

# IP PA / INTERCOM SOFTWARE PACKAGE User Manual



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## Summary

IP PA and Intercom System Software adopts advanced IPAudio™ technology, which is a pure digital transmission system by transmitting the signal in data packet on the LAN and WAN. The system solves the limitation of the transmission distance, susceptible to interference and such problems in traditional intercom and PA systems. The construction of the system is clear that just connecting the terminal to the computer can make up the strong digital communication system. It ingrates the computer network, intercommunication and public address without separate wiring to each interface.

## **Features**

- Function: it covers the intercom and PA system functions such as audio streaming on-demand service, budget management, terminal management, and authorization management, and so on.
- Transmission: audio transmission distance can infinitely extend and it can be operated over LAN and internet. The
  system supports the significant application in a large scale, such as the centralized control room from the main
  campus to sub-campus, from the headquarter to the branch office, to realize the fast and reliable information
  communication. The program takes up only 0.1Mbps of bandwidth per channel.
- Tone quality: Terminal output level close to CD quality (44.1K, 16.bit). It is more suitable for music enjoyment and listening training, such as Colleague Entrance Examination, CET4 and CET6 listening part. All the listening material can be clearly played and the candidates will not be puzzled by the vague sounds.
- The tone quality is clear and smooth, not disturbed by external electromagnetic waves. The minimum bandwidth is only 34kbps. The calling delay in LAN is less than 30 millisecond.
- The transmission distance can be infinitely extended. With the network, it can realize the intercom and multiparty call and build information and communication system in wider scale.
- It adopts digital audio processing technology and the audio width is 7KKz. The system has the function of echo
  cancellation and noise reduction, and realizes full-duplex conversation, multiparty calling and zone-broadcast.
- Confidential communication, special audio coding format, encryption processing, prevent eavesdropping;
- It is simple to adjust the communication scale, and it can complete the system expansion with increasing the terminal

## **Function List**

Function	Description
System overview	Quickly understand the number of terminals, sessions, tasks, media, servers, terminals online, system resource usage, and various types of tasks in the system, so that the system operation is clear.
<ul><li>Terminal management</li></ul>	Manage all terminals in the system, and set the intercom, broadcast,monitor properties of terminals.  For example, you can configure the terminal name, bind external cameras, intercom call transfer, multi-party call, intercom permission, broadcast permission, broadcast receiving mode,monitor permission, intercom/broadcast input/output volume, and task priority.
<ul><li>Zone management</li></ul>	Zoning can be planned according to the actual situation of the project. Zoning is mainly used for selection during broadcast.
<ul><li>User management</li></ul>	Add/delete user account ,set the role ,the rights of each role can be customized,including function right and operation terminal right.
Dial management	Support to add ring group ,when a terminal call to the specified ringing group number , all terminals in the group will ringing according to the ringing mode.  Support to add a shortcut number to call a specified terminal .
Broadcast settings	Support to set broadcast related parameters . For example ,multicast address、real-time task limitduration 、 task processing mode、 data processing mode.
Conference management	Support to add audio/video conference, the conference title \( \) host \( \) participant \( \) conference reminder \( \) video conference rotation ,use the run button of the conference template to control



	IP PA / Intercom software package user manual
	related terminals to run a conference in one click.
	Support to check、control、manage ongoing conference in the software.
Terminal status	Support to view the terminal propeties and status information ,and sort&filter terminal by zone、online status、search.
	Terminal status support list view、grid view.
	Support to add schedule tasks ,set triggers to trigger an operation on a terminal or server to automatically execute a task without human intervention.
	Trigger include 【Timing trigger】 and 【Event trigger】 (alarm/button/card/login/intercom/monitor/broadcast).
Schedule task	After trigger, the operation include 【Broadcast】 (file broadcast/server sound card broadcast/terminal broadcast/voice synthesis)、specified terminal 【Intercom】、【Monitor】、【Delay】、【Command】 (Volume adjust/alarm/remote broadcast control/custom instructions),user can customize schedule task according to the work environment.
	The schedule task support offline broadcast settings , the audio file can be pushed to terminal and save in advance ,the terminal play the media file according to the preset playing policy.
Real-time task	Support real-time broadcast .Real-time broadcast(file broadcast/terminal broadcast/voice composite broadcast) can be sent to the specified terminal.
● Media	User can upload the audio files to media library , as audio source to be used in timing ring broadcast real-time task. The files in the media library support to download online listen delete.
● Record	Recording files in WAV format generated by intercom, broadcast, monitor, and conference content between terminals are saved on the server. Recording files can be queried, listened, and downloaded.
	Record the real-time status history records. Statistical analysis, to know the system status timely and accurately.
• Report	In the real-time status report, the ongoing intercom, broadcast, monitor, alarm, conference, and alarm login events can be processed. For example, you can perform forced call release, monitor, forcible insertion, and transfer of ongoing intercom events.
Multi-server	Support to set multi-server SIP trunk to interact with other server for large-scale terminal expansion.
Device upgrade	Support terminal automatic upgrade .After the terminal firmware program is uploaded to the server, the terminal automatically obtains the firmware update program from the server to upgrade the firmware. (Only supported by some terminals)
<ul><li>Language configuration</li></ul>	Supports the language configuration of the server. Simplified Chinese, traditional Chinese, English, Russian, Spanish, Portuguese, French, Japanese, Korean, and German can be configured.
• Extension function	Support to view the authorized status(scenrio view、map view、SIP access、APP access) of the extension module.
<ul><li>Version information</li></ul>	Support to viwe the version information authorize information and restart server.
Device maintenance	Support to control device to task self-check and statistic result. (Only supported by some terminals)

Note: The above functions need to cooperate with corresponding type of device.



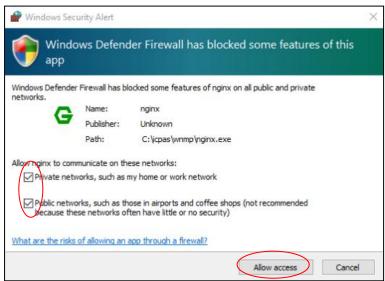
## Software Installation

⚠ Warning: Some firewall software may effect the running of IP PA and intercom system software, therefore please close all the firewall software(including WindowsXP built-in firewall) before installing the software.



Note: when the software is running for the first time after the installation, choose"private network" and "public network" in the security alert pop-up in Windows, and then click "allow access" to allow related programs of service software to pass through the firewall, as shown in the picture below.[Note: different system server settings may not same, take Win10 as an example for this settings]









## **Operate Environment**

Lowest configuration requirements:

CPU: i3

Memory: 4G and above (support 100 concurrent broadcast tasks)

Recommended configuration:

CPU: i5;

Memory: 16G and above (supports 500 concurrent broadcast tasks)

Recommended operating system: Windows 10/Windows Server 2016 or later

Resolution: 1080X1920

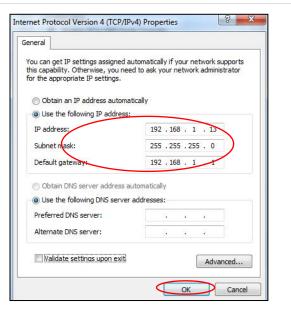
## **Installation Steps**

This software supports Windows 10 operating system.

#### **Install Sever Software**

Step	Operation	Diagram	
1	Confirm the computer has 100/1000M		
	network card and the drive program is		
	correctly installed.		

- In the TCP/IP settings of network can be set to automatically get the IP address.
  - Note: if the network didn't set DHCP service, please consult the network manager to get the available fixed IP.





Put the system installation disk, in disk:/Setup/Catalogue, double click software program to pop up welcome interface, then click the NEXT.

Choose the installation path, click the NEXT till the installation is finished and the icon shows on the desktop.



4 Right click the shortcut icon, and choose" attribute"-"compatibility", click the "run as administrator.

## **Software Operation**

Double click "ICPAS controller" icon to enter server control interface.



**Open the server:** please check that the server IP address in "Local IP" rectangle is correct after opening the controller ( when there are several network cards, please bind one of them for IP intercom and PA system use), and then check whether all servers are started or not (note: defaults is "Auto Start")

Restart the server: click "Stop All' first, and then click "Start All"

Note: 1) when server starts normally, the status bar displays  $\sqrt{}$ . If displays  $\times$ , please click "Stop All" to stop all servers, and then click "Config" to check whether the server port is occupied or not.

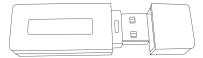
2) Set IP access restriction: click 【Config】 - 【IP access restriction】, select "restriction" and add IP address, the restriction will be effective after preservation. IP address added access restriction allows access to the server, the factory default is unlimited (all IP allow access to server).



## Software Registration

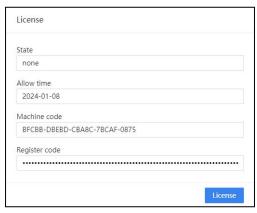
User can get authorization to use the official version server software through register code or dongle.

Dongle: directly insert dongle to the USB (drive-free), and then reboot the server software.



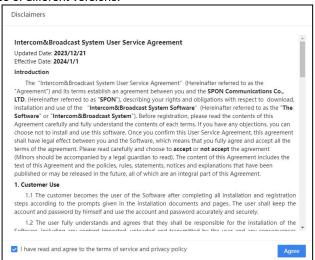
**Register code:** Access the server IP address through WEB, the system will automatically pop up the registration page. Send the machine code to the manufacturer to get the register code for the usage of the official server software.

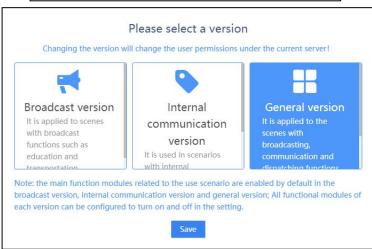
(Note: The registration code is valid for 2 months, it is recommended to use a dongle for registration)



Note: the server must be registered before normal operation.

After the registration is successful, please read the "Intercom&Broadcast System User Service Agreement" carefully, and after click on "Agree", please select the server version to use according to the industry, there are some differences in the functional modules of different versions.







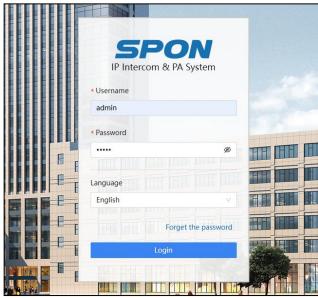
## **Server Software Operation Description**

## **Software Login**

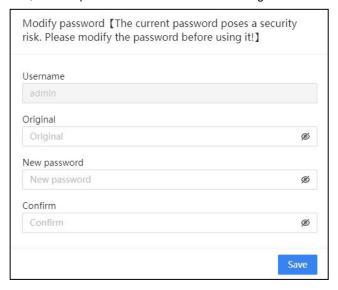
In the web browser address bar, type https://server IP (for example: https://192.168.1.13), enter the user name and password in the pop-up login window.

## **Admin Login**

(1) When login for the first time, the default username and password are both admin, press [Login] button to login the software.



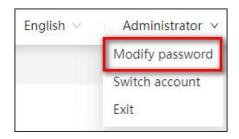
(2) Change password. After login, system will automatically display the option to change the password , please change the login password. The password must contain at least three types of characters: uppercase letters, lowercase letters, digits, and special characters, and the password must contain at least eight characters.



## Please modify the password periodically.

## The way to modify the password:

After login successfully, click on "**Administrator**" on the upper right corner and choose "change password" to change password.

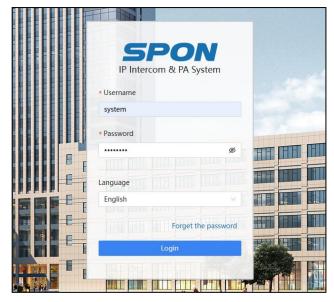




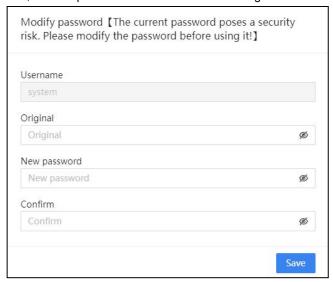
## System Administrator login (for debugger login)

(1) When login for the first time, the default username is admin, the default password is Admin123, press [Login]

button to login the software.



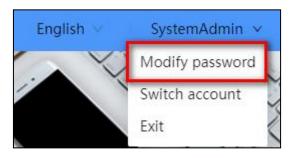
(2) **Change password.** After login, system will automatically display the option to change the password , please change the login password. The password must contain at least three types of characters: uppercase letters, lowercase letters, digits, and special characters, and the password must contain at least eight characters.



#### Please modify the password periodically.

## The way to modify the password:

After login successfully , click on "SystemAdmin" on the upper right corner and choose "change password" to change password.

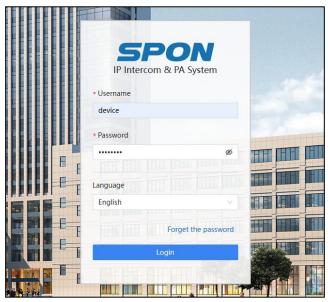




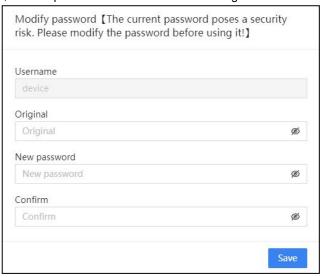
## **Device User Login**

This user must be correctly entered on the device for the device to obtain server information. That is, you need to enter the corresponding HTTP user name and password on the web pages of some devices ("device account" user name and password are recommended for all devices).

(1) When login for the first time, the default username is device, the default password is Admin123, press [Login] button to login the software.



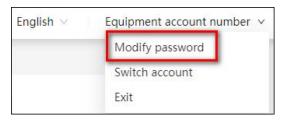
(2) **Change password.** After login, system will automatically display the option to change the password , please change the login password. The password must contain at least three types of characters: uppercase letters, lowercase letters, digits, and special characters, and the password must contain at least eight characters.



## Please modify the password periodically.

## The way to modify the password:

After login successfully, click on "**Equipment account number**" on the upper right corner and choose "change password" to change password.





## Basic Function(Please refer to electronic version for detailed information)

## **Overview**

#### After successfully login server ,the overview interface can view the following contents:

(1) View terminal number、session number、task number、media number、server number.

Terminal number: Display the number of all terminals in the system. Click to enter 【terminal List】.

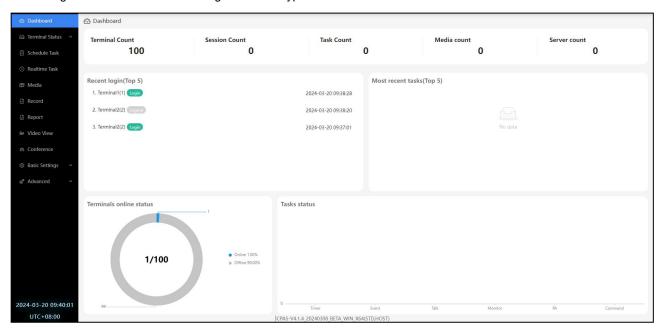
Session number: Display the number of terminals in the task (such as intercom, broadcast, monitoring, etc.), click to enter the [Report] - [real-time status] module.

Task nmuber: Display the total number of scheduled tasks in the system. Click to enter the 【Scheduled Task】 module.

Media number: Display the total number of audio files in the system, click to enter the 【Media Library】 module.

Server number: Display the total number of associated servers in the system, click to enter the 【Server Interconnection】 module.

- (2) In"Recent login" to view the top five terminals; In "Recent task" to view the top five task terminal;
- (3) View the number of online terminal \( \) offline terminal \( \) terminal in task in the fan chart; View the task number of timing \( \) event \( \) intercom according to the task type in the bar chart.





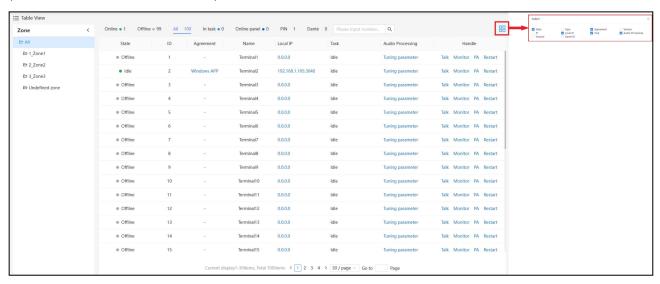
## **Terminal Status**

The "Status" shows terminal view mode, which supports table view, grid view.

Note: The zone information and terminal information of each view must be set in 【Basic Settings】 - 【Zone Management】 and 【Terminal Management】 in advance.

#### **Table View**

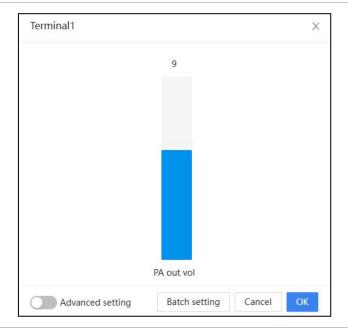
The interface displays in table view and it can show the zone list, terminal login status (online, offline), and task status (such as intercom, broadcast, idle etc.)



## **Terminal Volume Settings**

1 Broadcast output volume can be set as double click the terminal or volume, click the volume bar to increase or decrease the volume. Press "OK" to run the next task at this volume, the task can be performed in this time only if click "Cancel" and the next time will not.

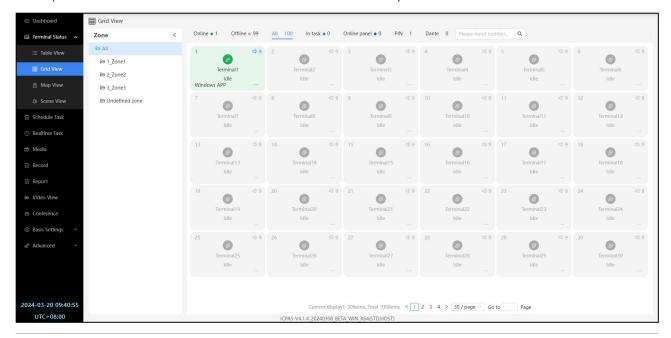
Note: turn on the "Advanced Setting" to set the intercom input and output volume, and the broadcast input and output volume.





#### Grid View

The interface displays in grid and the grid view can show the zone list, terminal login status (online, offline) and task status (such as intercom, broadcast, monitor, conference, Idle etc.)



• Terminal volume Double click one terminal or click \$\frac{1}{2}\$ g icon to set broadcast and intercom volume, for adjustment details, see "Volume Settings" in table view.

## **Map View**

The terminal location and status can be displayed in the map form. Users can make a marker on the map to clearly get the login address information. In map view, the target terminal can initiate intercom, broadcast, monitor and view the videos as well.

## **Scene View**

In the Scene View, it can display the terminal login location. Users can customize scene image, and add terminal mark or picture on the image.

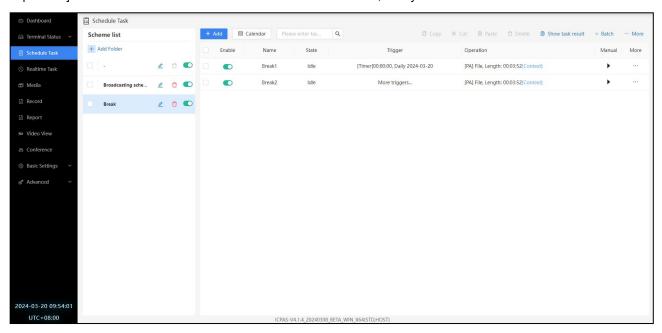
It can also add the scene mark on the scene map. Click the scene mark to switch the scene. ( click the left upper selection button to select different scene)

Click the terminal mark on the scene map to check the terminal login status (online, offline), task status (intercom, broadcast), at the same time, it can initiate intercom, broadcast, monitoring and so on functions (intercom, broadcast, monitoring initiator is the central microphone which is bound in [Basic Settings] -[User] tab.



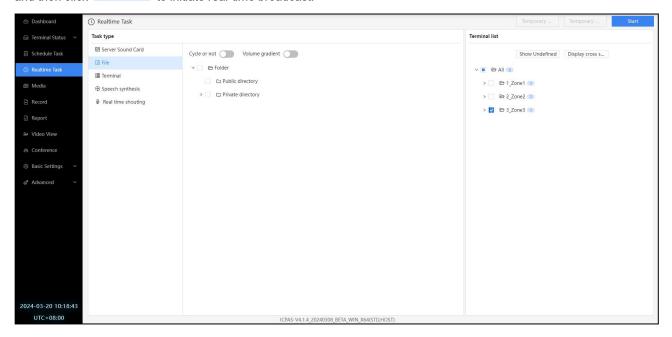
## **Schedule Task**

Users can set such tasks as the broadcast, alarm, intercom, timing programs in the [Schedule task]. When the server receives the triggering signal from terminals, it will automatically execute operations without the manual intervention. For example: add one timing ring, when select "timing" in [ Add-Trigger ] , it will set up the execution time. In the [ Add -Operation] to set as broadcast. When it comes to the scheduled time, the system will broadcast the task.



## **Real-time Task**

Real-time task supports file, terminal and speech synthesis broadcast. Select broadcast type and check target terminals, and then click to initiate real-time broadcast.





#### Media

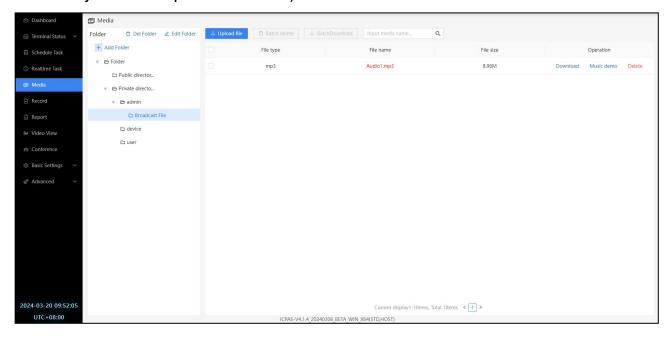
Users can upload audio recourse to media as the audio recourse of timing belling, broadcast and real-time tasks. Audio recourse of media support download, online audition and delete.

#### Add audio files

1. Click the + Add Folder button to build new files catalog.

Note: The file directory name can contain only uppercase and lowercase characters and digits.

2. Select pointed catalog, click button to upload audio files need to be added to the media library, file format supports MP3 and WAV. (It is ok for adding different bit rate audio files, the system background will be automatically converted to qualified bit rate files)





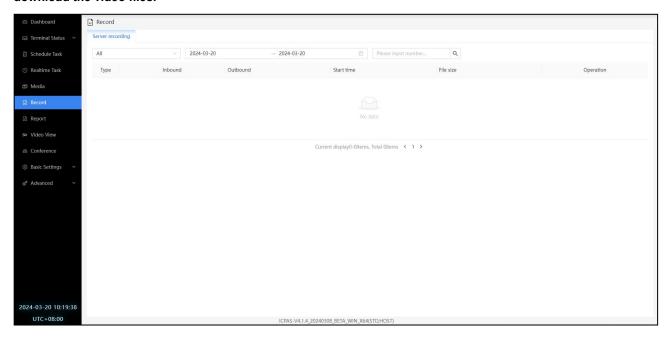
#### Record

### Server recording:

This server can save record files on the server in form of WAV format of intercom, broadcast, and monitor between terminals for downloading and reviewing later.(Note:Please use "system" account to login, enable the recording function in the "Basic settings"-"Composite settings"-"Audio and video configuration"in advanced)

### Inquiry/ download/ audition recording files:

Recording files can inquiry by category, time and terminal number. Select the file type and start time, press the search button to inquiry the recording file (If you need to follow the terminal inquiry, please input the terminal number), after inquired the recording file, click the [Download] or [Music demo] button on the right to download or listen to the recording file online. Note: if "Video Record" function is enabled in "Talk" of terminal management, you can check and download the video files.

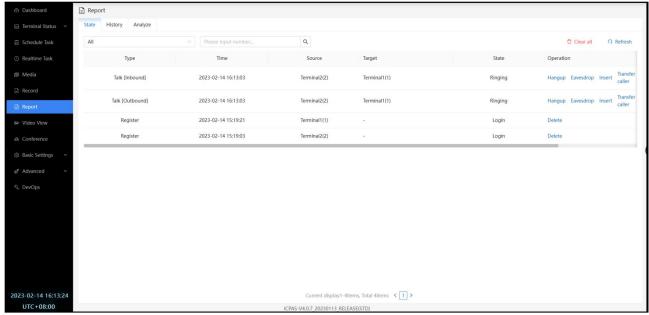


## Report

Record real-time status, history and statistical analysis of the equipment.

Set the rights to view reports for different users in [Basic Settings] -- [User Management] -- [Role Management], for detail operation steps please refer to the introduction of [Role Management].

[Real-time status] Records ongoing intercom, broadcast, monitor, alarm, conference, alarm login events. In real-time status, the records disappear after intercom, broadcast, monitor, and conference tasks stop. Users can view detailed records in the [Historical Record] module (export to Excel format). View statistical reports in the 【statistical Analysis】 module.





#### Video View

Video view is additional module, which will be available after authorization. Please choose the module and input the license code in "Advanced" - "Extension" (please contact the manufacturer for license).

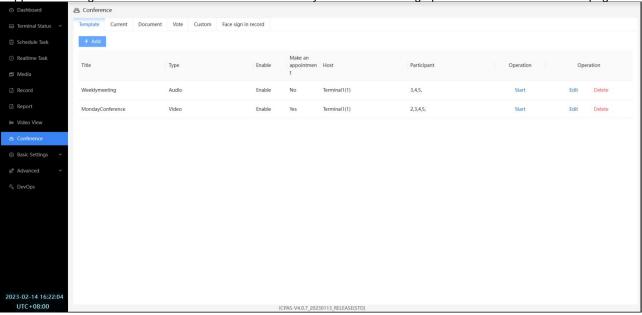
Click the download button to download video control, and restart the browser after installation.

#### Video preview

Double click the terminal bound video in the terminal list to preview the camera real time video (bind video please refer to "basic setting"-"terminal management")

## Conference

Support to adding video/audio conference and it can directly control and manage parties of conference on web page.



#### Conference template settings

The conference can be viewed, added, modified, run on the interface of conference template. The conference which is set in the conference template can be showed simultaneously on the conference display of the IP network visualized control host, click and run by manually.

#### **Current Conference**

The current conference template display the current ongoing conference, choose the corresponding conference ,click "Enter" button to enter into the management interface of the conference, support add, all mute, all invite.

## Document

On the document management page, you can upload files (Word, PDF, Excel and PPT formats are supported) required by the meeting to the service software. During a terminal meeting, you can use the uploaded files for preview or screen display.

The UploadDataTool tool is required to upload files. (If you need to upload files, please contact our technical support to obtain the upload tool.)

#### Vote

Add a vote in Vote Management. The IP network visual console can initiate a vote during a meeting.



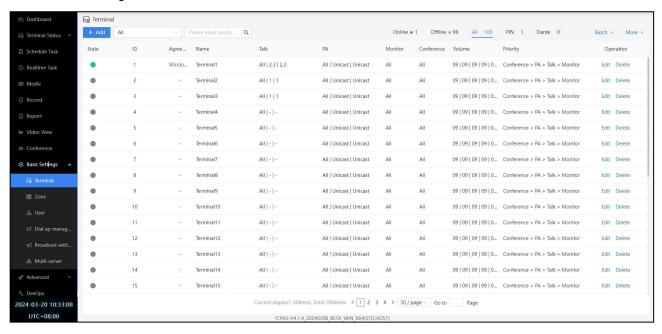
#### Custom

A customized meeting room is a virtual meeting room. Users can dial the customized meeting room number to join a meeting without using the service software or the moderator. Note: You must enable the customized meeting room in Meeting Management module.

## **Basic Settings**

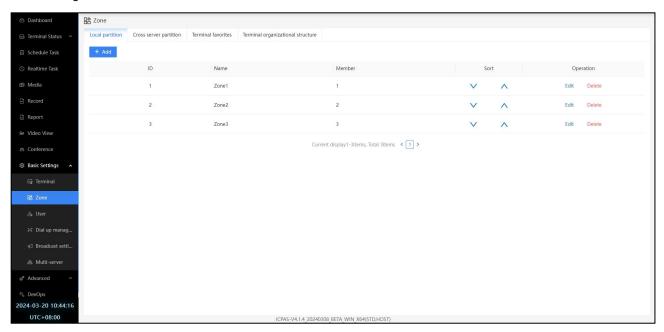
## **Terminal Management**

Terminal settings can be operated at the time of installing software, you can add terminal/ modify terminal/delete terminal in the terminal management interface.



## **Zone management**

On the "Zone" management interface, zones can be divided by the project real situation, zones are mainly used for broadcasting zone selection.



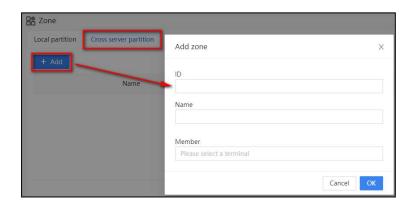


#### **Cross-server zone settings**

Please add other servers' information in "Basic Settings"- "Multi-server".

Click "Cross-server Zone" and click to add zones, the zone name and member list can be set. The cross-server zone member display mode is server number+ terminal ID number.

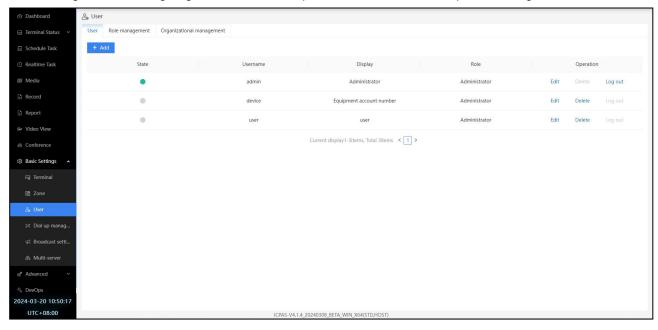
The zone modification and delete opeartion same as above mentioned.



## **User management**

## **User management**

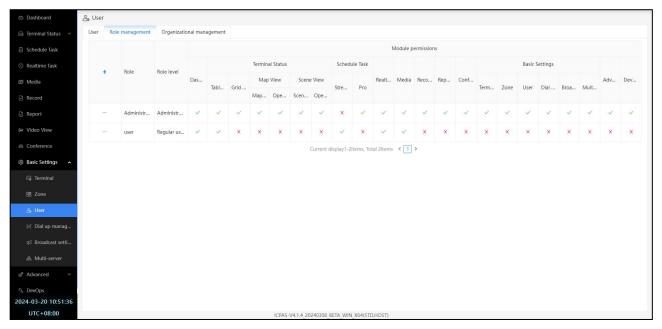
User management can assign login accounts and use permissions to the different operators using the server.





#### Role management

In the role management interface, you can customize roles and assign permissions to roles, and users can only access authorized modules. The red \* indicates unauthorized, and the green \* indicates authorized.

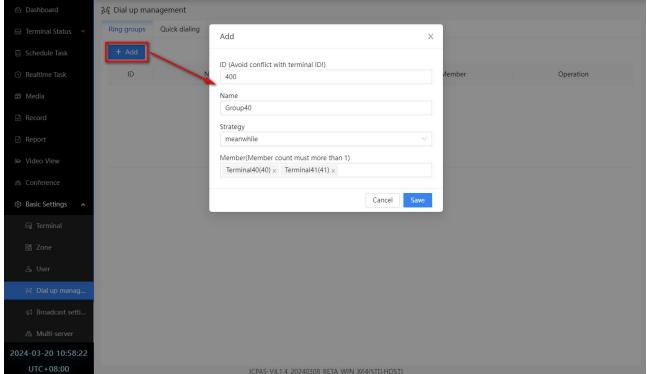


## Dial up management

## Ring groups

The function interface can be set in group call mode, click to add ringing group, set a grouping number (Note: the grouping number is ID number format, and can not be duplicated with other terminal ID), and set the group name and strategy(eg, ringing mode, can be set to simultaneous ringing or order ringing, order ringing are sorted according to the order in which the member list has selected), member list. When a terminal calls a group number that has been set, all terminals under this group number will ringing according to the set ringing mode. Once the terminal answered, other terminals will stop ringing.

Note:The member of the ring group must ≥2 .

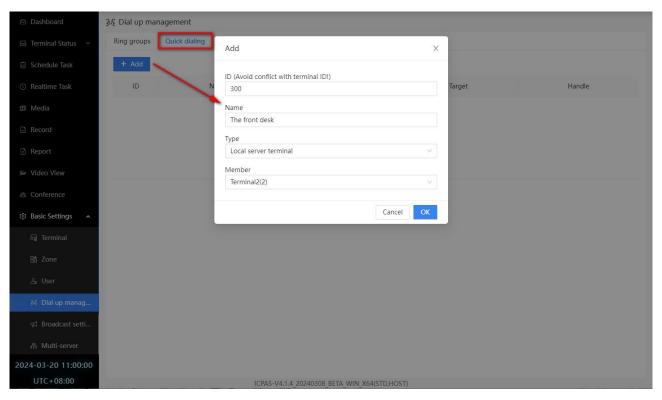




#### Quick dial

User can set the quick dial number for the terminal , to make a quick call to the specified terminal by dial the quick dial number.

**Quick dial setting:** Click "+ add "button ,set the ID number in the dialog box that is displayed(Note:ID number cannot be the same as another terminal ID ) name type(Local server terminal: call the terminal within the server;Across server terminal:call the terminal across the server;Sip trunk:call to the external telephone), check the target terminal, then click "save".



## **Multi-server**

Add different type of server on the multi-server to realize across server communication.

Note: External communication must be enabled for external communication. (Log in to the system account, under "Basic Settings" - "Network Settings" - "Exterior network mapping IP", you can enable external communication.)





## Advanced settings

## Backup/Restore

Back up all terminal/zone/tasks/user's information. When the data is destroyed, the data can be restored by the backup (for example, when the coverage is installed, the system parameter data will be modified, the user's data can be backed up before the coverage is installed, and the data will be covered after the installation is installed).

Click "Backup now" to backup data and save the file on the server automatically. Click "Restore" to restore the current data, support download. When needed, click "upload backup file" to restore the data.



## **Device upgrade**

Input the terminal type, Click "Upload firmware" button to upload the upgrade file to server, and the terminal will automatically obtain the update program from the server for firmware upgrading. (Note: only parts of terminals are ok)





#### Language

You can set system language here, support Chinese, English, Russian, Spanish, Portuguese, French, Japanese, korean, German.



#### **Extension**

In the extended function, broadcast console, identity recognition and intelligent analysis can be opened by pressing the button directly without license.

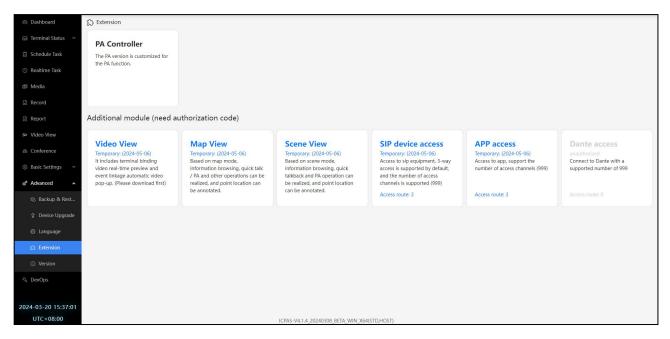
Video, map view/scene view, SIP device access and XC-APP access belong to additional modules, which can be used after authorized. Check the required module, click "Get application code", send the application code to the manufacturer, and then obtain authorization according to the license provided by the manufacturer.

**Video view**: including binding video real-time preview and event linkage automatic video popover. , Click the "download" button on the right to download and install video control after authorization; (see "Video preview" for details)

**Map view/scene view**: map/scene mode to browsing information, positioning and mark on map/scene view, it can work with intercom, broadcast and other operations (see "Terminal status" - "Map view"/" Scene view "for details)

SIP device connection: it allows 3-way SIP device access by default, 999-way SIP devices can be accessed after authorization

**APP Access:** The APP allows 3-way devices to access by default. After obtaining authorization, a maximum of 999-way devices can be accessed. (Please input PIN code in "Basic Settings" - "Terminal management".)





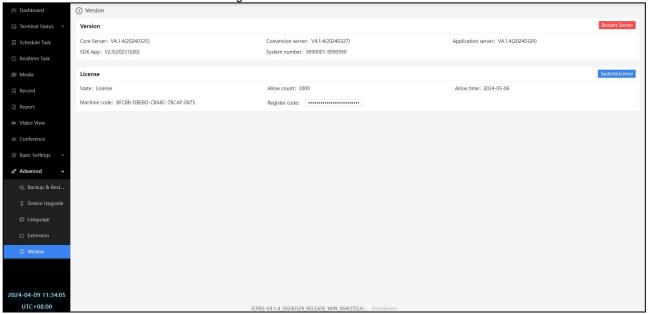
#### Version information

#### **Version information**

Display server version, core server version etc, click "Restart Server" to restart server;

#### License

Please offer the machine code to acquire the license of official server from supplier. (The registration code is valid for 2 months and it is recommended to use a dongle to obtain authorization.)

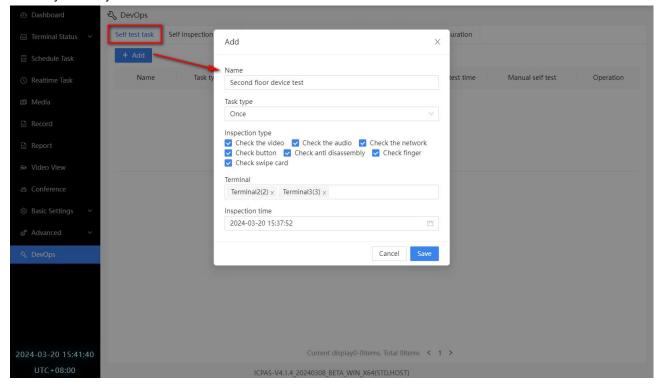


## **DevOps**

## **Device Self-inspection (Only some terminals support)**

Add self-inspection task: Press "+ Add" button to add a new self-inspection task, the task name, task type, inspection type, inspection terminal, inspection time can be set on the displayed dialog. After save to take effect, the terminal will perform the specified item inspection at the specified time. The device inspection type support video inspection, audio inspection, network inspection, button inspection, etc.

**Manual self-inspection:** Choose the corresponding self-inspection task, press the "Manual self-inspection" button to check by manually.



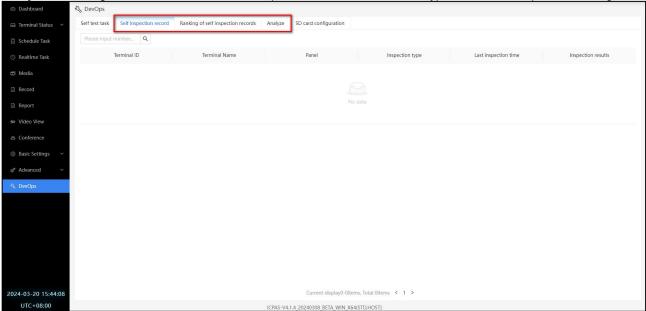


Self-inspection records. Ranking of self-inspection records. Analyze

**Self-inspection records:** Click Self-check Record to query device Self-inspection records, including terminal number, name, task name, check type, check time, and check result.

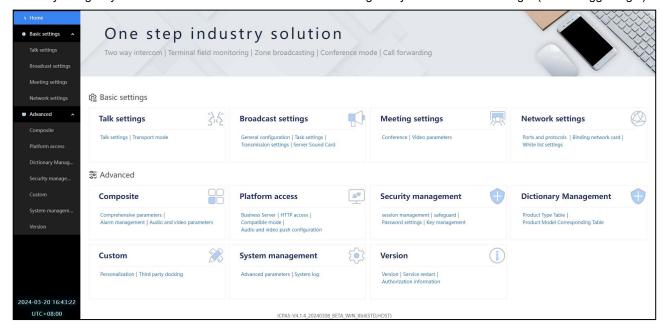
**Ranking of self-inspection records:** Click self-inspection record ranking to query the number of self-inspection failures and the last inspection time.

Analyze: Use diagram to show the device self-inspection failure data , failure type times, self-inspection ranking data.



## System Administrator Interface (Please refer to electronic version for detailed information)

The way to login system administrator interface to see "software login"-"system administrator login"(For debugger login)





Fault phenomenon	Fault reasons & exclude
Why all terminals can't login?	1. The firewall will prevent the server software access to the network by default, and it result in the server can't work normally. Therefore it's required to turn off the firewall or add the server software program is out of firewall prevent list.
	2. The server IP address and the terminal set [server IP] is different.
	3. The server is closed.
	4. Check whether the SIP key configured on the device is consistent with that configured on the server
Why some terminals can`t login?	Under the cross-network, the terminal haven`t set the gateway properly.
	<ol><li>Network does not work, we suggest using ping command test. The objective testing method is using the terminal connected cable insert to a computer (and set the terminal IP address), then Ping command to test connectivity on the server.</li></ol>
	3. Please use administrator to run the server.

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