VRF Management System User Manual

MY2025

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Welcome

Welcome to use the VRF Management System User Manual.

The manual describes how to use the VRF management system to manage and monitor the air conditioners in the system.

Login and logout the system

To login the system, please perform the following operation:

1. Enter “192.168.1.140” (default address) in the address bar.
2. Select the language at the upper right corner of the interface (the default language of the system is Chinese. After changing the language, you need to enter the system settings page of the system parameters and click the “restart” button to wait for the system to restart, otherwise, an alarm page will appear and part of the schedule management page may not be translated.)
3. Enter the user name and password. The super administrator user name is “admin” and the default password is “Admin12345”. Please change the password in time after login.
4. Click the “Login”.

⚠ **For security, when you are away or not using the system, please click the user name button at the upper right corner after the system logs in and select "logout" to exit the system.**

Quick guide

After you have correctly installed and wired the centralized control system in accordance with the Installation and Configuration Manual, you can follow the steps below to initialize the VRF:

1. Device initialization

   Please follow the 9.9 Device initialization instructions for the automatic device search. The system will automatically search all gateways and indoor and outdoor units under this port. After the initialization is completed, at the lower right corner prompts the current number of indoor and outdoor units and gateways that can be searched in the current system. The specific information of all indoor and outdoor units can be viewed on the system monitor. If the number matches the actual number of units installed in the project (power-on configuration), click the Save Initial Data button. If the number does not match, please refer to 2 for manual addition and completion, or check whether the air conditioning system settings are correct and then initialize the device again.

2. Manually configure the gateway, network number, indoor and outdoor units

   Please configure according to the7 Device allocation instructions, and manually add the units that have not been scanned during initialization. Only when you configure the gateway, network number, indoor and outdoor units correctly, the system can communicate with it normally.

3. Conduct the building, floor and grouping configuration.

   Please operate according to the 6 Area setting instructions. Building, floor, location and grouping are the organization mode of the indoor and outdoor unit information in the system. After you have configured it, On the monitoring interface of the indoor unit, you can navigation browse according to the configured building, floor and location information.

4. Group assignment for indoor units.

   Please assign the indoor units according to 6.3 Group Management. Only when you assign the correct group to the indoor units, the indoor units will display correctly under the group of the indoor units monitoring interface.

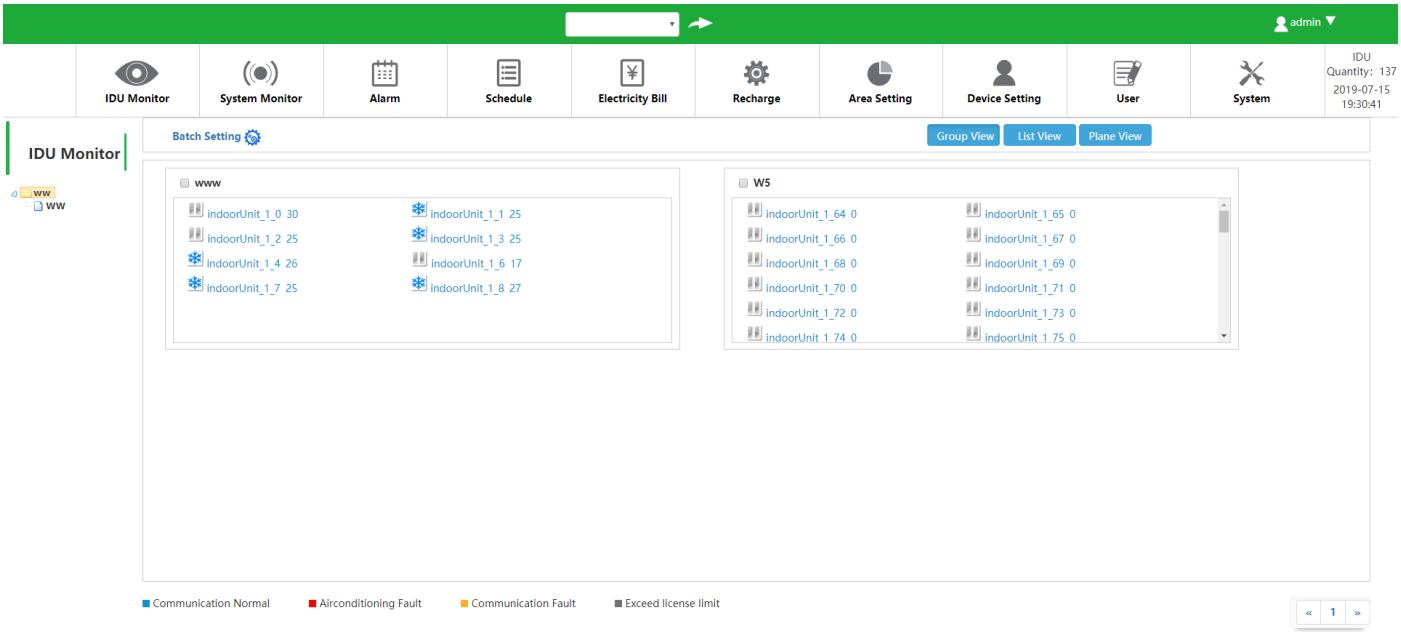
5. System time synchronization.

   Please synchronize the system time according to the time set by the system.

6. If you need to use the billing function, please follow the electricity rate setting instructions to set the electricity rate correctly before enable the function. The function depends on the tenant and needs to be set up in accordance with 8.2 Tenant management.

7. If you need to use the schedule setting function, please follow the schedule management instructions to set the correct schedule.

System interface layout



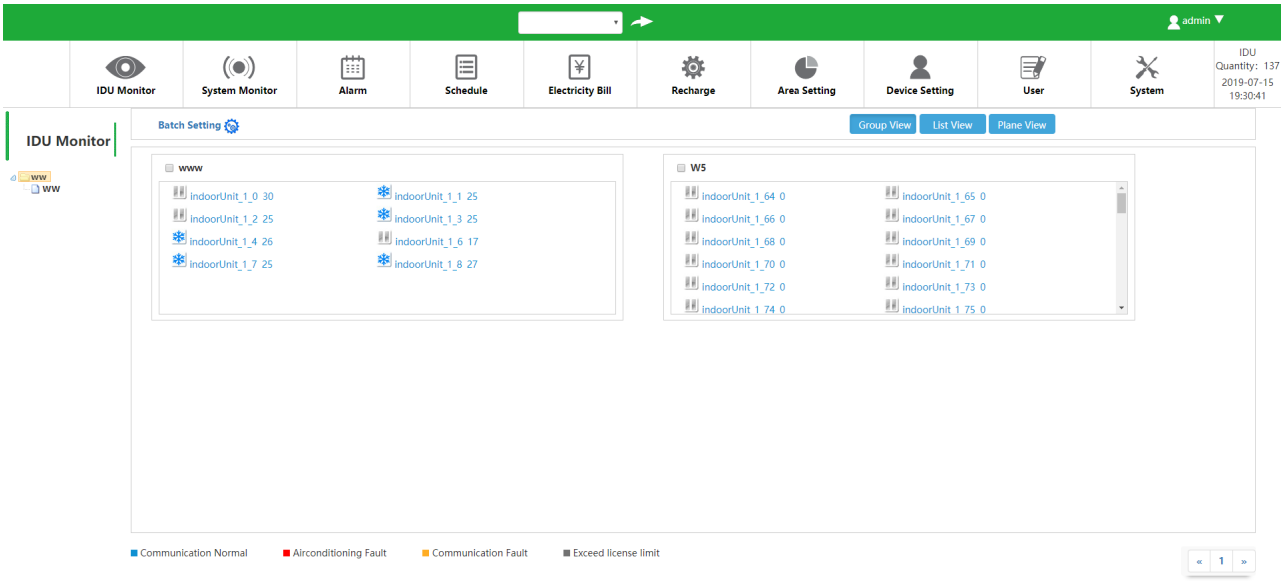
✧ For the best display effect, please use the latest version of Google Chrome browser to access, and set the resolution of the PC machine to which the browser belongs to 1920*1080.

1. Indoor unit (IDU) monitoring

The monitoring interface consists of the building list, the display for key attribute of the indoor unit, and the indoor unit details and control.

- ✧ The building list is a tree structure showing the architecture of the entire system and the block logical information (refer to "Area Setting" for the specific creation steps)
- ✧ The key attribute of the indoor unit shows the indoor unit name, group it belongs to, operating mode, and whether there is a fault alarm (for details, refer to "Device Setting")
- ✧ The indoor unit details and control shows all the detailed attribute information and one or more indoor units can be controlled

The page effect is shown as below:



The indoor unit monitoring page is divided into three view modes: group view, list view and plane view. The default display mode is

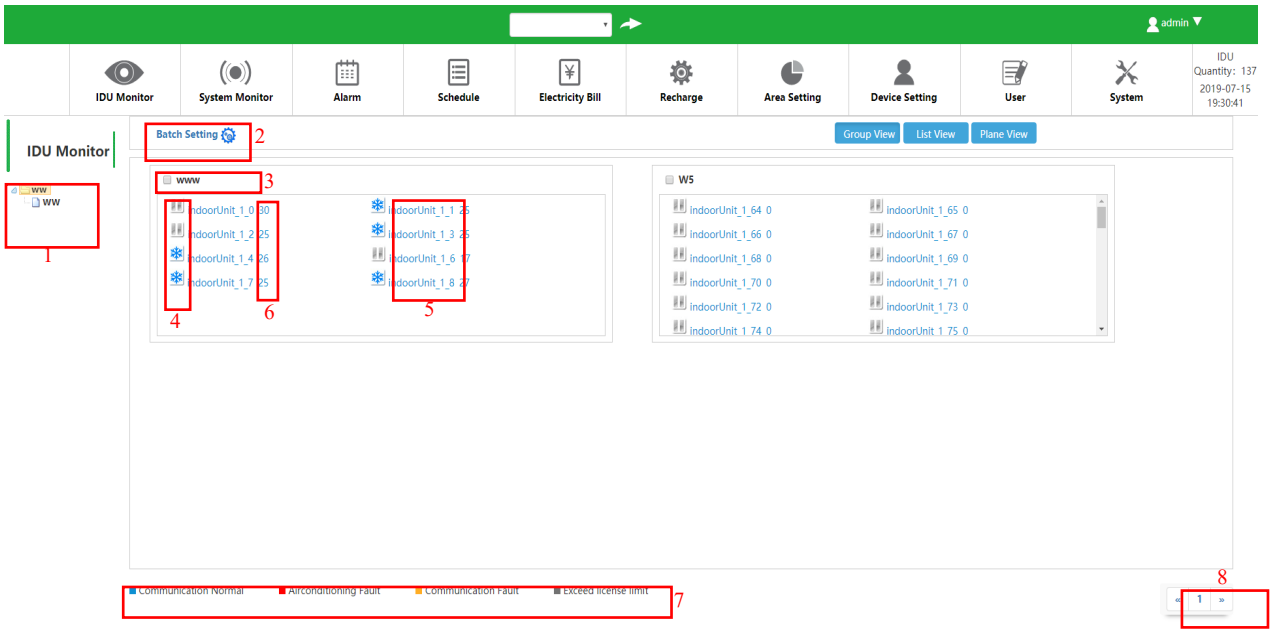
group view, which can be switched by clicking the button at the upper right corner of the page. Every time you switch, you need to wait for the page to completely refresh before you can operate.

Note:

If your role does not have the corresponding permissions, you cannot view or manipulate the page

1.1 Group view

✧ Group view is a display mode that displays the status of the indoor unit as a set. Each box on the page represents a set, and the set name is displayed at the upper left of each set.



Detailed:

1. The "1" marked in the figure represents the hierarchy tube formed by buildings and areas.
2. The "2" marked in the figure represents to batch set the parameters of the selected indoor units. (Click and the batch control page will pop up)
3. The "3" marked in the figure represents to check it to select all indoor units in the group.
4. The "4" marked in the figure represents the indoor unit mode.

   Represents the refrigeration mode *Represents the blowing mode* *Represents the heating mode*

   Represents air conditioning fault *Represents communication fault* *Represents power off*
5. The "5" marked in the figure represents the name of the indoor unit, and the color will change according to the state of the indoor unit and refer to the "7" Legend.
6. The "6" marked in the figure represents the setting temperature of the indoor unit, and the color will change according to the state of the indoor unit and refer to the "7" Legend.
7. The "7" marked in the figure represents the legend of the indoor unit state.

   Blue represents the air conditioning communication is normal and no fault.

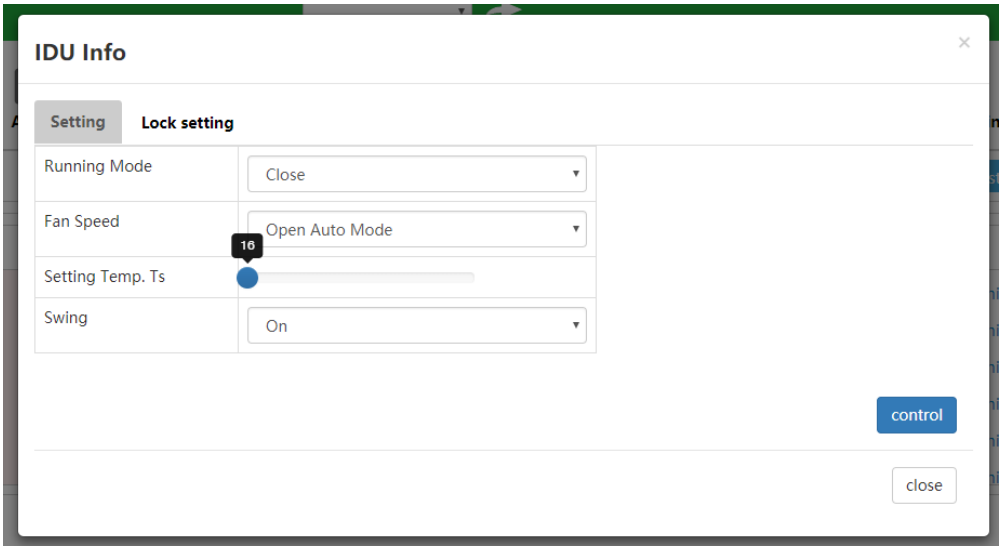
   Red represents the air conditioning has fault or alarm.

   Orange represents the air conditioning communication is abnormal (centralized controller or gateway and indoor unit).

   Gray represents the air conditioning exceeds the license limit.
8. The "8" marked in the figure represents the page number control of the current building or current node.

To set up a batch indoor unit, the following steps shall be performed:

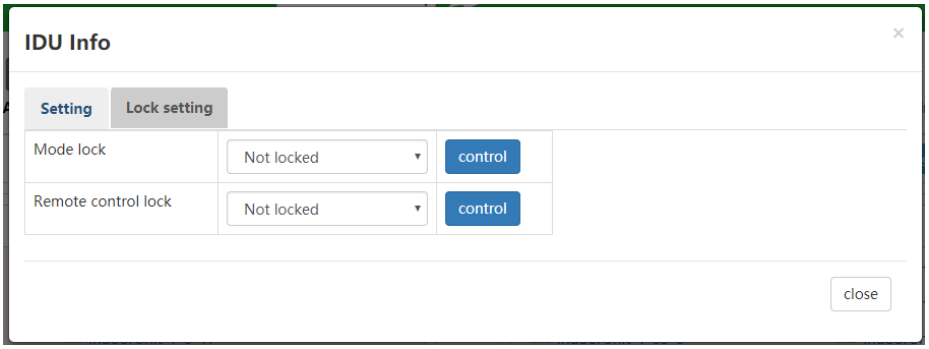
1. Select the group you want to set.
2. Click “Batch Setting”.
3. Select “Running Mode”.
4. Select “Fan Speed”.
5. Select “Setting Temp”.
6. Select “Swing”.
7. Click the “control” button to execute, click the "close" button to cancel and close.



When the setup is successful, and the page is grayed out, the rotating circle in the page indicates that the command is being executed. After the execution, the "control success" prompt box will pop up at the lower right corner of the page.

To set up a batch indoor units lock, follow these steps:

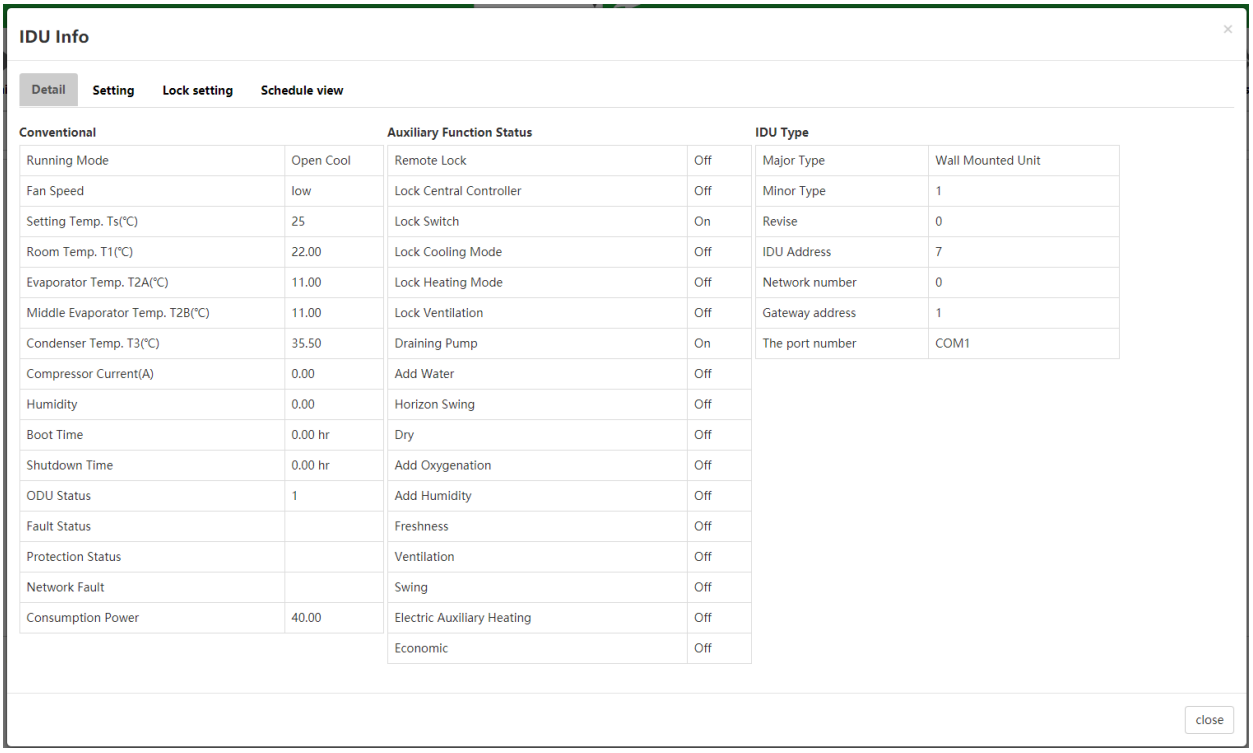
1. Select the group you want to set.
2. Select the mode to be locked and click the “control” button on the right of “mode lock”.
3. Select whether the remote is locked, click the “control” button on the right of “Remote control lock”.



To view the details of the single indoor unit, set the single indoor unit and set the lock setting of the single indoor unit, the following steps shall be performed:

1. Click the indoor unit you want to view

1.1. Click the indoor unit name in the group, and view the selected indoor unit properties in the “IDU Info" page.



1.2. Click “Setting” to set the indoor unit parameters.

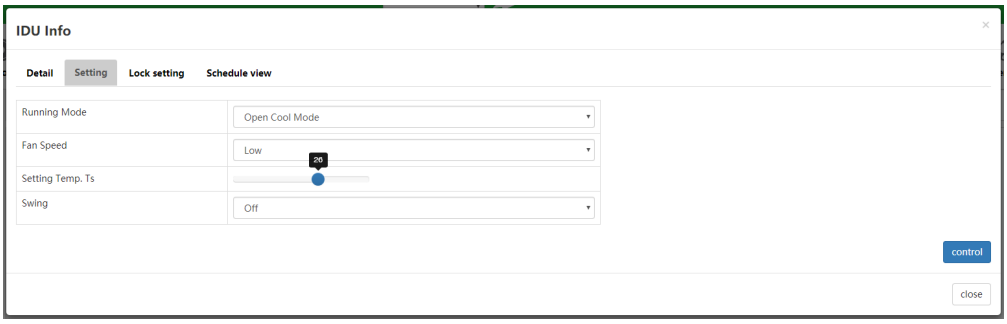
1.2.1. Select “Running Mode”.

1.2.2. Select “Fan Speed”.

1.2.3. Select “Setting Temp. Ts”.

1.2.4. Select “Swing”.

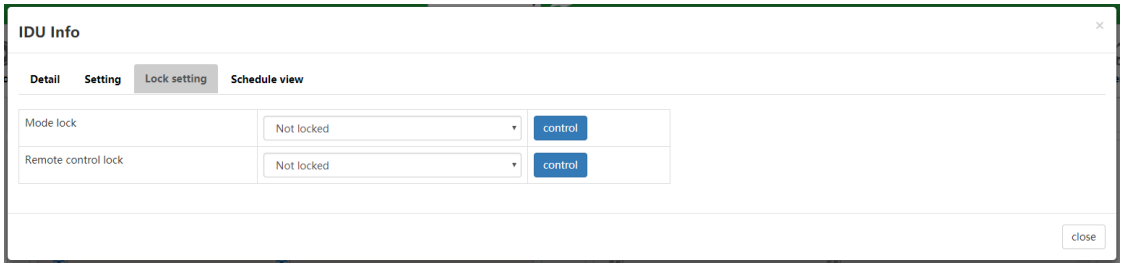
1.2.5. Click the “control” button to execute, click the "close" button to cancel and close.



1.3. Click “Lock setting” to set lock of the indoor unit.

1.3.1. Select the mode to be locked and click the “control” button on the right of “mode lock”.

1.3.2. Select whether the remote is locked, click the “control” button on the right of “Remote control lock”.



✧ When the setup is successful, and the page is grayed out, the rotating circle in the page indicates that the command is being executed. After the execution, the "control success" prompt box will pop up at the lower right corner of the page.

1.2 List view

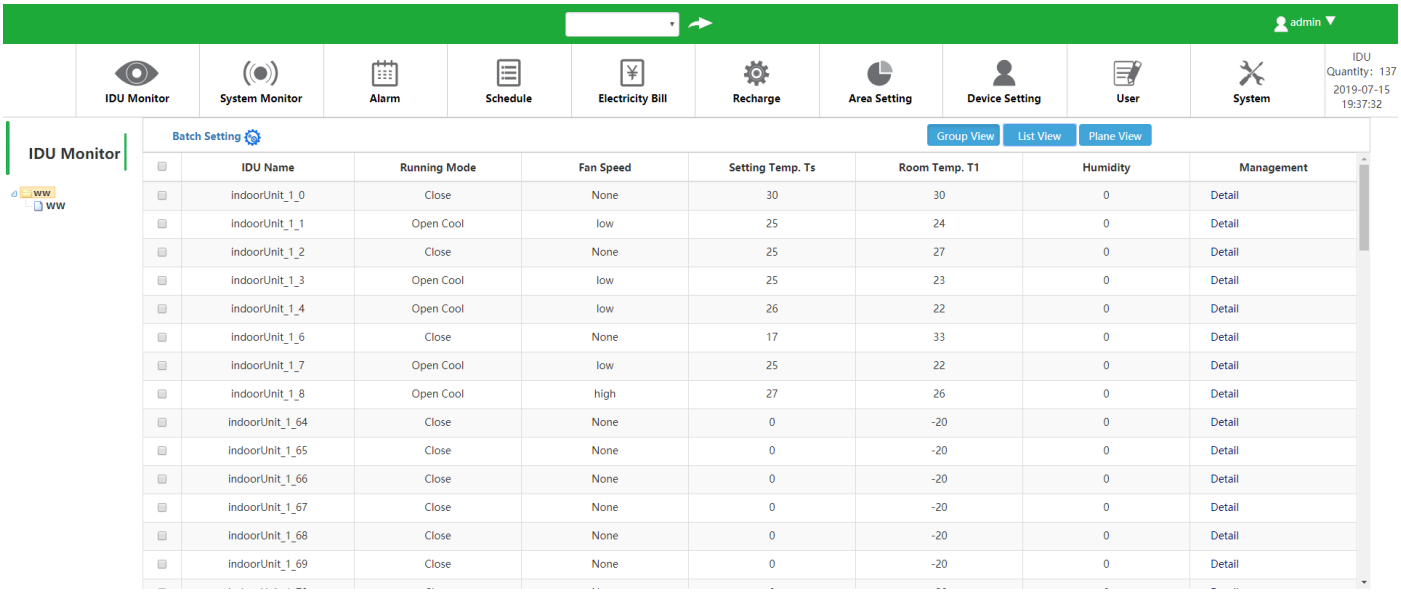
Click the “List view” button at the upper right corner to switch to the list view page.

The table on the list view page shows the status of a single indoor unit. If there is an alarm message in the indoor unit, it will be displayed in the remark column.

To view the indoor unit properties, do the following:

1 Click the “IDU Info” button for details of the indoor unit that needs to be viewed.

2. View the properties in the pop-up detailed properties of indoor unit.



To batch set the parameters of the selected indoor units, perform the following:

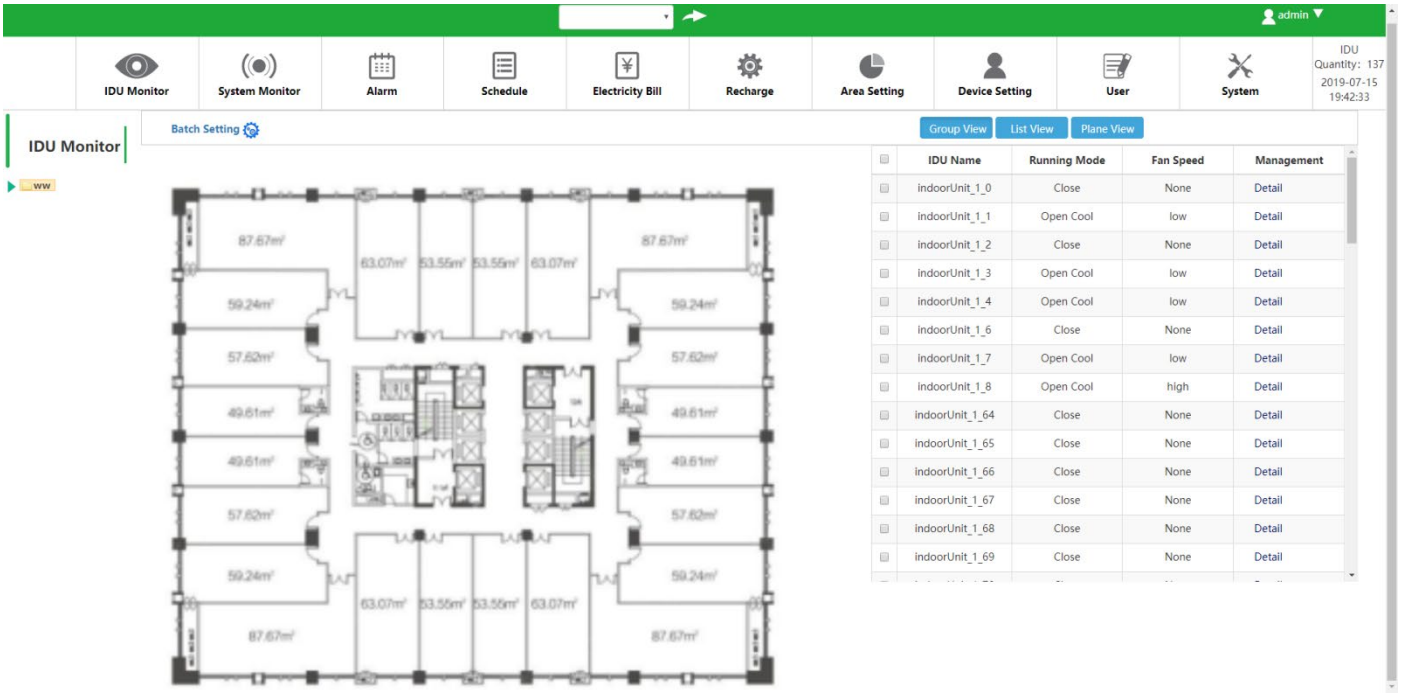
1. Select the indoor unit that needs to be set. (Check the box in front of the IDU name, and you can check one or more)
2. Click the “Batch Setting” button.
3. Select “Running Mode”.
4. Select “Fan Speed”.
5. Select “Setting Temp. Ts”.
6. Select “Swing”.
7. Click the “submit” button to execute, click the "close" button to cancel and close.

✧ When the setup is successful, and the page is grayed out, the rotating circle in the page indicates that the command is being executed. After the execution, the "setting success" prompt box will pop up at the lower right corner of the page.

1.3 Plane view

Click the “Plane view” button at the upper right corner to switch to the plane view page. On the plane view page, only the key attributes of the indoor unit are listed.

Click the tree structure node of different buildings or blocks. If you have imported pictures for the node, the preview of the building or block will be displayed on the right side of the page (please refer to “import image" for the operation of importing images)



To view the indoor unit properties, do the following:

1. Click the “IDU Info” button for details of the indoor unit that needs to be viewed.
2. View the properties in the pop-up detailed properties of indoor unit.

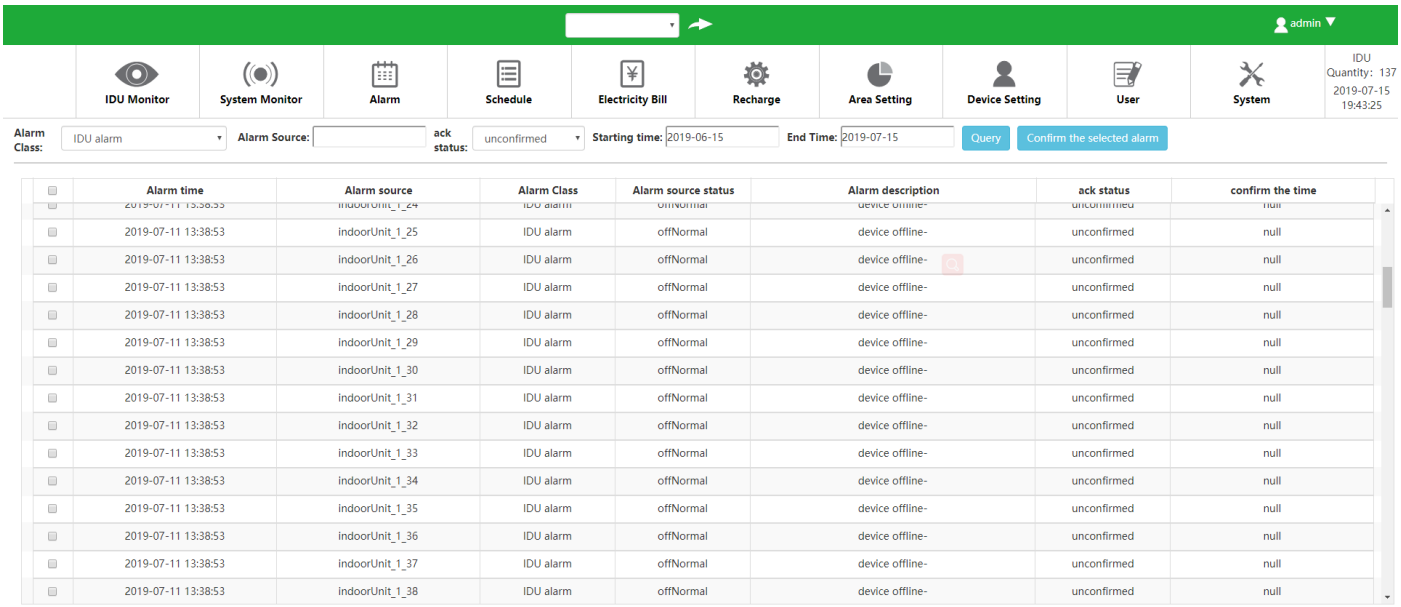
To batch set the parameters of the selected indoor units, perform the following:

1. Select the indoor unit that needs to be set. (Check the box in front of the IDU name, and you can check one or more)
2. Click the “Batch Setting” button.
3. Select “Running Mode”.
4. Select “Fan Speed”.
5. Select “Setting Temp. Ts”.
6. Select “Swing”.
7. Click the “submit” button to execute, click the "close" button to cancel and close.

✧ When the setup is successful, and the page is grayed out, the rotating circle in the page indicates that the command is being executed. After the execution, the "setting success" prompt box will pop up at the lower right corner of the page.

2. Alarm management

Alarm management includes two functions: query and confirm the alarm.



2.1 Query

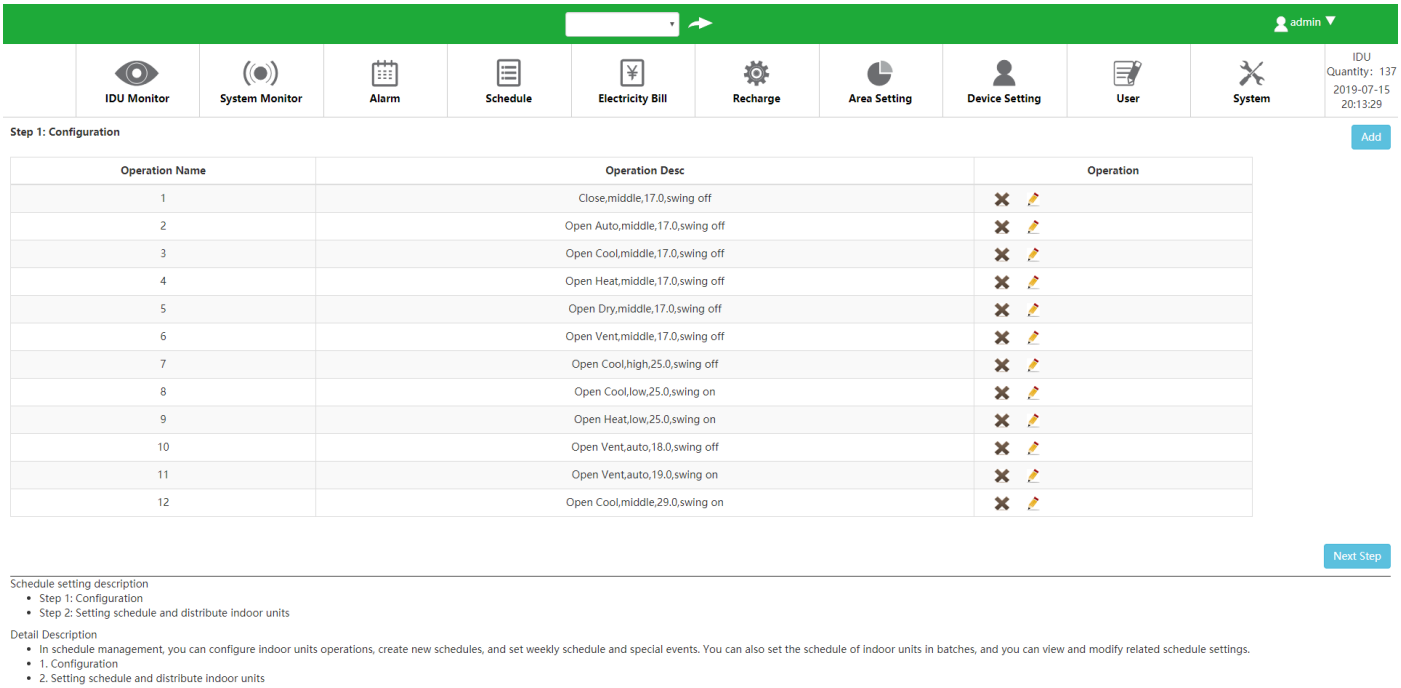
The Query has five screening conditions, including: alarm class, alarm source, ack status, starting time and end time.

- Alarm class includes: all, air conditioning alarm, electricity alarm and electricity warning and the default selection is all.
- Alarm source can be queried according to the name of the alarm source, such as the name of the indoor unit or the name of the tenant. If it is empty, all alarms will be searched.
- Ack status includes: confirmed and unconfirmed.
- Starting time and end time set the start and end times of the query.

2.2 Confirm the alarm

1. Select the alarm that needs to be operated.
2. Click the “Confirm the selected alarm” button to confirm the alarm.

3. Schedule management



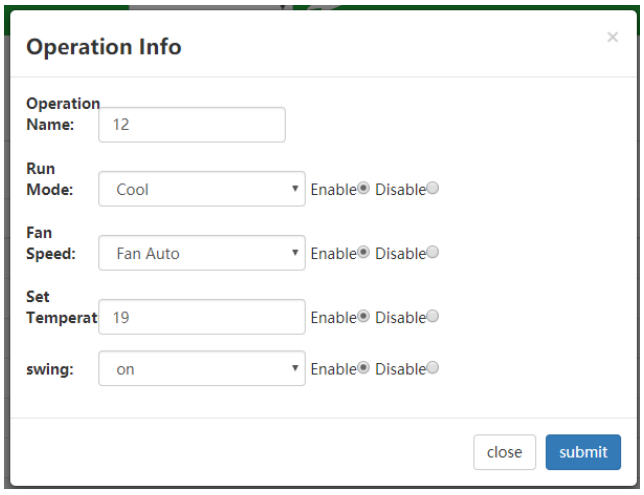
Schedule management can configure the air conditioning configuration according to the time period automatically modify the state.

The schedule operation steps are divided into three steps: 1. Configuration, 2. Setting schedule, 3. Distribute indoor units.

3.1 Configuration

To add operation, please perform the following operation:

1. Click the "add" button on the configuration page
2. Fill in the operation name, run mode, fan speed, set temperature and swing.
3. Select whether to enable these operations. The disabled items will not be controlled during schedule control.
4. Click the “submit” button.



To change operation, please perform the following operation:

1. Click on the configuration page
2. Fill in the operation name, run mode, fan speed, set temperature and swing.
3. Select whether to enable these operations. The disabled items will not be controlled during schedule control.
4. Click the “submit” button.

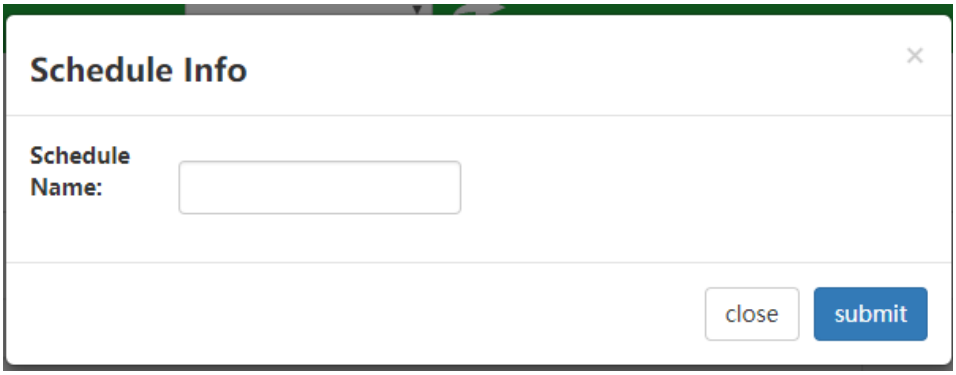
To delete operation, please perform the following operation:

1. Click on the configuration page

3.2 Setting schedule.

To add a schedule, please perform the following operation:

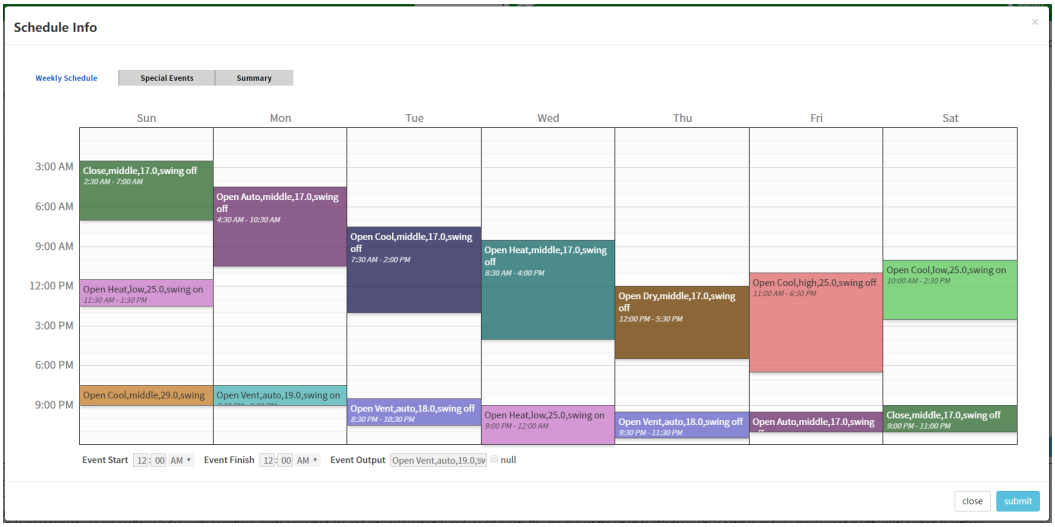
1. Click “next step” to the setting schedule page.
2. Click the “Add” button.
3. Enter the schedule name.
4. Click the “submit” button.



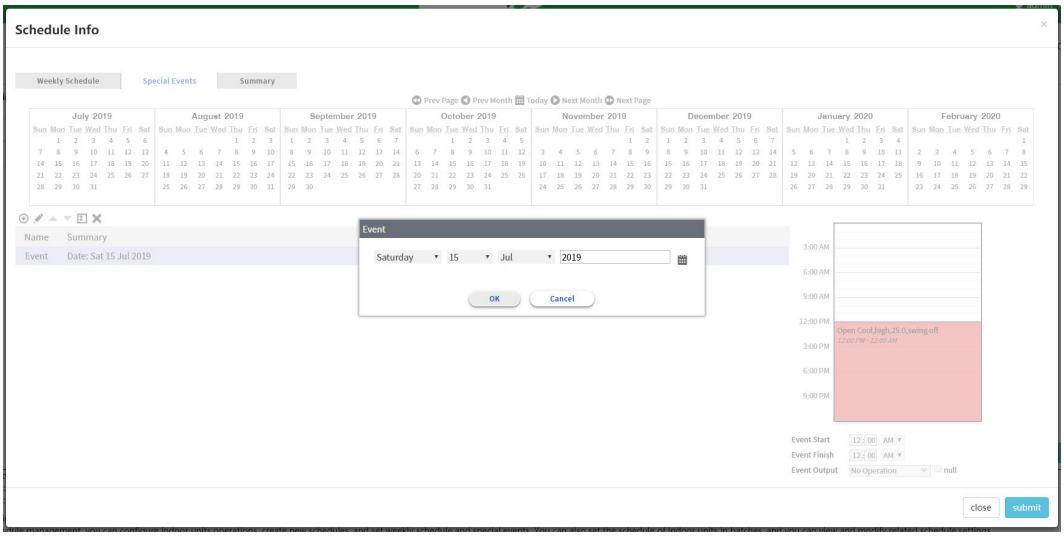
To change a schedule, please perform the following operation:

1. Click the “change schedule” button.
2. Select the time period for performing the operation each day in the pop-up box.
3. Set the operation for per time period by dragging, and select the operation that has been configured in the time output box.

   A null value indicates no operation.
4. Click the “submit” button.

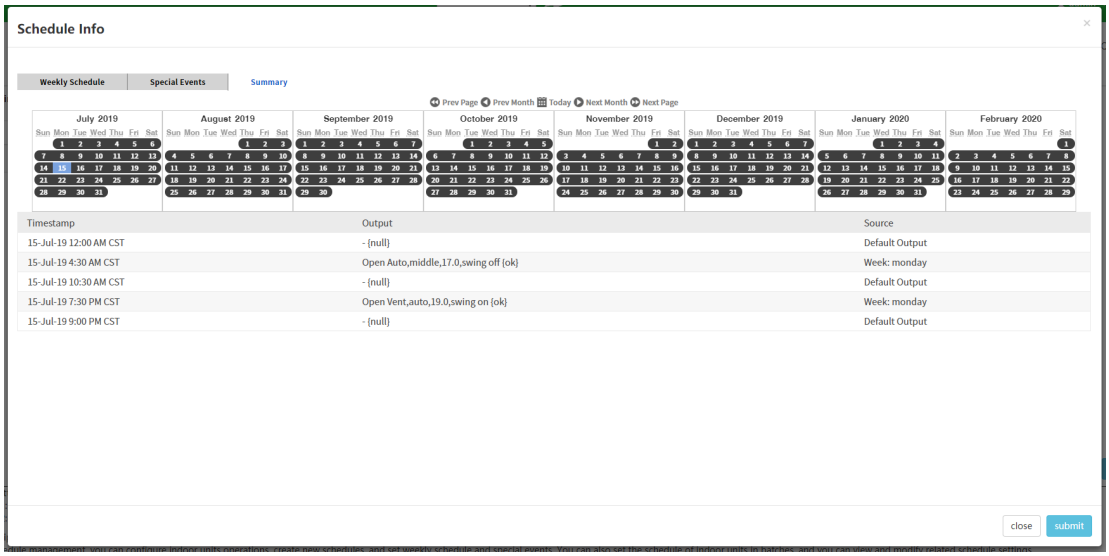


Add special events:



1. Click ⊕ to add special events.
2. Select the date on the pop-up, then click OK.
3. Drag and drop the time in the right event table and select the operation when the time outputs. Null is equivalent to void.
4. Check the event and click × to output

Event summary:



Select a day in the calendar to view the scheduled operations set for that day.

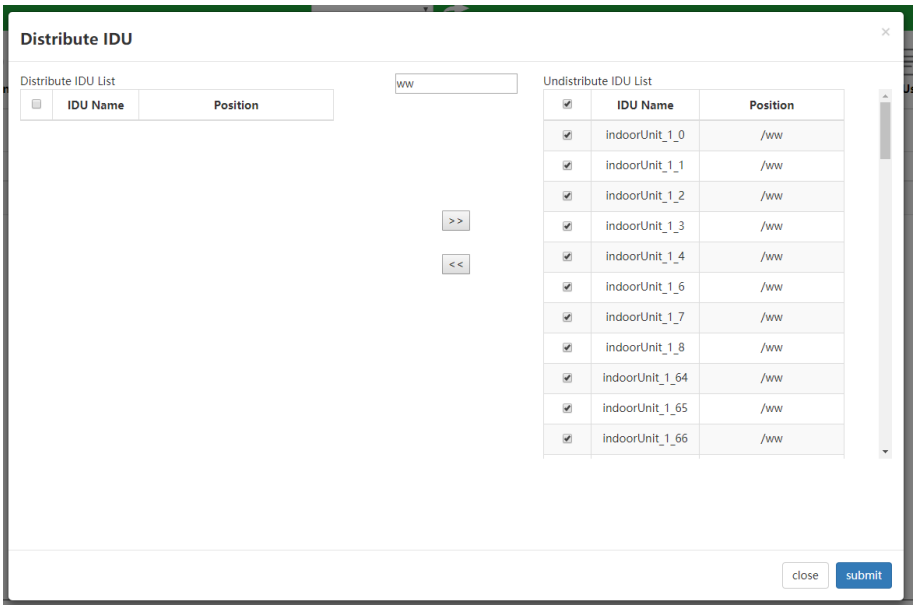
To delete a schedule, please perform the following operation:

1. Click the “delete” button.

3.3 Distribute indoor units.

To distribute indoor units, please perform the following operation:

1. Click “Distribute IDU”.
2. In the pop-up box, first select the indoor units to be removed from the list of applied indoor units and click the rightwards (>>) button
3. Select the building in the input box above, and the indoor units under the building that are not assigned to the schedule are listed in the undistributed IDU list.
4. Click the indoor units to be applied in the “Undistributed IDU List”, then click the leftwards (<<) button.



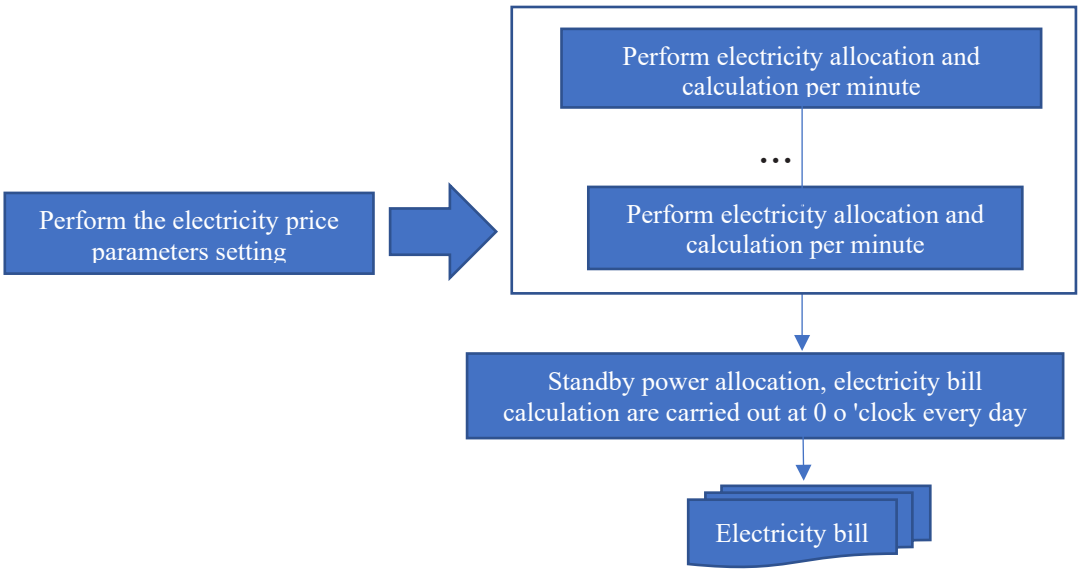
4. Electricity bill

In the "electricity bill" section, you can view and print the electricity bill by tenant, and save the electricity bill of tenant as a file.

Note:

If your role does not have the corresponding permissions, you cannot view or manipulate the page

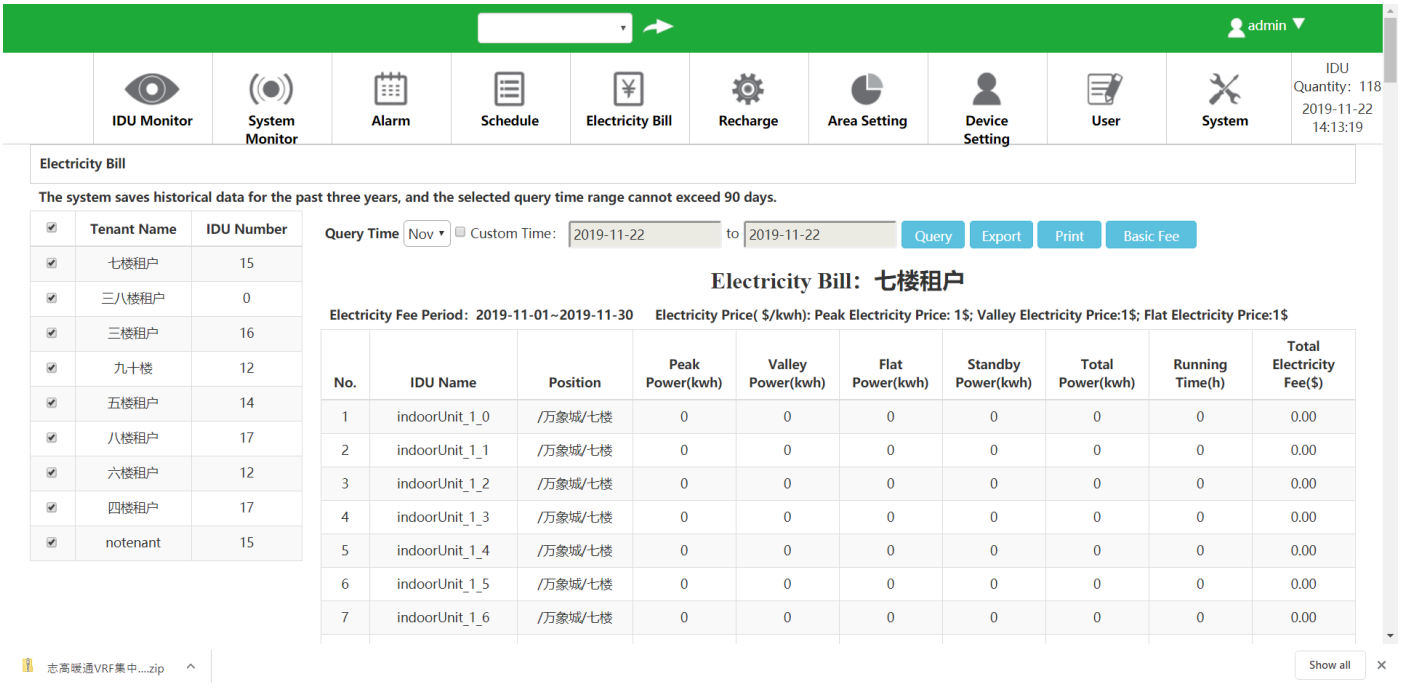
The electricity bill function is related to the "electricity peak, valley and flat setting" in the background configuration of the system, please refer to the setting content in the “electricity peak, valley and flat setting" page. The system can automatically allocate electricity fees to each indoor unit based on the meter and related information fed back by the gateway, and provide electricity bill query, export, and comparison functions. The flow of electricity fee management is as follows:



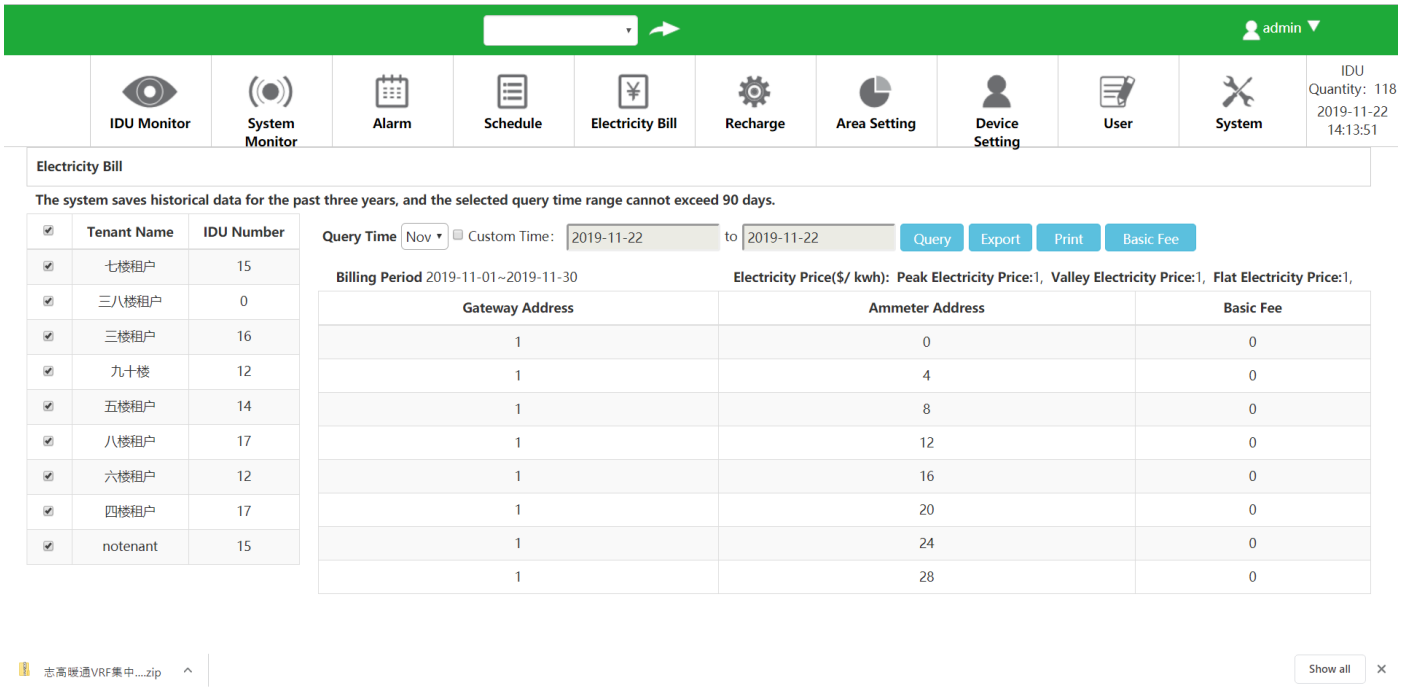
To check and print your electricity bill, please:

1. Select the tenant name in the list on the left whose electricity bill you want to view.
2. Select the date of the electricity bill in the query time on the right. The system default date is the current month. If you select a custom query date, you need to check the “Custom time” and click to open the calendar to select the required start and end dates.
3. Click the “Query” button.
4. Electricity bills for the selected date range will be shown below.

   The electricity includes the billing cycle, electricity price, serial number, indoor unit name, installation position, peak electricity, valley electricity, flat electricity, standby electricity, total electricity, running time, total electricity fee, and total.
5. Click “Print”, then the system will open a new window showing print preview and print options.
6. After configuring the printing options according to your needs, click "Print" again to print the electricity bill.



To view the basic fee bill, directly click “Basic Fee”, and the corresponding content will be displayed on the page below.



To save electronic electricity bill, please:

1. Select a tenant name in the list on the left whose electricity bill you want to view.
2. Select the date of the electricity bill in the query time on the right. The system default date is the current month.

   If you select a custom query date, you need to check the “Custom time” and click to open the calendar to select the required start and end dates.
3. Click “Query”.
4. Electricity bills for the selected date range will be shown below.

The electricity includes the billing cycle, electricity price, serial number, indoor unit name, installation position, peak electricity, valley electricity, flat electricity, standby electricity, total electricity, running time, total electricity fee, and total.

5. Click “Export”. Your browser will automatically download the electricity bill file.
6. You can find the downloaded file locally and view it directly in Excel.

Special description:

1. The electricity bill depends on the tenant, that is to say, only the indoor unit under the tenant can be queried for the electricity bill (for the configuration of the indoor unit and the tenant, please refer to "tenant management")
2. In order to better match the results of the electricity bill with the electricity meter data, it is recommended that the indoor units should be assigned to tenants and data entry must be performed according to the actual situation, otherwise the data counted in the bill and the degree in the meter will be inaccurate.
3. The operating electricity bill includes standby electricity bill can be set in the “electricity peak, valley and flat setting" in the background configuration of the system.

5. Electricity fee charge

The recharge page will display the balance of electricity charges according to the name of the tenant and its indoor unit. And it is allowable to recharge for the indoor unit. There are two modes for electricity fee charge: charge by user and charge by indoor units. When the electricity balance is insufficient, the system can send a shutdown lock command to the indoor unit according to the setting of "whether to send a shutdown lock command after arrears" in the electricity peak, valley and flat setting.

Note:

1. If your role does not have the corresponding permissions, you cannot view or manipulate the page.
2. The electricity charge function is related to the “electricity peak, valley and flat setting" in the background configuration of the system, please refer to the setting content in the “electricity peak, valley and flat setting" page (If non-billing mode is selected or prepaid fee is not checked in electricity peak, valley and flat setting, recharging will fail).
3. In the prepaid mode, the difference between charge by indoor units and charge by user:

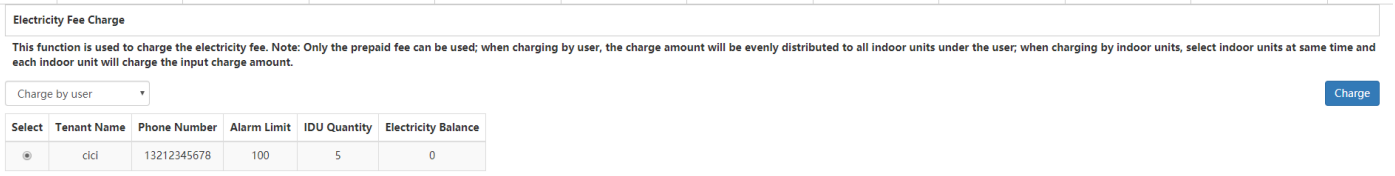
- As the balance in the system is stored in the indoor unit, the system provides the function of recharging the indoor unit.

However, in order to facilitate the unified management of the indoor units by the tenants, the system also provides the function of recharging all indoor units of the tenants.

1. If you want to recharge by the tenant, select "Charge by user" in the drop-down box on the left; if you want to recharge by indoor unit, select “Charge by indoor units".
2. If the charge by user is selected, click the “Charge” button at the upper right corner. If the charge by indoor units is selected, it is needed to select the tenant name first, then select the indoor unit to be recharged (multiple choices are OK), then click the “Charge” button at the upper right corner.

Note: when charging by user, the charge amount will be evenly distributed to all indoor units under the user; when charging by indoor units, select indoor units at same time and each indoor unit will charge the input charge amount.

3. Enter the amount to be recharged in the recharge amount input box in the pop-up recharge interface.
4. Click the “Charge” button



Special description:

1. Charge can only be done if the electricity bill sharing method is not non-billing mode and it is the prepaid mode
2. The electricity fee charge depends on the tenant, if the indoor unit is not distributed, the system background will generate a No Tenant
3. In order to better match the results of the electricity bill with the electricity meter data, it is recommended that the indoor units should be assigned to tenants and data entry must be performed according to the actual situation, otherwise the data counted in the bill and the degree in the meter will be inaccurate.
4. If there is a charge error, the system will automatically restore the balance of the indoor unit before recharging.
5. If you recharge multiple indoor units at one time, it may take some time and please wait patiently. During the recharge process, please do not close the page or perform other operations. If the recharge amount on the page does not correct, it is recommended to refresh the page manually to confirm.
6. In the prepaid mode, the difference between deductions by indoor unit and deductions by the tenant (set in the electricity fee setting interface):

As the balance in the system is stored in the indoor unit, the balance is deducted directly by the indoor unit.

- Deductions by indoor unit:

  When the electricity fee sharing deducted, new balance of indoor unit = old balance - consumption amount of the day

- Deductions by tenant:

  When the electricity fee sharing deducted, new balance of indoor unit under the tenant = old balance of indoor unit - sum of consumption amount of all billing indoor units under the tenant/number of billing indoor units

7. Description of arrearage warning, arrearage alarm and shutdown lock in prepaid mode

   - If the user selects the deduction by tenant (and fill in the warning limit of arrearage):

     The system will make a comparative judgment after deducting the tenant balance:

     - If it is less than the arrearage warning limit, an arrearage warning message will be sent.
     - If it is less than 0, an arrearage message will be sent to the tenant. And send shutdown and lock commands to all billing indoor units under the tenant.
     - When the user recharges the tenant, if the balance is greater than 0 and the limit, the system will set the two alarms to the recovery state and send an unlock command.
     - If there are billing indoor units in the system that have no tenants assigned at this time (it may not be rented out, or it may be misoperation), the system will automatically perform the following operations:
       - Directly deduct the balance of the indoor unit.
       - Judge whether the balance of the indoor unit is less than 0 and if arrears, an arrearage alarm will be sent. And the system will send a shutdown lock command to the indoor unit according to the setting of "whether to send a shutdown lock command after arrears" in the electricity peak, valley and flat setting.
       - When the user recharges the indoor unit, if the balance is greater than 0, the system sets the arrearage alarm to the recovery state and sends an unlock command.

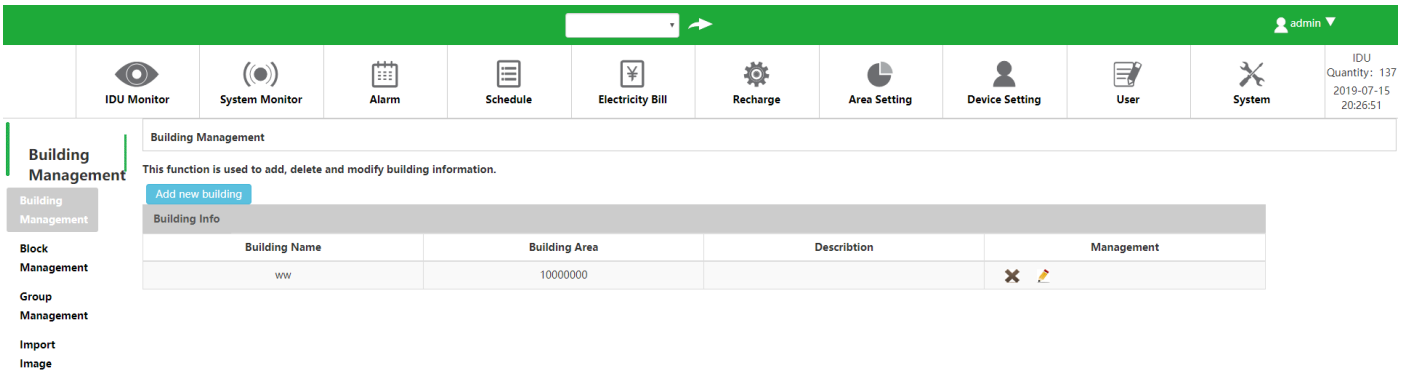
   - If the user selects the deduction by indoor unit (and fill in the warning limit of arrearage):

     The system will make a comparative judgment after deducting the indoor unit balance:

- If it is less than the arrearage warning limit, an arrearage warning message will be sent.
- If it is less than 0, an arrearage message for this indoor unit will be sent. The system will send a shutdown lock command to the indoor unit according to the setting of "whether to send a shutdown lock command after arrears" in the electricity peak, valley and flat setting.
- When the user recharges the indoor unit, if the balance is greater than 0 and greater than the limit, the system will set the two alarms to the recovery state and send an unlock command.

6. Area setting

The area setting includes three functions: the building management, block management, group management and import image. Among them, building management, block management, and group management can add, modify and delete the information of the building, block and group in the system.



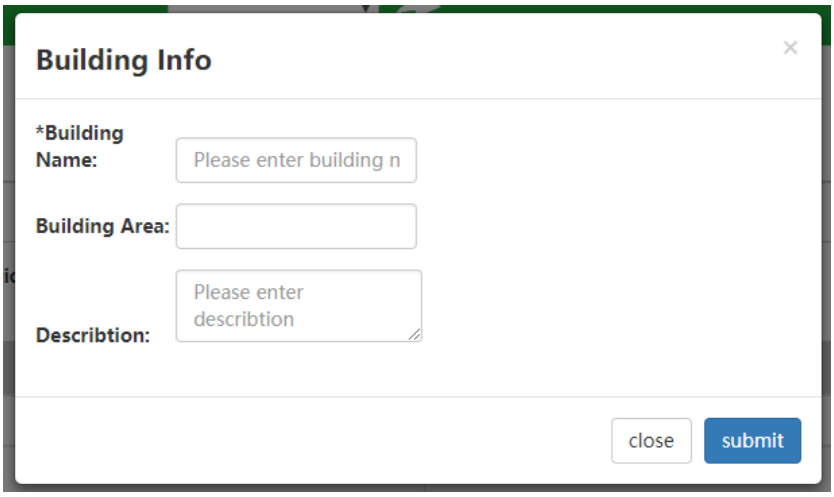
Note:

If your user type is not authorized for this page, you cannot browse or operate

6.1 Building management

To add a building, please perform the following operation:

1. Click “Area setting”.
2. The default page is "Building Management”; or click "Building Management” and the system will switch to the "Building Management” page.
3. Click the “Add new building” button.
4. Enter a building name consisting of characters or numbers in the "Building Name".
5. Enter the construction area value in the “Building Area”.
6. Enter the building description in the “Description”.
7. Click “submit”.
8. When the addition is successful, the table on the right will display all the information about the added building



- ✧ The building information after successful creation can be displayed in the tree structure on the left side of the "IDU Monitor" page
- ✧ In the process of building information creation, if you enter the wrong information, the page will have corresponding error prompt

To delete the building, please perform the following operation:

1. Click ✖

Special description:

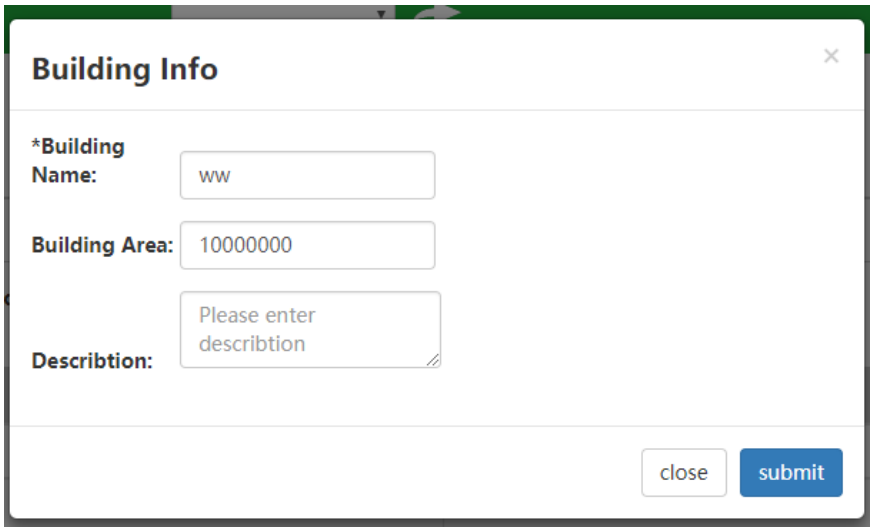
1. After the building is deleted, the blocks under the building will also be deleted directly (please refer to "Block Management” for the creation of block)
2. After the building is deleted, the group under the building will also be deleted directly (please refer to “Group Management” for the creation of group)

Therefore, please consider carefully when performing delete operations.

2. Confirm whether to delete, click OK to perform the delete operation

To modify the building, please perform the following operation:

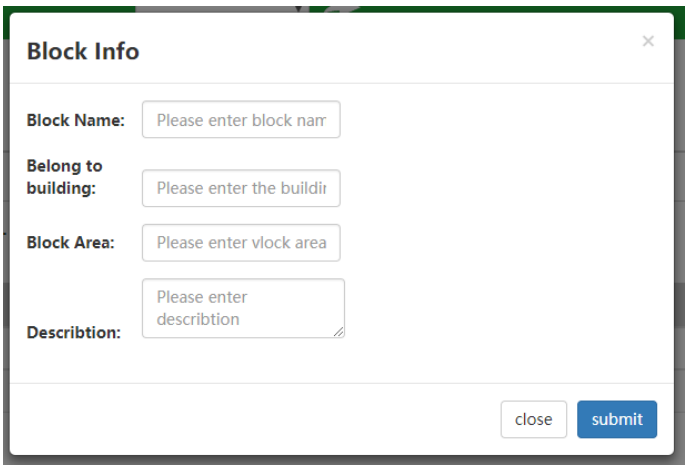
1. Click
2. Fill in the building name.
3. Fill in the building area.
4. Fill in the description.
5. Click the "Confirm changes" button or click the "Cancel" button to exit the modification page.



6.2 Block management

To add a block, please perform the following operation:

1. Click “Block Management” in the “Area Setting” page.
2. Click the “Add new block” button.
2. Fill in the block name.
3. Select the superior name at the "belong to building". (It can be building or block)
4. Enter the block area.
5. Enter the building description in the “Description”.
6. Click “submit”. 、



The block information after successful creation can be displayed in the tree structure on the left side of the "IDU Monitor" page

In the process of block information creation, if you enter the wrong information, the page will have corresponding error prompt

Special description:

1. Areas with the same name can be distinguished by superior names
2. Multi-level blocks can be created, but no more than 5 levels are recommended

To delete a block, please perform the following operation:

1. Click 
2. Confirm whether to delete, click OK to perform the delete operation

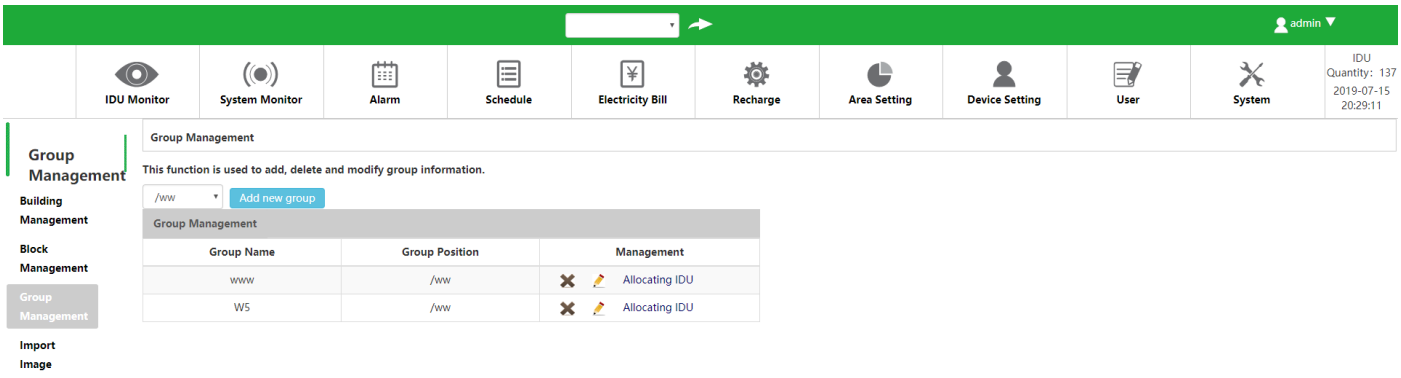
Special description:

1. After the block is deleted, the group under the block will also be deleted (please refer to "Group Management" for the creation of group)

To modify the block, please perform the following operation:

1. Click 
2. Fill in the block name.
3. Fill in the block area.
4. Fill in the description.
5. Click the "submit" button or click the "close" button to exit the modification page.

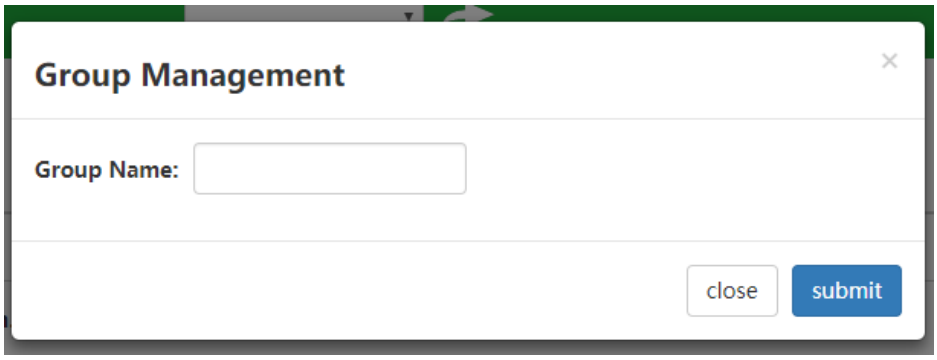
6.3 Group management



To add a group, please perform the following operation:

1. Click "Group Management" in the "Area Setting" page.
2. Select the group position to be added, click the "Add new group" button.
3. Fill in the group name.

4. Click “submit”.



The group information after successful creation can be displayed in the group view on the right side of the "IDU Monitor" page

In the process of group information creation, if you enter the wrong information, the page will have corresponding error prompt

To delete a group, please perform the following operation:

1. Click 
2. Confirm whether to delete, click OK to perform the delete operation

Special description:

1. After deleting the group, the indoor units under the group should be redistributed to other groups

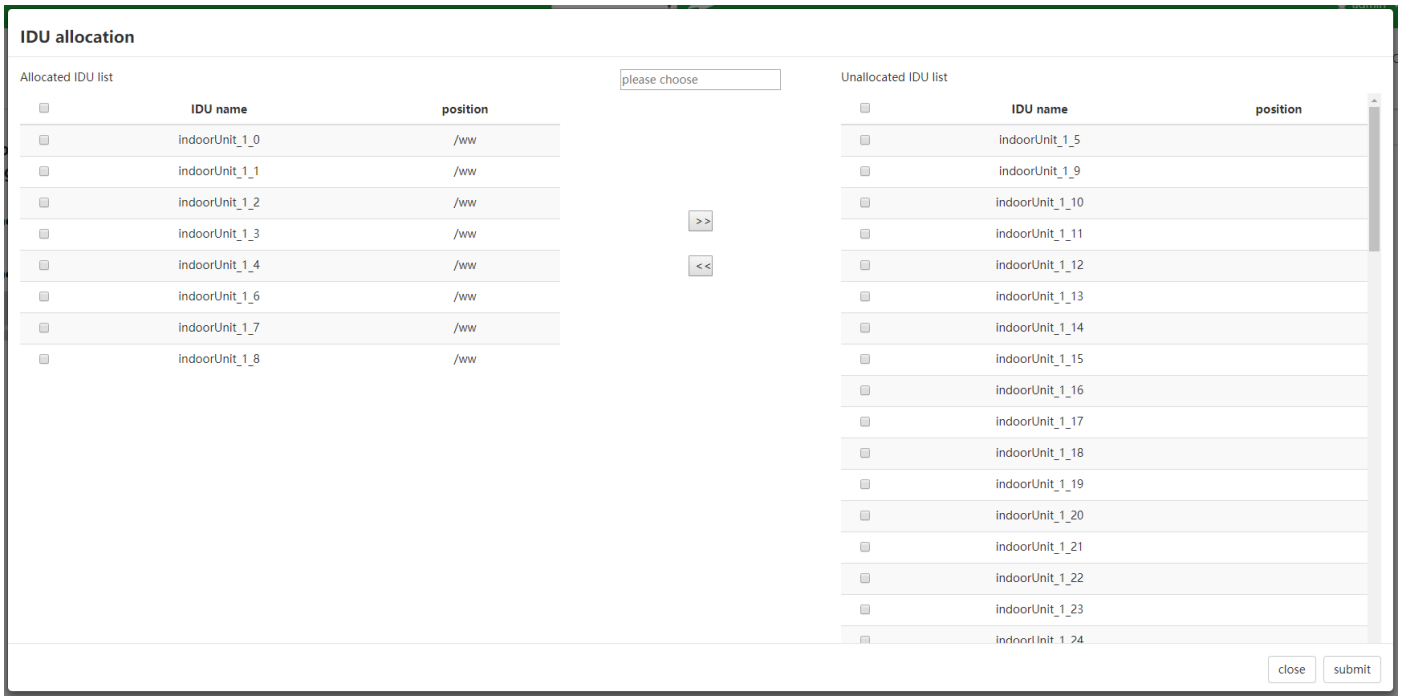
To modify the group, please perform the following operation:

1. Click 
2. Fill in the group name.
3. Click the "submit" button or click the “close" button to exit the modification page.

To distribute indoor units, perform the following operation:

1. Click the “IDU allocation”.
2. Click the input-box “please choose” in the pop-up.
3. Select the bus, gateway or network number where the indoor unit is located.
4. Select the right side indoor units and click the “<<” button to distribute the selected indoor units to this group. Click the “submit” button to save.
5. Select the left side indoor units and click the “>>” button to remove the selected indoor units from this group. Click the “submit” button to save.

6.4 Import image



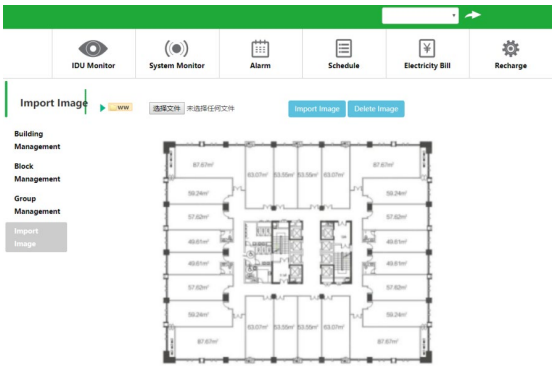
To import image, please perform the following operation:

1. Click the menu bar of the “Import Image” in the “Area Setting” page.
2. Select the name of the building or block you want to add images.
3. Click the “choose File” button to select images.
4. After selecting the images, click the "Import Image" button to import the images.
5. If you want to delete the images of the current building or block, click the “Delete Image” button.

Special description:

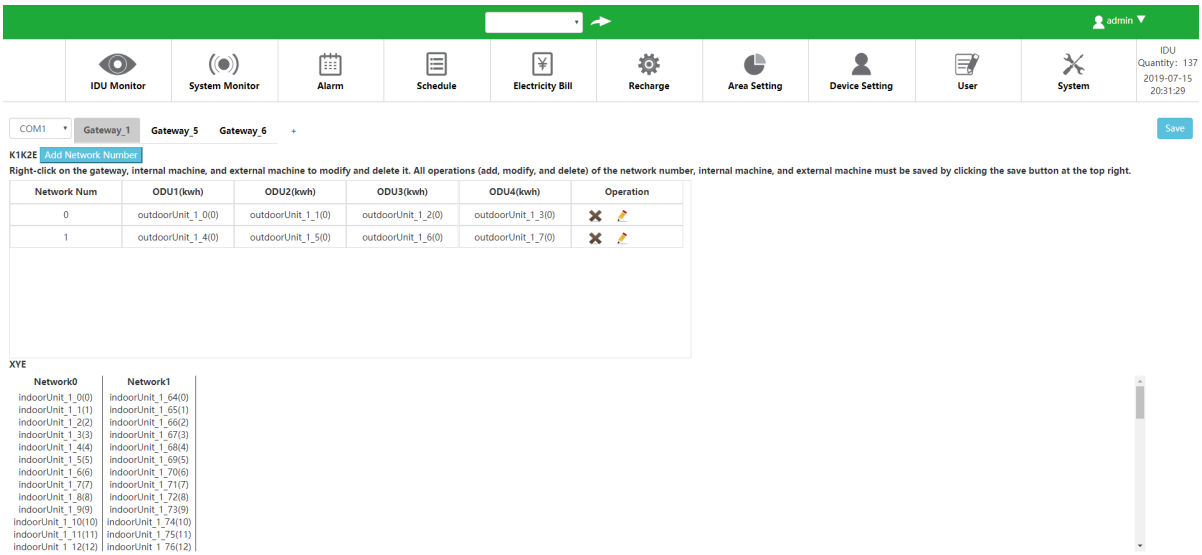
1. The size of the image to be uploaded should not exceed 1M
2. The image name and upload path must be in English, and the suffix must be in lowercase
3. Do not upload image with the same name under different buildings or blocks, otherwise all associated buildings or blocks will be deleted after deleting the image.
4. General format image types are supported

The imported images will be displayed on the IDU monitor -- Flat View page.



7. Device setting

Device setting can configure the system gateway, network number, indoor units and outdoor units.



Special description:

All operations (add, modify and delete) to the gateway, network number, indoor units and outdoor units must take effect by clicking the "Save" button at the upper right corner of the page.

It is necessary to wait for all devices under the current gateway to refresh before switching to view other gateway information. Otherwise, the information will be displayed in error

7.1 Configure the gateway

To add a gateway, please perform the following operation:

1. Select the bus (COM1 or COM2).
2. Click the “+” button on the left side of the bus.
3. Fill in the name and address of the gateway.
4. Click the “submit” button.

To modify a gateway, please perform the following operation:

1. Right-click on the gateway you want to modify and select change.
2. Enter the content to be modified in the pop-up window.
3. Click the “submit” button.

To delete a gateway, please perform the following operation:

1. Right-click on the gateway you want to modify and select delete.

7.2 Configure the network number

To add a network number, please perform the following operation:

1. Click the indoor unit needs to add a network number.

2. Click the “Add Network Number” button.
3. Select the address of the network number in the gateway (it cannot be 8).
4. Click the “submit” button (in the pop-up). (The network number cannot exist alone, so please continue to add operations to the indoor unit or outdoor unit after adding the network number)

To modify a network number, please perform the following operation:

1. Click 
2. Enter the address of the network number to be modified.
3. Click the “submit” button in the pop-up.
4. Click the “Save" button at the upper right corner.

To delete a network number, please perform the following operation:

1. Click 
2. Click the “Save" button at the upper right corner.

Note: Deleting a network number will delete all the indoor and outdoor units and their history under that network number.

7.3 Configure the outdoor unit

To add an outdoor unit, please perform the following operation:

1. Click the + in the cell of the outdoor unit to be added in the 1K2E table. (The address for ODU1 is 0, for ODU2 is 1, for ODU3 is 2 and for ODU4 is 3.)

The default name of the outdoor unit is (bus gateway address network number address OUT + outdoor unit address)

2. Click the “Save" button at the upper right corner.

To modify an outdoor unit, please perform the following operation:

1. Right-click the outdoor unit you want to modify and select change.
2. Change the outdoor unit name in the pop-up.
3. Click the “submit” button in the pop-up.
4. Click the “Save" button at the upper right corner.

To delete an outdoor unit, please perform the following operation:

1. Right-click on the outdoor unit you want to modify and select delete.
2. Click the “Save" button at the upper right corner.

7.4 Configure the indoor unit

To add an indoor unit, please perform the following operation:

1. Click the “Add” button in the XYE table.
2. Fill in the indoor unit name.
3. Fill in the indoor unit address.
4. Fill in the electricity alarm limit of the indoor unit in the “Alarm limit”.
5. Select whether it is allowed to calculate the electricity fee of this indoor unit.
6. Click the “submit” button in the pop-up.

7. Click the “Save" button at the upper right corner.

Note: all delete operations on this page (including the delete of indoor unit, network number and gateway) will check the balance of indoor unit first.

If the deleted indoor units are the all indoor units under a tenant, when deleting, it will be determined whether the balance of all the indoor units participating in billing is 0. If it is 0, it will be deleted correctly. If it is not 0, the total balance of indoor units needs to be set to zero on the page of electricity charge.

If the deleted indoor units are not all the indoor units under a tenant, the total balance of all deleted indoor units will be transferred to the other indoor units of the user.

If the billing mode of the indoor unit is changed to non-billing mode and the tenant to which the indoor unit belongs has no other indoor unit, you need to set the balance of the indoor unit to zero on the page of electricity charge first. If the billing mode of the indoor unit is changed to non-billing mode and the tenant to which the indoor unit belongs has other indoor units, the balance of the indoor unit will be transferred to the other indoor unit under the tenant automatically.

8.User management

User management will display a list of existing users, you can add, modify and delete users in the user management page. There are three types of users in this system:

property administrator, super property administrator and system administrator.

The permissions of these three users are as follows:

Function	System administrator	Property administrator	Super property administrator
IDU monitoring	√	√	√
System monitoring	√		
Alarm management	√	√	√
Schedule management	√	√	√
Electricity bill	√	√	√
Electricity fee charge	√		√
Area setting	√		
Device setting	√		√
User management	√	√	√
System parameters	√		

Note:

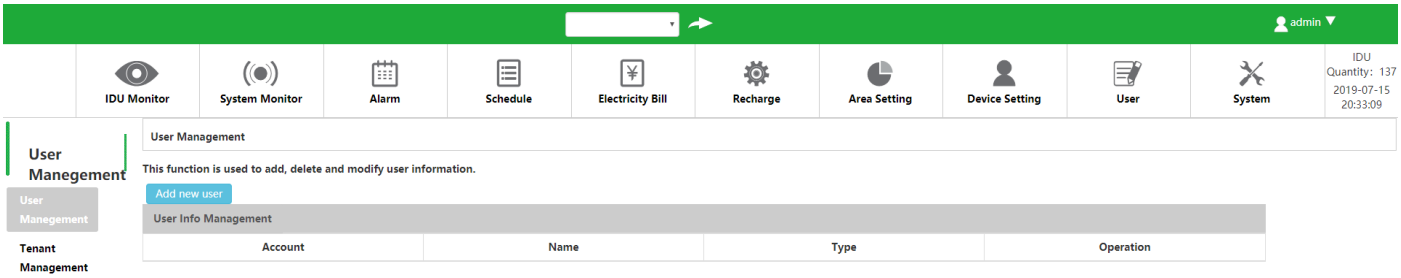
If your role does not have the corresponding permissions, you cannot view or manipulate the page

The system administrator can add system administrator, super property administrator and property administrator.

The super property administrator can add super property administrator and property administrator.

The property administrator can add the property administrator.

8.1 User management

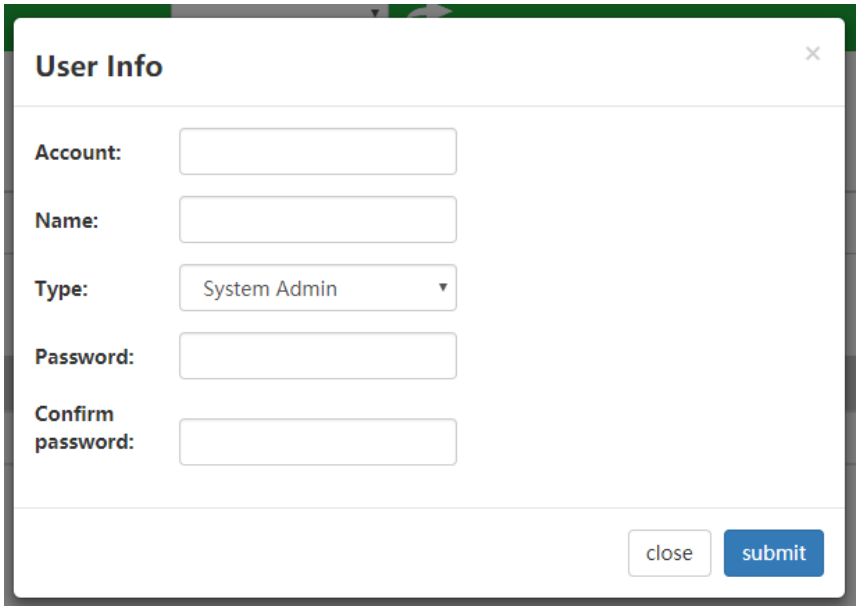


To add a new user, please:

1. Click “User Management”> “User Management” on the page menu.
2. Click the “Add new user” button.
3. Fill in the account name of new user in the “Account” column.
4. Fill in the name of new user in the “Name” column.

5. Select the "System Admin" (or other type) from the "Type" drop-down list.
6. Enter the password for the new account in the “Password” column.
7. Enter the password again for the new account in the “Password” column.
8. Click "submit" to save the new account.

The newly added user information will be displayed in the table on the page.



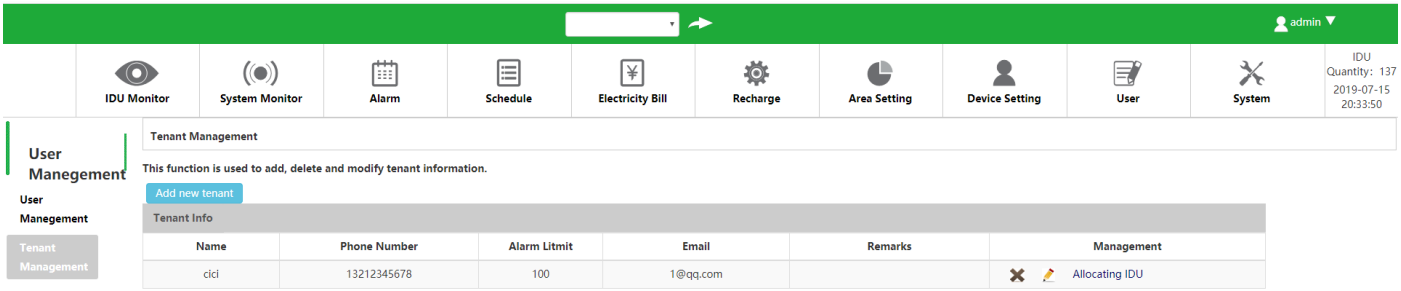
To modify the user, please:

1. Click “User Management”> “User Management” on the page menu.
2. Click the icon after the account name you want to modify.
3. Modify the user information in the pop-up modification page.
4. Click "Confirm changes".

To delete a user, please:

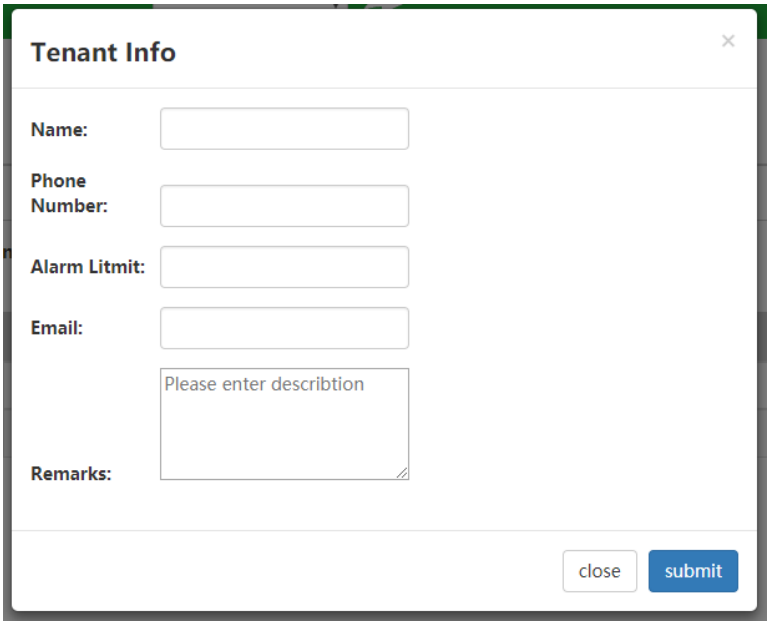
1. Click “User Management”> “User Management” on the page menu.
2. Click the icon after the account name you want to delete.
3. Click the "OK" button in the pop-up box.

8.2 Tenant management



To add a new tenant, please:

1. Click “User Management”> “Tenant Management” on the page menu.
2. Click the “Add new tenant” button.
3. Fill in the name of new tenant in the “Name” column.
4. Fill in the phone number of new tenants in the “Phone Number” column.
5. Fill in the corresponding value in the "Alarm Limit" column, when the system detects that the balance of the tenant is lower than this value, it will generate an alarm.
6. Fill in the email address of new tenant in the “Email” column.
7. Fill in the home address of new tenant in the “Home address” column.
8. Fill in the necessary notes for the new tenant in the “Remarks" column.
9. Click "submit" to save the new tenant.



To delete a tenant, please:

1. Click “User Management”> “Tenant Management” on the page menu.
2. Click the icon after the tenant you want to delete.
3. Click the "OK" button in the pop-up box.

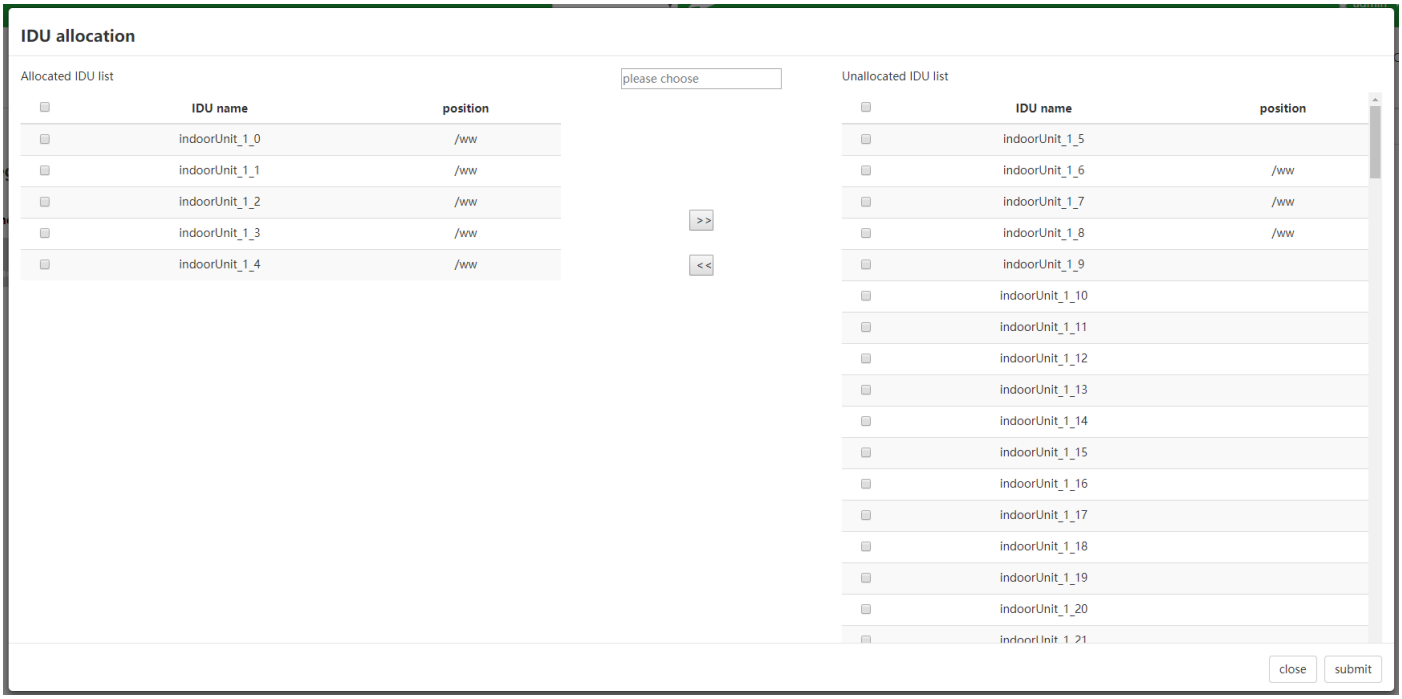
To modify the tenant, please:

1. Click “User Management”> “Tenant Management” on the page menu.
2. Click the icon after the tenant you want to modify.
3. Modify the tenant information in the pop-up modification page.
4. Click “submit”.

To distribute indoor units, perform the following operation:

1. Click the “IDU allocation”.
2. Click the input-box “please choose” in the pop-up.
3. Select the bus, gateway or network number where the indoor unit is located.

4. Select the right-side indoor units and click the “<<” button to distribute the selected indoor units to this tenant. Click the “submit” button to save.
5. Select the left side indoor units and click the “>>” button to remove the selected indoor units from this tenant. Click the “submit” button to save.



Notice:

When removing the indoor unit from the tenant:

If the removed indoor units are all indoor units of the tenant and the total balance of the indoor units is not 0, the total balance of the indoor units needs to be set to 0 on the page of electricity charge.

If the removed indoor units are all indoor units of the tenant and the total balance of the indoor units is not 0, the indoor units will be removed from the tenant normally.

If the removed indoor units are not the all indoor units of the tenant, the balance of it will be distributed to other indoor units of the tenant, and the indoor units will be removed from the tenant normally.

When deleting a tenant:

If the total balance of all the indoor units under this tenant is not 0, it needs to be set to 0 on the page of electricity charge.

If the total balance of all the indoor units under this tenant is 0, the tenant can be removed normally

9 System parameters

In the system parameter section, you can perform the operations of exporting system data and setting system functions.

> Note:
>
> If your role does not have the corresponding permissions, you cannot view or manipulate the page

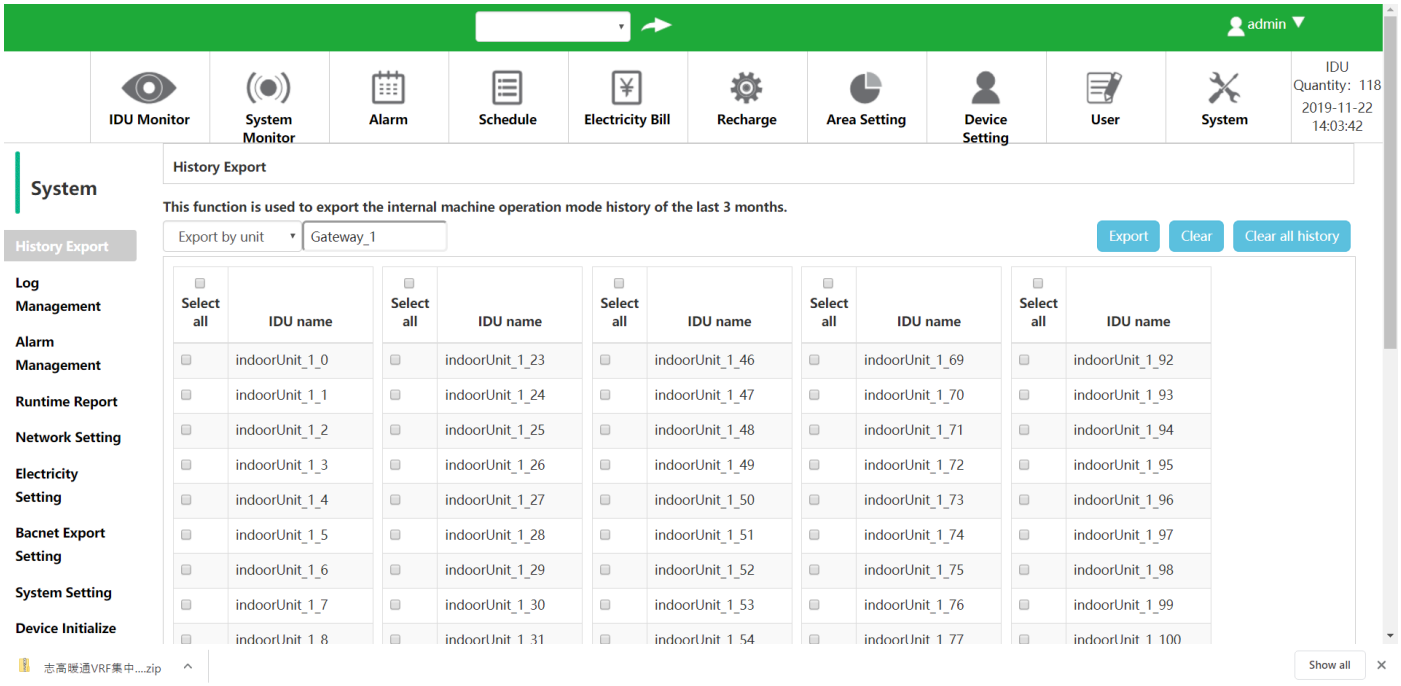
9.1 History export

The "History Export" function page is used to "Export", "Clear" and “Clear all history" of the saved history.

You can go to this page by clicking "System"> "History Export".

To export the history, please perform the following operation:

1. Click "System"> "History Export".
2. Select to export by unit or export by block.
3. Check the history of indoor unit to be exported.
4. Click the “Export” button.



- ✧ After the successful export, a confirmation dialog box will pop up to save it (directly save to the browser's default storage path)

To clear the history, please perform the following operation:

1. Click "System"> "History Export"> “Initial setting”.
2. Select to export by unit or export by block.
3. Select the indoor unit to be cleared the history.
4. Click the “Clear” button.

To clear the history, please perform the following operation (it is generally required after time synchronization):

1. Click "System"> "History Export"> “Initial setting”.

2. Click the “Clear all history” button.

9.2 Log Management

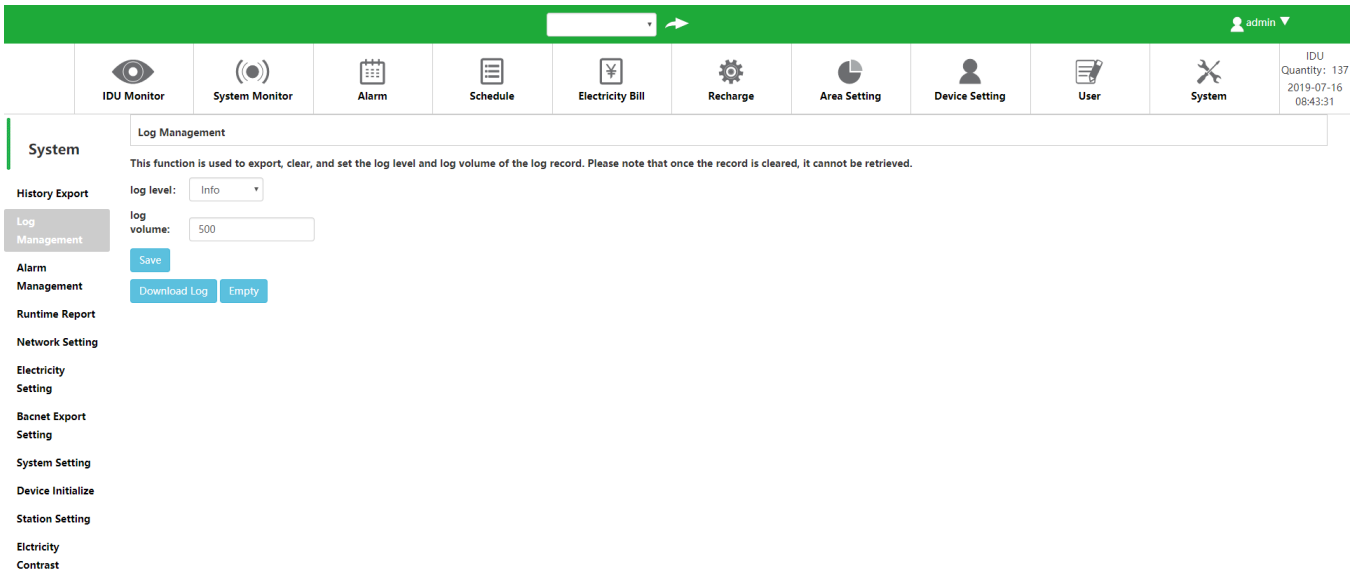
Click “System”> “Log Management” to go to the log management page.

Log management includes four functions: “log level”, “log volume”, “Download Log” and “Empty”.

The log records the actual log content in the background of the system, which can be used as a reference for troubleshooting when problem occurs.

To set the “log level” and “log volume”, please perform the following operation:

1. Select a log level. (the log level decreases from top to bottom in the list)
2. Fill in log volume.
3. Click the “Save” button.



Special description:

1. When a level is selected, the system saves the logs of the level and all logs higher than it.
2. If the log volume entered exceeds the limit, the system will give corresponding prompt.

To download the log, please perform the following operation:

1. Click the “Download Log” button.

It will be directly downloaded and saved to the default storage path of the browser.

To empty the log, please perform the following operation:

1. Click the “Empty” button.

2. Wait until the system completes the emptying operation.

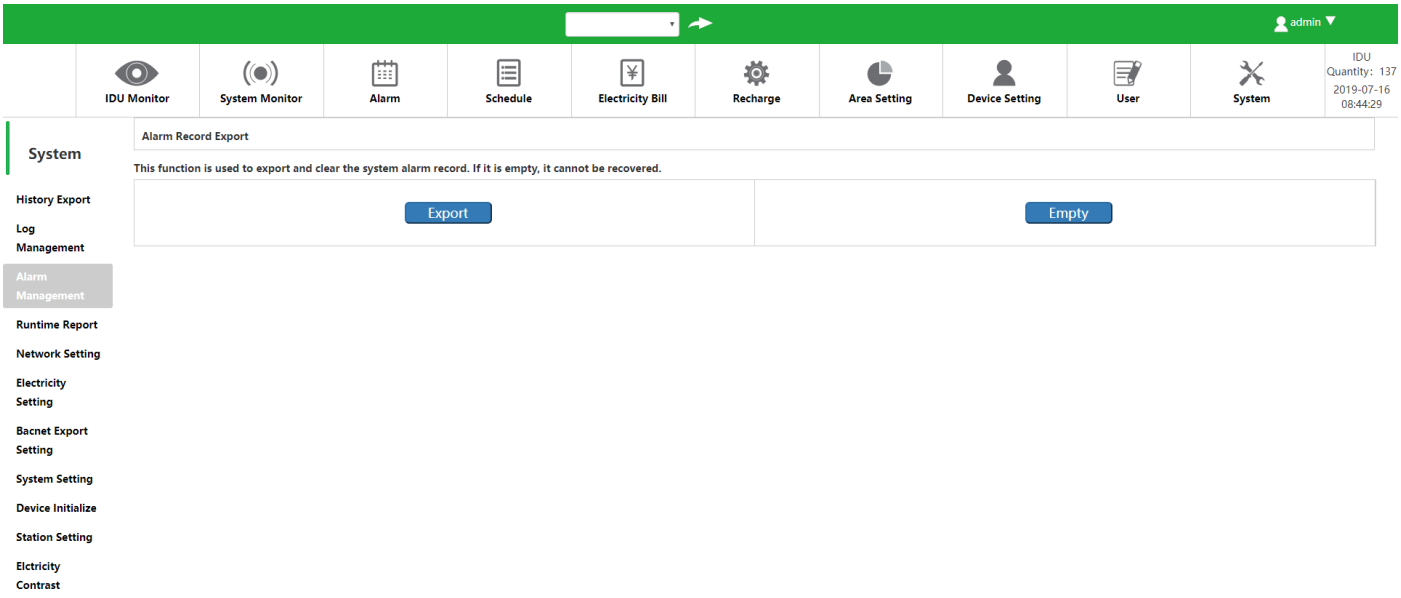
9.3 Alarm management

Click “System”> “Alarm Management” to go to the alarm management page.

Alarm management includes two functions: “Alarm Record Export” and “Alarm Record Empty”.

To export the alarm record, please perform the following operation:

1. Click the “Export” button.
2. Wait until the system completes the exporting operation.



Special description:

1. The alarm records exported here are consistent with the alarm records queried in the “Alarm Management"
2. The exporting file is an EXCEL file

To empty the alarm records, please perform the following operation:

1. Click the “Empty” button.
2. Wait until the system completes the emptying operation.

9.4 Runtime report

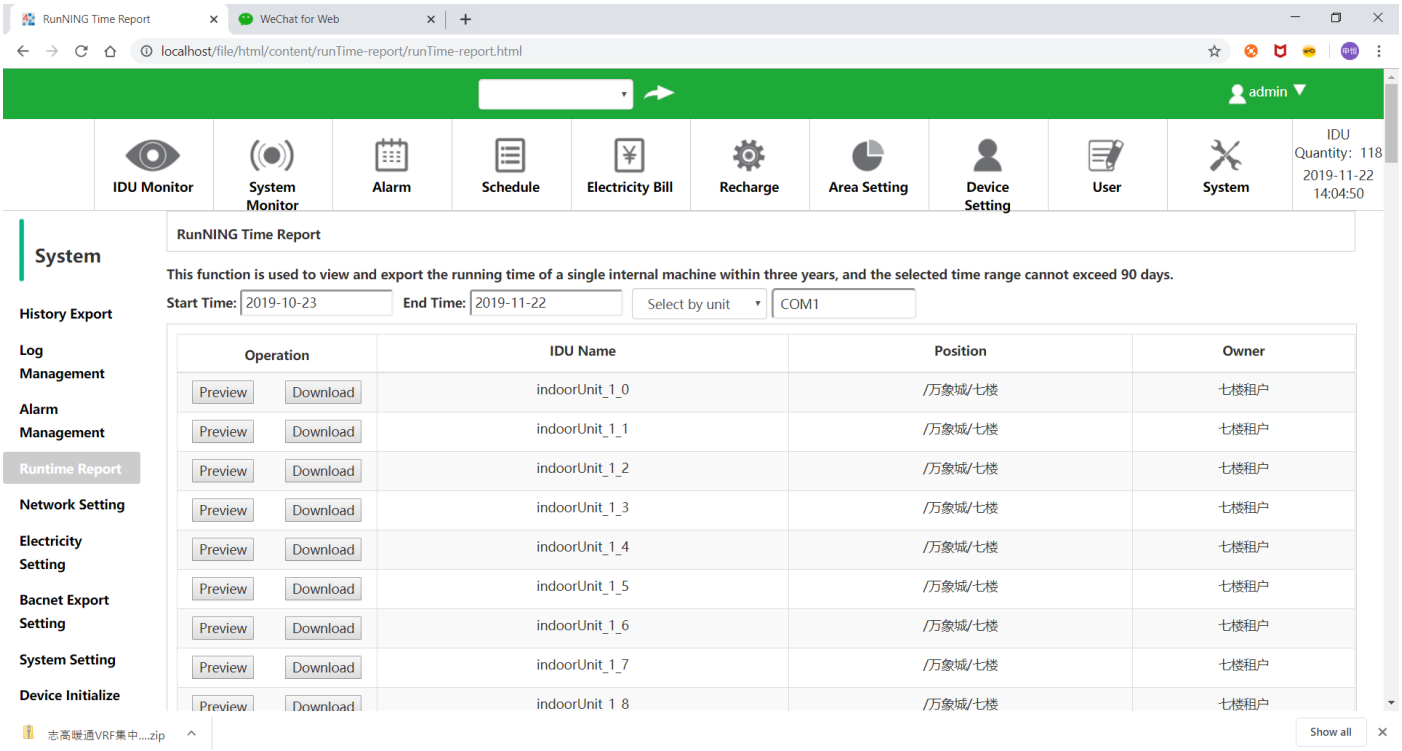
Click “System”> “Runtime Report” to go to the runtime report page.

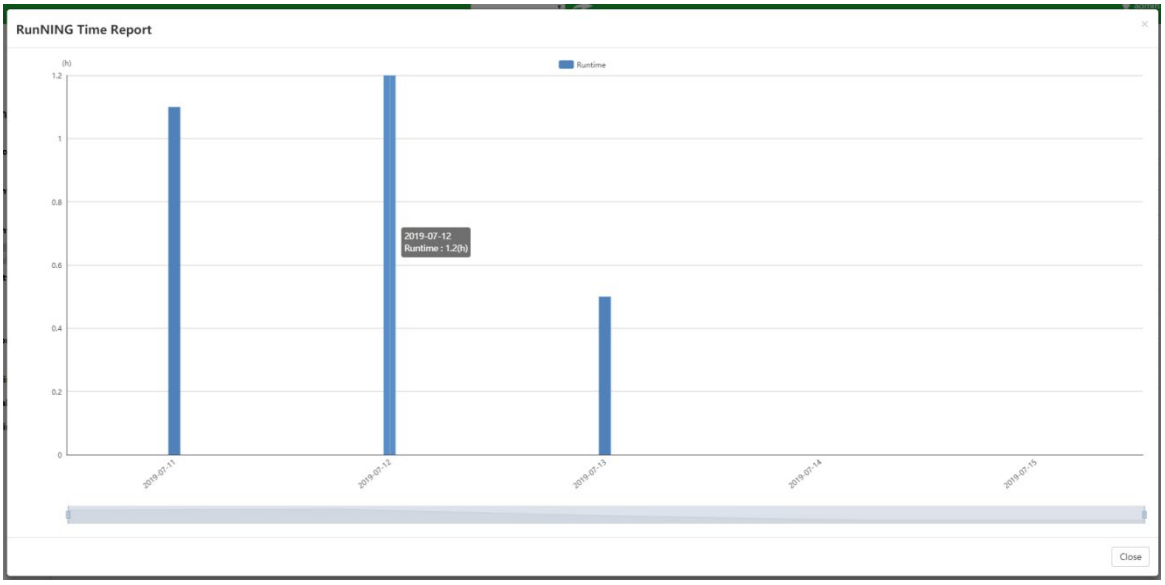
The runtime report includes two functions: “Preview” and “Download”.

The runtime report records the daily run time of the indoor units.

To preview the runtime of the indoor units, please perform the following operation:

1. Select the export way (export by block or by system)
2. Click the “Preview” button corresponding to the indoor unit you need to view.
3. The preview will be displayed as a "histogram".





To download the runtime report, please perform the following operations:

1. Click the “Download” button corresponding to the indoor unit you need to download.
2. It will be directly downloaded and saved to the default storage path of the browser.

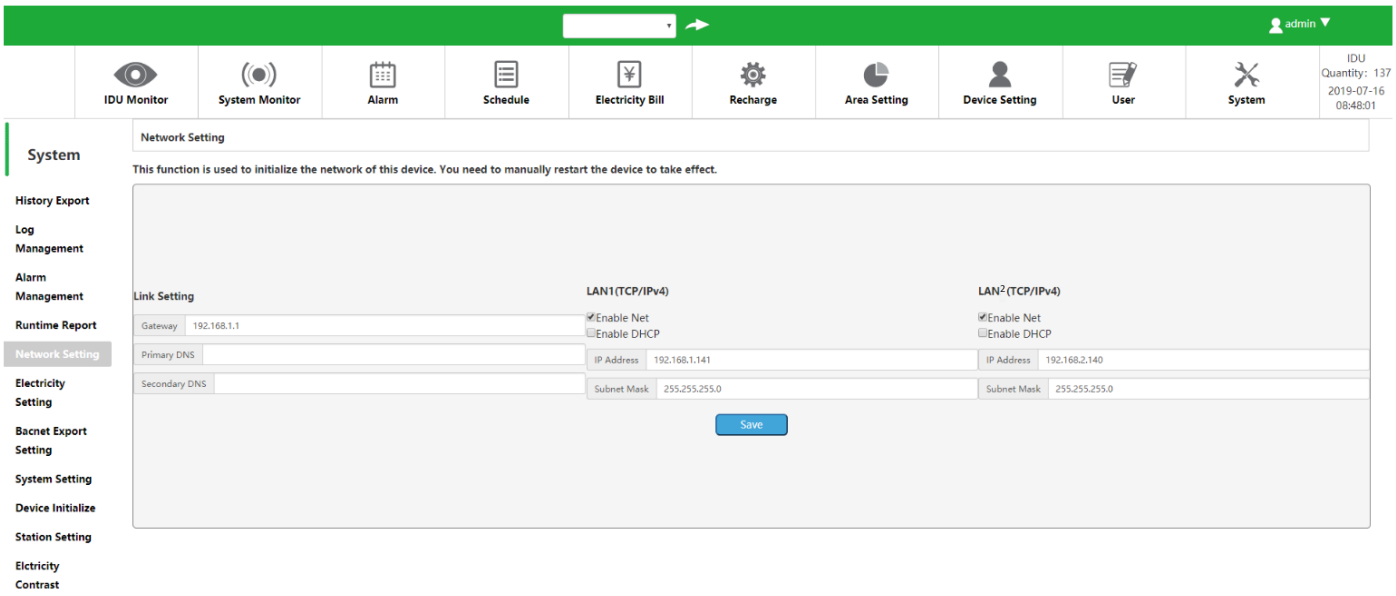
9.5 Network setting

Click “System”> “Network Setting” to go to the network setting page.

The IP address of the VRF system can be modified on this page. **Please note that changing the IP address will cause a system restart.**

There are LAN1 and LAN2 ports provided on the VRF system. For the first access, the factory IP address of the system hardware is set on LAN1.

It is recommended to always set a fixed IP address for the LAN1. When you log in to the system for the first time, you will see the following interface:



To perform "network setting", please perform the following operation:

If the device is **only connected to the LAN but not the BACnet**, a network wire is required to connect directly from the device to the computer, in the initial configuration of the system:

A. Set a fixed IP address

1. Keep all settings of LAN1 unchanged.
2. Check the "Enable Net" in the LAN2.
3. Enter the fixed IP address and subnet mask of the LAN in the LAN2.
4. Click "Save".
5. Restart the system.

B. Obtain ac IP address automatically

1. Keep all settings of LAN1 unchanged.
2. Check the "Enable Net" in the LAN2.
3. Check the "Enable DHCP" in the LAN2.
4. Click "Save".
5. Restart the system.

Note: After the configuration is completed, only LAN2 needs to be connected during normal use of the system and LAN1 should not be connected to any network wire and be in the vacant state.

If the device is **connected to both LAN and BACnet**, network wires are required to connect directly from the device to the computer and to connect from the device to the BACnet, in the initial configuration of the system:

A. Set a fixed IP address

1. Enter the fixed IP address and subnet mask of the LAN in the LAN1.
2. Check the "Enable Net" in the LAN2.
3. Enter the fixed IP address and subnet mask of the BACnet in the LAN2.
4. Click "Save".
5. Restart the system.

B. Obtain ac IP address automatically

1. Enter the fixed IP address and subnet mask of the LAN in the LAN1.
2. Check the “Enable Net” in the LAN2.
3. Check the “Enable DHCP” in the LAN2.
4. Click “Save”.
5. Restart the system.

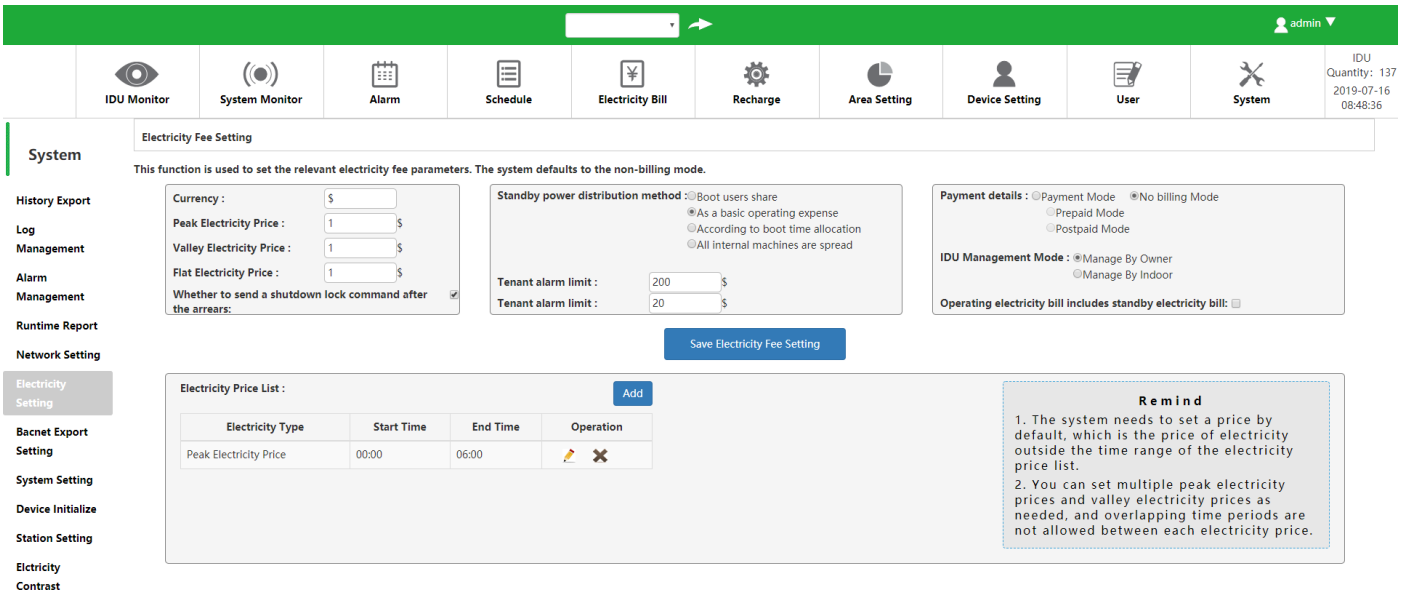
Note: After the configuration is completed, LAN1 and LAN2 need to be connected all the time during normal use of the system.

Special description:

1. A LAN port must be set with a fixed IP address before DHCP can be enabled. Otherwise, the IP address obtained automatically cannot be found;
2. After the IP address is set, the controller needs to be restarted automatically to enable it;
3. It is better not to set two LAN ports on the same network segment, because LAN2 is generally used for the BACnet IP communication network;

9.6 Electricity peak, valley and flat setting

With this function, you can set the currency of the electricity bill, the electricity bill sharing method, prepaid or not, the recharge method (electricity fee deduction mode of the indoor unit), alarm limit, and electricity price tables.



Precautions:

Currency: it is recommended to enter the local currency symbol (￥, $)

Whether to send a shutdown lock command after arrears: if the "whether to send a shutdown lock command after arrears” is checked, the indoor unit will be locked after arrears.

The tenant alarm limit and the indoor unit alarm limit are global limits. Priority is given to a single tenant or alarm limit (see the tenant management and device management functions for details). If the alarm limit for tenant or indoor unit is not set separately, the global limit shall prevail.

Electricity fee deduction mode of the indoor unit: when the deduction by tenant is selected, the balance warning, arrearage alarm, and shutdown lock are judged based on the balance of all indoor units under the tenant when the indoor unit deducts the electricity charge; when the deduction by indoor unit is selected, they are judged based on the balance of the indoor unit itself

Operating electricity bill includes standby electricity bill, when the standby electricity bill sharing method is not selected as the basic operating cost, if it is checked, the standby electricity will be treated as the operating electricity bill (flat electricity bill), if unchecked, it is still treated as the standby electricity bill.

Electricity price list: since different types of electricity prices (peak, valley, and flat) may be different, the type of electricity price for each time period through the electricity price list can be set to make the calculation of electricity price more reasonable. Multiple time periods of each type of electricity price can be set. But the electricity price is the same, and no repetition is allowed for all time periods of electricity price.

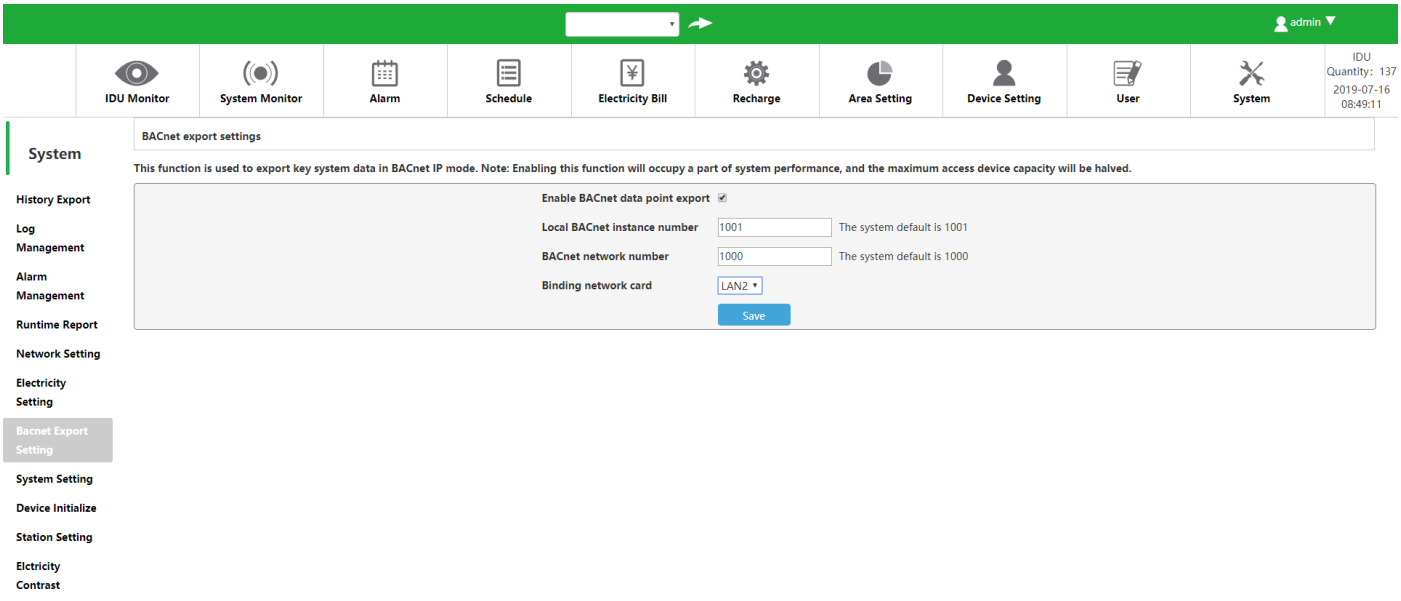
Payment details: for non-billing mode, there is no need to calculate the electricity charge during the indoor unit operation; for prepaid mode, it needs to recharge before use. During use, if the balance is less than the alarm limit, a warning of electricity charges will generate, if the balance is less than 0, an arrears alarm will generate, and the indoor unit will be locked according to the settings; Post-paid mode: No need to recharge, use first and pay later. The payment method must be selected before you can select prepaid mode and post-paid mode.

9.7 BACnet export setting

Click “System”>“Bacnet Export Setting” to go to the BACnet setting page.

To perform “Bacnet Export Setting”, please perform the following operation:

1. Select whether it is allowed to export.
2. Fill in the “Local BACnet instance number”, and the default is "1001”.
3. Fill in the “BACnet network number”, and the default is "1000”.
4. Select the binding network card.
5. Click the “Save” button.

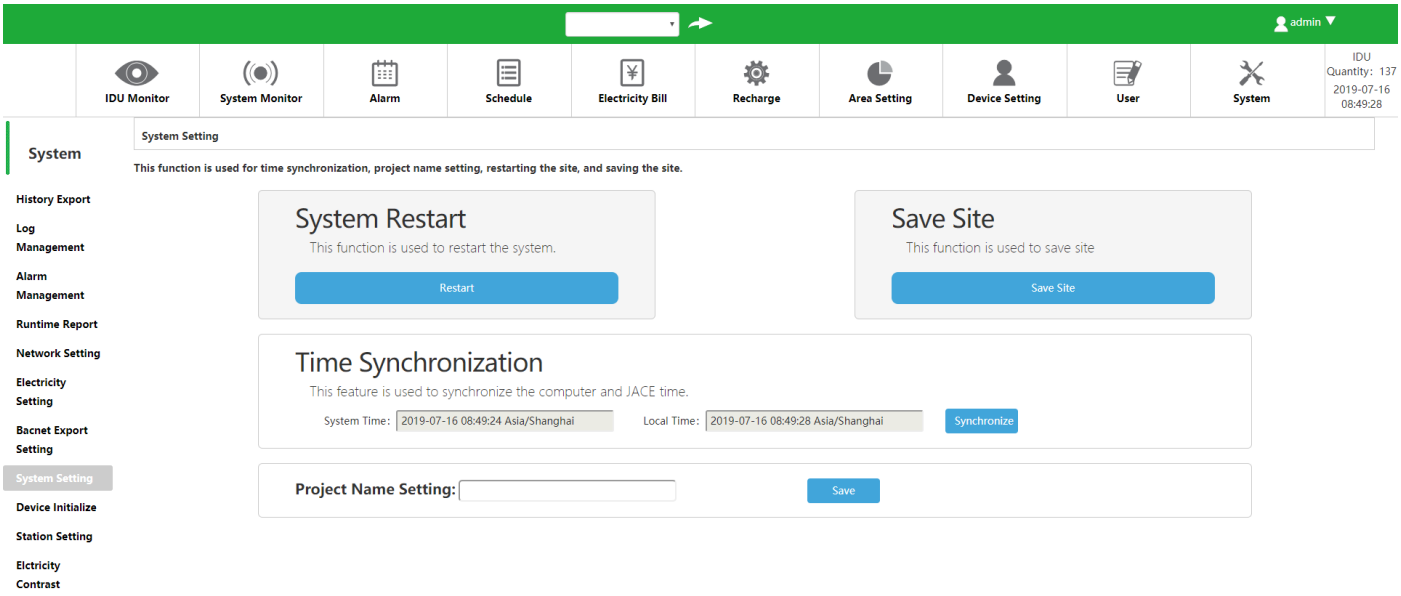


Special description:

1. After exporting the BACnet, the maximum number of indoor units in the system should be halved
2. After exporting the BACnet, the external system can be accessed via the BACnet protocol
3. Exporting BACnet extremely consumes system resources and please be patient.
4. After unchecked the Enable BACNet data point export, click the Save button to delete the BACnet data points that exist in the system

If there have been BACnet data points in the system, please do not repeat the export again.

9.8 System setting



System setting includes four functions: system restart, save site, time synchronization and project name setting.

Click “System”> “System Setting” to go to the system setting page.

To perform “System Restart”, please perform the following operation:

1. Click the “Restart” button.
2. Wait for the centralized controller to restart.

Note: restart may take 3 to 5 minutes, please be patient. After restarting, please log in again.

To perform “Save Site”, please perform the following operation:

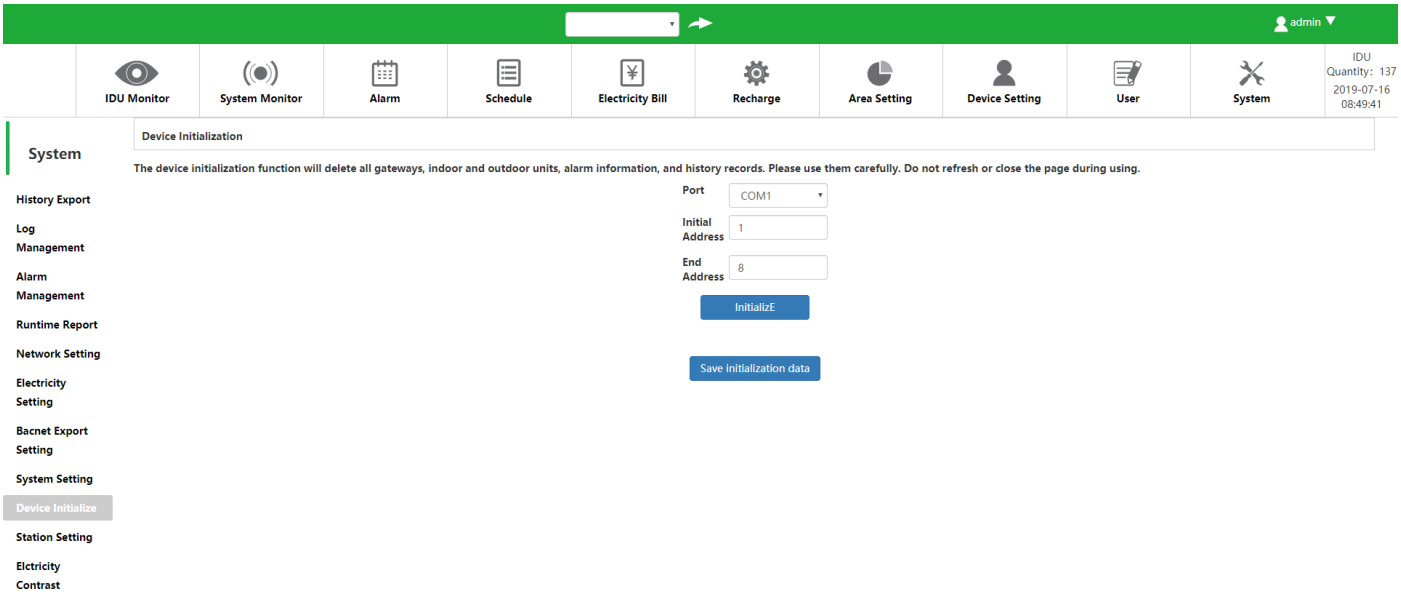
1. Click the “Save Site” button.
2. Click the “Synchronize” button to synchronize the time of the local computer to the centralized controller.

To perform “Project Name Setting”, please perform the following operation:

1. Enter the project name.
2. Click the “Save” button. The project name will be displayed in the upper left corner of the page after success.

9.9 Device initialize

Device initialization will scan all indoor units and outdoor units in the input address under the port and add them to the centralized control system.

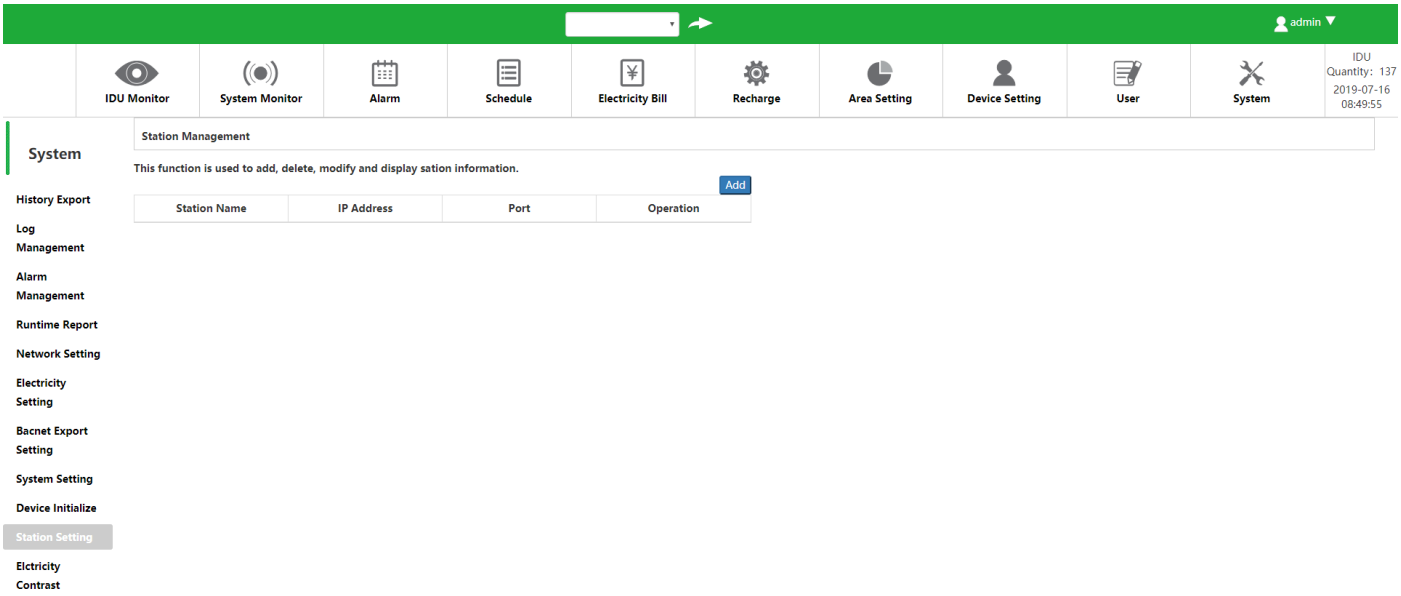


To perform "Device Initialize", please perform the following operation:

1. Select the Port to scan.
2. Enter the Initial Address and End Address for scanning.
3. Click the "Initialize" button.
4. After scan all indoor units and outdoor units, remember click "Save initialization data", otherwise, controller will not record power consumption.

9.10 Station setting

The station setting can configure other system address information in the system, and realize one click jump on the top page.



To perform “Add a station”, please perform the following operation:

1. Click the “Add” button.
2. Fill in the system name in the "Station Name" column.
3. Fill in the system IP address in the "IP Address" column.
4. Fill in the system port number in the "Port" column.
5. Click the “submit” button.

To perform “Add a station”, please perform the following operation:

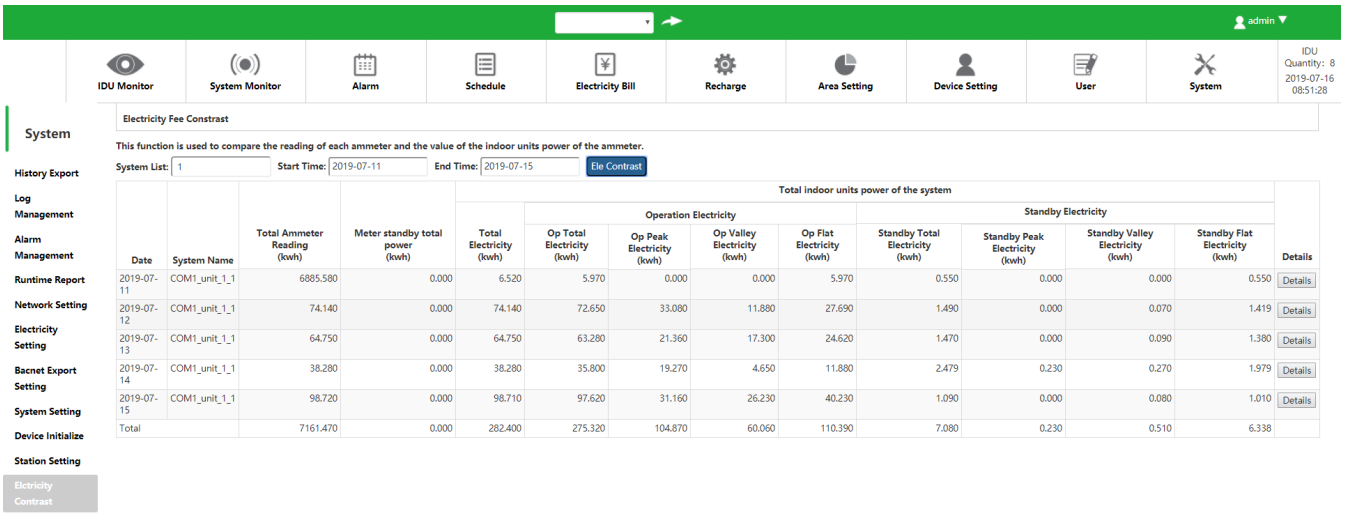
1. Click 

2. Fill in the system name in the "Station Name" column.
3. Fill in the system IP address in the "IP Address" column.
4. Fill in the system port number in the "Port" column.
5. Click the “submit” button.

To perform “Delete a station”, please perform the following operation:

1. Click 
2. Click “OK” in the pop-up box.

9.11 Electricity fee contrast



Date	System Name	Total Ammeter Reading (kwh)	Meter standby total power (kwh)	Total indoor units power of the system									Details
				Total Electricity (kwh)	Operation Electricity				Standby Electricity				
					Op Total Electricity (kwh)	Op Peak Electricity (kwh)	Op Valley Electricity (kwh)	Op Flat Electricity (kwh)	Standby Total Electricity (kwh)	Standby Peak Electricity (kwh)	Standby Valley Electricity (kwh)	Standby Flat Electricity (kwh)	
2019-07-11	COM1_unit_1_1	6885.580	0.000	6.520	5.970	0.000	0.000	5.970	0.550	0.000	0.000	0.550	Details
2019-07-12	COM1_unit_1_1	74.140	0.000	74.140	72.650	33.080	11.880	27.690	1.490	0.000	0.070	1.419	Details
2019-07-13	COM1_unit_1_1	64.750	0.000	64.750	63.280	21.360	17.300	24.620	1.470	0.000	0.090	1.380	Details
2019-07-14	COM1_unit_1_1	38.280	0.000	38.280	35.800	19.270	4.650	11.880	2.479	0.230	0.270	1.979	Details
2019-07-15	COM1_unit_1_1	98.720	0.000	98.710	97.620	31.160	26.230	40.230	1.090	0.000	0.080	1.010	Details
Total		7161.470	0.000	282.400	275.320	104.870	60.060	110.390	7.080	0.230	0.510	6.338	

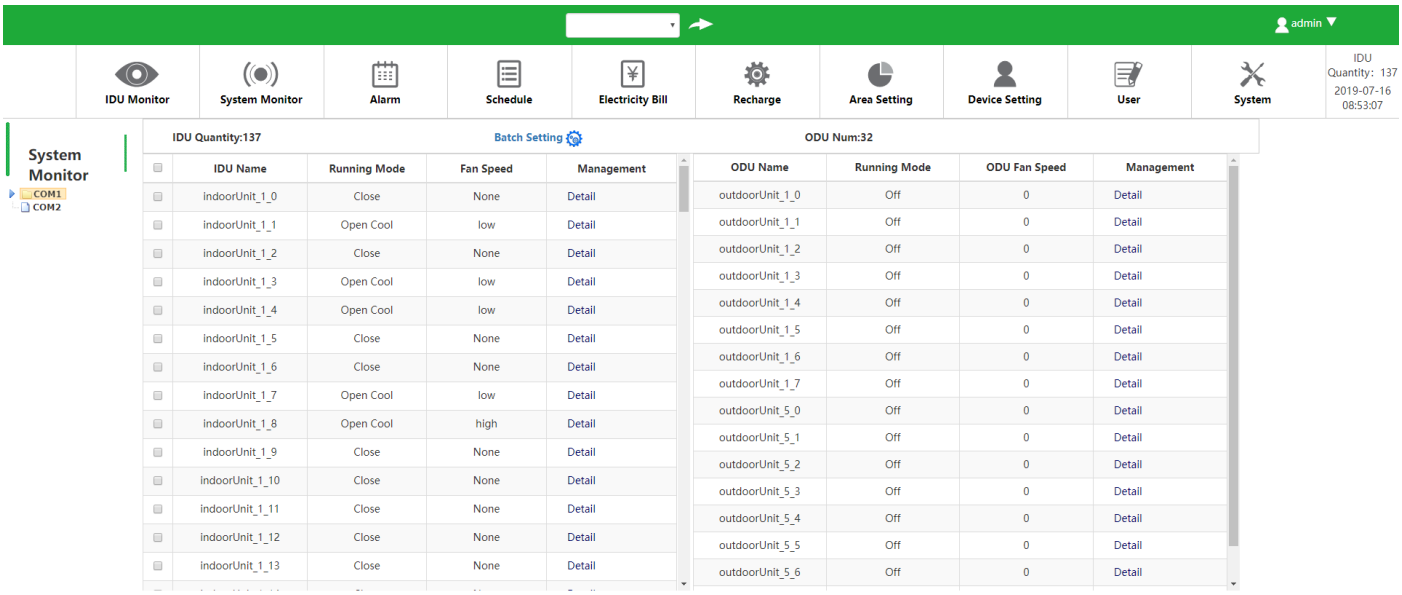
The daily power consumption of the refrigeration system can be checked via electricity fee contrast (it needs to connect the electricity meter)

1. Select from the System List.
2. Select the Start Time and End Time. Click Contrast and wait for the contrast result showing.
3. The Total Ammeter Reading is the total electricity cost of a refrigeration system on the day.

10 System monitor

The system monitor page can be used to monitor the indoor units and view the information of the outdoor units in the way of "Bus>> Gateway >> Network Number".

Click the tree directory on the left, the information list of the indoor and outdoor units will be displayed on the right.



10.1 IDU Info view

The operation way for IDU monitor is the same as that of the indoor unit list view of the “IDU Monitor” page.

10.2 ODU Info view

Click the “Detail” button to check the detail of the outdoor unit.