VDSL2 Home Gateway

Innbox V50-U

Management Guide

The Table of Contents contains “7” pages.
The document contains “70” pages.
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Safety precautions

When using this equipment, consider the following precautions and requirements:

⚠	Fiber cable, when operating, transmits a beam of infrared laser light You shall not look at the optical cable if it is at one side connected to the optical transmitter while the other end is not connected.
⚠	**Voltage**: When handling the power supply system, follow the instructions for safe use, which are part of the power-supply user manual.
⚠	**Sensitivity to static electricity**: To protect the equipment sensitive to static electricity always use an antistatic wrist-strap. For an even higher level of protection, we recommend that you equip the room with antistatic floor, and wear an antistatic overall, cotton gloves and conducting footwear.

The following requirements should be fulfilled in order to ensure optimal performance of the device up-to-date technology without any danger of damaging the equipment or the users:

- Please read the installation instructions in the User documentation thoroughly before you set up the unit. Correct handling ensures the safety of the user and the equipment.
- The device is designed for indoor use. The unit should be used in a sheltered area, within a temperature range from +5 to +40 Celsius.
- Do not expose the unit to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.
- Avoid using the device in dusty or damp places and places where there is a risk of explosion.
- Do not expose the device to humidity (in a bathroom for example).
- When the device is placed close to devices emitting electromagnetic interferences such as a microwave oven, HiFi equipment, etc., its performance is degraded. Move the device outside the disturbance range and the modem resumes its normal operation.
- Do not try to open or repair the unit yourself. The unit is a complicated electronic device that may be repaired only by authorized and qualified personnel.
- Only use the power adapter that comes with the package. Using a different voltage rating power adapter may damage this unit.
- Place this unit on a stable surface or mount it on the wall.
- Disconnect the power adapter before moving the unit.
- Do not put the cables where people can fall over them.
- Keep the package out of reach of children.

Contents

Document D Management Guide

1 About this document

1.1 Purpose

This document contains a description of the web interface for configuring and managing the Innbox V50-U home gateway.

1.2 Intended audience

This document is intended for the administrators and maintenance staff.

1.3 Document organization

Table 1-1: Document organization

Chapter...	Describes...
“Starting the web management interface”	the web interface start-up procedure.
“Web managemet interface description”	the web interface navigation, pages, sections and management options that are available for administrators and maintanance staff.

1.4 Conventions

1.4.1 Additional text marking

Table 1-2: Conventions for text marking

Sign	Description	Definition
⚠	Warning	The sign draws attention to a text that must be read and considered in order to avoid harmful consequences.
ⓘ	Note	The sign draws attention to an additional explanation.

1.4.2 Graphical user interface (GUI)

Table 1-3: Conventions for GUI text formatting

Format	Description
element	Elements of the application windows: window and dialog box titles, menus, data fields, buttons, tabs...
`value`	Value you must choose or enter.
>	The > sign links: ◆ sequence of menu choices which you have to select, for example: **Node** > **Insert**. ◆ sequence of MN manager, one or more element's groups and element, which you have to select, for example: **SYS** > **Basic Administration** > **Node**.

Table 1-4: Conventions for mouse usage in GUI

Format	Description
Click	Select and release the primary mouse button without moving the pointer.
Double-click	Press the primary mouse button twice continuously and quickly without moving the pointer.
Drag	Press and hold the primary mouse button and move the pointer to a certain position.
Right-click	Press the right mouse button without moving the pointer.

2 Starting the WEB management interface

To start the Innbox V50-U Home Gateway web interface:

1. Enter the Innbox V50-U IP address in the web browser address bar.
2. A dialog box requiring user authentication opens:

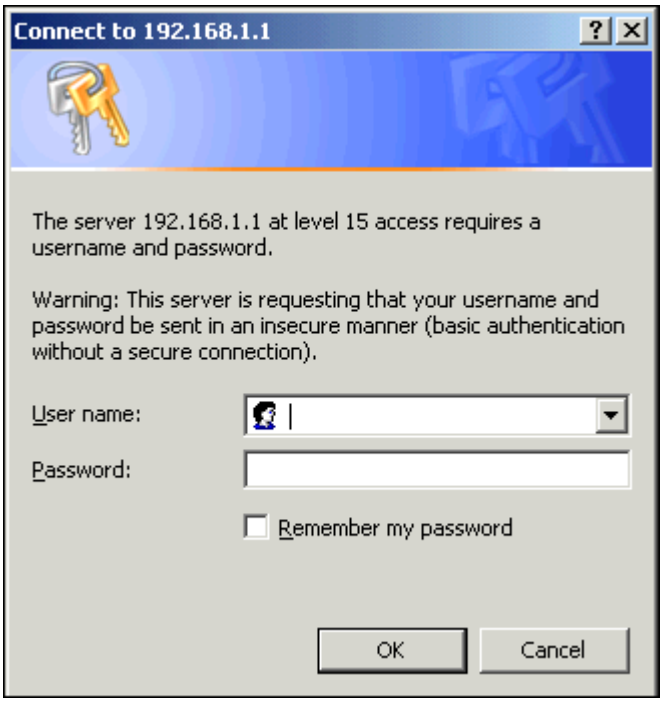


Figure 2-1: Dialog box

3. Enter the **User Name** and **Password**. The user name and password must be sent in an insecure manner.
4. Click **OK**.

2.1 Navigation

The management interface enables you to view your router settings, edit and configure them.

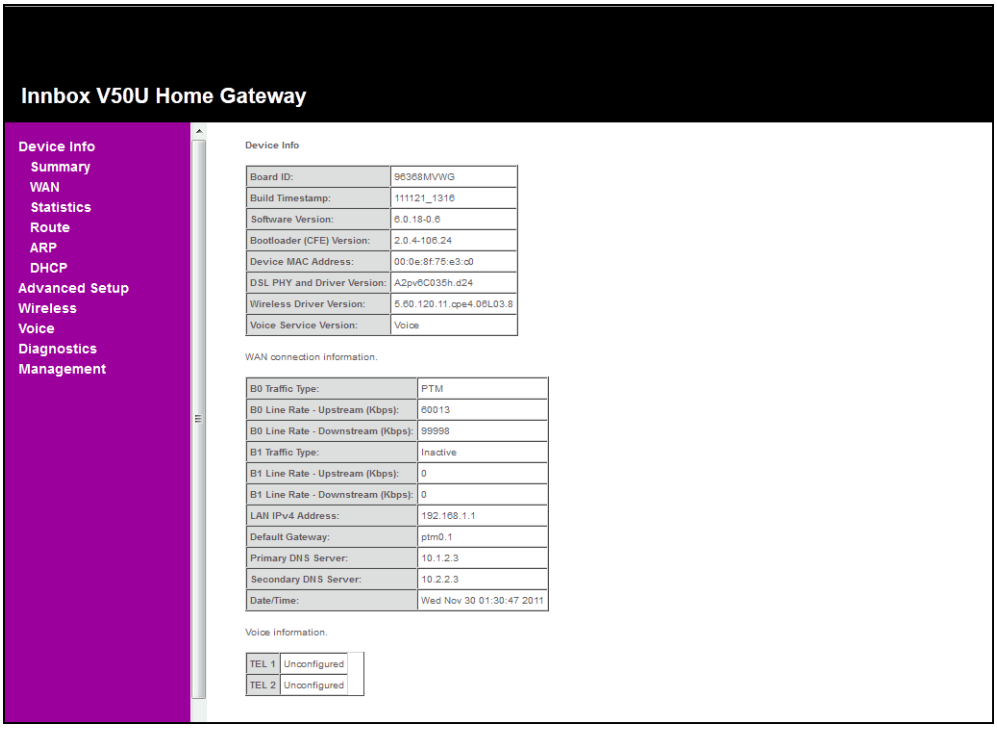


Figure 2-2: Main page

The interface is divided into two frames:

- **left frame** - navigation tree
  The navigation tree is intended for navigating and accessing the router configuration pages.

  The elements listed in the tree are hyperlinks. When you click a link, a corresponding configuration page will be displayed in the right frame.
- **right frame** - display area
  Displays a configuration page for the selected element.

3 WEB management interface description

This section describes the web management interface, configuration options and features that you can configure.

The main areas of configuration are divided into the following groups of elements:

- Device info
- Advanced Setup
- Wireless
- Voice
- Diagnostics
- Management

3.1 Device info

This section introduces the basic information about the device and its current settings in use. Click any of the submenus to view the corresponding information.

- Select **Device Info** > **Summary**. The Summary page opens. The first table indicates **Device info**. The second table displays the current status of **WAN connection information**. The third table displays **Voice information**.This information will vary depending on the settings of the device configured.

Note: Click the other submenus in the main menu, and you will be able to view the corresponding information about **WAN**, **Statistics**, **Route**, **ARP** and **DHCP**.

3.1.1 Summary

The **Summary** page displays useful current information about device. The information also reflects the current status of your WAN connection.

Device Info

Board ID:	96368MVWG7U73A
Build Timestamp:	110110_1256
Software Version:	6.0.13-0.6
Bootloader (CFE) Version:	2.0.4-106.24
Device MAC Address:	00:1f:a4:bb:d9:59
DSL PHY and Driver Version:	B2pvC033.d23e
Wireless Driver Version:	5.60.120.11.cpe4.06L03.8
Voice Service Version:	Voice

WAN connection information.

B0 Traffic Type:	PTM
B0 Line Rate - Upstream (Kbps):	60013
B0 Line Rate - Downstream (Kbps):	99998
B1 Traffic Type:	Inactive
B1 Line Rate - Upstream (Kbps):	0
B1 Line Rate - Downstream (Kbps):	0
LAN IPv4 Address:	192.168.1.1
Default Gateway:	ptm0.2
Primary DNS Server:	10.1.2.3
Secondary DNS Server:	10.2.2.3
Date/Time:	Mon Mar 21 03:50:08 2011

Voice information.

TEL 1	Unconfigured
TEL 2	Unconfigured

Figure 3-1: Summary Overview

3.2 Advanced Setup

Select **Advanced Setup**. Click any of the submenus to configure the corresponding function, for example Layer2 Interface, WAN Service, LAN, NAT, Security, Parental Control, Quality of Service, Routing, DNS, DSL, UPnP, DNS Proxy, Interface Grouping, Port Configuration and Multicast.

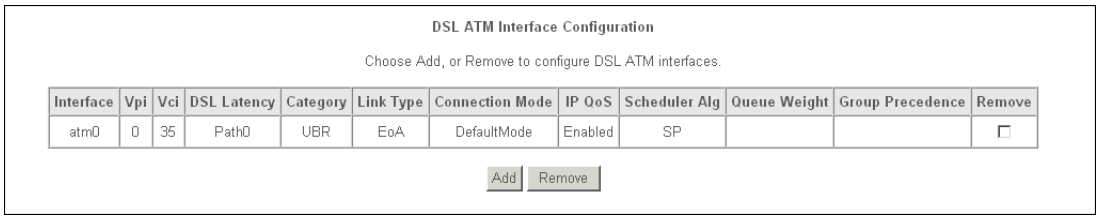
3.2.1 Layer2 Interface

Select **Advanced Setup** > **Layer2 Interface**. You can configure:

- **ATM Interface**: Configure the device to access Internet as a ADSL user. ISP provides you VPI (Virtual Path Identifier), VCI (Virtual Channel Identifier) settings and the DSL Interface with RJ11 connector.
- **PTM Interface**: Configure the device to access Internet as a VDSL user. Packet Transfer Mode (PTM) transports packets (IP, PPP, Ethernet, etc.) over DSL links as an alternative to using Asynchronous Transfer Mode (ATM). PTM is based on the Ethernet in the First Mile (EFM) IEEE802.3ah standard.
- **ETH Interface**: Configure the device to access Internet as an Ethernet user. ISP provides you Broadband Internet Service and the Ethernet Interface with RJ45 or SC/LC optical connector.

3.2.1.1 ATM Interface

Select **Advanced Setup** > **Layer2 Interface** > **ATM Interface**. The following page opens:



DSL ATM Interface Configuration

Choose Add, or Remove to configure DSL ATM interfaces.

Interface	Vpi	Vci	DSL Latency	Category	Link Type	Connection Mode	IP QoS	Scheduler Alg	Queue Weight	Group Precedence	Remove
atm0	0	35	Path0	UBR	EoA	DefaultMode	Enabled	SP			☐

Add Remove

Figure 3-2: ATM Interface

- **Add**: Click the button to add a new ATM PVC identifier.
- **Remove**: Select the checkbox in the table and click **Remove**.The corresponding interface will be deleted.

Note: If the interface is used by the configuration of the "WAN Service", you need to remove the corresponding WAN Service entry first before removing it here.

3.2.1.1.1 ATM PVC configuration

Select **Advanced Setup** > **Layer2 Interface** > **ATM Interface > Add**.

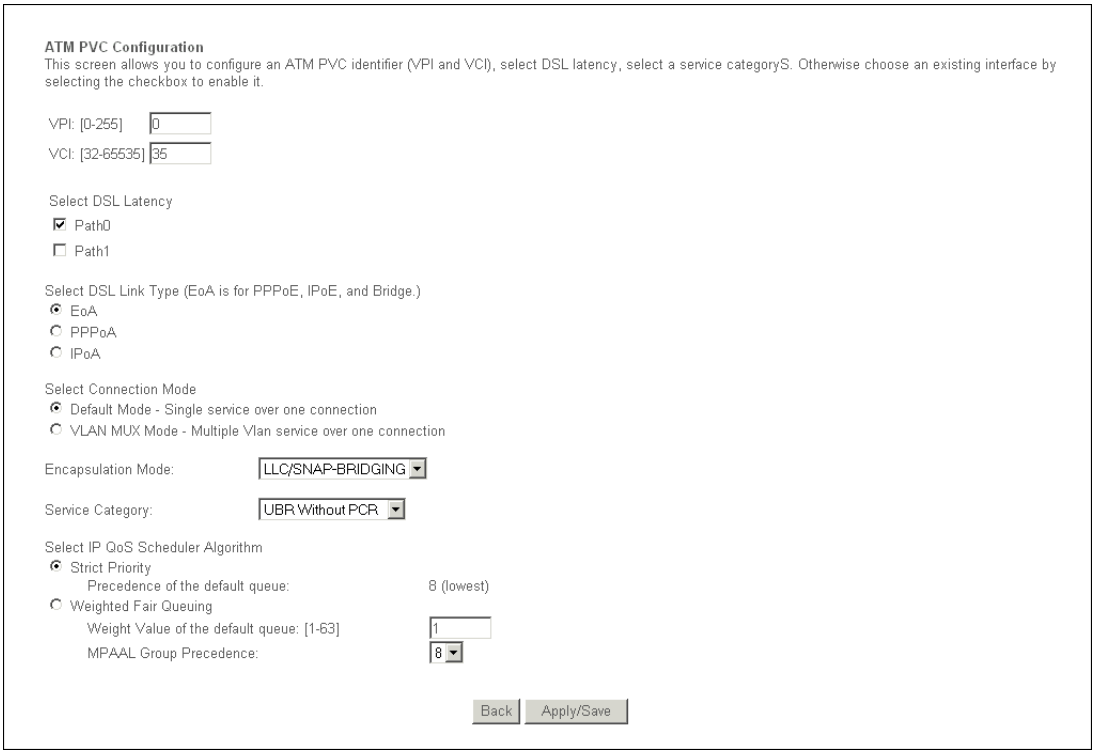


Figure 3-3: ATM PVC Configuration page

- **VPI/VCI**: the VPI and VCI values provided by your ISP. Do not change them unless it was required by your ISP.
- **DSL Latency**: Select a DSL latency. The options include Path 0 and Path1.
- **DSL Link Type**: Select a DSL Link Type which is provided by your ISP. The options include EoA (it is for PPPoE, IPoE, and Bridge), PPPoA (PPP over ATM) and IPoA (IP over ATM).
- **Connection Mode**: Select the connection mode for EoA option of DSL Link Type. The options include Default mode for single service over one connection, VLAN MUX Mode for multiple Vlan service over one connection, and MSC Mode for Multiple Service over one connection.
- **Service Category**: Select the type of the service assigned by your ISP in the drop-down list. The default type is UBR Without PCR.
- **Encapsulation Mode**: The mode of the data processing over the Link Type you have selected. Uses the default setting, if you are not sure.
- **Select IP QoS Scheduler Algorithm**: If you want to adopt QoS (Quality of Service) for the connection, select Strict Priority or Weighted Fair Queuing.

Note: Enabling packet level QoS for PVC improves performance for selected classes of applications. While QoS consumes system resources; therefore the number of PVC(s) will be reduced. Besides this, it cannot be set for the connection type of CBR and Real-time VBR. If you select the QoS service, the Quality of Service menu will be added to the Web-based Utility, the detailed configuration will be described in “Quality of Service”.

3.2.1.2 PTM Interface

Select **Advanced Setup** > **Layer2 Interface** > **PTM Interface**. The following page opens:

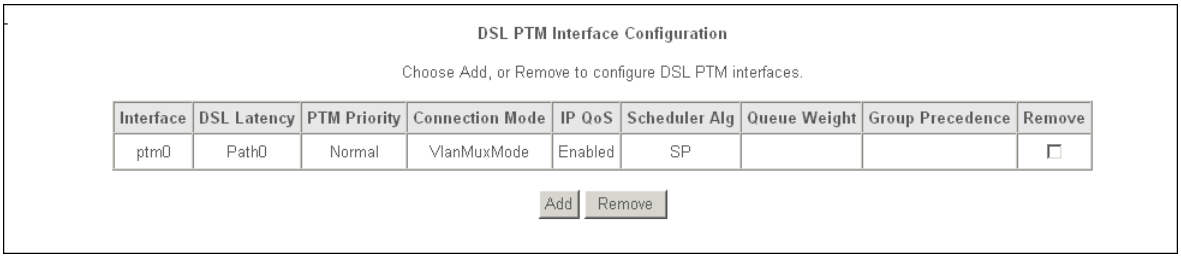


Figure 3-4: PTM Interface

- **Add**: Click the button to add a new interface.
- **Remove**: Select the checkbox in the table on the page above and then click **Remove**. The corresponding interface will be deleted.

3.2.1.2.1 PTM configuration

Select **Advanced Setup** > **Layer2 Interface** > **PTM Interface** > **Add**.

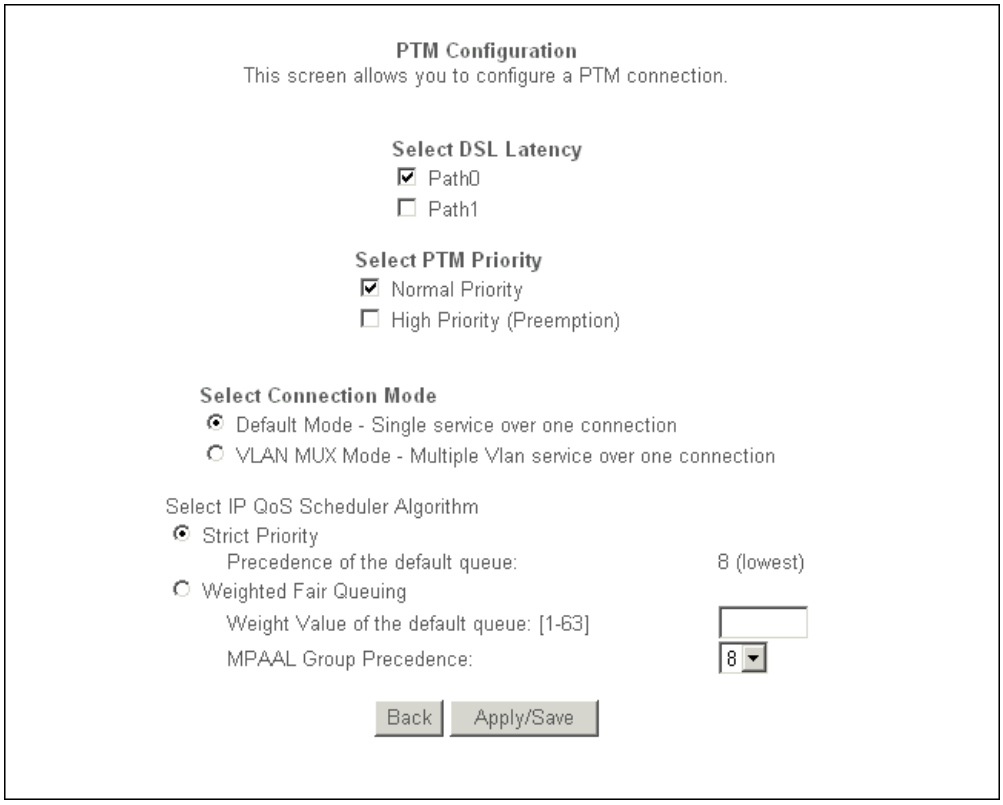


Figure 3-5: PTM Configuration page

- **DSL Latency**: Select a DSL latency. The options include Path 0 and Path1.
- **PTM Priority**: Select a PTM Priority.The options include Normal Priority and High Priority.
- **Connection Mode**: Select the connection mode for EoA option of DSL Link Type. The options include Default mode for single service over one connection, VLAN MUX Mode for multiple Vlan service over one connection, and MSC Mode for Multiple Service over one connection.

- **Select IP QoS Scheduler Algorithm**: If you want to adopt QoS (Quality of Service) for the connection, select Strict Priority or Weighted Fair Queuing.

3.2.1.3 ETH Interface

Select **Advanced Setup** > **Layer2 Interface** > **ETH Interface**. The following page opens:

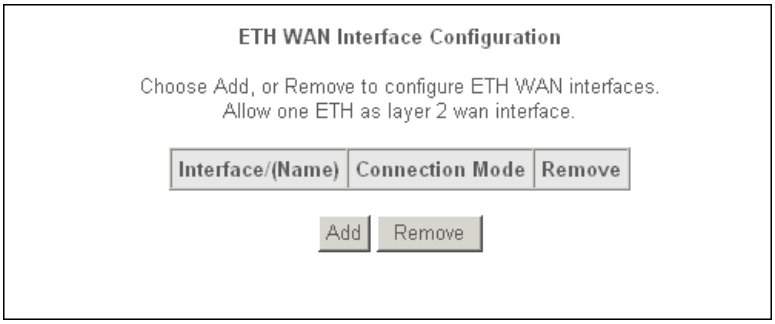


Figure 3-6: ETH WAN Interface

- **Add**: Click the button to add a new interface.
- **Apply/Save**: Click the button to save your settings.

3.2.1.3.1 ETH WAN Configuration

Select **Advanced Setup** > **Layer2 Interface** > **ETH Interface** > **Add**. The following page opens:

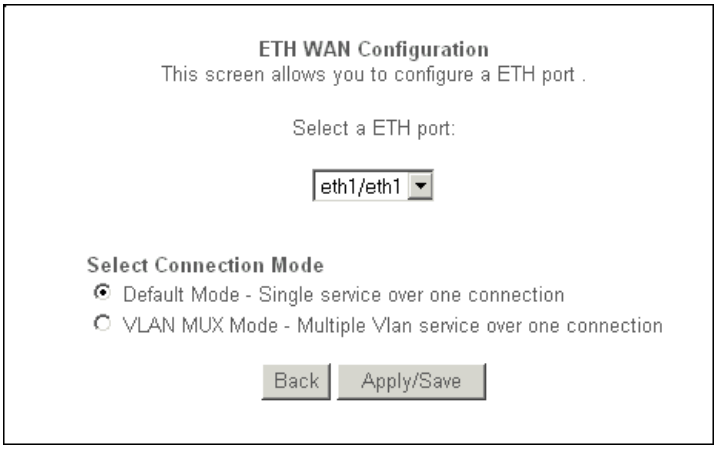
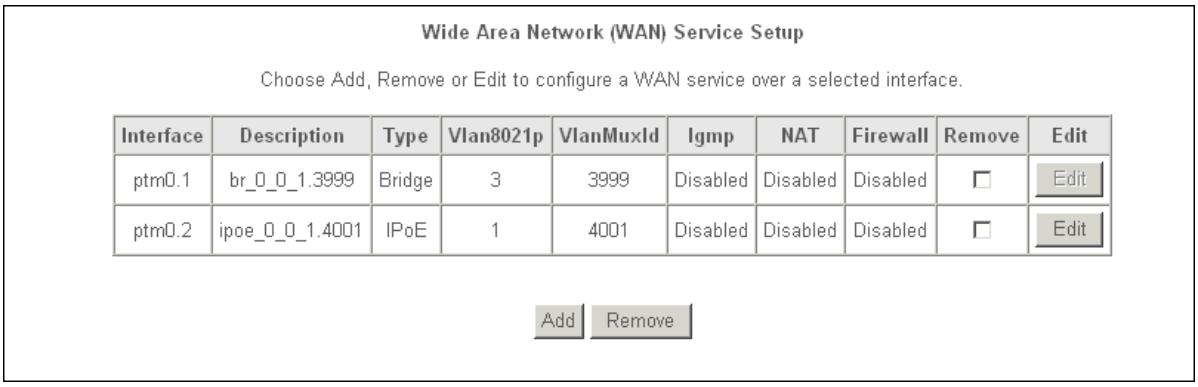


Figure 3-7: ETH WAN Configuration page

- **ETH port**: Select an ETH port to configure as the WAN port.
- **Select Connection Mode**: Select a connection mode for the port:
  - **Default mode** - Single service over one connection.
  - **VLAN MUX Mode** - Multiple Vlan service over one connection.

3.2.2 WAN Service

You can configure a WAN service over a selected interface. Select **Advanced Setup** > **WAN Service**. The following page opens:



Interface	Description	Type	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	Remove	Edit
ptm0.1	br_0_0_1.3999	Bridge	3	3999	Disabled	Disabled	Disabled	☐	Edit
ptm0.2	ipoe_0_0_1.4001	IPoE	1	4001	Disabled	Disabled	Disabled	☐	Edit

Figure 3-8: WAN Service Setup

There are five different configurations for the connection types: PPPoE, IPoE, Bridge, PPPoA, and IPoA. You can select the corresponding types according to your needs.

- **Add**: Click this button to add a WAN service.
- **Remove**: Click this button to remove a WAN service.
- **Edit**: If there are any rules already configured, you can edit them.

3.2.2.1 WAN Service Interface configuration

1. Select **Advanced Setup** > **WAN Service** > **Add**.

.

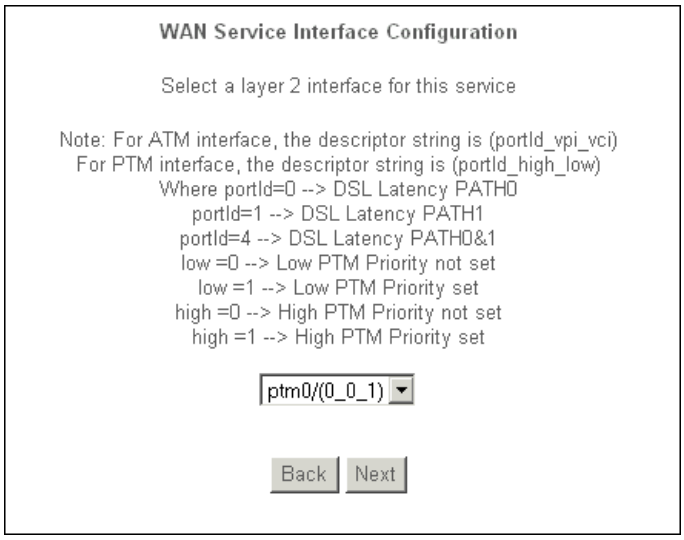


Figure 3-9: WAN Service Configuration

2. Select a layer 2 interface for this service and click **Next**. The following page opens:

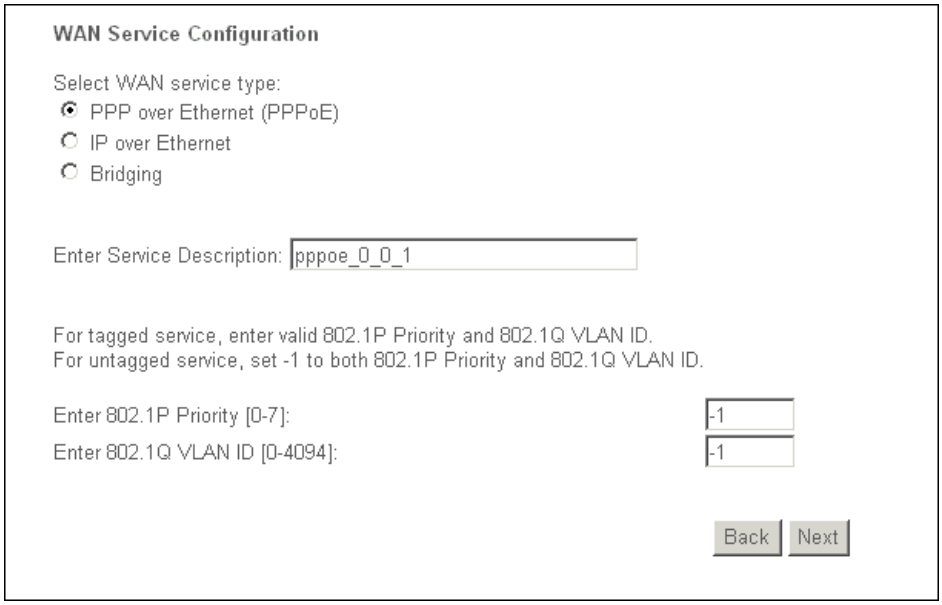


Figure 3-10: WAN Service Configuration - service type

3. Select the WAN service type: **PPP over Ethernet (PPPoE)**, **IP over Ethernet** or **Bridging**. If your ISP provides a PPPoE connection, select PPPoE option. You can create a service name for the Service Description or leave a default name.
4. Click **Next**. The following page opens:

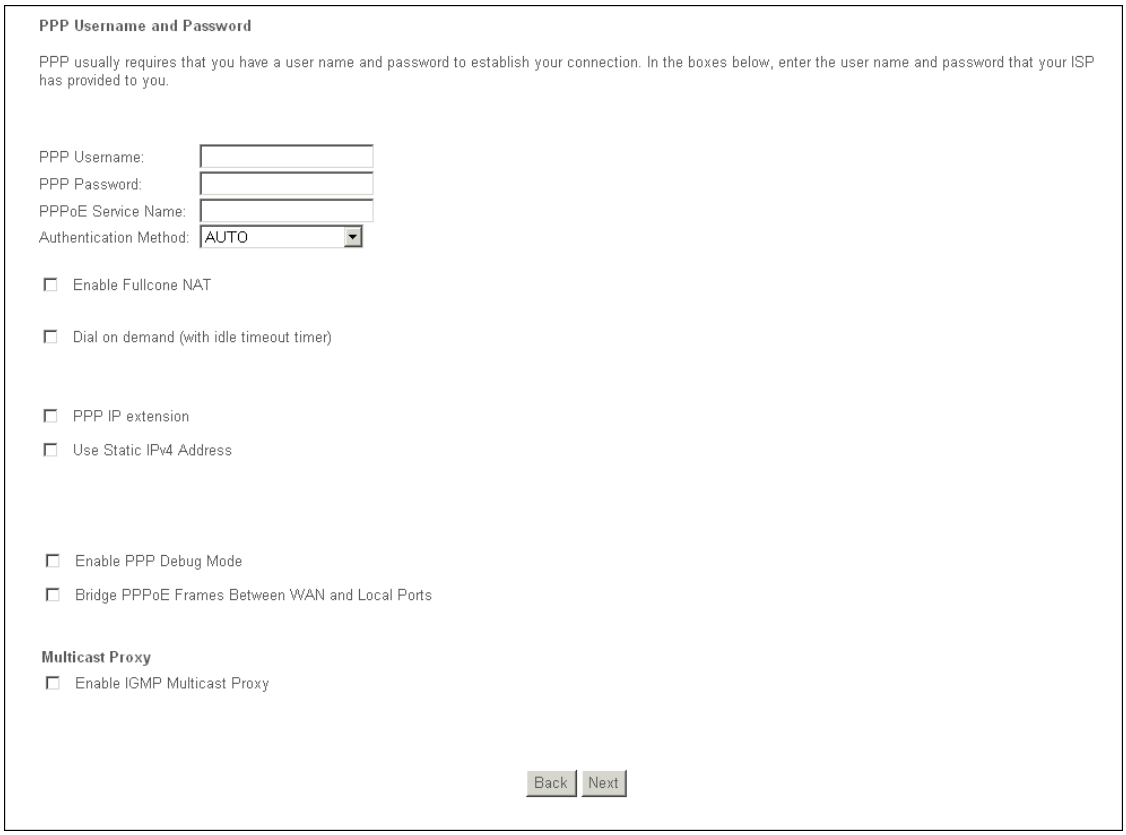


Figure 3-11: WAN - PPP Username and Password

5. Enter or select:

- **PPP Username/Password**: Enter the user name and password provided by your ISP. These fields are case-sensitive.
- **PPPoE Service Name**: Enter the service name if it was provided by your ISP. If you leave it blank, the default name will be the same as the service description on the previous page.
- **Authentication Method**: Select the authentication method from the drop-down list, the default method is AUTO, and you can leave it as a default setting.
- **Enable Fullcone NAT**: It is a type of NAT, if not enabled, the default NAT will act.
- **Dial on demand (with idle timeout timer)**: The device will cut off the internet connection after it has been inactive for a specific period of time (idle timeout), and it will automatically re-establish the connection as soon as you attempt to access the Internet again. If your Internet is charged by time you may want to select this option in order to save money.
- **PPP IP extension**: Select this option to get the public IP address from the PPP server to your PC, and the NAT and SPI firewall will be closed. Sometimes you can think it as bridge while PPP dialing in the device. It is a special feature deployed by some ISP. Unless your ISP specifically requires this setup, do not select it.
- **Use Static IPv4 Address**: If your ISP gives you a static WAN, gateway and DNS IP address, select this option to enter them manually.
- **Enable PPP Debug Mode**: Select this option to debug the PPP function and you can see many PPP log information in the systemLog. Only PPP has this debug mode.
- **Bridge PPPoE Frames Between WAN and Local Ports**: Select this option to start PPP connection in your local PC.
- **Enable IGMP Multicast Proxy**: IGMP (Internet Group Management Protocol) is used to manage multicasting on TCP/IP networks. Some ISPs use IGMP to perform remote configuration for client devices, such as the device. The default value is disabled, and if you are not sure, contact your ISP or just leave it.

6. Click **Next**. The following page opens:

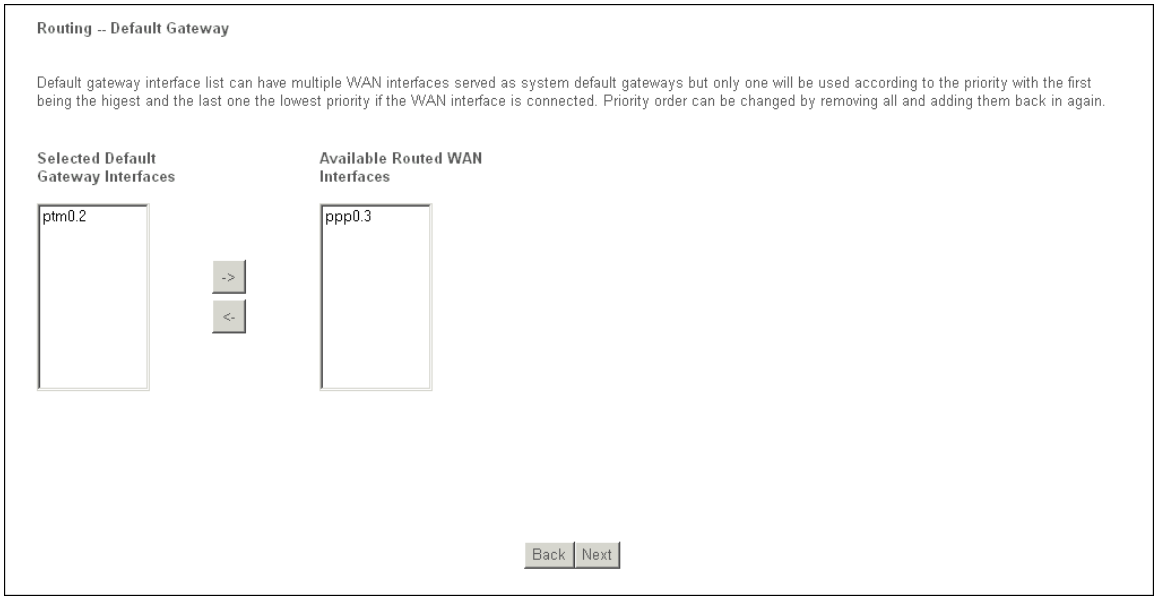


Figure 3-12: WAN - Routing - Default Gateway

7. Select a preferred WAN interface as the system default gateway and click **Next**. The following page opens:

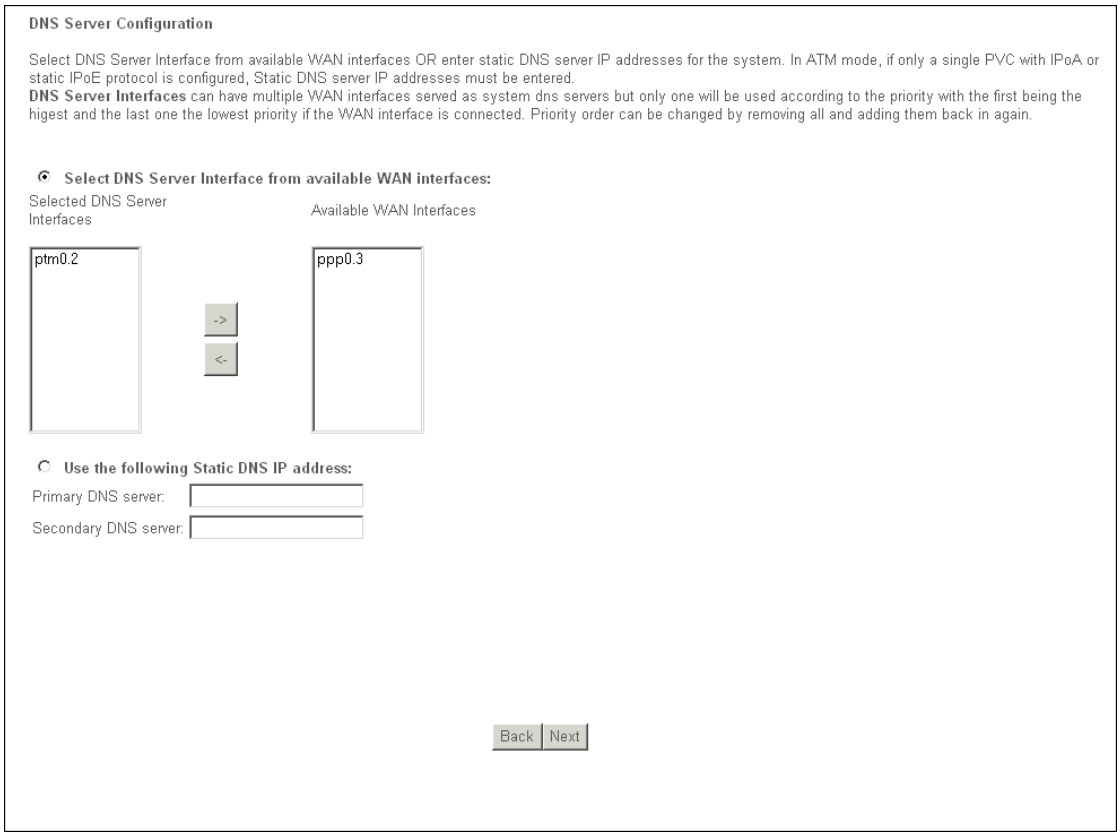


Figure 3-13: WAN - DNS Server configuration

- **Select DNS Server Interface from available WAN Interface**: You can select this option to automatically get DNS server information from the selected WAN interface.
- **Use the following Static DNS IP Address**: You can select this option to manually enter the primary and /or optional secondary DNS server IP addresses provided by your ISP.

8. Click **Next**. The following page opens:

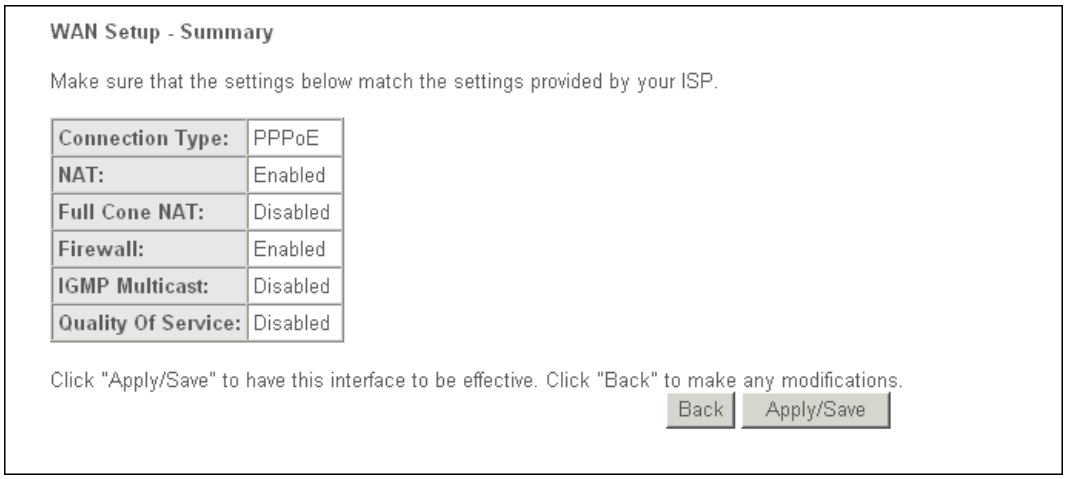


Figure 3-14: WAN Setup - Summary

9. Click **Apply/Save** to save these settings.

3.2.3 LAN

You can configure Local Area Network (LAN) in this page. Select **Advanced Setup** > **LAN**. The following page opens:

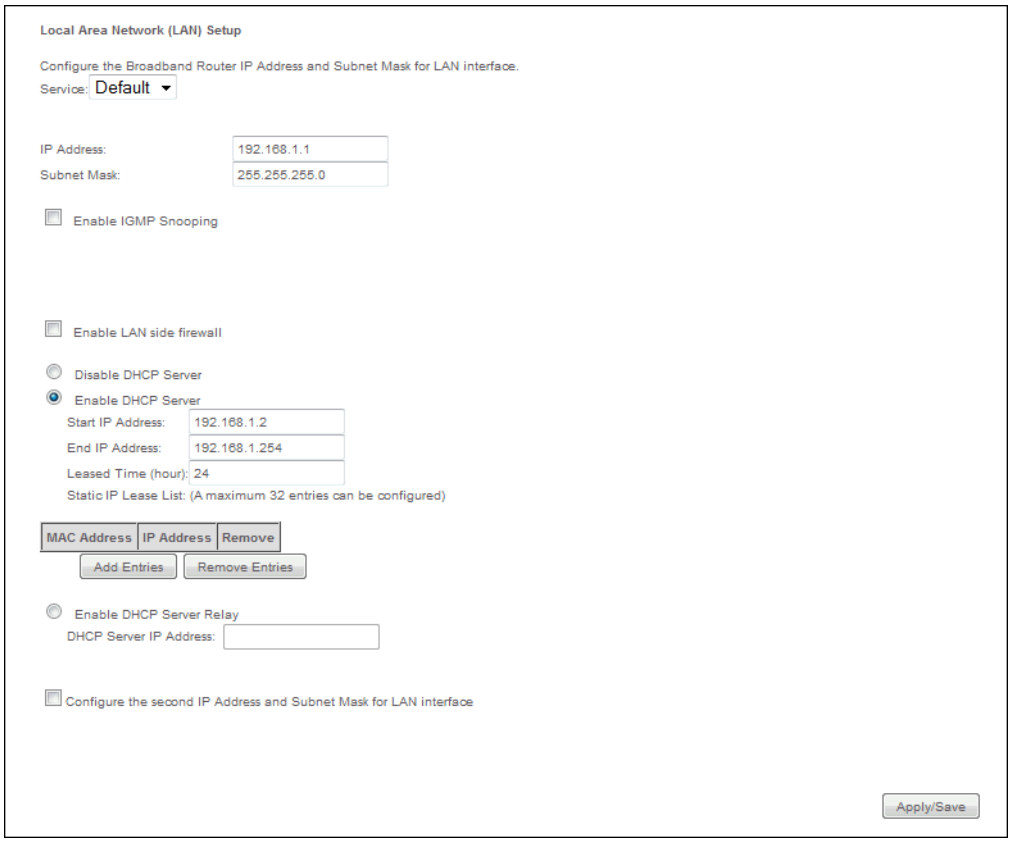


Figure 3-15: LAN Setup

- Configure the device IP Address and Subnet Mask for LAN Interface.
  - **IP Address**: Enter the device local IP Address, then you can access to the Web-based Utility via the IP Address, the default value is 192.168.1.1.
  - **Subnet Mask**: Enter the device Subnet Mask, the default value is 255.255.255.0.
- **Enable IGMP Snooping**: If you select the option, select the IGMP Mode: **Standard Mode** or **Blocking Mode**.
- **DHCP Server**: These settings allow you to configure the device's Dynamic Host Configuration Protocol (DHCP) server function. The DHCP server is enabled by default for the device Ethernet LAN interface. DHCP service will supply IP settings to computers which are configured to automatically obtain IP settings that are connected to the device though the Ethernet port. When the device is set for DHCP, it becomes the default gateway for DHCP client connected to it. Keep in mind that if you change the IP address of the device, you must change the range of IP addresses in the pool used for DHCP on the LAN.
  - **Start IP Address**: Enter a value for the DHCP server to start with when issuing IP addresses. Because the default IP address for the device is 192.168.1.1, the default Start IP Address is 192.168.1.2, and the Start IP Address must be 192.168.1.2 or greater, but smaller than 192.168.1.254.
  - **End IP Address**: Enter a value for the DHCP server to end with when issuing IP addresses. The End IP Address must be smaller than 192.168.1.254. The default End IP Address is 192.168.1.254.

- **Leased Time (hour)**: The Leased Time is the amount of time in which a network user will be allowed connection to the device with their current dynamic IP address. Enter the amount of time, in hours, then the user will be “leased” this dynamic IP address. After the dynamic IP address has expired, the user will be automatically assigned a new dynamic IP address. The default is 24 hours.

- **Static IP Lease List**: The function allows you to specify a reserved IP address for a PC on the LAN, that PC will always obtain the assigned IP address each time when it accesses the DHCP server. Reserved IP addresses should be assigned to servers that require permanent IP settings. Click Add Entries, to reserve the MAC address and IP address you want to reserved.
- **Configure the second IP Address and Subnet Mask**: Configure the device second IP Address and Subnet Mask for LAN Interface through which you can also access to the Web-based Utility as the default IP Address and Subnet Mask.

Note: UPnP, DHCP Server and the second IP Address are not available for the connection type of Bridging. They will not display on the preceding page since only Bridging is selected.

3.2.4 NAT

Network Address Translation (NAT) implements the translation of network addresses and ports. The implementation also supports NAT plus. Support for additional services is enabled, e.g., H.323, Video & Audio on Demand, which use a more complicated server-client communication scheme.

The following NAT features can be configured:

- “Virtual Servers”
- “Port Triggering”
- “DMZ Host”

3.2.4.1 Virtual Servers

Virtual servers can be used for setting up public services on your LAN, such as DNS, Email and FTP. A virtual server is defined as a service port, and all requests from the Internet to this service port will be redirected to the computer specified by the server IP. Any PC that was used for a virtual server must have a static or reserved IP Address because its IP Address may change when using the DHCP function.

Select **Advanced Setup** > **NAT** > **Virtual Servers**. The following page opens:

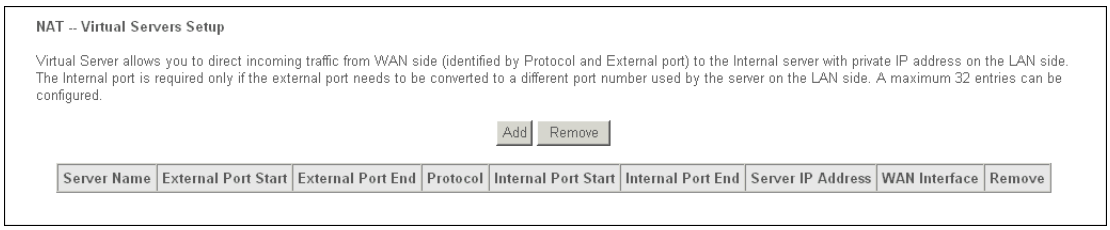


Figure 3-16: Virtual Servers

Virtual Server Table indicates the information about the Virtual Server entries:

- **Server Name**: The name of the virtual server. It is exclusive and must be filled in.
- **External Port Start**: The base number of external ports. You can type a service port or leave it blank.
- **External Port End**: The end number of external ports. You can type a service port or leave it blank.
- **Protocol**: The protocol used for this application, TCP, UDP, or TCP/UDP.

- **Internal Port Start**: The base number of internal ports. You can type a service port or leave it blank.
- **Internal Port End**: The end number of internal ports. You can type a service port or leave it blank.
- **Server IP Address**: The IP Address of the PC providing the service application.
- **WAN Interface**: The WAN service interface providing the service application.
- **Add**: Click this button to add a virtual server.
- **Remove**: Click this button to remove a virtual server.

3.2.4.1.1 NAT -- Virtual servers

1. Select **Advanced Setup** > **NAT** > **Virtual Servers** > **Add**. The following page opens:

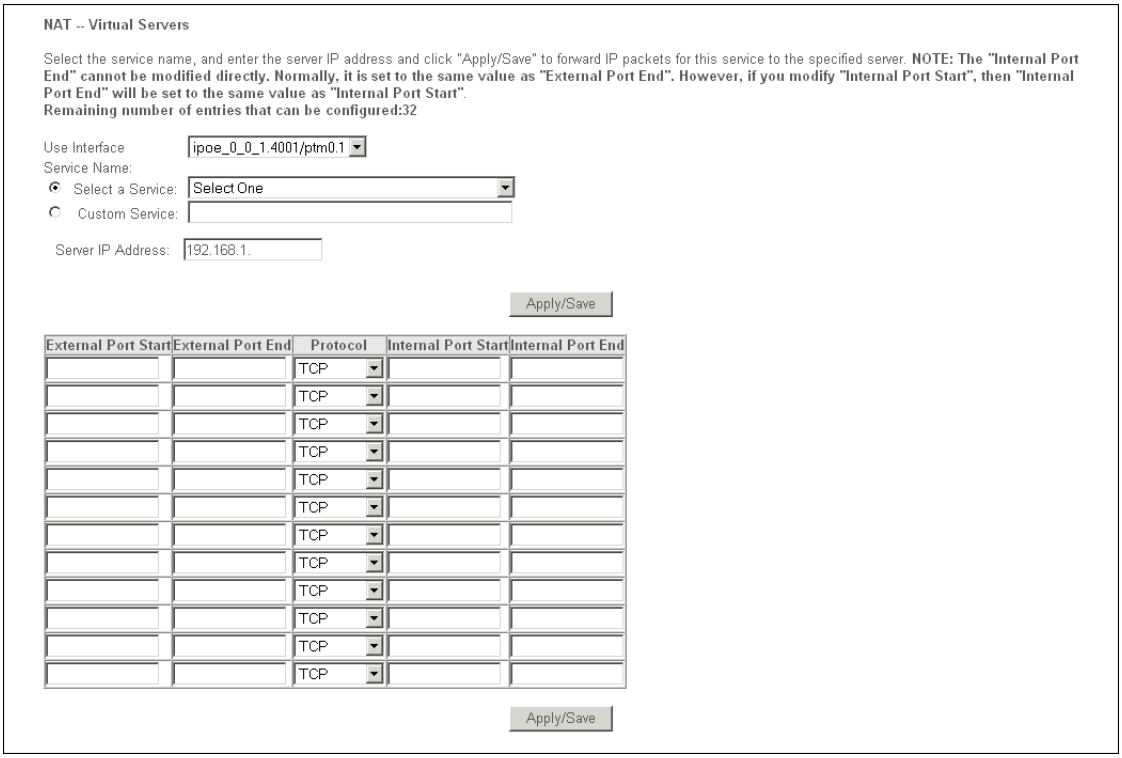


Figure 3-17: Add Virtual Servers

2. Select the interface which you want to use from the drop-down list.
3. Select the service which you want to use from the drop-down list. If the list does not have the service you need, type the name of the custom service in the text box.
4. Enter the IP Address of the computer in the **Server IP Address** text box.
5. Enter the **External Port Start**, **External Port End**, **Internal Port Start** and **Internal Port End** in the table, and then select the protocol used for this virtual server: **TCP**, **UDP** or **All**.
6. Click **Apply/Save** to enable virtual server.

Note: If you select the service from the drop-down list, the External Port Start, External Port End, Internal Port Start, Internal Port End and the Protocol will be added in the table automatically. You only need to enter the server IP address for the virtual server.

3.2.4.2 Port Triggering

Some applications require that specific ports in the device firewall should be opened for access by remote devices. Port Trigger dynamically opens up the 'Open Ports' in the firewall when an application on the LAN initiates a TCP/UDP connection to a remote device using the triggering ports. The device allows the remote party from the WAN side to establish new connections back to the application on the LAN side using the open ports. A maximum 32 entries can be configured.

Select **Advanced Setup** > **NAT** > **Port Triggering**. The following page opens:

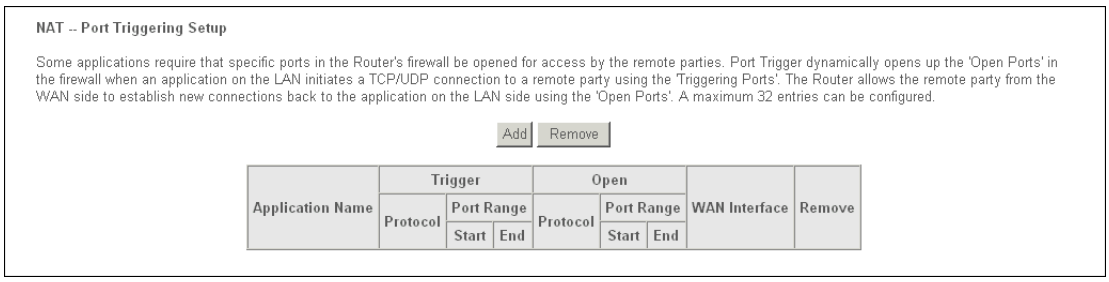


Figure 3-18: Port Triggering

- **Port Triggering Table**: The table indicates the information about the port triggering entries.
  - **Application Name**: This is the name of the port triggering. It is exclusive and must be filled.
  - **Trigger**: It includes the **Protocol** and the **Start** and **End** value of the **Trigger** ports.
  - **Open**: It includes the **Protocol** and the **Start** and **End** value of the **Open** ports.
  - **WAN Interface**: The WAN service interface setting the port triggering.
- **Add**: Click the button to add a new entry.
- **Remove**: Click the button to remove an entry.

3.2.4.2.1 NAT -- Port Triggering

1. Select **Advanced Setup** > **NAT** > **Port Triggering** > **Add**. The following page opens:

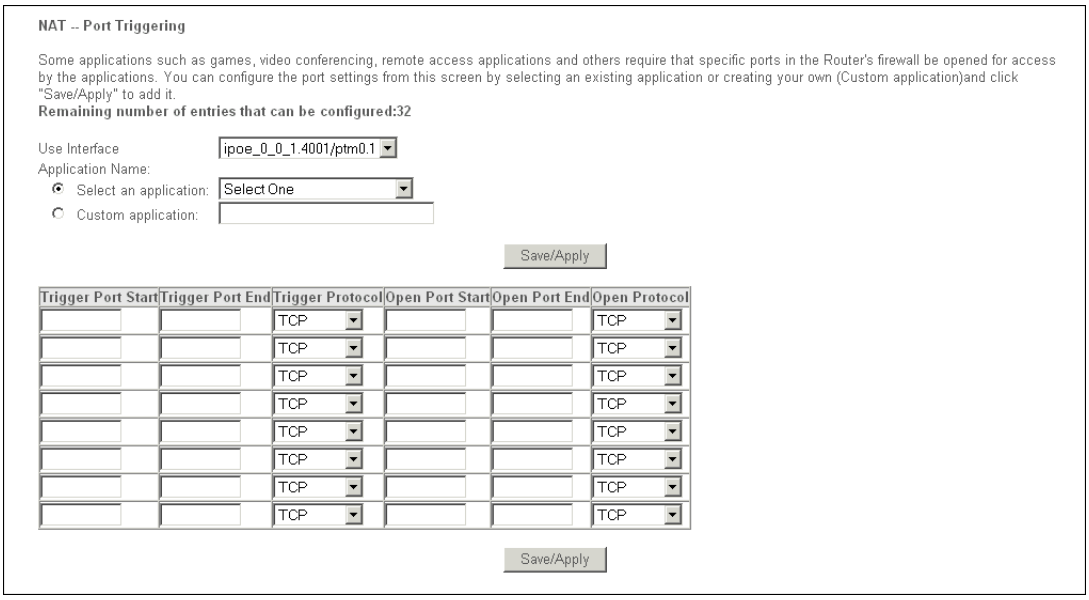


Figure 3-19: Add Port Triggering

2. Select the application from the drop-down list. If the list does not have the application that you want, select the **Custom application** radio button, and type the name of the custom application in the text box.
3. Enter the **Trigger Port Start**, **Trigger Port End**, **Open Port Start** and **Open Port End** in the table, and then select the **Trigger protocol** and **Open protocol**: **TCP**, **UDP** or **All**.
4. Click **Save/Apply** to enable the settings.

Note: If you select the application from the drop-down list, the External Port Start, External Port End, Internal Port Start, Internal Port End and the Protocol will be added in the table automatically.

3.2.4.3 DMZ Host

The DMZ host feature can make a local host be exposed to the Internet for a special-purpose service, such as online gaming or video conferences.The device will forward IP packets from the WAN that do not belong to any of the applications configured in the virtual servers table to the DMZ host computer.

Select **Advanced Setup** > **NAT** > **DMZ Host**. The following page opens:

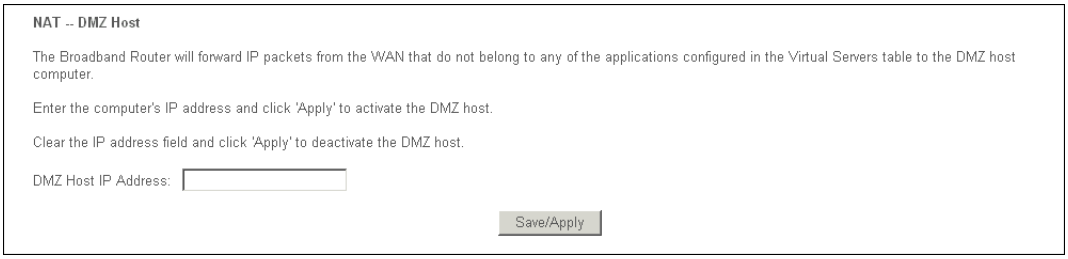


Figure 3-20: DMZ Host

- **DMZ Host IP Address**:
  - Enter the DMZ host IP address and click **Apply** to activate the DMZ host
  - Clear the IP address field and click **Apply** to deactivate the DMZ host.

Note: DMZ host forwards all the ports at the same time. Any PC whose port is being forwarded must have its DHCP client function disabled and should have a new static IP Address assigned to it because its IP Address may change while using the DHCP function.

3.2.5 Security

The advanced security features prevent other computers on the Internet from connecting to your PCs. You should only change the default security settings if you have experience in network configuration. In most cases you will not need to make any changes.

The following security features can be configured: **IP filtering** and **MAC filtering**.

3.2.5.1 IP Filtering

The IP address filtering feature makes it possible for administrators to control user access to the Internet, which is based on user IP. The IP address filtering includes: **Outgoing IP filtering** and **Incoming IP filtering**.

3.2.5.1.1 Outgoing IP filtering

The Outgoing IP Filtering feature allows you to control some IP traffic from LAN to access specific addresses. By default, all outgoing IP traffic from LAN is allowed, but some IP traffic can be BLOCKED by setting up filters.

Select **Advanced Setup** > **Security** > **IP Filtering** > **Outgoing**. The following page opens.

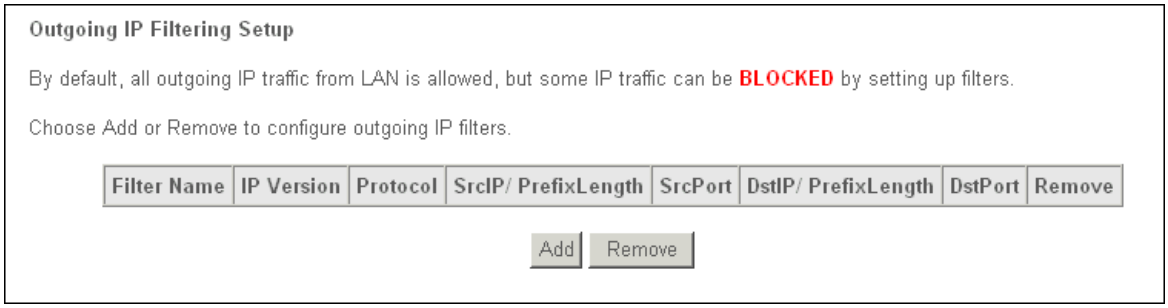


Figure 3-21: Outgoing IP Filtering

- **Add**: Click this button to add an outgoing IP filter.
- **Remove**: Click this button to remove an outgoing IP filter.

Add IP filter -- Outgoing

1. Select **Advanced Setup** > **Security** > **IP Filtering** > **Outgoing** > **Add**. The following page opens:

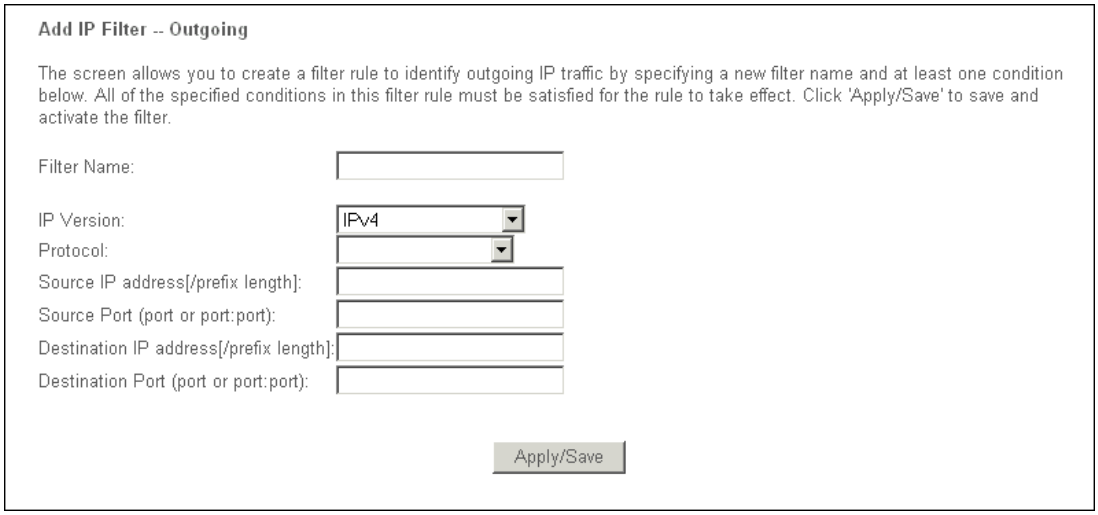


Figure 3-22: Add IP Filter - Outgoing

2. Enter the **Filter name** for the rule, it is exclusive and must be filled.
3. Select the protocol **TCP/UDP**, **TCP**, **UDP** or **ICMP** in the drop-down list for the connection between the source IP address and destination IP address.
4. Enter a **Source IP address** in dotted-decimal notation format and then type the **Source Port** (port or port: port) in the text boxes separately.
5. Enter a **Destination IP address** in dotted-decimal notation format and then type the **Destination Port** (port or port: port) in the text boxes separately.
6. Click **Apply/Save** to save this entry.

Note: When you add an Outgoing IP Filtering entry, you must configure at least one condition on the preceding page except the Filter name. If you leave the Protocol blank, it means that the rule is effective to all protocols, if you leave the Source IP Address and/or Destination IP Address blank, it suggests that all Source IP Addresses and/or Destination IP Addresses are controlled by the rule, if you leave the Source Port and/or Destination Port blank, it suggests that all Source Ports and/or Destination Ports are controlled by the rule.

3.2.5.1.2 Incoming IP Filtering

The Incoming IP Filtering feature allows some IP traffic from WAN to access some local addresses. By default, all incoming IP traffic from the WAN is blocked when the firewall is enabled. However, some IP traffic can be ACCEPTED by setting up filters.

Select **Advanced Setup** > **Security** > **IP Filtering** > **Incoming**. The following page opens.

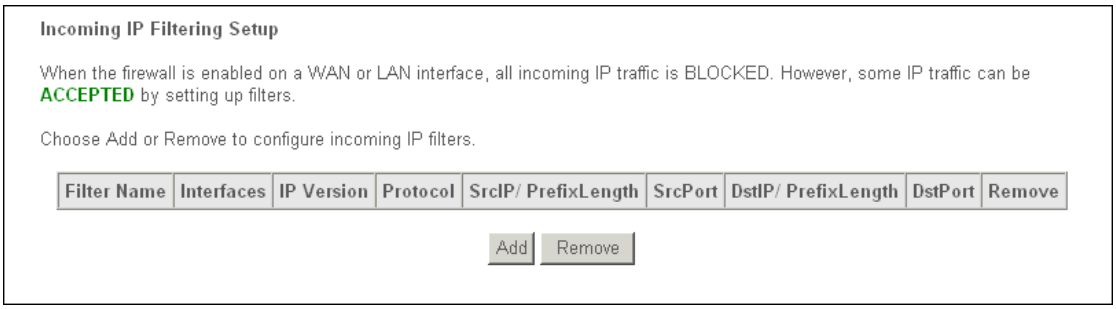


Figure 3-23: Incoming IP Filtering

- **Add**: Click this button to add an incoming IP filter.
- **Remove**: Click this button to remove an incoming IP filter.

Add IP filter -- Incoming

1. Select **Advanced Setup** > **Security** > **IP Filtering** > **Incoming** > **Add**. The following page opens:

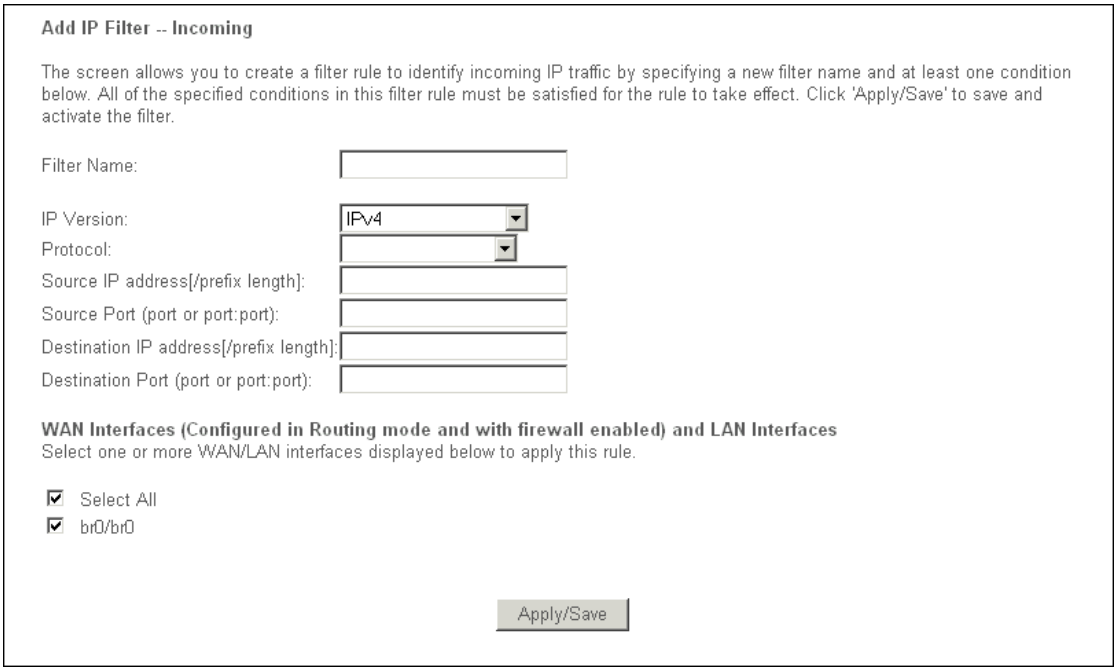


Figure 3-24: Add IP Filter - Incoming

2. Enter the **Filter name** for the rule, it is exclusive and must be filled in.
3. Select **Protocol** in the drop-down list, enter **Source IP address**, **Source Port**, **Destination IP address** and **Destination Port** for the rule.
4. Select at least one WAN interfaces displayed in the page to apply this rule.
5. Click **Apply/Save** to save this entry.

Note: When you add an Incoming IP Filtering entry, you must configure at least one condition on the preceding page except the Filter name. If you leave Protocol blank, it means that the rule is effective to all protocols, if you leave the Source IP address and/ or Destination IP address blank, it suggests that all Source IP addresses and/or Destination IP addresses are controlled by the rule, if you leave the Source Port and/or Destination Port blank, it suggests that all Source Ports and/or Destination Ports are controlled by the rule.

3.2.5.2 MAC Filtering

The feature allows you to control access to the Internet by users on your local network based on their MAC address.

Select **Advanced Setup** > **Security** > **MAC Filtering**. The following page opens:

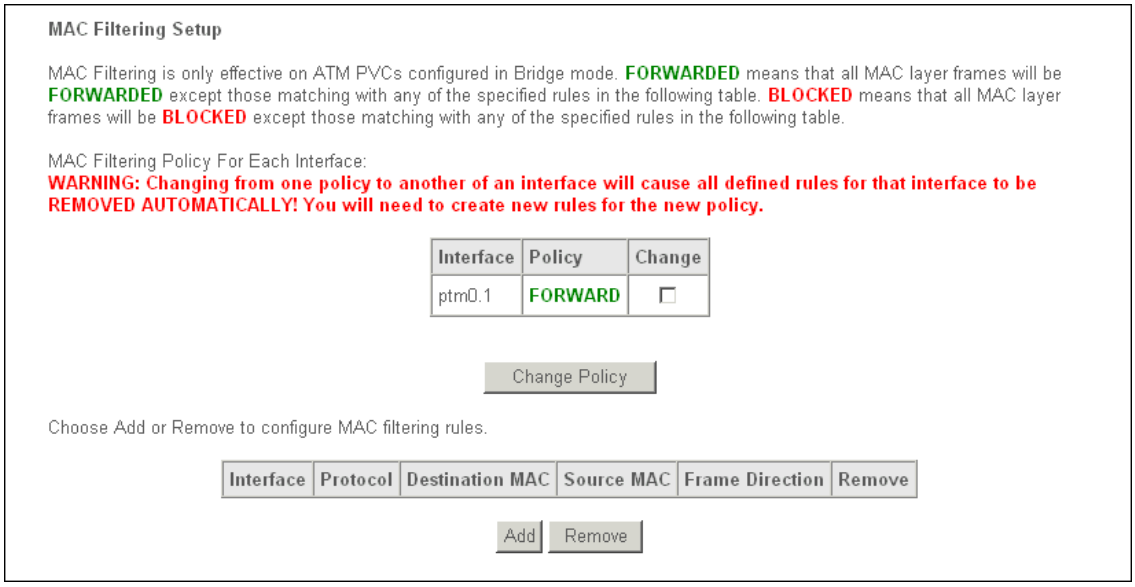


Figure 3-25: MAC Filtering Setup

- **Change Policy**: There are two policies for the MAC filters: FORWARDED and BLOCKED. Select the Change checkbox and click the Change Policy button to change from one policy to another. When you set FORWARDED, it means that all MAC layer frames will be forwarded except those matching with any of the specified rules in the table (shown in Figure 4-35). While BLOCKED means that all MAC layer frames will be blocked except those matching with any of the specified rules in the preceding table.
- **Add**: Click this button to add a new MAC filter.
- **Remove**: Click this button to remove a MAC filter.

3.2.5.2.1 Add MAC Filter

1. Select **Advanced Setup** > **Security** > **MAC Filtering** > **Add**. The following page opens:

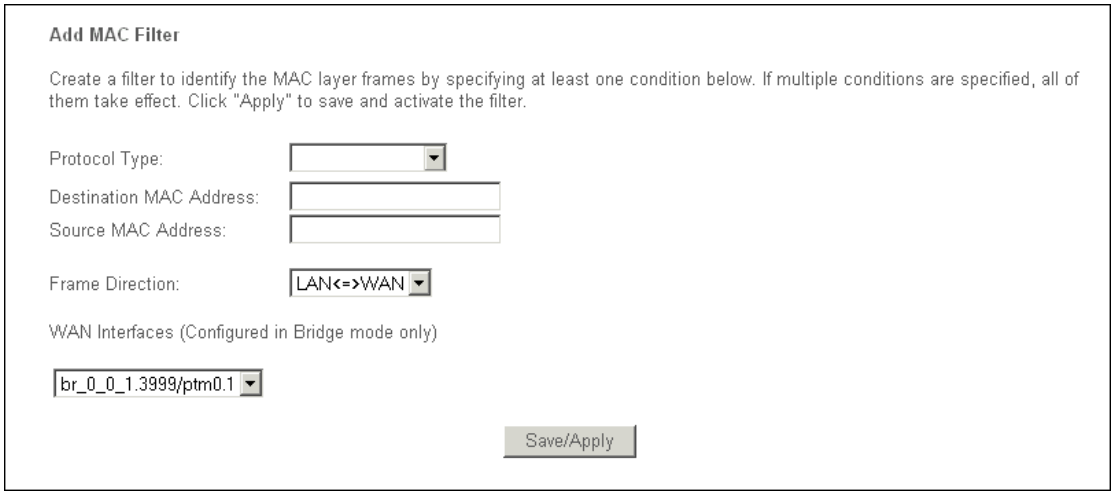


Figure 3-26: Add MAC Filter

2. Select **Protocol Type** in the drop-down list for the rule.
3. Enter **Destination MAC Address** and **Source MAC Address** in the fields.
4. Select **Frame Direction** in the drop-down list for the rule.
5. Select the WAN interfaces from the drop-down list.
6. Click **Save/Apply** to save this entry.

3.2.6 Parental Control

Parental Control feature provides the facility to block WAN side access from the specified internal PCs in your network for a specified duration as configured by the user (Parent or administrator).

Many parents want to have some control over the Internet access of their children's PCs. The Parental Control feature enables a time based controlling feature. It gives the control to the parents/administrators to control the traffic from different internal PCs connected to device.

You can configure **Time Restriction** and **URL Filter**.

3.2.6.1 Time Restriction

With time restriction you can add the time of the day to restrict access to a specific device connected to the router.

Select **Advanced Setup** > **Parental Control** > **Time Restriction**. The following page opens:

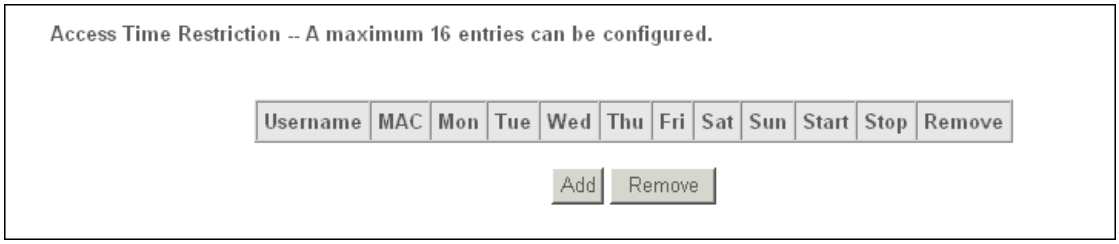


Figure 3-27: Access Time Restriction

- **Add**: Click this button to add a time restriction.
- **Remove**: Click this button to remove a time restriction.

3.2.6.1.1 Access Timer Restriction

1. Select **Advanced Setup** > **Parental Control** > **Time Restriction** > **Add**. The following page opens:

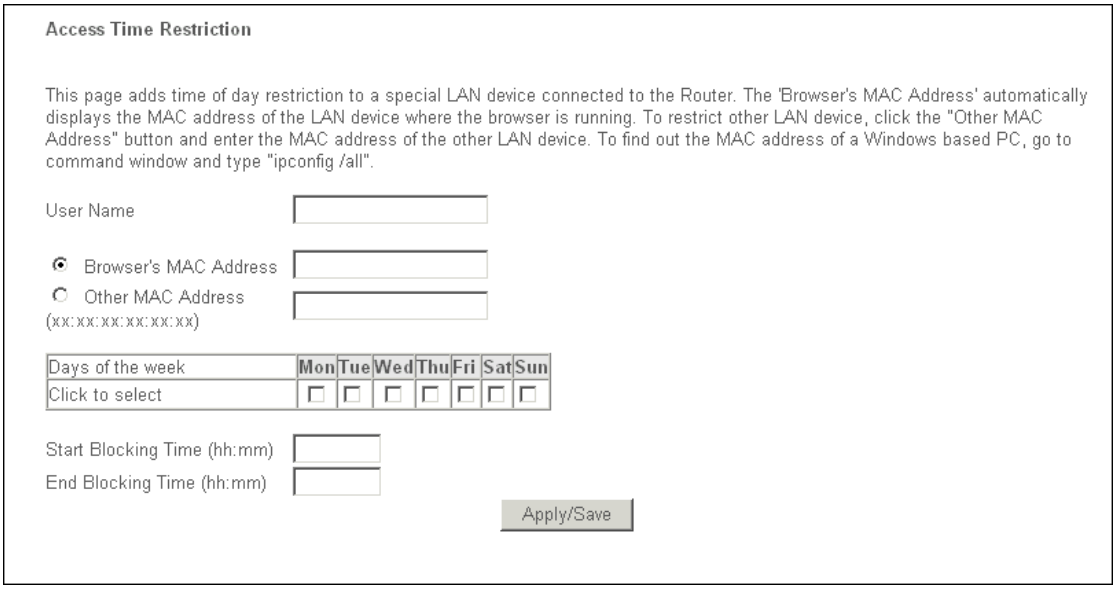


Figure 3-28: Add Access Time Restriction

2. Enter the **User Name** of the LAN device connected to the router.
3. To restrict the device where the browser is running, select the **Browser's MAC Address** radio button. The MAC address automatically displays in the text box. To restrict other LAN devices, click **Other MAC Address** radio button and enter the MAC address of the other LAN device.
4. Select the day to allow the rule to take effect.
5. Enter the **Start Blocking Time** and End Blocking Time in the fields. The device controlled will then be unable to connect to the internet during the specified time.
6. Click **Apply/Save** to save this entry.

Note: Before you configure time restriction, you must set the internet time (**Management** > **Internet Time**). Otherwise the time restriction will not work properly.

3.2.6.2 URL Filter

With URL filter you can configure the filter rules based on URL to control the computers in the LAN to access the specified port. You can use two policies:

- **Exclude**: Block the PCs to access the specified URL.
- **Include**: Only allow the PCs to access the specified URL.

Select Advanced Setup > **Parental Control** > **URL filter. The following page opens:**

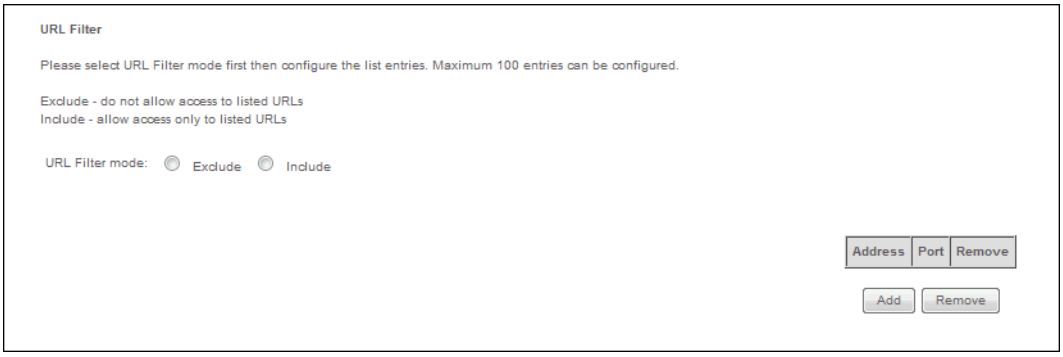


Figure 3-29: URL Filter

- **URL List Mode**:
  - **Exclude**: Select this option to block access to specified URLs.
  - **Include**: Select this option to only allow access to specified URLs.
- **Add**: Click this button to add an URL filter.
- **Remove**: Click this button to remove an URL filter.

3.2.6.2.1 Parental Control -- URL Filter Add

1. **Select Advanced Setup** > **Parental Control** > **URL filter** > **Add. The following page opens:**

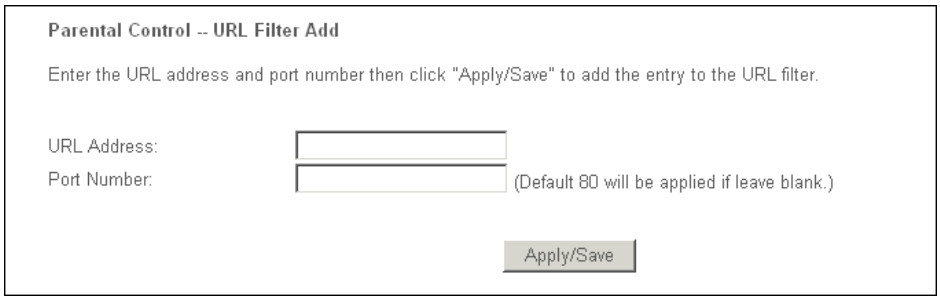


Figure 3-30: Add URL Filter

2. Enter the URL address and port number.
3. Click **Apply/Save** to save this entry.

3.2.7 Quality of Service

QoS helps to prioritize data as it enters your device. By attaching special identification marks or headers to incoming packets, QoS determines which queue the packets enter, based priority. This is useful when there are certain types of data you want to give higher priority, such as voice data packets will be given a higher priority than Web data packets. This option provides a better service of selected network traffic over various technologies.

Select **Advanced Setup** > **Quality of Service**. The following page opens:

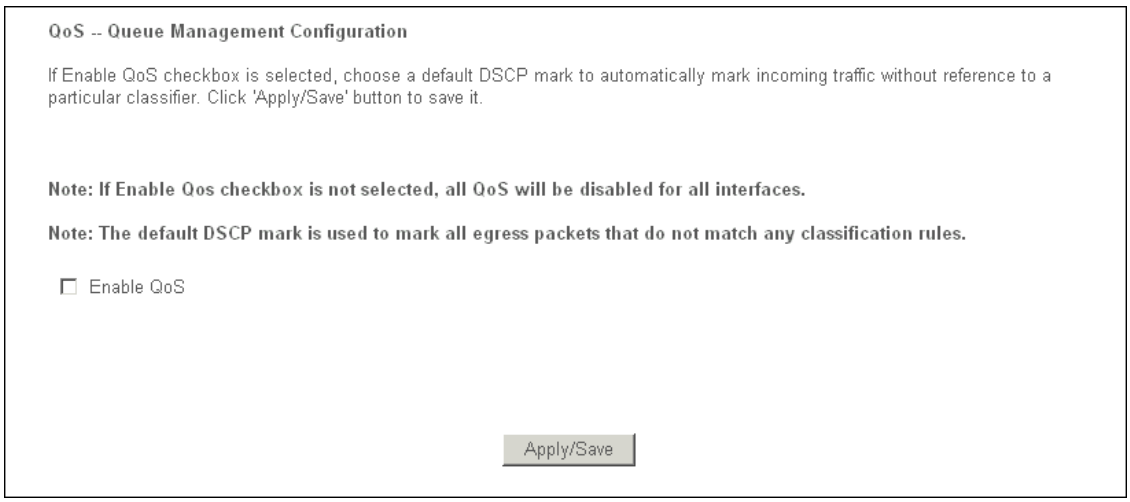


Figure 3-31: QoS Queue Management Configuration

- **Enable QoS**: Enable QoS for all interfaces.
- **Apply/Save**: Save the current settings.

3.2.7.1 QoS Queue Setup

Configure the QoS queues.

Select **Advanced Setup** > **Quality of Service** > **Queue Config**. The following page opens:

QoS Queue Setup

In ATM mode, maximum 16 queues can be configured.
In PTM mode, maximum 8 queues can be configured.
For each Ethernet interface, maximum 4 queues can be configured.
If you disable WMM function 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	Scheduler Alg	Precedence	Weight	DSL Latency	PTM Priority	Enable	Remove
WMM Voice Priority	1	wl0	SP	1				Enabled	
WMM Voice Priority	2	wl0	SP	2				Enabled	
WMM Video Priority	3	wl0	SP	3				Enabled	
WMM Video Priority	4	wl0	SP	4				Enabled	
WMM Best Effort	5	wl0	SP	5				Enabled	
WMM Background	6	wl0	SP	6				Enabled	
WMM Background	7	wl0	SP	7				Enabled	
WMM Best Effort	8	wl0	SP	8				Enabled	
Default Queue	34	ptm0	SP	8		Path0	Low	☐	

Add Enable Remove

Figure 3-32: QoS Queue Setup

- **Add**: Click this button to add a QoS queue.
- **Enable**: Click the checkbox in the Enable column and then this button to enable the specified queue.
- **Remove**: Click the checkbox in the Remove column and then this button to remove the specified queue.

3.2.7.1.1 QoS Queue Configuration

Configure a QoS queue and assign it to a specific layer2 interface.

1. Select **Advanced Setup** > **Quality of Service** > **Queue Config** > **Add**. The following page opens:

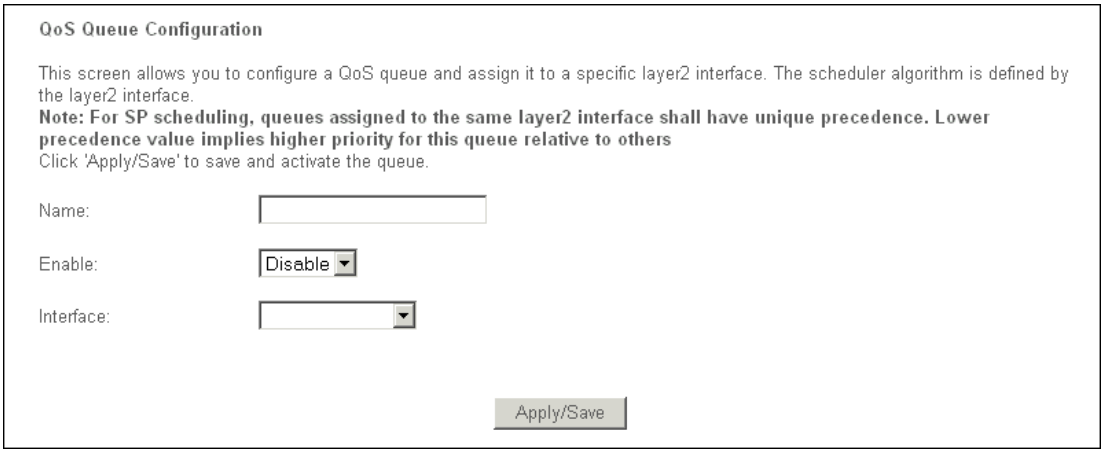


Figure 3-33: QoS Queue Configuration

2. Enter the **Name** of the queues.
3. To enable the queue, select **Enable**.
4. In the **Interface** drop-down list select the interface to assign the queue to.
5. Click **Apply/Save** to save the entry.

3.2.7.2 QoS Classification

In this page you can create a traffic class rule to classify the upstream traffic, assign queue which defines the precedence and the interface, and optionally overwrite the IP header DSCP byte.

A rule consists of a class name and at least one condition. All of the specified conditions in this classification rule must be fulfilled for the rule to take effect.

Select **Advanced Setup** > **Quality of Service** > **QoS Classification**. The following page opens:

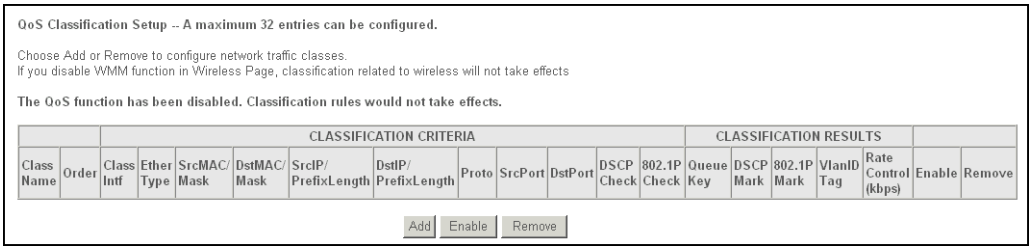


Figure 3-34: QoS Classification Setup

- **Add**: Click this button to add a network traffic class rule.
- **Enable**: Click this button to enable a selected network traffic class rule.
- **Remove**: Click this button to remove a network traffic class rule.

3.2.7.2.1 Add Network Traffic Class Rule

1. Select **Advanced Setup** > **Quality of Service** > **QoS Classification** > **Add**. The following page opens.

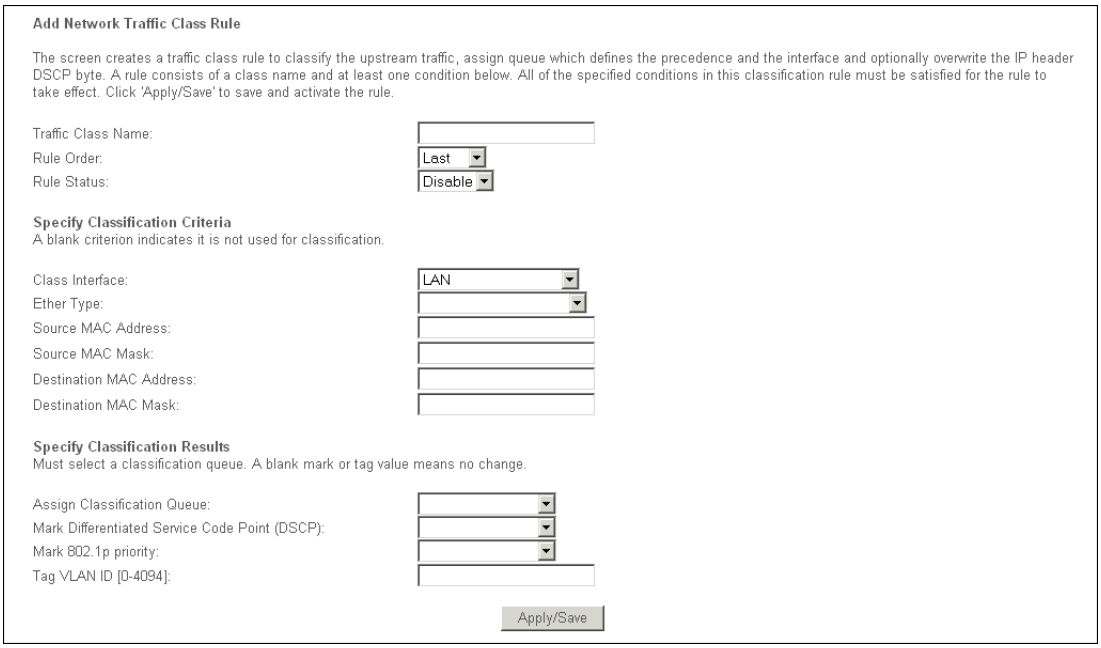


Figure 3-35: Add Network Traffic Class Rule

2. After you specify the conditions, click **Apply/Save** to save the entry.

3.2.8 Routing

You can configure:

- **Default Gateway** - configure the default gateway used by the WAN interface
- **Static Route** - manually configure any specific routes
- **Policy Routing** - cofingure the routing based on policies
- **RIP** - configure the routing information protocol (RIP).

3.2.8.1 Default Gateway

Default gateway interface list can have multiple 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 the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

Select **Advanced Setup** > **Routing** > **Default Gateway**. The following page opens:

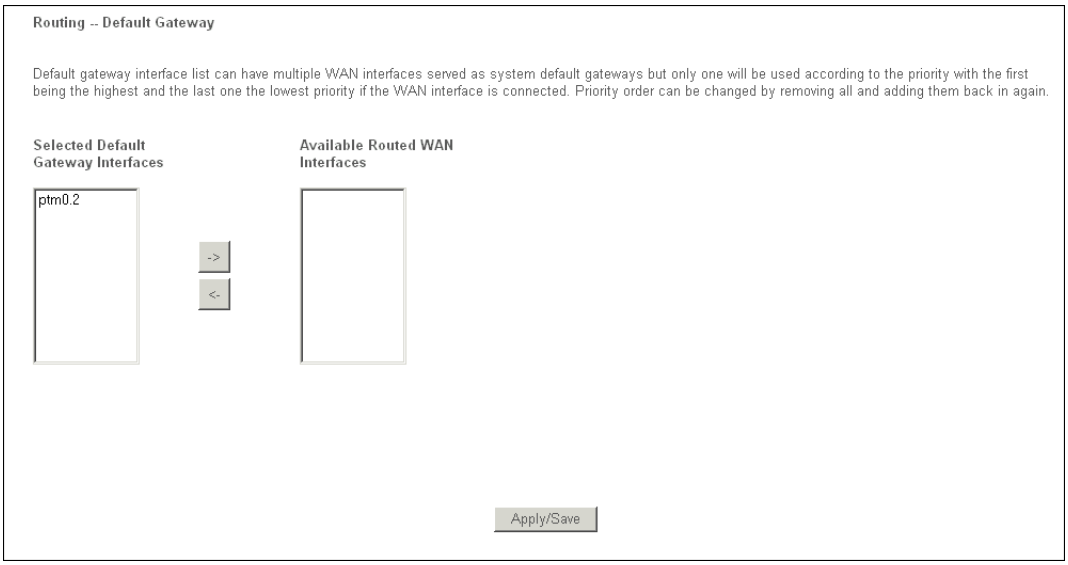


Figure 3-36: Routing - Default Gateway

- **Selected Default Gateway Interfaces**: A list of selected default gateway interfaces.
- **Available Routed WAN Interfaces**: A list of available routed WAN interfaces.
- **Apply/Save**: Click this button to save the settings.

3.2.8.2 Static Route

Configure the static routes - a pre-determined path that network information must travel to reach a specific host or network.

Select **Advanced Setup** > **Routing** > **Static Route**. The following page opens:

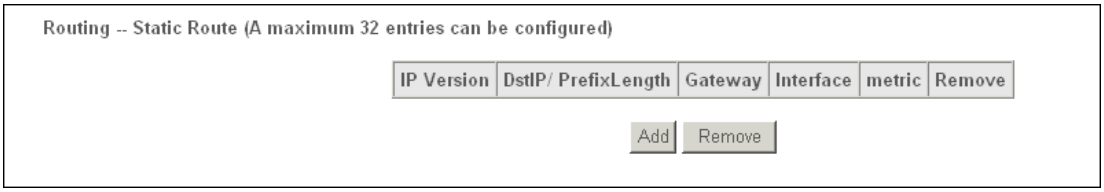


Figure 3-37: Routing - Static Route

- **Add**: Click this button to add a static route.
- **Remove**: Click this button to remove a static route.

3.2.8.2.1 Routing -- Static Route Add

Select **Advanced Setup** > **Routing** > **Static Route** > **Add**. The following page opens:

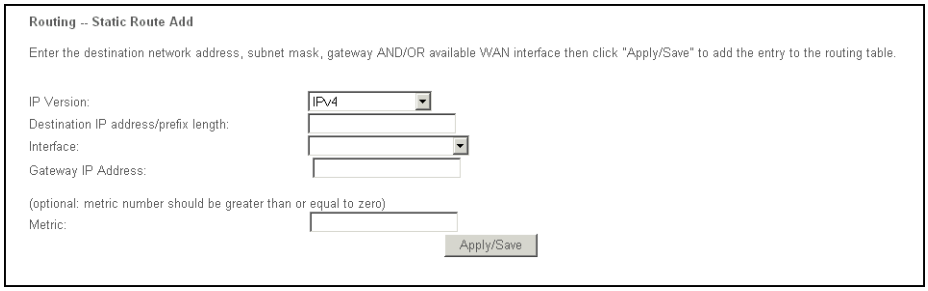


Figure 3-38: Routing - Static Route Add

- **Destination IP address**: The destination IP address is the address of the network or host that you want to assign to a static route.
- **Interface**: Select the interface name in the text box, or else, the default Interface will be adopted for the static route.
- **Gateway IP Address**: Enter the default gateway IP address for the static route.

3. **Apply/Save**: Click this button to save the settings.

3.2.8.3 Policy Routing

Select **Advanced Setup** > **Routing** > **Policy Route**. The following page opens:

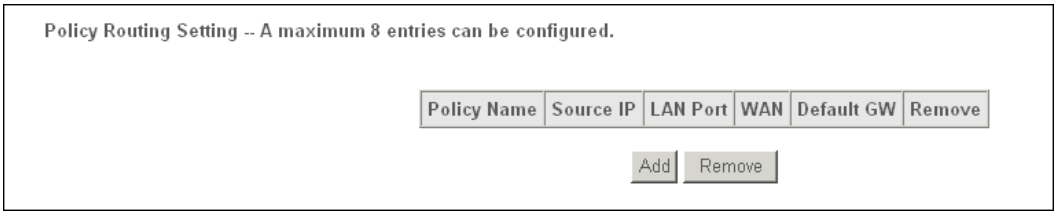


Figure 3-39: Policy Routing Setting

- **Add**: Click this button to add a policy route. Yo can add up to 8 policy routes.
- **Remove**: Click this button to remove a policy route.

3.2.8.3.1 Policy Routing Setup

1. Select **Advanced Setup** > **Routing** > **Policy Route** > **Add**. The following page opens:

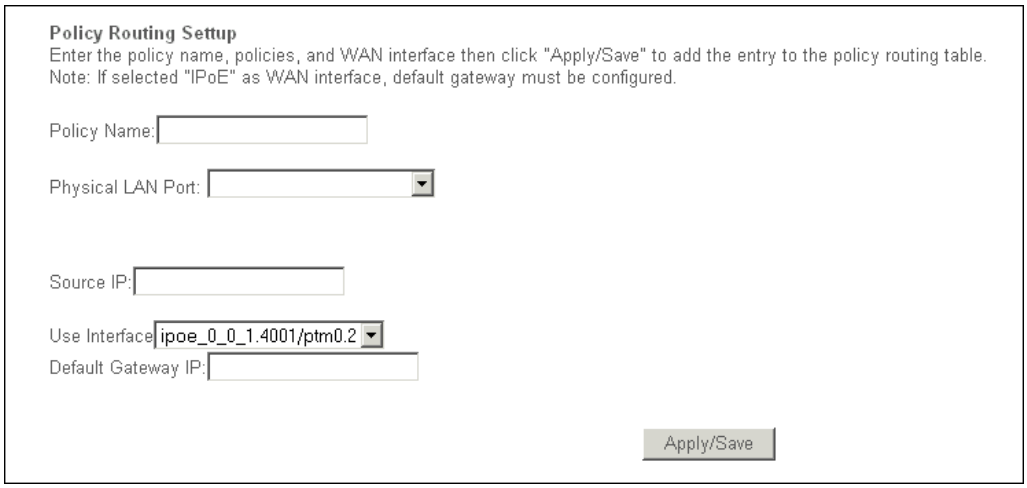


Figure 3-40: Policy Routing Setup

2. Enter the policy name, policies and WAN interface.
3. Click **Apply/Save** to add the entry to the policy routing table.

3.2.8.4 RIP

Routing Information Protocol (RIP) is a process of moving a packet from one node to another by forwarding the packet to the next router. It determines a route based on the smallest hop count between source and destination routers.

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

Select **Advanced Setup** > **Routing** > **RIP** The following page opens:

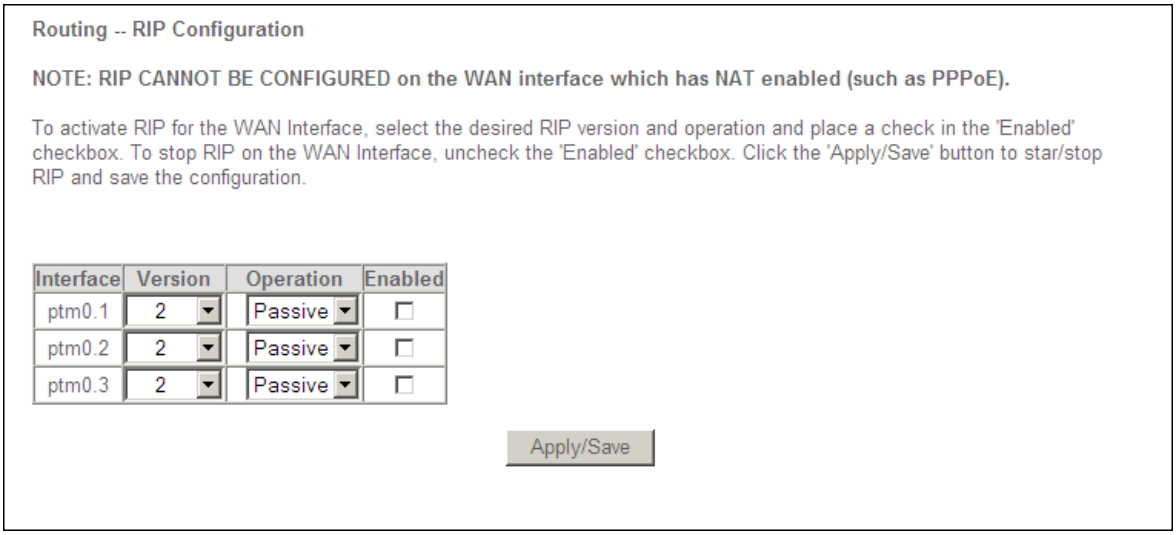


Figure 3-41: Routing - RIP Configuration

- **Enabled**: Click the checkbox to enable RIP for the selected interface, version and operation.
- **Apply/Save**: Save the settings.

3.2.9 DNS

You can configure a DNS server and Dynamic DNS in this page.

3.2.9.1 DNS Server

Select **Advanced Setup** > **DNS** > **DNS Server**. The following page opens:

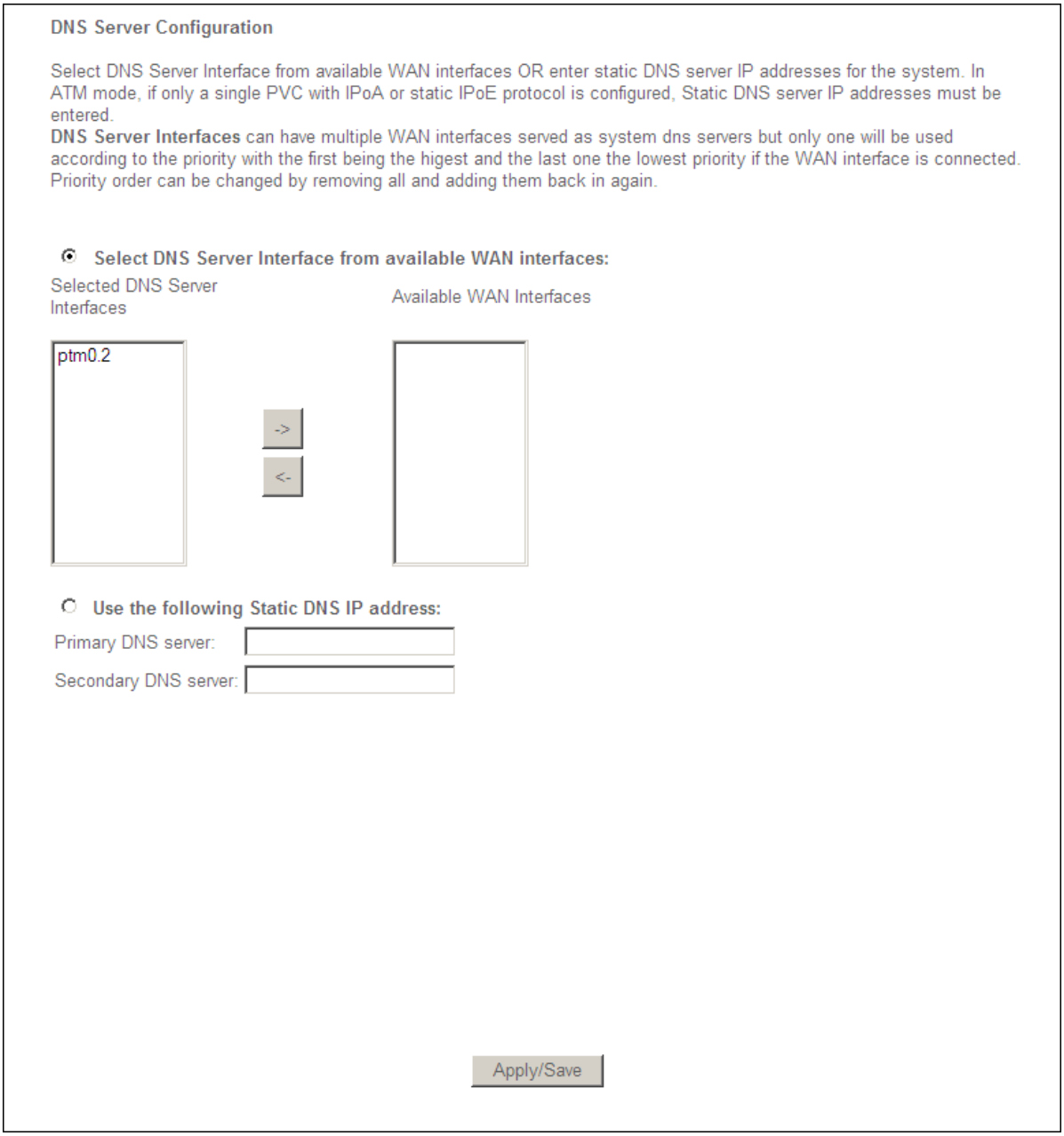


Figure 3-42: DNS Server Configuration

- Select DNS Server Interface from available WAN interfaces: DNS Server Interfaces can have multiple WAN interfaces served as system DNS servers but only one will be used according to the priority with the first being the highest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.
- **Use the following Static DNS IP address**: Enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.
- **Apply/Save**: Save the new settings.

3.2.9.2 Dynamic DNS

Dynamic Domain Name System (DDNS) lets you assign a fixed host and domain name to a dynamic Internet IP Address. The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname in any of the many domains, allowing your device to be more easily accessed from various locations on the Internet.

Select **Advanced Setup** > **DNS** > **Dynamic DNS**. The following page opens:

.

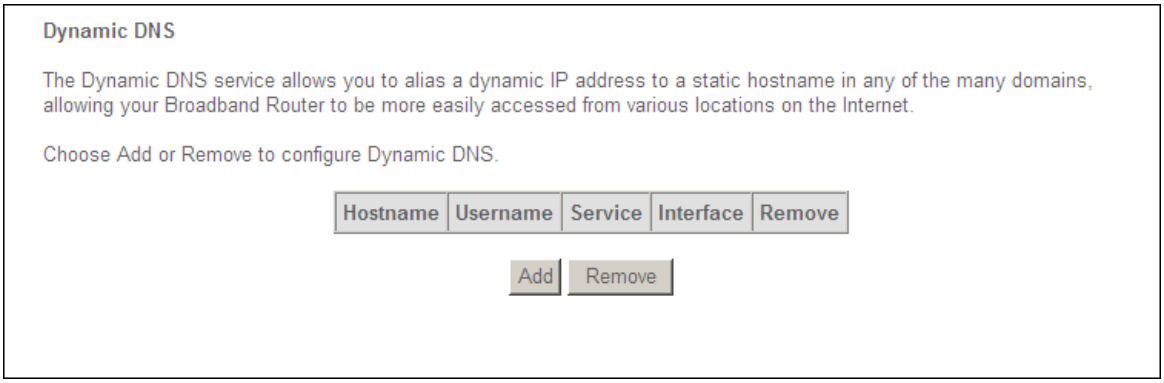


Figure 3-43: Dynamic DNS

- **Add**: Click this button to configure a Dynamic DNS.
- **Remove**: Click this button to remove a Dynamic DNS configuration.

3.2.9.2.1 Add Dynamic DNS

1. Select **Advanced Setup** > **DNS** > **Dynamic DNS** > **Add**. The following page opens:

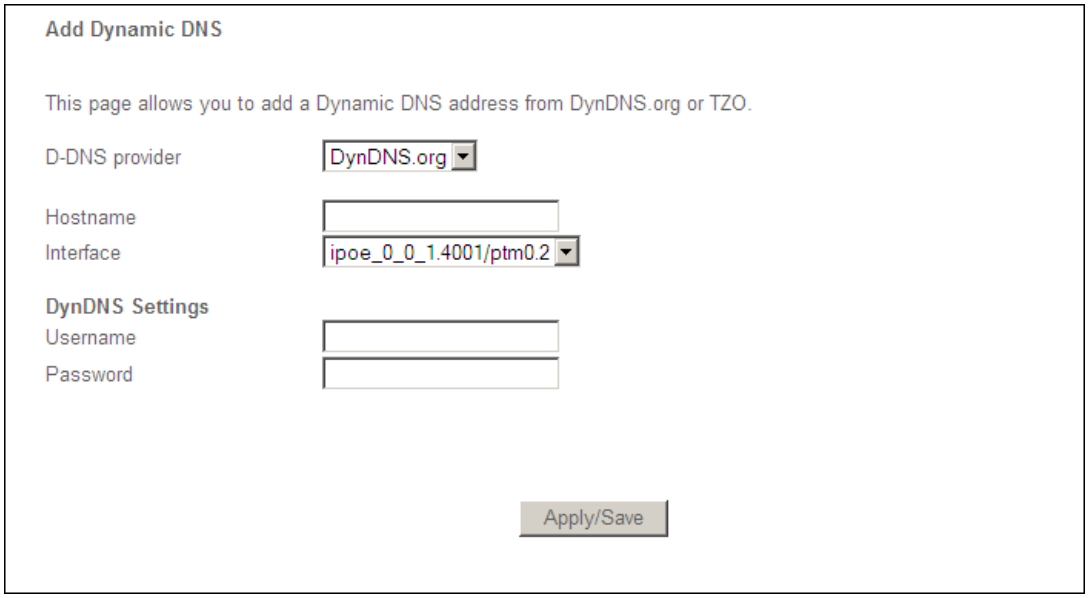


Figure 3-44: Add Dynamic DNS

2. Select **D-DNS provider** in the drop-down list.
3. Enter the **Hostname** of the DNS Server, and select the corresponding Interface for the DDNS.
4. Type the user name and password for your DDNS account.
5. Click **Apply/Save** to save the entry.

3.2.10 DSL

Configure the modulation type, phone line pair and the capability of Bitswap or SRA. To

Select **Advanced Setup** > **DSL**. The following page opens:

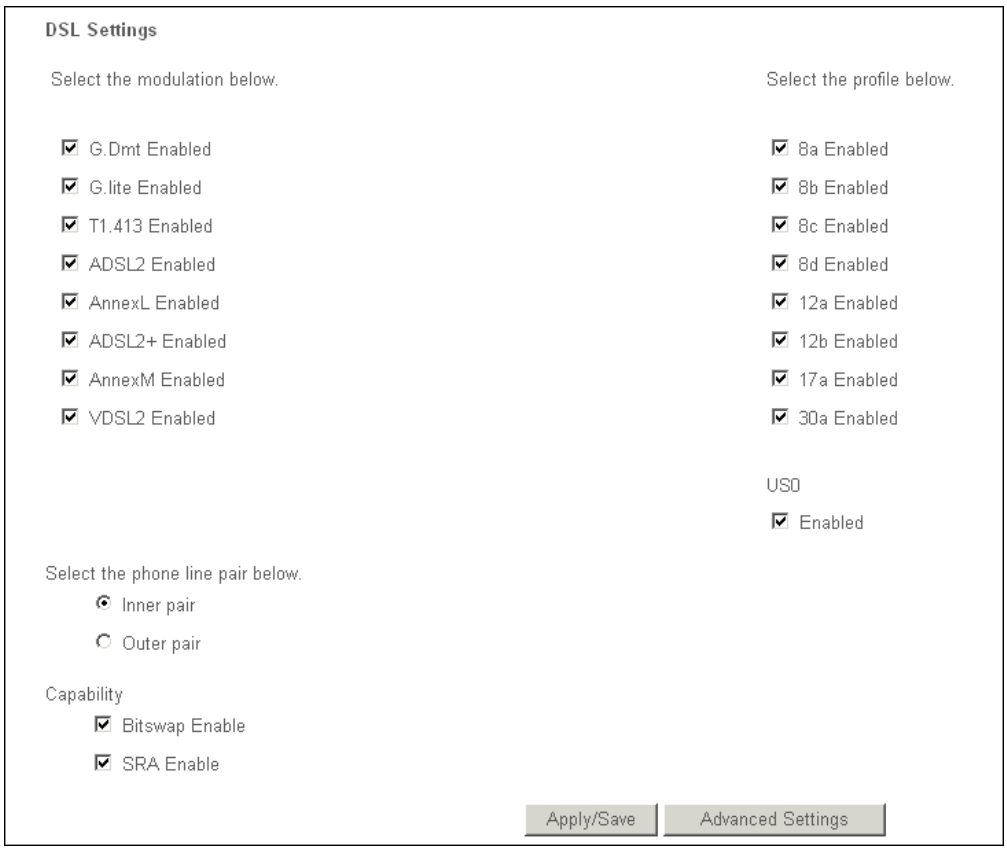


Figure 3-45: DSL Settings

- **Advanced Settings**: Click this button to open the Advanced settings page. Select the test mode: normal, reverb, medley, no retrain, and L3.

Figure 3-46: DSL Advanced Settings

- **Apply**: Save the settings.
- **Tone Selection**: Click this button to open the Tone settings page:

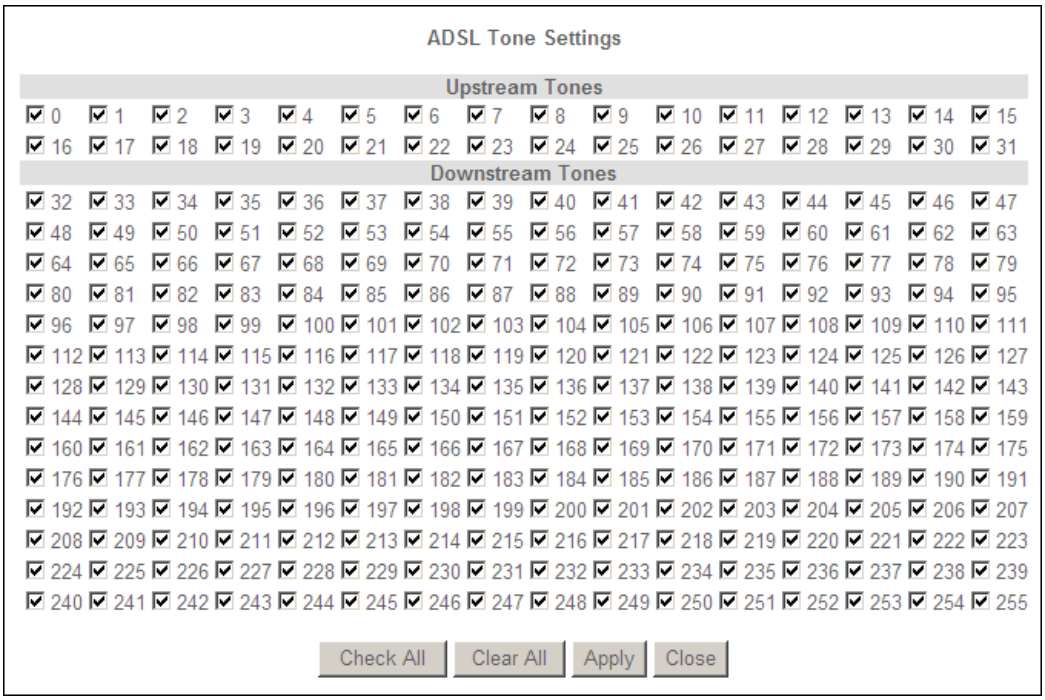


Figure 3-47: DSL Tone Settings

The frequency band of DSL is split into 256 separate tones, each spaced 4.3125 kHz apart. Each tone carries separate data, so the device operates as if 256 separate devices were running in parallel. The tone range is from 0 to 31 for upstream and from 32 to 255 for downstream. Do not change these settings unless directed by your ISP.

3.2.11 UPnP

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

Select **Advanced Setup** > **UPnP**. The following page opens:

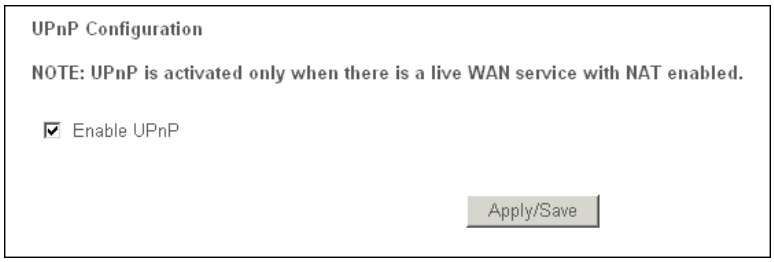


Figure 3-48: UPnP Configuration

- **Enable UPnP**: Select the checkbox to enable UPnP.
- **Apply/Save**: Save the settings.

3.2.12 DNS Proxy

Enable or disable DNS proxy.

Select **Advanced Setup** > **DNS Proxy**. The following page opens:

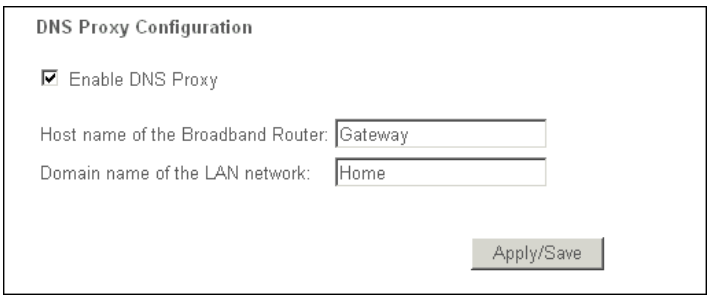


Figure 3-49: DNS Proxy Configuration

- **Host name of the Broadband router**: Enter the hostname of the device (router)
- **Domain name of the LAN network**: Enter the domain name of LAN.
- **Apply/Save**: Save the settings.

3.2.13 Interface Grouping

You can configure multiple ports to PVC and bridging groups to perform as an independent network.

Select **Advanced Setup** > **Interface Grouping**. The following page opens:

Figure 3-50: Interface Grouping

- **Add**: Click this button to create mapping groups with appropriate LAN and WAN interfaces.
- **Remove**: Click this button to remove the grouping and add the ungrouped interfaces to the Default group. Only the default group has IP interface.

3.2.13.1 Interface Grouping Configuration

1. Select **Advanced Setup** > **Interface Grouping** > **Add**. The following page opens:

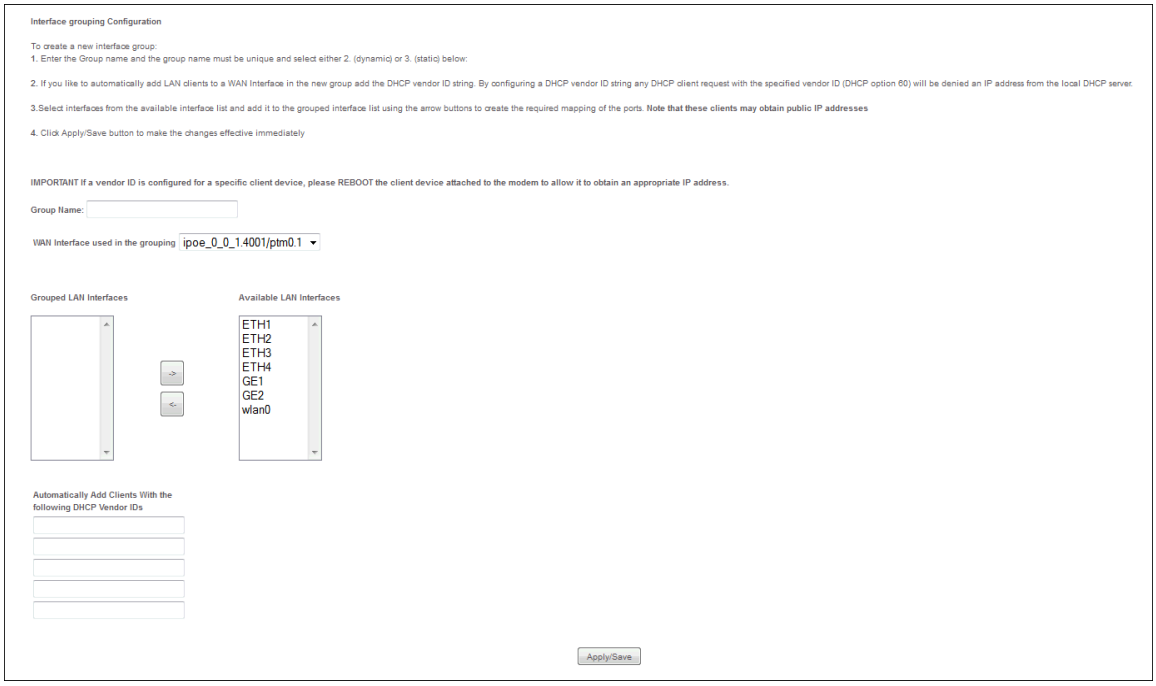


Figure 3-51: Interface Grouping Configuration

2. Enter a unique name for **Group Name**.
3. Select the interface which you want to use from the drop-down list.

Note: If you want to automatically add LAN clients to a WAN Interface in the new group, add the DHCP vendor ID string. By configuring a DHCP vendor ID string any DHCP client request with the specified vendor ID (DHCP option 60) will be denied an IP address from the local DHCP server.

4. Select interfaces from the available interface list and add it to the grouped interface list using the arrow buttons to create the required mapping of the ports.

Note: These clients may obtain public IP addresses.

5. Click **Save/Apply** to make the entry effective immediately.

Note: If a vendor ID is configured for a specific client device, REBOOT the client device attached to the modem to allow it to obtain an appropriate IP address.

3.2.14 Port Configuration

You can specify how the local ports of device are used.

Select **Advanced Setup** > **Port Configuration**. The following page opens:

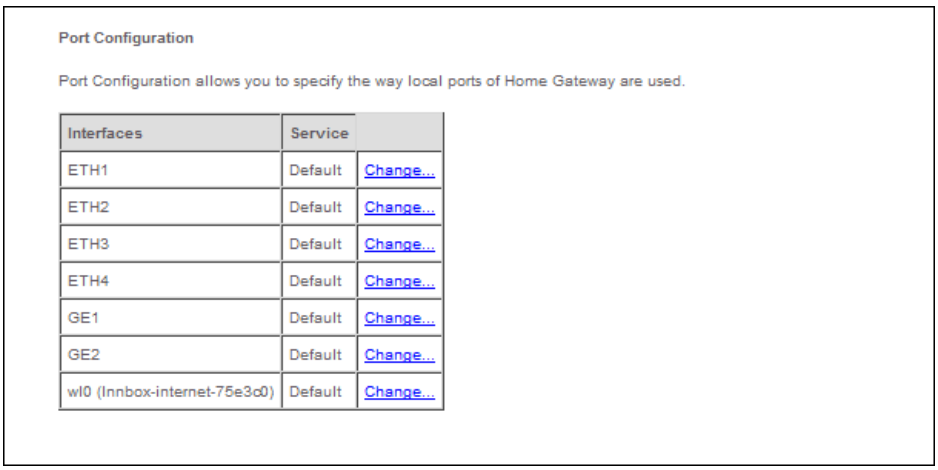


Figure 3-52: Port Configuration

- To change the service for interface click **Change...**. A new page opens:

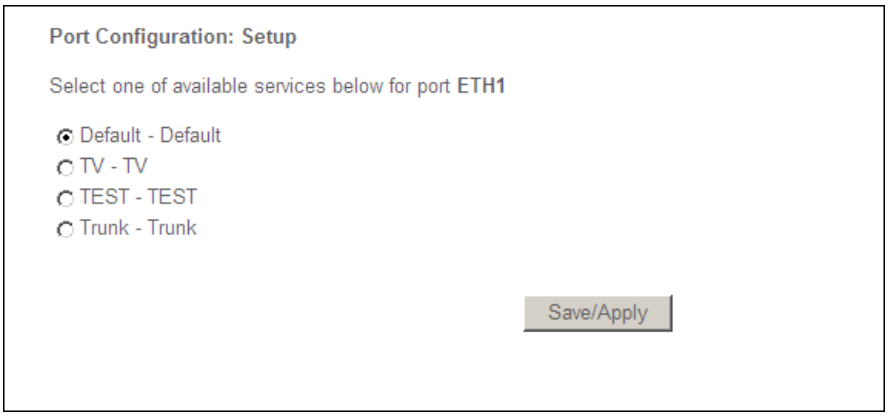


Figure 3-53: Port Configuration - Setup

- Select one of available services and click **Save/Apply**.

3.2.15 Multicast

Internet Protocol (IP) multicast is a routing technique that allows IP traffic to be sent from one source or multiple sources and delivered to multiple destinations. On the local network, multicast delivery is controlled by Internet Group Management Protocol (IGMP).

To modify default values of IGMP protocol configuration, select **Advanced Setup** > **Multicast**. The following page opens:

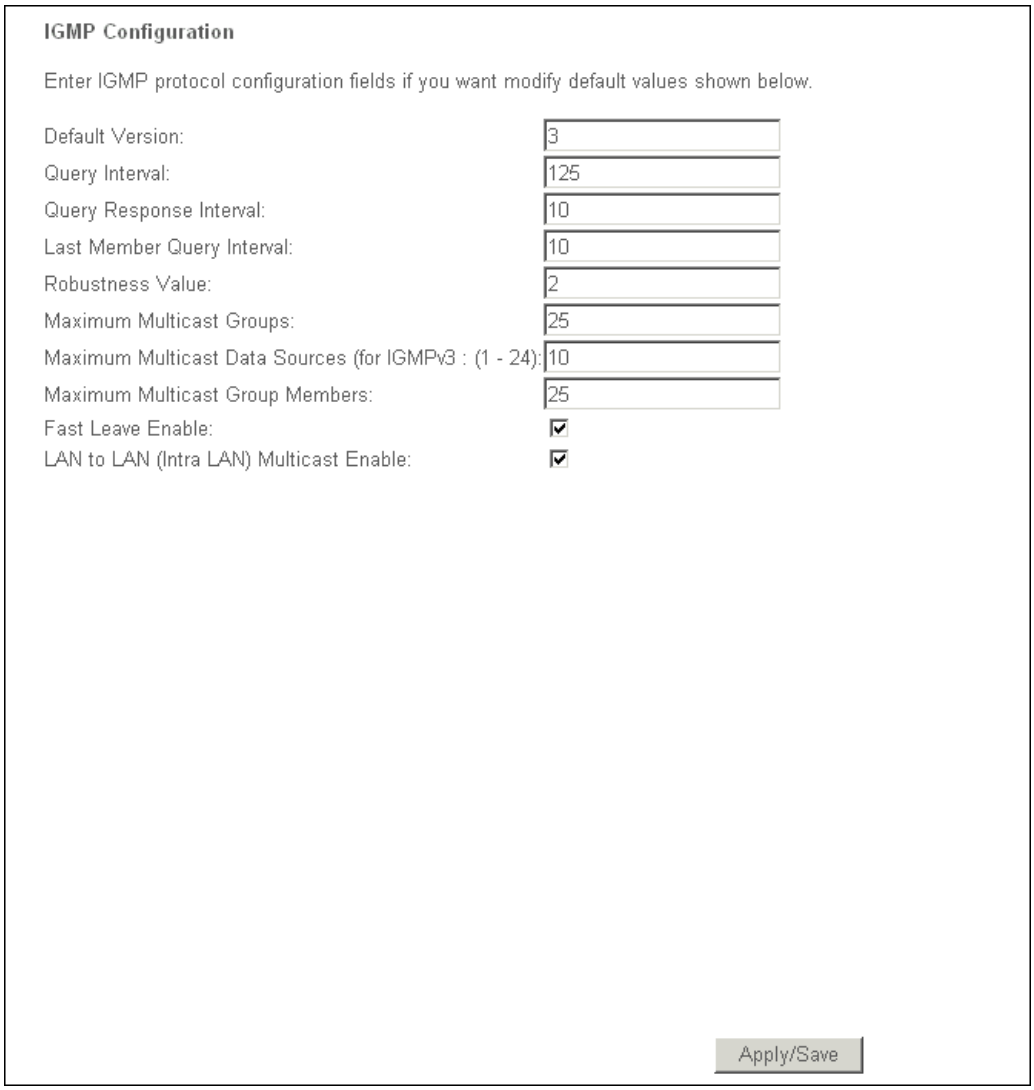


Figure 3-54: IGMP Configuration

Modify values and confirm the settings by clicking **Apply/Save**.

3.3 Wireless

Select Wireless. Click any of the submenus to configure the corresponding function of the wireless network: Basic, Security, MAC Filter, Wireless Bridge, Advanced and Station Info.

3.3.1 Basic

Select **Wireless** > **Basic**. The following page opens:

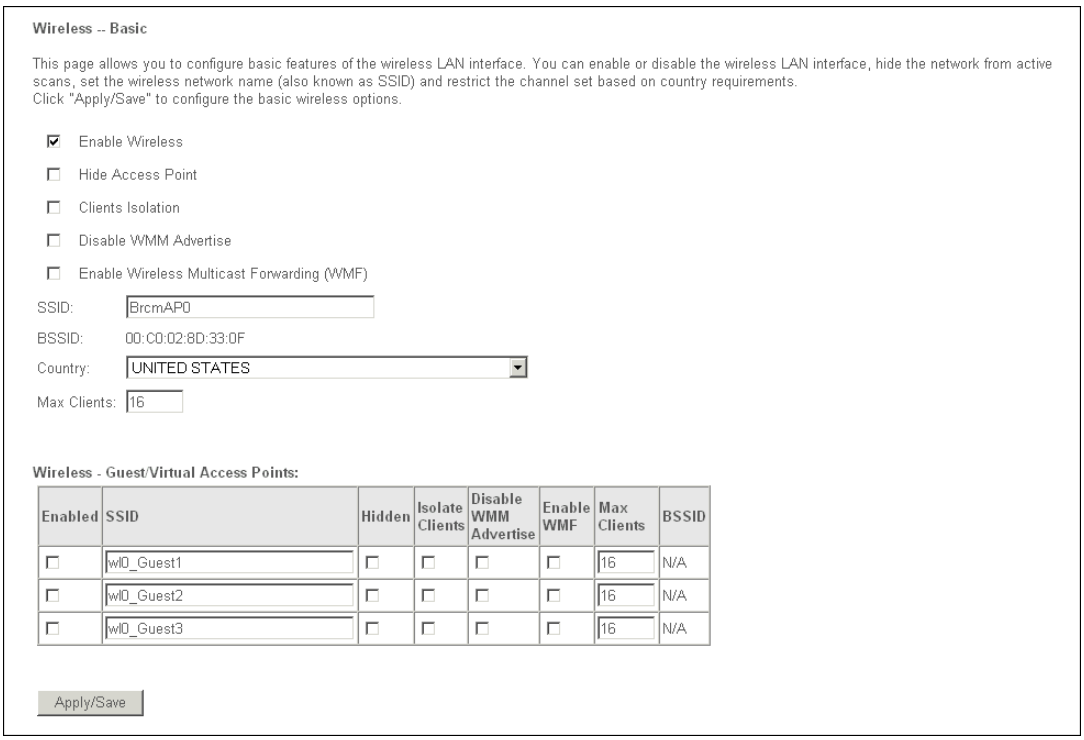


Figure 3-55: Wireless - Basic

- **Enable Wireless**: Enable or disable wireless connection.
- **Hide Access Point**: Check this box if you want to hide any access point for your device, so a station cannot obtain the SSID through passive scanning.
- **Clients Isolation**: When many clients connect to the same access point, they can access each other. Check this box to disable the access among clients which connect to the same access point.
- **Disable WMM Advertise**: WMM (wi-fi multimedia) provides high-performance multimedia voice and video data transfers. Select the checkbox to disable WMM.
- **SSID**: The SSID (Service Set Identification) is the unique name shared among all devices in a wireless network. The SSID must be identical for all devices in the wireless network.
- **Country**: The channel will adjust according to nations to adapt to each nation's frequency provision.
- **Max Clients**: Specifies maximum wireless client stations to connect to access point. Once the clients exceed the max value, all other clients are refused. The maximum value is 16.
- **Wireless - Guest/Virtual Access Points**: If you want to make Guest/Virtual network function available, check the **Enabled** box in the table of access points.
- **Apply/Save**: Save the current settings.

3.3.2 Security

You can configure security features of the wireless LAN interface in this page.

1. Select **Wireless** > **Security**. The **Wireless--Security** page opens.

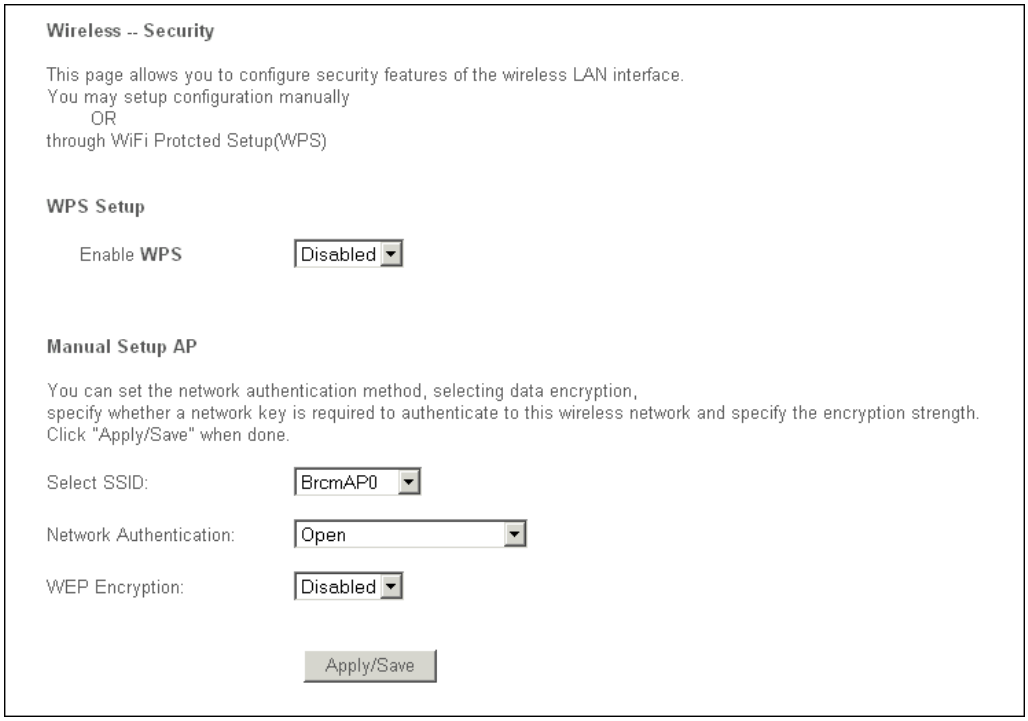


Figure 3-56: Wireless Security Configuration

You may setup security configuration manually or through Wi-Fi Protected Setup (WPS).

Note: Using WEP network authentication is not recommended because it does not offer reliable security. It should be used only when connecting older wireless clients that have compatibility issues with other network authentication methods.

3.3.2.1 Manual Setup AP

You can set the network authentcation method, select data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength.

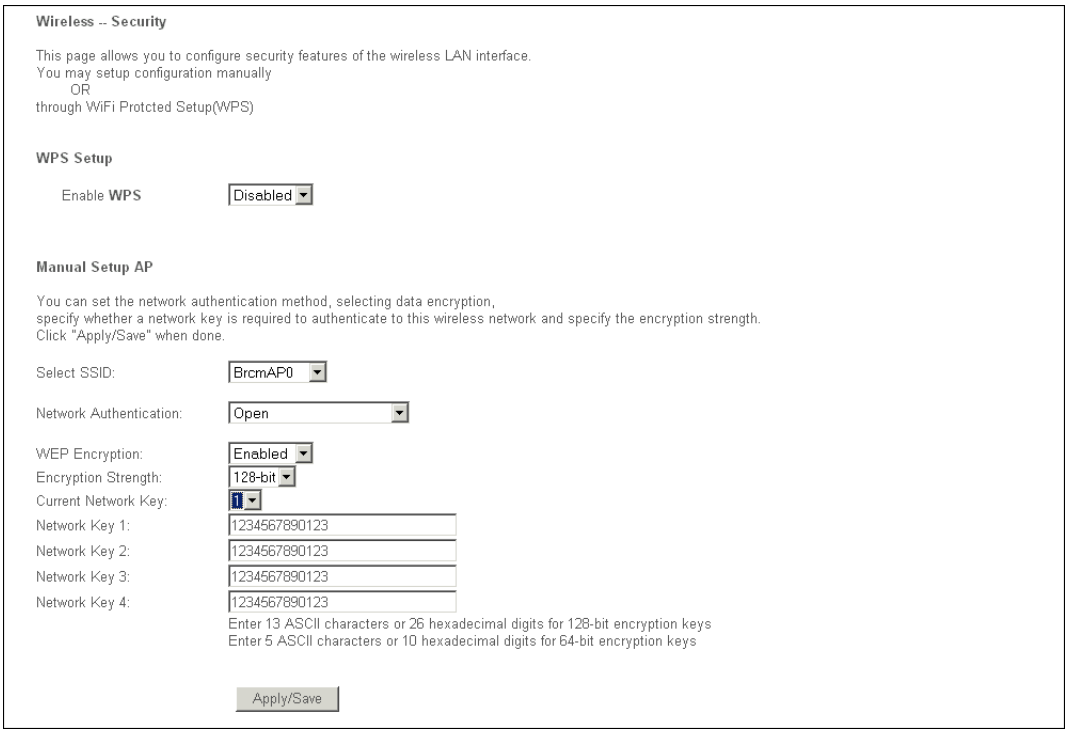


Figure 3-57: Manual Setup AP - Open

1. In the **Select SSID** field, select your wireless network name from a drop-down list.
2. In the **Network Authentication** field you can select encryption for wireless network from a drop-down list. Options avaiable are: Open, Shared, 802.1X, WPA, WPA-PSK, WPA2, WPA2-PSK, Mixed WPA2/ WPA and Mixed WPA2/WPA-PSK..

Note: For most users, it is recommended to use default Wireless LAN performace settings. Any changes made to these settings may adversely affect your wireless network.

3.3.2.1.1 WEP

WEP is a basic encryption method offering two levels of encryption, 64-bit and 128-bit encryption. To configure the WEP encryption, there are three ways:

- Keep the Network Authentication of **Open** and select **Enable** from the WEP Encryption drop-down list (shown in 3-57). **Open** allows any wireless station to associate with the access point.
- Select **Shared** from the Network authentication drop-down list as shown in 3-58. **Shared** only allows stations using a shared key encryption to associate with it. Shared key requires additional configuration of the key to be used.
- Select **802.1X** from the Network authentication drop-down list as shown in 3-59. **802.1X** allowing a user to be authenticated by a central authority.

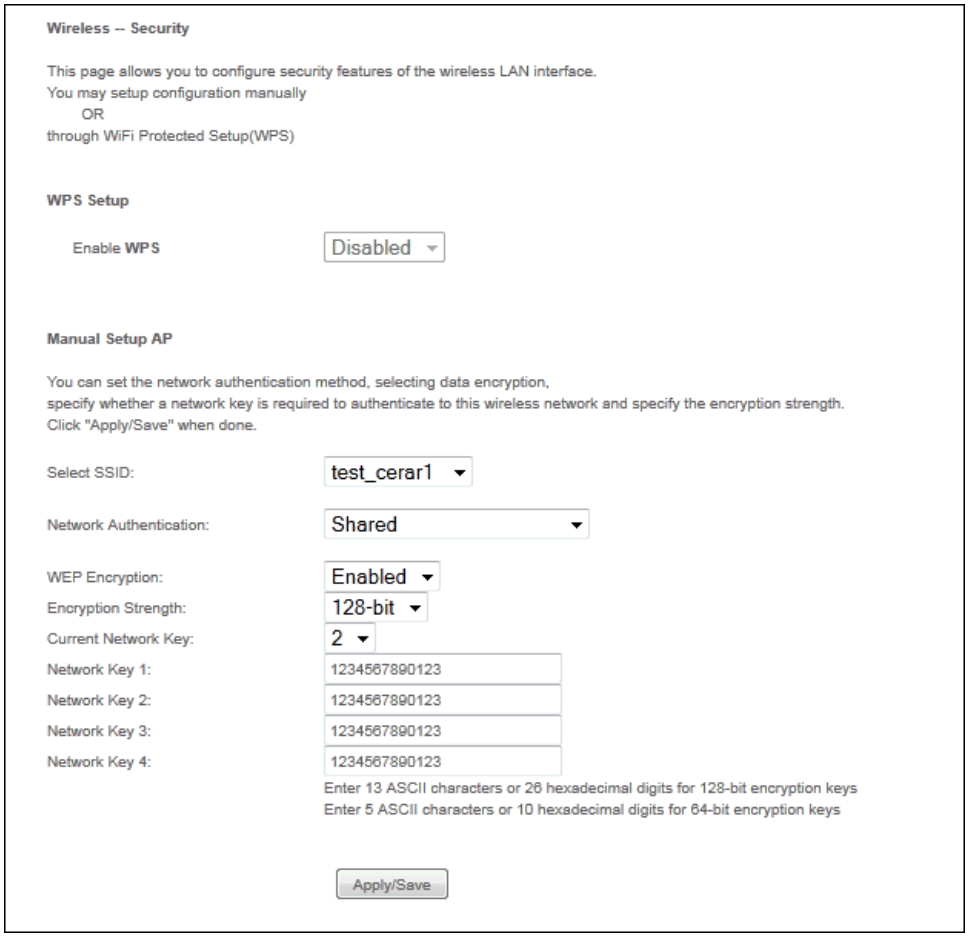


Figure 3-58: Manual Setup AP - Shared

- **Encryption Strenght**: Select the appropiate level of encryption, 64-bit or 128-bit.
- **Current Network Key**: To indicate which WEP key to use, select a transmission key number.
- **Network Key 1-4**: If you want to manually enter the WEP keys, then enter the network key in the Network Key 1-4 fields.
- **Apply/Save**: Save the current settings.

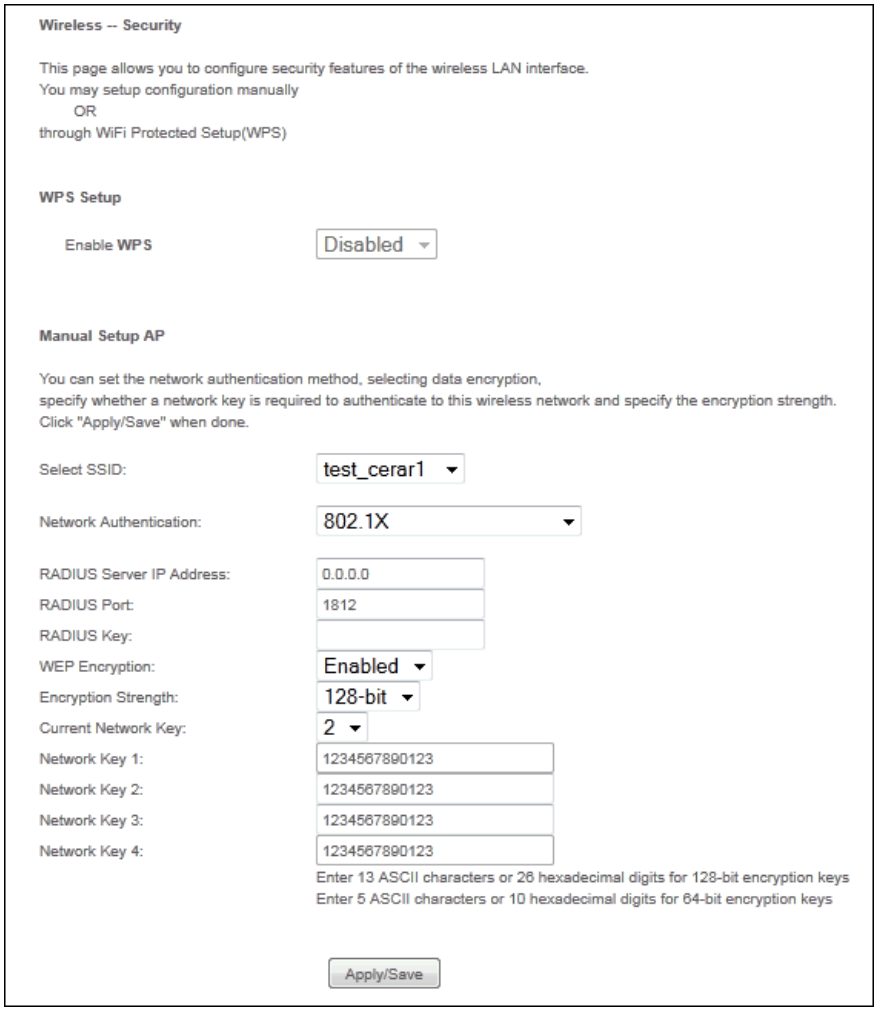


Figure 3-59: Manual Setup AP - X802.1X

- **RADIUS Server IP Address**: The IP address of the RADIUS server.
- **RADIUS Port**: The port of the RADIUS server. The default number is 1812.
- **RADIUS key**: The password of the RADIUS server.
- **Encryption Strenght**: Select the appropiate level of encryption, 64-bit or 128-bit.
- **Current Network Key**: To indicate which WEP key to use, select a transmission key number.
- **Network Key 1-4**: If you want to manualy enter the WEP keys, then enter the network key in the Network Key 1-4 fields.
- **Apply/Save**: Save the current settings.

3.3.2.1.2 WPA

WPA security for wireless communication has been developed to overcome some of the shortcomings of WEP. WPA combines generation with the authentication services of a RADIUS server.

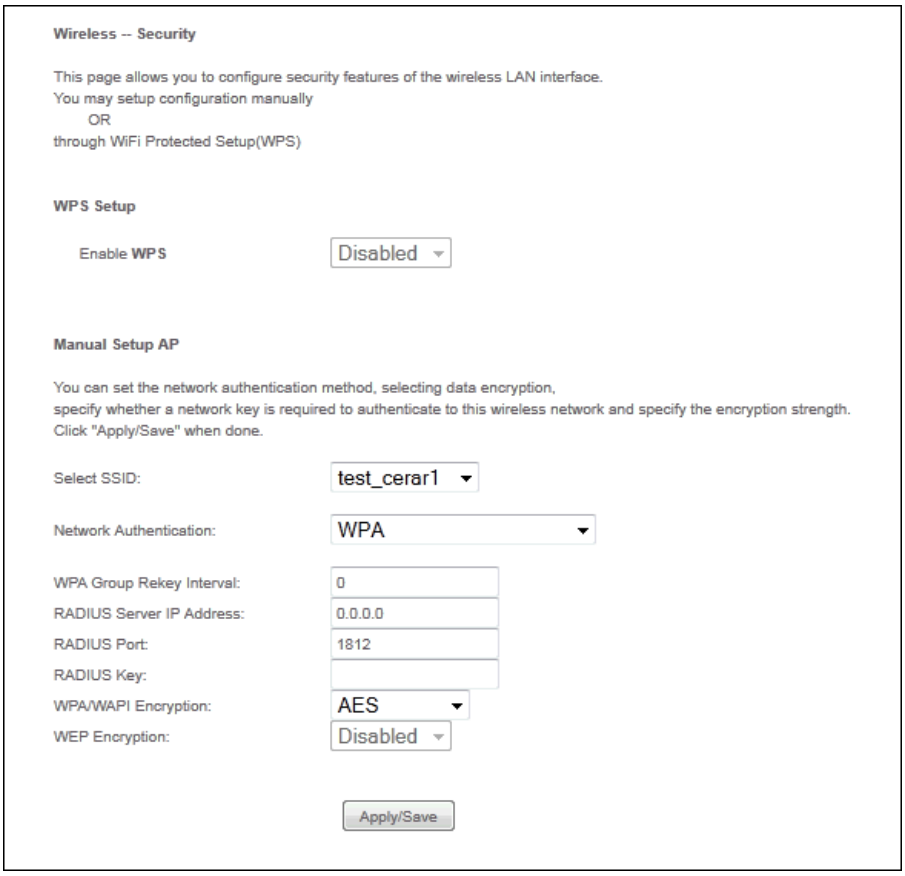


Figure 3-60: Manual Setup AP - WPA

- **WPA Group ReKey Interval**: Enter the Key Renewal period, which tells the home gateway how often it should change encryption keys.
- **RADIUS Server IP Address**: The IP address of the RADIUS server.
- **RADIUS Port**: The port of the RADIUS server. The default number is 1812.
- **RADIUS key**: The password of the RADIUS server.
- **WPA/WAPI Encryption**: Select the encryption you want to use: AES or TPIK+AES.
- **Apply/Save**: Save the current settings.

3.3.2.1.3 WPA-PSK

WPA-PSK requires a shared key and does not use a separated server for authentication. PSK keys can be ASCII or Hex type.

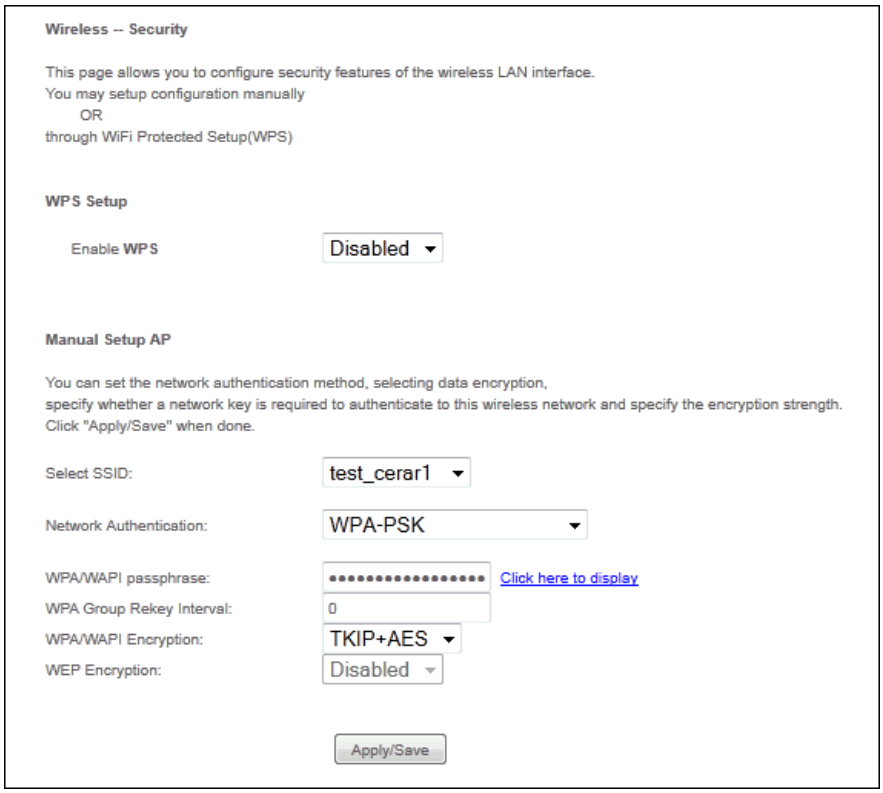


Figure 3-61: Manual Setup AP - WPA-PSK

- **WPA/WAPI passphrase**: Enter the key shared by the home gateway and your other network devices. It must have 8-63 ASCII characters or 64 Hexadecimal digits.
- If you click the option "**Click here to display**" the Figure 2-61 will pop-up. and it shows the password you have set.

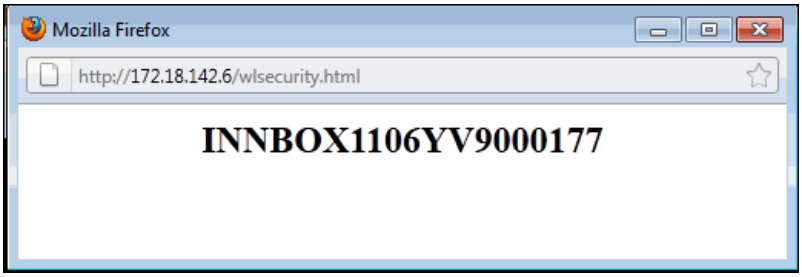


Figure 3-62: Displayed password for WPA-PSK

- **WPA Group ReKey Interval**: Enter the Key Renewal period, which tells the home gateway how often it should change encryption keys.
- **WPA/WAPI Encryption**: Select the encryption you want to use: AES or TPIK+AES.
- **Apply/Save**: Save the current settings.

3.3.2.1.4 WPA2

To configure WPA2 settings, select the WPA2 option from the drop-down list. The menu will change to offer the appropriate settings. The steps of these settings are similar to WPA settings.

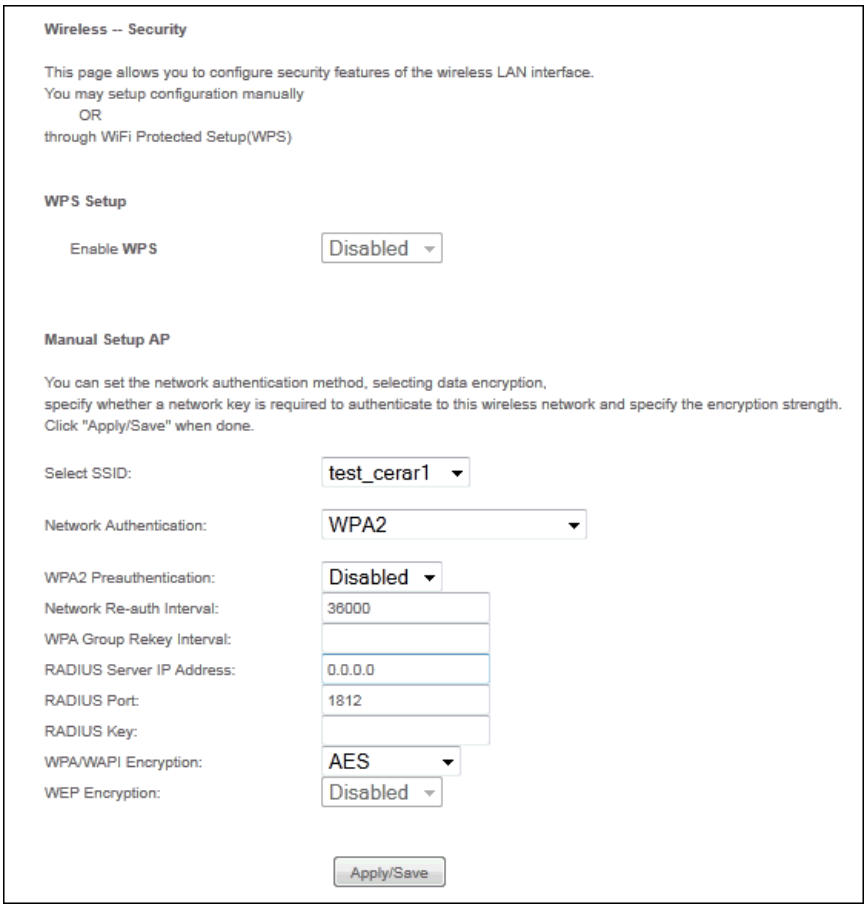


Figure 3-63: Manual Setup AP - WPA2

- **WPA2 Preauthentication**: Select Enable from the drop-down list. Stations will authenticate with the AP during the scanning process, and once association is required, the station has been already authenticated.
- **Network Re-auth Interval**: Enter a value in seconds as the frequency interval to enable periodic Network Re-authentication function, while leave it blank or enter ”0” to disable it.

3.3.2.1.5 WPA2-PSK

To configure WPA2-PSK settings, select the WPA2-PSK option from the drop-down list. The menu will change to offer the appropriate settings. WPA2-PSK requires a shared key and does not use a separated server for authentication. PSK keys can be ASCII or Hex type.

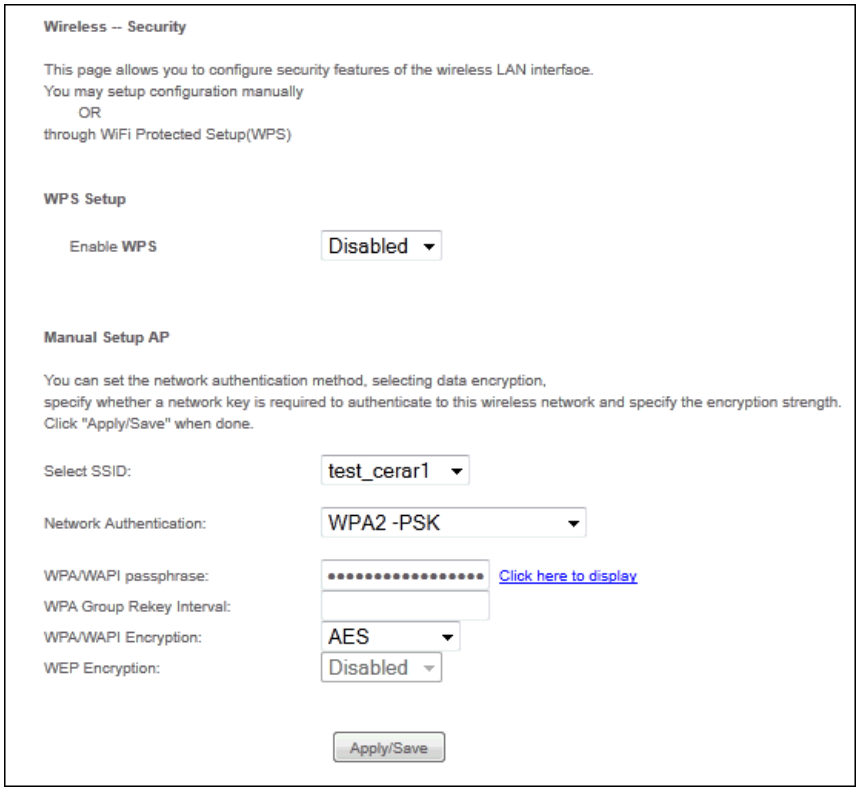


Figure 3-64: Manual Setup AP - WPA2-PSK

3.3.2.1.6 Mixed WPA2/WPA

To configure Mixed WPA2/WPA settings, select the WPA2/WPA option from the drop-down list. The menu will change to offer the appropriate settings. The steps to these settings are similar to those for WPA-PSK.

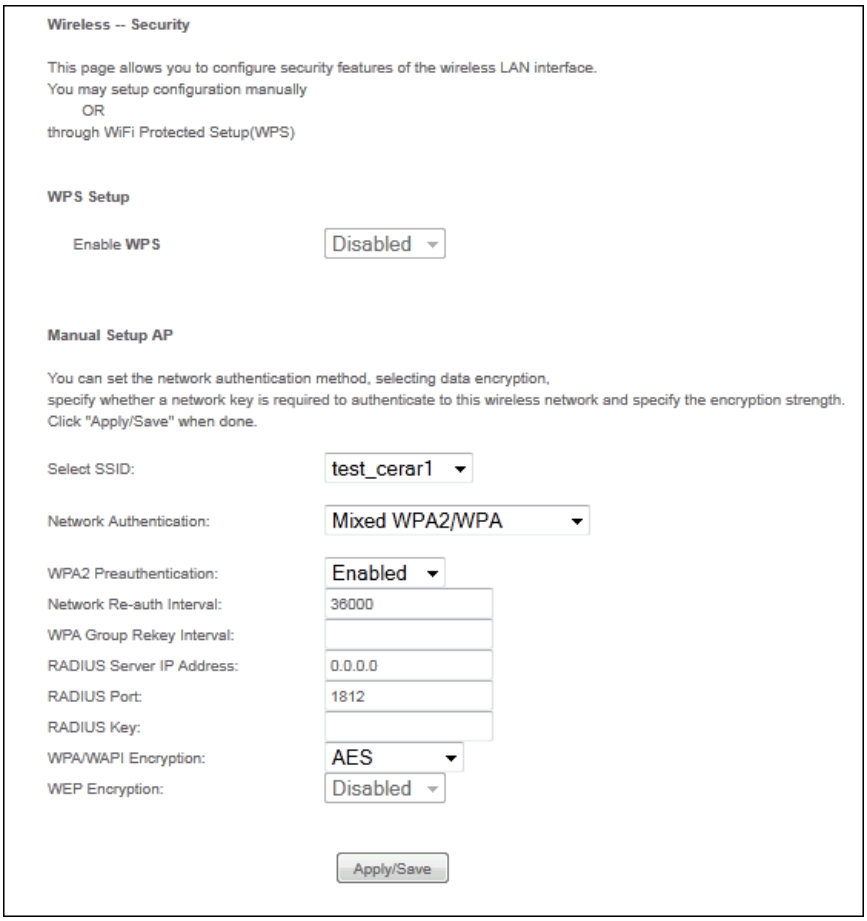


Figure 3-65: Manual Setup AP - WPA2/WPA

3.3.2.1.7 Mixed WPA2/WPA-PSK

To configure Mixed WPA2/WPA-PSK settings, select the WPA2/WPA-PSK option from the drop-down list. The menu will change to offer the appropriate settings. The steps to these settings are the same with WPA-PSK.

Figure 3-66: Manual Setup AP - WPA2/WPA-PSK

3.3.2.2 WPS Setup

Wi-Fi protected setup (WPS) is a standard for easy and secure establishment of a wireless home network. The goal of the standard is to simplify the process of configuring security on wireless networks.The Innbox V50-U home gateway supports two different ways of adding a device to the wireless network:

- **PIN Method** - a PIN (Personal Identification Number) has to be read from either a sticker on the new wireless client device (STA) or a display, if there is one, and entered at the "representant" of the Network.
- **Push-Button Method** - user simply has to push a button, either an actual or virtual one, on both the AP (or a Registrar of the Network) and the new wireless client device.

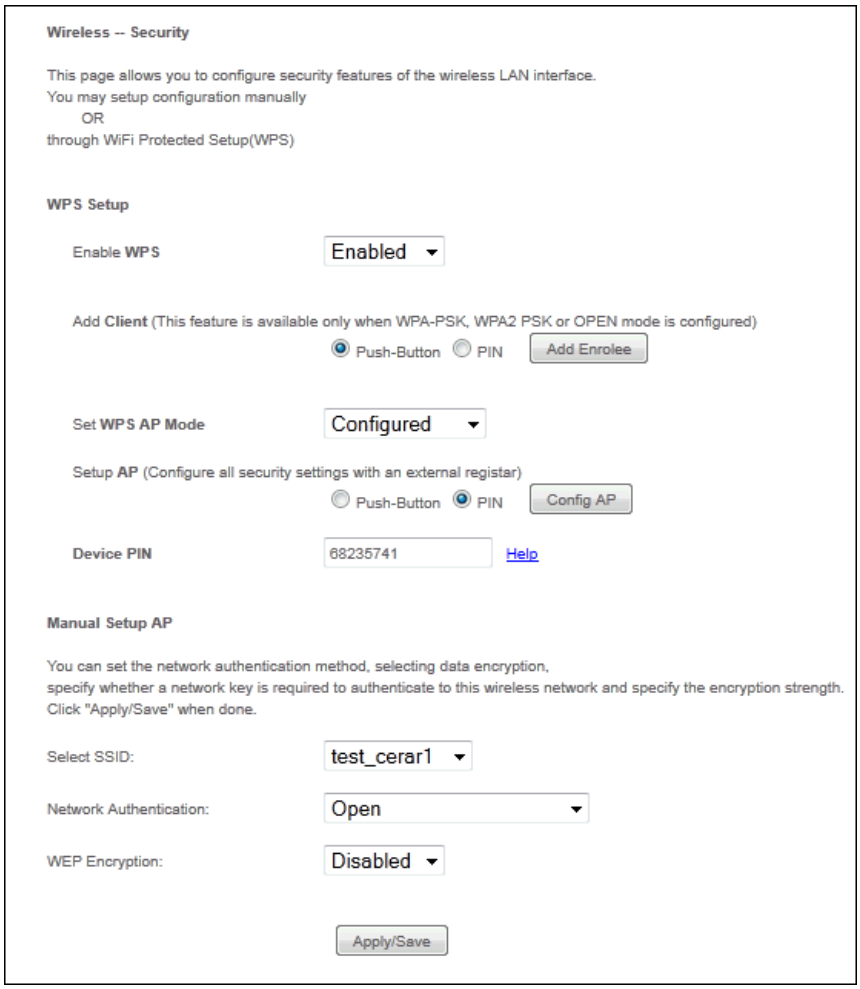


Figure 3-67: Wireless Security Configuration - WPS

- **Enabled**: Select this option to enable wireless bridge restriction. Enter the MAC address of the Remote Bridges. Only these remote bridges are granted access.
- **Enabled (Scan)**: Select this option to enable wireless bridge restriction, and it will scan the environment for APs that exist around the device. Only those selected AP will be granted access.

- **Refresh**: Click this button to update the remote bridges.
- **Apply/Save**: Click this button to save the settings.

3.3.3 MAC Filter

The Wireless MAC Filter feature allows you to control which wireless-equipped PCs or devices may or may not communicate on your wireless network depending on their MAC address. If you do not wish to filter users by MAC Address, select Disabled.

Select **Wireless** > **MAC Filter**. The following page opens:

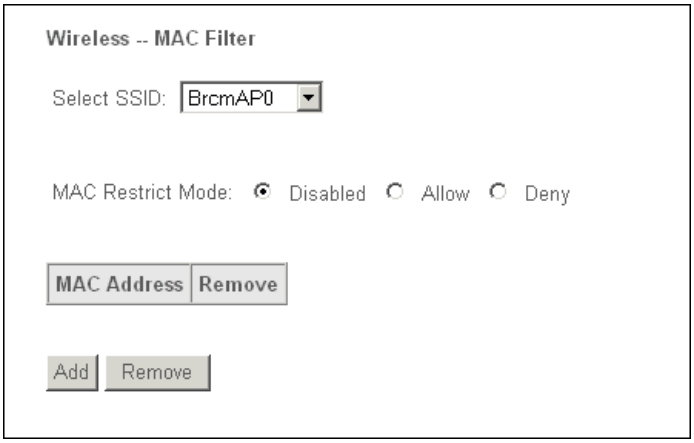


Figure 3-68: Wireless MAC Filter Configuration

- **Select SSID:** Select your wireless network name from a drop-down list.
- **Disabled:** Select this option to disable MAC Filter function.
- **Allow:** Select this option to enable MAC Filter function.
- **Deny:** Select this option to enable MAC Filter function.
- **Add:** Click this button to add the MAC Address.
- **Remove:** Select the MAC Address entry and click this button to remove it.

3.3.3.1 Wireless -- MAC Filter

Select **Wireless** > **MAC Filter** > **Add**. The following page opens:

Figure 3-69: Wireless MAC Filter - Add

- **MAC Address**: Enter the MAC address.
- **Apply/Save**: Click this button to add the MAC address to the MAC address filter.

3.3.4 Wireless Bridge

The device can also be configured as a wireless bridge. The wireless bridge mode will turn the access point into a wireless bridge. Wireless clients will not be able to connect to the access point in this mode.

Select **Wireless** > **Wireless Bridge**. The following page opens:

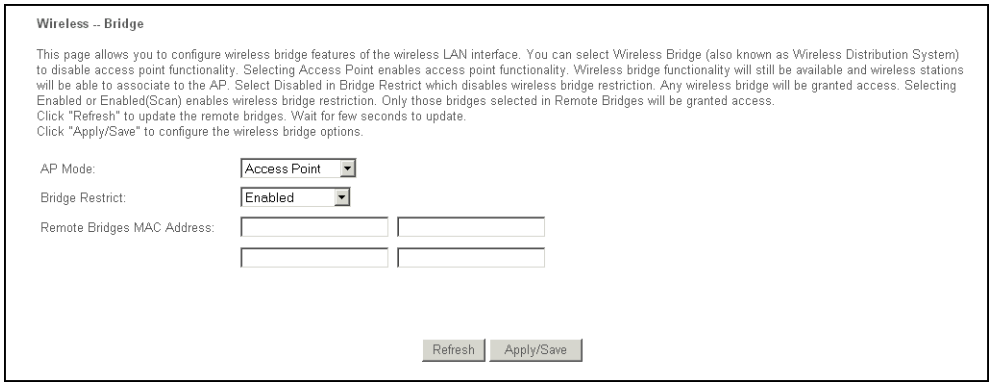


Figure 3-70: Wireless Bridge

- **AP Mode**: Select the AP mode from the drop-down list:
  - **Access Point**: Select this option to allow wireless stations including AP clients to access.
  - **Wireless Bridge**: Or WDS (Wireless Distribution System). It bridges the wireless stations, also in bridge mode, to connect two or more remote LANs.
- **Bridge Restrict**:
  - **Disabled**: Select this option to disable wireless bridge restriction. Any wireless bridge will be granted access.
  - **Enabled**: Select this option to enable wireless bridge restriction. Enter the MAC address of the Remote Bridges. Only these remote bridges are granted access.
  - **Enabled (Scan)**: Select this option to enable wireless bridge restriction, and it will scan the environment for APs that exist around the device. Only those selected AP will be granted access.
- **Refresh**: Click this button to update the remote bridges.
- **Apply/Save**: Click this button to save the settings.

3.3.5 Advanced

Select **Wireless** > **Advanced**. The following page opens:

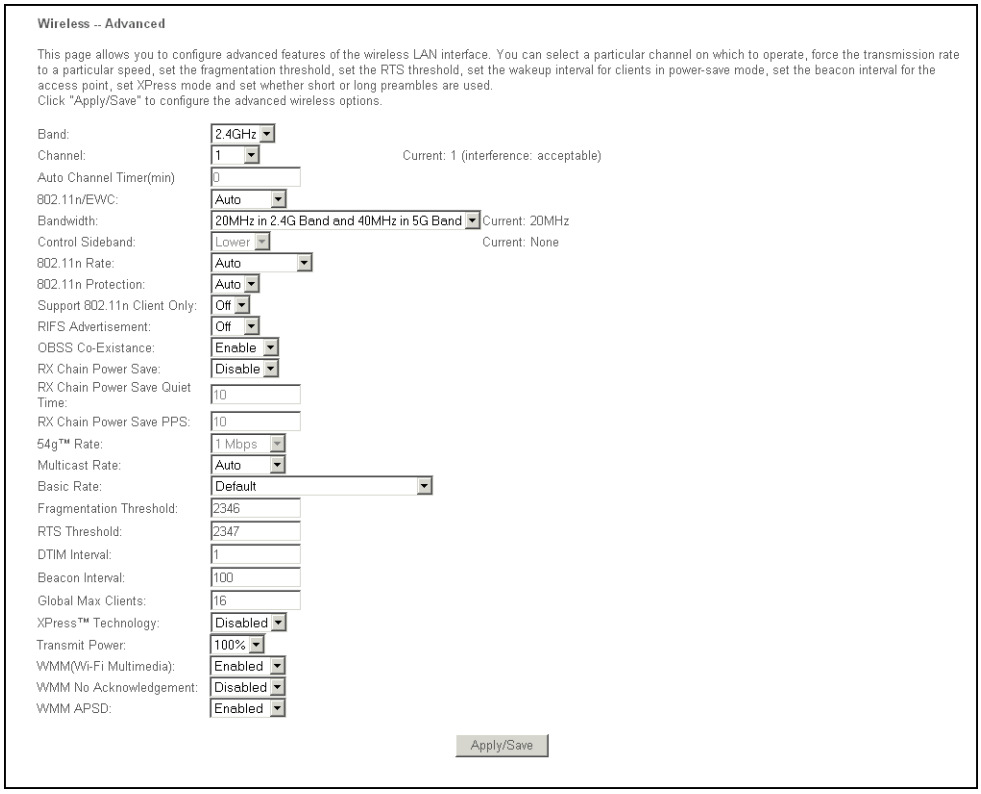


Figure 3-71: Wireless Advanced

- **Band**: Select the band.
- **Channel**: Select the channel you want to use from the drop-down list. This field determines which operating frequency will be used. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.
- **Auto Channel Timer (min)**: Auto channel scan timer in minutes (0 to disable).
- **802.11n/EWC**:
- **Bandwidth**: Select the bandwidth from the drop-down list. When higher bandwidth is selected, the device could transmit and receive data with a higher speed.
- **Control Sideband**: When higher bandwidth is selected, you can then select the Control Sideband you want.
- **54g Rate (Wireless Communication Rate)**: Drop-down menu that specifies the following fixed rates: Auto: Default. Uses the 11 Mbps data rate when possible but drops to lower rates when necessary. 1 Mbps, 2Mbps, 5.5Mbps, or 11Mbps fixed rates. The appropriate setting is dependent on signal strength.
- **Multicast Rate**: Multicast packet transmit rate.
- **Basic Rate**: Basic transmit rate.
- **Fragmentation Threshold**: A threshold, specified in bytes, that determines whether packets will be fragmented and at what size. On an 802.11 WLAN, packets that exceed the fragmentation threshold are fragmented, i.e., split into, smaller units suitable for the circuit size. Packets smaller than the specified fragmentation threshold value are not fragmented. Enter a value between 256 and 2346. If you experience a high packet error rate, try to slightly increase your Fragmentation Threshold. The value should remain at its default setting of 2346. Setting the Fragmentation Threshold too low may result in poor performance.

- **RTS Threshold**: When set in bytes, specifies the packet size beyond which the WLAN card invokes its RTS/CTS mechanism. Packets that exceed the specified RTS threshold trigger the RTS/CTS mechanism. The NIC transmits smaller packet without using RTS/CTS. The default setting of 2347 (maximum length) disables RTS threshold.
- **DTIM Interval**: This value, between 1 and 255, indicates the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing clients of the next window for listening to broadcast and multicast messages. When the device has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. Its clients hear the beacons and awaken to receive the broadcast and multicast messages. The default value is 1.
- **Beacon Interval**: Enter a value between 20-1000 milliseconds. The Beacon Interval value indicates the frequency interval of the beacon. A beacon is a packet broadcast by the device to synchronize the wireless network. The default value is 100.
- **Global Max Clients**
- **XPress Technology**: enabled or disabled.
- **Transmit Power:** This option will allow you to configure the wireless transmit power. High transmit power will extend the wireless signal range of the device and make the signal transmit more legible. Low transmit power with the smaller wireless signal range that will decrease the probability of interrupt by other Wi-Fi device.
- **WMM (Wi-Fi Multimedia):** This function can guarantee the packets with high-priority messages being transmitted preferentially.
- **WMM No Acknowledgement**: Refers to the acknowledge policy used at the MAC level. Enabling no acknowledgement can result in more efficient throughput but higher error rates in a noisy Radio Frequency (RF) environment.
- **WMM APSD**: Automatic Power Save Delivery. It saves power.

3.3.6 Station info

You can view the authenticated wireless stations and their status in this page.

Select **Wireless** > **Station info**. The following page opens:

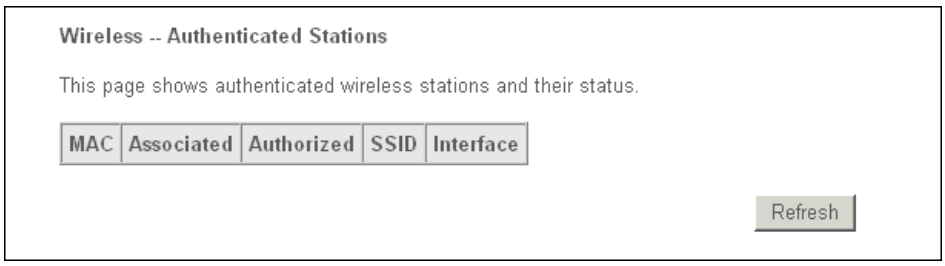


Figure 3-72: Wireless Authenticated Stations

- **MAC**: Displays the connected wireless station MAC address.
- **Associated**: Displays whether the wireless station has associated with the access point.
- **Authorized**: Displays the information of Authentication.
- **SSID**: Displays the connected wireless station SSID.
- **Interface**: Displays the connected wireless station Interface mode

3.4 Voice

This chapter describes the various options for configuration of the SIP voice service. Session Initiation Protocol (SIP) is a peer-to-peer protocol used for Internet conferencing, telephony, events notification, presence and instant messaging.

SIP is designed to address the functions of signalling and session management within a packet telephony network. Signalling allows callinformation to be carried across network boundaries. Session management provides the ability to control the attributes of an end-to-end call.

You can configure the voice-related parameter:

- **SIP Basic Settings**
- **SIP Advanced Settings**
- **SIP Debug Settings**

3.4.1 SIP Basic Settings

Select **Voice** > **SIP Basic Settings**. The following page opens:

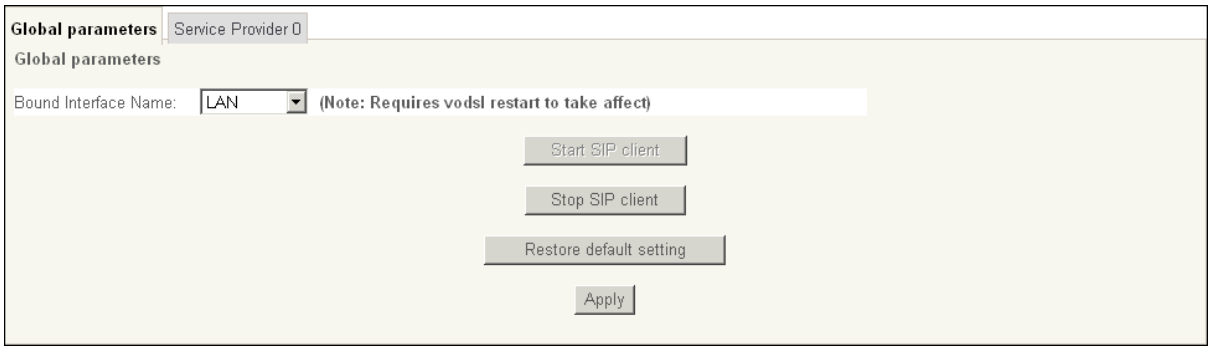


Figure 3-73: SIP basic settings - Global parameters tab

- **Bound Interface Name**: Select Bound Interface Name that will be used by the Voice-IAD system to find the SIP Proxy server from drop-down list.
- **Start SIP client**: Click to start the SIP client.
- **Stop SIP client**: Click to stop the SIP client.
- **Restore default setting**: Click to restore the default settings.
- **Apply**: Click to confirm the setting.

To view or modify more SIP Basic Settings click **Service provider** tab. The following page opens:

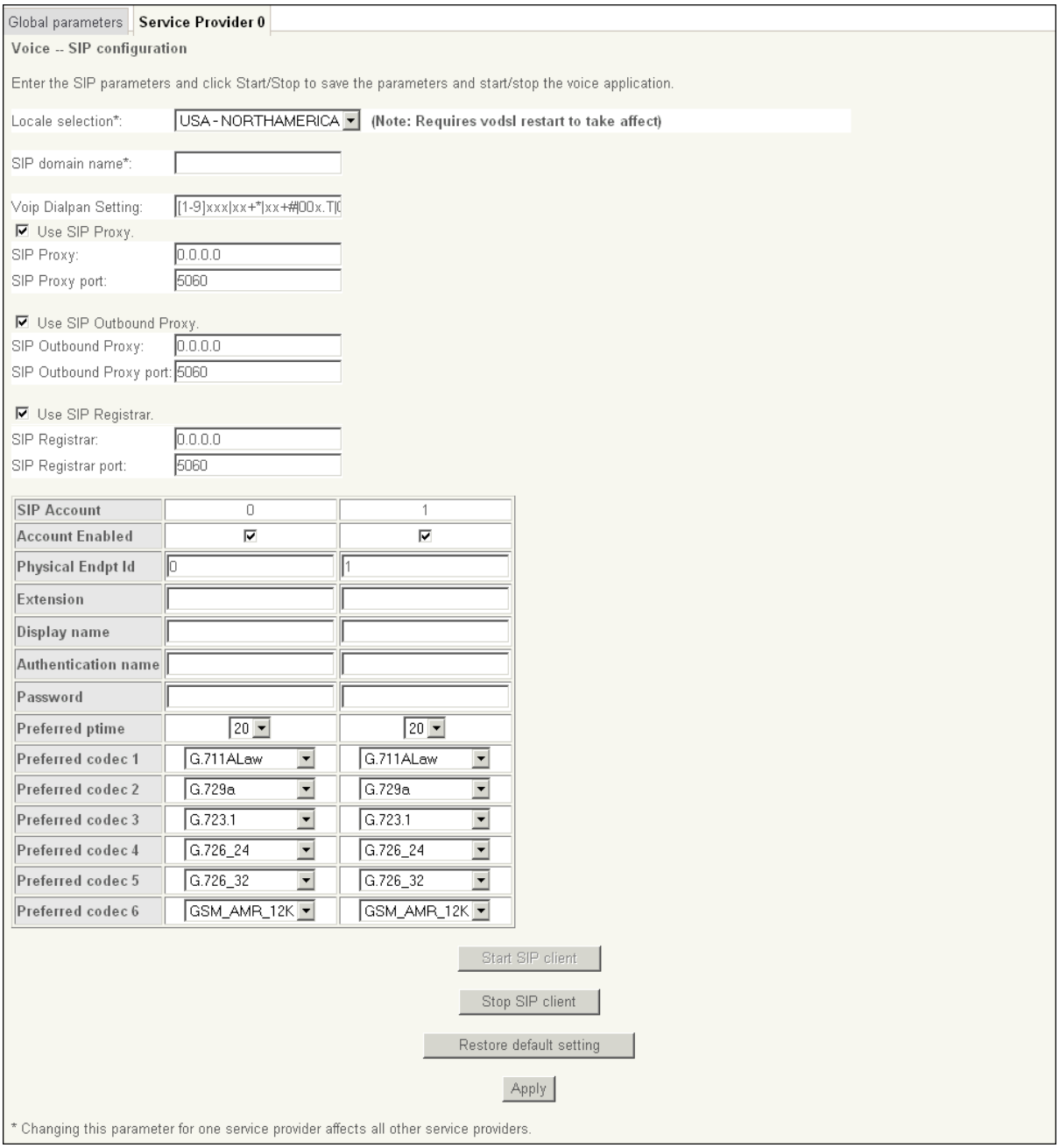


Figure 3-74: SIP basic settings - Service Provider tab

- **Local Selection**: Set tone, ring type and physical characteristics for each specific country.
- **SIP domain name**: Provided by your VoIP service provider.
- **Use SIP Proxy**: Enable the SIP Proxy by selecting the checkbox and setting proxy parameters.
  - **SIP Proxy**: Input IP address or domain name of the SIP proxy server, used for VoIP service.
  - **SIP Proxy port**: The value is set by VoIP provider and is normaly port 5060.
- **Use SIP Outbound Proxy**: Enable the SIP Outbound Proxy by selecting the checkbox and setting proxy parameters.
  - **SIP Outbound Proxy**: Input IP address or domain name of the SIP Outbound proxy server, used for VoIP service.
  - **SIP Outbound Proxy port**: The value is set by VoIP provider and is normaly port 5060.

- **Use SIP Registrar**: Enable the SIP Registrar by selecting the checkbox and setting registrar parameters.
  - **SIP Registrar**: Input IP address or domain name of the registrar server.
  - **SIP Registrar port**: The value is set by VoIP provider and is normaly port 5060.
- **SIP Account**: Ports TEL1 and TEL2.
- **Account Enabled**: Account is enabled by selecting the checkbox.
- **Extension**: The line extension number.
- **Display name**: The string for called party's telephone to display the caller name.
- **Authentication name**: The authentication username for the Registrar/proxy, given by VoIP provider.
- **Password**: The authentication password for the Registrar/proxy, given by VoIP provider.
- **Preferred ptime**: The time period used to digitally sample the analog voice signal. The default is 20.
- **Preferred codec 1-6**: Select preferd codec from drop-down list.
- **Start SIP client**: Click to start the SIP client.
- **Stop SIP client**: Click to stop the SIP client.
- **Restore default setting**: Click to restore the default settings.
- **Apply**: Click to confirm the setting.

3.4.2 SIP Advanced Settings

Select **Voice** > **SIP Advanced Settings**. The following page opens:

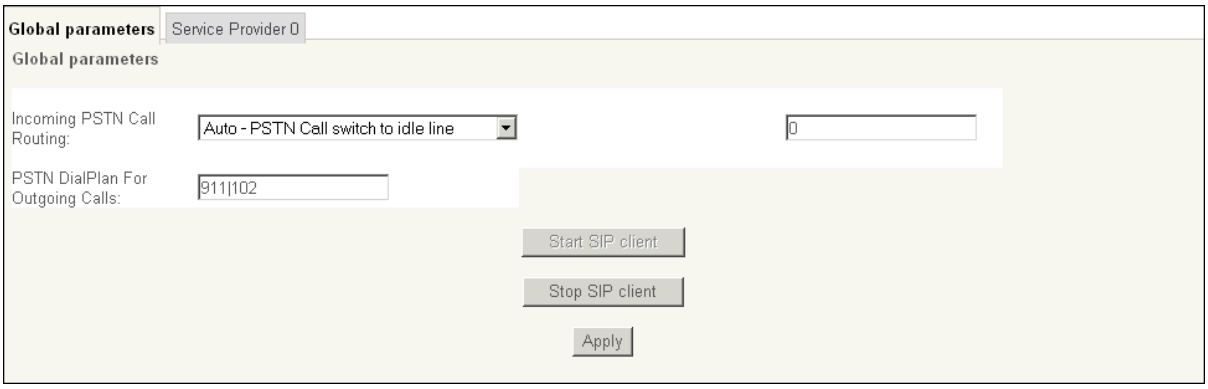


Figure 3-75: SIP advanced settings - Global parameters tab

- **Incoming PSTN Call Routing**: From drop-down list you can select the following rules:
  - **`Auto - PSTN call switch to idle line`**
  - **`Line - PSTN call switch to physical line`**
  - **`VoIP - PSTN call switch to voip call`**
- **Start SIP client**: Click to start the SIP client.
- **Stop SIP client**: Click to stop the SIP client.
- **Apply**: Click to confirm the setting.

For view or modify more SIP Advanced Settings click **Service provider** tab. The following page opens:

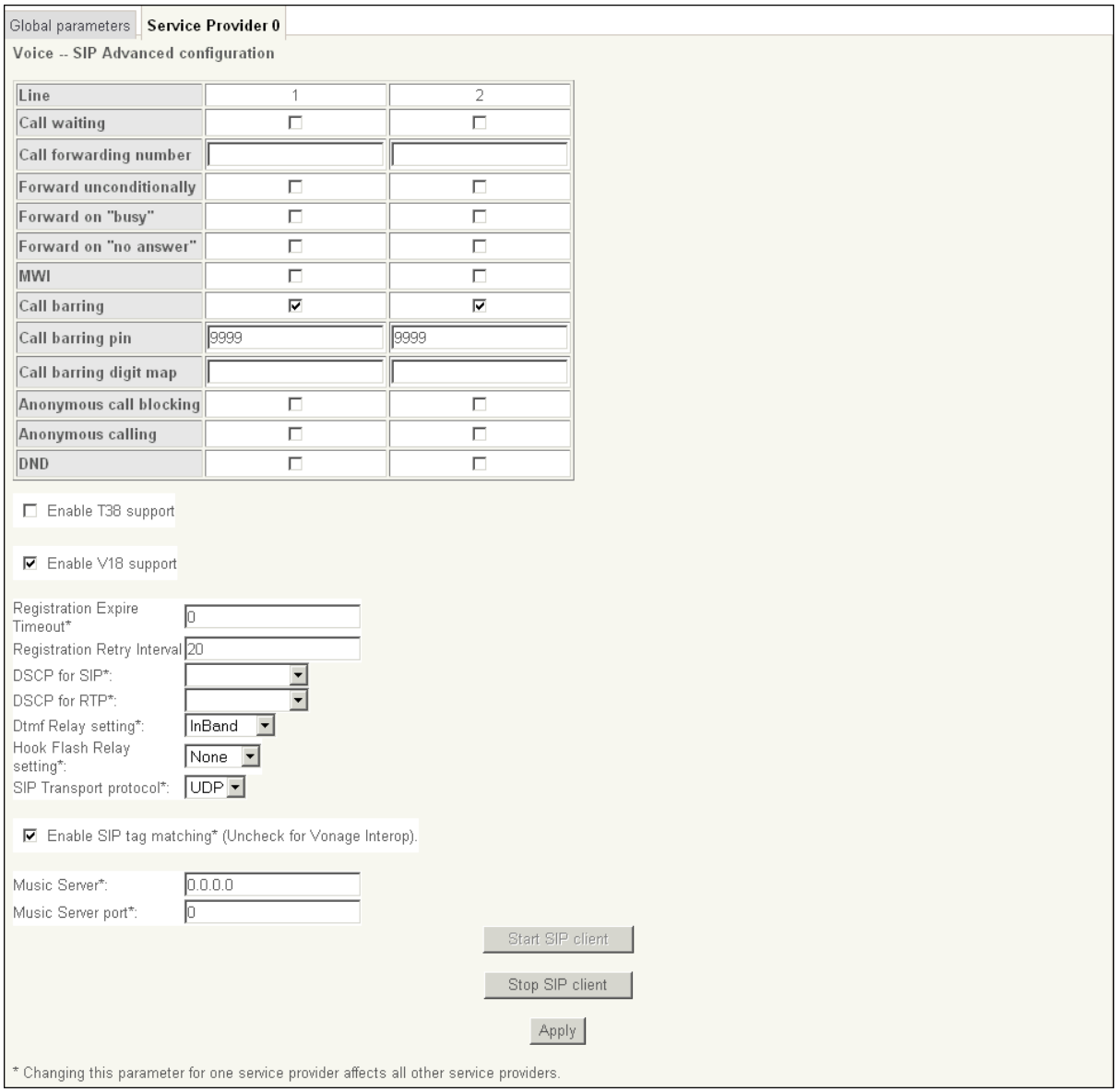


Figure 3-76: SIP advanced settings - Service Provider tab

- **Line**: Ports TEL1 and TEL2.
- **Call waiting**: Select the checkbox to enable this option.
- **Call forwarding number:** Enter the forwarding phone number.
- **Forward unconditionally**: Select the checkbox to enable this option.
- **Forward on “busy”**: Select the checkbox to enable this option.
- **Forward on “no answer”**: Select the checkbox to enable this option.
- **MWI**: Enable or disable Message-Waiting Indicator (MWI) for FXS Phones with this checkbox.
- **Call barring**: Select the checkbox to enable this option.
- **Call barring pin**: Enter the call barring pin.
- **Call barring digit map**: Enter the call barring digit map.
- **Anonymous call blocking**: Select the checkbox to enable this option.
- **Anonymous calling**: Select the checkbox to enable this option.

- **DND**: Select the checkbox to enable this option.
- **Enable T38 support**: Enable or disable T.38 Fax mode support with this checkbox. You can plug a fax machine into either phone port to send or receive faxes. Functionality depends upon FAX support by your VoIP service provider.
- **Dtmf Relay setting**: Set the special use of RTP packets to transmit digit events.
- **SIP Transport protocol**: Set the special use of SIP protocol to transmit digit events.
- **Enable SIP tag matching**: Select if required by your VoIP provider. (e.g. disable with Vonage service)
- **Music Server**: Enter the Music Server IP address.
- **Music Server port**: Enter the Music Server port.
- **Start SIP client**: Click to start the SIP client.
- **Stop SIP client**: Click to stop the SIP client.
- **Apply**: Click to confirm the setting.

3.4.3 SIP Debug Settings

Select **Voice** > **SIP Debug Settings**. The following page opens:

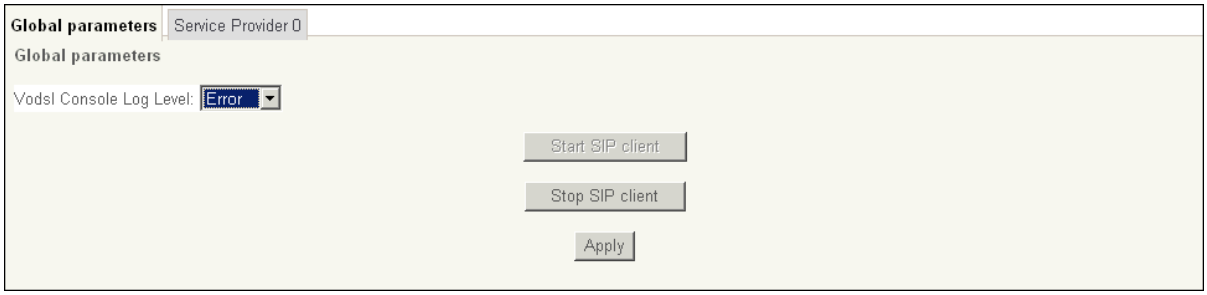


Figure 3-77: SIP debug settings - Global parameters tab

- **Vodsl Console Log Level**: From drop-down list you can select select the following:
  - `Error`
  - `Notice`
  - `Debug`
- **Start SIP client**: Click to start the SIP client.
- **Stop SIP client**: Click to stop the SIP client.
- **Apply**: Click to confirm the setting.

For view or modify more SIP Debug Settings click **Service provider** tab. The following page opens:

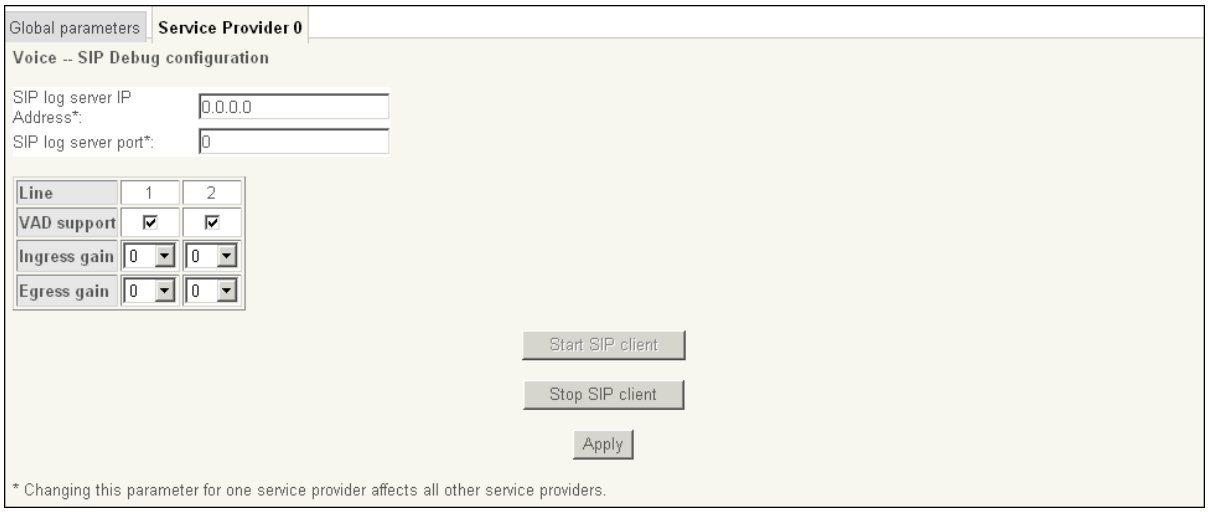


Figure 3-78: SIP debug settings- Service Provider tab

- **SIP log server IP Address**: Input IP address of the SIP log server.
- **SIP log server port**: Port number of the SIP log server.
- **Start SIP client**: Click to start the SIP client.
- **Stop SIP client**: Click to stop the SIP client.
- **Apply**: Click to confirm the setting.

3.5 Diagnostics

3.5.1 Diagnostics

This section describes the result of the test for the connection to your local network, DSL service provider and Internet service provider. You can refer to the Help menu to get more information about the corresponding test.

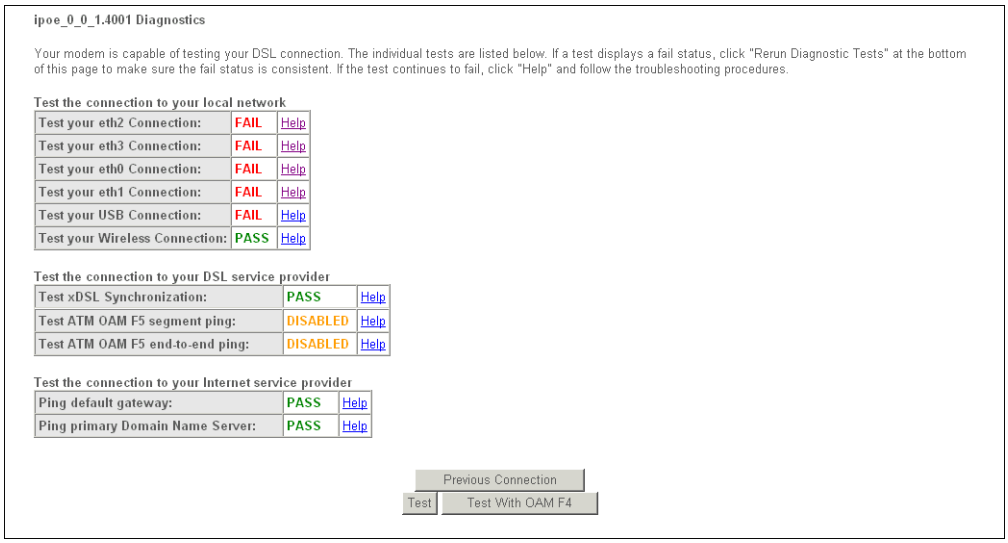


Figure 3-79: Diagnostics

- **Ethernet Connection**
  - **Pass**: indicates that the Ethernet interface from your computer is connected to the LAN port of your device. A flashing or solid green LAN LED on the device also signifies that an Ethernet connection is present and that this test is successful.
  - **Fail**: Indicates that the device does not detect the Ethernet interface on your computer.
- **USB Connection**
  - **Pass**: Indicates that the USB interface from your computer is connected to device properly.
  - **Down**: Indicates that the device does not detect the signal from USB interface.
- **Wireless Connection**
  - **Pass**: Indicates that the Wireless interface from your computer is connected to the wireless network.
  - **Down**: Indicates that the device does not detect the wireless network.
- **DSL Synchronization**
  - **Pass**: Indicates that the device has detected an DSL signal from the telephone company. A solid WAN LED on the device also indicates the detection of an DSL signal from the telephone company.
  - **Fail**: Indicates that the device does not detect a signal from the telephone company's DSL network. The WAN LED will continue to flash green.

3.6 Management

3.6.1 Settings - Backup

You can save the current configuration of your device to a file on your computer. This is highly recommended before you change any configuration settings or before you upgrade the firmware.

Select **Management** > **Settings** > **Backup**. The following page opens:

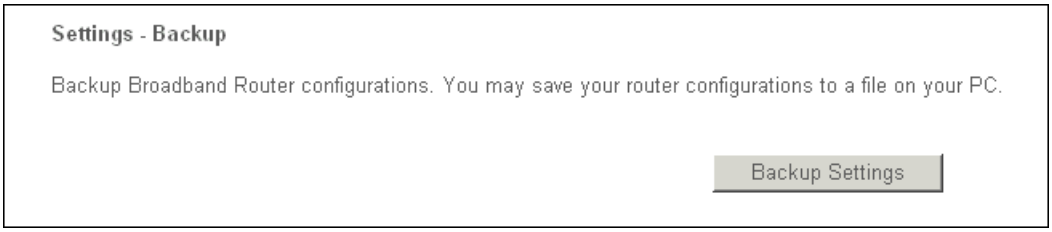


Figure 3-80: Backup Settings

- **Backup Settings**: Click this button to save the device configurations to a file on your PC.

3.6.2 Update settings

You can update the current configuration of your device from your saved files.

Select **Management** > **Settings** > **Update**. The following page opens:

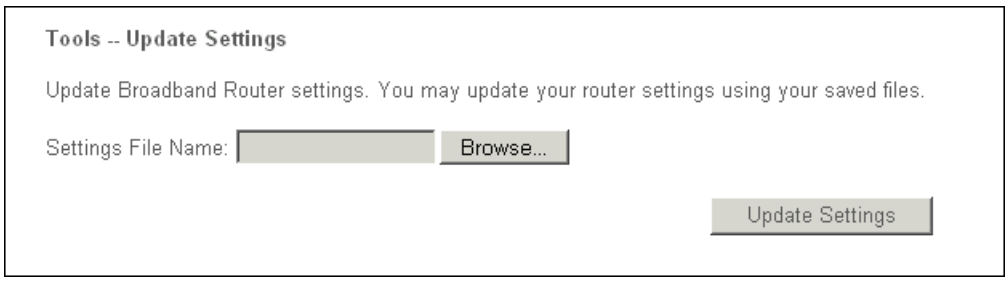


Figure 3-81: Update Settings

- **Settings File Name**: Enter the path to the settings file.
- **Browse**: Click this button to locate the settings file name.
- **Update Settings**: Click this button to update your device settings.

3.6.3 Restore Default settings

You can restore the current configuration of your device to the factory defaults.

Select **Management** > **Settings** > **Restore Default**. The following page opens:

Figure 3-82: Restore Default Settings

- **Restore Default Settings**: Click this button to restore your device configurations to the factory defaults.

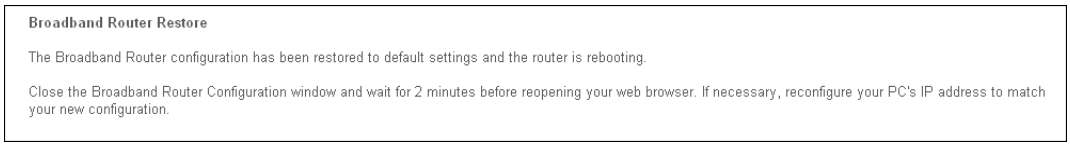


Figure 3-83: Broadband Router Restore

Close the window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC IP address to match your new configuration.

3.6.4 System Log

You can view and configure the system log options in the **System Log** page.

Select **Management** > **System Log**. The following page opens:

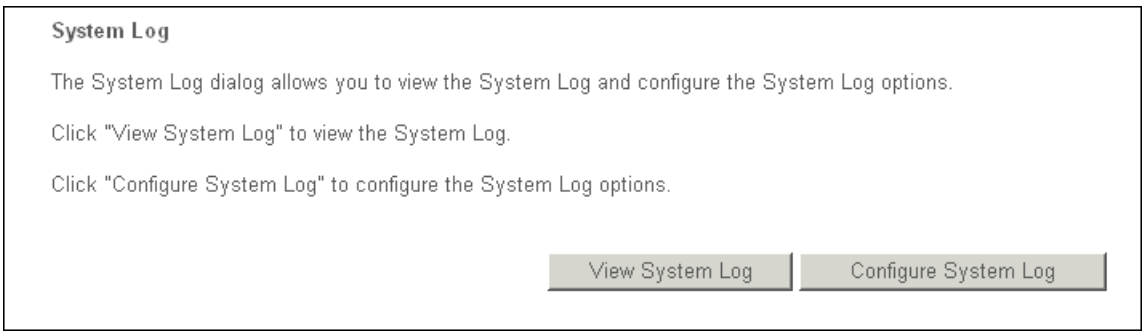


Figure 3-84: System Log

- **View System Log**: Click this button to view the system log.
- **Configure System Log**: Click this button to configure the system log.

3.6.4.1 System Log Configuration

Select **Management** > **Settings** > **System Log** > **Configure System Log**. The following page opens:

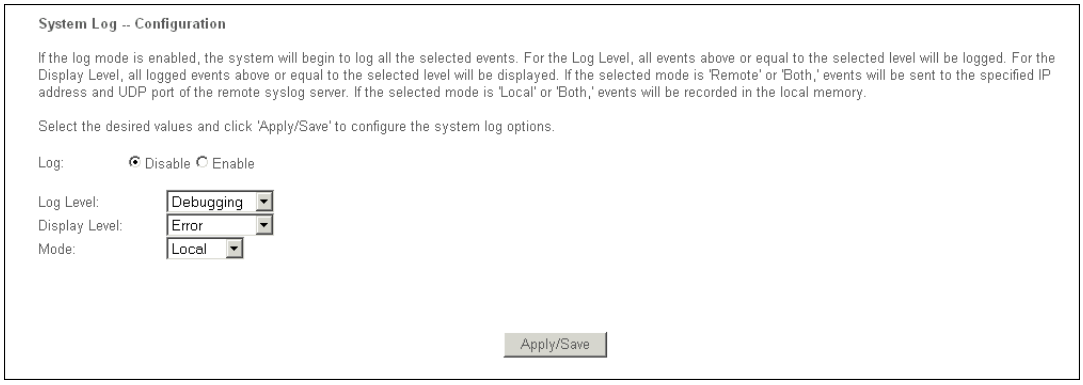


Figure 3-85: Configure System Log

- **Disable/Enable**: Select **Enable** to log the events, otherwise select **Disable**.
- **Log Level**: Select the log level in the drop-down list. All events above or equal to the selected level will be logged.
- **Display Level**: Select the display level in the drop-down list. All logged events above or equal to the selected level will be displayed.
- **Mode**: Select the mode to record the events. If the selected mode is **Local**, events will be recorded in the local memory. If the selected mode is **Remote**, events will be sent to the specified IP address and UDP port of the remote system log server. If the selected mode is **Both**, events will be sent to the local memory and the remote system log server.
- **Apply/Save**: Click this button to save the system log settings.

3.6.5 Security Log

You can view the security log and configure the security log options.

Select **Management** > **Security Log**. The following page opens:

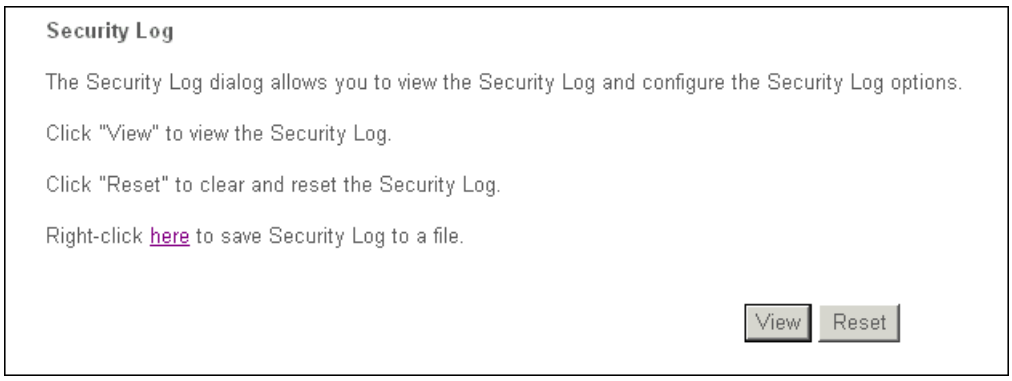


Figure 3-86: Security Log

- **Right-click here to save Security Log to a file**: This will save the security log to a file on your PC.
- **View**: Click this button to view the security log.
- **Reset**: Click this button to clear and reset the security log.

3.6.6 TR-069 Client

The WAN Management Protocol (TR-069) allows an Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection and diagnostics to this device.

Select **Management** > **TR-069 Client**. The following page opens:

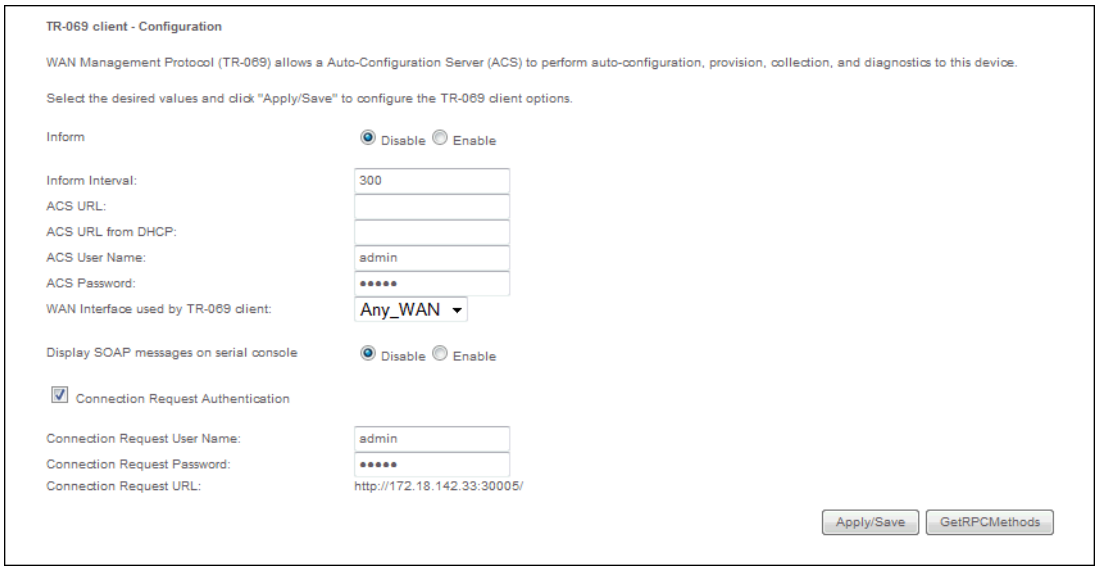


Figure 3-87: TR- 069 Client Configuration

- **Inform**: Disable or enable the TR-069.
- **Inform Interval**: The interval in seconds in which the device attempts to connect to ACS.

- **ACS URL**: URL for the device to connect to ACS.
- **ACS URL from HDCP**: ACS URL configuration via DHCP.
- **ACS User Name**: User name used to authenticate the device making a connection to ACS.
- **ACS Password**: Password used to authenticate the device making a connection to ACS.
- **Display SOAP messages on serial console**: Enable or disable displaying of messages.
- **WAN Interface used by TR-069 Client**: Select the WAN Interface from the drop-down list to perform this function.
- **Connection Request Authentication**: Enable or disable authentication of ACS.
- **Connection Request User Name:** User name to authenticate ACS making a connection to this device.
- **Connection Request Password:** Password to authenticate ACS making a connection to this device.
- **Apply/Save**: Click this button to configure the TR-069 client options.
- **GetRPCMethods**: Click this button to force the device to establish an immediate connection to ACS.

3.6.7 Internet Time

Select **Management** > **Internet Time**. The following page opens:

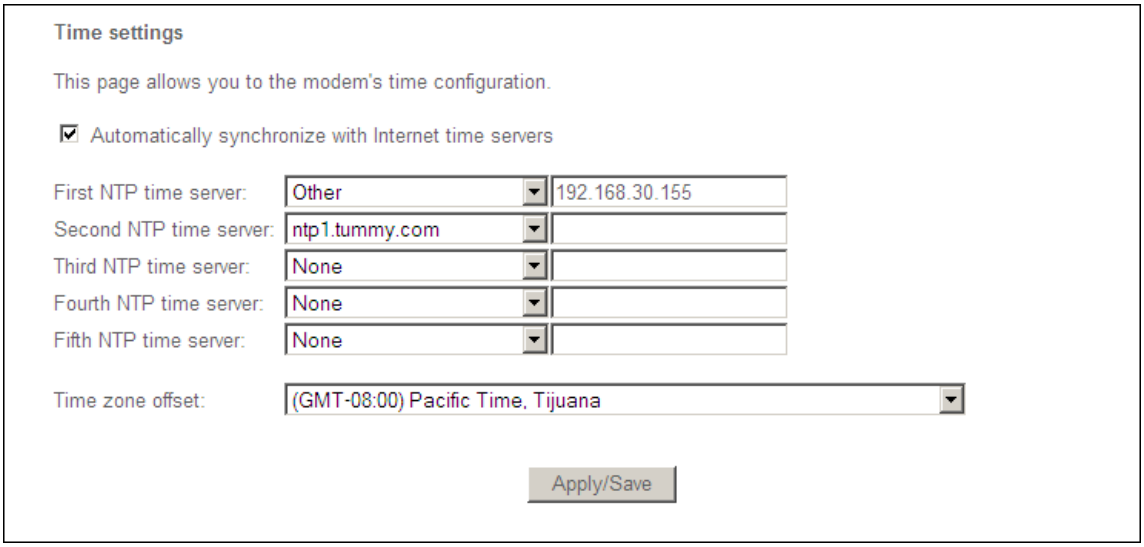


Figure 3-88: Internet Time

- **Automatically synchronize with Internet time servers**: Option to enable automatic time synchronization with the servers specified.
- **First NTP time server**: Enter the time server. You can specify up to five servers in the fields that follow.
- **Time zone offset**: Select the local time zone.**Apply/Save**: Click this button to save the settings.

3.6.8 Access Control - Passwords

Select **Management** > **Access Control** > **Passwords**. The following page opens:

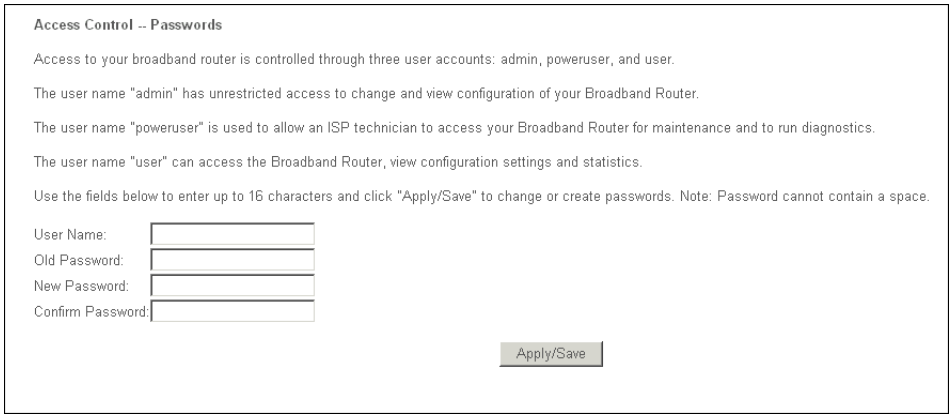


Figure 3-89: Access Control - Passwords

- **User Name**: Enter user name.
- **Old Password**: Enter the old password.
- **New Password**: Enter the new password.
- **Confirm Password**: Retype the new password to confirm it.
- **Apply/Save**: Click this button to save the settings.

3.6.9 Update Software

Select **Management** > **Update Software**. The following page opens:

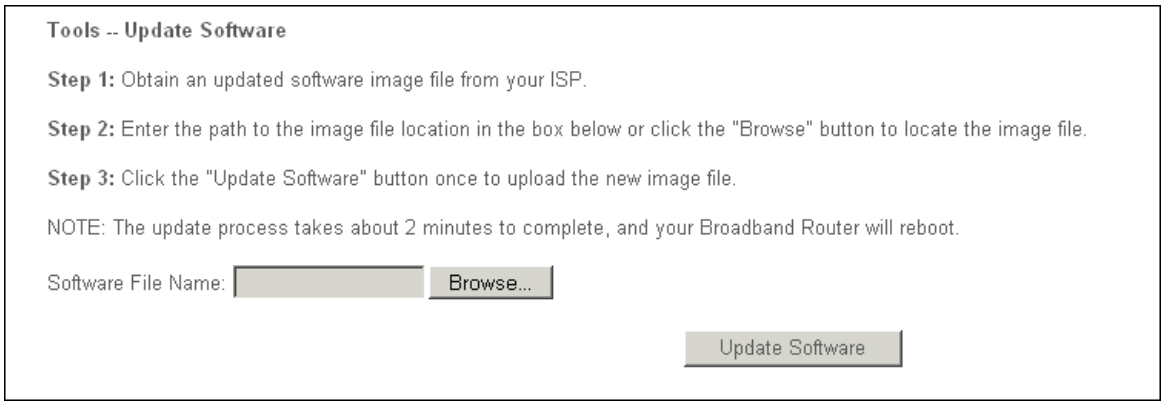


Figure 3-90: Update Software

- Follow the onscreen instruction.
- **Software File Name**: Enter the path to the image file location.
- **Browse**: Click this button to locate the image file.
- **Update Software**: Click this button to activate the software update. The update process takes about 2 minutes to complete.

3.6.10 Reboot

Select **Management** > **Reboot**. The following page opens:

Figure 3-91: Reboot

- **Reboot**: Click this button to reboot the device. Wait for about 2 minutes before attempting to use the device.