



# TE200 VoIP Gateway

## User Manual

Version 61.0.0.8

**Xiamen Yeastar Digital Technology Co., Ltd.**

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# 1. Introduction

## Yeastar TE200- Bridge the gap between E1/T1/J1 and VoIP networks

Yeastar TE200 offers SMBs cost effective additions to legacy telephone systems to bring the true benefits of VoIP. TE200 is a dual-port VoIP E1/T1/J1 gateway (VoIP to E1/T1/J1, and E1/T1/J1 to VoIP). Each E1 trunk supports up to 30 concurrent calls. It's designed to bridge the gap between E1/T1/J1 and VoIP networks. Integrating TE200 into an existing network will allow inexpensive communication via SIP trunking. Also, it could connect VoIP systems with E1/T1/J1 service from legacy carriers.

### 1.1 Features

• Trunk Support
• Call Routing Rules
• Automatic appending and stripping of digits to dialed numbers
• Caller ID name and number support
• FAX support
• Blocklist
• Firewall
• DDNS Support
• Backup and Restore
• Easy to install (web based)
• G729 codec support

## 1.2 Hardware Specification

### 1.2.1 Exterior Appearance

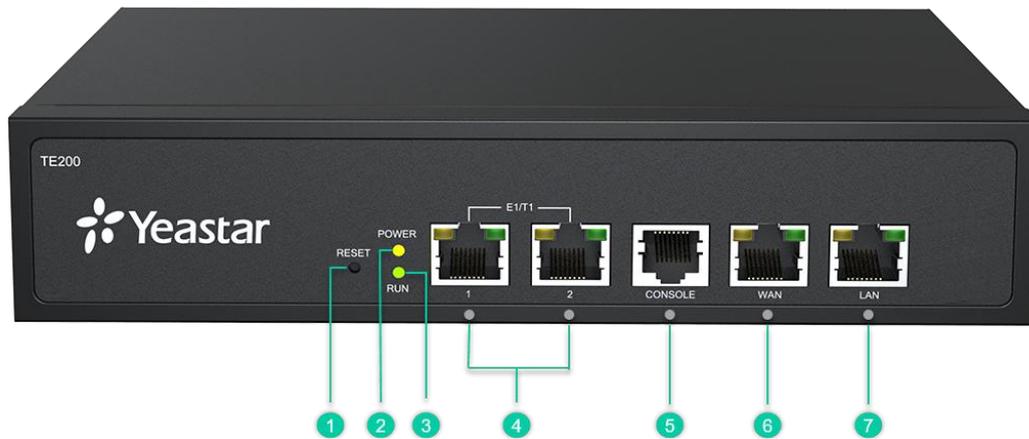


Figure 1-1 Yeastar TE200 Front Panel

Table 1-1 Front Panel Descriptions

No.	Identifying
① Reset Button	Press and hold to reset to factory defaults.
② Power Indicator	Indicates the power status. <ul style="list-style-type: none"> <li>• On: The power is switched on.</li> <li>• Off: The power is switched off.</li> </ul>
③ RUN Indicator	Indicates the system status. <ul style="list-style-type: none"> <li>• Blinking: The system is working properly.</li> <li>• Not Blinking/Off: The system goes wrong.</li> </ul>
④ E1/T1	E1/T1 interface.
⑤ Console	Console interface(RJ45) for debugging with connection with a console cable.
⑥ WAN	10/100/1000 Mbps adaptive RJ45 Ethernet port.
⑦ LAN	10/100/1000 Mbps adaptive RJ45 Ethernet port.



Figure 1-2 Yeastar TE200 Back Panel

Table 1-2 Back Panel Descriptions

No.	Identifying
① Power Switch	Press this button to switch on/off the device.
② Power Inlet	Connect the power supply to the port.
③ Protective Earth	Protect the personnel and the equipment.

## 2. System Setup

### 2.1 Connection Drawing

### 2.2 Connecting Ethernet Line

TE200 provides two 10/100/1000 Mbps Ethernet ports with RJ45 interface and LED indicator. Plug Ethernet line into TE200's Ethernet port, and then connect the other end of the Ethernet line with a hub, switch, router, LAN or WAN. Once connected, check the status of the LED indicator. A yellow LED indicates the port is in the connection process, and a green LED indicates the port is properly connected.

### 2.3 Supplying Power

Please follow the steps below to connect the TE200 unit to a power outlet:

1. Connect the small end of the power cable to the power input port on the TE200 back panel, and plug the other end of the cable into a 100V~240V AC power outlet.
2. Check the Power LED on the front panel. A solid green LED indicates that power is being supplied correctly.

### 3 Administrator Login

From your web browser, enter the IP address of the Yeastar TE200.

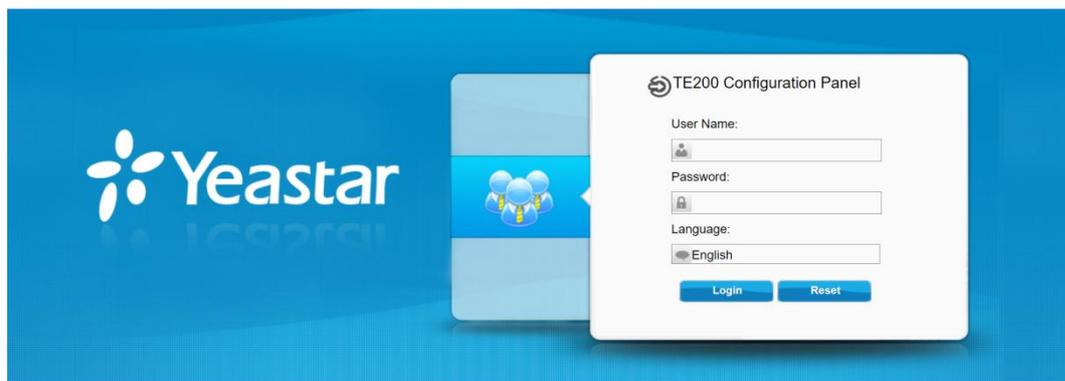
If this is the first time you are configuring TE200, please use the default settings below (your PC should be in the same local network with TE200):

IP Address: <http://192.168.5.150>

Username: **admin**

Password: **password**

ISDN VoIP Gateway for Cost Reduction



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Figure 3-1 Web Configuration Panel Login Page

This is the welcome page of TE200 after login successfully.



Figure 3-2 Admin Configuration Interface

## 4. Status



Click  to check the status of TE200, including the system's status and the detailed reports.

### 4.1 System Status

In this page, we can check the status of the system, including IP trunk status, E1/T1 status, network status and system information.

#### 4.1.1 IP Trunk status

Status	Trunk Name	Type	User Name	Hostname/IP	Reachability
Registered	U520	SIP	102	192.168.10.121	OK
OK (2 ms)	122	SP-SIP		192.168.10.122	OK (2 ms)

Status	Account	Type
Registered	500	SIP

Figure 4-1 IP Trunk Status

Table 4-1 Description of VoIP Trunk (SIP Type) Status

Status	Description
Unregistered	Trunk registration failed
Registered	Successful registration, trunk is ready for use
Request Sent	Registering
Waiting	Waiting for authentication

Table 4-2 Description of Service Provider SIP Trunk (SP-SIP Type) Status

Status	Description
OK	Successful registration, trunk is ready for use
Unreachable	The trunk is unreachable.

Failed	Trunk registration failed.
--------	----------------------------

### 4.1.2 E1/T1 Status

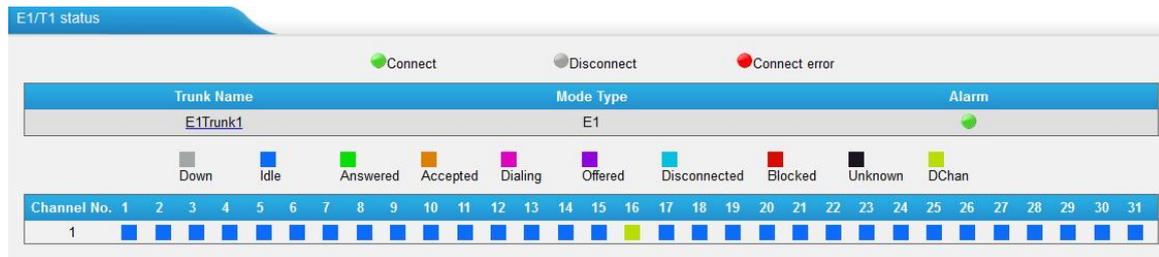


Figure 4-2 E1/T1 Status

Table 4-3 Description of E1 Trunk Status

Status	Description
	Connected successfully; data stream on the trunk is normal; but the trunk may not work if there is something wrong with the E1 trunk communication protocol.
	The port doesn't have E1 line connected.
	E1 line has been connected to the port; PRI is in corresponding or can't communicate.

Table 4-4 Status of Each Channel of E1 Trunk

Status	Description
Down	The Channel is not connected.
Idle	The channel is idle, ready for use.
Answered	The channel is busy in a call.
Accepted	The channel has accepted the call, but the phone does not accept the call, i.e. the phone is ringing.
Dialing	The channel is dialing out.

 Offered	The channel is accepting an incoming call.
 Disconnected	The channel is requesting to hang up, but the line hasn't be released by the other end.
 Blocked	At least one end is being blocked on the channel.
 Unknown	The channel is being used in a non-call way, or status unknown.
 DChan	D channel, the control and signaling information is being carried.

### 4.1.3 Network status

This page will display the IP addresses of the WAN and LAN ports and their network status information.

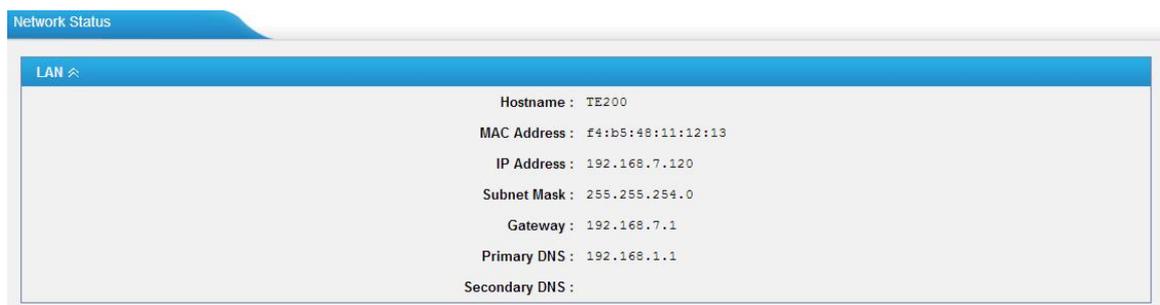


Figure 4-3 Network Status

### 4.1.4 System info

On this page, you can check the hardware/firmware version, and the disk usage of TE200.

**System Info**

**General**

**Product Type:**  
TE200

**Hardware Version:**  
V3.00 0000-0086

**Firmware Version:**  
61.0.0.7

**Uptime:**  
17:21:24 up 6 days, 23:13, 0 users

**Disk Usage**

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

**Disk Usage:**

	Used/Total(1K-blocks)	use%
flash:	34492/6788296	1%

**Memory Usage**

**Memory Usage:**

	Used/Total(1K-blocks)	use%
Mem:	126632/1018240	12%

Figure 4-4 System Info

## 4.2 Reports

On this page, you can check the call logs and system logs, which can be used to debug the problem you encountered.

### 4.2.1 Call logs

The call log captures all call details, including time, caller number, callee number, call type, call duration, etc. An administrator can search and filter call data by date, caller/callee, trunk, duration, billing duration, status, or communication type.

**Call Logs**

Search Condition

Start Date: 26 Feb 2013 End Date: 26 Feb 2013 Caller/Callee: Trunk: All

Duration: Billing Duration: Status: All Communication Type: All Start Searching

Download the records Delete the records Total: 5 Show: 1-5 View: 25

Time	Caller	Callee	Source Trunk	Destination Trunk	Duration	Billing Duration	Status	Communication Type	Pin User
2013-02-26 05:46:23	503	501	Yeastar	E1Trunk1	6	4	ANSWERED	Outbound	X
2013-02-26 05:46:19	503	501	Yeastar	E1Trunk1	3	2	ANSWERED	Outbound	X
2013-02-26 05:46:13	503	501	Yeastar	E1Trunk1	5	3	ANSWERED	Outbound	X
2013-02-26 05:46:06	503	501	Yeastar	E1Trunk1	6	2	ANSWERED	Outbound	X
2013-02-26 05:45:51	503	501	Yeastar	E1Trunk1	8	4	ANSWERED	Outbound	X

<< Prev Next >> Page: 1 / 1 Goto

Figure 4-5 Call Logs

## 4.2.2 System logs

You can download and delete the system logs of TE200.

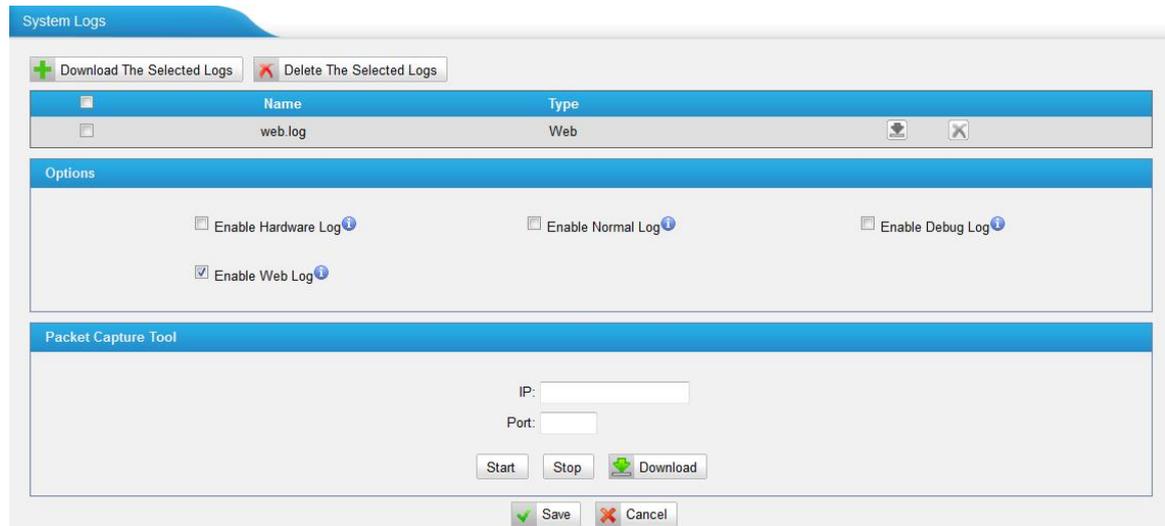


Figure 4-6 System Logs

### Options

#### •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)

## **Packet Capture Tool**

This feature is used to capture packets. Users can specify the destination IP address and port to get the packets.

### **·IP**

Specify the destination IP address to get the packets.

### **·Port**

Specify the destination Port to get the packets.

## 5. System



Click  to access the system page, where you can configure the network settings, firewall rules and system preferences.

### 5.1 Network Preferences

#### 5.1.1 LAN Settings

LAN Settings

LAN Settings

DHCP:

Enable SSH:  Port:

Hostname:

IP Address:

Subnet Mask :

Gateway :

Primary DNS :

Secondary DNS :

IP Address2:

Subnet Mask2:

Figure 5-1 LAN Settings

#### •DHCP

If this option is set as yes, TE200 will act as DHCP client to get an available IP address from your local network. Not recommended or you cannot access TE200 without the right IP address.

#### •Enable SSH

This is the advance way to access the device, you can use the putty software to access the device. In the SSH access, you can do more advance setting and debug. It's disabled by default.

**•Port**

The default port is 8022.

**•Hostname**

Set the host name for TE200.

**•IP Address**

Set the IP Address for TE200.

It is recommended to configure a static IP address for TE200.

**•Subnet Mask**

Set the subnet mask for TE200.

**•Gateway**

Set the gateway for TE200.

**•Primary DNS**

Set the primary DNS for TE200.

**•Secondary DNS**

Set the secondary DNS for TE200.

**•IP Address2**

Set the second IP Address for TE200.

**•Subnet Mask2**

Set the second subnet mask for TE200.

## 5.1.2 WAN Settings

WAN Settings

Use WAN:

DHCP

Static IP Address

IP Address:

Subnet Mask:

Default Gateway:

Primary DNS:

Secondary DNS:

PPPoE

User Name:

Password:

Figure 5-2 WAN Settings

3 connection types are supported: DHCP (obtain an IP automatically), PPPoE, and Static IP Address.

### Note:

1. WAN port is disabled by default.
2. WAN port cannot be used as a router to route the internet packages from WAN port to LAN port.

### •DHCP

If your ISP says that you are connecting through DHCP or a dynamic IP address from your ISP, perform these steps:

Step1: Select **DHCP** as the WAN Connection Type.

Step2: Click **Save** button to save the settings.

Step3: Reboot the device.

Step4: Check the WAN's Status (Status→ Network Status).

### •Static IP Address

If your ISP says that you are connecting through a static or fixed IP address from your ISP, perform these steps:

Step1: Select **Static IP Address** as the WAN Connection Type.

Step2: Enter the IP Address.

Step3: Enter the Subnet Mask.

Step4: Enter the Gateway Address.

Step5: Enter the Primary DNS and Secondary DNS.

Step6: Click the **Save** button to save the settings.

Step7: Reboot the device.

Step8: Check the WAN's Status (Status→ Network Status).

### •PPPoE

If your DSL provider says that you are connecting through PPPoE or if you Normally enter a user name and password to access the Internet, perform these

Steps:

Step1: Select **PPPoE** as the WAN Connection Type.

Step2: Enter the User Name.

Step3: Enter the Password.

Step4: Click the **Save** button to save the settings.

Step5: Reboot the device.

Step6: Check the WAN's Status (Status→ Network Status)

### 5.1.3 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 host names, addresses or other information.

**DDNS Settings**

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](http://dyndns.org), [freedns.afraid.org](http://freedns.afraid.org), [www.no-ip.com](http://www.no-ip.com), [www.zoneedit.com](http://www.zoneedit.com)

**DDNS is not running**

Enable DDNS:

DDNS Server:

User Name:

Password:

Host Name:

Figure 5-3 DDNS Settings

### 5.1.4 Static Route

TE200 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 TE200 to force it to go out through different gateway when access to different internet.

The default gateway priority of TE200 from high to low is WAN port→LAN port.

**Static Route Settings**

**Routing Table**

Destination	Subnet Mask	Gateway	Metric	Interface
192.168.0.0	255.255.255.0	0.0.0.0	0	LAN
192.168.4.0	255.255.254.0	0.0.0.0	0	WAN
192.168.2.0	255.255.254.0	0.0.0.0	0	LAN
224.0.0.0	224.0.0.0	0.0.0.0	0	LAN
0.0.0.0	0.0.0.0	192.168.5.1	0	WAN

**Static Route Rules**

Destination:  Subnet Mask:  Gateway:  Metric:  Interface:

No Static Routes Defined

Figure 5-4 Static Route Settings

#### 1) Route Table

The current route rules of TE200.

##### -Destination

The destination network to be accessed to by TE200.

**•Subnet Mask**

Specify the destination network portion.

**•Gateway**

Define which gateway TE200 will go through when access to 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.

**2) Static Route Rules**

You can add new static route rules here.

## **5.2 Firewall Settings**

Firewalls are used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially intranets. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

## 5.2.1 Firewall Rules

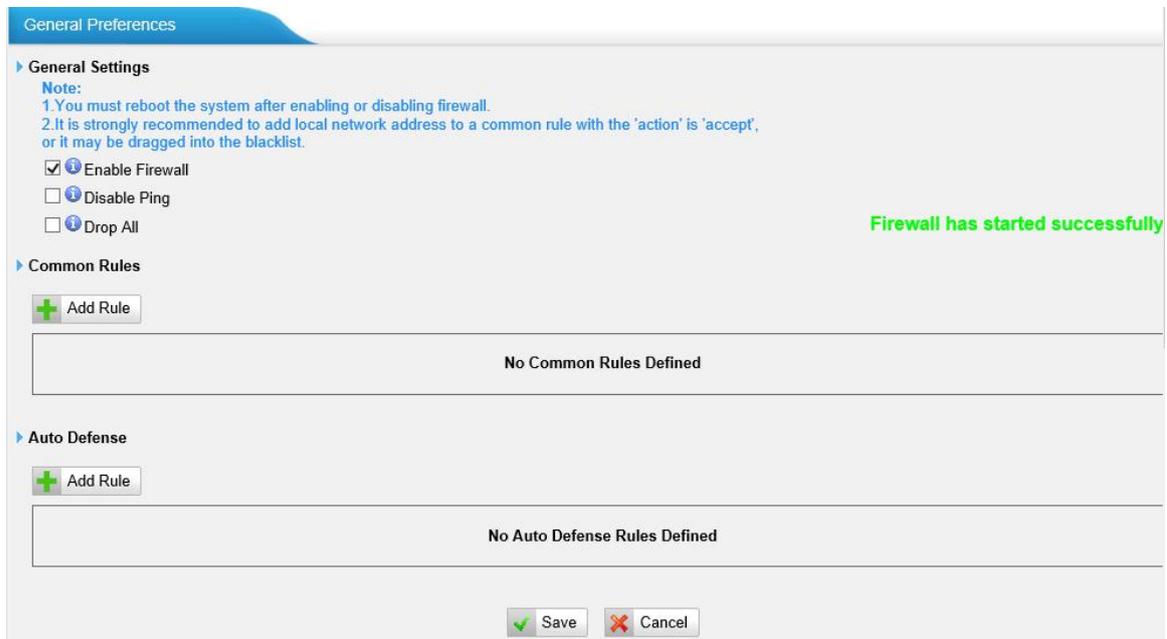


Figure 5-5 Firewall Settings

### 1) General Settings

#### •Enable Firewall

Enable the firewall to protect the device. You should reboot the device to make the firewall run successfully.

#### •Disable Ping

Enable this item; net ping from remote hosts will be dropped.

#### •Drop All

When you enable 'Drop All' feature, 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 are no default rules inside; you can create them as required.

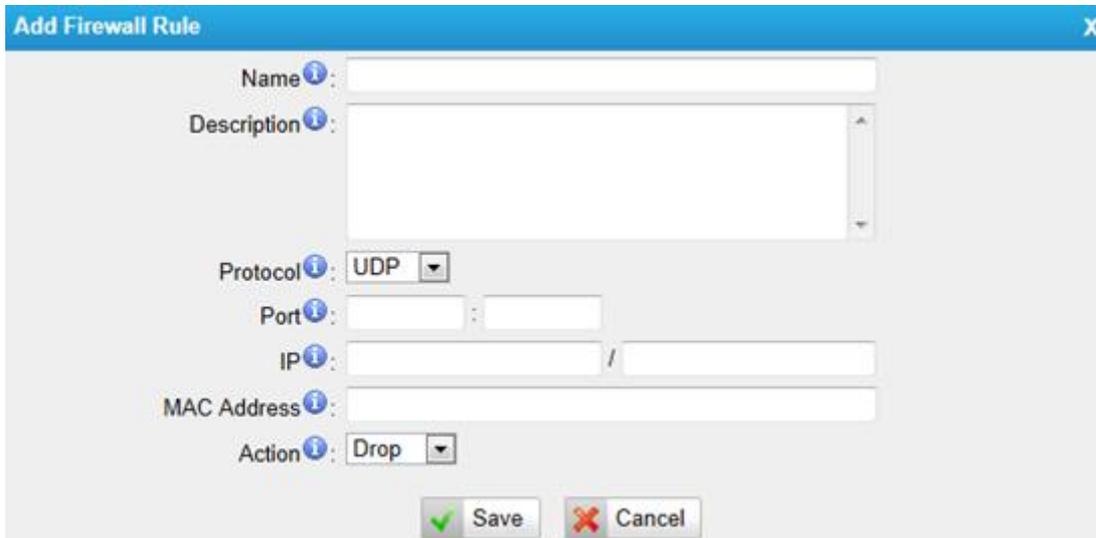


Figure 5-6 Add Firewall Rule

### •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.

Ex:192.168.5.100/255.255.255.255forIP 192.168.5.100

Ex:216.207.245.47/255.255.255.255 for IP 216.207.245.47

Ex: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.

**Note:** The MAC address of a remote device will be changed when data reach TE200. So filtering MAC address of remote devices will not work.

### •Action

Accept: Accept the access from remote hosts.

Drop: Drop the access from remote hosts.

Ignore: Ignore the access.

## 3) Auto Defense

Figure 5-7 Auto Defence Rule

### •Port

Auto defense port, e.g.: 8022.

### •Protocol

Auto defense protocol , TCP or UDP.

## •Rate

The maximum packets or connections can be handled per unit time.

E.g.: (Port: 8022 Protocol: TCP Rate: 10/minute) means maximum 10 TCP connections to port 8022 can be handled per minute, the eleventh connection will be refused directly.

## 5.2.2 IP Blocklist

You can set up the rules for packets receiving rate. When an IP address which hasn't been accepted in common rules sends packets faster than the allowed rate, it will be blocked automatically.

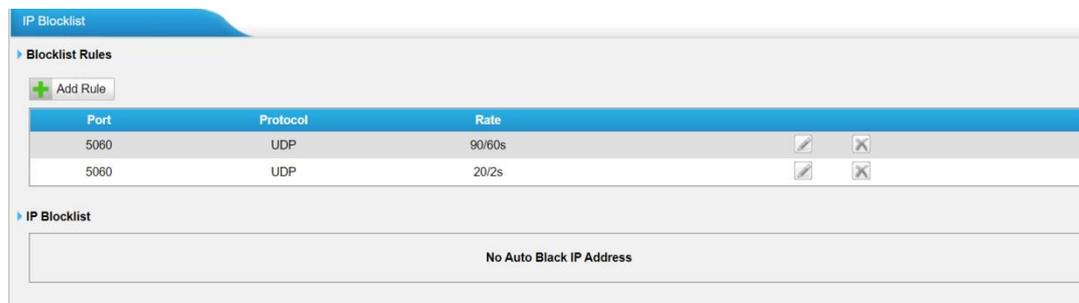


Figure 5-8 IP Blocklist

### 1) Blocklist Rules

Click **Add Rules** to add the rules for IP blocklist rate as your demand.

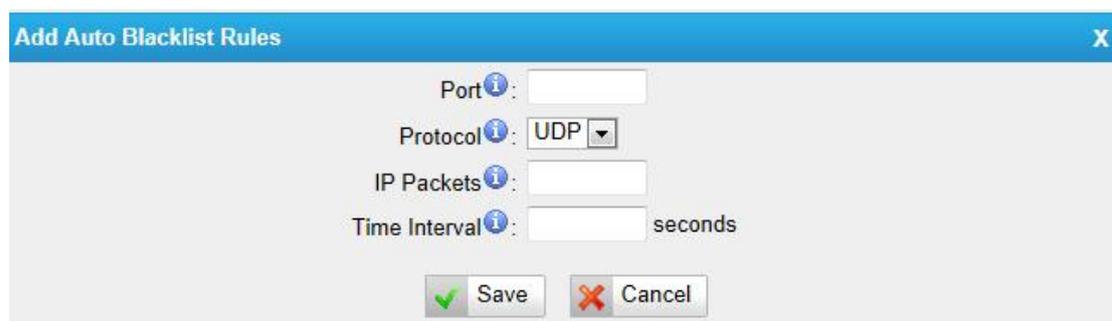


Figure 5-9 Auto Blacklist Rule

## •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.

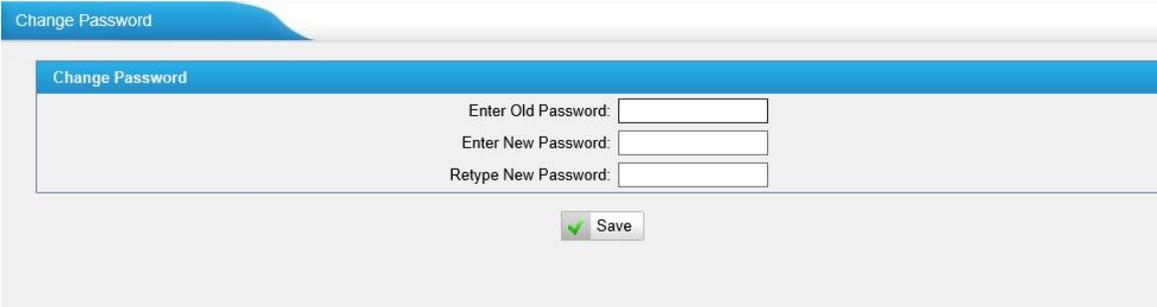
**2) IP blacklist**

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

## 5.3 system Preferences

### 5.3.1 Password Settings

On this page, you can change the password.



The screenshot shows a web interface for changing a password. At the top, there is a blue header with the text "Change Password". Below this, there is a form with a blue header that also says "Change Password". The form contains three input fields: "Enter Old Password:", "Enter New Password:", and "Retype New Password:". Below the input fields is a "Save" button with a green checkmark icon.

Figure 5-10 Change Password

**•Enter Old Password**

The default password is **password**.

### •Enter New Password

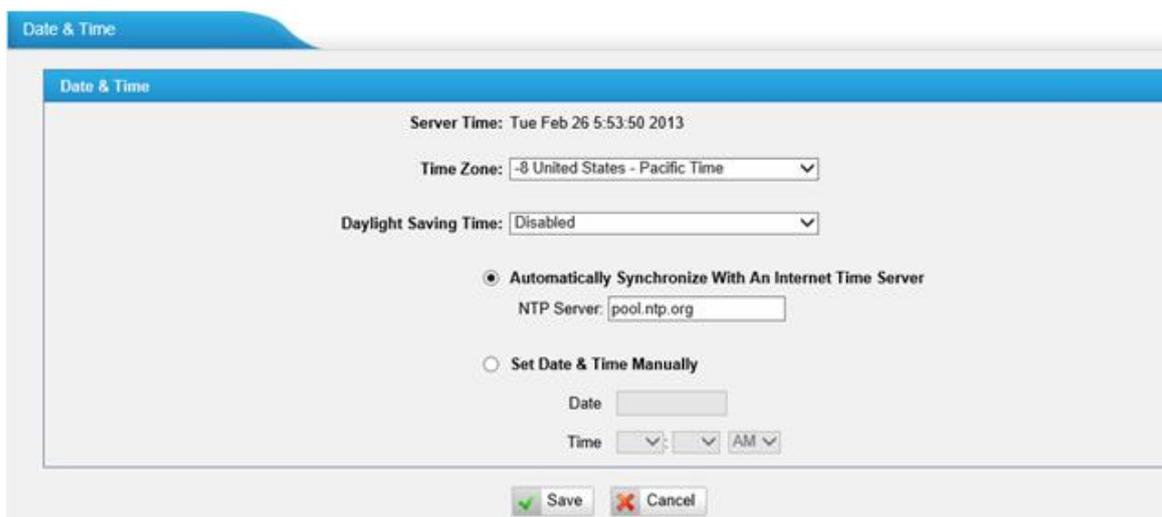
Enter the new password.

### •Retype New Password

To change the password, enter the new password and click update. The system will then prompt you re-login using your new password.

## 5.3.2 Date and Time

Set the date and time for TE200.



The screenshot shows the 'Date & Time' configuration page. At the top, it displays the 'Server Time: Tue Feb 26 5:53:50 2013'. Below this, there are three dropdown menus: 'Time Zone' set to '-8 United States - Pacific Time', 'Daylight Saving Time' set to 'Disabled', and 'Automatically Synchronize With An Internet Time Server' set to 'Enabled'. Under the 'Automatically Synchronize' option, the 'NTP Server' is set to 'pool.ntp.org'. There is also an option for 'Set Date & Time Manually', which includes fields for 'Date' and 'Time' (with AM/PM selection). At the bottom, there are 'Save' and 'Cancel' buttons.

Figure 5-11 Date and Time Settings

### •Time Zone

Choose the time zone for TE200.

### •Daylight Saving Time

Set the mode to Automatic or disabled .

### •Automatically Synchronize With an Internet Time Server

Enter the NTP server so that TE200 will update the time automatically.

### •Set Date & Time Manually

Enable this feature to set the time to your local right time manually.

### 5.3.3 Backup and Restore

You can backup up the configurations before reset TE200 to factory defaults, and then restore it using this package.



Figure 5-12 Backup and Restore

To restore the backup package, please click **Upload a Backup**, then upload it from your local PC.

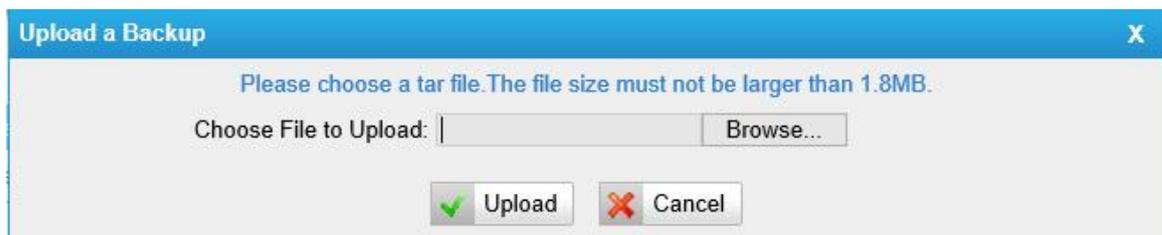


Figure 5-13 Upload a Backup

#### Note:

1. Please make sure the file size must not be larger than 1.8MB.
2. When you have updated the firmware version, it's not recommended to restore using old package.

### 5.3.4 Reset and Reboot

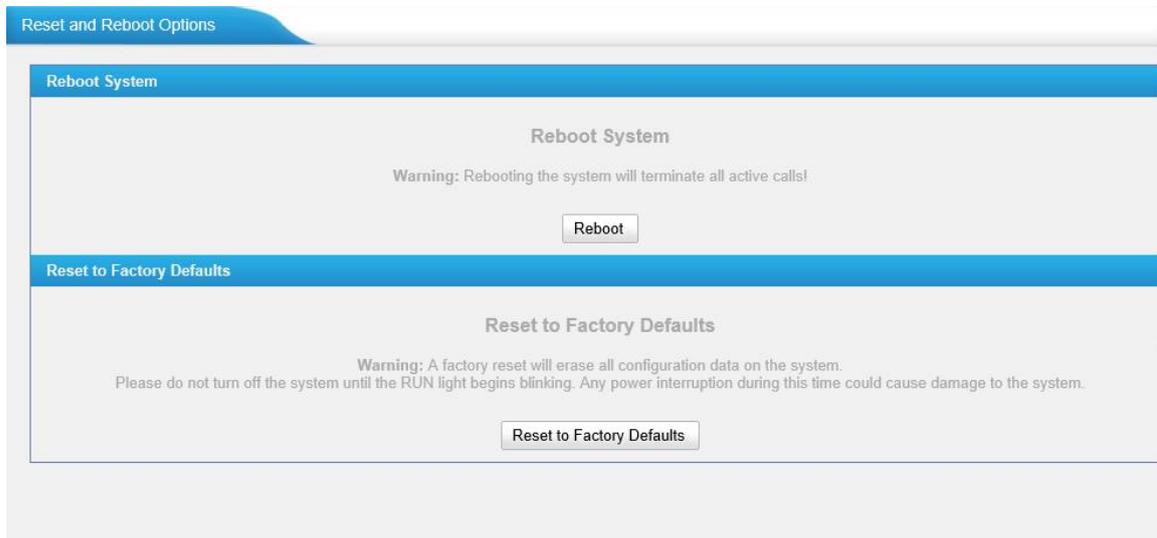


Figure 5-14 Reset and Reboot

#### •Reboot System

**Warning:** Rebooting the system will terminate all active calls!

#### •Reset to Factory Defaults

**Warning:** 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.

### 5.3.5 Firmware Update

TE200 can be upgraded to a new firmware version via network or locally. Users could upgrade firmware via HTTP or TFTP. Please go to **System** → **System Preferences** → **Firmware Update** to do upgrade.

#### **Notes:**

1. If "Reset configuration to Factory Defaults" is enabled, the system will be restored to factory default settings.

2. When updating the firmware, please don't turn off the power. Or the system will be damaged.
3. If you are trying to upgrade through HTTP, please make sure that your TE200 is able to visit external network, or it cannot access Yeastar website to get the firmware file, causing the upgrade fail.

## Upgrade through HTTP

On the Firmware Upgrade page, choose **HTTP URL**.

**Step1.** Enter the download link of the firmware file.

**Note:** the HTTP URL should be a **BIN** file download link.

**Step2.** Click **Start** to upgrade.

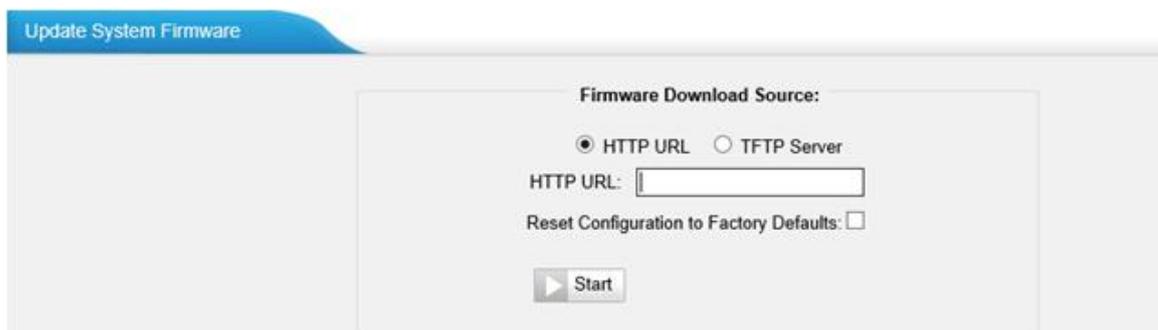


Figure 5-15 Firmware Upgrade

## Upgrade through TFTP

**Step1.** Download firmware file from Yeastar website.

**Step2.** Create a tftp Server (For example, tftpd on Windows).

- 1) Install tftpd32 software on computer.
- 2) Download link: [http://tftpd32.jounin.net/tftpd32\\_download.html](http://tftpd32.jounin.net/tftpd32_download.html)
- 3) Configure tftpd32.

On option "**Current Directory**", click "**Browse**" button, choose the firmware file (BIN file) upgraded patch. Click the **Service interface** drop-down, and select the IP address of your PC.

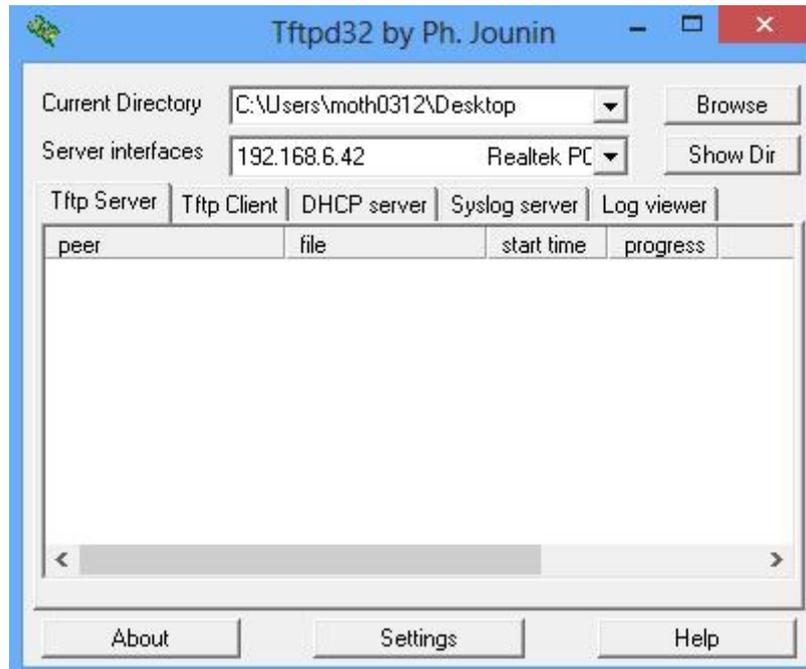


Figure 5-16 Configure Tftpd32

**Step3.** Log in to the TE200 Web page and go to **System→System Preferences→Firmware Update**, choose **“TFTP Server”**.

- 1) TFTP Server: fill in IP address of tftpd32 server (your PC’s IP address).
- 2) File Name: enter the name of firmware update. It should be a BIN file name.
- 3) Click “Start” to upgrade.

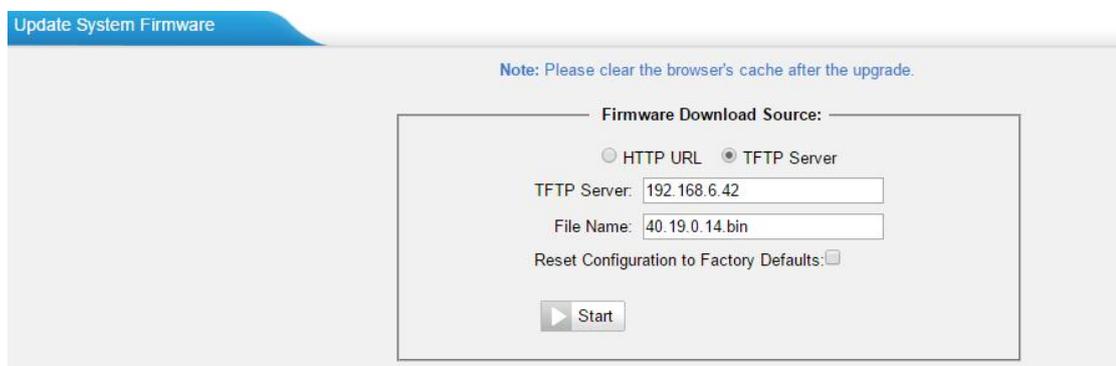


Figure 5-17 Upgrade through HTTP

## 6. Gateway

### 6.1 Digital Trunk

On this page you can configure the details of the E1/T1 trunk.

Digital Trunk			
E1/T1			
Trunk Name	Mode Type	Signaling	Echo Cancellation
E1Trunk1	E1	PRI-NET	On

Figure 6-1 E1/T1 Trunk

Click **Edit** on a desired trunk and modify its properties in the pop-up window.

**Edit Digital Trunk E1Trunk1** X

General Settings

Mode Type: <input type="text" value="E1"/>	Signaling: <input type="text" value="PRI"/>
Linecoding: <input type="text" value="HDB3"/>	Codec: <input type="text" value="alaw"/>
Echo Cancellation: <input type="text" value="On"/>	Framing: <input type="text" value="Disable CRC"/>

PRI Basic option

Switch Type: <input type="text" value="national"/>	Switch Side: <input type="text" value="User"/>
--	--

PRI Advanced option

Enable Facility: <input type="text" value="Enabled"/>	Overlap Dial: <input type="text" value="Disable"/>
Reset Interval: <input type="text" value="3600"/> s	PRI Indication: <input type="text" value="Inband"/>
Remote Dialplan: <input type="text" value="unknown"/>	Remote Number Type: <input type="text" value="unknown"/>
Location Dialplan: <input type="text" value="ISDN/telepho"/>	Location Number Type: <input type="text" value="national"/>
Screen Indicator: <input type="text" value="User-provided"/>	Presentation Indicator: <input type="text" value="allowed"/>
Nsf: <input type="text" value="none"/>	

Caller ID Prefix

International Prefix: <input type="text"/>	National Prefix: <input type="text"/>
Local Prefix: <input type="text"/>	Private Prefix: <input type="text"/>
Unknown Prefix: <input type="text"/>	

DOD Settings

Global DOD:

Figure 6-2 Edit E1/T1 Trunk

## 1) General Settings

### •Mode Type

E1 / T1 / J1

### •Signaling

PRI, MFC/R2, SS7, E&M

### •Linecoding

HDB3, AMI

### •Codec

Default: A-Law, U-Law.

### •Echo Cancellation

Disable or enable echo cancellation, it is recommended turn it on.

### •Framing

CRC Verification.

## 2) PRI Basic Option

### •Switch Type

national: National ISDN type2 (common in the US)

Euro ISDN: Euro ISDN

Q SIG: Minimalistic protocol to build a "network" with two or more PBX of different vendors!

---

**.Switch Side**

User, Network

**3) PRI Advanced Option****.Enable Facility**

To enable transmission of facility-based ISDN supplementary services (such as caller name from CPE over facility).

**•Over Lap Dial**

Define whether TE200 can dial this switch using overlap digits. If you need Direct Dial-in (DDI; in German "Durchwahl") you should change this to yes, then TE200 will wait after the last digit it receives.

**•Reset interval**

Set the time in seconds between restart of unused channels. Some PBXs don't like channel restarts. so set the interval to a very long interval e.g. 100000000 or "never" to disable entirely. If you are in Israel, the following is important: As Bezeq in Israel doesn't like the B-Channel resets happening on the lines, it is best to set the reset interval to 'never' when installing a box in Israel. Our past experience also shows that this parameter may also cause issues on local switches in the UK and China.

**•PRI Indication**

Tells how TE200 should indicate Busy () and Congestion() to the switch/user. Accepted values are:

inband: TE200 plays indication tones without answering; not available on all PRI/BRI subscription lines .

outofband: TE200 disconnects with busy/congestion information code so the switch will play the indication tones to the caller. Busy() will now do same as setting PRI\_CAUSE=17 and Hangup().

**•Remote Dialplan**

Called number type

**•Remote Number Type**

Called number identification

**•Location Dialplan**

Calling number type

**•Location Number Type**

Calling number identification

**Screen Indicator(SI)**

The SI provides information on the source and the quality of the provided information.

**.Presentation Indicator(PI)**

The PI provides instructions on whether or not the provided calling line identity is allowed to be presented, or indicates that the number is not available.

**•Nsf**

Used with AT&T PRIs. If outbound calls are being rejected due to "Mandatory information element missing" and the missing IE is 0x20, then you need this setting.

**4) Caller ID Prefix****•International Prefix**

When there are international calls coming in via this BRI trunk, the International

Prefix you have set here will be added before the CID. So you can know this is an international call before you answer it.

#### **-National Prefix**

When there are national calls coming in via this BRI trunk, the National Prefix you have set here will be added before the CID. So you can know this is a national call before you answer it.

#### **-Local Prefix**

When there are Local calls coming in via this BRI trunk, the Local Prefix you have set here will be added before the CID. So you can know this is a local call before you answer it.

#### **-Private Prefix**

When there are Private calls coming in via this BRI trunk, the Private Prefix you have set here will be added before the CID. So you can know this is a Private call before you answer it.

#### **-Unknown Prefix**

When there are calls with unknown number coming via this BRI trunk, the Unknown Prefix you set here will be shown as the caller ID.

### **5) DOD Settings**

DOD (Direct Outward Dialing) means the caller ID displayed when dialing out, before configure this, please make sure the provider supports this feature

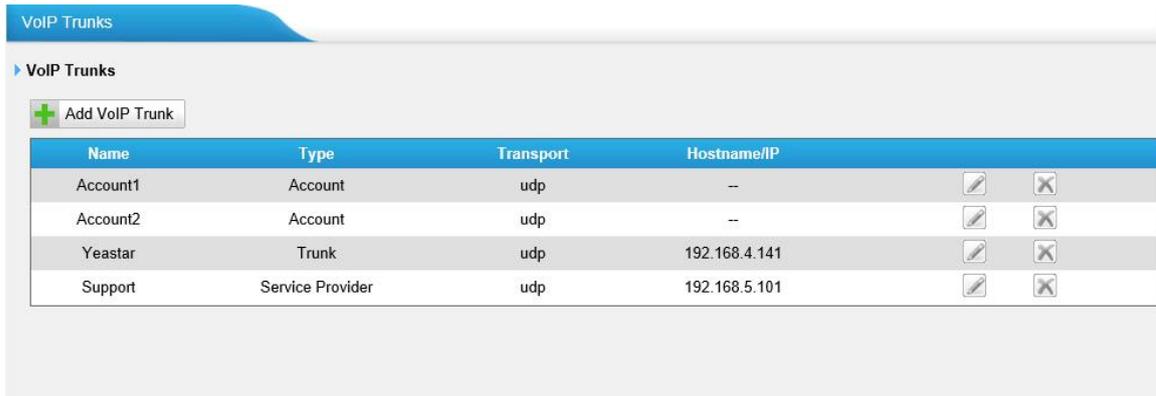
#### **-Global DOD**

Global direct outward dialing number.

## 6.2 VoIP settings

### 6.2.1 VoIP trunk

There are 3 types of VoIP trunks: **Account**, **Trunk** and **Service Provider**.

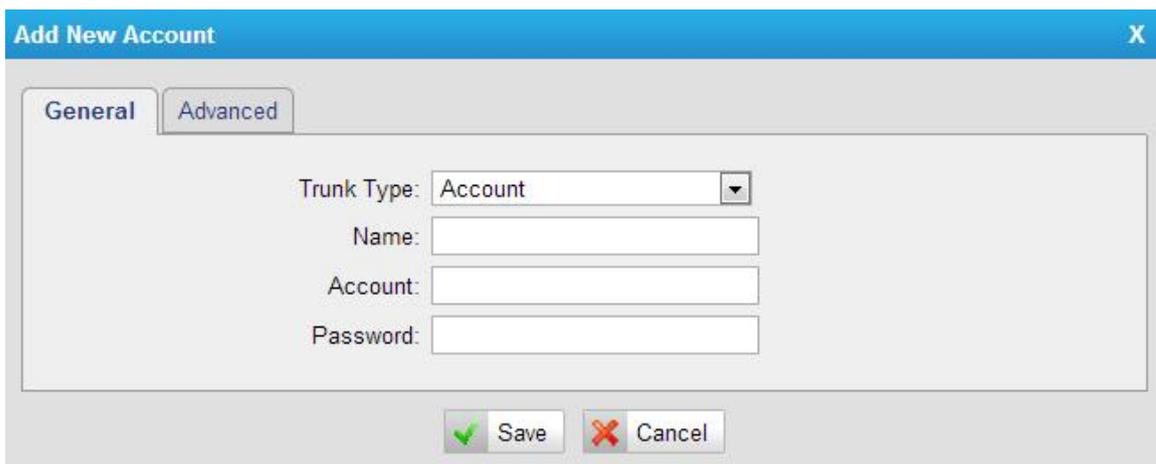


Name	Type	Transport	Hostname/IP		
Account1	Account	udp	--		
Account2	Account	udp	--		
Yeastar	Trunk	udp	192.168.4.141		
Support	Service Provider	udp	192.168.5.101		

Figure 6-3 VoIP Trunks

#### 1) Account

It's a SIP account created in TE200 so that the other devices can register SIP trunk at their side using these information.



**Add New Account**

General Advanced

Trunk Type: Account

Name:

Account:

Password:

Save Cancel

Figure 6-4 SIP Account

**•Trunk type:**

Click the Trunk Type drop-down and select **Account**.

**•Name:**

Specify a name to help you identify this trunk.

**•Account:**

Design the account for other device to register to.

**•Password:**

Design the password for other device to register to.

**2) Trunk**

It's a SIP trunk configured in TE200 to register to the SIP provider. Before configuring the TE200, please confirm with the vendor in advance that the trunk is working properly.

The screenshot shows a web-based configuration window titled "Add New Trunk". The window has a blue header bar with the title and a close button (X). Below the header, there are two tabs: "General" (which is active) and "Advanced". The "General" tab contains the following fields:

- Trunk Type: A dropdown menu with "Trunk" selected.
- Provider Name: A text input field.
- Hostname/IP: A text input field followed by a port field containing "5060".
- Domain: A text input field.
- User Name: A text input field.
- Authorization Name: A text input field.
- Password: A text input field.

At the bottom of the window, there are two buttons: "Save" (with a green checkmark icon) and "Cancel" (with a red X icon).

Figure 6-5 VoIP Trunk

**•Trunk type:**

Click the Trunk Type drop-down and select **Trunk**.

**•Provider name:**

A unique label to help you identify this trunk when listed in outbound rules, incoming rules etc. Eg: 'yeastar'.

**•Hostname/IP:**

Service provider's 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 provider's server domain name.

**•Username**

User name of sip account, which is used for sip trunk registration.

**•Authorization name**

Used for SIP authentication. Leave this blank if not required.

**•Password**

Password of SIP account.

**3) Service provider**

This is service provider trunk (peer to peer mode), which authorized using IP address only. If you have got a trunk with IP address only, please choose this type.

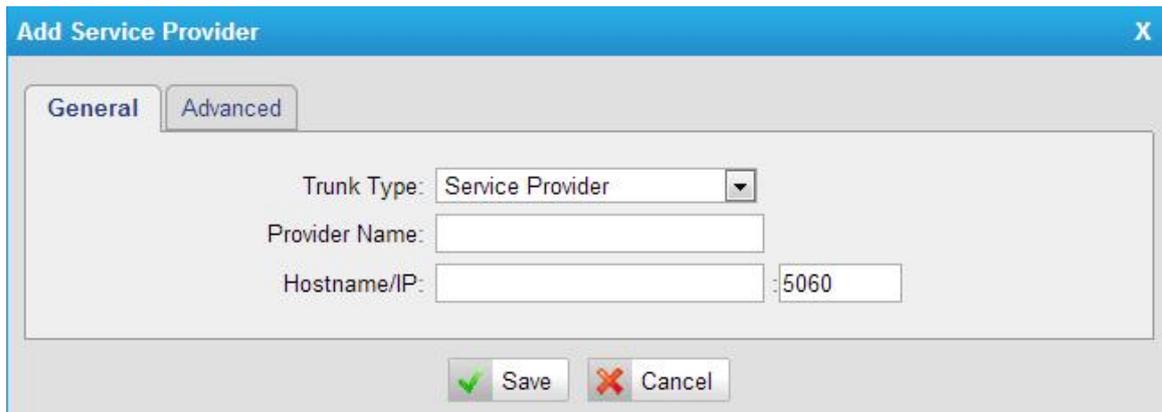


Figure 6-6 Service Provider SIP Trunk

**•Trunk type:**

Click the Trunk Type drop-down and select **Service Provider**.

**•Provider Name**

A unique label would help to you identify this trunk. Ex: 'Provider2'.

**•Hostname/IP**

Service provider's hostname or IP address.

**Note:** 5060 is the standard port number used by SIP protocol. Don't change this part if it is not required.

## 6.2.2 SIP Settings

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

Setting	Value
UDP Port	5060
Enable	<input type="checkbox"/>
TCP Port	5060
Enable	<input type="checkbox"/>
TLS Port	5061
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	8
Register Timeout	20
Calling Channel Codec Priority	Yes
DNS SRV Look Up	No
User Agent	

Figure 6-7 General Settings

### 1) General

#### •UDP Port

Used for sip registrations.Default value is 5060.

#### •TCP Port

Used for sip registrations.Default value is 5060.

#### •TLS Port

Used for sip registrations.Default value is 5061.

#### •RTP Port Start

Beginning of RTP port range.

#### •RTP Port End

End of RTP port range.

**•DTMF Mode**

Set default mode for sending DTMF. Default setting: rfc2833.

**•Max Registration/Subscription Time**

Maximum duration (in seconds) of a SIP registration. Default is 3600 seconds.

**•Min Registration/Subscription Time**

Minimum duration (in seconds) of a SIP registration. Default is 60seconds.

**•Default Incoming/Outgoing Registration Time**

Default Incoming/Outgoing Registration Time: 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. Default is 8 times.

**•Register Timeout**

Number of seconds to wait for a response from a SIP Registrar before timed out . 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 in preference. If not, TE200 will follow the priority in your SIP/SPS trunks.

**•DNS SRV Look Up**

If your SIP trunk contains more than one IP address, enable this option.

## -User Agent

To change the user agent parameter of asterisk, you should change it if needed.

## 2) NAT

**Note:** Configuration of this section is only required when using remote registry.

SIP Settings

General NAT Codecs QOS T.38 Advanced Settings

Note: Configuration of this section is only required when you use remote extensions.

Enable STUN:

STUN Address:

STUN Port:

External IP Address:

External Host:

External Refresh Interval:

Local Network Identification:

NAT Mode: yes

Allow RTP Re-invite: yes

Figure 6-8 NAT Settings

## -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 be used with this system. Please contact your ISP for more information.

#### **•External Refresh Interval**

If an external host has been supplied, you may specify how often the system will perform a DNS query on this host. This value is specified in seconds.

#### **•Local Network Identification**

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':AnotherRFC1918withCIDRnotation;

'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 report 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

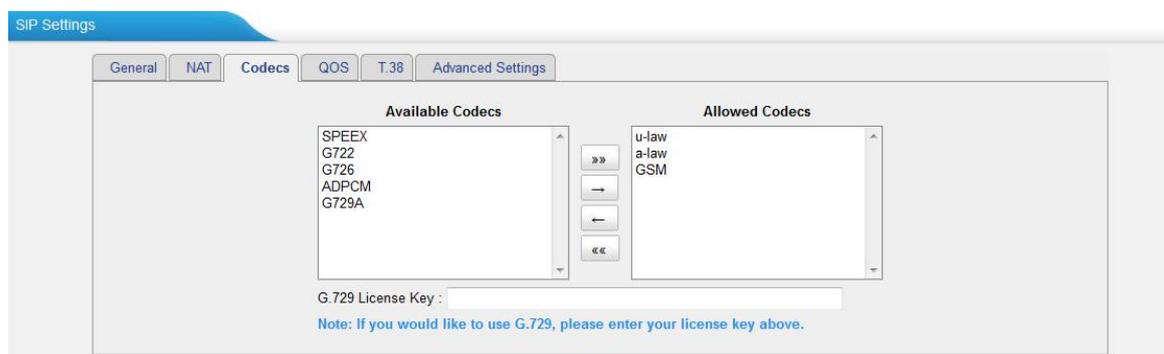


Figure 6-9 Codec Settings

A codec is a compression or decompression algorithm that used in the transmission of voice packets over a network or the Internet.

**u-law:** A PSTN standard codec, used in North America, that provides very good voice quality and consumes 64kbit/s in each direction (receiving and transmitting) of a VoIP call.

**a-law:** A PSTN standard codec, used outside of North America, that provides very good voice quality and consumes 64kbit/s in each direction (receiving and transmitting) of a VoIP call.

**GSM:** A wireless standard codec, used worldwide, that provides adequate voice quality and consumes 13.3kbit/s in each direction (receiving and transmitting) of a VoIP call. GSM is supported by many VoIP phones.

**SPEEX:** Speex is an Open Source/Free Software patent-free audio compression format designed for speech. The Speex Project aims to lower the barrier of entry for voice applications by providing a free alternative to expensive proprietary speech codecs. Moreover, Speex is well-adapted to Internet applications and provides useful features that are not present in most other codecs.

**G.722:**G.722 is a wideband speech coding algorithms which supports the bit rate of 64, 56 and 48kbps wideband. It's a broadband voice encoding of G series.

**G.726:** A PSTN codec, used worldwide, that provides good voice quality and consumes 32kbit/s in each direction (receiving and transmitting) of a VoIP call. G.726 is supported by some VoIP phones.

#### **ADPCM, G.729A.**

**Note:** If you would like to use G.729, please enter your license.

## **4) QoS**

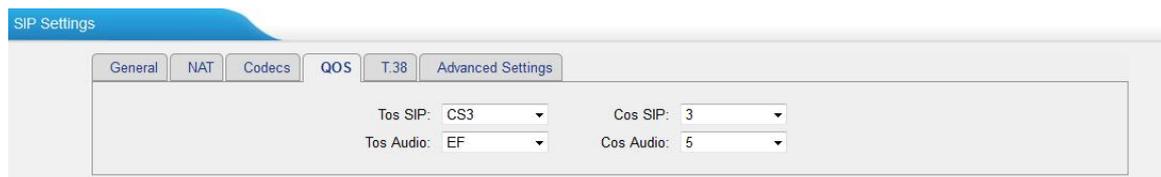


Figure 6-10 QoS

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.

## 5) T.38

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

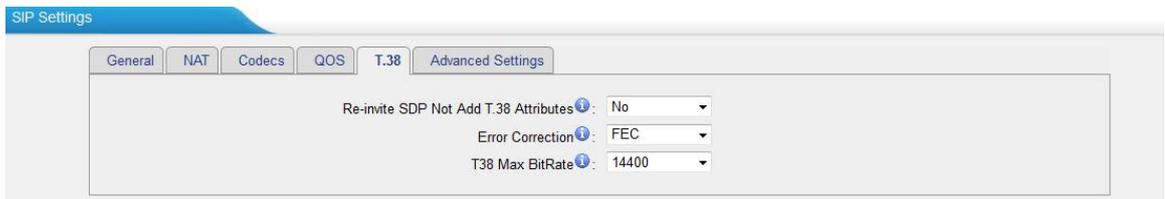


Figure 6-11 T.38 Settings

Table 6-1 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.

## 6) Advanced Settings

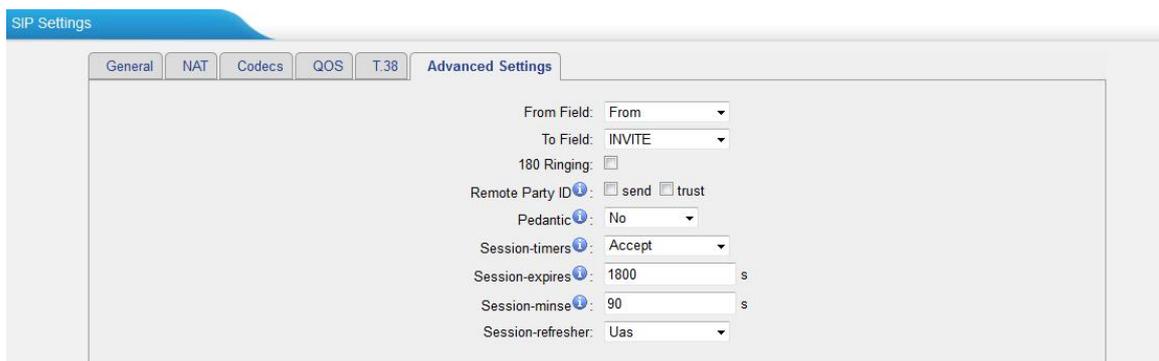


Figure 6-12 Advanced Settings

### -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 send Remote-Party-ID on SIP header. Default no.

**·Pedantic**

Enable checking of tags in headers, international character conversations in URIs and multiline formatted headers for strict, SIP compatibility.

**·Session -timers**

Enable or disable session-timer mode.

**·Session-expires**

The max refresh interval.

**·Session-minse**

The min refresh interval, which mustn't be less than 90s .

**·Session-refresher**

Choose session-refresher, the default is Uas.

## 6.2.3 Trunk Group

On this page, you can group multiple trunks into one group for setting up Routes list.

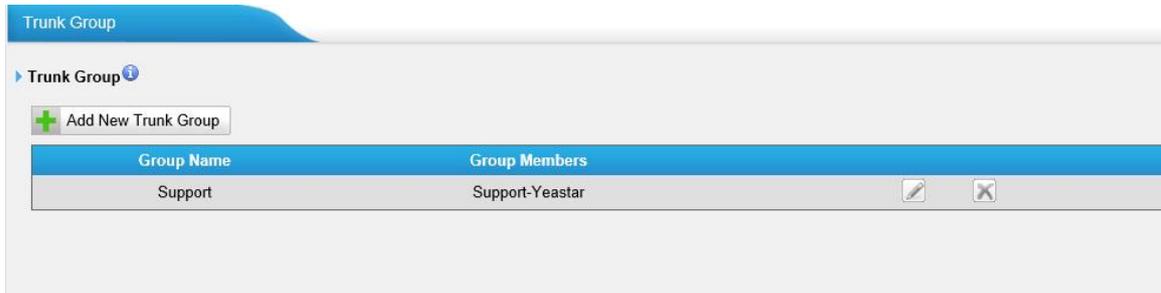


Figure 6-13 Trunk Group

Click **Add New Trunk Group** to add a new trunk group.



Figure 6-14 Edit Trunk Group

### Group name

Specify a name to help you identify this trunk group.

### Group members

All the SIP trunks you created will be listed here, please choose the desired

trunks to the right side as a group.

## 6.2.4 General Preferences

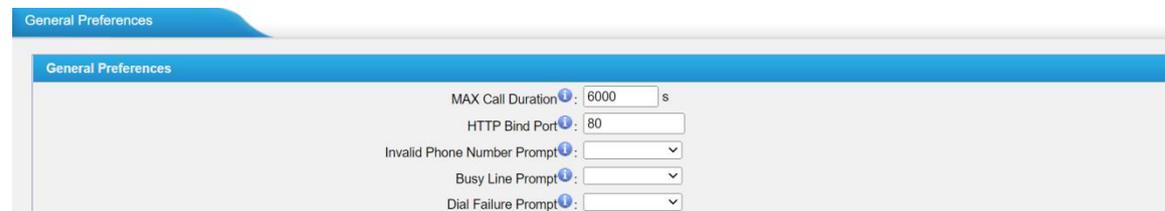


Figure 6-15 General Preference

### **.MAX call duration**

The absolute maximum amount of time permitted for a call. A setting of 0 disables the timeout. Default value is 6000s.

### **·HTTP bind port/Web Access Port**

Port to use for HTTP sessions. Default: 80

### **·Invalid Phone Number Prompt**

Select the prompt to be used when the number dialed is invalid.

### **·Busy Line Prompt**

Select the prompt to be used when the number dialed is busy.

### **·Dial Failure Prompt**

Select the prompt to be used when the dial failed due to congestion-no available channel.

**Note:** please reboot the system to take effect.

## 6.3 Routes Settings

There are two default routes to route the calls from E1 to SIP and SIP to E1.

In this page, we can route the call from one trunk to another trunk or a trunk group.



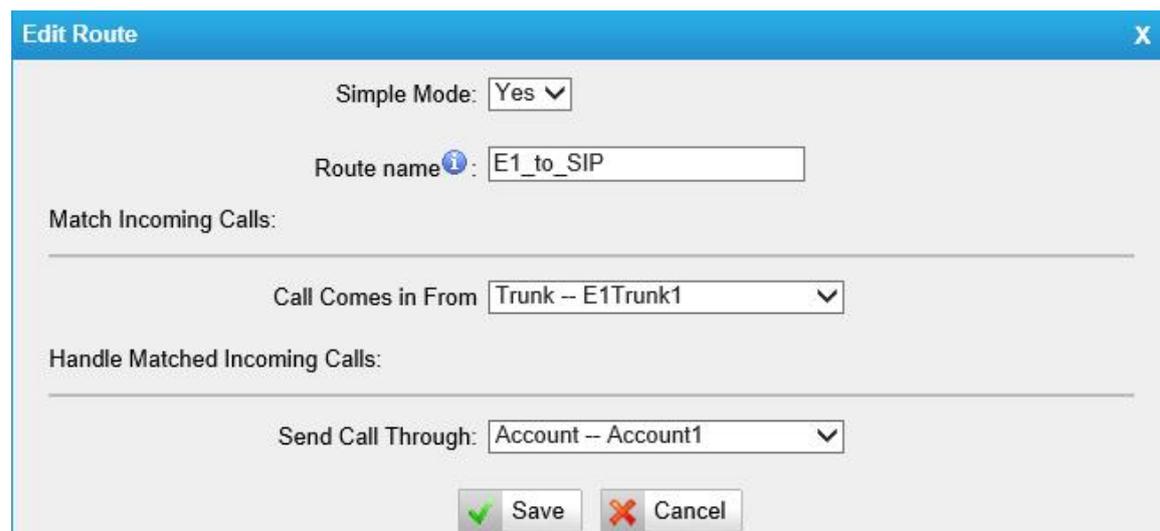
Route name	Simple Mode	Call Comes in From	Send Call Through		
to_S300	yes	E1Trunk1	192.168.66.31		
from_S300	yes	192.168.66.31	E1Trunk1		
to_S300_192.168.66.32	yes	E1Trunk1	S300_192.168.66.32		
from_S300_192.168.66.32	yes	S300_192.168.66.32	E1Trunk1		

Figure 6-16 Routes List

### 6.3.1 Route List

Click edit button to check and edit the details, there are two modes for a route.

#### 1) Simple mode



**Edit Route**

Simple Mode: Yes

Route name: E1\_to\_SIP

Match Incoming Calls:

Call Comes in From: Trunk -- E1Trunk1

Handle Matched Incoming Calls:

Send Call Through: Account -- Account1

Save Cancel

Figure 6-17 Simple Mode Route Settings

**Route name:**

Specify a name to help you identify this route.

**Match incoming calls:**

Choose the trunk or trunk group for the incoming calls.

**Handle matched incoming calls:**

Choose the trunk or trunk group to route the incoming calls to.

**2) Detailed mode**

In the **Simple Mode** drop-down, select **No** to access the detailed mode.

**Edit Route** [X]

Simple Mode ⓘ:

Route name ⓘ:

Match Incoming Calls:

---

Call Comes in From:

Inbound Caller Pattern ⓘ:

DID Number ⓘ:

DID Associated Number ⓘ:

Handle Matched Incoming Calls:

---

Send Call Through:

T.38 Support ⓘ:

Outbound Dial Pattern ⓘ:

Strip ⓘ:  digitals from front before dialing

Prepend these digitals ⓘ:  before dialing

Figure 6-18 Detailed Mode Route Settings

**Route name:**

Specify a name to help you identify this route.

**Match incoming calls:**

Choose the trunk or trunk group for the incoming calls.

**Inbound caller pattern:**

Match the prefix of caller ID for incoming calls.

**X:** Any Digit from 0-9

**Z:** Any Digit from 1-9

**N:** Any Digit from 2-9

**[12345-9]:** Any digit in the brackets (in this example, 1,2,3,4,5,6,7,8,9)

The '.'Character will match any remaining digits. For example, 9011. will match any phone number that starts with 9011, excluding 9011 itself.

The '!' will match none remaining digits, and causes the matching process to complete as soon as it can be determined that no other matches are possible.

Example 1: **NXXXXXX** will match any 7 digits phone number.

Example 2: **1NXXNXXXXXX** will match a phone number starting with a 1, followed by a 3-digit area code, and then 6 digit number.

**DID number:**

Define the expected DID Number if this trunk passes DID on incoming calls. Leave this field blank to match calls with any or no DID info. You can also use pattern matching to match a range of numbers.

**DID Associated Number:**

Define the extension for DID number. This field is only valid when you use BRI, SIP, SPS or SPX trunk for this inbound router. You can only input number and '\' in this field, and the format can be xxx or xxx-xxx. The count of the number must be only one or equal the count of the DID number.

---

### Send Call Through:

Choose the trunk or trunk group to route the incoming calls to.

### T.38 Support:

Enable T.38 fax in this outbound route.

**Note:** Only for VoIP Trunk(only support protocol).

### Outbound Dial Pattern

Outbound calls that match this dial pattern will use this outbound route. There are a number of dial pattern characters that have special meanings:

**X:** Any Digit from 0-9

**Z:** Any Digit from 1-9

**N:** Any Digit from 2-9

**[12345-9]:** Any digit in the brackets (in this example, 1, 2, 3, 4, 5, 6, 7, 8, 9)

The `.' Character will match any remaining digits. For example, 9011. will match any phone number that starts with 9011, excluding 9011 itself.

The `!' will match none remaining digits, and causes the matching process to complete as soon as it can be determined that no other matches are possible.

Example 1: **NXXXXXX** will match any 7 digits phone number.

Example 2: **1NXXNXXXXXX** will match a phone number starting with a 1, followed by a 3-digit area code, and then 6 digit number.

### Strip digits from front before dialing

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. For example, if users must press 0 before dialing a phone number, one digit should be stripped from the dial string before the call is placed.

### Prepend these digits before dialing

These digits will be prepended to the phone number before the call is placed. For example, if a trunk requires 10 digit dialing, but users are more comfortable with 7 digit dialing, this field could be used to prepend a 3 digit area code to all 7 digit phone numbers before calls are placed.

### 6.3.2 Blocklist

Blocklist is used to block an incoming/outgoing call. If the number of incoming/outgoing call is listed in the number blocklist, the caller will hear the following prompt: "The number you have dialed is not in service. Please check the number and try again". The system will then disconnect the call.



Figure 6-19 Blocklist

Click **Add Blocklist** to add a number to the blocklist, you can set the type to inbound, outbound or both.

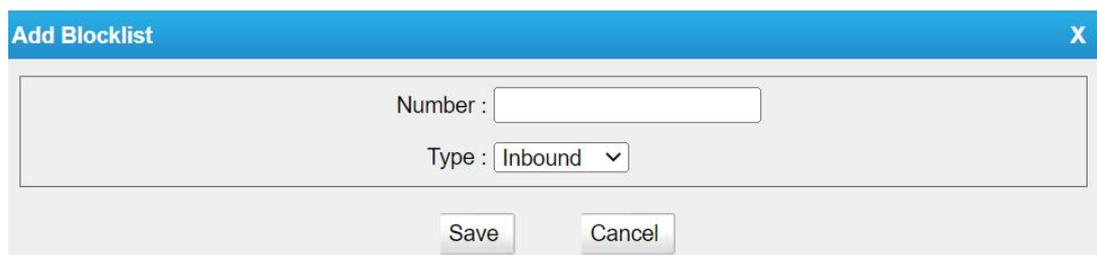
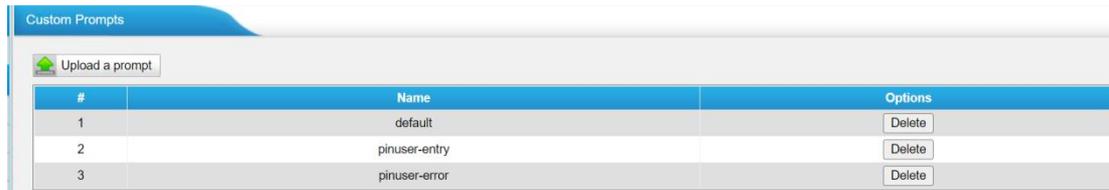


Figure 6-19

### 6.4 Custom Prompts

On this page, you can upload new custom prompts or manage the existing prompts.



#	Name	Options
1	default	Delete
2	pinuser-entry	Delete
3	pinuser-error	Delete

Figure 6-20 Custom prompts

Click **Upload a prompt** to upload custom prompts.

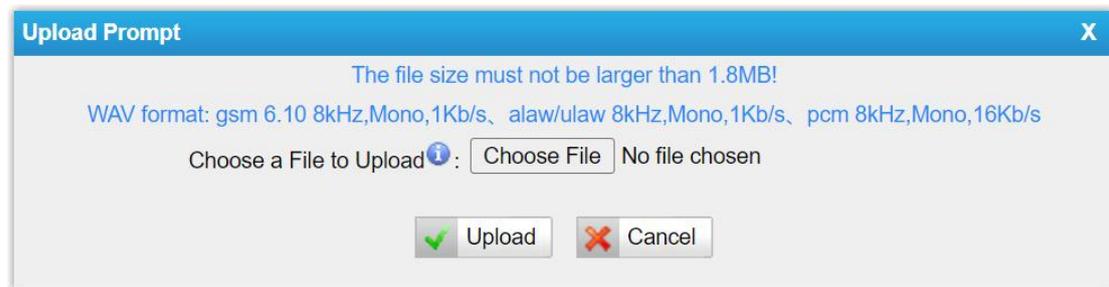


Figure 6-21 Upload prompt

## 7. Logout



Click  to log out safely to the log in page.