Villa VTO

User's Manual

V1.0.0

Foreword

General

This Manual introduces the operation of the villa station (VTO) web interface.

Safety Instructions

The following categorized signal words with defined meaning might appear in the Manual.

Signal Words	Meaning
CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or unpredictable result.
TIPS	Provides methods to help you solve a problem or save you time.
NOTE	Provides additional information as the emphasis and supplement to the text.

Revision History

Version	Revision Content	Release Date
V1.0.0	First release	April 2020

About the Manual

- The manual is for reference only. If there is inconsistency between the manual and the actual product, the actual product shall prevail.
- We are not liable for any loss caused by the operations that do not comply with the manual.
- The manual would be updated according to the latest laws and regulations of related regions. For detailed information, see the paper manual, CD-ROM, QR code or our official website. If there is inconsistency between paper manual and the electronic version, the electronic version shall prevail.
- All the designs and software are subject to change without prior written notice. The product updates might cause some differences between the actual product and the manual. Please contact the customer service for the latest program and supplementary documentation.
- There still might be deviation in technical data, functions and operations description, or errors in print. If there is any doubt or dispute, please refer to our final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- All trademarks, registered trademarks and the company names in the manual are the properties of their respective owners.
- Please visit our website, contact the supplier or customer service if there is any problem occurred when using the device.
- If there is any uncertainty or controversy, please refer to our final explanation.

Important Safeguards and Warnings

The following description is the correct application method of the device. Please read the manual carefully before use, in order to prevent danger and property loss. Strictly conform to the manual during application and keep it properly after reading.

Operating Requirement

- Do not place and install the device in an area exposed to direct sunlight or near heat generating device.
- Do not install the device in a humid, dusty or fuliginous area.
- Keep its horizontal installation, or install it at stable places, and prevent it from falling.
- Do not drip or splash liquids onto the device; do not put on the device anything filled with liquids, in order to prevent liquids from flowing into the device.
- Install the device at well-ventilated places; don't block its ventilation opening.
- Use the device only within rated input and output range.
- Do not dismantle the device arbitrarily.
- Transport, use and store the device within allowed humidity and temperature range.

Power Requirement

- The product shall use electric wires (power wires) required by the region where the device will be used.
- Use power supply that meets SELV (safety extra low voltage) requirements, and supply power with rated voltage that conforms to Limited Power Source in IEC60950-1. For specific power supply requirements, refer to device labels.
- Appliance coupler is a disconnecting device. During normal use, keep an angle that facilitates operation.

Table of Contents

Foreword I
Important Safeguards and Warnings II
1 Initialization 1
2 Login Interface 2
2.1 Login 2
2.2 Resetting Password 2
3 Main Interface 4
4 Local Setting 5
4.1 Basic 5
4.1.1 Device Properties & Events 5
4.1.2 Façade Layout (Only for VTO3211D) 6
4.2 Video & Audio 7
4.3 Access Control 8
4.3.1 Local 9
4.3.2 RS-485 9
4.4 System 10
4.5 Security 11
4.6 Onvif User 12
5 Household Setting 13
5.1 VTO No. Management 13
5.1.1 Adding VTO 13
5.1.2 Modifying VTO Information 14
5.1.3 Deleting VTO 15
5.2 Room No. Management 15
5.2.1 Adding Room Number 15
5.2.2 Modifying Room Number 17
5.2.3 Issuing Access Card 17
5.3 VTS Management 18
5.4 Status 19
6 Network Setting 20
6.1 Basic 20
6.1.1 TCP/IP 20
6.1.2 Port 20
6.1.3 HTTPS 21
6.1.4 P2P 21
6.2 SIP Server 21
6.3 Firewall 22
7 Log Management 24
7.1 Call 24
7.2 Alarm 24
7.3 Unlock 24
7.4 Log 25
Appendix 1 Cybersecurity Recommendations 26

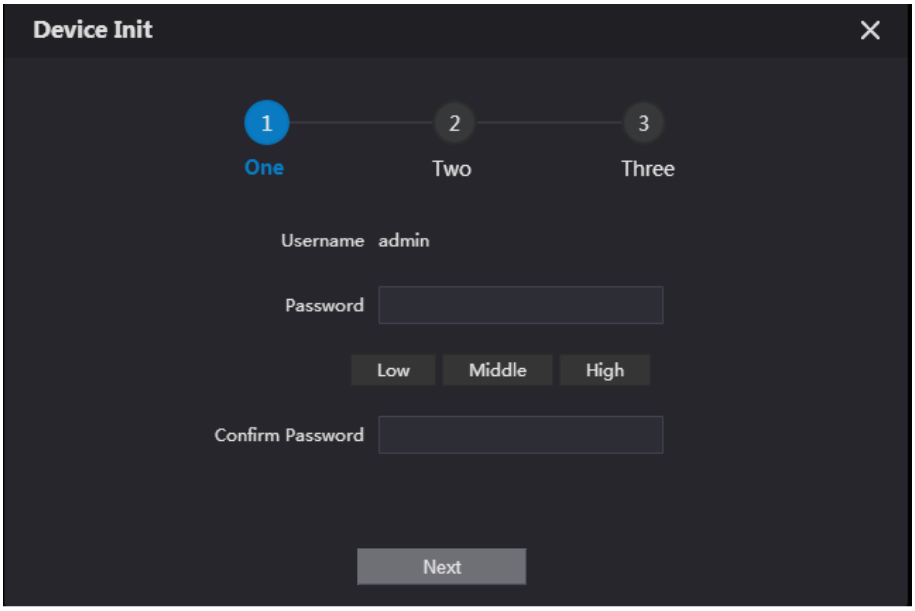
1 Initialization

For first time login or after the VTO being reset, you need to initialize the web interface. The default IP address of the VTO is 192.168.1.108, and make sure the PC is in the same network segment as the VTO.

Step 1 Connect the VTO to power source, and then boot it up.

Step 2 Open the internet browser on the PC, then enter the default IP address of the VTO in the address bar, and then press **Enter**.

Figure 1-1 Device initialization



Step 3 Enter and confirm the password, and then click **Next**.

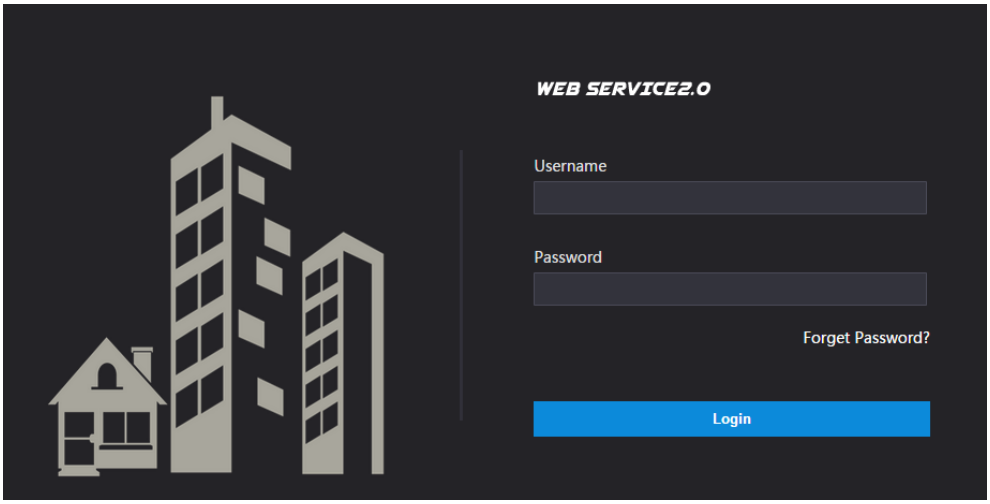
The email setting interface is displayed.

Step 4 Select the **Email** check box, and then enter your email address. This email address can be used to reset the password.

Step 5 Click **Next**. The initialization succeeded.

Step 6 Click **OK**.

Figure 1-2 Login interface



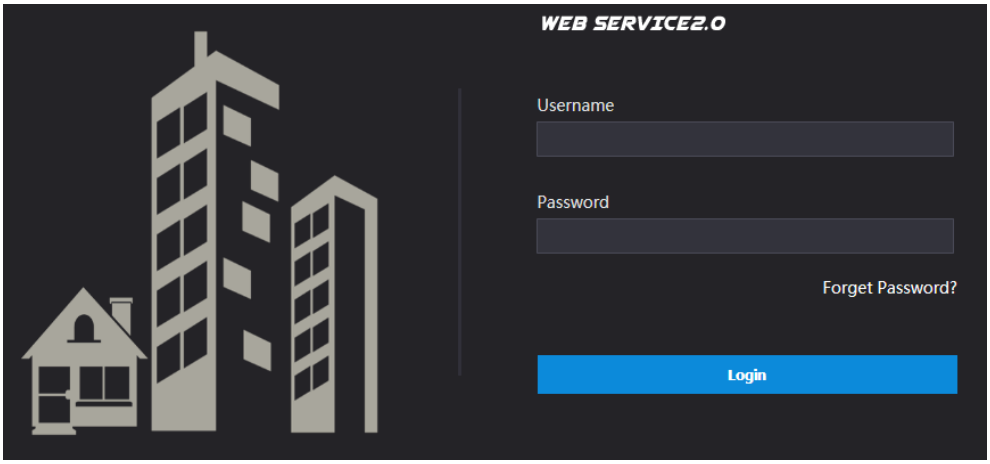
2 Login Interface

2.1 Login

Before login, make sure that the PC and VTO are in the same network segment.

Step 1 Enter the VTO IP address in the browser address bar, and then press **Enter**.

Figure 2-1 Login interface

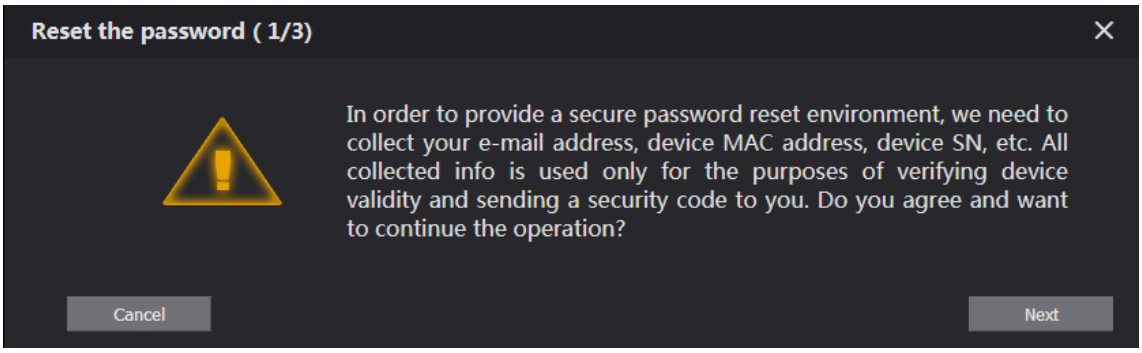


Step 2 Enter "admin" as username, then the password you set during initialization, and then click **Login**.

2.2 Resetting Password

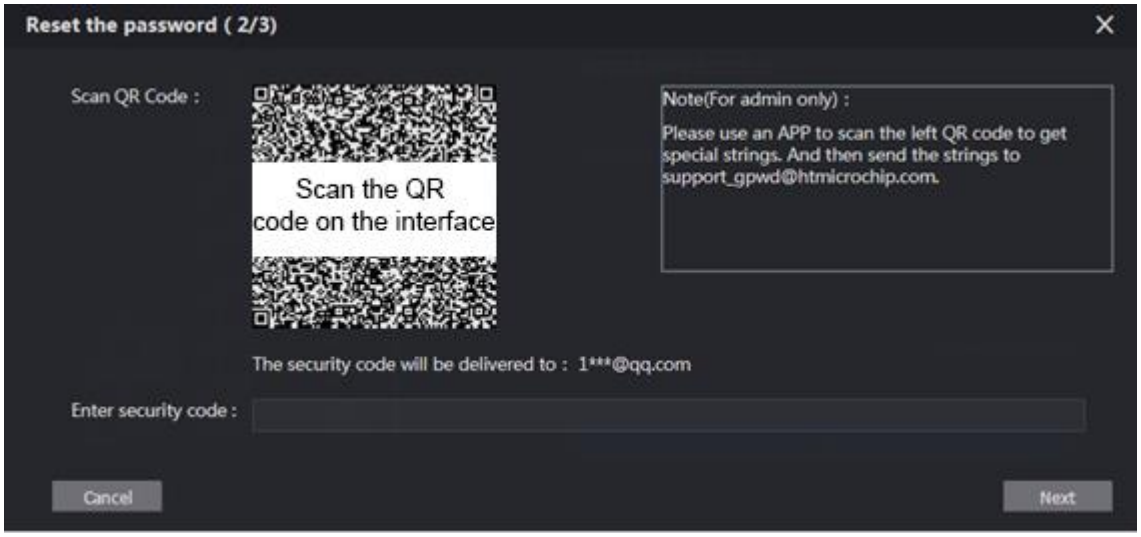
Step 1 On the login interface (Figure 2-1), click **Forgot Password?**.

Figure 2-2 Reset the password (1/3)



Step 2 Click **Next**.

Figure 2-3 Reset the password (2/3)



Step 3 Scan the QR code on the web interface to obtain the security code in your mailbox, and then enter the security code in the input box.

- If you did not configure email during initialization, contact the supplier or customer service for help.
- To obtain security code again, refresh QR code interface.
- Use the security code within 24 hours after receiving it. Otherwise, it will become invalid.
- If wrong security code is entered for 5 times continuously, this account will be locked for 5 min.

Step 4 Click **Next**, and then the **Reset the password (3/3)** dialog box is displayed.

Step 5 Set and confirm the new password as instructed, and then click **OK**.

3 Main Interface

Log in to the web interface of the VTO, and then the main interface is displayed.

Figure 3-1 Main interface

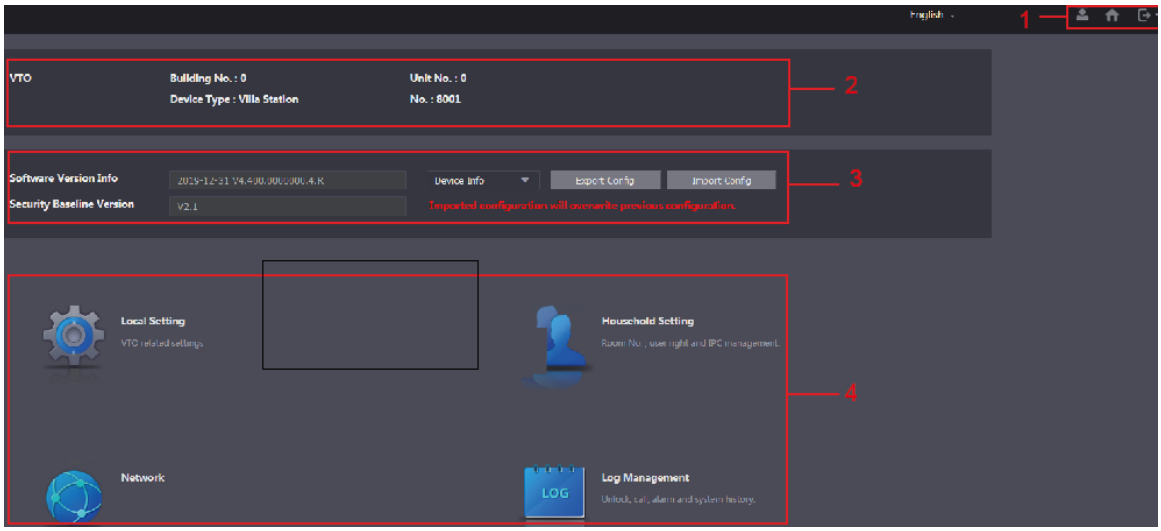


Table 3-1 Main interface introduction

No.	Function	Description
1	General function	• Click to change the password and your email address. • Click to go to the main interface. • Click to log out, reboot the VTO or restore the VTO to factory settings.
2	VTO information	You can view the general information of the VTO, including building No., unit No., device type, and VTO No..
3	System information	You can view the software version, MCU version, and security baseline version.
4	Config manager	Select **Device Info** or **User Info**, and then you can export the VTO configuration or user information to the PC or import them from it.
5	Function area	Click the buttons to go to the corresponding menu.

4 Local Setting

This chapter introduces how to configure VTO type, VTO No., video and audio, access password, system time, and security function.

General operations:

- After configuration, click **Confirm** to save, and click **Refresh** to view the latest change.
- If you click **Default**, all the configurations in the current page would be restored to the default, and you need to click **Confirm** to save.

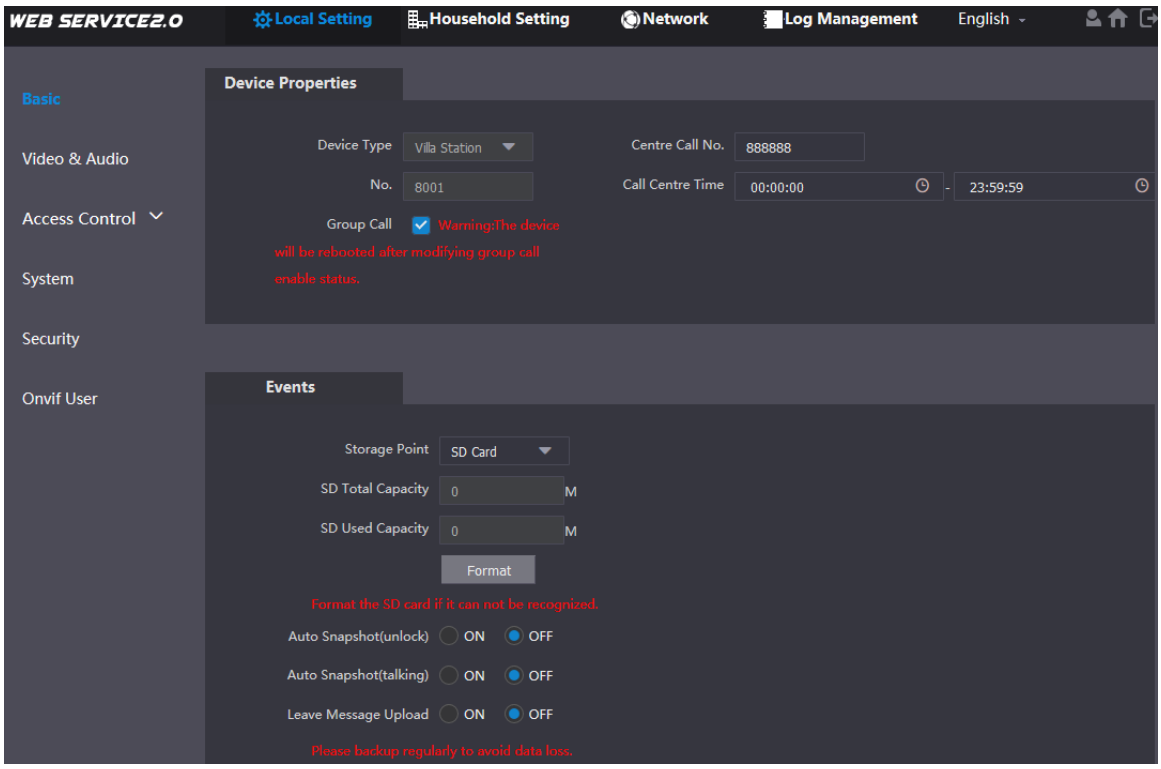
4.1 Basic

4.1.1 Device Properties & Events

This section introduces the configuration of VTO device type, VTO number, and auto storage.

Step 1 On the main interface (Figure 3-1), select **Local Setting > Basic**.

Figure 4-1 Basic



Step 2 Configure parameters.

Table 4-1 Basic parameter description

Parameter	Description
Device Type	Keep the default value. ● Building number and unit number are available only when other servers work as SIP server. See "6.2 SIP Server."

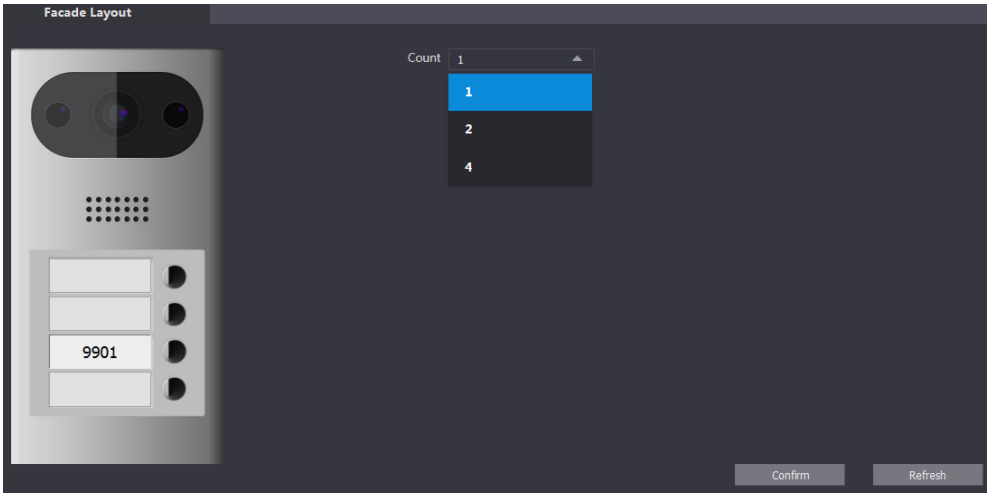
Parameter	Description
	• Fence station is normally used when other servers work as SIP server.
Centre Call No.	Configure the number of the management centre, and you can call the management centre on every VTO or VTH in the network. The default number is 888888.
Call Centre Time	Time period in which you are allowed to call the management centre.
VTO No.	The VTO number can be used to differentiate each VTO, and it is normally configured according to unit or building number. You can add VTO devices to the SIP server with their numbers.
Storage Point	All the snapshots would be saved to the SD card in the villa station automatically. • Auto Snapshot (unlock) Select **ON** to enable this function, and then the system takes snapshot every time when the door is unlocked. • Auto Snapshot (talking) Select **ON** to enable this function, and then the system takes snapshot every time when VTH user answers a call from the VTO. • Messages Select **ON** to enable this function, and then the system uploads the messages from visitors to the SD card automatically. • If there is an SD card in the main VTH, the left messages would be saved to the SD card of the main VTH by default. • To receive message, the **VTO Message Time** must be configured to be more than 0. See the VTH user's manual.

Step 3 Click **Confirm**.

4.1.2 Façade Layout (Only for VTO3211D)

If you select 1 form the **Count** drop-down list, only the third button will be valid; if you select 2, only the second and the fourth buttons will be valid; and if you select 4, all the four buttons will be valid.

Figure 4-2 Façade layout

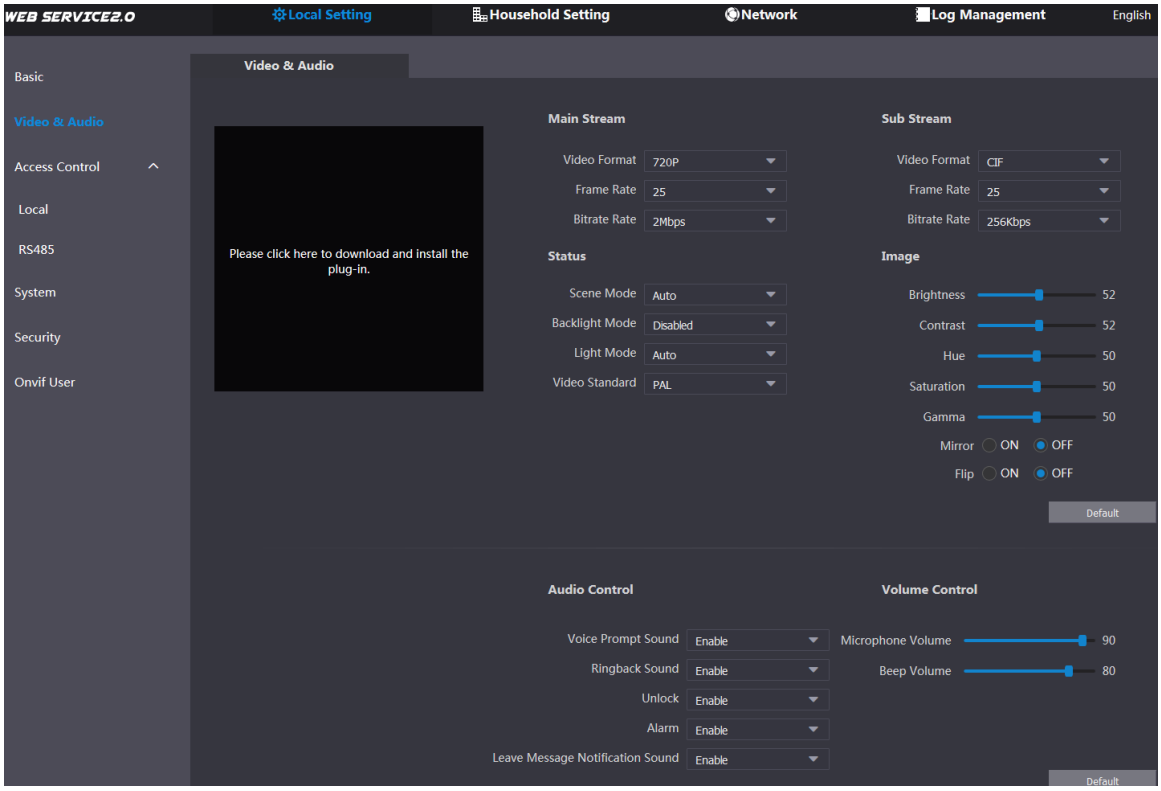


4.2 Video & Audio

This section introduces how to configure the format and quality of video that captured by VTO, and the audio control settings.

Step 1 On the main interface (Figure 3-1), select **Local Setting > Video & Audio**.

Figure 4-3 Video & audio



Step 2 Configure parameters, and these configurations will take effect immediately.

Table 4-2 Video parameter description

Parameter		Description
Main Stream	Video Format	Select the video resolution from **720P**, **WVGA**, and **D1**.
	Format Rate	Configure the number of frames in 1 second. You can select from **1** to **25** under **PAL**, and **1** to **30** under **NTSC** video standard. The larger the value is, the smoother the video will be.
	Bitrate	Configure the data amount that transmitted in 1 second. You can select as needed. The larger the value is, the better the video quality will be.
Sub Stream	Video Format	Select the video resolution from **CIF**, **WVGA**, **QVGA**, **D1**, and **1080P**.
	Format Rate	Configure the number of frames in 1 second. You can select from **1** to **25** under **PAL**, and **1** to **30** under **NTSC** video standard. The larger the value is, the smoother the video will be.
	Bitrate	Configure the data amount that transmitted in 1 second. The larger the value is, the better the video quality will be.
Status	Scene Mode	Adjust the video to adapt to different scenarios. You can select from **Automatic**, **Sunny**, **Night** and **Disabled**. It is **Automatic** by default.
	Day/Night Mode	You can select from **Disabled**, **Auto**, **Sunny** or **Night**.

Parameter		Description
	BackLight Mode	You can select from the following modes: ● **Disabled**: No back light. ● **BLC**: The camera gets clearer image of the dark areas on the target when shooting against light. ● **WDR**: The system dims bright areas and compensates dark areas to ensure the clarity of all the area. ● **HLC**: The system constrains bright areas and reduces halo size to dim the overall brightness.
	Light Mode	There are four light modes: NO, NC, Auto, and Scheduled. Select as needed.
	Video Standard	Select from **PAL** or **NTSC** according to your display device.
Image	Brightness	Changes the value to adjust the picture brightness. The larger the value is, the brighter the picture will be, and the smaller the darker. The picture might be hazy if the value is too large.
	Contrast	Changes the contrast of the picture. The larger the value is, the more the contrast will be between bright and dark areas, and the smaller the less. If the value is too large, the dark area would be too dark and bright area easier to get overexposed. The picture might be hazy if the value is too small.
	Hue	Makes the color deeper or lighter. The default value is made by the light sensor.
	Saturation	Makes the color deeper or lighter. The larger the value is, the deeper the color will be, and the lower the lighter. Saturation value does not change image brightness.
	Gamma	Changes the picture brightness and improves the picture dynamic range in a non-linear way. The larger the value is, the brighter the picture will be, and the smaller the darker.
	Mirror	Select **On**, and then the image is displayed with left and right side reversed.
	Flip	Select **On**, and then the image is displayed upside down.
Audio Control	Select **Enable** or **Disabled** to turn on or off each sound.	
Volume Control	Miccrophone Volume	Adjust the value, and the larger the value is, the louder the VTO microphone volume will be.
	Beep Volume	Adjust the value, and the larger the value is, the louder the system volume will be.

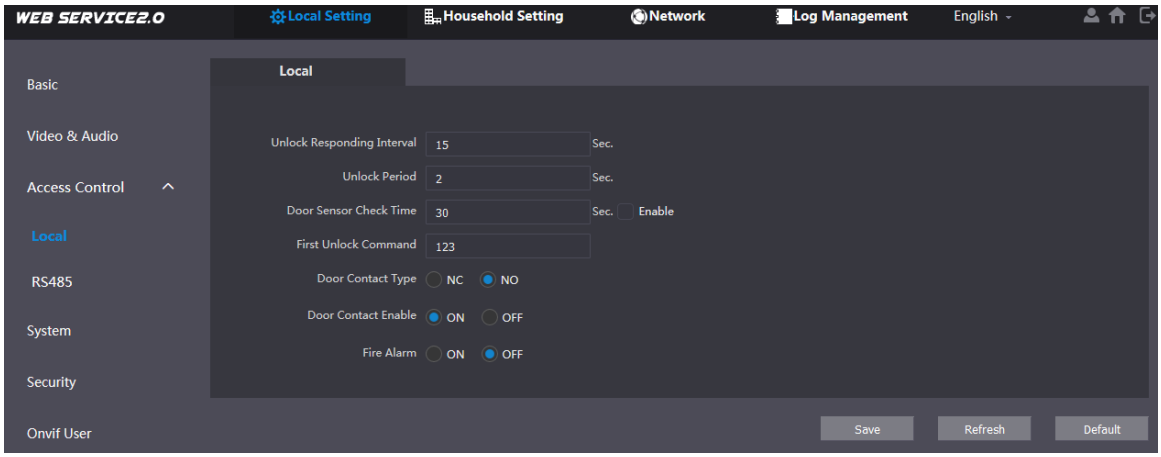
4.3 Access Control

This section introduces how to configure the lock, including unlock responding interval, open door command, door sensor check time, first unlock command and door contact type.

4.3.1 Local

Step 1 On the main interface (Figure 3-1), select **Local Setting > Access Control > Local**.

Figure 4-4 Local



Step 2 Configure parameters.

Table 4-3 Local access control parameter description

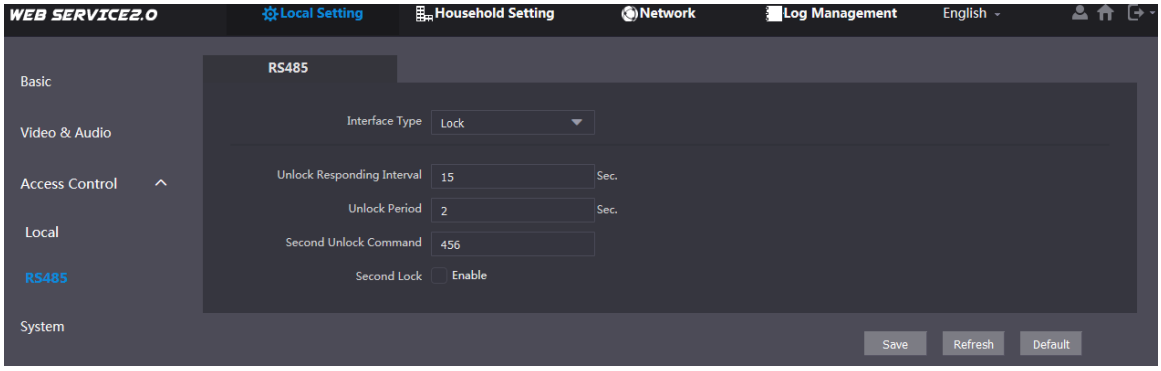
Parameter	Description
Unlock Responding Interval	The time interval to unlock again after the previous unlock, and the unit is second.
Unlock Period	The time amount for which the lock stays open after unlock, and the unit is second.
Door Sensor Check Time	If you have installed door sensor, you need to configure the time period, and If the unlock time exceeds the **Door Sensor Check Time**, the door sensor alarm is triggered, and the alarm will be sent to the management center. ● Select the **Enable** check box, and the door will not be locked until the door sensor contacts each other. ● If you do not select the **Enable** check box, the door will be locked after the **Unlock Period** finishes.
First Unlock Command	You can connect a third-party phone such as SIP phone to your VTO, and use the command to open the door remotely.
Door Contact Type	Select **NC** or **NO** according to the lock you use.
Door Contact Enable	After door contact is enabled, if doors are not locked at certain period, alarms will be triggered, and alarm messages will be pushed to the indoor monitor (VTH).
Fire Alarm	Select as needed.

Step 3 Click **Save**.

4.3.2 RS-485

You can set unlock responding interval, unlock period, and second unlock command.

Figure 4-5 RS-485

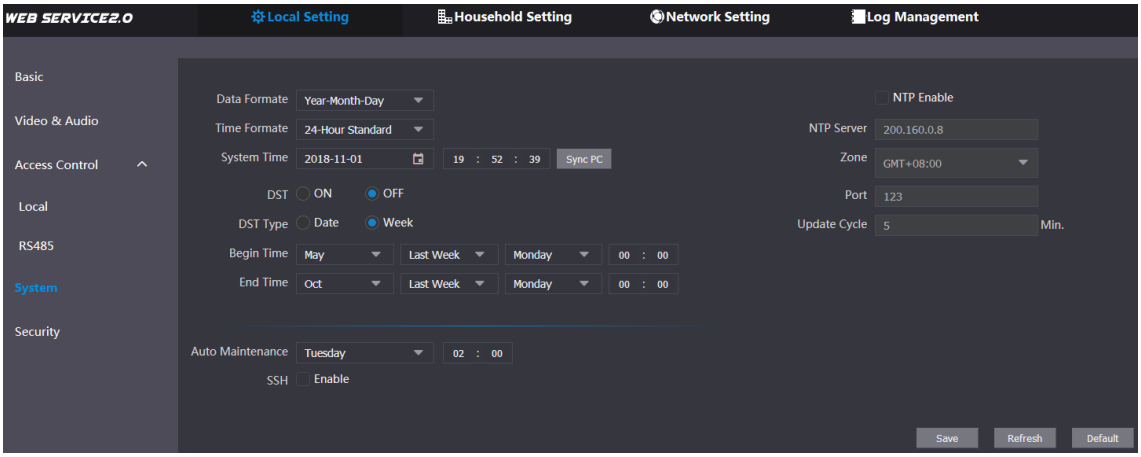


4.4 System

This section introduces how to configure the date format, time format, and the NTP server.

Step 1 On the main interface (Figure 3-1), select **Local Setting > System**.

Figure 4-6 System



Step 2 Configure parameters.

Table 4-4 System parameter description

Parameter	Description
Date Format	You can select from Year-Month-Day, Month-Day-Year, and Day-Month-Year.
Time Format	Configure the time format, and you can select from **12-Hour** or **24-Hour**.
Time Zone	Select a time zone as needed.
System Time	Configure the VTO system date, time and time zone. Do not change the system time arbitrarily; it might cause problems on video searching and publishing snapshot or notice. Before changing the system time, turn off video recording or auto snapshot.
Sync PC	Click to sync the VTO system time and the PC system time.
DST	Select **ON** to enable DST.
DST Type	Select **Date** to define a specific date for DST or select **Week** for it.
Start Time	Configure the begin time and end time for DST.
End Time	
NTP Enable	Select the check box to enable NTP timing.

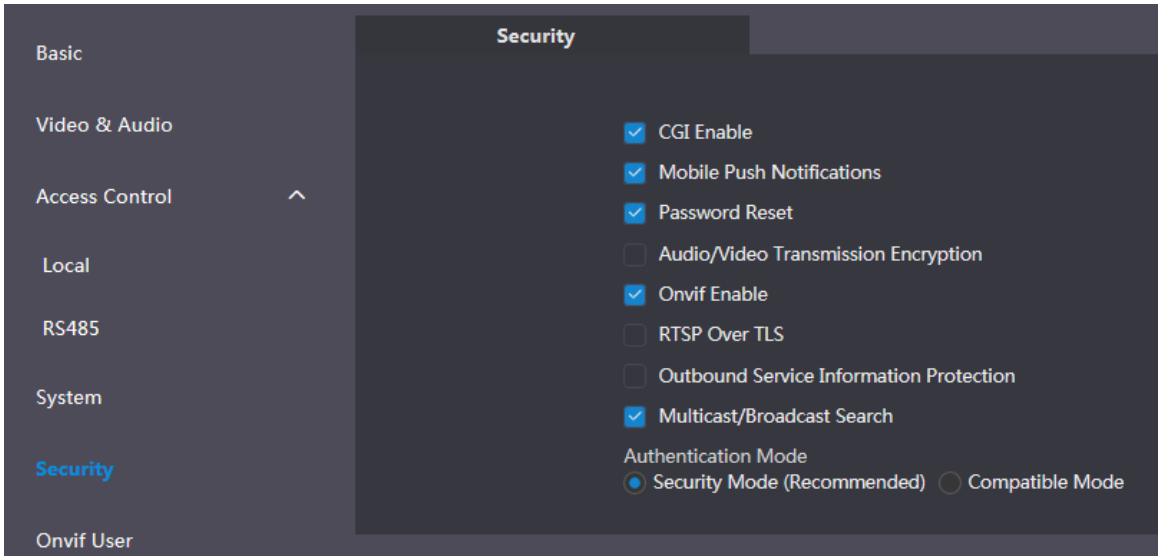
Parameter	Description
NTP Server	Enter the domain name of the NTP server.
Port	The port number of the NTP server.
Update Cycle	The time interval that the VTO syncs time with the NTP server, and it is 30 min at most.
Maintenance	Select the day and time for the auto maintenance, and the VTO will restart then.
SSH	Select the **Enable** check box, and then you can connect debugging devices to the VTO through SSH protocol.

Step 3 Click **Save**.

4.5 Security

Step 1 On the main interface (Figure 3-1), select **Local Setting > Security**.

Figure 4-7 Security



Step 2 Configure parameters.

Table 4-5 Security parameter description

Parameter	Description
CGI Enable	Select the check box to enable, and then you can use CGI command.
Mobile Push Notification	After you have enabled this, nitifications will be pushed to the app installed on your phone.
Password Reset	Select the check box to enable, and then the password resetting is available.
Audio/Video Transmission Encryption	If you have enabled this, transmission of audio and video will be encrypted.
Onvif Enable	After Onvif is enabled, videos from devices manufactured by other companies can be displayed on the door station web interface.
RTSP Over TLS	RTSP is the abbreviation of real time streaming protocol, it's a network control protocol designed for use in entertainment and communications systems to control streaming media servers. The protocol is used for

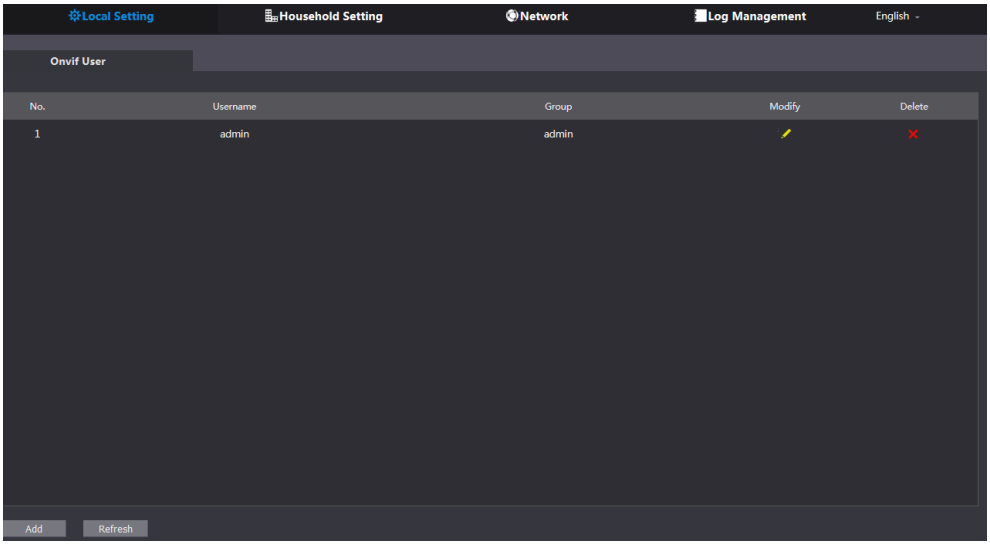
Parameter	Description
	establishing and controlling media sessions between end points.
Outbound Service Information	After it is enabled, service password information cannot be sent to others.
Multicast/Broadcast Search	If you have disabled this, VDP configure tools cannot find this device.
Authentification Mode	There are two modes: Security Mode (Recommended) and compatible mode.

Step 3 Click **Save** to save.

4.6 Onvif User

Onvif user is only for engineers. You can add, delete, and modify ONVIF user information. The Onvif username is admin by default.

Figure 4-8 Onvif user



5 Household Setting

This chapter is about configurations to the door stations (VTO) that work as SIP servers (see 6.2 SIP Server). You will know how to add, modify, and delete VTO, VTH, VTS, and IPC devices, and how to send messages from the SIP server to other VTO and VTH devices. If you are using other servers as SIP server, see the corresponding manual for the detailed configuration.

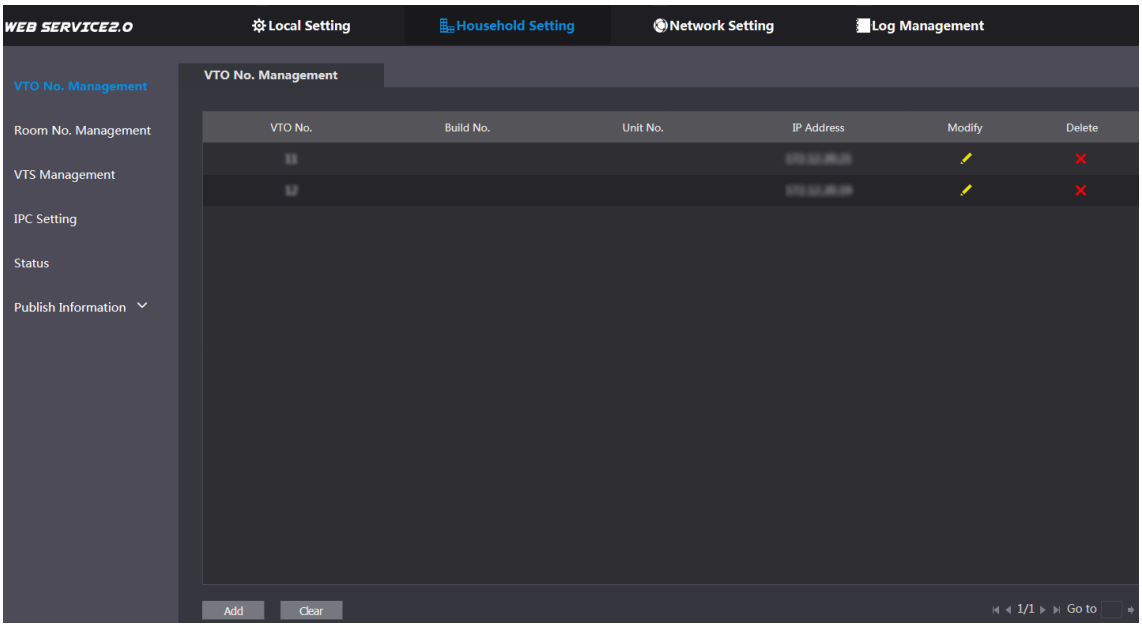
5.1 VTO No. Management

5.1.1 Adding VTO

You can add VTO to the SIP server, and then you can make video calls among video door phones that are connected to the same SIP server.

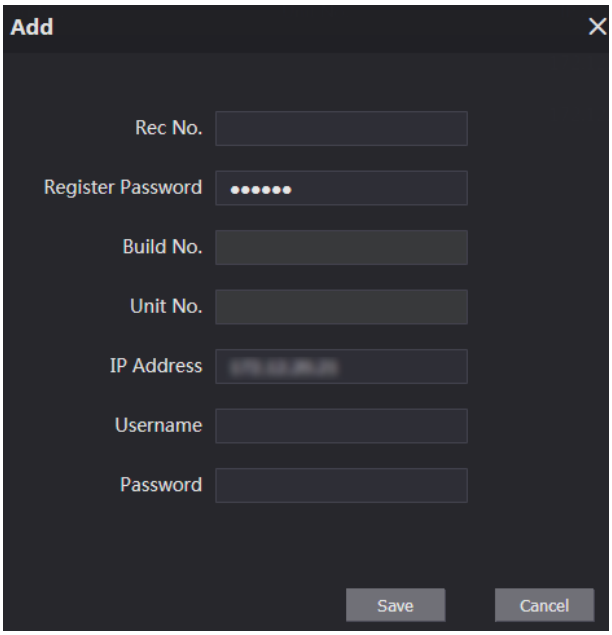
Step 1 Log in to the web interface of the SIP server, and then select **Household Setting** > **VTO No. Management**.

Figure 5-1 VTO No. management



Step 2 Click **Add**.

Figure 5-2 Add VTO



Step 3 Configure the parameters.

Table 5-1 Add VTO configuration

Parameter	Description
Rec No.	The VTO number you configured for the target VTO. See the details in "Table 4-1."
Register Password	Keep default value.
Build No.	Available only when other servers work as SIP server.
Unit No.	
IP Address	The IP address of the target VTO.
Username	The user name and password for the WEB interface of the target VTO.
Password	

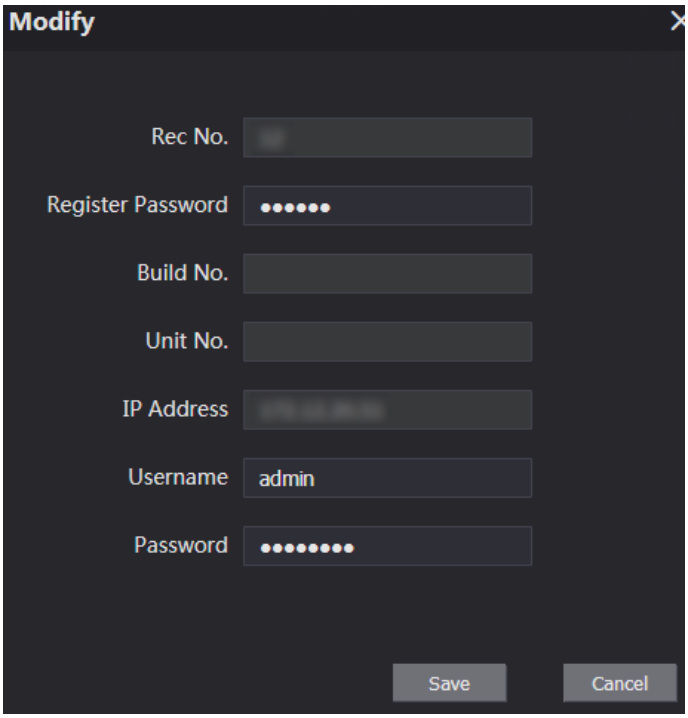
Step 4 Click **Save**.

5.1.2 Modifying VTO Information

The VTO that is currently at use cannot be modified or deleted.

Step 1 On the **VTO No. Management** interface (Figure 5-1), click .

Figure 5-3 Modify VTO



Step 2 You can modify the **Rec No.**, **Username**, and **Password**.

Step 3 Click **Save**.

5.1.3 Deleting VTO

The VTO that is in use cannot be modified or deleted.

On the **VTO No. Management** interface (Figure 5-1), click to delete VTO one by one; and click **Clear** to delete all the VTO.

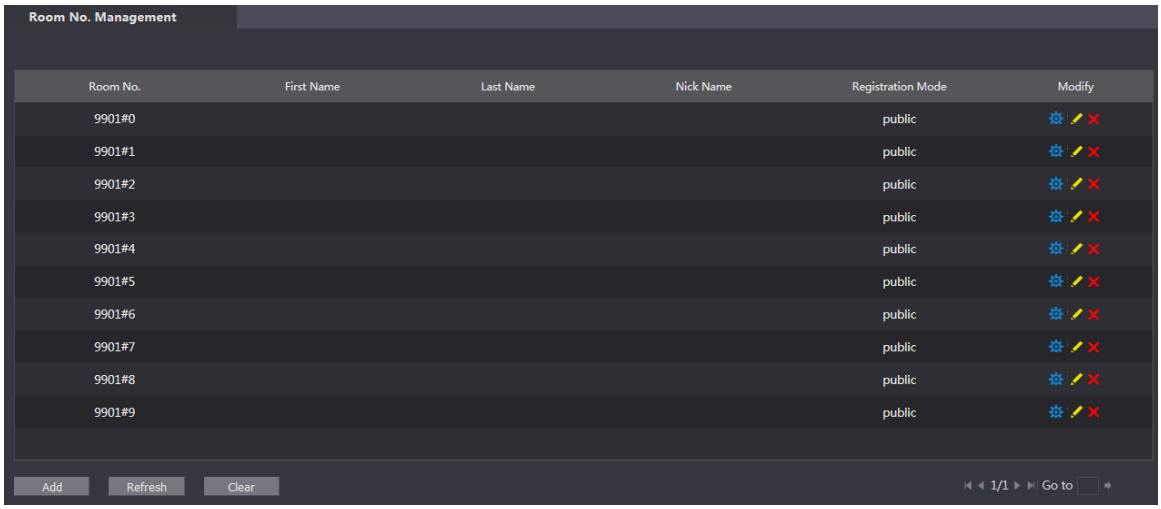
5.2 Room No. Management

5.2.1 Adding Room Number

You can add the planned room numbers to the SIP server, and then configure room numbers on VTH devices so that you can connect them to the network.

Step 1 Log in to the web interface of the SIP server, and then select **Household Setting** > **Room No. Management**.

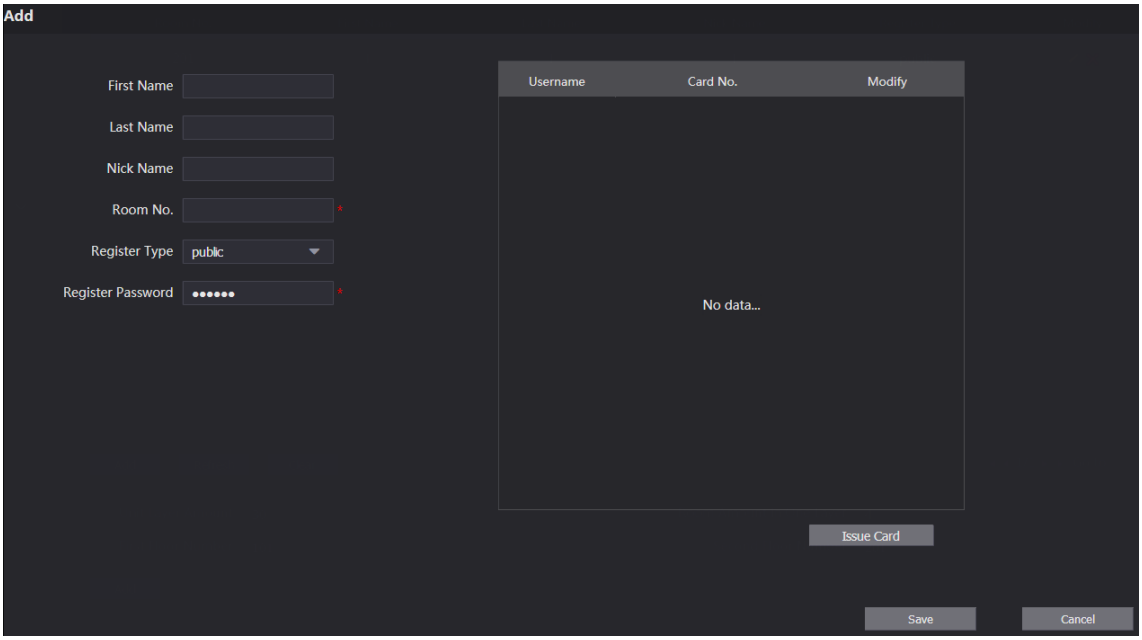
Figure 5-4 Room No. Management



Step 2 Add room numbers.

1) Click **Add**.

Figure 5-5 Add room numbers



2) Configure room information.

Table 5-2 Room information

Parameter	Description
First Name	Enter the information that helps to differentiate each room.
Last Name	
Nick Name	
Room No.	The room number you planned.
Register Type	Select **public**, and **local** is reserved for future use.
Register Password	Keep the default value.

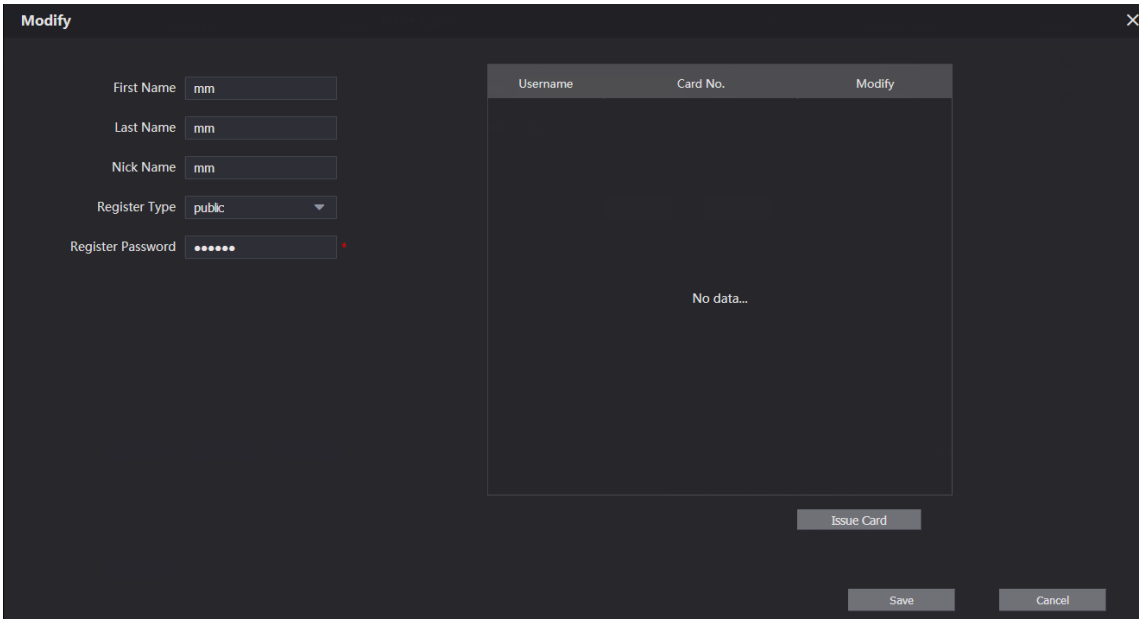
3) Click **Save**.

The room numbers added are displayed. Click to modify room information, click to view the device serial number, and click to delete a room. Click **Refresh** to view the latest status, and click **Clear** to delete all the room numbers.

5.2.2 Modifying Room Number

Step 1 On the **Room No. Management** interface (Figure 5-4), click .

Figure 5-6 Modify room number



Step 2 You can modify the names for the room.

Step 3 Click **Save**.

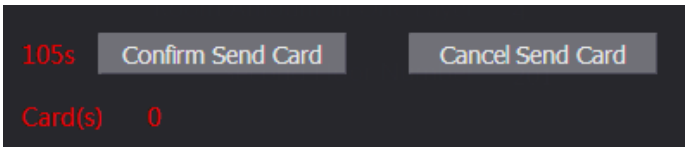
5.2.3 Issuing Access Card

You can issue card to a room, and can also set the card as the main card, or set the card to the lost state. Main cards are used to issue cards for other rooms.

Step 1 On the **Modify room number** interface (Figure 5-6), click **Issue Card**.

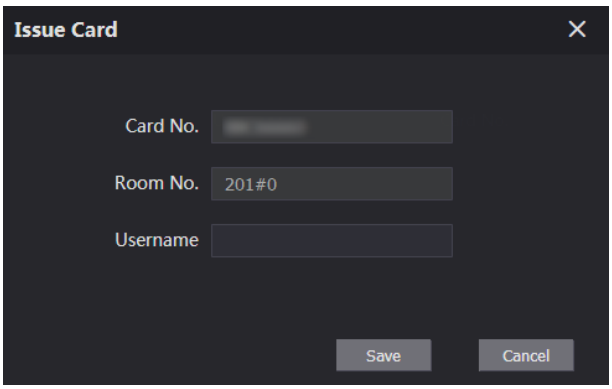
The countdown notice is displayed.

Figure 5-7 Countdown notice



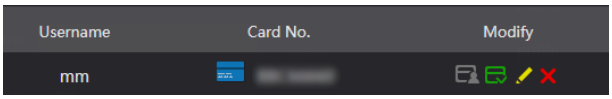
Step 2 Swipe the card that needs to be authorized on the VTO, and then the **Issue Card** dialogue box is displayed.

Figure 5-8 Issue card



Step 3 Enter a username, click **Save**, and then click **Confirm Send Card** at the countdown notice (Figure 5-7).

Figure 5-9 Issued access card



Step 4 You can modify card information.

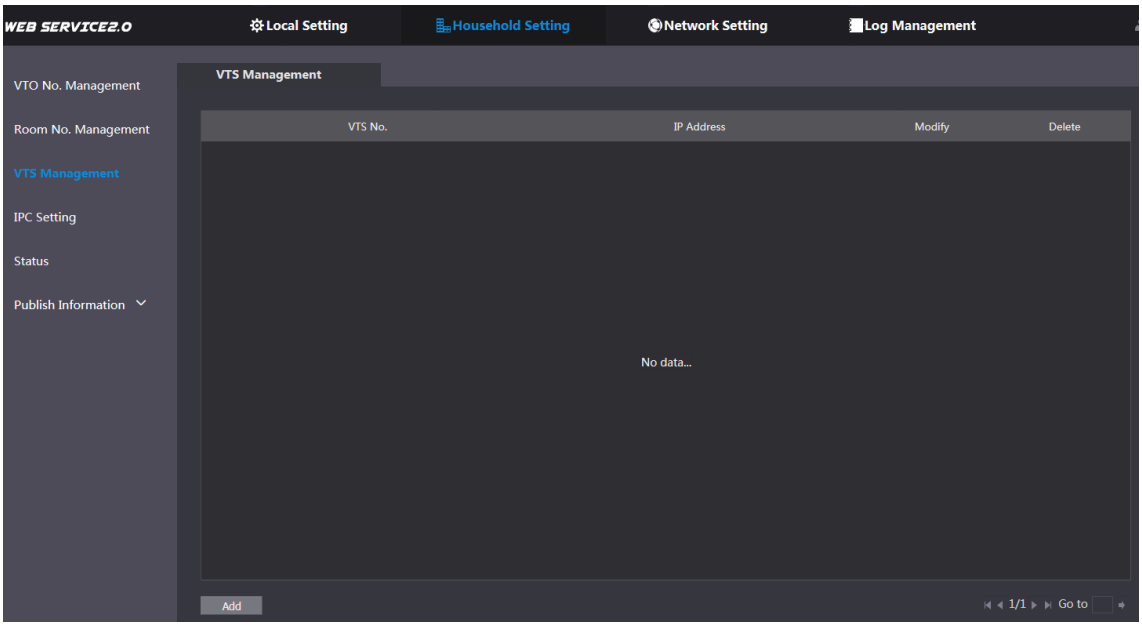
- Click to set it to the main card, and then the icon turns into . The main card can be used to issue access card for this room on the VTO. Click again to resume.
- Click to set the card to the lost state, and then the icon turns to . The card under lost state cannot be used to open the door. Click again to resume.
- Click to modify the user name.
- Click to delete the card.

5.3 VTS Management

You can add VTS device to the SIP server, and the VTS can be used as the management center. It can manage all the video door phones in the network, make or receive video calls, and make basic configurations. For details, see the VTS user's manual.

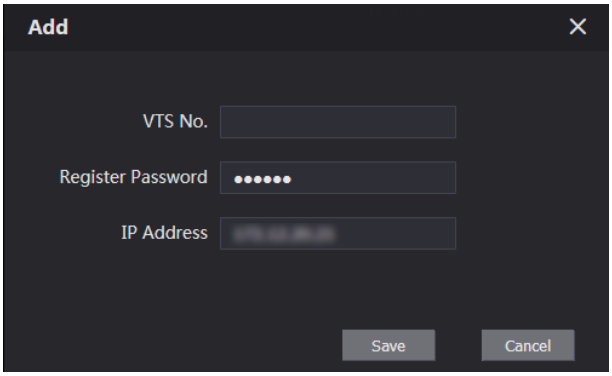
Step 1 Log in to the web interface of the SIP server, and then select **Household Setting** > **VTS Management**.

Figure 5-10 VTS management



Step 2 Click **Add**.

Figure 5-11 Add VTS



Step 3 Configure the parameters, and for the detailed description.

Table 5-3 Add VTS configuration

Parameter	Description
VTS No.	The VTS number you configured for the target VTS.
Register Password	Keep default value.
IP Address	The IP address of the target VTS.

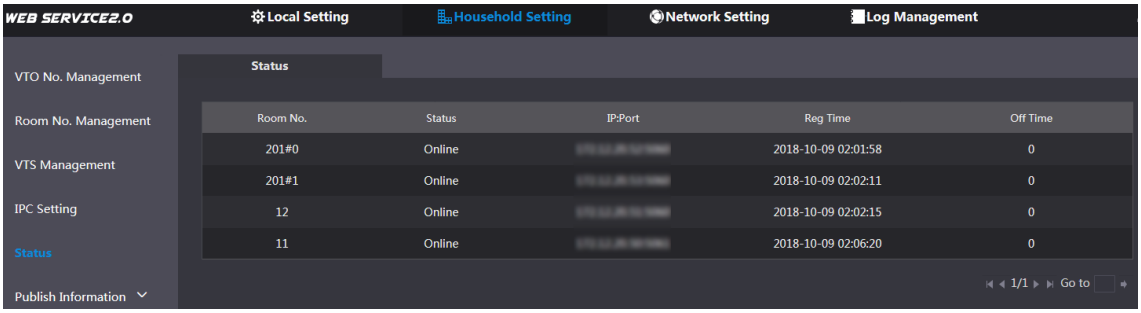
Step 4 Click **Save**, and then the added VTS is displayed. Click to modify IP address, and click to delete.

5.4 Status

You can view the working state and IP address of all the connected devices.

Log in to the web interface of the SIP server, and then select **Household Setting > Status**.

Figure 5-12 Status



6 Network Setting

This chapter introduces how to configure IP address, SIP server, DDNS, and UPnP.

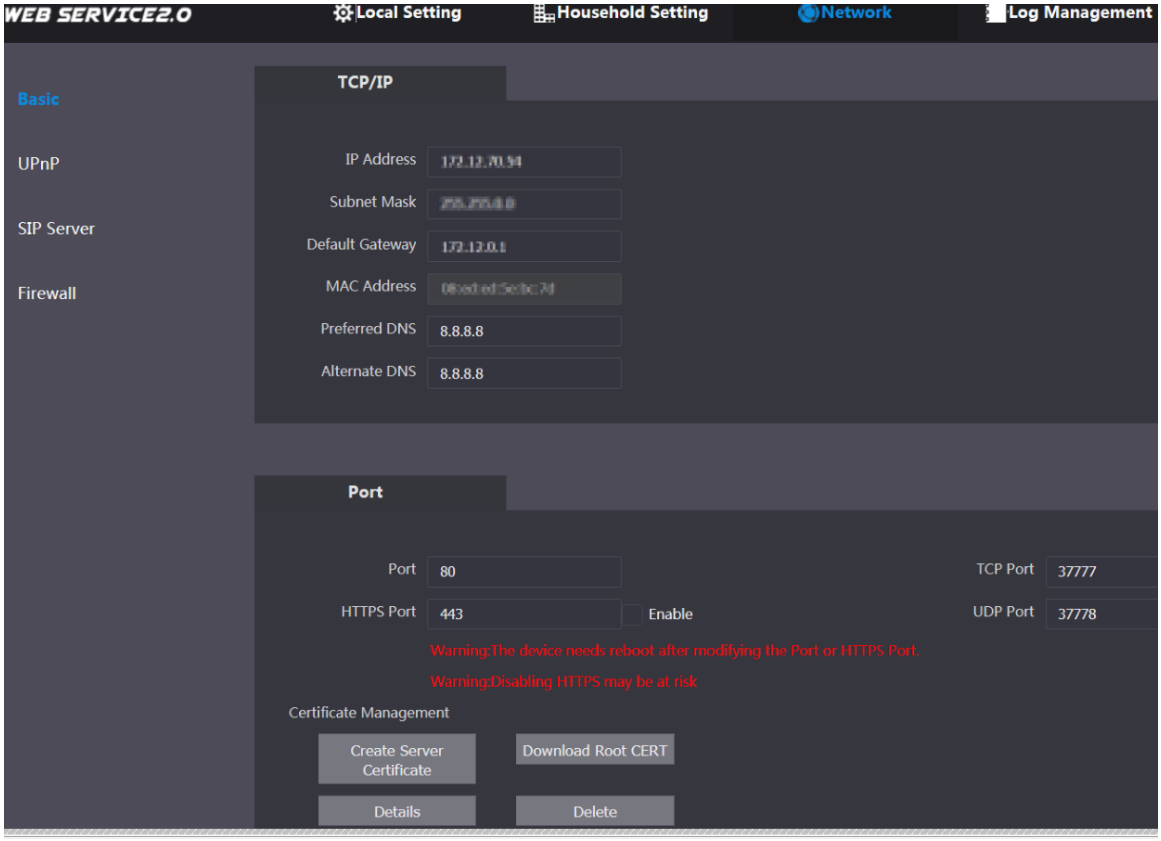
6.1 Basic

6.1.1 TCP/IP

You can modify the IP address and port number of the VTO.

Step 1 Select **Network Setting** > **Basic**.

Figure 6-1 TCP/IP and port



Step 2 Enter the network parameters and port number, and then click **Save**.

The VTO will restart, and you need to modify the IP address of your PC to the same network segment as the VTO to log in again.

6.1.2 Port

6.1.2.1 Creating Server Certificate

Click **Create Server Certificate**, enter needed information, click **Save**, and then the terminal will restart.

6.1.2.2 Downloading Root Certificate

Step 1 Click **Download Root Certificate**.

Step 2 Select a path to save the certificate on the Save File dialog box.

Step 3 Double-click **Root Certificate** that you have downloaded to install the certificate. Install the certificate by following the onscreen instructions.

6.1.3 HTTPS

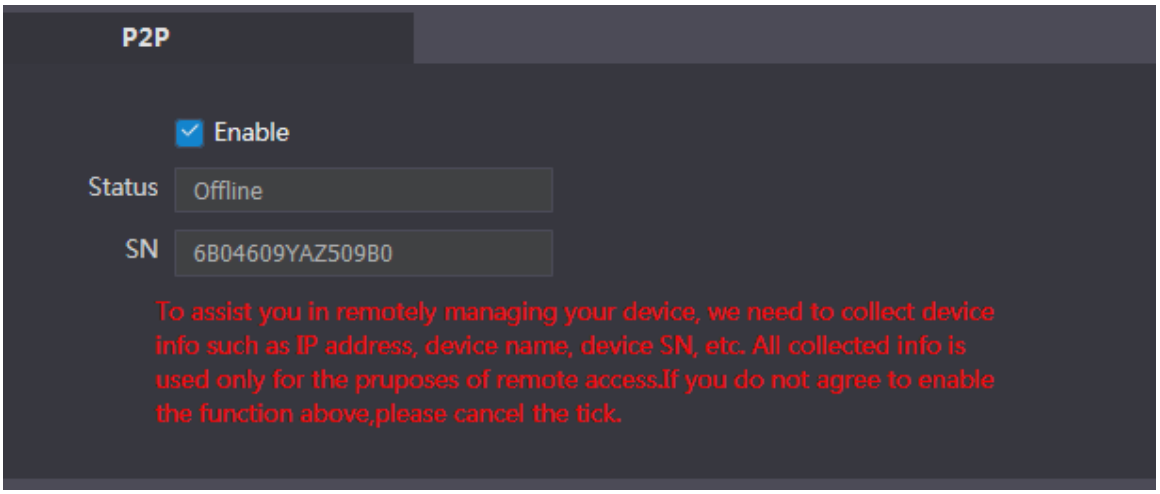
Select the **Enable** check box at **HTTPS Port**, and then the VTO will reboot. After restart, you can log in to the VTO by entering "https:// VTO IP address" in the address bar of the explorer.

- You can use the default value, and you can also modify the port number as needed.
- When HTTPS Port is enabled, you can enter https://VTO IP address:HTTPS port number/#/Login to log in to the web interface; or you can enter http://VTO IP address:port number, and the address will be automatically changed to https://VTO IP address: HTTPS port number/#/Login.

6.1.4 P2P

P2P network is one in which two or more PCs share files and access to devices such as printers without requiring separate server computer or server software.

Figure 6-2 P2P

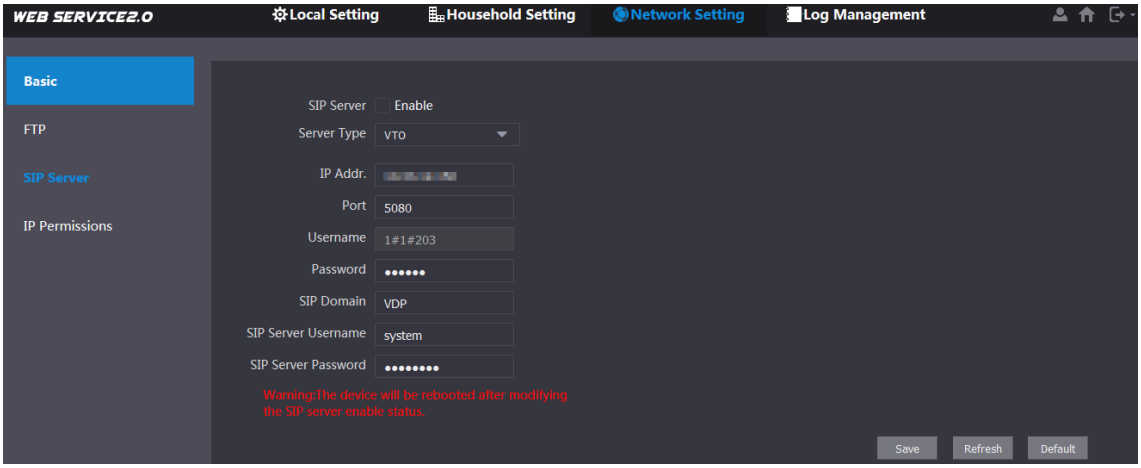


6.2 SIP Server

The SIP server is required in the network to transmit intercom protocol, and then all the VTO and VTH devices connected to the same SIP server can make video calls among each other.

Step 1 Select **Network Setting** > **SIP Server**.

Figure 6-3 SIP server



Step 2 Select the server type you need.

- If the VTO you are visiting works as SIP server
  Select the **Enable** check box at **SIP Server**, and then click **Save**.
  The VTO will reboot, and after rebooting, you can then add VTO and VTH devices to this VTO. See the details in "5 Household Setting."

  If the VTO you are visiting does not work as SIP server, do not select the **Enable** check box at **SIP Server**, otherwise the connection will fail.
- If other VTO works as SIP server
  Select **VTO** in the **Server Type** list, and then configure the parameters.

Table 6-1 SIP server configuration

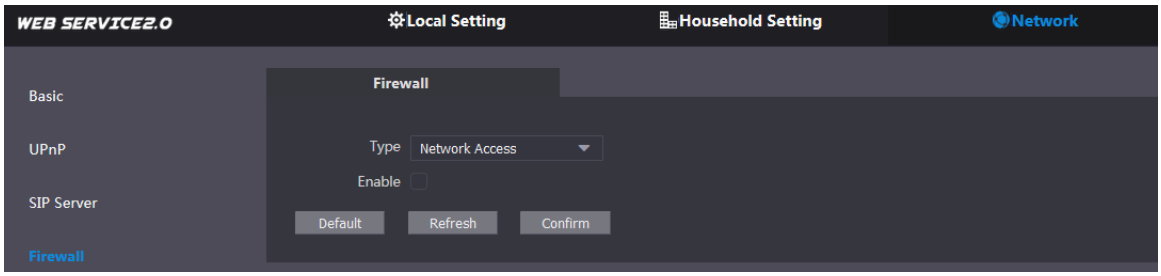
Parameter	Description
IP Addr.	The IP address of the VTO which works as SIP server.
Port	5060
Username	Keep the default value.
Password	
SIP Domain	VDP
SIP Server Username	The user name and password for the web interface of the SIP server.
SIP Server Password	

- If other servers work as SIP server
  Select the server type you need at **Server Type**, and then see the corresponding manual for the detailed configuration.

6.3 Firewall

Firewall is only for engineers. Select as needed.

Figure 6-4 Firewall



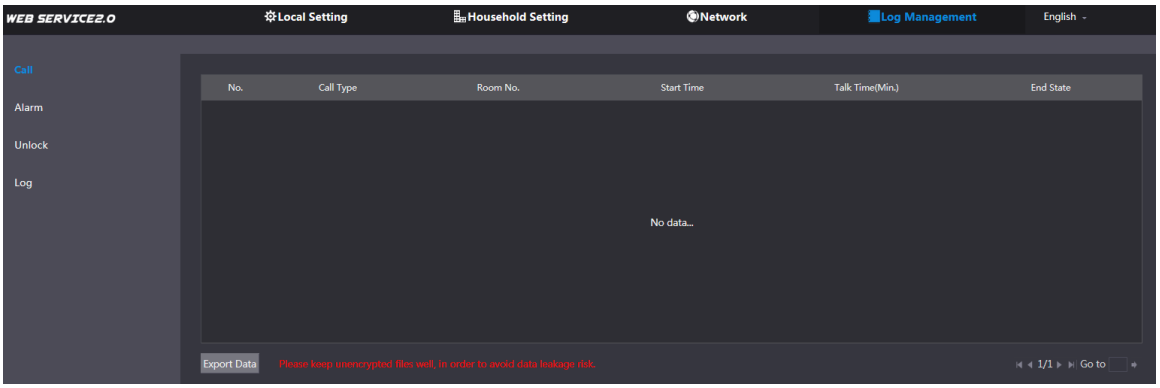
7 Log Management

You can view call history, alarm records, unlock records and system logs.

7.1 Call

You can view call logs, including call types, room numbers, start time, talk time, and end state.

Figure 7-1 Call

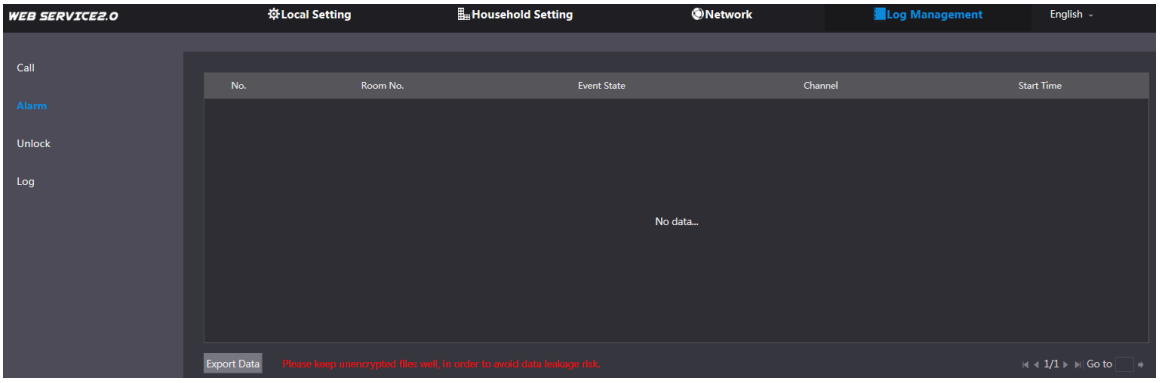


Click **Export Data** to export the records to your PC.

7.2 Alarm

You can view and export alarm logs.

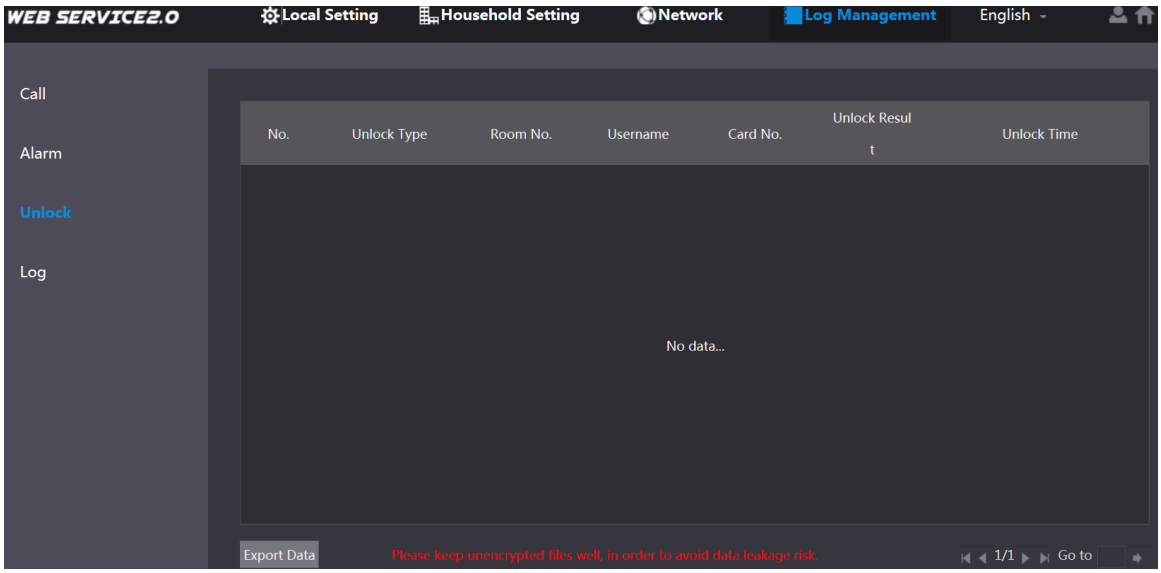
Figure 7-2 Alarm



7.3 Unlock

You can view and export unlocking records, including access card unlock, password unlock, remote unlock, and press button unlock.

Figure 7-3 Unlock

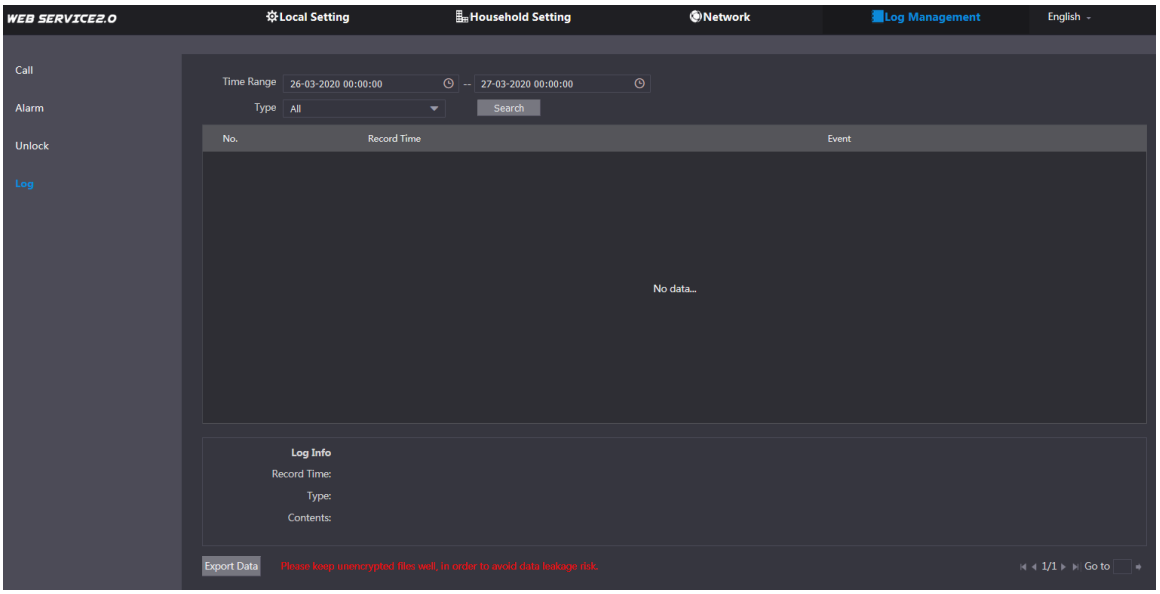


Click **Export Data** to export the records to your PC.

7.4 Log

You can search, view, and view logs of events in specific periods.

Figure 7-4 Log



Appendix 1 Cybersecurity Recommendations

Cybersecurity is more than just a buzzword: it's something that pertains to every device that is connected to the internet. IP video surveillance is not immune to cyber risks, but taking basic steps toward protecting and strengthening networks and networked appliances will make them less susceptible to attacks. Below are some tips and recommendations on how to create a more secured security system.

Mandatory actions to be taken for basic device network security:

1. **Use Strong Passwords**

   Please refer to the following suggestions to set passwords:

   - The length should not be less than 8 characters;
   - Include at least two types of characters; character types include upper and lower case letters, numbers and symbols;
   - Do not contain the account name or the account name in reverse order;
   - Do not use continuous characters, such as 123, abc, etc.;
   - Do not use overlapped characters, such as 111, aaa, etc.;

2. **Update Firmware and Client Software in Time**

   - According to the standard procedure in Tech-industry, we recommend to keep your device (such as NVR, DVR, IP camera, etc.) firmware up-to-date to ensure the system is equipped with the latest security patches and fixes. When the device is connected to the public network, it is recommended to enable the "auto-check for updates" function to obtain timely information of firmware updates released by the manufacturer.
   - We suggest that you download and use the latest version of client software.

"Nice to have" recommendations to improve your device network security:

1. **Physical Protection**

   We suggest that you perform physical protection to device, especially storage devices. For example, place the device in a special computer room and cabinet, and implement well-done access control permission and key management to prevent unauthorized personnel from carrying out physical contacts such as damaging hardware, unauthorized connection of removable device (such as USB flash disk, serial port), etc.

2. **Change Passwords Regularly**

   We suggest that you change passwords regularly to reduce the risk of being guessed or cracked.

3. **Set and Update Passwords Reset Information Timely**

   The device supports password reset function. Please set up related information for password reset in time, including the end user's mailbox and password protection questions. If the information changes, please modify it in time. When setting password protection questions, it is suggested not to use those that can be easily guessed.

4. **Enable Account Lock**

   The account lock feature is enabled by default, and we recommend you to keep it on to guarantee the account security. If an attacker attempts to log in with the wrong password several times, the corresponding account and the source IP address will be locked.

5. **Change Default HTTP and Other Service Ports**

   We suggest you to change default HTTP and other service ports into any set of numbers between 1024~65535, reducing the risk of outsiders being able to guess which ports you are using.

6. **Enable HTTPS**

   We suggest you to enable HTTPS, so that you visit Web service through a secure communication channel.

7. **MAC Address Binding**

   We recommend you to bind the IP and MAC address of the gateway to the device, thus reducing the risk of ARP spoofing.

8. **Assign Accounts and Privileges Reasonably**

   According to business and management requirements, reasonably add users and assign a minimum set of permissions to them.

9. **Disable Unnecessary Services and Choose Secure Modes**

   If not needed, it is recommended to turn off some services such as SNMP, SMTP, UPnP, etc., to reduce risks.

   If necessary, it is highly recommended that you use safe modes, including but not limited to the following services:

   - SNMP: Choose SNMP v3, and set up strong encryption passwords and authentication passwords.
   - SMTP: Choose TLS to access mailbox server.
   - FTP: Choose SFTP, and set up strong passwords.
   - AP hotspot: Choose WPA2-PSK encryption mode, and set up strong passwords.

10. **Audio and Video Encrypted Transmission**

    If your audio and video data contents are very important or sensitive, we recommend that you use encrypted transmission function, to reduce the risk of audio and video data being stolen during transmission.

    Reminder: encrypted transmission will cause some loss in transmission efficiency.

11. **Secure Auditing**

    - Check online users: we suggest that you check online users regularly to see if the device is logged in without authorization.
    - Check device log: By viewing the logs, you can know the IP addresses that were used to log in to your devices and their key operations.

12. **Network Log**

    Due to the limited storage capacity of the device, the stored log is limited. If you need to save the log for a long time, it is recommended that you enable the network log function to ensure that the critical logs are synchronized to the network log server for tracing.

13. **Construct a Safe Network Environment**

    In order to better ensure the safety of device and reduce potential cyber risks, we recommend:

    - Disable the port mapping function of the router to avoid direct access to the intranet devices from external network.
    - The network should be partitioned and isolated according to the actual network needs. If there are no communication requirements between two sub networks, it is suggested to use VLAN, network GAP and other technologies to partition the network, so as to achieve the network isolation effect.
    - Establish the 802.1x access authentication system to reduce the risk of unauthorized access to private networks.
    - Enable IP/MAC address filtering function to limit the range of hosts allowed to access the device.