Application Service Series

Billing Management System

Administrator's Manual

Document Version: 01

Release Date: 2025-04

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1 Contents

1 Contents.....1
2 Contents of Figures 5
3 Contents of Table.....8
4 Modifying Record.....9
5 Preamble..... 10
5.1 About this Manual..... 10
5.2 Document Users 10
6 Products..... 11
6.1 AS Billing Management System..... 11
6.2 Product Positioning: 11
6.3 System Features 12
7 Application Scenario..... 13
7.1 Enterprise communications management 13
7.2 Service industry communication optimization..... 13
7.3 Call Cost Analysis for Multinational Enterprises..... 14
7.4 Government Agencies and Operator Requirements 14
7.5 Integration with existing systems..... 14

7.6 Small and Medium Business Adaptation 15
8 AS Series Software Deployment and Installation 16
8.1 Pre-Installation Environment Configuration 16
8.1.1 List of Files Required for Installation 17
8.1.2 Create User Accounts 18
8.1.3 Granting sudo privileges to users 19
8.2 Installing NewLync-AS (Single-Machine Deployment) 19
8.3 Install NewLync-AS (Dual-Server Deployment) 22
8.4 Firewall Configuration 25
8.5 Accessing and Logging into the NewLync-AS Management System Platform 27
8.6 Add Recording Node 29
8.7 Configure OM Remote Recording 30
8.8 Import License 33
8.9 AS Series License Features Overview 35
8.10 Function Comparison Table 37
9 Configuring AS 38
9.1 Organizational structure 38
9.1.1 Membership and sectors 38
9.2 Enterprise Settings 44
9.2.1 Corporate Information 44

9.2.2 Administrative authority 45
10 Configuring CDR Billing 49
10.1 CDR Configuration 49
10.2 Call Record 50
10.3 Statistical Analysis 52
10.4 Billing Center 52
10.5 Statement of Accounts 57
11 Alerts 58
11.1 Alarm Log 58
11.2 Alarm settings 59
12 System Settings 61
12.1 Device Management Interface 61
12.2 Authorization Information 66
12.3 Data Maintenance 68
12.4 System settings 69
12.5 Recording Node Functionality 70
13 Appendix 73
13.1 Common Problems 73
13.1.1 Billing system does not show call records 73
13.1.2 Unable to export call log report 73
13.1.3 System Login Failure 74

13.1.4 Rate setting not in effect 74
13.1.5 Billing statements cannot be exported..... 74
13.1.6 Incomplete call records..... 75
13.2 Glossary 76

2 Contents of Figures

Figure 1 AS management system login screen 28
Figure 2 Add Recording Node 29
Figure 3 Add OM device 30
Figure 4 Configure OM Remote Recording..... 32
Figure 5 Configure OM Remote Recording 2..... 32
Figure 6 Getting the License Request File..... 33
Figure 7 Import License..... 34
Figure 8 Checking License Status..... 34
Figure 9 AS Trial License Interface 35
Figure 10 New sectors 38
Figure 11 Setting up department heads..... 39
Figure 12 Editorial office..... 39
Figure 13 Import Export Members 40
Figure 14 Import Export Members 40
Figure 15 Download Template..... 41
Figure 16 Uploading departmental information..... 41
Figure 17 Download Template..... 42

Figure 18 Adding Members 42
Figure 19 Modify member information..... 43
Figure 20 Modify basic enterprise information 44
Figure 21 Transfer creator 45
Figure 22 Add Super Administrator..... 46
Figure 23 Add Administrator 46
Figure 24 Edit Administrator Privileges..... 48
Figure 25 OM Series configuration interface..... 49
Figure 26 Call log screen 50
Figure 27 Call Interface Details Configuration Screen..... 50
Figure 28 Setting up call log filtering criteria 51
Figure 29 Picture of the statistical analysis interface..... 52
Figure 30 Adding members to Members & Departments 53
Figure 31 Assigning Extension Numbers..... 54
Figure 32 Adding Rates 54
Figure 33 Editorial rates 55
Figure 34 Call details 55
Figure 35 Call details 56
Figure 36 Batch price setting interface 57
Figure 37 Monthly Billing List Operator Interface 57
Figure 38 Alarm log interface..... 58

Figure 39 Alarm Event Settings 59
Figure 40 Sending Mail Settings 60
Figure 41 Device management interface 61
Figure 42 Edit device operation interface 62
Figure 43 Device management editing interface 63
Figure 44 Device management interface 64
Figure 45 Add Device 65
Figure 46 Getting the License Request ID 66
Figure 47 Import License 67
Figure 48 Check if the License file is imported correctly 68
Figure 49 Data Maintenance Interface 68
Figure 50 Add Node 70
Figure 51 Edit Node 71
Graph 52 Deleting nodes 72

3 Contents of Table

Table 1 Compatibility Requirements Table..... 17
Table 2 Number of concurrent recordings supported 17
Table 3 Installation File Information Sheet..... 18
Table 4 Firewall Port List..... 26
Table 5 Function Comparison Table 37
Table 6 Explanation of the Modify Member Information screen 43
Table 7 Enterprise Basic Information Interface Definition 45
Table 8 Adding an Administrator Interface Definition..... 47
Table 9 Setting up Call Log Screen Definitions..... 52
Table 10 Call Detail Screen Definitions..... 56
Table 11 Editing Device Operator Interface Definitions..... 63
Table 12 Data Maintenance Interface Definitions 68

4 Modifying Record

Document Version 01 (2025-04)

Full version

5 Preamble

5.1 About this Manual

This manual is a guidance document developed to help businesses and individual users maximize their use of the AS billing management system. The manual describes in detail the product introduction, operation methods and application scenarios for initial users and managers.

5.2 Document Users

- IT administrator: responsible for the deployment and daily maintenance of the system to ensure s Forum and efficient system operation.
- Enterprise managers: optimize communication costs and improve operational efficiency by analyzing billing data.
- Technical support engineers: solve all kinds of technical problems encountered by users and provide professional advice.

6 Products

6.1 AS Billing Management System

AS is a fully enterprise-ready public communications billing solution that utilizes a process-oriented CDR (Call Detail Recording) interface for efficient data collection and billing management, and supports multi-terminal communications requirements.

6.2 Product Positioning:

CDR collection and billing management in one package

The system includes the following core functions:

- Billing Management: By setting up multi-category billing rules, it realizes accurate communication cost calculation and provides a large number of informative reports for enterprise managers.
- Statistical Analysis: Develop call data into multiple visual reports, such as call count and call duration analysis, for easy monitoring and optimization of operation strategies.
- System synchronization: Supports synchronized configuration with AS and OMX devices for seamless upgrades and unified management.

6.3 System Features

- Efficient billing and bill management: support calculations involving large amounts of data and real-time data processing, complete rapid analysis and calculation of communication costs.
- Multi-scenario application support: suitable for enterprise communications management and government agencies, and supports multi-currency and multi-language configurations to meet the needs of multinational enterprises.
- Hierarchical permissions and security: Ensure that every step of the operation can be traced at any time, and protect sensitive data with advanced security measures. Adopting dual-machine hot standby and high responsiveness design to ensure stable system operation.

7 Application Scenario

7.1 Enterprise communications management

The AS system provides comprehensive expense management features for incoming and outgoing calls. Real-time statistical analysis tools allow enterprises to accurately control call costs and optimize communication strategies for high-cost areas. At the same time, the system supports the generation of detailed reports at the departmental level to help business administrators understand the call overhead of each department.

7.2 Service industry communication optimization

Communication expense management is especially important in-service industries such as hospitality and finance. AS provides industry-specific communication cost analysis features, such as peak hour outbound call statistics and low peak hour optimization strategy recommendations. With the reporting function, the service industry can effectively monitor the call quality and cost of the customer service center.

7.3 Call Cost Analysis for Multinational Enterprises

For the diverse needs of multinational organizations, AS provides communication expense statistics across time zones and multi-currency support. The system supports generating call reports by country and region to help enterprise administrators analyze international call cost trends, optimize international communication strategies, and improve operational efficiency.

7.4 Government Agencies and Operator Requirements

Government departments need to strictly manage communication costs and resource utilization. The AS system ensures that public resources are utilized efficiently through accurate expense tracking capabilities and comprehensive resource allocation reports. Meanwhile, for operators, the system supports the billing needs of batch users, providing detailed call records and statistical analysis.

7.5 Integration with existing systems

With an open API interface, AS can seamlessly interface with an organization's existing CRM and ERP systems. The system supports the import of user and call data from these platforms to achieve unified data management across systems. In addition, administrators can quickly set up customized reports through the API to improve work efficiency.

7.6 Small and Medium Business Adaptation

AS offers a cost-effective billing solution tailored to the needs of small and medium-sized businesses. Enterprises can quickly deploy billing rules through the system's pre-defined templates, manage expenses using a simple and intuitive user interface, and further reduce communication costs with built-in optimization suggestions.

8 AS Series Software Deployment and Installation

This chapter provides a detailed overview of the entire installation process, including system requirements, pre-deployment preparations, installation steps, initial configuration, and firewall settings.

8.1 Pre-Installation Environment Configuration

Please prepare the installation environment according to the following instructions to ensure a smooth system installation.

CPU Requirements

Details:

Specification	At least 8 cores
CPU Frequency	At least 2.4 GHz

The system requires a minimum of an 8-core CPU with a clock speed of at least 2.4 GHz to support the concurrent operations of the recording system. The greater the number of CPU cores and the higher the clock speed, the better the system's multitasking capabilities and response speed will be.

Memory Requirements

Memory Requirements	At least 16GB

At least 16GB of memory is required to ensure smooth system operation and robust

data processing capabilities. The larger the memory capacity, the stronger the system's ability to handle a large number of concurrent tasks.

Disk Requirements

It is recommended to reserve sufficient storage space for MP3 and WAV format data to accommodate potential future growth needs. Based on our testing, 1GB of storage space can hold approximately 290 hours of MP3 recordings or about 18 hours of WAV recordings.

Compatibility Requirements

CPU	Kunpeng（ARM）、Phytium（ARM）、HYGON 、ZhaoXin、Intel（X86）
Operating System	KylinOS V10、KylinOS、EulerOS、 UOS、Red Hat、Ubuntu
Database	KingbaseES、Dameng、KDMDB、TiDB、Cassandra、CouchDB

Table 1 Compatibility Requirements Table

Recommended Configurations

Number of concurrent recordings	Recommended CPU cores	Recommended CPU frequency	Recommended memory size
50	8-core	2.4GHz	16GB
800	16-core	2.4GHz	64GB

Table 2 Number of concurrent recordings supported

8.1.1 List of Files Required for Installation

This section lists the core files required prior to installing the NewLync-AS series system. To ensure a smooth installation process, please verify that the installation

packages listed below have been downloaded and their integrity confirmed.

File name
nlkas.xxxxxxxxxxxxxx.tar.gz (The filename includes the version number and release date, and will be updated with the release of new version installation packages)

Table 3 Installation File Information Sheet

8.1.2 Create User Accounts

Prerequisite: The operator must possess superuser (root) privileges.

1. To start a terminal session: Type `ssh username@serverdomaine`, press the spacebar, enter the server password, then press the spacebar again.

```
PS C:\Users\user> ssh npms@192.168.191.168
npms@192.168.191.168's password:
```

2. Switch to the root user.

3. Add a user account: Execute the following command as the system root user to create a new user account named ‘nlk’. Replace <username> with the desired username for the user you wish to create:

```
adduser <username>
```

4. Assign passwords to new users:

```
passwd <username>
```

5. When prompted for a “New Password,” enter the new password you wish to set.

6. Confirm new password:

Next, the system will prompt you to “Re-enter the new password:” for confirmation.

Re-enter the password you just set to complete the password setup.

8.1.3 Granting sudo privileges to users

Use the visudo command to grant sudo privileges to specified users, enabling them to execute commands requiring elevated privileges.

1. Enter the visudo command and execute it:

```
visudo
```

2. Locate the root entry in the sudoers file:

In the text editor, locate the section regarding root user privileges, as shown below:

```
## Allow root to run any commands anywhere
root    ALL=(ALL)       ALL
```

3. Add sudo privileges for this user under the root entry:

Immediately following the root user permission entry, add the following content:

```
nlk    ALL=(ALL)       ALL
```

After entering the command, press Ctrl+X to exit.



8.2 Installing NewLync-AS (Single-Machine Deployment)

This section provides detailed steps for deploying NewLync-AS on a single Linux machine, covering the entire process from preparing the deployment directory to

configuring and executing the installation script.

1. Switch to the nlk user account:

If you are not currently logged in as the nlk user, you must first switch to that user.

Execute the following command to switch users:

```
su - nlk
```

2. Create the deployment directory: After opening the terminal or connecting to the server, create a new directory to store the NewLync-AS installation files:

```
mkdir deploy
```

3. Switch to the newly created deployment directory:

```
cd deploy
```

4. Upload the installation package to the deployment directory.

5. Extract the installation files:

```
tar -zxf nlkas.xxxxxxxxxxxx.tar.gz
```

File names may change with version updates. Please ensure that the file name within the command is replaced with the current installation file name.

6. Post-completion verification: Confirm that the file has been successfully decompressed:

```
ll
```

After entering the command, you will see a list of the newly extracted files and

directories.

7. Prepare the ENV file on the server:

```
./installV2.sh newenv
```

8. Modify the env file according to the specific environment:

Item	Definition
adparam_mode=local	No changes required.
adparam_hostname	Enter this device's IP address
secondary_hostname	Leave blank
adparam_ldap_domain	LDAP domain, modify according to actual circumstances
adparam_ladp_password	LDAP password, modify as needed based on actual circumstances
adparam_s3_key	S3 Protocol ID, modify as needed based on actual circumstances
adparam_s3_secret	S3 Protocol ID, modify as needed based on actual circumstances
MY_IS_SECOND=no	No changes required.

9. Run script: Used to install Docker, enable IPv4 forwarding, configure the system environment, and prepare for subsequent installations.

```
./installV2.sh install
```

10. Logout: After completing the installation script, execute the logout operation to

close the current terminal session.

```
exit
```

11. Relogin: After logging out, please reconnect to the server to ensure all environment variables and configuration updates take effect. Use the following command to relogin to the server, replacing your.server.com with your server address.

```
ssh nlk@your.server.com
```

12. Re-execute the installation script: After logging back in, navigate to the directory containing installV2.sh. Run the following command to execute the installation script again and complete the installation.

```
cd deploy
./installV2.sh install
```

8.3 Install NewLync-AS (Dual-Server Deployment)

This section provides detailed steps for installing NewLync-AS Dual-Machine in a Linux environment, covering the entire process from preparing the deployment directory to configuring and executing the installation script.

1. Switch to the nlk user account:

If you are not currently logged in as the nlk user, you must first switch to that user. After opening a terminal or connecting to the server, execute the following

command to switch users:

```
su - nlk
```

2. Create deployment directory：Create deployment directory:

After connecting to both servers, create a deploy directory on each machine to store the NewLync-AS installation files:

```
mkdir deploy
```

3. Both servers have been switched to the newly created deployment directory:

```
cd deploy
```

4. Both servers uploaded the installation package to the deployment directory.

5. Extract the NewLync-AS installation files on both servers:

```
tar -zxf nlkas.xxxxxxxxxxxx.tar.gz
```

File names may change with version updates. Please ensure that the file name within the command is replaced with the current installation file name.

6. Verify upon completion:

Confirm that the files have been successfully extracted on both servers:

```
[nlk@localhost nlkas]# ll
```

After entering the command, you will see a list of the newly extracted files and directories.

7. Prepare the ENV file on the first server:

```
./installV2.sh newenv
```

8. Modify the env file according to the specific environment:

Item	Definition
adparam_mode=local	No changes required.
adparam_hostname	Enter this device's IP address.
secondary_hostname	Enter the backup machine's IP address.
adparam_ldap_domain	LDAP domain, modify according to actual circumstances.
adparam_ladp_password	LDAP password, modify as needed.
adparam_s3_key	S3 protocol ID, modify according to actual circumstances.
adparam_s3_secret	S3 protocol key, modify according to actual circumstances.
MY_IS_SECOND=no	No changes needed.

9. After executing the following command on the first server to generate the environment for the second server, it will be automatically copied to the second server:

```
./installV2.sh setup_secondary_server_env
```

10. Both servers execute the script:

```
./installV2.sh install
```

11. Log out.

After completing the installation script, perform the exit operation on both servers to close the current terminal session.

```
exit
```

12. Please log in again.

After logging out, please reconnect to both servers to ensure all environment variables and configuration updates take effect. Use the following command to log back into the server, replacing your.server.com with your server address:

```
ssh nlk@your.server.com
```

13. Re-execute the installation script: After logging back in, navigate to the directory containing installV2.sh. On both servers, run the following command to re-execute the installation script and complete the installation:

```
cd deploy
./installV2.sh install
```

14. Import Authorization: Log in to the AS management backend using the IP address of the first server, export the License ID, apply for authorization, and then import it.

15. Restart nlkas on another server.

```
docker-compose restart nlkms
```

8.4 Firewall Configuration

This section details how to configure the firewall to support the full functionality of

the NewLync-AS series services. Ensure that the corresponding ports are opened to allow the services to operate normally.

Port number	Protocol	Description
8082	tcp	Access for the NewLync-AS series management page.
1311	udp	Data transmission for OM remote recording.
7070	tcp	Reporting for OM CDR Data.
389	tcp	Network communication for LDAP services.

Table 4 Firewall Port List

1. Open the management page port for the NewLync-AS series.

Open port 1311/tcp for OM remote recording:

```
firewall-cmd --zone=public --add-port=1311/udp --permanent
```

2. Open the OM remote recording port.

Open port 8082/UDP for accessing the NewLync-AS series management page:

```
firewall-cmd --zone=public --add-port=8082/tcp --permanent
```

3. Open the OM CDR reporting port.

Open port 7070/TCP for OM CDR reporting:

```
firewall-cmd --zone=public --add-port=7070/tcp --permanent
```

4. Open the LDAP service port.

Open port 389/tcp for LDAP service:

```
firewall-cmd --zone=public --add-port=389/tcp --permanent
```

5. Apply and reload firewall rules.

Apply all changes and reload the firewall to make the settings take effect:

```
firewall-cmd --reload
```

6. Verify that ports are open.

```
firewall-cmd --zone=public --list-ports
8082/tcp 1311/udp 7070/tcp 389/tcp
```

8.5 Accessing and Logging into the NewLync-AS Management System Platform

After completing the installation and configuration of the NewLync-AS management system, administrators need to access the management platform to configure and manage the system. The detailed steps are as follows:

1. Open your web browser:

On your computer, launch any web browser, such as Google Chrome, Mozilla Firefox, or Microsoft Edge.

2. Enter the management platform address:

In the browser's address bar, enter the URL for the NewLync-AS Management System Platform: http://[server IP address]:[port number].

Example: http://192.168.131.58:8082, then press Enter to access the site.

3. Log in to the management platform:

On the login page, you will need to enter the credentials for your administrator

account. Please use the following default login information:

- User name: enter your user name in the 'User name' input box, default user name ：sysadmin
- Password: Enter your password in the 'Password' input box, default password：as28N24@pw

In addition, you can choose to log in with your cell phone number:

- Cell Phone Number: Enter your cell phone number in the 'Cell Phone Number' input box and enter the verification code received in the 'Verification Code' input box.

Once you have entered these credentials, click "Login" to enter the management platform.

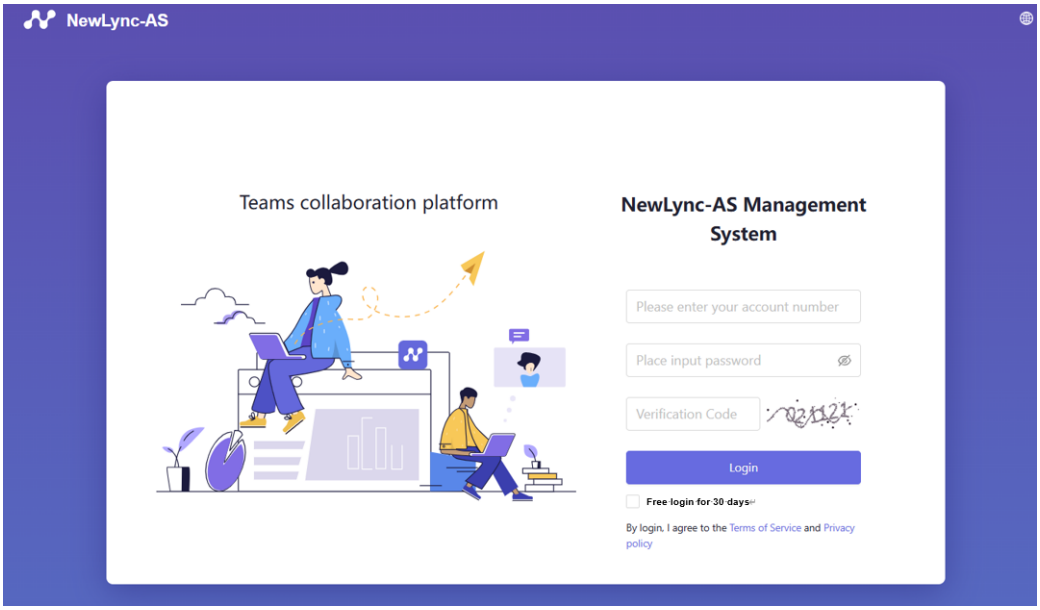


Figure 1 AS management system login screen

Note Keep your login credentials confidential and use them only on trusted devices. For system security, it is recommended to change the default password immediately after your first login.

8.6 Add Recording Node

After installation, add a recording node by navigating to the NewLync-AS management backend and selecting > Recording Node, then click Add Node.

Web address: http://192.168.130.58:8082 (Modify according to the actual server IP address)

Default account and password: sysadmin/as28N24@pw

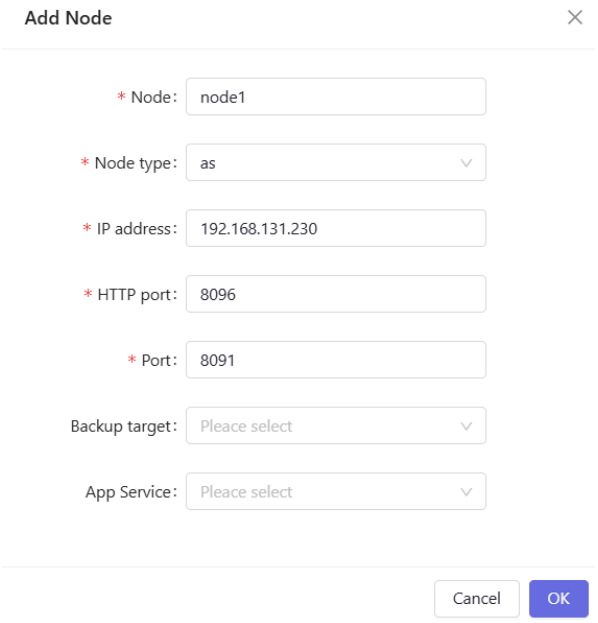


Figure 2 Add Recording Node

Item	Definition
Node Name	Default input node1.
Node Type	Select as.
IP address	Enter the current server IP address.
HTTP port	Default input 8096.
Port	Enter 8091.

Item	Definition
Application Services	Select the application. The default application created during installation is internal. Select internal.
Backup target	Not selected.
Alarm Switch	Enable as needed; alerts will be sent when space is insufficient.

8.7 Configure OM Remote Recording

Access the NewLync-AS management backend at http://192.168.130.58:8082 (modify according to the actual server IP address).

Default Account and Password: sysadmin/as28N24@pw

1. Add OM device

Step.1. Select the department; it is recommended to select the entire company.

Step.2. Select the application service created when adding the recording node from the application services at the bottom.

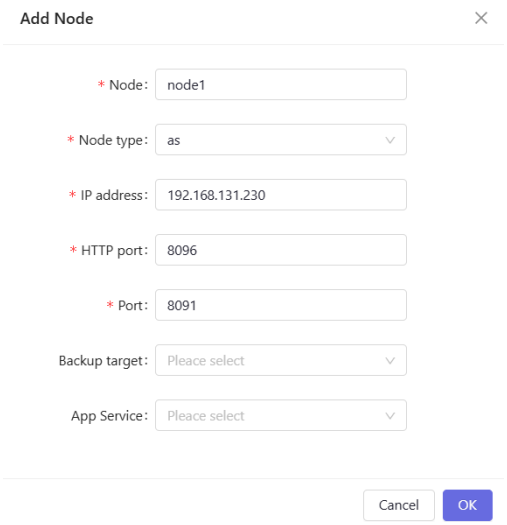


Figure 3 Add OM device

Item	Definition
Name	Fill in as needed. For example: node1
Department	Required. If uncertain, select the entire team.
Equipment Type	Select the OM/MX or OMX device based on the type of equipment being added.
MAC address	Enter the MAC address of the device.
FSP Security Code	Enter the FSP security code.
Recording Cache Address	Select and enter the recording cache address.
Local CDR Cache	Check to enable local CDR caching.
Application Services	Select the default internal.

2. Configure OM Remote Recording

Log in to the web interface, navigate to Application Services > Recording/Voicemail, configure remote recording, and enter the recording server address: 192.168.131.230:1311 (modify according to the actual server IP in your deployment).

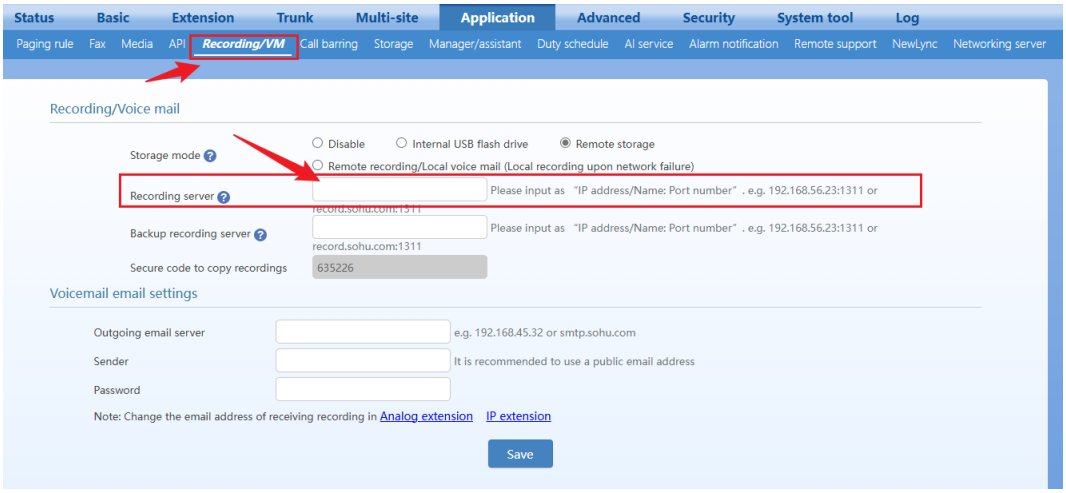


Figure 4 Configure OM Remote Recording

3. Enable call recording for the OM extension

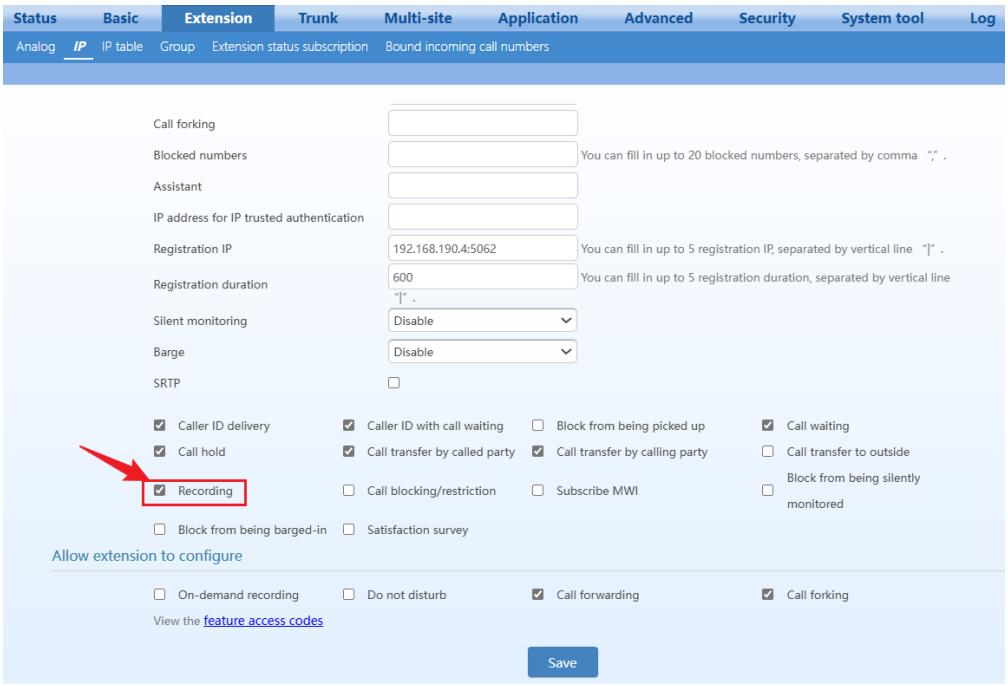


Figure 5 Configure OM Remote Recording 2

Recording Parameter Configuration

192.168.130.55 is the OM IP (modify according to your OM address). After logging into the OM web interface, enter the following command in your browser:

http://192.168.130.55/xml?method=gw.config.set&id698=0x008F

Finally, restart OM to complete the configuration.

8.8 Import License

After completing the installation and configuration of the NewLync-AS Series NL-Recording system, it defaults to a trial license. The next step is to import the License to activate and enable the system's full functionality. Please contact your distributor to obtain the appropriate License. Once you have the License, follow the steps below to import it correctly.

Obtain License request file:

Step.1 Log in to the NewLync-AS NL-Recording system management platform.

Step.2 Navigate to > System Settings > License Information. Click “Get License Request ID” to generate the License Request file (.csr file).

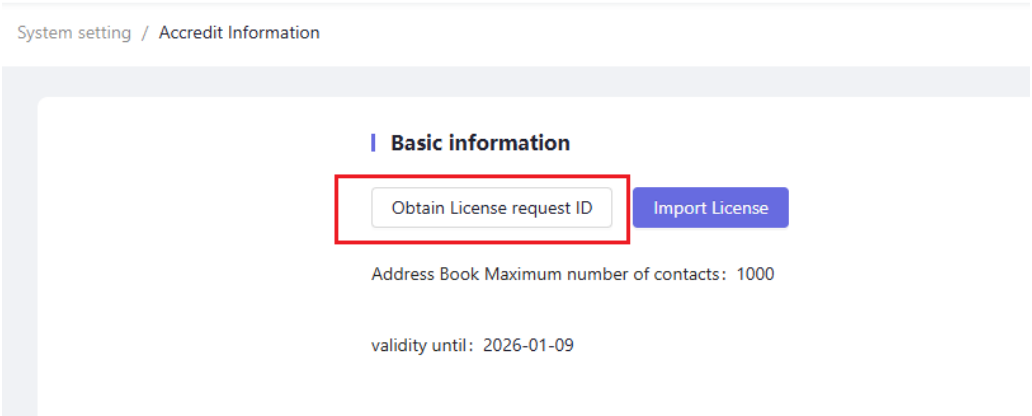


Figure 6 Getting the License Request File

Step.3 Save the generated .csr file to your local computer as prompted. This file must be sent to your distributor to obtain the corresponding license.

Submit a license request and receive the license file

Step.1 Send the .csr file to your supplier or New Rock. They will generate the corresponding license file based on the number of services you purchased.

Step.2 After processing your request, the supplier will send you a document containing the official license.

Import License File:

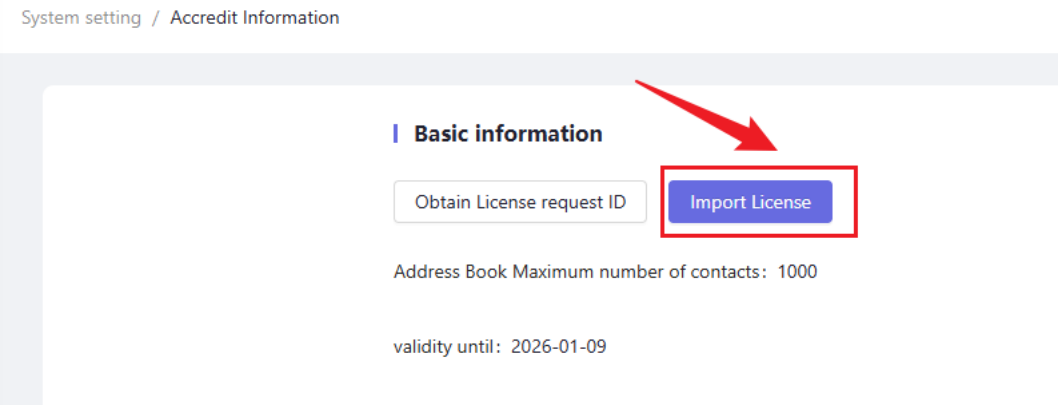


Figure 7 Import License

Step.1 Click “Import License”.

Step.2 In the pop-up window, browse and select your License file.

Step.3 After selecting the file, click “Open” to upload it. The system will automatically process and verify the validity of the License file.

Step.4 Verify License Status.

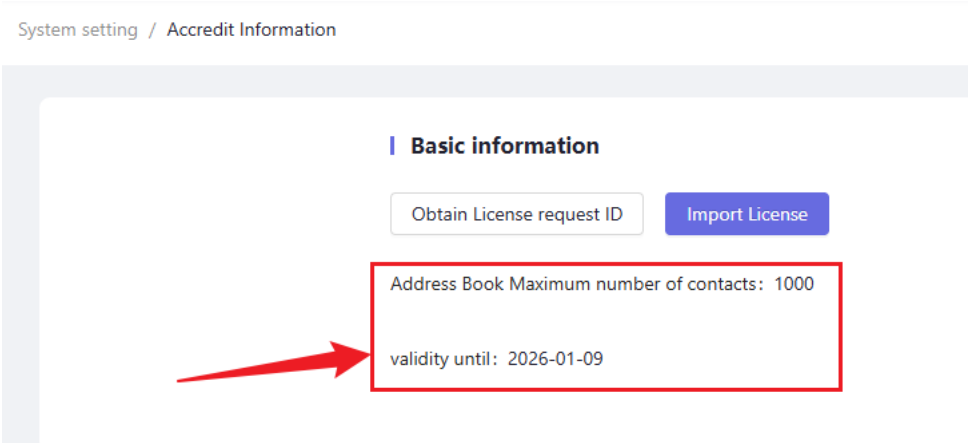


Figure 8 Checking License Status

8.9 AS Series License Features Overview

The AS series of management systems offers four authorization modes to meet the diverse communications management needs of enterprise users. After initial installation, the system defaults to a trial license mode with some functionality limitations. Enterprise users can contact the distributor to purchase an official license, which supports personalization (functionality, concurrency, maximum number of contacts) to fully unlock the full functionality. The following is a detailed description of the functions and features of the four authorizations:

I. AS Trial License

The system defaults to a trial license, under which the number of address book administrators is limited and only the basic organization structure and member management functions are supported. The recording function has a limited maximum number of concurrencies, which cannot meet the demand for large-scale recording. The trial period for the function is 7 days. For enterprise trial and functionality evaluation only.

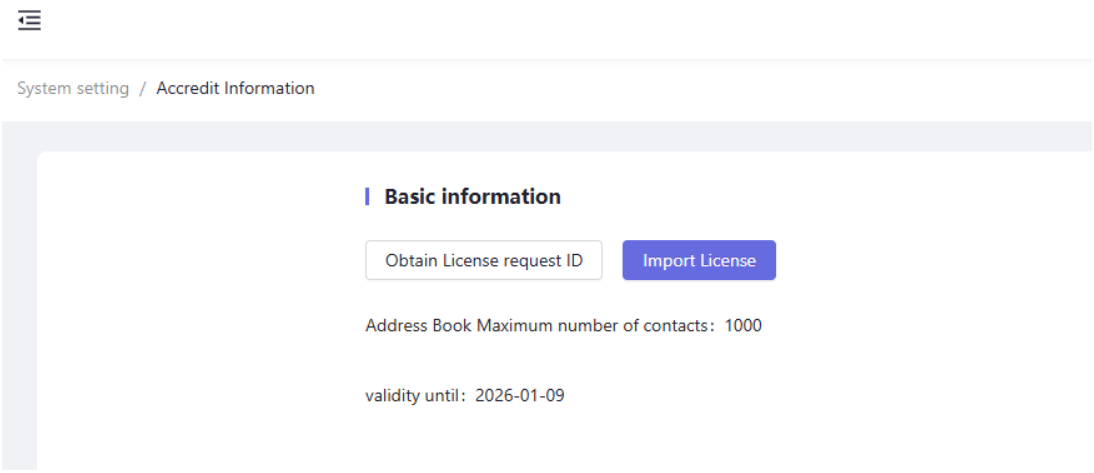


Figure 9 AS Trial License Interface

II. AS Recording System License

Core Functions: Provide storage, query and playback management of call recording, support recording acquisition and storage, support encrypted and non-encrypted storage modes, and provide recording statistical analysis and alarm functions to meet multi-dimensional data management needs.

Applicable industries: Mainly used in finance, customer service, public prosecutors

and law enforcement and other industries, need to record, archive and playback the customer call scenarios.

III. AS billing system authorization

Core Functions: Support call record (CDR) collection and management, filter call records according to departments or members, manage call cost calculation, generate bills according to call duration, location, type, etc., and support personalized rate settings. Ideal for large-scale call centers or enterprise communications expense management.
Applicable industries: call centers, communication service providers, mainly used for call billing, bill management and communication expense accounting.

IV. AS Address Book System License

Core Functions: Used to manage the information and organizational structure of enterprise employees, support LDAP protocol docking, support for a variety of phones (including Yealink, Direction, Huawei and other internal communications). Support employee information query and organization management.
Applicable industries: HR, administration and IT departments for scenarios that require efficient management of company address book, employee and departmental information.

Concurrent authorization of recordings and authorization of a maximum number of communicators
Users can purchase recording concurrent license and address book number limit license separately according to their needs, to enhance the maximum number of concurrent use of the system at the same time and the maximum number of address book users, to ensure that the system can still run stably during the peak period of use. When the enterprise in the subsequent expansion, you can contact the channel provider to upgrade the license on the existing basis.

8.10 Function Comparison Table

Feature Module	Contacts Authorization	Recording Authorization	Billing Authorization
Support Organizational Structure Management	✓	✓	✓
Support User Permission Level Management	✓	✓	✓
LDAP Protocol Integration	✓		
Recording Collection and Storage Management		✓	
Recording Permission Control (Whitelist, etc.)		✓	
Support Recording Statistics and Alerts		✓	
Support Multi-Node Recording Backup		✓	
Support Call Record Statistics			✓
Support CDR Collection and Management			✓
Support Billing Report Output			✓
Support Call Rate Calculation and Tiered Billing			✓
Support API Interface Integration	✓	✓	✓
Support Domestic Servers and Operating Systems (New China)	✓	✓	✓
Support Statistical Report Output	✓	✓	✓
Support Sensitive Information Hiding (Recording/CDR)		✓	✓
Compatible with OM/OMX/MX Devices	✓	✓	✓
Support NewLync2.0 Collaboration Platform	✓	✓	✓
Support Log Backup and Recovery	✓	✓	✓
Support Call Detail Record Encryption		✓	✓
Support Departmental Statistical Analysis	✓	✓	✓
Support Large-Scale Concurrent Access	✓	✓	✓

Table 5 Function Comparison Table

9 Configuring AS

9.1 Organizational structure

9.1.1 Membership and sectors

Administrators can add members directly in the admin backend, or via a corporate invitation code. Directly added members are inactivated by default and cannot log in to the client, you can enable the automatic activation function in the operation and maintenance platform.

Add department

Step.1 Go to the AS administration backend and click Organizational Structure > Members & Departments.

Step.2 Click +New Department on the left side of the page.

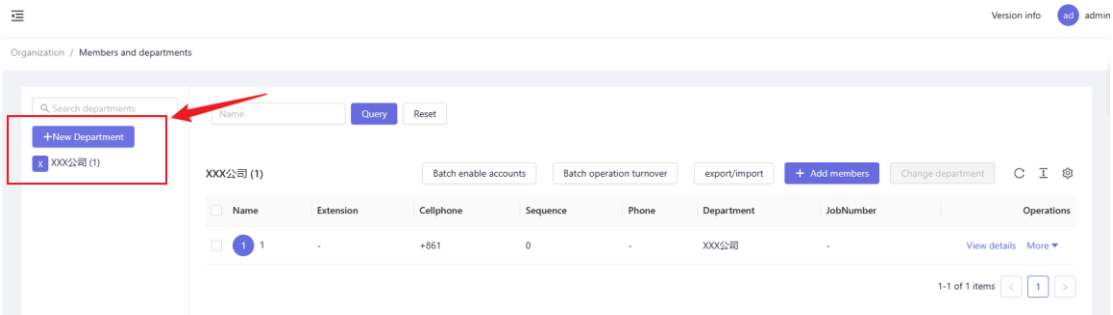


Figure 10 New sectors

Step.3 Enter the department name in the pop-up window, select the parent department, and set the department head (optional).

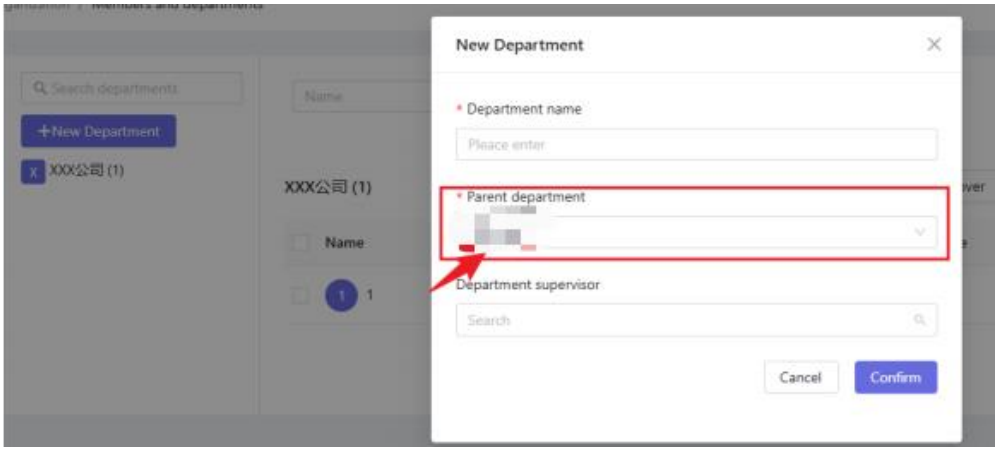


Figure 11 Setting up department heads

Step.4 Click Confirm to create successfully.

Step.5 Right mouse button on a department name allows you to edit the department, add sub-departments, move down, and delete the department. Only empty departments can be deleted, so remove the members in the department before deleting it.

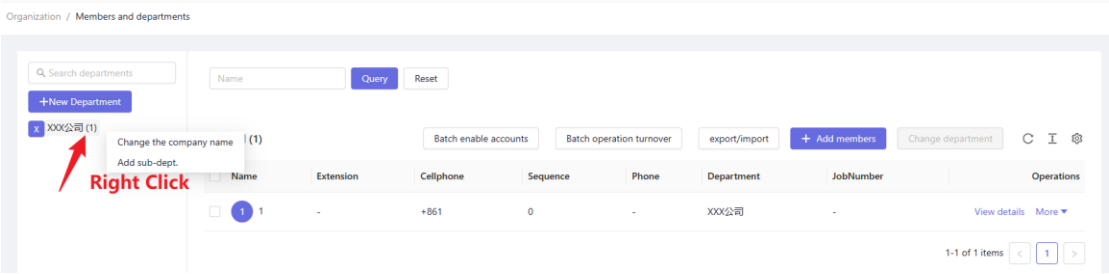


Figure 12 editorial office

Import Export Membership

Step.1 Go to the AS administration backend and click Organizational Structure > Members & Departments.

Step.2 Click Import Export.

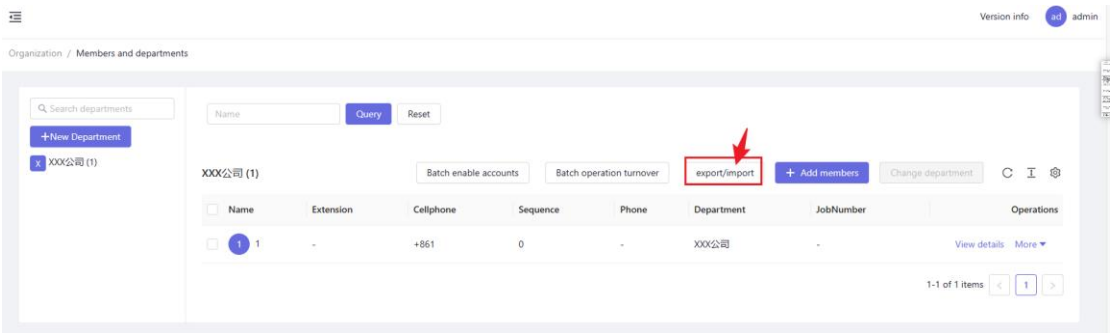


Figure 13 Import Export Members

Step.3 Click Export Members to export all members.

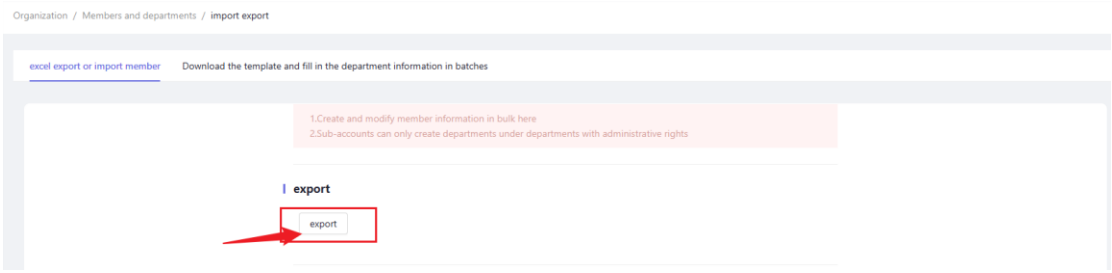


Figure 14Import Export Members

Step.4 Click Download Template and the browser automatically downloads an excel template. Edit the template, add member information, save, and then click Upload Staff Information to upload the edited form. Be careful not to modify the Forum structure.

Import Export Department

Step.1 Download the template, enter departmental information and then upload it to add departments in batch.

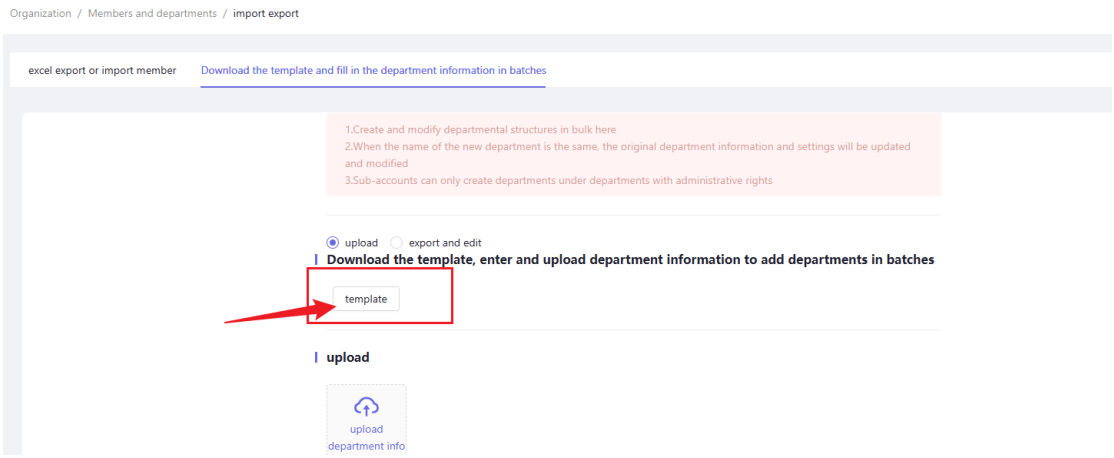


Figure 15 Download Template

Step.2 Follow the form prompts and click Upload Department Information after completing the form.

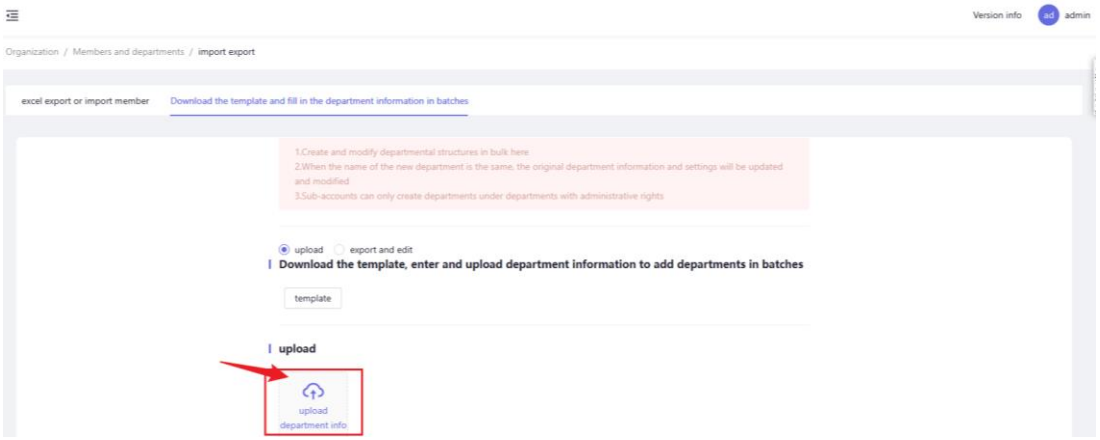


Figure 16 Uploading departmental information

Step.3 Export and modify departments

Click to download the template, enter department information and upload it to add departments in bulk.

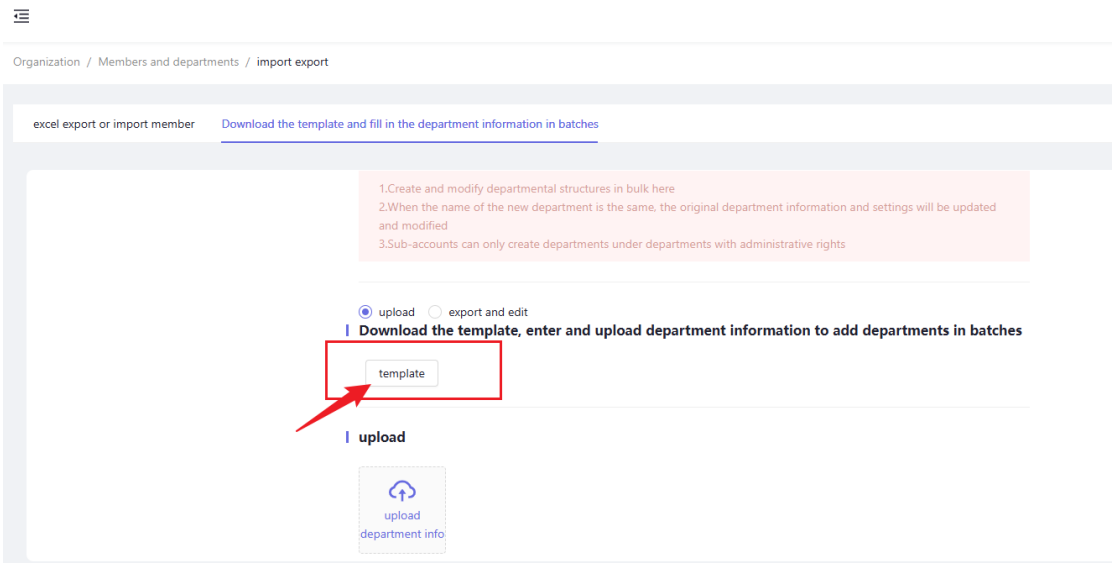


Figure 17 Download Template

Add Member

Step.1 Go to the AS administration backend and click Organizational Structure > Members & Departments.

Step.2 Click +Add Member on the Members page.

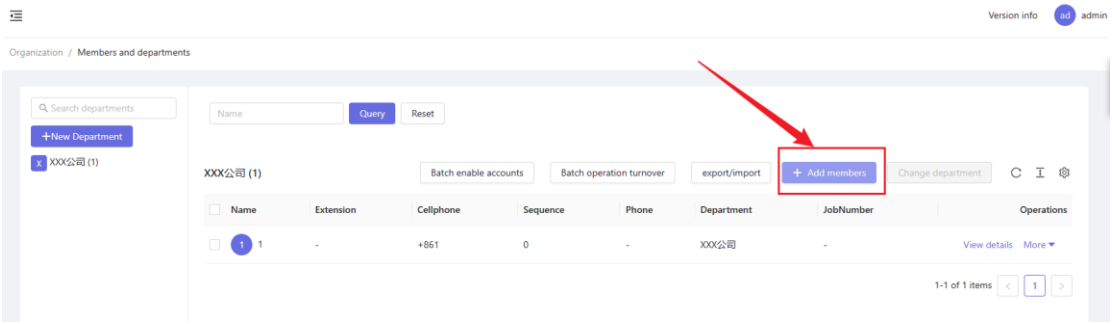


Figure 18 Adding Members

Step.3 Fill in the pop-up window with basic information such as name, cell phone, department, email and extension. Fill in at least one cell phone and email address.

Step.4 Click Finish to add successfully.

Step.5 Click More in the member list to modify member information, change departments, operate departures, reset passwords, and suspend accounts.

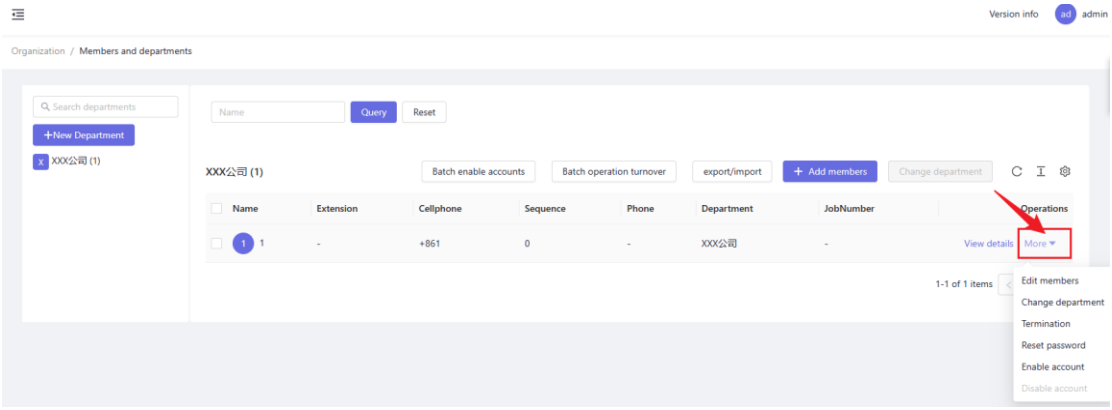


Figure 19 Modify member information

Batch Enable Accounts and Batch Operate Separations

Step.1 Click on Bulk Enable Accounts and enter your login name (currently supports cell phone, email, and extension logins)

Step.2 Enter your login password

Step.3 Check Enable response permissions and click OK to save.

Item	Definition
name and surname	This field is used to display or enter the employee's name. Users can query or update basic employee information based on this field.
(telephone) extension	Employee's extension number.
cell phone	Employee's cell phone number.
private plane	Employee's landline number.
sectoral	The department to which the employee belongs. Administrators or users with privileges can use this field to view the departmental affiliation of an employee, or to perform departmental transfers.
job title	The job number is used to differentiate between different employees and is an important identifier of an employee's identity.

Table 6 Explanation of the Modify Member Information screen

9.2 Enterprise Settings

9.2.1 Corporate Information

Go to the admin backend and click Enterprise Settings>Enterprise Information to view the enterprise information. Click Modifying the upper right corner to modify your business information, asterisked fields are required.

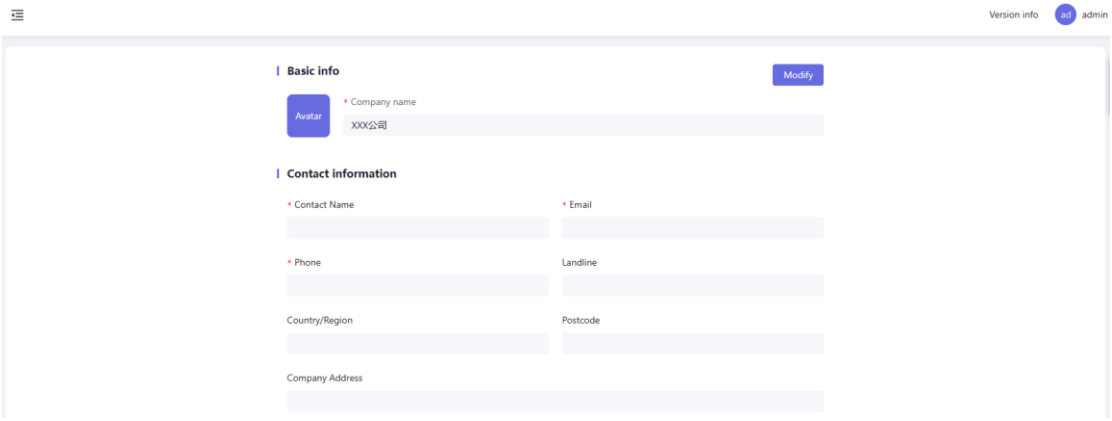


Figure 20 Modify basic enterprise information

Item	Definition
company identification	To display the company name, you need to fill in or select the official name of the company. Ensure that the name of the company is the same as the one registered in the system for subsequent management and inquiries.
Contact e-mail	The e-mail address of the primary contact. This mailbox is used to receive external notifications from the organization or to make contact.
Contact person's cell phone	The cell phone number of the primary contact for emergency communication or contact with someone outside the company.
private plane	The landline phone number of the business.
Country or	The administrator needs to fill in the country or region where the

area	company is located. This information helps determine the legal, tax and other compliance requirements of the company's location.
zip code	The postal code of the company's address. Zip codes help to ensure that mail or packages are correctly mailed to the company's address.
Business Address	The complete office address of the company, including the street, city, country or region where it is located. This information is used for company communications and business-related geolocation identification.

Table 7 Enterprise Basic Information Interface Definition

9.2.2 Administrative authority

There are three roles in the admin backend permissions, Creator, Super Administrator and Administrator. There is only one creator with all permissions to transfer. Super Administrators are created by the creator, and there can be more than one, with all the permissions except that you can't manage Super Administrators and Creators. Administrators are created by super administrators and can customize the scope of permissions.

9.2.2.1 Transfer creator

Step.1 Go to the admin backend and click Enterprise Settings>Manage Permissions.

Step.2 Find the creator on the Super Admin page and click Transfer.

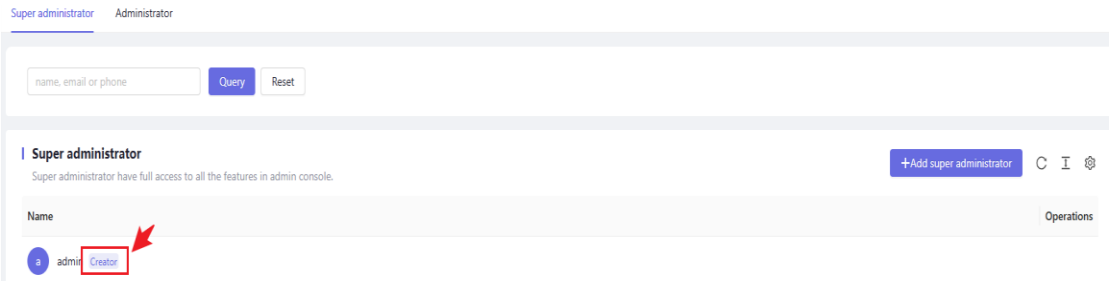


Figure 21 Transfer creator

Step.3 Enter keywords in the pop-up window, search for the member you want to transfer to, and click Select.

Step.4 Click Submit to complete the transfer.

9.2.2.2 Add Super Administrator

Step.1 Go to the AS administration backend and click Enterprise Settings>Manage Privileges.

Step.2 Click +Add Super Administrator on the Super Administrator page.

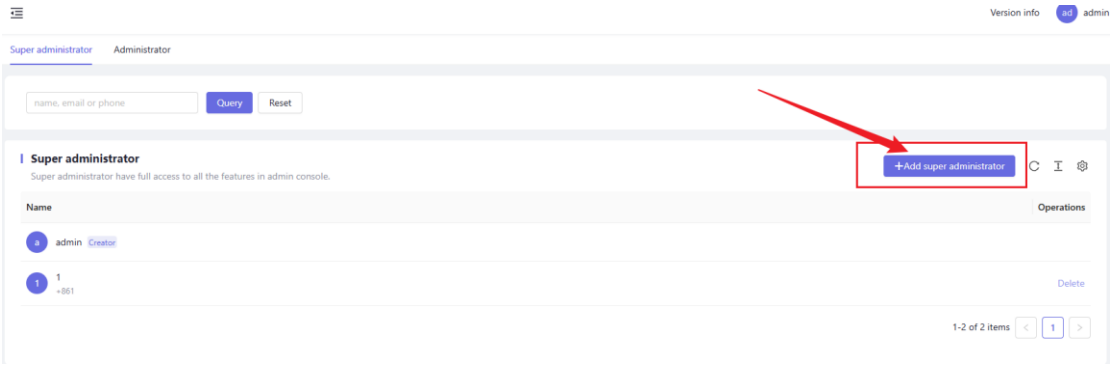


Figure 22 Add Super Administrator

Step.3 Enter a keyword in the pop-up window, search for members, and click to select it.

Step.4 Click Submit to complete the creation.

9.2.2.3 Add Administrator

Step.1 Go to the AS administration backend and click Enterprise Settings>Manage Privileges.

Step.2 Click+Add Administrator on the Administrator page.

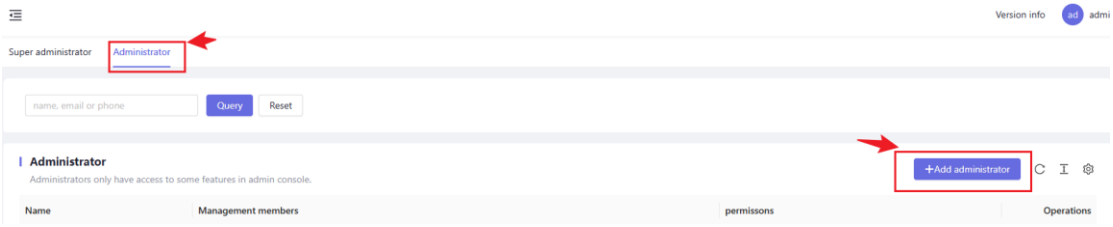


Figure 23 Add Administrator

Step.3 Enter keywords in the pop-up window to search for members to add as administrators, and then check the permission range.

Item	Definition
name and surname	The administrator needs to fill in the name of the new administrator. This field is used to identify the administrator as an individual and to ensure that information about each administrator in the system is clearly identifiable.
Scope of management	The administrator needs to set the scope of that administrator's administrative privileges and decide which departments that administrator can manage. This field is used to control the assignment of permissions.
scope of one's jurisdiction	The appropriate permissions granted to the new administrator.
manipulate	The administrator needs to define the actions that can be performed on this administrator account. Examples include enabling, disabling, modifying or deleting administrator information. This field is used to manage the account status and related settings for this administrator.

Table 8 Adding an Administrator Interface Definition

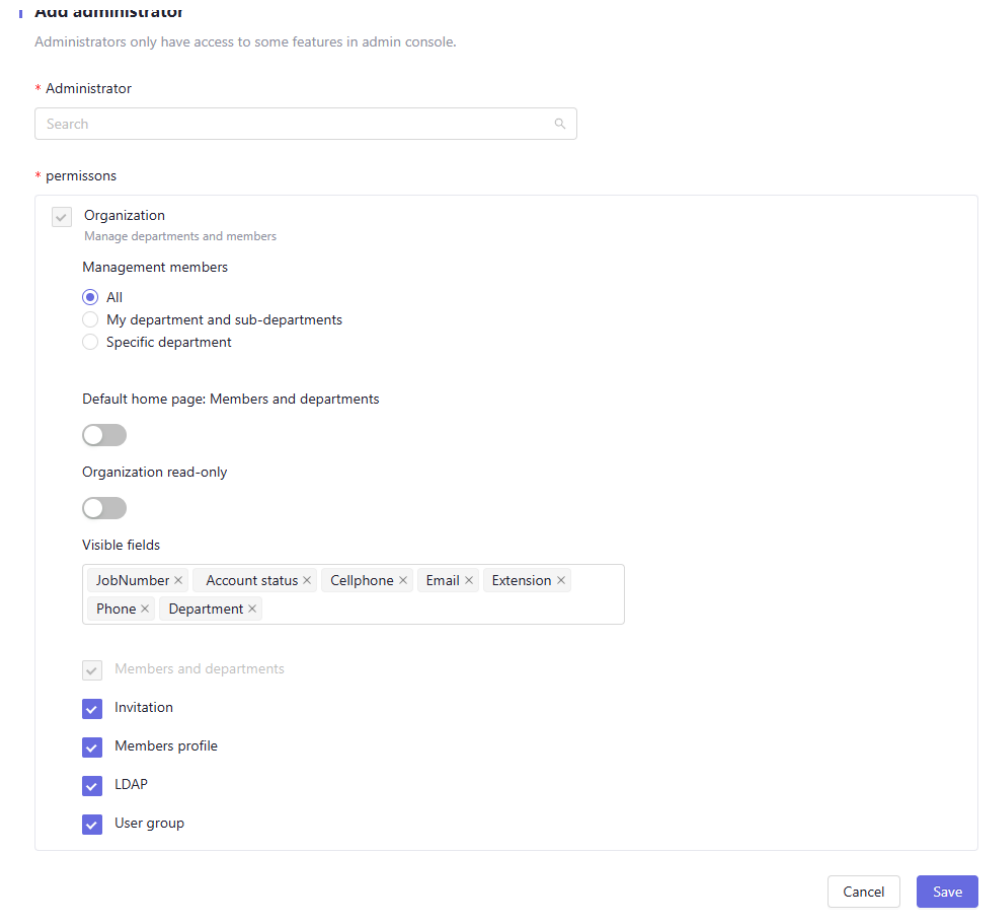


Figure 24 Edit Administrator Privileges

Step.4 Click Save to complete the addition.

10 Configuring CDR Billing

10.1 CDR Configuration

supports unified management of CDR data for IPPBX and Cloud PBX. IPPBX and Cloud PBX upload CDRs to AS, and administrators can centrally view the information through the management backend.

IPPBX Configuration CDR Upload

Step.1 Login to OM WEB, click "Application Service -> API", select Customize Mode and enter the CDR server address.

Step.2 In API Functions, enable extension status monitoring, click Save and reboot the OM device.

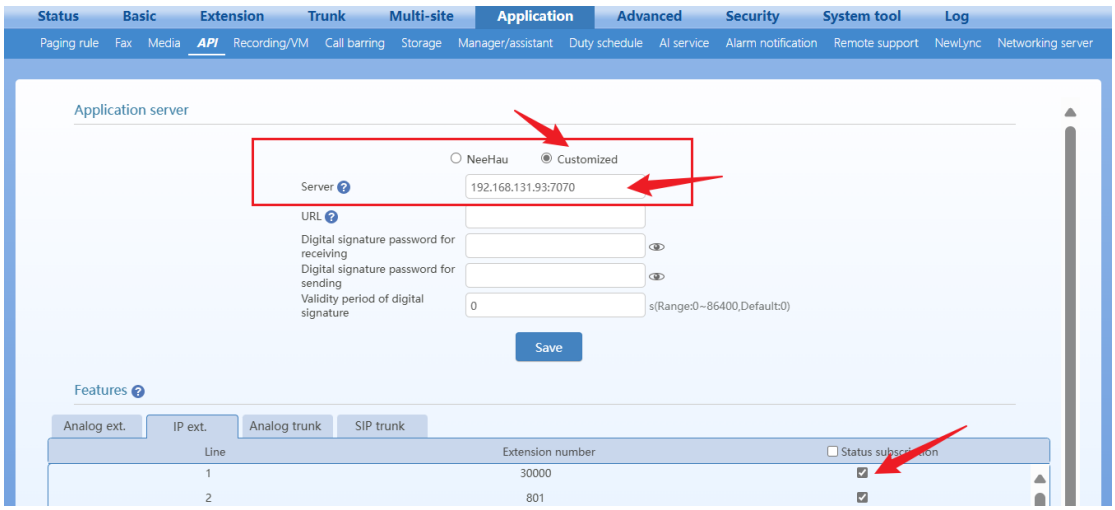


Figure 25 OM Series configuration interface

10.2 Call Record

Enter the administration backend, enter the IP address of the deployment server, and click CDR Billing->Call Login order. The call logs support multiple criteria filtering and can be viewed in detail.

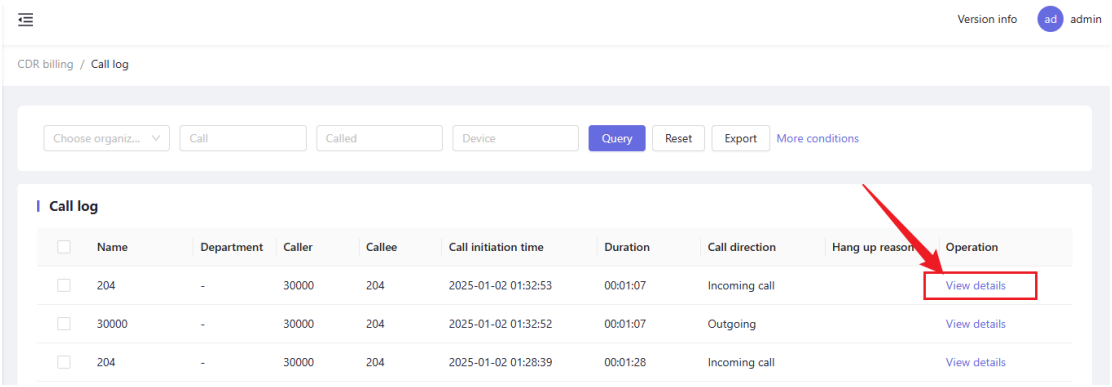


Figure 26 Call log screen

Call Logging Cases:

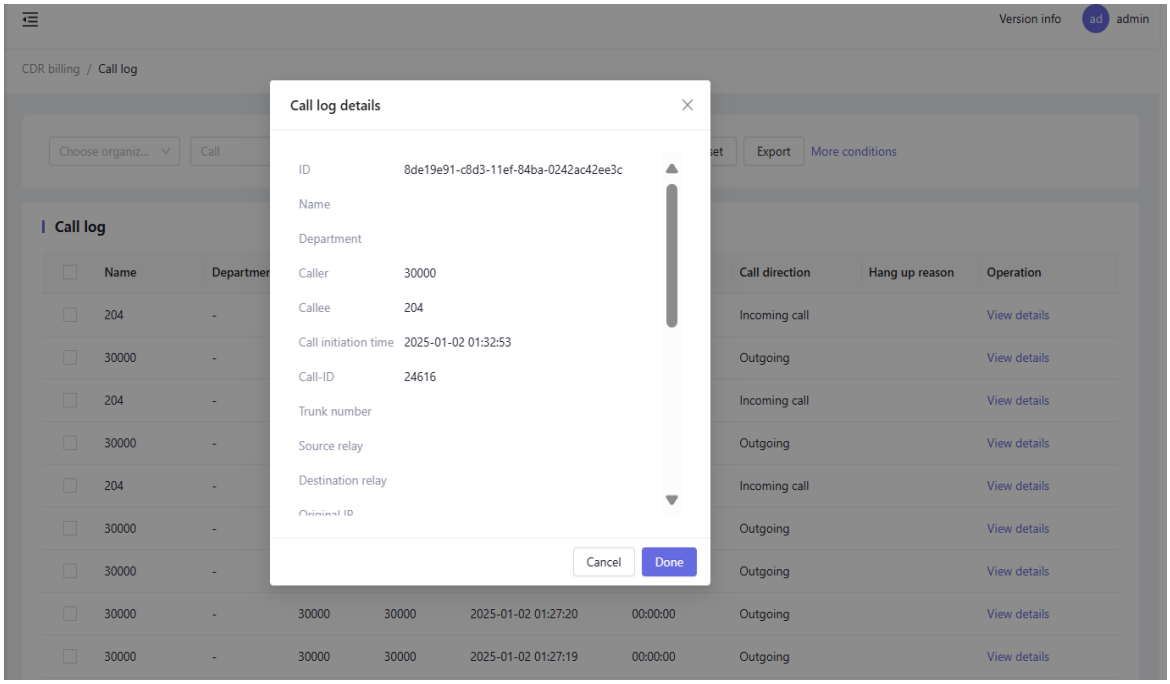


Figure 27 Call Interface Details Configuration Screen

Click Export Data to export the call logs and generate an excel file. First select the filter conditions, then click Query, click Export, you can export the call records of the specified conditions.

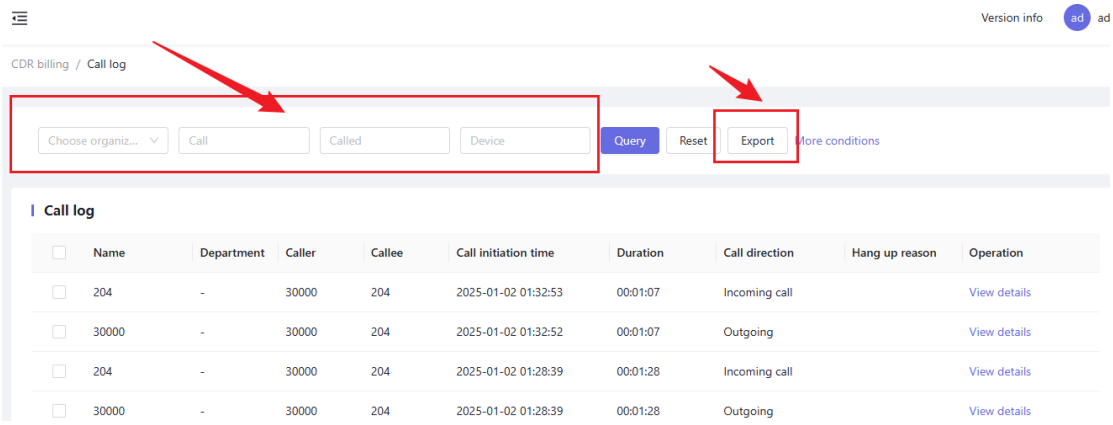


Figure 28 Setting up call log filtering criteria

Item	Definition
name and surname	The name of the person involved in the call.
sectoral	The department to which the employee belongs.
caller ID	Displays the phone number that initiated the call.
called number	Displays the phone number to which the call was answered.
Call origination time	Displays the exact time the call started. This field records the start time of the call and is typically used to analyze the time slot distribution, processing time, etc. of the call.
airtime	Displays the total duration of the call and records the duration of the call.
Call Type	Displays the type of call. Examples include: external calls, internal calls, inbound and outbound calls, international calls, automated outbound calls, etc.
Reason for	Record the reason why the call ended when it did. Examples

disconnection	include: normal end, party hang-up, system interruption, no response/no answer, call timeout, misdialing, etc.

Table 9 Setting up Call Log Screen Definitions

10.3 Statistical Analysis

Statistical analysis page can view the number of calls and call duration, and provide visual analysis functions, so that administrators can easily understand the enterprise's communication usage intuitively.



Figure 29 Picture of the statistical analysis interface

10.4 Billing Center

The billing center supports outbound billing, internal calls and inbound calls are not included in the billing.

preliminary

1. Adding members: Enter the AS administration background, enter the IP address of the deployment server, and click Organizational Structure->Members and Departments to add members.

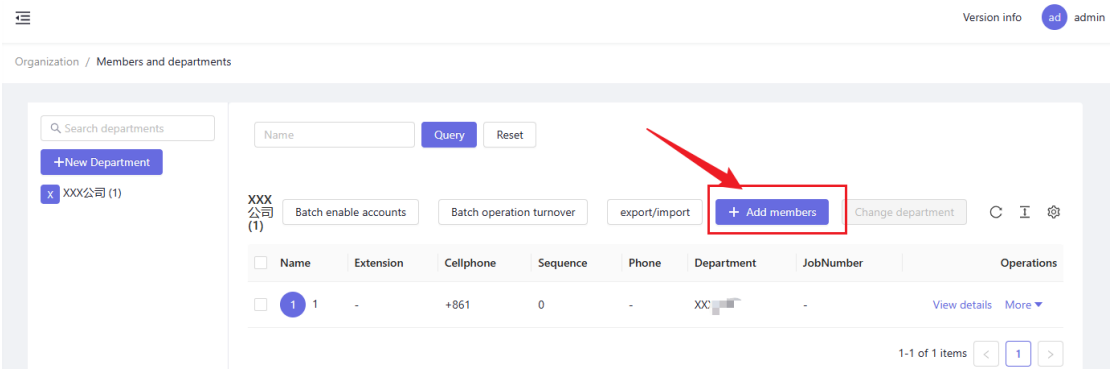


Figure 30 Adding members to Members & Departments

Fill in the pop-up window with basic information such as name, cell phone, department, email and extension. Fill in at least one of the cell phone and email address. Click Finish to add successfully. Click More in the member list to modify member information, change departments, operate departures, reset passwords, and suspend accounts.

2. Add Billing Extension: Enter management background, click Cloud PBX Service->Extension Management to add billing extension.

3. Configure the billing extension number: Go to the admin backend, click Organization Structure-> Members & Departments, edit the member's profile, and configure the Extension field as the billing extension number.

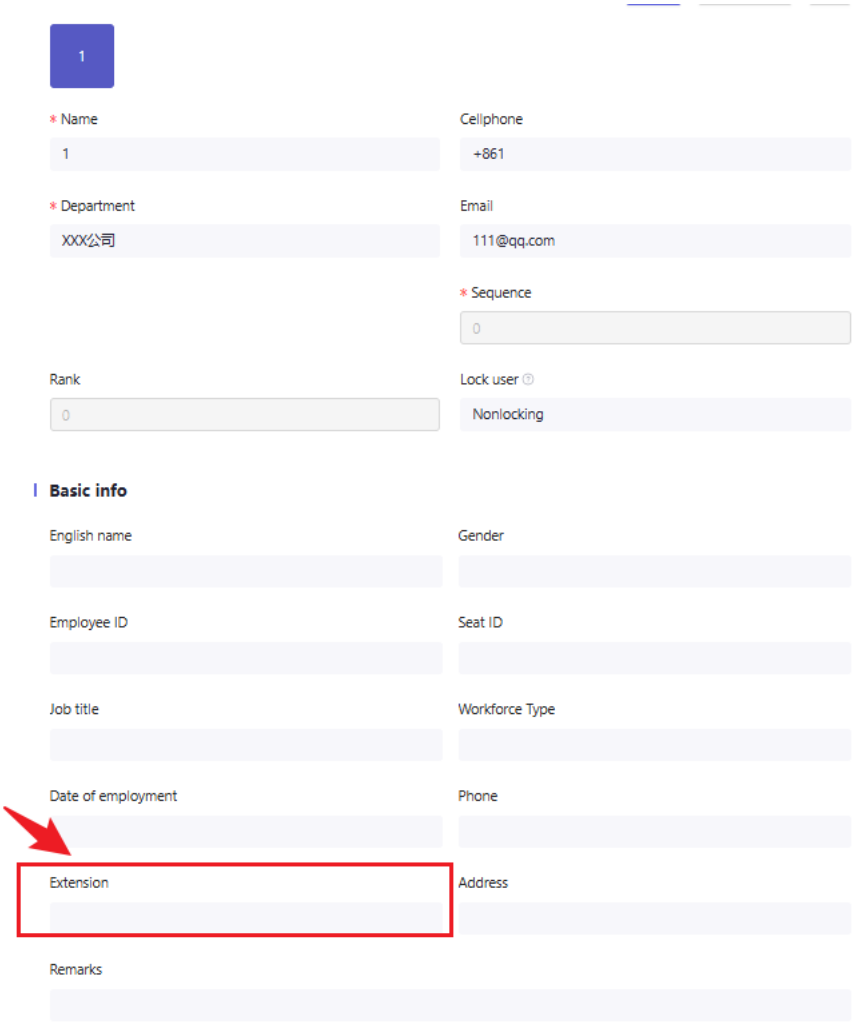


Figure 31 Assigning Extension Numbers

Add Rate

1. Go to the admin backend, click CDR Billing-> Billing Center, click + Add Rate.

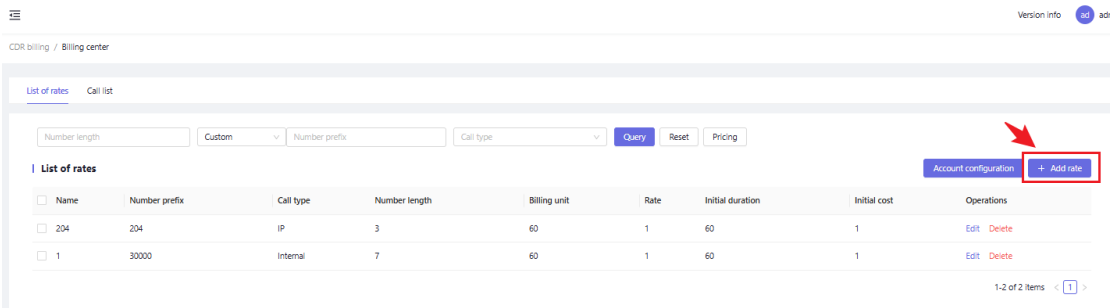


Figure 32 Adding Rates

2. Enter the rate parameters in the pop-up window.

Example:

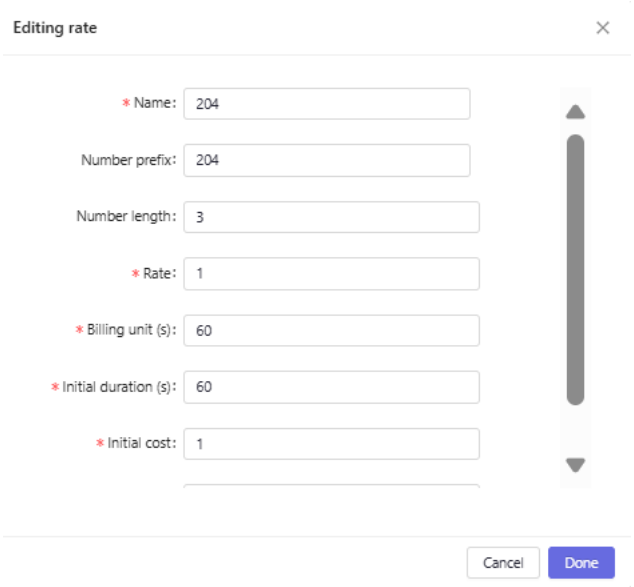


Figure 33 Editorial rates

Subsequent calls of 1 minute and 07 seconds duration were made, and the billing of $2 was checked at CDR Billing > Billing Center > Call Detail.

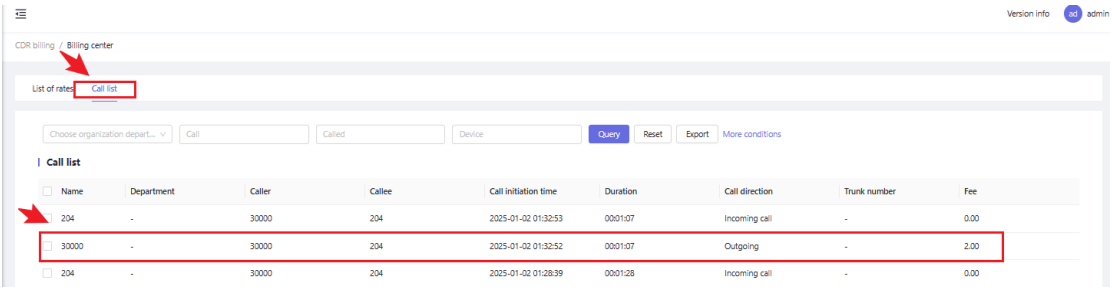


Figure 34 Call details

Item	Definition
Item	Customized rate name
prefix of a number	Used to match the prefix of the outgoing caller's number and calculate the corresponding rate after successful matching
Number Length	Matches the prefix of the outgoing number, if it matches it will be calculated at that rate, 0 matches any length
tariff	Rate for one billing unit
Billing unit	Duration of a billing unit

(seconds)	
Initial duration (seconds)	Fixed fees within the initial time period, 0 means no initial time period is configured
Initial costs	Costs within the initial duration
Type of call	Supports multiple call types for categorized statistics

Table 10 Call Detail Screen Definitions

3. After you initiate an outbound call using an IP phone, you can view the cost details in CDR Billing > Billing Center > Call Detail.

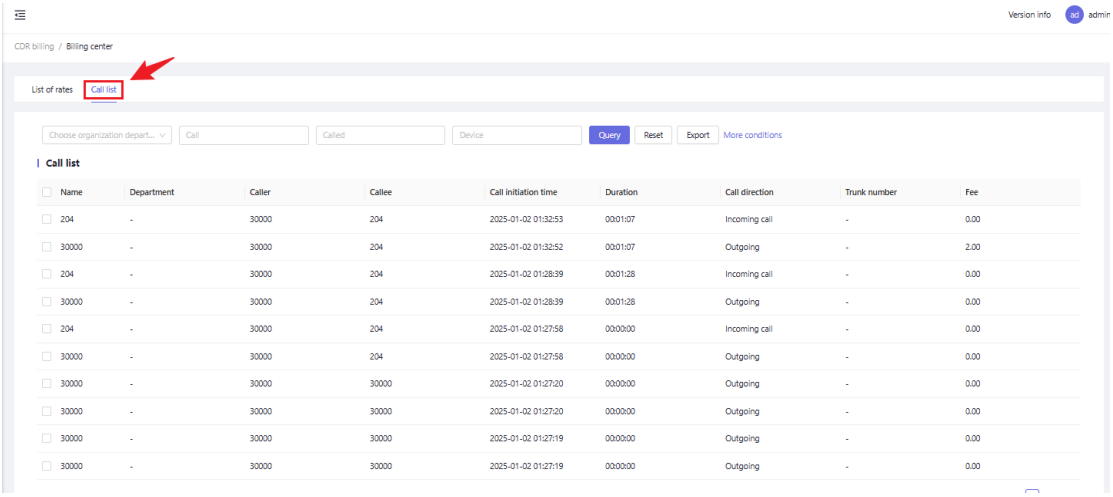


Figure 35 Call details

Description of Rates

1. Fee Calculation Formula, Total Fee = Initial Fee + (Call Duration - Initial Duration) / Billing Unit * Rate, less than one billing unit is counted as one billing unit.

2. After you add a rate, only new calls will be billed. For previous calls, you can select the billing date for processing through the batch pricing feature.

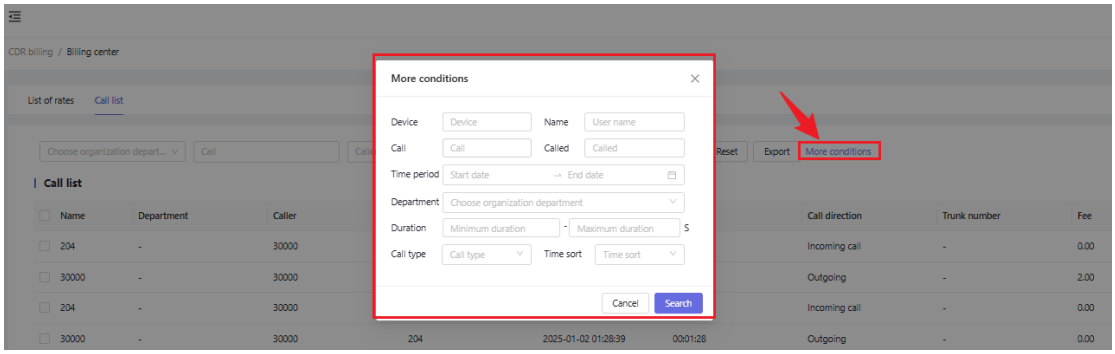


Figure 36 Batch price setting interface

3. Modification of rates is by default only effective for subsequent calls. Use the batch pricing feature to recalculate the cost of a previous call.

10.5Statement of Accounts

The Billing Reports page displays the Billing Filter component and Monthly, making it easy for administrators to generate bills on demand.

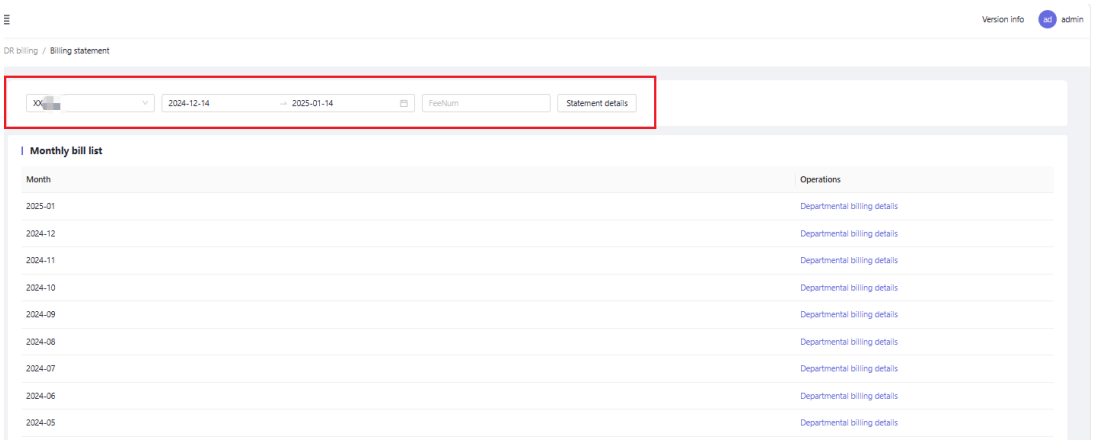


Figure 37 Monthly Billing List Operator Interface

Select the department and time in the filter, enter the extension number, and click Extension Query Billing to query the bill for the specified extension; if the extension is left blank, then query the bill for the extension in the specified department.

11 Alerts

11.1 Alarm Log

The alarm management interface is used for real-time monitoring of system operation status and recording of alarm events to help users find and deal with potential problems in time. The interface is divided into two main parts: alarm logging and resource usage monitoring. The resource monitoring area displays key system performance indicators, including CPU usage, memory usage and disk usage, showing current resource consumption in numerical and graphical form. The alarm log section records all alarm events, categorized by "high", "medium" and "low" levels, displaying the type of event, the related service address, the time of occurrence and a detailed description, making it easy for users to quickly locate the problem. It is convenient for users to quickly locate the problem.

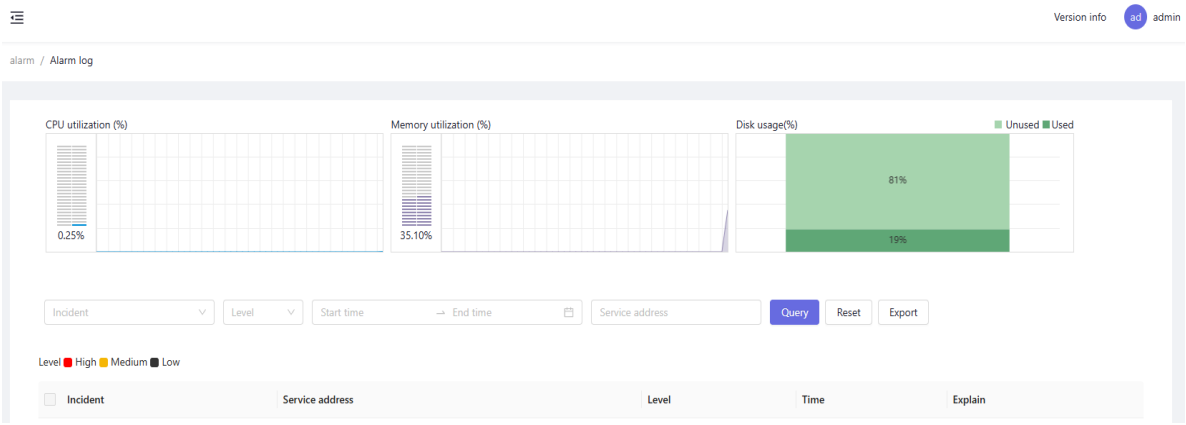


Figure 38 Alarm log interface

11.2Alarm settings

The alarm event setting interface is used to flexibly configure the alarm rules and notification methods for system monitoring to ensure s Forum system operation. According to different scenarios, users can set up resource usage alarms such as high CPU occupancy, high memory occupancy, high storage space usage, etc., as well as program status alarms such as abnormal termination of the recording and acquisition program, abnormal termination of the service program, and backup failure. In addition, it also supports monitoring of abnormal situations such as database connection errors and longtime not receiving recording files, etc. Users can set alarm level, notification mailbox and specific threshold or time interval for each event. Through fine-grained alarm configuration, administrators can receive timely interface alerts or email notifications to effectively handle system exceptions.

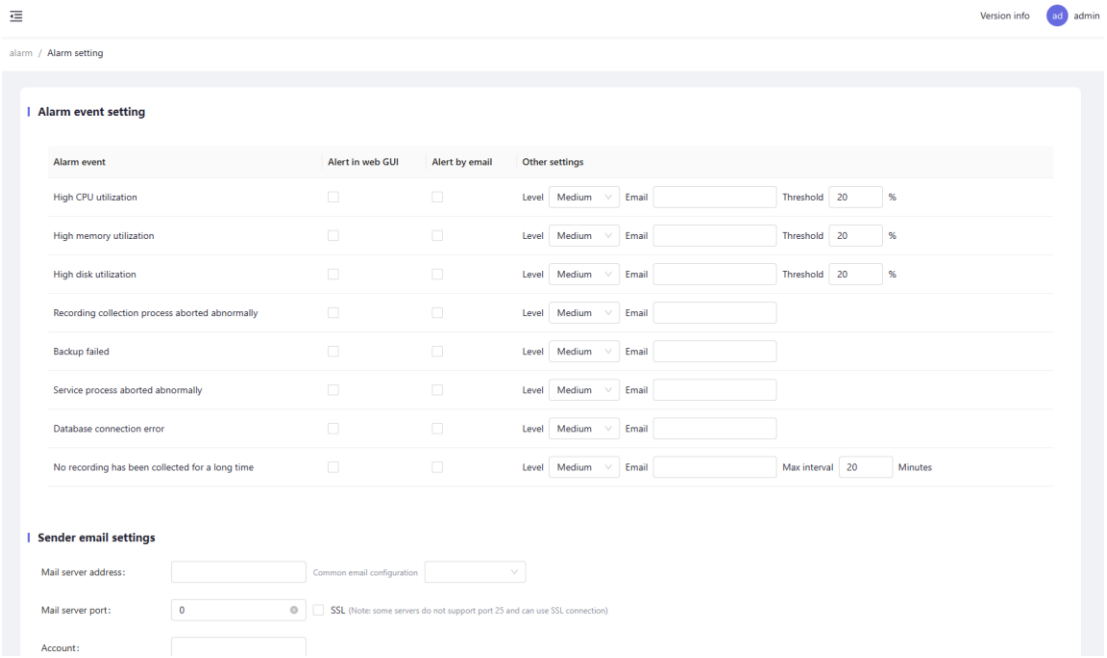


Figure 39 Alarm Event Settings

Sending mailbox setting is used to configure the mailbox information of the system to send alarm emails to ensure that the alarm notification can be sent to the relevant person in charge in time. Users can fill in the mailbox server address, select common mailbox configurations to simplify the setup process, and specify the mailbox server port number (SSL encrypted connection is supported to cope with the situation that some servers do not support port 25). Enter your email account and password to complete the authentication.

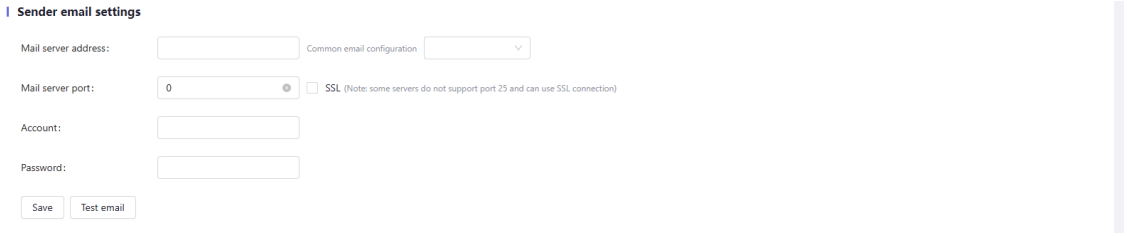


Figure 40 Sending Mail Settings

12 System Settings

This section provides various global configuration and management features for the AS Series system. With this module, administrators can effectively manage devices, application services, license information, and data maintenance operations.

12.1 Device Management Interface

The Device Management section allows administrators to monitor and manage all devices in the system. This includes viewing the current status of the device, configuring device details, and performing necessary maintenance operations. The following are the specific steps for device management and the key features of the interface.

Step.1 Access the list of devices:
The system will display a list of devices with each device's name, MAC address, device type, FSP security code, recording cache address, and local CDR to save key information. Users can quickly understand the current status and basic configuration of the device through this list.

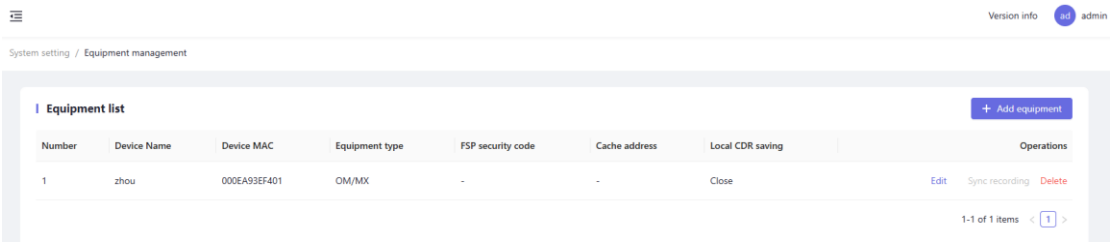


Figure 41 Device management interface

Step.2 Edit device information: Click the "Edit" button next to the device you want to

edit to open the "Edit Device" dialog box.

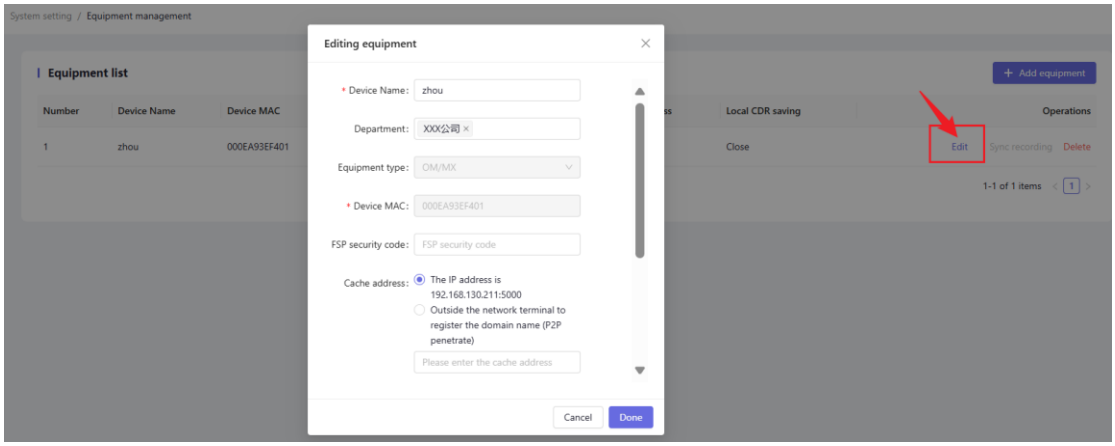


Figure 42 Edit device operation interface

Item	Definition
Equipment Name	In the Device Name field, enter or modify the name of the device.
sectoral	Fill in the appropriate departmental information here
Equipment type	Select the type of device from the Device Type drop-down menu. This field is grayed out in the interface and is not Edi Forum because the device type is determined when the device is added and cannot be changed in subsequent edits
MAC address	Enter or modify the MAC address of the device. This field is grayed out in the interface and is not Edi Forum because the MAC address is the unique identifier of the device, which is determined when the device is added and cannot be changed in subsequent edits
FSP security code	: The FSP (Field Security Protocol) security number is a security authentication code used to identify and verify the identity of a device. This number ensures that only authorized devices can access the system when the device requires specific secure communications or data exchange. If your device settings include FSP security, you will need to enter the correct security number in this field so that the system can confirm the legitimacy of the device

	and enable the appropriate security measures
Recording cache address	iP Address: You can choose to set the IP address of the device. Extranet Terminal Registration Domain Name: Alternatively, select Extranet Terminal Registration Domain Name (P2P Penetration) to allow devices to be accessed via the Internet without disclosing the device's real IP address, which improves security and simplifies remote access setup.
Default Time Zone	Select the time zone of the device from the drop-down menu
Get Interval	Fill in the interval time in minutes and set it according to your needs.
Synchronizing local CDR saves	Choose to turn this item on or off to determine whether Call Detail Records (CDRs) are saved to the device's local storage.
Select Application Services	This step lets you decide whether to enable application services. If enabled, you can select the desired local application service from the drop-down menu, e.g. local AS service

Table 11 Editing Device Operator Interface Definitions

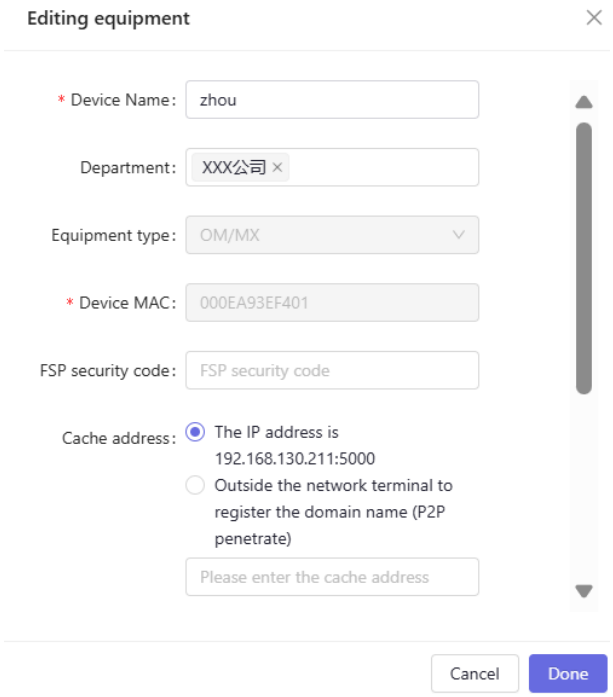


Figure 43 Device management editing interface

Step.3 Apply or cancel changes.

Step.4 Add device.

Administrators can register new hardware or software to the system by clicking the "+Add Device" button on the interface. This includes physical devices such as servers and switches, as well as software components such as OMX.

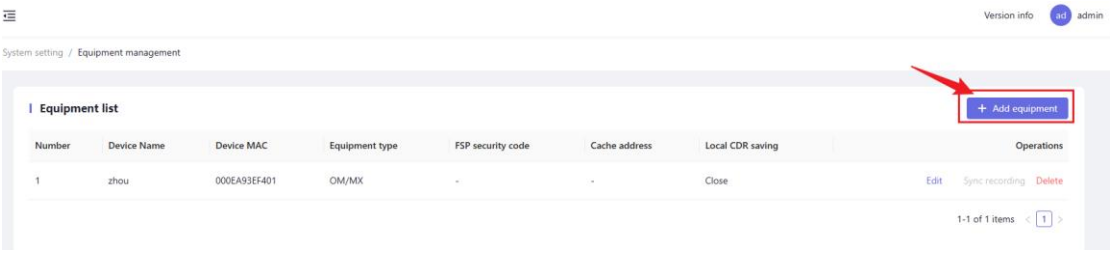


Figure 44 Device management interface

Administrators can register new devices to the system by clicking the "+Add Device" button on the interface.

Step.1 Click the "+Add Device" button to open the "Add Device" dialog box.

Step.2 Enter or select device details including name, department, device type (either hardware or software, e.g. OMX as a software component), MAC address, FSP security code, recording cache address, IP address, domain name of the extranet endpoint registry, default time zone, fetch interval, local CDR saving and application services.

Step.3 After confirming that the information entered is correct, click the "Finish" button to save and register the new device.

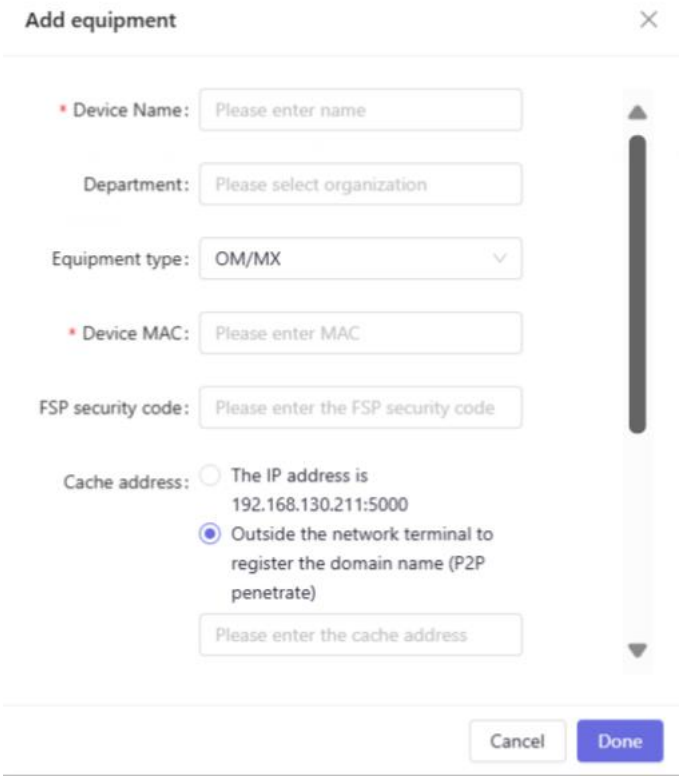


Figure 45 Add Device

Note In the "Add Device Type" option, "OM" and "OMX" are displayed. In fact, when you select the "OM" type, you can add not only OM devices but also MX devices. Selecting the "OM" type includes both OM and MX devices.

Remove the device:

Step.1 Select the device to be deleted in the device list.

Step.2 Click the "Delete" button next to the device and a confirmation dialog box will pop up.

Step.3 Confirm the deletion operation in the confirmation dialog and the device will be completely removed from the system, or select Cancel to terminate the deletion operation.

12.2 Authorization Information

After completing the installation of the AS Series NL-Recording Management System, the next step is to import the License to activate and enable the full functionality of the system. License is the key to the operation of the system and ensures legal use of the software and access to its features. Please follow the steps below to import License correctly.

Get the License request file:

Step.1 Log in to the AS NL-Recording System Administration Platform.

Step.2 Navigate to the "System Settings" section and select the "License Information" option.

Step.3 Click Get License Request ID to generate a license request file (.csr file). This file contains the system information necessary to request an official License file.

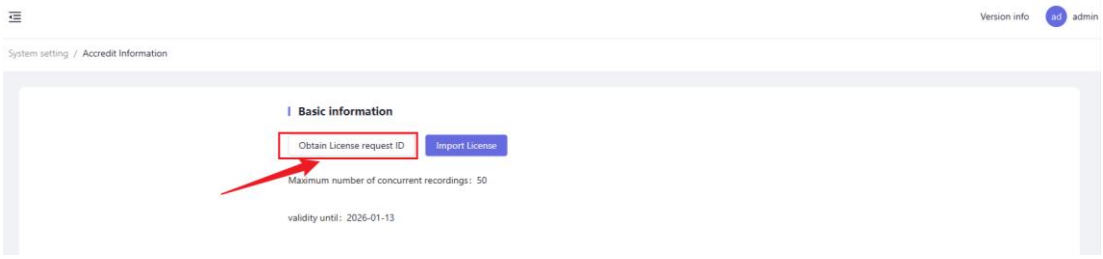


Figure 46 Getting the License Request ID

Step.4 Follow the prompts to save the resulting .csr file to your local computer, which will need to be sent to your distributor to obtain the appropriate License.

Submit a License request and receive the License file

Step.1 Send the .csr file to your supplier or to Newswire Communications. The License file is generated according to the number of services you have purchased.

Step.2 After processing your request, the supplier will send you a document containing the official License.

Import the License file:

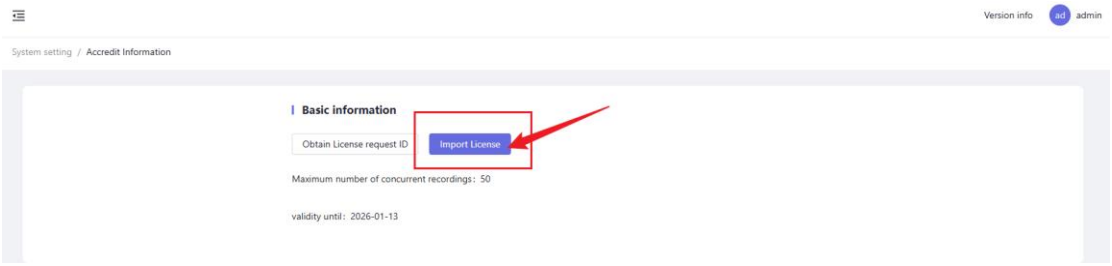


Figure 47 Import License

Step.1 Select Import License.

Step.2 In the pop-up window, browse and select your License file.

Step.3 After selecting the file, click "Open" to upload the file. The system will automatically process and verify the validity of the License file.

Verify the License status:

After the License file is uploaded, the system will automatically verify the validity of the License. If the system shows that the license is valid, it means that the license has been imported successfully and the system has been activated successfully. The page will display key information about the License, such as:

- Maximum number of concurrent recordings: 20
- Valid until: 2024-08-13

Verify that the License information displayed is what you expect and that the system features are activated correctly. If the display status is invalid or an error occurs, check that the License file is correct or contact your vendor for further support.

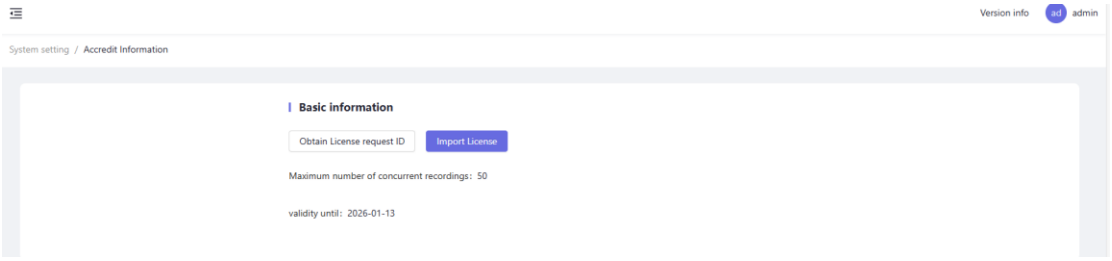


Figure 48 Check if the License file is imported correctly

12.3 Data Maintenance

Through the data maintenance interface, administrators can easily view and manage the data in the system and perform the necessary cleanup operations to ensure efficient system operation and effective data management.

Step.1 After logging in to the AS management background, click "System Settings" in the left menu, and then select "Data Maintenance" submenu to enter the Data Maintenance page.

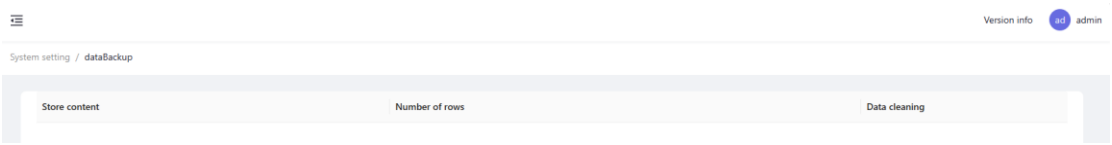


Figure 49 Data Maintenance Interface

Item	Definition
Stored content	Administrators can use this function to view all the data currently stored in the system and the corresponding data volume, and evaluate the storage status of the system.
View Entries	Displays the number of each type of data entry, helping administrators quickly understand the size and distribution of each type of data stored in the system.
Perform data cleansing	The Data Cleaning feature allows administrators to delete historical data that is no longer needed, optimizing system performance.

Table 12 Data Maintenance Interface Definitions

Step.2 Select the time period to be cleaned and click Confirm.

After confirming the cleanup operation, the system performs data cleanup and updates the list of stored contents to show the latest number of data entries.

Step.3 After data cleansing is complete, the system will update the contents of the storage.

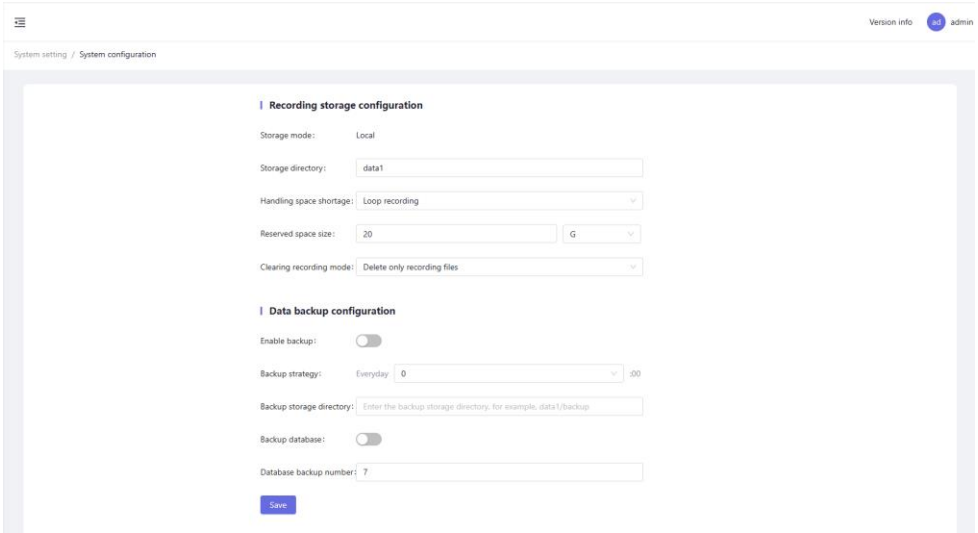
Note

Backup data: Before performing data cleaning operation, it is recommended to backup important data to avoid data loss due to accidental deletion.

Regular maintenance: It is recommended to check and maintain the system data regularly to ensure efficient and Forum operation of the system.

12.4 System settings

The system provides flexible recording storage and data backup functions to ensure the security of recording data and the stability of system operation. With a combination of local storage and backup policies, users can effectively manage storage space and quickly recover critical information in the event of unexpected data loss.



Recording storage interface

Item	Definition
Storage Mode	The current storage mode, which defaults to local storage.
Storage Catalog	Specified path for backup file storage
Handling of space shortages	Loop recording is currently supported
Size of space reserved	By presetting the minimum space to be reserved
Cleaning up the recording method	The system automatically cleans up the earliest recordings when there is insufficient space, ensuring the continuity and effectiveness of storage
Backup Strategy	Support daily scheduled backup, the default backup time for the whole point, can be adjusted according to demand
Backup Storage Catalog	Enter the storage directory, e.g. data1/backup
Database Backup	The system backs up the recording database on a regular basis and retains the latest backups (number of backups can be set on demand) to ensure data recoverability

12.5 Recording Node Functionality

The Recording Management System supports node list management, which is used to configure and maintain different types of nodes to meet the needs of backup and data management. Users can add, edit or delete nodes according to actual application scenarios.

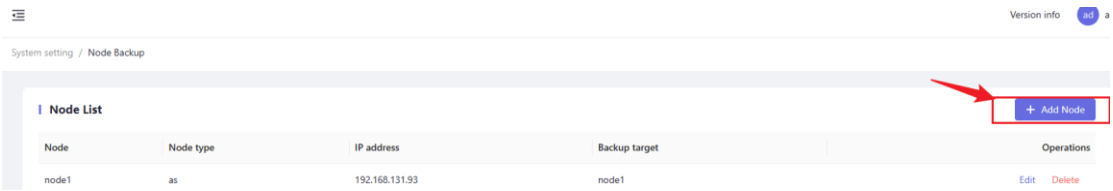


Figure 50 Add Node

Step.1 To add a node, navigate to Recording Node, click Add Node, and configure the parameters.

Edit Node

Click Edit Node to modify the configured node parameters.

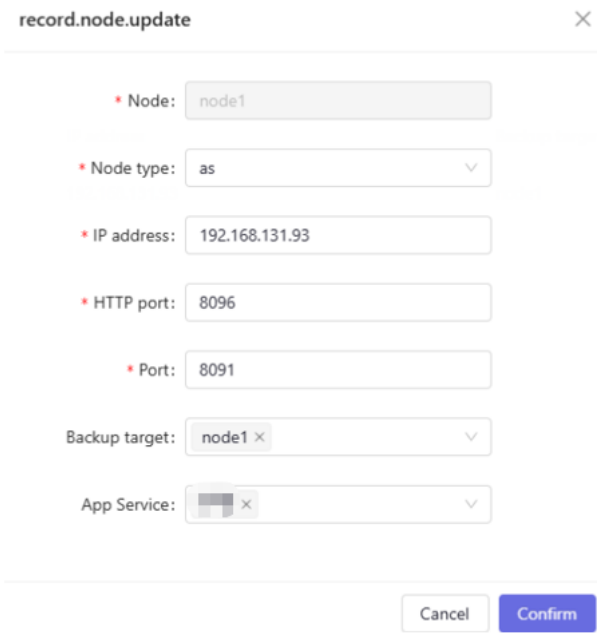


Figure 51 Edit Node

Node name; the name of the current node.

Node Type: Select the node type from the drop-down menu, the following node types are currently supported.

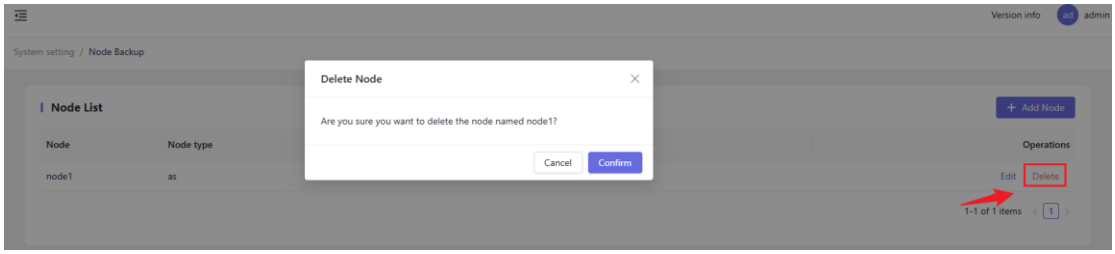
Item	Definition
as	Recording management system nodes
ftp	FTP protocol node for external storage and file transfer
http	HTTP protocol node for transferring data over the network

Other parameters

Item	Definition
IP address	Network address of the node for targeting of data transmission
ports	Port number of the current server
http	HTTP protocol node for transferring data over the network
Backup target	Name of the backup server

Delete node

Click Delete to delete the current node.



Graph 52 Deleting nodes

13 Appendix

13.1 Common Problems

13.1.1 Billing system does not show call records

- Ensure that the IPPBX or Cloud PBX is configured correctly, including setting the API address and enabling related features.
- Verify that the network connection is open and that the AS server address can be resolved and accessed correctly.
- Check to see if any firewall rules are preventing data transfer.
- Ensure that OM Series devices have been updated to a supported version

13.1.2 Unable to export call log report

- Verify that rates and extension bindings have been properly configured.
- Check that the CDR data is fully uploaded to the system.
- Reload the System Statistics module and confirm that the time range is set correctly.
- Ensure that member and departmental information in the organizational structure is fully updated.
- If the problem is still not resolved, contact technical support.

13.1.3 System Login Failure

- Check that the user’s name and password entered are correct.
- Verify that user permissions are set correctly, especially the validity of the administrator account.
- If it is a double authentication failure, make sure the phone or email is configured properly.
- If multiple attempts fail, please contact your system administrator to reset your password.

13.1.4 Rate setting not in effect

- Check that the rate rule correctly matches the desired number prefix or call type.
- Confirm that the rate settings have been saved and applied.
- Reprocessing historical voice orders in the system batch pricing function.
- Ensure that initial rates and unit hourly settings meet requirements

13.1.5 Billing statements cannot be exported

- Check if the export path has written permission.
- Confirm that the filter conditions are set appropriately and ensure that there is export Forum data.
- If the file is too large, try exporting the data in batches.
- Check that the file export is set to the correct format (e.g. Excel or CSV).

13.1.6 Incomplete call records

- Check that the CDR upload interval meets the configuration requirements.
- Verify that call records for all extensions and outside lines have been properly associated.
- Contact technical support to confirm if there is a lost ticket issue.

13.2 Glossary

CDR (Call Detail Record)	Detailed information about phone calls, including call time, duration, and cost. Used to define rules for calculating call charges.
Rate Rule	A set of rules used to define how call charges are calculated.
Batch Pricing	Reapplying rate rules to historical call records for billing processing.
Hot Standby (Dual Server Hot Standby)	A high-availability solution where two servers synchronize in real time, ensuring automatic failover in case of system failure.
Extension	A distributed phone terminal in an enterprise phone system.
API (Application Programming Interface)	An interface for system interaction with other software systems, used for data exchange.
Call Detail Record Upload Interval	The time interval between CDR data uploads from OM or PBX devices to the billing system.
Statistical Analysis Module	A functional module used to generate statistical reports on call records.
Sensitive Data Protection	System processing to hide or encrypt privacy or confidential information in call records.
Organizational Structure Management	A feature to manage the hierarchical relationships within an enterprise, supporting the addition, editing, and deletion of departments and members.
Billing Export Format	The supported file formats for exporting bills, including Excel, CSV, etc., for data archiving and analysis.
Call Record Retrieval	The system's ability to quickly locate call records using filters such as date, duration, extension number, etc.
Rate Type	Defines different billing rules for different call types, such as local, long distance, and international calls.
Synchronization Interval	The time interval for data synchronization between the primary and standby servers in a hot standby setup.