



TA1600/2400/3200 FXS Gateway

User Manual

Version 40.18.0.10

Yeastar Information Technology Co. Ltd.

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Introduction

Yeastar TA1600/2400/3200 FXS Analog VoIP Gateways are cutting-edge products that connect legacy telephones, fax machines and PBX systems with IP telephony networks and IP-based PBX systems. Featuring rich functionalities and easy configuration, Yeastar TA is ideal for small and medium enterprises that wish to integrate a traditional phone system into IP-based system. Yeastar TA helps them to preserve previous investment on legacy telephone system and reduce communication costs significantly with the true benefits of VoIP.

Features

● 16/24/32 FXS ports
● Fully compliant with SIP and IAX2
● Dial Pattern of outgoing calls
● Hunt Group
● Configurable VoIP Server templates
● Reliable fax performance with T.38
● 3-party Conference
● Inter-port Calling
● Call Hold
● Blind Transfer
● Attended Transfer
● Support RADIUS protocol

For more information, please click:

<http://www.yeastar.com/Products.html/Analog-VoIP-Gateways>

For more information about the Yeastar TA hardware specification and how to install the Yeastar TA, please refer to the document below:

<http://www.yeastar.com/downloadFile/75>

Part I. Configuration Guide

1. Login

The TA FXS Gateway attempts to contact a DHCP server in your network to obtain valid network settings (e.g., the IP address, subnet mask, default gateway address and DNS address) by default.

Please enable DHCP Server in your network to obtain the TA FXS Gateway IP address.

How to check TA FXS Gateway IP address:

1. Pick up the analog phone, then access the voice menu prompt by dialing “***”.
2. Dial “1” to check the IP address.
3. Dial “2” for web access address.

Logging On:

After entering the IP address in the web browser, users will see a log-in screen.

Check the default settings below:

Username: **admin**

Password: **password**

In this example, the IP address is 192.168.6.150, the model is TA1600.

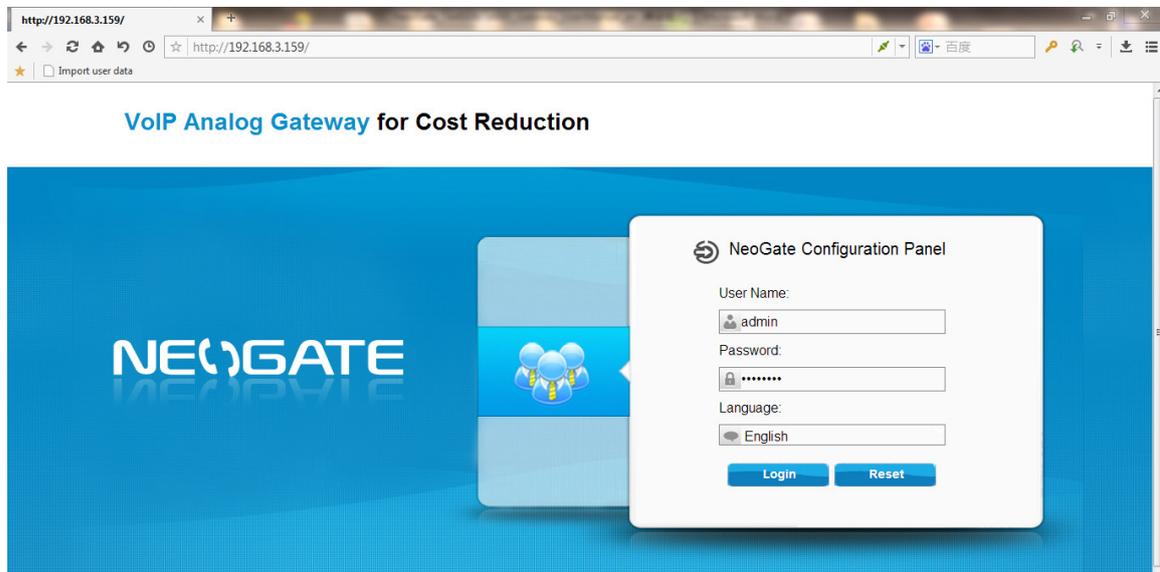


Figure 1-1 TA FXS Gateway Login page

2. Status



Click  to check the status of TA FXS Gateway, including the system status and the detailed reports.

2.1 System Status

In this page, we can check the status of the system, including trunk status, network status and system information.

2.1.1 Port Status

Port	UP/Down	Number	Status	Voice Mail(New/Old)	Off-hook/On-hook
1	Up	100	OK	0/0	On Hook
2	Up	101	OK	0/0	On Hook
3	Up	102	OK	0/0	On Hook
4	Up	103	OK	0/0	On Hook
5	Up	104	OK	0/0	On Hook

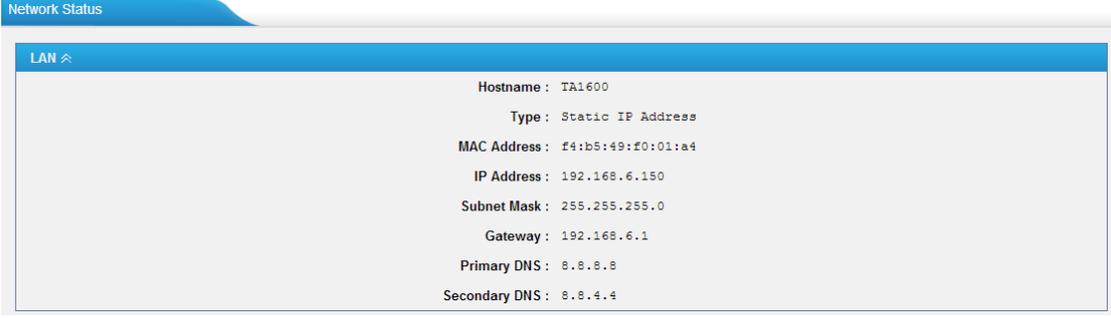
Figure 2-1 FXS Port Status

Table 2-1 Description of FXS Port Status

Up/Down	
Up	The FXS module works well.
Down	The FXS module is broken.
Status	
OK	Successful registration, trunk is ready for use
Unreachable	The trunk is unreachable.
Request Send	Registering.
Waiting for authentication	Wrong password or user name.
Failed	Trunk registration failed.
Voice Mail (New/Old)	
Showing the number of unread voicemail and old voicemail. *Only when the FXS port is registered as one of the VoIP Server's accounts, can you see the voice mail status.	
Hook	
On Hook	The FXS port is idle.
Off Hook	The FXS port is busy.

2.1.2 Network status

In this page, the IP address of LAN port will appear with their status.



The screenshot shows the 'Network Status' page with a 'LAN' section expanded. The configuration details are as follows:

Hostname :	TA1600
Type :	Static IP Address
MAC Address :	f4:b5:49:f0:01:a4
IP Address :	192.168.6.150
Subnet Mask :	255.255.255.0
Gateway :	192.168.6.1
Primary DNS :	8.8.8.8
Secondary DNS :	8.8.4.4

Figure 2-2 Network Status

If your VLAN or VPN are configured, you can check the status in this page also.

2.1.3 System Info

In this page, we can check the hardware/firmware version, or the disk usage of TA FXS Gateway.



The screenshot shows the 'System Info' page with the 'General' section expanded. The information is as follows:

General

- Product Type: TA1600
- Hardware Version: V1.20 0000-0000
- Firmware Version: 40.18.86.10
- SN Version: AS2014250321
- Uptime: 18:35:38 up 17:19, load average: 1.00, 1.01, 1.01

Disk Usage

Note: If there is not enough disk space on the system, the oldest call log files will be automatically deleted as necessary.

	Used/Total (1K-blocks)	use%
flash:	5196/389120	1%

Memory Usage

	Used/Total (1K-blocks)	use%
Mem:	108704/417768	26%

Figure 2-3 System Info

2.2 Reports

In this page, we can check the call detailed log, system log, and use the packet tool to debug the system when needed.

2.2.1 Call Logs

The call log captures all call details, including call time, caller number, callee number,

call type, call duration, etc. An administrator can search and filter call data by call date, caller/callee, trunk, duration, billing duration, status, or communication type.

The screenshot shows the 'Call Logs' interface. At the top, there are search filters for Start Date (04 Jun 2014), End Date (04 Jun 2014), Caller/Callee, Trunk (All), Duration, Billing Duration, Status (All), and Communication Type (All). A 'Start Searching' button is located to the right of these filters. Below the filters are two buttons: 'Download the recordings' and 'Delete the recordings'. To the right of these buttons, it says 'Total: 39 Show: 1-25 View: 25'. Below this is a table with the following columns: Time, Caller, Callee, Source Server/Port, Destination Server/Port, Duration, Billing Duration, Status, and Communication Type.

Time	Caller	Callee	Source Server/Port	Destination Server/Port	Duration	Billing Duration	Status	Communication Type
2014-06-04 22:05:08	304	*741			11	3	ANSWERED	Internal
2014-06-04 22:02:37	304	huntinggroup1		Port2	2	0	ANSWERED	Internal
2014-06-04 22:02:34	304	300	SOHO		80	80	ANSWERED	Inbound
2014-06-04 22:02:28	304	300	Port3	SOHO	86	80	ANSWERED	Outbound
2014-06-04 22:01:59	304	300	Port3	SOHO	5	0	FAILED	Outbound

Figure 2-4 Call Logs

2.2.2 System Logs

You can download and delete the system logs of TA FXS Gateway.

The screenshot shows the 'System Logs' interface. At the top, there are two buttons: 'Download The Selected Logs' and 'Delete The Selected Logs'. Below these buttons is a table with the following columns: Name, Download, and Delete. The table lists several log files, including firmware_update.log, pbx20101205.log, pbx20101206.log, pbx20101207.log, pbx20140512.log, pbx20140513.log, pbx20140514.log, pbx20140515.log, pbx20140516.log, pbx20140516_old.log, and web.log. Below the table is an 'Options' section with four checkboxes: 'Enable Hardware Log', 'Enable Normal Log', 'Enable Web Log', and 'Enable Debug Log'. All checkboxes are checked.

Figure 2-5 System Logs

- **Enable Hardware Log**
Save the information of hardware; (up to 4 log files)
- **Enable Normal Log**
Save the prompt information; (up to 16 log files)
- **Enable Web Log**
Save the history of web operations (up to 2 log files)
- **Enable Debug Log**
Save debug information (up to 2 log files)

2.2.3 Packet Tool

This feature is used to capture packets for technician. Integrate packet capture tool “Wireshark” in TA FXS Gateway.

Users also could specify the destination IP address and port to get the packets.

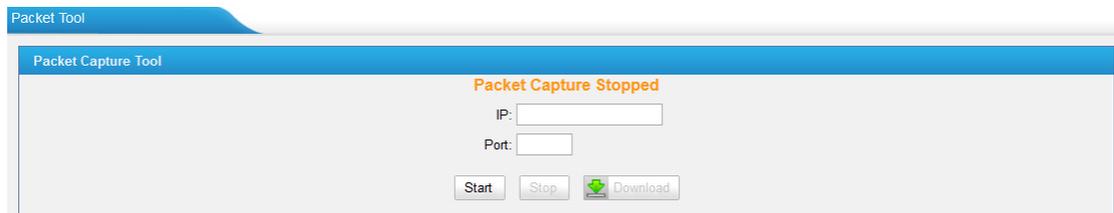


Figure 2-6 Packet Tool

- **IP**
Specify the destination IP address to get the packets.
- **Port**
Specify the destination Port to get the packets.

3. System



Click  to access. In this page, we can configure the network settings, security settings and some system preferences.

3.1 Network Preferences

3.1.1 LAN Settings

Figure 3-1 Static IP Address Mode

Table 3-1 Description of LAN Settings

Items	Description
Hostname	Set the host name for TA FXS Gateway
Static IP Address	Set the TA FXS Gateway’s IP address as a static IP
IP Address	Set the IP Address for TA FXS Gateway. It is recommended that you configure a static IP address for TA FXS Gateway.
Subnet Mask	Set the subnet mask for TA FXS Gateway
Gateway	Set the gateway for TA FXS Gateway
Primary DNS	Set the primary DNS for TA FXS Gateway.
Secondary DNS	Set the secondary DNS for TA FXS Gateway
IP Address2	Set the second IP Address for TA FXS Gateway
Subnet Mask2	Set the second subnet mask for TA FXS Gateway

Figure 3-2 DHCP Mode

Select DHCP mode to get network automatically from the local network.

LAN Settings

General Settings

Hostname: TA1600

Mode: PPPoE

User Name:

Password:

Figure 3-3 PPPoE

Fill in user name and password to access the Internet via PPPoE.

3.1.2 Service

The administrator can manage all the access methods on TA FXS Gateway on the "Service" page.

Service

General Service Settings

Enable SSH: Yes Port: 22

Enable FTP: Yes Port: 21

Enable TFTP: Yes Port: 23

Web Server

HTTP: Enabled

HTTP Bind Port: 80

HTTPS: Enabled

HTTPS Bind Port: 555

Figure 3-4 Service Settings

Table 3-2 Description of Service Settings

Items	Description
SSH	By using SSH, you can log in to TA FXS Gateway and run commands. It's disabled by default. We don't recommend enabling it if not needed. The default port for SSH is 8022;
FTP	FTP access; The default port is 21.
TFTP	TFTP access; The default port is 23.
HTTP	HTTP web access; The default port is 80.
HTTPS	HTTPS web access, it is disabled by default, and you can enable it to get safer web access.

3.1.3 VLAN Settings

A VLAN (Virtual LAN) is a logical local area network (or LAN) that extends beyond a single traditional LAN to a group of LAN segments, given specific configurations.

Note:

TA FXS Gateway is not the VLAN server, a 3-layer switch is still needed, please configure the VLAN information there first, then input the details in TA FXS Gateway, so that the packages via TA FXS Gateway will be added the VLAN label before sending to that switch.

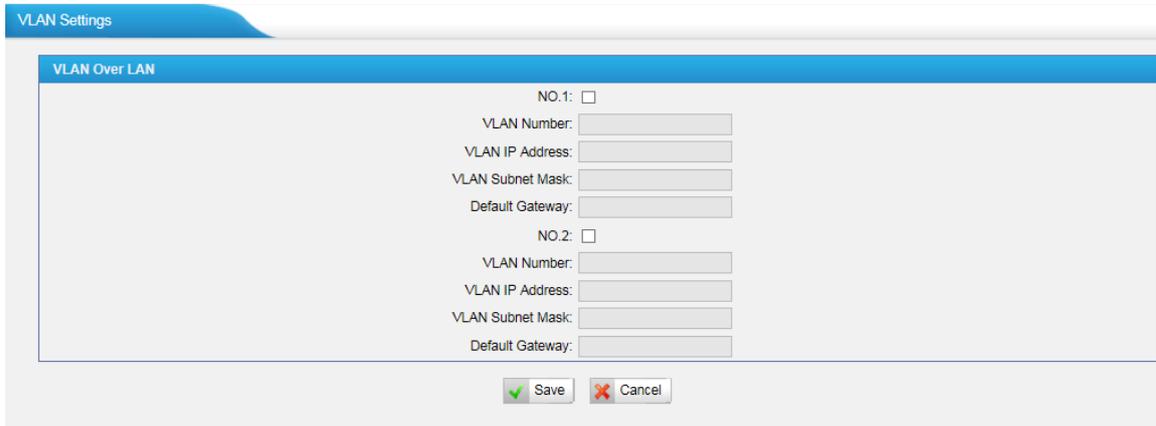


Figure 3-5 VLAN Settings

Table 3-3 Description of VLAN Settings

Items	Description
NO.1	Click the NO.1 you can edit the first VLAN over LAN
VLAN Number	The VLAN Number is a unique value you assign to each VLAN on a single device
VLAN IP Address	Set the IP Address for TA FXS Gateway VLAN over LAN.
VLAN Subnet Mask	Set the Subnet Mask for TA FXS Gateway VLAN over LAN.
Default Gateway	Set the Default Gateway for TA FXS Gateway VLAN over LAN
NO.2	Click the NO.2 you can edit the first VLAN over LAN.
VLAN Number	The VLAN Number is a unique value you assign to each VLAN on a single device.
VLAN IP Address	Set the IP Address for TA FXS Gateway VLAN over LAN.
VLAN Subnet Mask	Set the Subnet Mask for TA FXS Gateway VLAN over LAN.
Default Gateway	Set the Default Gateway for TA FXS Gateway VLAN over LAN.

3.1.4 VPN Settings

A virtual private network (VPN) is a method of computer networking typically using the public internet that allows users to privately share information between remote locations, or between a remote location and a business' home network. A VPN can provide secure information transport by authenticating users, and encrypting data to prevent unauthorized persons from reading the information transmitted. The VPN can be used to send any kind of network traffic securely. TA FXS Gateway supports

OpenVPN.

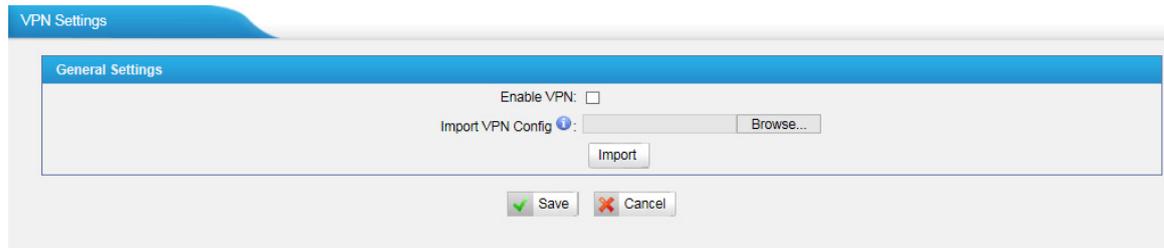


Figure 3-6 VPN Settings

- **Enable VPN**
- **Import VPN Config**
Import configuration file of OpenVPN.

Notes:

1. Don't configure "user" and "group" in the "config" file. You can get the config package from the OpenVPN provider.
2. TA FXS Gateway works as VPN client mode only.

3.1.5 DDNS Settings

DDNS (Dynamic DNS) is a method / protocol / network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a Domain Name System (DNS) name server to change, in real time, the active DNS configuration of its configured hostnames, addresses or other information.

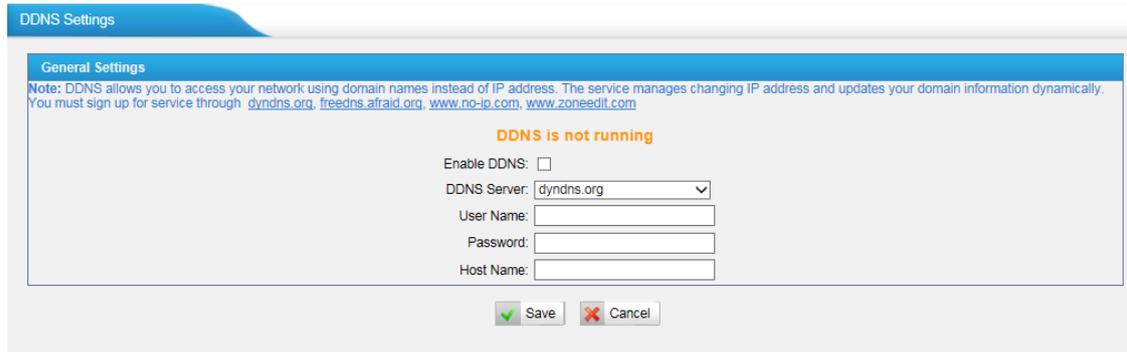


Figure 3-7 DDNS Settings

Table 3-4 Description of DDNS Settings

Items	Description
DDNS Server	Select the DDNS server you sign up for service.
User Name	User name the DDNS server provides you.
Password	User account's password.
Host Name	The host name you have got from the DDNS server

Note: DDNS allows you to access your network using domain names instead of IP address. The service manages changing IP address and updates your domain information dynamically. You must sign up for service through dyndns.org, freedns.afraid.org, www.no-ip.com, www.zoneedit.com.

3.1.6 Static Route

TA FXS Gateway will have more than one Internet connection in some situations but it has only one default gateway. You will need to set some Static Route for TA FXS Gateway to force it to go out through different gateway when accessing to different internet.

The default gateway priority of TA FXS Gateway from high to low is VPN/VLAN → LAN port.

Static Route Settings				
Routing Table				
Destination	Subnet Mask	Gateway	Metric	
192.168.7.0	0.0.0.0	255.255.255.0	0	
0.0.0.0	192.168.7.1	0.0.0.0	0	

Static Route Rules					
ID: 1	Destination: <input type="text"/>	Subnet Mask: <input type="text"/>	Gateway: <input type="text"/>	Metric: <input type="text"/> <input type="button" value="Modify"/>	
ID	Destination	Subnet Mask	Gateway	Metric	
1	--	--	--	--	<input type="button" value="X"/>
2	--	--	--	--	<input type="button" value="X"/>
3	--	--	--	--	<input type="button" value="X"/>
4	--	--	--	--	<input type="button" value="X"/>
5	--	--	--	--	<input type="button" value="X"/>
6	--	--	--	--	<input type="button" value="X"/>
7	--	--	--	--	<input type="button" value="X"/>
8	--	--	--	--	<input type="button" value="X"/>

Figure 3-8 Static Route

1) Route Table

The current route rules of TA FXS Gateway.

2) Static Route Rules

You can add new static route rules here.

Table 3-5 Description of Static Route Settings

Items	Description
Destination	The destination network to be accessed to by TA FXS Gateway.
Subnet Mask	Specify the destination network portion.
Gateway	Define which gateway TA FXS Gateway will go through when accessing the destination network.
Metric	The cost of a route is calculated by using what are called routing metric. Routing metrics are assigned to routes by routing protocols to provide measurable statistic which can be used to judge how useful (how low cost) a route is.
Interface	Define which internet port to go through.

3.1.7 SNMP Settings

Simple Network Management Protocol (SNMP) is an Internet-standard protocol for managing devices on IP networks. TA FXS gateway supports three versions: V1, V2C and V3.

SNMP Settings

Note 1: If the managers want to access the device by SNMP v3 mode, 'SNMPv3 user' information must be configured.
Note 2: If the managers want to access the device by SNMP v1/v2c mode, 'SNMP Community' information must be configured.

SNMP Settings

SNMP is running

Enable:

Local Port:

SNMPv3 User

SNMPv3 User:

Access Limit:

Auth Passwd:

Encryption Passwd:

SNMP Community

SNMP Mode:

Access: Read Write

Community:

IP/SubnetMask:

Trap Setting

Trap Mode:

Trap Community:

Trap IP:

Figure 3-9 SNMP Settings

3.2 Security Center

3.2.1 Security Center

You can check TA FXS Gateway security configuration in “Security Center” page. And also, you can enter the relevant security settings page rapidly.

Firewall:

Function	Status	Note	Setting
Firewall Switch	Enabled	The number of firewall rule is:2.Please check if the rule is effective.	<input type="button" value="Setting"/>
Drop All	Disabled		<input type="button" value="Setting"/>
Blacklist Rules	Configured	The number of blacklist rules is:3	<input type="button" value="IP Blacklist"/>
Alert Settings	Configured	No	<input type="button" value="Alert Settings"/>

Figure 3-10 Firewall

In the “Firewall” tab, you can check firewall configuration and alert settings. You can enter the configuration page directly by clicking the relevant button.

Service:

Name	Status	Note	Setting
AMI	Enabled		<input type="button" value="Setting"/>
SSH	Enabled		<input type="button" value="Setting"/>
FTP	Enabled		<input type="button" value="Setting"/>
TFTP	Enabled		<input type="button" value="Setting"/>
HTTP	Enabled		<input type="button" value="Setting"/>
HTTPS	Enabled		<input type="button" value="Setting"/>

Figure 3-11 Service

In “Service” tab, you can check AMI /SSH/FTP/TFTP/HTTP/HTTPS status. You can enter the configuration page directly by clicking the relevant button.

Port:

Name	Port	Setting
SIP UDP Port	5060	<input type="button" value="Setting"/>
SIP TCP Port	5060	<input type="button" value="Setting"/>
SIP TLS Port	5061	<input type="button" value="Setting"/>
HTTP Bind Port	80	<input type="button" value="Setting"/>
HTTPS Bind Port	555	<input type="button" value="Setting"/>

Figure 3-12 Port

In “Port” tab, you can check SIP port, HTTP port and HTTPS port. You can also enter the relevant page by clicking the button in “Setting” column.

We recommend changing the default port for security.

3.2.2 Alert settings

If the device is under attack, the system will alert users via call or E-mail.

The attack modes include IP attack and Web Login.

- **IPATTACK**

When the system is attacked by IP address, the firewall will add the IP to auto IP Blacklist and notify the user if it matches the protection rule.

- **WEBLOGIN**

Web Login Alert Notification: entering the wrong password consecutively for five times when logging in TA FXS Gateway Web interface will be deemed as an attack, the system will limit the IP login within 10 minutes and notify the user.

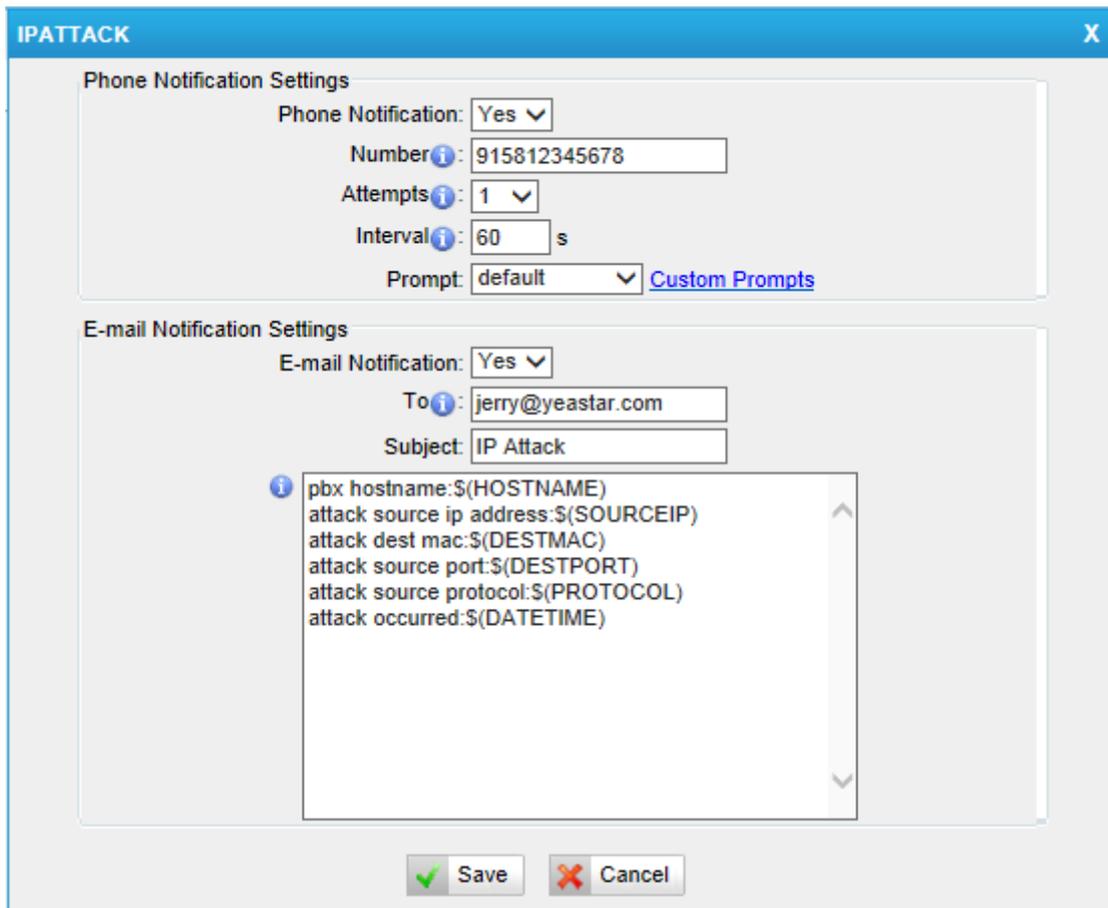


Figure 3-13 Alert Settings

Table 3-6 Description of Alert Settings

Phone Notification Settings	
PHONE Notification	Whether to enable phone notification or not.
Number	The numbers could be set for alert notification; users can setup multiple extension and outbound phone numbers. Please separate them by “;”. Example: “500;9911”, if the extension has configured Follow Me Settings, the call would go to the forwarded number directly.

Attempts	The attempts to dial a phone number when there is no answer.
Interval	The interval between each attempt to dial the phone number. Must be longer than 3 seconds, the default value is 60 seconds.
Prompt	Users will hear the prompt while receiving the phone notification.
Email Notification Settings	
E-mail Notification	Whether to enable E-mail Notification or not.
Recipient's Name	The recipients for the alert notification, and multiple email addresses are allowed, please separate them by “;”. E.g. jerry@yeastar.com;jason@yeastar.com,456@sina.com
Subject	The subject of the alert email.
Email Content	Text content supports predefined variables. Variable names and corresponding instructions are as follows: gateway hostname:\$(HOSTNAME) attack source ip address:\$(SOURCEIP) attack dest mac:\$(DESTMAC) attack source port:\$(DESTPORT) attack source protocol:\$(PROTOCOL) attack occurred:\$(DATETIME)

3.2.3 AMI Settings

The Asterisk Manager Interface (AMI) is a system monitoring and management interface provided by Asterisk. It allows live monitoring of events that occur in the system, as well enabling you to request that Asterisk perform some action. The actions that are available are wide-ranging and include things such as returning status information and originating new calls. Many interesting applications have been developed on top of Asterisk that take advantage of the AMI as their primary interface to Asterisk.

There are two main types of messages on the Asterisk Manager Interface: manager events and manager actions.

The 3rd party software can work with TA FXS Gateway using AMI interface. It is disabled by default. If necessary, you can enable it.

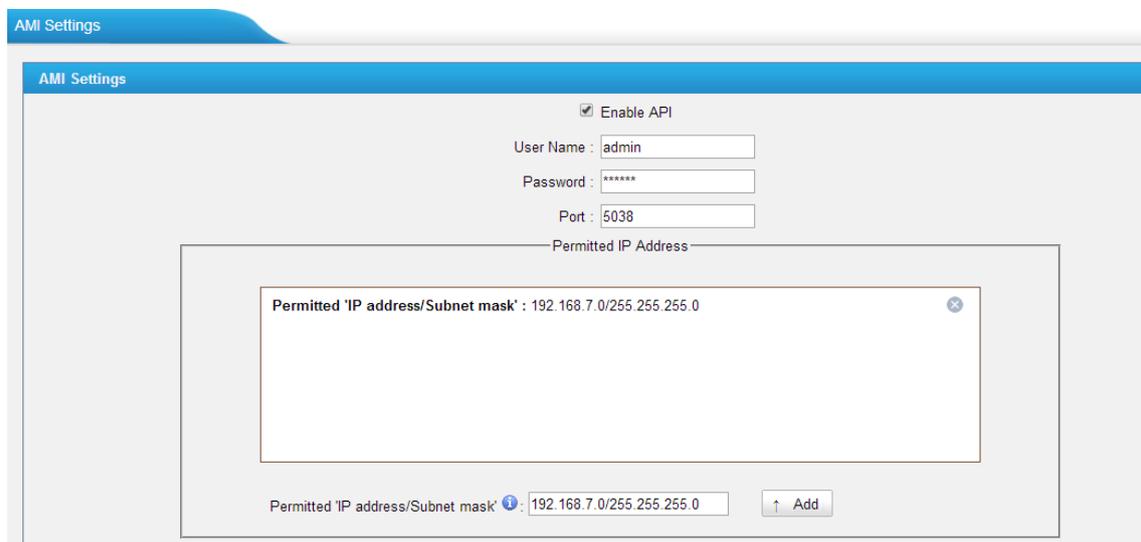


Figure 3-14 AMI Settings

Username & password: after enabling AMI, you can use this username and password to log in TA FXS Gateway AMI.

Permitted "IP address/Subnet mask": you can set which IP can log in TA FXS Gateway AMI interface.

3.2.4 Certificates

TA FXS Gateway can support TLS trunk. Before you register TLS trunk to TA FXS Gateway, you should upload certificates first.

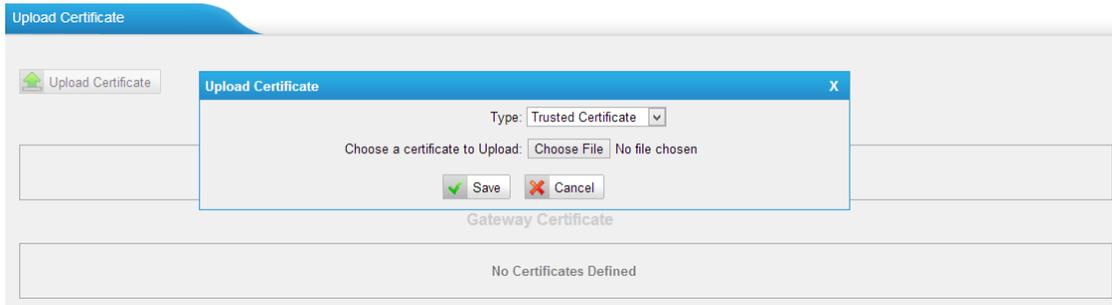


Figure 3-15 Certificates

Trusted Certificate

This certificate is a CA certificate. When selecting “TLS Verify Client” as “Yes”, you should upload a CA. The relevant IPPBX should also have this certificate.

Gateway Certificate

This certificate is server certificate. No matter selecting “TLS Verify Client” as “Yes” or “NO”, you should upload this certificate to TA FXS Gateway. If IPPBX enables “TLS Verify server”, you should also upload this certificate on IPPBX.

3.2.5 Firewall Rules

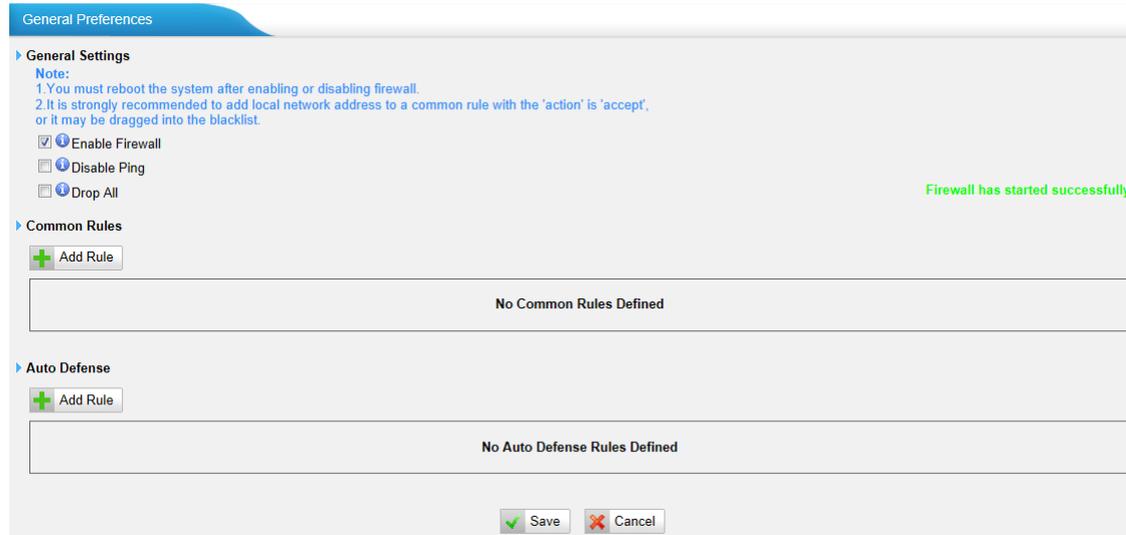


Figure 3-16 Firewall Rules

1) General Settings

Table 3-7 Description of Firewall General Settings

Items	Description
Enable Firewall	Enable the firewall to protect the device. You should reboot the device to make the firewall run.
Disable Ping	Enable this item to drop net ping from remote hosts.
Drop All	When you enable “Drop All” feature, the system will drop all packets or connection from other hosts if there are no other

rules defined. To avoid locking the devices, at least one “TCP” accept common rule must be created for port used for SSH access, port used for HTTP access and port used for CGI access.

2) Common Rules

There is no default rule; you can create one as required.

Figure 3-17 Common Rule

Table 3-8 Description of Common Rule Settings

Items	Description
Name	A name for this rule, e.g. “HTTP”.
Description	Simple description for this rule. E.g. Accept the specific host to access the web interface for configuration.
Protocol	The protocols for this rule.
Port	Initial port should be on the left and end port should be on the right. The end port must be equal to or greater than start port.
IP	The IP address for this rule. The format of IP address is: IP/mask E.g. 192.168.5.100/255.255.255.255 for IP 192.168.5.100 E.g. 192.168.5.0/255.255.255.0 for IP from 192.168.5.0 to 192.168.5.255 .
MAC Address	The format of MAC Address is XX:XX:XX:XX:XX:XX, X means 0~9 or A~F in hex, the A~F are not case sensitive.
Action	Accept: Accept the access from remote hosts. Drop: Drop the access from remote hosts. Ignore: Ignore the access.

Note: The MAC address will be changed when it's a remote device, so it will not be working to filter using MAC for remote devices.

3.2.6 IP Blacklist

You can set some packets accept speed rules here. When an IP address which hasn't been accepted in common rules sends packets faster than the allowed speed, it will be set as a black IP address and be blocked automatically.

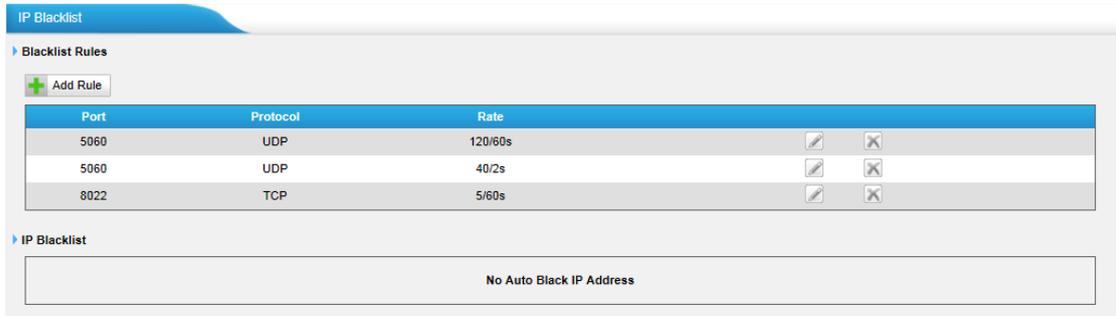


Figure 3-18 IP Blacklist

1) Blacklist rules

We can add the rules for IP blacklist rate as demanded.

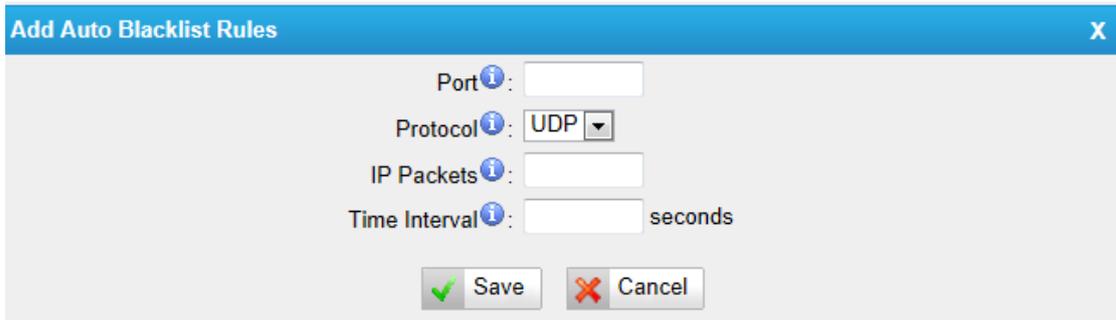


Figure 3-19 Auto Blacklist Rule

Table 3-9 Description of Auto Blacklist Rule Settings

Items	Description
Port	Auto defense port
Protocol	Auto defense protocol. TCP or UDP.
IP Packets	Allowed IP packets number in the specific time interval.
Time interval	The time interval to receive IP packets. For example, IP packets 90, time interval 60 means 90 IP packets are allowed in 60 seconds.

2) IP blacklist

The blocked IP address will display here, you can edit or delete it as you wish.

3.3 System Preferences

In this page, we can set other system preferences, like the password for admin

account, system date and time, firmware update, backup and restore, reset and reboot.

3.3.1 Password settings

The default password is “**password**”. To change the password, enter the new password and click "Save". The system will then prompt you to re-login using your new password.



Figure 3-20 Password Settings

3.3.2 Date and Time

Set the date and time for TA FXS Gateway.

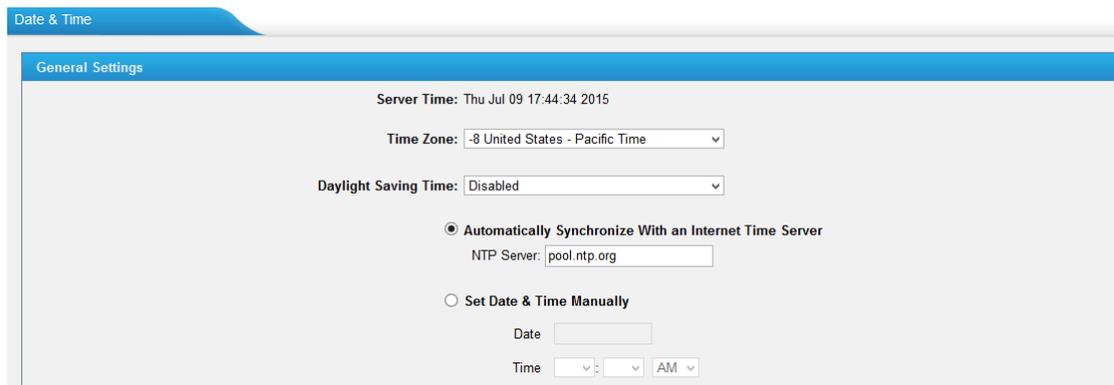


Figure 3-21 Date & Time

Table 3-10 Description of Date & Time Settings

Items	Description
Time Zone	You can choose your time zone here.
Daylight Saving Time	Set the mode to Automatic or disabled.
Automatically Synchronize With an Internet Time Server	Input the NTP server so that TA FXS Gateway will update the time automatically.
Set Date & Time Manually	You can set the time to your local time manually here.

3.3.3 Email Settings

To send the system alert to email address, please configure the Email settings first,

and make sure SMTP test is successful.

Figure 3-22 Email Settings

Table 3-11 Description of SMTP Settings

Items	Description
E-mail Address	The E-mail Address that TA FXS Gateway will use to send voicemail.
Password	The password for the email address used above
SMTP Server	The IP address or hostname of an SMTP server that the TA FXS Gateway will connect to in order to send voicemail messages via email, i.e. mail.yourcompany.com.
Port	SMTP Port: the default value is 25.
Use SSL/TLS to send secure message to server	If the server of sending email needs to authenticate the sender, you need to enable this Note: Must be selected for Gmail or exchange server.

After filling out the above information, you can click on the “Test Account Settings” button to check whether the setup is OK.

- 1) If the test is successful, you can use the email safely.
- 2) If test failed, please check if the above information is correct or if the network is proper.

3.3.4 Auto Provision Settings

This feature is used along with MyPBX "NeoGate Provisioning". Users can configure TA FXS Gateway on MyPBX "NeoGate Provisioning" page.

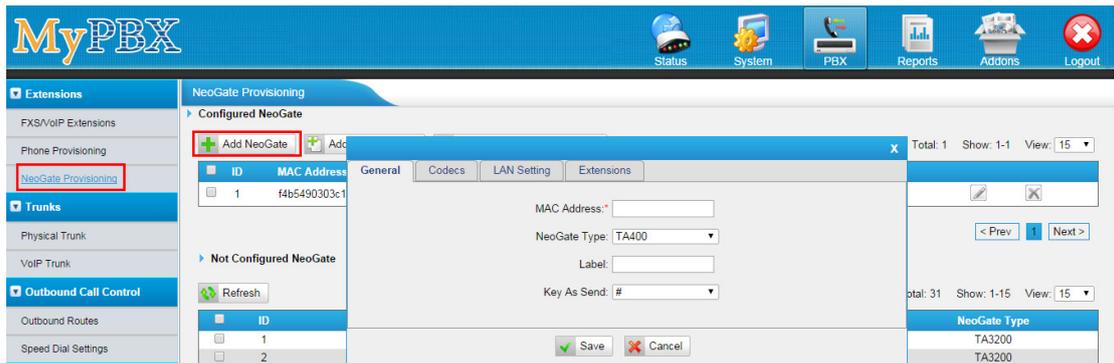


Figure 3-23 MyPBX NeoGate Provisioning

Add NeoGate

Click “Add NeoGate” and fill in the corresponding information in the pop-up window.

Figure 3-24 General Settings

1) General

- **MAC Address**
Fill in the MAC address of the TA FXS Gateway.
- **MAC Address**
Select the TA FXS Gateway Type.
- **Label**
Fill in the name of the TA FXS Gateway.
- **Key as Send**
Configure a key as the send key, you can choose #, * or disable this feature.

2) Codecs

In this page, you can set the codecs for the TA FXS Gateway.

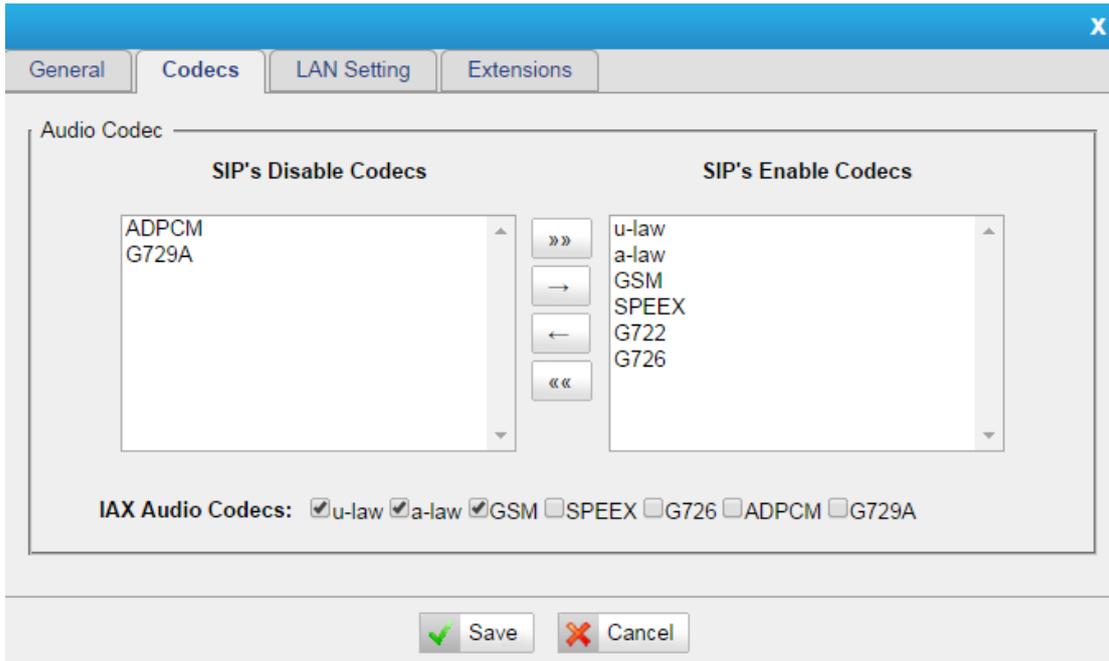


Figure 3-25 Codec Settings

3) LAN Settings

Configure the network of TA FXS Gateway on this page.

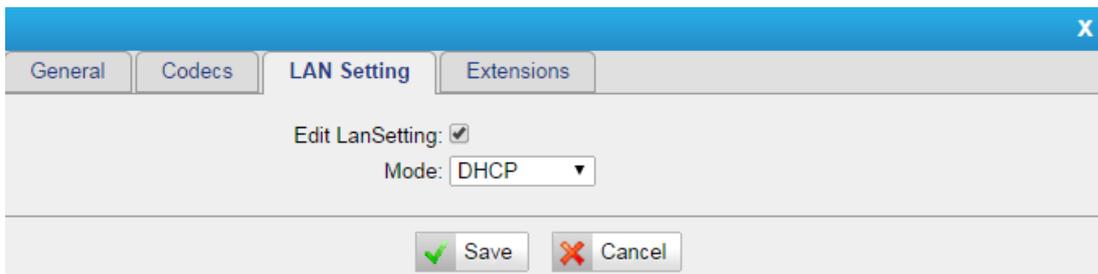


Figure 3-26 LAN Settings

4) Extensions

Configure each line of TA FXS Gateway.

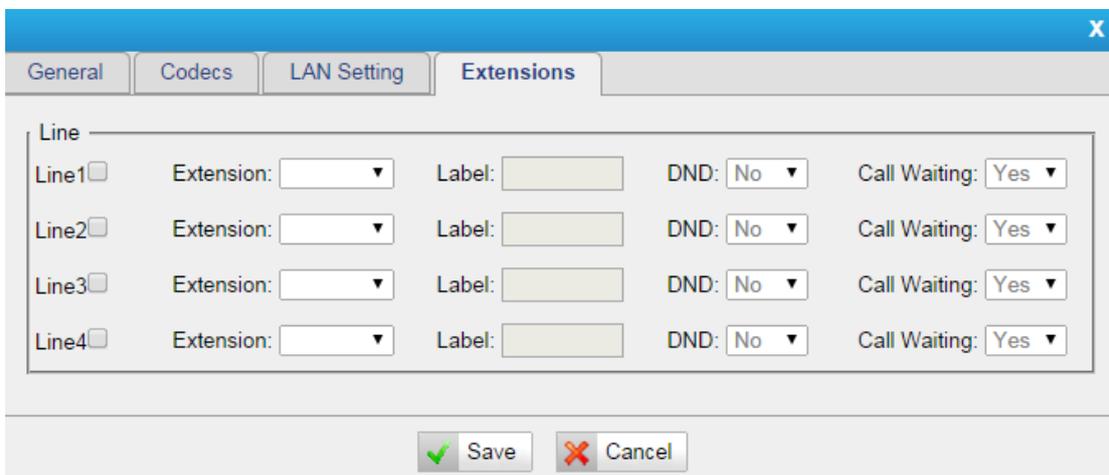


Figure 3-27 Extensions Settings

Two Methods are supported for TA FXS Gateway provision: PnP and DHCP. If DHCP method is selected, you should enable DHCP Server on MyPBX (System→Network Preferences→DHCP Server).

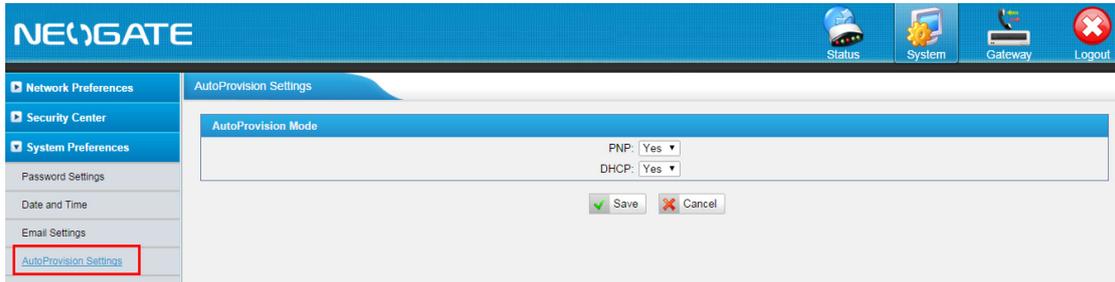


Figure 3-28 TA FXS Gateway Gateway Auto Provision

3.3.5 Firmware Update

Firmware upgrading is possible through the Administrator Web interface using a TFTP Server or an HTTP URL. Enter your TFTP Server IP address and firmware file location, then click "Start" to update the firmware

Notes:

1. If “Reset configuration to Factory Defaults” is enabled, the system will restore to factory default settings.
2. When updating the firmware, please don't turn off the power. Or the system will get damaged.

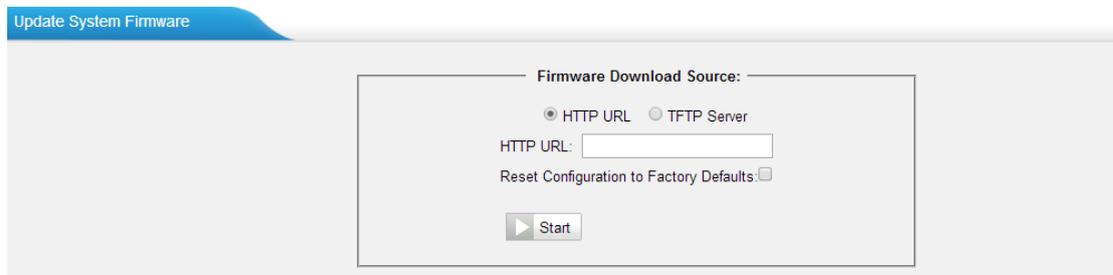


Figure 3-29 Firmware Update

3.3.6 Backup and Restore

We can back up the configurations before resetting TA FXS Gateway to factory defaults, and then restore it on this package.

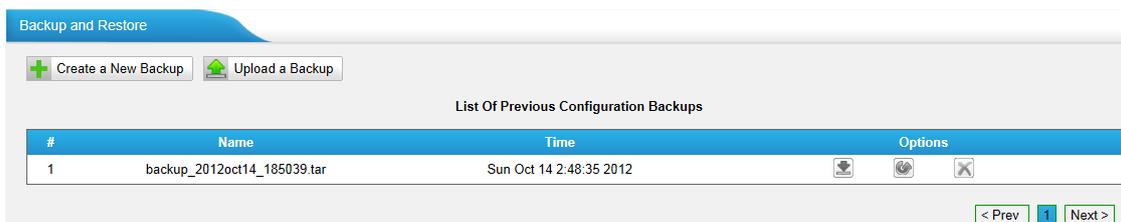


Figure 3-30 Backup and Restore

Notes:

1. Only configurations, custom prompts will be backed up.
2. If you have updated the firmware version, it's not recommended to restore using old package.

3.3.6 Reset and Reboot

We can reset or reboot TA FXS Gateway directly in this page.

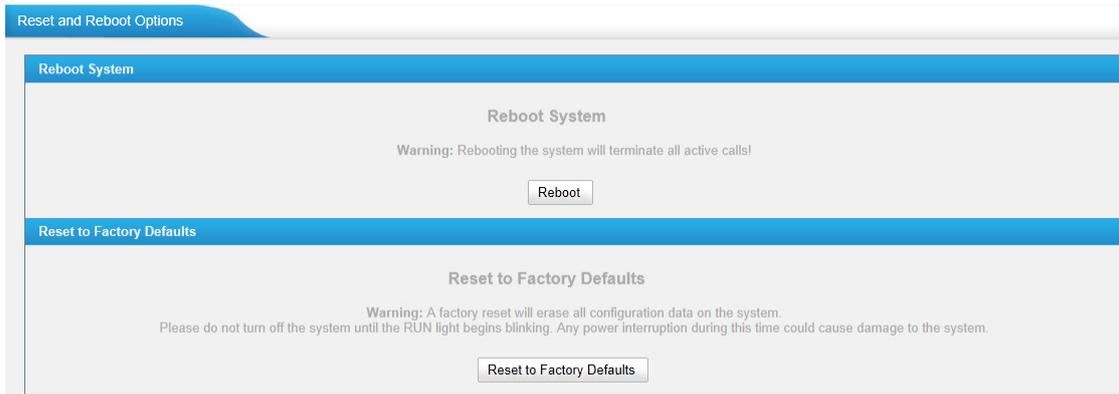


Figure 3-31 Reset and Reboot

- **Reboot System**
Warning: Rebooting the system will terminate all active calls!
- **Reset to Factory Defaults**
Warning: A factory reset will erase all configuration data on the system. Please do not turn off the system until the RUN light begins blinking. Any power interruption during this time could cause damage to the system.

4. Gateway



Click **Gateway** to access the gateway configuration page. Users can configure the details of FXS ports, VoIP settings, gateway settings and advanced settings.

4.1 FXS Port List

4.1.1 FXS Port List

All the FXS ports are listed here. You can edit each FXS port by clicking the "Edit" button. Batch editing the FXS ports number and batch editing FXS ports are available.

FXS Port List									
<input type="checkbox"/> Modify Number of the selected Port <input type="checkbox"/> Modify the selected Port <input type="checkbox"/> Reset the selected Port									
<input type="checkbox"/>	Port	Number	Call Waiting	DND	Always Forward	No Answer Forward	Busy Forward		
<input type="checkbox"/>	1	100	no	no	no	yes	yes		
<input type="checkbox"/>	2	101	no	no	no	yes	yes		
<input type="checkbox"/>	3	102	no	no	no	yes	yes		
<input type="checkbox"/>	4	103	no	no	no	yes	yes		
<input type="checkbox"/>	5	104	no	no	no	yes	yes		
<input type="checkbox"/>	6	105	no	no	no	yes	yes		
<input type="checkbox"/>	7	106	no	no	no	yes	yes		
<input type="checkbox"/>	8	107	no	no	no	yes	yes		
<input type="checkbox"/>	9	108	no	no	no	yes	yes		
<input type="checkbox"/>	10	109	no	no	no	yes	yes		

Figure 4-1 FXS Port List

1) Edit the FXS port

Click "Edit" button to configure the FXS port.

Edit FXS Port - 1 [X]

General | Other Settings

General

Port: Number:

VoIP Server Template

Primary Server: Failover Server:

User Name: Authentication Name:

Password: Online Number:

From User:

Route Settings

Dial Pattern Template: DID Number:

Hotline

Enable Hotline:

Hotline Number: Delay Dial: s

Flash

Hook Flash Detection: ms

Call Duration Setting

Max Call Duration: s

Figure 4-2 Edit FXS Port

➤ **General**

Table 4-1 Description of FXS Port General Settings

Items		Description
General	Port	The corresponding port.
	Number	User account number.
VoIP Server Template	Primary Server	Choose the Primary VoIP server, where the account will be registered.
	Failover Server	Choose the failover server for the account. This server will be used if the primary server is unavailable.
	User Name	Username of the account. Used for VoIP trunk registration. The user name should be entered if the "Enable Register" is checked on the VoIP Server.
	Authentication Name	Used for SIP authentication. The authentication name should be entered if "Enable Register" is checked on the VoIP Server.
	Password	Password of the SIP account. The password should be entered if "Enable Register" is checked on the VoIP Server.
	From User	All outgoing calls from this SIP Trunk will use the "From User" (in this case the account name for SIP Registration) in From Header of the SIP Invite package. Keep this field blank if not needed.
	Online Number	Define the online number that expected by "Skype Connect" and some other SIP service providers. Leave this field blank if not needed.
Dial Pattern Template		The account will be allowed to make outbound calls according to the selected template.
Hotline	Enable Hotline	Select whether to use Hotline or not. Hotline is disabled by default. If this feature is enabled, the system will dial out the hotline number automatically after off-hook.
	Hotline Number	Set the number to dial out automatically after off-hook.
	Delay Dial	Define how long to make Hotline take effect after you pick up the phone.
Flash		Sets the amount of time, in milliseconds, that a hook flash must remain depressed in order for the system to consider it as a valid flash event. Default: 1000ms.
Call Duration Setting		Set up the max call duration for every call of this

user, but it's only valid for outbound calls. Enter "0" or leave this blank empty, the value would be equal to the max call duration configured in the General Preferences settings page.
Note: This setting will not be valid for internal calls.

➤ **Other Settings**

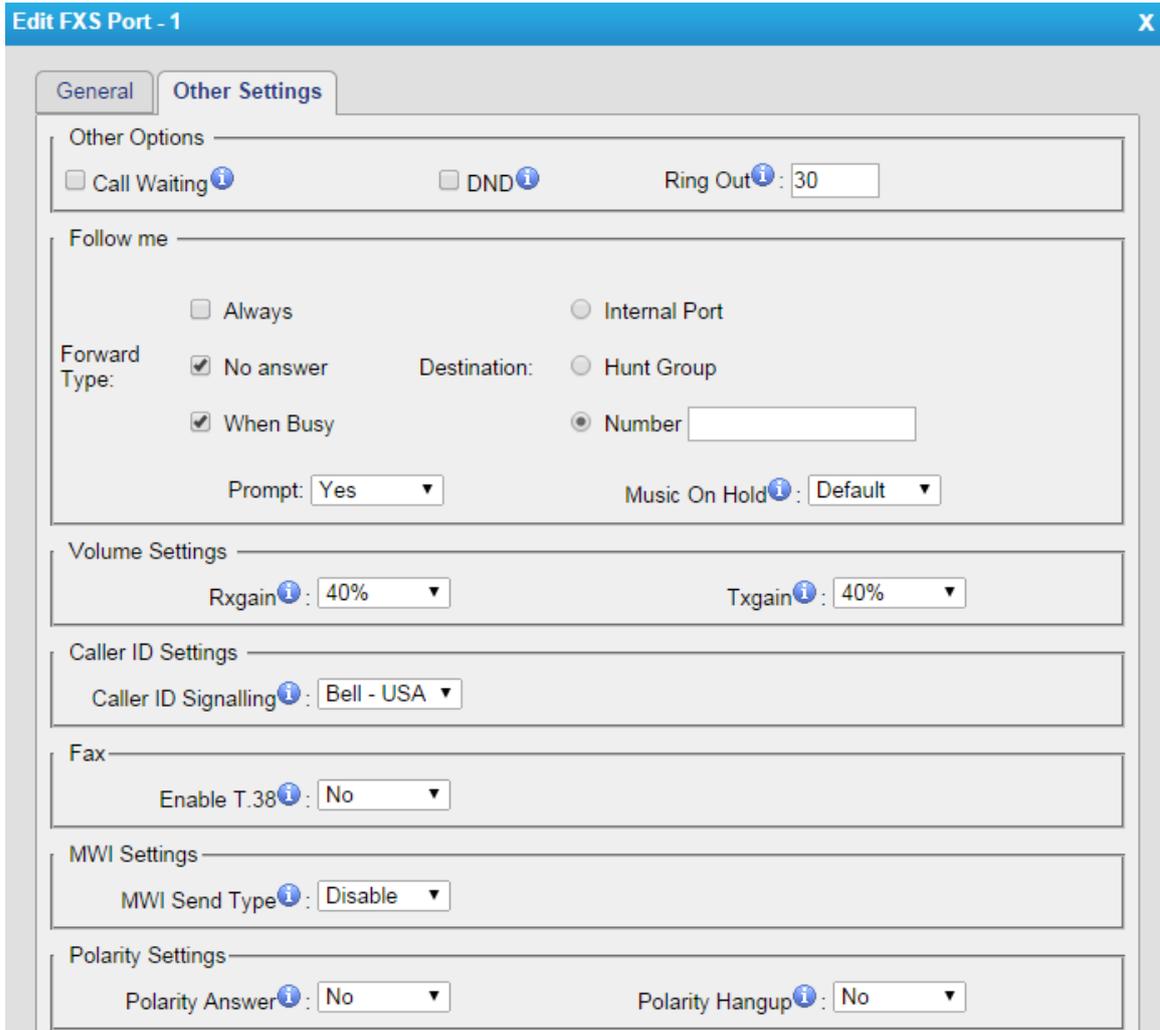


Figure 4-3 FXS Port Other Settings

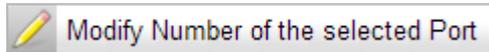
Table 4-2 Description of FXS Port Other Settings

Items	Description
Call Waiting	Check this option if the extension should have Call Waiting capability. If this option is checked, the "When busy" follow me options will not be available.
DND	Don't Disturb. When DND is enabled for an extension, the extension will not be available.
Ring Out	Check this option if you want to customize the ring time. Ring tone will stop over the time defined.

Follow me	<p>Call forwarding for an extension can be configured here. You can also configure call forwarding to a hunt group.</p> <p>Prompt: whether the prompt is played or not when the call is transferred.</p> <p>Music On Hold: choose the on hold music.</p>
Volume Settings	<p>Settings for the FXS port volume.</p> <p>Rxgain: adjust receive gain.</p> <p>Txgain: adjust transmit gain.</p>
Caller ID Settings	<p>Select the type of caller ID signaling. FSK and DTMF signal is supported.</p>
Fax	<p>If the FXS port is connected to a Fax machine, this option should be checked.</p>
MWI Settings	<p>Message Waiting Indicator (MWI) refers to a special LED on the analog phone, which indicates the voice mail status. There are three lighting methods supported on TA FXS Gateway gateway: neon, FSK and Polarity. Choose the lighting method according to your phone. TA FXS Gateway gateway will light the lamp up once receiving a new message; the lamp will goes off if there is no unread voice mail.</p>
Ploarity Settings	<p>A polarity signal is required on some systems for reverse polarity billing. Select if reverse polarity signal is activated on this FXS port. It is not activated by default.</p> <p>Polarity Answer: Whether to send polarity signal while picking up the phone.</p> <p>Polarity Hangup: Whether to send polarity signal while hanging up the phone.</p>

2) Batch Edit Number of FXS Ports

Select the FXS ports, and click the button "Modify Number of the selected Port"

 , you can modify the number of the FXS ports in bulk.

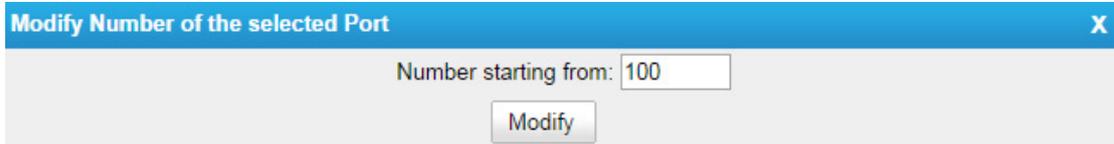
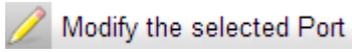


Figure 4-4 Batch Edit Number of FXS Ports

3) Batch Edit FXS Ports

You can also modify the selected FXS ports in bulk by clicking the button "Modify the selected Port" .

Check the options that you want to edit. Options that are not checked and modified will remain the default settings.

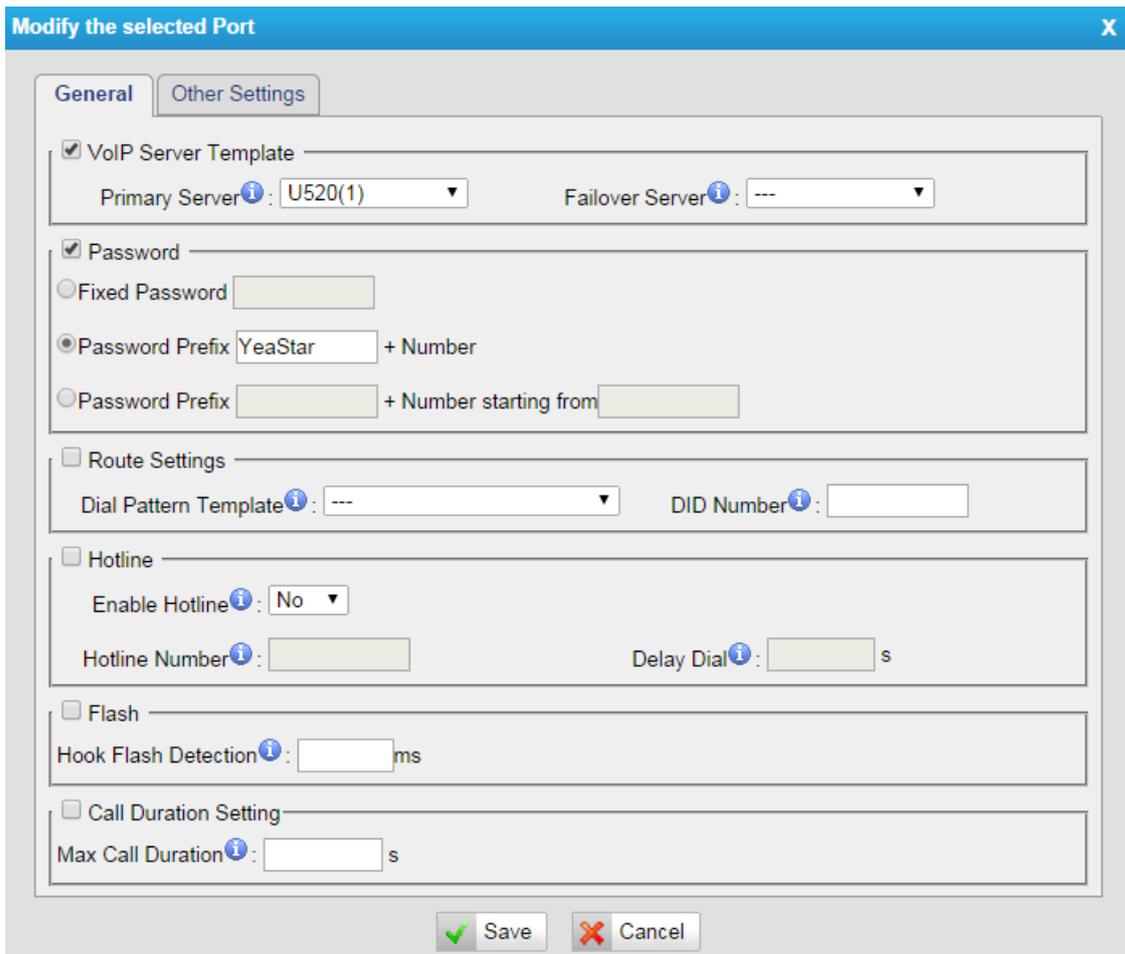


Figure 4-5 Batch Edit FXS ports

3) Batch Reset FXS Ports

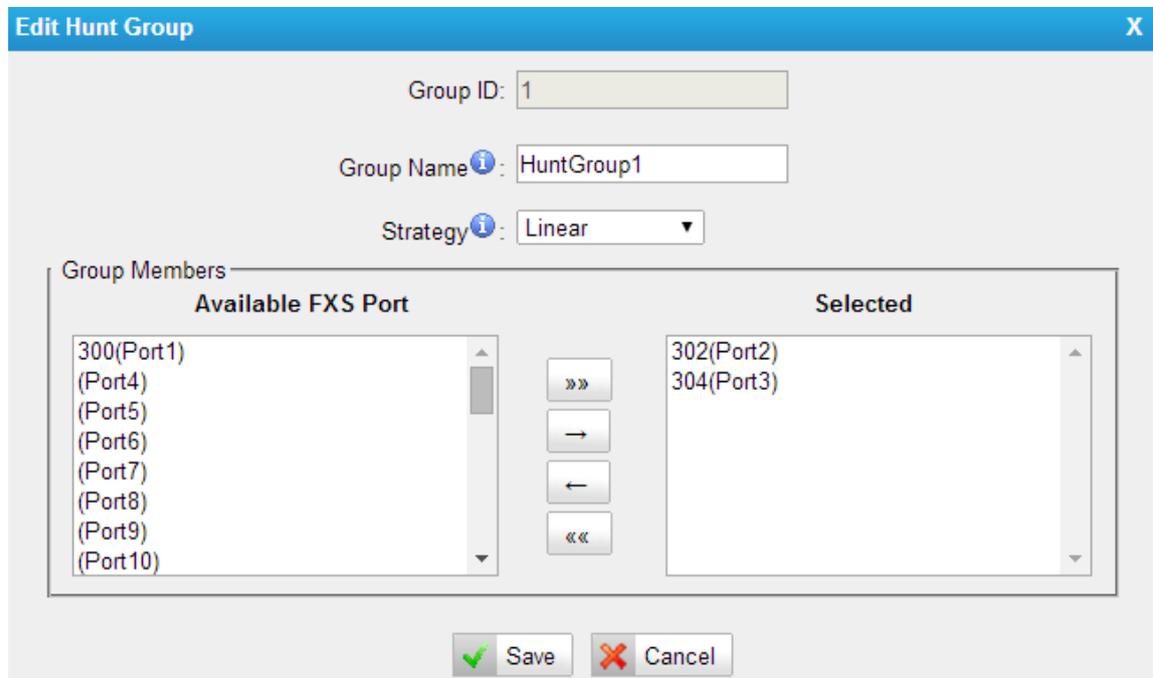
You can reset the selected FXS ports in bulk by clicking the button "Reset the

selected Port" . The settings for the FXS ports will back to the default.

4.1.2 Hunt Group

Hunt group is a feature that allows a call reaching multiple FXS ports. The FXS ports will act as a single group, called a hunt group. The number of hunt groups is limited by the number of ports each TA FXS Gateway model has. For example, there are 24 hunt groups on TA FXS Gateway2400.

Hunt group will be chosen when configuring the FXS port "Follow Me". The hunt group will work when a call reaches the FXS port associated user which is busy or no answer.



Edit Hunt Group X

Group ID: 1

Group Name *i*: HuntGroup1

Strategy *i*: Linear ▼

Group Members

Available FXS Port		Selected	
300(Port1)	»» → ← ««	302(Port2)	
(Port4)		304(Port3)	
(Port5)			
(Port6)			
(Port7)			
(Port8)			
(Port9)			
(Port10)			

Save Cancel

Figure 4-6 Hunt Group

The screenshot shows the 'Edit FXS Port - 1' configuration window with the 'Other Settings' tab selected. The 'Destination' dropdown menu is highlighted with a red box and set to 'Hunt Group | HuntGroup1(Group1)'. Other settings include 'Call Waiting' (unchecked), 'DND' (unchecked), 'Ring Out' (30), 'Follow me' (unchecked), 'Forward Type' (No answer and When Busy checked), 'Destination' (Hunt Group | HuntGroup1(Group1)), 'Prompt' (Yes), 'Music On Hold' (Default), 'Volume Settings' (Rxgain: 40%, Txgain: 40%), 'Caller ID Settings' (Bell - USA), 'Fax' (Enable T.38: No), and 'MWI Settings' (MWI Send Type: Disable).

Figure 4-7 Set Hount Group on "FXS Port" Page

There are 3 strategies for hunt group on TA FXS Gateway.

- **Simultaneous**
All the FXS users will ring at the same time.
- **Circular**
In circular hunting, the calls are processed "round-robin". If a call is delivered to FXS port1, the next call will go to 2, the next to 3. The succession throughout each of the FXS users even if one of the previous local users becomes free. When the end of the hunting group is reached, the hunting starts over at the first local users.
- **Linear**
Linear hunting is also referred to serial hunting. In linear hunting, calls are always delivered to the first FXS users, unless it is busy, then the second, third, and so on.

4.2 VoIP Settings

To integrate with other IPPBX, we need to configure the VoIP settings in TA FXS Gateway to set up VoIP trunk (SIP and IAX).

4.2.1 VoIP Server Settings

There are some configurable VoIP(SIP/IAX) Server templates on this page. The number of VoIP Server templates is the half of FXS ports on TA FXS Gateway. The VoIP server settings help the FXS ports to register to the VoIP server. Once configured, the templates can be chosen on FXS port setting page.

Two modes are available for the VoIP server, we call them VoIP mode and SPS(Service Provider SIP)/SPX(Service Provider IAX) mode.

VoIP Mode:

The FXS port will be registered as one the VoIP server's SIP extensions if "Enable Register" is checked on VoIP Server template.

SPS/SPX Mode:

If "Enable Register" is not checked, the FXS port will be registered as a SPS/SPX trunk to the VoIP Server. One SPS/SPX trunk to TA FXS Gateway also should be created on the VoIP Server.

Server ID	Name	SIP/IAX	Transport	Hostname/IP	
1	VoIPServer1	SIP	udp	192.168.7.26	
2	VoIPServer2	SIP	udp	192.168.5.149	
3	VoIPServer3	SIP	udp	--	
4	VoIPServer4	SIP	udp	--	
5	VoIPServer5	SIP	udp	--	
6	VoIPServer6	SIP	udp	--	
7	VoIPServer7	SIP	udp	--	
8	VoIPServer8	SIP	udp	--	
9	VoIPServer9	SIP	udp	--	
10	VoIPServer10	SIP	udp	--	
11	VoIPServer11	SIP	udp	--	
12	VoIPServer12	SIP	udp	--	

Figure 4-8 VoIP Server

The screenshot shows a configuration window titled "Edit VoIP Server - VoIPServer1". It has two tabs: "General" and "Advanced". The "General" tab is selected. The configuration fields are as follows:

- Server ID: 1
- Server Name: VoIPServer1
- Type: SIP
- Enable Register:
- Transport: UDP
- Hostname/IP: 192.168.7.26 : 5060
- Domain: 192.168.7.26
- Enable Outbound Proxy Server:

At the bottom, there are "Save" and "Cancel" buttons.

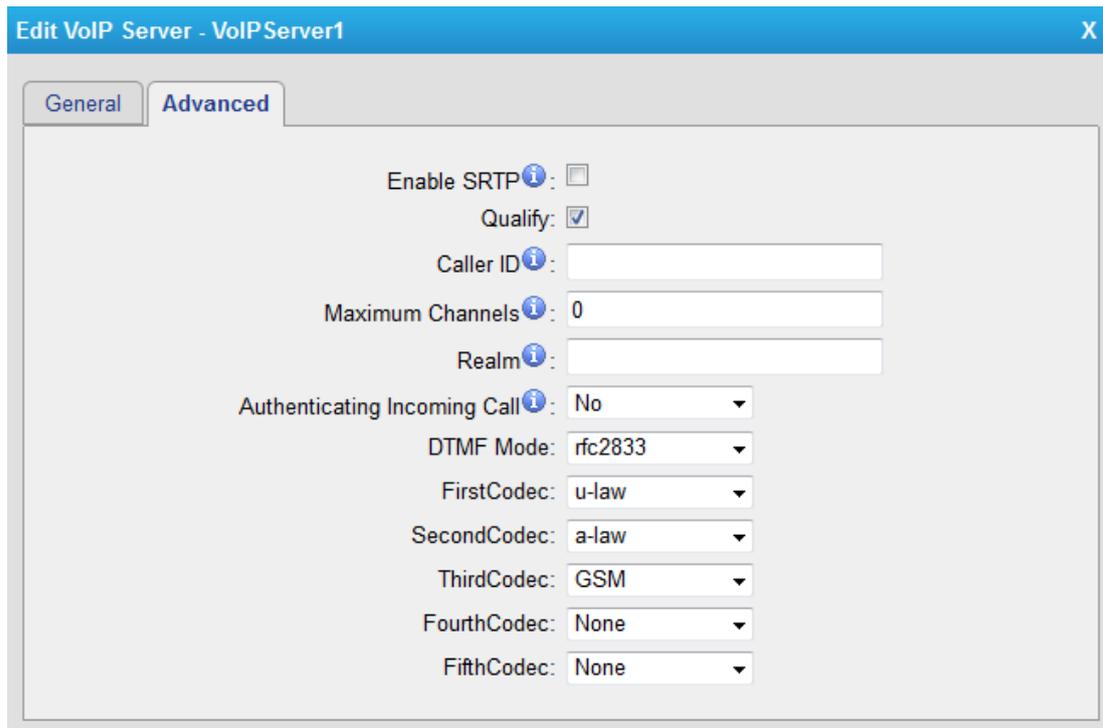
Figure 4-9 VoIP Server Settings

➤ General

Table 4-3 Description of VoIP Server General Settings

Items	Description
Server ID	The ID for the VoIP server template.
Server Name	The name for the VoIP server template.
Type	Choose the type of the VoIP server, SIP or IAX.
Enabel Register	Do not check "Enable Register", if you want to register the FXS port as a Service Provider SIP (IAX) trunk to the VoIP Server. One Service Provider SIP (IAX) trunk to TA FXS Gateway also should be created on the VoIP Server. Check "Enable Register" if you want to register the FXS port as an extension of the VoIP server. You will need to enter the relevant user name, password, etc in the FXS port page when using this template.
Transport	This will be the transport method used by the SIP Trunk. This method is given by the SIP trunk provider. The options are UDP (default), TCP ,and TLS.
Hostname/IP	VoIP server hostname or IP address. 5060 is the standard port number used by SIP protocol. Don't change this part if it is not required.
Domain	VoIP server hostname. An IP address also can be filled here.
Enable Outbound Proxy Server	A proxy that receives requests from a client. Even though it may not be the server resolved by the Request-URI.

➤ **Advanced**



The screenshot shows the 'Advanced' settings for a VoIP server. The settings are as follows:

- Enable SRTP:
- Qualify:
- Caller ID:
- Maximum Channels:
- Realm:
- Authenticating Incoming Call:
- DTMF Mode:
- FirstCodec:
- SecondCodec:
- ThirdCodec:
- FourthCodec:
- FifthCodec:

Figure 4-10 VoIP Server Advanced Settings

Table 4-4 Description of VoIP Server Advanced Settings

Items	Description
Enable SRTP	Define if SRTP is enabled for this VoIP server.
Qualify	Send check alive packets to the SIP provider.
Caller ID	Specify the caller ID to use when making outbound calls over this VoIP server.
Maximum Channels	Control the maximum number of simultaneous calls. Set as 0 to specify no maximum.
Realm	Realm is a string to be displayed to users so they know which username and password to use.
Authenticating Incoming Call	When an incoming call reaches TA device and sends INVITE packet to TA, TA responds 401, but the Realm info in 401 Response does not match the Realm set on TA VoIP Server, the provider will refuse to authenticate. If you set this option to No, TA will not reply a 401 Response to the provider to authenticate the incoming call.
DTMF Mode	Set default mode for sending DTMF of this trunk. Default setting: rfc2833
Codec	Define the codec for this sip trunk and its priority

4.2.2 Dial Pattern Template

Dial pattern template specifying how to route the calls from FXS ports to VoIP server extensions or external numbers. The number of dial pattern templates is limited by the number of ports each TA FXS Gateway model has.

Figure 4-11 Dial Pattern Template

Table 4-5 Description of Dial Pattern Template Settings

Items	Description
Template ID	The ID for this template.
Template Name	A name for this template.
Dial Pattern	Calls from the FXS port should match the dial pattern set on this template, or the call cannot be established. Hover the pointer over  to read tips.
Strip	Allows the user to specify the number of digits that will be stripped from the front of the phone number before the call is placed.
Prepend	The digits will be appended to the phone number before the call is placed.
DTMF Mode	Set default mode for sending DTMF of this trunk. Default setting: rfc2833.
Codec	Define the codec for this sip trunk and its priority.

4.2.3 SIP Settings

This is the SIP settings in TA FXS Gateway, including General settings, NAT, Codecs, Qos, Response Code, T.38, and advanced settings.

1) General

The screenshot shows the 'SIP Settings' window with the 'General' tab selected. The settings are as follows:

- UDP Port: 5060
- Enable Random Port: Yes
- Random Port Update Interval: 24 Hour
- Enable TCP Port: 5060
- Enable TLS Port: 5061
- TLS Verify Server: No
- TLS Ignore Common Name: Yes
- TLS Client Method: sslv2
- RTP Port Start: 10000
- RTP Port End: 12000
- DTMF Mode: rfc2833
- Max Registration/Subscription Time: 3600
- Min Registration/Subscription Time: 60
- Default Incoming/Outgoing Registration Time: 120
- Register Attempts: 0
- Register Timeout: 20
- Calling Channel Codec Priority: Yes
- DNS SRV Look Up: No
- User Agent: (empty)

Figure 4-12 SIP General Settings

Table 4-6 Description of SIP General Settings

Items	Description
UDP Port	Port used for SIP registrations. The default is 5060.
Enable Random Port	Enable or Disable Random SIP port.
Random Port Update Interval	Set the Random Port Update Interval.
TCP Port	Port used for SIP registrations. The default is 5060.
TLS Port	Port used for SIP registrations. The default is 5061.
TLS Verify Server	When using TA FXS Gateway as a TLS client, whether or not to verify server's certificate. It is "No" by default.
TLS Verify Client	When using TA FXS Gateway as a TLS server, whether or not to verify client's certificate. It is "No" by default.
TLS Ignore Common Name	Set this parameter as "No", then common name must be the same with IP or domain name.
TLS Client Method	When using TA FXS Gateway as TLS client, specify the protocol for outbound TLS connections. You can select it as tlsv1, sslv2 or sslv3.
RTP Port Start	Beginning of the RTP port range.
RTP Port End	End of the RTP port range.
DTMF Mode	Set the default mode for sending DTMF. Default setting: rfc2833
Max Registration/Subscription Time	Maximum duration (in seconds) of a SIP registration. The default is 3600 seconds.
Min Registration/Subscription Time	Minimum duration (in seconds) of a SIP registration. The default is 60 seconds.

Default Incoming/Outgoing Registration Time	Default Incoming/Outgoing Registration Time: the default duration (in seconds) of incoming/outgoing registration.
Register Attempts	The number of SIP REGISTER messages to send to a SIP Registrar before giving up. The default is 0 (no limit).
Register Timeout	Number of seconds to wait for a response from a SIP Registrar before classifying the register has timed out. The default is 20 seconds.
Calling Channel Codec Priority	Once enabled, when dialing out via SIP/SPS trunks, the codec of calling channel will be selected preferentially. If not, TA FXS Gateway will follow the priority order in your SIP/SPS trunks.
Video Support	Support SIP video or no. The default is yes.
Max Bit Rate	Configure the max bit rate for video stream. The default: 384kb/s.
DNS SRV Look Up	Please enable this option when your SIP trunk contains more than one IP address.
User Agent	To change the user agent parameter of asterisk, the default is "TA FXS Gateway"; you can change it if needed.

2) NAT

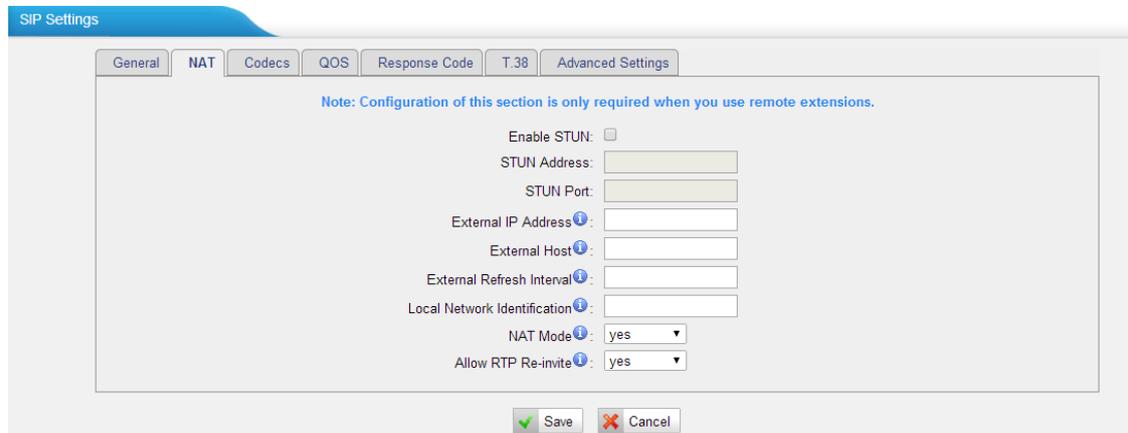


Figure 4-13 NAT Settings

Table 4-7 Description of SIP General Settings

Items	Description
Enable STUN	STUN (Simple Traversal of UDP through NATs) is a protocol for assisting devices behind a NAT firewall or router with their packet routing.
STUN Address	The STUN server allows clients to find out their public address, the type of NAT they are behind and the internet side port associated by the NAT with a particular local port. This information is used to set up UDP communication between the client and the VOIP provider and so establish

	a call.
External IP Address	The IP address that will be associated with outbound SIP messages if the system is in a NAT environment.
External Host	Alternatively you can specify an external host, and the system will perform DNS queries periodically. This setting is only required when your public IP address is not static. It is recommended that a static public IP address is used with this system. Please contact your ISP for more information.
External Refresh Interval	Used to identify the local network using a network number/subnet mask pair when the system is behind a NAT or firewall. Some examples of this are as follows: "192.168.0.0/255.255.0.0": All RFC 1918 addresses are local networks; "10.0.0.0/255.0.0.0": Also RFC1918; "172.16.0.0/12": Another RFC1918 with CIDR notation; "169.254.0.0/255.255.0.0": Zero conf local network. Please refer to RFC1918 for more information.
NAT Mode	Global NAT configuration for the system; the options for this setting are as follows: Yes = Use NAT. Ignore address information in the SIP/SDP headers and reply to the sender's IP address/port. No = Use NAT mode only according to RFC3581. Never = Never attempt NAT mode or RFC3581 support. Route = Use NAT but do not include rport in headers.
Allow RTP Reinvite	By default, the system will route media streams from SIP endpoints through itself. Enabling this option causes the system to attempt to negotiate the endpoints to route packets to each other directly, bypassing the system. It is not always possible for the system to negotiate endpoint-to-endpoint media routing.

3) Codecs

We can choose the allowed codec in TA FXS Gateway, a codec is a compression or decompression algorithm that used in the transmission of voice packets over a network or the Internet. For more information about codec, you can refer to this page: http://en.wikipedia.org/wiki/List_of_codecs

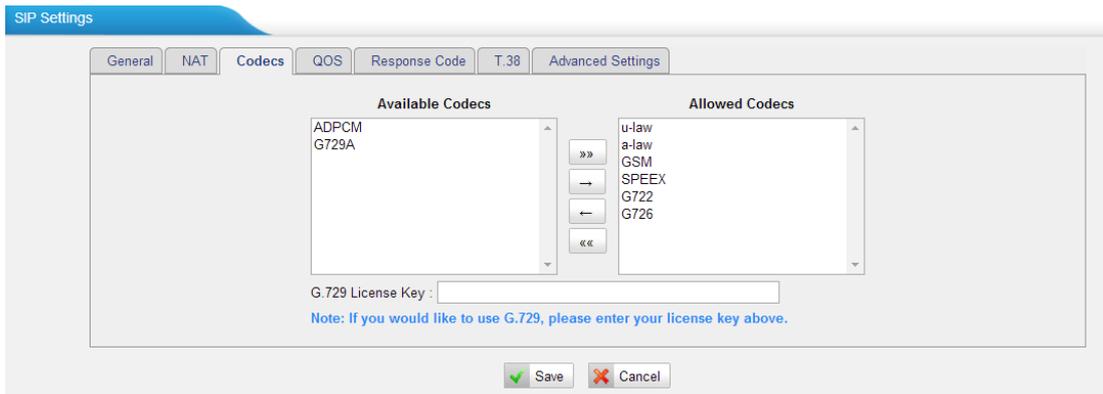


Figure 4-14 Codecs

If you want to use codec G729, we recommend buying a license key and input it here.

4) Qos

QoS (Quality of Service) is a major issue in VoIP implementations. The issue is how to guarantee that packet traffic for a voice or other media connection will not be delayed or dropped due interference from other lower priority traffic. When the network capacity is insufficient, QoS could provide priority to users by setting the value.

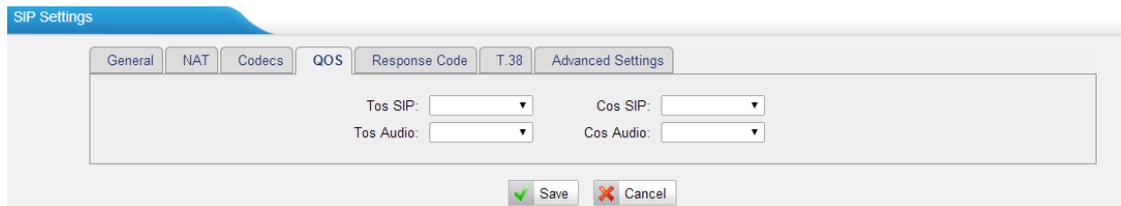


Figure 4-15 Qos

Note: It's recommended that you configure the QoS in your router or switch instead of TA FXS Gateway side.

5) Response Code

You can change the response code on TA FXS Gateway to the one you want before sending it to the VoIP server. It helps the VoIP server understands better the exact call status, like busy, no response and others.

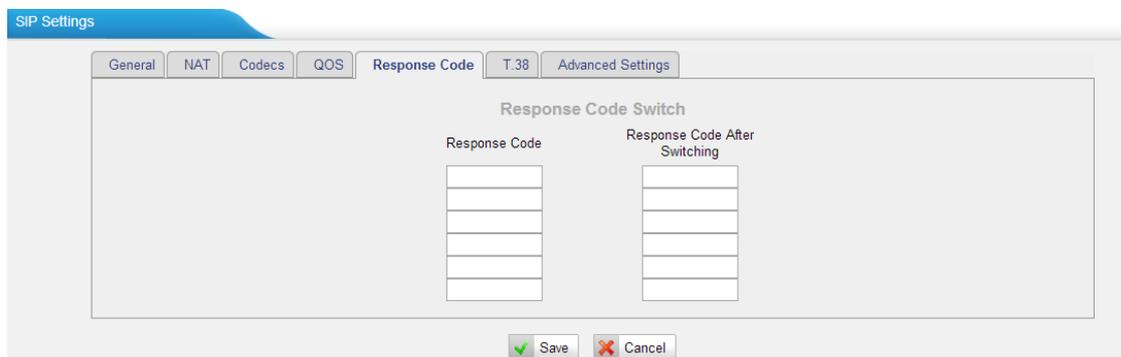


Figure 4-16 Response Code

Note: We don't recommend configuring this if you are not familiar with the code of call

status from the VoIP server.

6) T.38

Settings on this page is for the purpose of improving receiving and sending T.38 FAX.

Figure 4-17 T.38 Settings

Table 4-8 Description of T.38 Settings

Items	Description
Re-invite SDP Not Add T.38 Attributes	If set to Yes, SDP in re-invite packet will not add T.38 attributes.
Error Correction	Re-invite SDP T38FaxUdpEc.
T.38 Max Bit Rate	Set T38 Max Bit Rate.

7) Advanced Settings

Figure 4-18 SIP Advanced Settings

Table 4-9 Description of SIP Advanced Settings

Items	Description
From Field	Where to get the caller ID in SIP packet.
To Field	Where to get the DID in SIP packet.
180 Ringing	It is set when the telecom provider needs. Usually it is not needed.
Remote Party ID	Whether to send Remote-Party-ID on SIP header or not. Default: no.
Allow Guest	Whether to allow anonymous registration extension or not. Default: no. It's recommended

	that it is disabled for security reason.
Pedantic	Enable pedantic parameter. Default: no.
Alwaysauthreject	If enabled, when TA FXS Gateway rejects “Register” or “Invite” packets, TA FXS Gateway always respond the packets using “SIP404 NOT FOUND”. It’s recommended that it is enabled for security reason.
Session-timers	Enable session-timer mode, default: yes. If you find the call is cut off every 15 minutes every time, please disable this.
Session-expires	The max refresh interval
Session-minse	The min refresh interval, which mustn't be shorter than 90s.
Session-refresher	Choose the session-refresher, the default is Uas.

4.2.4 IAX Settings

IAX is the Internal Asterisk Exchange protocol, you can connect to TA FXS Gateway or register IAX trunk to another IAX server. It’s supported by the asterisk-based IPPBX.

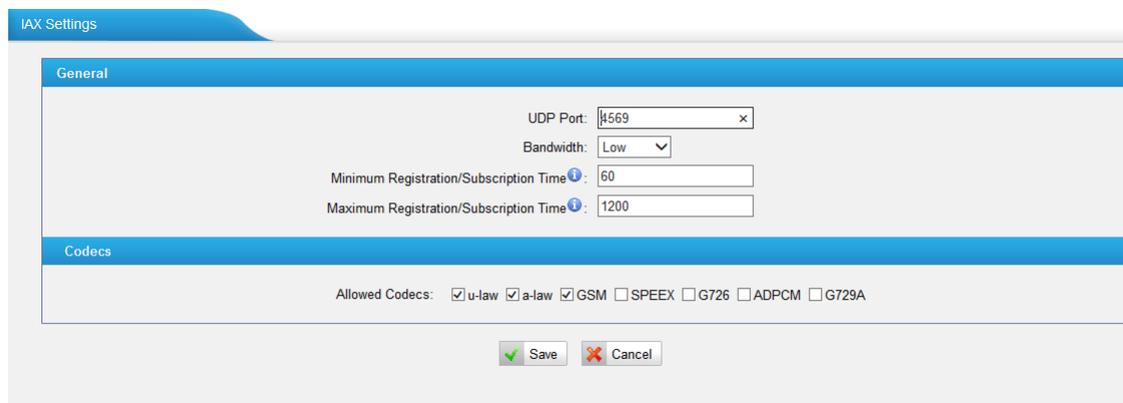


Figure 4-19 IAX Settings

Table 4-10 Description of IAX Settings

Items	Description
Bind Port	Port used for IAX2 registrations. Default is 4569.
Bandwidth	Low/medium/high with this option you can control which codec to be used.
Min Registration Time	Minimum duration (in seconds) of an IAX2 registration. Default is 60 seconds
Max Registration Time	Maximum duration (in seconds) of an IAX2 registration.

	Default is 1200 seconds.
Codecs	Enable the codec you want for IAX communication.

4.3 Gateway Settings

4.3.1 General Preferences

Figure 4-20 General Settings

Table 4-11 Description of General Settings

Items	Description
Ring Timeout	Number of seconds to ring a device before executing the "Follow me" configurations. This is a gloable setting for all FXS ports.
MAX Call Duration	The absolute maximum amount of time permitted for a call. A setting of 0 disables the timeout.
Music On Hold	Set hold music for the system.
Key As Send	Set the "#" or "*" to perform as a send key while dialing. Default is "#".
Enable Jitterbuffer	Forces the use of a jitter buffer on the received side of a SIP channel. The call quality will be improved if this option is enabled.
Jitterbuffer MaxSize	Max length of the jitter buffer. Default is 40 milliseconds

4.3.2 Feature Codes

There are various feature codes on TA FXS Gateway. The feature codes are used to acquire the gateway info or activate and inactivate supplementary services. The default feature codes are illustrated below. The parameters for feature codes are configurable.

Feature Codes		
General		
Internal Call Prefix ¹		*99
Speed Dial Prefix		*98
Attended Transfer		*3
Blind Transfer		*03
Direct IP Calling		*96
Check Number		*97
Voice Menu		***
Voice Menu Password Settings		123456
Call Forwarding Preferences		
Reset to Defaults ¹		*70
Enable Forward All Calls		*71
Disable Forward All Calls		*071
Enable Forward When Busy		*72
Disable Forward When Busy		*072
Enable Forward No Answer		*73
Disable Forward No Answer		*073
Forward to Internal Port ¹		*74
Forward to Number ¹		*75
Forward to Hunt Group ¹		*76
Enable Do Not Disturb		*77
Disable Do Not Disturb		*077

Figure 4-21 Feature codecs

➤ General

Table 4-12 Description of General Settings

Items	Default	Description
Internal Call Prefix	*99	Dial the feature code and the FXS port number when making calls between the analog phones connected to multiple ports of the TA FXS Gateway without the use of a VoIP server.
Speed Dial Prefix	*98	The prefix number for applying a speed dialing. The prefix should be added ahead of the speed dial number.
Attended Transfer	*3	Users may transfer an incoming call by dialing *3 on their phone.
Blind Transfer	*03	Users may blind transfer an incoming call by dialing *03 on their phone.
Direct IP Calling	*96	Direct IP calling allows two parties, that is, a FXS Port with an analog phone and another VoIP Device, to talk to each other in an ad hoc fashion without a SIP proxy. The default "Direct IP Calling" feature code is *96.
Check Number	*97	Users can check the analog phone's number by simply dialing the "Check Number" feature code on the phone. The default "Check Number" feature code is *97.
Voice Menu	***	Users may enter the voice prompt menu by pressing *** on their phone.
Voice Menu Password Settings	123456	The password of voice menu is required before entering the advanced settings. The default password is 123456.

> Call Forwarding Preferences

Table 4-13 Description of Call Forwarding Preferences

Items	Default	Description
Reset to Defaults	*70	Users may reset all call forwarding defaults by calling *70 on their phone.
Enabel Forward All Calls	*71	Users may enable always forward by calling *71 on their phone.
Disable Forward All Calls	*071	Users may disable always forward by calling *071 on their phone.
Enable Forward When Busy	*72	Users may enable busy forward by dialing *72 on their phone.
Disable Forward When Busy	*072	Users may disable busy forward by calling *072 on their phone.
Enable Forward No Answer	*73	Users may enable no answer forward by calling *73 on their phone.
Disable Forward No Answer	*073	Users may disable no answer forward by calling *073 on their phone.
Forward to Internal Port	*74	Users may activate call forwarding to port by dialing this feature code, followed by the FXS port number.
Forward to Number	*75	Users may activate call forwarding by dialing this feature code, followed by the extension or phone number to forward all calls to this number. Note: Users may activate Forward to number by dialing *74 + phone number. E.g. by dialing *74501, all calls will be forwarded to extension 501.
Forward to Hunt Group	*76	Users may forward the call to a hunt group by calling *75 on their phone.
Enable Do Not Disturb	*77	Activate "Do Not Disturb". Once activated, the FXS port will reject all incoming calls.
Disable Do Not Disturb	*077	Disable "Do Not Disturb" for the FXS port by pressing the feature code on the phone. It will recover normal ringing upon the arrival of incoming calls.

4.3.3 Speed Dial Settings

There are 128 configurable Speed Dial templates available on TA FXS Gateway.

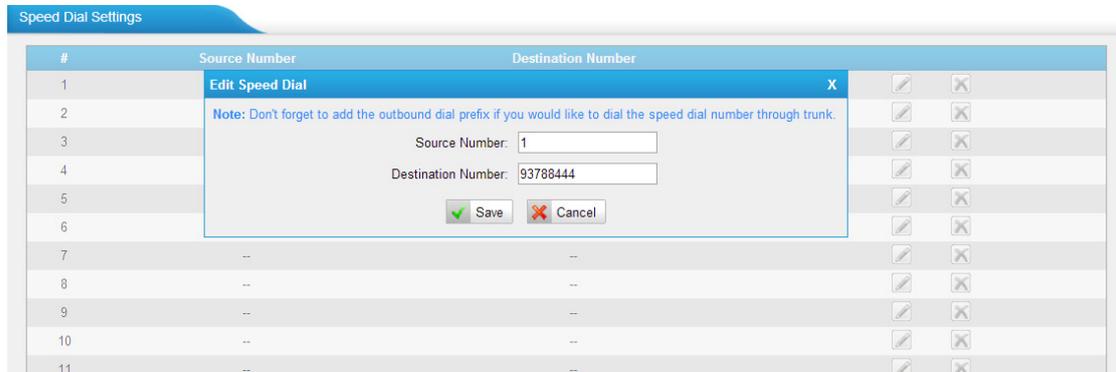


Figure 4-22 Speed Dial

•Source Number

The speed dial number.

•Destination Number

The number you want to call.

E.g. the source number is “1”. The destination number is 93788444. The prefix number is *98. You can use an extension with any type to dial *981, then it will call the number 93788444.

Note: Don't forget to add the dial pattern according to the selected dial pattern template.

4.4 Audio Settings

4.4.1 Custom Prompts

We can upload the prompts in this page; you can also download it and save it as a backup.

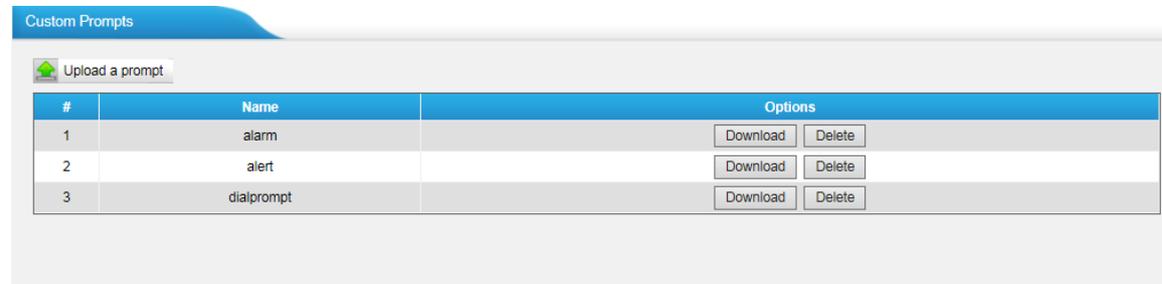


Figure 4-23 Custom Prompts

The administrator can upload prompts by doing the following:

- 1) Click “Upload Prompt”.
- 2) Click “Browse” to choose the desired prompt.

3) Click “Upload” to upload the selected prompt.

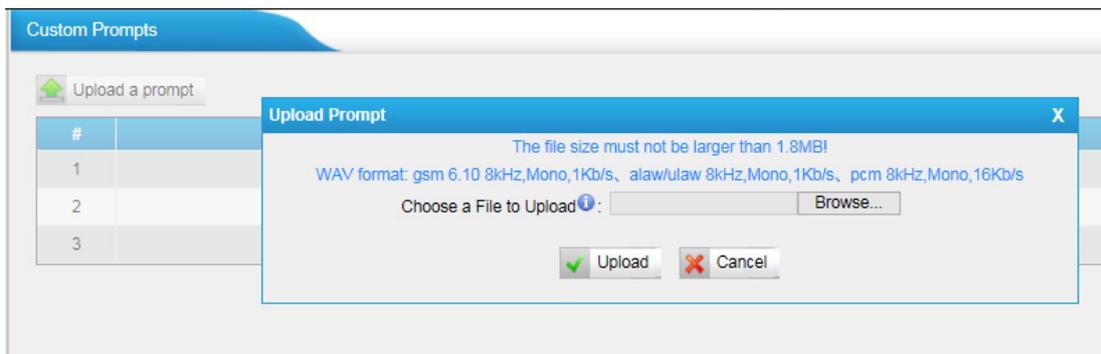


Figure 4-24 Upload A Prompt

Note: The file size must not be larger than 1.8 MB, and the file must be WAV format:
 GSM 6.10 8 kHz, Mono, 1 Kb/s;
 Alaw/Ulaw 8 kHz, Mono, 1 Kb/s;
 PCM 8 kHz, Mono, 16 Kb/s.

4.4.2 Music on Hold Prompts

In this page, we can upload the music on hold prompts.

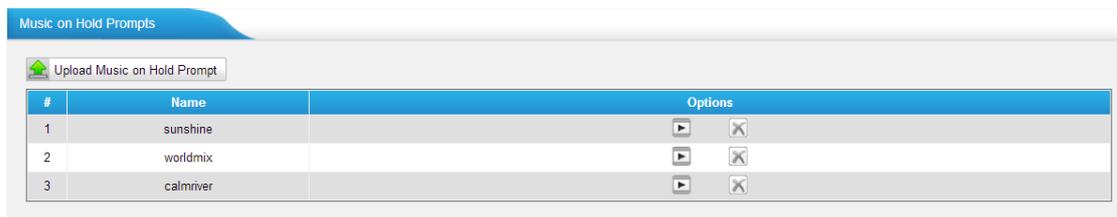


Figure 4-25 Music On Hold

The administrator can upload on hold music as follows:

- 1) Click “Upload Music on Prompt”.
- 2) Click “Browse” to choose the desired audio file.
- 3) Click “Upload” to upload the selected file.

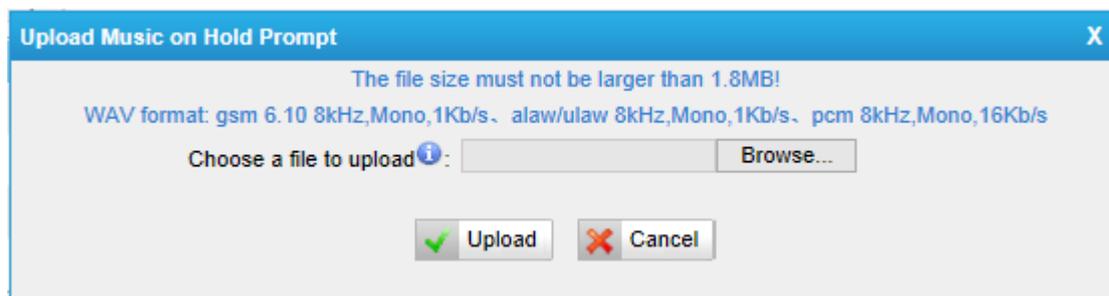


Figure 4-26 Upload Music on Hold Prompt

Note: The file size must not be larger than 1.8 MB, and the file must be WAV format:
GSM 6.10 8 kHz, Mono, 1 Kb/s;
Alaw/Ulaw 8 kHz, Mono, 1 Kb/s;
PCM 8 kHz, Mono, 16 Kb/s.

4.4.3 System Prompts Settings

There are multilingual system prompts on TA FXS Gateway. You can download the appropriate language you need. TA FXS Gateway can support American English, Australian English, Chinese, Dutch, French, Canadian French, German, Greek, Hungarian, Italian, Polish, Portuguese, Brazilian Portuguese, Russian, Spanish, Mexican Spanish, Turkish, Thai, and Korean currently.

Notes:

1. Auto-detection is highly recommended. But if you prefer to download via HTTP or TFTP server, please contact the local dealer for the prompts.
2. When update successfully, just click “Apply Changes” on Web then it will take effect, there is no need to reboot.

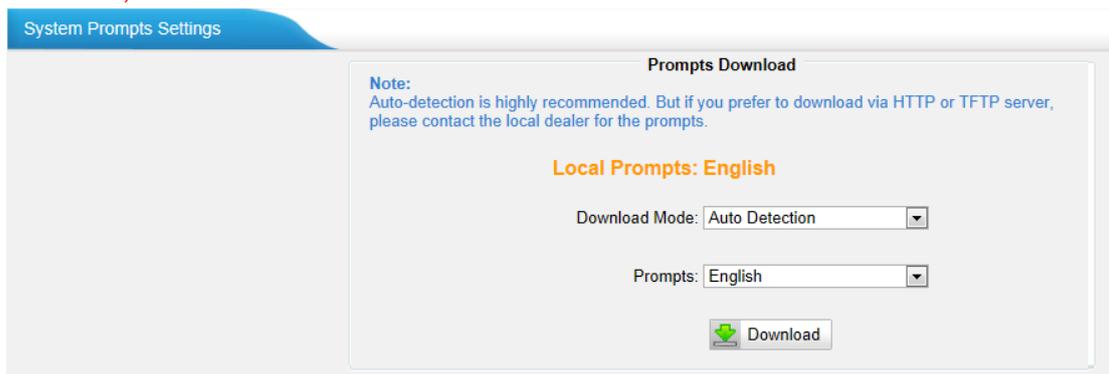


Figure 4-27 System Prompts Settings Page

4.5 Advanced Settings

4.5.1 Tone Zone Settings

Advanced ring tones for all the FXS ports can be configured on this page. There are pre-programmed tone zone settings for some countries and regions. Users can simply find and select their country to get tone zone settings for the gateway.



Figure 4-28 Tone Zone Settings

Users may also configure the tone zone according to the national standard by selecting "User custom for Tone Zone". Please refer to the document below and configure the tone zone settings on TA FXS Gateway:

<http://www.itu.int/ITU-T/inr/forms/files/tones-0203.pdf>

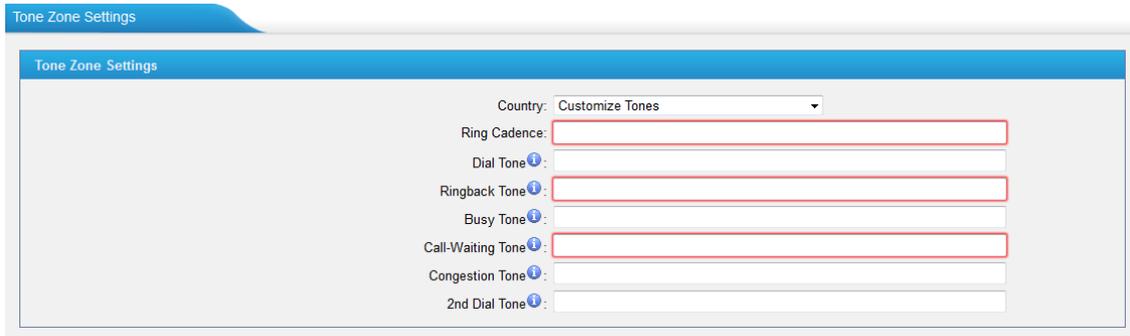


Figure 4-29 Customize Tones

Table 4-14 Description of Tone Zone Settings

Items	Description
Country	Choose the country to get pre-programmed tone zone settings or choose "User custom for Tone Zone" to configure the settings manually.
Ring Cadence	Configuration option for all FXS ports ring cadence for all incoming calls.
Dial Tone	Prompt tone of off-hook dial tone.
Ringback Tone	The tone sent to caller when ringing is on.
Busy Tone	Used for busy line prompt.
Call-Waiting Tone	Used for notification in call waiting.
Congestion Tone	Used to indicate that an invalid code has been dialed, or that all circuits (trunks) are busy and/or the call is unroutable.
2nd Dial Tone	Used for the second stage dial tone.

4.5.2 RADIUS Settings

TA FXS Gateway supports RADIUS (Remote Authentication Dial In User Service) protocol. RADIUS feature is mainly for billing purpose on TA FXS Gateway. There are primary and secondary RADIUS server configurations available. Once the primary server is unreachable, the RADIUS requests will be sent to the secondary server.

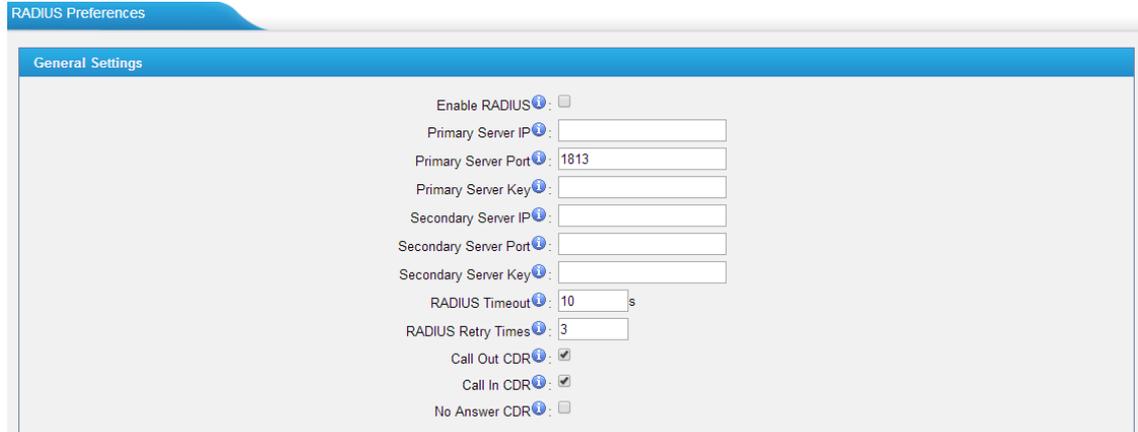


Figure 4-30 RADIUS Settings

Table 4-15 Description of RADIUS Settings

Items	Description
Enable RADIUS	Enable RADIUS on TA FXS Gateway.
Primary Server IP	Set IP address of the primary server.
Primary Server Port	Default is 1813. Specifies the port to be used for the primary RADIUS account.
Primary Server Key	Specifies the key to be used to authenticate the RADIUS connection to the Primary server. The key is set according to the RADIUS server.
Secondary Server IP	Set IP address of the primary server. The second sever will be activated the primary one becomes unusable.
Secondary Server Port	Default is 1813. Specifies the port to be used for the second RADIUS account.
Secondary Server Key	Specifies the key to be used to authenticate the RADIUS connection to the second server. The key is set according to the RADIUS server.
RADIUS Timeout	Specifies the number of seconds to wait for a response after the RADIUS message is sent to the server. Default: 10 seconds. The retransmission will be performed if there is no response after the timeout.
RADIUS Retry Times	Specifies the number of times the RADIUS messages will send to the RADIUS server before giving up. Default: 3.
Call Out CDR	Whether to send "Call Out CDR" to RADIUS server or not.

Call In CDR	Whether to send "Call In CDR" to RADIUS server or not.
No Answer CDR	Whether to send "Call Out CDR" to RADIUS server or not.

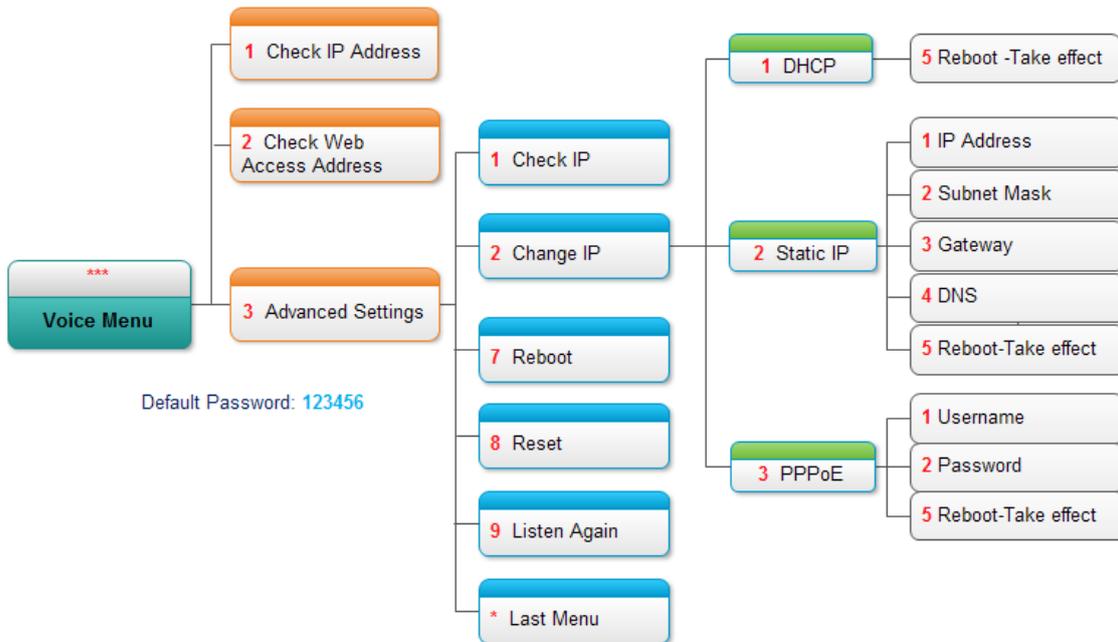
Part II. Basic Operations

Here are instructions about how to operate on analog phones connected to TA FXS Gateway to use some features.

1. TA FXS Gateway Voice Menu

TA FXS Gateway provides a voice menu to guide you to configure the network settings for the device. You need to press *** on the analog phone which is connected to TA FXS Gateway's FXS port to enter the voice menu.

The default password to enter "Advanced Settings" is 123456. You can change the password on TA FXS Gateway Web page.(Gateway→Gateway Settings→Feature Codes→Voice Menu Password Settings)



Tips:

1. "9" listen to the prompt again.
2. "*" returns to the last menu.

2. Inter-port Call

TA FXS Gateway supports inter-port calls between the phones which are connected to FXS ports of TA FXS Gateway. Achieve it by simply pressing the "Internal Call Extra" feature code (default *99) + the FXS port number on the phone.

Note: You need add digit 0 before the FXS port number if the port number is between 1 and 9.

For example, to make a call from the phone which is connected to TA FXS Gateway

FXS port 1 to another phone which is connected to FXS port2, you need to dial *9902 on the phone.

The user connected to port 16 can be reached by dialing *9916 on the phone.

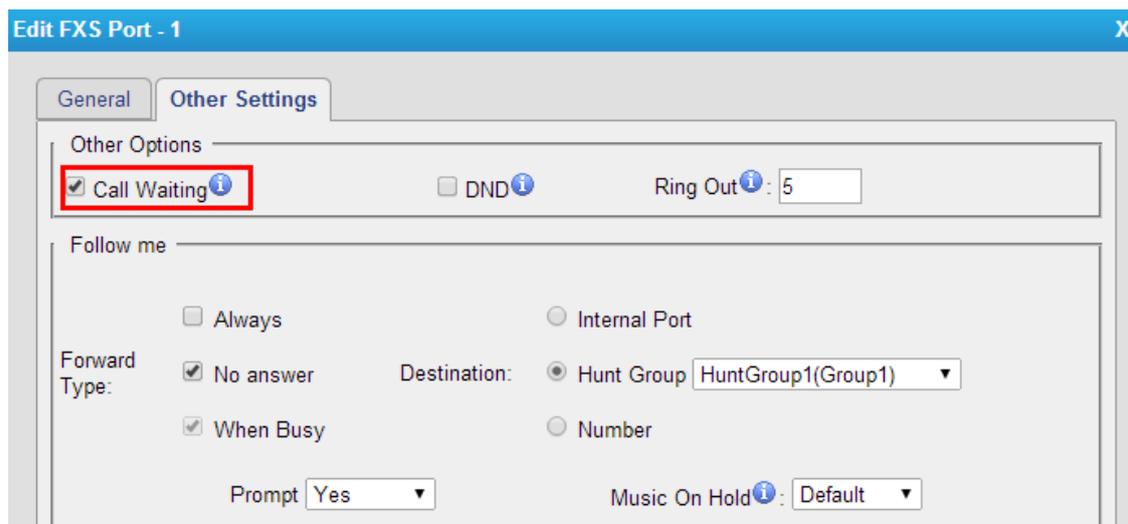
3. Call Hold

An active call can be held by pressing "flash" key on the analog phone. Press the key again to resume the call.

If there is no "flash" key on the phone, you can use "hook flash" (quickly toggle on-off hook) to hold a call. The call may be disconnected by chance if using "hook flash".

4. Call Waiting

If the call waiting is activated for the FXS port, the FXS user who is in a call can hear a call waiting tone "beep" when there is a new incoming call. The user can press "hook flash" to toggle between the active call and the incoming call.



5. Call Transfer

Blind transfer and attended transfer are supported on TA FXS Gateway. Users can achieve call transfer by pressing the feature code during the call.

Blind Transfer

Default feature code: *03

1. Dial "**03" during the call;
2. Dial the called number after hearing a prompt "transfer";
3. The call will be transferred after the number is dialed.

Attended Transfer

Default feature code: *3

1. Dial "*3" during the call;
2. Dial the called number after hearing a prompt "transfer";
3. Talk to the transfer recipient;
4. The call will be transferred after hanging up.

6. Three-party Conference

Users can make a three-party conference call on TA FXS Gateway.

Assuming that A and B are in the call and B wants to invite C to a conference. Please check the following steps of how to establish a conference.

1. B presses "flash" key or taps hook flash to get a dial tone; A will hear the on hold music meanwhile;
2. B dials C's number;
3. If C answers the call, then B presses "flash" key or tap hook flash, the conference will be established, including A, B, and C.
4. If there is no answer on C, A can press "flash" key or tap hook flash to resume the call with A.
5. C will be ejected if B presses "flash" key or taps flash hook during the conference call.

7. Direct IP Call

Direct IP call allows two parties, that is, a FXS Port with an analog phone and another VoIP Device, to talk to each other in an ad hoc fashion without a SIP proxy. The default "Direct IP Calling" feature code is *96.

Example:

Target IP address: 192.168.2.123

Destination port:5060

To call the IP phone, you should dial *96192*168*2*123*5060 on the analog phone.

8. Change TA FXS Gateway's IP Address Using Analog Phones

By default, TA FXS Gateway obtain a dynamic IP address from the DHCP server. You can change the device's IP address via the analog phone which is connected to the FXS port.

There are 3 modes supported on TA FXS Gateway access the internet.

- DHCP

- Static IP Address
- PPPoE

Here we introduce how to set a static IP address for TA FXS Gateway.

IP address: 192.168.10.125

Subnet mask: 255.255.255.0

Gateway: 192.168.10.1

DNS: 8.8.8.8

1. Press *** to enter the voice menu.
2. Press 3 to enter the “Advanced Settings”.
3. Enter the password follow by the pound key: 123456# (The default password is 123456).
4. Press 2 to change the IP address.
5. Press 2 to enable the static IP.
6. Press 1 to change the IP address and follow by the new IP address (1192*168*10*125).
7. Press 2 to change the subnet mask and follow by the new subnet mask (2255*255*255*0).
8. Press 3 to change the gateway and follow by the new gateway (3192*168*10*1).
9. Press 4 to change the dns and follow by the new dns (48*8*8*8).
10. Press 5 to reboot the device.
11. After reboot, you can access the device by the new IP address.

[End]