智科通信

We Focus· We Deliver

UC510
IP Office for SOHO

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This device 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.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment 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, may 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.

Table of Contents

Safety Notice

Please read the following safety notices before installing or using this device. They are crucial for safe and reliable operation of the device. Failure to follow the instructions contained in this document may result in damage to your device and void the manufacturer's warranty.

1. Please use the external power supply which is included in the package. Other power supplies may cause damage to the device, affect the performance or induce noise.
2. Before using the external power supply in the package, please check your building power voltage. Connecting to Inaccurate power voltage may cause fire and damage.
3. Please do not damage the power cord. If the power cord or plug is impaired, do not use it. Connecting a damaged power cord may cause fire or electric shock.
4. Ensure the plug-socket combination is accessible even after the device is installed. In order to service this device it will need to be disconnected from the power source.
5. Do not drop, knock or shake the device. Rough handling can break internal circuit boards.
6. Do not install the device in places where there is direct sunlight. Also do not place the device on carpets or cushions. Doing so may cause the device to malfunction or cause a fire.
7. Avoid exposing the device to high temperature (above 40°C), low temperature (below -10°C) or high humidity. Doing so could cause damage and will void the manufacturer warranty.
8. Keep this device far away from water or any liquid which would damage the device.
9. Do not attempt to open it. Non-expert handling to the device could cause damage and will immediately void the manufacturer warranty.
10. Consult your authorized dealer for assistance with any issues or questions you may have.
11. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the device.
12. Wipe it with soft cloth that has been slightly dampened in a mild soap and water solution.
13. If you suspect your device has been struck by lightning, do not touch the device, power plug or phone line. Call your authorized dealer for assistance to avoid the possibility of electric shock.
14. Ensure the device is installed in a well ventilated room to avoid overheating and damaging the device.
15. Before you work on any equipment, be aware of any hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. If you are in a situation that could cause bodily injury.

Directory

Chapter 1 Breif Introduction

1.1 Brief Introduction of UC510/UC520

UC510/520 is designed specifically as an IP Office for SOHOs (Small Office and Home Offices). The new solution offers not only a Wi-Fi router supporting VPN Client/Server, VLAN, and external ADSL connection... but also a fully featured IP PBX that can host up to 10 extensions with 2 analog ports connected, and supports Call Forward, Call Recording, Blind/Attendant Transfer, and many other features.
UC510/520 is configured and managed through a single web GUI which significantly reduces the time and effort required to install the product. This simplified management and reduction in hardware costs through merging two products into one makes the UC510 an amazing and cost effective solution for SOHOs.

Telephony Module: Built-in 2 FXO or 1FXOS; LTE is default in UC520.

Model	FXS	FXO	LTE
UC510	1	1	0
	0	2	0
UC520	1	1	1
	0	2	1

1.2 Main Features

PBX Features

BLF
Blind/Attended Transfer
Call Forward
Call Pickup
DID
DISA
Dial Plan
Follow Me
IVR/ IVR Prompts
Inbound Route
Music On Hold
Outbound Route
Phone Provisioning
Ring Group
SIP/FXO Trunk
Time Rule
Voicemail/Voicemail to Email

Router Features

Internet Access (PPPoE, Static or DHCP)
VLAN (IEEE802.1Q)
DHCP List
Blind IP to MAC
Wi-Fi Basic Setup
Wi-Fi Security Setup
Wi-Fi Mac Address Filter
Wi-Fi Advanced Setup
Online Host
NAT: Port Forwarding/DMZ Host

1.3 Hardware Interfaces

UC510 Front Panel

UC510Rear Panel

1 * Turbo Button
1 * Power Interface (DC 12V 2A)
5 * Ethernet Interfaces (10/100Mbps)
2 * Analog Ports(FXO/FXS)
2* USB Ports

UC510/520 LED Indication:

Indication	Function	Status	Explanation
PWR	Power Status	On	Power On
		Off	Power Off
WPS	WPS Status	On	WSC Succeeded(Off after300s)
		Off	WPS Ready or Disabled
		200ms Blink	WSC Running, Timeout 120s
		100ms Blink	WSC Failed or Timeout 120s
WAN	WAN Data Status	Blink	Data Transporting
		Off	Line Disconnected
LAN	LAN(1..2..3..4) Data Status	Blink	Data Transport
		Off	Line Disconnected
Wi-Fi	Wireless Status	On	Wi-Fi Enabled
		Off	Wi-Fi Disabled
1	FXO	On	Channel Loading Succeeded
		Off	Channel Loading Failed
2	FXS	On	Channel Loading Succeeded
		Off	Channel Loading Failed
*3G/4G	3G/4G Status (UC520 support)	On	Module Works
		Blink	Module Loading Succeeded or Data Transporting
		Off	No Module, or No SIM card, or Not Working

Notice: WPS (Wi-Fi Protected Setup), WSC (Wi-Fi Simple Configuration)

1.4 Environmental Requirements

- Working Temperature: 0 °C ~40 °C
- Storage Tempreture: -20 °C ~ 55 °C
- Humidity: 5~95% Non-Condensing

1.5 Packing List

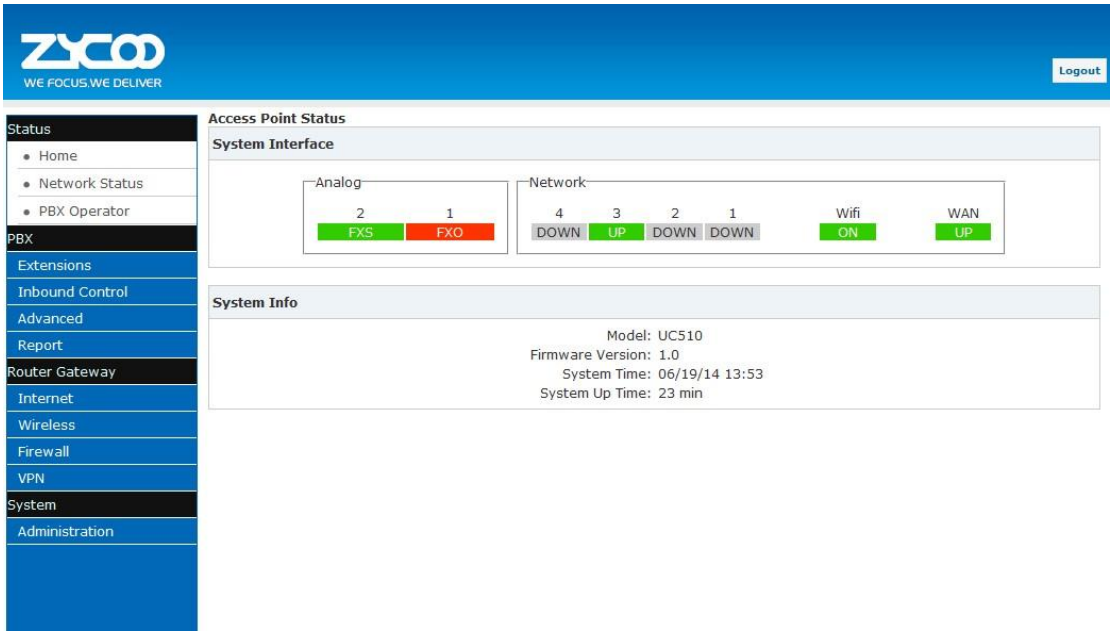
Item	UC510	UC520
Host	1 set	1 set
Antenna	2 pieces	3 pieces
Power Supply	1 piece	1 piece
Ethernet Cable	1 piece	1 piece
Quick Installation Guide	1 piece	1 piece
Warranty Card	1 piece	1 piece

Chapter 2 Getting Started

2.1 Home

The default login URL is http://192.168.1.1:9999

After system login, the home page will display status of the system interface and system information including model, firmware version and running time.



System Interface: Connecting Status of Interfaces.

If an Analog module is connected, “FXO” or “FXS” will be displayed at the appropriate position. If no Analogue module is connected then “N/A” will be displayed.

If Ethernet is connected on either LAN or WAN,“UP” will be displayed for the relevant port. If no connection is detected on the port, “DOWN” will be displayed.

If Wi-Fi is enabled, “ON” will be displayed and if not enabled “OFF” is displayed.

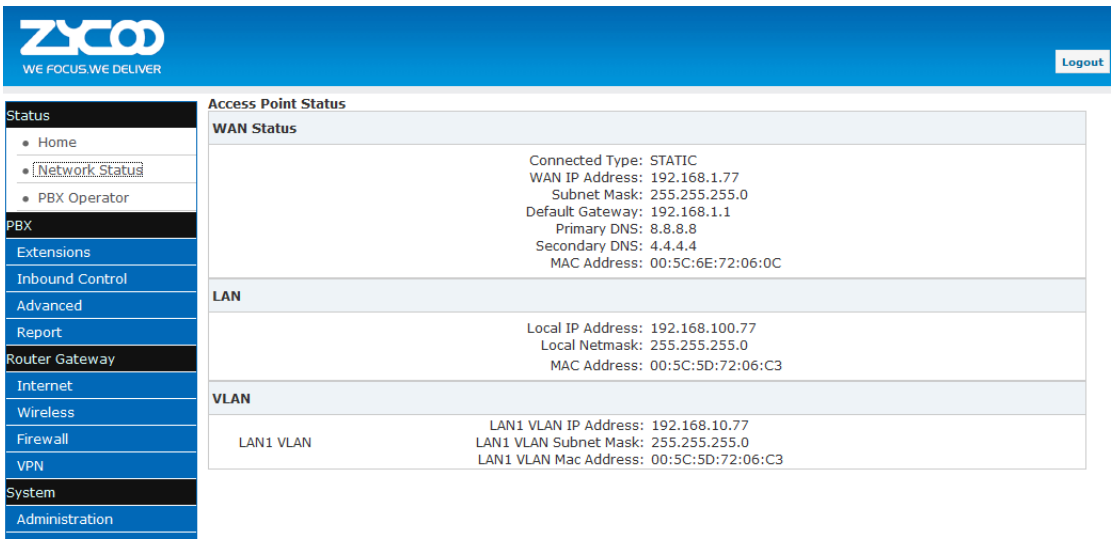
System Info: Displays device model, system version, system current time and running time.

2.2 Network Status

Network Status displays the network configuration of the system, including **WAN**, **LAN**, **VLAN**.

The network connection supports STATIC, DHCP and PPPoE. The relevant information will be displayed after configuration from【Router Gateway】→【Internet】.

The example below shows a typical configuration:



2.3 PBX Operator

On this page, the extension status, trunk status and module status will be displayed.

Extensions : Extensions' status, including Idle, Ringing, InUse, Hold, and UnAvailable.

VoIP Trunk: If there is no trunk, you will be reminded that "No VoIP Trunk Defined" and "Click Here to Create Trunk".

FXO Ports : If there is no module inserted, then nothing will be displayed here; if there is other module inserted, the other module connection status will be displayed here.

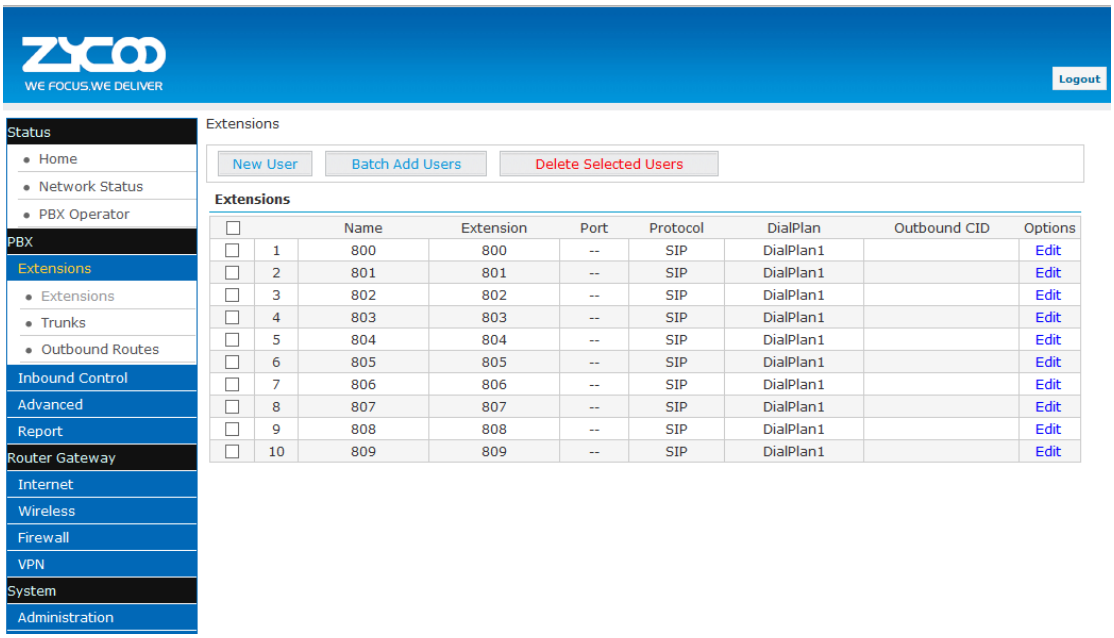
Chapter 3 PBX

3.1 Extensions

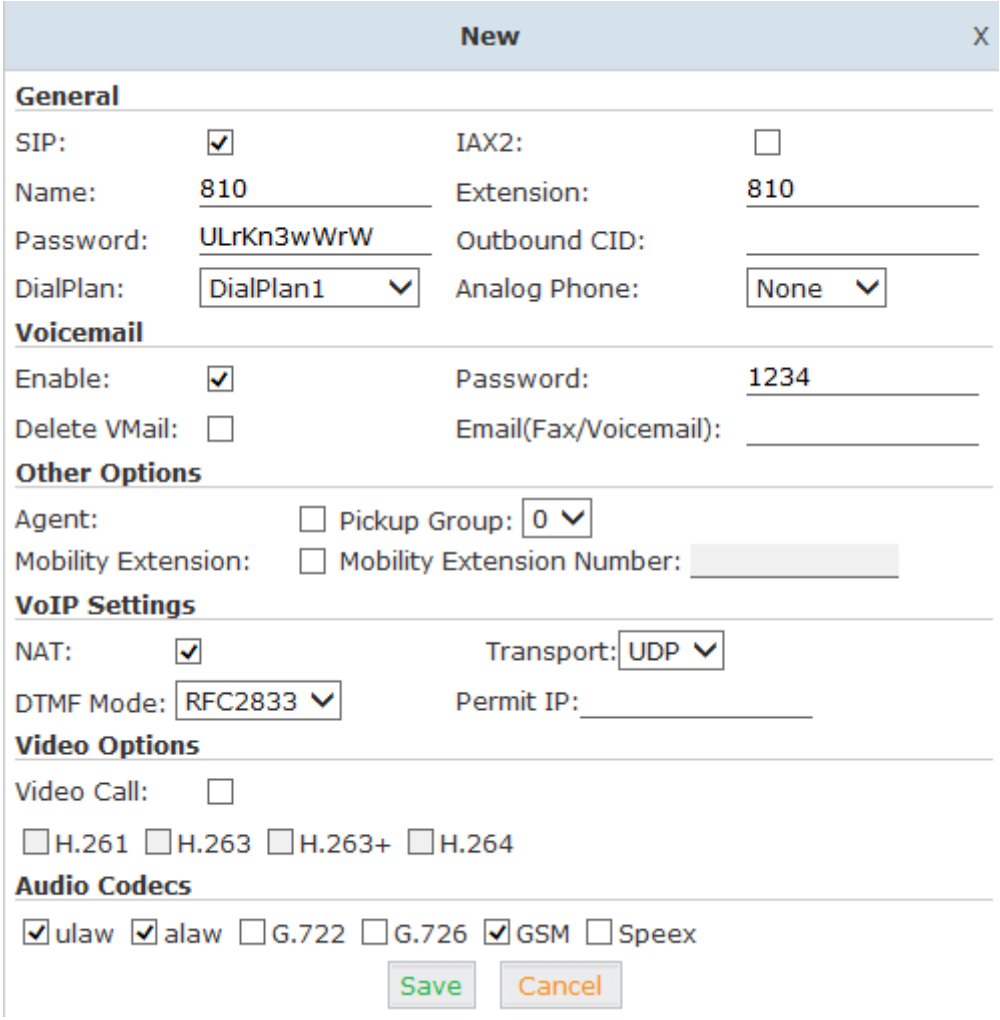
3.1.1 Extensions

UC510/520 support SIP/IAX2 and analog extensions. You can add new users one at a time or by using the batch add users feature. All extensions are configured on this page.

Click 【Extensions】→【Extensions】to configure:



Click【New User】to see the extension configuration interface as below:



Reference:

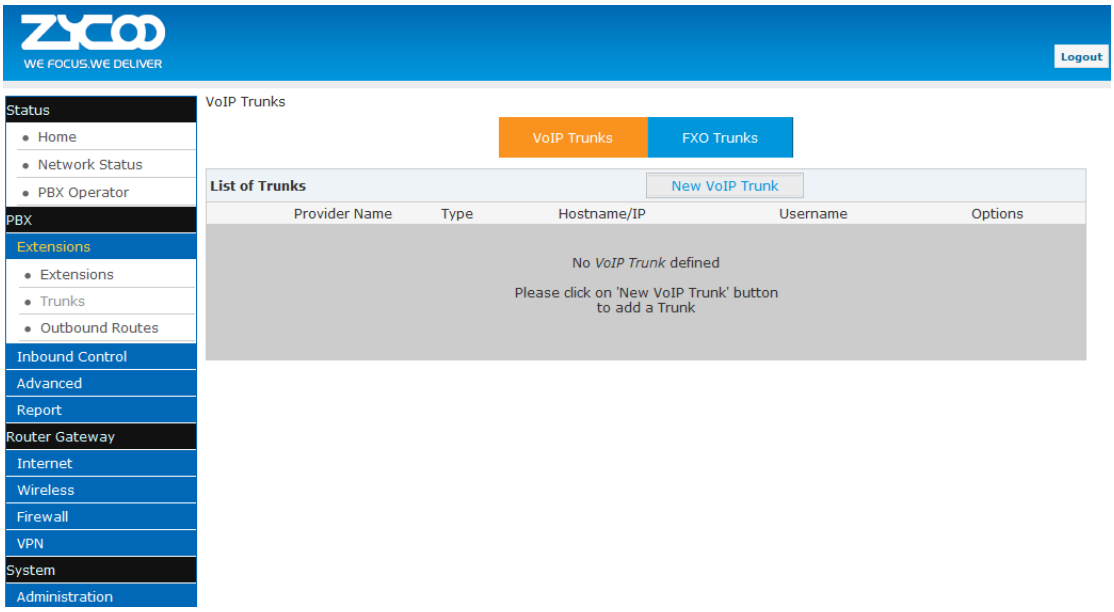
Item	Explanation
SIP/IAX2	Choose extension protocol.
Name	Extension Name (English Character Only), e.g.: Tom.
Extension	Extension Number connected to the phone, e.g.: 888.
Password	Same password as voicemail. (4-16 digits, e.g.:123456)
Outbound CID	Override the caller ID when dialing out with a trunk.
Dial Plan	Please choose the Dial Plan which is defined in the menu “Outbound Routes”.
Analog Phone	Please choose the relative FXS port for your analog phone.
Enable	Enable the voicemail account
VM Password	Set password for Voicemail. For security reasons, do not use the extension number or any easy combination for example "1234"
Delete VMail	Delete voicemail from the PBX after it’s sent by email.
Email (FAX/Voicemail)	Extension user’s email address to receive email messages with attached fax or voicemail (you need configure the fax to email/voicemail options), e.g.: Tom@gmail.com
Agent	Set this extension user as agent.
NAT	Check this option if extension user or the phone is located behind the

	router.
Pickup Group	Select the Pickup Group which the extension user belongs to.
Mobility Extension	If this option is checked, you must set mobile extension number. User can make calls to the PBX server with this mobile number, and have all rights of this extension, e.g.: Outbound Call, Internal Call, or listen to voicemail.
Transport	Select the Transport Protocol: UDP, TCP
DTMF Mode	Default DTMF is rfc2833. It can be changed if necessary.
Video Call	Check to enable video calling for this extension and select the video codecs you require.
Permit IP	Set device IP address or subnet permitted to register extensions with the PBX. E.g.:192.168.1.77/255.255.255.255 or 192.168.10.0/255.255.255.0. Devices with other IP addresses are not allowed to register extension to the PBX.
Audio Codecs	Select what audio codecs you require.

3.1.2 Trunk

If you want to set up an outbound route connected to the PSTN (Public Switch Telephone Network) or VoIP provider, please configure on this page:

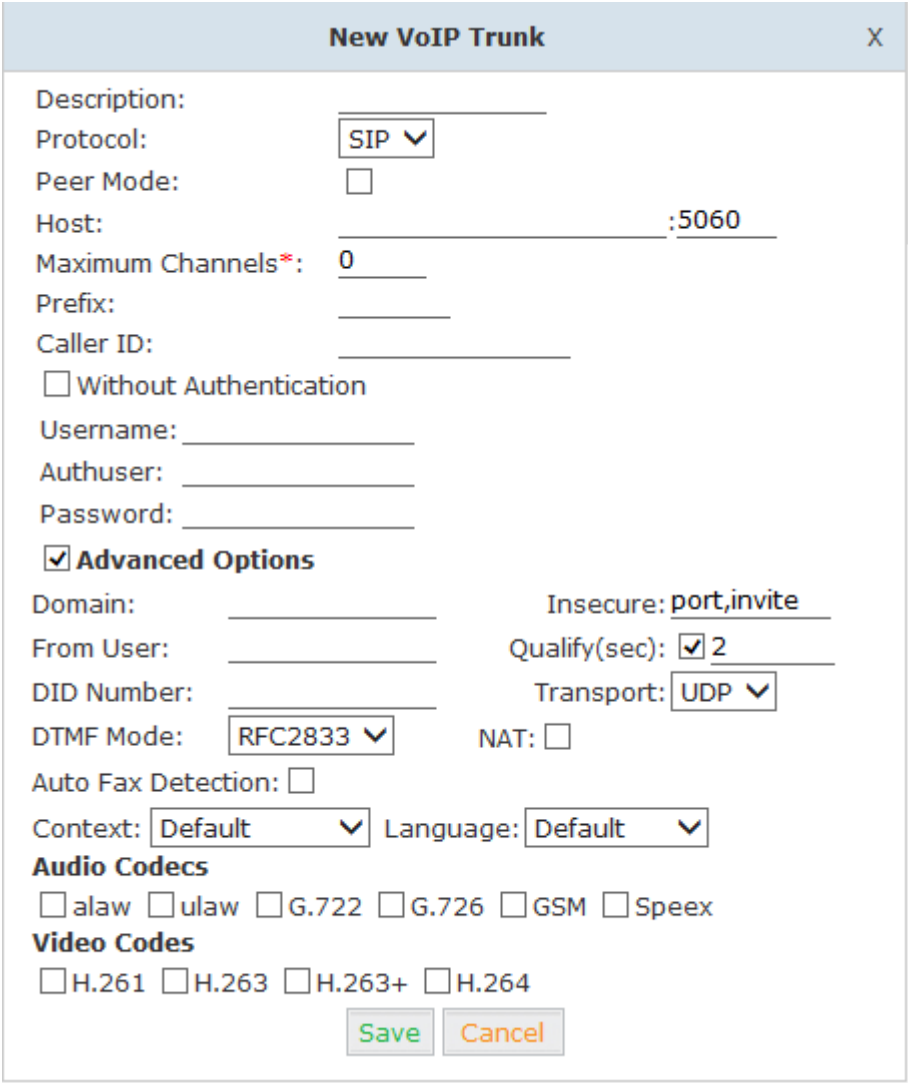
Click【Extensions】→【Trunks】:



UC510/520 supports two kinds of trunks for your choice: VoIP Trunk and FXO trunk.

VoIP Trunks

Click【VoIP Trunk】→【New VoIP Trunk】:



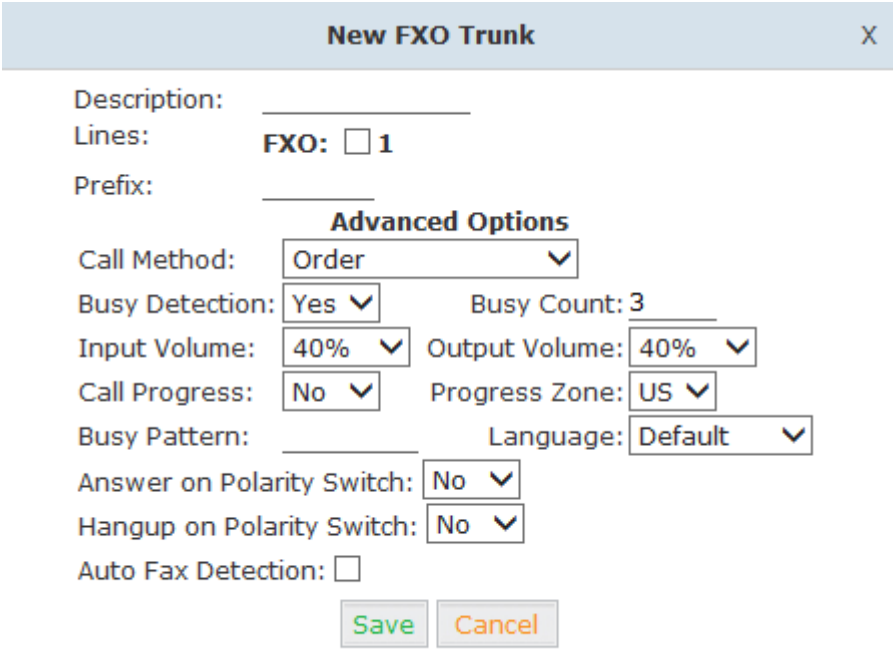
VoIP Trunks Reference:

Item	Explanation
Description	Description of SIP trunk.
Protocol	Select protocol for outbound route, SIP or IAX2.
Host	Set host address (provided by VoIP Provider).
Maximum Channels	Set maximum channels for simultaneous call. (Only for outbound call; “0” = no limitation).
Prefix	The prefix will be added in front of your dialed number automatically when the trunk is in use.
Caller ID	This Caller ID will be displayed when user makes outbound call. Note: This function must be supported by service provider.
Without Authentication	If your trunk is static IP based and does not require a registration string when connecting the CooVox IP PBX, check this option.
Username	Username provided by VoIP Provider.
Password	Password provided by VoIP Provider.
Advanced Options	Advanced options for this trunk, e.g.: codecs, language, etc.

The outbound trunk will be in the list of VoIP Trunks when the trunk is added successfully.

FXO Trunk

Click【FXO Trunk】→【New FXO Trunk】:



FXO Trunk Reference:

Item	Explanation
Description	Description for this trunk.
Lines	Check one or two channels (FXO) to be included in this trunk group
Prefix	The prefix will be added to the dialed number automatically when this trunk is in use.
Advanced Options	Advanced Options for this trunk, e.g.: Call Method, Busy Detection, etc.

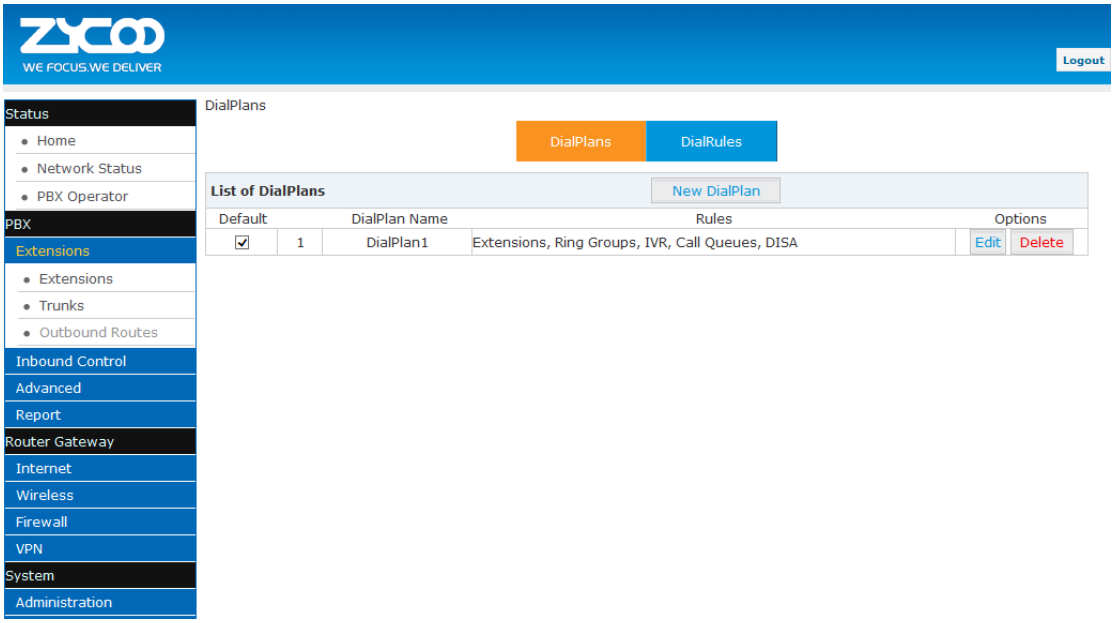
Select one or more of the available channels to be used for this trunk group.

Note: each channel can only be included in one trunk group. If no channels appear then all available channels are already defined.

3.1.3 Outbound Routes

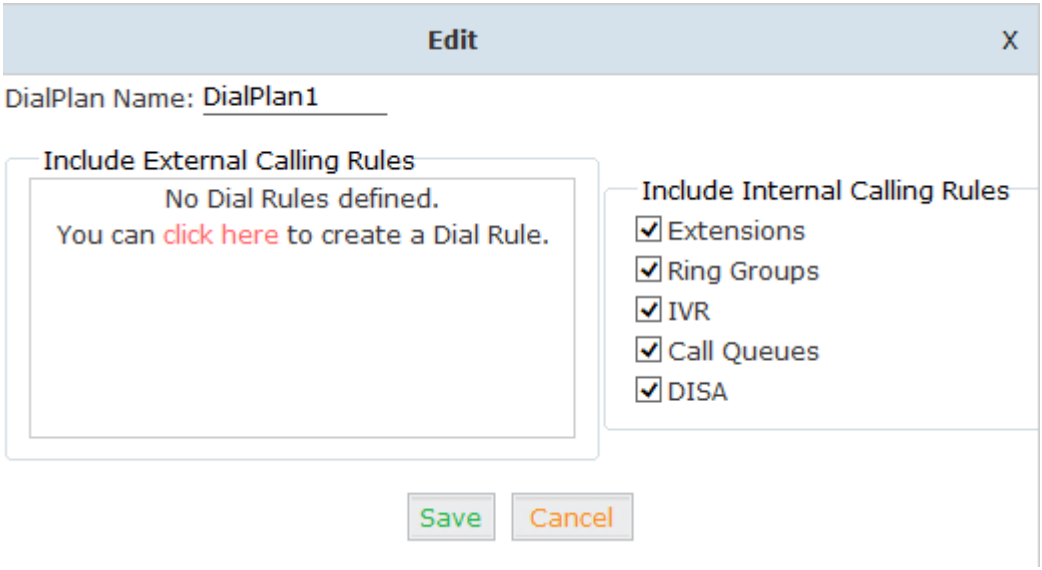
Outbound Routes are used to define which trunk groups are used by a specific extension when placing outbound calls. If you don't allow an extension user to place external calls, please ignore this section.

Please configure on this page: 【Basic】→【Outbound Routes】

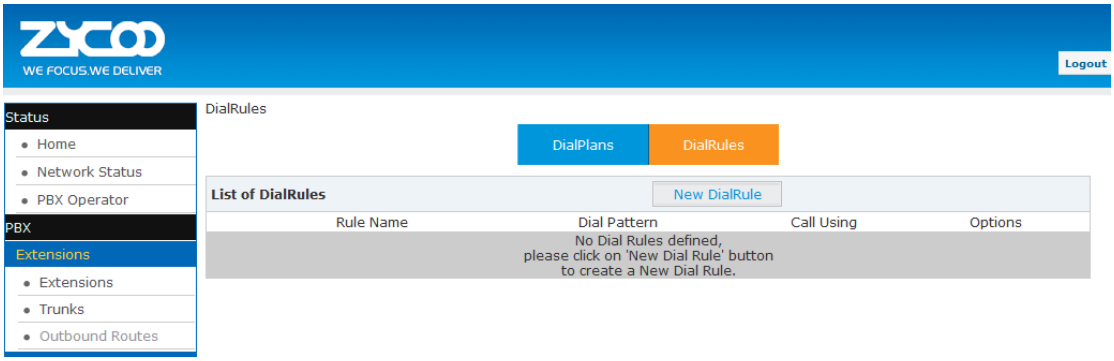


You can configure the basic match pattern of outbound routes and create different dial plan on this page. Create as many different dial plans as you need to determine how you need extensions to be allowed to make calls. For example, create “InternalDialPlan” to include all Internal Calling Rules but do not select any outbound dial rules. Select “InternalDialPlan” for all extension users that do not need the ability to make external calls.

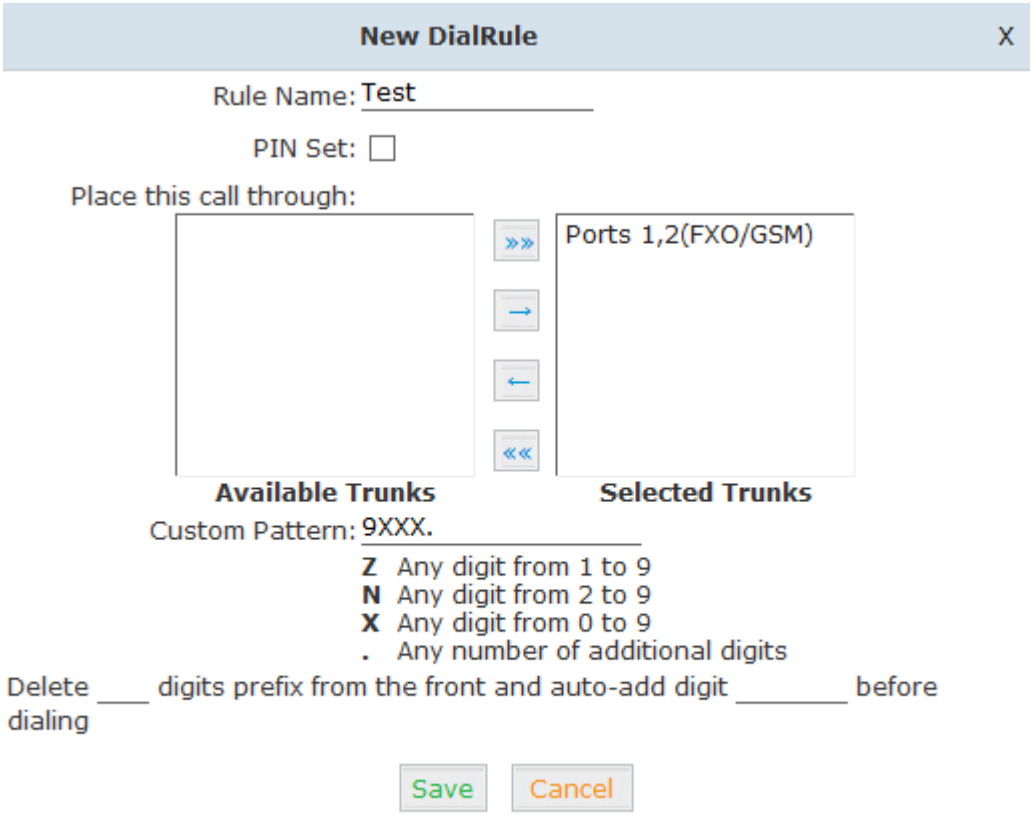
Click【DialPlans】→【New DialPlan】:



You can create one or more DialRules for DialPlans from the DialRules page:



Click【DialRules】→【New DialRule】to create a new Dial Rule



Reference:

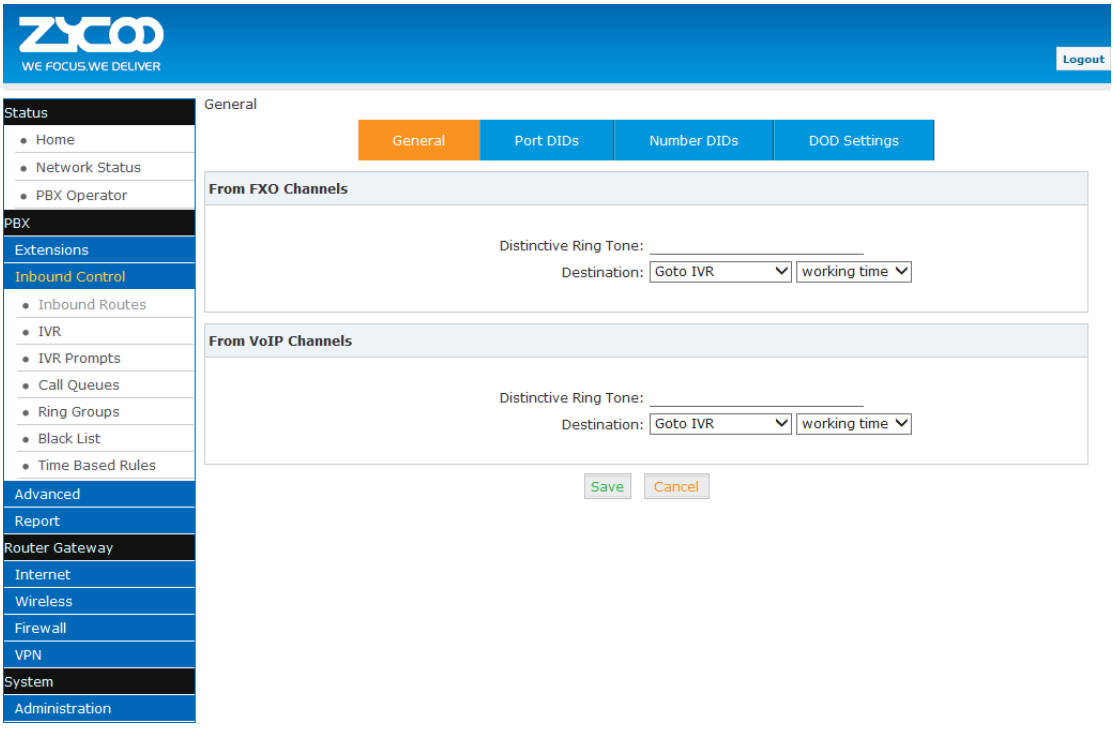
Item	Explanation
Rule Name	Define the name for the dial rule.
PIN Set	Input this PIN when you use this dial rule.
Place this call through	Select one of the trunk groups that have been set up to use for this dial rule
Custom Pattern	N any digit from 2 to 9 Z any digit from 1 to 9 X any digit from 0 to 9 . One or more digits
Delete[ ]digits prefix	Define how many digits will be deleted from the dialed number.

	For example, user dialed 94166445775 and you selected to delete 1 digit, then 4166445775 is sent out to the trunk.
Auto-add digit[ ]	If add digit “9”, when dial 12345, 912345 will be sent.

3.2 Inbound Control

3.2.1 Inbound Routes

Click【Inbound Control】→【Inbound Routes】



General

Distinctive Ring Tone：mapping the custom ring tone file, e.g.: Set distinctive ring tone as “External”, the phone will play this ring tone when receiving the call.

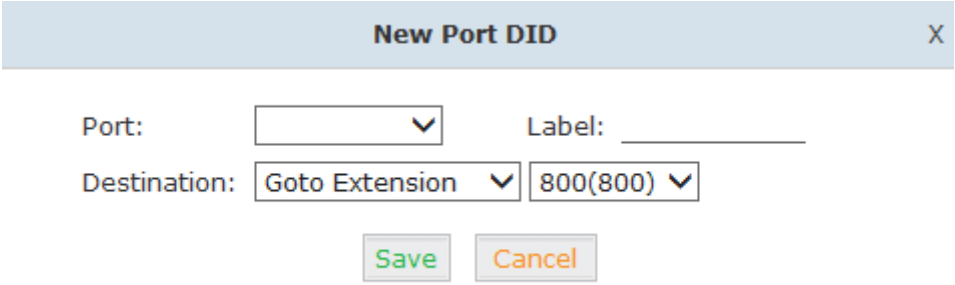
Note: The phone must support such feature as well.

Select all calls coming in on a specific port (FXO/VoIP) and select which destination (Extension User, IVR, Queue, Conference Bridge, IVR, etc) should answer those calls. Setting the label will assign this label to be displayed.

Port DIDs

To have incoming calls from a PSTN trunk port (FXO trunk) answered by a specific extension user, call queue, conference bridge, or IVR, please configure here:

Click【Port DIDs】→【New Port DIDs】:



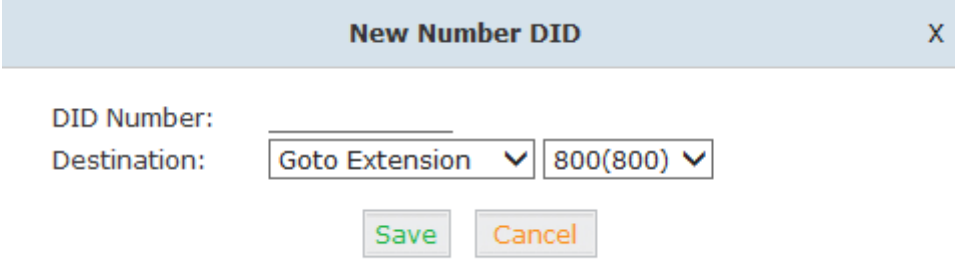
Reference:

Item	Explanation
Port	Select the port
Label	Set a label for the port. Incoming calls from this port will display the specified label.
Destination	Incoming calls will be answered by the specified destination. (extension user, call queue or IVR etc)

Number DIDs

If you want to set the destination of inbound calls through VoIP and E1/T1 Trunks based on the incoming DNIS (dialed number or DID), you can specify the DID and destination (user extension, queue or IVR, etc) from the following diagram.

Click【Number DID】→【New Number DID】:

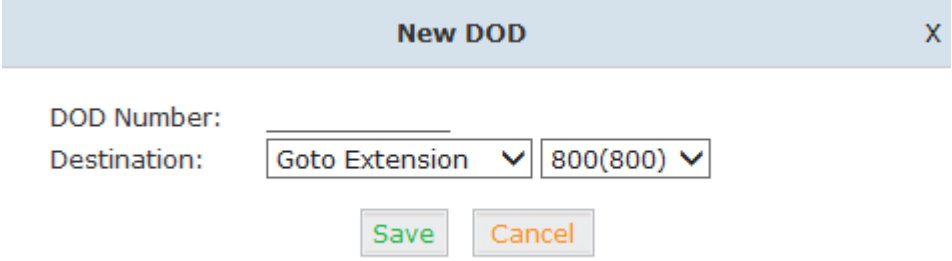


Reference:

Item	Explanation
DID Number	Set DID Number
Destination	Incoming calls will be answered by the specified destination (extension user, call queue or IVR etc)

DOD Settings

To configure outbound calls from user extensions to answer with specified destinations (user extension, queue, IVR, etc) , please click【DOD Settings】→【New DOD】:



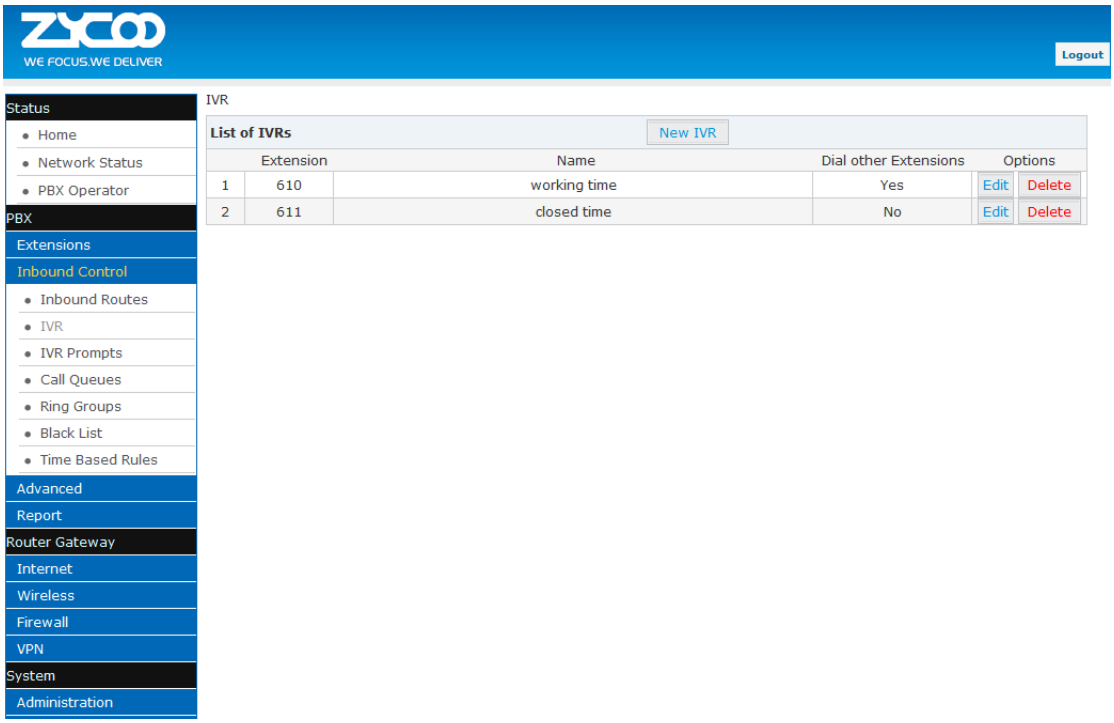
Reference

Item	Explanation
DOD Number	Set the DOD(direct outbound dial) number, and use it to match the Caller ID
Destination	Incoming calls will be answered by the specified destination (extension user, call queue or IVR etc)

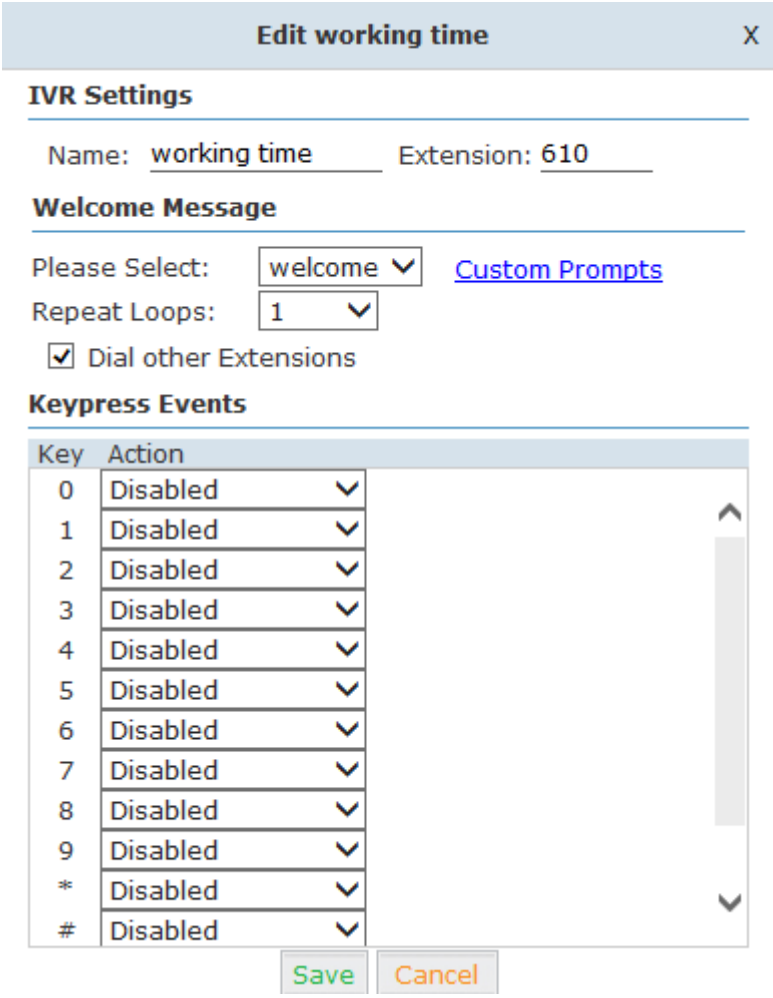
3.2.2 IVR

IVR (Interactive Voice Response) or Automated Attendant will allow callers to select from a specific set of options by pressing the selected digit on their telephone dialpad.

Click【Inbound Control】→【IVR】:



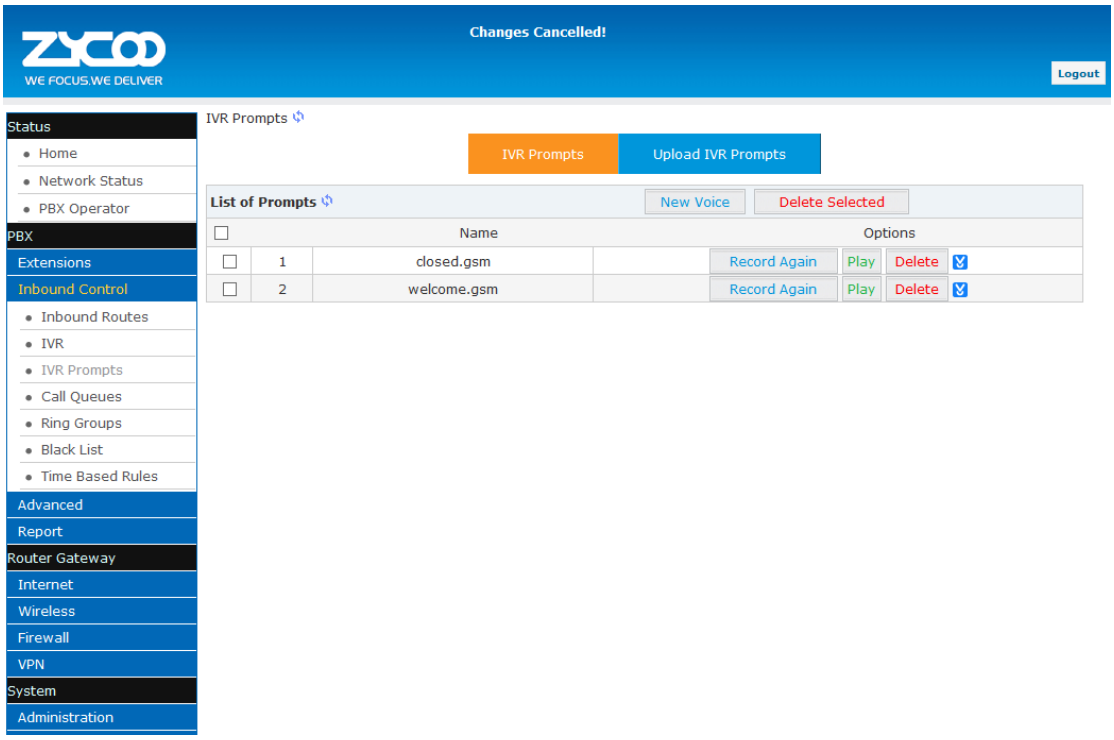
Click【NewIVR】to create a new IVR:



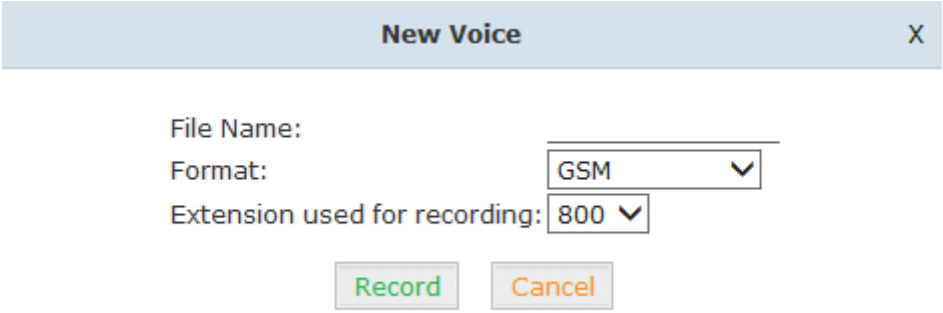
Item	Explanation
Name	Enter a descriptive name for the IVR
Extension	Enter a unique extension or IVR number. This number is used to access the IVR from an internal extension
Please Select	Select the IVR prompt that will provide the caller with instructions on what options are available. To configure the prompt in this page:【IVR Prompt】
Repeat Loops	Loop times to repeat playing the IVR prompt if the caller does not select an option
Dial Other Extension	Allow user to dial other extensions instead of the listed options
Keypress Event	Select the available options beside the designated digit

3.2.3 IVR Prompts

IVR prompts can be customized recorded by any extension registered to the PBX or they can be uploaded from the “Upload IVR Prompt” section below:



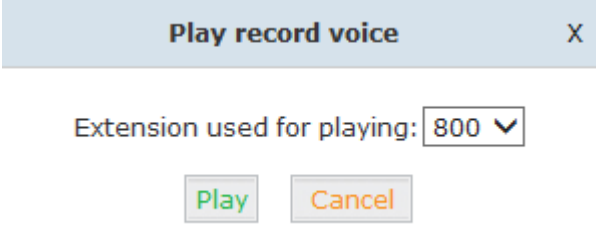
Click【IVR Prompts】→【New Voice】to create new IVR prompt:



Item	Explanation
File Name	Define a name for this voice file
Format	Select the voice format GSM / WAV(16bit) supported only
Extension used for recording	Select the extension which is used for recording the IVR prompt

Click【Record】, the extension will ring, and the prompt can be recorded after answering the phone.

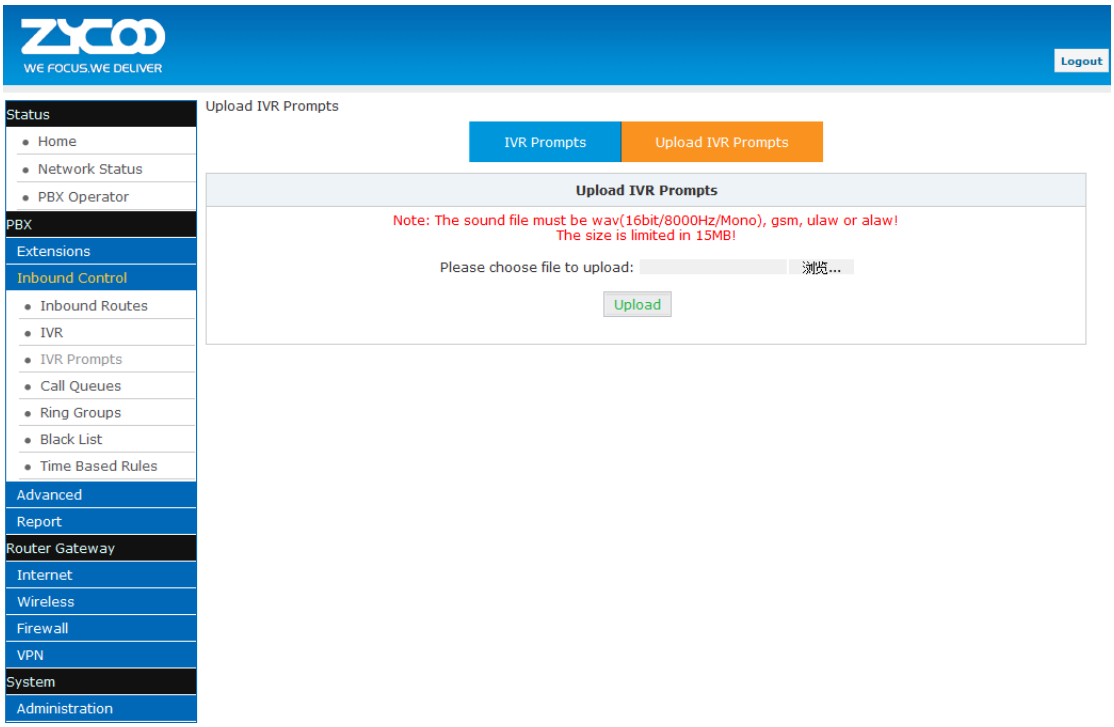
To hear the existing recording, please click【Play】:



Select the extension, click【Play】, the selected extension will ring, and you will hear the recorded prompt after picking up the phone.

Upload IVR prompt

Click【Upload IVR prompt】→【Upload】:



Notice:

UC510/520 supports custom audio files in wav, gsm, ulaw, alaw format.
Recordings must be smaller than 15MB.

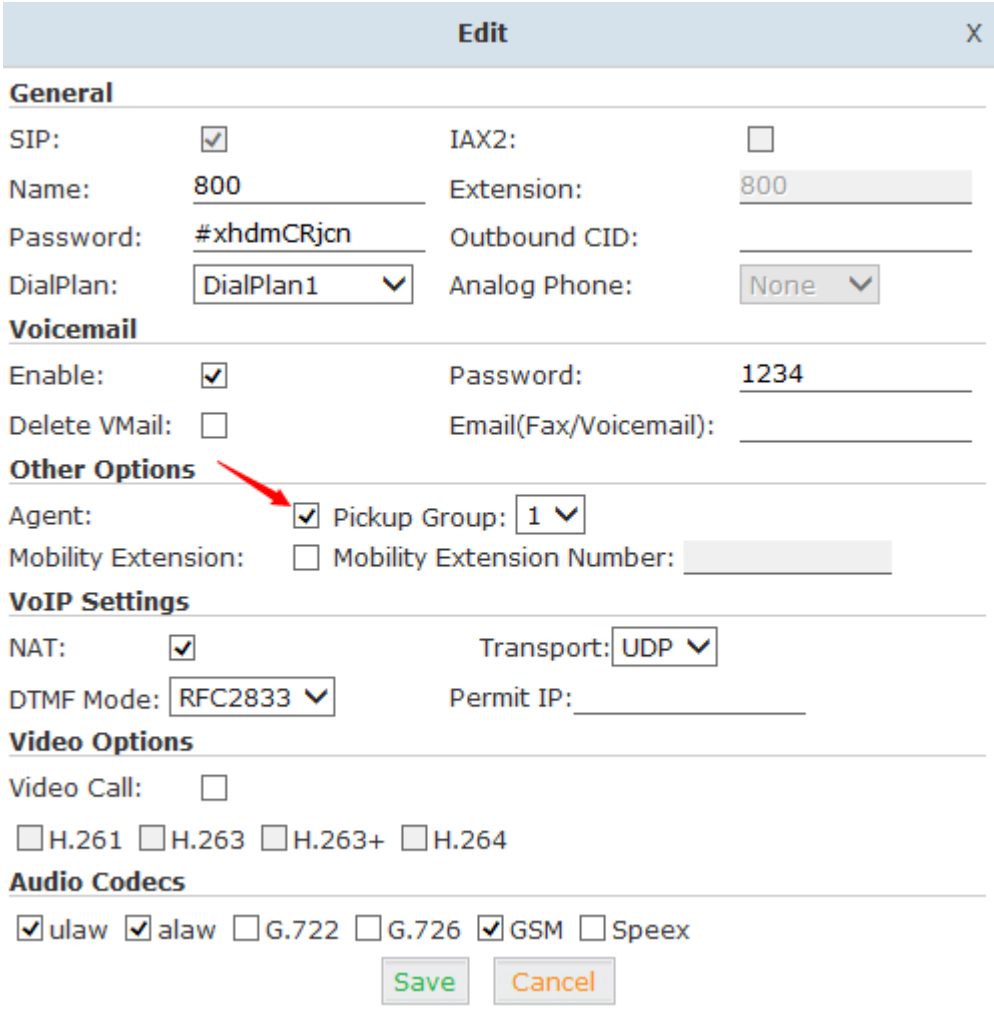
3.2.4 Call Queue

Create Agent

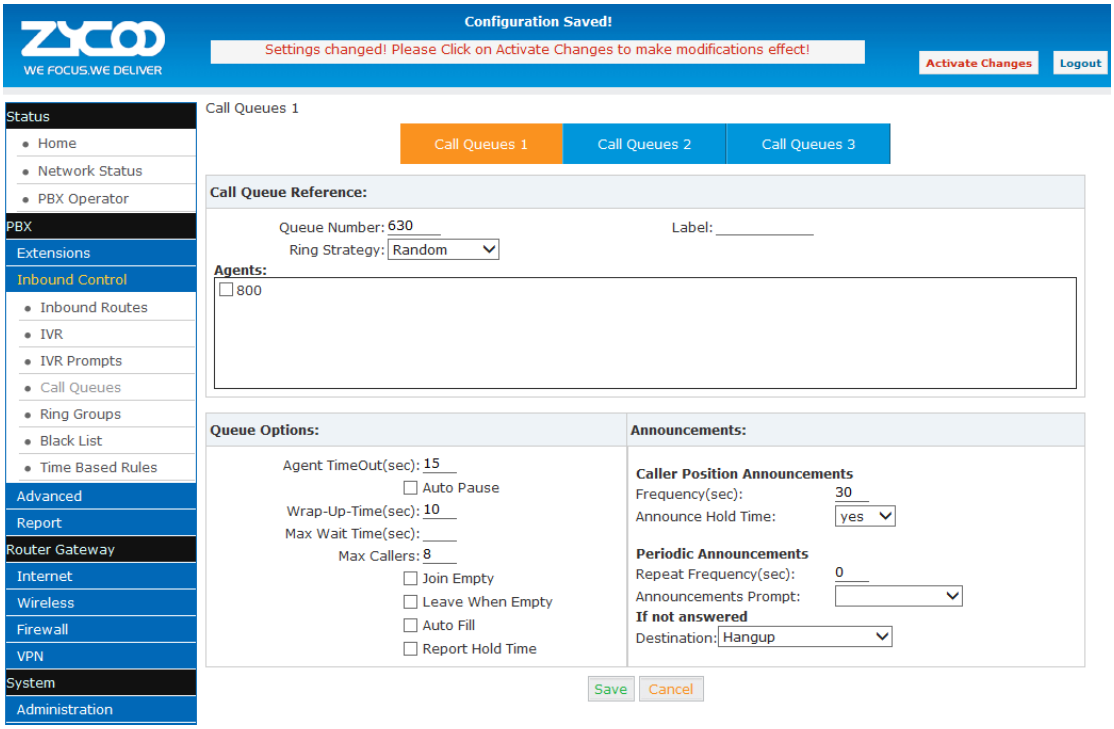
To allow a user to be an agent in a Call Center queue, please check the “Agent” option for that specific user extension.

Click【Basic】→【Extension】→【Edit】the extension you want to configure:

Step1:Tick【Agent】and【Save】

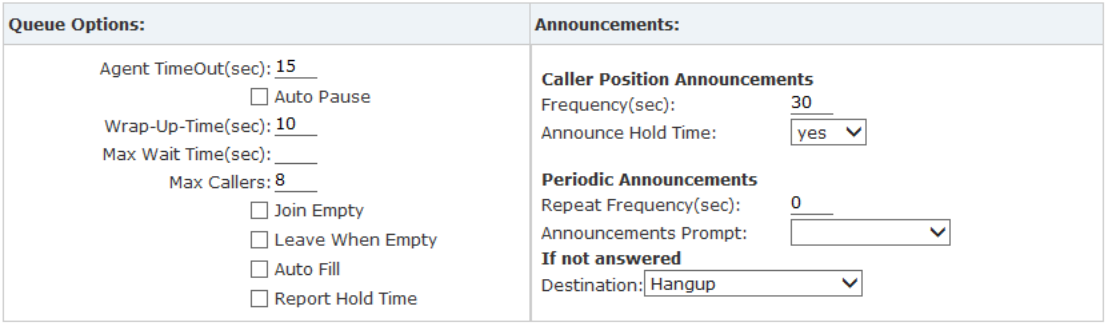


Step2: Click【Inbound Control】→【Call Queues】



Reference

Item	Explanation
Queue Number	Define an extension number to identify the queue.
Label	Define the label for the queue.
Ring Strategy	RingAll--Ring all available agents until one answers(default) RoundRobin – Starting with the first agent, ring the extension of each agent in turn until the call is answered. LeastRecent – ring the extension of the Agent who has least recently received a call FewestCalls – ring the extension of the Agent who has taken the fewest number of calls. Random – ring the extension of a random Agent. RRmemory -- RoundRobin with Memory, like RoundRobin above, except instead of the next call starting with the first agent, the system remembers which extension was called last and begins the round robin with the next agent
Agent	Check each agent that is to be a member of this specific Call Center Queue.



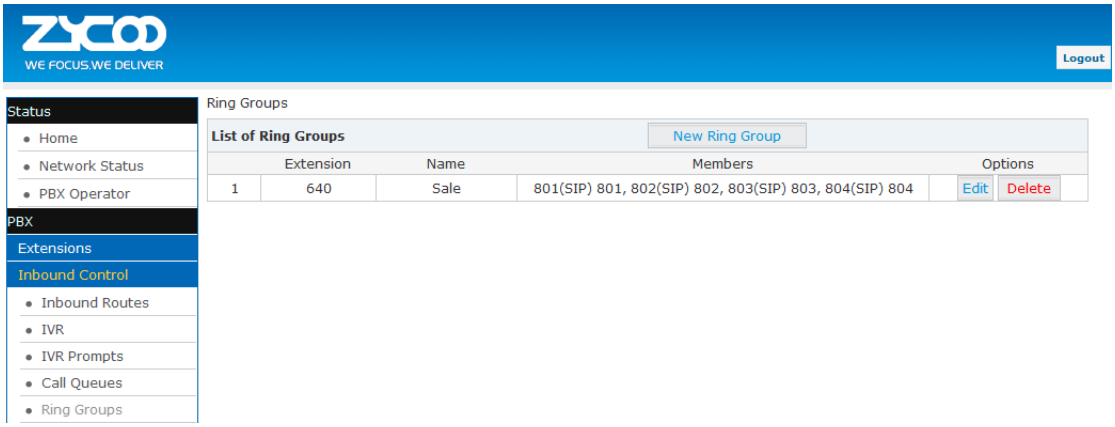
Reference:

Item	Explanation
Agent TimeOut(sec)	Specify the number of seconds to ring an agent's extension before sending the call to the next Agent (based on Ring Strategy).
Auto Pause	If an Agent's extension rings and the Agent fails to answer the call, automatically pause that agent so they stop receiving calls from the queue.
Wrap-Up-Time(sec)	This is the amount of time in seconds that an agent has to complete work on a call after the call is disconnected. (Default is 0, which means no wrap-up time.)
Max Wait Time(sec)	Calls that have been waiting in the queue for this number of seconds will be sent to the "If not answered" destination.
Max Callers	Max number of callers who are allowed to wait in the queue. (Default is 0, which means no limitation.). With this number of callers in the queue already, subsequent callers will be sent to the ""If not answered" destination.
Join Empty	Allow callers to enter the Queue when no Agents are available. If this option is not defined, callers will not be able to enter Queues with no available agents - callers will be sent to the "If not answered" destination.
Leave When Empty	If this option is selected and calls are still in the queue when the last agent logs out, the remaining callers in the Queue will be transferred to "If not answered" destination. This option cannot be used with Join Empty simultaneously.
Auto Fill	Callers will be distributed to Agent automatically.
Report Hold Time	Report the hold time of the next caller for Agent when the Agent is answering the call.
Frequency(sec)	Repeat frequency to announce the hold time for callers in the Queue. ("0" means no announcement).
Announce Hold Time	Announce the hold time. Announce (yes), do not announce (no) or announce once (once), it will not be announced when the hold time is less than 1 minute.
Repeat Frequency(sec)	Interval time to play the voice menu for callers.("0" mean not to play).
Announcement Prompt	Select a prompt as the Announcements Prompt from the IVR Prompts.

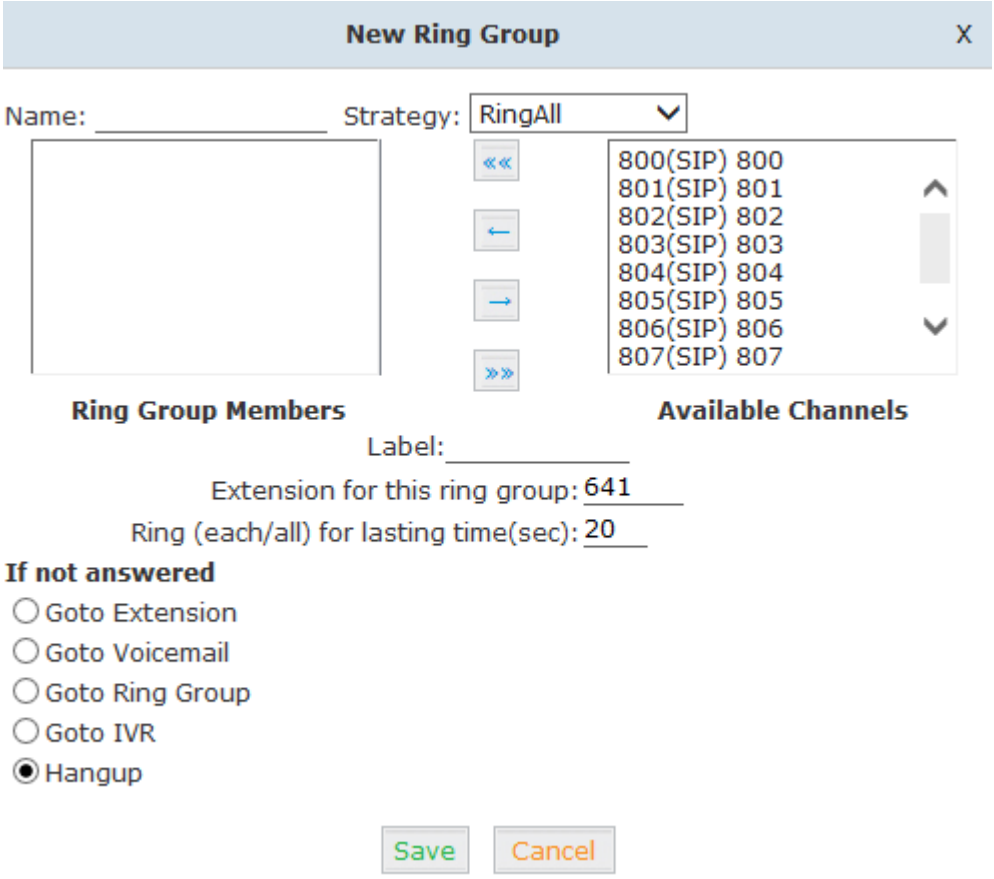
3.2.5 Ring Groups

A Ring Group (sometimes called a Hunt Group) is a way to ring a collection of extensions by dialing a single extension number. The methodology used to ring that collection of extensions is called the ring strategy. Once the timeout (number of seconds) is reached, the call will then be directed to the “if not answered” or failover destination.

Click【Inbound Control】→【Ring Groups】to configure a Ring Group:



Click【New Ring Group】to create a new ring group:



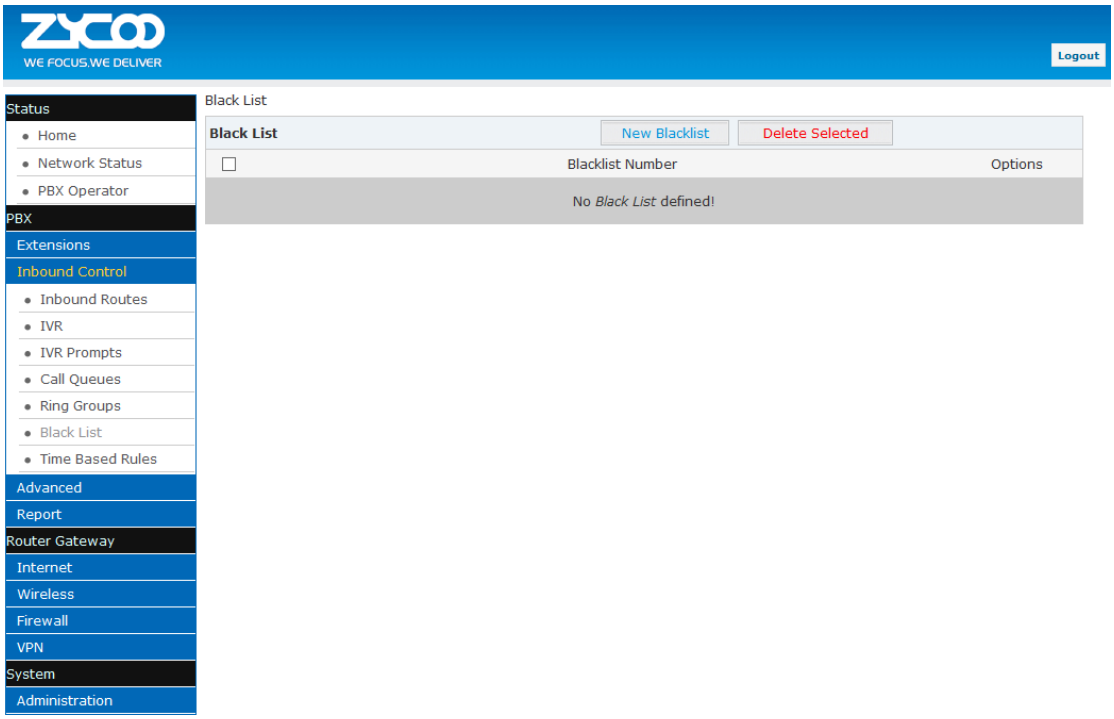
Reference:

Item	Explanation
Name	Define a name for the Ring Group
Label	Define the label for the Ring Group.
Ring Strategy	Select “Ring All” or “Ring in order”
Ring Group Members	Select the Ring Group Member from “”
If not answered	You can choose to forward the call to extension, voicemail, ring group, IVR or hang up if no answered.

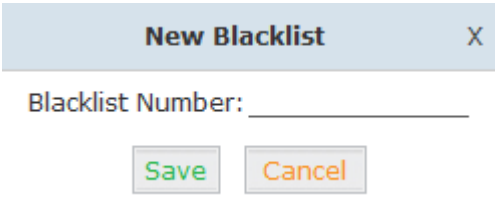
3.2.6 Blacklist

The Blacklist feature allows the blocking of specific phone numbers by Callerid; such as the insurance sales, credit card sales who interrupted your work, you can add their numbers to the blacklist.

Click【Inbound Control】→【Blacklist】to configure:

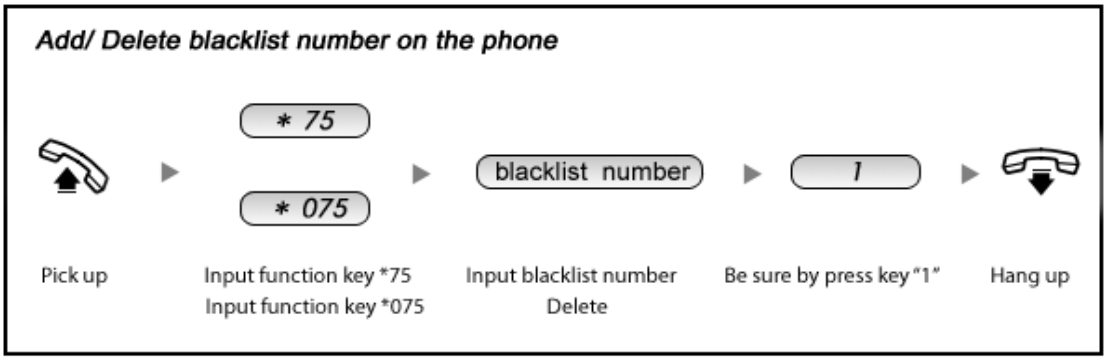


Click【New Blacklist】to create a new Blacklist:



Input the caller ID in the space provided. Once configured, future calls from this caller ID will be blocked.

To maintain this list of blocked numbers, see the instructions in the following diagram:



Reference:

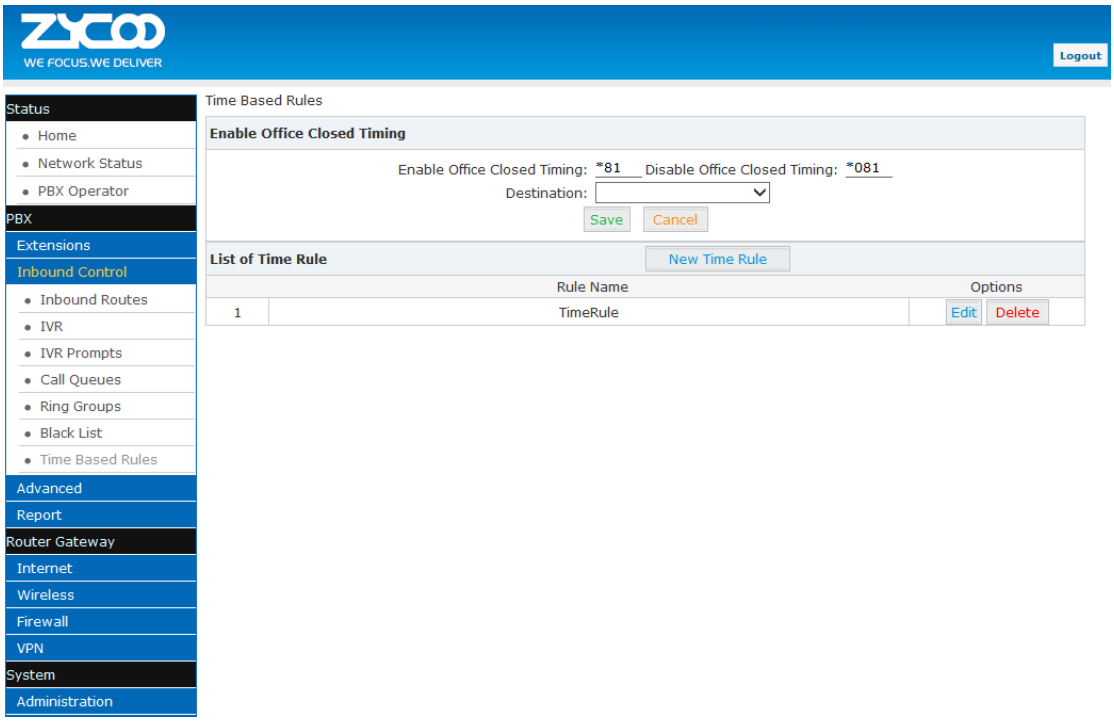
Item	Explanation
*75	When the registered extension user inputs *75 + blacklist number, this number will be added to the list of Blacklist Numbers.
*075	When the registered extension user inputs *075+blacklist number, this number will be deleted from the list of Blacklist Numbers.

3.2.7 Time Based Rules

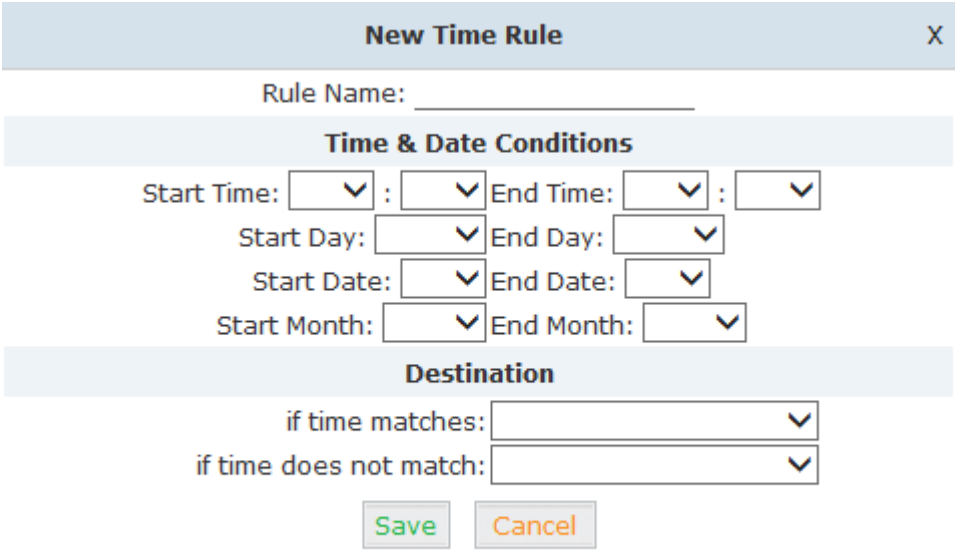
Time Based Rules can help a company to distribute calls to the right person in the specified hour. For example, BusinessHours.

Select the start& end time, start&end day, start & end dates and/or start & end month. When an inbound call is processed, if the current time of the PBX is within these parameters, then the call will go to the "if time matches" destination. If the current time of the PBX is out of these parameters, then the call will go to the "if time does not match" destination.

Please set from this page: 【Inbound Control】→【Time Based Rule】:



Click【New Time Rule】to create a new Time Rule



Reference:

Item	Explanation
Rule Name	Define the name for this Time Rule.
Time&Date Conditions	Set parameters for Time/Day/ Date/ Month.
Destination	Select destination if time matches or does not match the above condition. For example for BusinessHours, “if time matches”, select operator extension during BusinessHours. If out of business hours, select Operator voicemail as “if time does not match” destination.

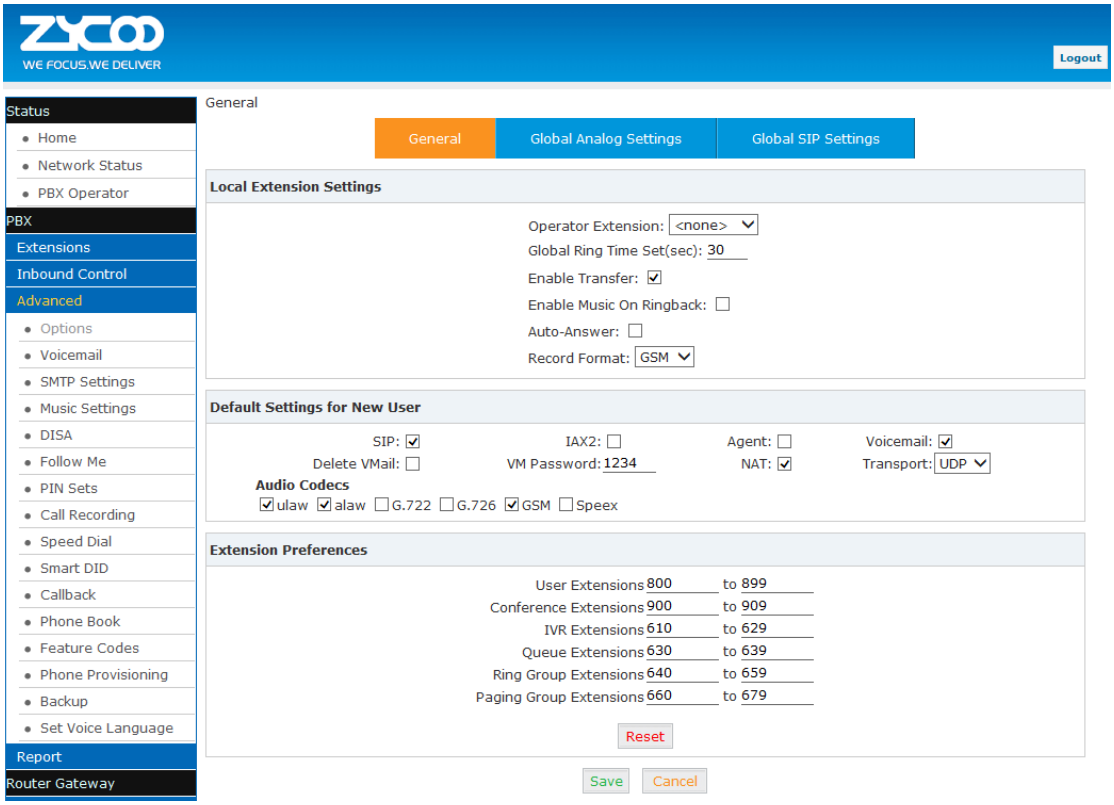
3.3 Advanced

3.3.1 Options

General

Default settings for existed extension and new extension.

Click【Advanced】→【Options】→【General】:

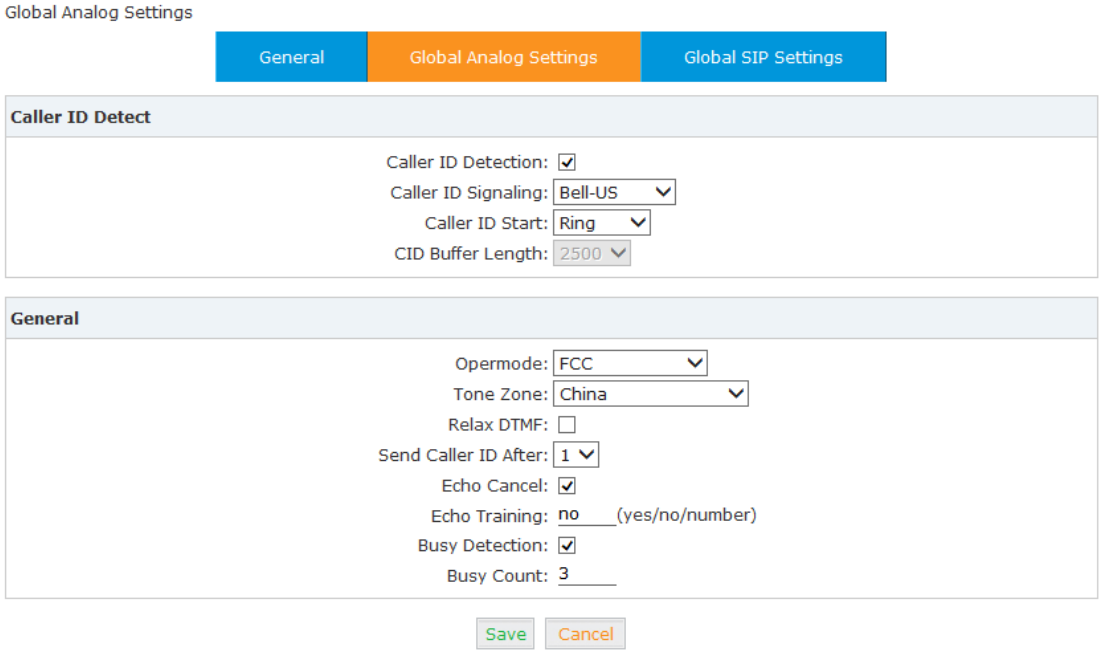


Reference

Item	Explanation
Operator Extension	Set extension number for Operator.
Global RingTime Set	Set RingTime for every extension.
Enable Transfer	Check to enable Transfer.
Enable Music On Ringback	Check to enable Music On Ringback.
Record Format	Set the format for recording files. (GSM / WAV only)
Defaut Setting for New User	Check to enable the default settings.
Extension Preferences	Set the rule for extensions.

Global Analog Settings

Click【Advance】→【Options】→【Global Analog Settings】:



Reference:

Item	Explanation
Caller ID Detection	Enable/Disable Caller ID Detection
Caller ID Signaling	Select the mode of Caller ID Signaling.
Caller ID Start	Ring--Caller ID start before ring. Polarity--Caller ID start when polarity reversal starts.
CID Buffer Length	Default CID Buffer Length
Opermode	Set the Opermode for FXO/GSM Ports.
ToneZone	Select the ToneZone in your country.
Relax DTMF	Enable/Disable Relax DTMF inspection.
Echo Cancel	Enable/Disable Echo Cancel
Echo Training	Set Echo Training (default unit: ms)
Busy Detection	Enable/Disable Busy Detection.
Busy Count	Count the Busy Detection. It will be active when enable Busy Detection.

Global SIP Settings

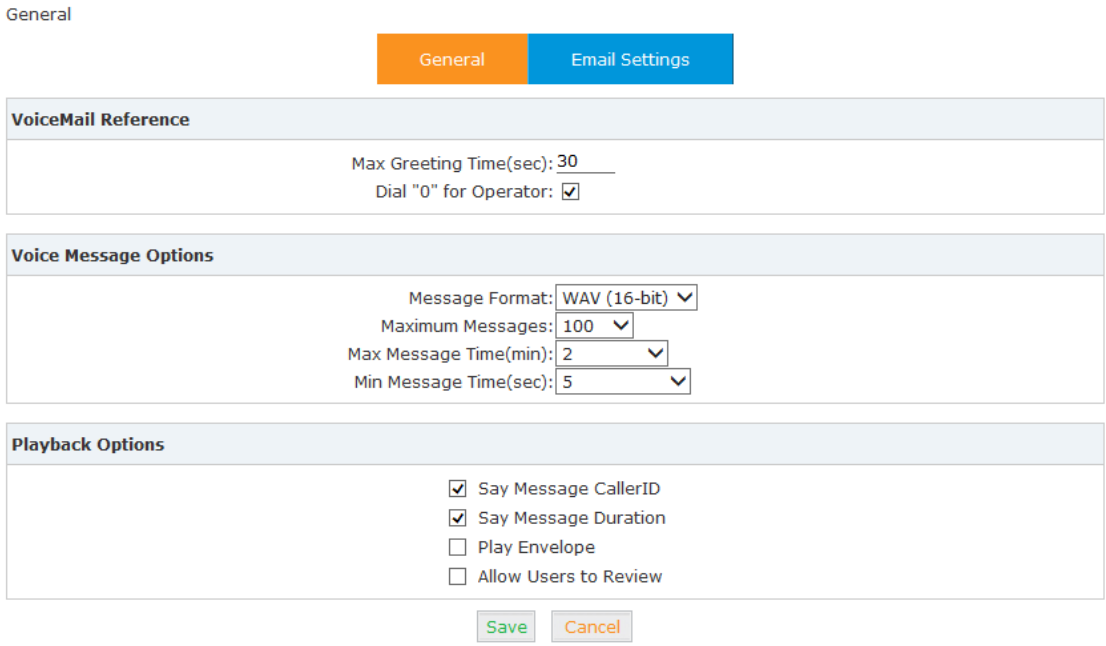
Global SIP Settings is appropriate for advanced administrators. Please contact our technical support department before modifying anything in this section.

3.3.2 Voicemail

Voicemail is used to convey a caller's recorded audio message to a recipient when the recipient is not at seat or busy on the phone.

When configuring your email settings, first you need to set the voicemail reference and voice message information… as below.

Click【Advanced】→【Voicemail】→【General】:

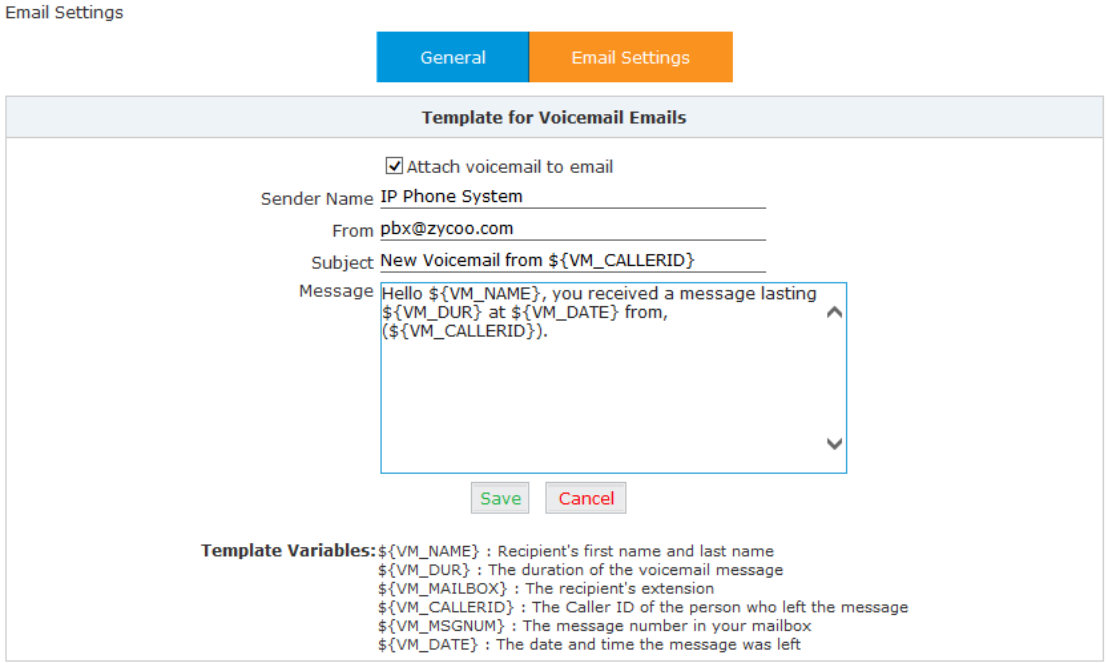


Reference

Item	Explanation
MaxGreeting Time(sec)	Maximum recording length for voicemail greetings
Dial "0" for Operator	Select this option to allow callers to dial "0" to transfer out of voicemail to the Operator.
Message Format	Save the voice message at this format, WAV(16-bit) or Raw GSM.
Maximum Messages	Maximum voicemail messages allowed.
Max Message Time(min)	Maximum Time for each message allowed.
Min Message Time(sec)	MinimumTime for each message. The message will be deleted automatically if the time is less than the min. message time.
Say Message CallerID	Play the Caller ID of the caller before playing the voice message.
Say Message Duration	Play the message duration before playing the voice message.
Play Envelope	Play the date, time and caller ID for the voicemail message.
Allow Users to Review	Check this option to allow users to review the voice message.

Then you need to configure the template for voicemail emails as below.

Click【Advance】→【Voicemail】→【Email Settings】:



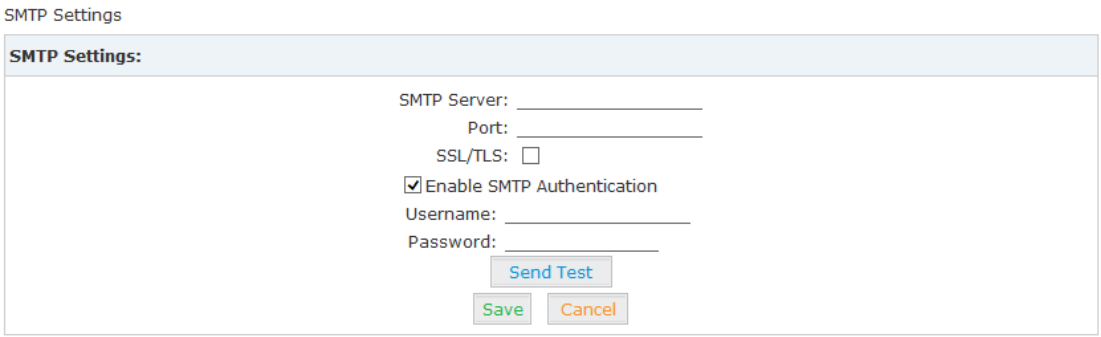
Reference:

Item	Explanation
Attach voicemail to Email	The voicemail will be sent as attachment to the user's Email.
Sender Name	The sender's name will be displayed when you receive the Email.
From	Mailbox to send email.
Subject	Subject of the Email.
Message	Input the Email template.

3.3.3 SMTP Settings

An SMTP server is required to allow email messages to be sent to users with attached voicemail and fax-mail messages. The system supports connection to cloud based SMTP service providers such as google. Configure your SMTP server as follows:

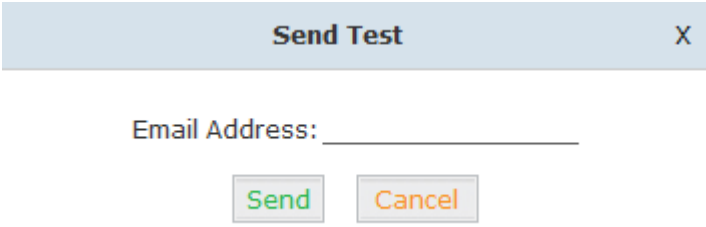
Click【Advance】→【SMTP Settings】:



Reference:

Item	Explanation
SMTP Server	You must set SMTP Server address or domain connected to the CooVox IP PBX, which is used for sending the voice message to Email.
Port	Port number for SMTP server. Default is 25, and it will be changed to 465 when you enable SSL/TLS.
SSL/TSL	Enable SSL/TLS.
Enable SMTP Authentication	If your SMTP server needs authentication, please enable this option, and configure the following.
Username	Input username of your Email.
Password	Input password of your Email.

Click【Send Test】after configuration, the following diagram will be displayed to ask you to input the Email for receiving.

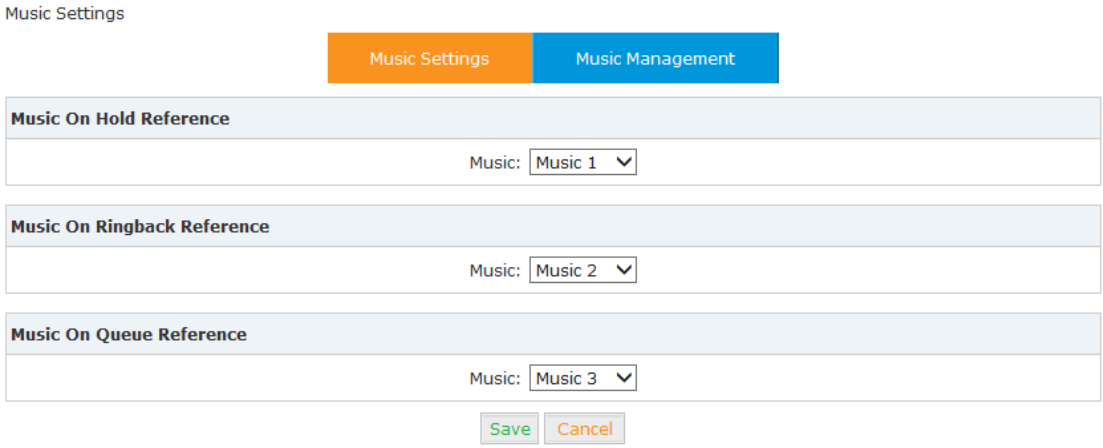


Specify the email address and click【Send】to send the test email. Verify that email was successfully sent or not. If no email is received, please modify the SMTP settings and try again.

3.3.4 Music Settings

Management of Music on Hold, Music on Ringback, Music on Queue.

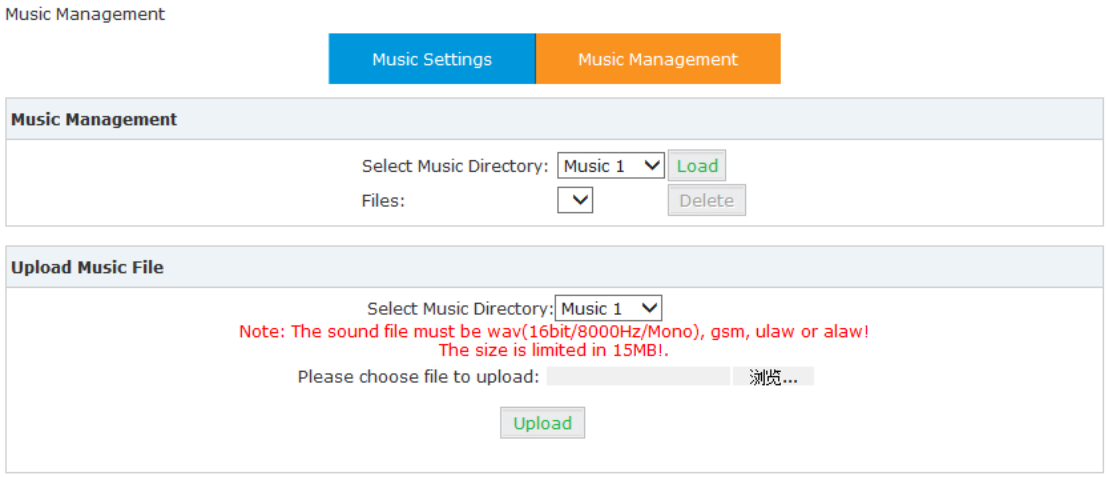
Click【Advance】→【Music Settings】:



Select the different music file for different Music.

Music Management

【Advance】→【Music Settings】→【Music Management】



Reference:

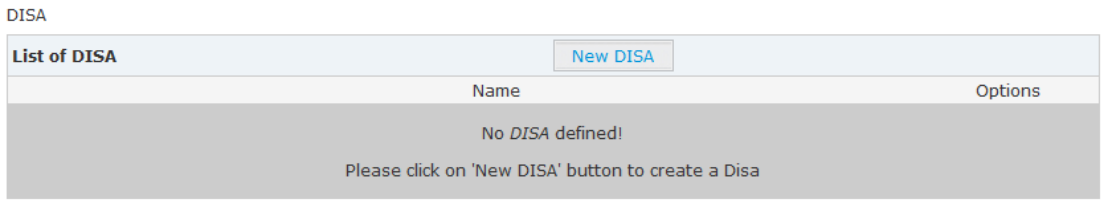
Item	Explanation
Select Music Directory	Select which Music Directory you wish to load.
File	Display music name under the music file, you can delete it.
Select Music Directory	Select the file where you want to save your uploaded music.
Please choose file to upload	Select the music you want to upload. Note: music file must be wav (16bit/8000Hz/Single), gsm, ulaw or alaw, and less than 15MB.

3.3.5 DISA

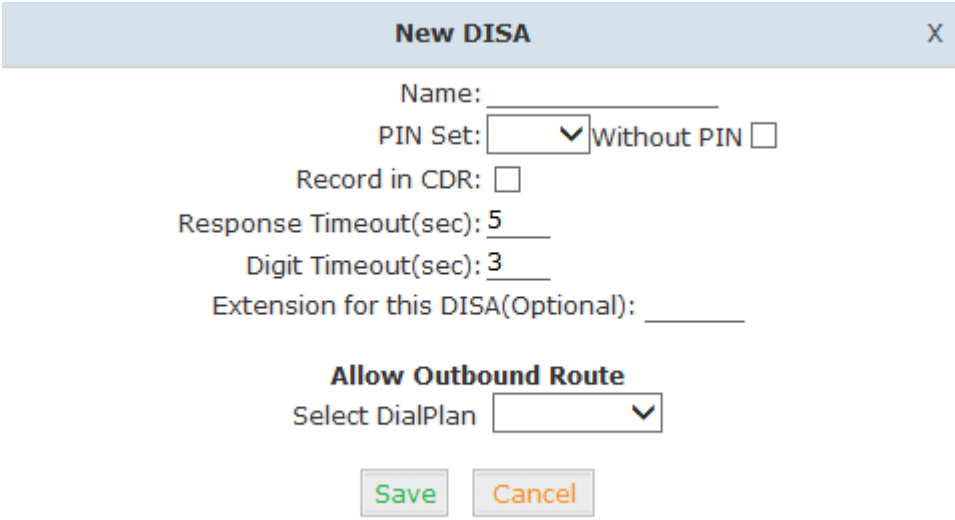
This feature allows an authorized user to call into the PBX and then place an outbound call using another trunk. For example, an employee working out of the office who needs to make an international call using trunks connected to the PBX. By calling the DISA number, after PIN authentication, the caller hears dial tone and can dial the call.

Please configure as below.

Click【Advance】→【DISA】:



Click【New DISA】to create a new DISA



Reference

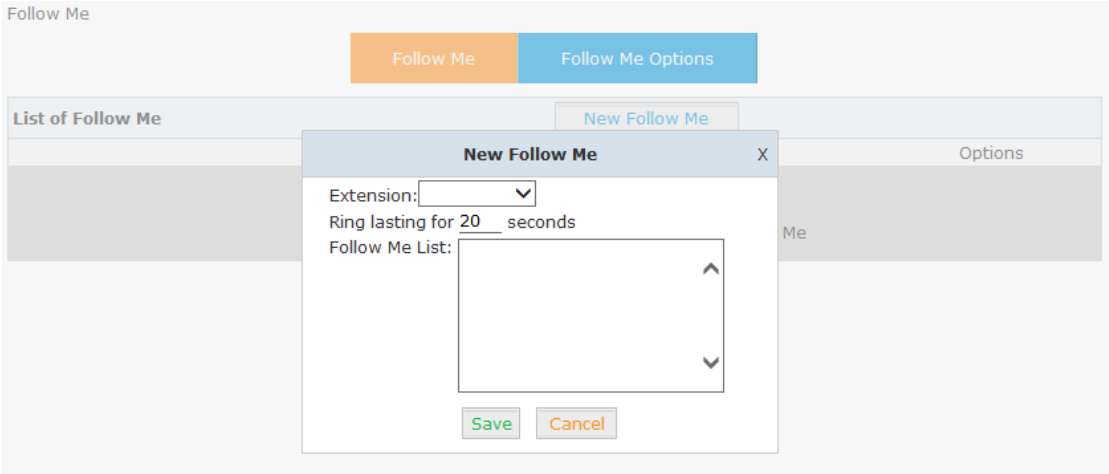
Item	Explanation
Name	Define a name for DISA.
PIN Set	User will be prompted to input this number when PIN Authentication is needed.
Record in CDR	Check to record.
Response Timeout(sec)	The maximum time for waiting before hanging up if the dialed number is incomplete or invalid. Default is 10 seconds
Digit Timeout(sec)	The maximum interval time between digits when typing extension number. Default is 5 seconds.
Extension for this DISA(Optional)	If you want to access DISA by dialing an extension, you can define an extension number for this DISA.
Select DialPlan	Select the DialPlan for this DISA.

3.3.6 Follow Me

This feature allows callers to automatically be forwarded to one or more internal extensions and/or one or more external phone numbers when the call is not answered at the primary extension.

Please configure as below.

Click【Advanced】→【Follow Me】→【New Follow Me】:



Select an extension, set the ring duration, and add the numbers in the Follow Me List; 【Save】 and 【Activate】.

List Format: Extension Number, Ring Duration

E.g.: 806,30

808,20

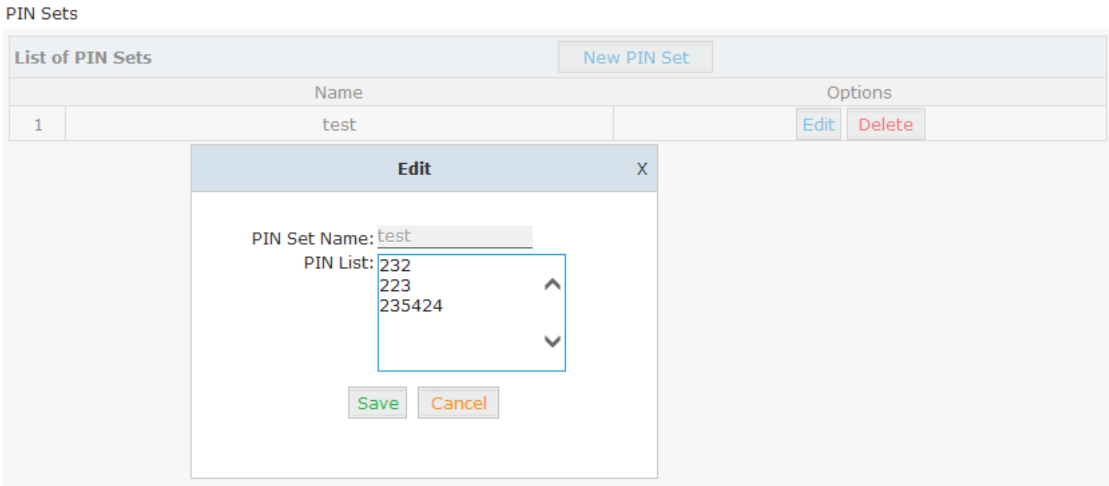
806 rings, after 30 seconds, the call is going to 808

3.3.7 PIN Sets

This feature allows an administrator to specify a list of PIN codes in a PIN Set. These PIN codes can then be used to secure an Outbound Call Route, ensuring that users must enter the PIN selected to be able to make an outbound call (e.g. for long distance or international calling).

Please configure as below.

Click【Advanced】→【PIN Sets】→【New PIN Set】:



Reference

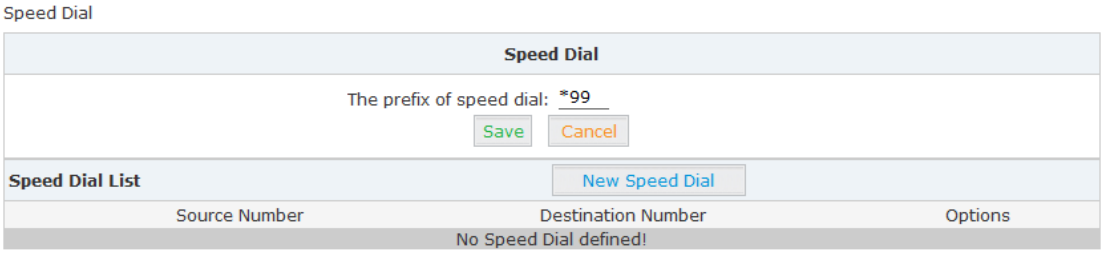
Item	Explanation
PIN Set Name	Define the name for this PIN Set
PIN Set	Define PIN codes in this list

3.3.8 Speed Dial

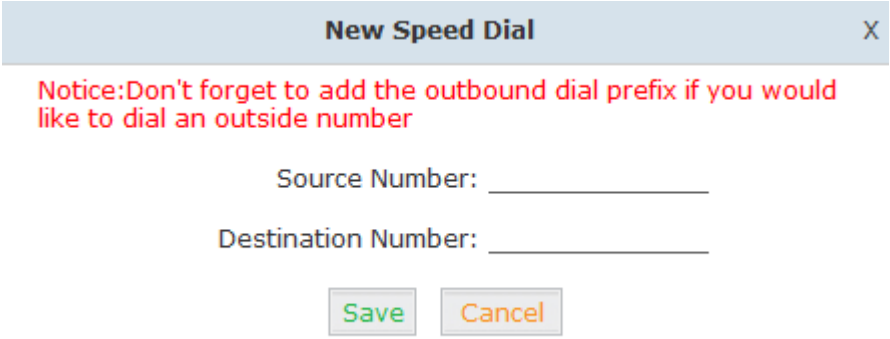
This feature allows the user to place a call by pressing a reduced number of keys. This function is particularly useful for phone users who dial certain numbers on a regular basis.

From the example here, it allows setting up system wide speed dial numbers that translate a feature code (*99) plus a two-digit code (00-99) into an external phone number.

Click【Advanced】→【Speed Dial】→【New Speed Dial】:



Click 【New Speed Dial】to create a new speed dial.



E.g.: prefix is *99 , speed number is 00, destination telephone number is 85337096.
When dial *9900, the call is going to 85337096 automatically.

3.3.9 Smart DID

Smart DID is defined and developed by ZYCOO directly. It's allows the callee to reach the caller directly when calls back via PBX. E.g.: Caller A makes an outbound call to the callee B, but B is out of office and cannot receive the call; When callee B backs to the office, he/she can make the call back to the caller A directly even he/she doesn't know the caller A's extension number.

Click【Advanced】→【Smart DID】:

Smart DID

Smart DID

Enable: ☐

Save Cancel

Smart DID Rules List New Smart DID Rule

	Pattern	Strip	Prepend	Options
1	X.			Edit Delete

Check “Enable” and “Save” to make this function efficient.

Click【New Smart DID Rule】to display the following diagram:

New Smart DID Rule X

Pattern: _____

Strip: ____digits before dialing

Prepend: ____before dialing

Save Cancel

Input the pattern and define how many digits need to be stripped or prepended, then click “Save”→“Activate”.

3.3.10 Callback

This feature allows an external caller to place an inbound call to the PBX. The inbound call will be disconnected and subsequently the PBX will place an outbound call back to this number and forwarded to defined destination after the call is connected.

Please configure as below.

Click【Advanced】→【Callback】:

Callback Number Settings

Callback Number Settings

Enable: ☐

Strip: ____digits before dialing

Prepend: _____before dialing

DialPlan: [ ]

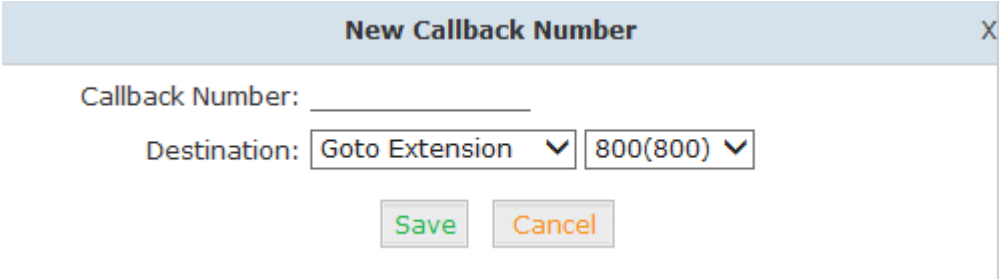
Save Cancel

List of Callback Number New Callback Number

Callback Number	Destination	Options
No Callback Number defined!		

Enable this function; select DialPlan, and define the callback rule (strip digits or prepend prefix).

Click【New Callback Number】to add callback number.

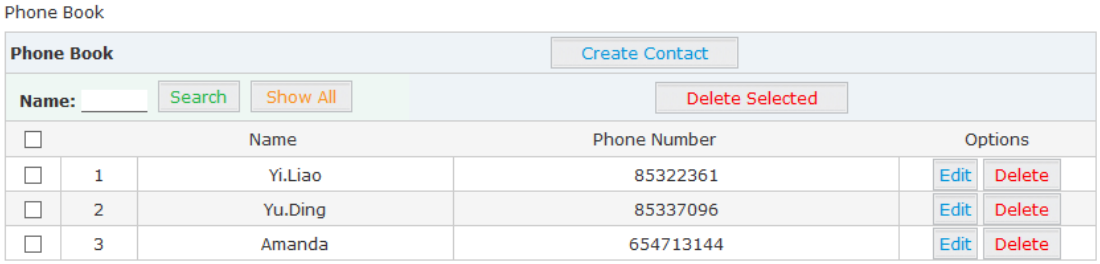


Input callback number and define the destination.

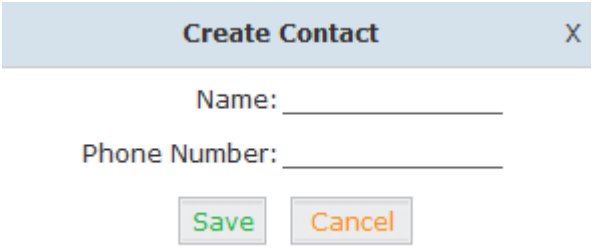
3.3.11 Phone Book

When an incoming call's Caller ID matches a number in the phone book, the name of matched number will be displayed. Please configure as below.

Click【Advanced】→【Phone Book】:



Click 【Create Contact】to create a new contact



3.3.12 Feature Codes

Feature codes are short dial codes that when manually dialed or programmed into a function key on your phone will allow you to perform actions quickly.

Click【Advanced】→【Feature Codes】to see the following diagram, and you can define the code for each feature.

Feature Codes

Feature Codes Management

Call Parking

Extension to Dial for Parking Calls: 700
Extension Range to Park Calls: 701-720
Call Parking Time(sec): 45
Parking Hints: ☐

Pickup Call

Pickup Extension: *8
Pickup Specified Extension: **

Transfer

Blind Transfer: #
Attended Transfer: *2
Disconnect Call: *
Timeout for answer on attended transfer(sec): 15

Call Forward

Enable Forward All Calls: *71
Disable Forward All Calls: *071
Enable Forward on Busy: *72
Disable Forward on Busy: *072
Enable Forward on No Answer: *73
Disable Forward on No Answer: *073

Do Not Disturb

Enable Do Not Disturb: *74
Disable Do Not Disturb: *074

Black List

Blacklist a number: *75
Remove a number from the blacklist: *075

Voicemail

Voicemail Main Menu: *60
Check Extension Voicemail: *61

Call Queues

Pause Queue Member Extension: *95
Unpause Queue Member Extension: *095

Save Cancel

Reference:

Item	Explanation
Extension to Dial for Parking Calls	Define an extension for parking calls.
Extension Range to Park Calls	Define the extension range for parking calls. (e.g.: 701-720)
Call Parking Time(sec)	Define the time for parking calls. UC510/520 will return the call to the extension after this time is expired.
Pickup Extension	This feature code will pick up a call given that the callers extension and the ringing extension are in the same pickup group and call group.
Pickup Specified Extension	This feature code allows a caller to pickup a call ringing on the specified extension. Default: Dial**+extension number to pickup the specified extension.
Blind Transfer	To Allow unattended or blind transfer while on a call based on the following steps: 1.While on a call with caller “A”, the user dials the blind transfer key sequence (in this case “#”). The system places the original call with “A” on hold, says "Transfer" then gives a dial tone. 2. Dial the transferee extension or phone number you wish to transfer the call to “B” and hangup the phone. 3.The original caller “A” is transferred immediately to the

	transferee “B” and “B” see the callerid of “A”.
Attended Transfer	To allow attended or supervised transfer while on a call based on the following steps: While on a call with caller “A”, the user dials the supervised transfer key sequence (in this case “*2”). The system places the original call with “A” on hold, says "Transfer" then gives a dial tone. dial the transferee extension or phone number you wish to transfer the call to “B” and wait for “B” to answer the phone and talk to “B” to introduce the call. If “B” does not wish to take the call, “B” can hang up the call and you are returned to your call with “A”. If “B” wishes to accept the call, you hang up the phone and caller “A” is transferred to the transferee “B”. If the call goes to voicemail or you wish to abort the transfer, simply press the “disconnect call” key sequence (in this case “*”) and the transfer will be aborted and you will be back on the call with the original caller “A”.
Disconnect Call	Disconnect the current transfer call (for Attended transfer).
Timeout for answer on attended transfer（sec）	Set the timeout value
One Touch Recording	Configure the function key for One Touch Recording
Call Forward	Enable/Disable Call Forward and the settings of function keys for different forward modes.
Do Not Disturb	Enable/Disable “Do Not Disturb”
Blacklist	Add/Delete blacklist number.
Voicemail	Configure the function keys for entering voicemail and check extension voicemail.
Pause Queue Member Extension	Pause the agent, and the agent cannot receive the call.
Unpause Queue Member Extension	Un-pause the agent, and the agent can receive the call.

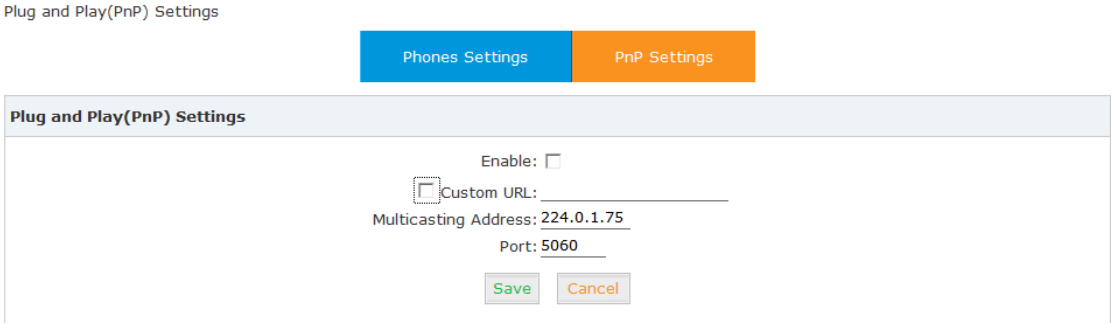
3.3.13 IP Phone Provisioning

When deploying large numbers of IP Phones, it is time consuming to have to configure each extension manually. UC510/520 allows certain IP Phones to be auto-provisioned and therefore all supported phones can be auto-provisioned. How amazing is this for enterprise!

To achieve this, please record the MAC, extension number, and username of each phone in the required format (please take reference of the auto provision script file model for details), then import the formatted file, once the phone is connected to the local network, it will get the extension number and password automatically. There are two operation methods to fulfill this function: DHCP & PnP. Please see details as below:

Method 1: PnP Settings

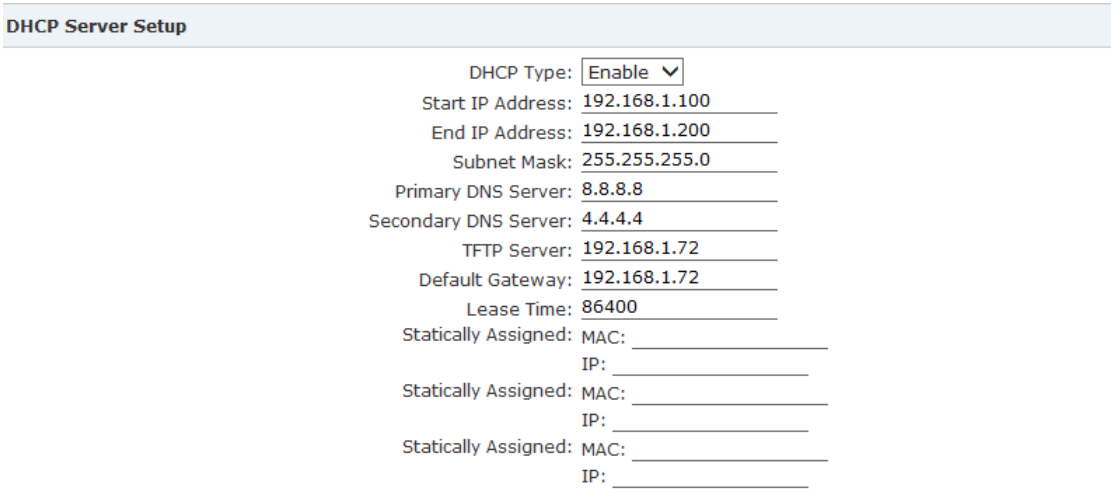
Select 【Advance】→【Phone Provisioning】→【PnP Settings】to enable PnP Settings, the default will be shown as below:



Note: Custom URL is the path for some users to get the phone configuration files specially.

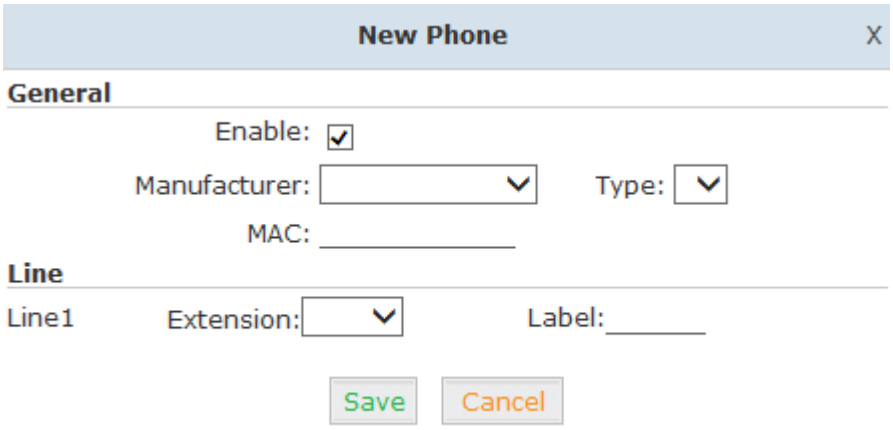
Method 2: Enable DHCP service

Click【Router Gateway】→【Internet】→【LAN】DHCP Server Setup in the following diagram:



Set the TFTP server and enable DHCP Server service.

Then Click【Advanced】→【Phone Provisioning】→【New Phone】:



Enable Phone Provisioning in【Basic】, select the IP Phone manufacture, input MAC of the phone, and select the extension for provisioning.

Notice

UC510/520 supports phone provisioning with phone brands of Zycoo/Akuvox/Escene/Yealink/ Grandstream currently.

3.3.14 Set Voice Prompt Language

Voice prompt is the PBX system voice prompt, which is usually different for different countries. Please select your countries official language as the system voice prompt language. If you can't find the language, you need to purchase the voice prompt from an independent supplier.

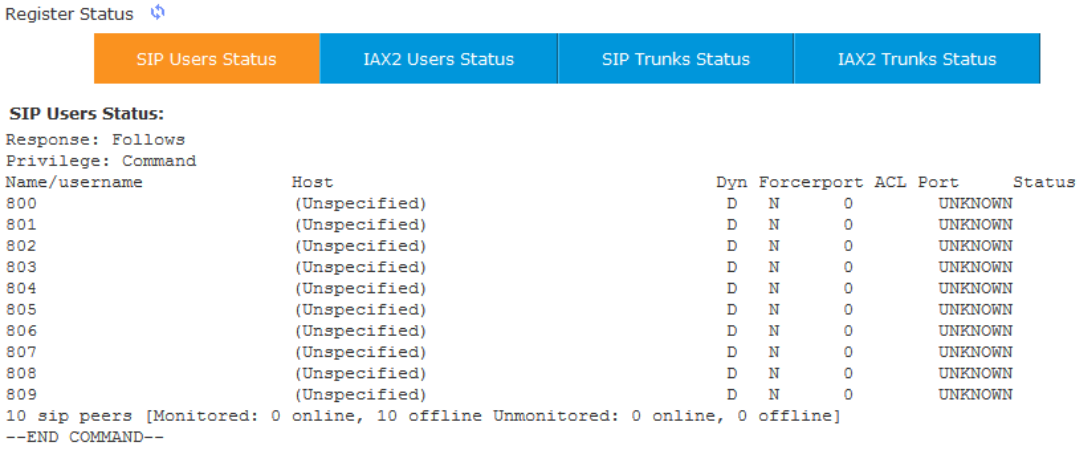
Click 【Advanced】→【Set Voice Language】to set the system prompt language. It's available to download or delete the voice prompt package.

3.4 Report

3.4.1 Register Status

Register status is status report about the registered extensions.

Click【Report】→【Register Status】to check status of the users and trunks.



Click【SIP Users Status】to show all SIP users status
Click【IAX2 Users Status】to show all IAX2 users status
Click【SIP Trunks Status】to show all SIP Trunks status
Click【IAX2 Trunks Status】to show all IAX2 Trunks status

3.4.2 Call Logs

Check call logs by caller ID or callee ID.
Click【Report】→【Call Logs】:

Call Logs

Start Date: Jun 26 2014 Field: Caller ID Filter
End Date: Jun 26 2014 Download Delete

Call Start	Caller ID	Destination ID	Account Code	Duration(sec)	Disposition
2014-06-26 02:15:52	805 <805>	118615772016		3	ANSWERED
2014-06-26 01:50:01	805 <805>	18615772016		3	ANSWERED
2014-06-26 01:49:34	805 <805>	18615772016		4	ANSWERED
2014-06-26 01:46:35	805 <805>	18615772016		3	ANSWERED
2014-06-26 01:43:05	805 <805>	18615772016		3	ANSWERED

Notice

Duration in the call logs is not real charged duration. If you need billing, PSTN must support polarity reversal function, and meanwhile, you must configure relevant parameters of polarity reversal in trunk configuration for the UC510/520.

3.4.3 PBX Debug Logs

Click【Report】→【System Logs】, you can download/ delete the system logs.

PBX Debug Logs

PBX Debug Logs

Enable PBX Log: ☑ Enable PBX Debug Log: ☑

Save Cancel

List of Logs Download Selected Delete Selected

☐		Name	Type	Options	
☐	1	pbx19700101.log	PBX Log	Delete	Download
☐	2	debug.log	Debug Log	Delete	Download

Chapter 4 Router Gateway

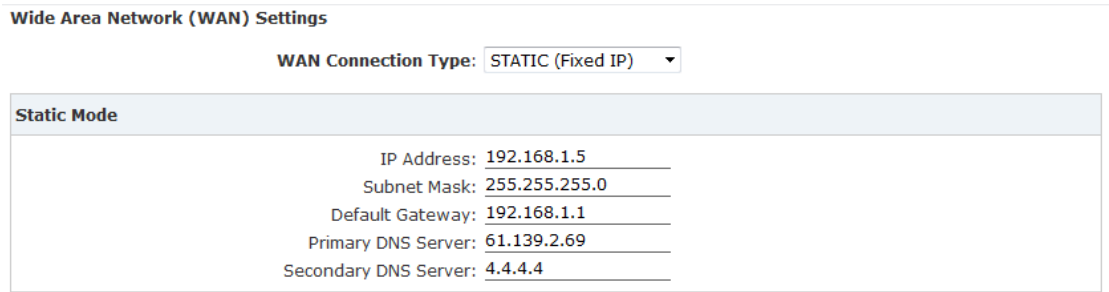
4.1 Internet

4.1.1 WAN

This page is used to configure the WAN port and clone the MAC address.
The device supports several methods for WAN port access including STATIC(Fixed IP)/ DHCP(Auto Config)/ PPPoE(ADSL)/L2TP/PPTP; and UC520 supports LTE by default.

Static

Once you have selected Static, a static IP address provided by the network service provider needs to be inserted. Subnet mask, default gateway and other relevant information must also be set.
Click【Internet】→【WAN】:
WAN Connection Type: Select "STATIC(Fixed IP)"



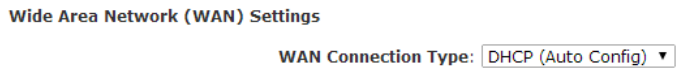
Reference

Item	Explanation
WAN Connection Type	STATIC(Fixed IP)
IP Address	Set IP address, e.g.: 192.168.1.5
Subnet Mask	Set Subnet Mask, e.g.: 255.255.255.255
Default Gateway	Set default gateway, e.g.: 192.168.1.1
Primary DNS Server	Set the primary DNS server address
Secondary DNS Server	Set the secondary DNS server address
MAC Clone	Enable or Disable MAC Clone
MAC Address:	Cloned MAC address

DHCP

If DHCP is selected, the IP address, subnet mask and other relevant information will be obtained from a DHCP server located on the network.

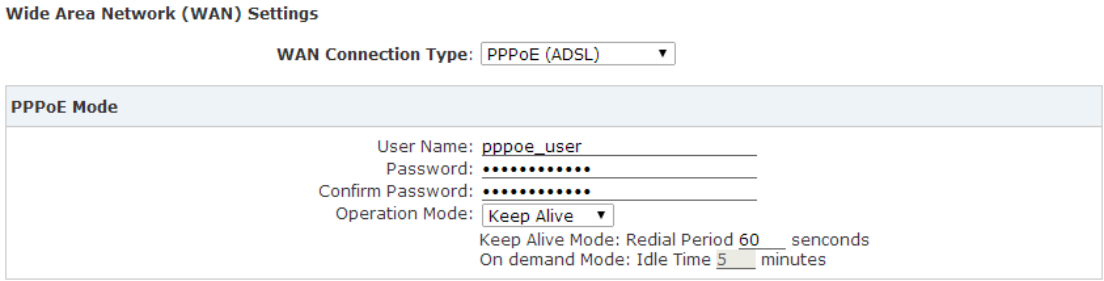
WAN Connection Type: Select "DHCP(Auto Config)"



PPPoE

If PPPoE is selected then the UC510/520 must be connected to the network via ADSL modem.

WAN Connection Type: Select “PPPoE(ADSL)”



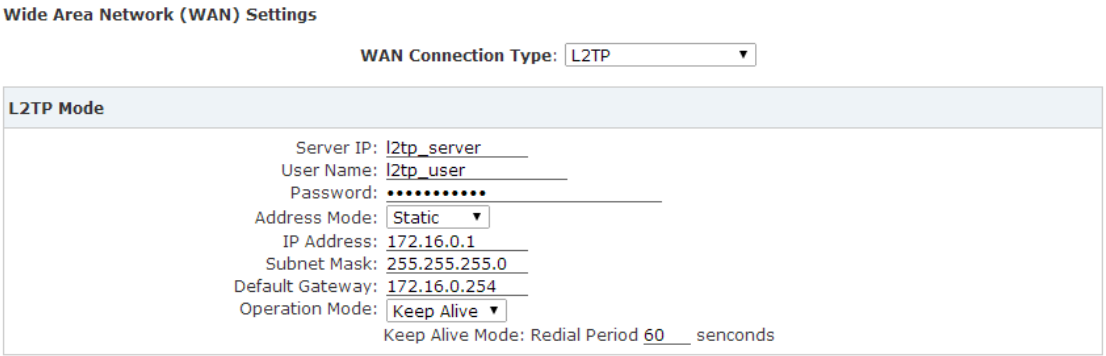
Reference:

Item	Explanation
WAN Connection Type	PPPoE(ADSL)
User Name	Set the username
Password	Set the password
Verify Password	Verify the password
Operation Mode	Support three operation modes: Keep Alive/On Demand/Manual. **Keep Alive**: when PPPoE is disconnected, system will redial PPPoE per 60s. **On Demand**: No data from PPPoE to WAN, after lasting 5mins, PPPoE will be disconnected automatically; when data is transported to WAN, PPPoE will be re-connected automatically. **Manual**: When PPPoE is disconnected, you have to click “Save”---“Activate” manually, and PPPoE will redial.

L2TP

If L2TP is selected the UC510/520 will serve as a VPN client and therefore all traffic sent and received will be encrypted, providing safe access to the business network by dialing to the Internet Service Provider(ISP) or connecting to the internet or other network.

WAN Connection Type: Select L2TP



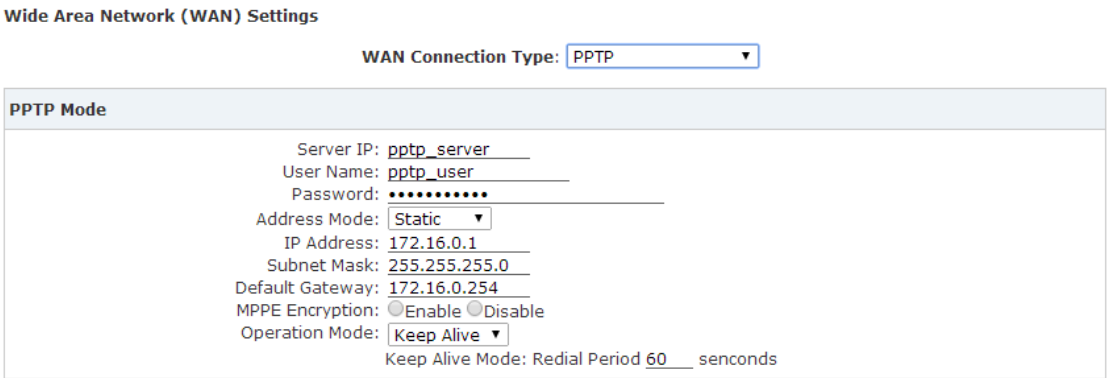
Reference:

Item	Explanation
WAN Connection Type	L2TP.
Server IP	Set the server IP
User Name	Set the user name
Password	Set the password
Address Mode	Support two modes: Static(Fixed IP)/ Dynamic(DHCP Auto Config)
IP Address	Set the IP address when Address Mode is Static
Subnet Mask	Set subnet mask when Address Mode is Static
Default Gateway	Set default gateway when Address Mode is Static
Operation Mode	Support two operation modes: Keep Alive/Manual. Keep Alive: when L2TP is disconnected, system will connect again every 60s. Manual: When L2TP is disconnected, you have to connect manually.

PPTP

If PPTP is selected the UC510/520 will serve as a VPN client and therefore all traffic sent and received will be encrypted, providing safe access to the business network by dialing to the Internet Service Provider(ISP) or connecting to the internet or other network.

WAN Connection Type: Select “PPTP”



Reference:

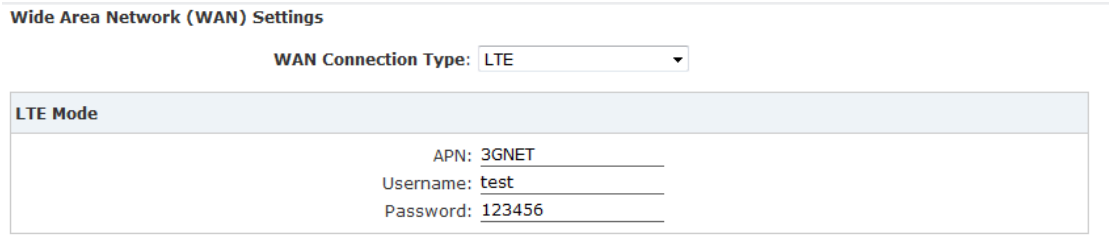
Item	Explanation
WAN Connection Type	PPTP
Server IP	Input server IP
User Name	Set user name
Password	Set password
Address Mode	Support two modes: Static(Fixed IP)/Dynamic (DHCP Auto Config)
IP Address	Set IP address when Address Mode is Static
Subnet Mask	Set subnet mask when Address Mode is Static
Default Gateway	Set default gateway when Address Mode is Static
MPPE Encryption	Enable or Disable MPPE Encryption (Microsoft Point-to-Point

	Encryption)
Operation Mode	Support two operation modes: Keep Alive/Manual. Keep Alive: when PPTP is disconnected, system will connect again every 60s. Manual: when PPTP is disconnected, you have to connect manually.

LTE

LTE network connection is supported on the UC520 only by default. It supports FDD-LTE.

WAN Connection Type: Select "LTE"

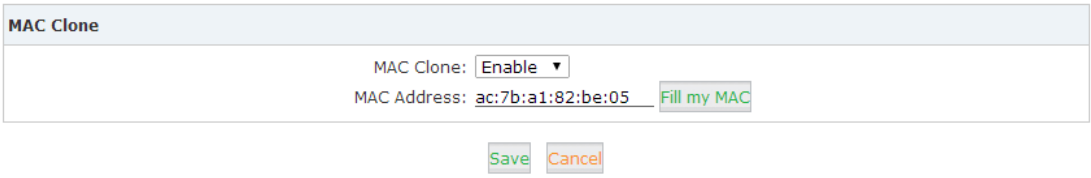


Reference:

Item	Explanation
WAN Connection Type	Select LTE (Optional)
APN	Access Point Name, such as 3GNET. (mandatory field)
User Name	Set user name (Optional)
Password	Set Password (Optional)

MAC Clone

To prevent multiple users from sharing a broadband connection, the ISP will identify the MAC address of the terminals.MAC Clone is used to clone the same MAC address of the WANport for network connection. Multiple users can surf the internet through a single router.



Reference:

Item	Explanation
MAC Clone	Enable/Disable MAC Clone
MAC Address	Fill the cloned MAC address. E.g.: ac:7b:a1:82:be:05

4.1.2 LAN

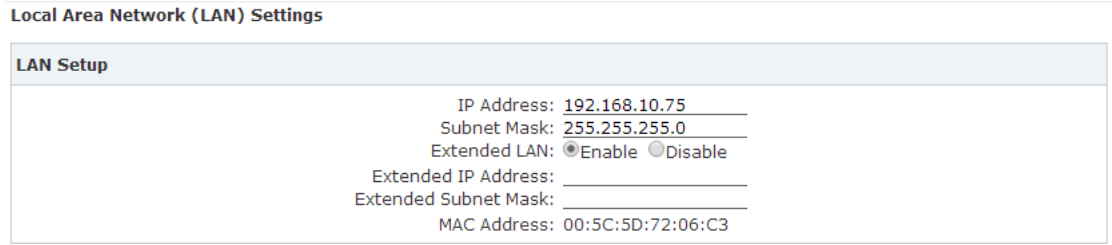
LAN Setup

It's necessary to configure the LAN IP for LAN based users to achieve internal network connectivity.

Default LAN IP for UC510/520 is 192.168.1.1, and it can be changed as required.

To make changes to the settings for the LAN port, VLAN and DHCP Server.

Click【Internet】→【LAN】:

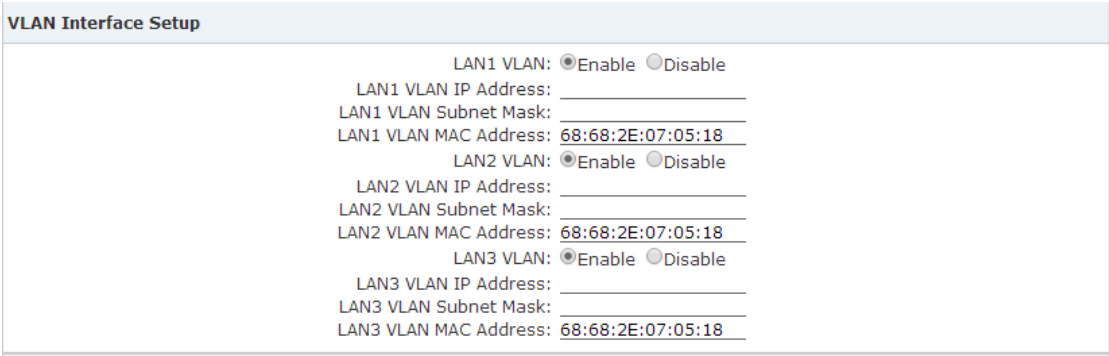


Reference

Item	Explanation
IP Address	Set LAN IP
Subnet Mask	Set subnet mask for LAN port
Extended LAN	Enable or disable Extended LAN
Extended IP Address	Set IP address for Extended
Extended Subnet Mask	Set subnet mask for Extended

VLAN Settings

VLAN provides the segmentation services traditionally provided only by routers in LAN configurations. By using VLANs, one can control traffic patterns and react quickly to relocations. VLAN provides the flexibility to adapt to changes in network requirements and allow for simplified administration.



Reference

Item	Explanation
LAN1 VLAN	Enable or Disable VLAN of LAN1
LAN1 VLAN IP Address	Set the IP address of VLAN for LAN1
LAN1 VLAN Subnet Mask	Set the subnet mask of VLAN for LAN1
LAN1 VLAN MAC Address	Set the MAC address of VLAN for LAN1. You need to distribute a new and independent MAC address which cannot be same as the current system.
LAN2 VLAN	Enable or Disable VLAN of LAN2.
LAN2 VLAN IP Address	Set the IP address of VLAN for LAN2
LAN2 VLAN Subnet Mask	Set the subnet mask of VLAN for LAN2

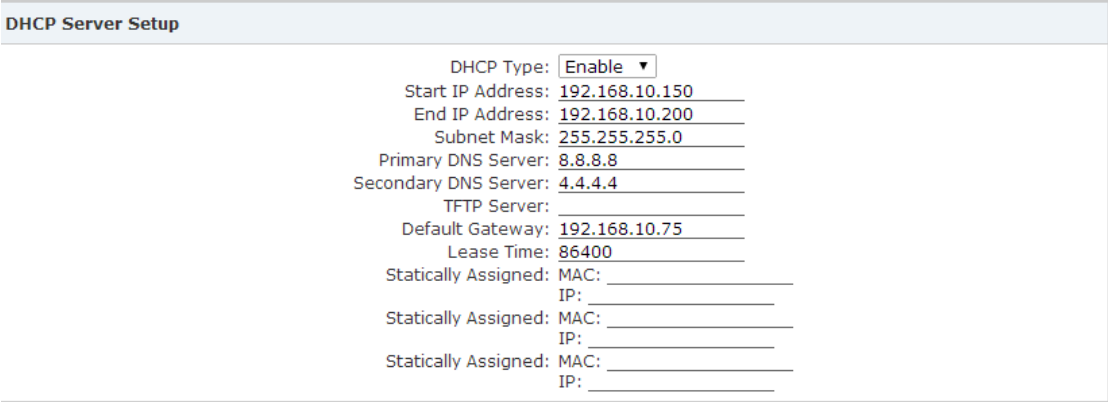
LAN2 VLAN MAC Address	Set the MAC address of VLAN for LAN2. You need to distribute a new and independent MAC address which cannot be same as the current system.
LAN3 VLAN	Set the IP address of VLAN for LAN3
LAN3 VLAN IP Address	Set the subnet mask of VLAN for LAN3
LAN3 VLAN Subnet Mask	Set the MAC address of VLAN for LAN3
LAN3 VLAN MAC Address	Set the IP address of VLAN for LAN3. You need to distribute a new and independent MAC address which cannot be same as the current system.

Notice

VLAN IP address of LAN3/LAN2/LAN1 must be in different network segments;
MAC address must be different from LAN port; MAC address must be different during Port VLAN.

DHCP Server Setup

DHCP Server can used to automatically assign IP address to terminals accessing UC510/520.
Only the IP address range set here can be assigned automatically.

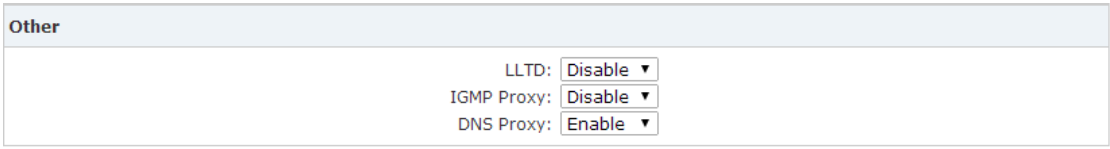


Reference:

Item	Explanation
DHCP Type	Enable or Disable DHCP
Start IP Address	Set Start IP address, which must be same as the LAN or Extended LAN
End IP Address	Set End IP address, which must be same as the LAN or Extended LAN
Subnet Mask	Set subnet mask address
Primary DNS Server	Set primary DNS sever address
Secondary DNS Server	Set secondary DNS sever address
TFTP Server	Set TFTP server address, which supports OPTION66, and be used for IP PBX Auto Provision
Default Gateway	Set default gateway address; it is recommended to be the LAN or extended LAN IP address, otherwise, LAN user cannot surf internet.

Lease Time	Set the lease time of IP
Statically Assigned	Set statically assigned MAC and IP(at most 3). The client will receive the corresponding IP address when DHCP is enabled.

Other Settings



Reference:

Item	Explanation
LLTD	LLTD(Link Layer Topology Discovery) is a proprietary Link Layer protocol for network topology discovery and quality of service diagnostics; and operates over both wired (such as Ethernet(IEEE802.3) or power line communication as well as wireless networks (such as IEEE802.11) . Default is disabled.
IGMP Proxy	IGMP(Internet Group Management Protocol)is a communications protocol used by hosts and adjacent routers on IP networks to establish multicast group memberships. IGMP is an integral part of IP multicast. IGMP is one way of IGMP Proxy. Default is disabled.
DNS Proxy	DNS proxy server is used by companies to describe a DNS server that directs clients to a proxy server for an unknown list of websites and services. It is primarily used to unblock blocked content from websites which contain region-restricted content. E.g.: When your client device DNS is set as LAN IP of UC510, domains can be analyzed. Default is enabled.

Notice

The DHCP server IP must be in the same segment as the LAN port, and the default gateway must be the LAN IP, otherwise users will be unable to access the internet.

4.1.3 Static Routing

Static Routing is a form of routing that occurs when a router uses a manually-configured routing entry, rather than information from a dynamic routing protocol to forward traffic.

Click【Internet】→【Static Routing】:

Add a routing rule

Destination:
Range: Host
Gateway:
Interface: LAN
Comment:

Apply Cancel

Current Routing table in the system

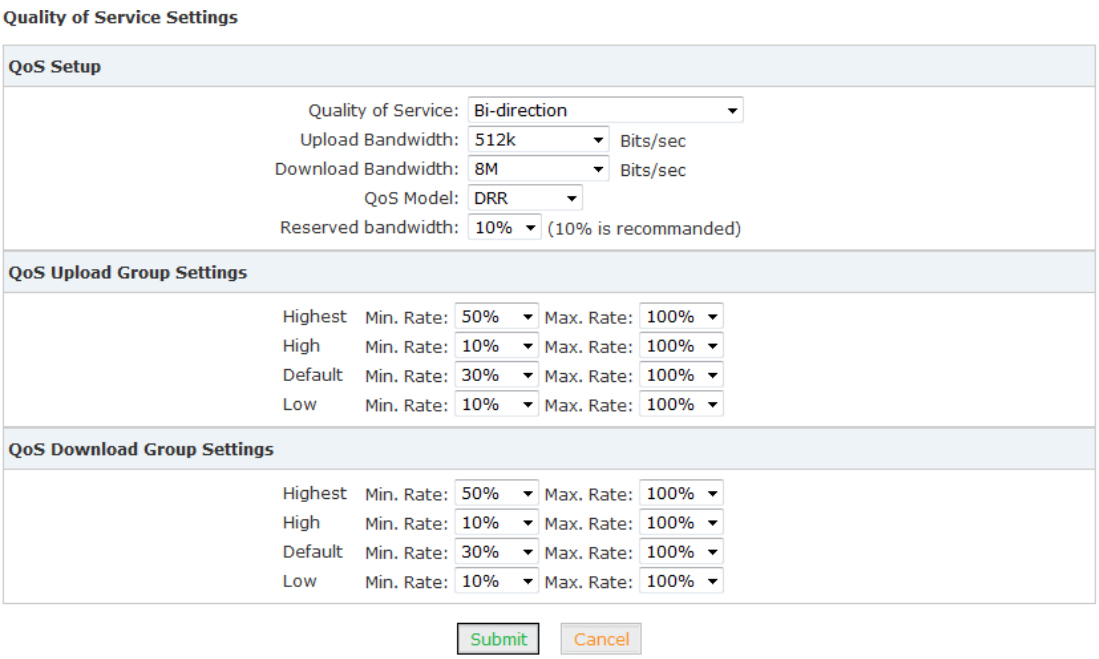
No.	Destination	Netmask	Gateway	Flags	Metric	Ref	Use	Interface	Comment
1	222.209.4.1	255.255.255.255	0.0.0.0	5	0	0	0	WAN(ppp0)	
2	255.255.255.255	255.255.255.255	0.0.0.0	5	0	0	0	LAN(br0)	
3	192.168.10.0	255.255.255.0	0.0.0.0	1	0	0	0	LAN(br0)	
4	0.0.0.0	0.0.0.0	0.0.0.0	1	0	0	0	WAN(ppp0)	

Reference:

Item	Explanation
Destination	Set the IP address of destination host or network IP address. E.g.: 222.209.4.1, 192.168.10.0.
Range	Select the routing mode: Host or Net. When “Net” is selected, you need to configure the netmask, e.g.: 255.255.255.0.
Gateway	Set the gateway address
Interface	Select the interface type: WAN/LAN/Custom. E.G.: Custom interface can be eth2.3, eth2.4 or ppp2.
Comment	Name for this routing.
Current Routing table in the system	Routing table list. The static routing created by yourself can be deleted, but default routing cannot be deleted.

4.1.4 QoS

QoS(Quality of Service) is the overall performance of network, particularly the performance seen by the users of the network. User can control the flow of WAN port traffic based on the QoS rule.



Click【Submit】, save the settings to automatically activate the upload or download flow control.

Reference:

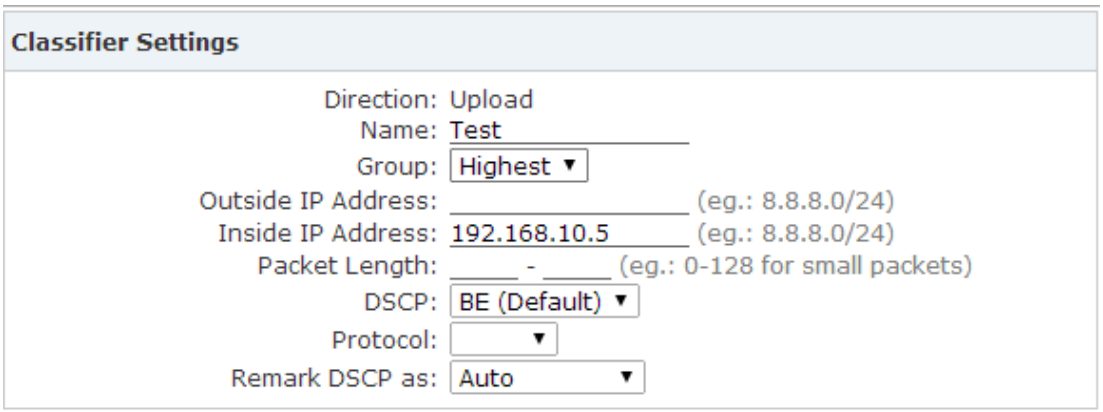
Item	Explanation
Quality of Service	Select the QoS: Disable/ Bi-direction/Upload to Internet/Download from Internet. Bi-direction include Upload to internet and Download from internet
Upload Bandwidth	Define the upload bandwidth; it can be selected from the list or custom defined
Download Bandwidth	Define the download bandwidth; it can be selected from the list or custom defined
QoS Model	Support three models: DRR(Deficit Round Robin)/SPQ(Strict Priority Queue)/DRR+SPQ. Default is DDR.
Reserved bandwidth	Reserve the bandwidth; It is recommended to reserve 10%. Default is 0%.
QoS Upload Group Settings	Highest/High/Default/Low Take the above as example: Highest Min. Rate 50% Max. Rate 100% High Min. Rate 10% Max. Rate 100% Default Min. Rate 30% Max. Rate 100% Low Min. Rate 10% Max. Rate 100% If the bandwidth of upload/download is 10M, then the lowest bandwidth for Highest group user is 5M, highest bandwidth can be up to 10M The lowest bandwidth for High group user is 1M, the highest bandwidth can be up to 10M; The lowest bandwidth for Default group user is 3M, the highest bandwidth can be up to 10M;

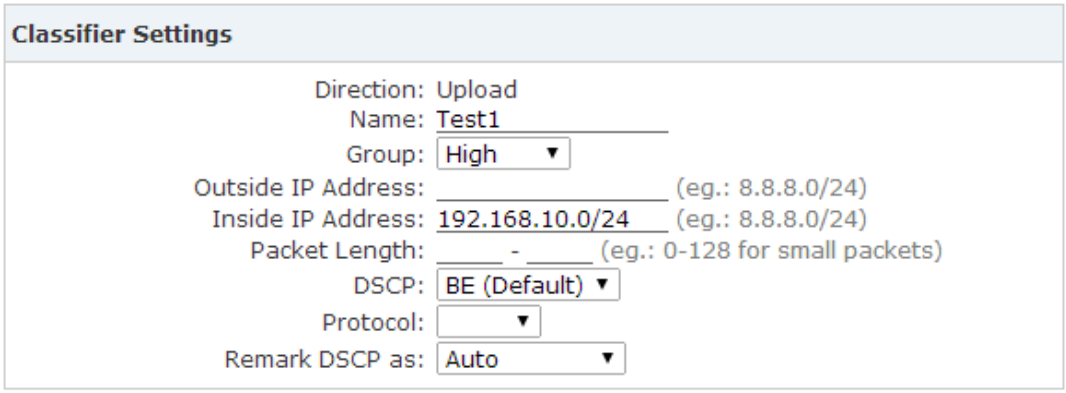
	The lowest bandwidth for Low group user is 1M, the highest bandwidth can be up to 10M; Total value of Min.Rate for the 4 groups from “Low” to “Highest” must be less than 100% or equal to 100%. If QoS is enabled then all client devices will comply with the “Default” group.
Qos Download Group Settings	The configuration of Qos Download Group Settings is same as Qos Upload Group Settings as detailed in the example above.

After saving QoS settings, you can see “QoS Upload Group Settings” and “QoS Download Group Settings” in【QoS】page.

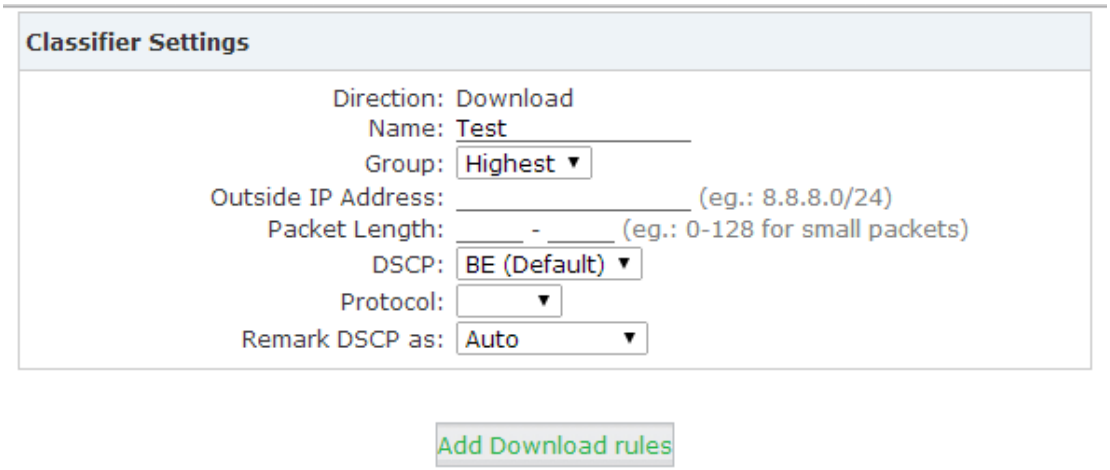
E.g.: Set the upload rate of a device whose IP is 192.168.10.5 to be Highest group, and other device to be High group; set the download rate of intranet as the Highest group.

Click【Add upload rules】to enter the upload rule settings:





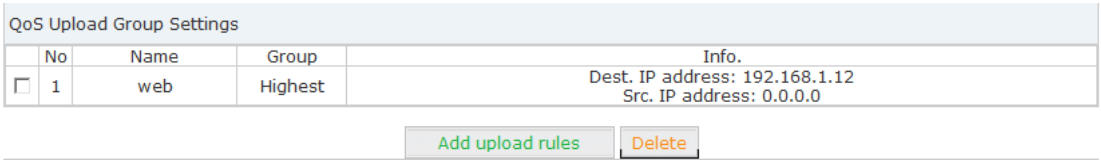
Click【Add download rules】to enter the download rule settings:



Reference:

Item	Explanation
Direction	Transmission direction (no need to configure)
Name	Custom define the rule name
Group	Select the corresponding group (or priority group)
Outside IP address	Set outside IP address(or network segment) and corresponding group subnet mask digits, e.g.: 192.168.10.0/24. Or be null to allow all outside IP address.
Inside IP address	Set inside IP address(or network segment) and subnet mask digits, e.g.: 192.168.10.0/24. Or be null to allow all intranet IP.
Packet Length	Set the rule package length, or don't set. Default is null.
DSCP	DSCP(Differential Service Code Point) supports: BE(default)/ AF11/ AF12/ AF13/ AF21/ AF22/ AF23/ AF31/ AF32/ AF33/ AF41/ AF42/ AF43/ EF Default is null.
Protocol	You can select TCP/UDP/ICMP or null (all protocols use the default IP address). When TCP or UDP is selected, you must complete the outside and intranet port range.
Remark DSCP as	Optional. You can reset DSCP for QoS or do not change. Default is "Do Not change"

Click【Add upload rules】to add the rule(at most 32 rules).



It is the same process to add download rule in "QoS Download Group Settings".

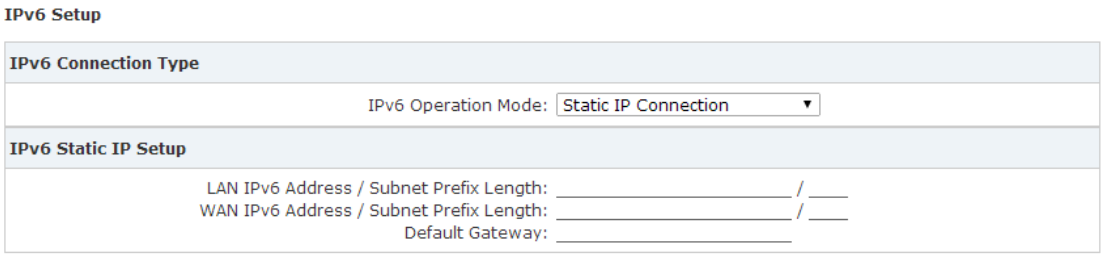
Note: LAN IP 192.168.1.1 of the UC510 is not included in QoS settings. QoS settings is only for client devices connected to LAN of UC510.

4.1.5 IPv6 Setup

Internet Protocol version 6 (**IPv6**) is the latest version of the Internet Protocol(IP), the communications protocol that provides an identification and location system for IP based devices, e.g. computer on networks and routes traffic across the Internet.IPv6 is intended to replace IPv4, which still carries more than 96% of Internet traffic worldwide as of May 2014.

Click【Internet】→【IPv6】:

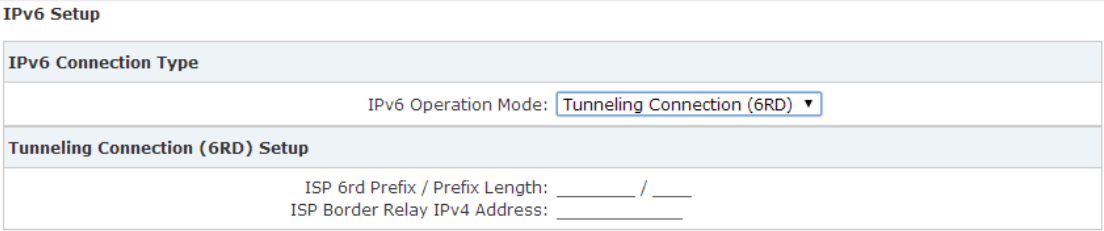
Select **Static IP Connection** for IPv6 Operation Mode



Reference:

Item	Explanation
IPv6 Operation Mode	Static IP Connection
LAN IPv6 Address / Subnet Prefix Length	Set IPV6 address and subnet prefix length on LAN
WAN IPv6 Address / Subnet Prefix Length	Set IPV6 address and subnet prefix length on WAN
Default Gateway	Set default gateway

IPv6 Operation Mode: Select Tunneling Connection(6RD)



Reference:

Item	Explanation
IPv6 Operation Mode	Tunneling Connection(6RD):
ISP 6rd Prefix / Prefix Length	Set ISP 6RD prefix/prefix length
ISP Border Relay IPv4 Address	Set IPv4 address on Broadcast(Layer)

4.1.6 DHCP Client Info

The DHCP client info will displays the information of terminals once they have been assigned IP address from DHCP server, including hostname, MAC address, IP address and expiration time.

Click【Internet】→【DHCP Client Info】:

DHCP Client List

DHCP Clients			
Hostname (optional)	MAC Address	IP Address	Expires in

Reference:

Item	Explanation
DHCP Clients	Display all DHCP clients

4.2 Wireless

4.2.1 Basic

This option has some basic settings of wireless, such as wireless network, high throughput, entity module and others.

Click【Router Gateway】→【Wireless】→【Basic】to show as below:

Basic Wireless Settings

Wireless Network

Radio On/Off: RADIO OFF
WiFi On/Off: WiFi OFF
Network Mode: 11b/g/n mixed mode
Network Name(SSID): UC510_AP Hidden Isolated
BSSID: 18:FF:FF:FF:FF:FF
Frequency (Channel): 2412MHz (Channel 1)

HT Physical Mode

Operating Mode: Mixed Mode Green Field
Channel BandWidth: 20 20/40
Guard Interval: Long Auto
MCS: Auto
Reverse Direction Grant(RDG): Disable Enable
Extension Channel: 2432MHz (Channel 5)
Space Time Block Coding(STBC): Disable Enable
Aggregation MSDU(A-MSDU): Disable Enable
Auto Block ACK: Disable Enable
Decline BA Request: Disable Enable
HT Disallow TKIP: Disable Enable

Other

HT TxStream: 2
HT RxStream: 2

Save Cancel

Reference:

Name	Introductions
Radio On/Off	RF(radio frequency) switch. Before enabling Wi-Fi, it must be on. The default is On.
Wi-Fi On/Off	Wi-Fi switch
Network Mode	Alternative Wireless protocol, includes 11b/g/n mixed mode, 11b only, 11g only and 11n only(2.4G)
Network Name(SSID)	SSID(Service Set Identification) also known as Wi-Fi name,

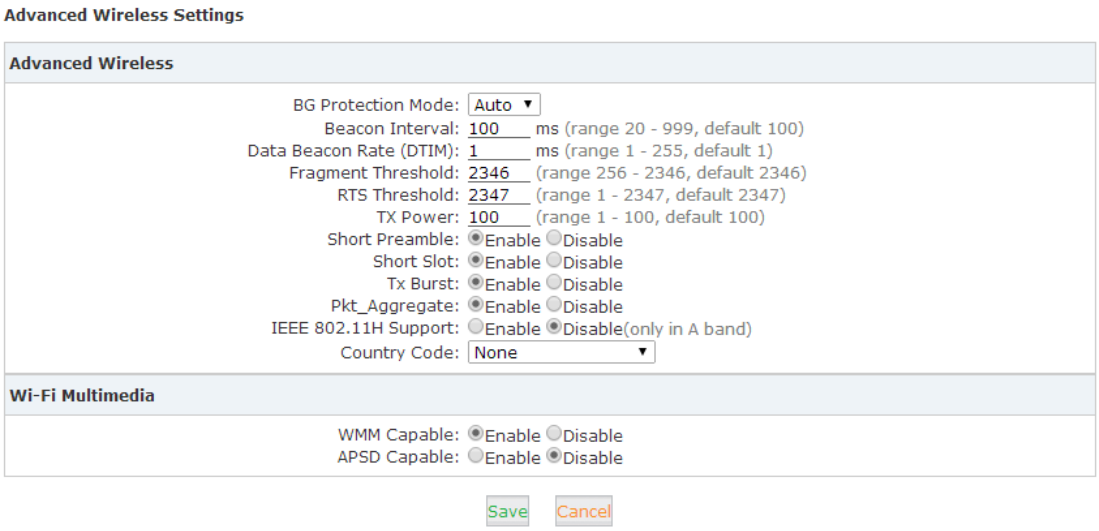
	allows your wireless network to be easily distinguished from other wireless networks. In addition, Hidden option can make SSID invisible, nobody can search this Wi-Fi; Isolated option is used for partitioning VLAN under the same SSID; in other words, Isolated option users could not visit others Host in the same SSID
BSSID	BSSID is Basic Service Set Identifier, which is defined as MAC address of Wi-Fi router in IEEE 802.11.
Frequency (Channel)	Wi-Fi Frequency(Channel). It can be “AutoSelect” or selected as a specific frequency. The default is “AutoSelect”
Operating Mode	Operation mode contains Mixed and Green Field. Mixed Mode：wireless network card can identify Pre-N AP, but throughput would be affected； Green Field Mode：It will reach high throughput, but compatibility and system security will be affected The default is Mixed Mode
Channel Bandwidth	Supports 20MHz and 20MHZ/40MHz channel. In IEEE 802.11N mode, two 20MHZ channels can be bundled to a 40MHz channel; it can be used as two channels in real working environment (one is primary, the other one is secondary); this will double the transmission rate or promote more. The default is 20/40
Guard Interval	Is used to ensure that distinct transmissions do not interfere with one another. These transmissions may belong to different users (as in TDMA) or to the same user (as in OFDM). Send interval between the wireless signal; long interval or auto interval is alternative
MCS	MCS(Modulation and Coding Scheme) is the wireless rate of 802.11n. Please select the index value of MCS; each value corresponds to a communication rate determined by a set of parameters. The default is Auto.
Reverse Direction Grant(RDG)	Is used to guarantee the normal communication between terminal and AP, especially in radio interference.
Extension Channel	If Frequency(Channel) is “AutoSelect”, then no extension channels; If specific channel is selected, there will be corresponding extension channel. And when Channel Bandwidth is 20MHz, there will not be extension channel; when Channel Bandwidth is 40MHz, there will be extension channel, then the bandwidth will be promoted, as well as transmission rate
Space Time Block Coding(STBC)	Space–time block coding is a technique used in wireless

	communications to transmit multiple copies of a data stream across a number of antennas and to exploit the various received versions of the data to improve the reliability of data-transfer.
Aggregation MSDU(A-MSDU)	A-MSDU(Aggregated MAC Service Data Unit) is a frame aggregation mode, which is used to combine multiple MSDUs into one MSDU for transmission. This will reduce the amount of additional MAC head information in each MSDU and improve the MAC-Layer transmission rate. The default is enabled.
Auto Block ACK	Realize aggregate switch sequence and then increase transmission rate. The default is enabled
Decline BA Request	Default is disable, in order to increase transmission rate
HT Disallow TKIP	Forbid TKIP encryption. The default is enabled.
HT TxStream	High throughput transmit data stream. Default value is 2.
HT RxStream	High throughput receive data stream. Default value is 2.

4.2.2 Advanced

The wireless advanced setting includes advanced wireless and Wi-Fi multimedia (WMM) configurations.

Click【Router Gateway】→【Wireless】→【Advanced】to show as below:



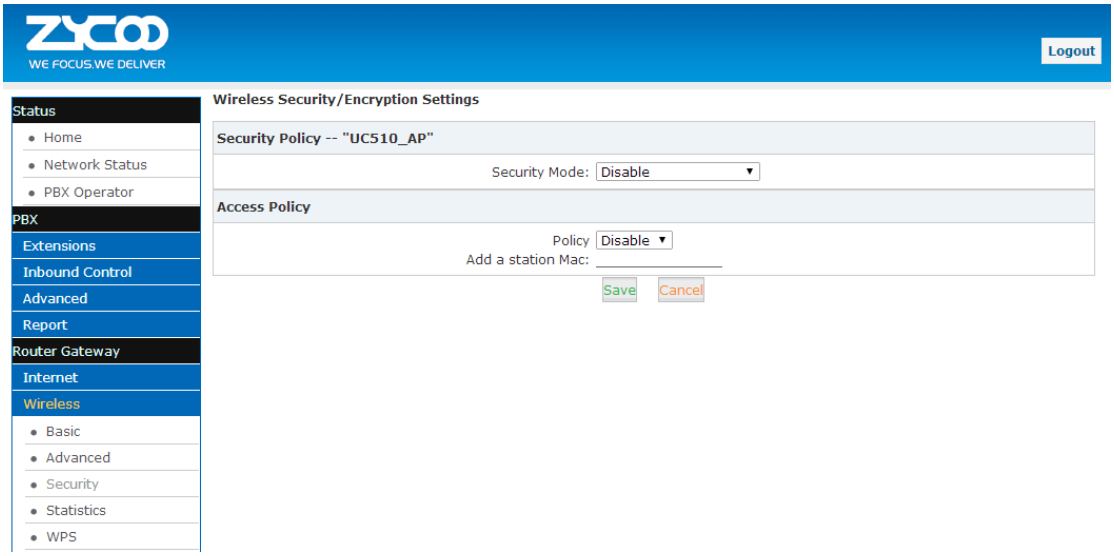
Reference:

Name	Instruction
BG Protection Mode	BG = IEEE802.11b/g It benefits for improving slower wireless connection access to router by complex multiple mode. The default is Auto

Beacon Interval	Beacons are packets sent by a wireless Access Point to synchronize wireless devices. Beacon Interval is the time between beacon transmissions. The access speed of the wireless client will be higher when the interval value is lower. The default is 100ms.
Data Beacon Rate (DTIM)	A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages. The default is 1ms.
Fragment Threshold	Specifies the fragmentation threshold for data packets, when the packet length exceeds fragmentation threshold, it will be divided into various data packets automatically. More data packets will result in poor performance of the network. It's not recommended to set a lower value. The default is 2346.
RTS Threshold	Specify the RTS threshold for data packets, when the packet length exceeds this value, the router will send the RTS to destination for negotiate, after receiving the RTS frame, wireless site will respond to a CTS (Clear to send) frame in response to the router and the client; which means there is wireless communication between them.
TX Power	Define the size of current wireless AP for SSID transmitted power, the larger the signal stronger. The default is 100.
Short Preamble	Enable short preamble to make the network synchronization performance better. The default is enabled.
Short Slot	Enable it to improve the transmission efficiency of wireless communication. The default is enabled.
Tx Burst	Enable it to assure the AP has a higher throughput without changing the network environment and increasing the transmission duration. Default is enabled.
Pkt_Aggregate	Packet Aggregate. Enable it to strengthen the mechanism of local area network to ensure correct packet to the destination
IEEE 802.11H Support	Extension of the 5 GHZ microwave standard of physical layer and MAC sub-layer (mainly used in Europe)It solves problems like interference with satellites and radar using the same 5 GHz frequency band.
Country Code	Choose your country code in the drop-down list
WMM Capable	Enable it to improve wireless multimedia data transmission performance (such as video or online broadcast). If you are not familiar with the WMM, please set it to capable.
APSD Capable	Automatic Power Save Delivery. Enable it to save power when no data is transmitted. This may affect the wireless network performance. Default is disabled.

4.2.3 Security

The security page allow for configuration of wireless network security/ encryption settings.
Click【Router Gateway】→【Wireless】→【Security】to show as below:



Reference:

Item	Explanation
Policy	Select Disabled, Allow, Reject in the drop-down list
Add a station Mac	Here you can add a new MAC address for a Frequency Wi-Fi client .If Disabled is selected then the access policy is disabled; If Allow is selected then the MAC access is allowed only to access; If Reject is selected then all the MAC addresses listed here will be rejected. You are allowed to add 64 MAC addresses maximum.

Wireless network security/encryption Settings include: security policy and access policy. Security policy includes 4 modes: OPENWEP, WPA2-PSK, WPA-PSK/WPA2-PSK, WPA1/WPA2.

WEP: Wired Equivalent Privacy, which is a security algorithm for IEEE 802.11 wireless networks. WEP uses the stream cipher RC4 for confidentiality, and the CRC-32 checksum for integrity. OPENWEP is one way of WEP.

WPA: Wi-Fi Protected Access, which is a security protocol and security certification program developed by the Wi-Fi Alliance to secure wireless computer networks.

WPA2: Wi-Fi Protected Access II, known as IEEE 802.11i-2004, is the successor of WPA .

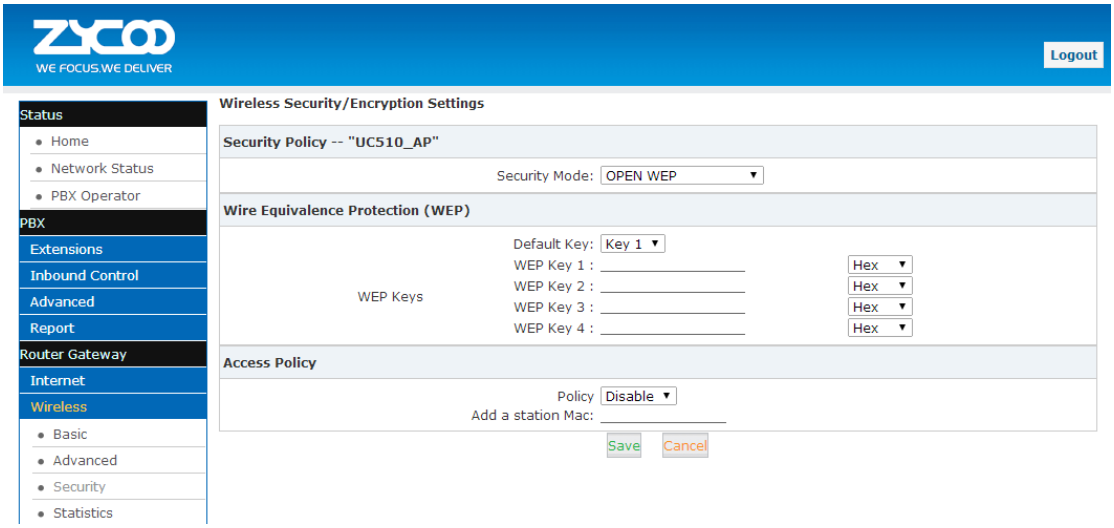
WPA-PSK: Wi-Fi Protected Access Pre-shared Key, also referred to WPA-Personal. It's designed for home and small office networks and doesn't require an authentication server.

WPA/WPA2: is mainly used for enterprise. Adopt 802.1x for authentication and generating root key for encryption data, but not set PSK(pre-shared key) manually. RADIUS server replaced the single password mechanism in authentication.

When WPS is enabled, users can use 4 security encryption modes: OPENWEP, WPA-PSK, WPA2-PSK and WPA-PSK/WPA2-PSK. Here let's introduce the 4 modes in detail, but WPA2-PSK is recommended.

OPENWEP

Click【Router Gateway】→【Wireless】→【Security】, Select【Security Mode】as OPENWEP:

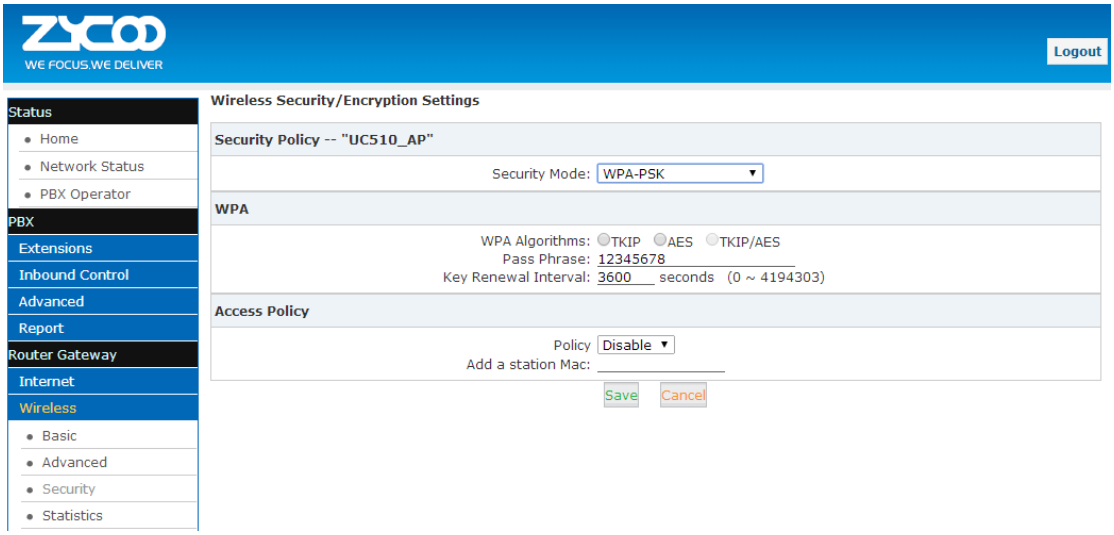


Reference:

Item	Description
Security Mode	OPENWEP
Default Key	Select one of the WEP key as default key, and define the four keys. User can access wireless AP with one of four keys.
WEP Key	User can set 4 keys here.
Hex	Hex is hexadecimal
ASCII	ASCII is binary

WPA-PSK

click【Router Gateway】→【Wireless】→【Security】, select【Security Mode】→WPA-PSK to show below：

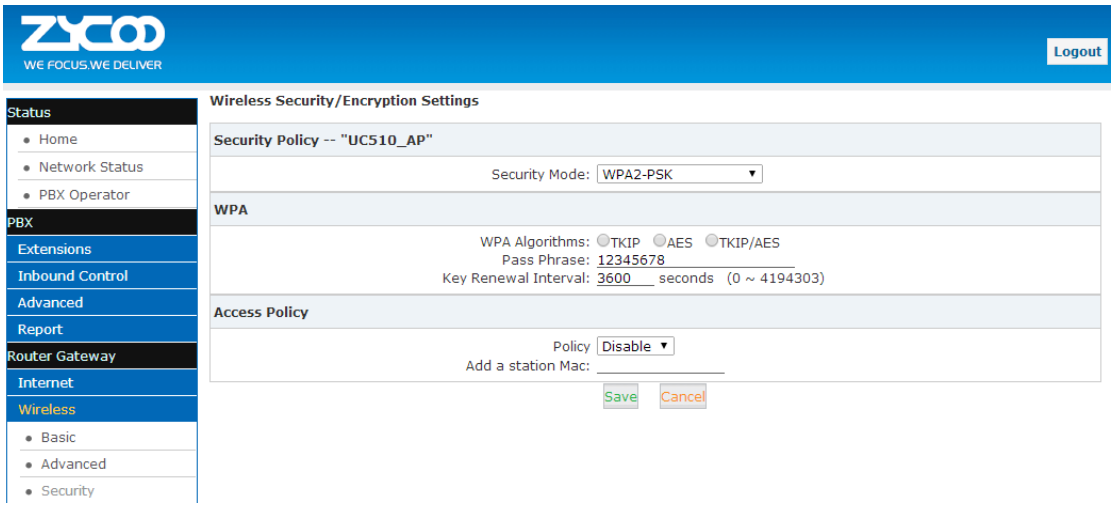


Reference:

Item	Explanation
WPA Algorithms	Support TKIP(Temporal Key Integrity Protocol) and AES (Advanced encryption standard). User can select one algorithm.
Pass Phrase	Input Wi-Fi password, e.g.: @Ab2-Cw158
Key Renewal Interval	The key update interval defaults to 3600 seconds

WPA2-PSK

Click【Router Gateway】→【Wireless】→【Security】, select【Security Mode】→WPA2-PSK to show below:

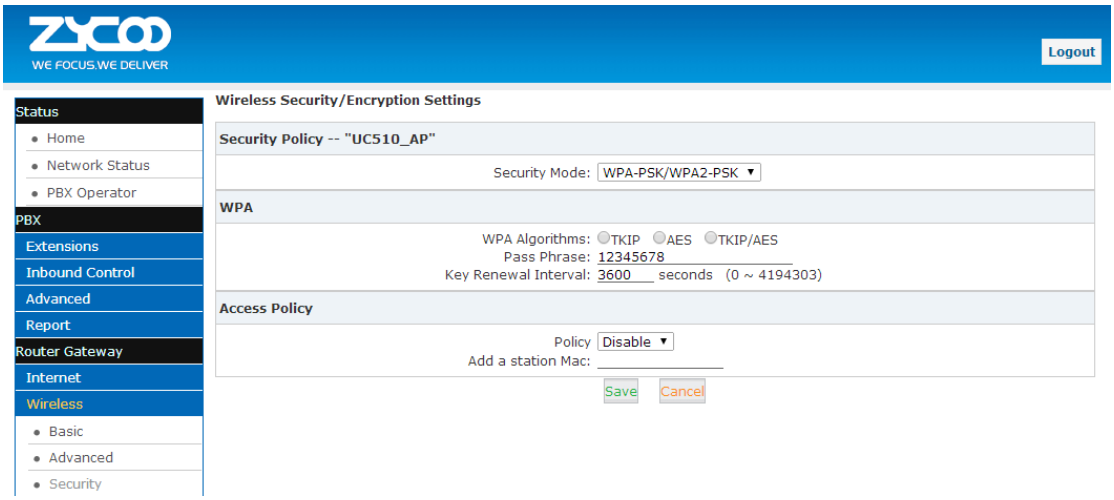


WPA2-PSK parameter table：

Item	Description
WPA Algorithms	Support TKIP and AES, TKIP/AES. User can select one of three encryption algorithms.
Pass Phrase	Input Wi-Fi password
Key Renewal Interval	The key update interval defaults to 3600 seconds

WPA-PSK/WPA2-PSK

click【Router Gateway】→【Wireless】→【Security】, then select【Security Mode】→WPA-PSK/WPA2-PSKto show as below:

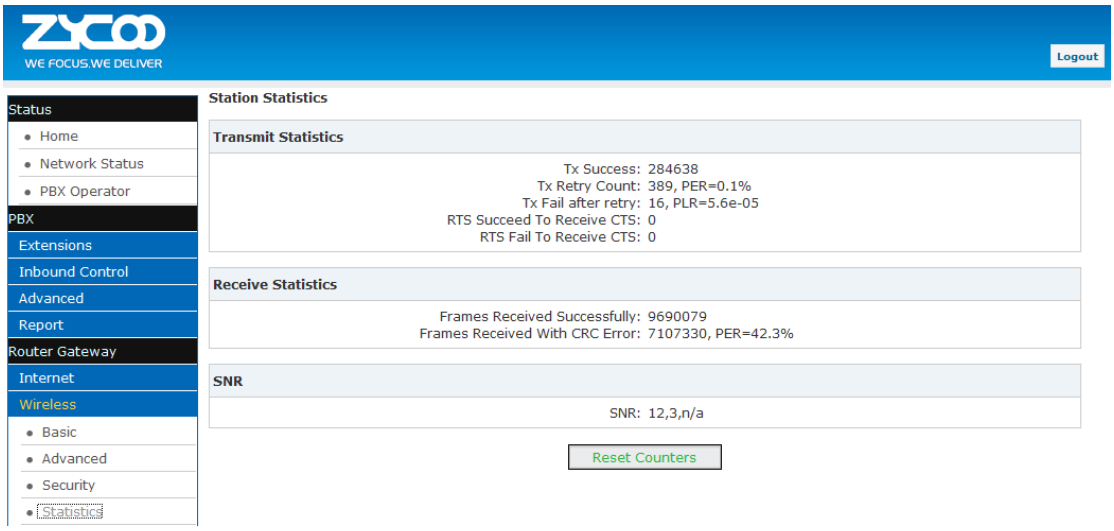


Reference:

Item	Description
WPA Algorithms	Support TKIP and AES, TKIP/AES. User can select one of three encryption algorithms.
Pass Phrase	Input Wi-Fi password
Key Renewal Interval	The key update interval defaults to 3600 seconds

4.2.4 Statistics

Wireless transmit/receive status statistics, click【Router Gateway】→【Wireless】→【Statistics】to show as below:



Statistical parameter table：

Item	Description
Tx Success	Successful transmission package size (by byte)
Tx Retry Count	Transmission retry count (by byte); PER (Percent Ratio) count by percentage.
Tx Fail after retry	Statistics of Retry after transmission failure(by byte); PLR : Packet Loss Rate
RTS Succeed To Receive CTS	Received CTS successfully after sending RTS (RTS/CTS refer to Request to Send and Clear to Send, flow control signal)
RTS Fail To Receive CTS	Failed to receive CTS after sending RTS (RTS/CTS refer to Request to Send and Clear to Send, flow control signal)
Frames Received Successfully	Receive frames successfully (by byte)
Frames Received With CRC Error	Received the frame CRC errors, in bytes, PER as a percentage
SNR	Signal-to-Noise Ratio is defined as the power ratio between a signal(meaningful information) and the background noise(unwanted signal). The greater the SNR, the smaller the noise power is.

WPS

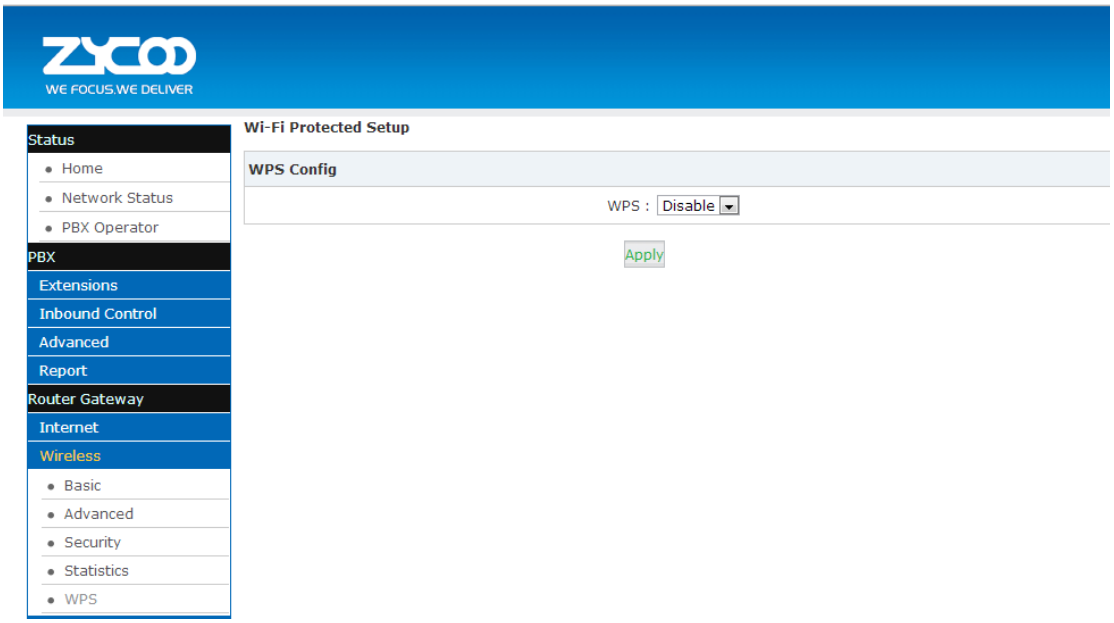
WPS (Wi-Fi Protected Setup) was launched by the Wi-Fi alliance as a new Wi-Fi security setting, mainly in order to solve the long wireless encryption authentication set. The drawbacks of the steps is that it is too complex, difficult, WPS function on the wireless router can let's take a quick easy encryption wireless network data transmission, to prevent the invasion of illegal users.

Traditionally, a Wi-Fi router limits illegal access by assigning a complicated password. This makes it inconvenient to both memorize and input the password. WPS provides a much easier and relatively more secure way of limiting illegal access and attack.

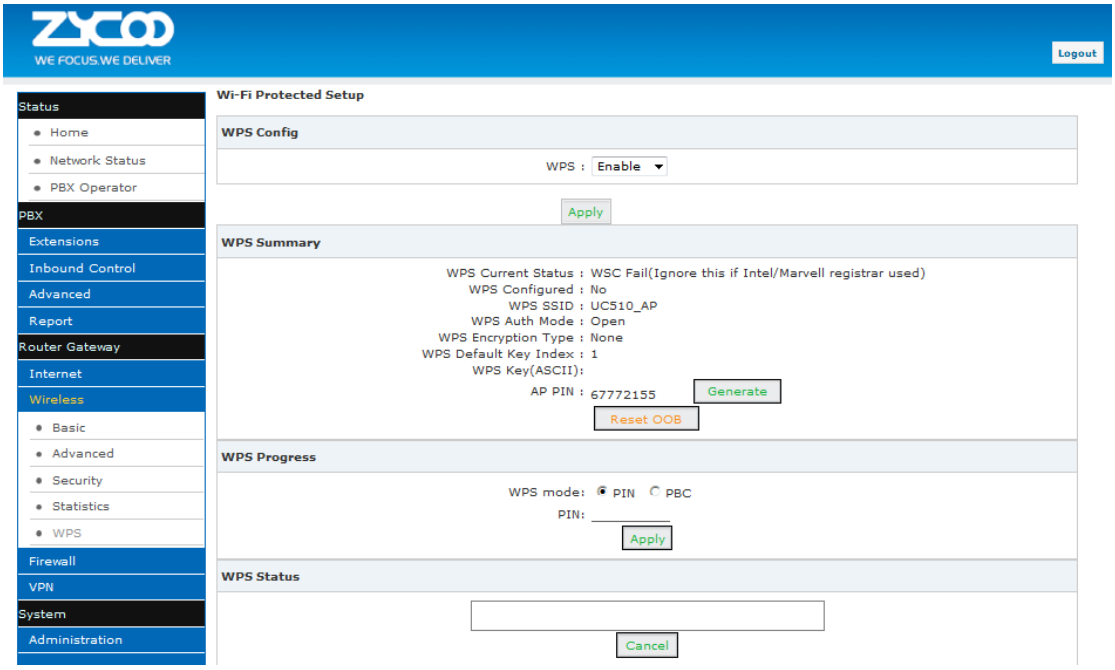
There are two ways to configure WPS. Let’s take the mobile phone as example:

1. If you enabled WPS on your mobile phone, then press the turbo button on the UC510, the UC510 will automatically authorize your phone to access Wi-Fi. Of course, only company staff who are in the office can press the turbo button.
2. You can generate a random password from the UC510 GUI, and you can input the password on your mobile phone to access Wi-Fi.

Click【Router Gateway】→【Wireless】→【WPS】to show as below：



Default is disabled. Select Enable for startup, as shown below：



Note: Click “Reset OOB” to reset all the Wi-Fi settings, and all the information will be generated automatically.

WPS Reference:

Item	Description
WPS Current Status	WPS Current Status. Idle=Inactive
WPS Configured	Yes: WPS is configured
WPS SSID	SSID, can be set in the Basic screen Network Name (SSID)
WPS Auth Mode	WPS Authentication Mode; a kind of security mode, same as the “Security” menu.
WPS Encryption Type	WPS Encryption Type

WPS Default Key Index	Default key index of WPS
WPS Key(ASCII)	Wi-Fi password
AP PIN	PIN code for wireless clients to connect to AP via WPS
WPS mode	Support PIN(Personal Identification Number) and PBC(Push Button Configuration) PIN: Click “Apply” after inputting PIN.WPS Current Status will display the connection is successful after WPS is connected; PBC: Click “Apply” after selecting PBC, or quickly click the Turbo button on the router, wireless clients can connect.
WPS Status	Status about wireless clients connect to the WPS, which is in accordance with WPS Current Status.

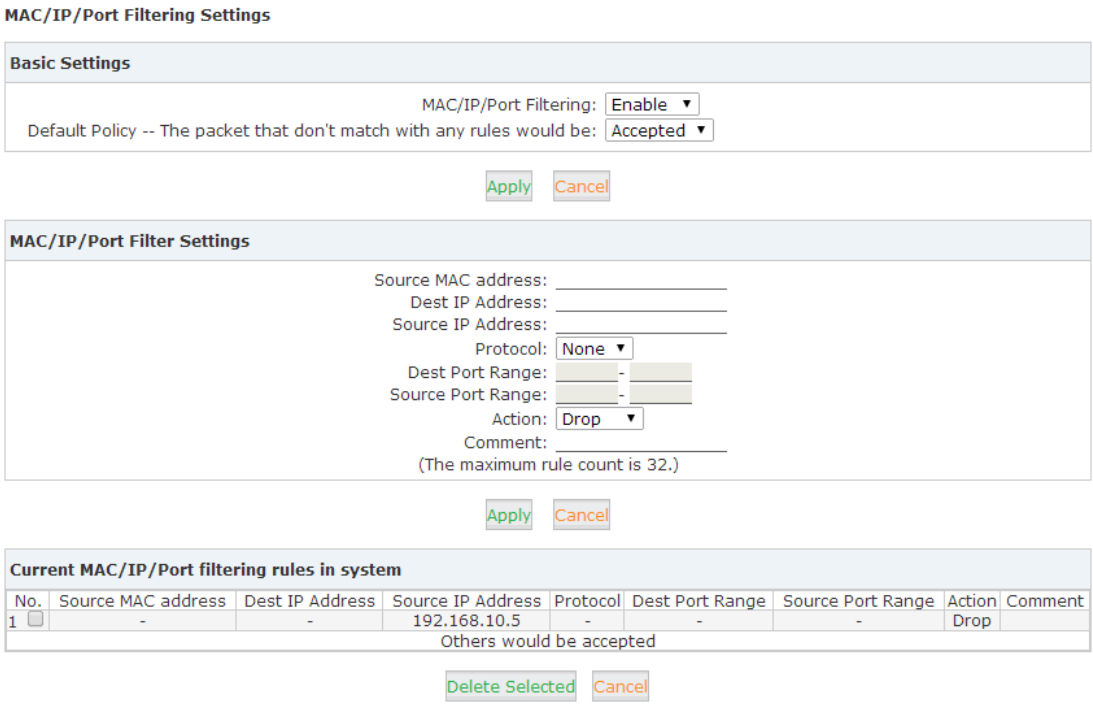
4.3 Firewall

4.3.1 MAC/IP/Port Filter

Any connection request from terminals can be controlled by the filter feature according to the defined rule parameters. Filtering based on MAC, source IP and source port can prevent the terminal from unauthorized network connections.

Set MAC/IP/Port filter:

Click【Firewall】→【MAC/IP/Port Filter】: take the following diagram as example, the host with 192.168.10.0/24 is allowed to surf internet, but the host with 192.168.10.5 is rejected to connect network.



Reference:

Item	Explanation
MAC/IP/Port Filter	Enable/Disable the MAC/IP/Port filter
Default Policy	The default strategy, set up to receive or discard the specified Mac/IP/Port of packets
Source MAC Address	Set the source host MAC address, e.g.: 00:12:0f:dd:22:01 or null
Dest. IP Address	Set the destination host IP address, such as 221.220.215.0/24 or 192.188.10.12/32 or 192.188.10.12
Source IP Address	Set the source host IP address, such as 192.168.10.0/24or 192.168.10.12/32 or 192.168.10.12
Protocol	Set the protocol type. None means all types
Dest. Port Range	Set the destination port range
Source Port Range	Set the source port range
Action	Set the action: Accept or Drop
Comment	Annotation

Basic Settings

Click【Apply】and save settings

MAC/IP/Port Filter Settings

Click【Apply】and save settings. The maximum rule count is 32.

Current MAC/IP/Port filtering rules in system

Current MAC/IP/ Port filtering rules in the system are listed here. Click【Delete Selected】 to delete selected rule.

Activate Notice

Click【Active】to activate configuration

Notice

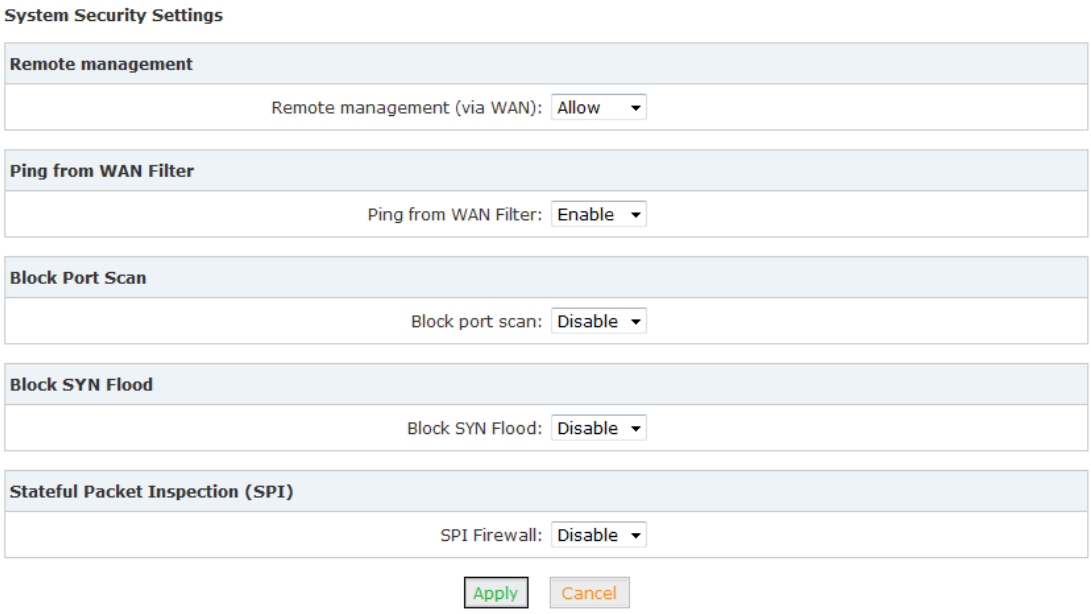
If you are not familiar with Firewall settings, please DO NOT add rules here by yourself in case of any failure on the system. If you are not familiar with the port of application program, please DO NOT set “Default Policy” as “Dropped” in Basic Settings.

4.3.2 System Firewall

System Firewall is used to strengthen the security of the system and protect connected endpoint devices and the PBX from malicious attacked.

System Firewall Settings

Click【Firewall】→【System Firewall】



Reference

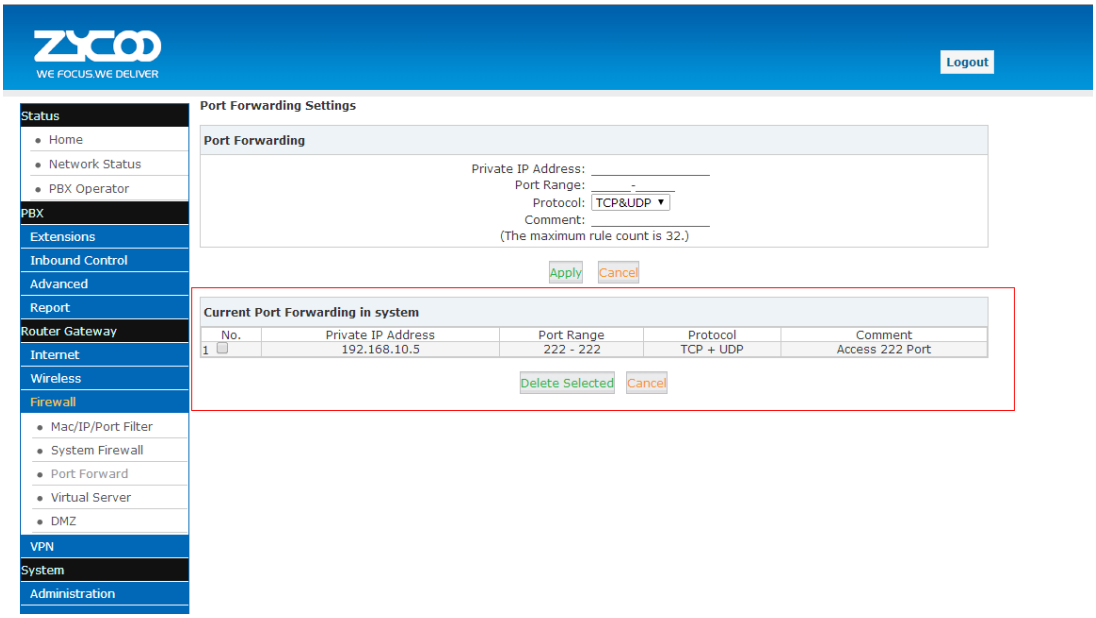
Item	Explanation
Remote management	Allow/ Deny: Remote access web GUI and SSH through WAN port. The default is Deny.
Ping form WAN Filter	Enable/ Disable: Filter the WAN port in/out ping packet. Default is disabled, namely allow ping.
Block Port Scan	Enable/ Disable: Blocking the WAN port scan. Default is enabled.
Block YSN Flood	Enable/ Disable: Prevent the SYN Flood attack. Default is enabled.
Stateful Packet Inspection（SPI）	Enable/ Disable the process used by a firewall to keep track of the state of network connections. It's the highest level security. Default is enabled.

4.3.3 Port Forward

Port forward allows remote computers (for example, computers on the Internet) to connect to a specific computer or service within a private local-area network (LAN).

Packet Forwarding Settings:

Click【Firewall】→【Port Forward】: from the following diagram, visit port 222 from WAN, the data will be forwarded to the client 192.168.10.5.



Reference:

Item	Explanation
Private IP Address	Private destination IP address that packet forwarded to. E.g.: 192.168.10.5
Port Range	Destination port range that packet forwarded. E.g.: 222
Protocol	TCP&UDP/TCP/UDP
Comment	Annotation for this port forwarding

Port Forwarding

Click【Apply】and save settings. Basic information configuration(Max.32 port forwarding rules).

Current Port Forwarding in system

Current Port Forwarding in the system is listed here. Click【Delete Selected】to delete selected rule.

Activate Notice

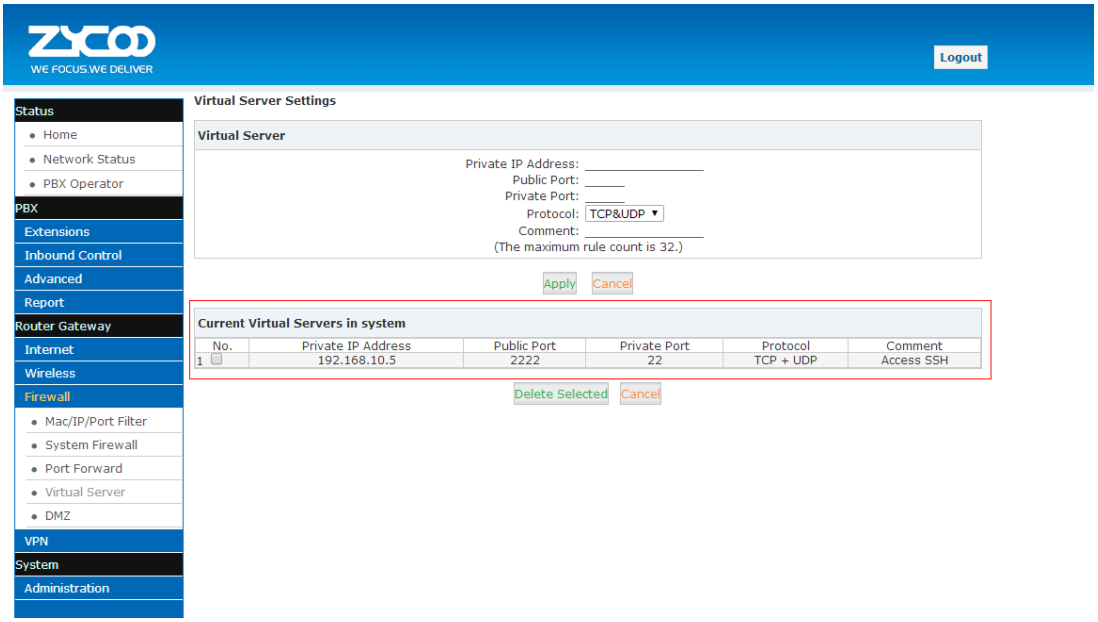
Click【Active】to activate configuration.

4.3.4 Virtual Server

Virtual Server is used to map the port range between WAN and LAN terminals of UC510/520. The access of WAN to the port range will be directed to the specified terminals on the LAN. This feature is particularly useful for remote working.

Virtual Server Settings:

Click【Firewall】→【Virtual Server】: take the following diagram as example, visit port 2222 from WAN, the data will be forwarded to the port22 of client 192.168.10.5.



Reference:

Item	Description
Private IP Address	Private destination IP address that packet forwarded to. E.g.: 192.168.10.5
Public Port	Public port that packet visited
Private Port	Internal port that packet forwarded
Protocol	TCP
Comment	Annotation

Virtual Server

Basic information configuration(Max. 32Virtual Server)

Current Virtual Server in system

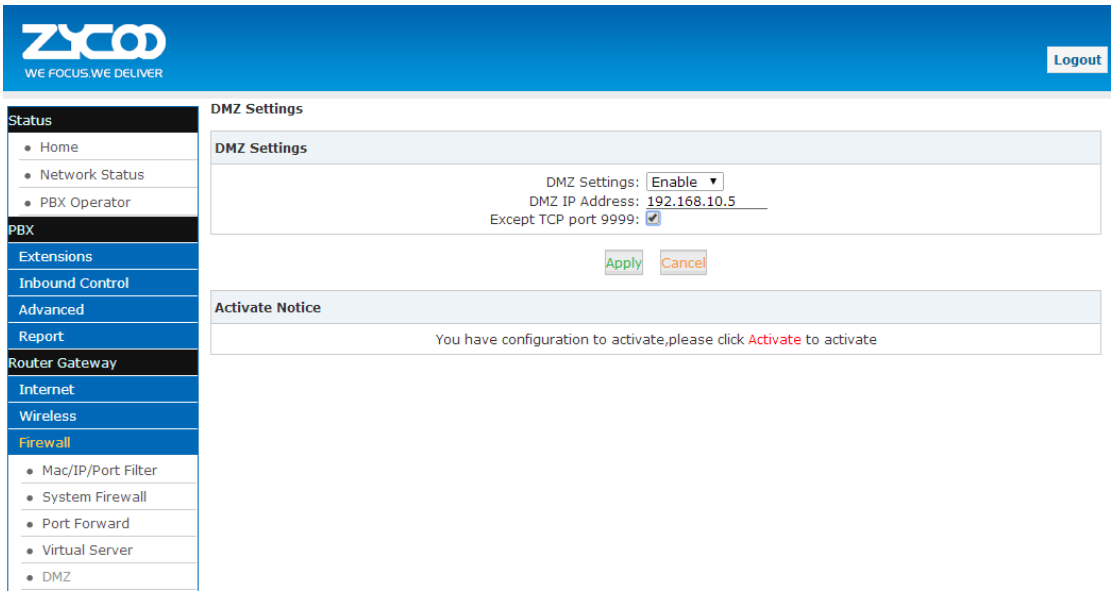
Current virtual server in system is listed here. Click【Delete Selected】to delete selected virtual server.

4.3.5 DMZ

DMZ is used to allow a personal computer connected to LAN to be exposed to the internet.

DMZ Settings

Click【Firewall】→【DMZ】: from the following diagram, the data visited from all ports via WAN will be forwarded to the port of client 192.168.10.5.



Reference:

Item	Description
DMZ Setting	Enable/ Disable the DMZ function
DMZ IP Address	DMZ host IP address
Except TCP port 9999	Tick to open TCP port 9999(http)

Activate Notice

Click【Activate】to activate configurations.

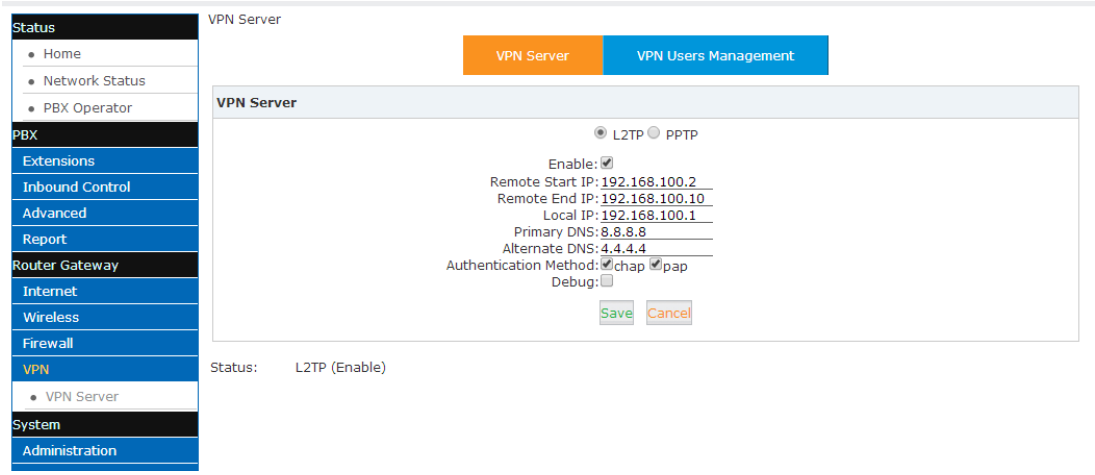
4.4 VPN

4.4.1 VPN Server

VPN(Virtual Private Network) is a way of connecting a computer to a remote network in a secure manner to ensure traffic between the computer and remote network is encrypted. Most people using computers connect to the worldwide web using a normal network - they use dial-up or broadband. It's used by some worker to connect using a laptop to do work - they can check their work email and see work websites which cannot be seen on the normal internet.

CooVox IP PBX supports two kinds of VPN servers: L2TP/PPTP. (Max. 10 VPN clients are available to connect.)

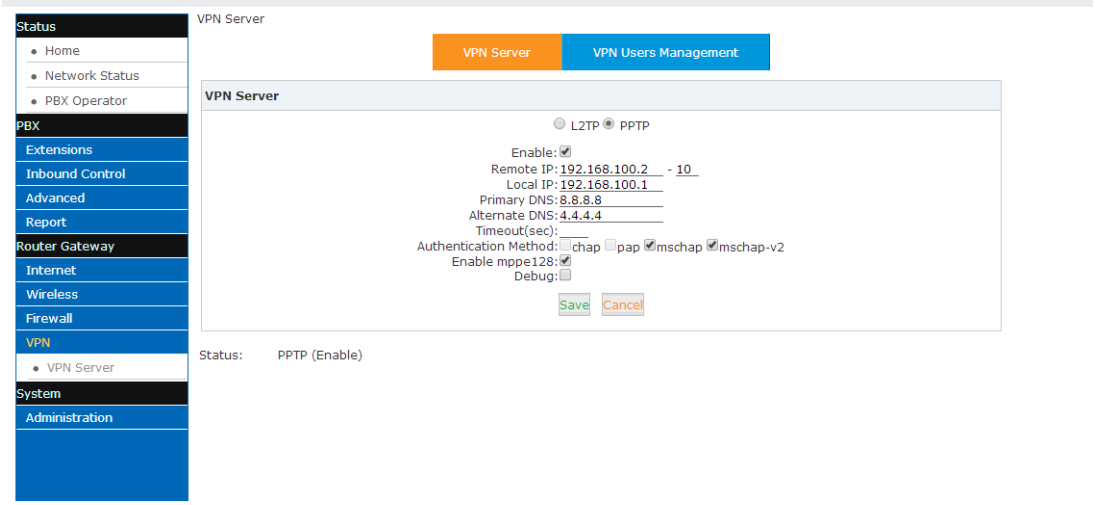
Click【Router Gateway】→【VPN】→【VPN Server】, enable “L2TP” as the following diagram:



Reference

Item	Explanation
Enable	Enable/Disable L2TP or PPTP
Remote Start IP	Remote Start IP distributed to client by L2TP
Remote End IP	Remote End IP distributed to client by L2TP
Local IP	Local IP
Primary DNS	Primary DNS
Alternate DNS	Alternative DNS
Authentication Method	chap/pap
Debug	Open/Close debug of logs

Enable PPTP as the following diagram:



Reference:

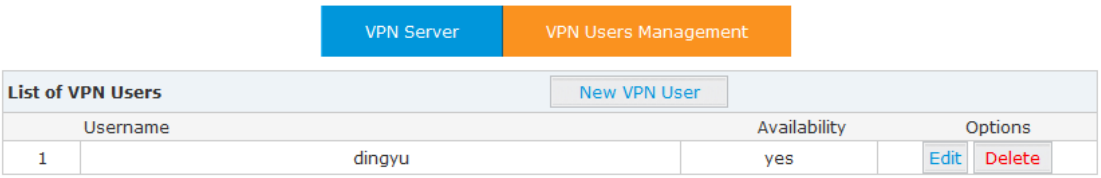
Item	Explanation
Enable	Enable/Disable L2TP or PPTP
Remote Start IP	Remote Start IP distributed to client by L2TP
Remote End IP	Remote End IP distributed to client by L2TP
Local IP	Local IP
Primary DNS	Primary DNS

Alternate DNS	Alternative DNS
Time out (sec)	Time out for connection (Default is 120s)
Authentication Method	support chap/pap/mschap/mschap-v2 authentication encryption algorithm
Enable mppe123	Microsoft encryption algorithm; it's recommended to be enabled
Debug	Open/Close debug of logs

After configuring VPN server settings, please create VPN client's username and password, as well as username and password of L2TP/PPTP.

Click【Router Gateway】→【VPN】→【VPN Server】→【VPN Users Management】:

VPN Users Management



This page is used for management of VPN username and password.

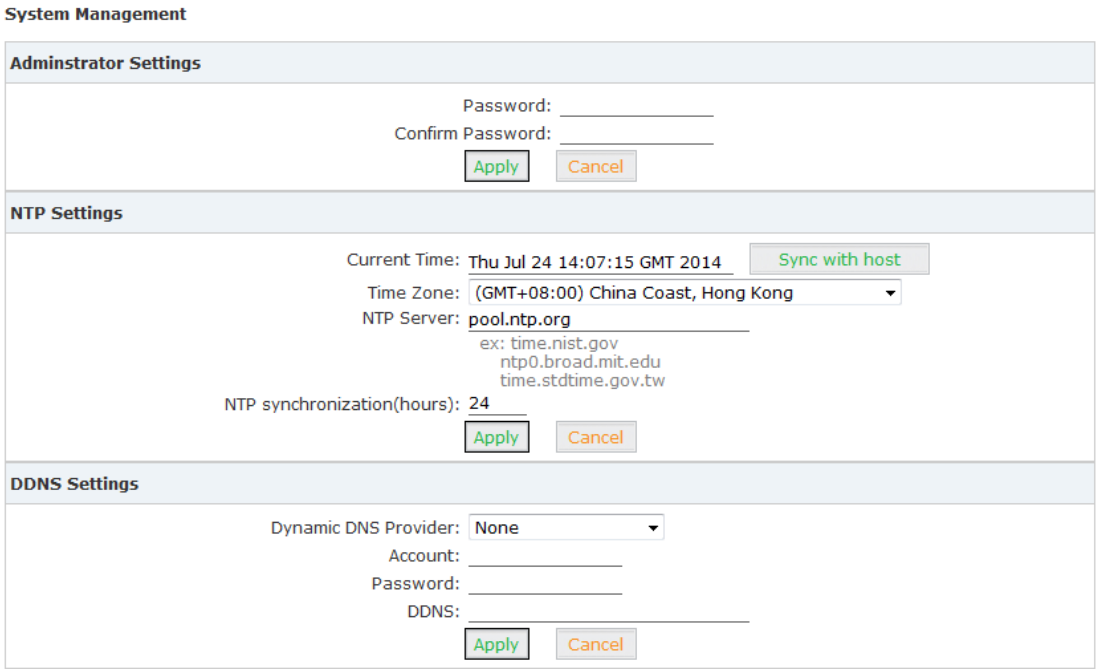
Chapter 5 System

5.1 Administration

5.1.1 Management

The purpose of the management page is to configure settings for administrator passwords, NTP service, DDNS service.

Click【Administration】→【Management】to configure:



Item	Explanation
Password	Input new password
Confirm Password	Confirm the new password
Current Time	Synchronize the current time
Time Zone	Select your time zone
NTP Server	Input the NTP server to synchronize the time
NTP synchronization (Hours)	The interval of NTP synchronization. Default is 24 hours
Dynamic DNS Provider	Support Dyndns.org / freedns.afraid.org/ www.zoneedit.com / www.no-ip.com
Account	Input the account which is applied from DNS provider
Password	Input the password which is applied from DNS provider
DDNS	Input the host which is applied from DNS provider

After settings, click "Apply" to activate.

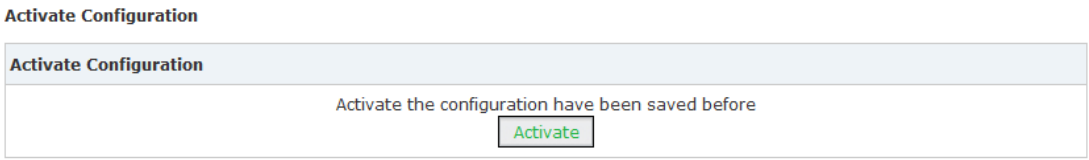
5.1.2 Activate Configuration

Activate Configuration is only for Wi-Fi router here. PBX settings is separate and not included here.

There are two ways to activate configurations:

a) After settings for a function of router, press “Activate” at the bottom of the relative page to activate the settings;

b) Click 【Administration】→【Activate Configuration】 to enter the page as below:



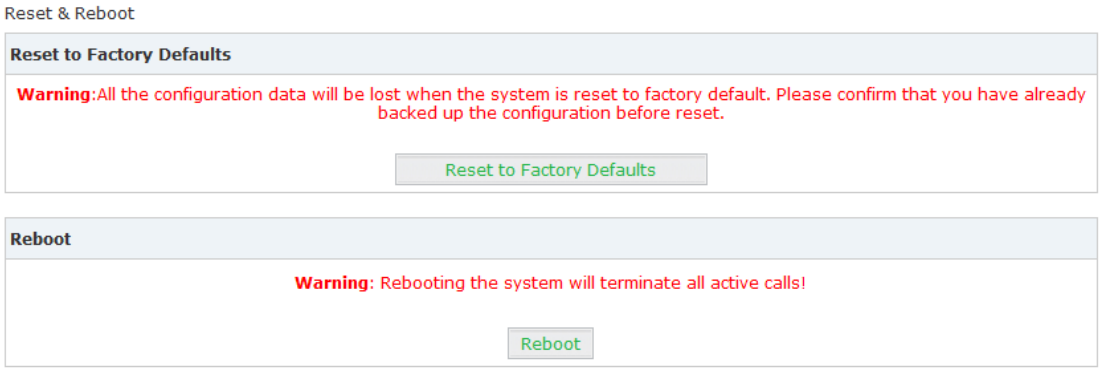
Notice:

During this activation period, network will restart and disconnect in a short time; please prepare before this operation.

5.1.3 Reset &Reboot

Reset will make the system reset to factory settings, and reboot will make the system restart.

Click【Administration】→【Reset & Reboot】to show the page as below:



Click "Factory Defaults" to reset the system to the Factory settings; click "Reboot" to restart the system.

Notice:

All network will be disconnected when system reboots and all the business will be interrupted. All the functionalities are not available in a short time; please prepare before operation.

5.1.4 Statistics

You can check the system operation condition from【Statistics】, including memory usage, network contract, quantity of packages, etc..

Click【Administration】→【Statistics】to take a view:

Statistic

Memory	
	Memory total : 122644 kB Memory left : 69776 kB
WAN/LAN	
WAN	Rx packets: 17012 Rx bytes: 2250920 Tx packets: 4353 Tx bytes: 398438
LAN	Rx packets: 2314 Rx bytes: 249009 Tx packets: 2172 Tx bytes: 1190722
All interfaces	
ra0	Rx packets: 6089 Rx bytes: 741533 Tx packets: 3186 Tx bytes: 562579
WAN	Rx packets: 17014 Rx bytes: 2251588 Tx packets: 4353 Tx bytes: 398438
LAN	Rx packets: 2314 Rx bytes: 249009 Tx packets: 2172 Tx bytes: 1190722

Remark:

ra0: Wi-Fi interface

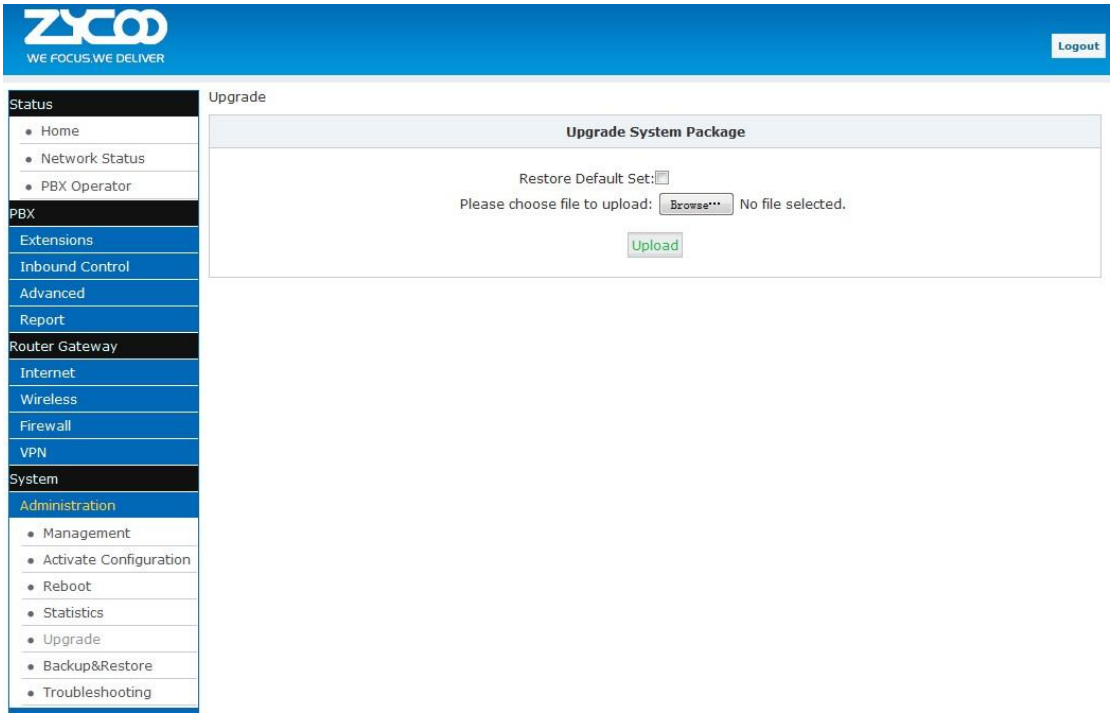
LAN: includes LAN1 ~LAN4 by default

5.1.5 Upgrade

Upgrade is used to update your system as required.

The system can be upgraded from this【Upgrade】page via uploading package.

Click【Administration】→【Upgrade】:



Select the upgrade file and then click the "Upload" button, the system will be automatically upgraded.

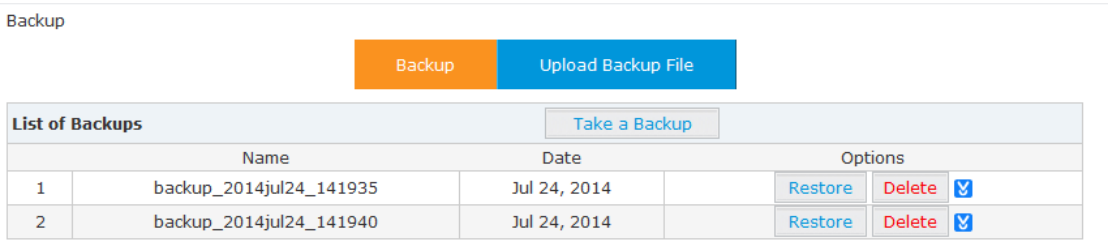
Notice:

All functions will not be available during system upgrade; please prepare before operation.
Please do not change the updated file in case of any failure of the upgrade.

5.1.6 Backup&Restore

The system settings including IVR prompt, music files on hold, and Wi-Fi router configurations can be backed up in case of any failure of the system. Within the backup files, you can easily restore the system.

Click【Administration】→【Backup&Restore】:



Click the “Take a Backup” button to back up the settings, and you will find the backup file’s name and date. You can click to download the backup file and save it to your computer; when you need to recovery the settings, you can upload it from "Upload Backup File", or click the “Restore” button of the relative backup file to recovery the settings

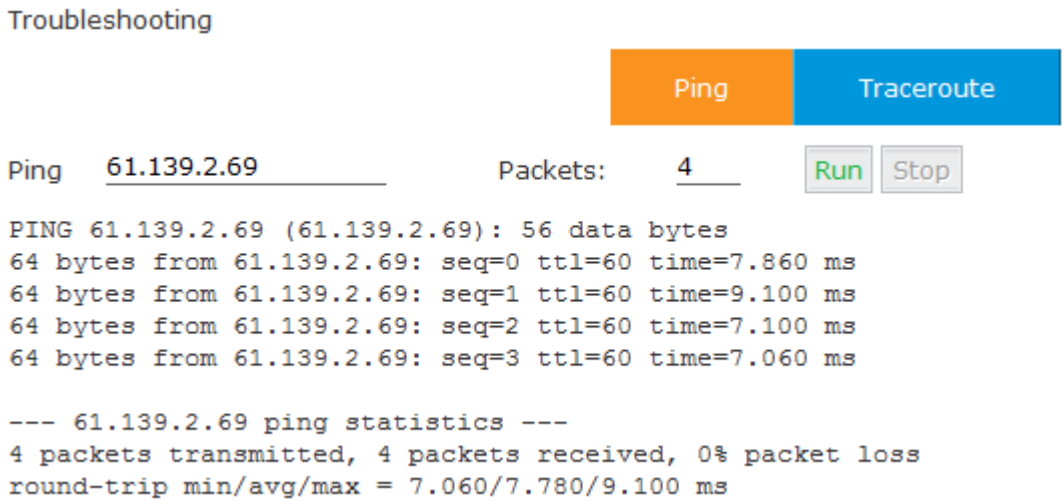
Notice:

All functions will not be available during backup & restore; please prepare before operation.
Please do not change the backup files in case of any failure of backup or restore.

5.1.7 Troubleshooting

Troubleshooting is used for network connection test.

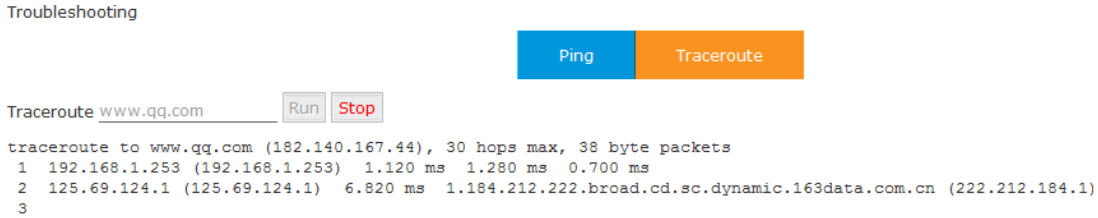
Click【Administration】→【Troubleshooting】→【Ping】to test:



Input the destination address and contract number, then click "Run" to wait for the results.

Test route:

Click【Administration】→【Troubleshooting】→【Traceroute】to test:



Input the destination, then click "Run" to test.