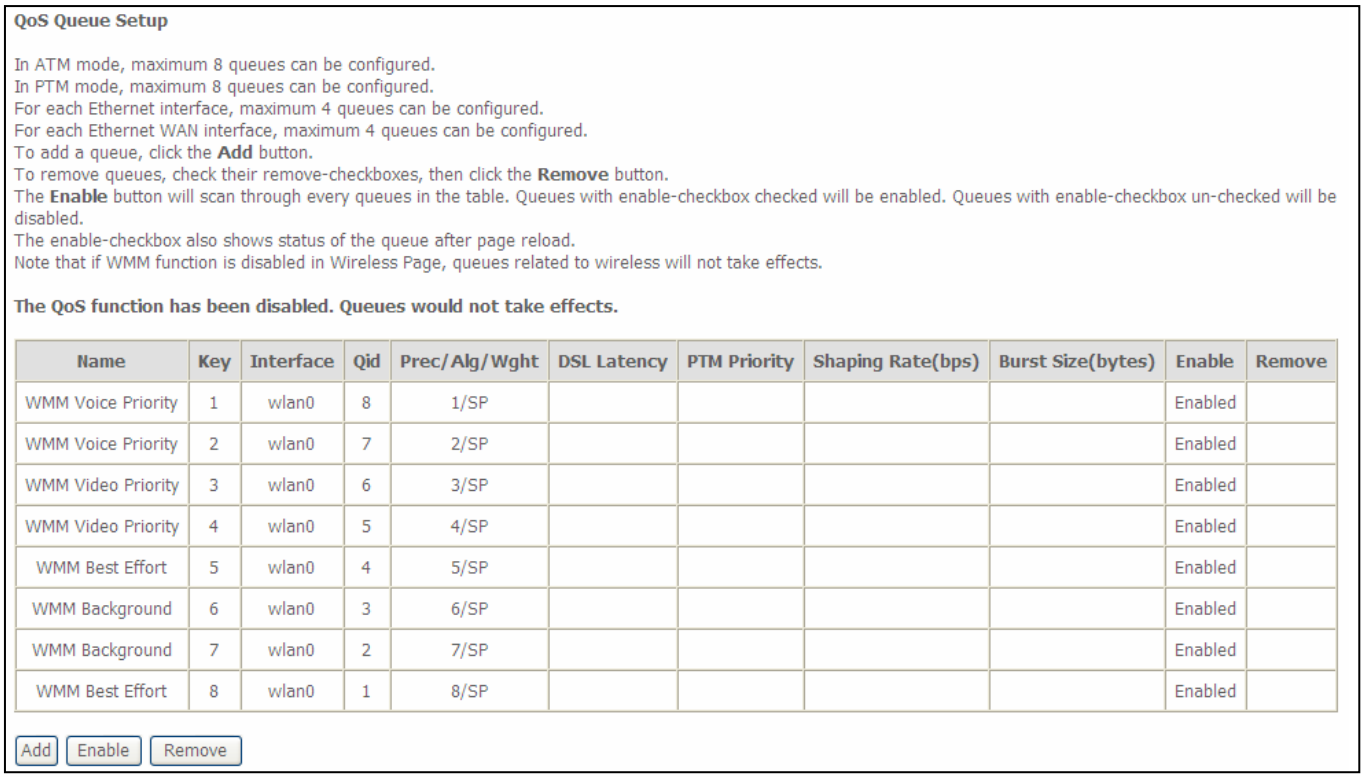
Traffic Classification and Action. The Traffic Classification enables you to classify packets on the basis of various fields in the packet and perhaps the physical ingress port. The Action enables you to assign the strict priority level and mark some fields in the packet that matches the Traffic Classification rule. You can configure any or all fields as needed in these two QoS blocks for a QoS rule.



Check the "**Enable QoS**" checkbox as shown below. Then choose a default DSCP mark to automatically mark incoming traffic without reference to a particular classifier. Click on "**Apply/Save**" button to save it.



4-4-7-1 QOS Queue



QoS Queue Setup

In ATM mode, maximum 8 queues can be configured.
In PTM mode, maximum 8 queues can be configured.
For each Ethernet interface, maximum 4 queues can be configured.
For each Ethernet WAN interface, maximum 4 queues can be configured.
To add a queue, click the **Add** button.
To remove queues, check their remove-checkboxes, then click the **Remove** button.
The **Enable** button will scan through every queues in the table. Queues with enable-checkbox checked will be enabled. Queues with enable-checkbox un-checked will be disabled.
The enable-checkbox also shows status of the queue after page reload.
Note that if WMM function is disabled in Wireless Page, queues related to wireless will not take effects.

The QoS function has been disabled. Queues would not take effects.

Name	Key	Interface	Qid	Prec/Alg/Wght	DSL Latency	PTM Priority	Shaping Rate(bps)	Burst Size(bytes)	Enable	Remove
WMM Voice Priority	1	wlan0	8	1/SP					Enabled	
WMM Voice Priority	2	wlan0	7	2/SP					Enabled	
WMM Video Priority	3	wlan0	6	3/SP					Enabled	
WMM Video Priority	4	wlan0	5	4/SP					Enabled	
WMM Best Effort	5	wlan0	4	5/SP					Enabled	
WMM Background	6	wlan0	3	6/SP					Enabled	
WMM Background	7	wlan0	2	7/SP					Enabled	
WMM Best Effort	8	wlan0	1	8/SP					Enabled	

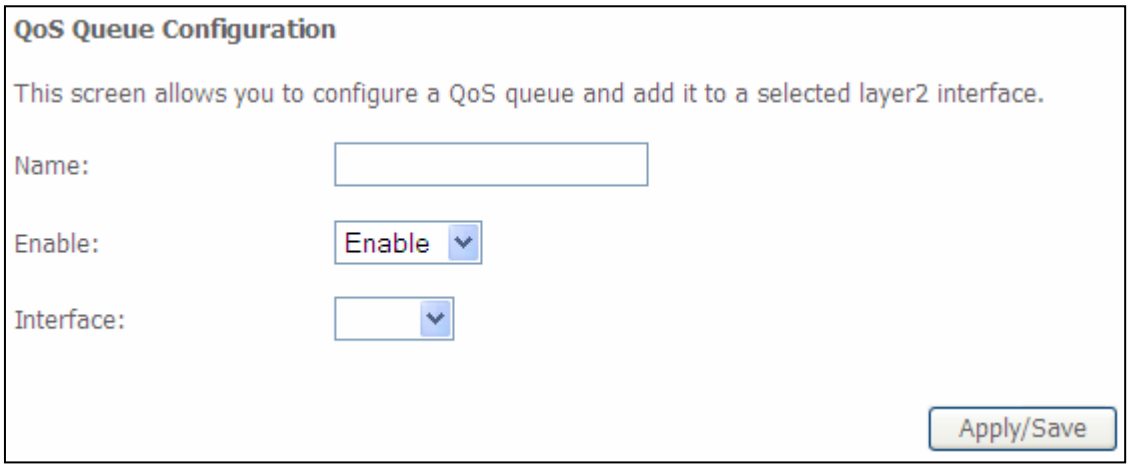
Add Enable Remove

For each Ethernet interface, maximum 4 queues can be configured. For each Ethernet WAN interface maximum 4 queues can be configured.
The "**Enable**" button will scan through every queue in the table.

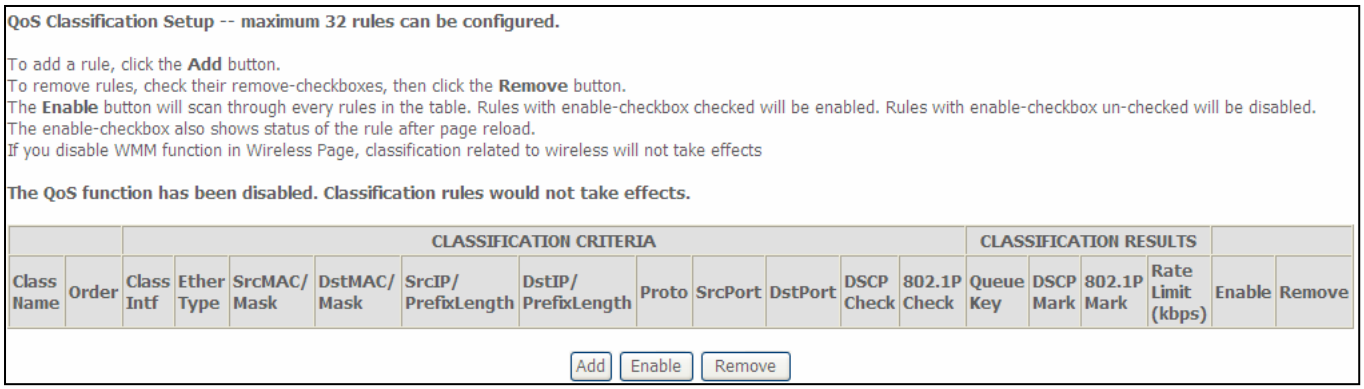
Parameter	Description
Name	Name of the QoS Rule.
Key	Enter the key.
Interface	Select Interface on which the QoS rule is to be applied.
Qid	Enter the QID.
Prec/Alg/Wght	Mention the prec/alg/wght.
DSL Latency	Display the WAN Path.
PTM priority	Define the PTM priority.
Shaping Rate (bps)	Type the shaping rate.
Burst Size (bytes)	Type the Burst size
Enable	Displays the Enabled Status if enabled.
Remove	Select the checkbox to remove the entry.

Note: If the WMM function is disabled in the wireless page, queues related to wireless will not take effect.

Click on "**Add**". The below given screen will appear. This screen allows you to create a QOS queue and add it to a selected layer2 interface. Enter the name and interface of the QoS queue as shown below.

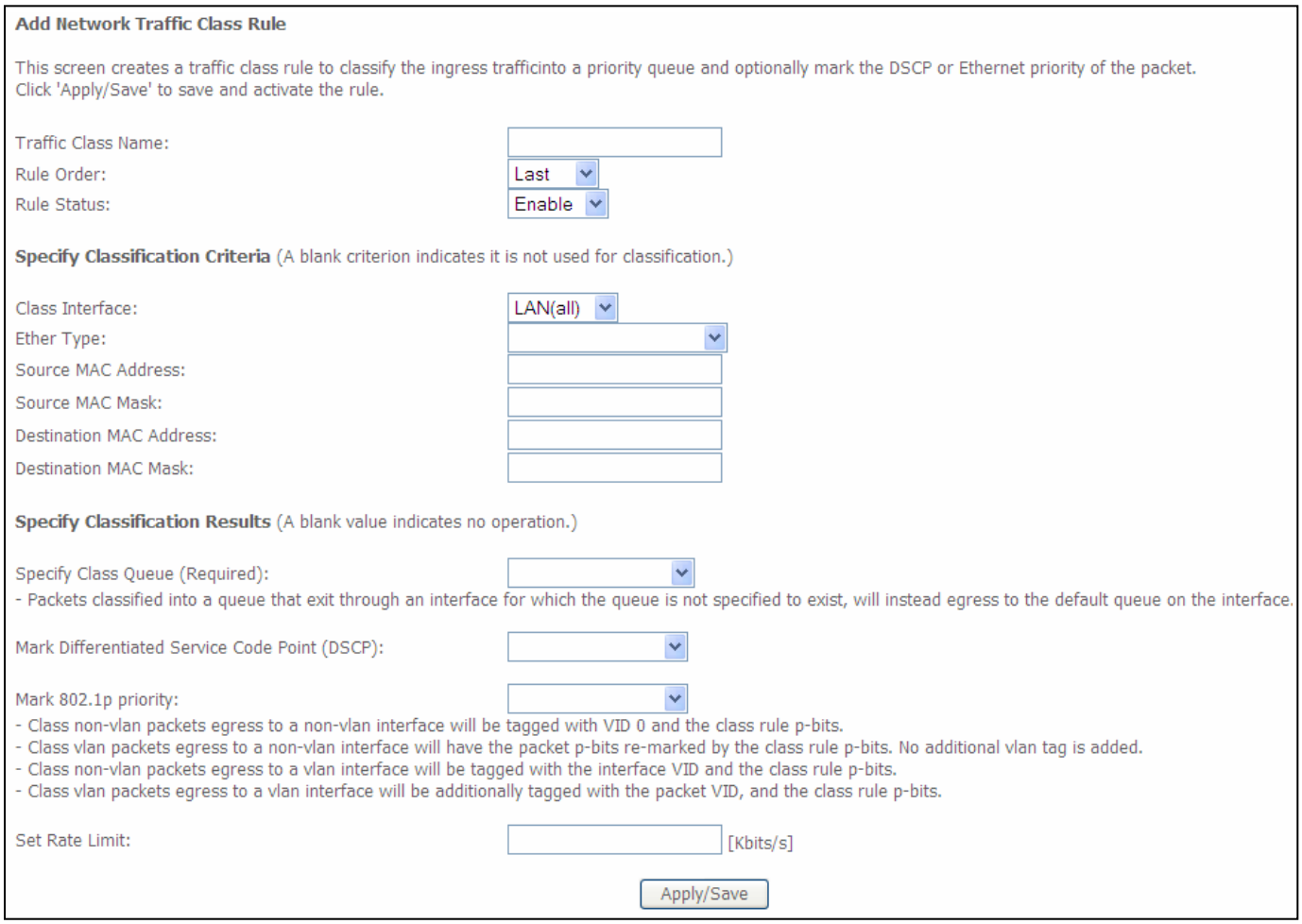


4-4-7-2 QOS Classification



Note: If the QOS function has been disabled, then the classification rules would not take effect.

Click on "**Add**" button to add a rule. The below given screen will appear. By entering the settings in this page, you can create traffic class rule to classify the ingress traffic into the priority queue and optionally mark the DSCP or Ethernet priority of the packet. Click "**Apply/Save**" button to save and activate the rule.

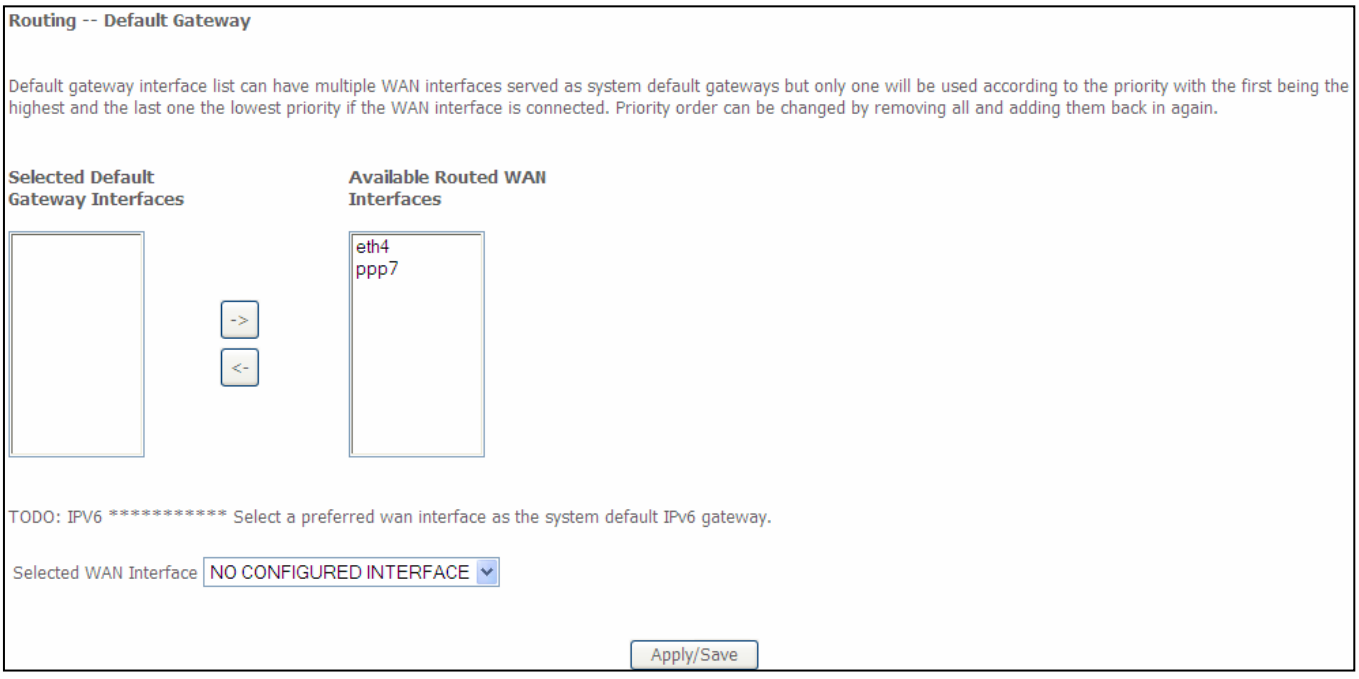


Parameter	Description
Traffic Class Name	Name of the Traffic Class.
Rule Order	Select the Rule Order.
Rule Status	Enable or Disable the Rule Status.
Class Interface	Select the Traffic Class Interface on which rule is to be applied.
Ether Type	Select the Ether Type as required.
Source MAC Address	Enter the Source MAC Address.
Destination MAC address	Enter the Destination MAC address.
Destination MAC Mask	Enter the Destination MAC Mask.
Specify Class Queue	Enter the Class Queue.
Mark DSCP	Select the DSCP from the List.
Mark 802.1p priority	Select the Priority from 0-7.
Set Rate Limit	Set the Rate limit here.

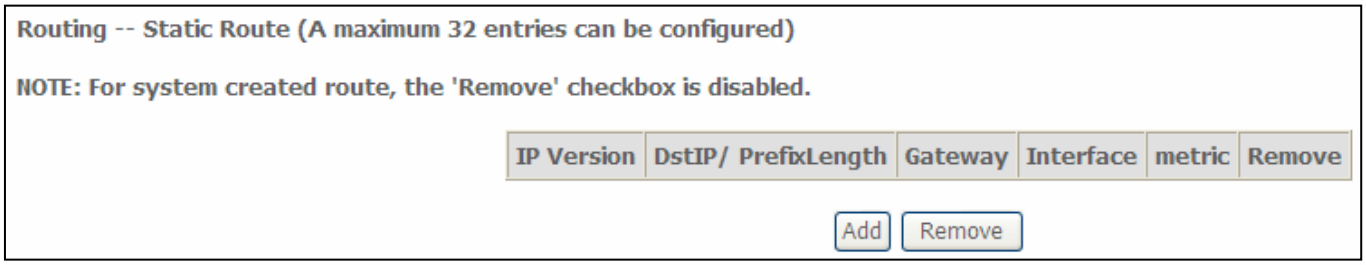
4-4-8 Routing

4-4-8-1 Default Gateway

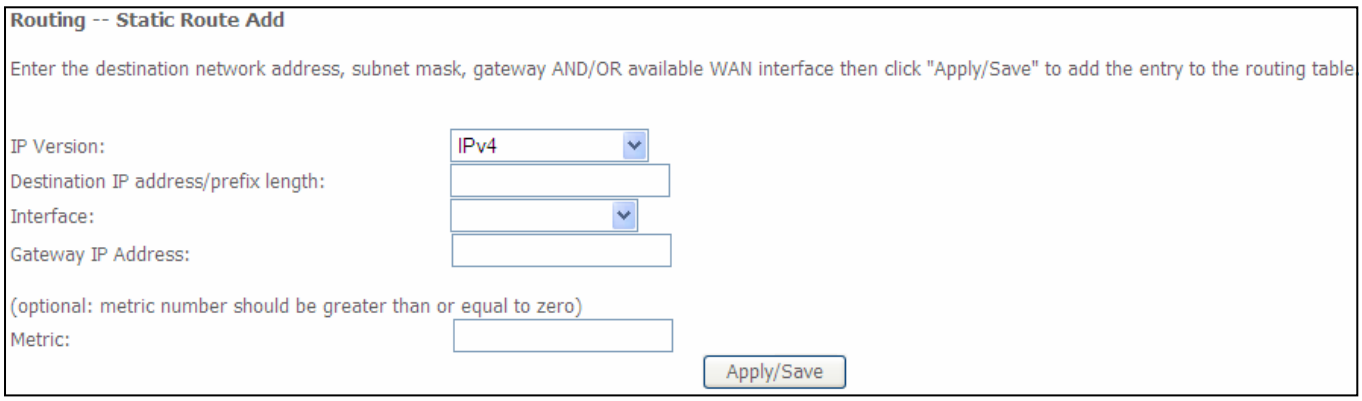
Default gateway interface can have WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the highest and the last one of the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back again.



4-4-8-2 Static route

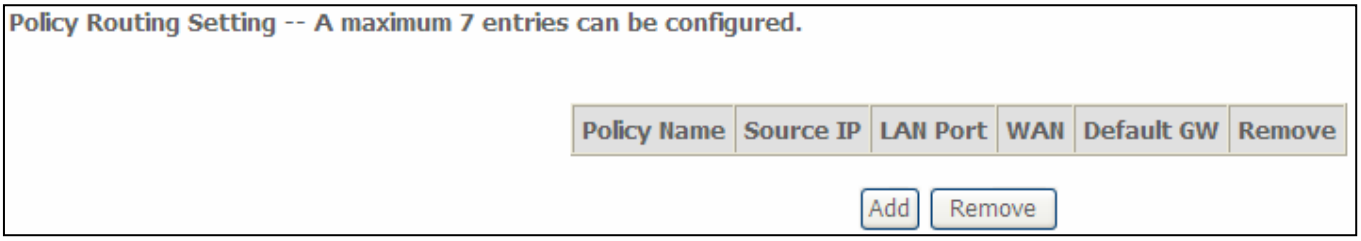


Click on "**Add**". The below given screen will appear. Here enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click on "**Apply/Save**" to add the entry to the routing table.



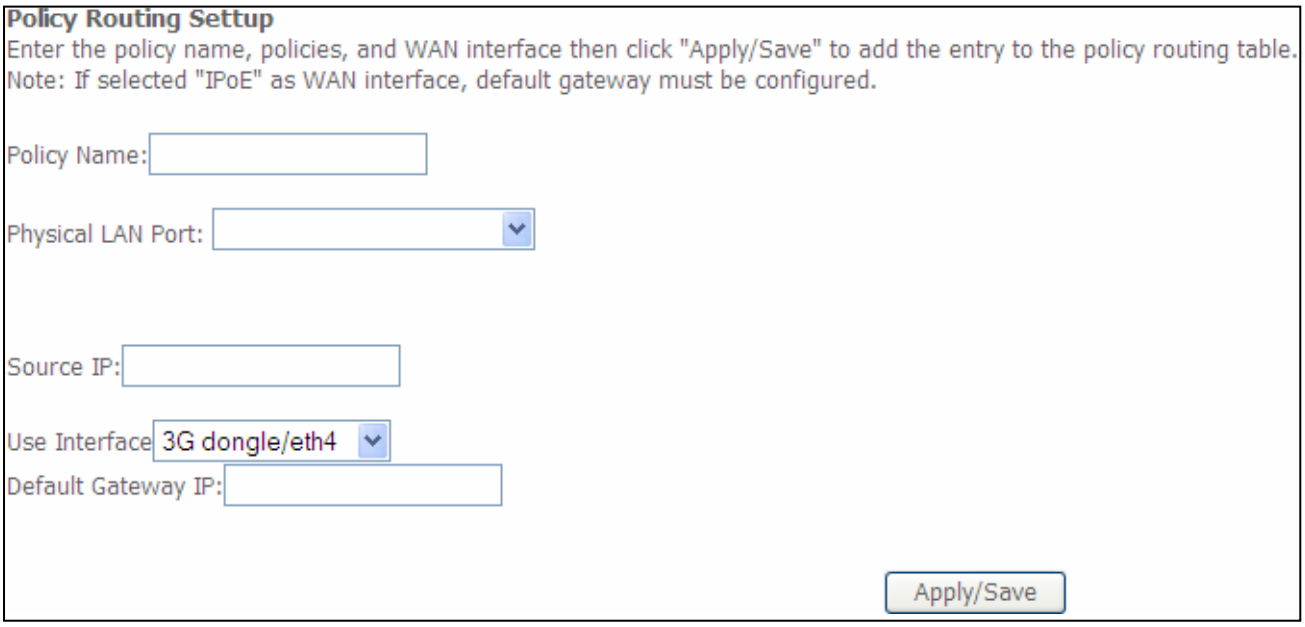
Parameter	Description
IP Version	Select the Internet Protocol version IPV4/IPV6.
Destination IP address/prefix length	Enter Destination IP or/and Prefix length. (IPV6)
Interface	Select the WAN/LAN interface.
Gateway IP address	Enter the IP address.
Metric	Enter the numerical value (= or > 0).

4-4-8-3 Policy Routing



Click on "**Add**". The below given screen will appear.

Here enter the policy name, policies and WAN interface. Then click "**Apply/Save**" button to add the entry to the policy routing table.

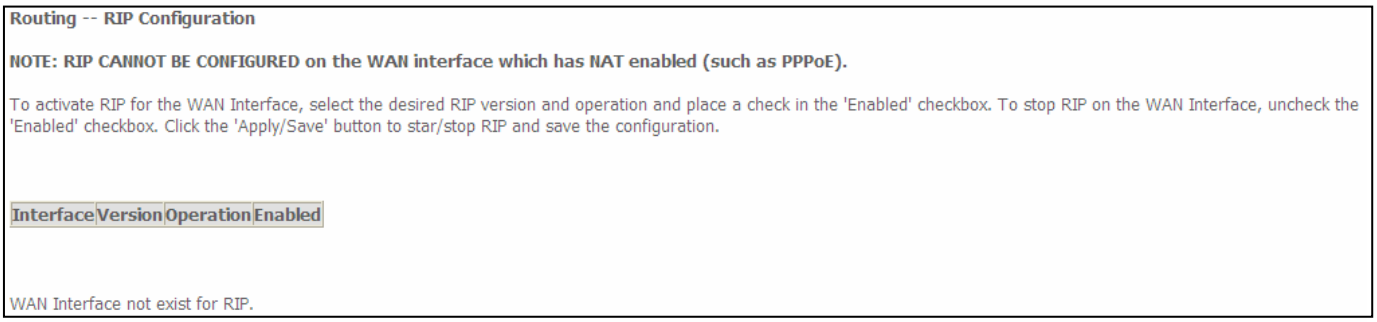


Parameter	Description
Policy Name	Enter the name of Policy.
Physical LAN port	Select the LAN port.
Source IP	Enter the Source IP address.
Use Interface	Select the Interface.
Default Gateway IP	Type the IP of the default gateway.

4-4-8-4 RIP

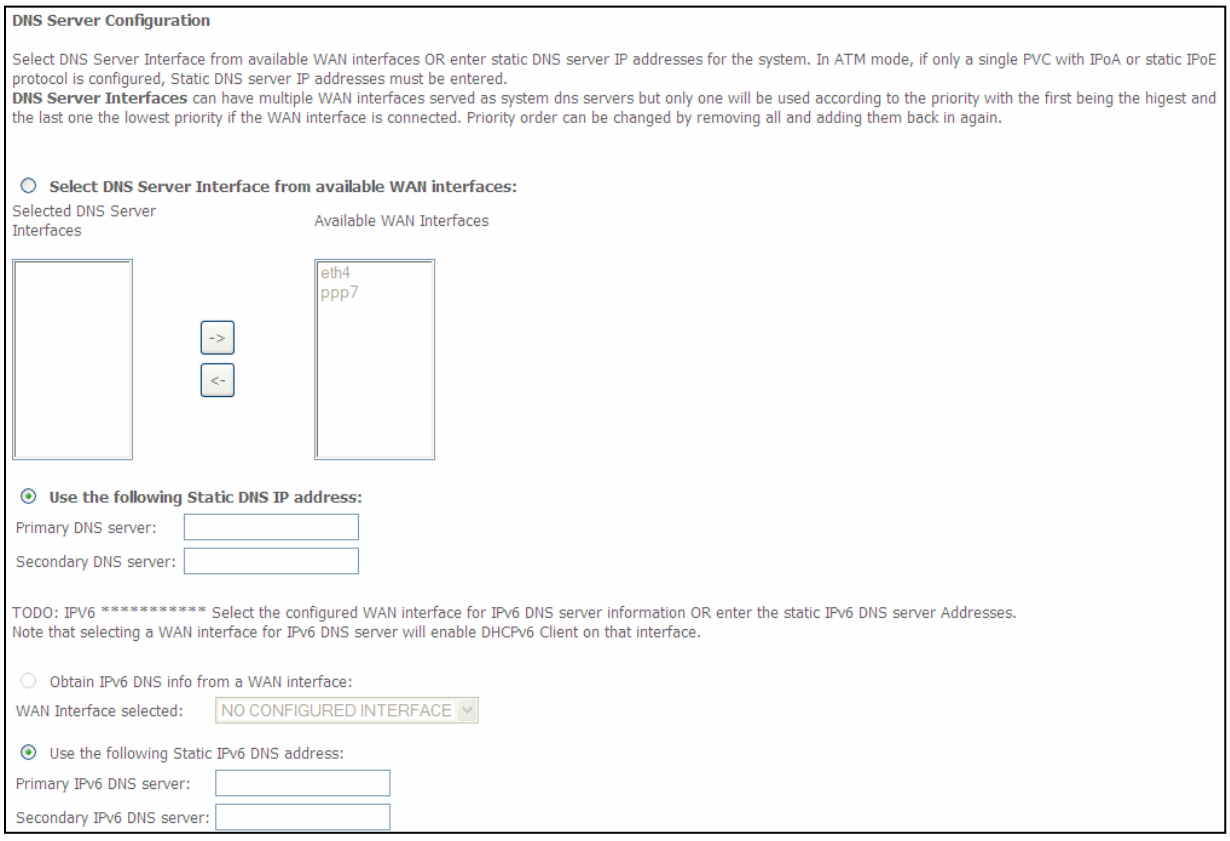
To activate RIP for the WAN interface, select the desired RIP version and operation and check the "**Enabled**" checkbox. To stop RIP on the WAN interface, uncheck the "**Enabled**" checkbox. Click the "**Apply/Save**" button to start/stop RIP and save the configuration.

Note: RIP cannot be configured on the WAN interface which has NAT enabled (such as PPPoE).



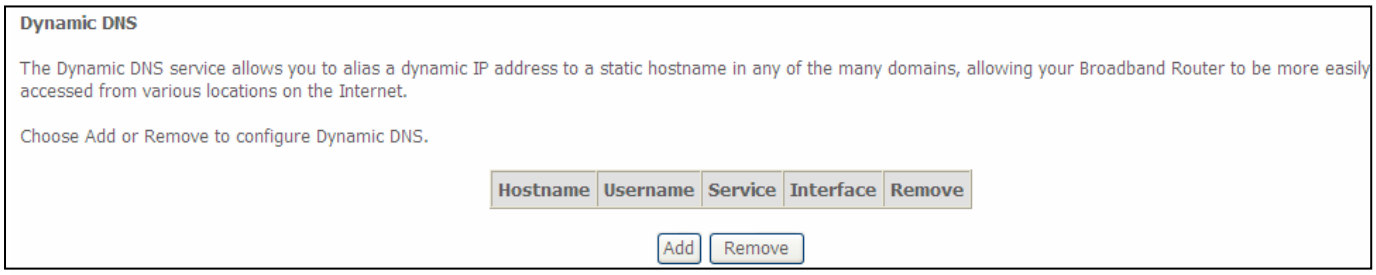
4-4-9 DNS

4-4-9-1 DNS Server

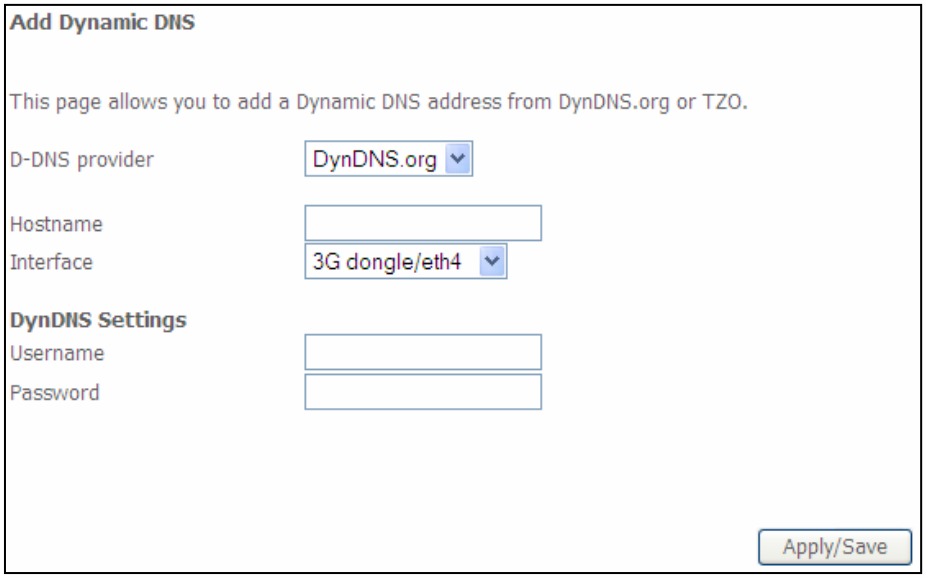


4-4-9-2 Dynamic DNS

The Dynamic DNS feature allows you to register your device with a DNS server and access your device each time using the same host name. The Dynamic DNS page allows you to add/remove the Dynamic DNS feature.



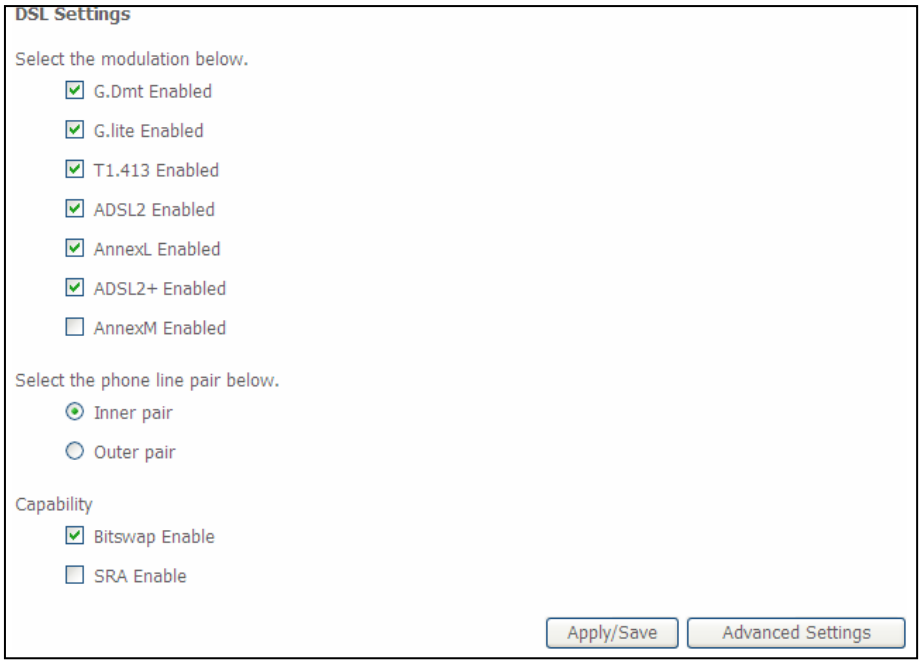
Click on "**Add**". The below given screen will appear.



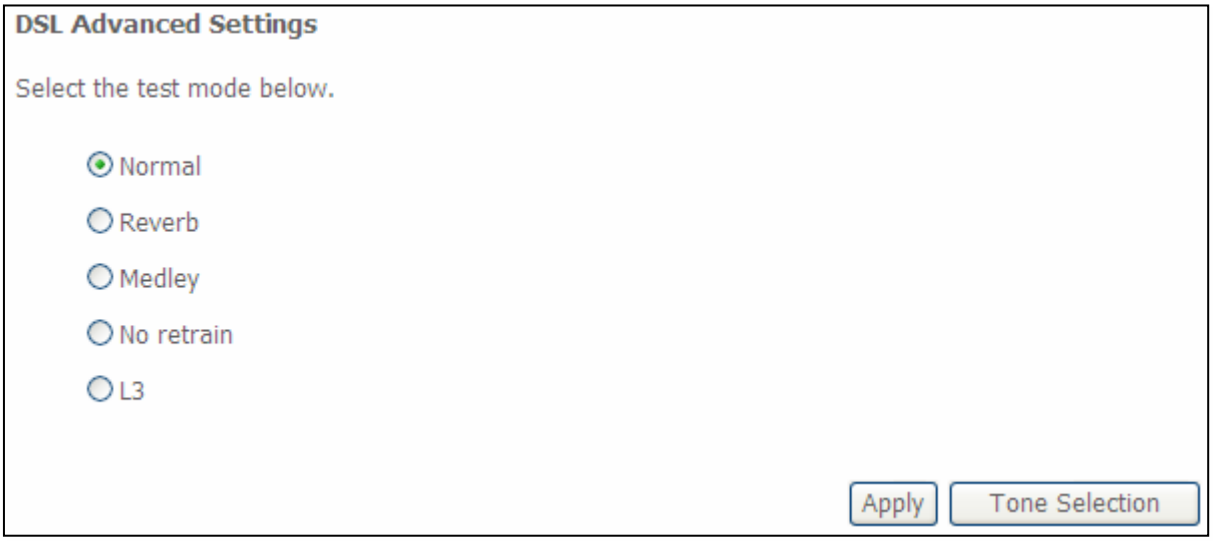
Parameter	Description
D-DNS provider	Select your DDNS Service Provider.
Hostname	Enter the hostname configured in your DDNS Service Provider Account.
Interface	Select the WAN Interface Type.
User Name	Enter the User Name of your DDNS account.
Password	Enter the Password of your DDNS account.

4-4-10 DSL

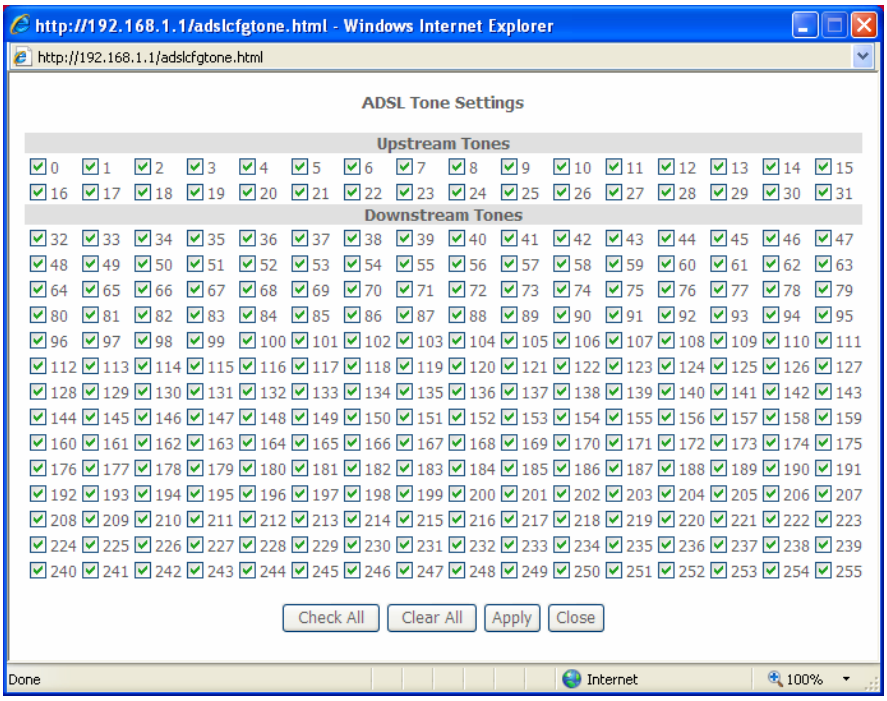
This page allows you to set the ADSL modulation. It is recommended, not to change anything unless required/suggested by the ADSL service provider. **CAUTION: Wrong selection of modulation may make the router ADSL link unstable.**



Click on "**Advanced Settings**". The below given screen will appear.



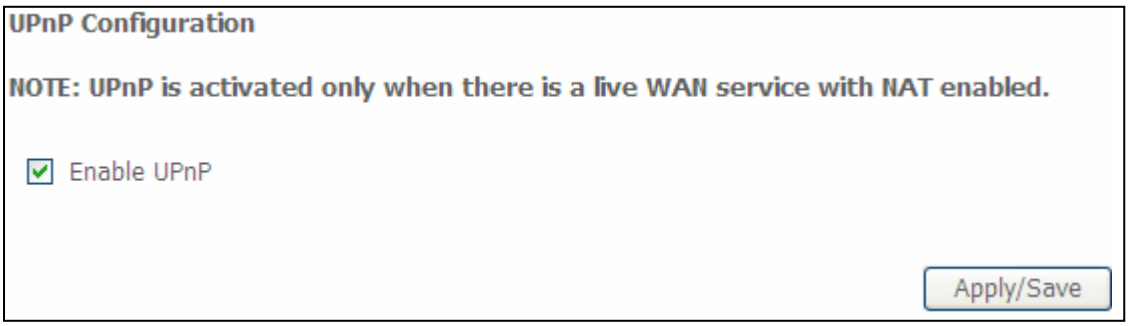
Click on "**Tone Selection**". The screen shown below will appear.



Note: If you do not have much knowledge of ADSL tone settings, it is advised not to change these settings.

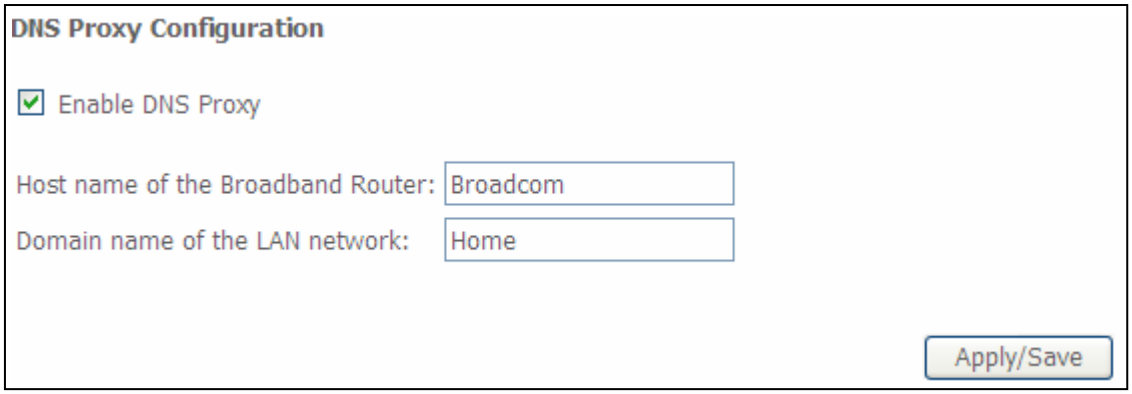
4-4-11 UPnP

Check mark "**Enable UPnP**" to enable UPnP service.



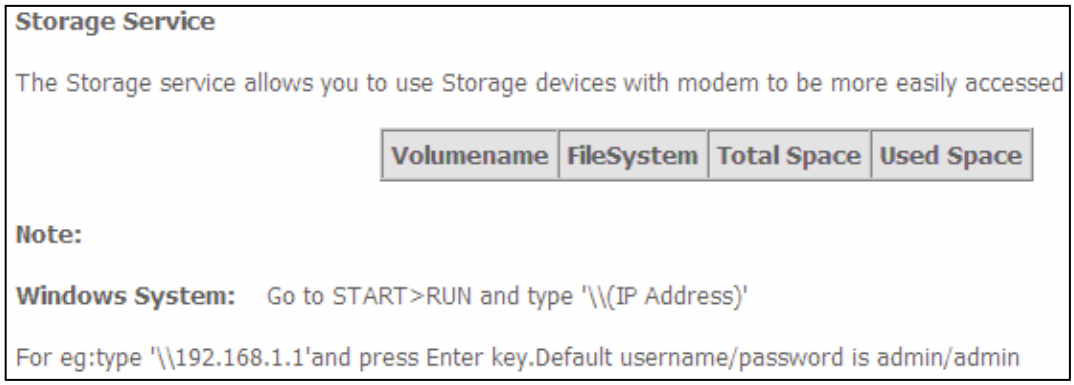
4-4-12 DNS Proxy

Check mark "**Enable DNS Proxy**" to enable DNS Proxy. Enter the Host name of the Router and the domain name of the LAN network.



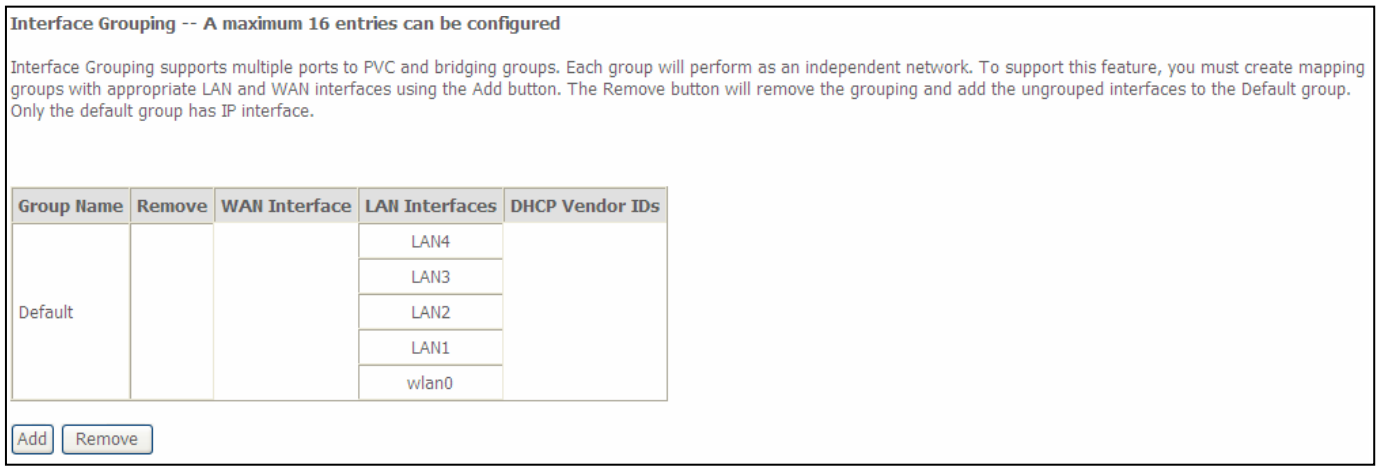
4-4-13 Storage Service

This page will list the USB Mass storage when connected (tested up to 16 GB).
The storage service allows you to use storage devices with the modem to be more easily accessed.

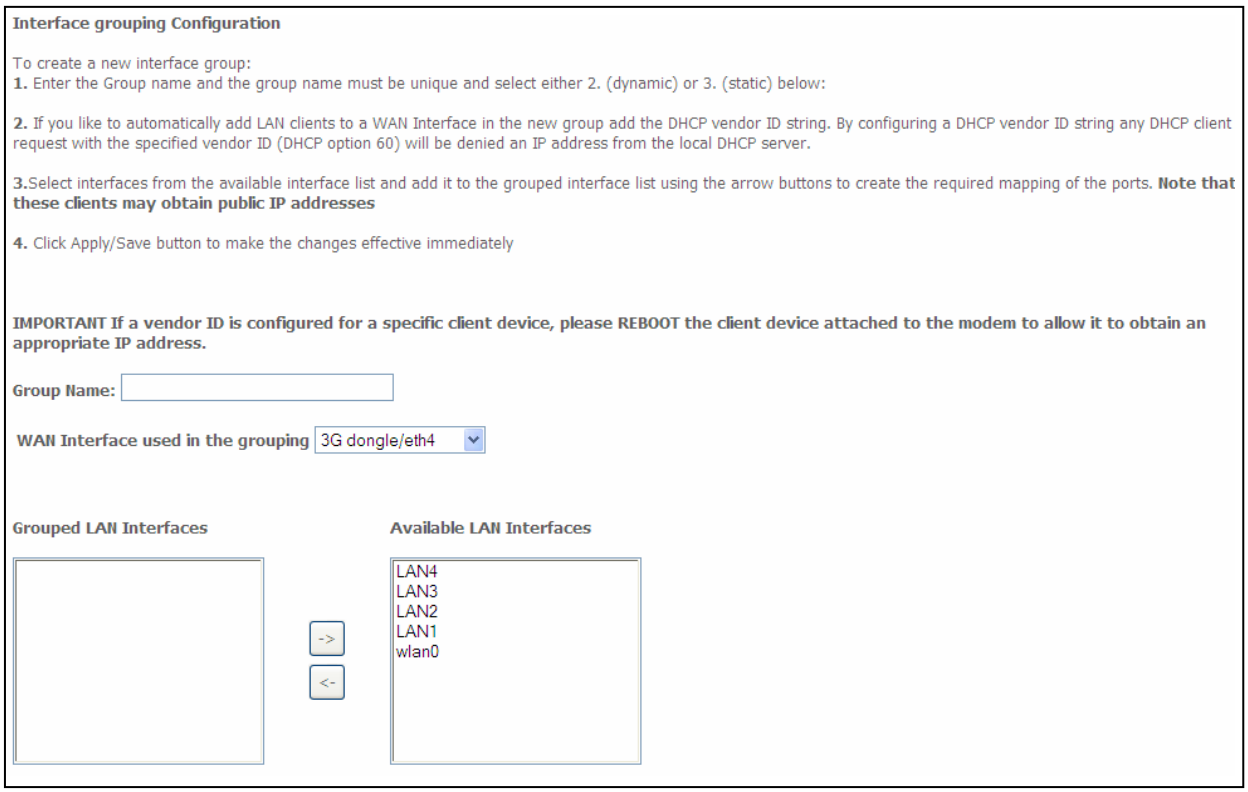


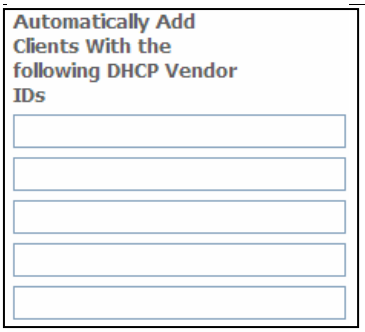
4-4-14 Interface Grouping

Interface grouping supports multiple ports and bridging groups. Each group will perform as an independent network. To support this feature, you must create mapping groups with appropriate LAN and WAN interfaces using the Add button. The remove button will remove the grouping and add the ungrouped interfaces to the default group. Only the default group has IP interface.



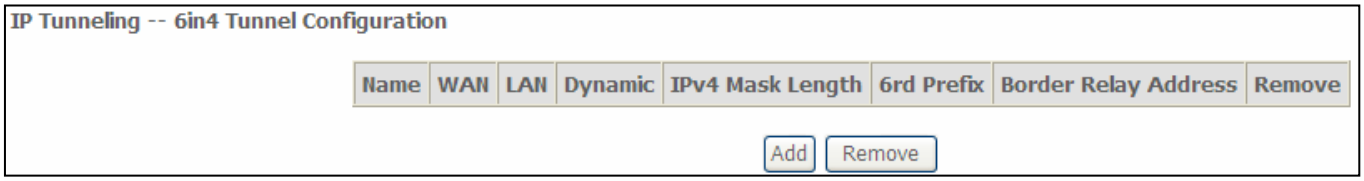
Click on "**Add**". The following screen will appear.



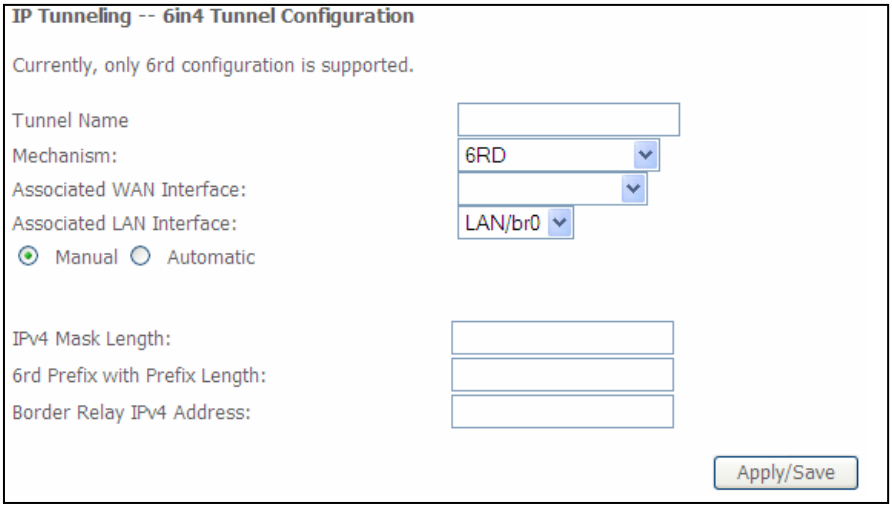


4-4-15 IP Tunnel

4-4-15-1 IPv6inIPv4

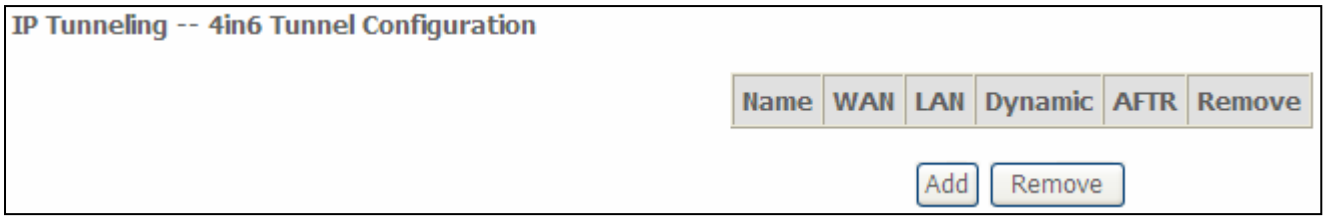


Click on "**Add**". The following screen will appear.

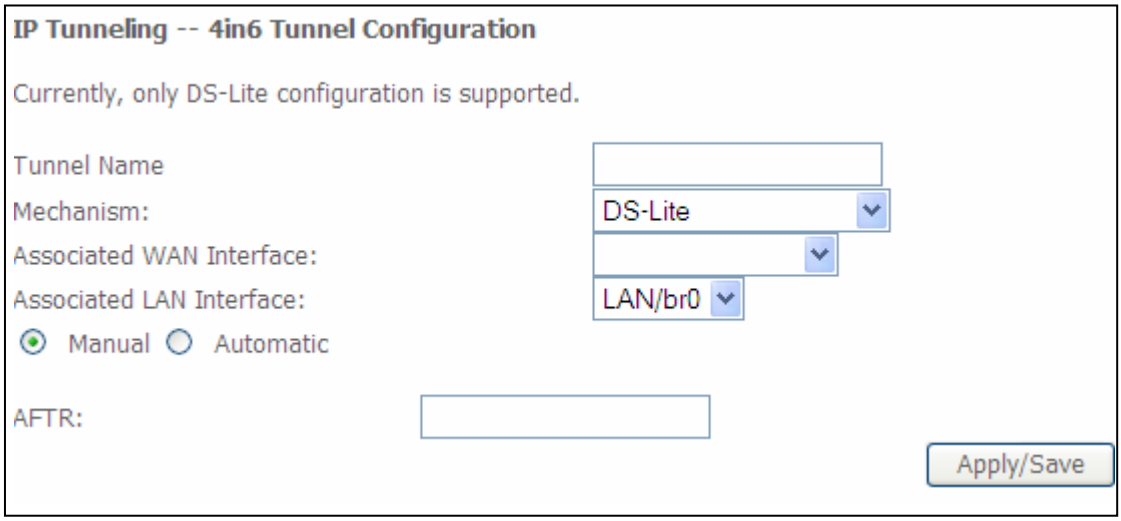


Parameter	Description
Tunnel Name	Enter a name for the tunnel.
Mechanism	The default mechanism is 6RD.
Associated WAN interface	Select the WAN Interface for tunneling.
Associated LAN interface	Default LAN interface is selected.
IPv4 Mask Length	Enter the IPv4 Mask Length.
6rd Prefix with prefix length	Enter the prefix length.
Border Relay IPv4 address	Enter the border relay IPv4 address.

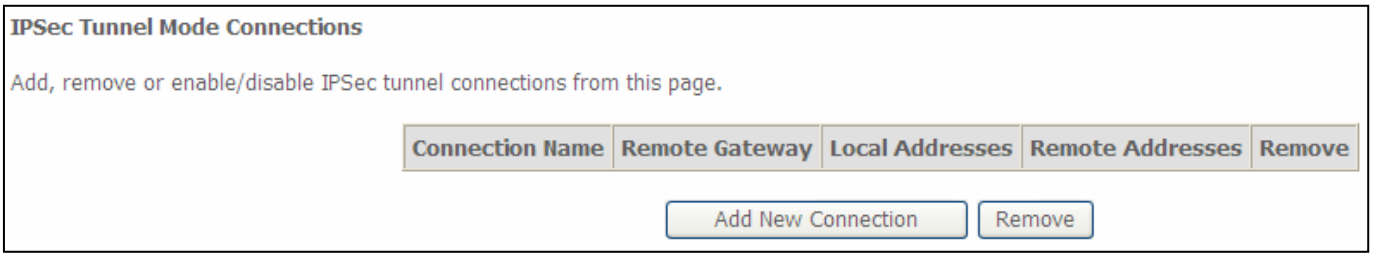
4-4-15-2 IPv4inIPv6



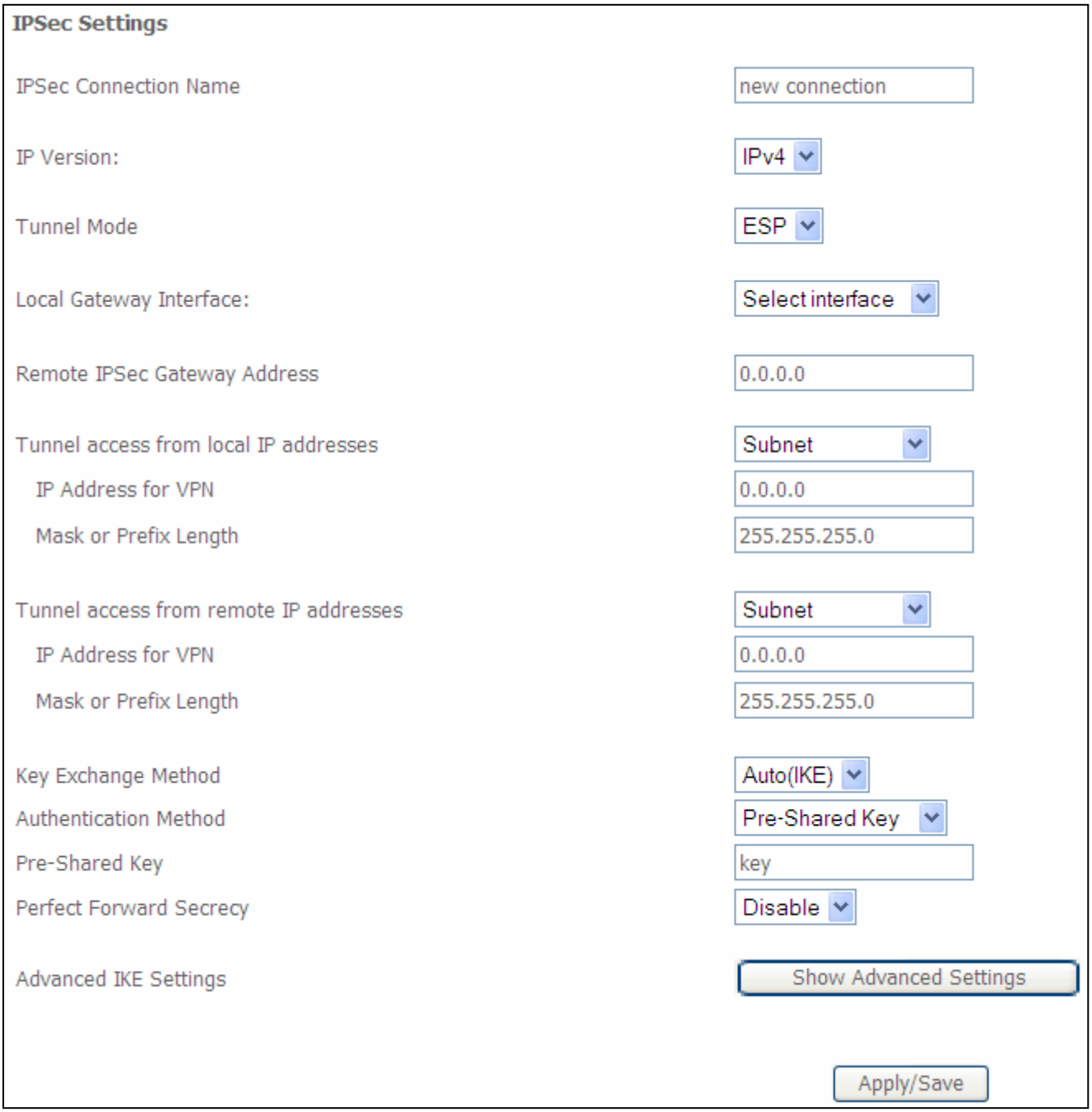
Click on "**Add**". The following screen will appear.



4-4-16 IPSec



Click on "**AddNewConnection**". The screen shown below will appear.



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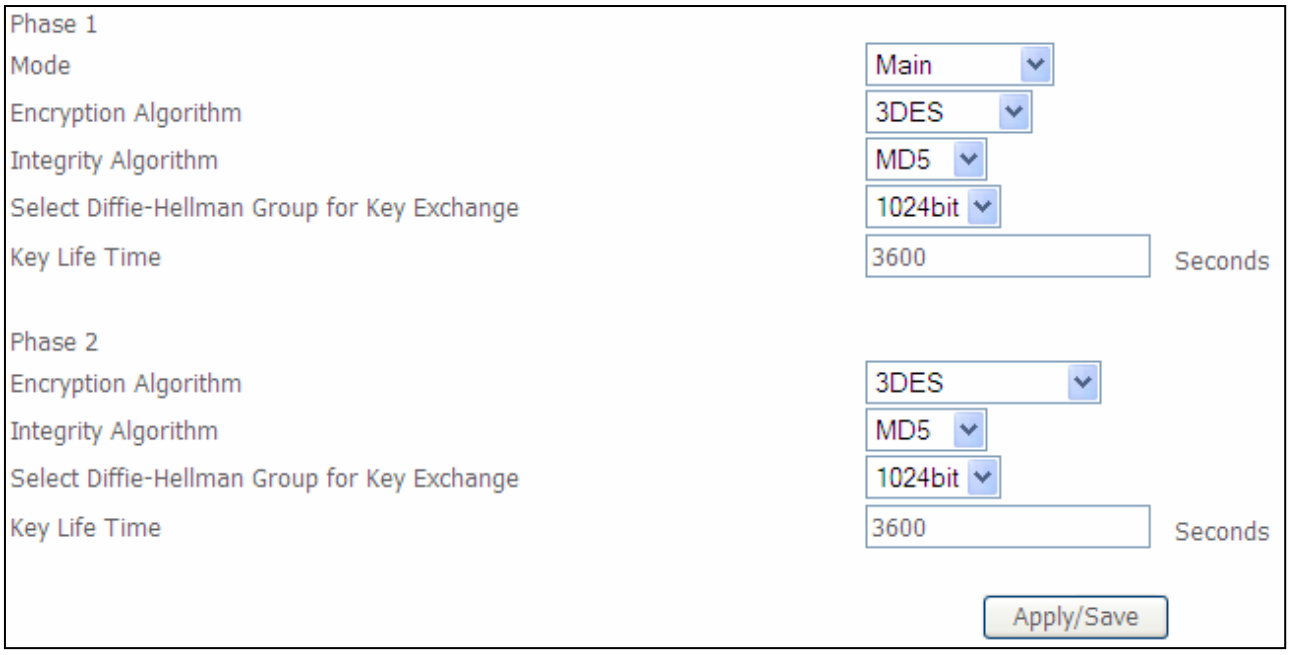
Parameter	Description
IPSec Connection Name	Enter a name for IPSec Tunnel.
IP version	Select the IP Version.
Tunnel Mode	Select the IPSec Tunnel mode.
Local Gateway Interface	Select the local gateway interface.
Remote IPSec Gateway Address	Enter the remote IPSec Gateway IP Address.
Tunnel Access from local IP address	Select Subnet or Single IP Address.
IP address for VPN	Enter the IP Address.
Mask or prefix length	Enter the Subnet Mask.
Tunnel access form remote IP address	Select Subnet or Single IP Address for the remote network.
Key exchange method	Select the key exchange mode.
Authentication Method	Select the authentication mode.
Pre-Shared key	Enter a new VPN Key for the IPSec tunnel.
Perfect forward secrecy	Select Enable or Disable.
Advanced IKE settings	Click to show advanced setting.

Click on "**Show Advanced Settings**". The screen shown below will appear.



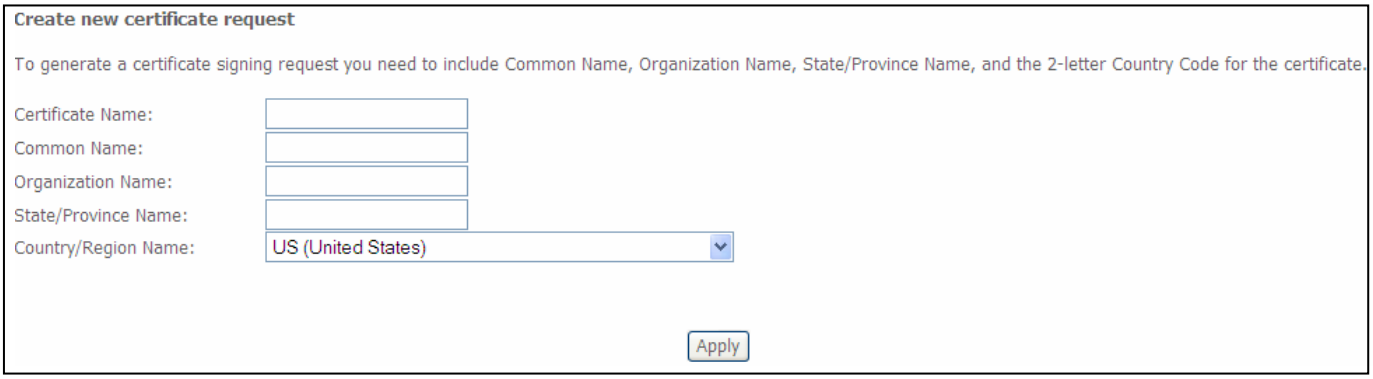
Parameter	Description
Mode	Select the mode, either Main or Aggressive.
Encryption Algorithm	Select the encryption algorithm.
Integrity Algorithm	Select the Integrity Algorithm.
Select Diffie-Hellman Group for key exchange	Select the bit option.
Key life time	Enter the time in seconds.

4-4-17 Certificate

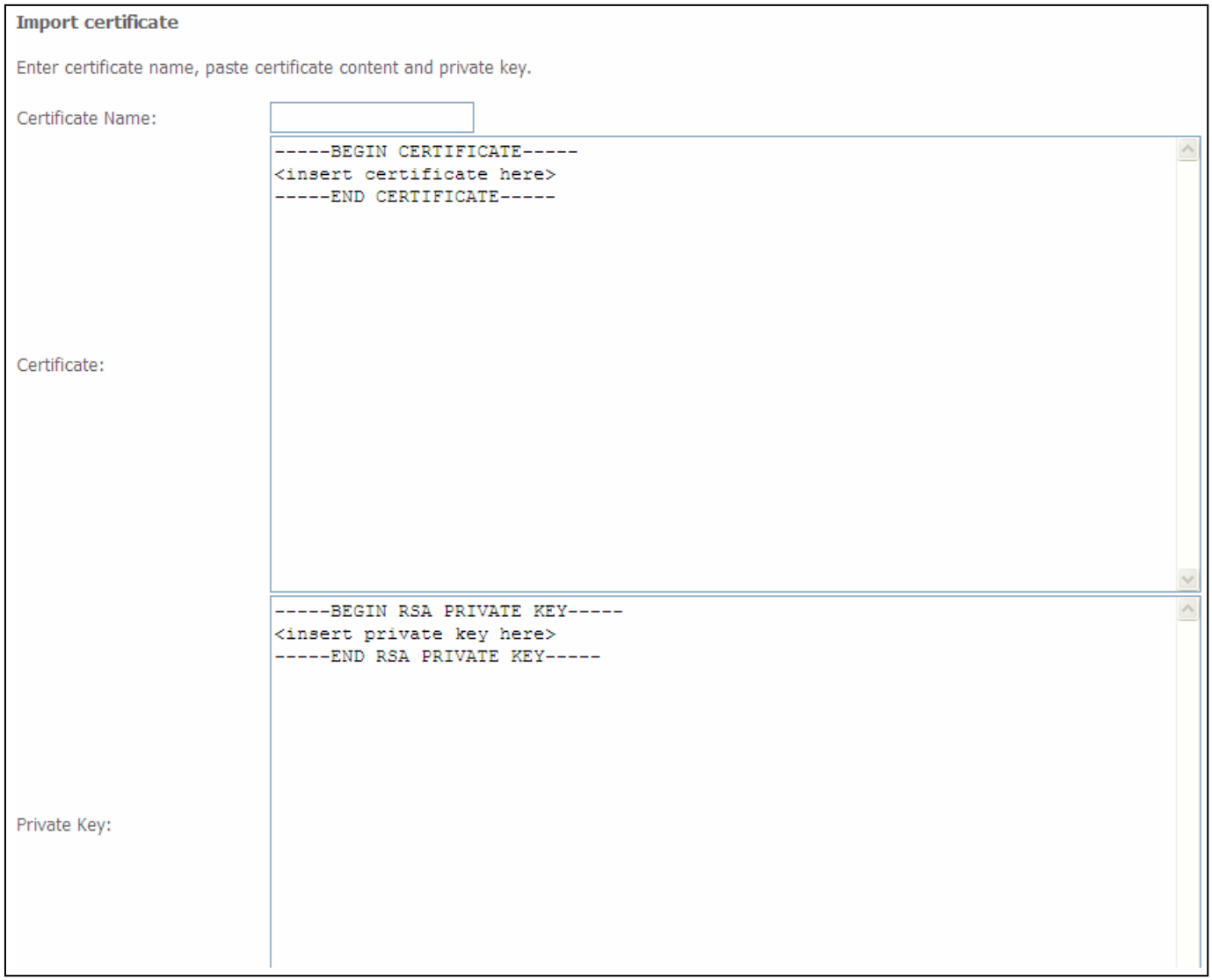
4-4-17-1 Local

Local certificates are used by peers to verify your identity. Maximum 4 certificates can be stored.

Click on "**Create Certificate request**". The screen shown below will appear.



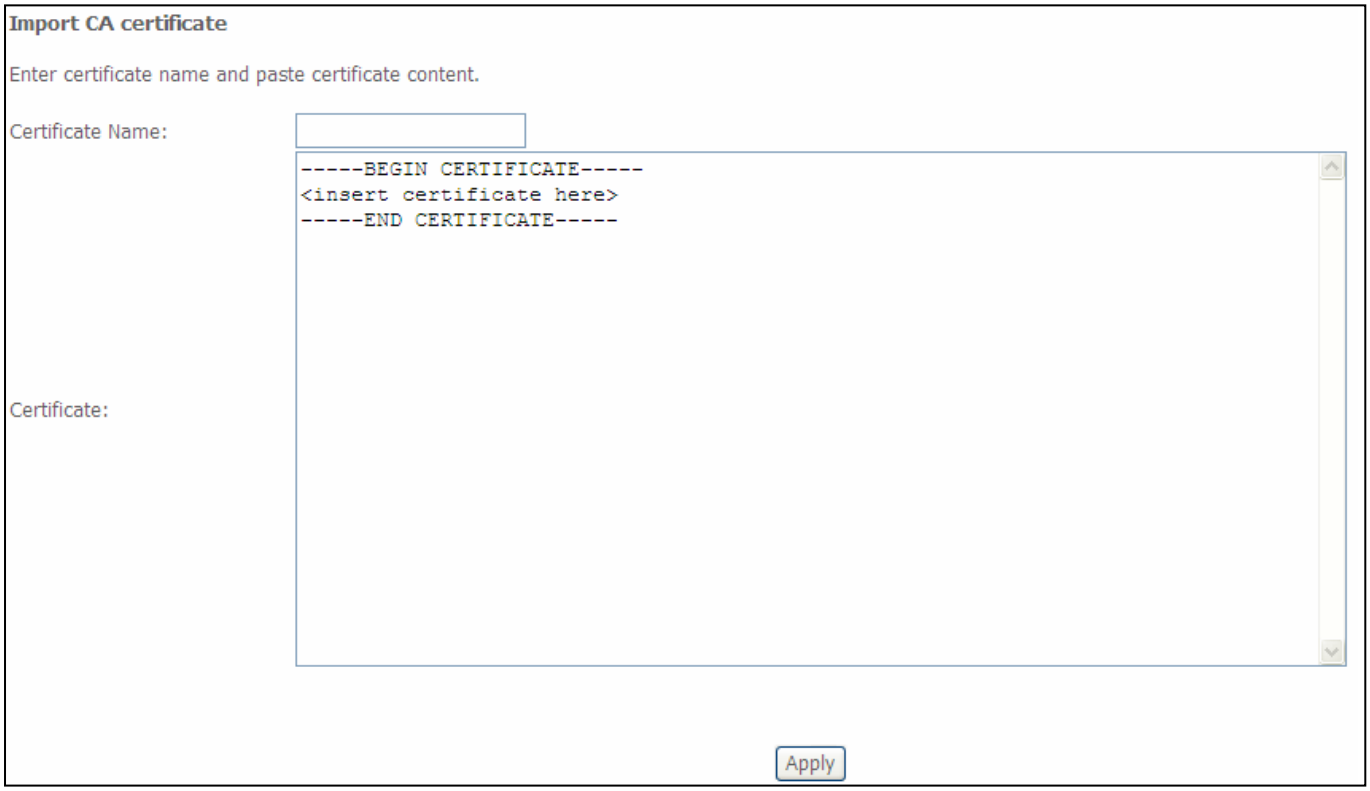
Click on "**Import Certificate**", the following screen will appear.



4-4-17-2 Trusted CA

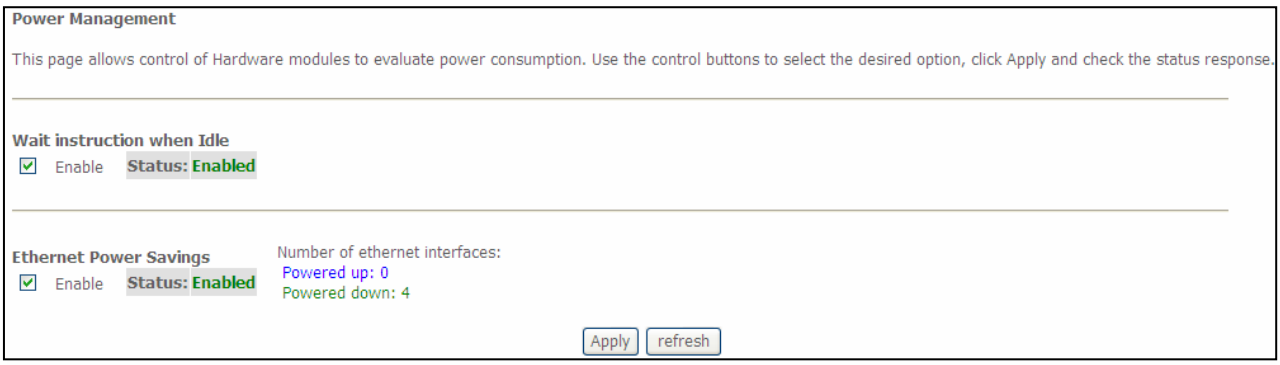
CA certificates are used by you to verify peers certificates. Maximum 4 certificates can be stored.

Click on "**Import Certificate**". The following screen will appear.

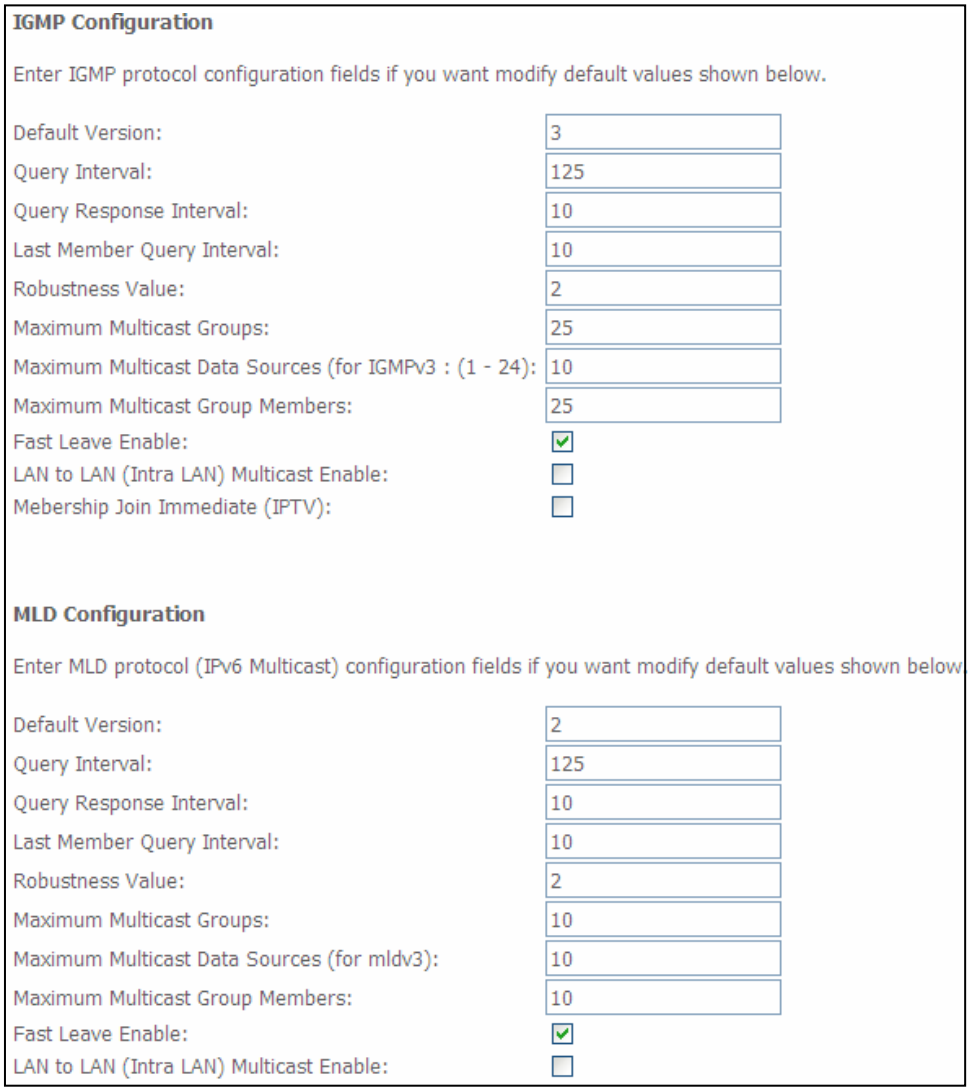


4-4-18 Power Management

This module allows control of hardware modules to evaluate power consumption. Use the control buttons to select the desired option. Click "**Apply**" and check the status response.



4-4-19 Multicast



Parameter	Description
Default Version	Enter the Default Version Value.
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.
Last Member query interval	Enter the last member query interval.
Robustness value	The IGMP robustness variable provides fine-tuning to allows for expected packet loss on a subnet.
Maximum multicast groups	Define the Maximum multicast group/groups.
Maximum multicast data sources	Define the Maximum multicast data sources.
Fast leave enable	When you enable IGMP fast-leave processing, the router immediately removes a port when it detects an IGMP version 2 leave message on that port.
LAN to LAN multicast enable	Enable or disable as required.
Membership join Immediate	Enable or Disable membership join immediate.

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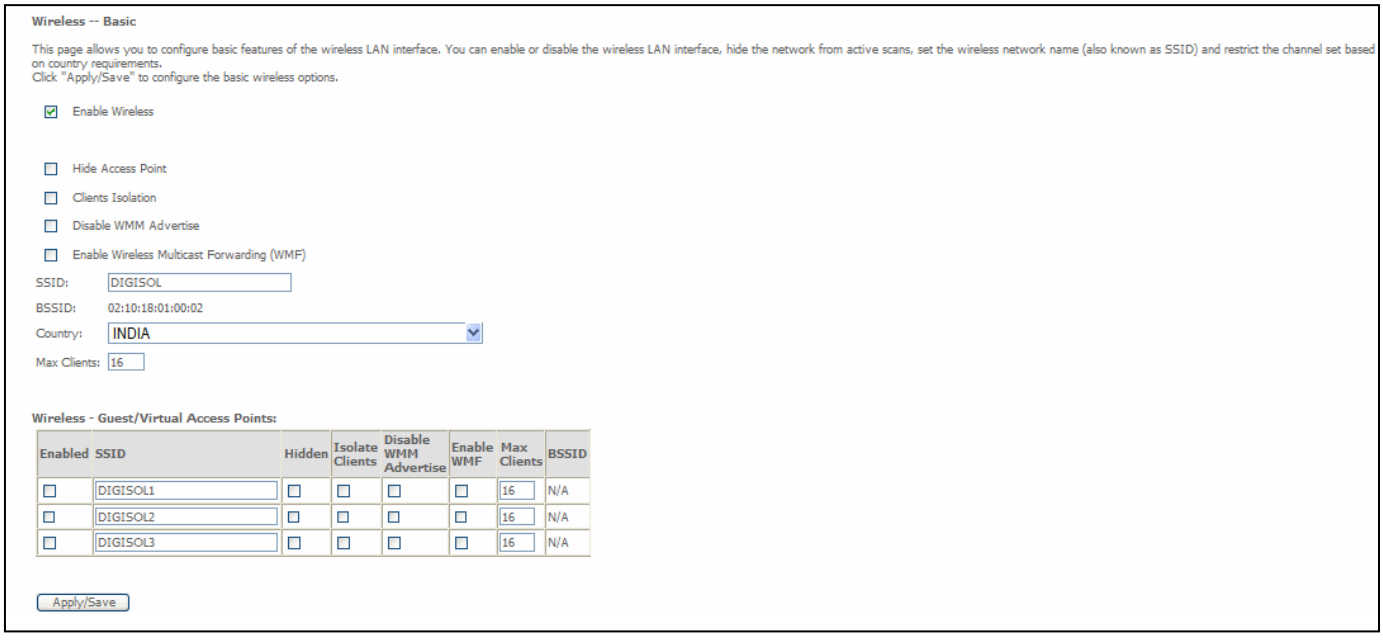
4-5 Wireless

4-5-1 Basic

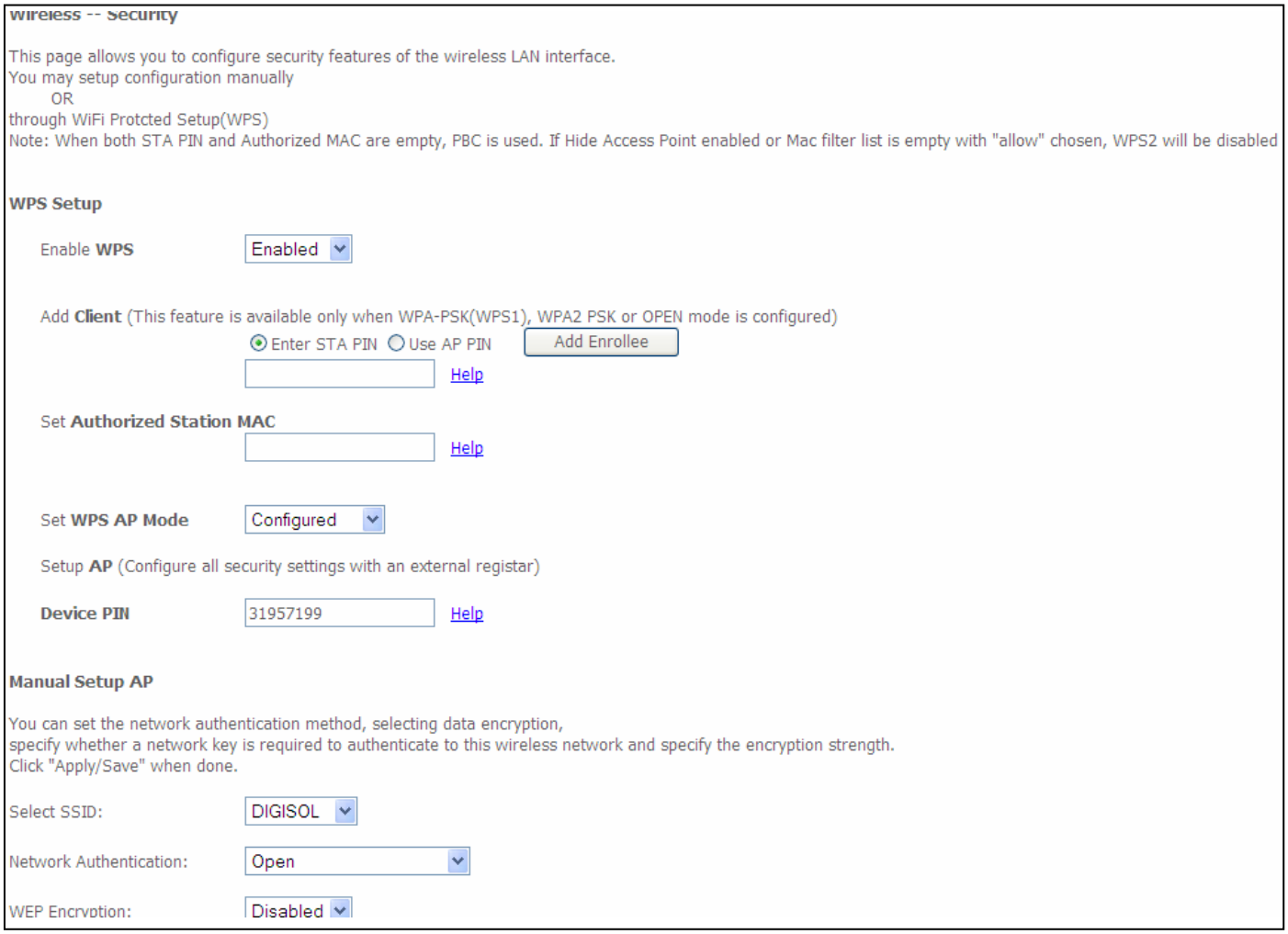
This page allows you to configure basic features of the wireless LAN interface. You can enable or disable the wireless LAN interface, hide the network from active scans, set the wireless network name and restrict the channel set based on country requirements.



Parameter	Description
Enable wireless	Use this option to turn ON/OFF Wi-Fi of the router.
Hide access point	Disable SSID Broadcast.
Clients Isolation	Select this option to Enable Wireless client isolation.
Disable WMM Advertise	Enable/Disable WMM Advance feature.
Enable wireless multicast forwarding (WMF)	Enable/Disable WMF feature.
SSID	Enter a name to your Wi-Fi network.
BSSID	Displays the MAC ID.
Country	Select the country.
Max Clients	Enter the Max Wi-Fi clients.

4-5-2 Security

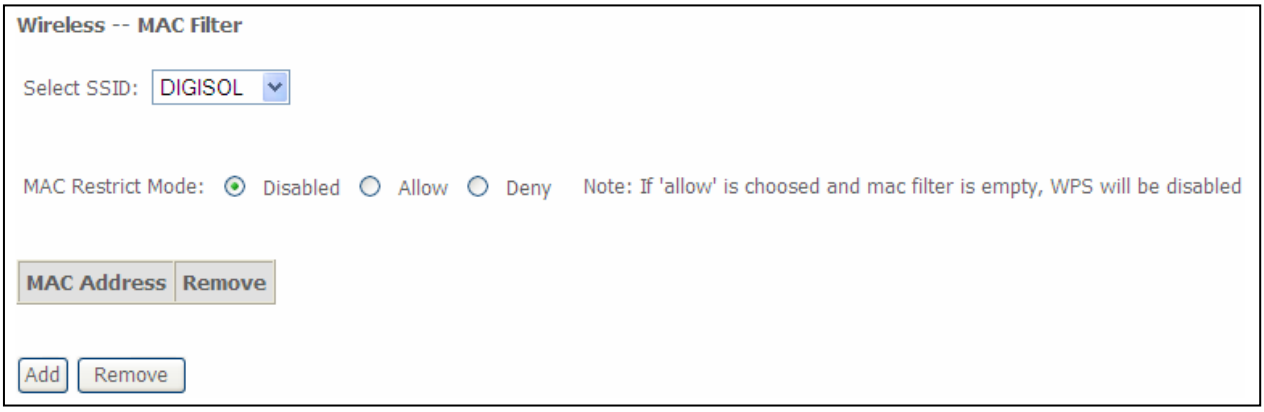
This page allows you to configure the security features of the wireless LAN interface.



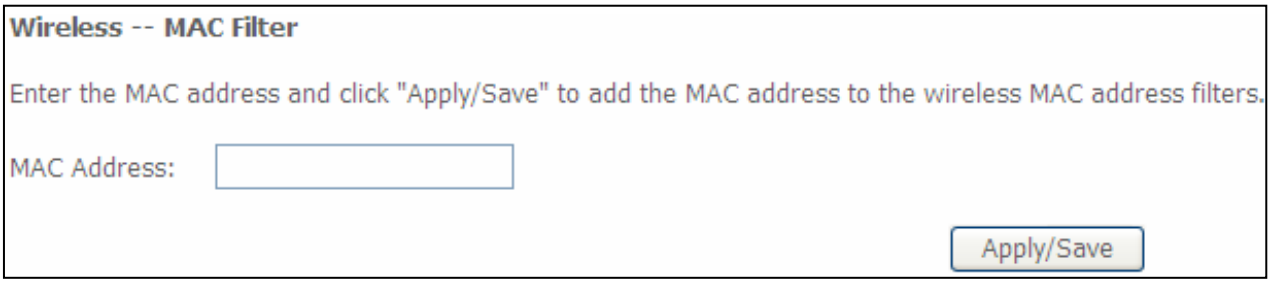
Parameter	Description
Enable WPS	Select to enable WPS.
Add Client	Input Station Pin from Client.
Set Authorized station MAC	Input Authorized Station MAC: xx:xx:xx:xx:xx:xx
Set WPS AP mode	Set the AP Mode.
Device PIN	Device Pin is generated by AP.
Select SSID	Select the wireless network.
Network Authentication	Select authentication method.
WEP Encryption	Enter the WEP Key if WEP Encryption is selected.

4-5-3 MAC Filter

The MAC filtering feature allows you to define rules to allow or deny frames through the device based on source MAC address, destination MAC address and traffic direction.

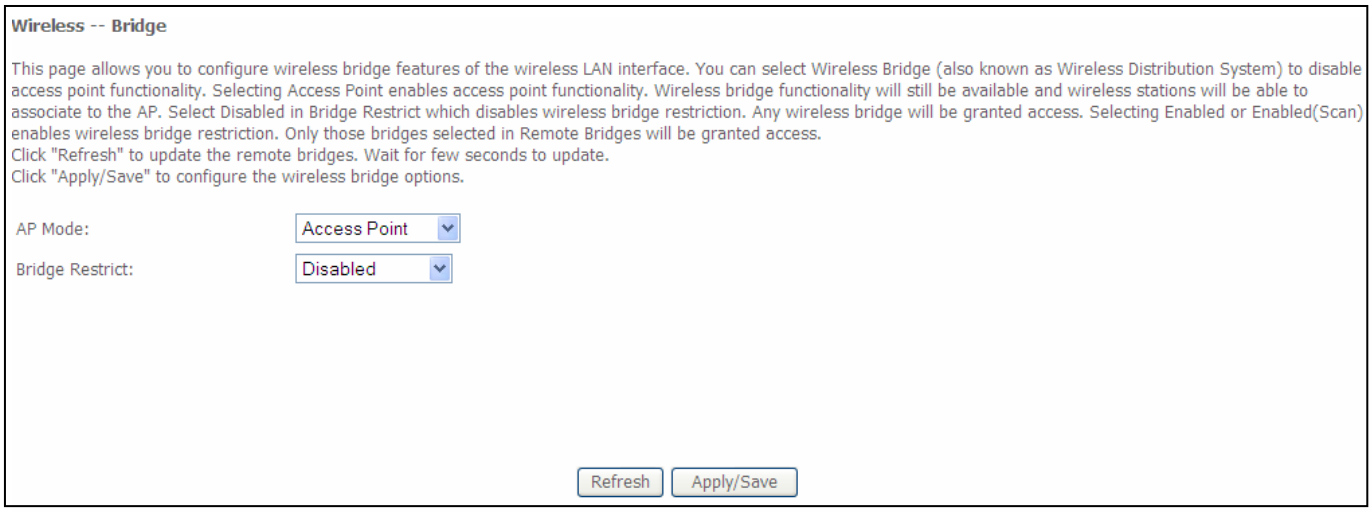


Click on "**Add**". Enter the MAC address below that you wish to add to the wireless MAC address filters.



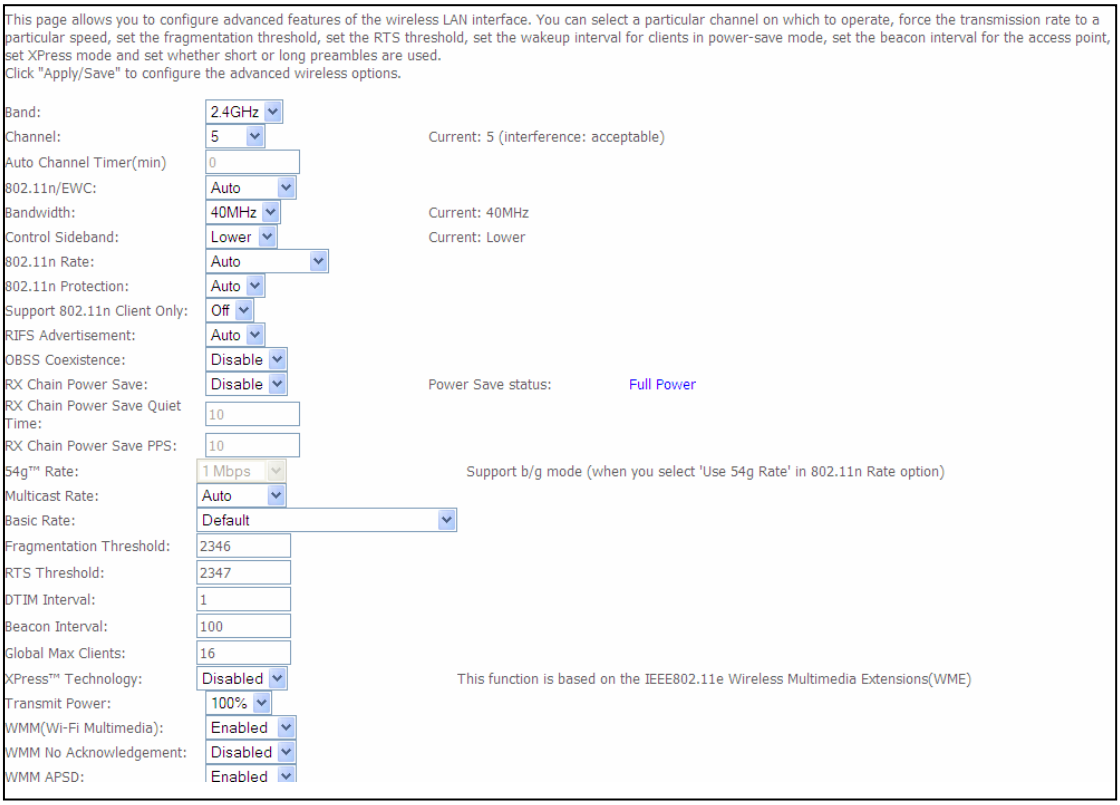
4-5-4 Wireless Bridge

This page allows you to configure wireless bridge features of the wireless LAN interface. You can select wireless bridge to disable access point functionality.



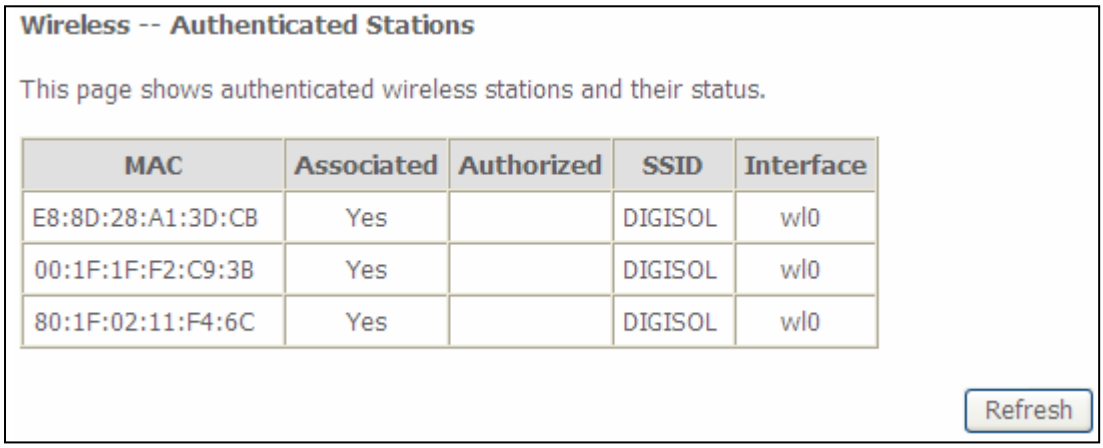
4-5-5 Advanced

This page allows you to configure advanced features of the wireless LAN interface. You can select a particular channel on which to operate, force the transmission rate to a particular speed, set the fragmentation threshold, set the RTS threshold, set the wakeup interval for clients in power-save mode, set the beacon interval for the access point.



4-5-6 Station Info

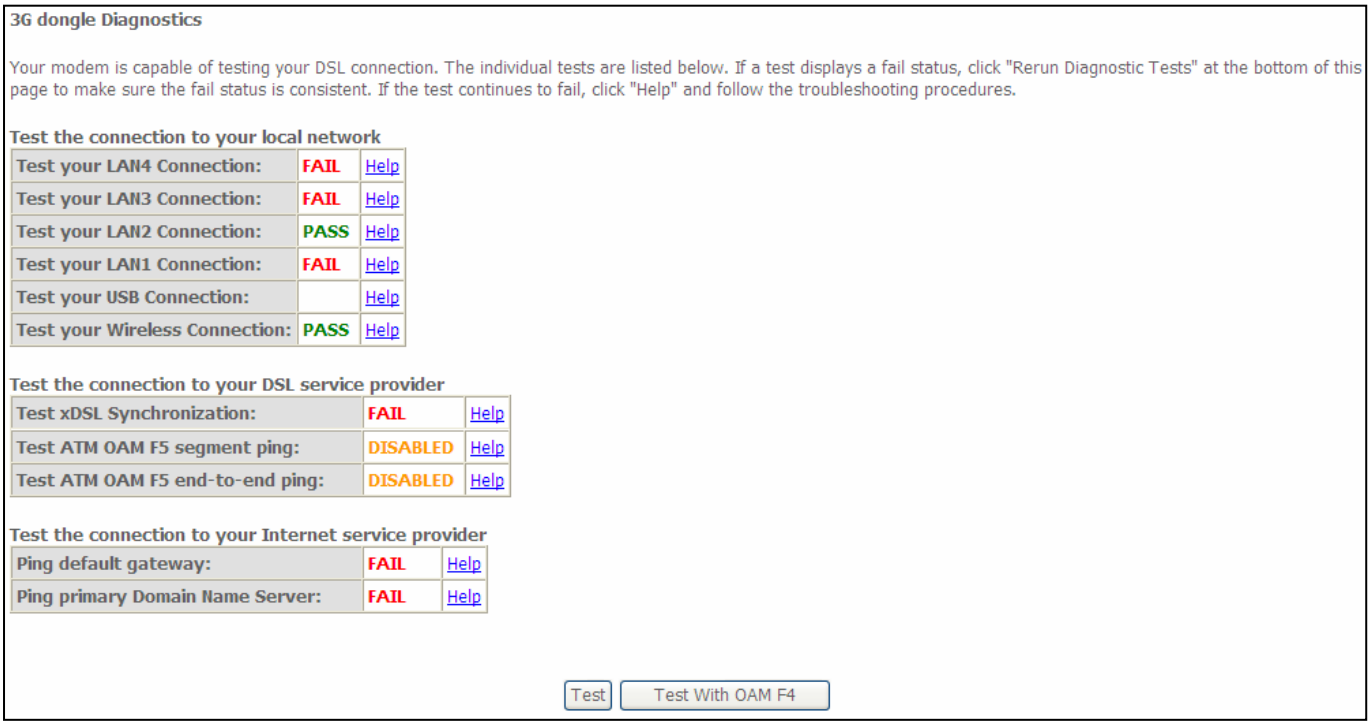
This page shows authenticated wireless stations and their status.



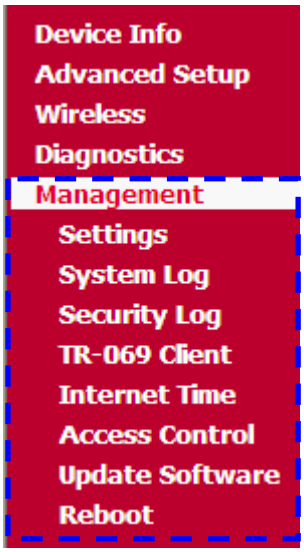
Parameter	Description
MAC	List the MAC address of wireless device associated.
Associated	This will appear Yes, if associated or otherwise it will be blank.
Authorized	Will show if authorized or not.
SSID	Wireless network name.
Interface	Wireless interface number.

4-6 Diagnostics

The router is capable of testing the DSL connection. The individual tests are listed below.



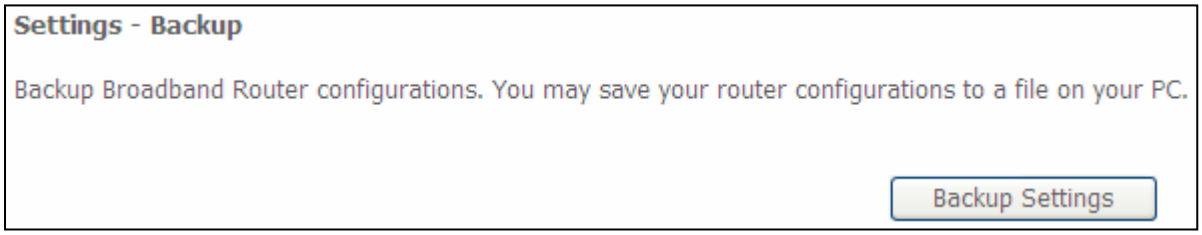
5 Management

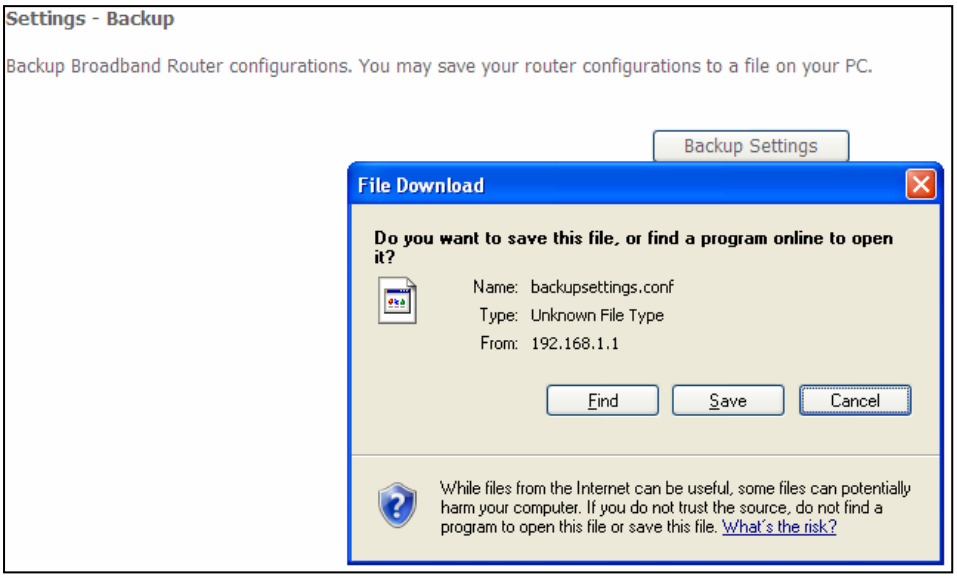


5-1 Settings

5-1-1 Backup

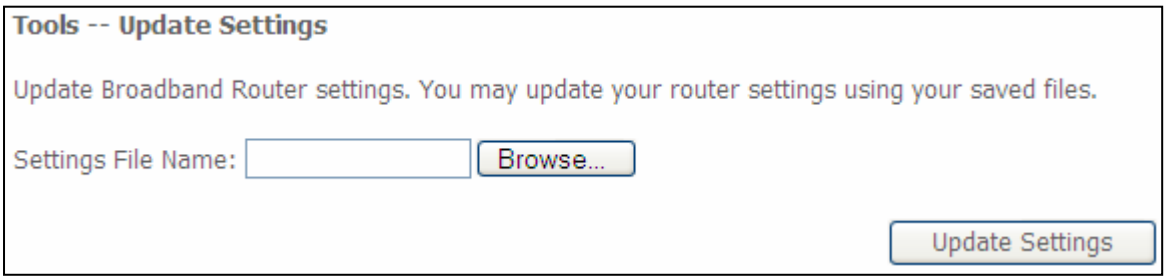
Click on "**Backup settings**" button and the following screen will appear. Click on the **save** button to save the config file on your PC.





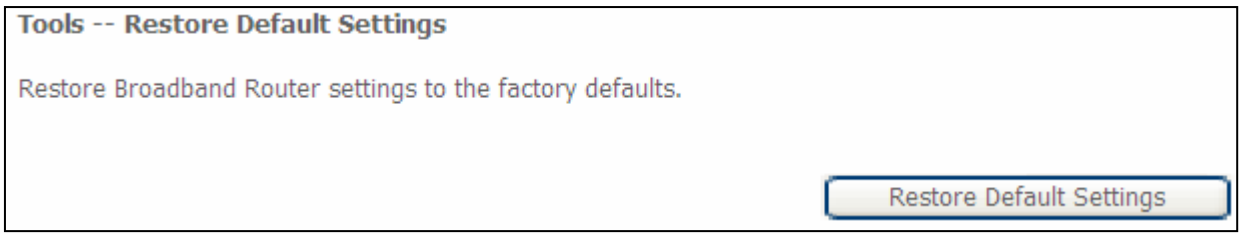
5-1-2 Update

Click on "**Browse**" to upload a new config file on the router. Then click on "**Update Settings**".



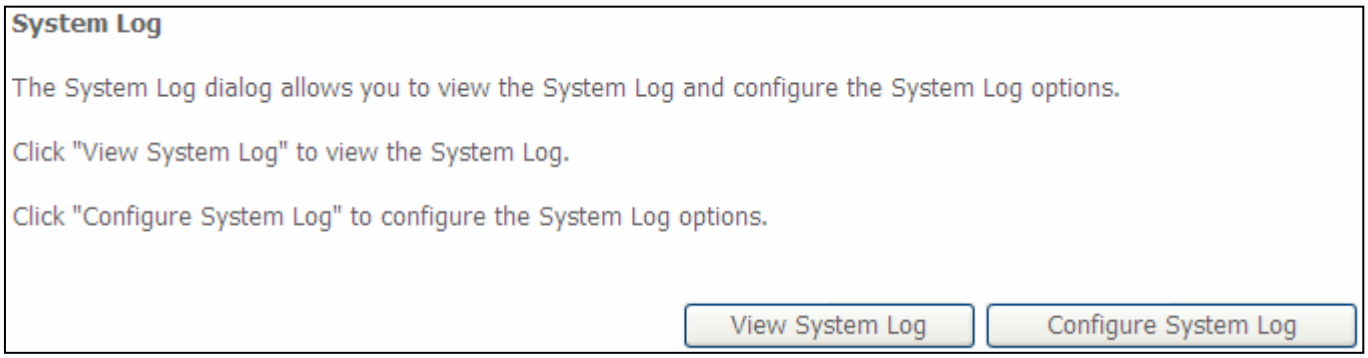
5-1-3 Restore Default

Click on the "**Restore Default Settings**" button to restore the unit to its default settings.

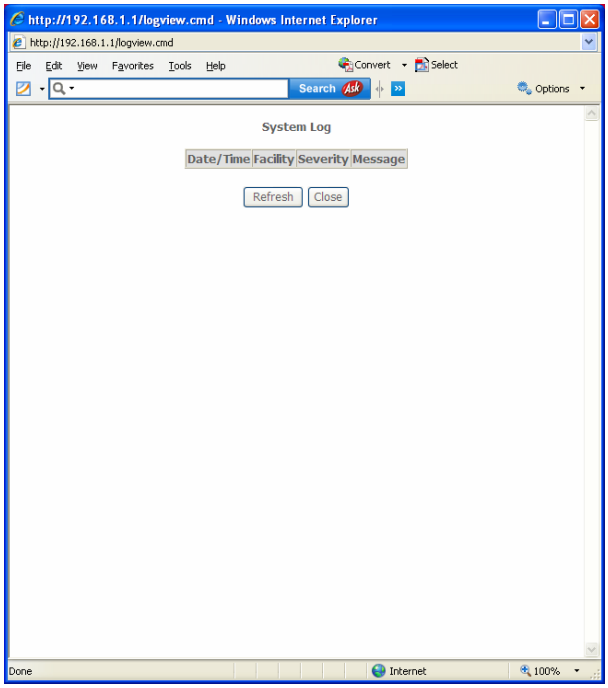


5-2 System Log

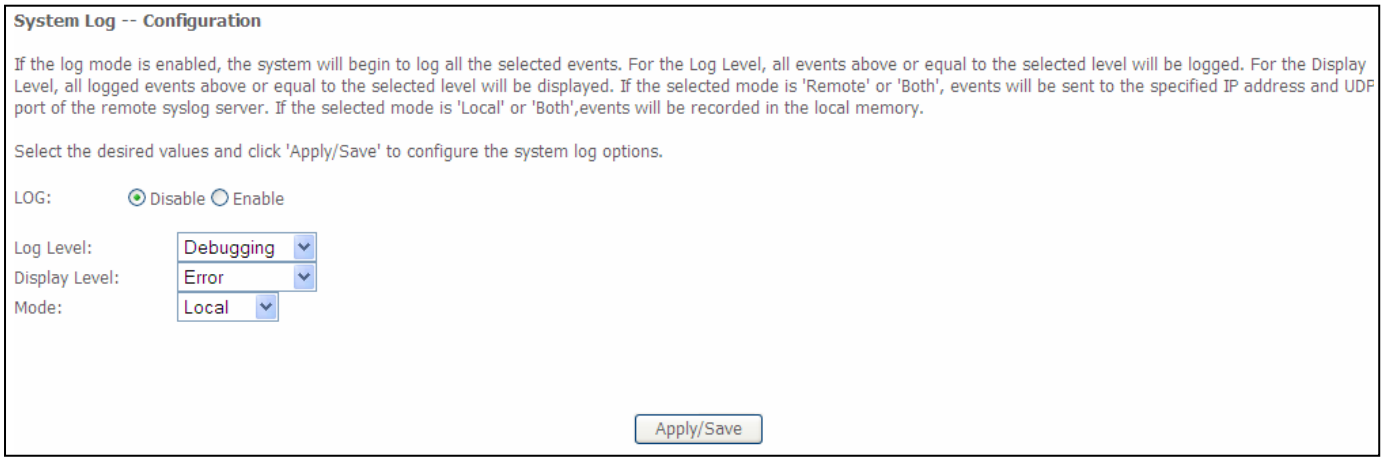
The system log dialog allows you to view the system log and configure the system log options.



Click on "**View system log**". The screen shown below will appear.



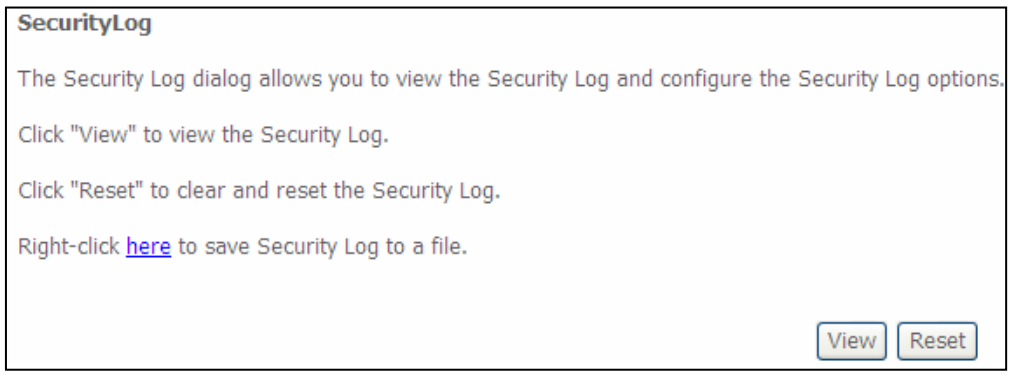
Click on "**Configure System Log**". The screen shown below will appear.



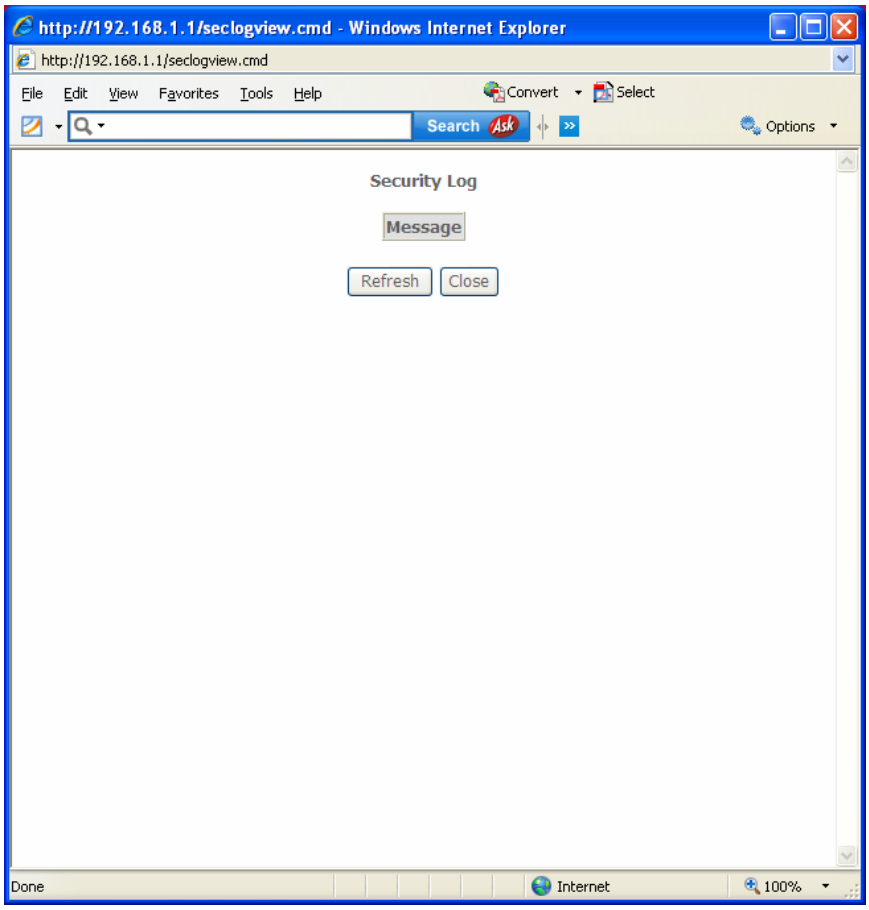
Parameter	Description
Log level	Select the Log Level.
Display level	Select the Display Level.
Mode	Select mode as Local or Remote.

5-3 Security Log

The security log dialog allows you to view the security log and configure the security log options.

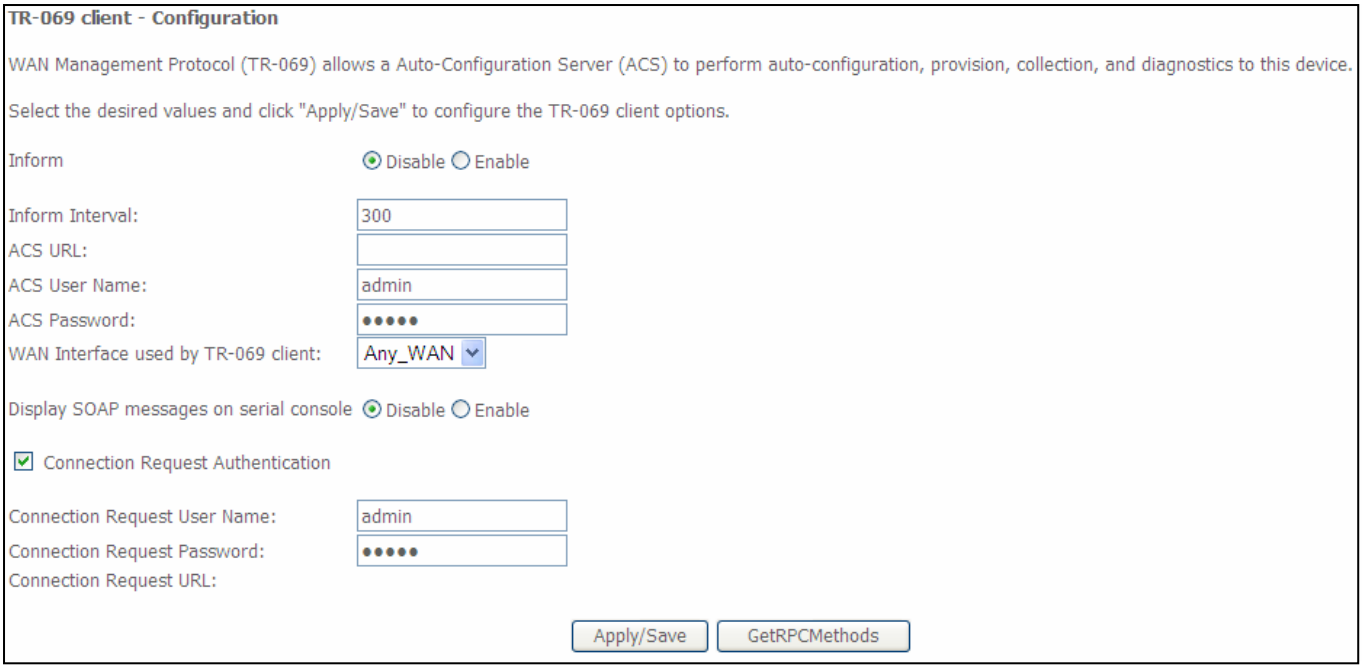


Click on "**View**". The screen shown below will appear.



5-4 TR-069 Client

TR-069 is a protocol for communication between a CPE and Auto-Configuration Server (ACS). The CPE TR-069 configuration should be well defined to be able to communicate with the remote ACS.

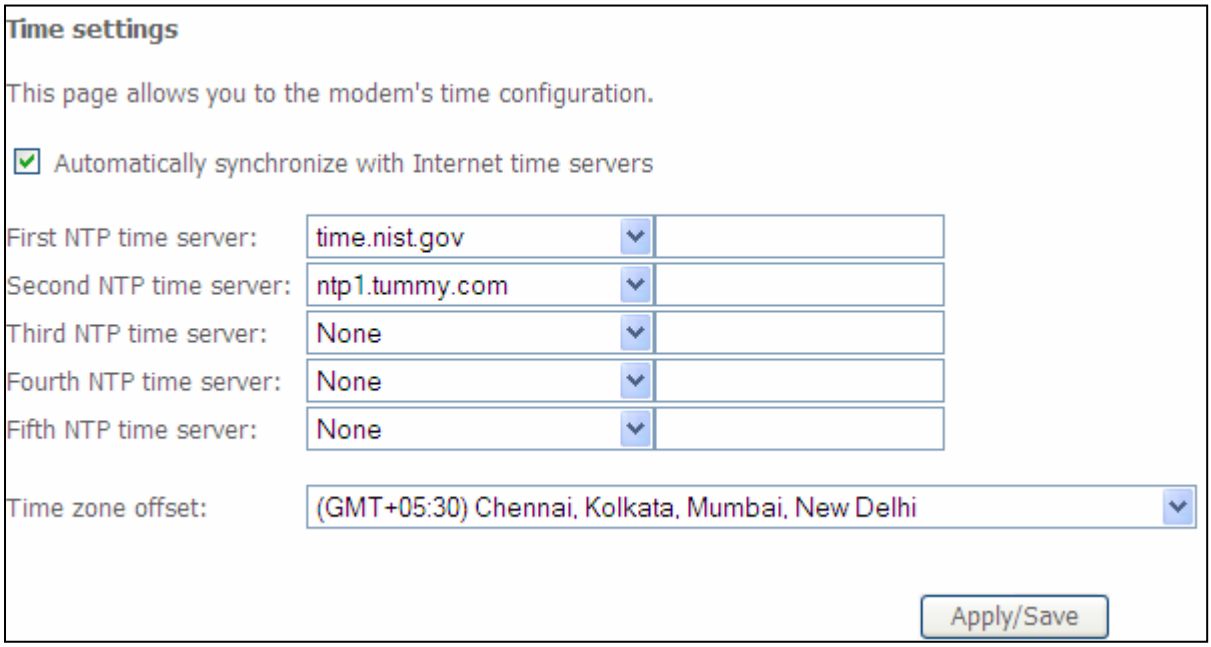


Parameter	Description
Inform interval	Enter the “Inform Interval”, default value is 300.
ACS URL	Enter ACS server IP.
ACS user name	Enter the username.
ACS password	Enter the password.
WAN interface used by TR-069 client	Select the WAN Interface.
Display SOAP messages on serial console	Enable or disable as required (check with ISP).
Connection Request Authentication	Select or deselect as required.
Connection Request User name	Type the username.
Connection Request Password	Type the password.
Connection request URL	Type the URL of server.

5-5 Internet time

This page allows you to synchronize the internet time with the router.

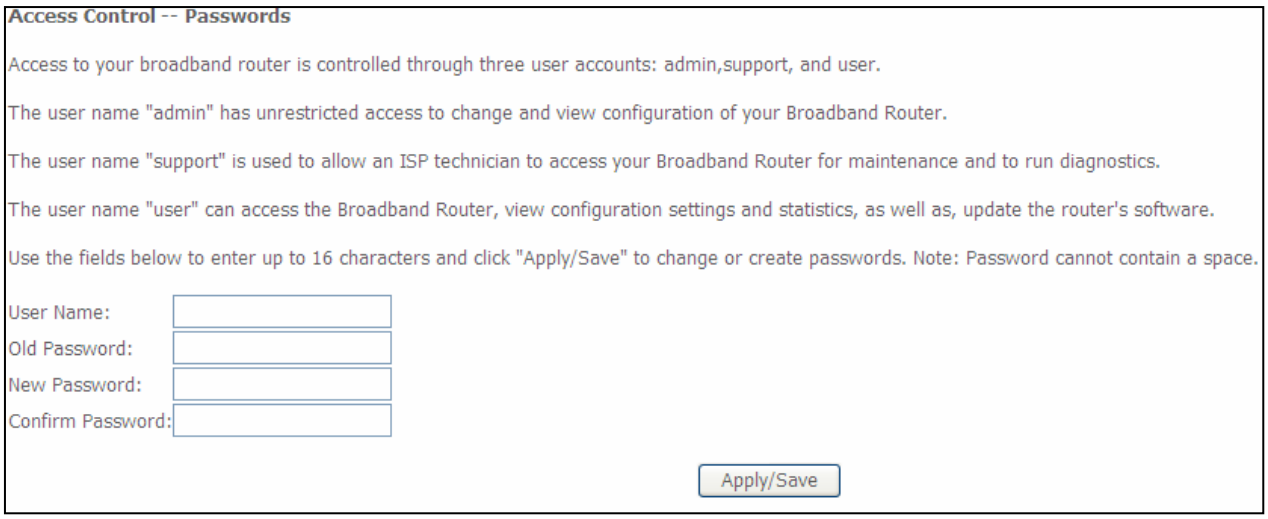
The below parameters will help you to configure the NTP server details on the router which will enable the router time to sync with the global internet time. This will help to enable the time stamp in system logs.



5-6 Access Control

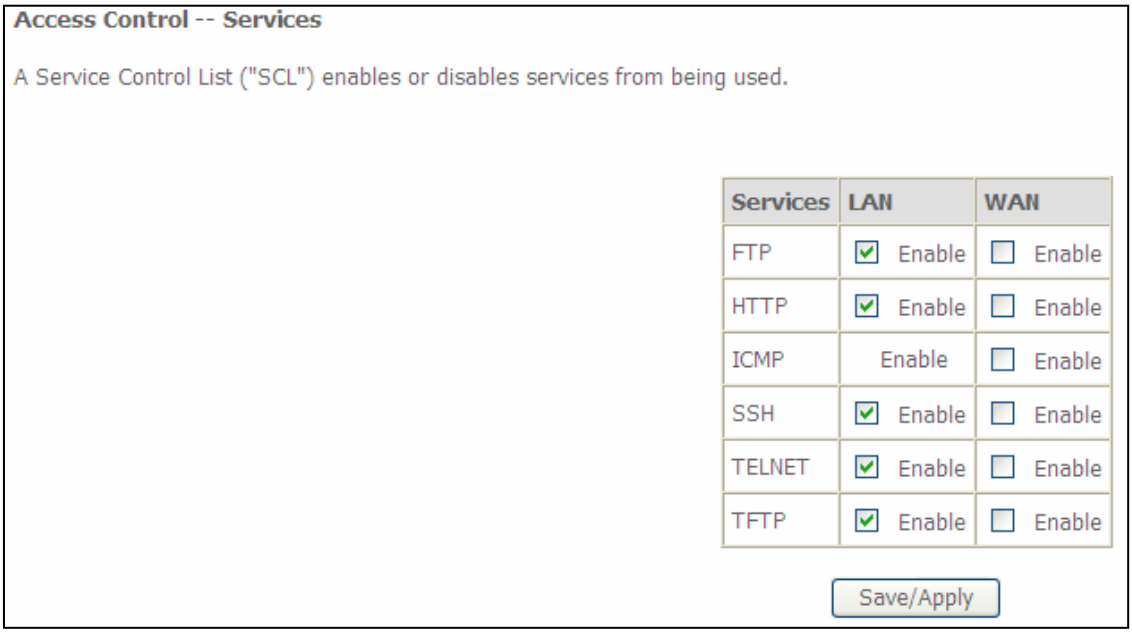
5-6-1 Passwords

Access to your broadband router is controlled through three user accounts: admin, support and user.
The user name "**admin**" has unrestricted access to change and view configuration of your broadband router.
The user name "**support**" is used to allow an ISP technician to access you broadband router for maintenance and run diagnostics.
The user name "**user**" can access the broadband router, view configuration settings and statistics, as well as update the router's software.
Below you can enter up to 16 characters and click "**Apply/Save**" button to change or create passwords.



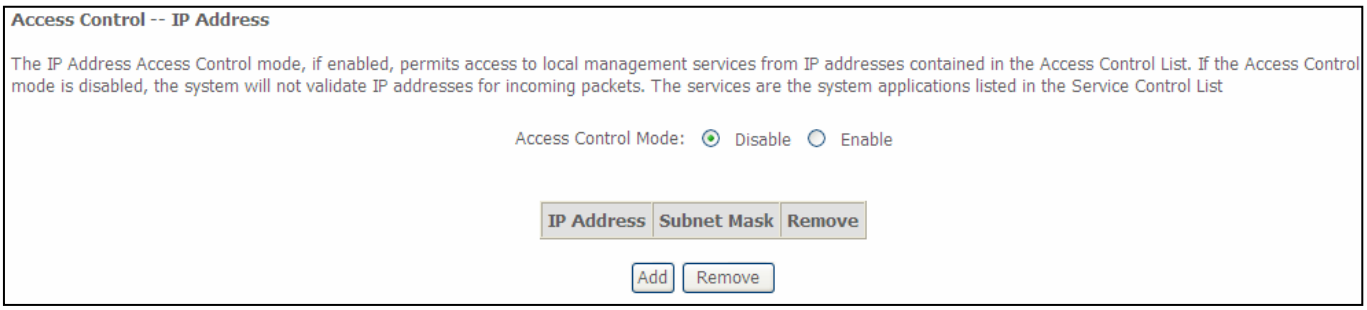
5-6-2 Services

You can enable or disable the following list of services available in the access control list as shown below.



5-6-3 IP Addresses

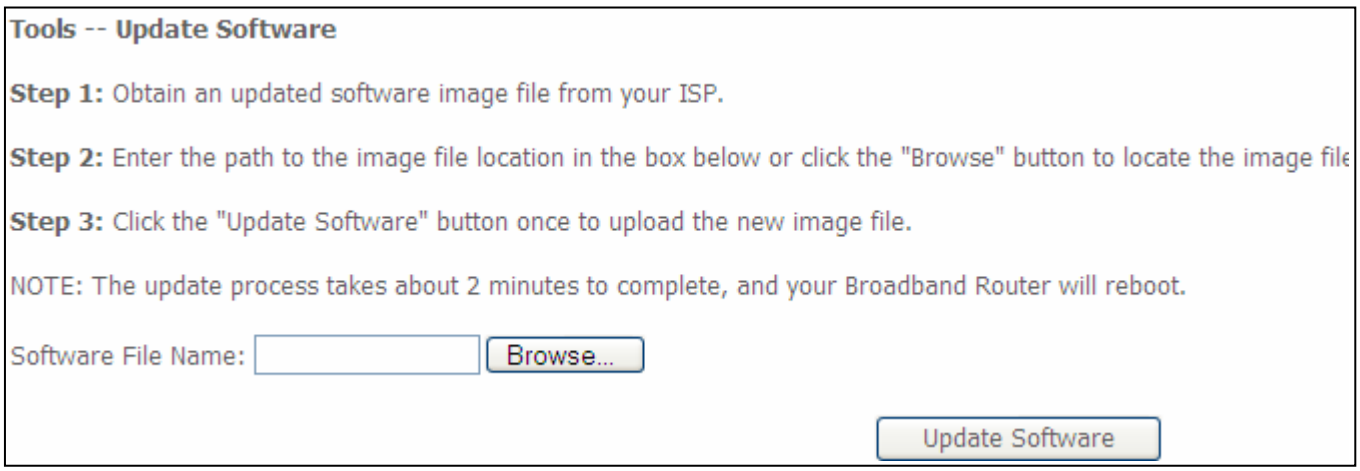
The IP address Access control mode, if enabled, permits access to local management from IP addresses contained in the access control list. If the access control mode is disabled, the system will not validate IP addresses for incoming packets.



Click on "**Add**". The following screen will appear. Enter the IP address.

5-7 Update Software

Click on the "**Update Software**" button to upgrade the firmware.



5-8 Reboot

Click on "**Reboot**" button to restart the device.

6. Appendix

6-1 Hardware Specifications

Antennas: 5 dBi fixed antennas
Power Supply: AC power adaptor: 100VAC-240VAC
DC voltage: 12V DC, 1A
Hardware Interfaces: One RJ-11 port (for ADSL Line), Four 10/100Mbps RJ-45 Ports, One Power switch, One Reset button, Two Wireless antenna, WLAN button, WPS button and One USB 2.0(Host) Port
ADSL Standards: ANSI T1.413 issue2, ITU-T G992.1 with Annex A (G.dmt)
ITU-T G.992.2 Annex A (G.lite), ITU-T G.992.3 Annex A, L, M (ADSL2)
ITU-T G.992.5 Annex A, M (ADSL2+), ITU-T G 994.1
ITU-T G.997.1, ETSI ETR-328
Protocol & Features Supported: RFC 2684 IP Bridging, RFC 2684 IP Routing, RFC 2516, PPPoE, RFC 2364 PPPoA, NAT & PAT (RFC 1631), DMZ support
Software features: IP filtering, Stateful packet inspection, (IPSec, L2TP, PPTP) pass through, Support TR069
Quality of Service: Port based QoS
Wireless Standard and feature: IEEE 802.11b/g/n, 64/128 bit WEP, Multiple SSIDs Support, Support for WPA, WPA2-PSK, WPA-PSK, TKIP, AES.
Dimensions:
Net Dimensions: 149 x 130.08 x 28.8 mm
Gross Dimensions: 213 x 158 x 82 mm
Weight:
Net weight: 500 gms
Gross weight: 600 gms
Environmental Specifications:
Operating temperature: 0º C to 50º C
Non-operating temperature: -20º C to 70º C

7. Troubleshooting

If you find that the router is not working properly or stops responding don't panic! Before you contact your dealer of purchase for help, please read this troubleshooting first.

Scenario	Solution
Unable to access the router through web page	a. Please check the power cord connection and network cable of this router. All cords and cables should be correctly and firmly inserted into the router. b. If all LED's on the router are off, please check the status of A/C power adapter, and make sure it's correctly powered. c. You must use the same IP address subnet as the router uses. d. Are you using MAC or IP address filter? Try to connect the router by another computer and see if it works; if not, please restore your router to factory default settings (pressing 'reset' button for over 10 seconds). e. Set your computer to obtain an IP address automatically (DHCP), and see if your computer can get an IP address. f. If you did a firmware upgrade and this happens, contact your dealer of purchase for help. g. If all above solutions don't work, contact the dealer of purchase for help. h. Clear your Internet browser history and cache memory.
Can't get connected to Internet	a. Please be patient, sometimes Internet is just that slow. b. Bypass the router and verify whether you can get connected to internet as before. c. Check PPPoE user ID and password again. d. Call your Internet service provider and check if there's something wrong with their service. e. If you just can't connect to one or more websites, but you can still use other internet services, please check URL/Keyword filter. f. Try to reset the router and try again.

	g. Verify the line with device provided by your Internet service provider too. h. Try to use IP address instead of hostname. If you can use IP address to communicate with a remote server, but can't use hostname, please check DNS settings.
I can't locate my router by my wireless client	a. 'Broadcast ESSID' set to off? b. Both the antennas are secure. c. Are you too far from your router? Try to get closer. d. Please remember that you have to input ESSID on your wireless client manually, if ESSID broadcast is disabled.
File download is very slow or breaks frequently	a. Are you using QoS function? Try to disable it and try again. Internet is slow sometimes, be patient. b. Try to reset the router and see if the download speed improves. c. Try to know what other clients do on your local network. If some clients are transferring files of big size, other clients will get an impression that Internet is slow. d. If this has never happened before, call your Internet service provider to know if there is something wrong with their network.
I can't log onto web management interface: password is wrong	a. Make sure you're connecting to the correct IP address of the router (Default IP: 192.168.1.1). b. Password is case-sensitive. Make sure 'Caps lock' is not on. c. If you have forgotten the password, do a hard reset.
Router gets heated up	a. This is not a malfunction as long as you are able to touch the router's case. b. If you smell something wrong or see smoke coming out from the router or A/C power adapter, please disconnect the router and A/C power adapter from the utility power (make sure it's safe before you're doing this), and call your dealer of purchase for help.
The date and time of all event logs are wrong	a. Adjust the time zone in 'System > Time Zone' settings of the router.

☎ 1800-209-3444 (Toll Free)
helpdesk@digisol.com sales@digisol.com www.digisol.com

8. 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.

DMZ: DMZ is a physical or logical subnetwork that contains and exposes an organization's external services to a larger untrusted network, usually the Internet. The purpose of a DMZ is to add an additional layer of security to an organization's local area network (LAN); an external attacker only has access to equipment in the DMZ, rather than any other part of the network.

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

Port triggering: Port triggering is a configuration option on a NAT-enabled router that allows a host machine to dynamically and automatically forward a specific port back to itself. Port triggering opens an incoming port when your computer is using a specified outgoing port for specific traffic.

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 communication 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.

3G telecommunication networks: Supports services that provide an information transfer rate of at least 200 kbit/s. However, many services advertised as 3G provide higher speed than the minimum technical requirements for a 3G service. Later 3G releases, often denoted 3.5G and 3.75G, also provide mobile broadband access of several Mbit/s to smartphones and mobile modems in laptop computers.