ReadyNet™
CONNECTIVITY SIMPLIFIED

AC1200M/MS

User Manual

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1 Preface

Thank you for choosing the ReadyNet AC1200M wireless router or ReadyNet AC1200MS wireless router with VoIP. The AC1200MS will allow you to make ATA calls using your broadband connection and provides Wi-Fi router functions.

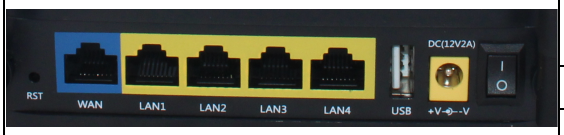
This manual provides basic information on how to install and connect the ReadyNet AC1200M/MS to the Internet. It also discusses the router's features and functions and how to use them correctly. Before you can connect the AC1200M/MS to the Internet and use it, you must have a high-speed broadband connection installed.

The ReadyNet AC1200M/MS is a stand-alone device so no computer is required to make Internet calls. The AC1200MS provides clear and reliable voice quality through the Internet, is fully compatible with SIP industry standards, and is able to interoperate with many other SIP devices and software on the market.

2 LED Indicators and Connectors

2.1 LED Indicators

Front Panel	LED	Status	Explanation
	POWER	On (Red)	The router is powered on and running normally.
		Off	The router is powered off.
	WAN	On (Green)	The port is connected with 1000Mbps.
		Off	The port is disconnected.
		Blinking (Green)	It will blink while transmitting data.
	LAN 1/2/3/4	On (Green)	The port is connected with 1000Mbps.
		Off	The port is disconnected.
		Blinking (Green)	The data is transmitting.
	2.4G 5G	On (Green)	Wireless access point is ready.
		Blinking (Green)	It will blink while wireless traffic goes through.
	USB	On (Green)	USB device is connected.
		Off	No USB device connected.

Rear Panel	Interface	Description
	RST	Reset to factory default settings
	WAN	Connector for accessing the Internet.
	LAN (1/2/3/4)	Connectors for local networked devices.
	USB	Connector for USB device.
	DC 12V/2A	Connector for a power adapter.
	ON/OFF	Power Switch.

2.2 Hardware Installation

Step 1.For the AC1200MS, connect Line 1 or Line 2 ports to a land line phone jack with an RJ-11 cable (standard phone cord).

Step 2.Connect the WAN port to an access point such as a modem, switch, or router with an Ethernet cable.

Step 3.Connect one of the LAN ports to your computer with an Ethernet cable.

Step 4.Connect one end of the power cord to the power port of this device. Connect the other end to the wall outlet of electricity.

Step 5.Push the ON/OFF switch to power on the router.

Step 6.Check the Power, WAN, and LAN LEDs to assure network connections.

3 Voice Prompt (AC1200MS)

Voice Menu Setting Options

Code	Contents
1	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "1" and the AC1200MS reports the current WAN port connection type. Step 3. Prompt "Please enter password", user needs to input password with end char # if user wants to configure WAN port connection type. ✧ Password in the IVR is same as the Web login. User can use phone keypad to enter password directly and the matching table is in Note 4. ✧ For example: WEB login password is "admin", so password in IVR is "admin" too, user inputs "23646" to access and then configure the WAN connection port. Step 4. Report "operation successful" if password is correct. Step 5. Choose the new WAN port connection type, either 1. DHCP or 2. Static. Step 6. Report "operation successful", indicates user successfully made the changes. AC1200MS will return to sound prompting **"please enter your option, one WAN Port ……".** ✧ If at any time you want to quit, press "**".

2	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "2", and the AC1200MS reports current WAN Port IP Address. Step 3. Input the new WAN port IP address with the end char #. ✧ Using "*" to replace ".", user can input 192*168*20*168 to set the new IP address 192.168.20.168. ✧ Press # key to indicate you have finished. Step 4. Report "operation successful" if user operation is correct. ✧ If at any time you want to quit, press "**".
3	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "3", and the AC1200MS reports the current WAN port subnet mask. Step 3. Input a new WAN port subnet mask with the end char #. ✧ Using "*" to replace ".", user can input 255*255*255*0 to set the new WAN port subnet mask 255.255.255.0. ✧ Press # key to indicate you have finished. Step 4. Report "operation successful" if user operation is correct. ✧ If at any time you want to quit, press "**".
4	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "4", and the AC1200MS reports current gateway. Step 3. Input the new gateway with the end char #. ✧ Using "*" to replace ".", user can input 192*168*20*1 to set the new gateway 192.168.20.1. ✧ Press # key to indicate you have finished. Step 4. Report "operation successful" if user operation is correct. ✧ If at any time you want to quit, press "**".
5	Step 1. Pick up phone and press "****" to start IVR Step 2. Choose "5", and the AC1200MS reports current DNS Step 3. Input the new DNS with the end char # ✧ Using "*" to replace ".", user can input 192*168*20*1 to set the new gateway to 192.168.20.1 ✧ Press # key to indicate you have finished Step 4. Report "operation successful" if user operation is correct. ✧ If at any time you want to quit, press "**".
6	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "6", and the AC1200MS reports "Factory Reset". Step 3. Prompt "Please enter password", inputting password is the same as in operation 1. ✧ If at any time you want to quit, press "*". Step 4. Prompt "operation successful" if the password is correct. Step 5. Press "7", reboot to make changes effective.
7	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "7", and the AC1200MSs report "Reboot". Step 3. Prompt "Please enter password", inputting password is the same as in operation 1. Step 4. The AC1200MS will reboot if the operation is correct.

8	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "8", and the AC1200MS reports "WAN Port Login". Step 3. Prompt "Please enter password", inputting password is the same as in operation 1. ✧ If at any time you want to quit, press "*". Step 4. Report "operation successful" if user operation is correct. Step 5. Prompt "1enable 2disable", choose 1 or 2 with confirm char #. Step 6. Report "operation successful" if user operation is correct.
9	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "9", and the AC1200MS reports " WEB Access Port". Step 3. Prompt "Please enter password", inputting password is the same as in operation 1. Step 4. Report "operation successful" if user operation is correct. Step 5. Report the current WEB Access Port. Step 6. Set the new WEB access port with end char #. Step 7. Report "operation successful" if user operation is correct.
0	Step 1. Pick up phone and press "****" to start IVR. Step 2. Choose "0", and the AC1200MS reports the current Firmware version.

Notes

- When using Voice Menu, press "*" (star) to return to the main menu.
- If any changes are made in the IP assignment mode, please reboot the AC1200MS to apply the changes.
- When entering an IP address or subnet mask, use "*" (star) to replace "." (dot). For example, to enter the IP address 192.168.20.159 by keypad, press 192*168*20*159#, use the "#" (pound) key to indicate you have finished entering the IP address.
- When assigning an IP address in Static IP mode, you must also set the subnet mask and default gateway. If in DHCP mode, please make sure that DHCP SERVER is available in your existing broadband connection to which WAN port of AC1200MS is connected.
- The default LAN port IP address of AC1200MS is 192.168.11.1 and do not set the WAN port IP address of AC1200MS in the same network segment of LAN port of AC1200MS, otherwise it may lead to the AC1200MS fail to work properly.
- Enter the password by phone keypad. The matching table between number and letters is as follows:
  - To input: D, E, F, d, e, f -- press '3'
  - To input: G, H, I, g, h, i -- press '4'
  - To input: J, K, L, j, k, l -- press '5'
  - To input: M, N, O, m, n, o -- press '6'
  - To input: P, Q, R, S, p, q, r, s -- press '7'
  - To input: T, U, V, t, u, v -- press '8'
  - To input: W, X, Y, Z, w, x, y, z -- press '9'
  - To input all other characters in the administrator password-----press '0', e.g. password is 'admin-admin', press '23646023646'

4 User Interface Web Page

4.1 Two-Level Management

The AC1200M/MS supports user management. For user mode operation, please log in to the user interface web page. The Username is “user” and the default Password is the last 8 letters of the LAN port MAC address.

This section also explains how to set up a password for an administrator/root user and how to adjust basic/advanced settings for successfully accessing the Internet.

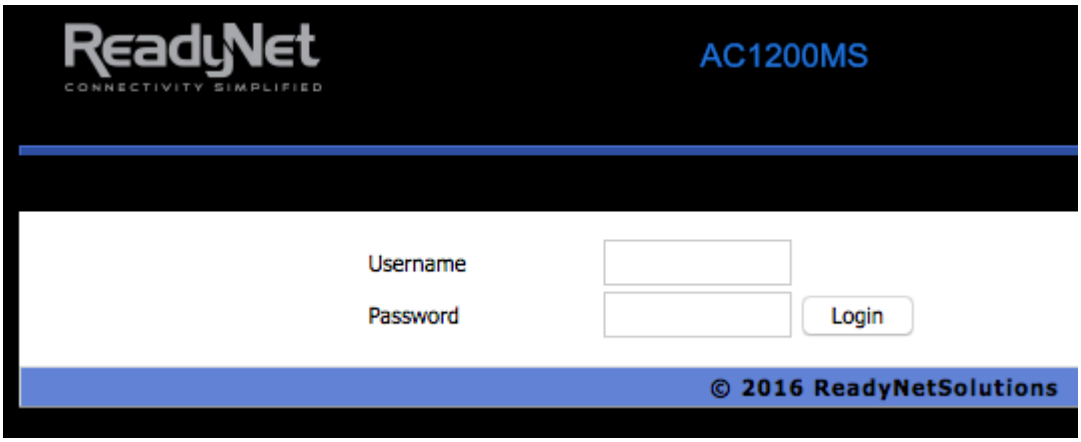
4.2 Accessing the User Interface Web Page

4.2.1 From the LAN Port

Step1. Connect your computer to one of the router’s LAN ports using an Ethernet cable.

Notice: You may either simply set up your computer to get IP dynamically from the router or set up the IP address of the computer to be the same subnet as **the default IP address of the router, which is 192.168.11.1**.

Step 2. Open a web browser on your computer, type **http://192.168.11.1.** The following login window will open.



Step 3. To login, type in the Username and Password found on the label on the bottom of the AC1200M/MS and click Login. (The username is “user” and the password is printed on the label on the bottom of your router.)

The web page will log out after 5 minutes of no activity.

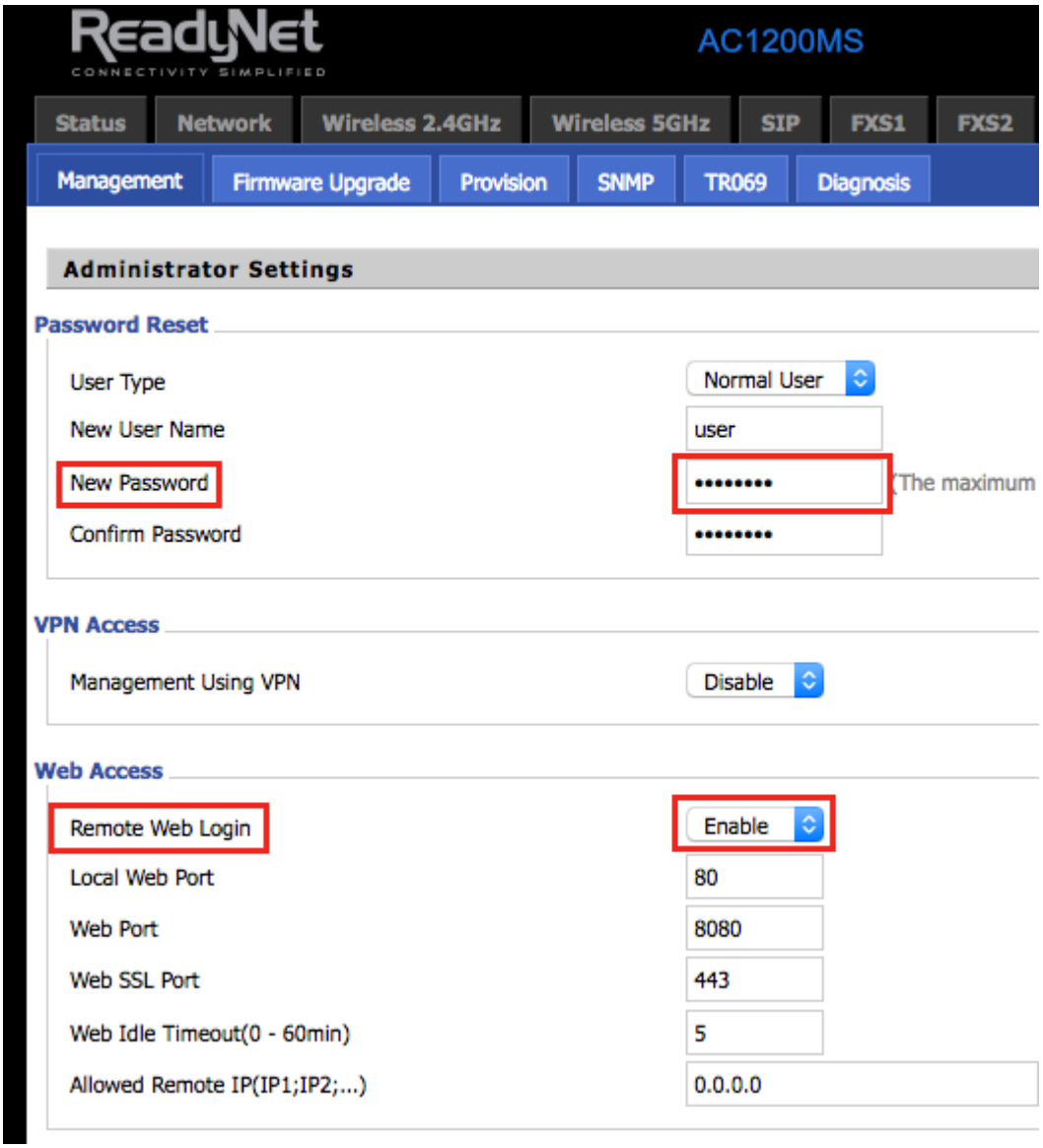
4.2.2 From the WAN Port

By default, remote web login from the WAN port is disabled. To enable remote web login from the WAN port, you will need to log in through a LAN port (see 4.2.1) to get the WAN IP address (see Status page), change the default password (Administration > Management > Password Reset), and enable remote management (Administration > Management > Web Access). The remote login port is 8080.

Step 1. Make sure your PC can connect to the router's WAN port.

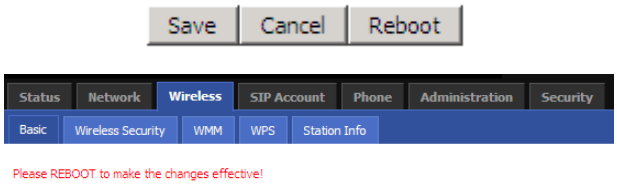
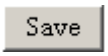
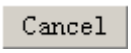
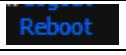
Step 2. Open a web browser on your computer and type **http://WAN IP ADDRESS:8080**, replacing **WAN IP ADDRESS** with the actual WAN IP address you obtained while logged in through the LAN port**.** Then follow the login procedures in 4.2.1.

Step 3. Go to Administration > Management to enable Remote Web Login and to reset your login password.

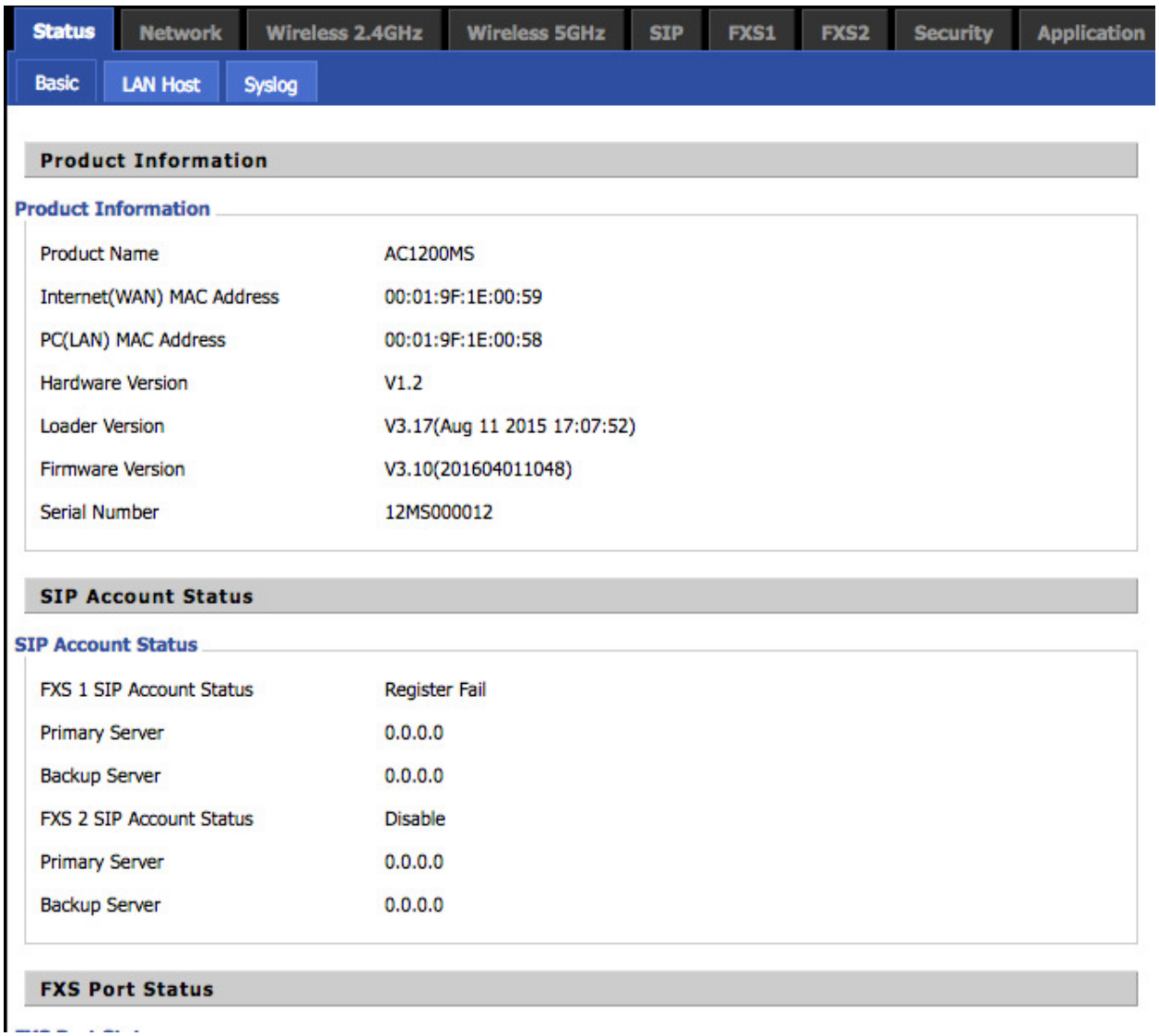


4.3 Web Page

Sub-navigation bars will appear on the line below the top navigation bar. Click on the sub-navigation bars to choose a configuration page. The web page will log out after 5 minutes of no activity.

<table>
<tr>
<td rowspan="3"> 
</td>
<td></td>
<td> 
</td>
<td>After every change, click this button to apply the change.
After clicking Save, the red Please REBOOT to make the changes effecti will appear.</td>
</tr>
<tr>
<td></td>
<td> 
</td>
<td>Click to cancel changes.</td>
</tr>
<tr>
<td></td>
<td> 
</td>
<td>Click to reboot the router.</td>
</tr>
</table>

5 Status



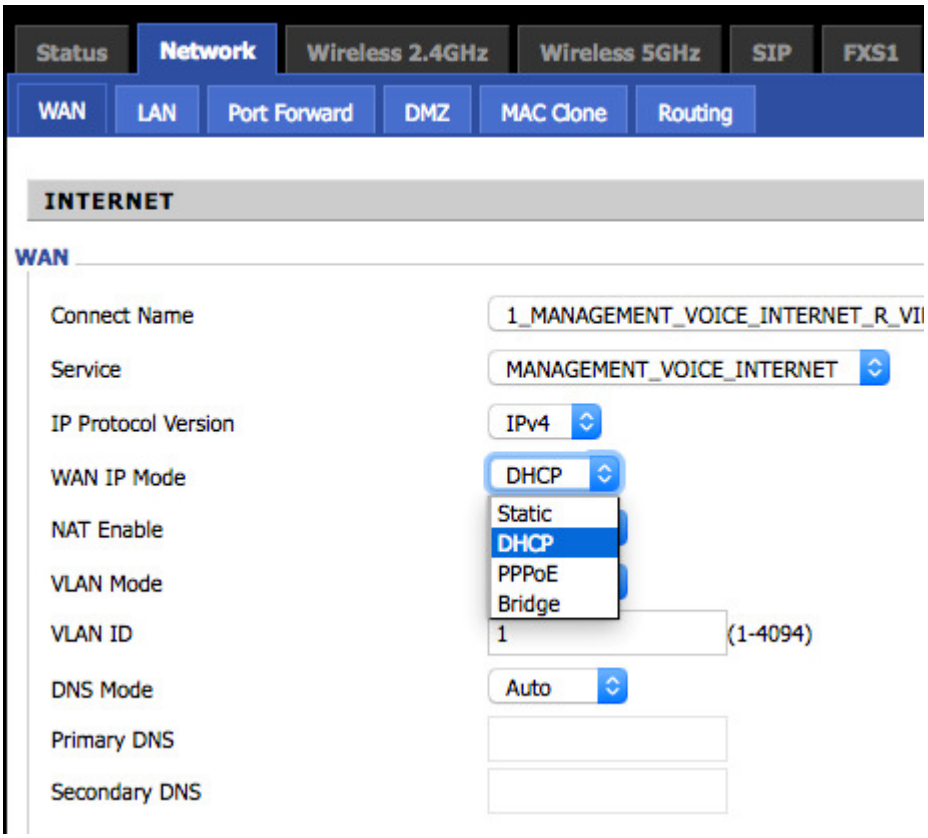
5.1 System Log

By default, the local system log is enabled. User can check the system log in **Status > Sys Log**.

6 Network

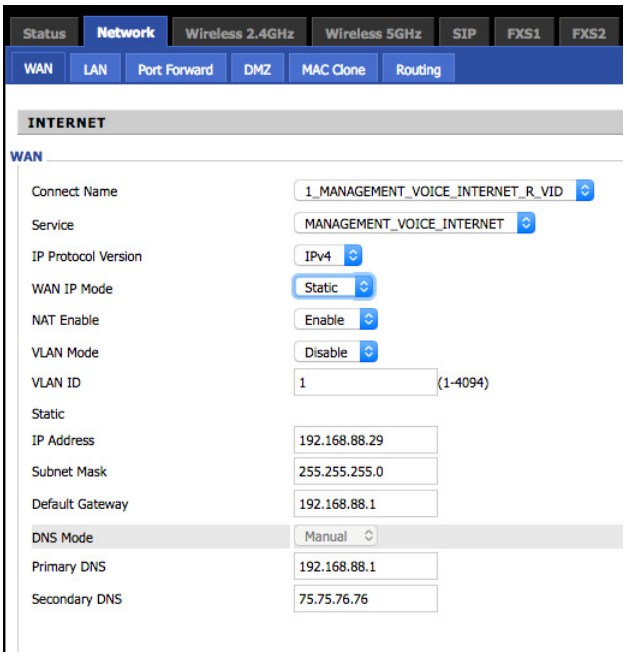
6.1 WAN

Open the **Network > WAN** web page as shown below and select the appropriate **IP Mode** according to the information from your ISP. There are three types offered – Static, DHCP and PPPoE.



6.1.1 Static IP

You will receive a fixed public IP address or a public subnet (multiple public IP addresses) from your DSL or Cable ISP service providers. In most cases, a Cable service provider will offer a fixed public IP while a DSL service provider will offer a public subnet. If you have a public subnet, you can assign an IP address to the WAN interface.

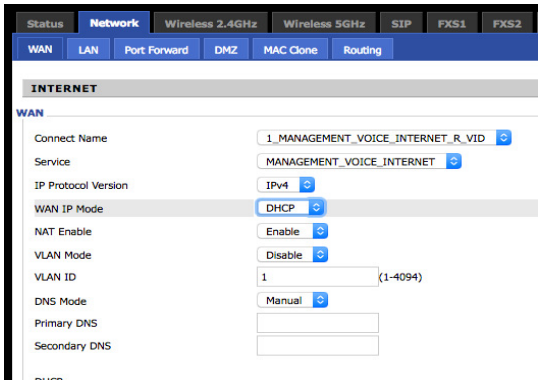


IP Address	Type the IP address.
Subnet Mask	Type the subnet mask.
Gateway IP Address	Type the gateway IP address.
Primary DNS Server	Type in the primary IP address for the route.
Secondary DNS Server	Type in secondary IP address for necessity in the future.

6.1.2 DHCP

The router has a built-in DHCP server that assigns a private IP address to each local host.

DHCP stands for Dynamic Host Configuration Protocol. The router by factory default acts as a DHCP server for your network so it automatically dispatches related IP settings to any local user configured as a DHCP client. It is highly recommended you leave the router enabled as a DHCP server if you do not have a DHCP server for your network.

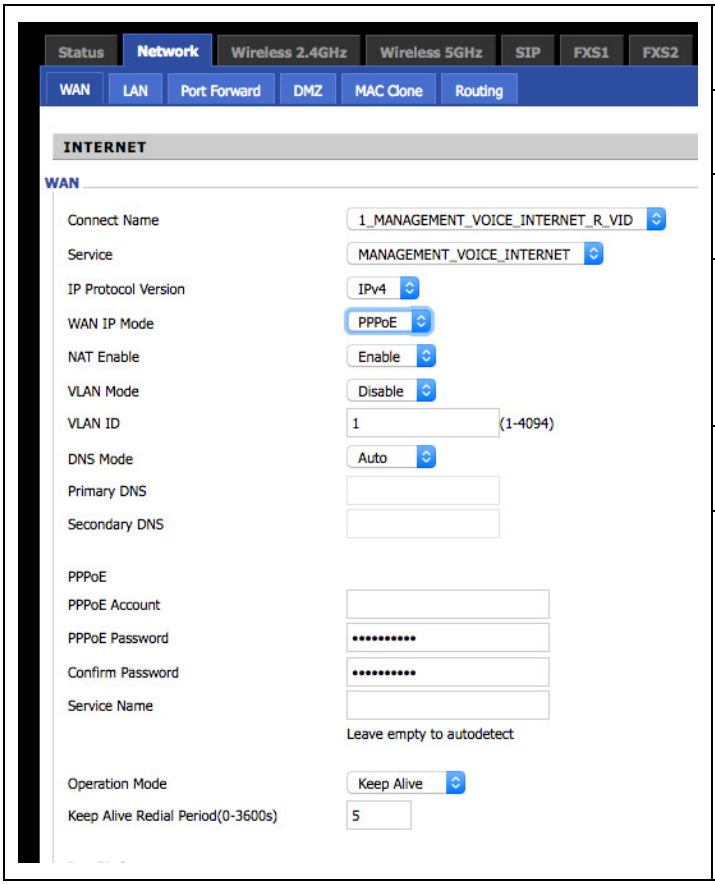


DNS Mode	Set the DNS Mode to Auto or Manual. If user chooses Manual, fill in the primary and secondary DNS addresses.
Primary DNS Server	Type in the primary IP address for the route.
Secondary DNS Server	Type in secondary IP address for necessity in the future.

6.1.3 PPPoE

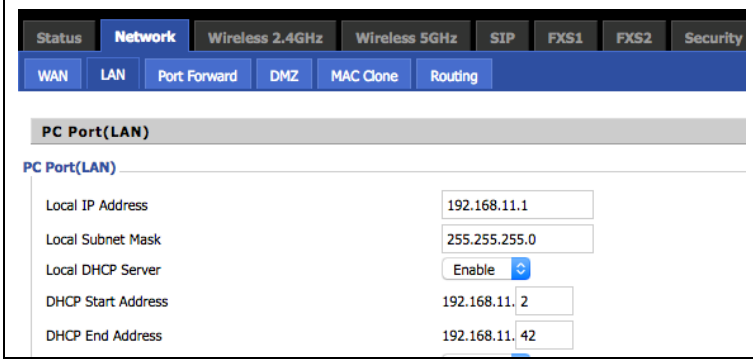
PPPoE stands for **Point-to-Point Protocol over Ethernet**. It relies on two widely accepted standards: PPP and Ethernet. It connects users through an Ethernet to the Internet with a common broadband medium, such as a single DSL line, wireless device, or cable modem. All users over the Ethernet can share a common connection.

PPPoE is often used for DSL. All local users can share one PPPoE connection for accessing the Internet. Your service provider will provide you information about user name, password, and authentication mode.



PPPoE Account	Assign a specific valid user name provided by the ISP.
PPPoE Password	Assign a valid password provided by the ISP.
Confirm Password	Input the password again.
DNS Mode	Set the DNS Mode to Auto or Manual. If Manual, fill in primary and secondary DNS addresses.
Primary DNS Server	Type in the primary IP address for the route.
Secondary DNS Server	Type in secondary IP address for necessity in the future.

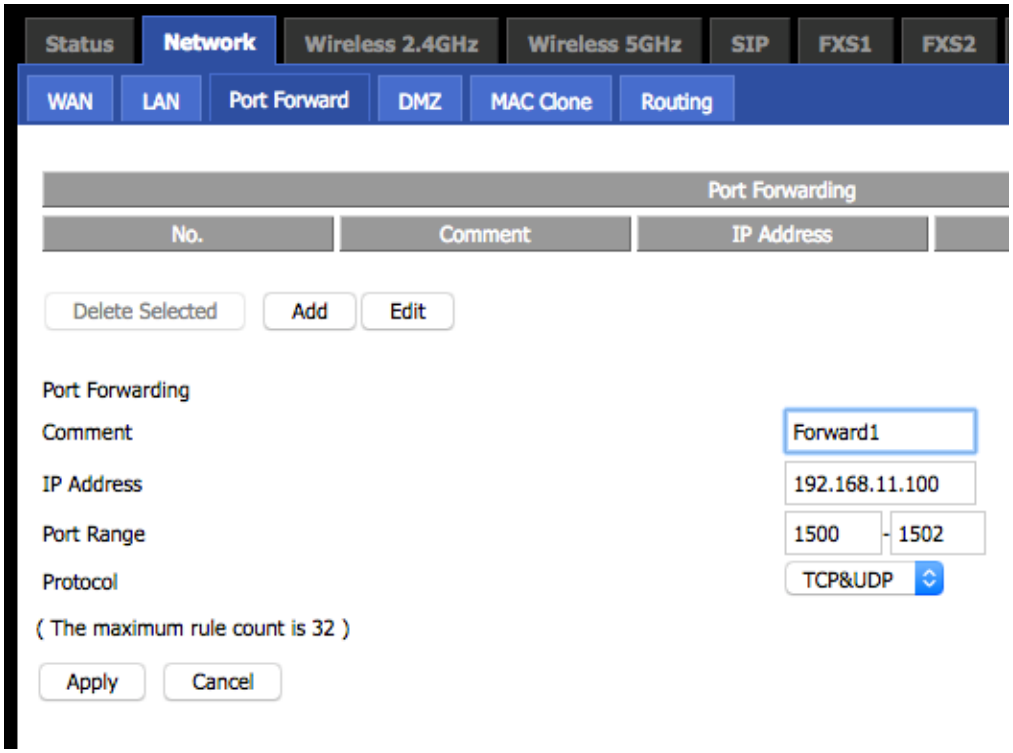
6.2 LAN



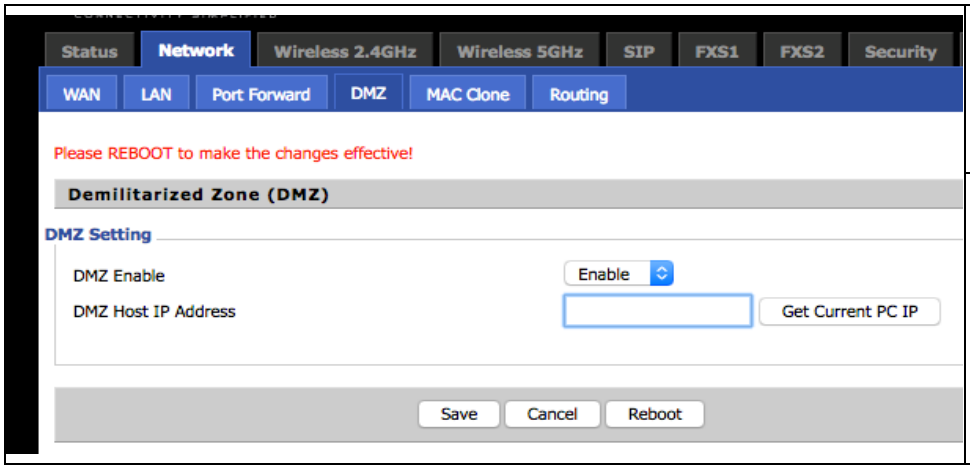
Local IP Address	Type in local IP address (Default: 192.168.11.1)
Local Subnet Mask	Type in an address code that determines the size of the network. (Default: 255.255.255.0/ 24)
Local DHCP Server	If or not enable DHCP server.

	DHCP Start/End Address	The DHCP start/end address.
	DNS Mode	Set the DNS Mode to Auto or Manual. If Manual, fill in the primary and secondary DNS addresses.
	Primary DNS Server	Type in the primary IP address for the route
	Secondary DNS Server	Type in the secondary IP address for the route

6.3 Port Forward



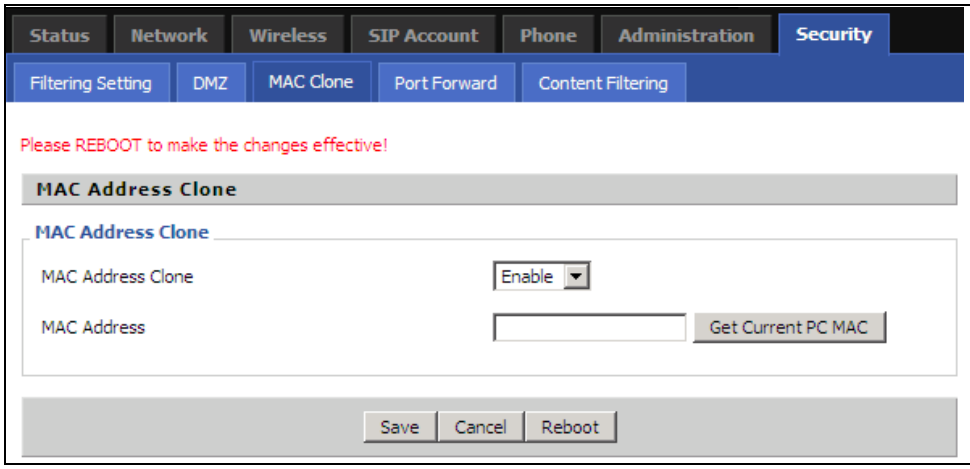
6.4 DMZ



DMZ Enable	Enable DMZ
DMZ Host IP Address	Enter the private IP address of the DMZ host

6.5 MAC Clone

Some ISPs will require you to register your MAC address. If you do not wish to re-register your MAC address, you can have the router clone the MAC address that is registered with your ISP. To use the Clone Address button, the computer viewing the Web-base utility screen will have the MAC address automatically entered in the Clone WAN MAC field.



Step 1. Press Get Current PC MAC to clone the current PC or MAC address to router's Internet port..

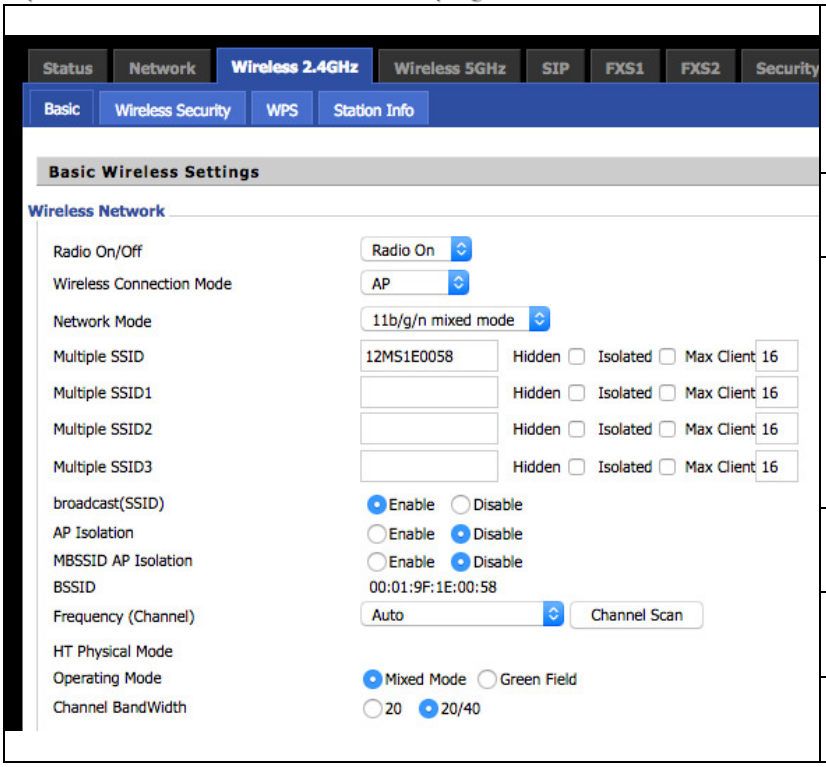
Step 2. Press Save to save the changes.

Step 3. Press Reboot to make changes effective.

7 2.4GHz and 5GHz Wireless Connection

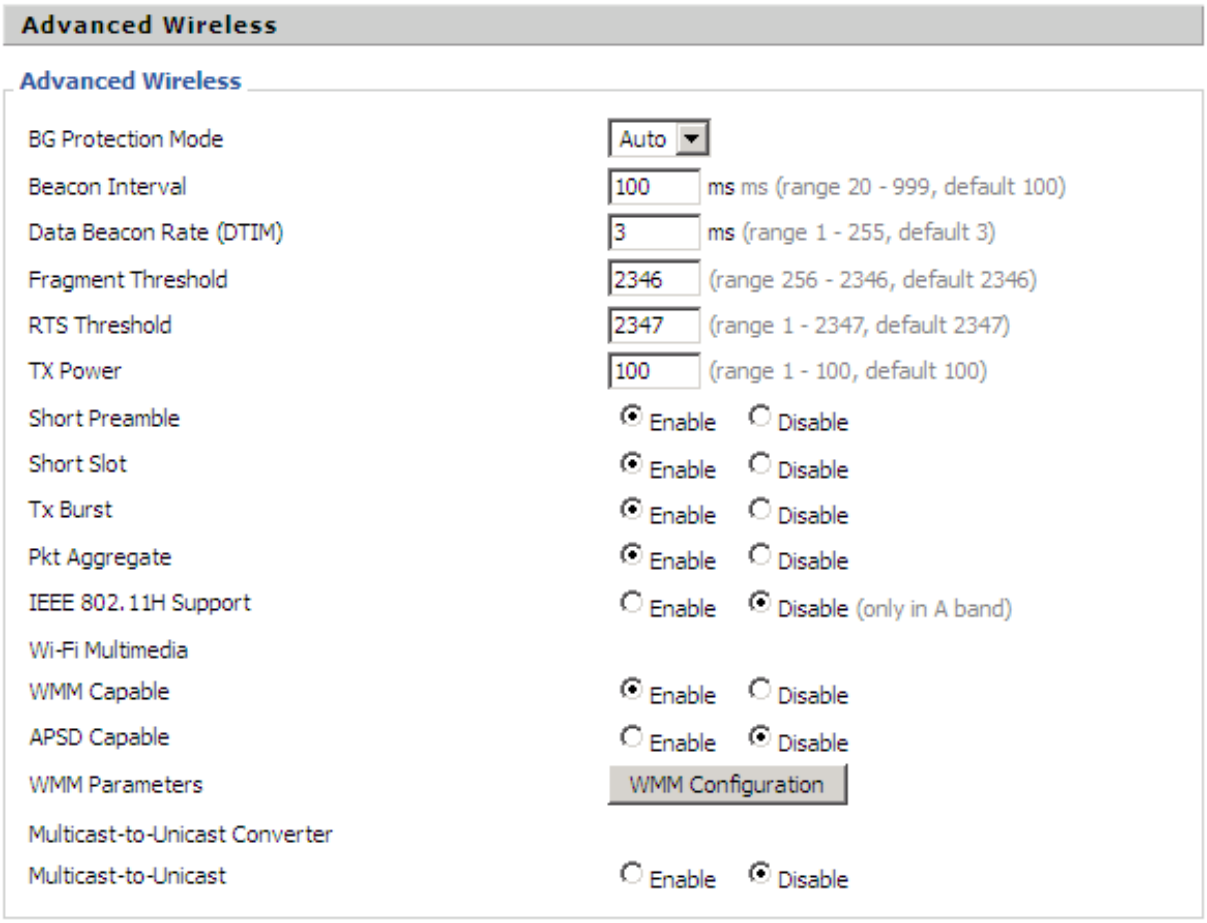
7.1 Enable Wireless and Set the SSID

Open the **Wireless > Basic** web page as shown below.



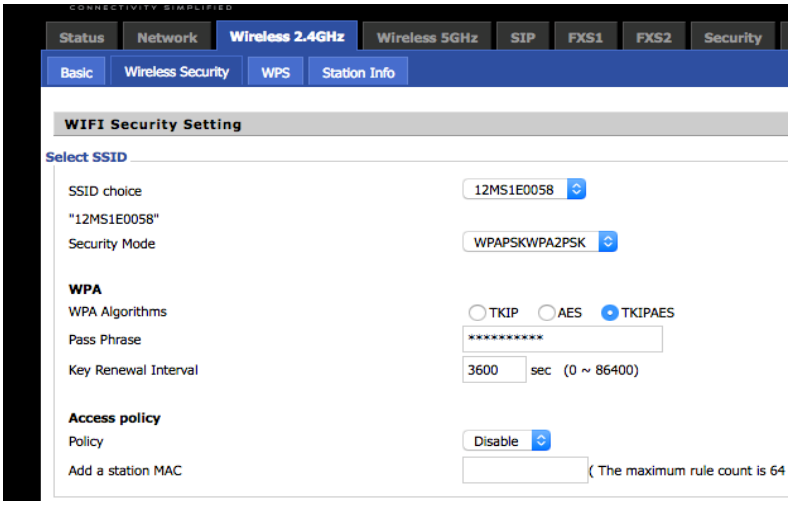
Radio On/Off	Press RADIO OFF to disable. Press RADIO ON to enable.
Network Mode	Choose one network mode from the drop down list.
Network Name (SSSID)	The SSID can be any text, number, or special characters. The default SSID is 1200MXXXXXX or 1200MSXXXXXX (last 6 digits of the LAN MAC).
Multiple SSSD1-3	For adding additional wireless networks.
Broadcast (SSID)	Allows user to disable SSID broadcast.
Frequency	For choosing channel frequency.

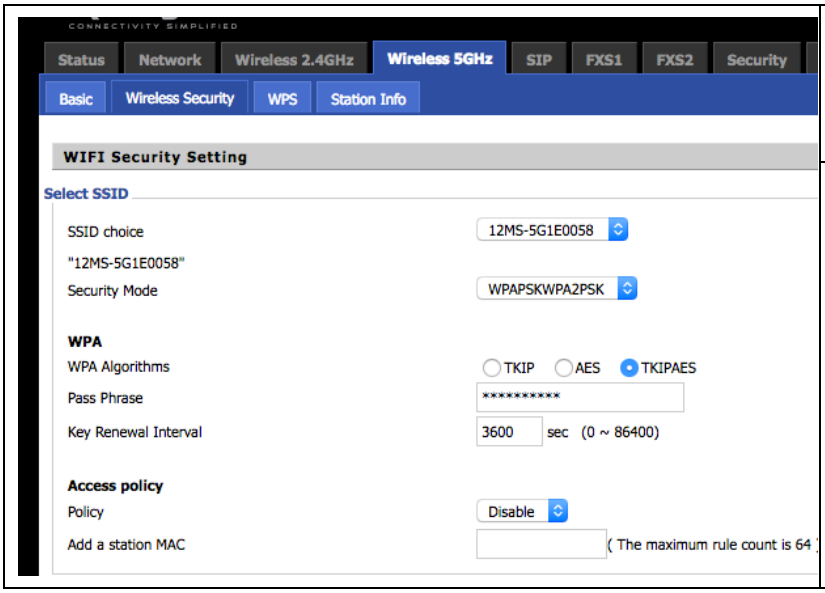
7.1.1 Advanced (Administrative Users)



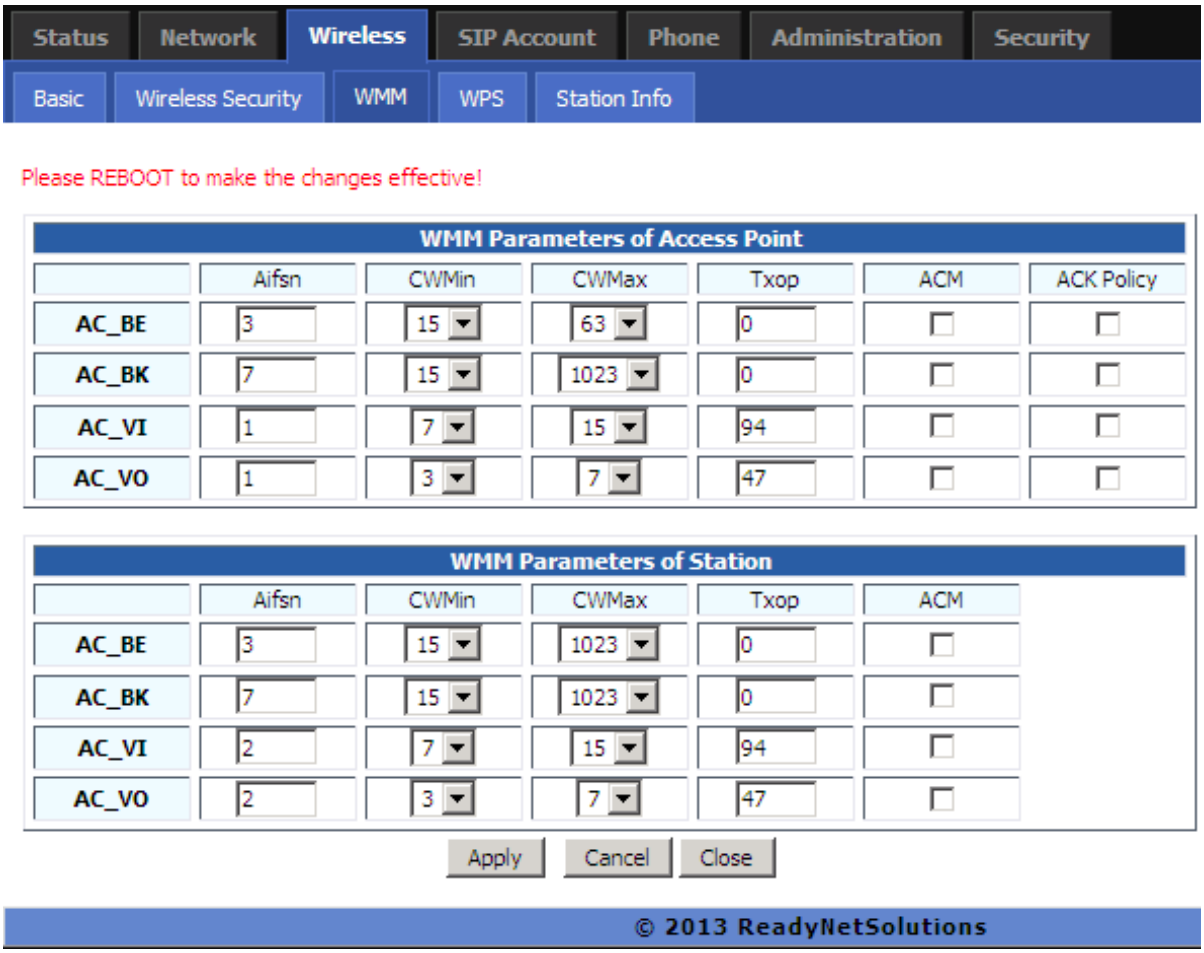
7.2 Wireless Security

Open the **Wireless > Security** web page to set up encryption for 2.4Ghz band and 5Ghz band..

<table>
<tr>
<td rowspan="2"> 
</td>
<td>SSID Choice</td>
<td>Select the SSID you’d like to configure.</td>
</tr>
<tr>
<td>Security Mode</td>
<td>Select an appropriate encryption mode for the security and privacy of your wireless data packets. Each encryption mode will bring out a different web page to offer additional configurations.</td>
</tr>
</table>

	**SSID Choice**	Select the SSID you'd like to configure.
	Security Mode	Select an appropriate encryption mode to improve the security and privacy of your wireless data packets. Each encryption mode will activate a different web page to configure.

7.3 WMM (Administrative Users)



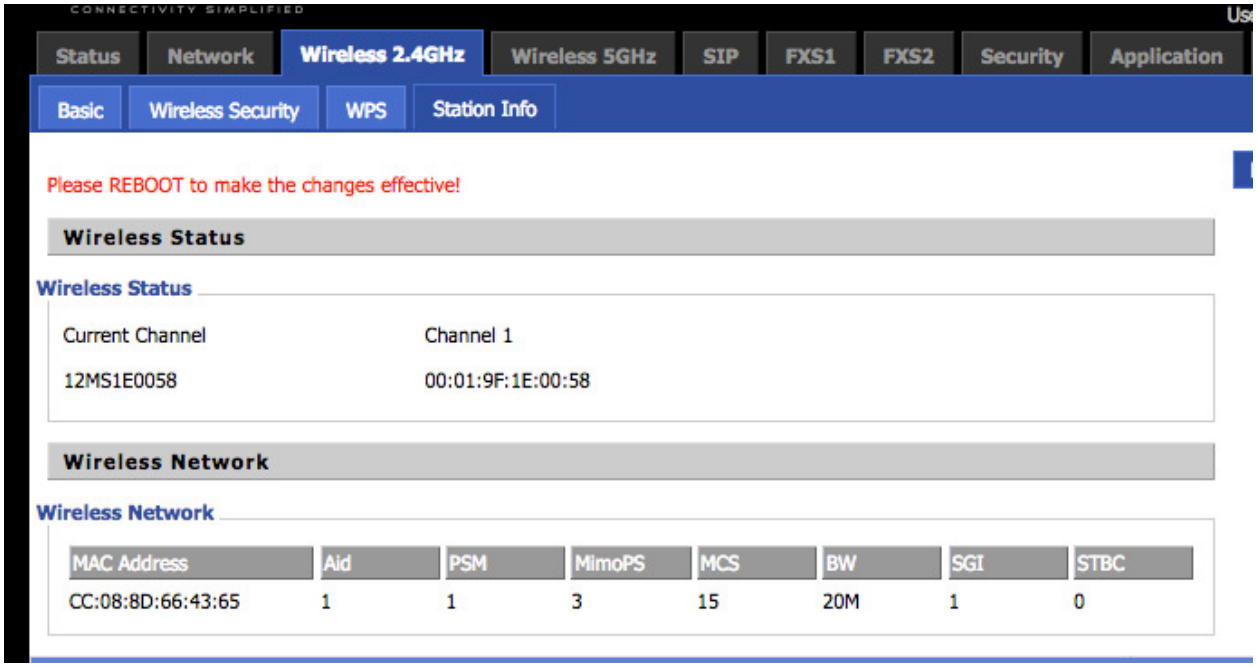
7.4 WPS

WPS (**Wi-Fi Protected Setup**) provides an easy procedure to make a network connection between a wireless station and a wireless access point (router) with the encryption of WPA and WPA2.

It is the simplest way to build a connection between wireless network clients and the router. Users do not need to select any encryption mode or type a long encryption passphrase to set up a wireless client every time. Users need only press a button on the wireless client and WPS will connect the client and router automatically.

<table>
<tr><td rowspan="2"> 
</td><td>WPS</td><td>Enable WPS.</td></tr>
<tr><td>Apply</td><td>Press the button to apply.</td></tr>
</table>

7.5 Station Info



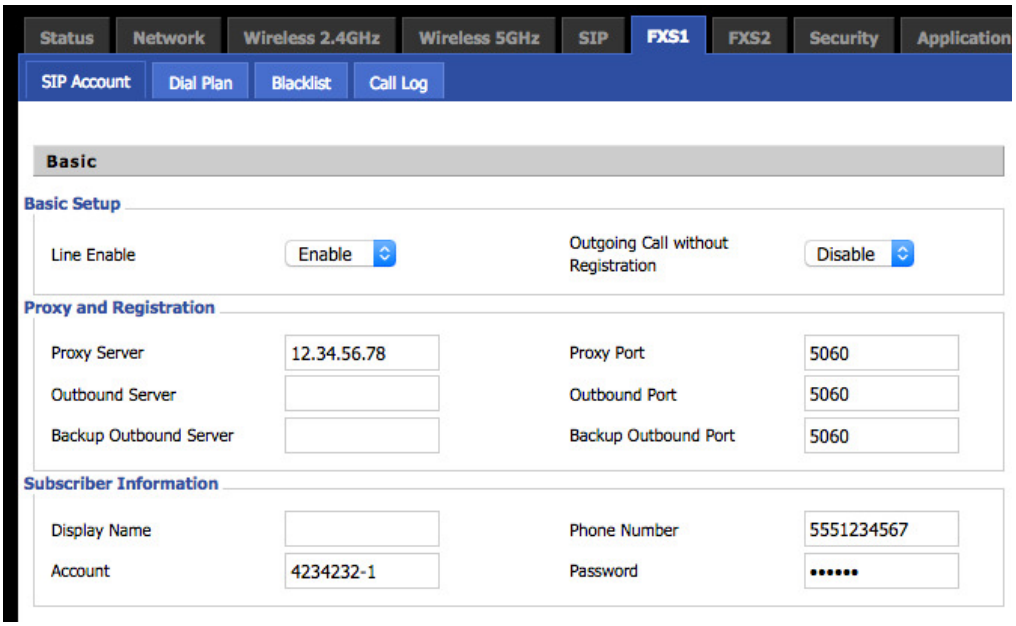
8 SIP, FXS1 and FXS2 (AC1200MS)

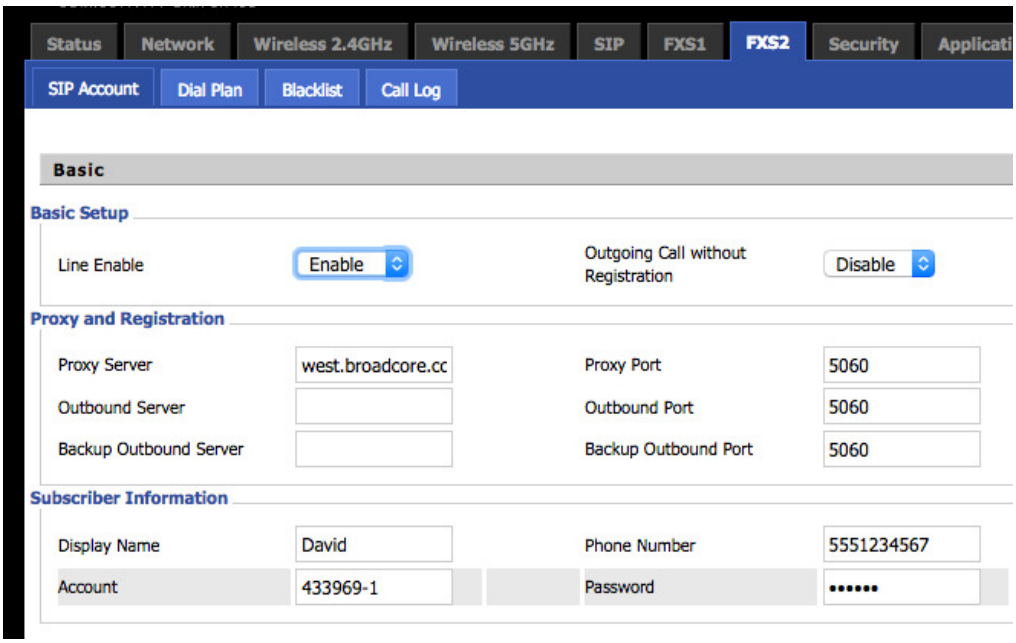
8.1 Register

The AC1200MS has two FXS port used for SIP calls. Before registering you will need a SIP account from your administrator or provider.

8.1.1 Configure SIP from Web Page

Step 1. Open **FXS1** or **FXS2 > SIP Account** web page.





Step 2. Enter the Server domains and Port addresses provided by your administrator or provider into the Server and Port parameters.

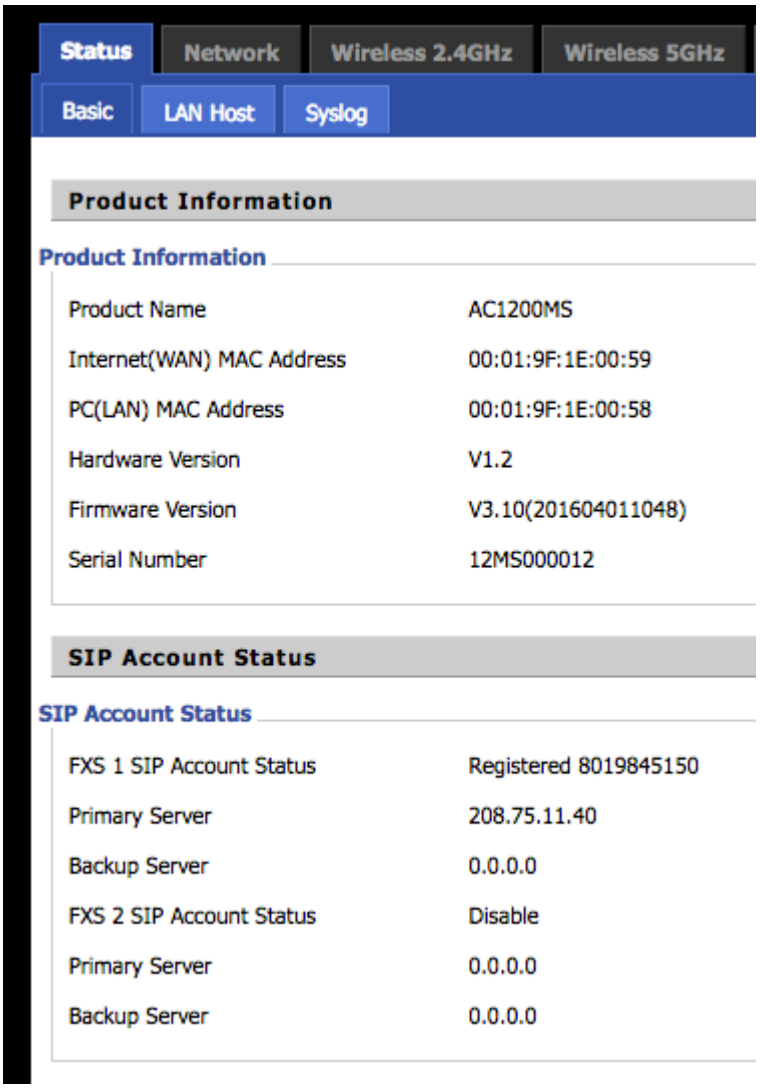
Step 3. Enter the account name, phone number, account number, and password from your provider or administrator into Display Name, Phone Number, Account, and Password parameters.

Step 5. Click on Save at the bottom of the web page.

Note: If Please REBOOT to make the changes effective! appears, Click Reboot to make changes effective.

8.1.2 View the Register Status

To view the status, open the Status web page. If the value is registered as follows, the AC1200MS is ready to make phone calls.



8.2 Phone Features

8.2.1 Calling phone or extension numbers

To make a phone or extension number call:

a) Both ATA and the other VoIP device (i.e., another ATA or SIP product) must have public IP addresses, or

b) Both ATA and the other VoIP device must be on the same LAN using private or public IP addresses, or

c) Both ATA and the other VoIP device can be connected through a router using public or private IP addresses.

To make a call, pick up the analog phone or turn on the speakerphone and input the IP address directly, ending the input with "#".

8.2.2 Direct IP calls

Direct IP calling allows two phones, that is, an ATA with an analog phone and another VoIP device, to talk to each other without a SIP proxy. VoIP calls can be made between two phones if:

a) Both ATA and the other VoIP device (i.e., another ATA or SIP product) have public IP addresses, or

b) Both ATA and the other VoIP device are on the same LAN using private or public IP addresses, or

c) Both ATA and the other VoIP device can be connected through a router using public or private IP addresses.

To make a direct IP call, pick up the analog phone or turn on the speakerphone and input the IP address directly, ending the input with "#".

8.2.3 Call Hold

While in conversation, press "*77" to put the remote end on hold. Then you will hear dial tone and the remote party will hear the hold tone.

Press "*77" again to release the hold and resume bi-directional media.

8.2.4 Blind Transfer

Assuming that call Party A and Party B are in conversation and A wants to blind transfer B to C, Party A dials "*78" to get a dial tone, dials party C's number and immediately presses "#" (or waits 4 seconds) to dial out. Party A can then hang up.

8.2.5 Attended Transfer

Assuming that call Party A and Party B are in conversation. A wants to Attend Transfer B to C.

Step 1. Party A dials "*77" to put Party B on hold, when Party A hears the dial tone, A dials C's number, then Party A and Party C are in conversation.

Step 2. Party A dials "*78" to transfer to C, now B and C are in conversation.

Step 3. If the transfer is not successful, A and B are in conversation again.

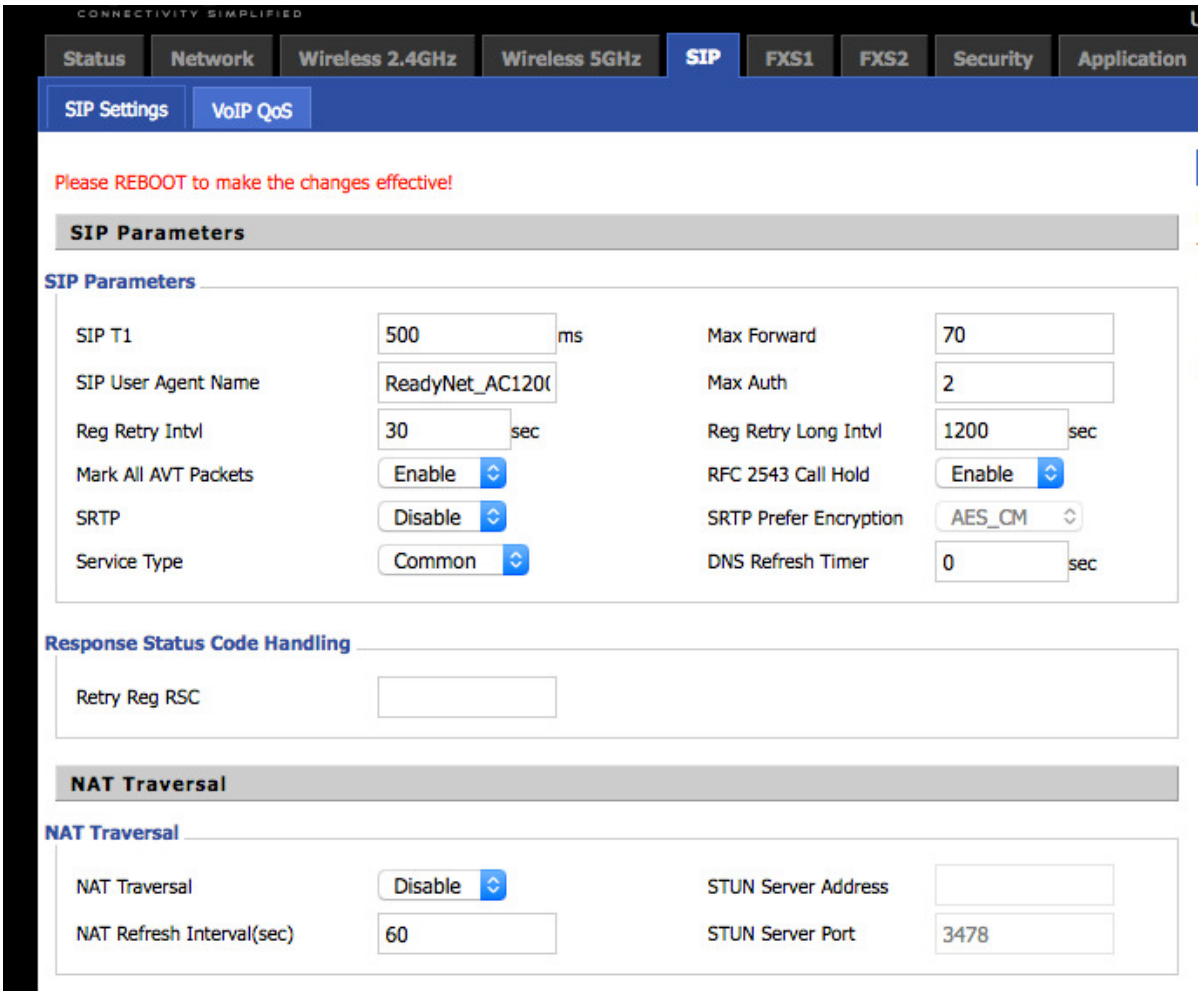
8.2.6 Conference

Party A and Party B are connected and A wants to add C to the conference.

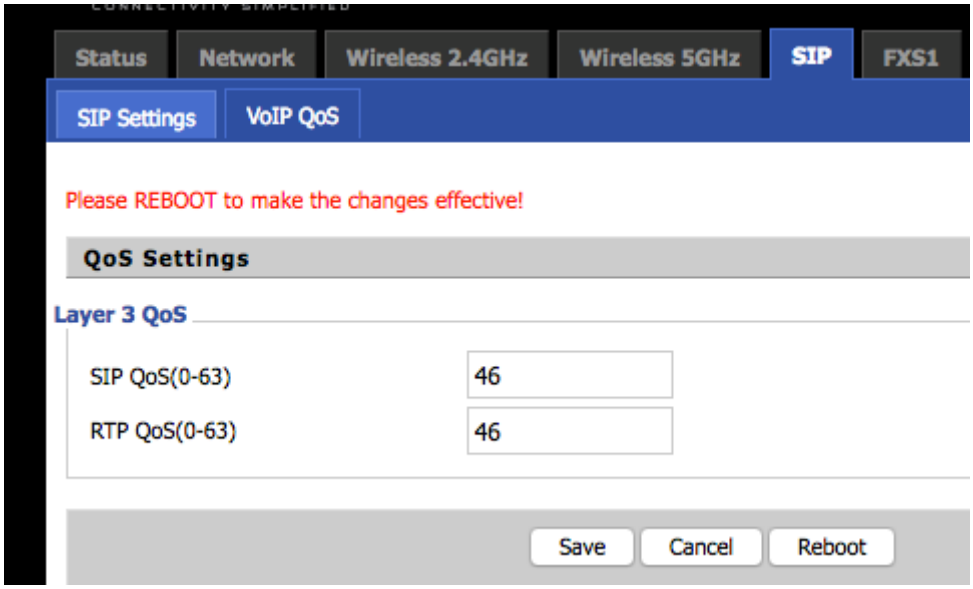
Step 1. Party A dials "*77" to place Party B on hold, when Party A hears the dial tone, A dials C's number, then party A and party C are in conversation.

Step 2. Party A dials "*88" to add C, now A, B and C are in conference.

8.2.7 SIP Settings

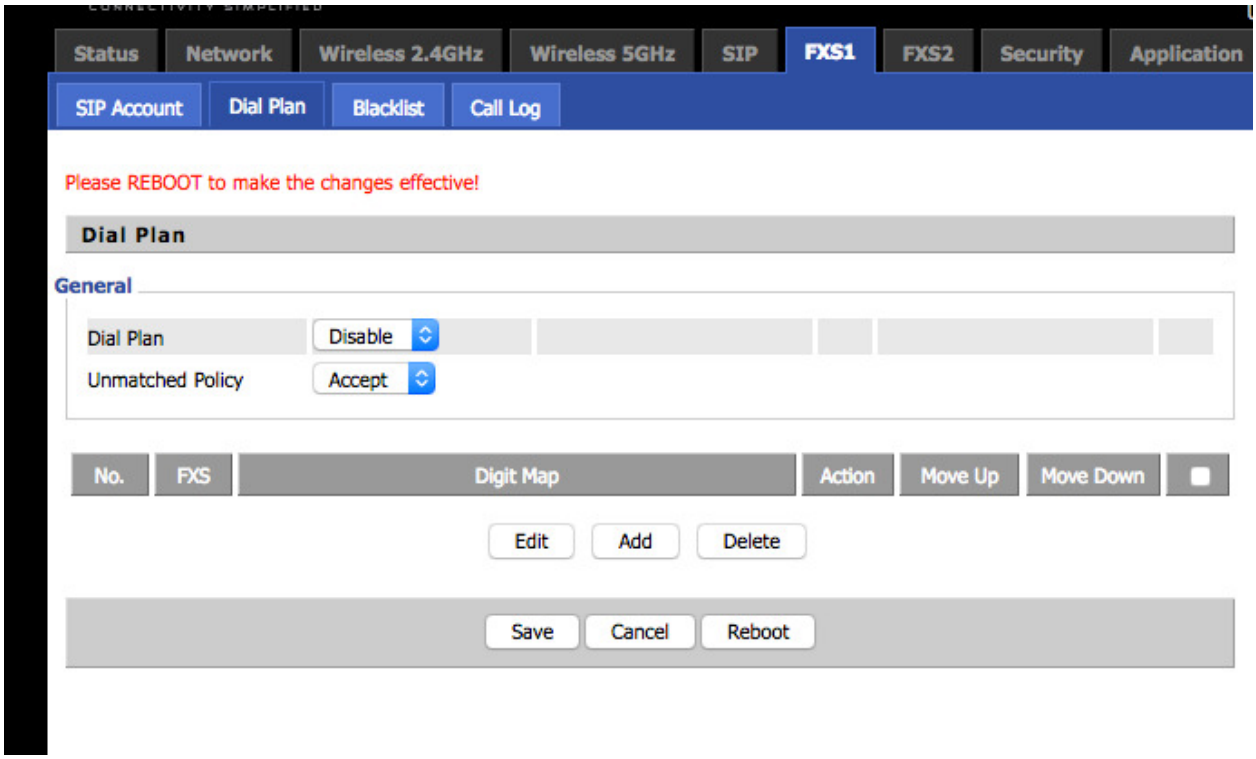


8.2.8 VoIP QoS



8.3 FSX

8.3.1 Dial Plan



8.3.2 Call Log

Redial List

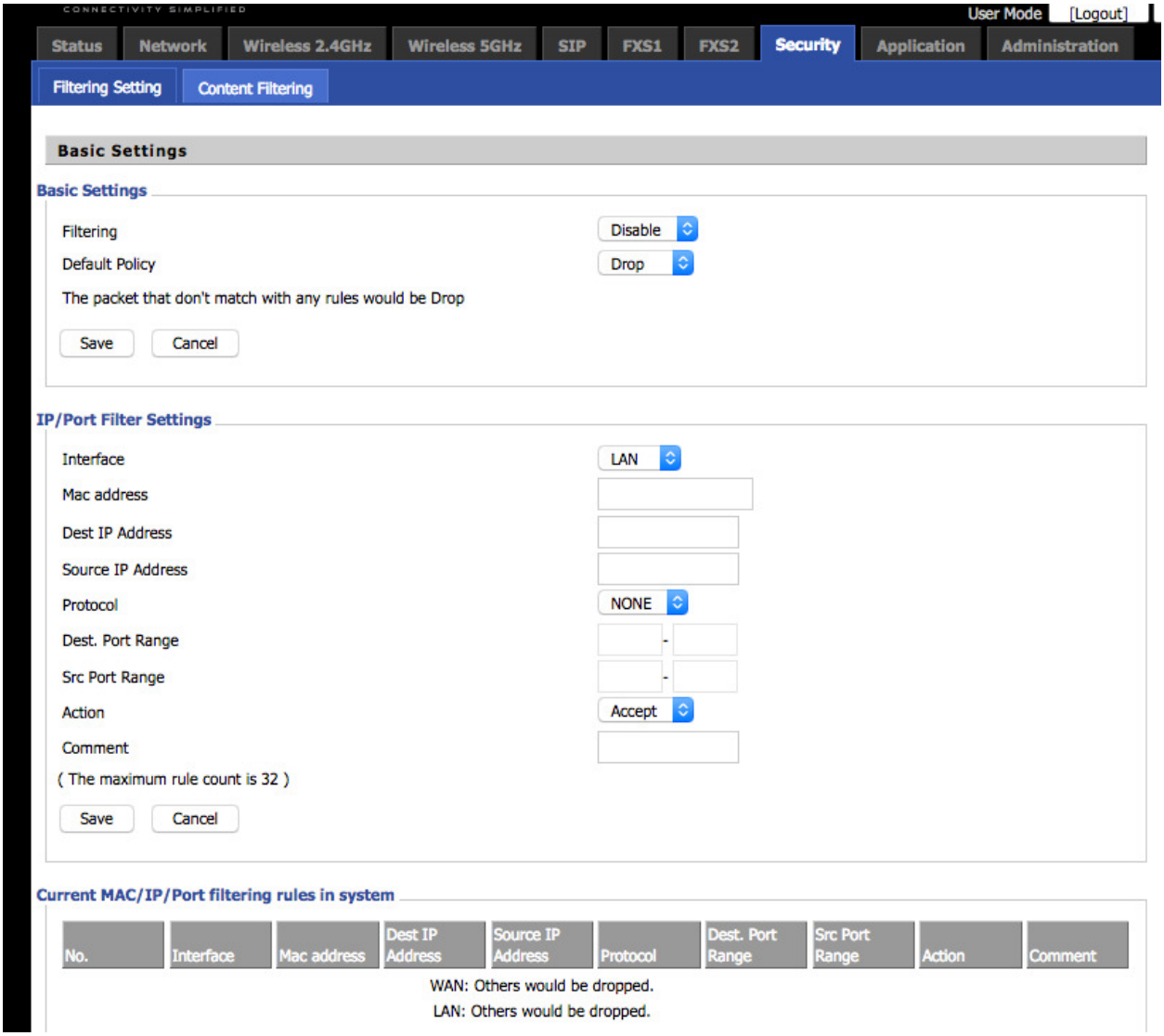
Index	NUMBER	Start Time	Duration	
1	501	08/13 09:13	00:00:01	☐
2	550	08/13 15:56	00:00:03	☐
3	550	08/13 16:00	00:00:07	☐
4	1001	08/13 16:12	00:00:01	☐
5	550	08/13 16:12	00:00:08	☐
6	550	08/13 16:16	00:00:10	☐
7	550	08/13 16:32	00:00:56	☐
8	550	08/13 16:38	00:00:22	☐
9	550	08/13 17:06	00:00:22	☐
10	550	08/13 17:07	00:01:01	☐

Answered Calls

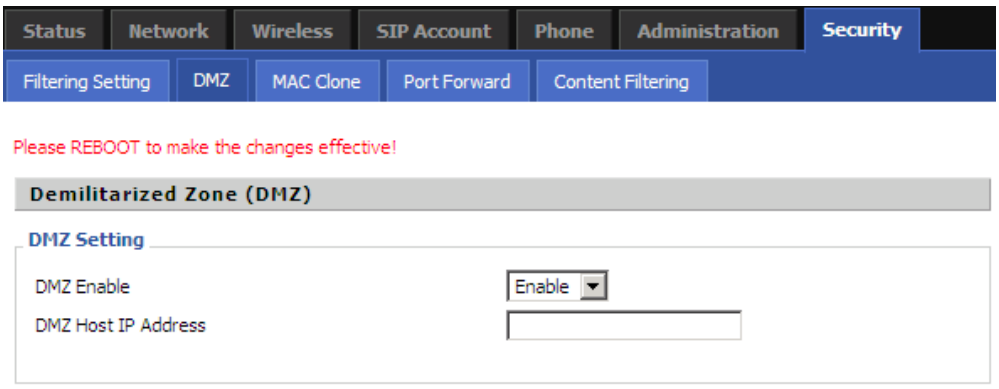
Index	NUMBER	Start Time	Duration	
1	501	08/13 09:13	00:00:15	☐
2	015910695671	08/13 09:58	00:03:44	☐

9 Security

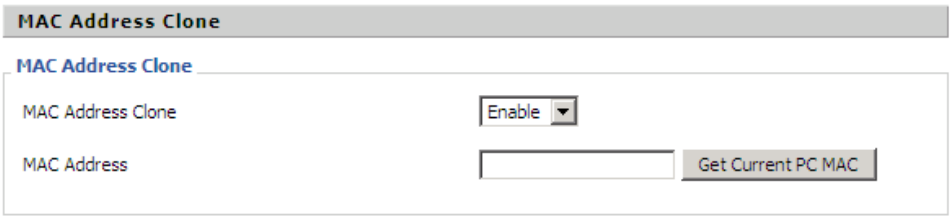
9.1 Filtering Setting



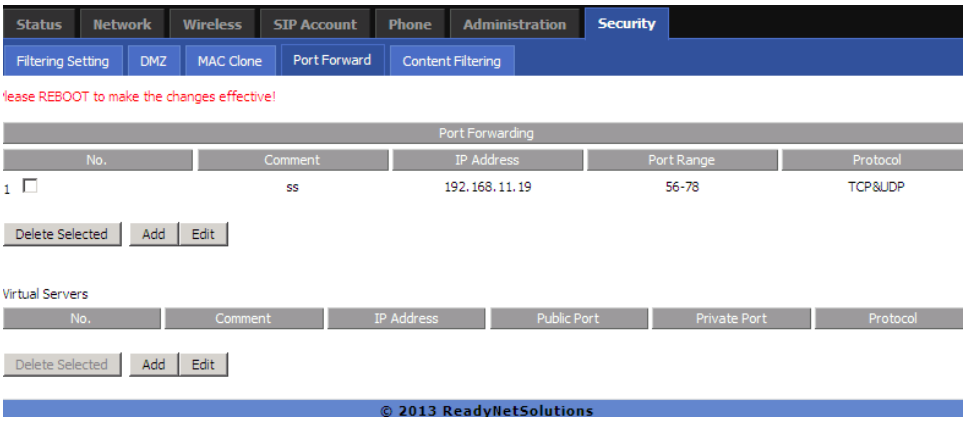
9.2 DMZ



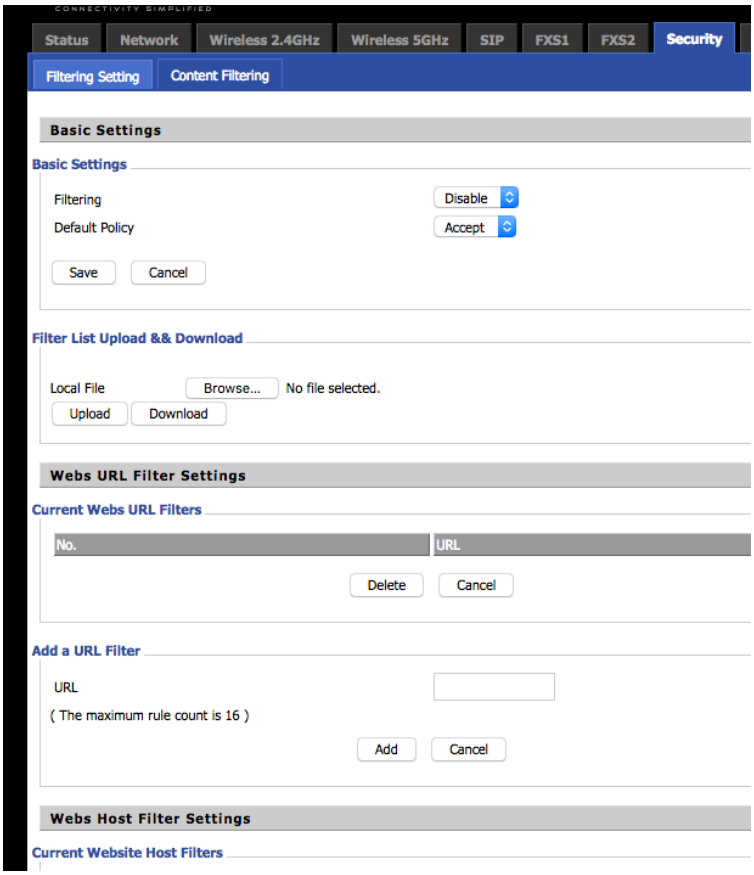
9.3 MAC Clone



9.4 Port Forward

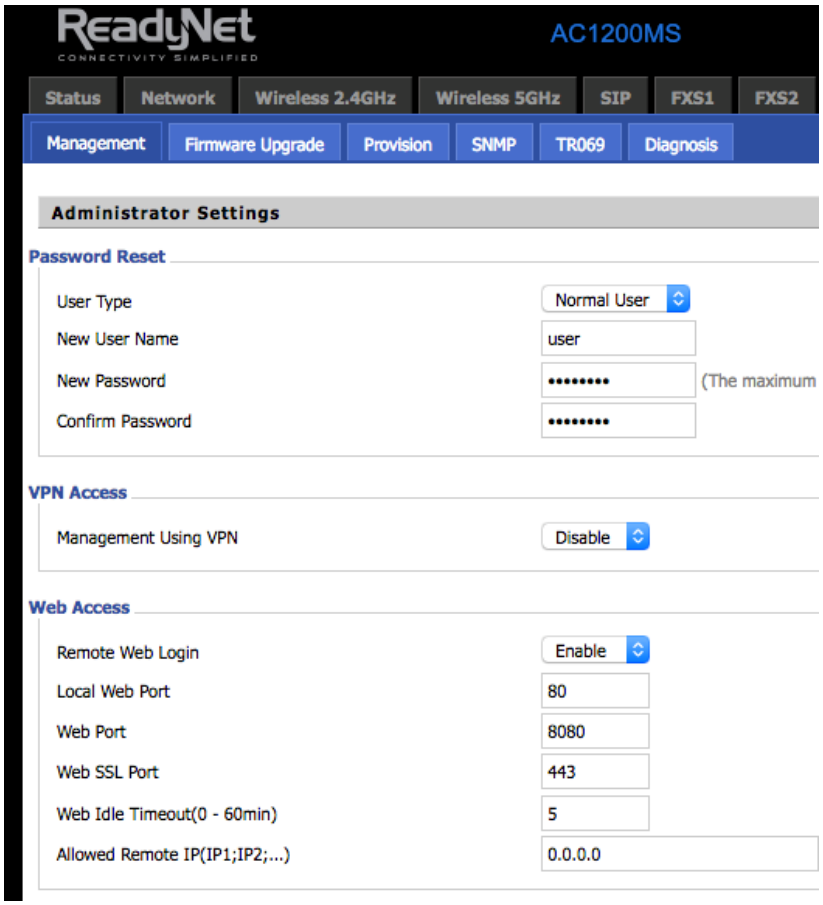


9.5 Content Filtering



10 Administration

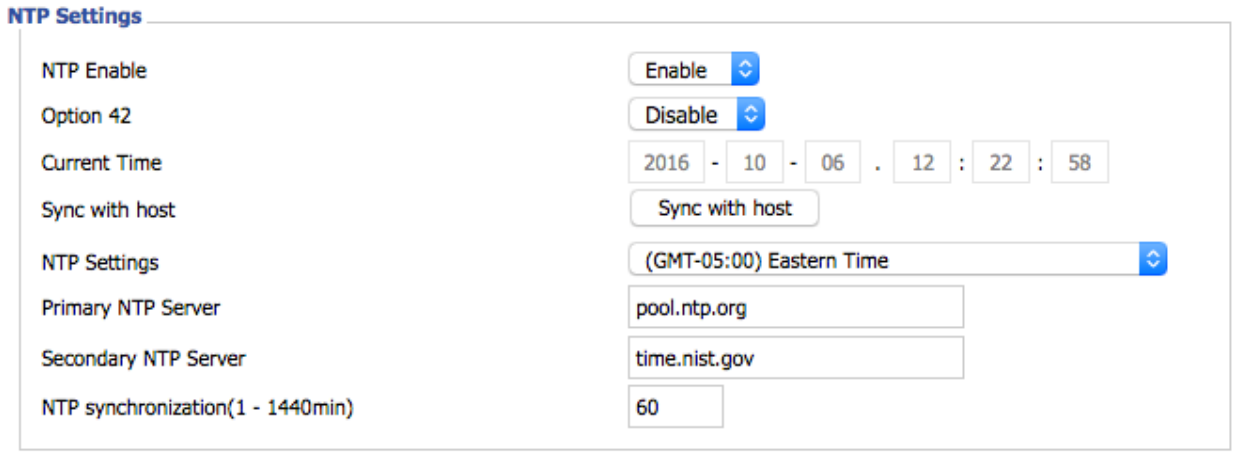
10.1 Management



User Type	Select the user type
New User Name	User can change new user name
New Password	Input the new password
Confirm Password	Confirm the password
NTP Enable	Enable NTP
Current Time	Display the current time.
NTP Settings	Select the time zone.
Primary NTP Server	The primary NTP server
Secondary NTP Server	The secondary NTP server
NTP syn-chronization	Set the NTP synchronization.

10.1.1 Setting Up the Time Zone

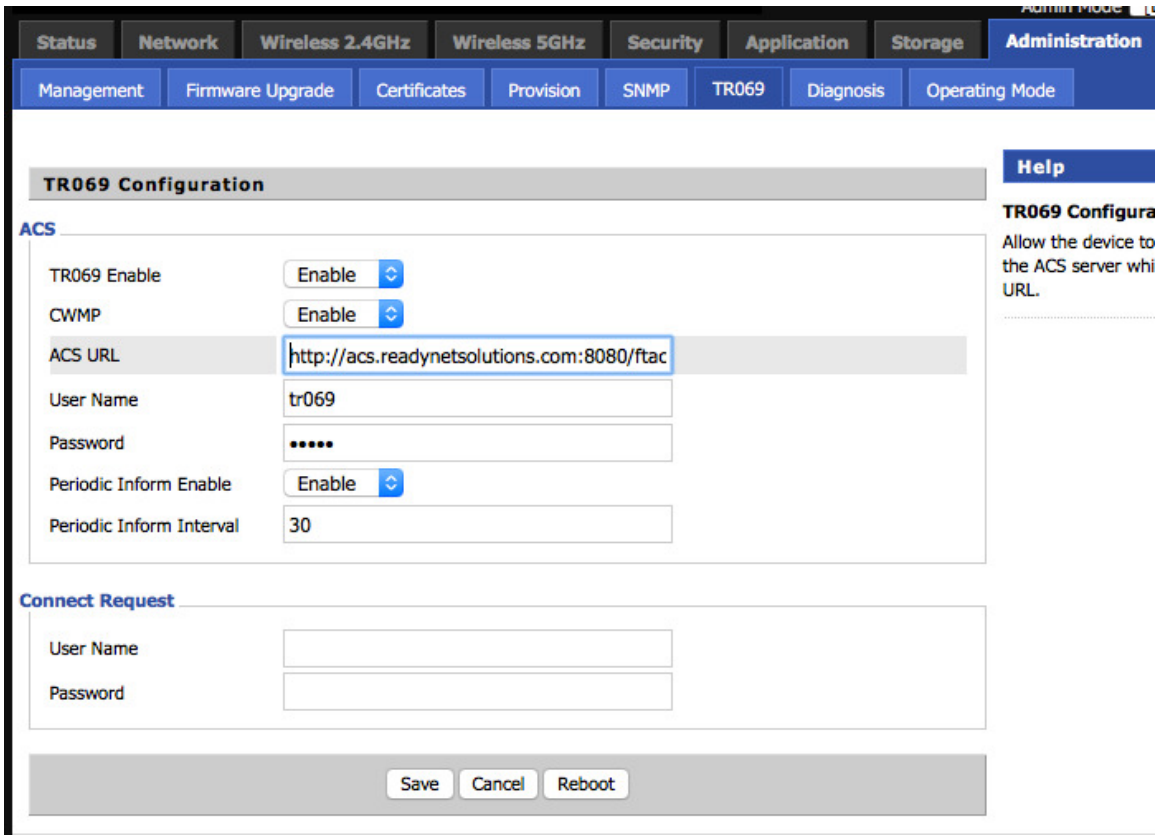
Open **Administration > Management** web page as shown below, select the **Time Zone**, specify the **NTP server** and set the update interval in **NTP synchronization**.



10.2 TR-069

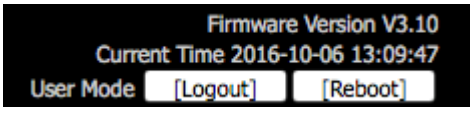
To configure the router for management by a TR-069 server (ACS), click Administration -> TR069 and set both TR069 and CWMP to ‘Enable’. Enter the location of the ACS in the ‘ACS URL’ field. In addition if the ACS requires a username and password, enter the ‘User Name’ and ‘Password’ fields. To configure the router to check in with the ACS, set ‘Periodic Inform' to 'Enable’ and set the value of 'Periodic Inform Interval' to the number of seconds between each check in.

Click ‘Save’ followed by ‘Reboot’ for your settings to be applied.



10.3 Logout

Press **logout** to exit.



10.4 Reboot

Press **Reboot** button to reboot the AC1200M/MS.

11 FCC Statement

This device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, many cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

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

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. This equipment should be installed and operated with minimum distance 28cm between the radiator and your body.

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