Smart InfraSight
User Manual

Vertiv Tech provides customers with technical support. Users may contact the nearest Vertiv local sales office or service center.

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Chapter 1   Activation

1.1   Overview

1.1.1   Overview

Open the local browser in the specified version and enter the default IP address and port number of the server in the address bar to activate Smart InfraSight: https://192.168.0.251. After Smart InfraSight is successfully activated, you can use the related functions.

1.1.2   Functional Module

For more information about the activation function, see section *1.3* "*Specific Functions*."

1.2   Quick Start

1.2.1   Quick Deployment Procedure

To activate Smart InfraSight functions, perform the following steps:

[1] Obtain the activation code.

[2] Enter the correct activation code to activate the system.

[3] Set the email address of the system administrator (admin).

[4] Set the login password of the system administrator (user name: admin).

[5] Configure the mail server.

1.2.2   Example

This section describes how to activate Smart InfraSight.

Obtaining the activation code

If Smart InfraSight is not activated, it automatically redirects to the activation page after you start Smart InfraSight. You or authorized commissioning engineer can call the customer service hotline and advise the customer service personnel of the feature code of Smart InfraSight. After verifying the user ID, the customer service personnel will notify the user of the Smart InfraSight activation code. Figure 1-1 shows the activation page.
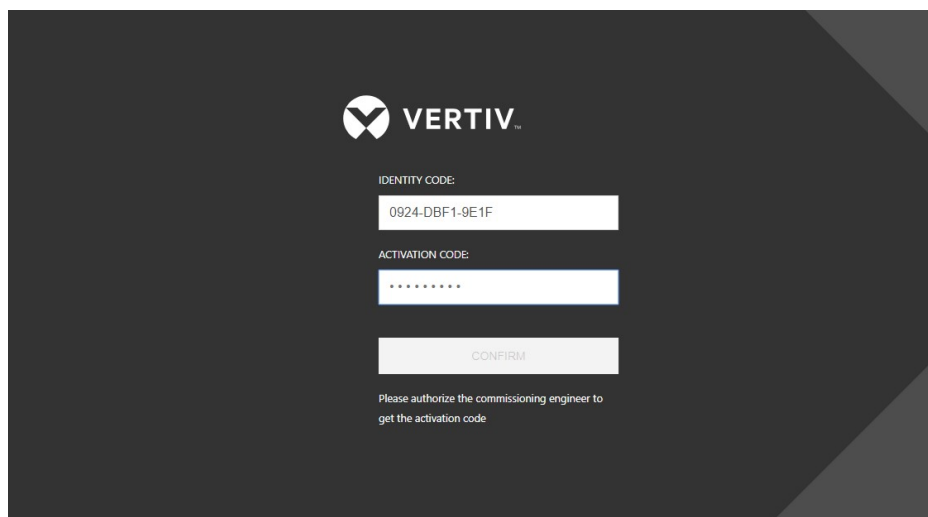
Figure 1-1   Activation page

Activation

Fill out the activation code and click **Enter** to complete activation. Set the email address of the system administrator (**admin**), password of the system administrator (user name: **admin**), and mail server. Then, you can use the system.

1.3   Specific Functions

1.3.1   Activating Smart InfraSight

Obtaining the activation code

If Smart InfraSight is not activated, it automatically redirects to the activation page when you access any page. You or authorized commissioning engineer can call the customer service hotline and advise the customer service personnel of the feature code of Smart InfraSight. After verifying the user ID, the customer service personnel will notify the user of the Smart InfraSight activation code. Figure 1-2 shows the activation page.
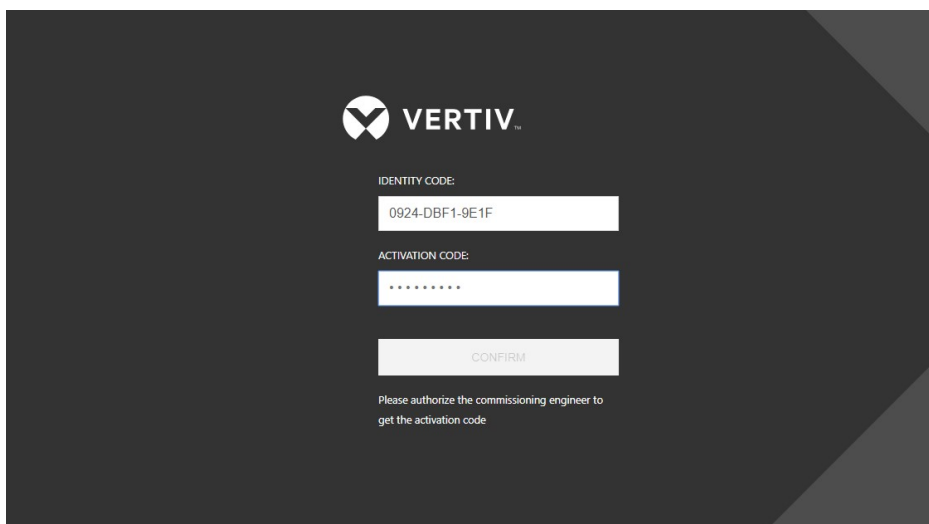
Figure 1-2   Activation page

📖   **Note**

1. The feature code of each Smart InfraSight is unique.

Activation

1. Fill out the activation code and click **Enter**, as shown in Figure 1-3.
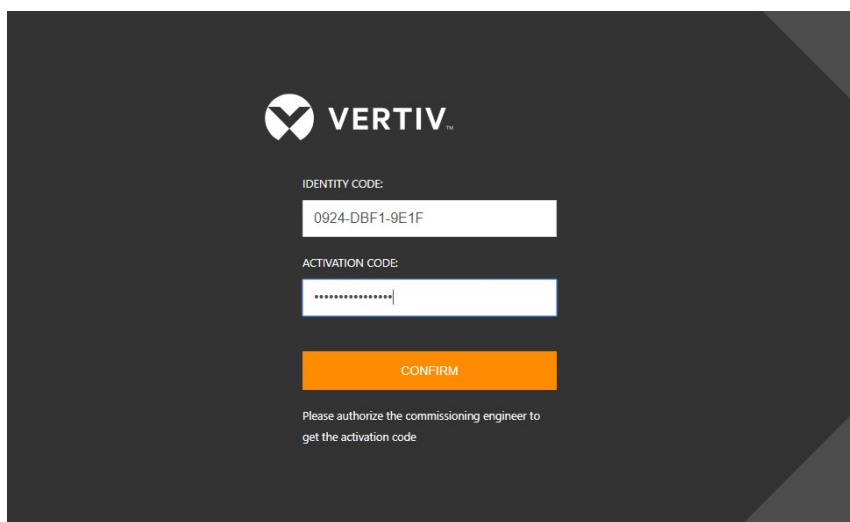
Figure 1-3   Activating RDU-M

2. If the activation code is correct, the activation operation is completed, and the system automatically redirects to the system administrator's email address page, as shown in Figure 1-4.
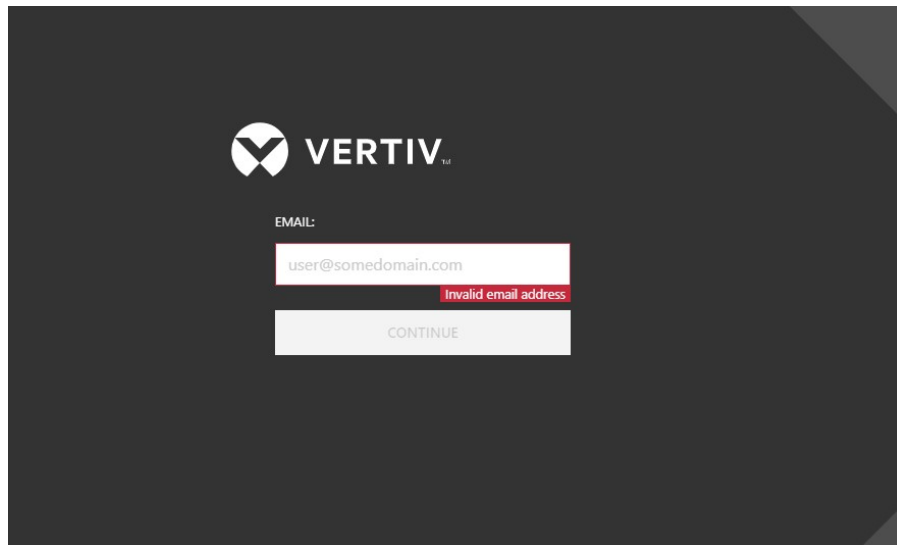
Figure 1-4   Setting the email address

📖   **Note**

1. If the activation code is incorrect, the system prompts "Incorrect activation code".

2. If Smart InfraSight has already been activated and you enter the correct activation code on the activation page again, the system prompts "The product has been activated" and redirects to the homepage or login page.

3. If Smart InfraSight has already been activated and you access the system again, the system automatically skips the activation page and displays the login page (if the system initialization setting is not completed, the system displays the initialization setting page).

3. After entering the correct email address and setting the system administrator's email address, the system redirects to the page for setting the system administrator's login password (user name: **admin**), as shown in Figure 1-5.
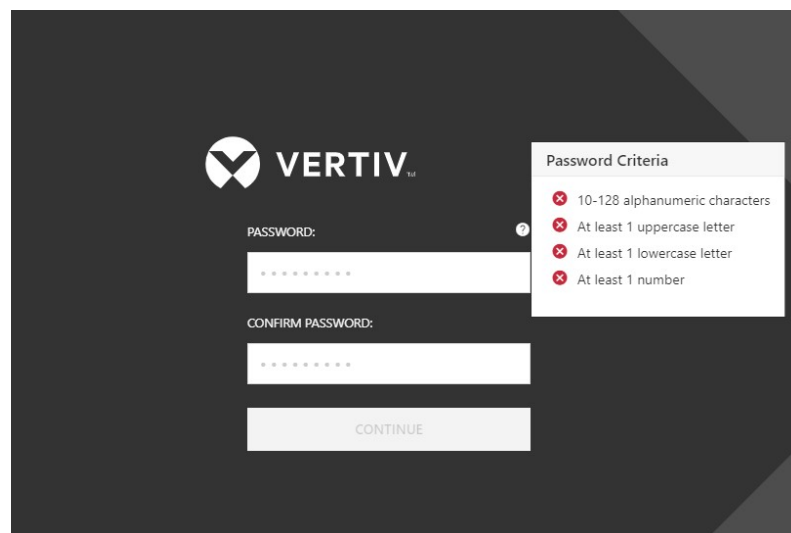
Figure 1-5   Setting the login password of the system administrator (admin)

4. After you set the system administrator login password that meets the specified requirements, the system automatically redirects to the page for selecting the mail server configuration, as shown in Figure 1-6. You can immediately configure the mail server or click the **Skip** button to configure the mail server in **System Management** > **Notification Settings** later.
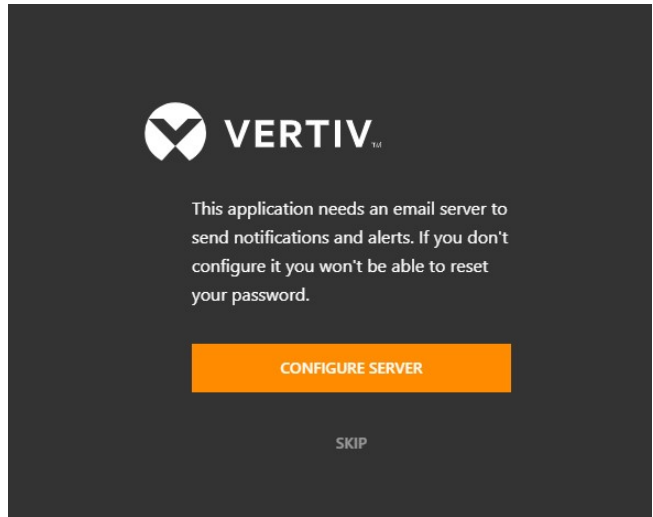
Figure 1-6   Selecting whether to skip mail server configuration

If you select **CONFIGURE SERVER**, the system redirects to the mail server configuration page, as shown in Figure 1-7. Enter **EMAIL HOST**, **PORT**, **USERNAME**, and **PASSWORD**, and select **Use TLS** or not, and click **CONTINUE** to complete the mail server configuration.

Figure 1-7   Configuring the mail server

5. After confirming the system initialization configuration, you can start to use Smart InfraSight. **Username** is the default user name of the system administrator (**admin**, which cannot be changed), and **Email** is the email address bound with the user name.
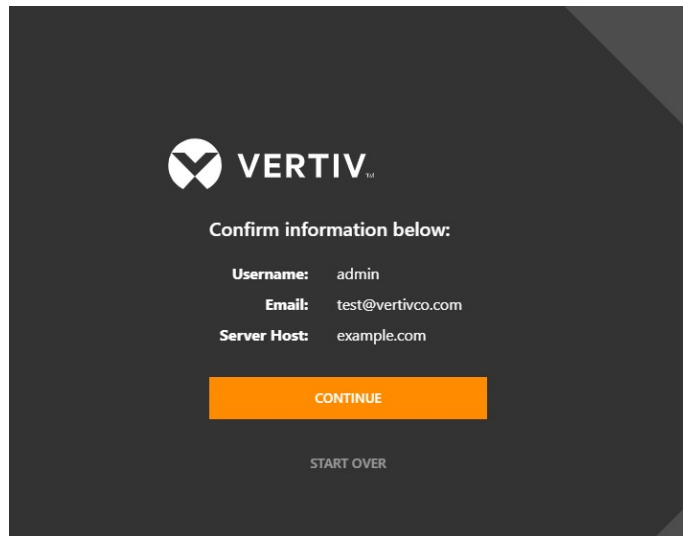
Figure 1-8   Configuring the mail server

Chapter 2   Login

2.1 Overview

2.1.1 Overview

After you activate Smart InfraSight and complete the initialization configuration, you need to log in to the system before operation.

2.1.2 Functional Module

For more information about the login function, see section *2.3* "*Specific Functions*."

2.2 Quick Start

2.2.1 Quick Deployment Procedure

To log in to Smart InfraSight, perform the following steps:

[1] Enter the correct user name.

[2] Enter the password that matches the user name.

2.2.2 Example

This section describes how to log in to the activated Smart InfraSight.

Entering the user name and password
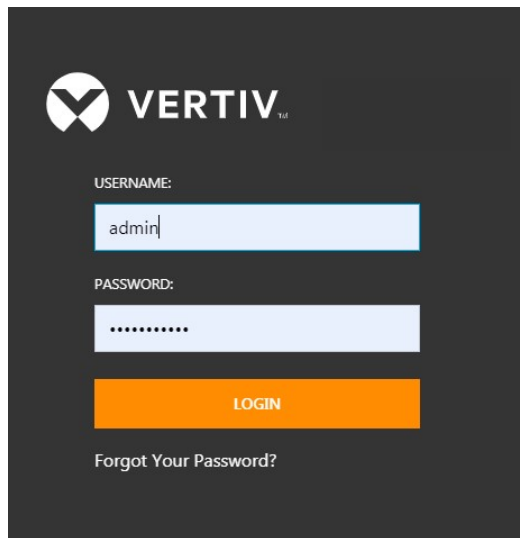
Figure 2-1   Login

2.3 Specific Functions

2.3.1 Login

Login

Enter the user name and password, and click **LOGIN**.

Figure 2-2   Login

Forgot password

On the login page, click **Forgot Password**, enter **USERNAME** and **EMAIL** on the **Forgot Password** page, and click **SUBMIT**.

Figure 2-3   Forgot password

📖   **Note**

The entered user name and email address should match the account. Otherwise, the system will not send the email.

The user name cannot contain single and double quotation marks, slashes, backslashes and vertical bars in English language.

2.3.2   Profile and Help

Viewing Help

After logging in to the system, click the drop-down menu button on the right side of the user name (**admin** in the figure) in the upper right corner, click the **Help** menu to pop up a dialog box for selecting the document type, and select the Chinese or English version of the help document to view and download the file.
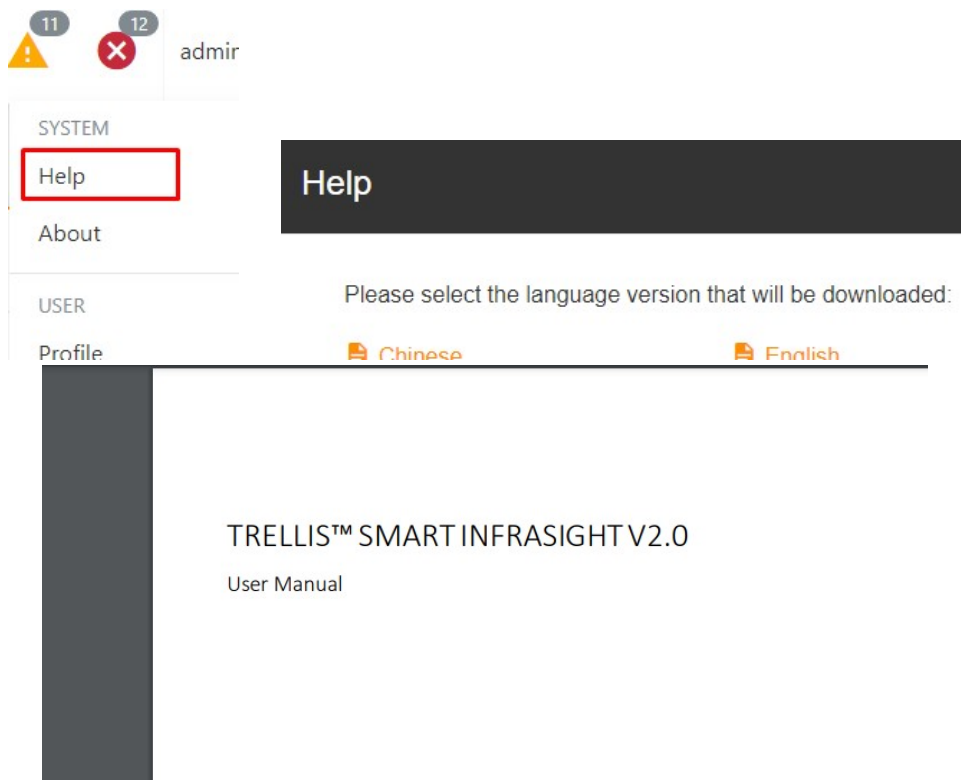
Figure 2-4   Viewing Help

Viewing About

After logging in to the system, click the drop-down menu button on the right side of the user name (**admin** in the figure) in the upper right corner, click the **About** menu to pop up a dialog box for viewing the software information.
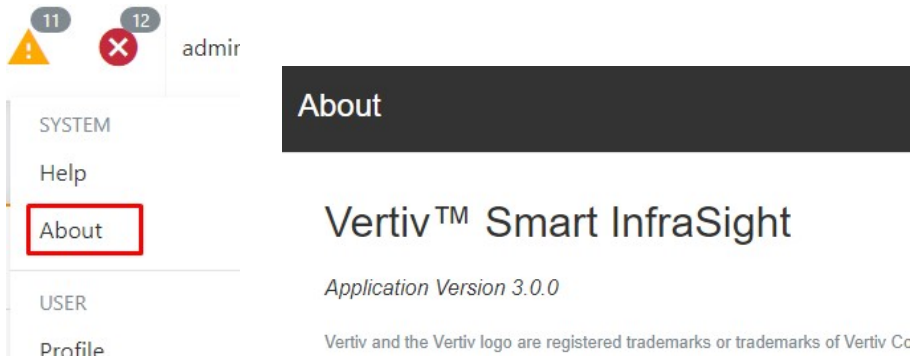
Figure 2-5   Viewing About

Viewing Profile

After logging in to the system, click the drop-down menu button on the right of the user name (**admin** in the figure) in

the upper right corner, click the [Profile]   ✿ menu to display the **User Profile** page.
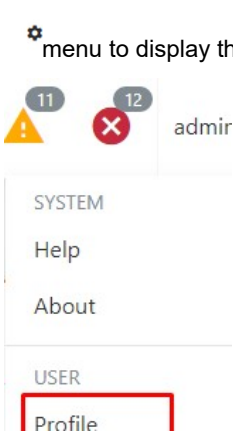
Figure 2-6   Viewing Profile

Figure 2-7 User Profile page

Changing the user password

Choose **User Profile** → **Your Password**. After you click the ✏ icon on the right side, the input box becomes editable. Enter the new password in the input box, confirm the password, and click **SAVE**.

Figure 2-8 Changing the user password

Modifying the contact information

Choose **User Profile** → **Contact Information**. After you click the ✏ icon on the right side, the input box becomes editable. Enter **Email Address** and **Phone Number** in the input box, and click **SAVE**.

Figure 2-9 Modifying the contact information

📖 **Note**

1. In principle, **Email Address** is mandatory and it must contain letters or digits, the "." symbol, and at least one "@" symbol in the middle.

2. For **Phone Number**, select the country and then enter the phone number.

Logout

Click the drop-down menu button on the right side of the user name and click **Sign Out**. The current user logs out of the system.
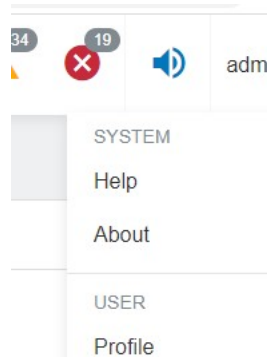
Figure 2-10   Logout

Chapter 3   Homepage

3.1   Overview

3.1.1   Overview

The monitoring homepage is a data platform that collects data of the RDU and makes the data intelligent and standardized. The homepage is a module used to display the main monitoring data of Smart InfraSight. The main page is a configuration tree. Click on each node to enter the monitoring homepage of the corresponding site. Currently, Smart InfraSight supports three types of sites: Smart Aisle, Smart Cabinet, and Smart Row.

3.1.2   Functional Module

The homepage introduces general site homepage information. For more information about the homepage, see section *3.3* "*Specific Functions*."

- General homepage introduction

3.1.3   Recommended Client Hardware Configuration

- Recommended client hardware configuration: Memory: 4 GB or higher; CPU: 8 cores or higher; computer with independent 2 GB video RAM or higher

3.1.4   Browser Requirements and Language Settings

Recommended browser: Google Chrome 73 or later; Firefox 66 or later; Edge 87 or later

Recommended resolution: 1920*1080; minimum resolution: 1600*900

For the Edge browser, the software language is consistent with the current system language. For other browsers, you can set the language in browser settings.

3.1.5   Entering the Homepage

Open the browser, enter the default IP address and port number of the server (https://192.168.0.251) in the address bar, and enter the correct user name and password to display the homepage.

3.2   Quick Start

3.2.1   Quick Deployment Procedure

To ensure that Smart InfraSight homepage displays data normally, perform the following steps:

[1] Discover the RDU device and add it to the monitoring function.

[2] Edit the area (optional).

[3] Open the monitoring homepage and enter the specific site configuration page.

[4] Configure the Smart Aisle site (optional).

Example

The general homepage contains four types of sites: Smart Aisle site, Smart Row site, Smart Cabinet site, and general site. Add the four types of sites to the monitoring system on the monitoring page.

Discovering the RDU device and adding it to the monitoring function

When searching for the RDU device, you need to make some basic configuration in RDU-A: Allow Smart InfraSight to

access the current RDU-A, click [wrench icon], click [Discovery] on the configuration tool menu, enter the RDU search

page, and enter the IP segment where the collector RDU is located. As shown in the following figure, enter the IP segment from 10.163.104.1 to 10.163.104.255.
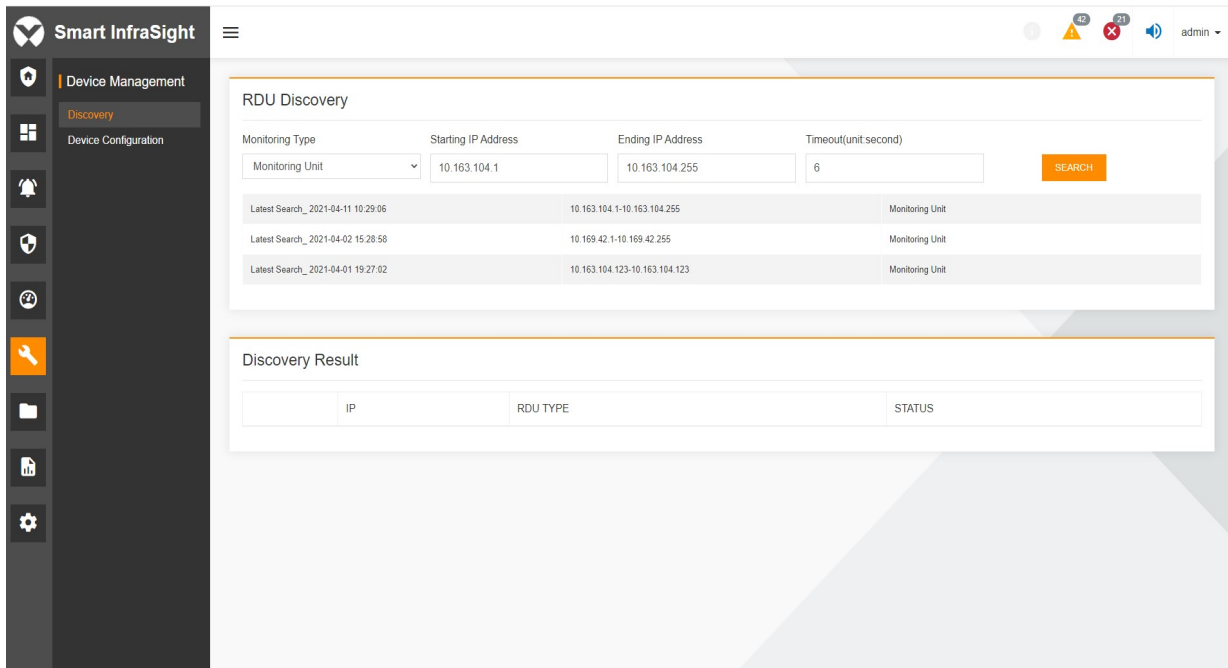
Figure 3-1   RDU search page

Click [SEARCH] to search the RDU device, as shown in the following figure.
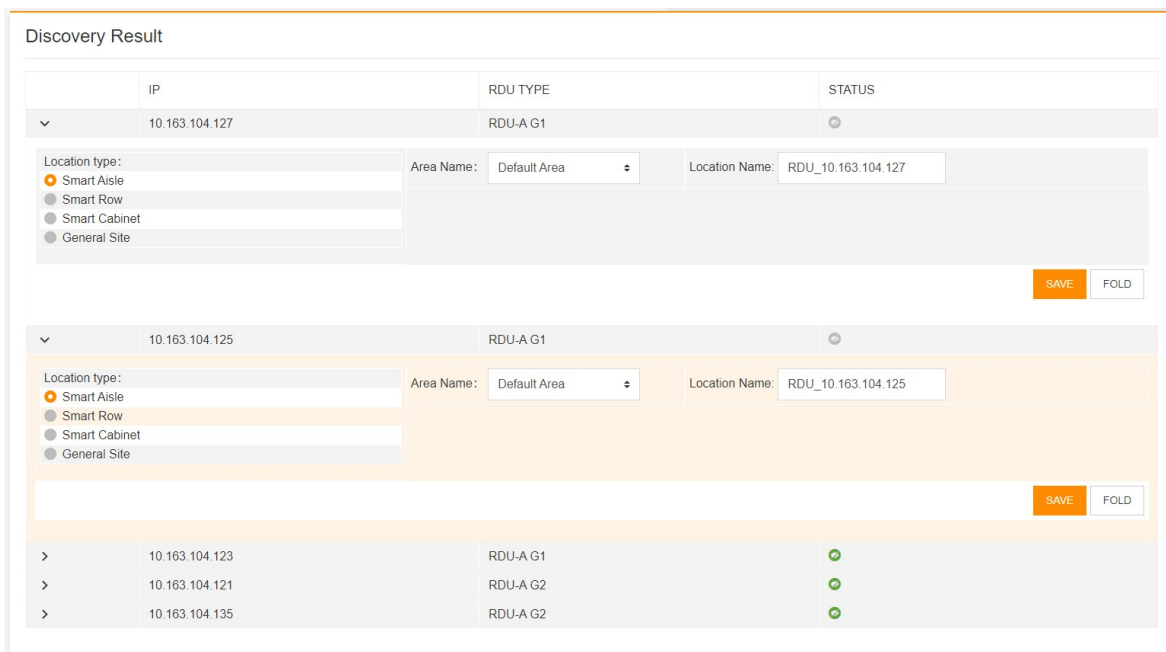
Figure 3-2   Searching for the RDU device

Select the desired RDU device.

Select the site type, including Smart Aisle, Smart Row, Smart Cabinet, and general site. The site type is defaulted to Smart Aisle.

The system automatically selects the **Default Area**. If you need to select other areas, refer to **Editing Area Name**. By default, the site name is in the RDU_IP format. You can modify the area name if needed.

Click **SAVE** to add the discovered RDU device to the monitoring function.

After the RDU is added to the monitoring function, you can view the corresponding site on the monitoring page. Taking site RDU_10.169.42.185 as an example, the homepage is displayed as shown in the following figure.
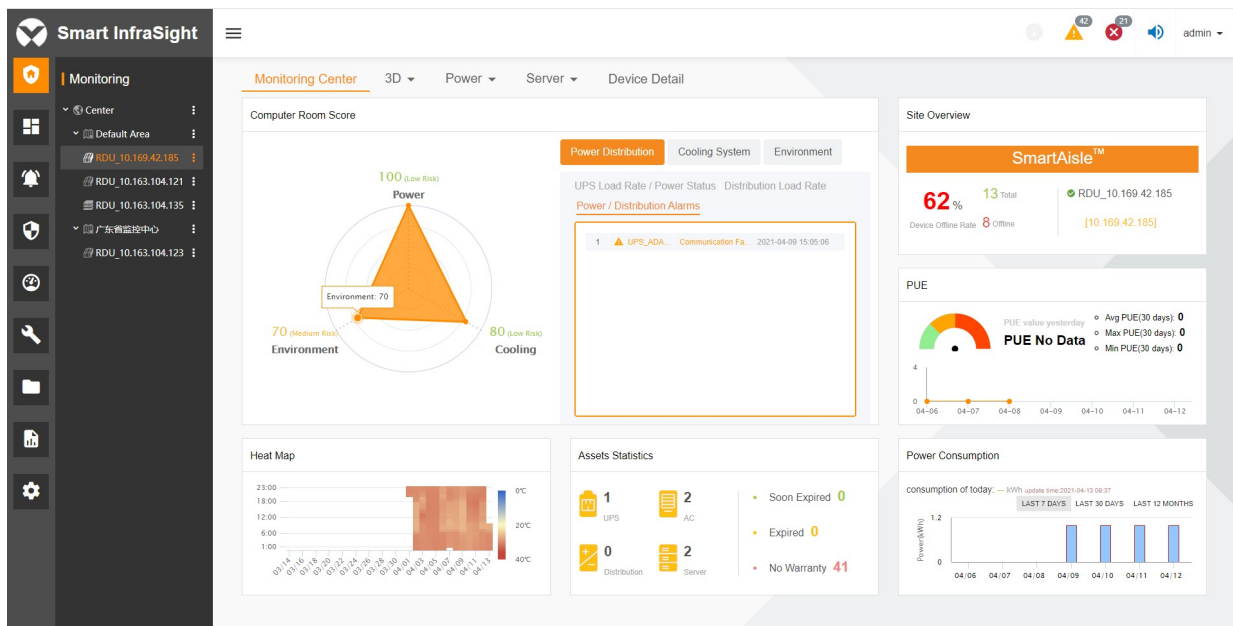
Figure 3-3   Monitoring page

Editing the area (optional)

The homepage has the **Center** node only. If an RDU is added to the monitoring function, it is mounted to the **Default Area** node by default.

If you need to use other areas instead of the default area, click ⋮ suffixed to the site of a sub-node on the navigation tree on the homepage. An operation menu is displayed, on which you can add, edit, or delete the area and 3D configuration, as shown in the following figure.
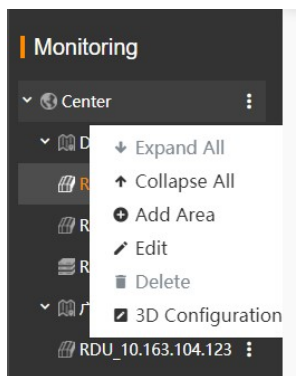
Figure 3-4   Pop-up shortcut menu

The function of editing the area can mount the RDU to an appropriate area and display the RDU on the search page. In addition, this function makes the site structure on the homepage more reasonable.

1. Add an area name.

(1) click ⋮ on the right side of **Center** and click **Add Area** on the pop-up operation menu. The **Add Area** page is displayed, as shown in the following figure.

Figure 3-5   Add Area page

(2) Enter the new area name, for example, Boston, as shown in the following figure.
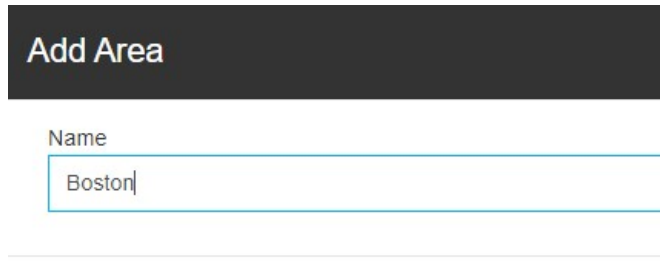
Figure 3-6   Entering the new area name

(3) Click [SAVE] to go back to the homepage.
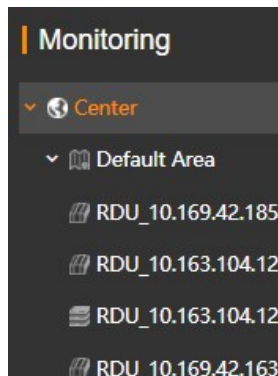
Figure 3-7   Area management page

The Boston area has been mounted to the **Center** node. To add other areas to the **Center** node, repeat steps 1 to 3.

To add an area to the **Boston** node, click on the right side of the Boston node, and repeat steps 1 to 3.

2. Modify an area name.

Click on the right side of the desired area to display the operation menu, as shown in the following figure.
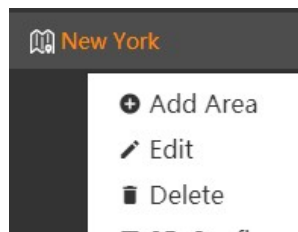
Figure 3-8   Operation menu

Click Edit to display the **Edit Area** page, and change **Boston** to **New York**, as shown in the following figure.

Figure 3-9   Edit Area page

Click [SAVE] , as shown in the following figure.
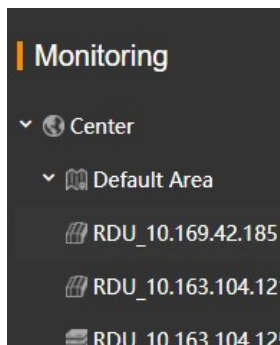
Figure 3-10   Area management page

After editing the area, click [tool icon]. The monitored area is added to the RDU discovery result page, where you can select the area name, as shown in the following figure.
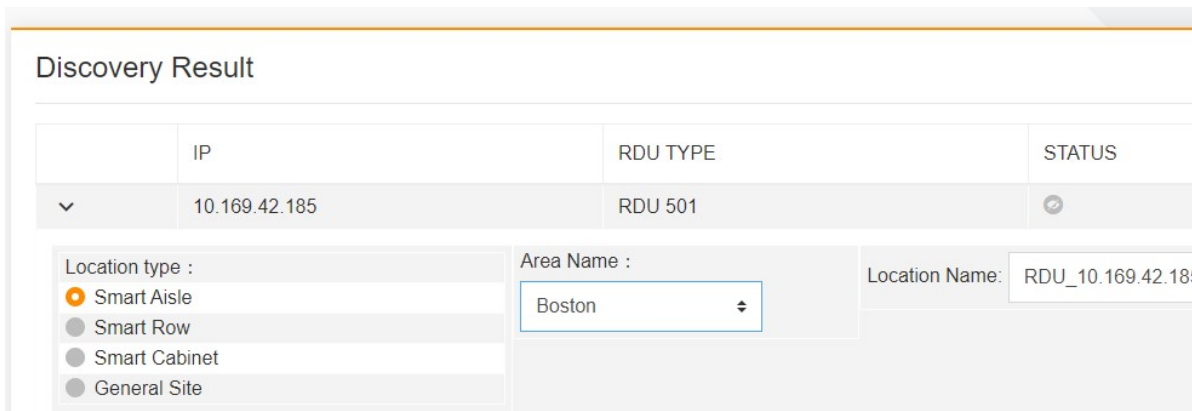
Figure 3-11   Adding the monitored area to the discovery result page

3. Go back to the monitoring homepage and click [⋮] on the right side of any area-level site to edit or delete the current site, perform 3D configuration, switch to a new area, and redirect to the RDU operation, as shown in the following figure.
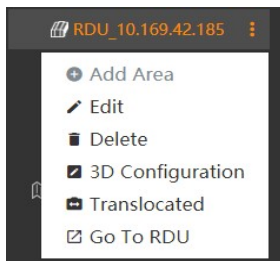
Figure 3-12   Site operation page

Click ✎ Edit. The **Edit Location** page is displayed, on which you can edit the current site name and view the location type and location-bound RDU of the current site, as shown in the following figure.

Figure 3-13　Editing the site name

After the site name is edited, click **Save** to save the configuration.

If you click 🗑 Delete , the **Delete** dialog box is displayed, alerting the impact that may be caused by the deletion operation, as shown in the following figure.

Figure 3-14　Delete dialog box

Click ✎ 3D Configuration to enter the 3D configuration page of the current site. For specific operations, see the 3D configuration description in Chapter 6 (Note: Currently, 3D configuration is available only to Smart Aisle and general site).

Click ▣ Translocated to adjust the area where the current site is located, as shown in the following figure.
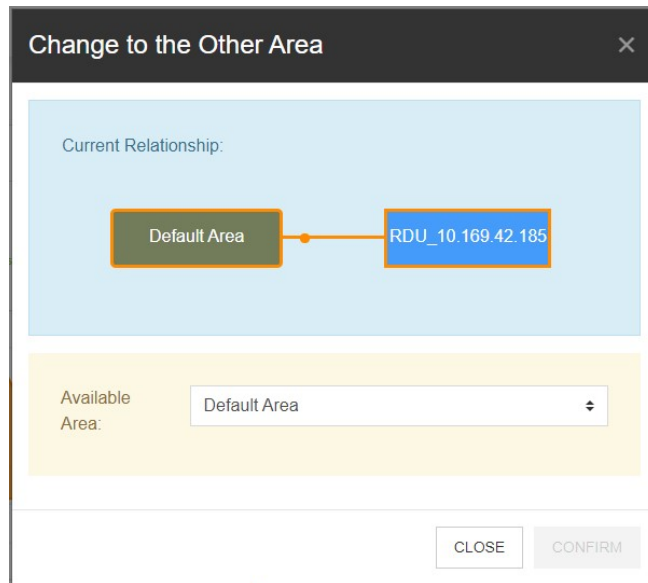
Figure 3-15 Change to the Other Area page

Select the target area from the **Available Area** drop-down list box, and click **CONFIRM**. The current site is transferred to the target area.

Click ⬀ Go To RDU . The system redirects to the RDU intelligent monitoring unit page.

3. Go back to the monitoring homepage and enter the specific site configuration page.

Click [icon] to open the monitoring homepage. By default, the system selects the **Center** node. Select and click the site to be configured, for example, the site with address 10.169.42.185, as shown in the following figure.
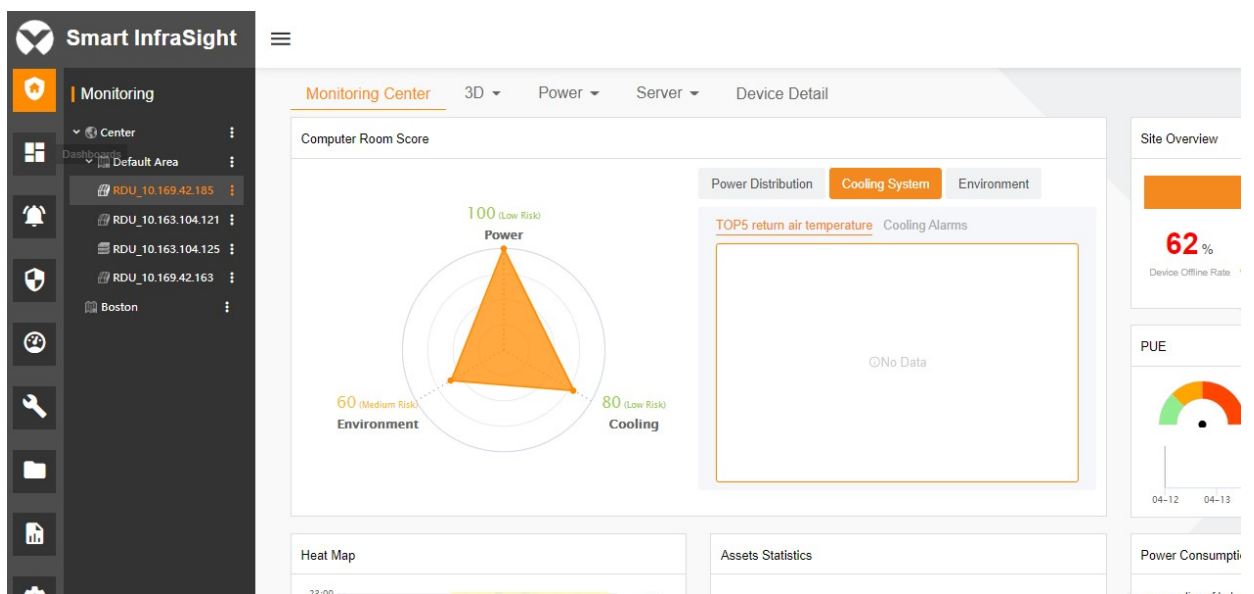
Figure 3-16 Site configuration on the monitoring homepage

The homepage contains six modules: **Computer Room Score**, **Site Overview**, **PUE**, **Heat Map**, **Assets Statistics**, and **Power Consumption**, where **PUE**, **Heat Map**, and **Power Consumption** modules do not have data and need to be configured separately, and the **Computer Room Score**, **Site Overview**, and **Assets Statistics** display the data of the current site by default.

The configuration procedure is the same for all types of sites. This section takes Smart Aisle as an example.

Configuring the Smart Aisle site

1. Configure the heat map.

The Smart Aisle homepage displays the shape of the 24-hour temperature trend of the computer room in the past 30 days through a heat map. You can click the configuration tool icon to configure the display of the heat map. The procedure is as follows:

Hover the cursor in the upper right corner of the **Heat Map** page to display the ⚙ button, as shown in the following figure.
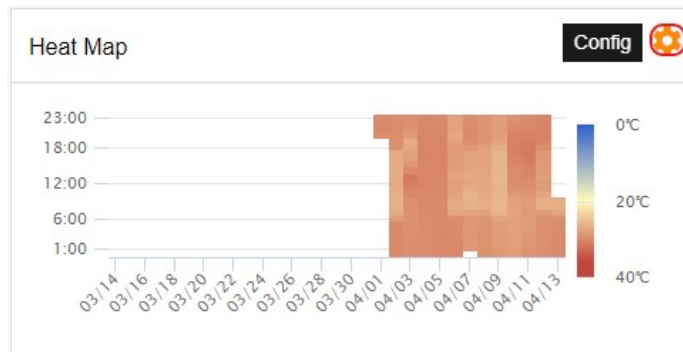
Figure 3-17   Configuring the Smart Aisle heat map

Click **Config** to display the heat map configuration page, as shown in the following figure.

Figure 3-18   3D configuration page of Smart Aisle

By default, **Minimum temperature** is 10˚C and **Maximum temperature** is 40˚C. Select **All**. You can directly enter the temperature value or click ⇕ suffixed to the input box to adjust the temperature. Then, click SAVE. The heat map automatically adjusts the temperature legend based on the input value. In this example, **Minimum temperature** is set to 0˚C and **Maximum temperature** is set to 100˚C, and **All** is selected. The page is displayed as follows after the configuration is saved.
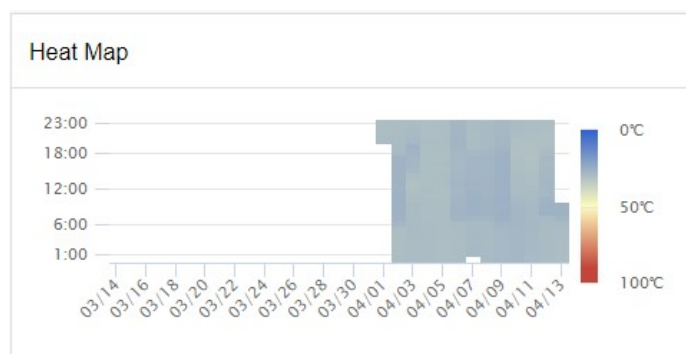
Figure 3-19   Displayed heat map after configuration

2. Configure the PUE (mandatory).

The PUE can only be configured manually instead of automatically. For more information about the configuration, see the PUE configuration. Simple configuration is as follows:

Click 🕧 to enter the **PUE Consumption** page. Click **PUE Configuration**. The page is as shown in the following figure.
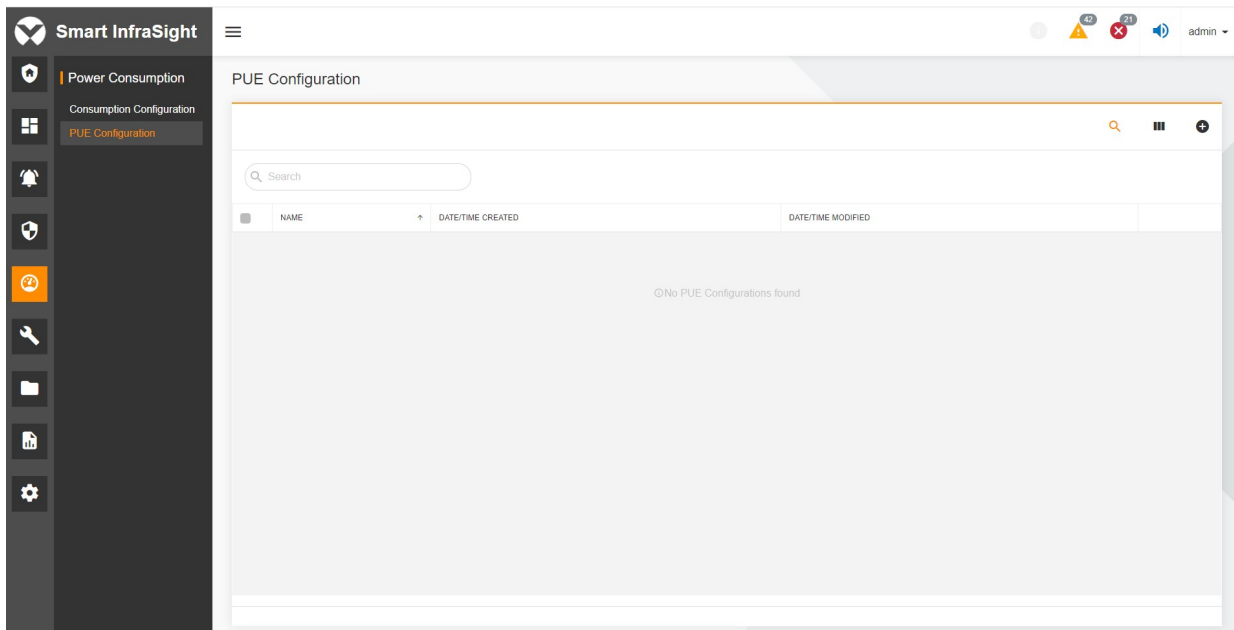
Figure 3-20 PUE Configuration page

Click ⊕ to add new PUE configuration. The **Add New PUE Configuration** page is displayed, as shown in the following figure.
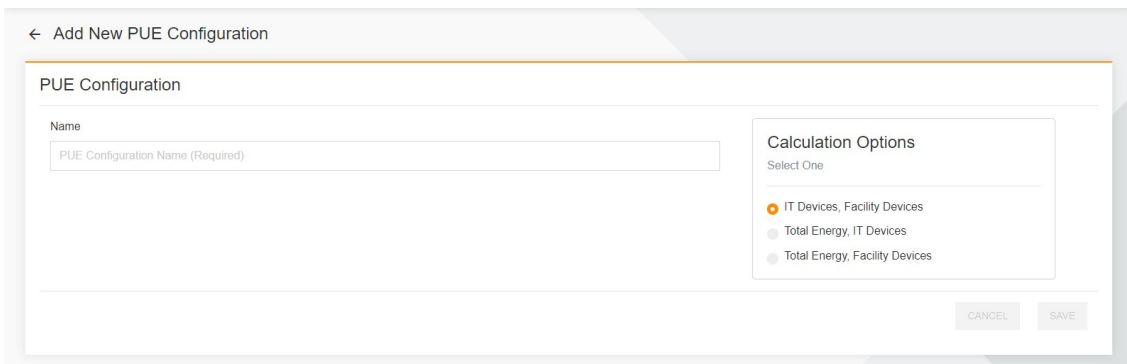
Figure 3-21 Add New PUE Configuration

Enter PUE configuration name in **Name** and select **Calculation Options**. Click SAVE to save the configuration, as shown in the following figure.
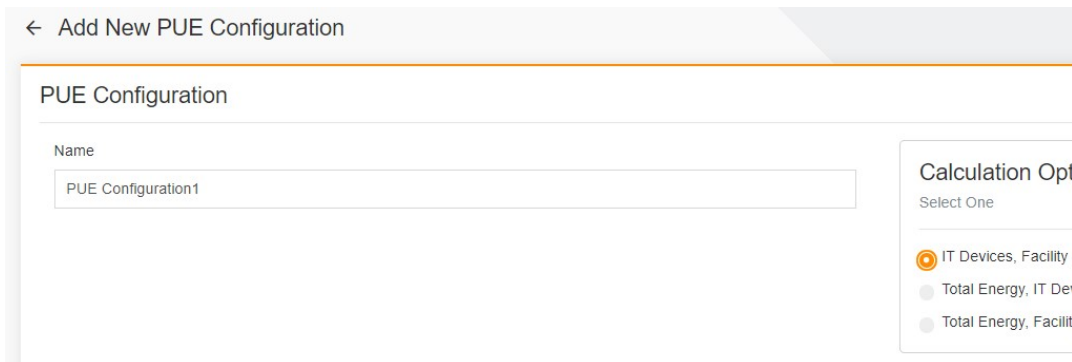
Figure 3-22 PUE calculation

Select the corresponding device used for PUE calculation. The system performs simple addition and subtraction calculations for each option, as shown in the following figure.
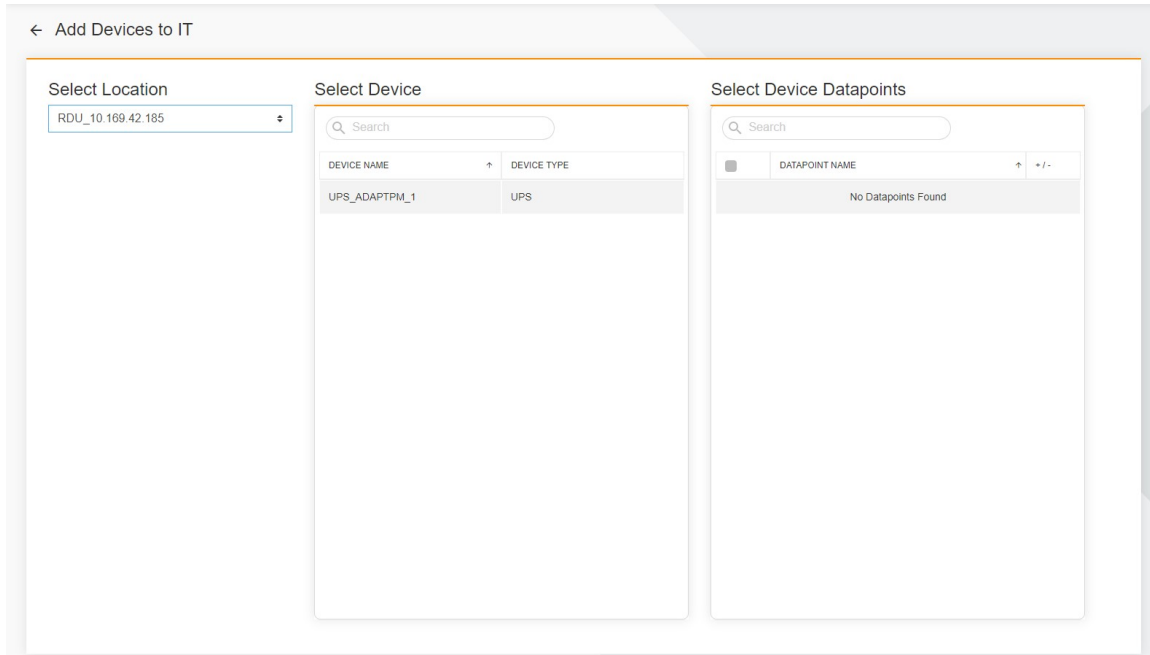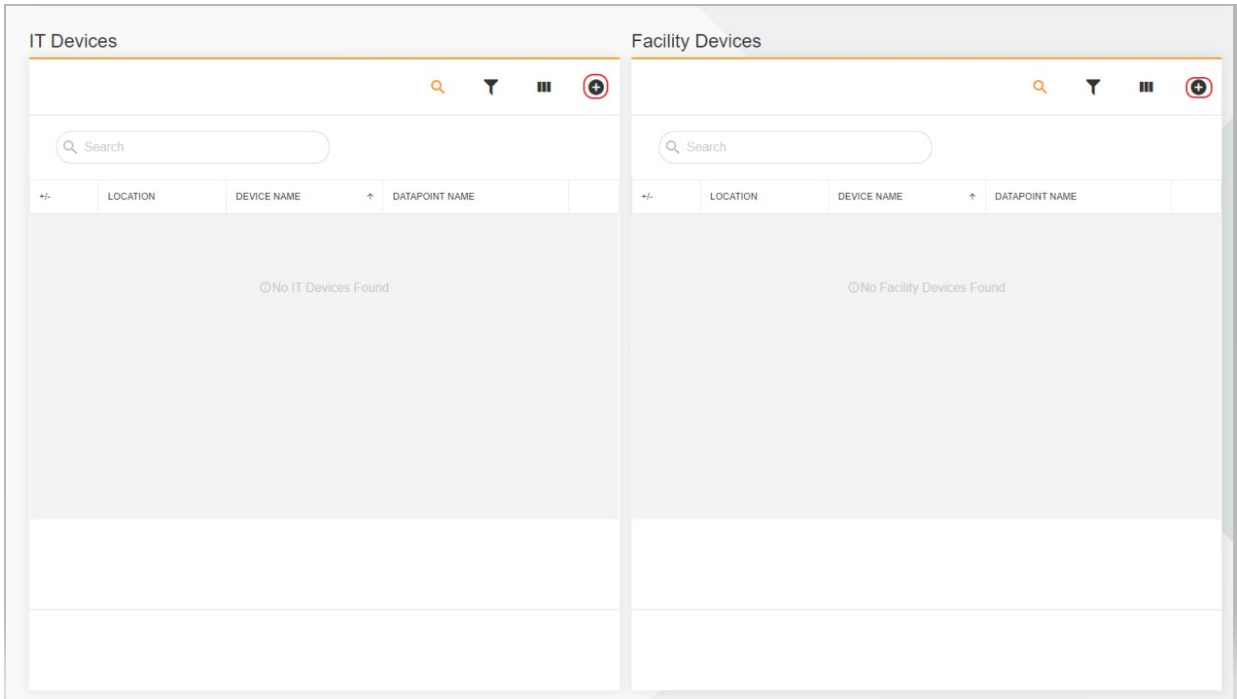
Figure 3-23   PUE calculation for the device

On the following page, you can make adjustments to the values.
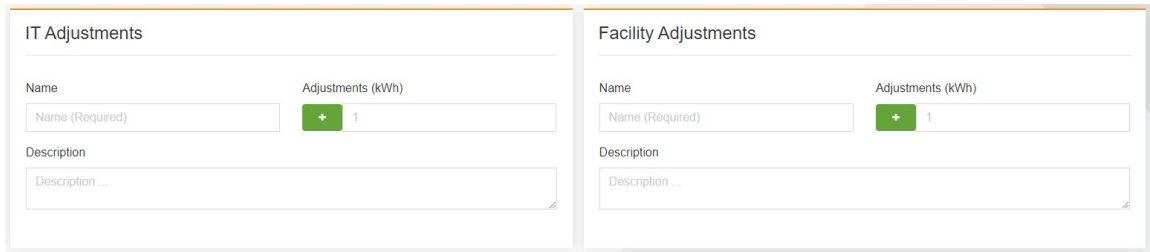
Figure 3-24   Value adjustment

Click **SAVE** to go back to the **PUE Configuration** page, where you can view the added PUE configuration, as shown in the following figure.
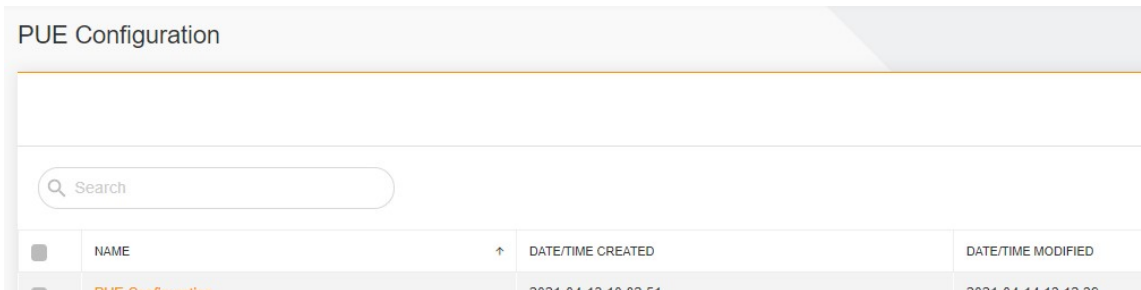
Figure 3-25   Back to PUE Configuration page

Click [icon]. Hover the cursor in the upper right corner of the **PUE** page to display the [icon] button. Click the button to display the **Config** page, and associate the PUE configuration, as shown in the following figure.
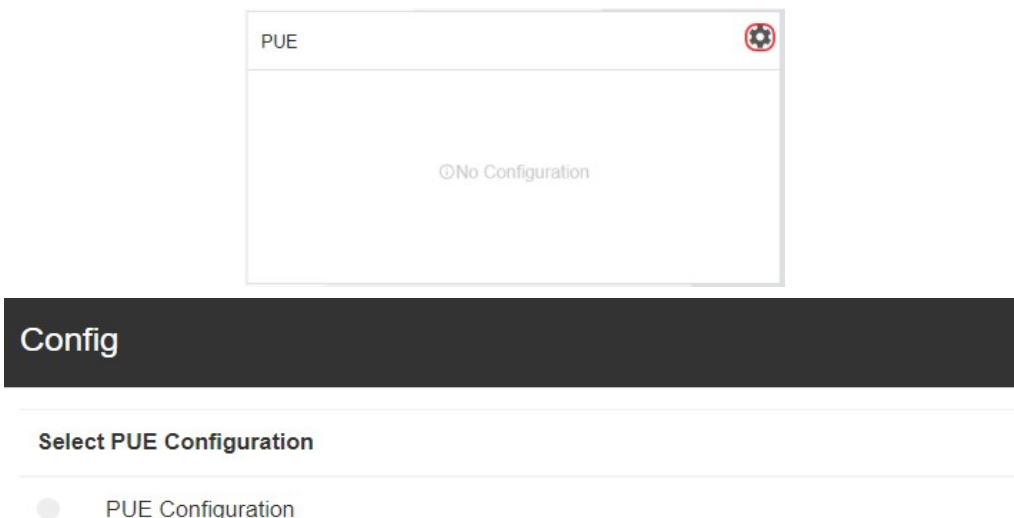
Figure 3-26   Selecting the PUE configuration

Select the PUE configuration to be configured and click **SAVE**.

3. Configure the power consumption bar graph (mandatory).

The power consumption bar graph can only be configured manually instead of automatically. For more information about the configuration, see the power consumption configuration. Simple configuration is as follows:

Click **No Consumption Configuration**, as shown in the following figure. The system automatically redirects to the **Consumption Configuration** page.
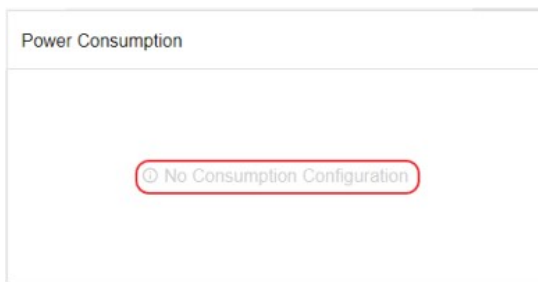
Figure 3-27   Power consumption configuration button

On the **Consumption Configuration** page, click [icon] in the upper right corner to display the **Add Consumption Configuration** page. The following figure shows the specific operation.
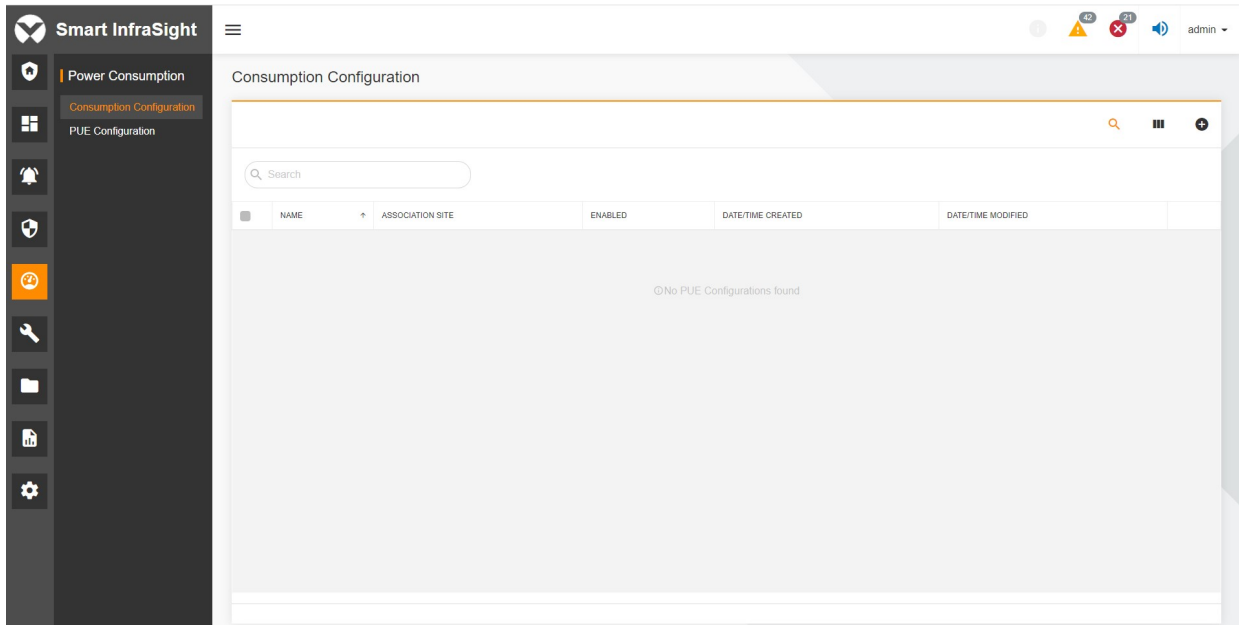
Figure 3-28   Consumption Configuration page

On the **Add Consumption Configuration** page, enter the consumption configuration name in **Name**. Click ⊕ in the upper right corner of the **Consumption Signals** pane to display the **Select Consumption Signal** dialog box, as shown in the following figure.
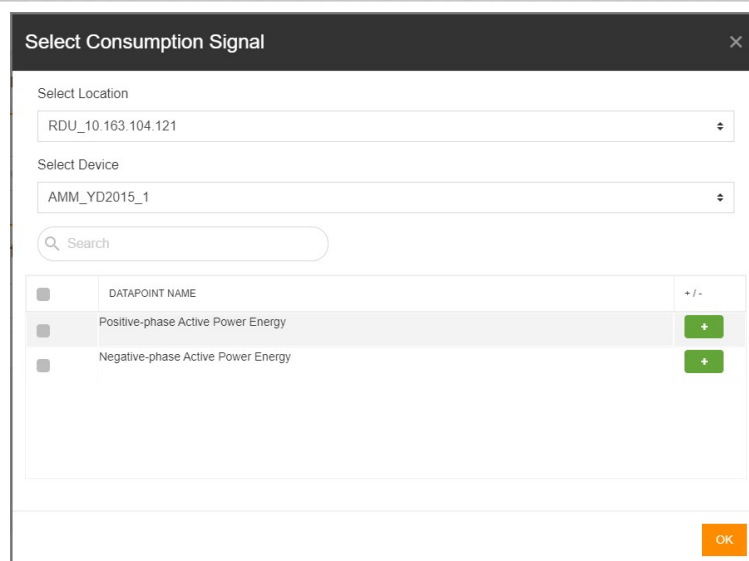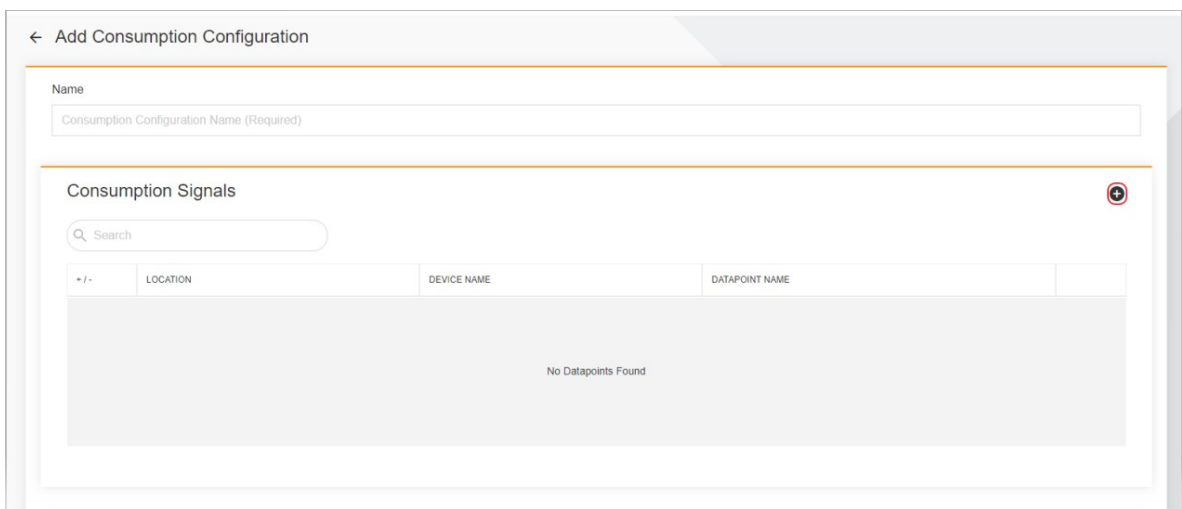
Figure 3-29   Select Consumption Signal dialog box

Select the location and device from the drop-down list boxes. Select the signals in the table. Click [OK] .

In addition, you can enter the corresponding name and value to adjust the consumption values on the **Consumption Adjustments** page, as shown in the following figure.
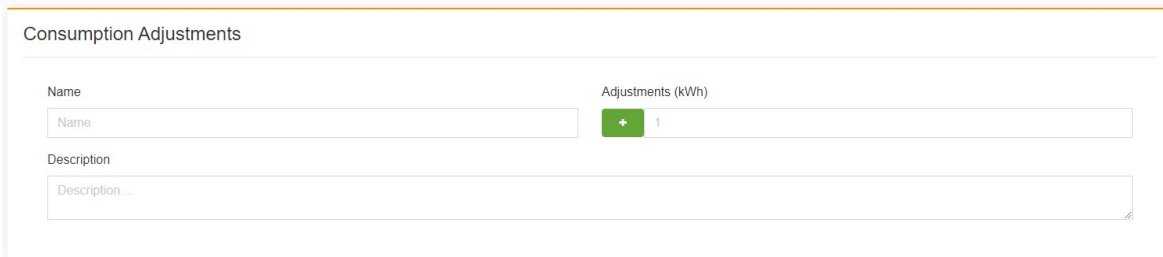
Figure 3-30   Consumption Adjustments page

Select the site to be associated and click [SAVE] to save the current consumption configuration, as shown in the following figure.
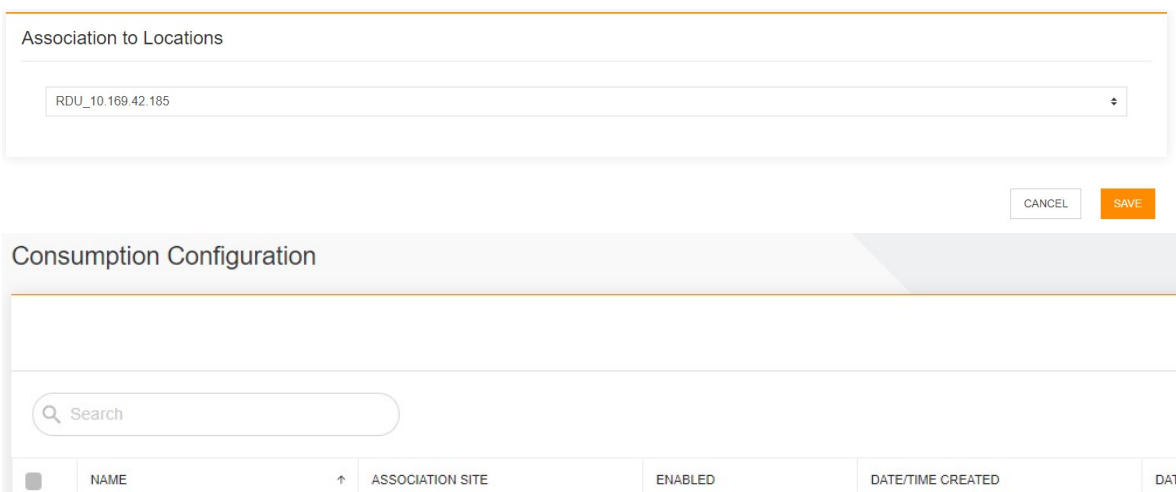
Figure 3-31   Association to Locations

After the consumption configuration is completed, click [icon] to go back to the monitoring homepage. Select the associated site to view the power consumption bar graph.

3.3 Specific Functions

3.3.1 Map Navigation

Quick Deployment Procedure

By default, Smart InfraSight homepage contains two parts: **Center** and **Default Area**. You can add an area in the following steps (see Editing the Area):

[1] Click [icon] on the right side on the navigation tree to display the operation menu.

[2] Click **Add Area** on the operation menu.

After you add the area, it is displayed on the monitoring homepage.

1. Configure the background for an area.

Select to enter an area. Click the settings button in the upper right corner to display the operation menu that contains the **Edit Background** and **Edit Location** options. Click **Edit Background**. Enter the background image list page.
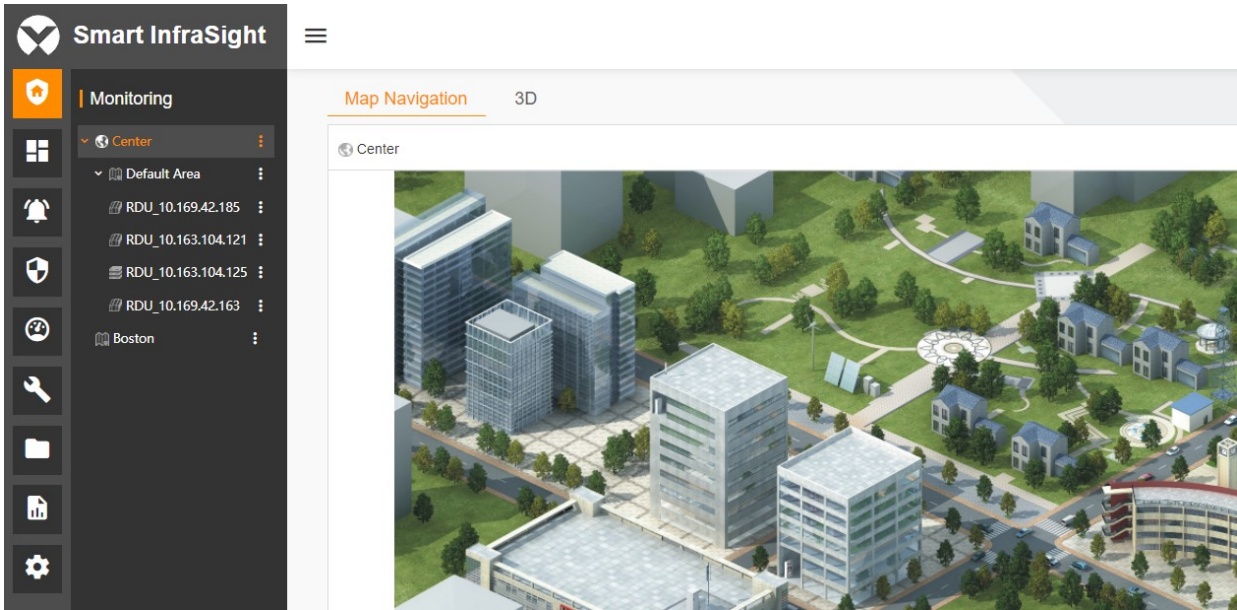
Figure 3-32   Background image list page

Select a background image and click **SAVE**. The image is set as the background of the corresponding area.
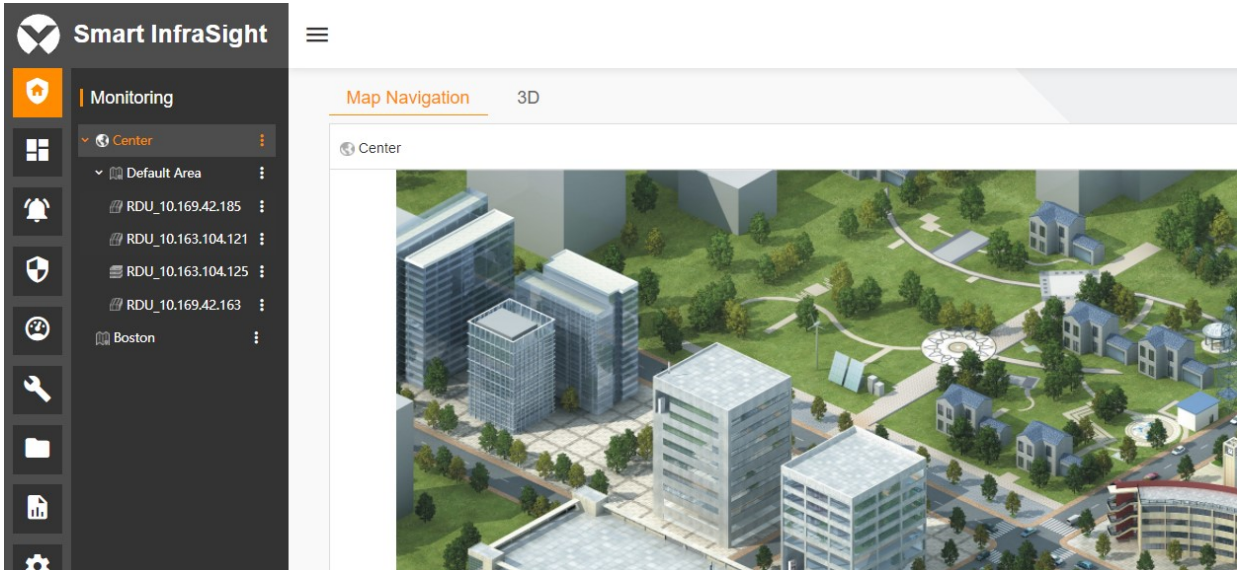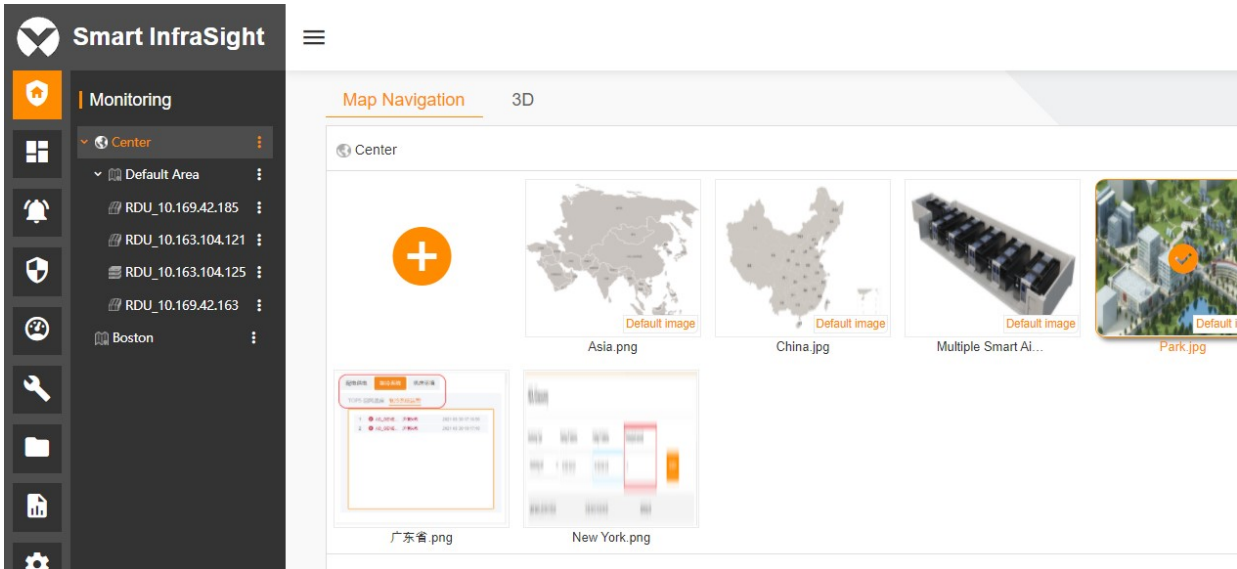
Figure 3-33   Setting the background

2. Change the background of an area.

Click the settings button in the upper right corner to display the operation menu to enter the background image list page. Click the desired background image and click **SAVE**.
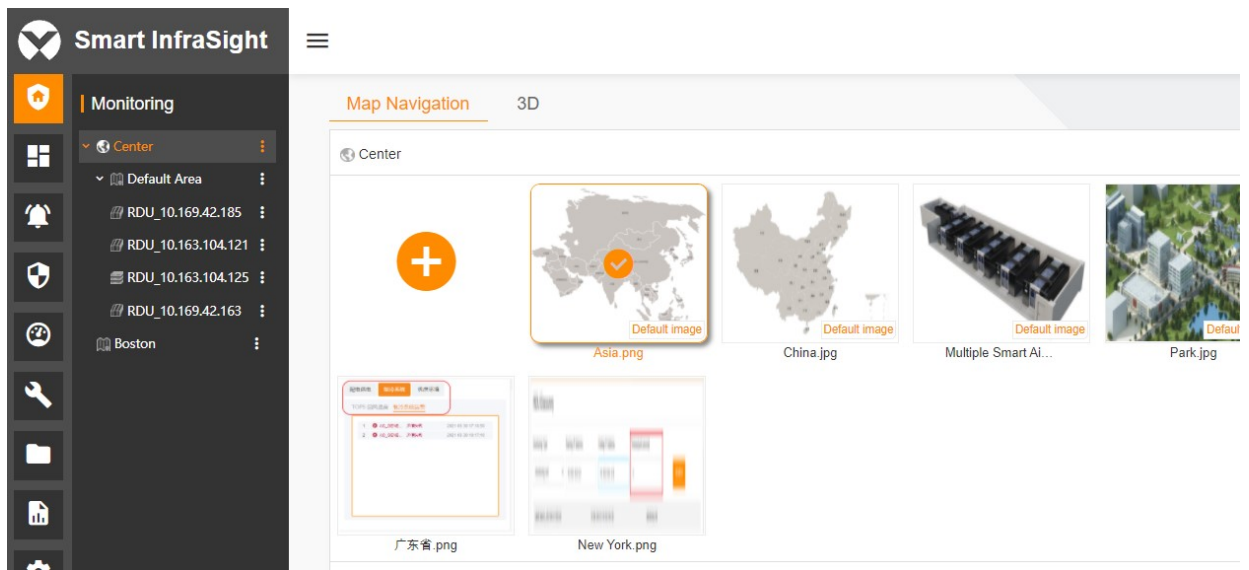
Figure 3-34 Changing the background of an area

3. Edit the site location.

Select to enter an area. The page displays all sites in this area. Click the settings button in the upper right corner and select **Edit Location**.

The page for editing the location is displayed, as shown in the following figure.
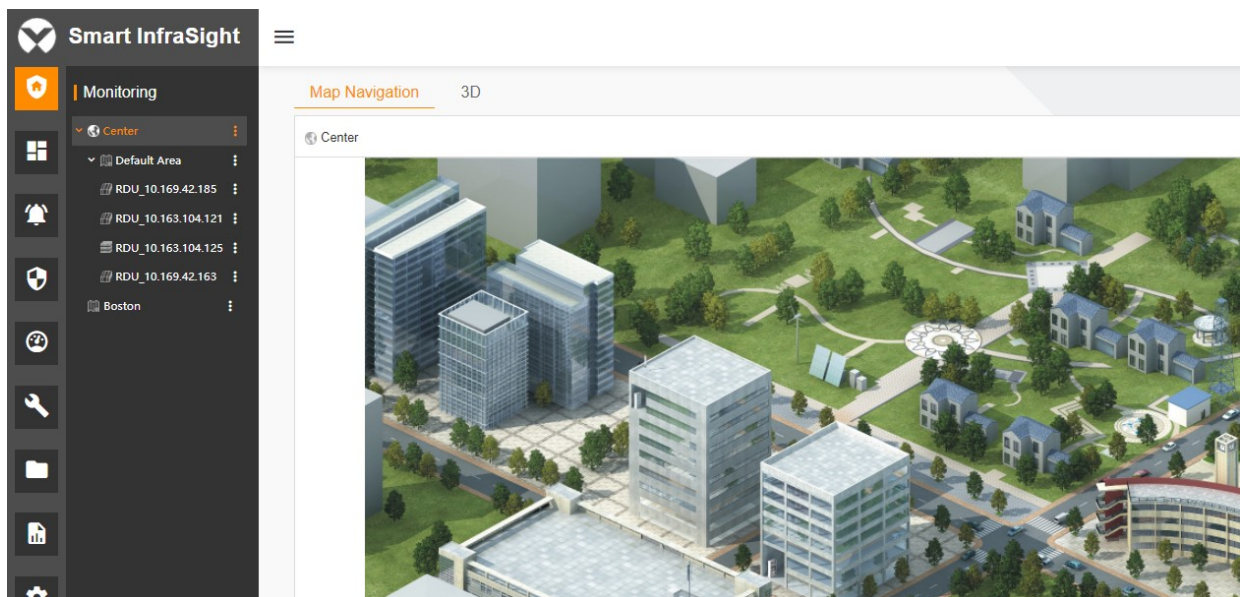
Figure 3-35 Editing the location

Drag and drop the site icon to a desired location. Click **SAVE** in the lower right corner.

4. Upload a custom background image.

Click the settings button to enter the **Map Navigation** list. Click the "+" button. The **Add Image** page is displayed, as shown in the following figure.
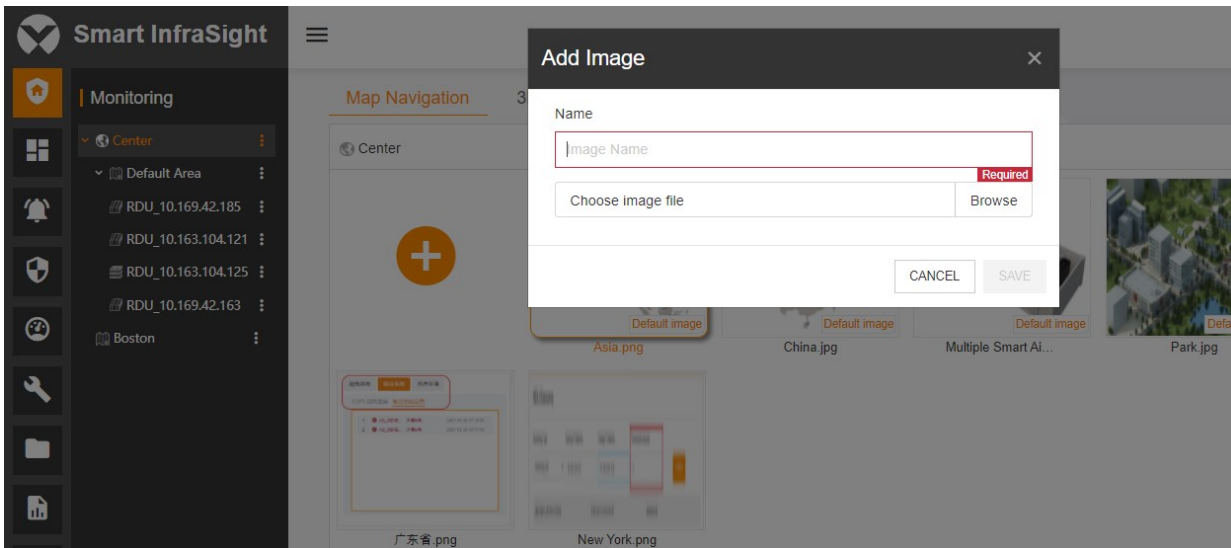
Figure 3-36   Add Image page

Enter the image name, select the image path, and click **SAVE**. (You cannot upload an image with the same name, and the size of the image cannot exceed 10 MB.)

📖   **Note**

1. The image name only supports three types of special characters, namely, "-", "_" and ".".

2. The system only supports PNG, JPG and GIF image formats.
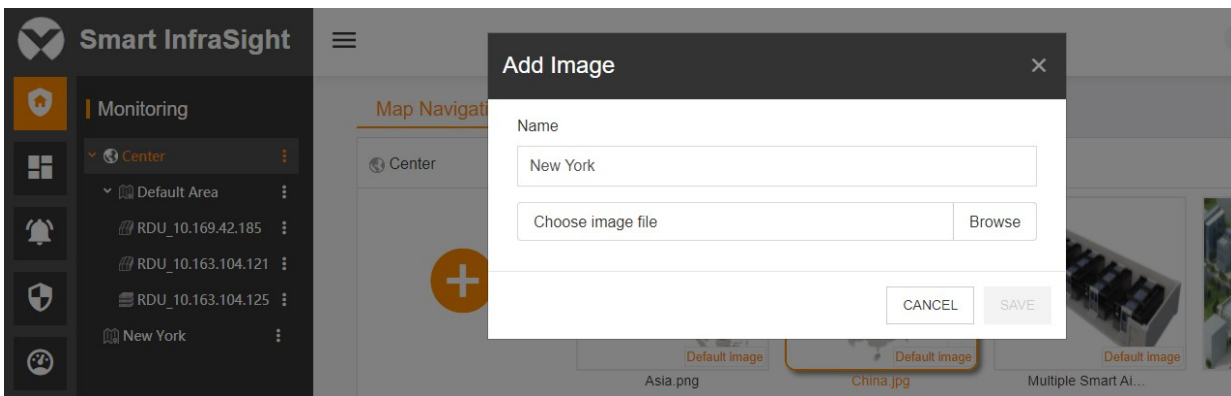
Figure 3-37   Uploading a custom background image

5. Delete a background image.

Enter the image list. Click [Delete ×] in the upper right corner of the desired background image and click **Delete**. The **Delete** dialog box is displayed. Click **CONFIRM**.

(The default image cannot be deleted.)
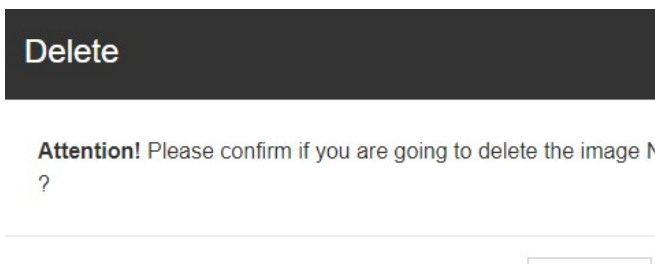
Figure 3-38   Deleting a background image

3.3.2 Area-level 3D Configuration

You can enter the 3D configuration page from the area on the monitoring homepage in two ways:

(1) For the area without 3D configuration, switch from the **Map Navigation** page to the **3D** page, as shown in the following figure.
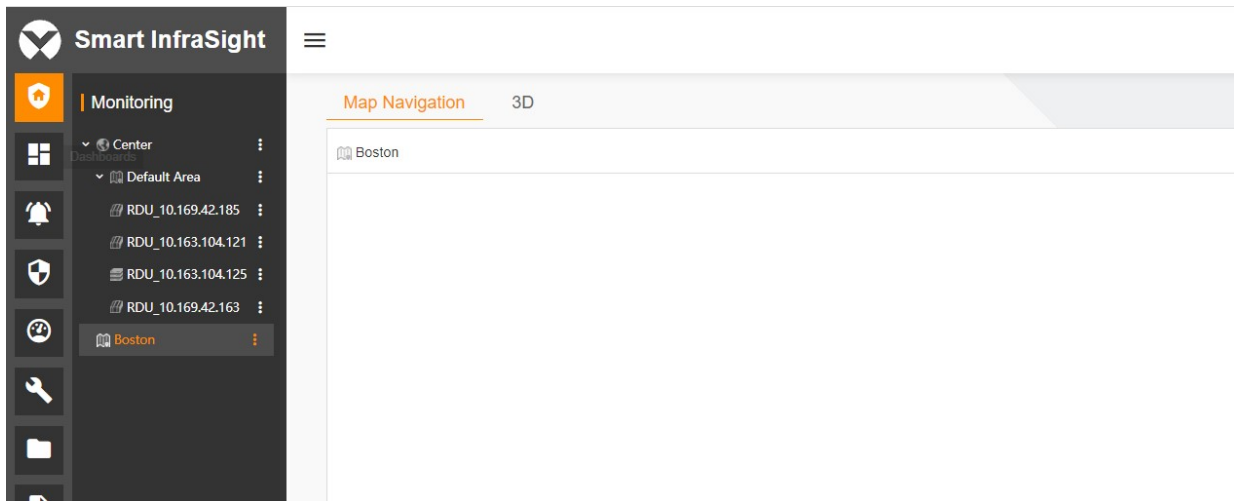
Figure 3-39   Entering area-level 3D configuration mode (1)

(2) Click ⋮ at the right part of an area sub-node. On the displayed operation menu, select 3D Configuration. The 3D configuration page is displayed, as shown in the following figure.
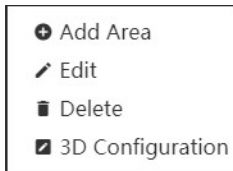
Figure 3-40   Entering area-level 3D configuration mode (2)

On the 3D configuration page, make 3D configuration for the current area. For more information about the configuration method, see **3D Configuration** in this manual.

3.3.3   Monitoring Homepage

The site monitoring homepage contains the following parts: **Monitor Center**, **3D**, **Power**, **Server**, and **Device Detail**.

(1) The **Monitor Center** page displays the current site information in different dimensions and ways from a global perspective, including the computer room score, site overview, basic asset information, current PUE value, temperature change trend, and power consumption change bar graph. The following figure shows the specific information displayed on the page.
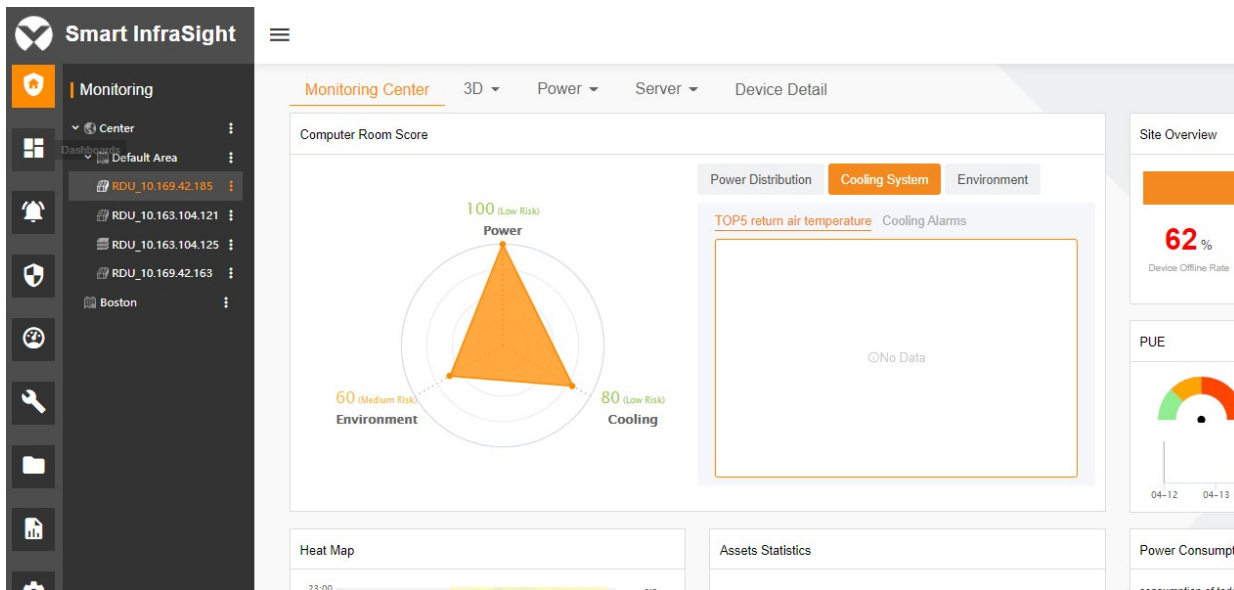
Figure 3-41   Monitor Center page

Specific information is as follows:

● Computer Room Score

The system displays the current running status of the site in a radar chart in terms of power distribution, cooling, and environment, facilitating you to make adjustments according to the site running information.

● Site Overview

This pane displays the site type, site name, device offline rate, RDU-A IP address, temperature, and other information, helping you obtain the basic information about the site.

● PUE

This pane displays the PUE statistics of the site, including the PUE value yesterday, 30-day statistics, and weekly PUE change curve.

● Heat Map

This pane displays the temperature change trend of the computer room for 24 hours in the past 30 days in a form of heat map. The temperature trend of each day is represented by a bar on the heat map, helping you intuitively understand the temperature change trend of the computer room.

● Assets Statistics

This pane displays statistics of the following types of assets: UPS, air conditioner, power distribution, and server, helping you obtain basic information about the site assets.

● Power Consumption

This pane displays the power consumption bar graphs of the past 7 days, past 30 days, and past 12 months. You can view the desired power consumption information through different configurations.

(2) The **3D** page displays the 3D, space capacity, power distribution capacity, thermal view, and heat map, helping you intuitively understand the current site status. For more information about the configuration, see **3D Configuration**.

(3) The **Power** page consists of two parts: power distribution and cooling. The device situations of the site are intuitively displayed through line graphs and flow graphs. For details, see **Standalone Site Power/Cooling Monitoring** in this manual.

(4) The **Server** page consists of two parts: server and console device. The basic information of the server is intuitively displayed in the form of a table. In addition, you can perform other control operations through the operation buttons on the table. For details, see **IT Management** in the manual.

(5) The **Device Detail** page mainly displays the specific information about the devices on the current site. The following figure shows the information displayed on the page.
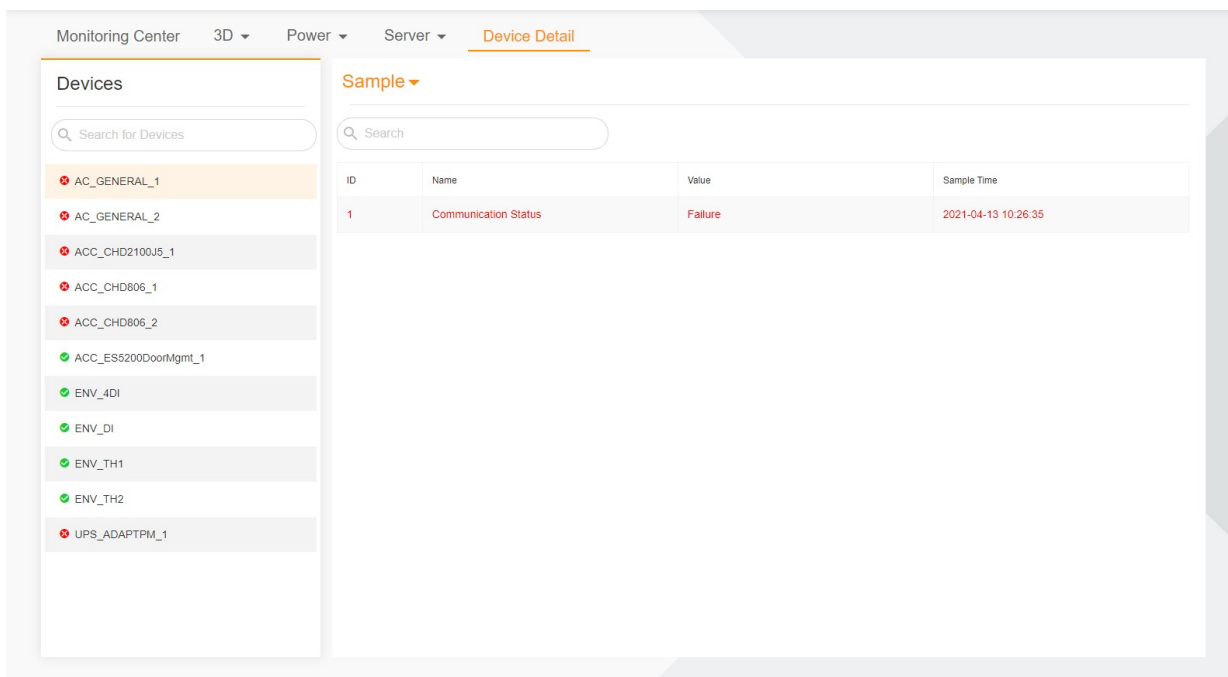
Figure 3-42   Device Detail page

The left navigation tree lists all devices of the current site. By default, the first device is selected, and the right part displays the device information in three dimensions, namely, signal, alarm, and control. You can select a desired dimension from the drop-down list to display the specific information about the selected device, as shown in the following figure.
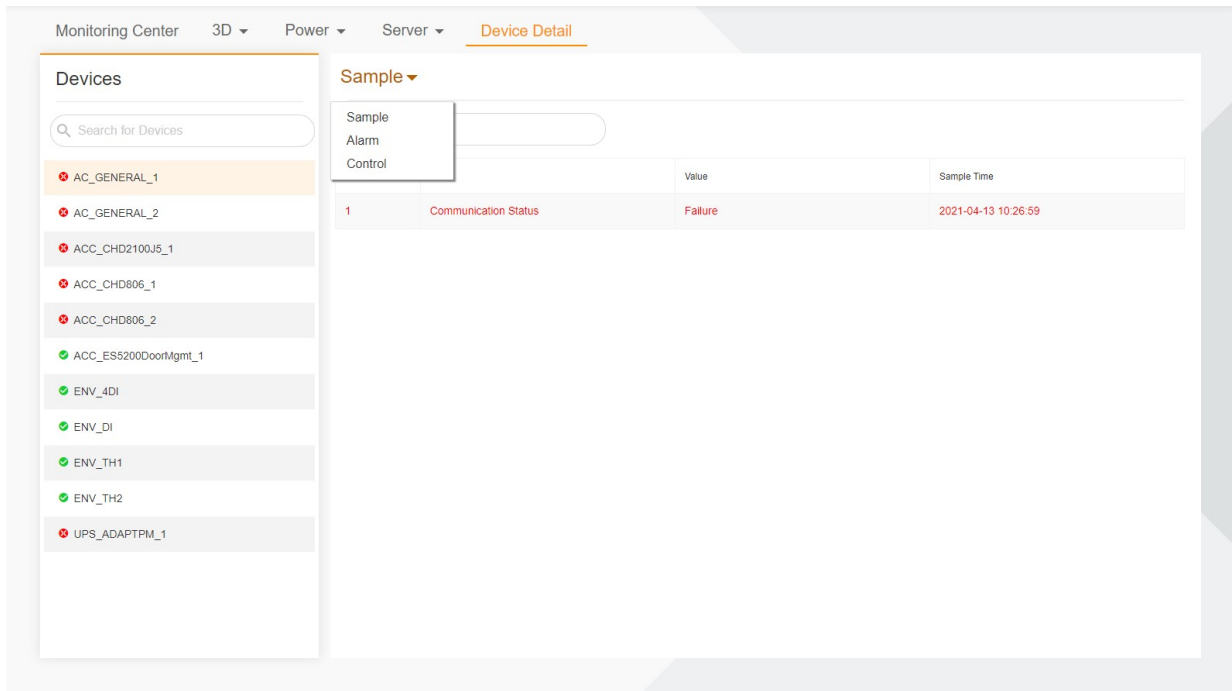
Figure 3-43   Device signal details
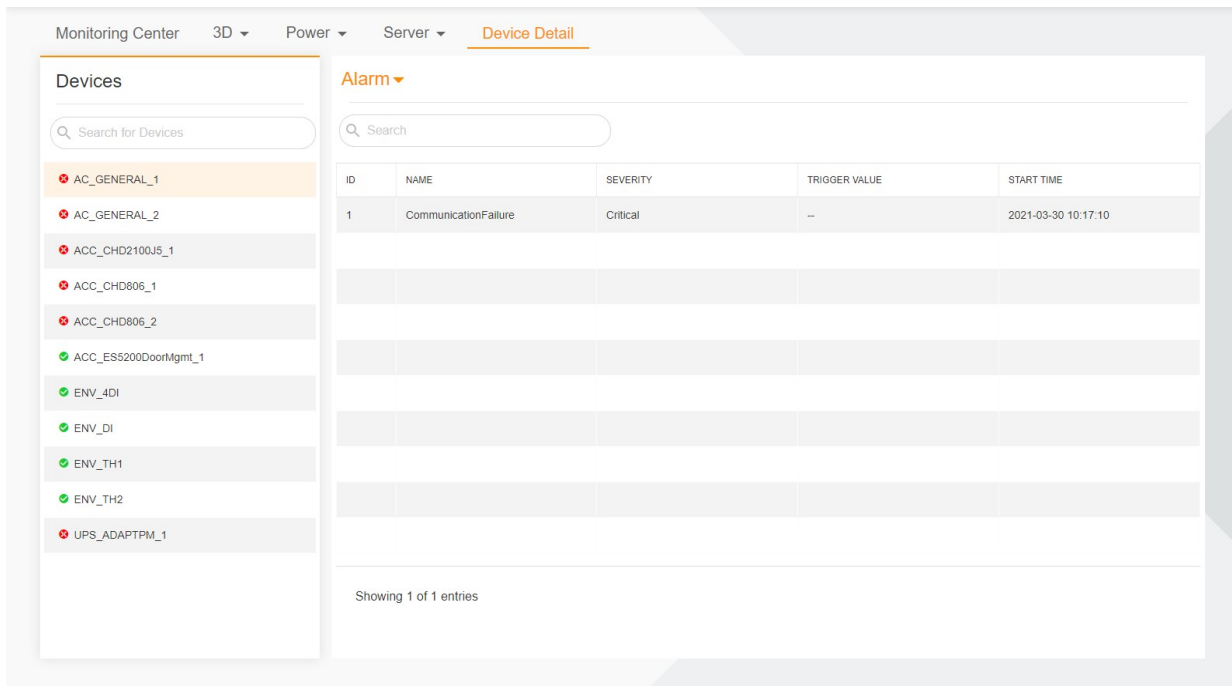
Figure 3-44   Device alarm details
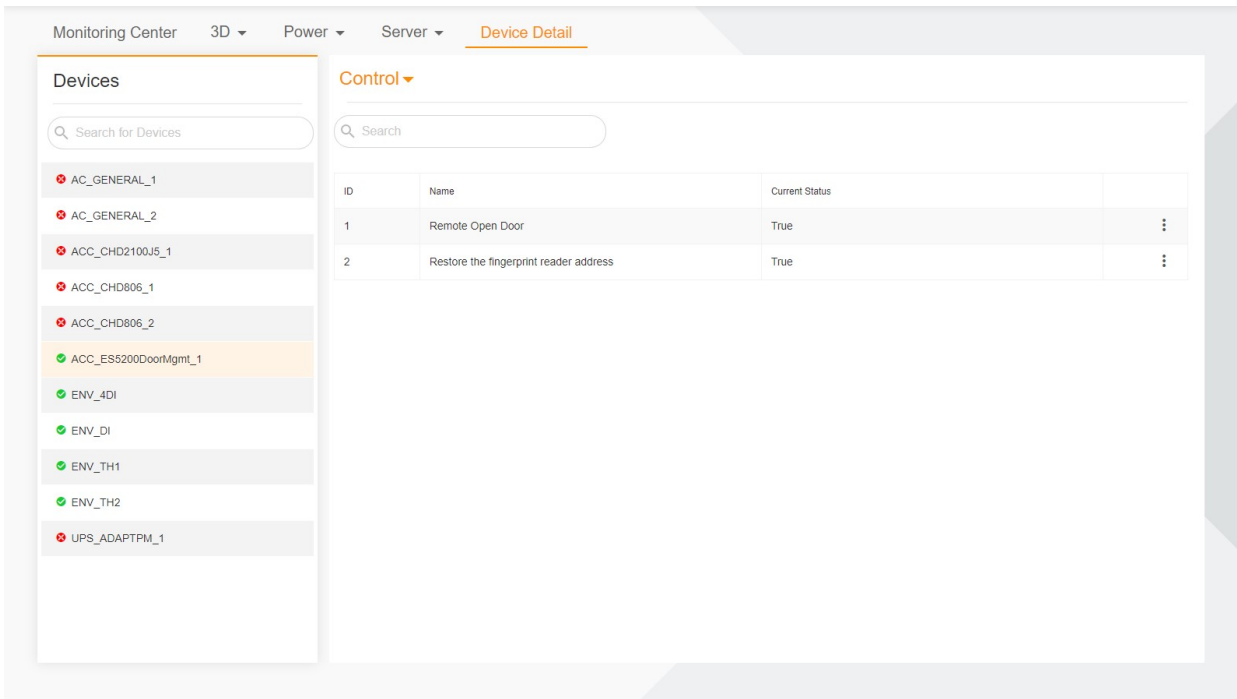
Figure 3-45   Device control details

Click ⋮ at the end of each row of the control table and select **Send Command**. In the displayed **Send Command** dialog box, select the corresponding command and click **SEND COMMAND**, as shown in the following figure.
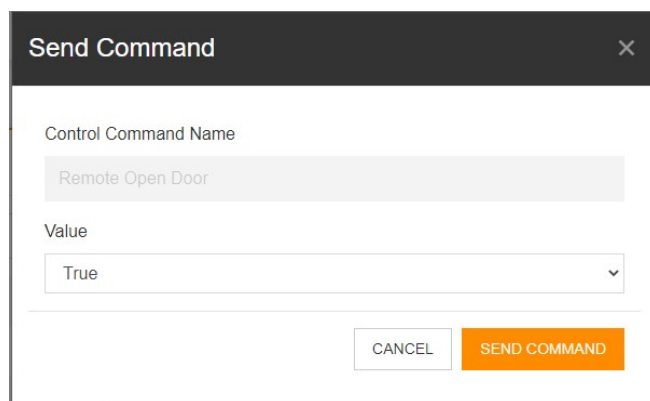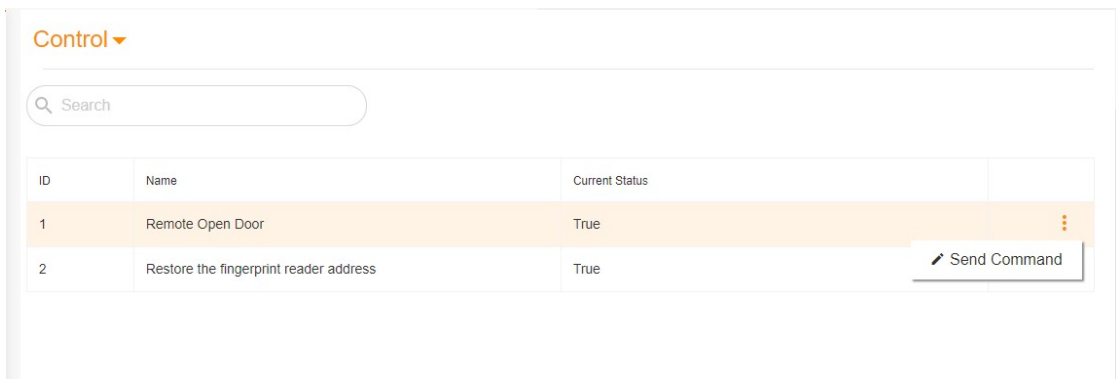
Figure 3-46   Sending the control command

After selecting a different value, click SEND COMMAND . The corresponding command is sent to the current device.

Chapter 4   Dashboard

4.1   Overview

4.1.1   Overview

You can create, delete and edit dashboard pages. To create a dashboard page, click the add button to enter the new dashboard page. Set the dashboard title and select or define the dashboard template. Then, the dashboard page is created. To delete a dashboard page, directly click the delete button. To edit a dashboard page, click the edit button. On the displayed dashboard name edit dialog box, edit the dashboard page name.

4.1.2   Functional Module

This section describes functional modules that can be configured on Smart InfraSight. For more information about the functional modules, see section 4.3.

4.2   Quick Start

4.2.1   Quick Deployment Procedure

(1) Open Smart InfraSight. Enter the **Dashboards** module. The **New Dashboard** page is displayed.

(2) Enter the dashboard name, select any of the default dashboard layouts, or select a custom layout, and click **SAVE** to enter the dashboard page.

(3) If you select a custom layout, the custom layout page is displayed, on which you can add a row layout using the add button and set the row layout mode and height according to actual needs.

(4) After the configuration is completed, the dashboard page is displayed. You can click **ADD** to add a widget.

(5) After you click **Add Widget**, the **Widget Template** page is displayed, including the widget templates and common widgets. The widget templates are built-in templates and the common widgets are templates shared by users.

(6) The template includes the template name, template description and template type. You can search for the desired template by name and category. When you find the desired template, click **ADD** to add it to the dashboard. Common widgets can be deleted according to actual needs.

(7) After the widget is added, you can click the **Config** button to enter the **Config** page to configure the widget.

(8) If you need to add a widget with the same configuration, click the share button to share it to common widgets. In this way, you can find the desired widget from the common widgets when you add widgets next time.

(9) If you do not need a widget, you can click the delete button to delete it.

(10) If you need to change the location of a widget, you can drag it to another location.

(11) If you are not satisfied with the dashboard layout, you can click the edit button to enter the edit page. Then, add or delete a row, or drag and drop a row to the desired location. The location preview is displayed on the right side of the page.

4.2.2   Example

The following figure shows the page for adding the dashboard.
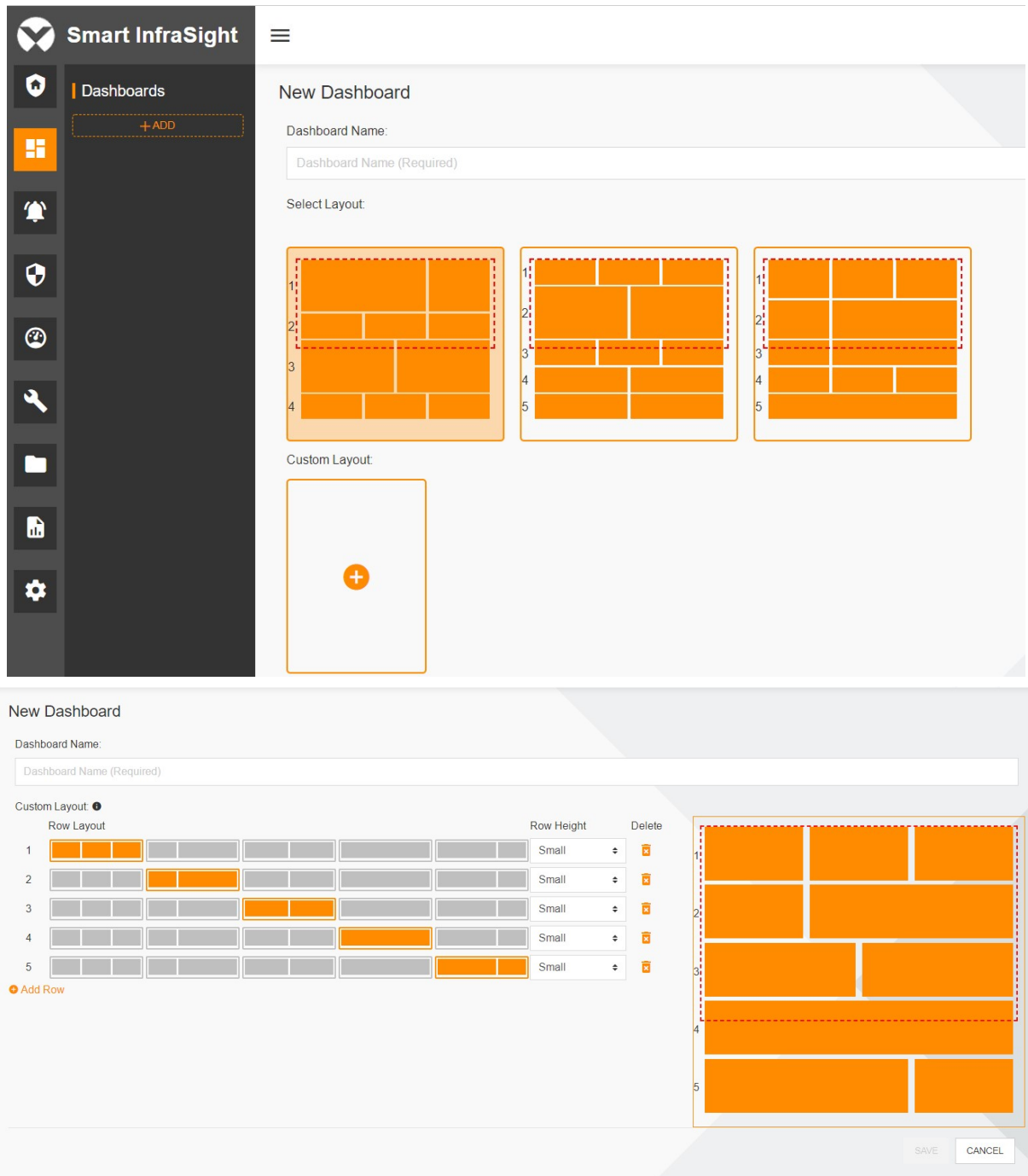
Figure 4-1   Dashboard add interface

The following figure shows the page after the dashboard is configured.
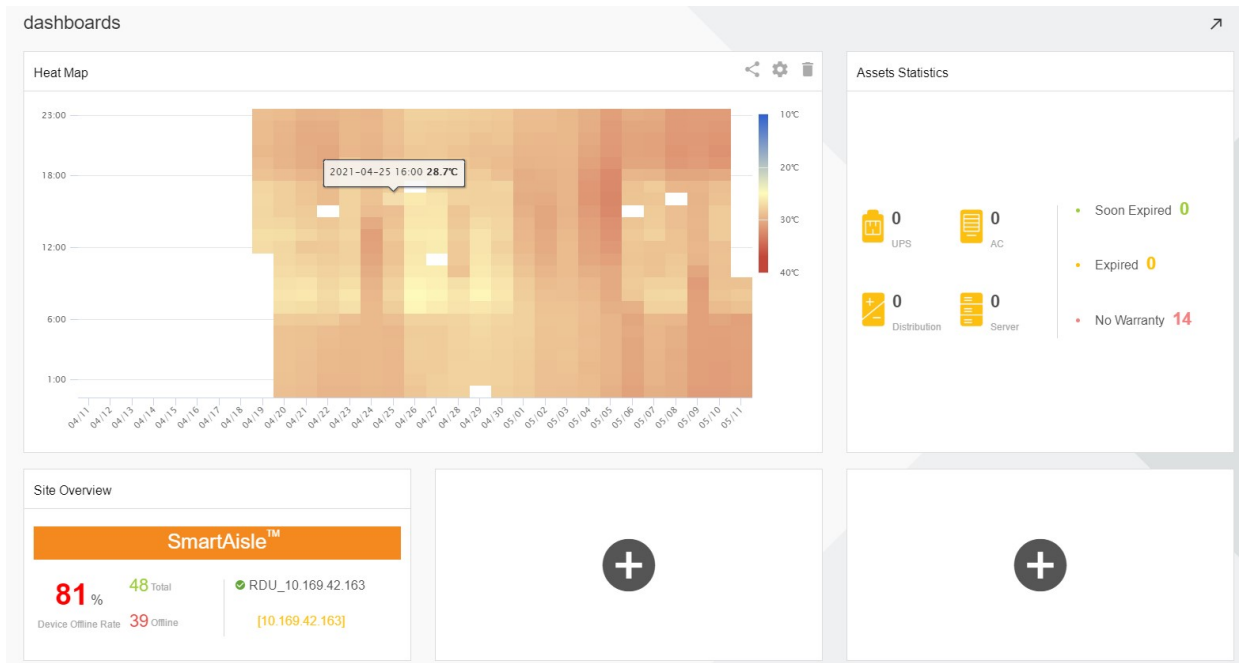
Figure 4-2   Dashboard is configured

The following figure shows the page for adding the widget.
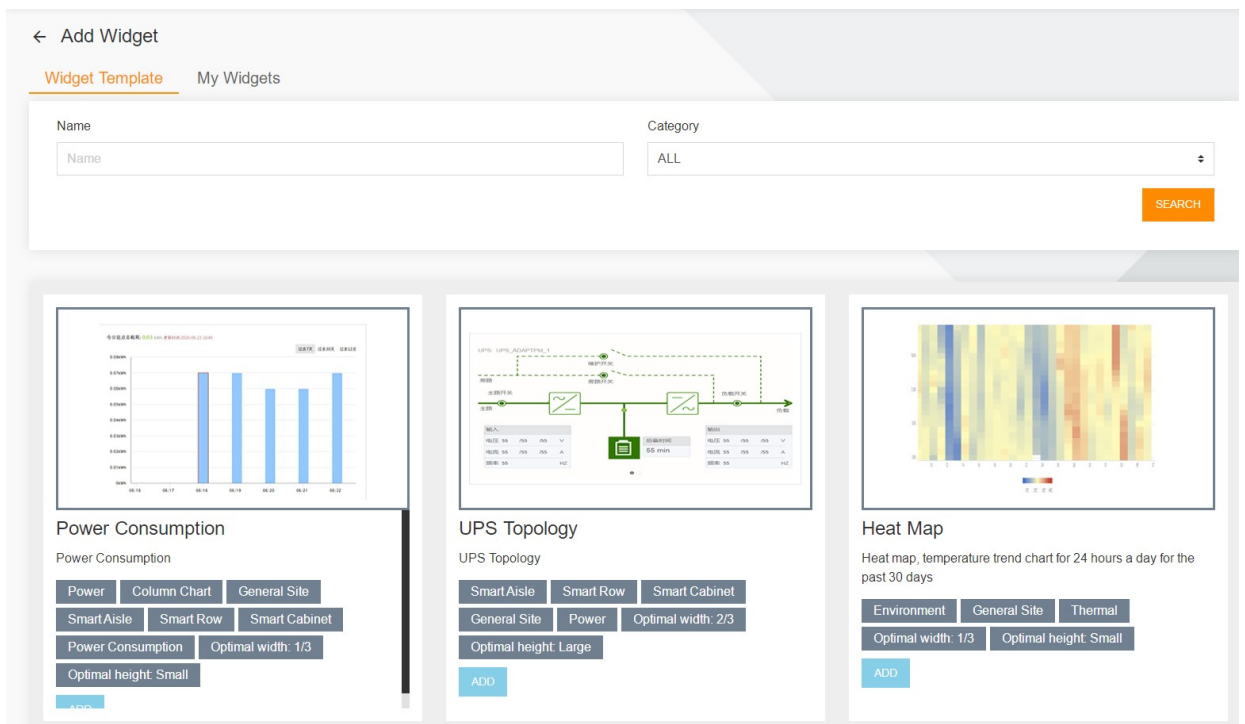
Figure 4-3   Widget add interface

4.3 Specific Functions

4.3.1 Adding a Dashboard on Dashboard Page

Enter the dashboard name, select any of the default dashboard layouts, or select a custom layout, and click **SAVE** to enter the dashboard page.
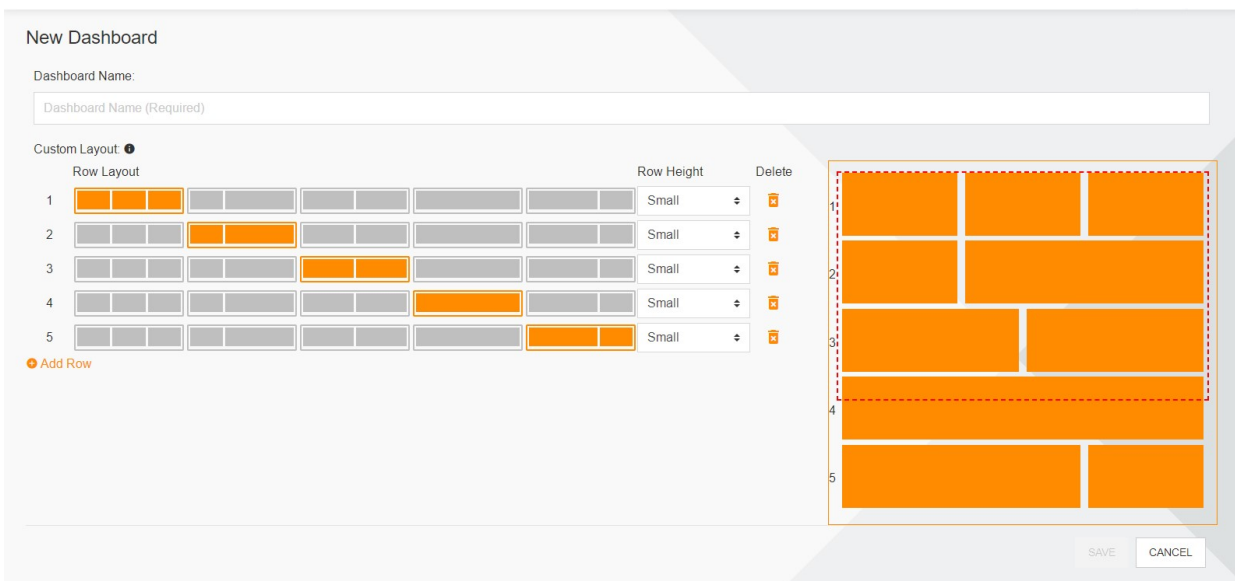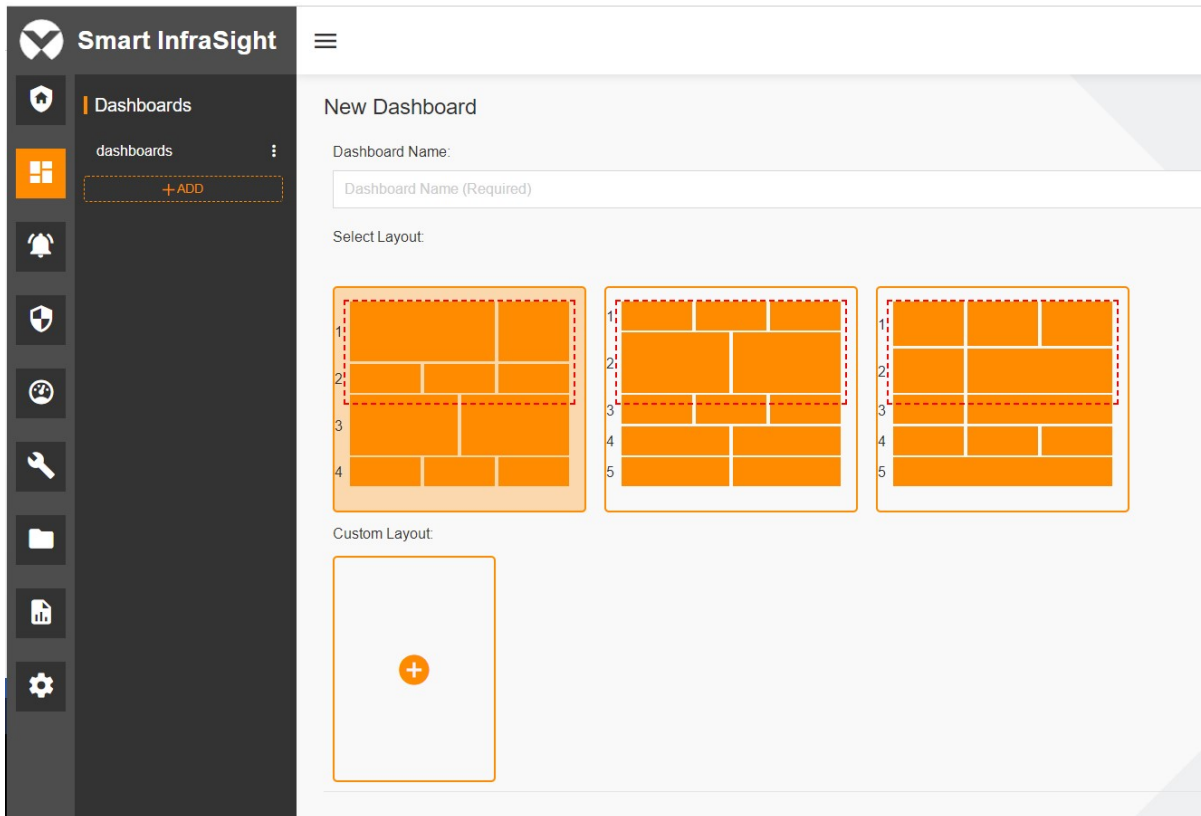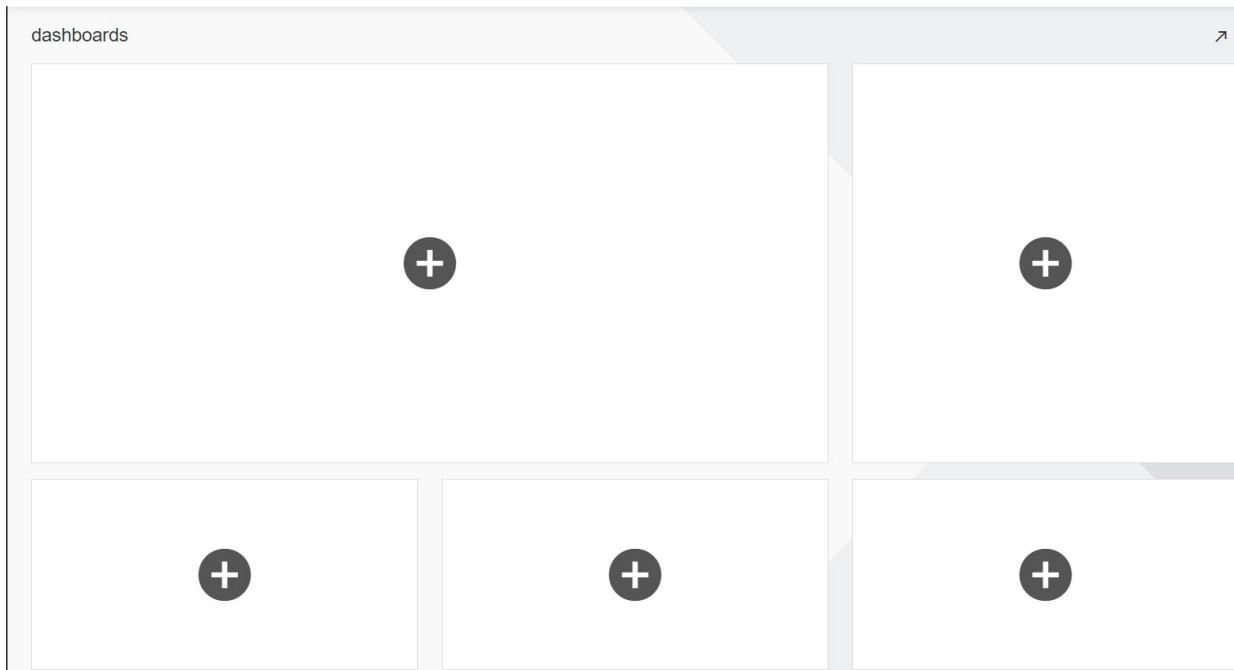
Figure 4-4 Adding a dashboard on dashboard page

4.3.2 Adding a Widget

Click **Add Widget** to enter the **Add Widget** page. Find the desired widget by search or other methods. Add the found widget.
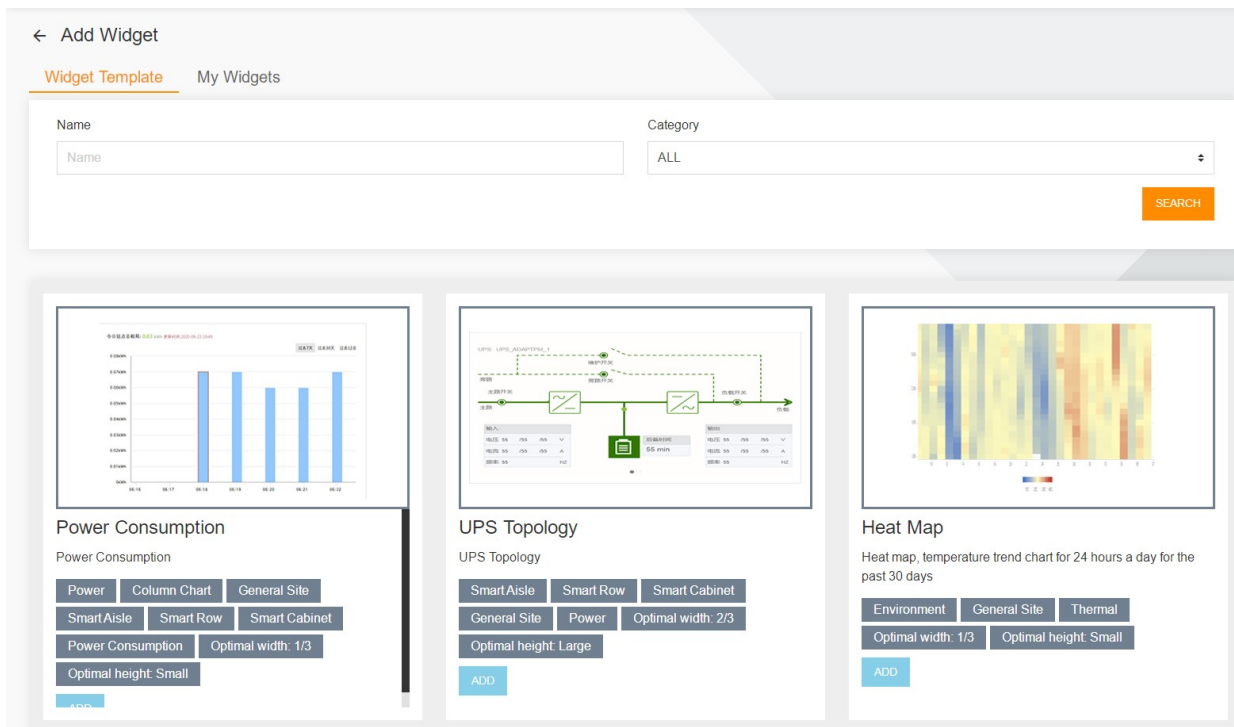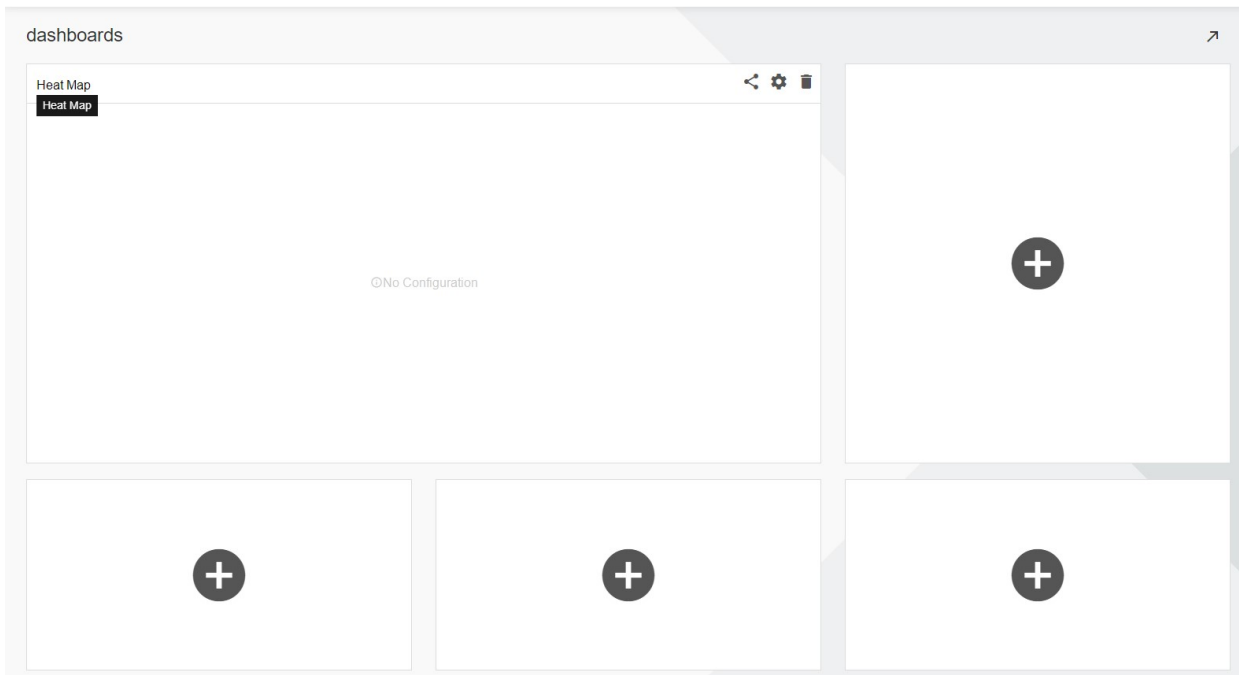
Figure 4-5   Add widget

4.3.3   Configuring, Sharing, and Deleting a Widget
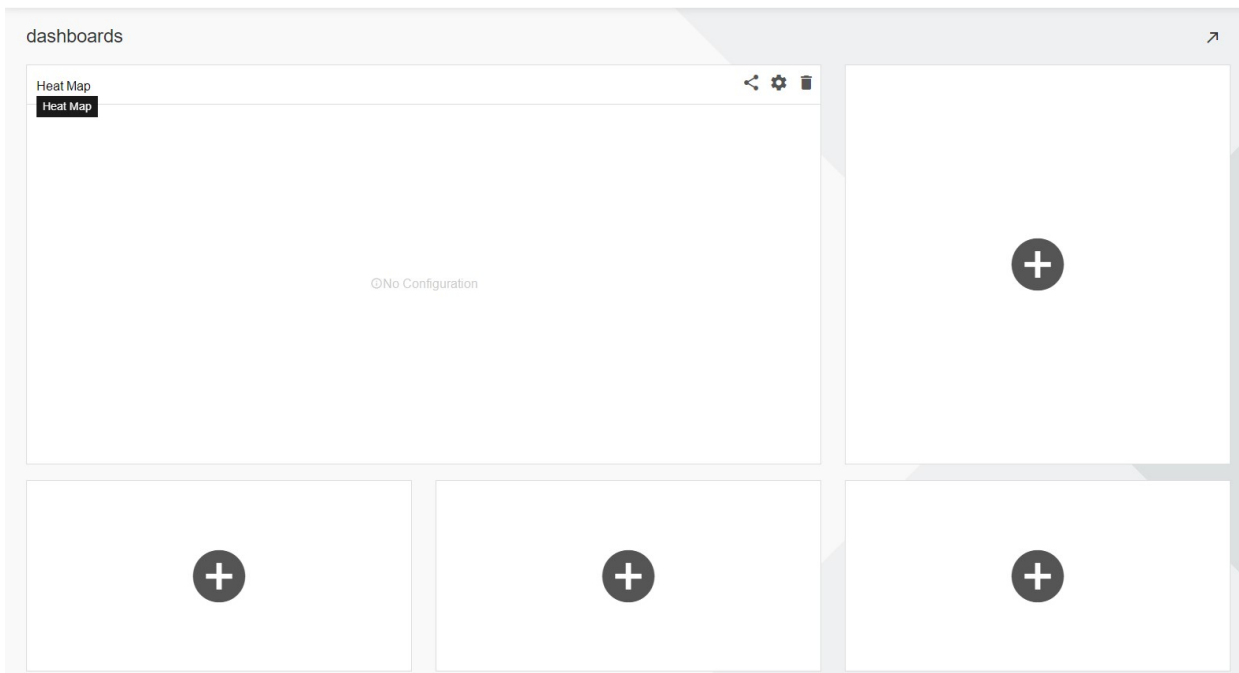
Figure 4-6   Configuring, sharing, and deleting a widget

Click the **Config** button to enter the **Config** page.
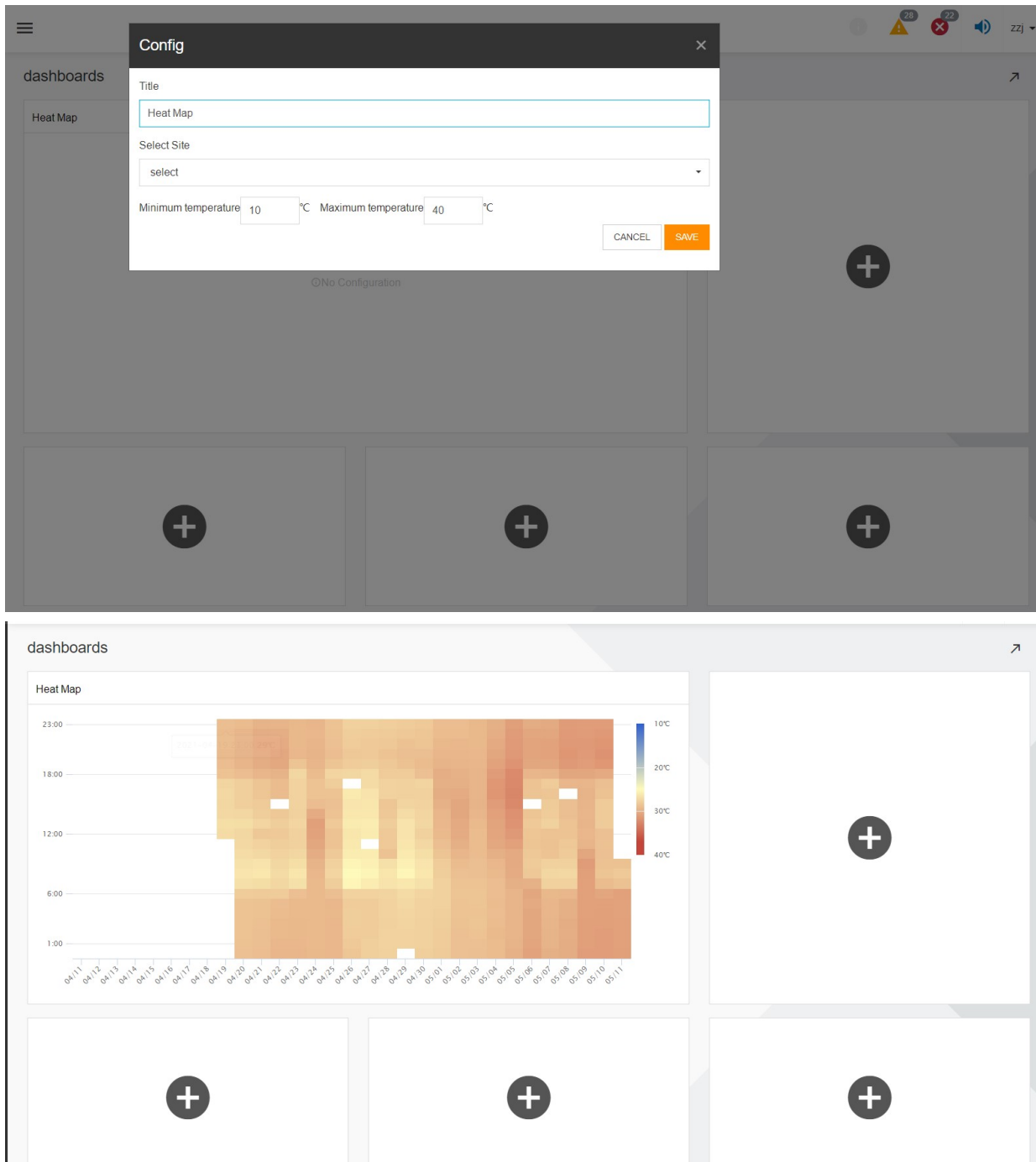
Figure 4-7   Config page

Click the **Share Widget** button to share the widget to the common widgets.
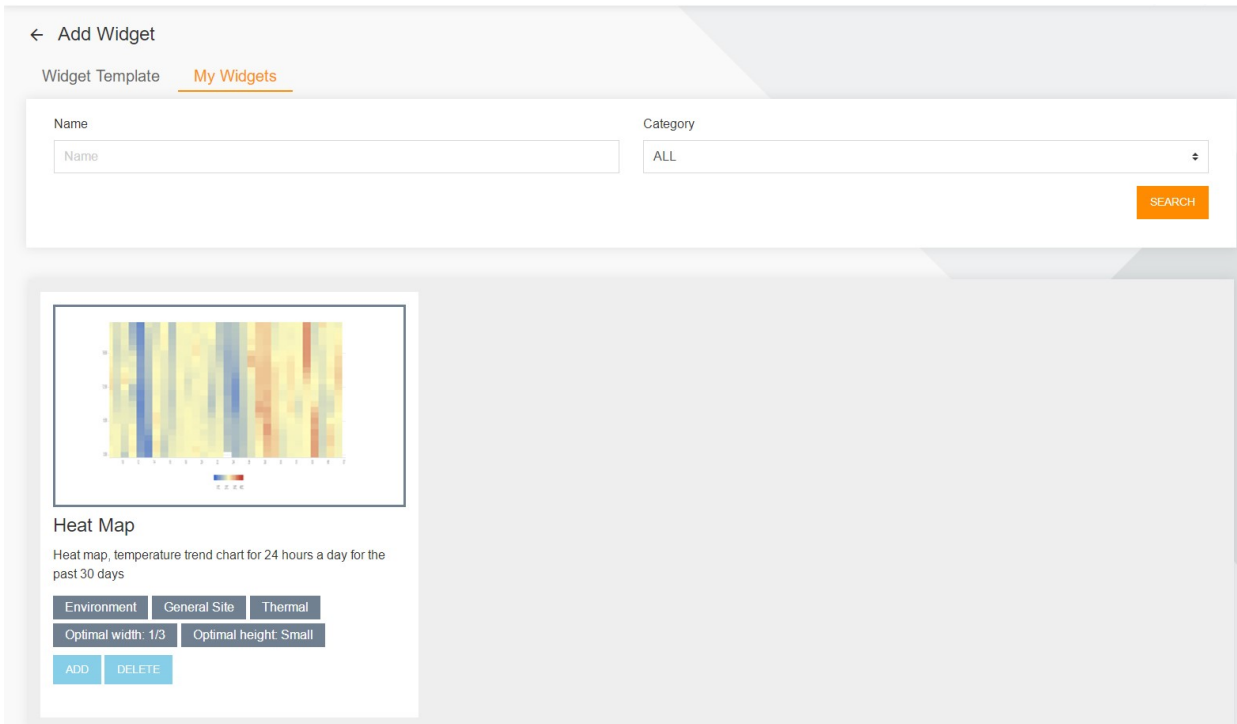
Figure 4-8   Share widget

Click the **Delete** button to delete the widget.
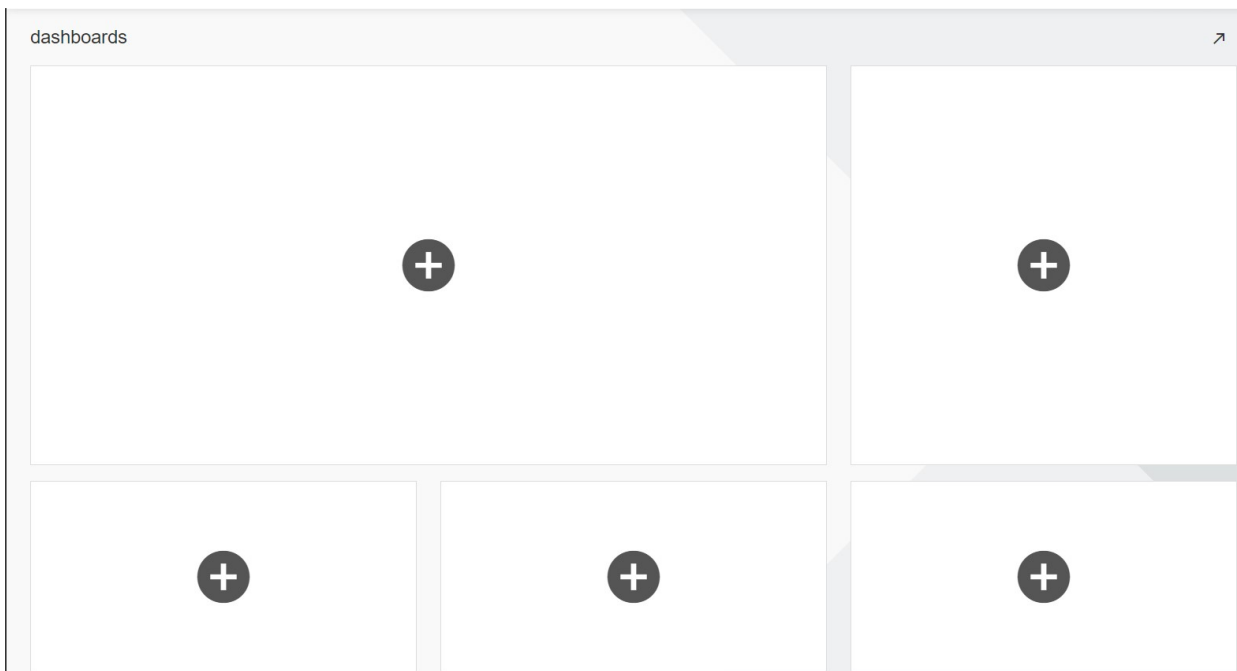
Figure 4-9   Delete widget

4.3.4   Editing a Dashboard

Click the **Edit** button to enter the **Edit Dashboard** page.
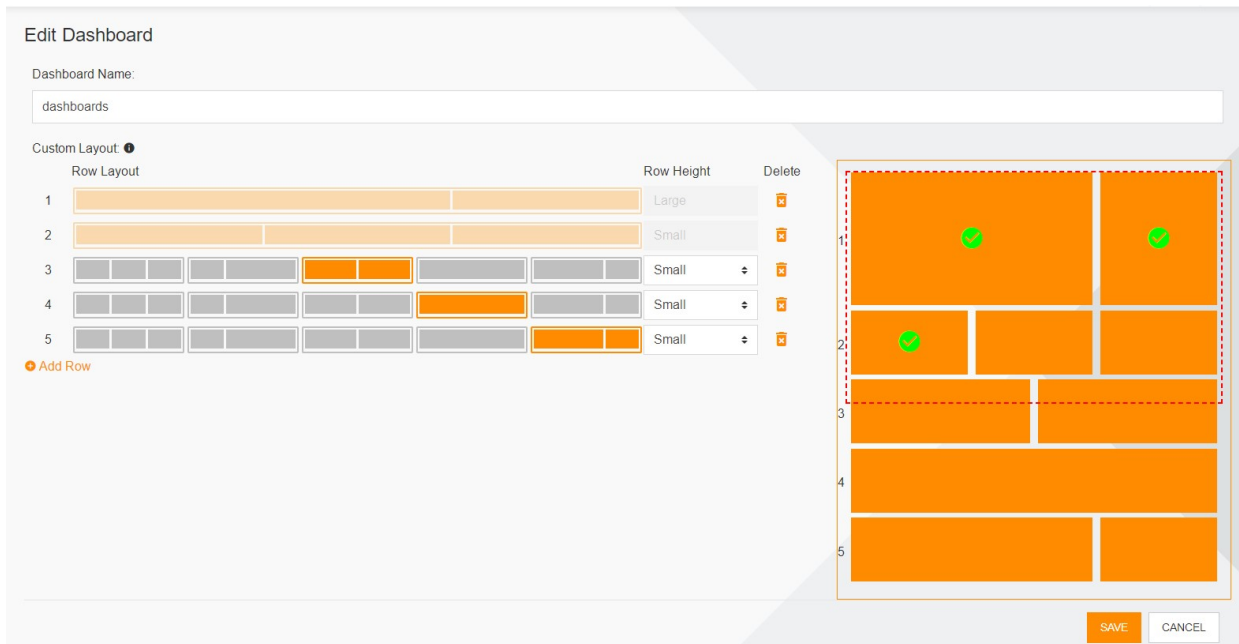
Figure 4-10   Edit dashboard

Chapter 5   Standalone Site Power/Cooling Monitoring

5.1   Overview

5.1.1   Overview

On the **Power/Cooling** tab page of the monitoring homepage, you can view professional information related to power distribution and cooling of the current site.

5.1.2   Functional Module

The **Power/Cooling** tab page contains the following functional modules. For more information about the functional modules, see section *5.3 "Specific Functions."*

- Three-phase Unbalance
- Maximum Power Trend Per Hour
- Power Consumption
- UPS Topology
- Air Condition
- Air Conditioning Alarms
- Comparison Of Supply And Return Temperature
- Comparison Of Hot And Cold Aisle Temperatures

5.2   Quick Start

5.2.1   Quick Deployment Procedure

[1] Open Smart InfraSight. Click a site on the area/site tree, and click the Cooling tab page on the right side to enter the professional power consumption page.

[2] Configure the Maximum Power Trend Per Hour widget. Click the functional menu in the upper right corner of the widget, and configure the related information in the Config dialog box.

[3] Before configuring the Consumption Configuration widget, add the consumption configuration scheme to the consumption module.

[4] Click the Air Condition tab on the top to enter the professional cooling page.

[5] Configure the Comparison Of Supply And Return Temperature widget. Click the functional menu in the upper right corner of the widget, and configure the related information in the Config dialog box.

5.2.2   Example

Configuration procedure on the professional power consumption page

Click the functional menu in the upper right corner of the **Maximum Power Trend Per Hour** widget, and configure the related information such as **Safety line proportion (%)** in the **Config** dialog box.
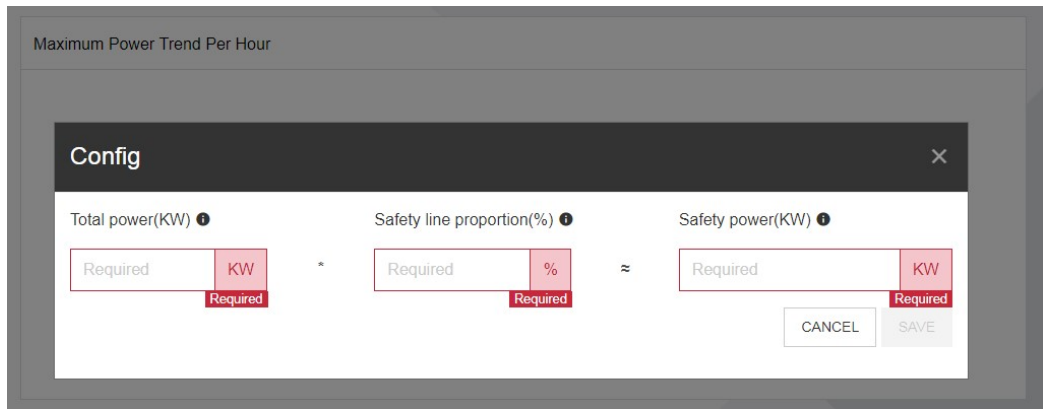
Figure 5-1   Configuring the Maximum Power Trend Per Hour widget

The **Consumption Configuration** widget is configured in the **Power Consumption** module. For details, see section *11.3*.
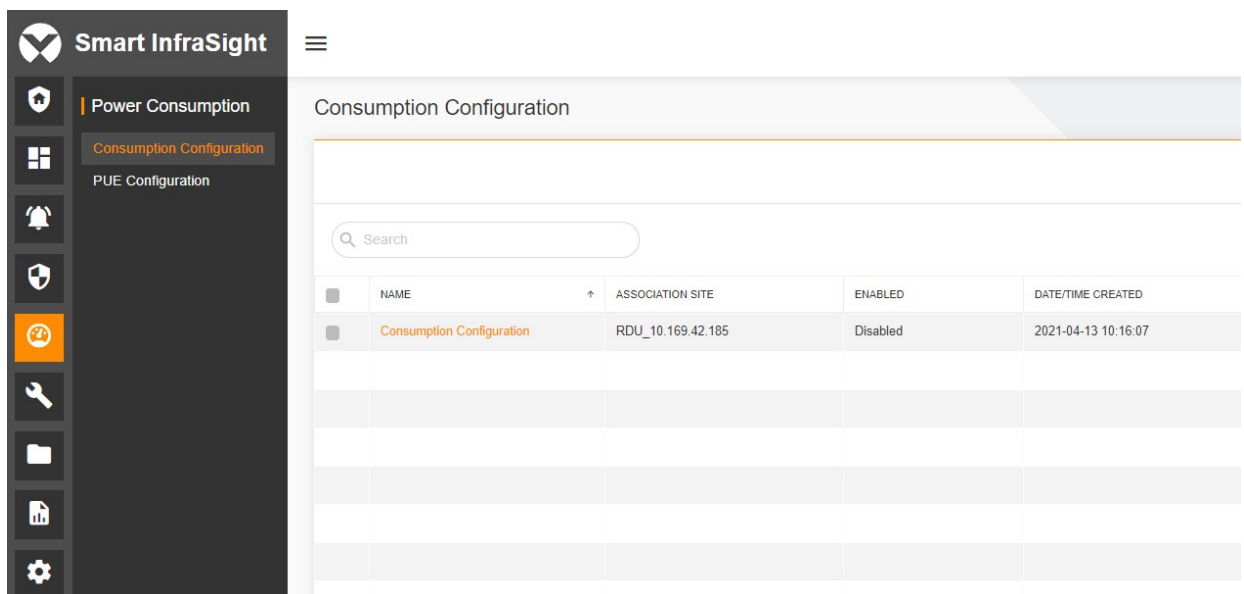
Figure 5-2   Completing Consumption Configuration in the Power Consumption module

At this time, you can view all information on the professional power consumption page.

Configuration procedure on the professional cooling page

Click the functional menu in the upper right corner of the **Comparison Of Supply And Return Temperature** widget, and configure the related information such as target air conditioner name in the **Config** dialog box.
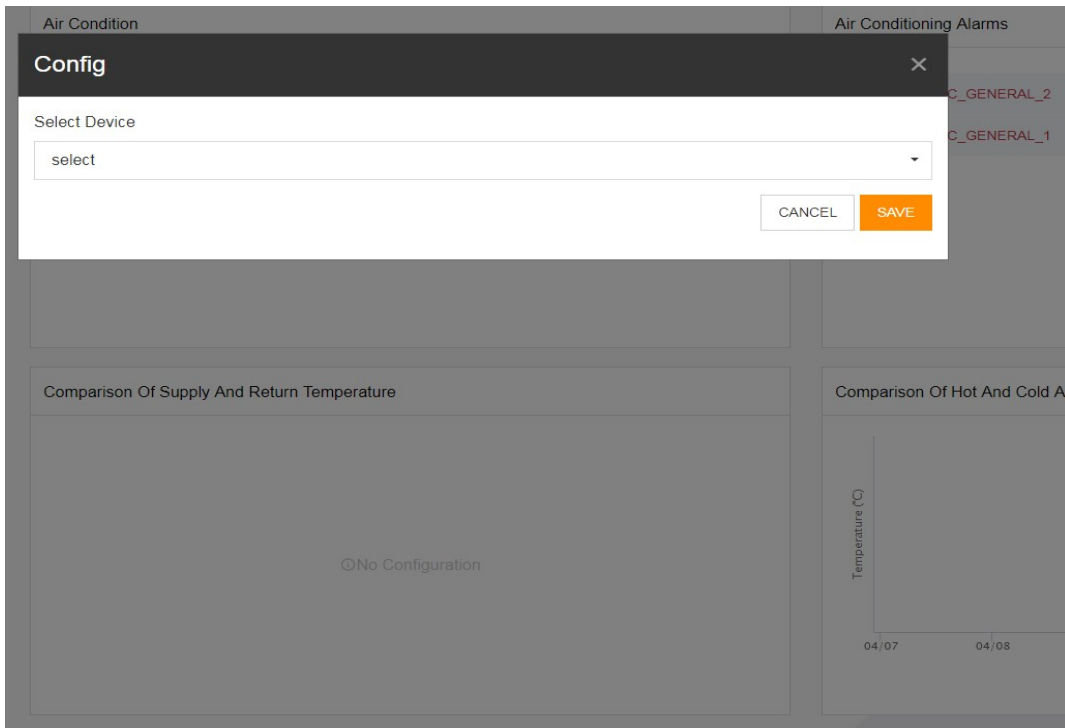
Figure 5-3   Configuring the Comparison Of Supply And Return Temperature widget

At this time, you can view all information on the professional cooling page.

5.3 Specific Functions

5.3.1 Browsing the Professional Power Consumption Page

The professional power consumption page contains the following widgets: **Three-phase Unbalance**, **Maximum Power Trend Per Hour**, **Power Consumption**, and **UPS Topology**.

The **Three-phase Unbalance** widget displays the three-phase unbalance of each UPS device of the site.
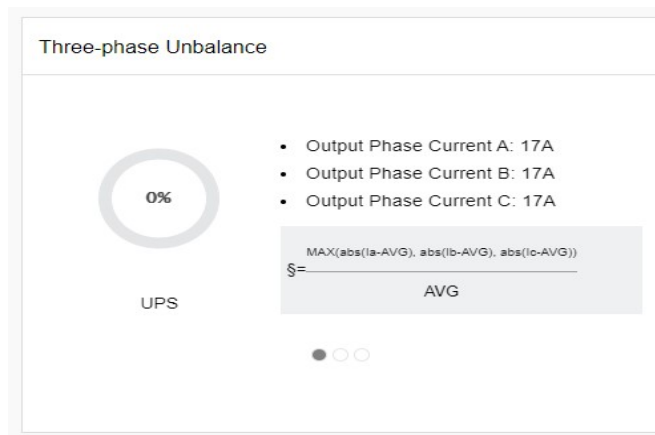
Figure 5-4   Three-phase Unbalance

The **Maximum Power Trend Per Hour** widget displays the highest power trend of all UPS devices of the site in the past 24 hours.
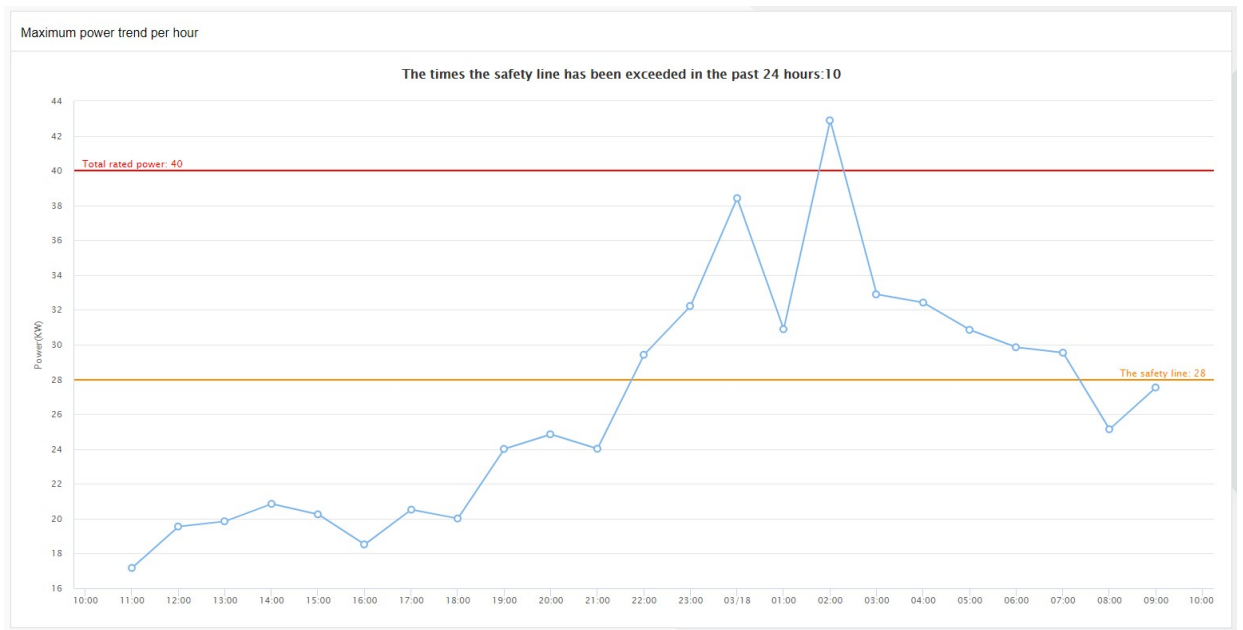
Figure 5-5   Maximum Power Trend Per Hour

The **Power Consumption** widget displays the power consumption information of the current site in a past period as well as the total power consumption of the current day. You can switch the bar graphs among **LAST 7 DAYS**, **LAST 30 DAYS**, and **LAST 12 MONTHS**.
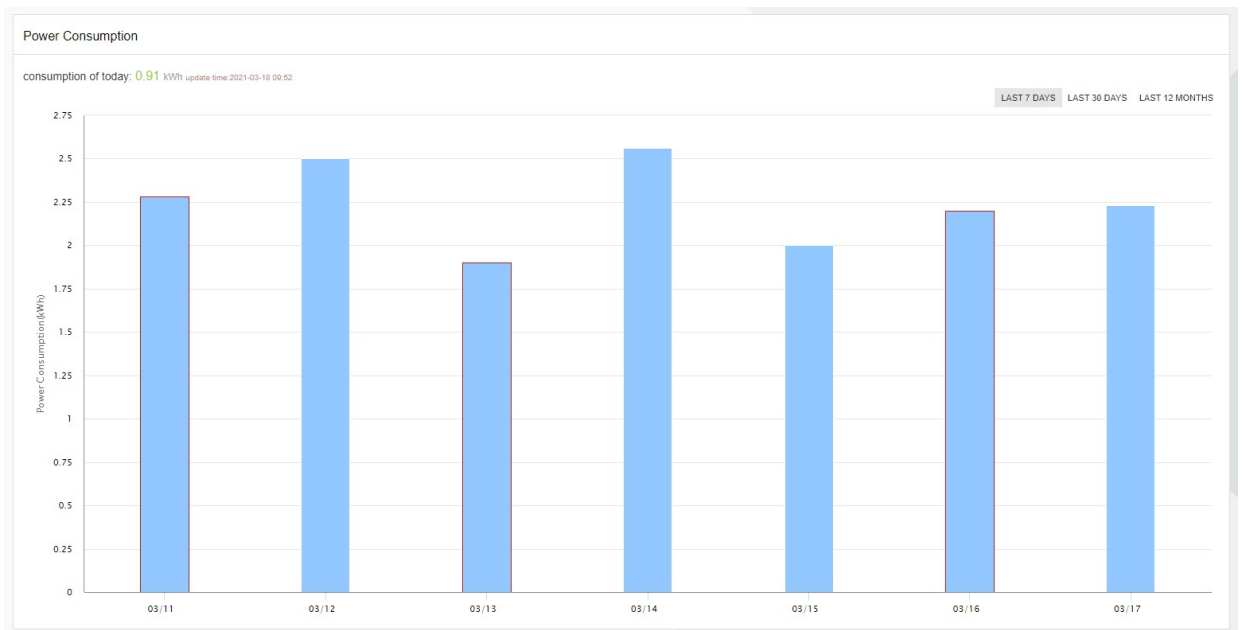
Figure 5-6   Power Consumption

The **UPS Topology** widget displays the flowchart of each UPS device of the site.
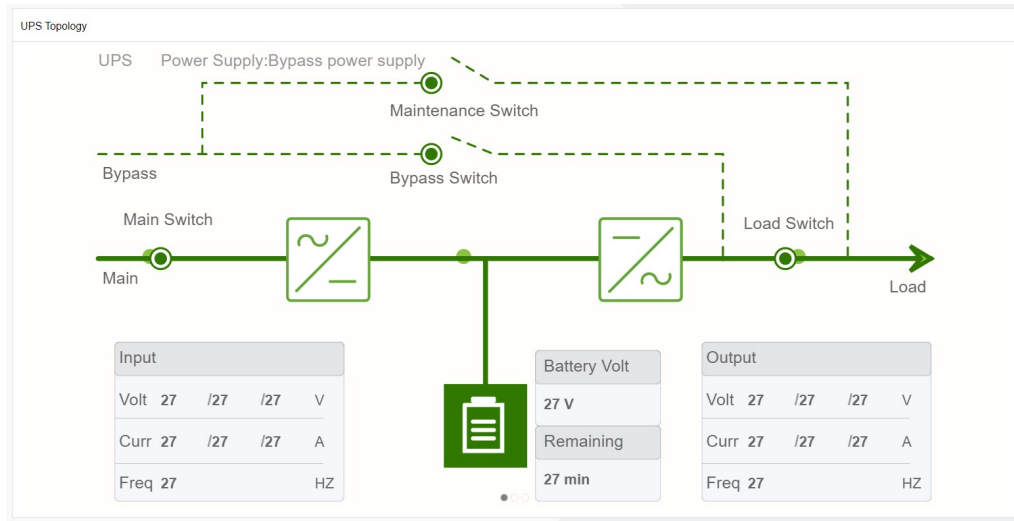
Figure 5-7   UPS Topology

5.3.2 Browsing the Professional Cooling Page

The professional cooling page includes the following widgets: **Air Condition**, **Air Conditioning Alarms**, **Comparison Of Supply And Return Temperature**, and **Comparison Of Hot And Cold Aisle Temperatures**.

The Air Condition widget displays the status of each air conditioner of the current site.

Figure 5-8   Air Condition

The **Air Conditioning Alarms** widget displays the alarm information of each air conditioner of the current site.

1	✖	AC_CRV4025_1	CommunicationFailure	2021-03-16 15:30:56
2	⚠	AC_CRV+_1	CommunicationFailure	2021-02-26 11:07:01
3	ⓘ	AC_CRV+_1	Exhaust temperature alarm	2021-02-25 18:58:01
4	ⓘ	AC_CRV+_1	Airflow loss alarm	2021-02-13 23:23:01
5	⚠	AC_CRV+_1	Filter clogged alarm	2021-02-11 23:58:01
6	⚠	AC_CRV+_1	Power lose phase alarm	2021-02-05 18:02:01
7	✖	AC_CRV4025_1	Loss Of Power Alarm	2021-02-01 18:15:01
8	✖	AC_CRV4025_1	Loss Of Airflow Alarm	2021-01-25 19:42:52
9	✖	AC_CRV+_1	Low Pressure Lock alarm	2021-01-25 18:58:01
10	ⓘ	AC_CRV4025_1	Supply Air High Temperature Alarm	2021-01-24 22:44:34
11	ⓘ	AC_CRV4025_1	Lighting Protection Alarm	2021-01-22 19:22:23
12	✖	AC_CRV4025_1	Smoke Detector Alarm	2021-01-20 03:12:12
13	✖	AC_CRV4025_1	Remote Shutdown Alarm	2021-01-10 03:06:01
14	✖	AC_CRV4025_1	Power Frequency Offset Alarm	2021-01-01 18:20:01

Figure 5-9   Air Conditioning Alarms

The **Comparison Of Supply And Return Temperature** widget displays the supply and return air temperature line charts of the selected air conditioner of the current site.
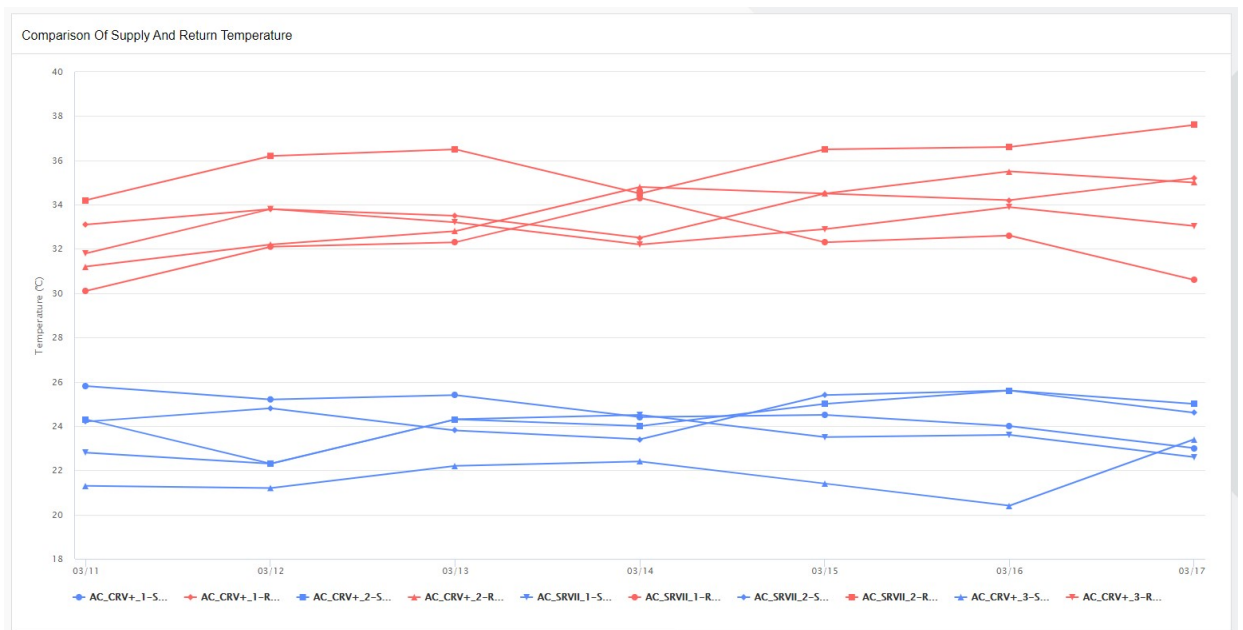
Figure 5-10   Comparison Of Supply And Return Temperature

The **Comparison Of Hot And Cold Aisle Temperatures** widget displays the highest return air temperature and lowest supply air temperature line charts of all air conditioners of the current site in the past 7 days.
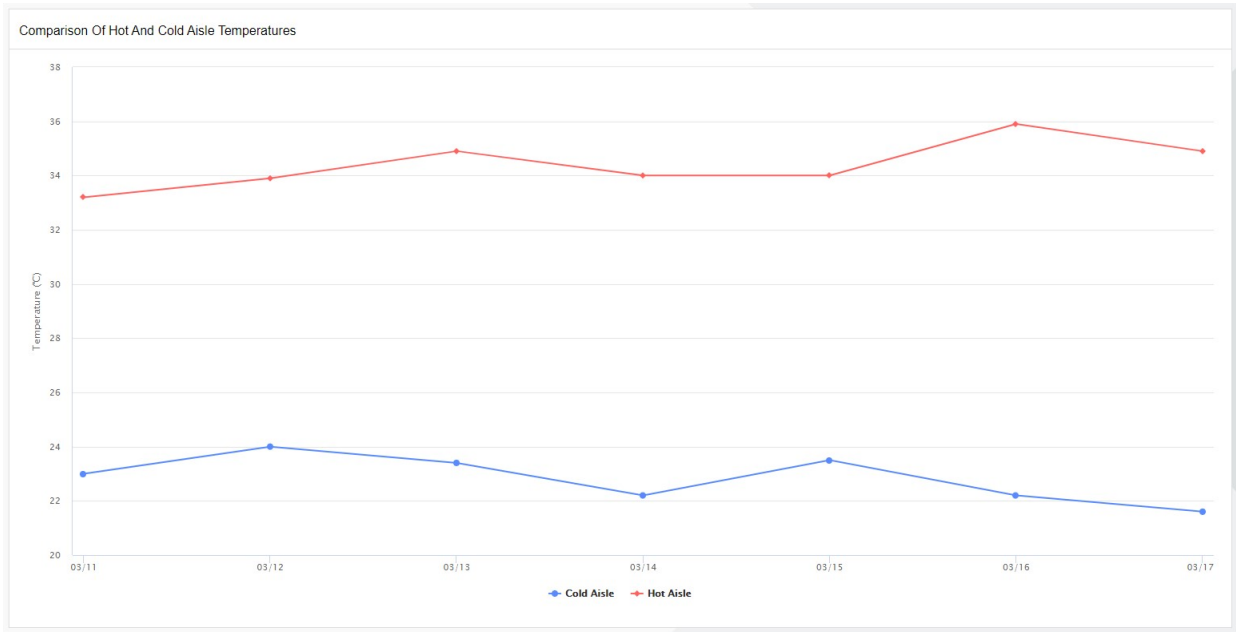
Figure 5-11   Comparison Of Hot And Cold Aisle Temperatures

Chapter 6   Configuration Operations

6.1 Overview

6.1.1 Overview

The configuration tool is the core function of the entire Smart InfraSight platform that can monitor and display data. It is also the first function that you contact. You can search for RDU in the configuration module and add it to the monitoring function, so that the underlying data is officially connected to the Smart InfraSight platform and the platform can display and monitor the data normally. Because the Smart InfraSight platform displays Smart Aisle, Smart Cabinet, and Smart Row through a site tree structure, you can define a multidimensional area structure in the configuration tool based on the actual geographic deployment, and associate the structure with the RDU added to the monitoring function. The configuration tool also allows you to synchronize the underlying RDU configuration, redirect to the RDU page, customize the list of devices that need to be monitored under the RDU, configure the device storage strategy, and configure the key information about various collection signals (signals, alarms, control, and settings).

6.1.2 Functional Module

This section describes functional modules that can be configured on Smart InfraSight. For more information about the functional modules, see section *6.3* "*Specific Functions*."

- Configuration Tool
- Device Configuration

6.2 Quick Start

6.2.1 Quick Deployment Procedure

To ensure that the RDU can be discovered and added to the monitoring function, perform the following steps:

[1] Set the access permissions for performing the search operation on RDU-A.

[2] Search for the RDU and add it to the monitoring function.

[3] Edit the area when adding the RDU to the monitoring function (optional).

[4] Configure the device (optional).

[5] Manage the area (optional).

6.2.2 Example

Setting the access permissions for performing the search operation on RDU-A

When searching for an RDU, you need to make some basic configurations on RDU-A, that is, allowing Smart InfraSight to access the current RDU-A. There are two configuration methods.

Configuration method 1: Allow any Smart InfraSight to access the current RDU-A, as shown in the following figure.
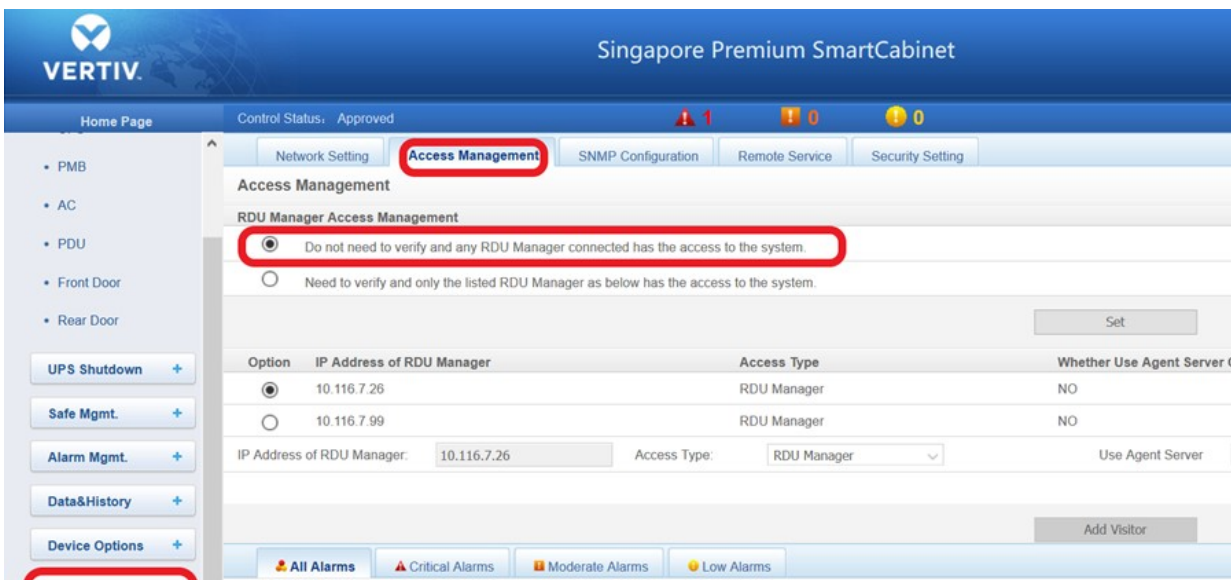
Figure 6-1   Allowing Smart InfraSight to access the current RDU-A

Configuration method 2: Set the IP address of the desired Smart InfraSight as a permitted visitor on RDU-A, as shown in the following figure.
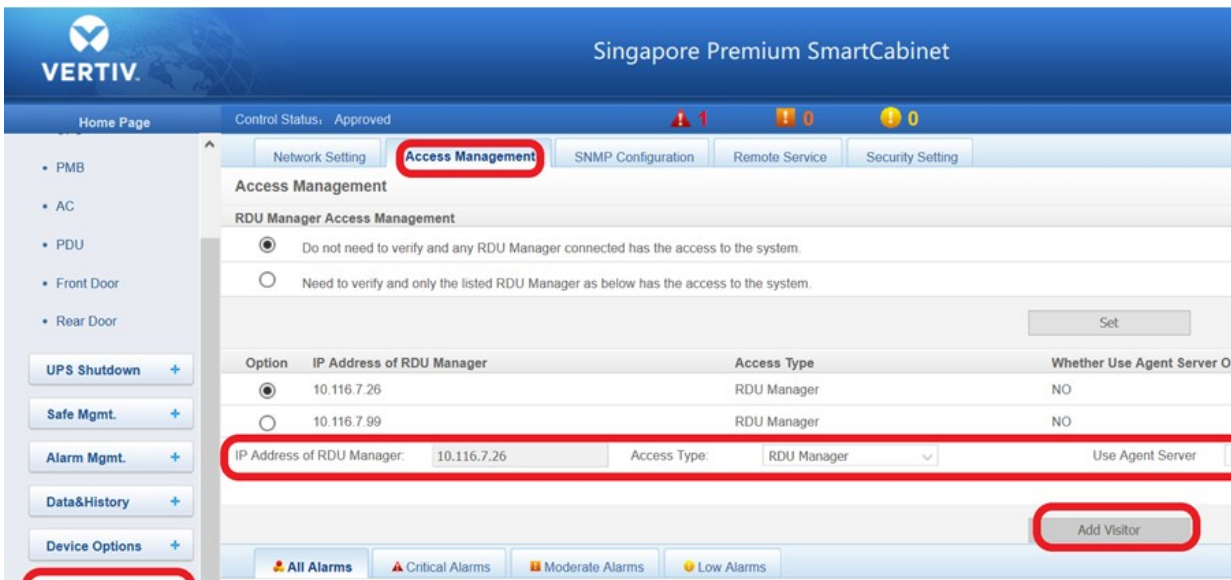
Figure 6-2   Adding a permitted visitor

📖   **Note**
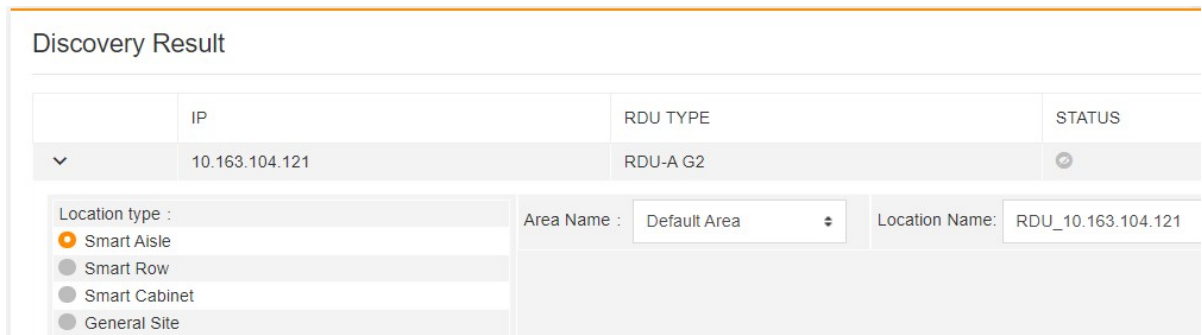
If the configuration prior to the search operation has been made, but RDU-A cannot be discovered in Smart InfraSight, the RDU-A network may be interrupted. Check whether the RDU-A network is connected properly.

Searching for the RDU and adding it to the monitoring function

After completing the above basic configurations, you can enter the corresponding IP address in the search page of the configuration tool to search for the RDU. After finding the RDU, click the **SAVE** button in the corresponding row of the current RDU area to add it to the monitoring function. For operation details, see section *6.3.1*"

Editing the area when adding the RDU to the monitoring function (optional)

Taking the discovered RDU with IP address 10.163.104.121 as an example, you can edit the area and use the default value as the area name.

Figure 6-3   Editing the area

Configuring the device (optional)

If the initial device-related settings do not meet the actual requirements, you can modify them through device configuration. In addition, if the underlying of the RDU that has been added to the monitoring function changes (some devices are added or removed), you can use the RDU configuration synchronization function of the RDU management module to synchronize the latest RDU configuration. For specific operations, see the device configuration part in section *6.3.2*.
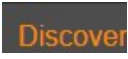
Managing the area (optional)
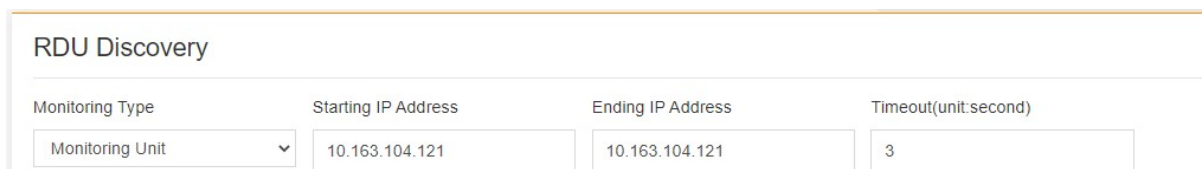
If the structure of the area tree does not meet the actual requirements, you can customize the area tree in the area management module. For specific operations, see section *6.3.3* "*Configuring, Sharing, and Deleting a Widget*."

6.3   Specific Functions

6.3.1   Search

Entering the search page

On Smart InfraSight client, click [wrench icon]. By default, the system selects the [Discover] page, where you can search for the device, as shown in Figure 6-4.

Figure 6-4   RDU Discovery page

Search function

1. Select **Monitoring Type**, enter **Starting IP Address**, **Ending IP Address**, and **Timeout**, and click **SEARCH**. The system search for the corresponding RDU based on the specified conditions.

2. During the search process (as shown in Figure 6-5), the **SEARCH** button is always unavailable. The **Discovery Result** page displays the first three IP records in the search area. By default, the latest search condition is displayed in the search condition box. If you click the record bar, the system automatically fills the record content to the **Monitoring Type**, **Starting IP Address**, **Ending IP Address**, and **Timeout** boxes.

Figure 6-5   Searching

3. After the search is completed, the **SEARCH** button becomes available. The list of discovered RDUs is displayed on the **Discovery Result** page, as shown in Figure 6-6. The search results include: The RDU is added to the monitoring

function, and the RDU is not added to the monitoring function. The discovery information can be expanded only for the RDU that is not added to the monitoring function. For the RDU that is added to the monitoring function, only the information about the current RDU is displayed. In addition, the system pops up the search result in the lower right corner of the page. If the search is successful (as shown in Figure 6-7), the prompt information automatically disappears in 5s. If the search is successful but no RDU is discovered (as shown in Figure 6-8), the prompt information also automatically disappears in 5s. If the search fails, the system describes the corresponding cause in the prompt information.
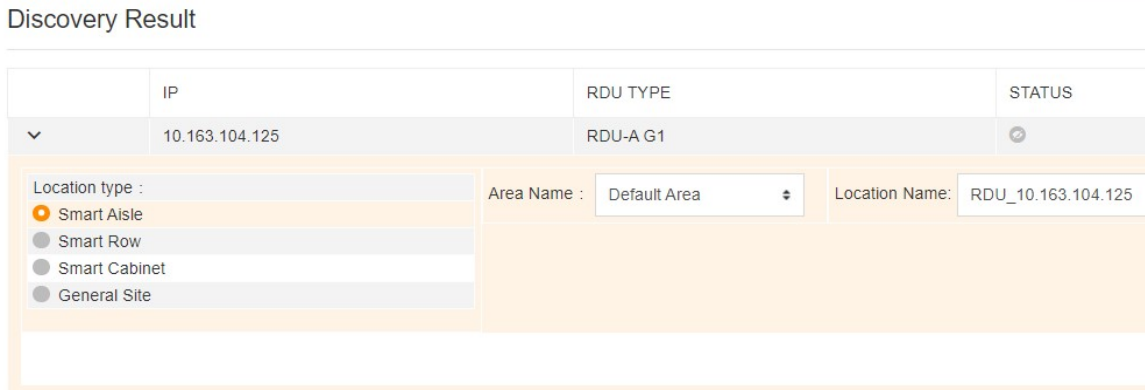
Figure 6-6   Search result
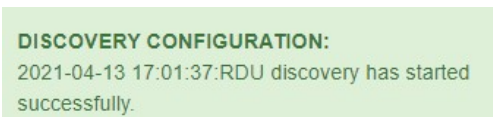
Figure 6-7   Prompt for a successful search operation

Figure 6-8   Prompt for no RDU discovered in the search

📖   **Note**

1. The start IP address must be smaller than the end IP address. Otherwise, the system does not allow the search operation.

2. The range of the start IP address and the end IP address cannot exceed 255. Otherwise, the system does not allow the search operation.

3. **Monitoring Type** must be selected. Otherwise, the system does not allow the search operation.

4. After you click the **SEARCH** button, it becomes unavailable. You need to wait until it becomes available to perform the next search operation.

5. The **Discovery Result** page displays the first three IP records in the search area. By default, the latest search condition is displayed in the search condition box.

Timeout

The following figure shows the timeout range for discovering the RDU IP field set on the back end. You can set the timeout range based on the actual network situations of the client. The timeout range is 2–300s. In the initial settings, **Timeout** is set to 3s.
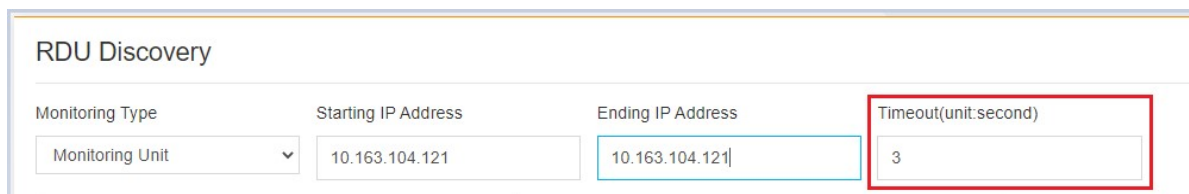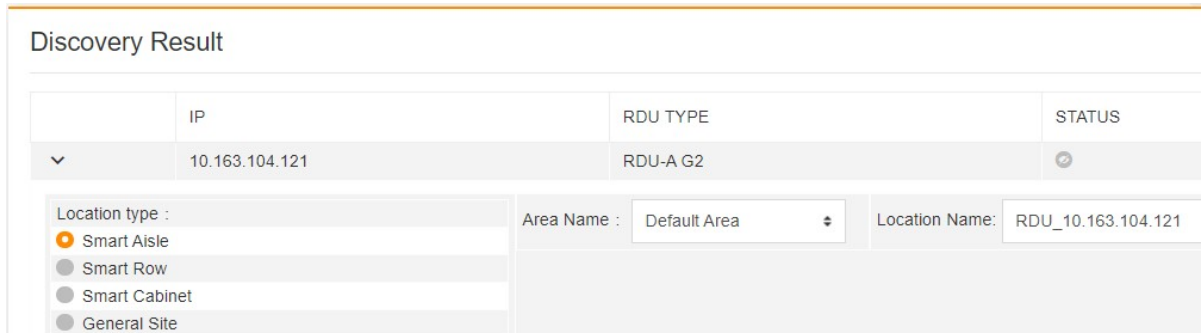
Figure 6-9   Setting Timeout

Adding the RDU to the monitoring function

1. After an RDU that is not added to the monitoring function is discovered, you can click **SAVE** on the **Discovery Result** page (as shown in Figure 6-10) to add the current RDU to the monitoring function. By default, the system sets **Location Type** of the current RDU to **Smart Aisle**, **Area Name** to **Default Area**, and **Location Name** to RDU_IP address of the RDU. After the edit, click **SAVE**. In this way, the system adds the current RDU to the monitoring function and associates the current RDU with the created site. For more information about editing the site, see the area management part of the manual.
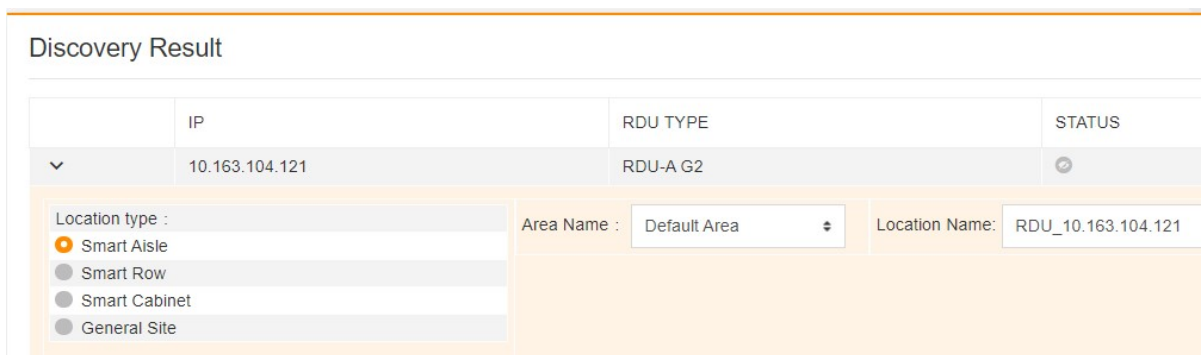
Figure 6-10   Specific search result operation

2. Click **SAVE**. The RDU is added to the monitoring function (as shown in Figure 6-11). The **SAVE** button becomes unavailable.
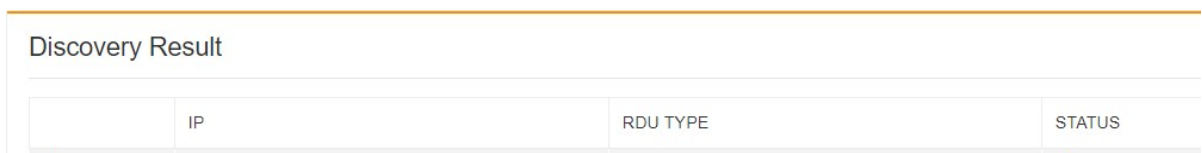
Figure 6-11   Adding the RDU to the monitoring function

3. After the RDU is added to the monitoring function, the system pops up prompt information in the lower right corner, indicating the adding result. If the RDU is successfully added to the monitoring function, the prompt information automatically disappears in 5s. If the RDU fails to be added to the monitoring function, the system describes the corresponding cause in the prompt information. In addition, the information about the RDU that is added to the monitoring function is folded on the **Discovery Result** page, and the status is updated to "added to the monitoring function". It is not allowed to expand the area row and add the RDU to the monitoring function repeatedly.

Figure 6-12   Added to the monitoring function

📖   **Note**

1. After the discovered RDU is added to the monitoring function, you cannot see the specific row of the associated site if you click **SEARCH** again. That is, the RDU cannot be added to the monitoring function repeatedly.

2. For the RDU that is not added to the monitoring function, if you click **SAVE**, the button becomes unavailable until the save operation is completed.

3. **Location Name** is mandatory. Otherwise, you cannot click **SAVE**.

4. **Location Name** must be unique within the entire center, including the area name.

5. **Location Name** must contain 3-64 characters.

6.3.2　Device Configuration

Entering the device configuration page

On Smart InfraSight client, click [icon]. Select Device Configura. The device configuration page is displayed, as shown in Figure 6-13.
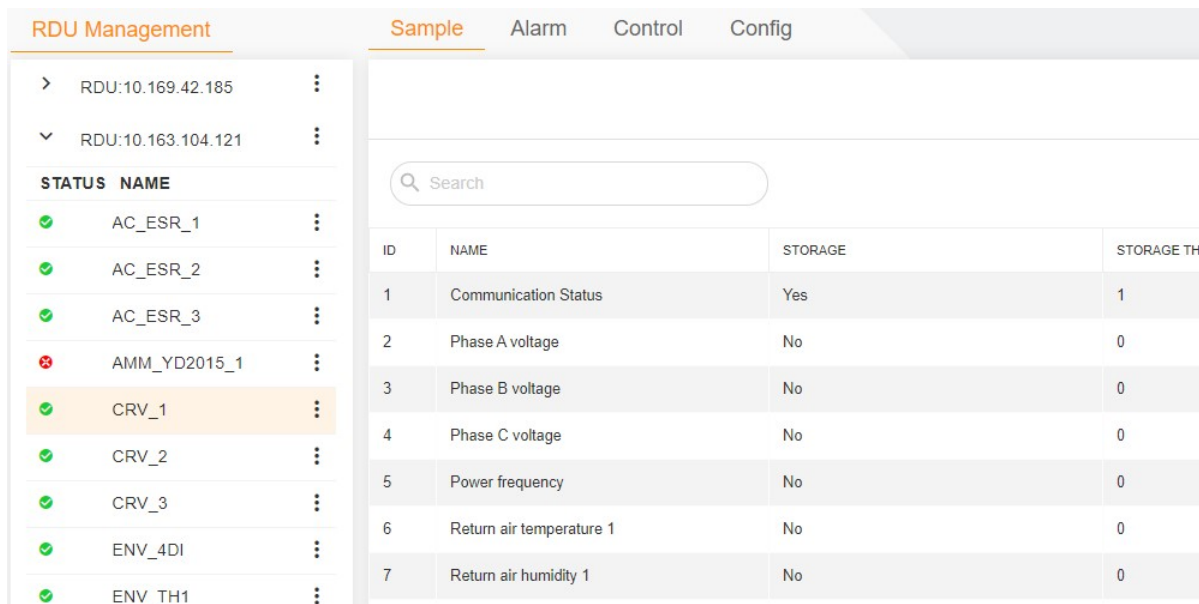
Figure 6-13　Device Configuration page

RDU Management

I. Synchronizing the RDU configuration

1. On the **RDU Management** page, select an RDU and click ↻. The current RDU configuration is synchronized with the underlying configuration, as shown in Figure 6-14.
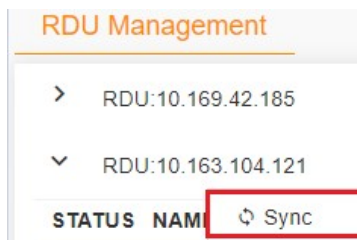
Figure 6-14　Synchronization button

2. Because the current RDU may be associated in 3D configuration or widget, the **Confirm Sync Configuration** dialog box is displayed after you click **Sync** (as shown in Figure 6-15). You can select **CONFIRM** or **CLOSE** based on actual situations. If you select **CLOSE**, the system does not synchronize the RDU configuration. If you select **CONFIRM**, the system starts to synchronize the RDU configuration.
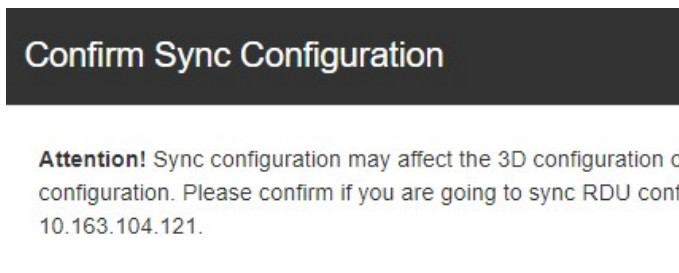
Figure 6-15　Confirm Sync Configuration dialog box

II. Folding and expanding the devices under the RDU

1. On the RDU list, you can click ＞ to fold the devices under RDU (as shown in Figure 6-16).

RDU Management

> ＞ RDU:10.169.42.185

> [＞] RDU:10.163.104.121
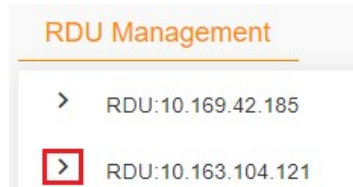
Figure 6-16   Effect of folded devices under the RDU

2. On the RDU list, you can click ＞ in the front of the RDU row to expand the devices under RDU (as shown in Figure 6-17).

RDU Management

> ＞ RDU:10.169.42.185

> ∨ RDU:10.163.104.121

STATUS	NAME
●	AC_ESR_1
●	AC_ESR_2
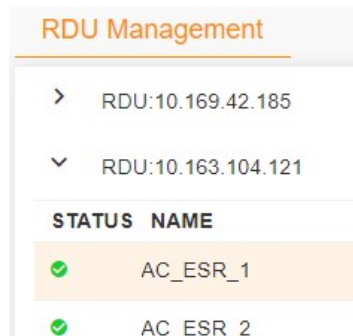
Figure 6-17   Effect of expanded devices under the RDU

III. Editing the device

1. Click ⋮ on the right side of any device under the RDU and select ✎ EDIT from the drop-down list (as shown in Figure 6-18).

RDU Management

> ＞ RDU:10.169.42.185

> ∨ RDU:10.163.104.121

STATUS	NAME
●	AC_ESR_1
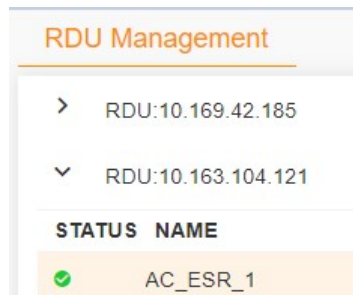
Figure 6-18   Editing the device

2. The **Device Configuration** page is displayed, showing **Device Name** and **Storage Strategy**. If you do not edit any content, the **SAVE** button remains unavailable (as shown in Figure 6-19).

Device Configuration

Device Name

AC_ESR_1

Storage Strategy(h) ❶

1

Figure 6-19   Device configuration not modified

3. If the input format is incorrect, the system displays prompt information below the edit box (as shown in Figure 6-20), and the **SAVE** button is unavailable.
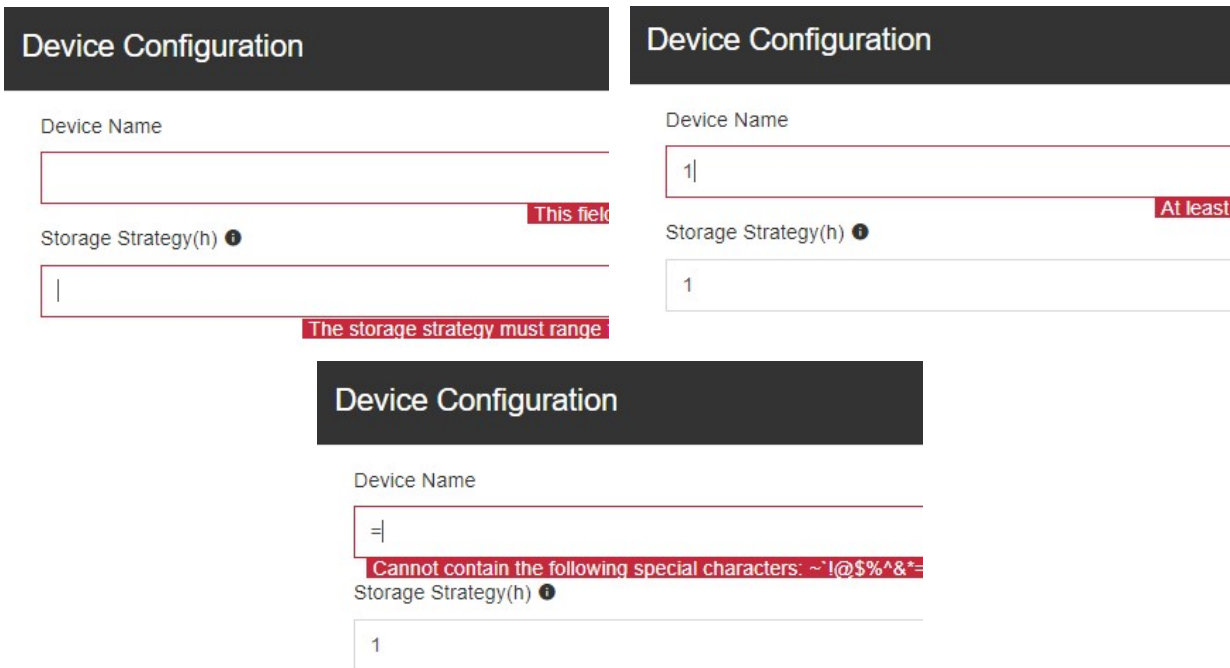
Figure 6-20   Incorrect input format

4. You can modify **Device Name** and **Storage Strategy**. At this time, the **SAVE** button becomes available (as shown in Figure 6-21). After modification, click **SAVE**.
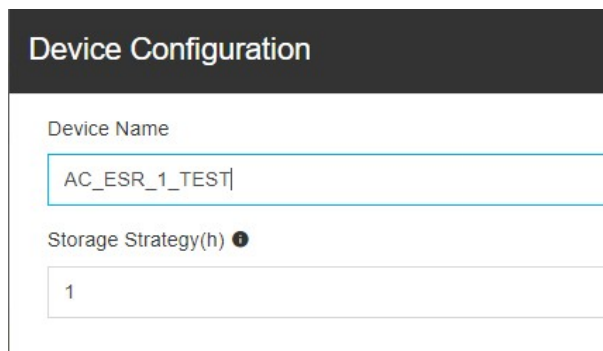
Figure 6-21   Modifying device configuration

📖   **Note**

1. **Device Name** should contain at least 3 characters.

2. In the edit window, you can click **SAVE** only after the information is modified.

Signal Association

I. Displaying the signal list

1. Click any device row under the RDU. The signal list of the device is displayed on the **Sample** tab page accordingly. When the **Device Configuration** page is loaded initially, the first device under the first RDU is selected by default (as shown in Figure 6-22).

Figure 6-22 Displaying the signal list

II. Fuzzy search by signal name

In the search box on the **Sample** tab page, enter the name of the signal you need to search quickly. The system filters out the corresponding signal immediately (as shown in Figure 6-23).

Figure 6-23 Fuzzy search of the signal

III. Editing the signal

1. Click ⋮ on the rightmost of the signal to be edited, and select ✎ EDIT (as shown in Figure 6-24).
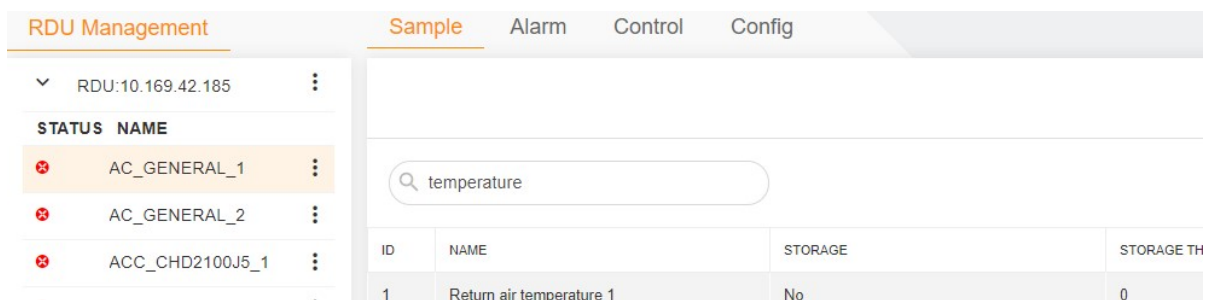
Figure 6-24 Editing the signal

2. The **Sample Configuration** page is displayed. If you do not make any modification, the **SAVE** button is unavailable. If you click **CLOSE**, the system exits the edit page.
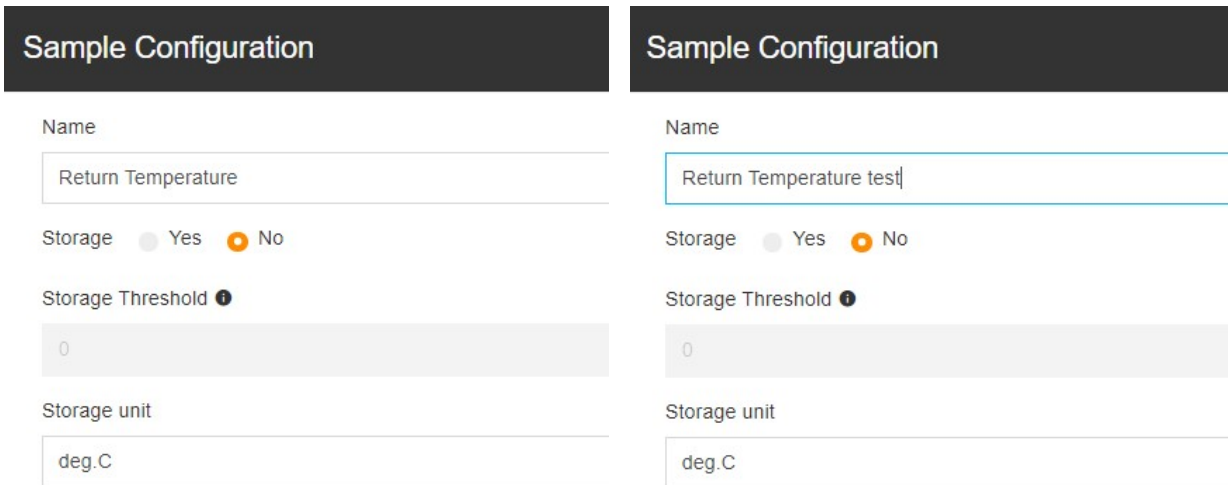
Figure 6-25   Sample Configuration

3. Edit **Name**, and click **SAVE**.

4. To modify **Storage Threshold**, select **Yes** for **Storage**. Set the storage threshold according to the actual situation. Click **SAVE**.
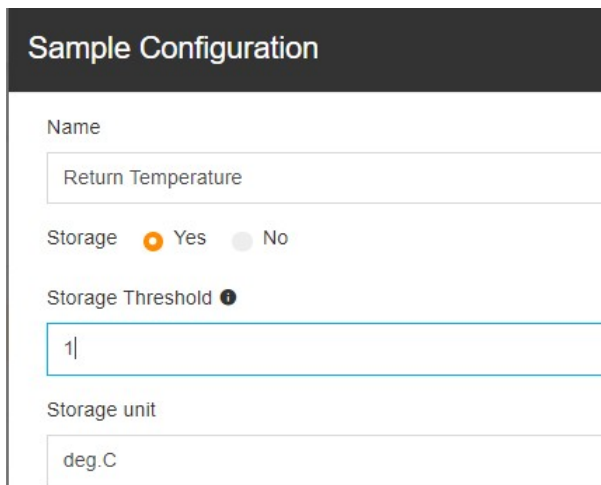
Figure 6-26   Sample Configuration - Modifying Storage Threshold

5. To modify **Storage unit**, select **Yes** for **Storage**. Set the storage unit according to the actual situation. Click **SAVE**.

    Note

1. **Name** should contain at least 1 character.

2. In the edit window, you can click **SAVE** only after the information is modified.

Alarm Configuration

I. Displaying the alarm list

1. Click any device row under the RDU. The alarm list of the device is displayed on the **Alarm** tab page accordingly. When the **Device Configuration** page is loaded initially, the first device under the first RDU is selected by default (as shown in Figure 6-27).

Figure 6-27   Displaying the alarm list

II. Fuzzy search by alarm name

In the search box on the **Alarm** tab page, enter the name of the alarm you need to search quickly. The system filters out the corresponding alarm (as shown in Figure 6-28).
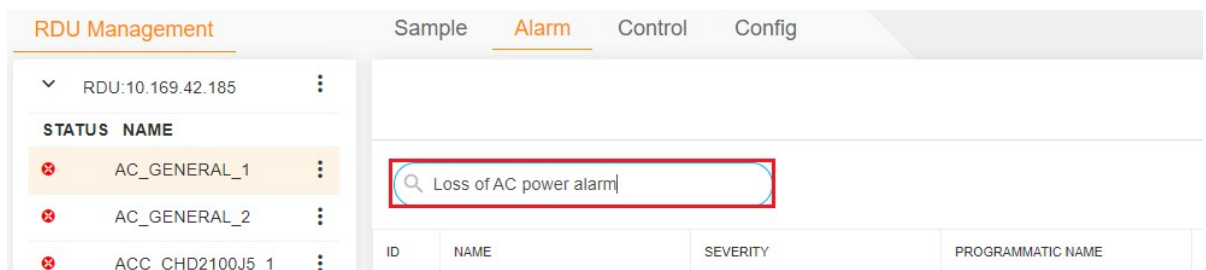
Figure 6-28   Fuzzy search of the alarm

III. Editing the alarm

1. Click ⋮ on the rightmost of the alarm to be edited, and select **EDIT** (as shown in Figure 6-29).
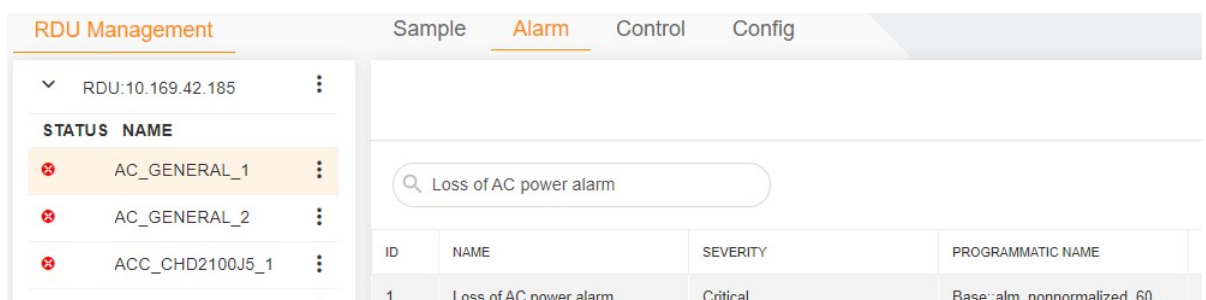
Figure 6-29   Editing the alarm

2. The **Alarm Configuration** page is displayed. If you do not make any modification, the **SAVE** button is unavailable. If you click **CLOSE**, the system exits the edit page (as shown in Figure 6-30).
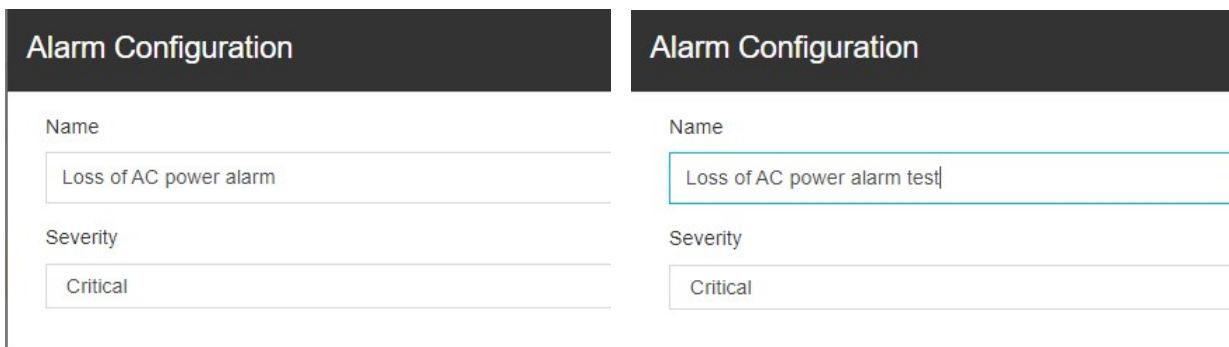
Figure 6-30   Alarm Configuration

3. Edit **Name** and **Severity**, and click **SAVE**.

☞   **Note**

1. **Name** should contain at least 1 character.

2. In the edit window, you can click **SAVE** only after the information is modified.

Control Configuration

I. Displaying the control list

Click any device row under the RDU. The control list of the device is displayed on the **Control** tab page accordingly. When the **Device Configuration** page is loaded initially, the first device under the first RDU is selected by default (as shown in Figure 6-31).
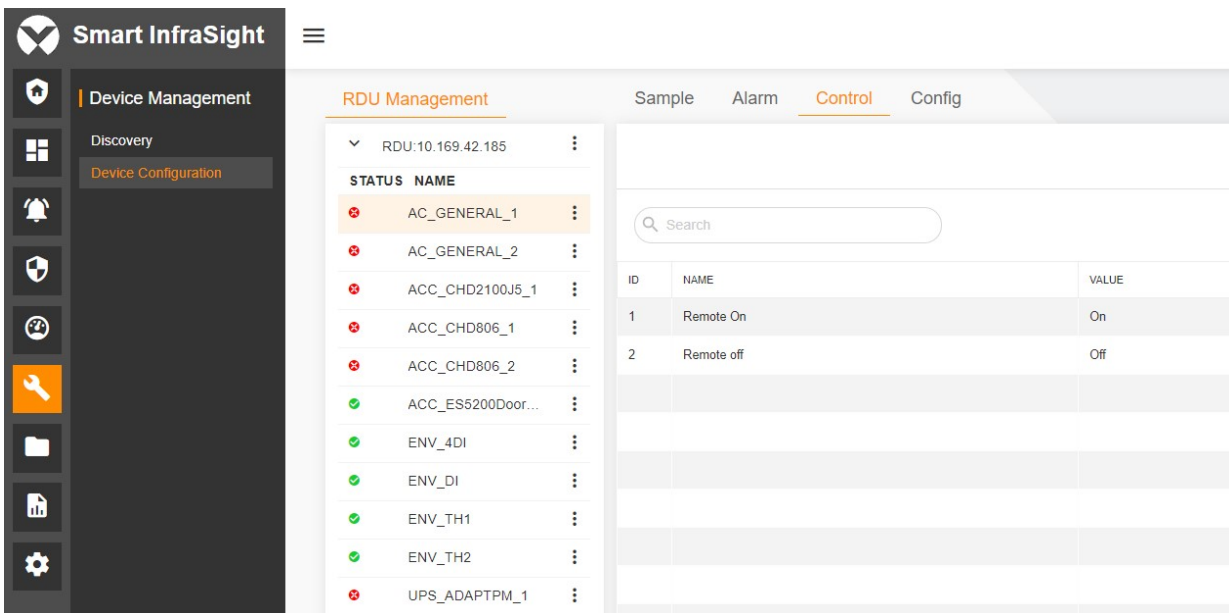
Figure 6-31   Displaying the control list

II. Fuzzy search by control name

In the search box on the **Control** tab page, enter the name of the control you need to search quickly. The system filters out the corresponding control (as shown in Figure 6-32).
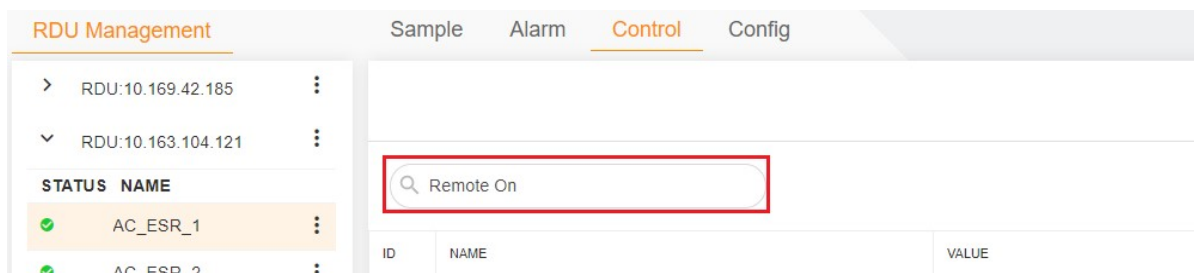
Figure 6-32   Fuzzy search by control

III. Editing the control

1. Click ⋮ on the rightmost of the control to be edited, and select **EDIT** (as shown in Figure 6-33).
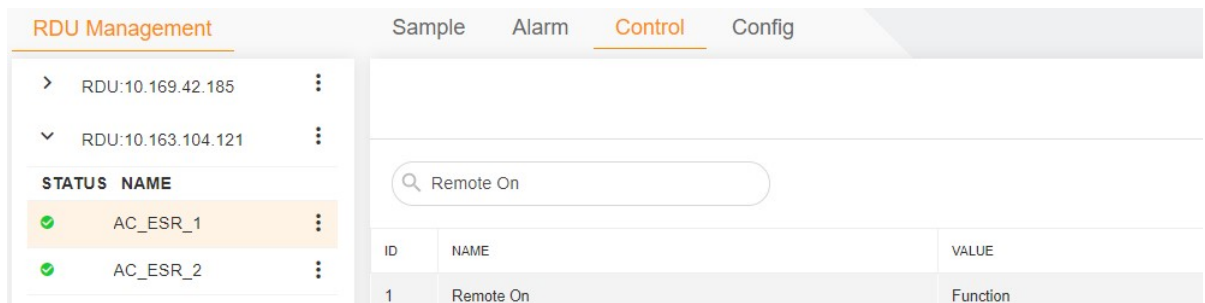
Figure 6-33　Control page

2. The **Control Configuration** page is displayed. If you do not make any modification, the **SAVE** button is unavailable. If you click **CLOSE**, the system exits the edit page (as shown in Figure 6-34).
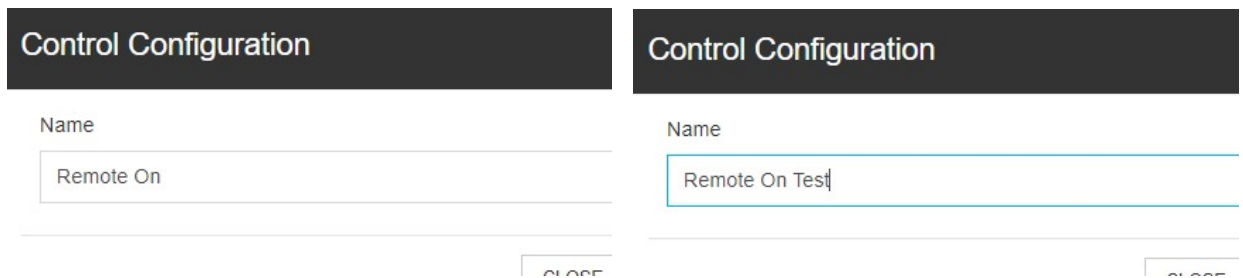
Figure 6-34　Control edit page

3. Edit **Name** and click **SAVE**.

📖　　**Note**

1. **Name** should contain at least 1 character.

2. In the edit window, you can click **SAVE** only after the information is modified.

Config Configuration

I. Displaying the configuration list

1. Click any device row under the RDU. The configuration list of the device is displayed on the **Config** tab page accordingly. When the **Device Configuration** page is loaded initially, the first device under the first RDU is selected by default (as shown in Figure 6-35).
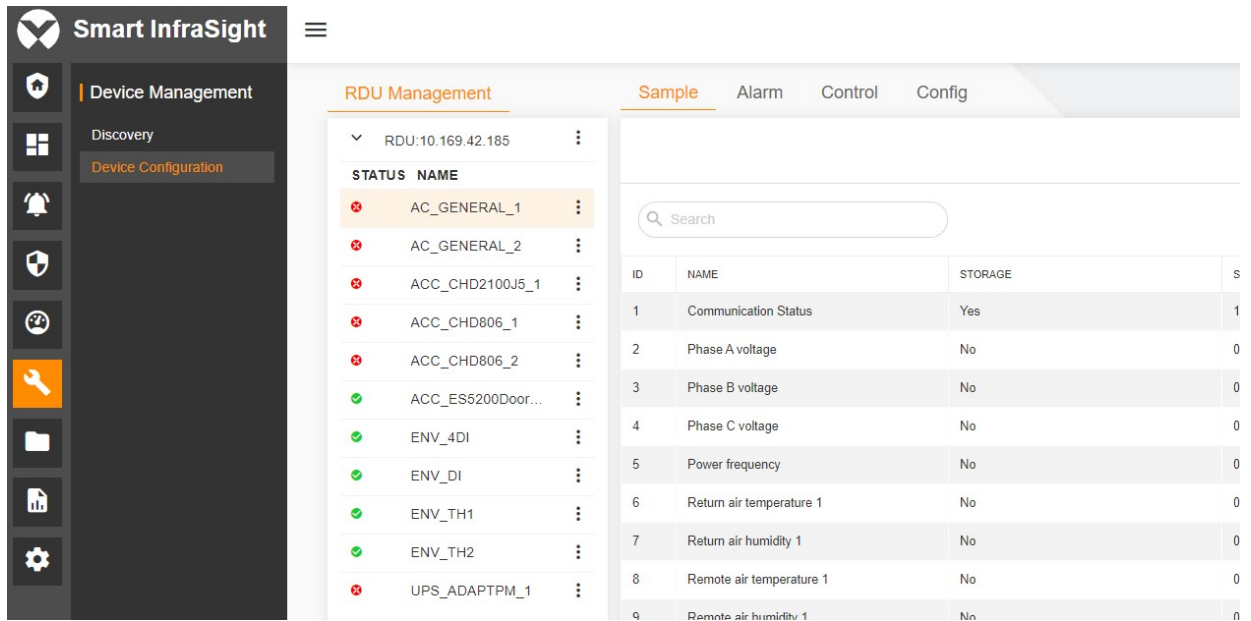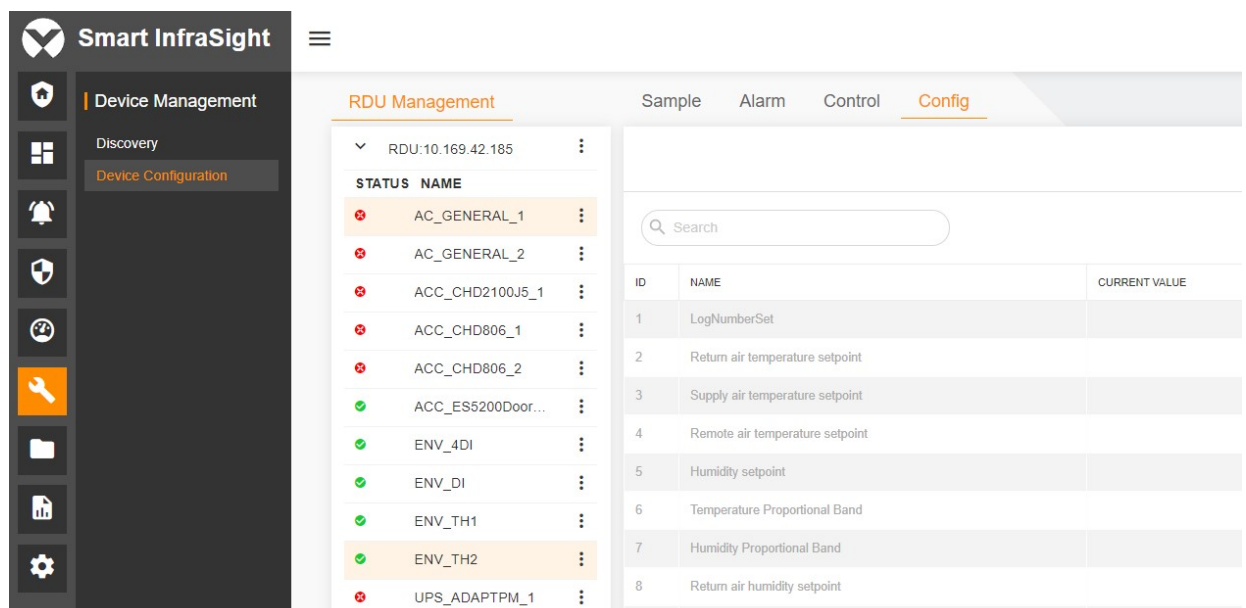

Figure 6-35　Displaying the configuration list

II. Fuzzy search by configuration name

In the search box on the **Config** tab page, enter the name of the configuration you need to search quickly. The system filters out the corresponding configuration, as shown in Figure 6-36.
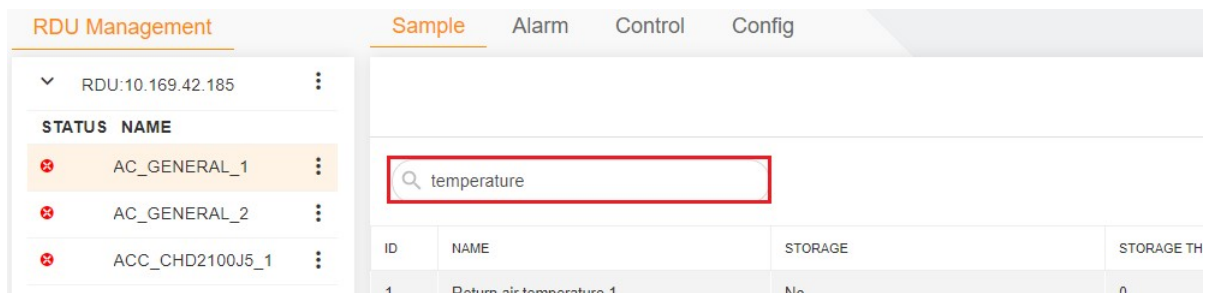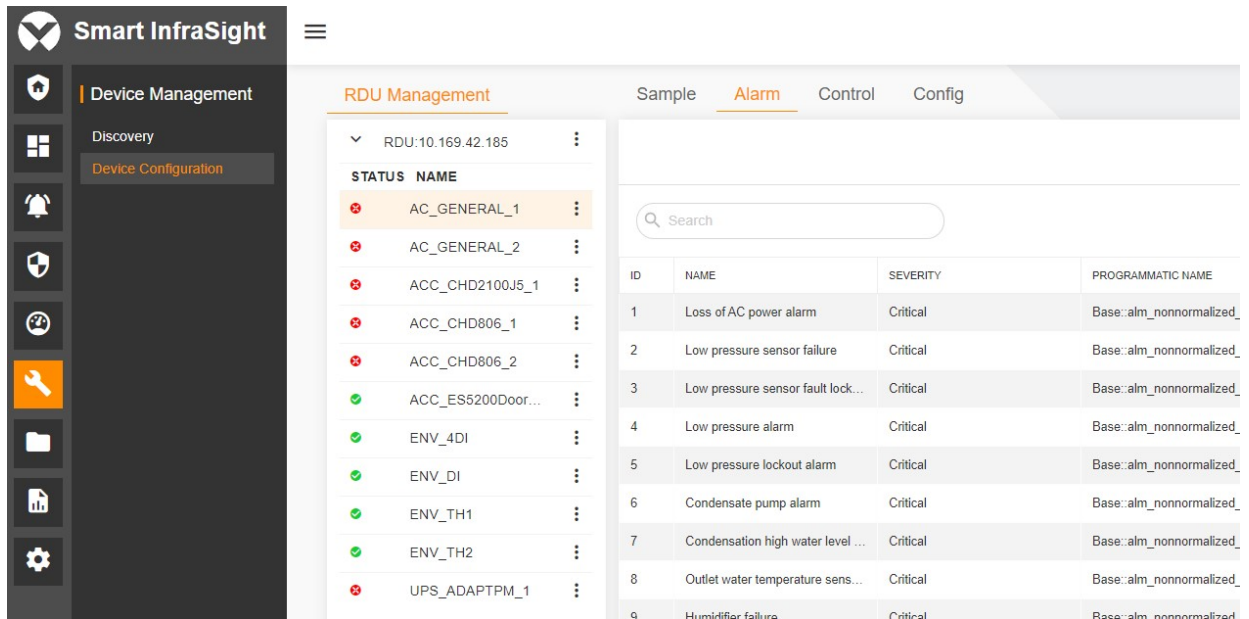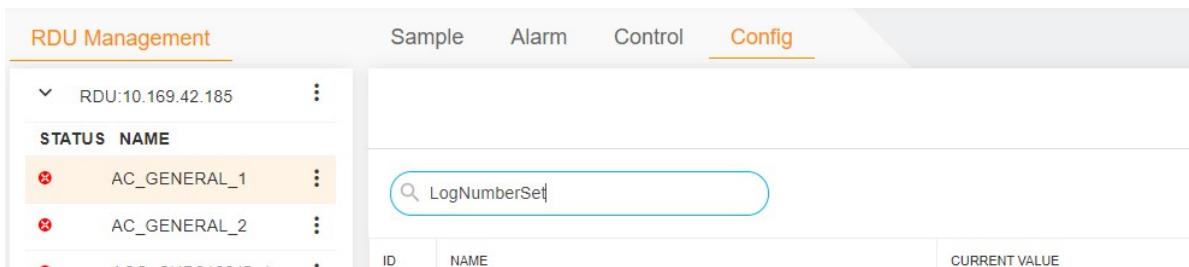

Figure 6-36   Fuzzy search by configuration

III. Editing the configuration

1. Click ⋮ on the rightmost of the configuration to be edited, and select **EDIT**, as shown in Figure 6-37.
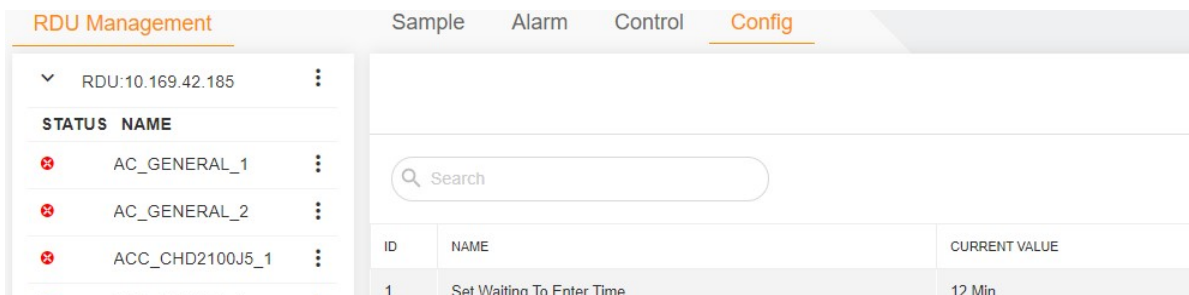
Figure 6-37   Editing the configuration

2. The **Configuration** page is displayed. If you do not make any modification, the **SAVE** button is unavailable. If you click **CLOSE**, the system exits the edit page (as shown in Figure 6-38).
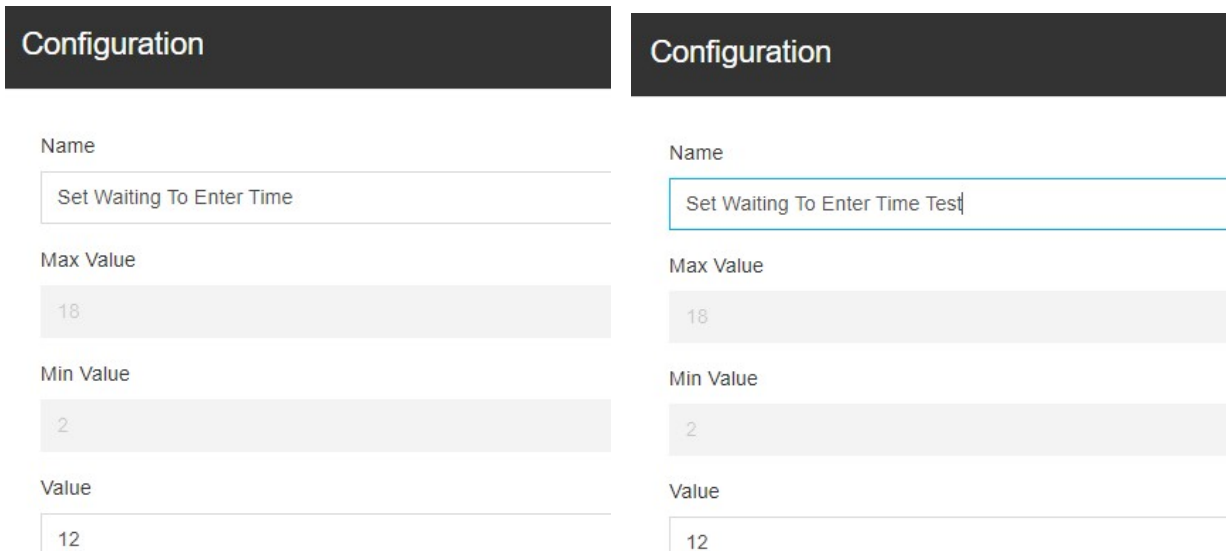
Figure 6-38   Editing the configuration

3. Edit **Name** and values, and click **SAVE**.

📖   **Note**

1. **Name** should contain at least 1 character.

2. In the edit window, you can click **SAVE** only after the information is modified.

Chapter 7   Alarm

7.1   Overview

7.1.1   Overview

The Alarms module is the major functional module for the entire Smart InfraSight platform to monitor alarms and obtain alarm information. You can obtain current and historical alarms lists in the Alarms module, and export the alarm lists. In this way, you can master the alarm situations of devices under the specific site.

7.1.2   Functional Module

The Alarms module contains the following functional modules. For more information about the functional modules, see section *5.3 "Specific Functions."*

- Active Alarms
- Alarm History

7.2   Quick Start

7.2.1   Quick Deployment Procedure
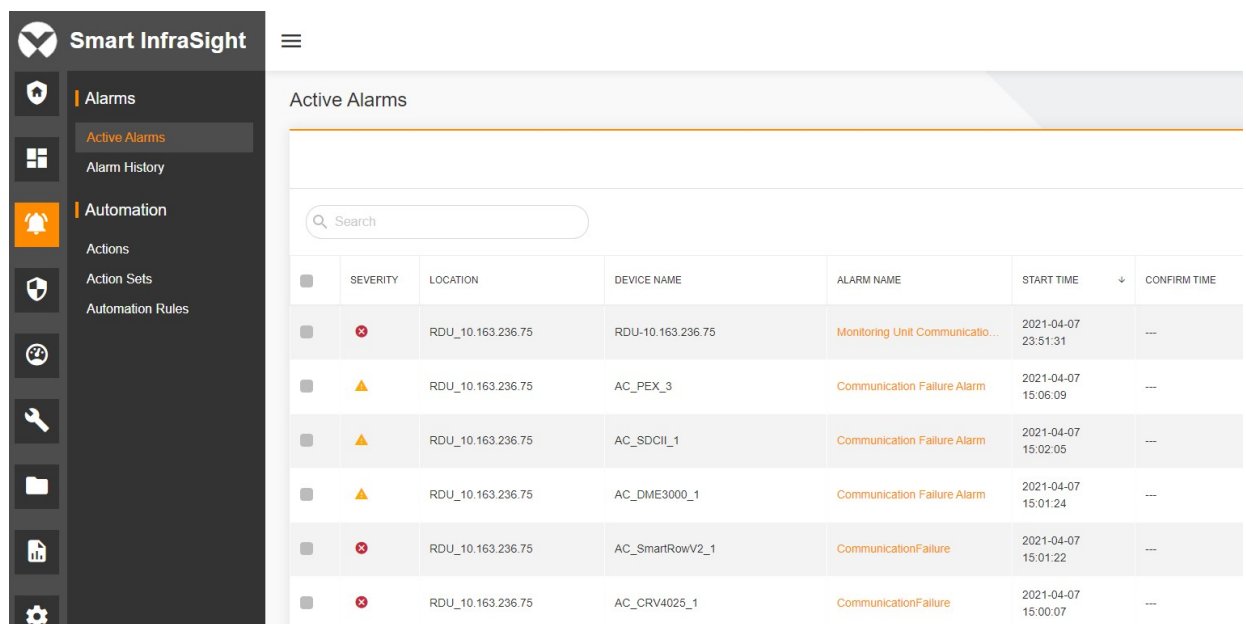
To ensure that the alarm information can be displayed, perform the following steps:

[1] View the active alarm list.

[2] View the historical alarm list.

7.2.2   Example

Active Alarms

When you click **Alarms**, the **Active Alarms** page is displayed by default. The alarm list contains **SEVERITY**, **LOCATION**, **START TIME**, **DEVICE NAME**, **ALARM NAME**, **CONFIRM TIME**, and **AMOUNT OF NOTES**.

Figure 7-1   Active Alarms

Viewing alarm details

On the **Active Alarms** or **Alarm History** page, you can click the button on the right side of an alarm row and click **View details**.
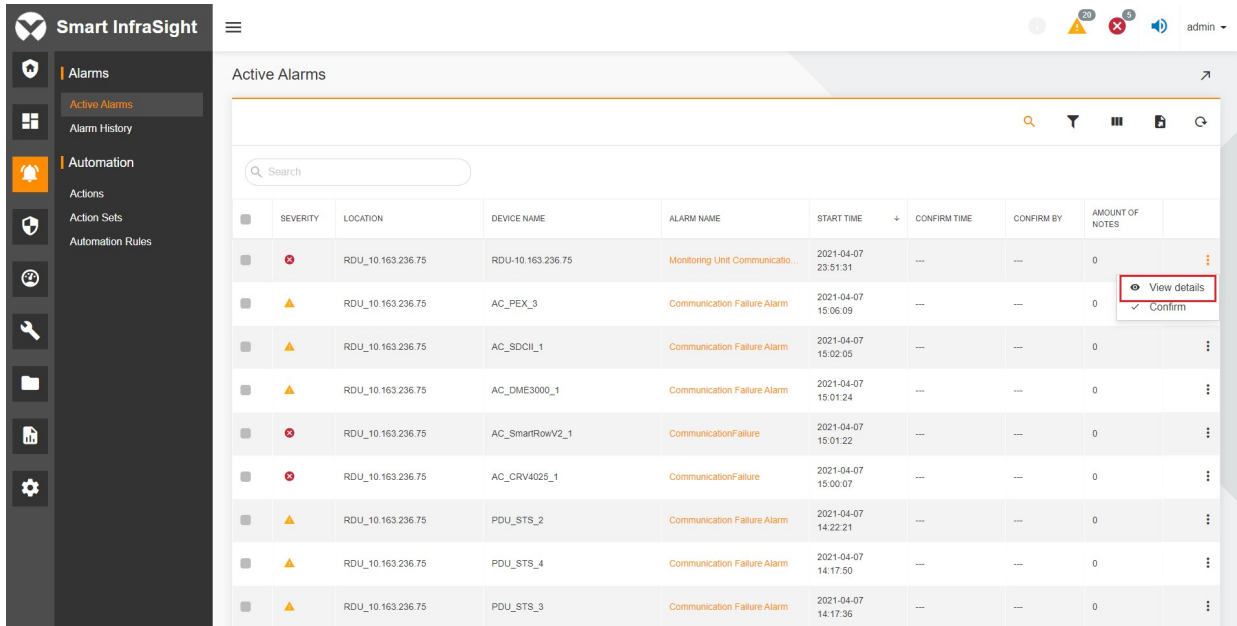
Figure 7-2 Viewing alarm details

Exporting alarms

On the alarm list page, click the button in the upper right corner. Enter the name of file to be exported. Select the type, date, and severity of the alarm as well as the field to be exported. Click **SAVE**.

Figure 7-3 Exporting alarms

If the alarm file is successfully exported, the system prompts for the successful export in the lower right corner.
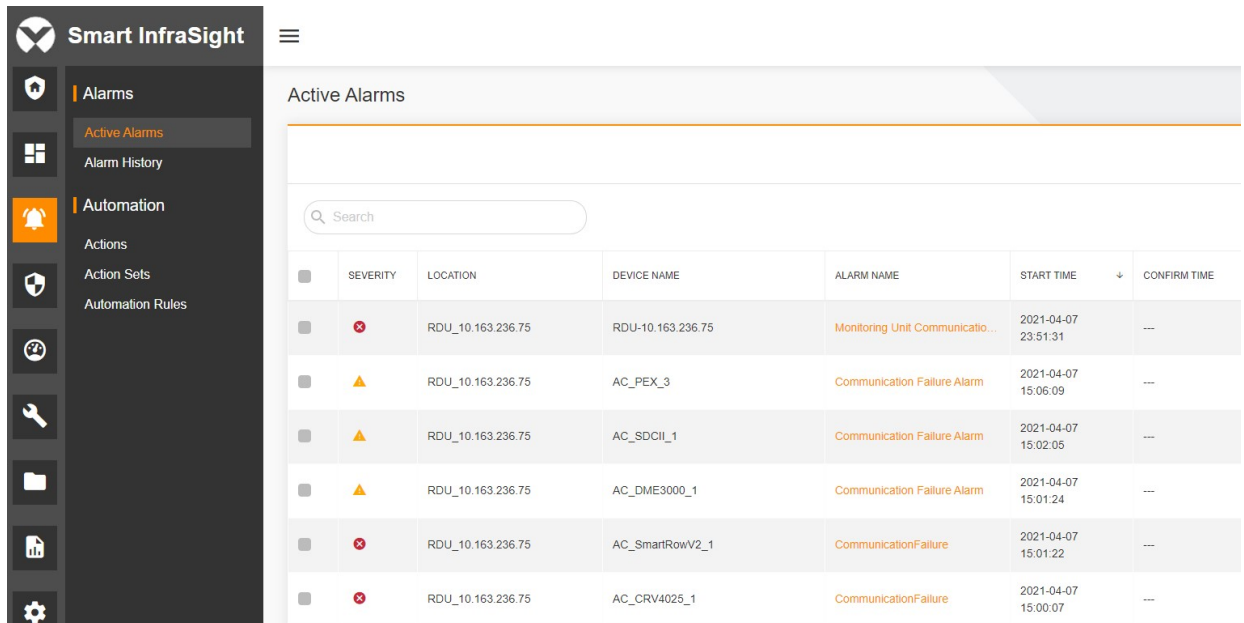
Figure 7-4 Prompt for the successful export

7.3 Specific Functions

7.3.1 Active Alarms

When you click [bell icon] in the Alarms module, the **Active Alarms** page is displayed by default. The alarm list contains **SEVERITY**, **LOCATION**, **START TIME**, **DEVICE NAME**, **ALARM NAME**, **CONFIRM TIME**, and **AMOUNT OF NOTES**.

Figure 7-5   Active Alarms

📖   **Note**

1. If an alarm is not found, the list displays "No Alarms".

2. In the table, the search button 🔍 is orange and the search box is displayed by default. After you click the **search** button 🔍, the search button becomes black, and the search box is hidden. The system saves the last state of the search button.

7.3.2 Alarm History

In the Alarms module, choose [bell icon] → Alarm History. The system displays the historical alarm list. The list displays **SEVERITY**, **LOCATION**, **DEVICE NAME**, **ALARM NAME**, **START TIME**, **CLEARED TIME**, **DURATION**, **CONFIRM TIME**, **CONFIRM BY**, and **AMOUNT OF NOTES**.
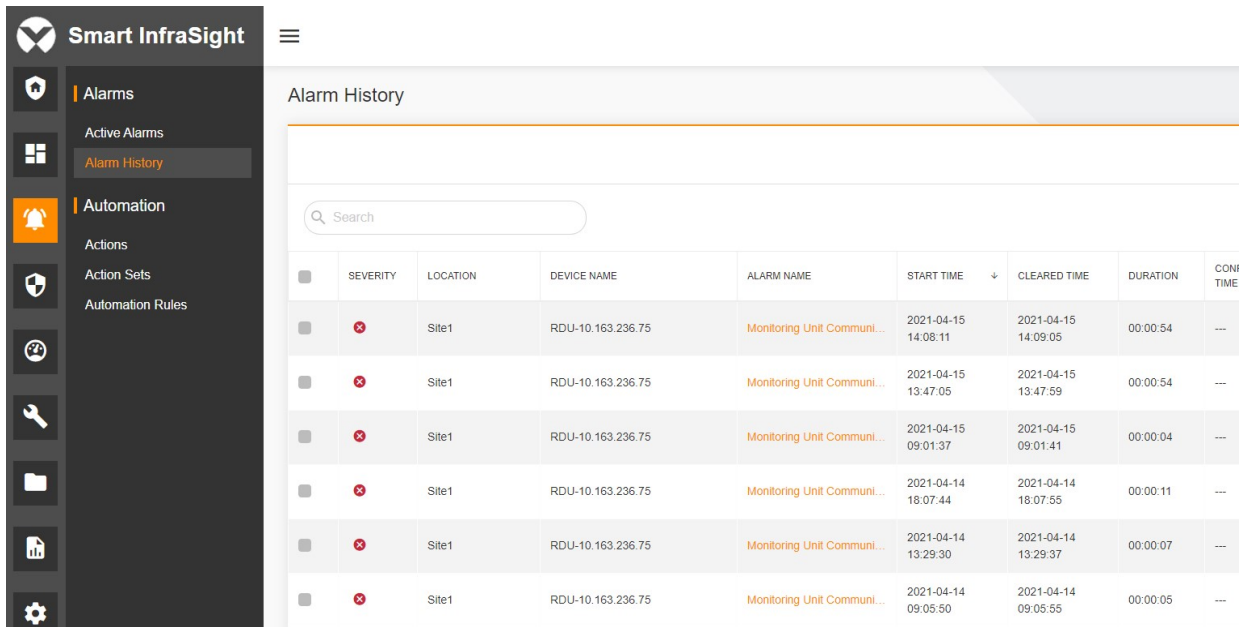
Figure 7-6   Alarm History

📖   **Note**

1. If an alarm is not found, the list displays "No Alarms".

2. In the table, the search button 🔍 is orange and the search box is displayed by default. After you click the search button 🔍, the search button becomes black, and the search box is hidden. The system saves the last state of the search button.

7.3.3 Viewing alarm details

You can view alarm details in two ways.

1. On the **Active Alarms** or **Alarm History** page, you can click the ⋮ button on the right side of an alarm row and click **View details**.

2. Alternatively, in the left check box, select an alarm. The system displays "1 Row Selected" above the search box. Click 👁 on the right side of the page to view details.
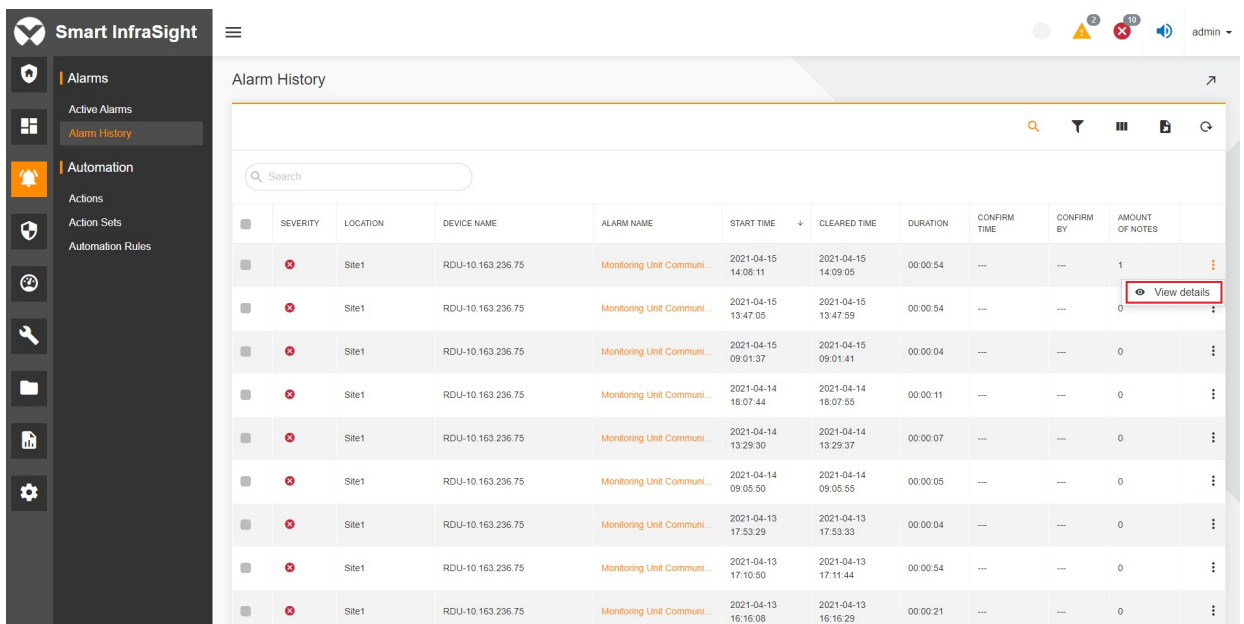
Figure 7-7   Viewing alarm details (1)
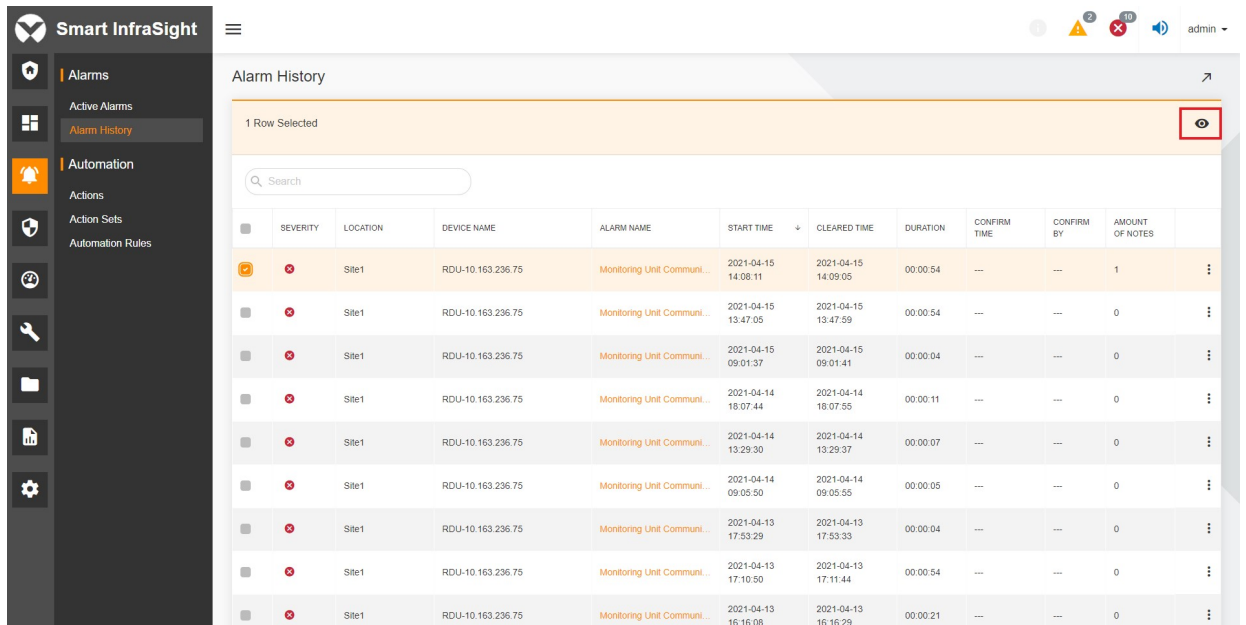
Figure 7-8　Viewing alarm details (2)

In addition to the properties displayed on the alarm list, the **Alarm Details** page also displays **Notes**, **Action History**, and **Status Record**.

7.3.4　Notes

On the **Alarm Details** page, click the **Notes** tab in the lower part. In the input box, enter the related notes, and click **ADD NOTE**. The successfully added note is displayed on the note list in the lower part. Click ✏ to edit the note or 🗑 to delete the note.
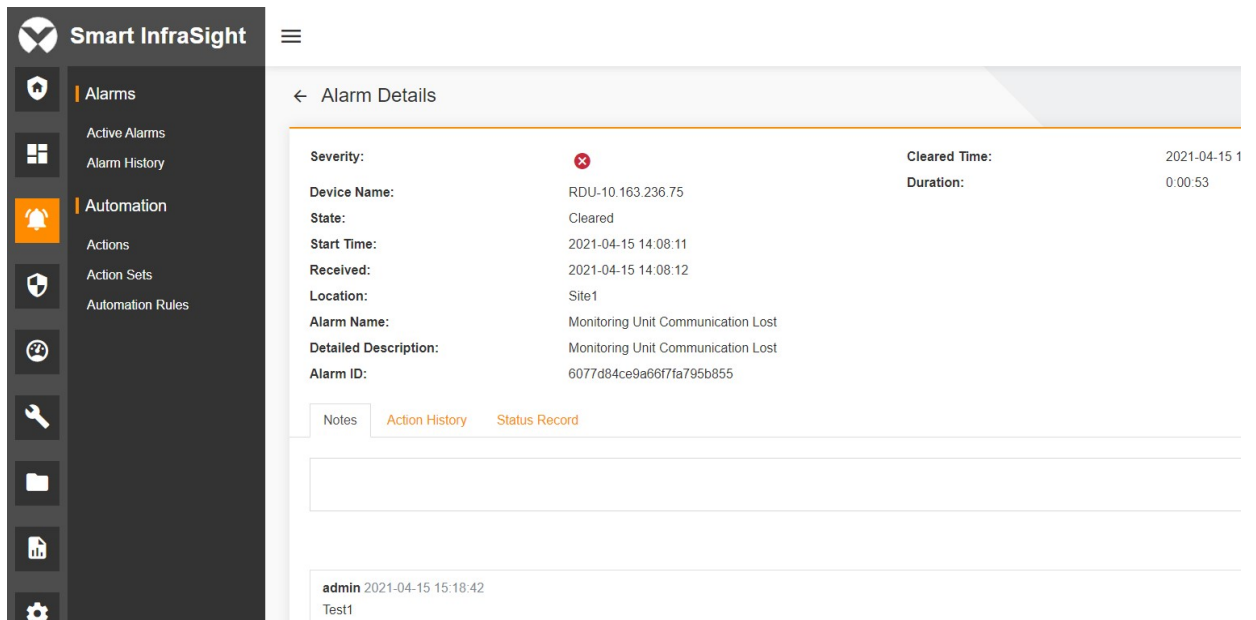
Figure 7-9　Adding a note

7.3.5　Action History

On the **Alarm Details** page, click the **Action History** tab in the lower part. The tab page displays a notification, indicating that the alarm is configured.
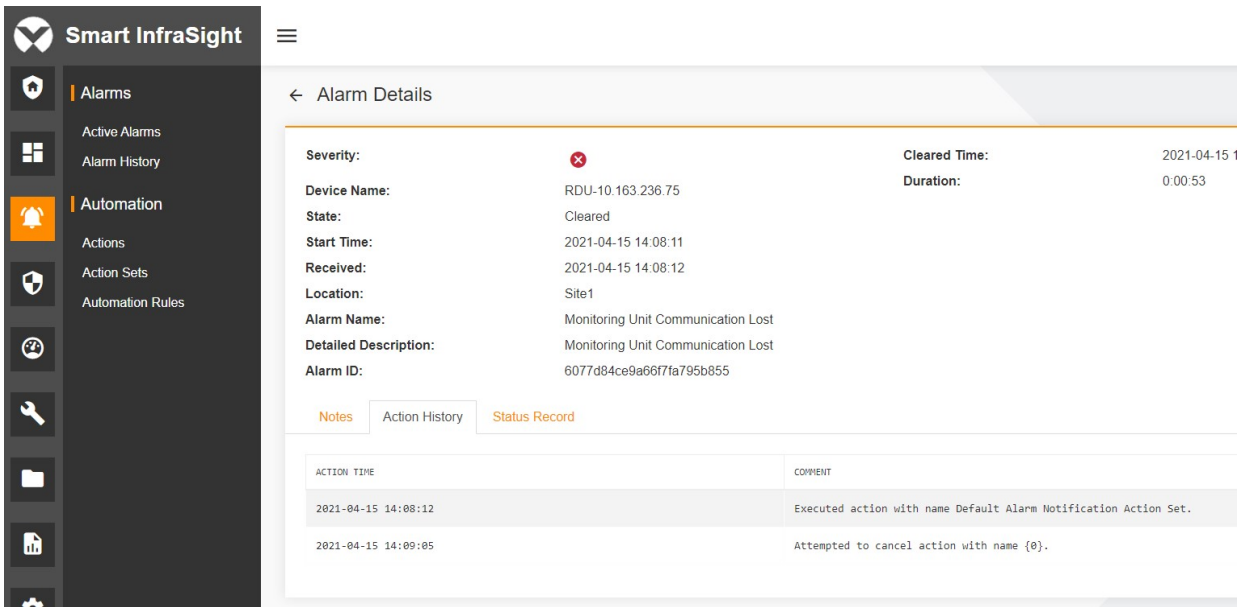
Figure 7-10   Viewing action history

7.3.6 Status Record

On the **Alarm Details** page, click the **Status Record** tab in the lower part. The tab page displays the alarm status record (alarm generation time and alarm clearance time).
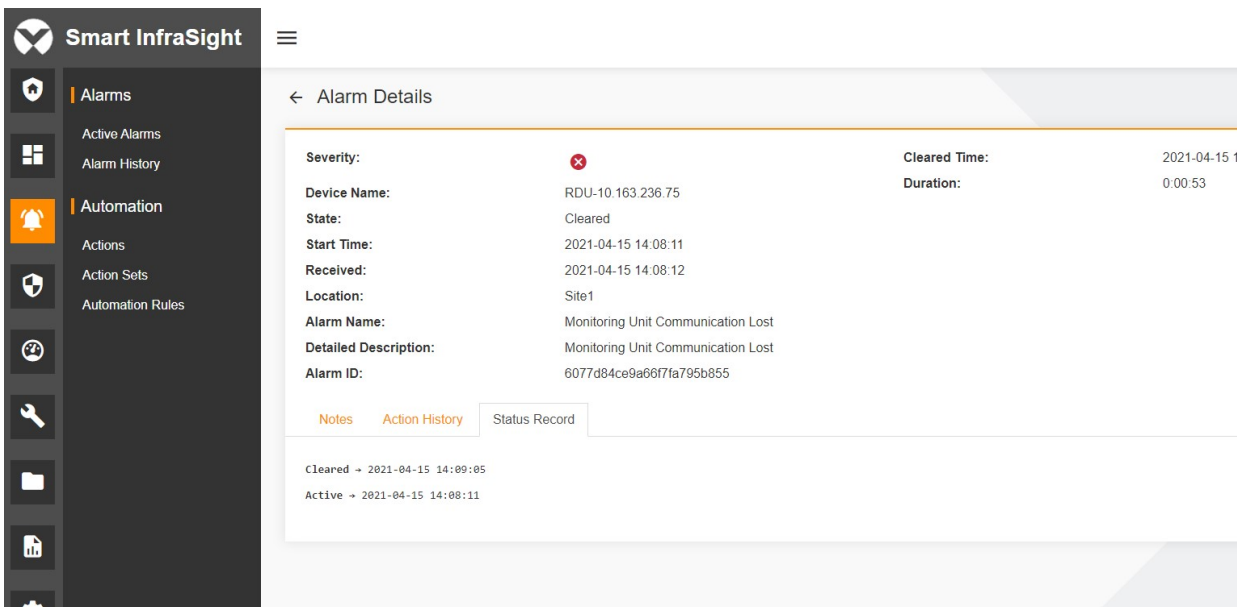
Figure 7-11   Viewing status record

7.3.7 Exporting alarms

On the alarm list page, click 📄 in the upper right corner. Enter the name of file to be exported. Select the type, date, and severity of the alarm as well as the field to be exported. Click **SAVE**.
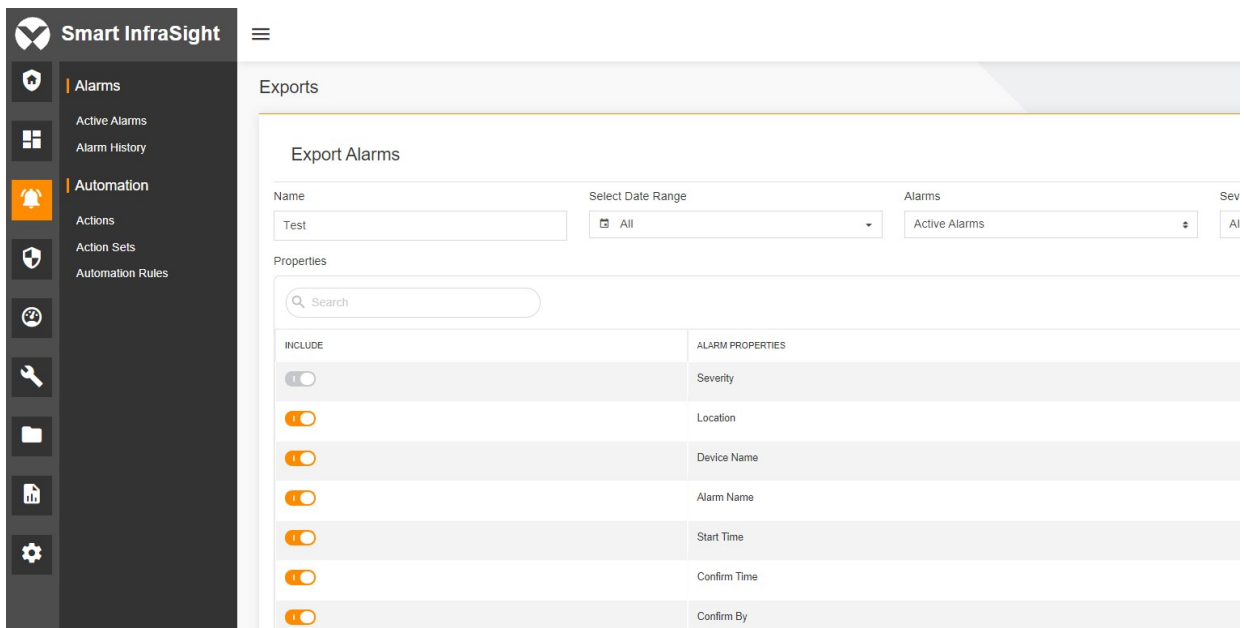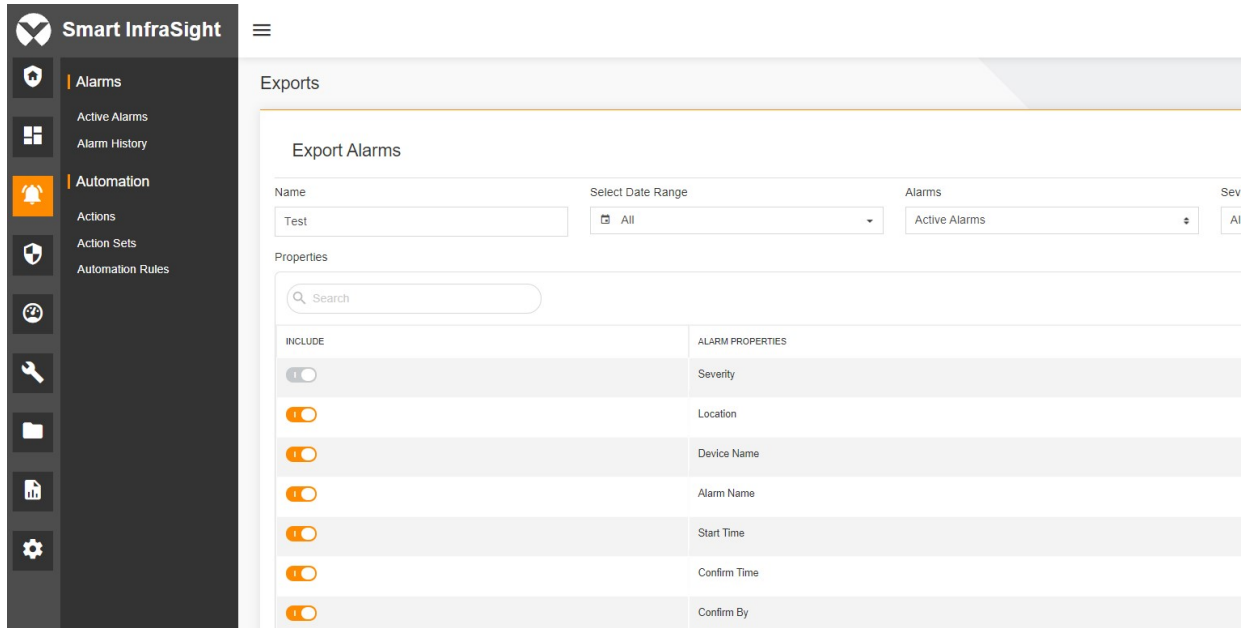
Figure 7-12   Exporting alarms

After you click **SAVE**, the system prompts "Generating" in the lower right corner.

Figure 7-13   Exporting alarms

If the alarm file is successfully exported, the system prompts for the successful export in the lower right corner.

Figure 7-14   Prompt for the successful export

After the file is successfully exported, you can click **VIEW EXPORTS** to view alarm export record.

Figure 7-15   Viewing alarm export record

On the **Alarm Exports** page, you can download the record table.
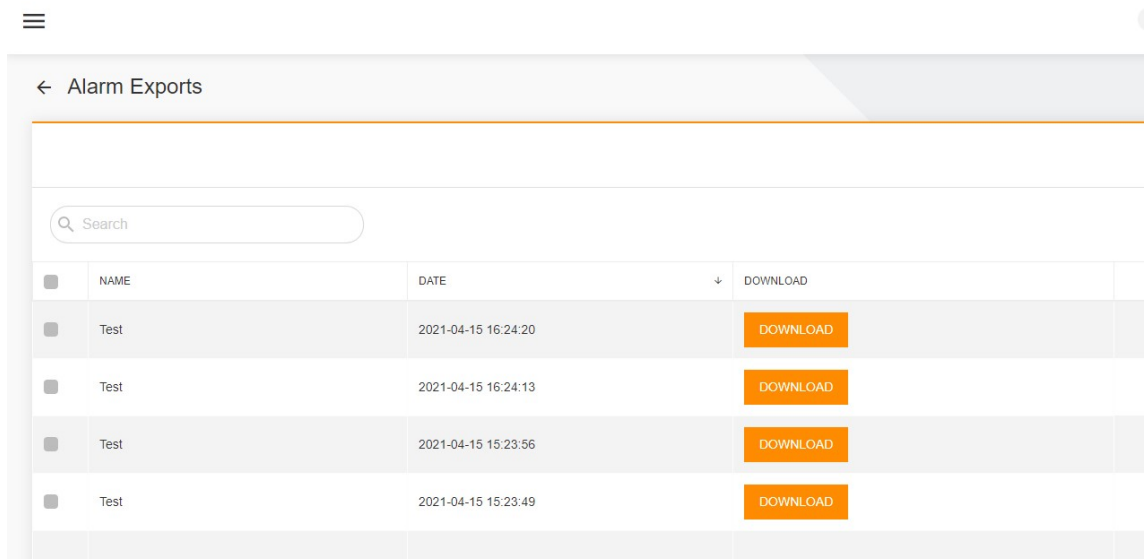
Figure 7-16   Downloading the exported alarm excel file

Chapter 8   3D Configuration

8.1   Overview

This chapter mainly describes how to make the corresponding 3D configuration for the 3D module of the Smart Aisle site or general site or area, such as the functions of adding a device, modification, deletion, preview, and saving.

8.2   Quick Start

8.2.1   Quick Deployment Procedure

To quickly configure a 3D Smart Aisle site, perform the following steps:

[1]   Open the SI system. Click ⋮ of a site on the monitoring tree, and select **3D Configuration.**

[2]   The left part of the opened view is a shapes list, which contains the rack, UPS, and other devices.

[3]   Drag and drop the device from the left side to the canvas on the right side to add a device to a site.

[4]   In the upper right corner, adjust the length (unit: meter) of the Smart Aisle site according to actual needs.

[5]   Click the preview button to preview the 3D appearance of the Smart Aisle site.

[6]   Click **Save** to save the 3D configuration of the Smart Aisle site.

To quickly configure a 3D general site, perform the following steps:

[1]   Open the SI system. Click ⋮ of a site on the monitoring tree, and select **3D Configuration.**

[2]   The left part of the opened view is a shapes list, which contains UPS, air conditioner and other devices.

[3]   Drag and drop the device can from the left side to the canvas on the right side to add a device to a site.

[4]   Adjust length and width (unit: meter) of the general site according to actual needs.

[5]   Click the preview button to preview the 3D appearance of the general site.

[6]   Click **Save** to save the 3D configuration of the general site.

To quickly configure a 3D area, perform the following steps:

[1]   Open the SI system. Click ⋮ of an area on the monitoring tree, and select **3D Configuration.**

[2]   The left part of the opened view is a shapes list, which contains site information and graphic tools.

[3]   Drag and drop horizontal wall and vertical wall as needed to the canvas on the right side.

[4]   Click the wall and use the mouse to adjust the length of the wall on the up and down/left and right sides.

[5]   Adjust length and width (unit: meter) of the area appropriately.

[6]   Click the preview button to preview the 3D appearance of the area.

[7]   Click **SAVE**.

To quickly configure a rack, perform the following steps:

[1]   Open the system and click ⋮ of the Smart Aisle room or general site room to display the configuration menu. Enter the 3D configuration module.

[2]   If there is no rack in the site (on the left shapes list), you need to add a rack. Click ⊕ and select the rack.

[3]   Set the asset name, asset code, asset template, width, and other parameters of the rack. Click Save to completely add the rack.

[4]   Drag and drop the rack to the canvas on the right side. Double-click the rack to enter the rack configuration page (the system prompts whether to save the current rack before entering the configuration canvas).

[5]   After entering the rack configuration, drag and drop the server, PDU, temperature and humidity sensor, server, and switch on the left shapes list to the corresponding positions on the right part.

[6]   If the shapes list does not have the above devices, click **Add** to add the devices. The process of adding devices is similar to the process of adding racks. You must set the asset name, asset code and other parameters. After setting the parameters, add the devices to the left shapes list.

[7]   After the configuration is completed, click **SAVE**.

To quickly configure a PDU, perform the following steps:

[1]   Open the system and click   of the Smart Aisle room or general site room to display the configuration menu. Enter the 3D configuration module.

[2]   Drag and drop a PDU to the site (if the PDU does not exist on the shapes list, click   to add the device. The parameter configuration process is the same as that of the rack configuration).

[3]   Double-click a PDU to enter the PDU configuration page.

[4]   You can drag and drop the PDU on the left shapes list to the corresponding position on the power distribution cabinet (if there is an available space).

[5]   If there is no available PDU on the left shapes list, click **Add** and fill out the configuration information to add a new PDU.

[6]   After the configuration is completed, click **SAVE**.

8.2.2   Example

After configuring a Smart Aisle site, you can configure the device according to actual situations and successfully save the settings.

Configuring a standalone Smart Aisle site

Open the SI system. In the **Monitoring** module, click   of the Smart Aisle site on the site tree, and select **3D Configuration**. The 3D room configuration page is displayed, as shown in the following figure.

Figure 8-1   3D configuration page of the Smart Aisle site

Click   on the device list to open the functional menu and select **Edit**. On the displayed page, edit the device-related information, and click **SAVE**.
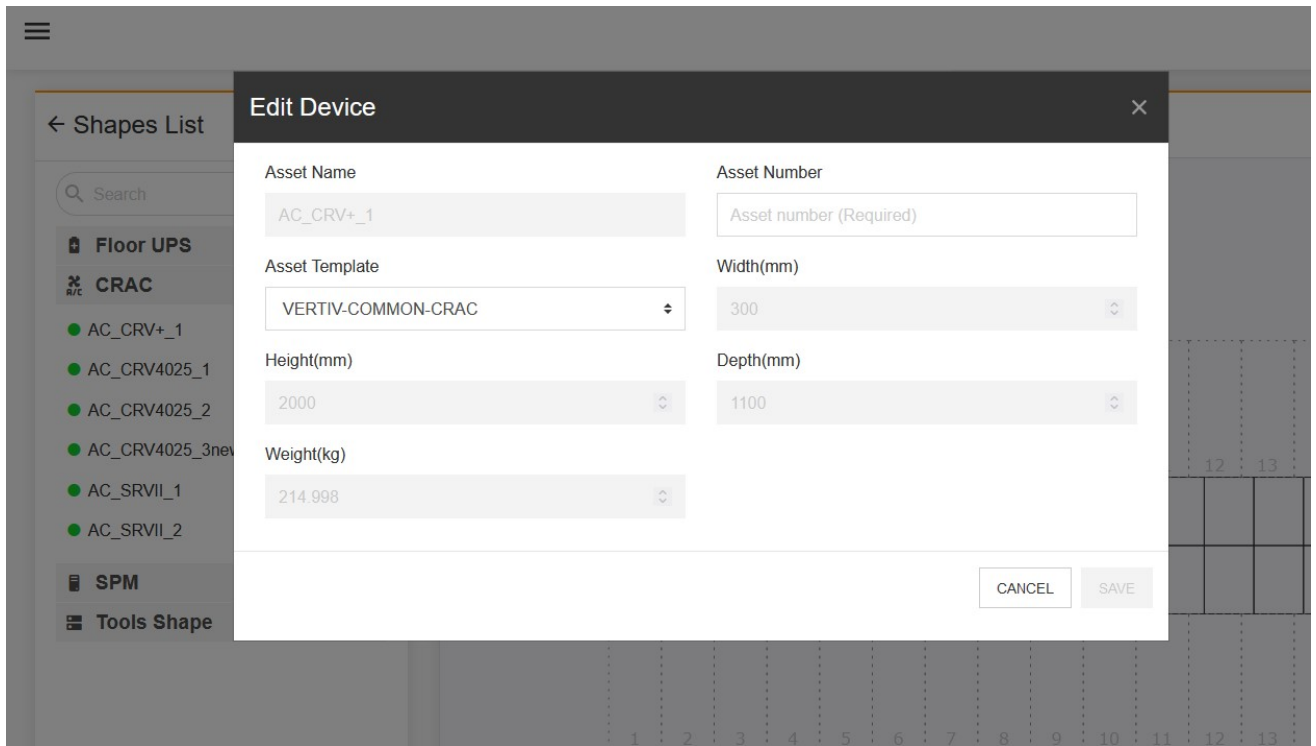
Figure 8-2   Editing the device information

If any necessary device is missing, click ➕ at the top of the shapes list to add it.
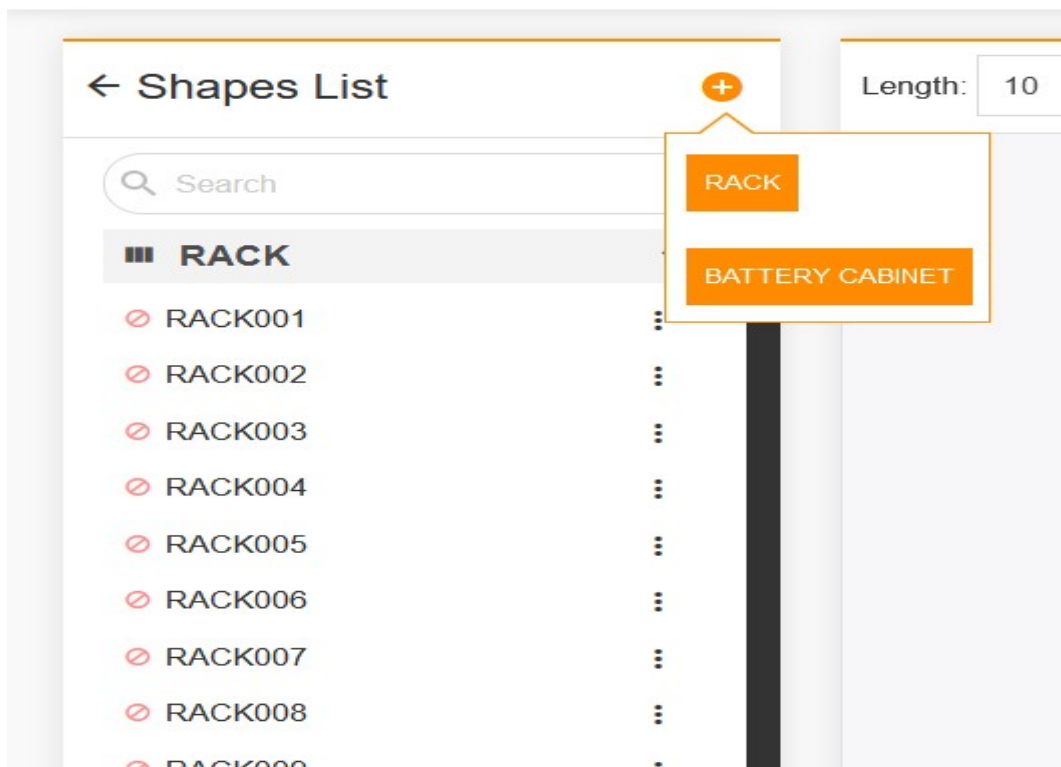
Figure 8-3   Add button

Drag and drop the device from the left side to the canvas on the right side. Adjust the length of the Smart Aisle site appropriately.
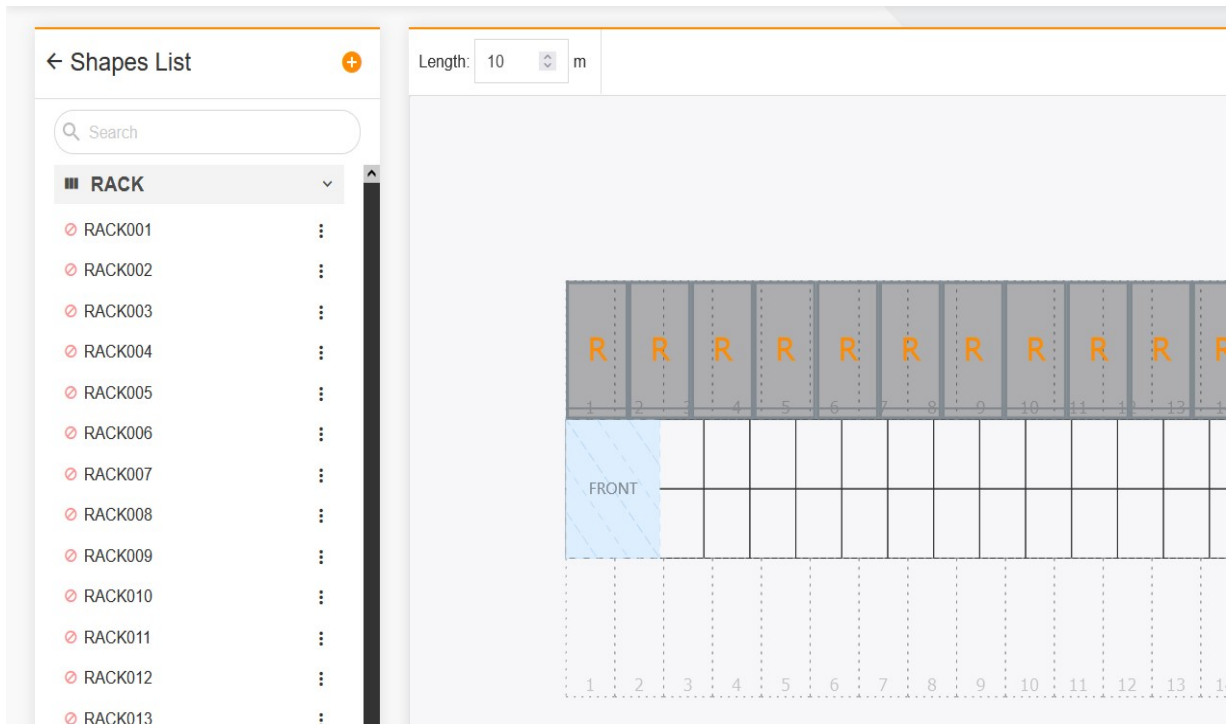
Figure 8-4   Dragging and dropping the device to the canvas

Click the preview button to preview the 3D configuration. Continue to press the left button of the mouse to preview the 3D configuration of the site up and down/left and right, and slide the middle wheel of the mouse to zoom in and out of the 3D preview of the site.

Figure 8-5   Previewing a 3D Smart Aisle site
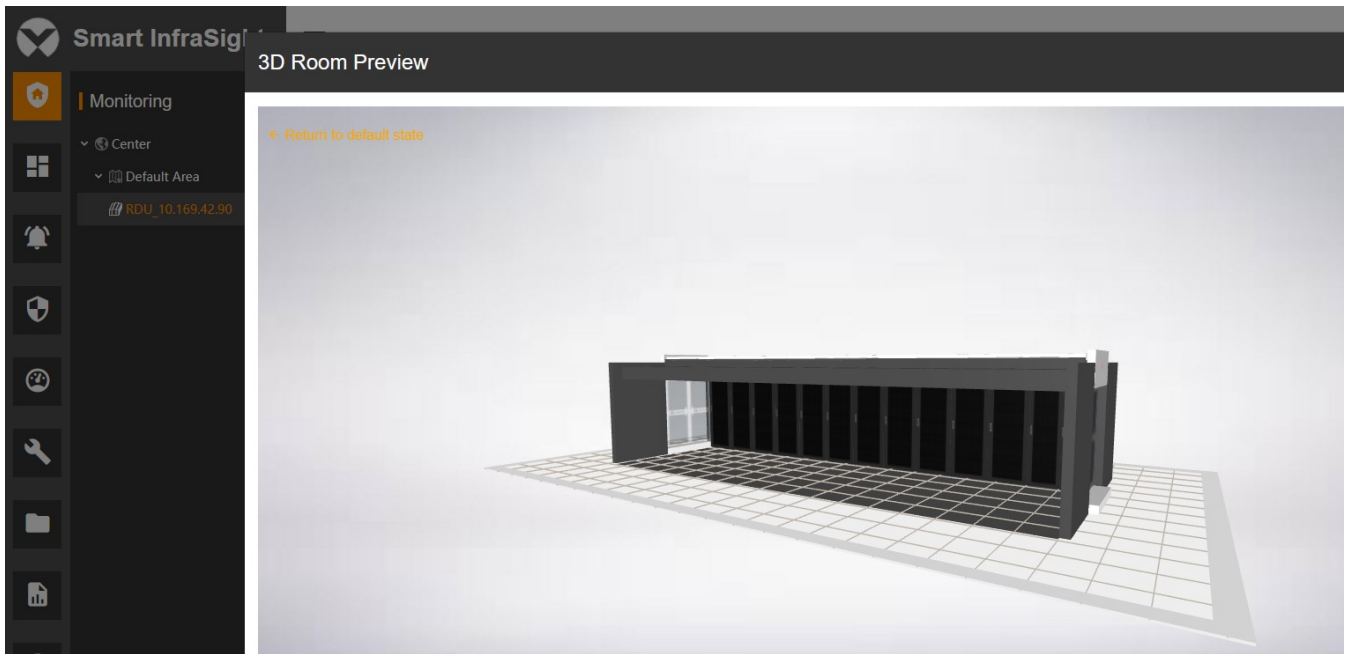
Figure 8-6 Pressing the left button of the mouse to select to preview 3D Smart Aisle site
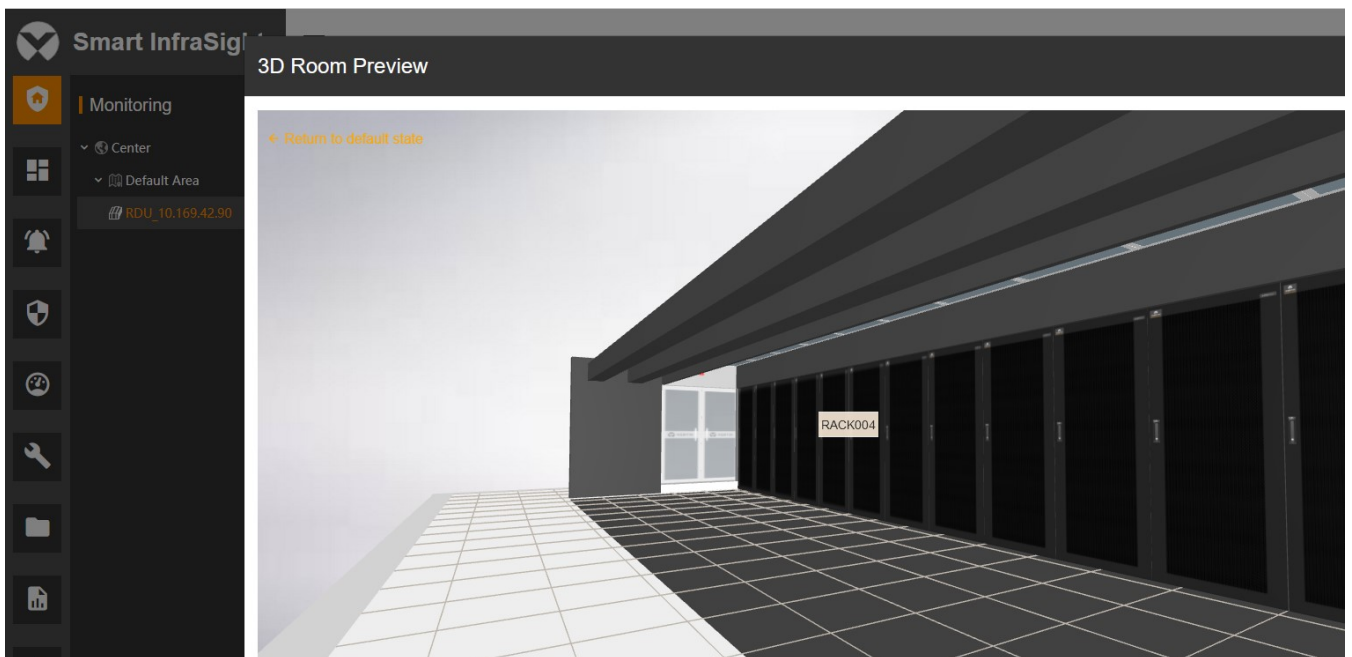
Figure 8-7 Pressing the middle wheel to preview a 3D Smart Aisle site

Till now, the 3D configuration of the Smart Aisle site is completed.

Configuring an area

Open the SI system. In the **Monitoring** module, click [icon] on the site tree to open the functional menu, and select **3D Configuration**. The 3D configuration page for the area is displayed, as shown in the following figure.
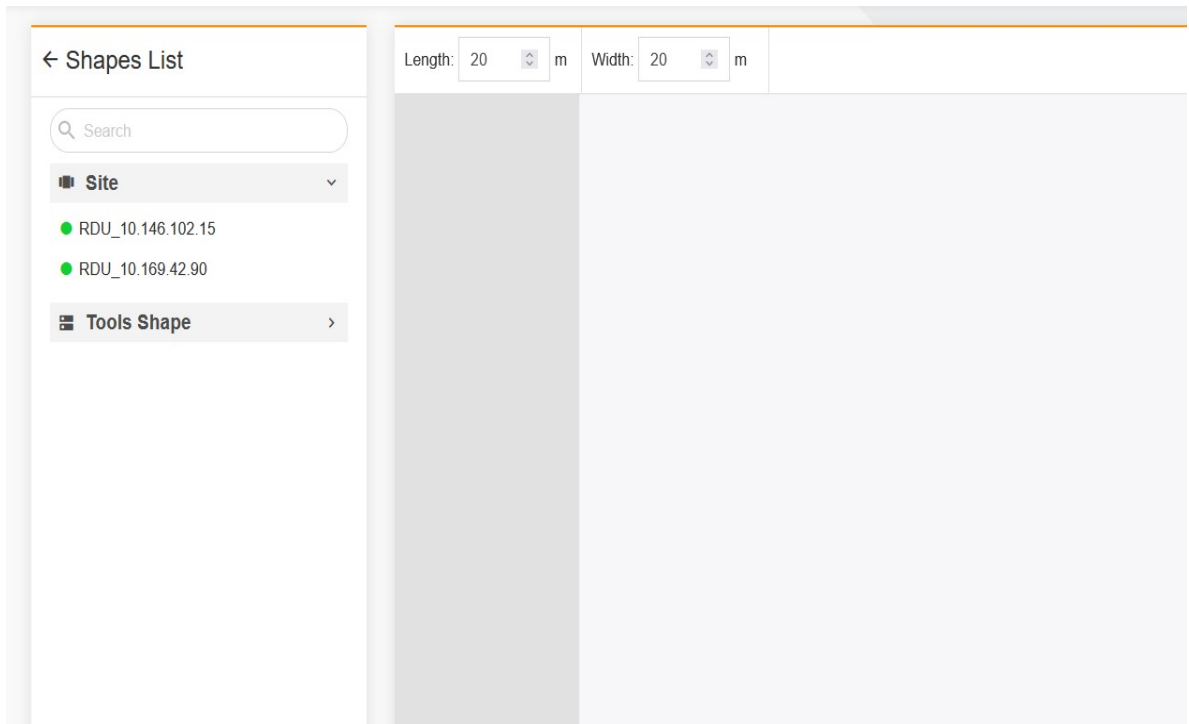
Figure 8-8   3D configuration page for the area

Drag and drop the site and wall to the canvas and modify the length of the wall as well as the length/width of the area appropriately, as shown in the following figure.
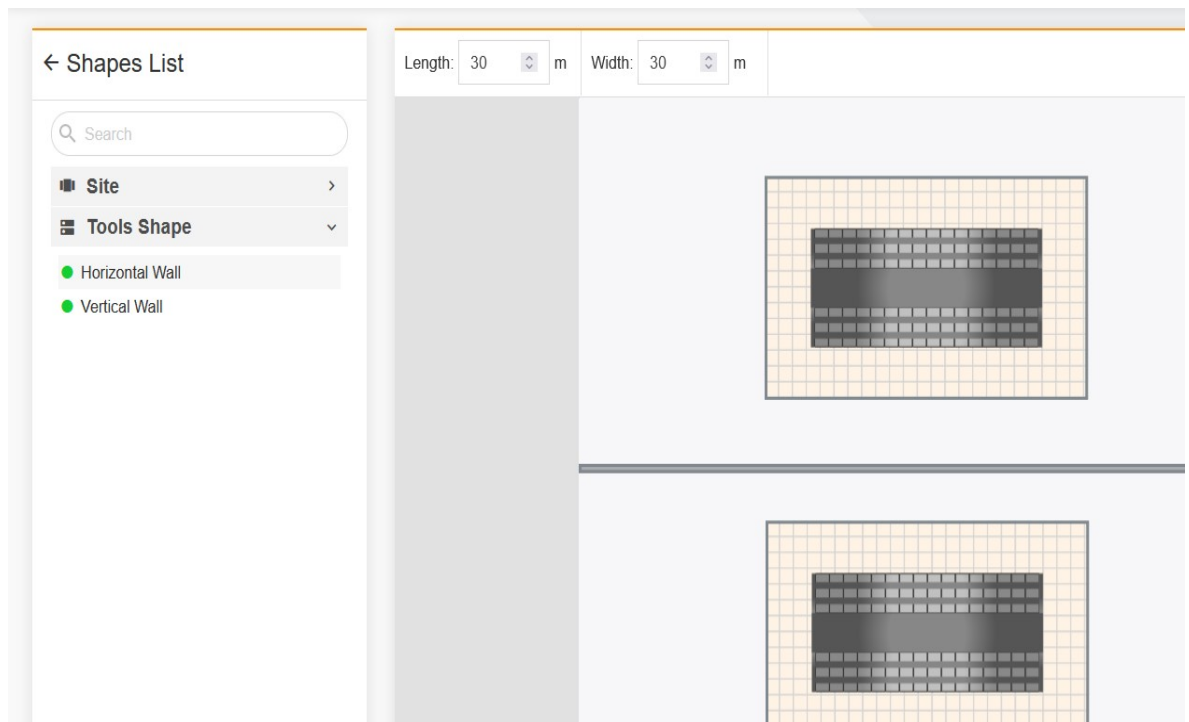
Figure 8-9   Dragging and dropping the site and wall to the canvas

Preview the effect and save the configuration.
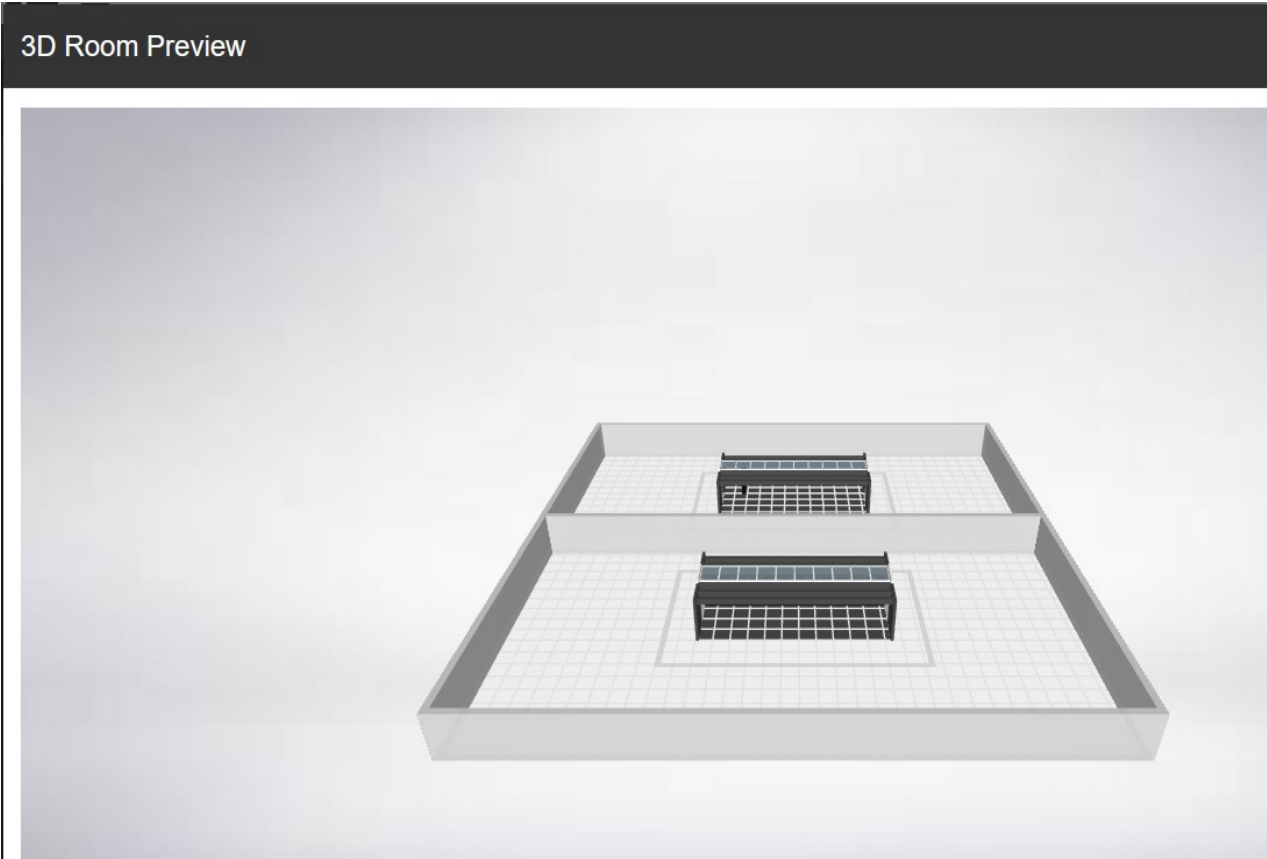
Figure 8-10   Previewing the 3D appearance of the area

Till now, the 3D configuration of the area is completed.

Configuring the rack

Double-click a rack to enter the rack configuration page.
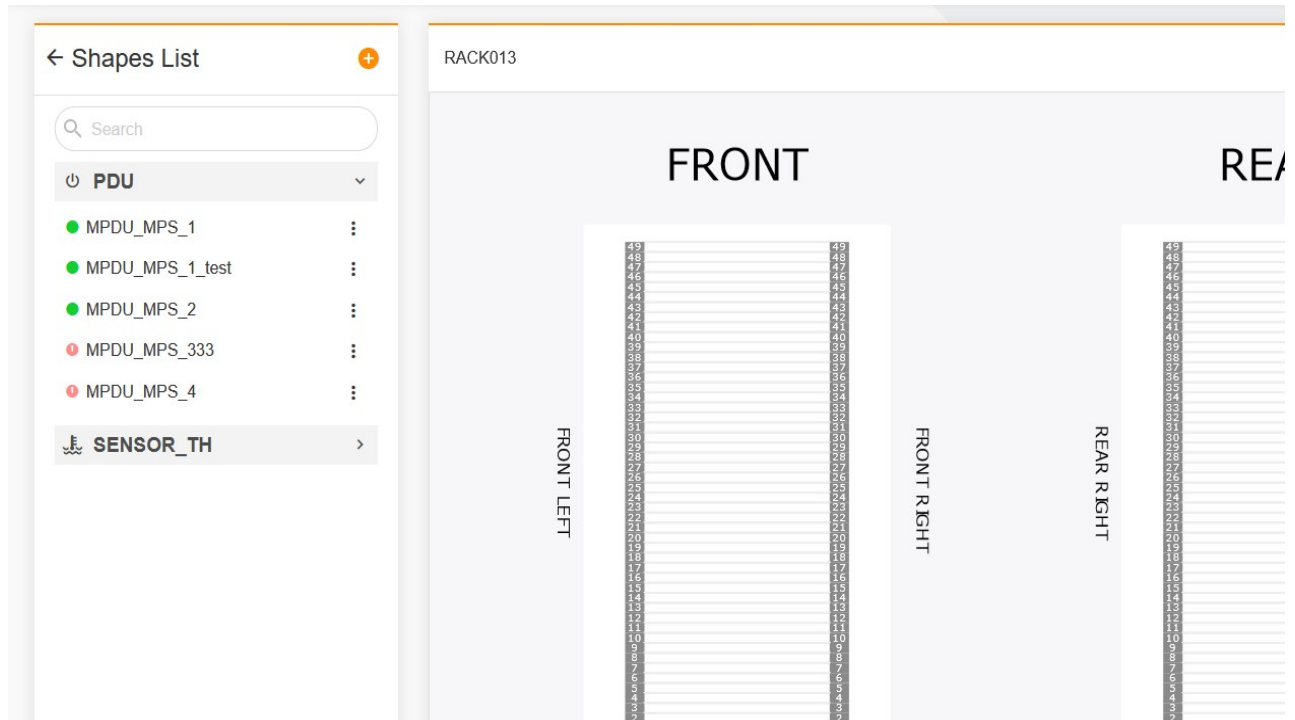
Drag and drop a server, switch, PDU, or temperature sensor to the corresponding position.
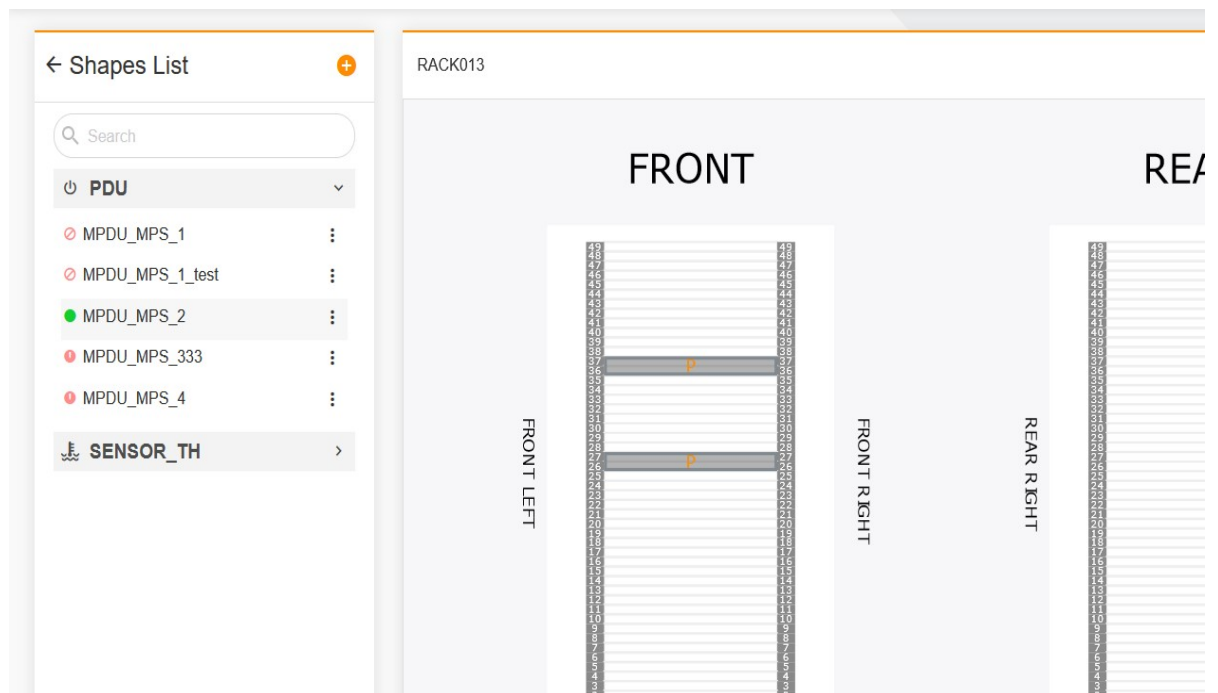
Click **SAVE**. Wait until the system completes the saving. At this time, the configuration is completed.

Configuring the PDU

Double-click a PDU to enter the PDU configuration page.
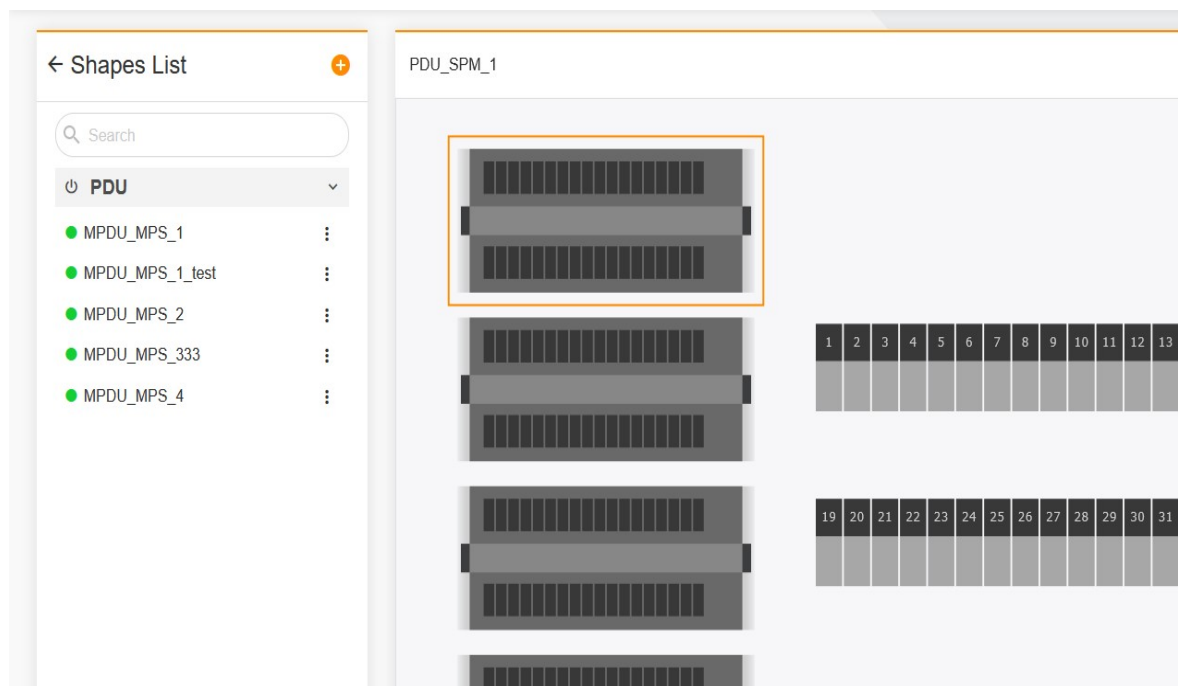
Drag and drop the PDU to the corresponding position.
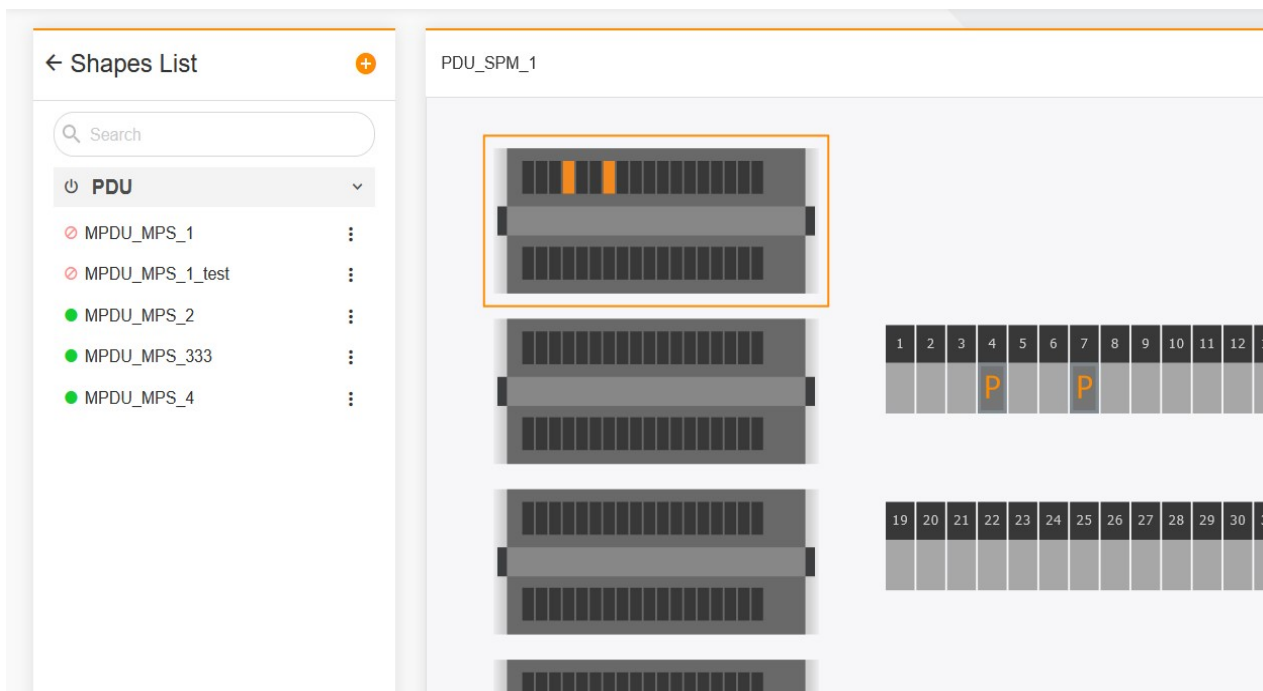
Click **SAVE**. Till now, the PDU configuration is completed.

8.3 Specific Functions

8.3.1 Entering the 3D Configuration page of the site/area

Open the SI system. In the **Monitoring** module, click 〓 of the site on the site tree to open the functional menu, and select **3D Configuration**. The 3D site configuration page is displayed, as shown in the following figure.

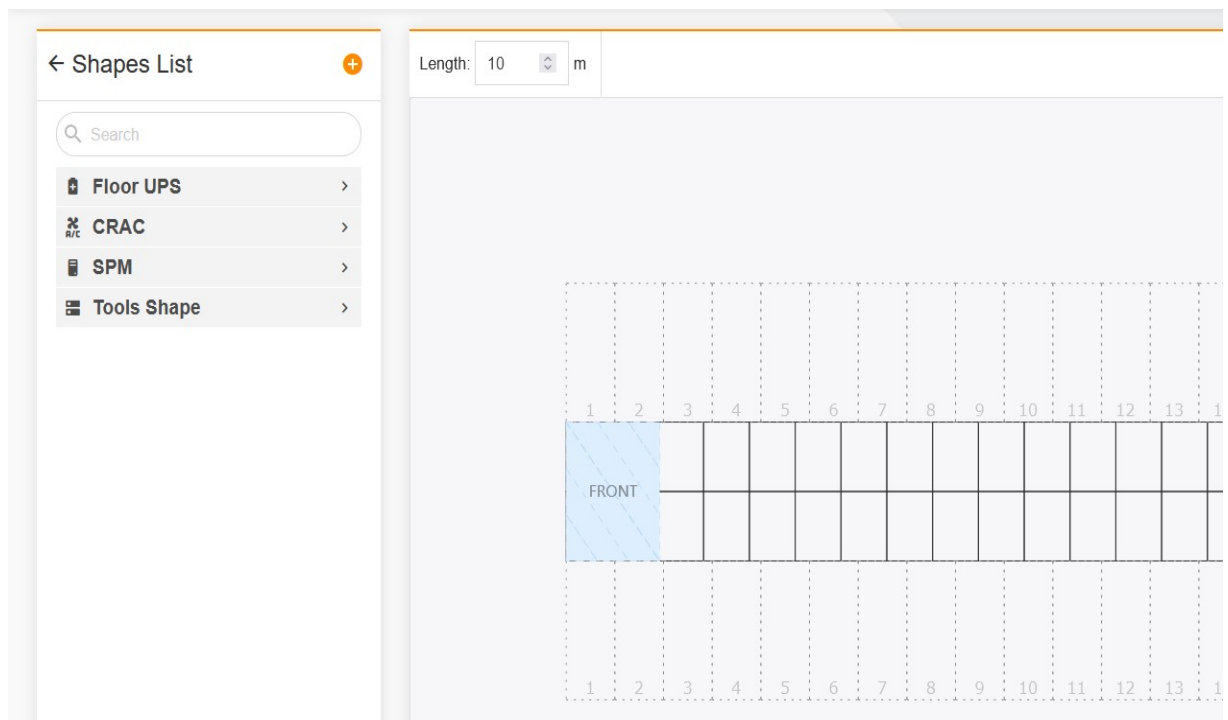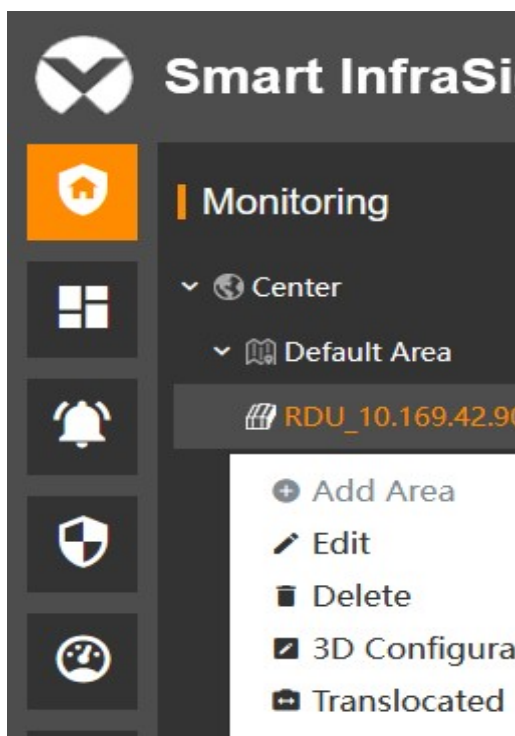
Figure 8-11   3D configuration entry of the site

Open the SI system. In the **Monitoring** module, click 〓 of the site on the site tree, and select **3D Configuration**. The 3D area configuration page is displayed.
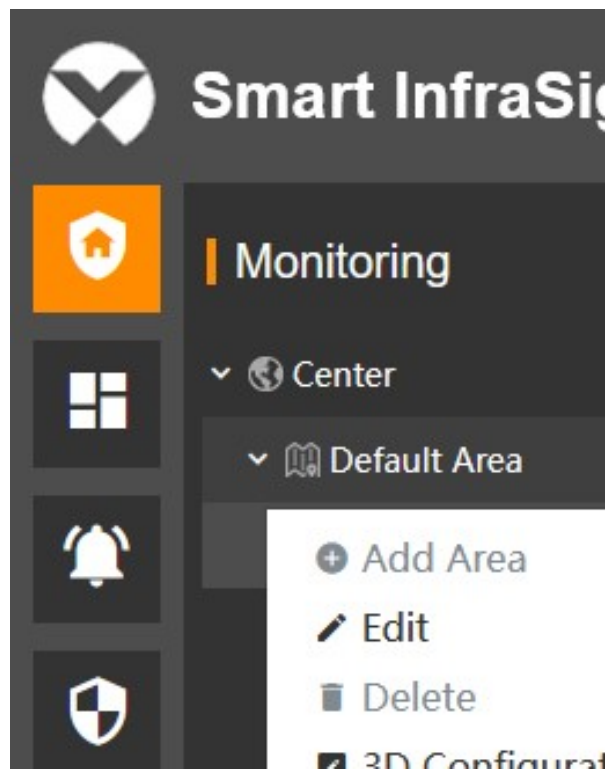
Figure 8-12   3D configuration entry of the area

8.3.2   Editing/Adding a Device

Editing a device

After entering the 3D configuration page of the site or area, you can click ⋮ of the device in the shapes list on the left, open the function menu, and select **Edit** to edit the asset name, asset code, width, depth, height, and other parameters of the device. After the edit is completed, click **SAVE**. as shown in the following figure.
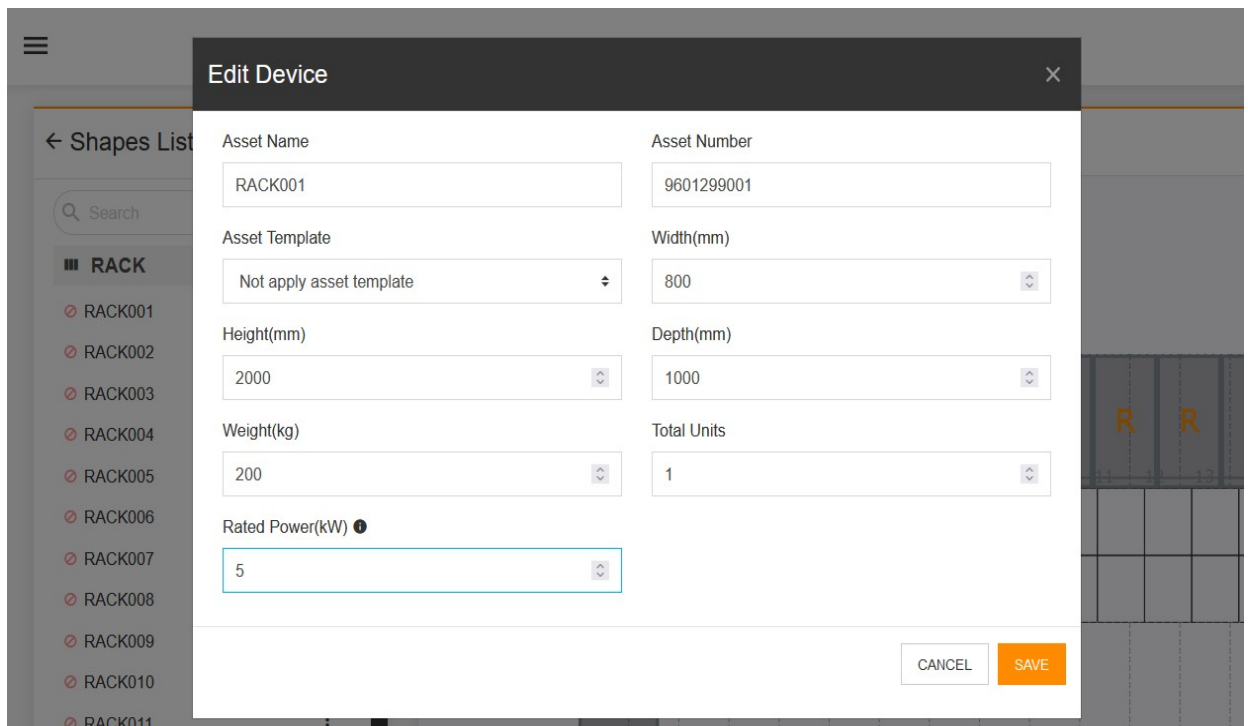
Figure 8-13   Editing the device information

Adding a device

If **Shapes List** lacks a necessary device, click the add button at the top of **Shapes List** to add it.

Currently, the system supports the following device models: rack and battery cabinet.
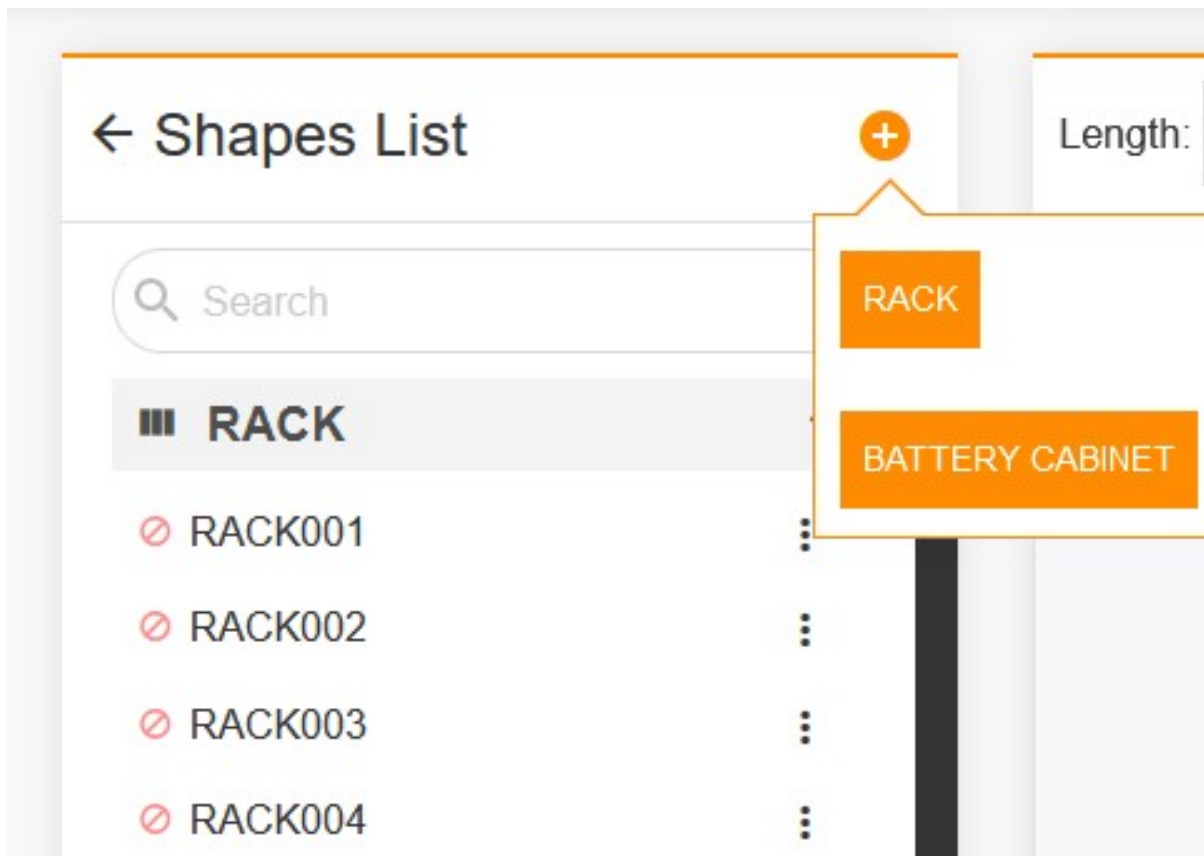
Figure 8-14   Entry for adding a device

When adding a device, you need to fill out the asset name, asset code, width, height, depth and other parameters of the device. Click **SAVE**. The added device appears on the shapes list. You can drag and drop it to the canvas on the right side to add a device.
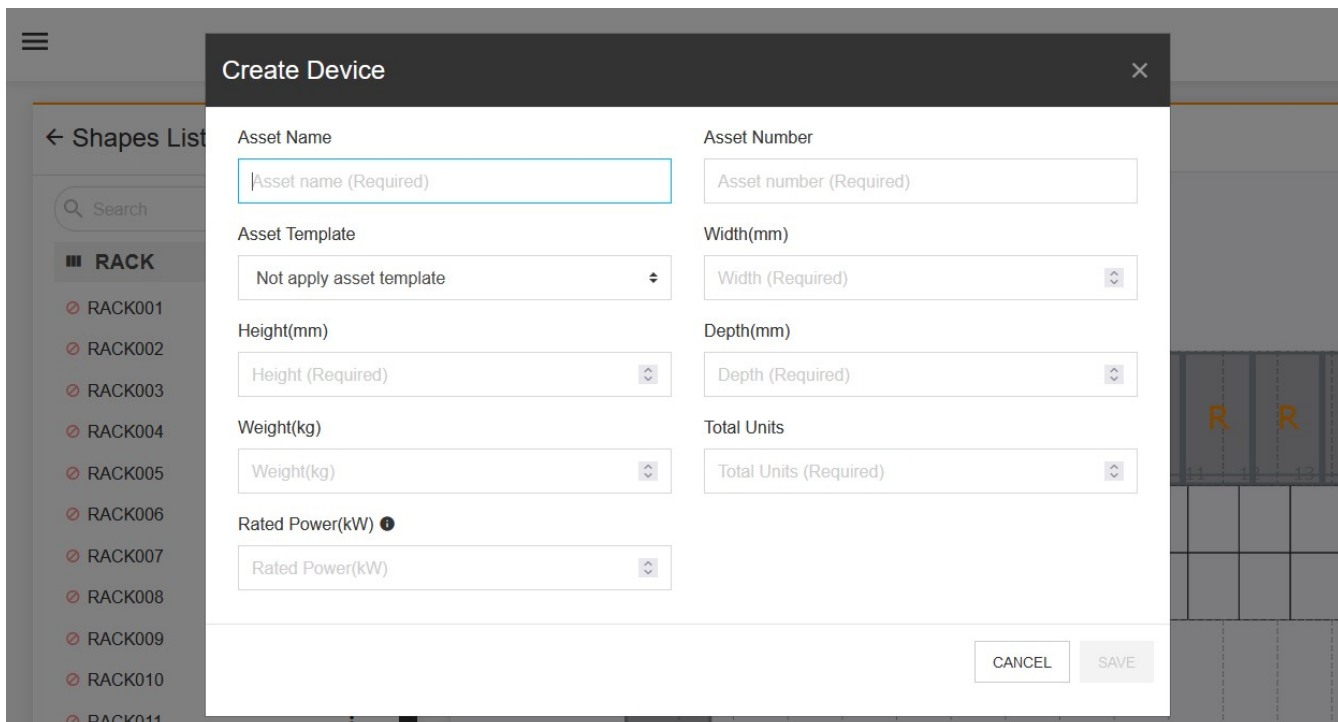
Figure 8-15   Editing the device information on Create Device page

8.3.3 Dragging and Dropping a Device/Editing the Canvas Size/Modifying the Device Angle

After the device is edited and added, drag and drop it to the canvas. As shown in the following figure, drag and drop the rack to the site.
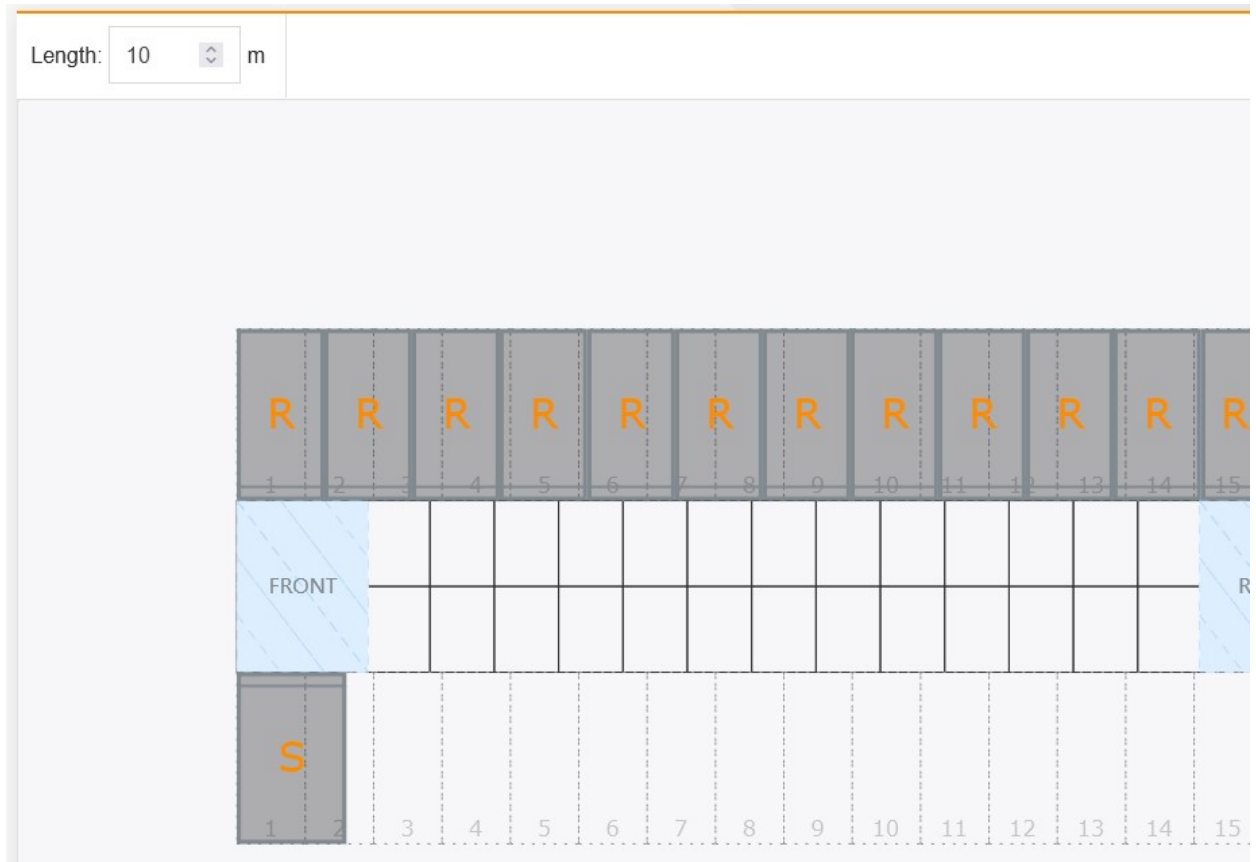
Figure 8-16   Dragging and dropping the device to the canvas

If the size of the canvas is not appropriate, you can adjust the size of the canvas through the size input box at the top of the site/area.
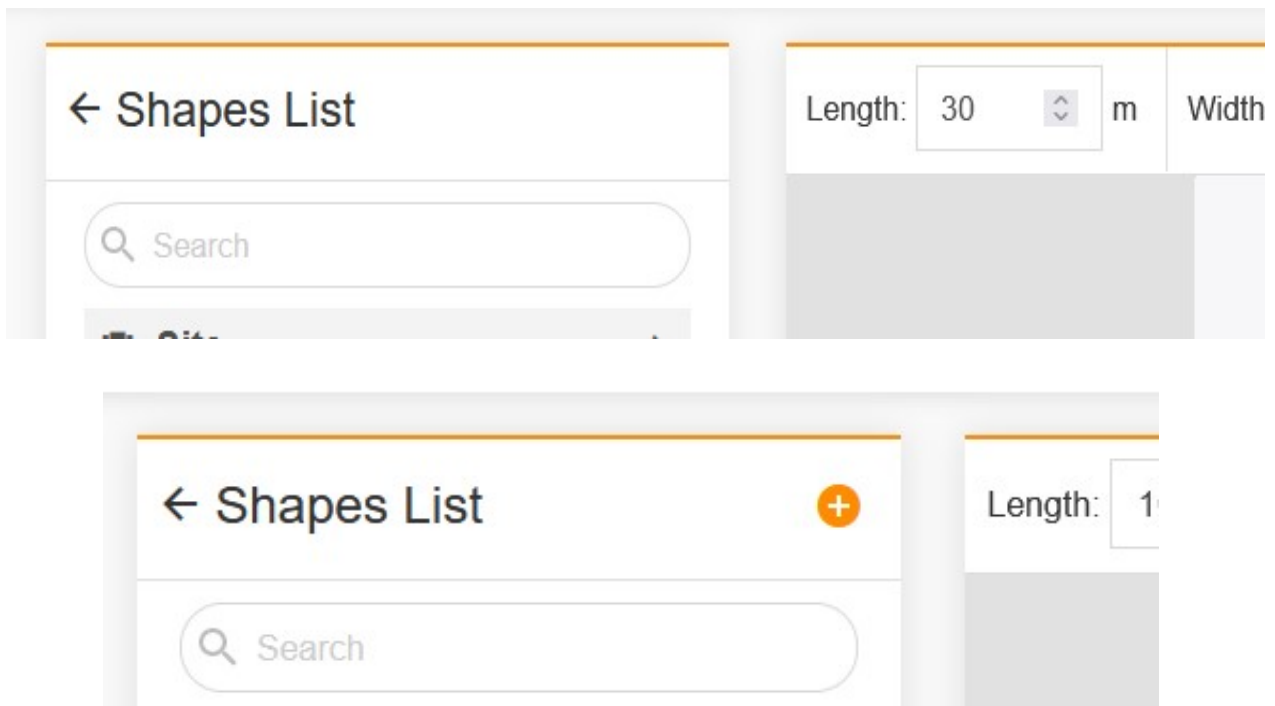
Figure 8-17   Modifying the size of the area/site canvas

On the canvas of Smart Aisle/general site, you can modify the rotation angle of the device according to actual needs. When a device model is selected, click the rotation button that appears at the top of the device to rotate the device.

In a general site, the device can rotate at an angle of 0 degrees, 180 degrees, or 270 degrees.
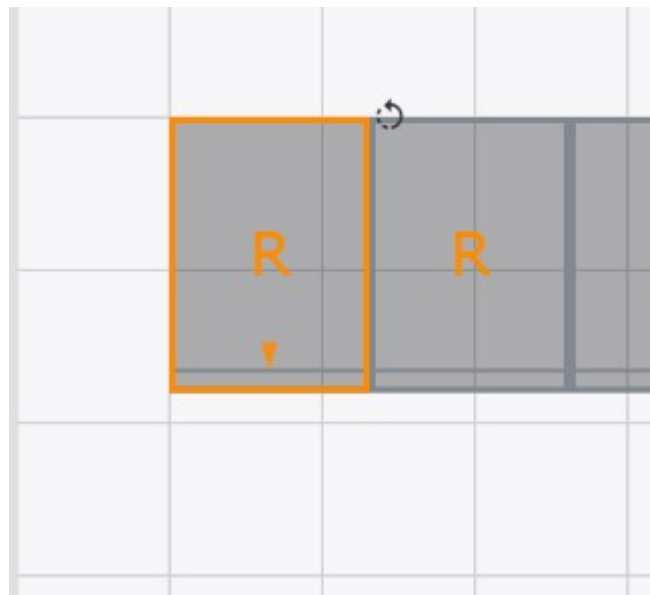
Figure 8-18   Rotation angle of the device in the general site

In the Smart Aisle site, the device can rotate at an angle of 0 degrees or 180 degrees.
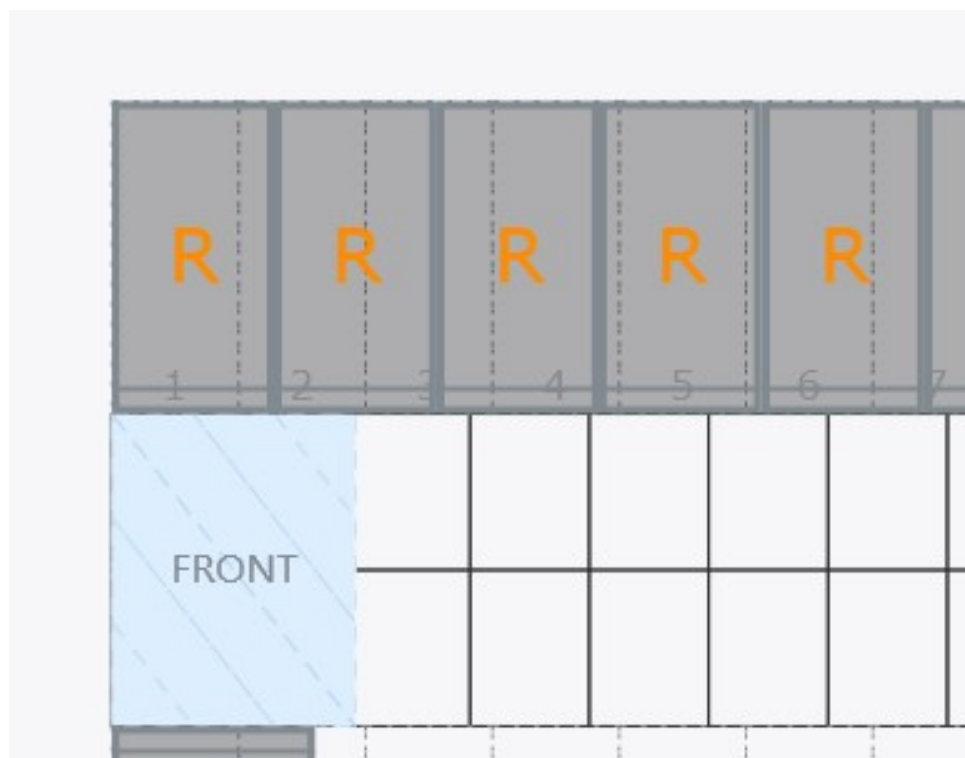
Figure 8-19   Rotation angle of the device in the Smart Aisle site

8.3.4 Previewing/Saving 3D Configuration

After all configurations are completed, click the preview button at the top, and view the 3D appearance of the corresponding site/area in the pop-up preview window, as shown in the following figure.

Figure 8-20   Previewing the 3D appearance

After confirming the configuration, click the save button at the top. After the configuration is successfully saved, click

the ← Shapes Li back button on the left side of **Shapes List**. Alternatively, click the corresponding site in the left area/site tree to go back to the monitoring homepage, and click the **3D** tab page in the monitoring homepage. Then, check the 3D module, as shown in the following figure.
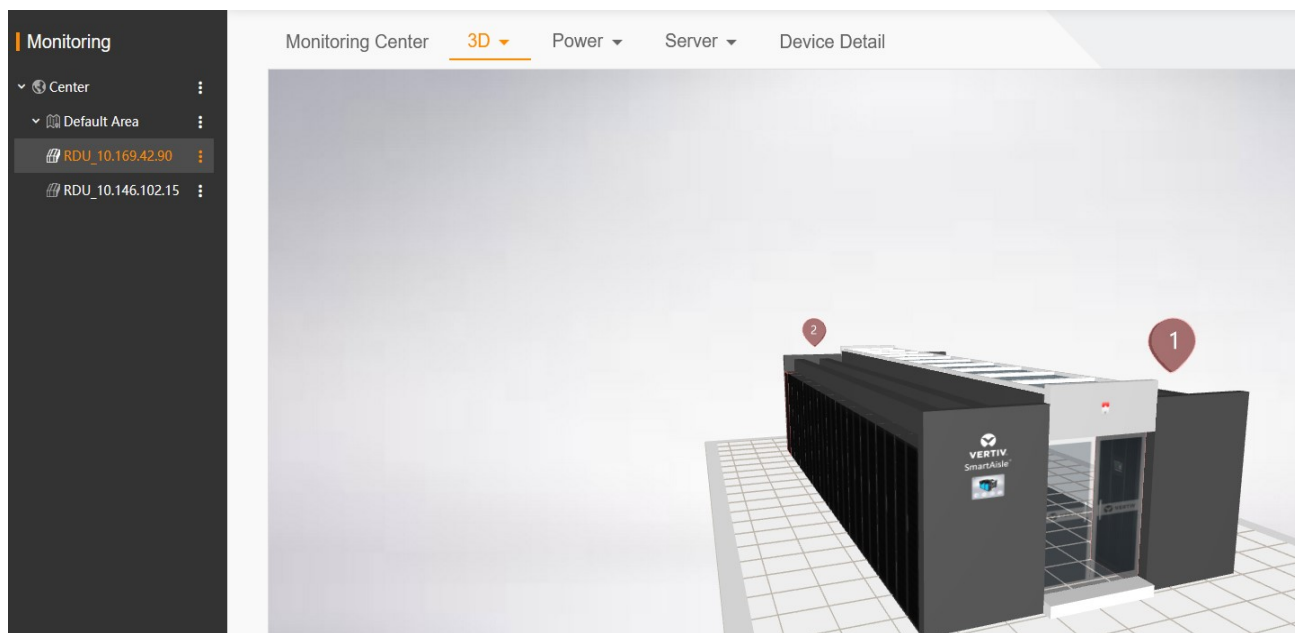
Figure 8-21   3D room monitoring

Till now, a 3D room is successfully configured and can be put into monitoring.

8.3.5 Configuring a Rack

Configure the rack information according to the actual rack location.

General configuration

The devices on the device list have the following states:

The device information is incomplete: The device cannot be dragged and dropped, and you need to edit the basic information about the device.

The device can be dragged and dropped to the current rack: The device can be dragged and dropped, and you do not need to complete the information.

The device has already been bound with another rack: The device can be dragged and dropped. If you drag the device, the system prompts that you should unbind the device with the other rack.

The device has already been bound with the current rack: The device cannot be dragged and dropped.

Configuring the rack

You can add and edit the device information, as shown in the following figure.
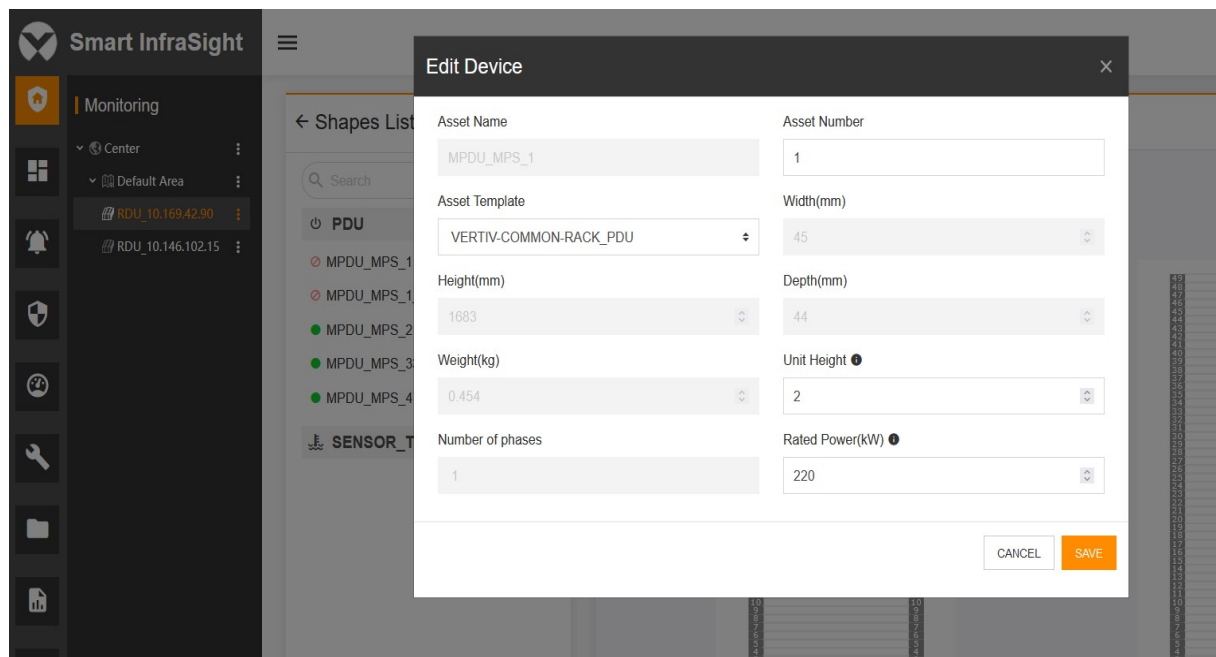
In the states of "The device can be dragged and dropped to the current rack" and "The device has already been bound with the current rack", you can drag and drop the device to the corresponding location.

When you are dragging a device, the system displays the location where the device can be placed, as shown in the following figure.
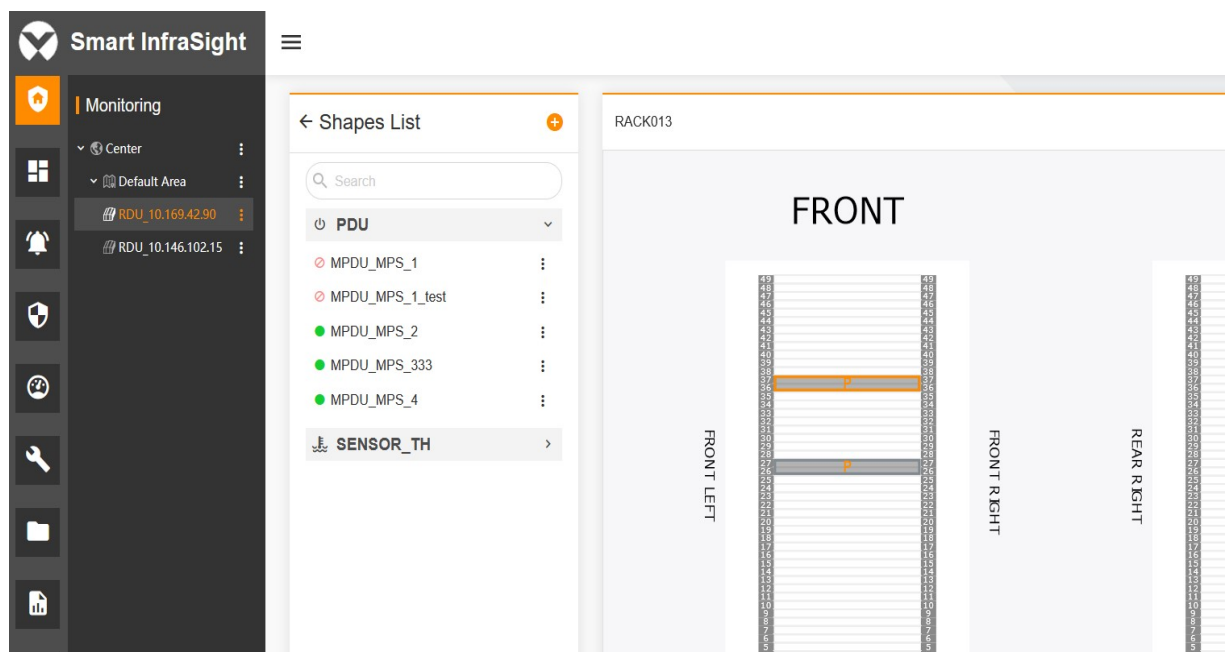
Click **SAVE**. Wait until the system completes the saving. At this time, the rack configuration is completed.

8.3.6 Configuring a PDU

You can configure a PDU based on the binding relationship between the actual PDU and the planned PDU.

General configuration

The devices on the device list have the following states:

The device information is incomplete: The device cannot be dragged and dropped, and you need to edit the basic information about the device.

The device can be dragged and dropped to the current PDU: The device can be dragged and dropped, and you do not need to complete the information.

The device has already been bound with another PDU: The device can be dragged and dropped. If you drag the device, the system prompts that you should unbind the device with the other PDU.

The device has already been bound with the current PDU: The device cannot be dragged and dropped.

Configuring the PDU

You can add and edit the device information, as shown in the following figure.
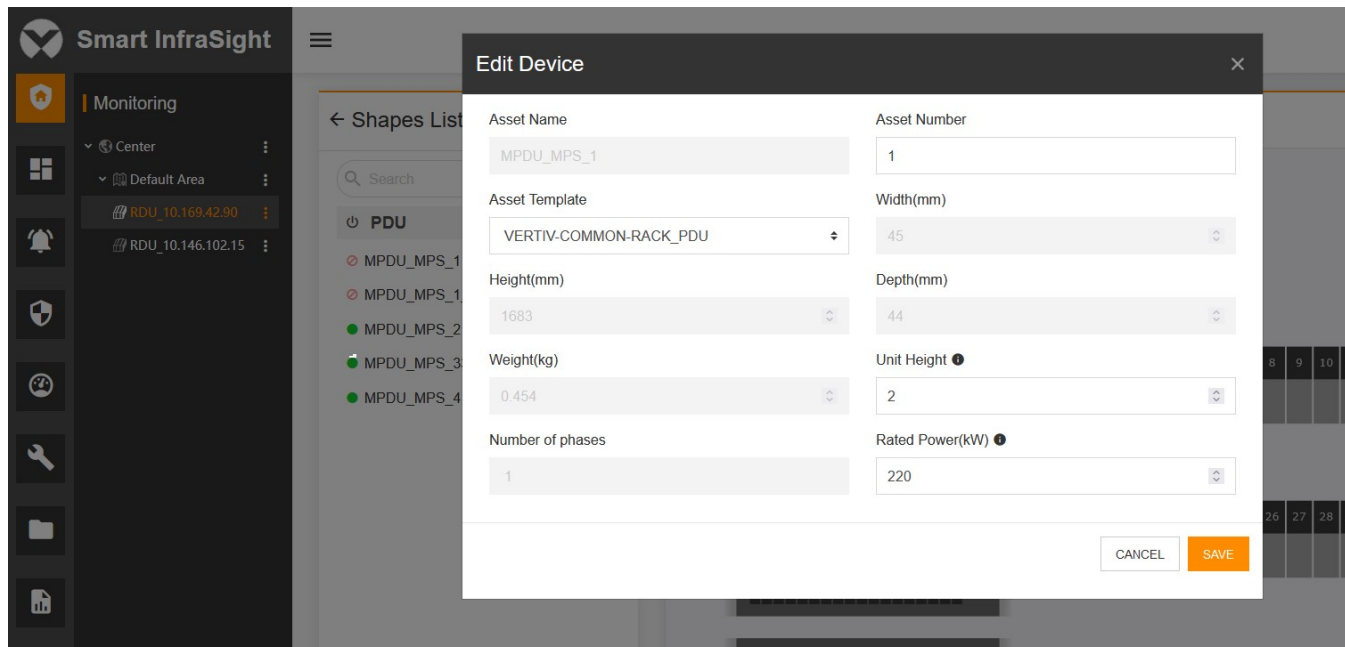
In the states of "The device can be dragged and dropped to the current power distribution cabinet" and "The device has already been bound with the current power distribution cabinet", you can drag and drop the device to the corresponding location.

The following figure shows the specific information displayed on the page.
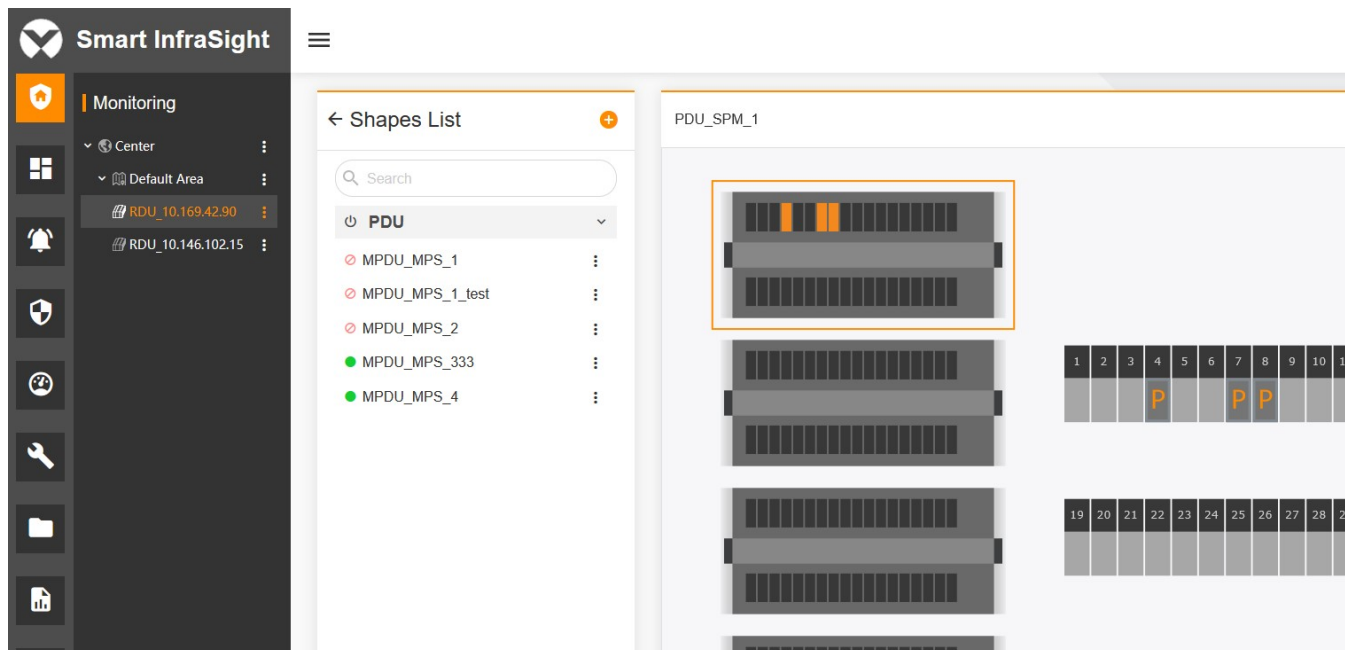
After the configuration is completed, click **SAVE**. Till now, the PDU configuration is completed.

Chapter 9 3D Visualization

9.1 Overview

9.1.1 Overview

This chapter describes how to manage information such as alarm, location, and running status of devices in the Smart Aisle and general sites or areas using the 3D visualization module.

9.1.2 Functional Module

The 3D visualization module contains the following functional modules. For more information about the functional modules, see section **Error! Reference source not found.**"*Error! Reference source not found.*."

- Displaying a Smart Aisle site in the 3D module
- Displaying a General Site in the 3D Module
- Displaying an area in the 3D module

9.2 Quick Start

9.2.1 Quick Deployment Procedure

Complete rack configuration and bind it with the device. The configuration is as follows:

[1] On the monitoring homepage, click the functional menu of a site or an area on the left area/site tree, and select **3D Configuration**.

[2] Complete the device-related information such as the rack information, and drag and drop the device to the canvas.

[3] Double-click each device in the rack to complete the binding relationship between the rack and the device.

[4] Preview the effect. After saving the configuration, view the related information on the **3D** tab page on the monitoring homepage.

9.2.2 Example

3D configuration for the Smart Aisle/general site

The 3D configuration tool may lack some necessary information about devices that are imported into the rack through the asset import function. Before dragging and dropping a device to the canvas, you need to edit and complete the relevant information such as the length, width, and height of the device. Click ⋮ of the device to open the functional menu. Select the edit tab to edit and complete the device information.
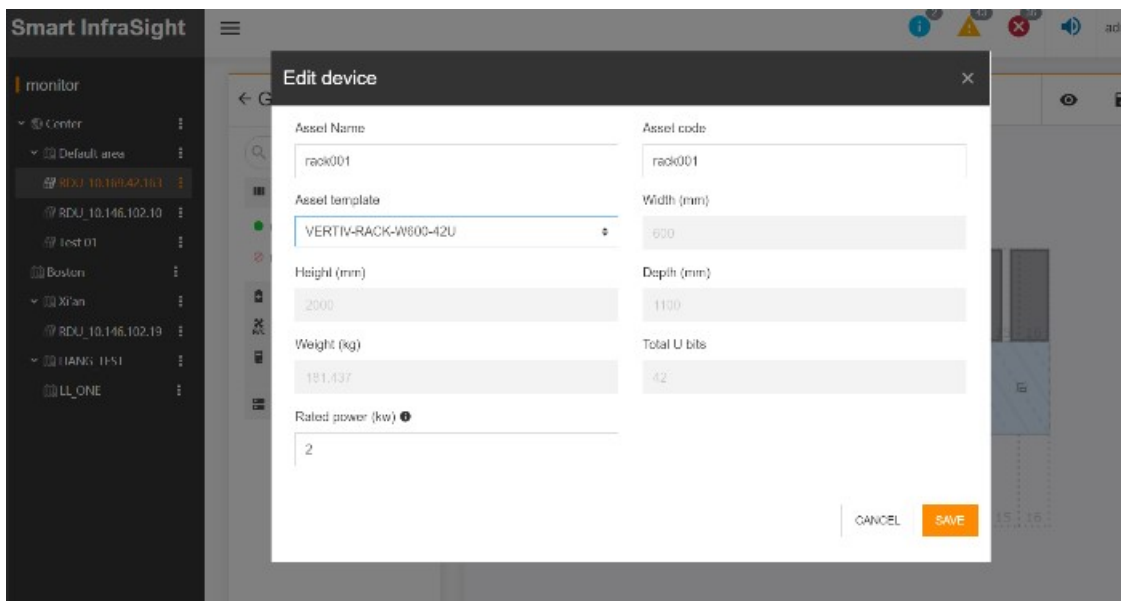
Figure 9-1   Completing the device-related information such as the rack information

Complete the rack-related information and drag and drop the device to the canvas.

Click ⋮ of the site/area on the monitoring tree to enter the functional menu. Enter the 3D configuration tool to configure the parameters. The following figure shows the configuration result. For specific operation procedure, see Chapter 8 "3D Configuration."
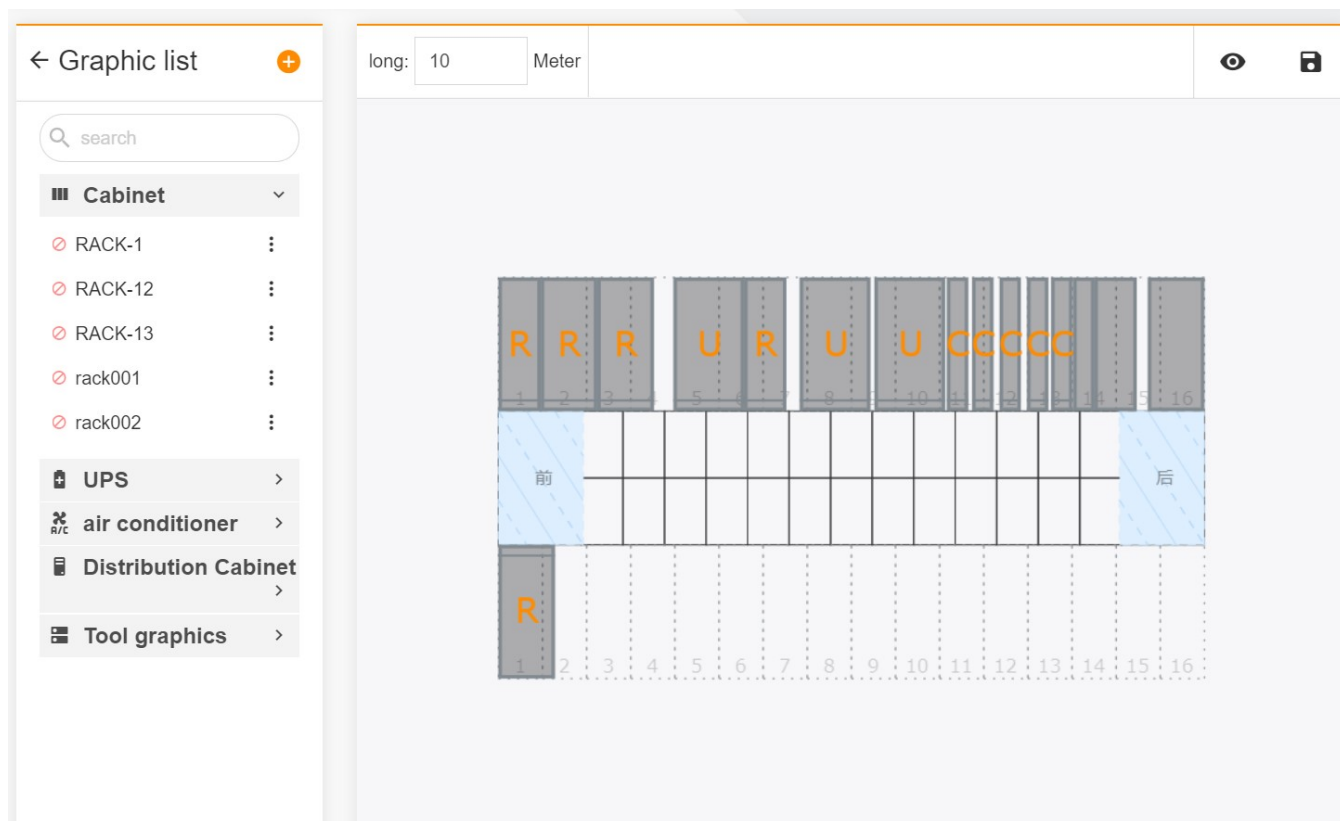
Figure 9-2   3D configuration of the Smart Aisle site

Double-click each device in the rack to complete the binding relationship between the rack and the device.

The 3D module displays running status of the relevant devices when displaying the rack devices. Therefore, you need to bind the rack with the device using the 3D configuration tool, as shown in the following figure.
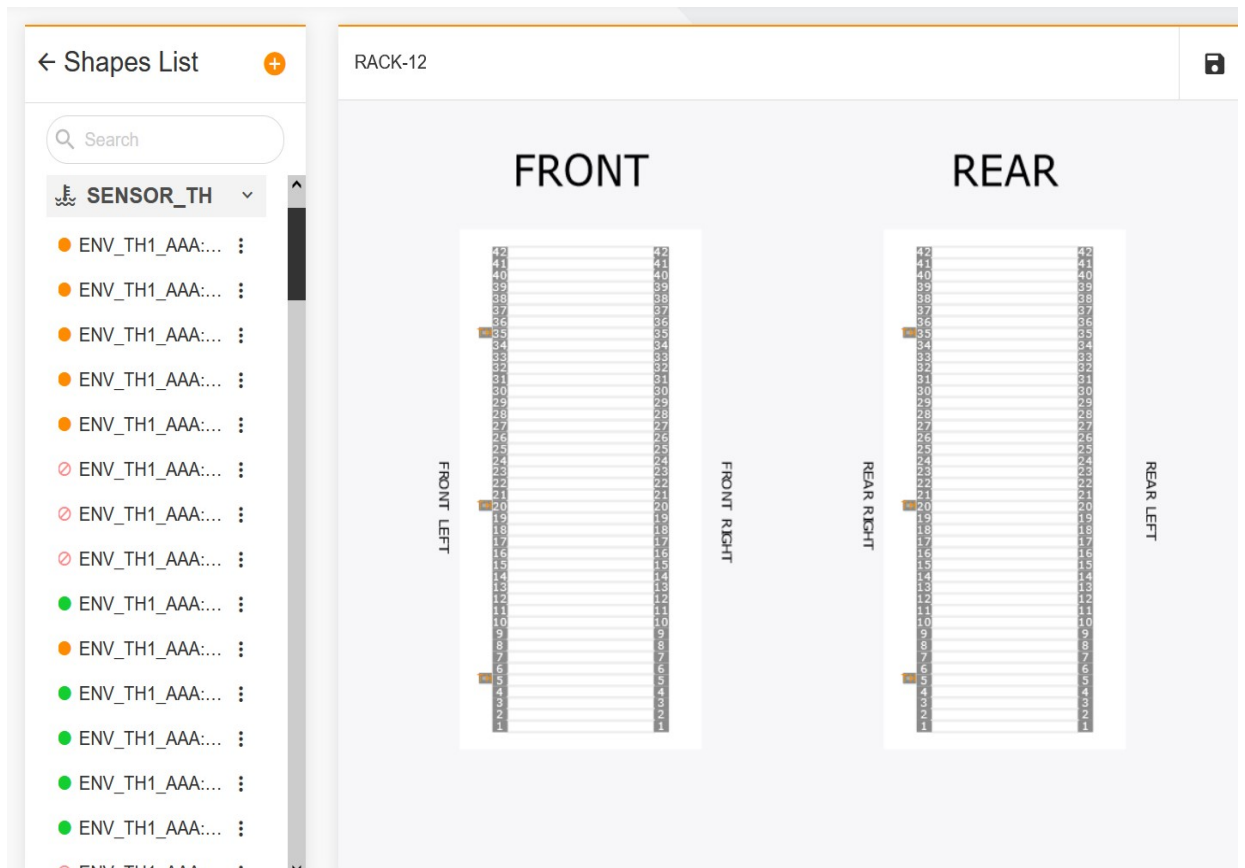
Figure 9-3 Device binding information such as rack/SPM

Preview the effect. After saving the configuration, view the related information on the 3D tab page on the monitoring homepage.

After completing the preceding configurations, you can click the preview button to view the approximate appearance in the 3D module. After confirming the configurations, you can go back to the 3D module to view the specific information.
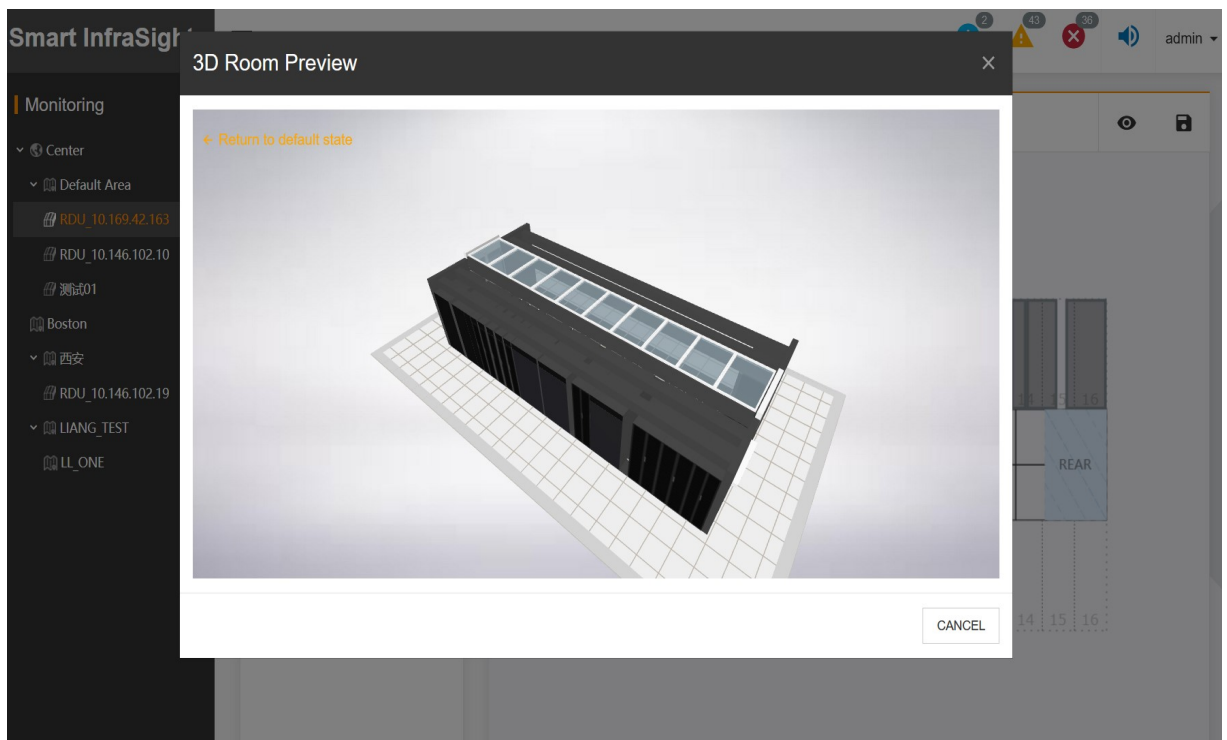
Figure 9-4 3D module appearance previewed in 3D configuration tool

9.3   Specific Functions

9.3.1   Displaying a Smart Aisle site in the 3D module

The system can display a Smart Aisle site in 3D scenarios, including **3D**, **Space Capacity**, **Power**, **Thermal View**, and **Heat Map**. On the left monitoring tree of the Smart Aisle monitoring homepage, select the **3D** tab on the right side. On the **3D** tab page, select **3D**, **Space Capacity**, **Power**, **Thermal View**, or **Heat Map** to enter the 3D module.

3D module

The 3D module mainly displays the 3D appearance of the Smart Aisle site, device location, alarms, running status, and other information.

By default, the default view of the Smart Aisle site is displayed. Continuously press the left button to rotate or the right button to move, or use the middle wheel to zoom in or out. You can also continuously press the middle wheel to go back the initial default state. The following figure shows the default state.
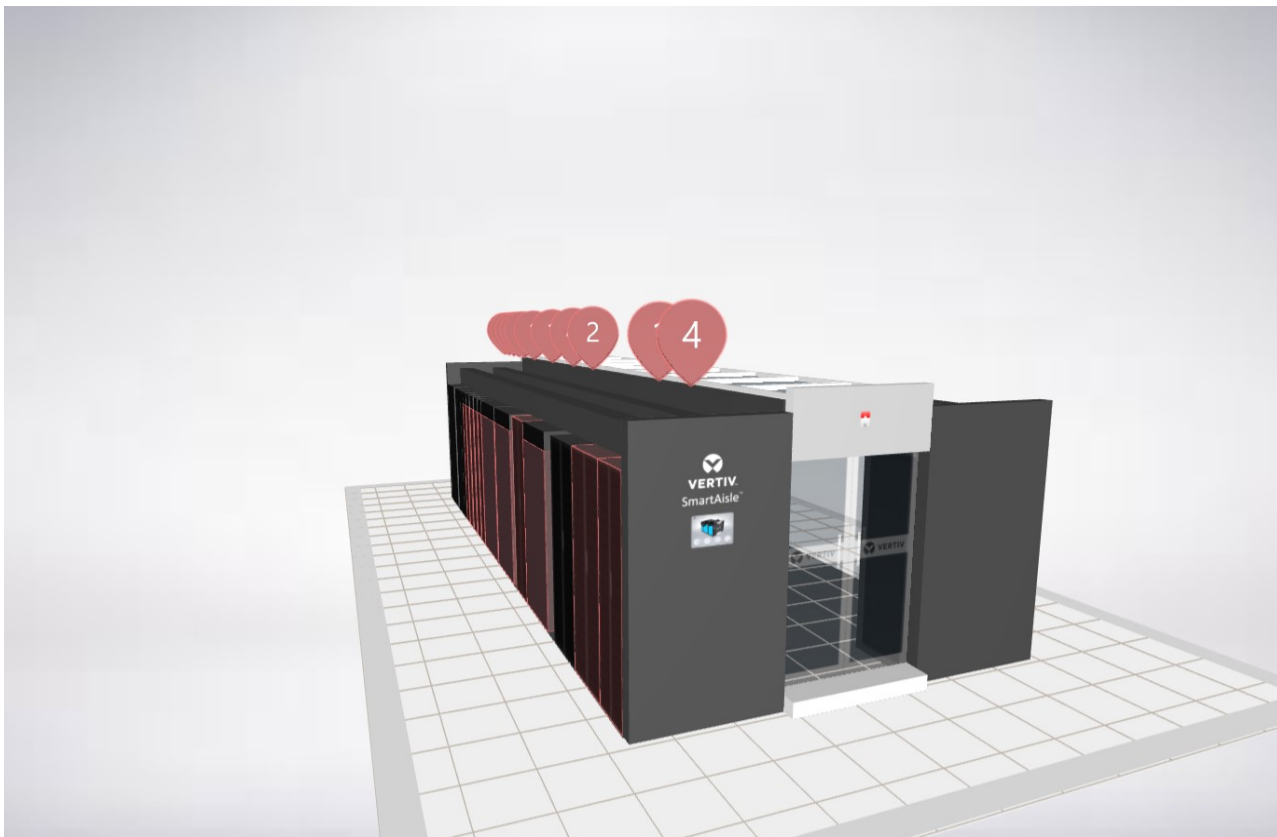
Figure 9-5   Default 3D view of the Smart Aisle site

Continuously press the left button to rotate the 3D view of the Smart Aisle site clockwise or counterclockwise, as well as to rotate up and down for a top view or bottom view, as shown in the following figure.

Monitoring Center   3D ▾   Power ▾   Server ▾   Device Detail

← Return to default state

Figure 9-6   3D view of the Smart Aisle site after rotation

Monitoring Center   3D ▾   Power ▾   Server ▾   Device Detail

← Return to default state
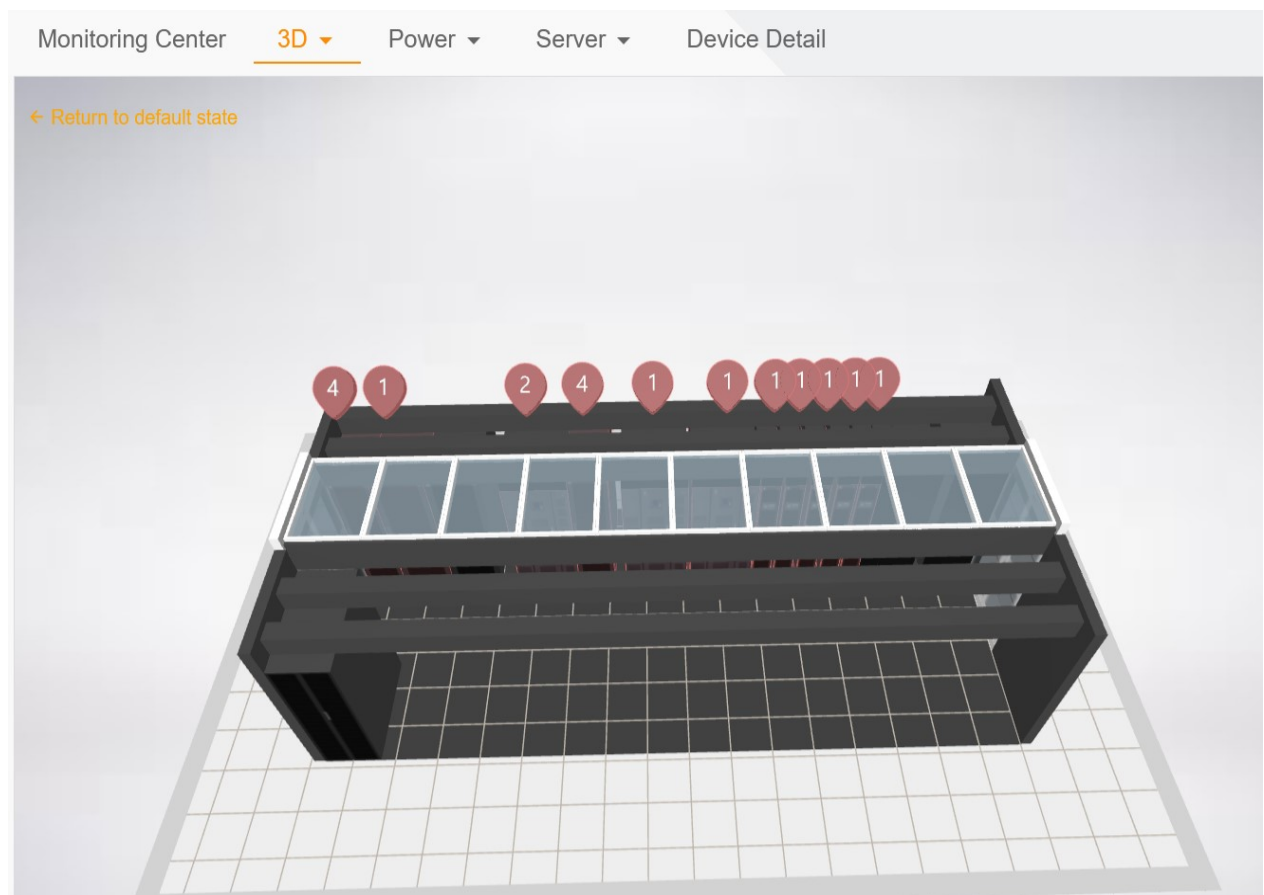
Figure 9-7   Top view of the Smart Aisle site

You can use the middle wheel to zoom in or out the 3D appearance of the Smart Aisle site, as shown in the following figure.
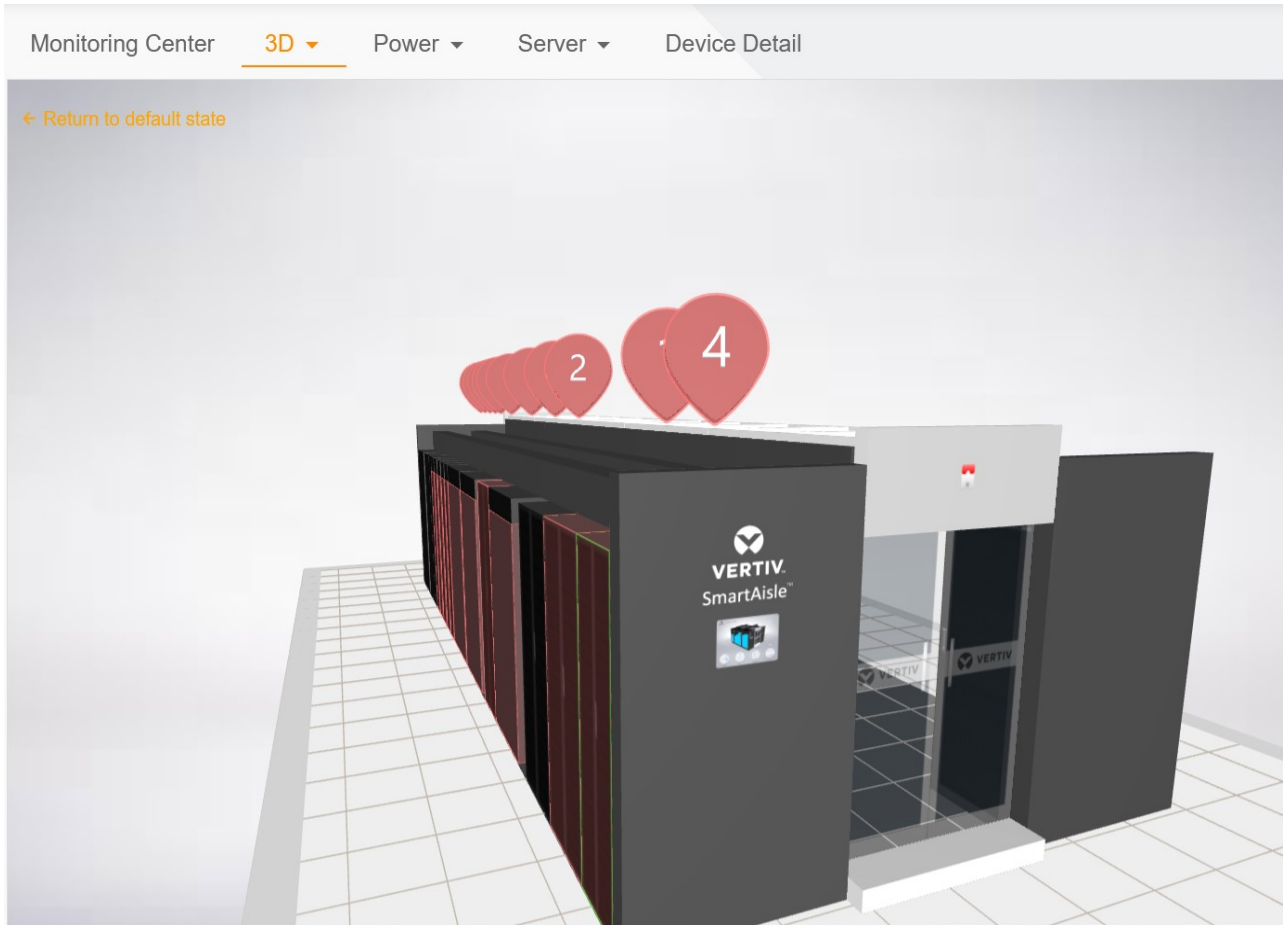
Figure 9-8   Zoom-in display of a Smart Aisle site
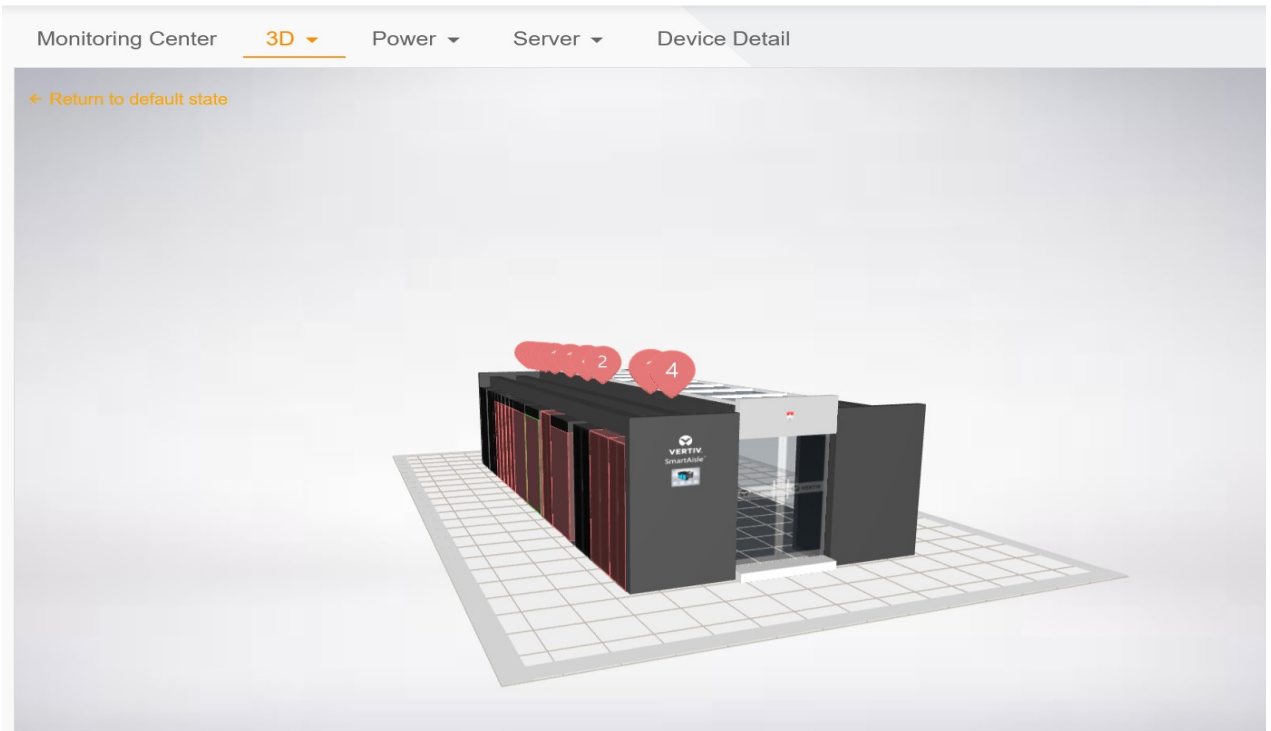
Figure 9-9   Zoom-out display of a Smart Aisle site

The following figure shows the single-row view of the Smart Aisle site. You can click a device such as rack or battery cabinet to enter the single rack view, or click the back button on the left side to go back to the previous view.
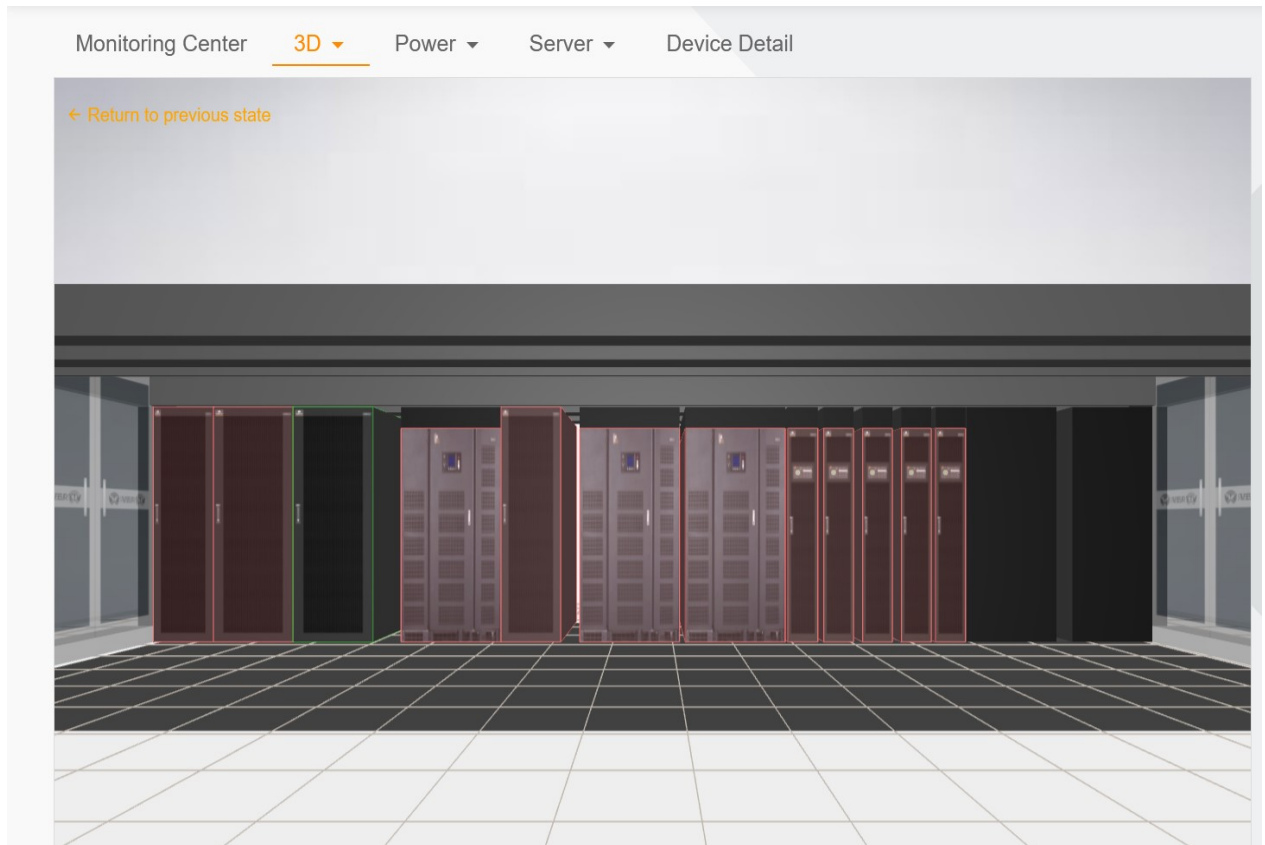
Figure 9-10   Single-row 3D view of the Smart Aisle site

In the single-row view, you can click any rack to enter the view of a single rack, as shown in the following figure. The left side records the basic information about the rack, warning, space, power distribution, environment, IT category and other information. The basic information includes an overview of the rack state and asset information. The 3D appearance also shows all the devices of the rack. If you switch to the warning card, the 3D appearance displays the device that has the warning. If you switch to the IT category card, it displays IT devices such as servers and switches.

The following figure shows the overview and 3D appearance in basic information.
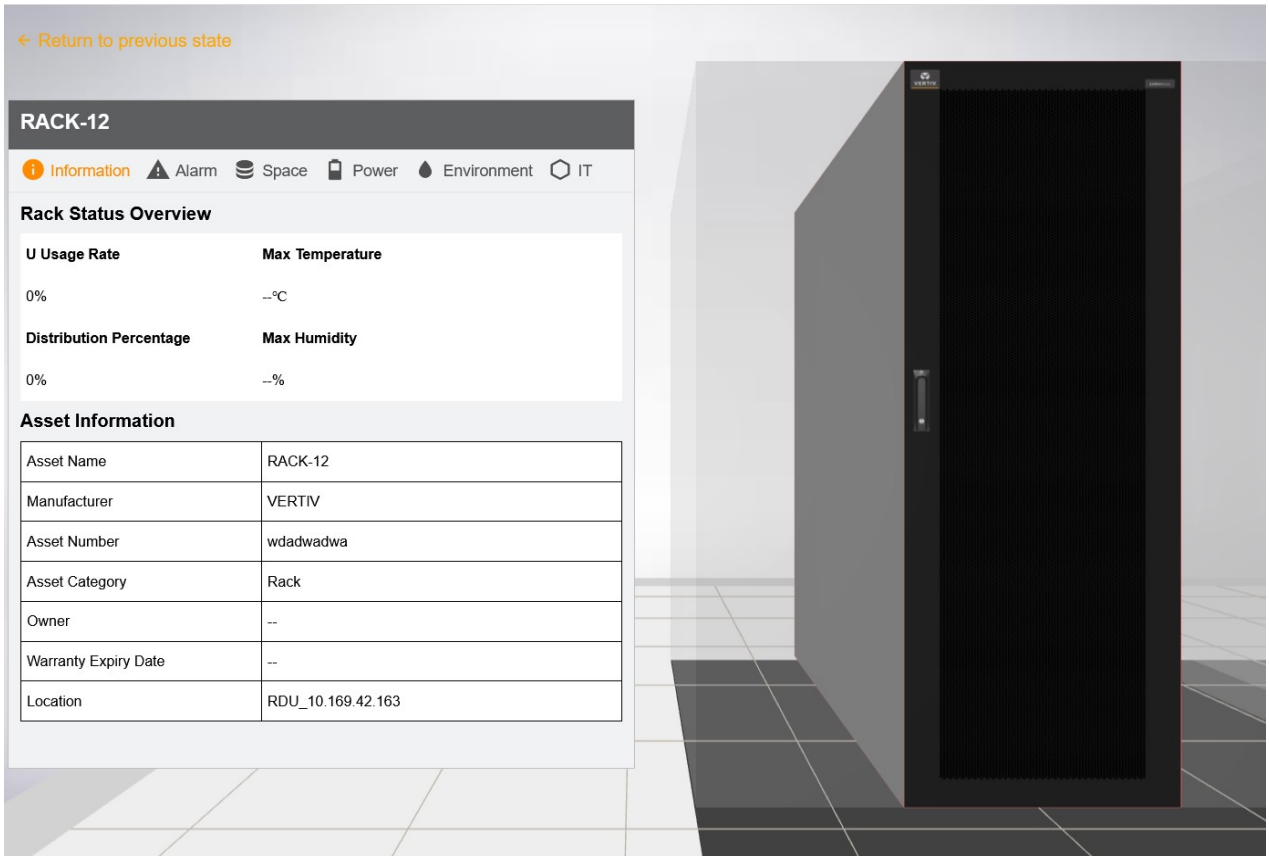
Figure 9-11   Single-rack 3D view of the Smart Aisle site

Click the warning, space, power distribution, environment, and IT category to switch to the corresponding cards. The following figures show the content displayed on each card.
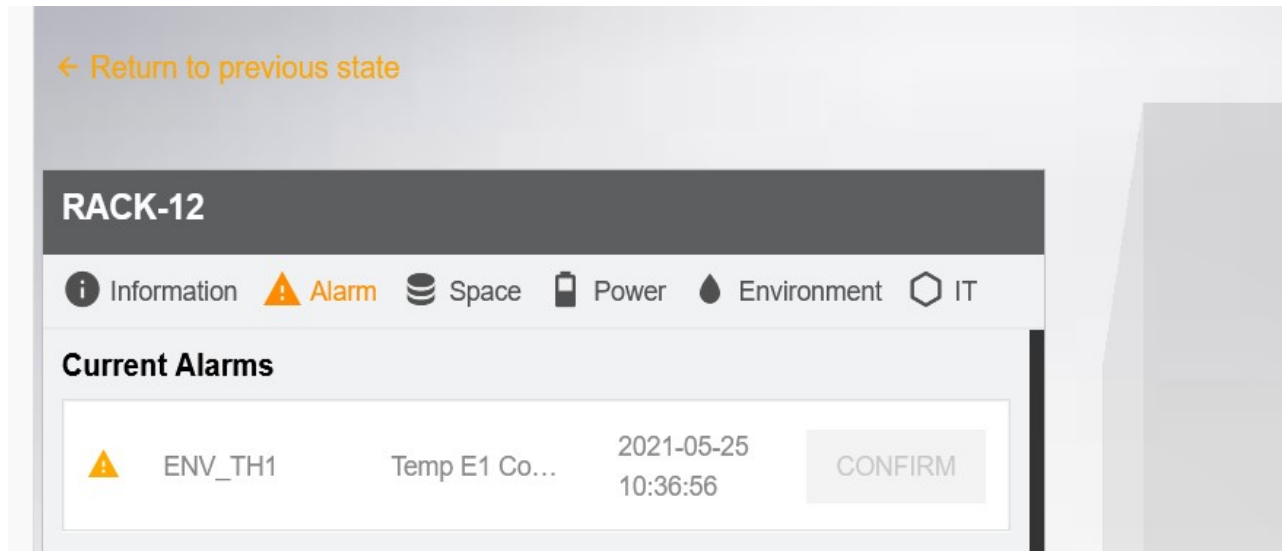
Figure 9-12   Content of the warning card
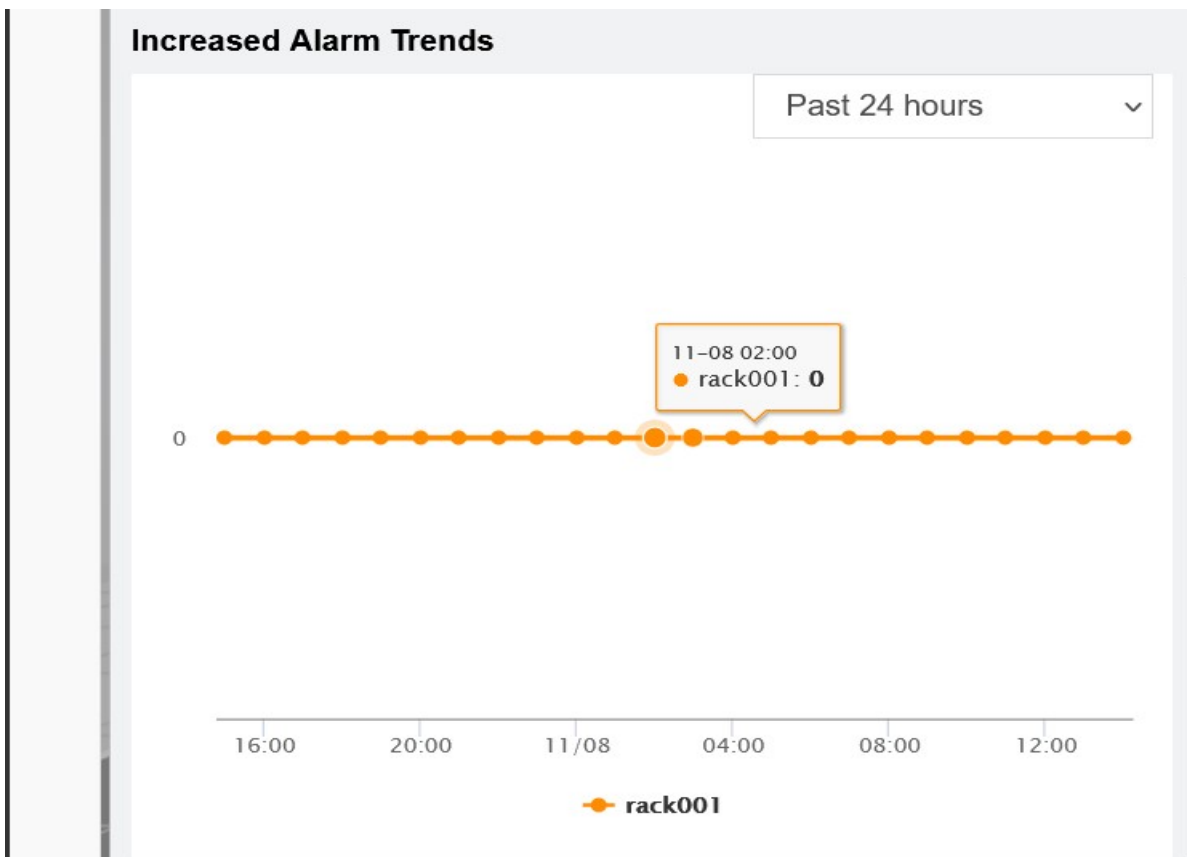
Figure 9-13 Content displayed on the warning card
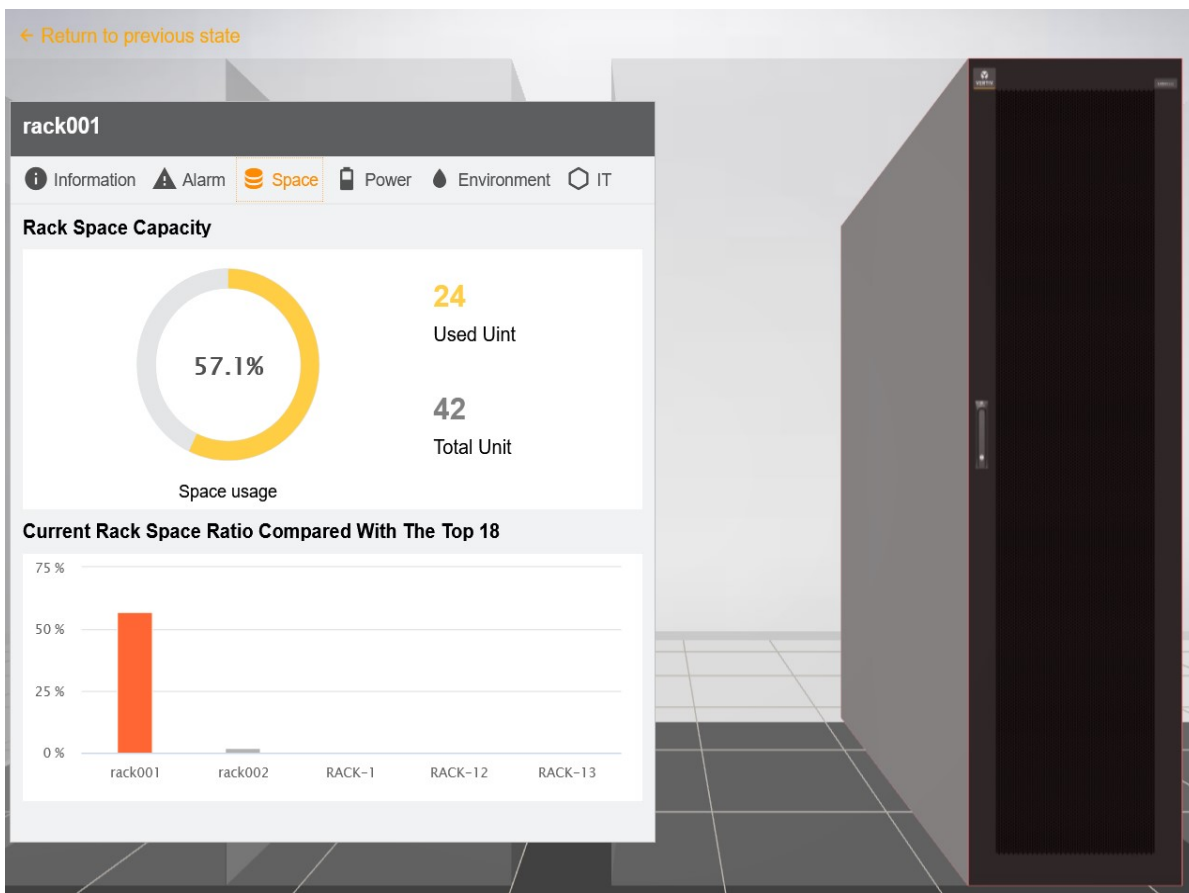
Figure 9-14 Content displayed on the space card
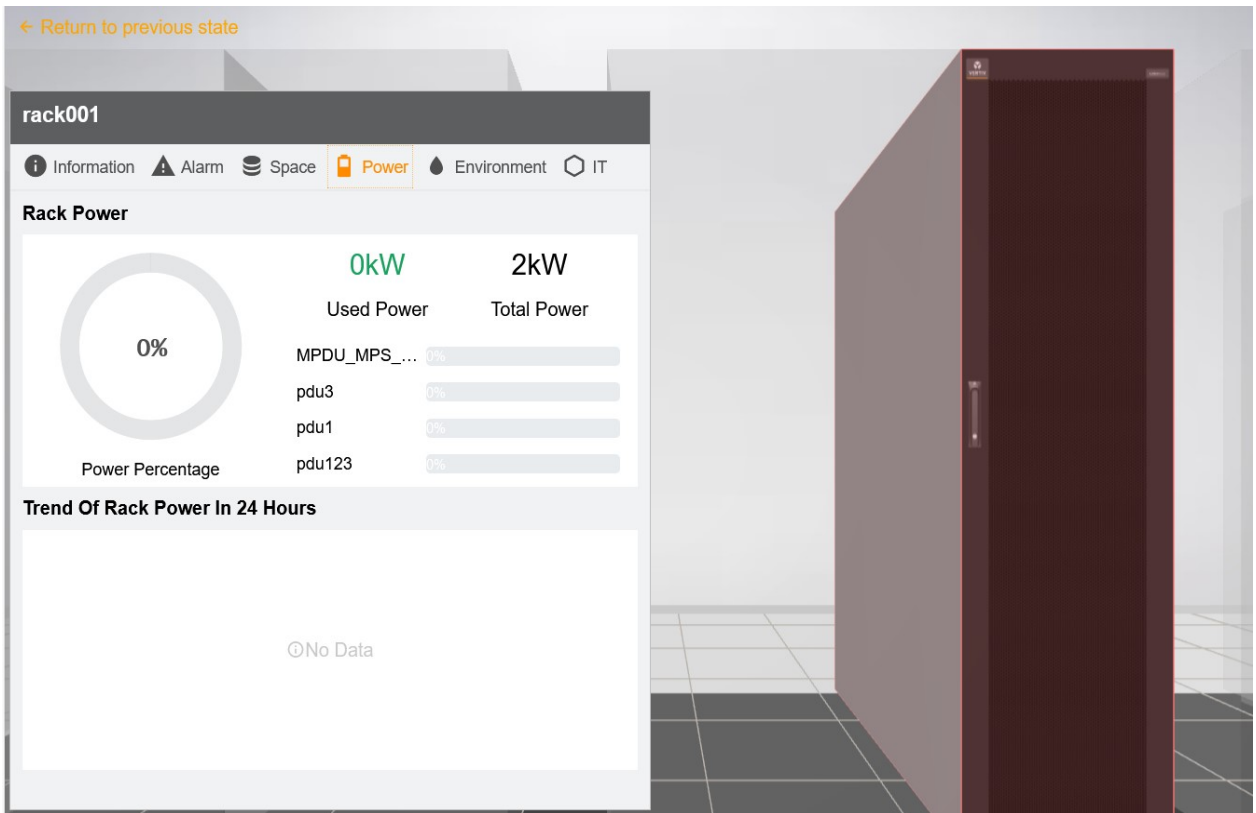
Figure 9-15   Content displayed on the power distribution card
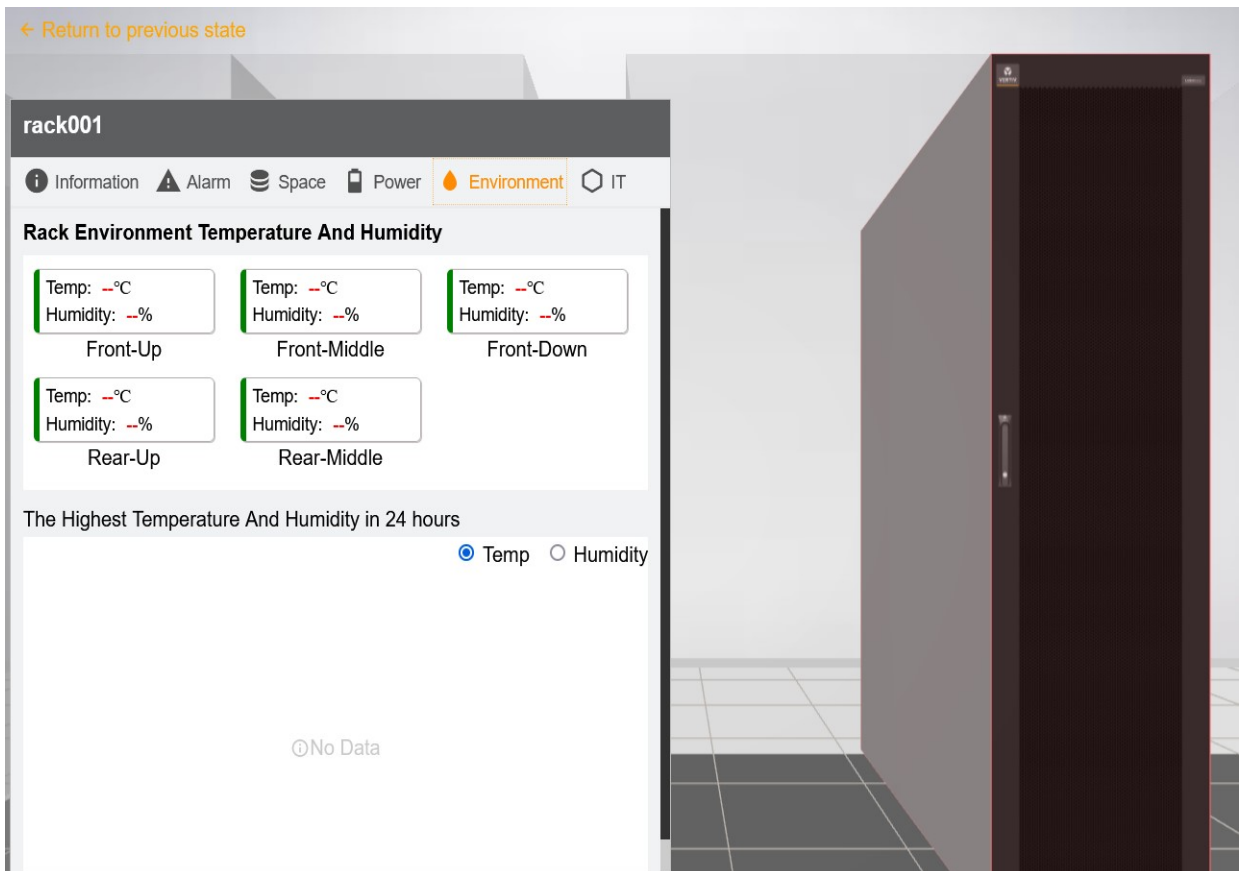
Figure 9-16   Content displayed on the environment card
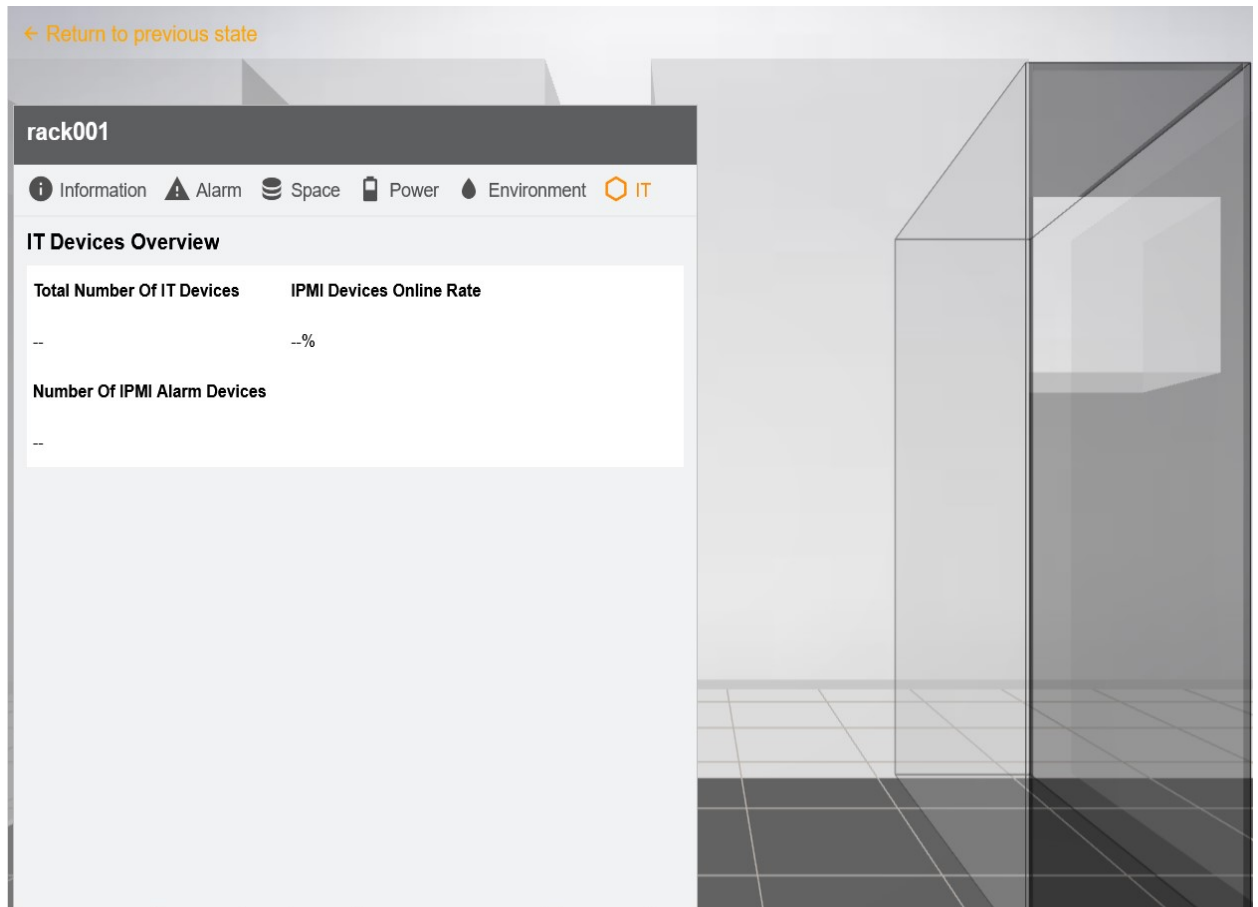
Figure 9-17 Content displayed on the IT category card

When you switch to the IT category card, you can click the server model on the right part to enter the server view (If there is no physical display model, the site may not be arranged. That is, the site is not synchronized, or the number of devices is too large, which exceeds the monitoring range).
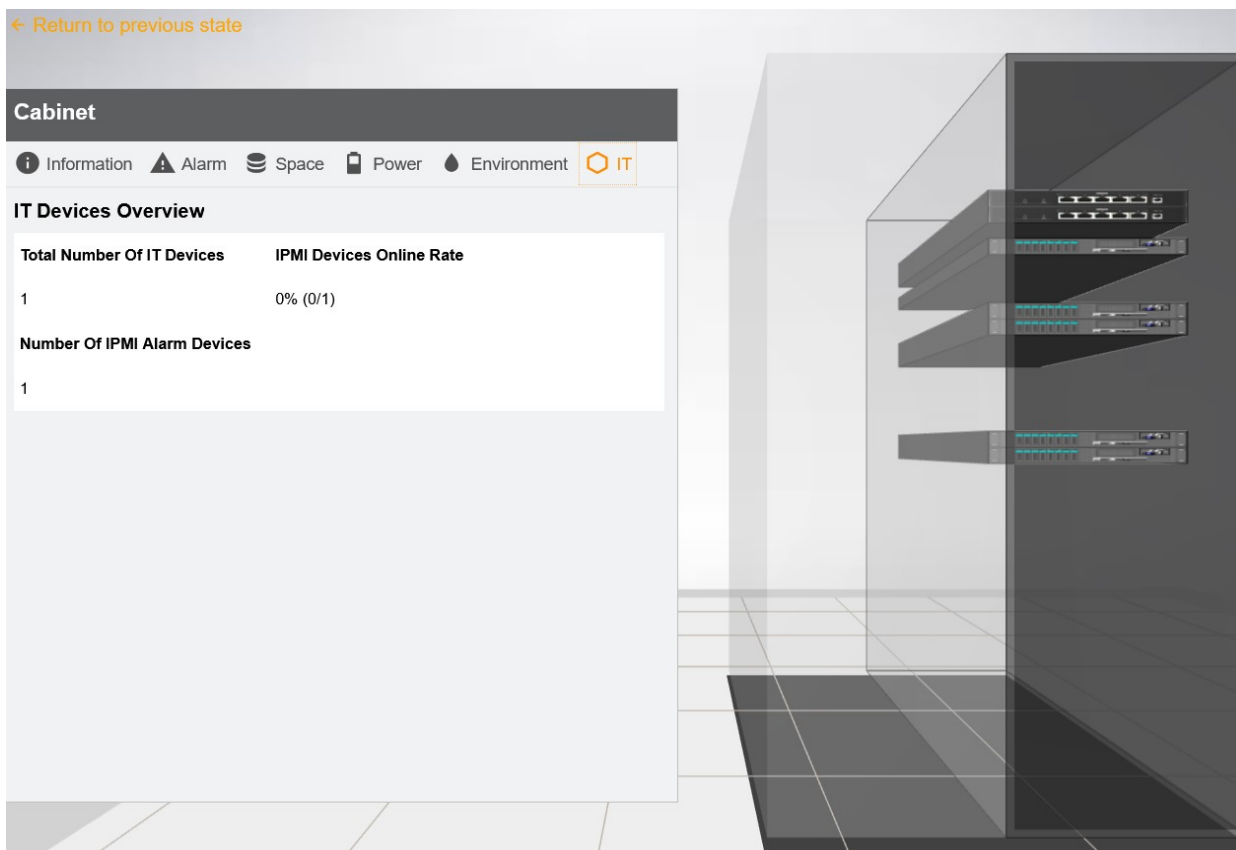
Figure 9-18   Single-rack 3D view of the Smart Aisle site - IT category

The server view card contains the basic information, alarms and logs. You can switch between cards or click the back button on the left side to go back to the previous view, as shown in the following figure.
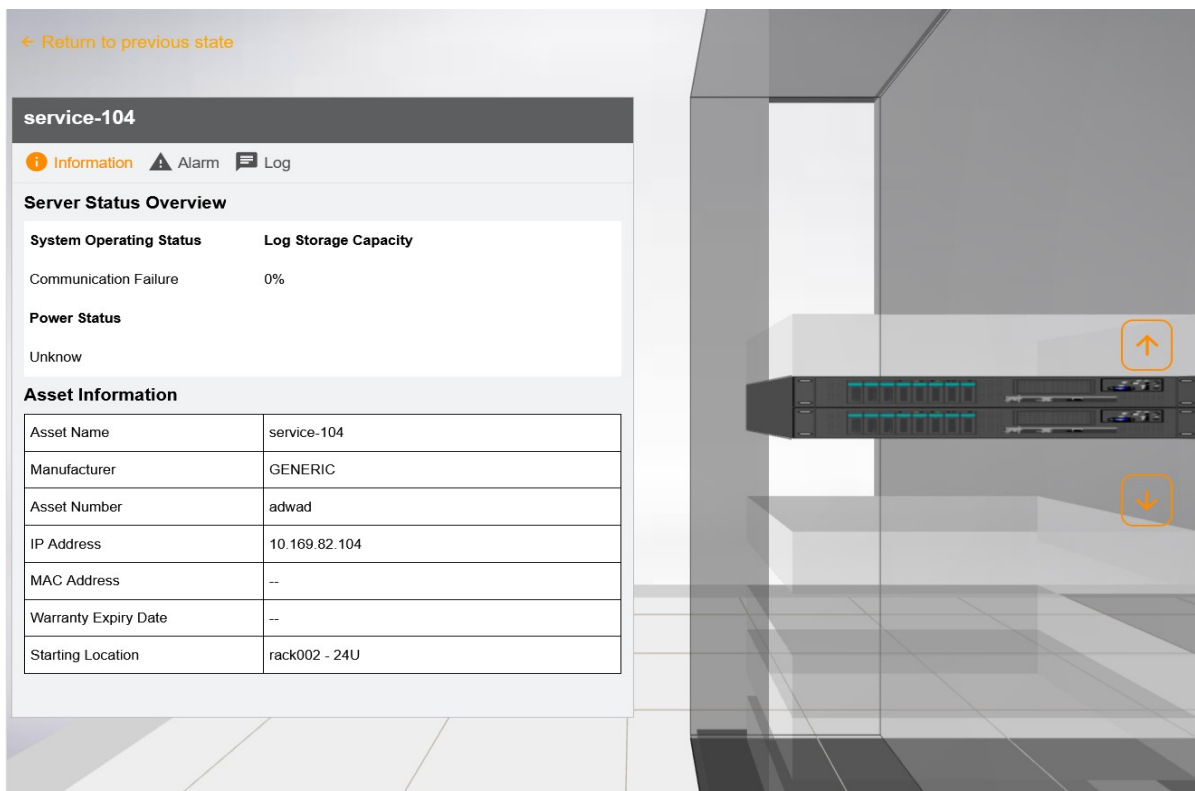
Figure 9-19   Server view of the Smart Aisle site

When a device has an alarm, it blinks red, and an alarm bubble appears on the top. You can click the bubble to view alarm and other information.
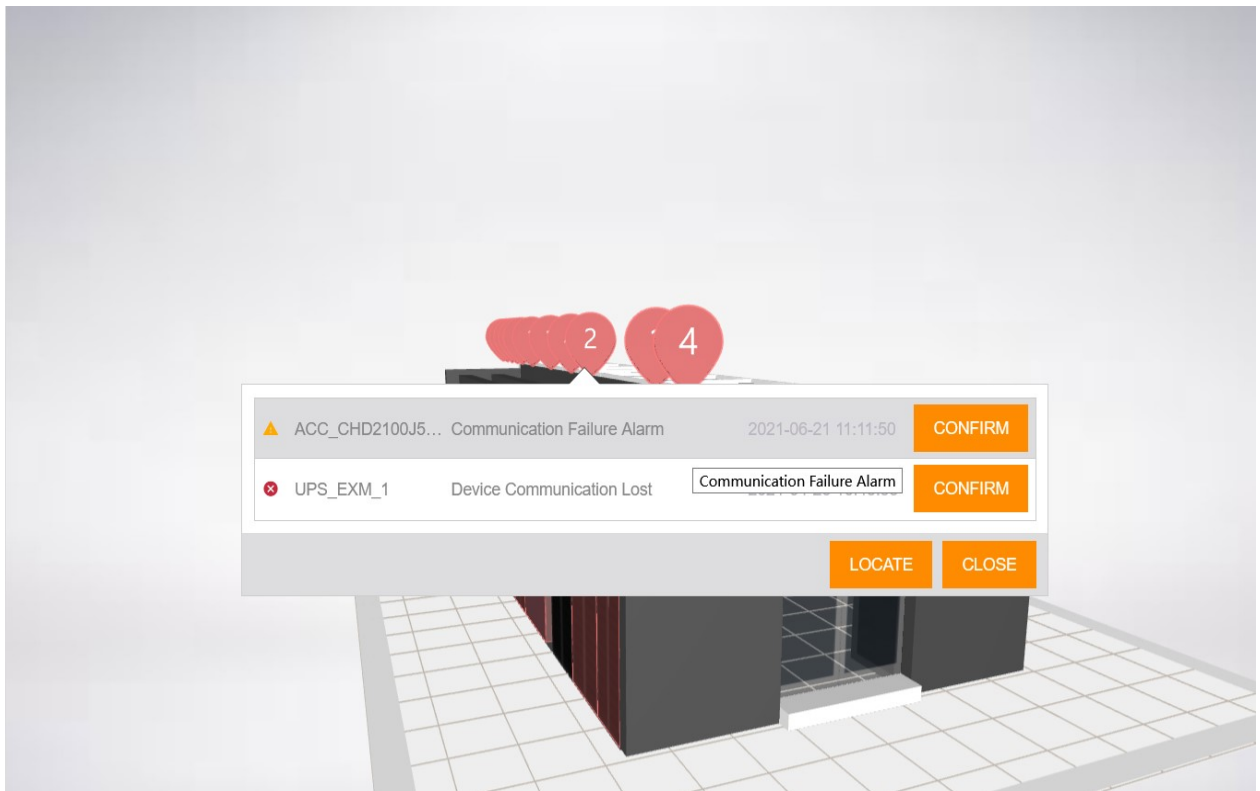
Figure 9-20   Smart Aisle site - Alarm bubble

However, the card content display of the single rack of the UPS, air conditioner, and power distribution cabinet is different from that of the rack.

For example, the content of the single rack of UPS mainly includes the basic information, alarm, and state. The basic information card of the UPS includes an overview of the UPS state and the asset information set when the UPS is added. The warning card contains the current warning of the UPS and the trend line graph of new alarms in the past 24 hours and 7 days (similar to the warning card of the rack). The state card shows the UPS state flowchart.

Figure 9-21   Basic information about UPS

The content of the single rack of air conditioner includes the basic state, alarm, and environment cards. The basic state card includes an overview of the air conditioner state and the asset information set when the air conditioner is added. The alarm card is similar to that of the UPS and rack, including the current alarm and alarm trend. The

environment card records the temperature and humidity of the air conditioner, as well as the temperature change trend curve.
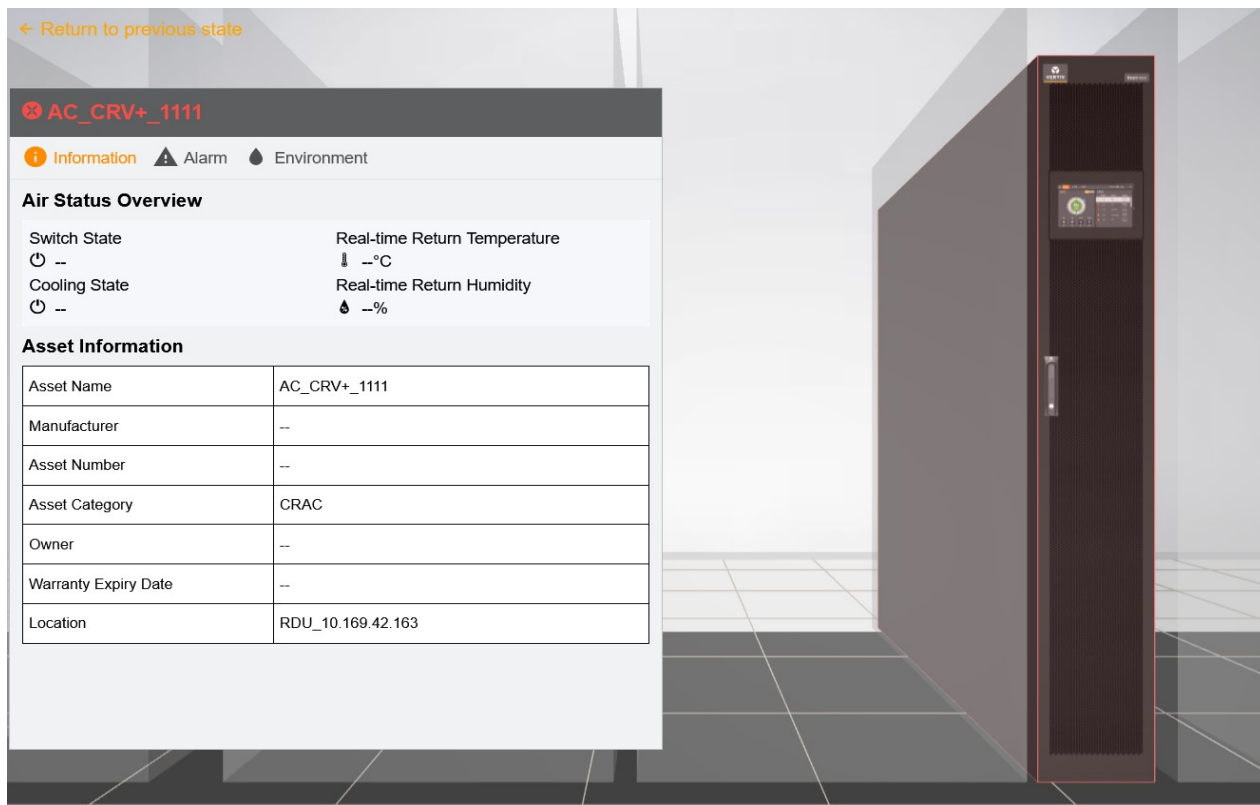
Figure 9-22 Basic information about AC

The content of the power distribution cabinet mainly includes the following cards: Basic information, alarm, and state. Basic information card mainly includes an overview of SPM state and asset information set when the SPM is added. The alarm card is similar to that of the rack and UPS. The state card describes the tributary state and the real-time power state graphs of top 20 tributaries.
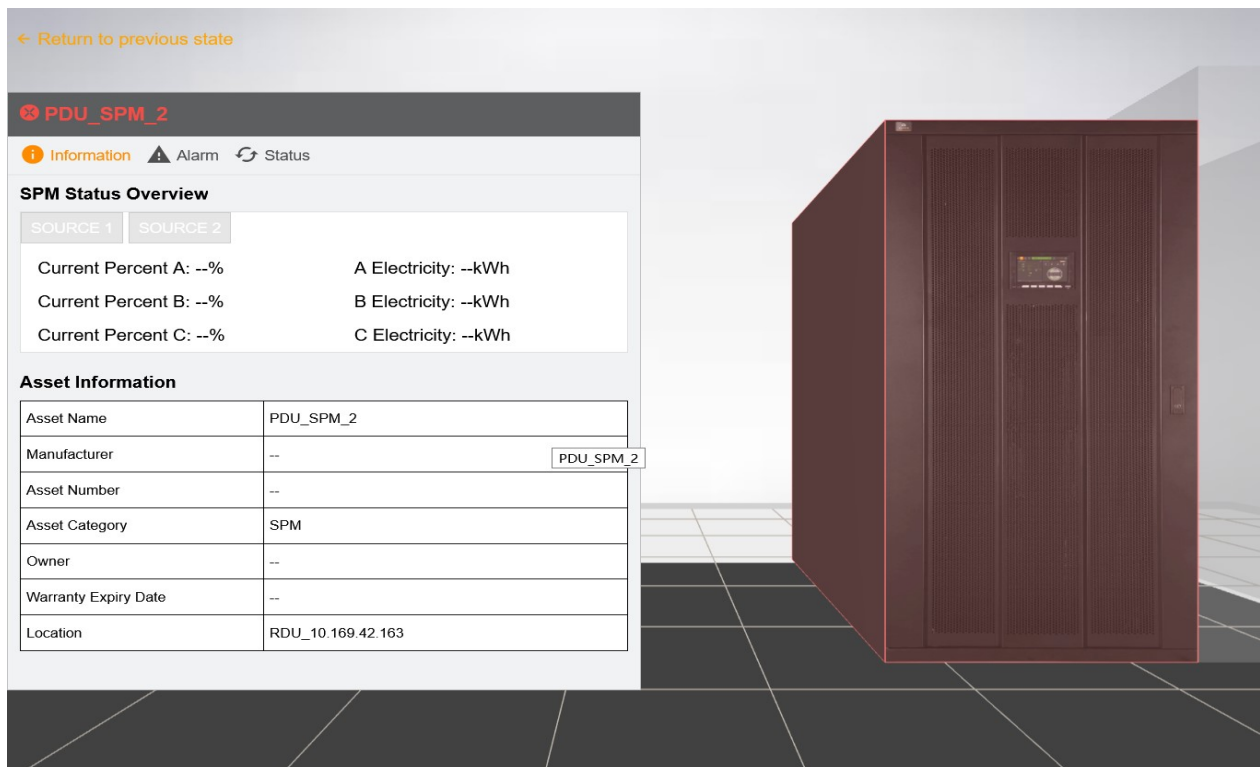
Figure 9-23   Basic information about SPM

Space Capacity module

Click the **Space Capacity** tab to enter the **Space Capacity** 3D module, as shown in the following figure. The system displays the space usage of each rack in the current site through the proportion of the 3D colored blocks inside the rack. In this scenario, you can also rotate, zoom in/out, and move the module for display. Click the corresponding rack to enter the focused state (similar to the single-row view of Smart Aisle), and click to view the display of space capacity.
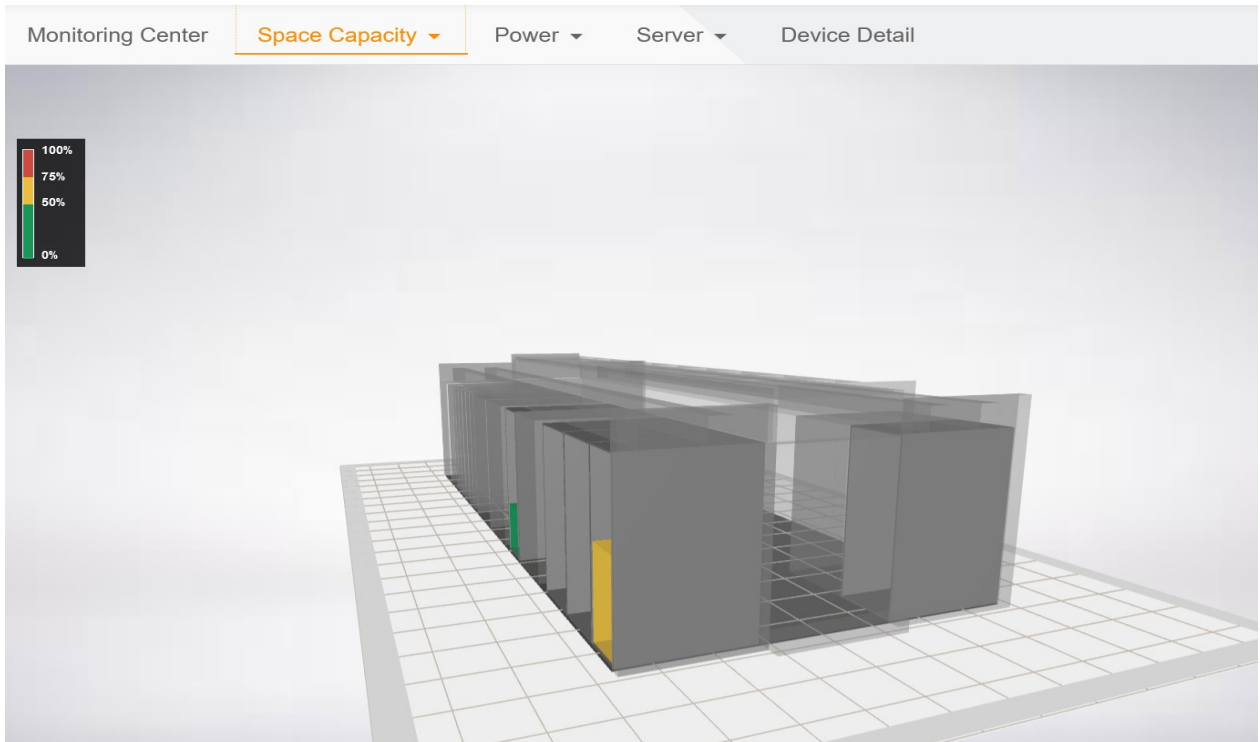
Figure 9-24   Space Capacity 3D module of the Smart Aisle site
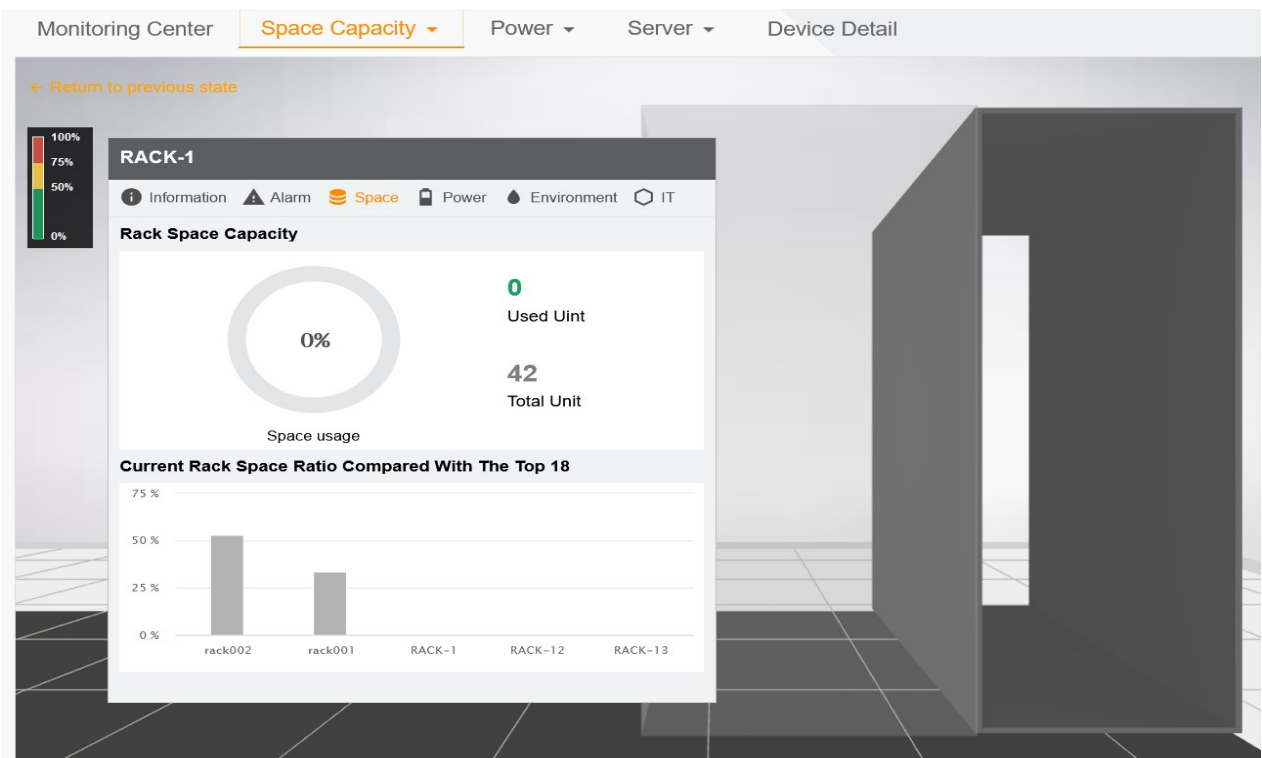
Figure 9-25 Display of rack space capacity

Power 3D module

Click the **Power** tab to enter the **Power** 3D module, as shown in the following figure. The system displays the power usage of each rack in the current site through the proportion of the 3D colored blocks inside the rack. In this scenario, you can also rotate, zoom in/out, and move the module for display. Click the corresponding rack to enter the focused state (similar to the single-row view of Smart Aisle), and click to view the display of general power distribution capacity and used power capacity.
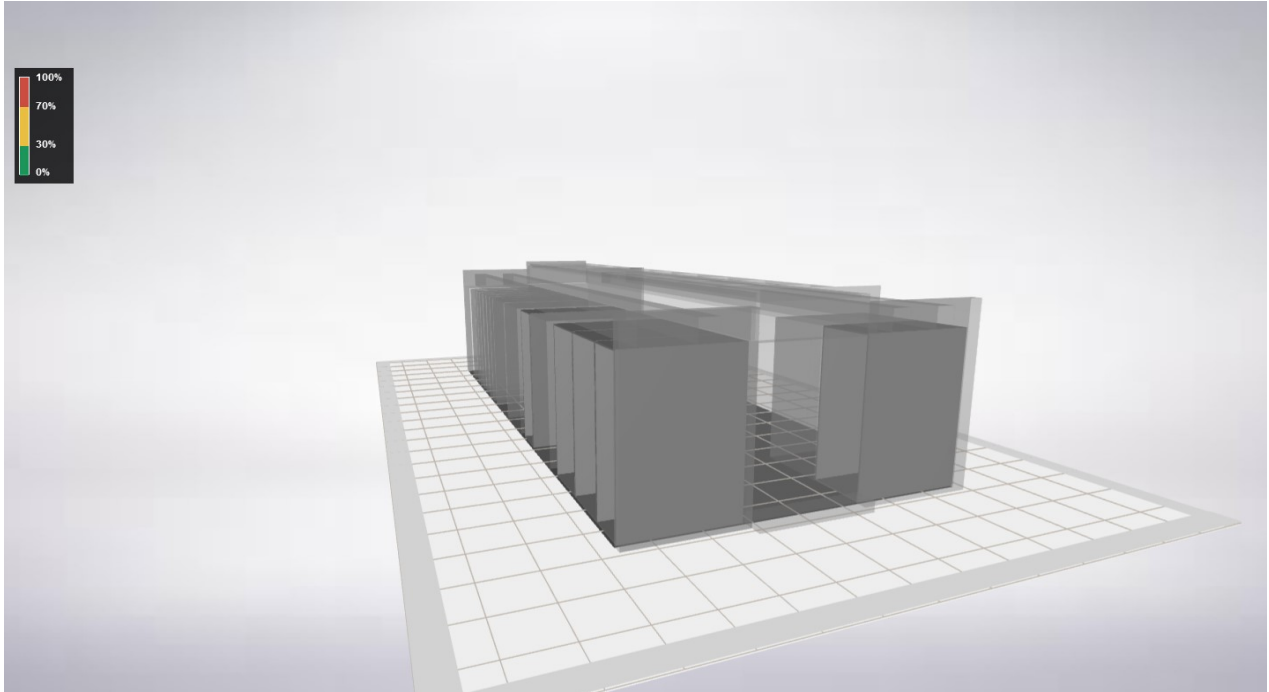
Figure 9-26   Power 3D module of the Smart Aisle site
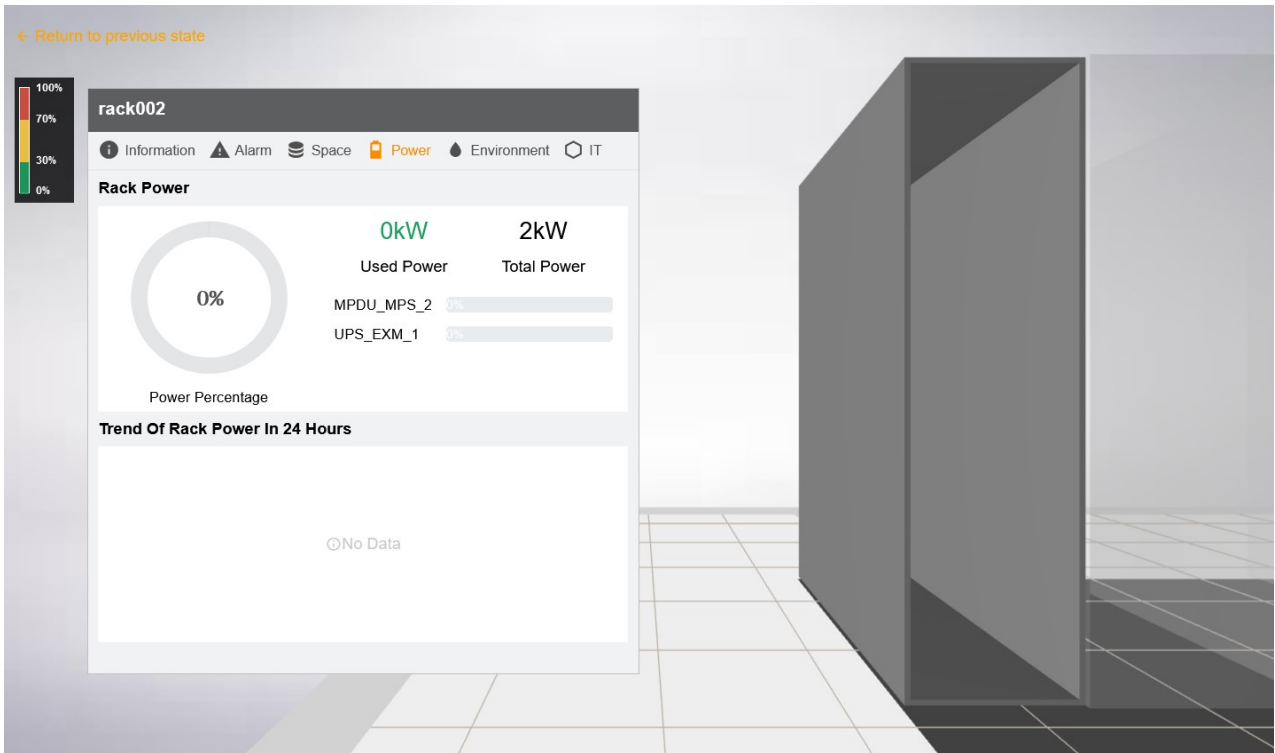
Figure 9-27   Display of rack space capacity

Thermal View 3D module

Click the **Thermal View** tab to enter the **Thermal View** 3D module. This module displays three temperature labels of the rack, namely, upper, middle, and lower. You can also rotate, zoom in/out, move, and focus on the 3D module. In

addition, you can click [gear icon] on the left thermal bar to set the maximum and minimum temperature values for monitoring. Then, the system adjusts the label color based on the rack temperature. In this scenario, you can click a device to switch between views.
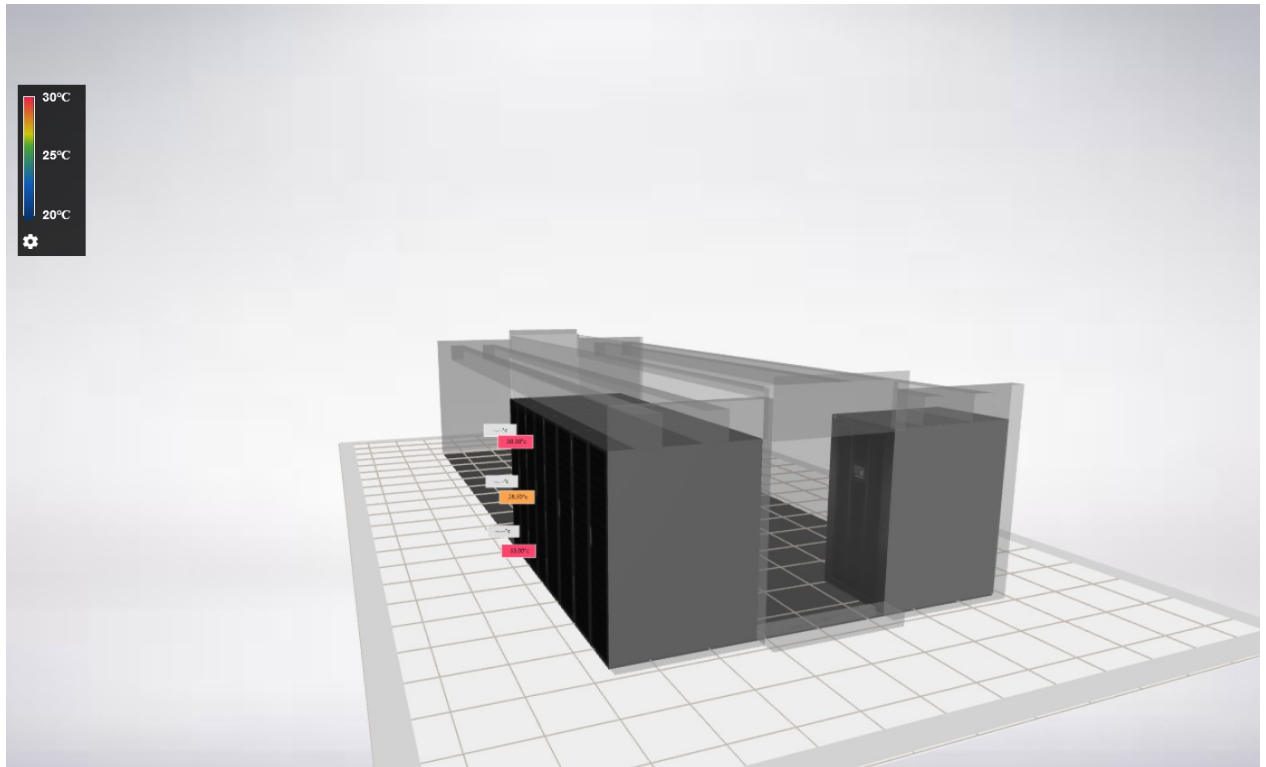
Figure 9-28   Thermal View 3D module of the Smart Aisle site
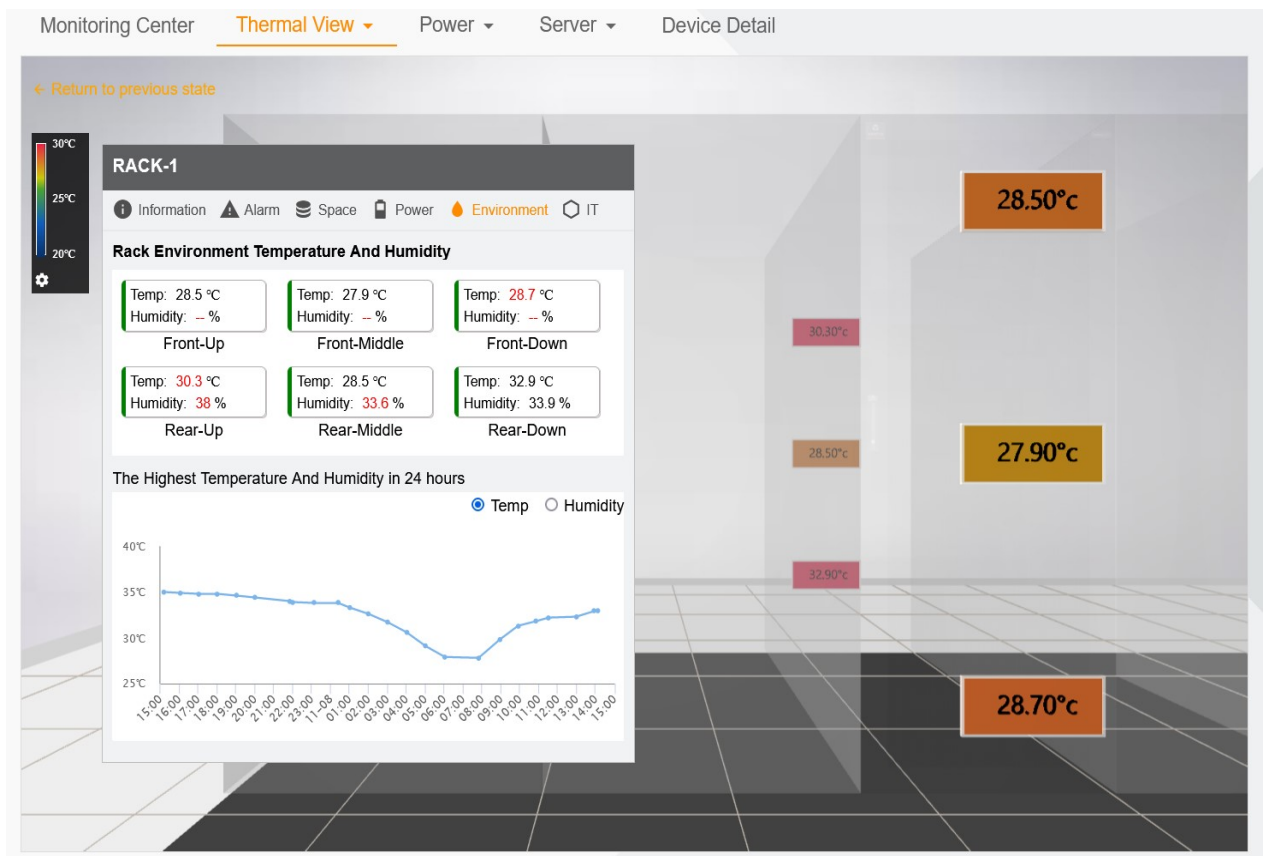
Figure 9-29   Display of rack temperature label and environment
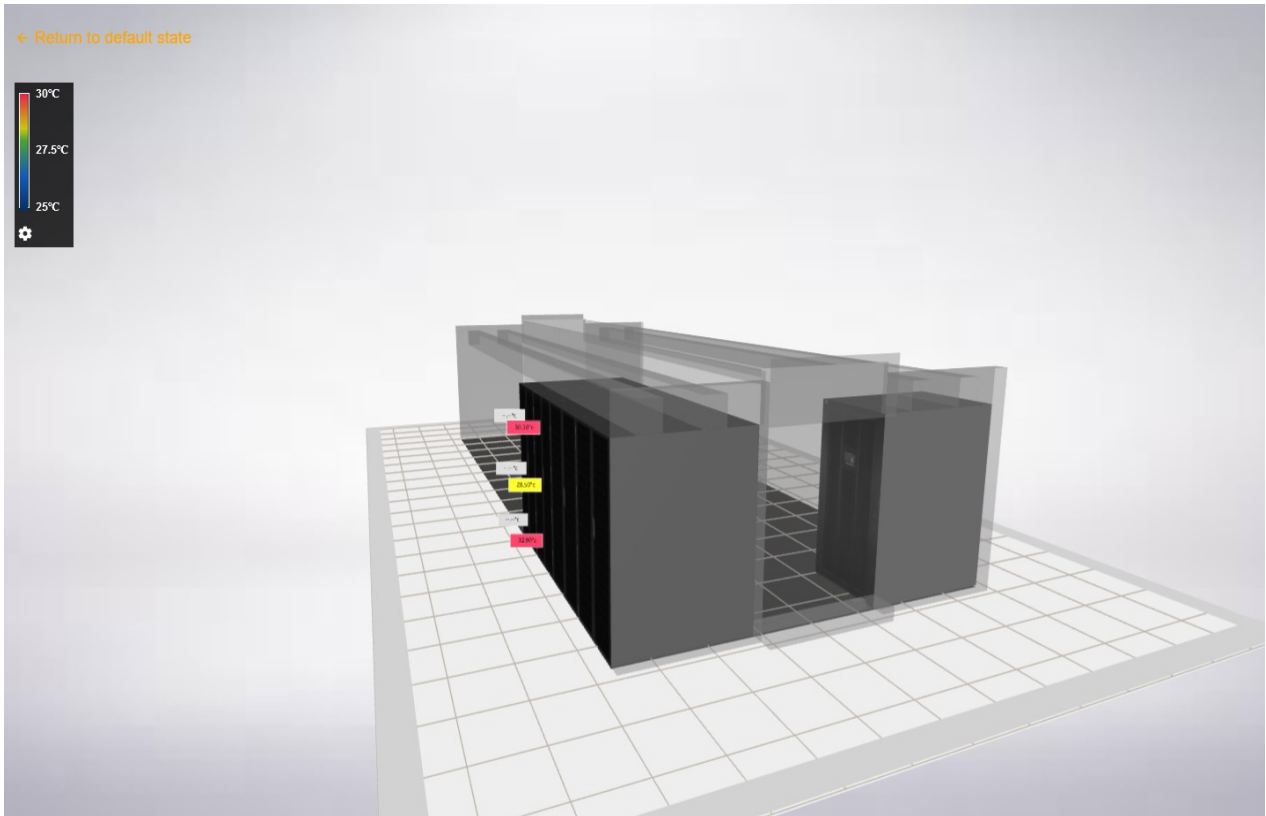
Figure 9-30 Changes in label colors after the adjustment of temperature range

Heat Map 3D module

Click the **Heat Map** tab to enter the **Heat Map** 3D module, as shown in the following figure. This module displays the temperature monitoring of all devices in a Smart Aisle site. In addition, you can click ⚙ on the left thermal bar to set the maximum and minimum temperature values for monitoring. Then, the system adjusts the rack color based on the rack temperature. In this scenario, you can click a device to switch between views.

Figure 9-31 Heat Map 3D module of the Smart Aisle site

Figure 9-32   Changes in heat maps after the adjustment of temperature range

9.3.2   Displaying a general site in the 3D module

The 3D module of the general site is the same as that of the Smart Aisle site, except that the 3D view hierarchy of the general site does not have the single-row view, as shown in the following figure.
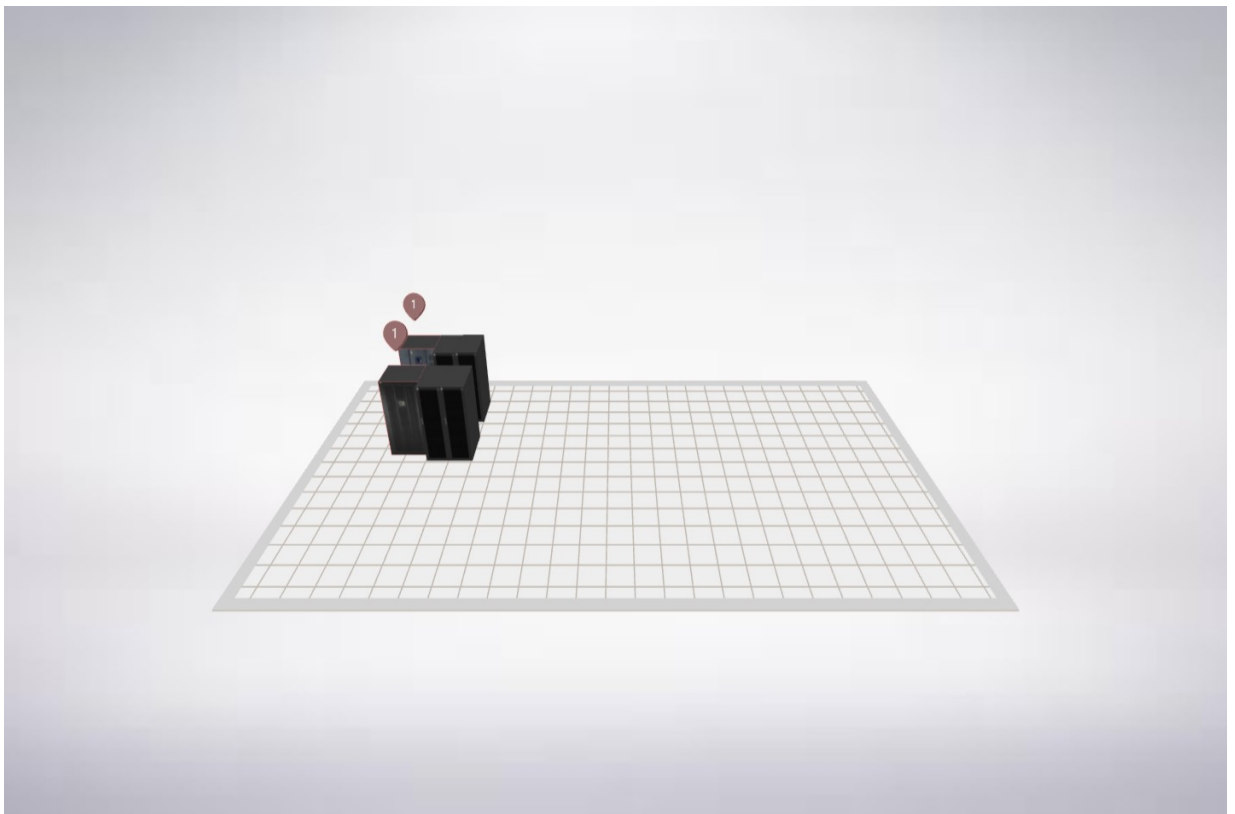
Figure 9-33   3D module of the general site

9.3.3   Displaying an area in the 3D module

3D module entry of an area

Click an area on the monitoring tree. Click the **3D** tab on the right side to enter the area-level 3D module, The 3D module in this area can display the total number of alarms of all sites in the area and the highest/lowest temperature and humidity monitored. You can click [↑] to hide the information, shown in the following figure.
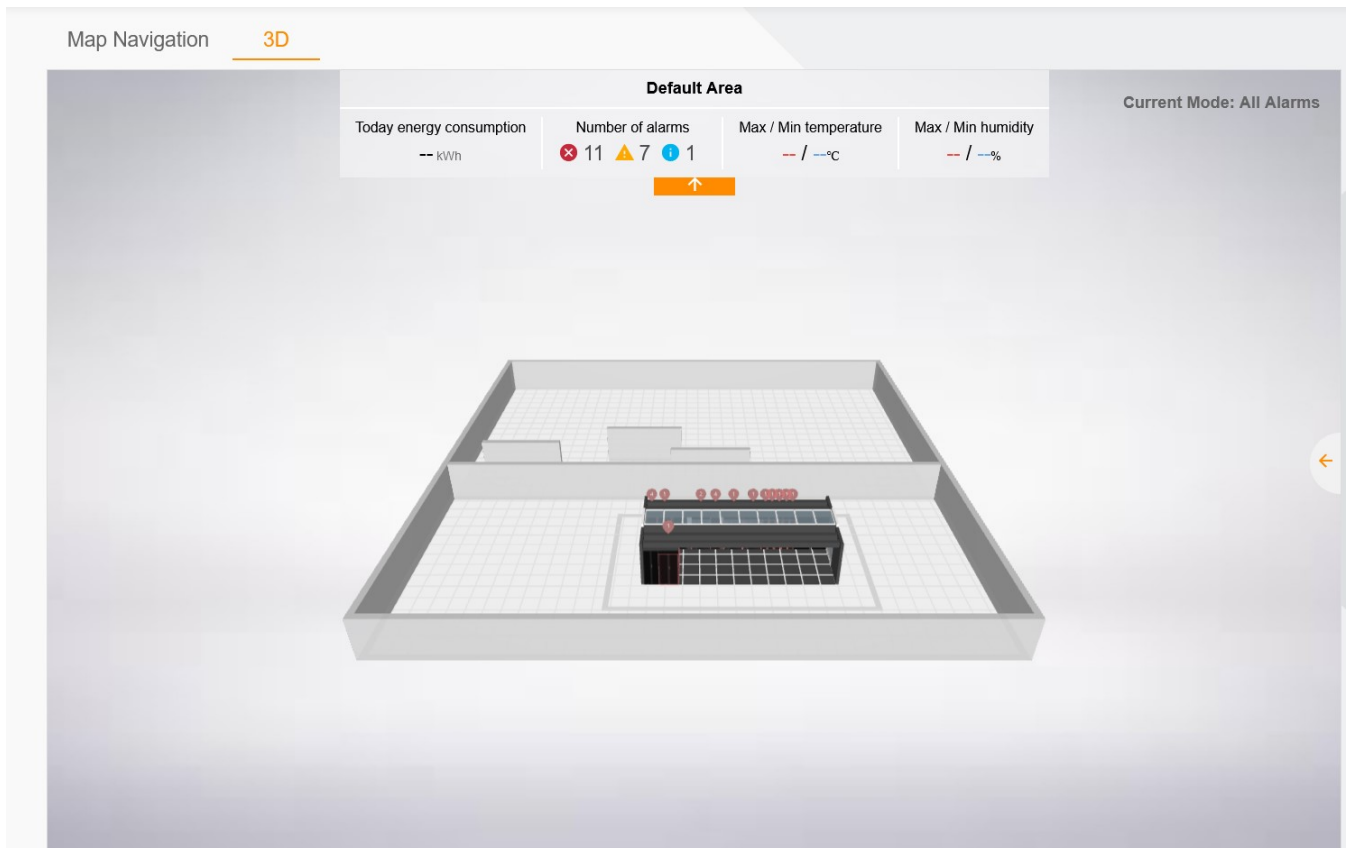
Figure 9-34   Area-level 3D module

If the 3D model of the site is not found in the area, you can click [⋮] in the area of the monitoring tree, open the functional menu, select **3D Configuration**, drag and drop the site from the shapes list on the left side to the canvas on the right side, and click [👁] . After previewing, click [💾] if you are satisfied.

You can select, zoom in/out, move, and restore the 3D module display in this area.

Mode switching

Click the functional menu on the right side of the area-level 3D module to switch to other modes.
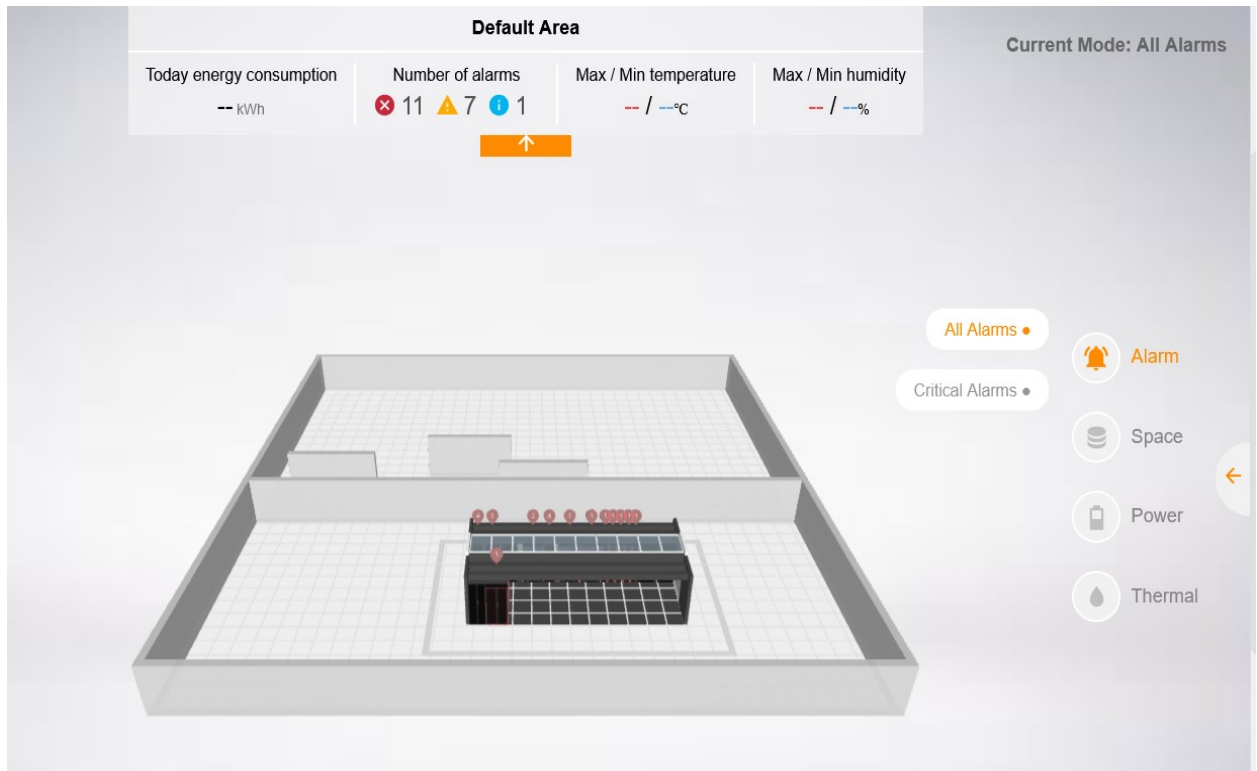
Figure 9-35   Area-level 3D module - Mode switching

When you switch to the space mode, the page displays the space allocation of sites in the entire area, shown in the following figure.
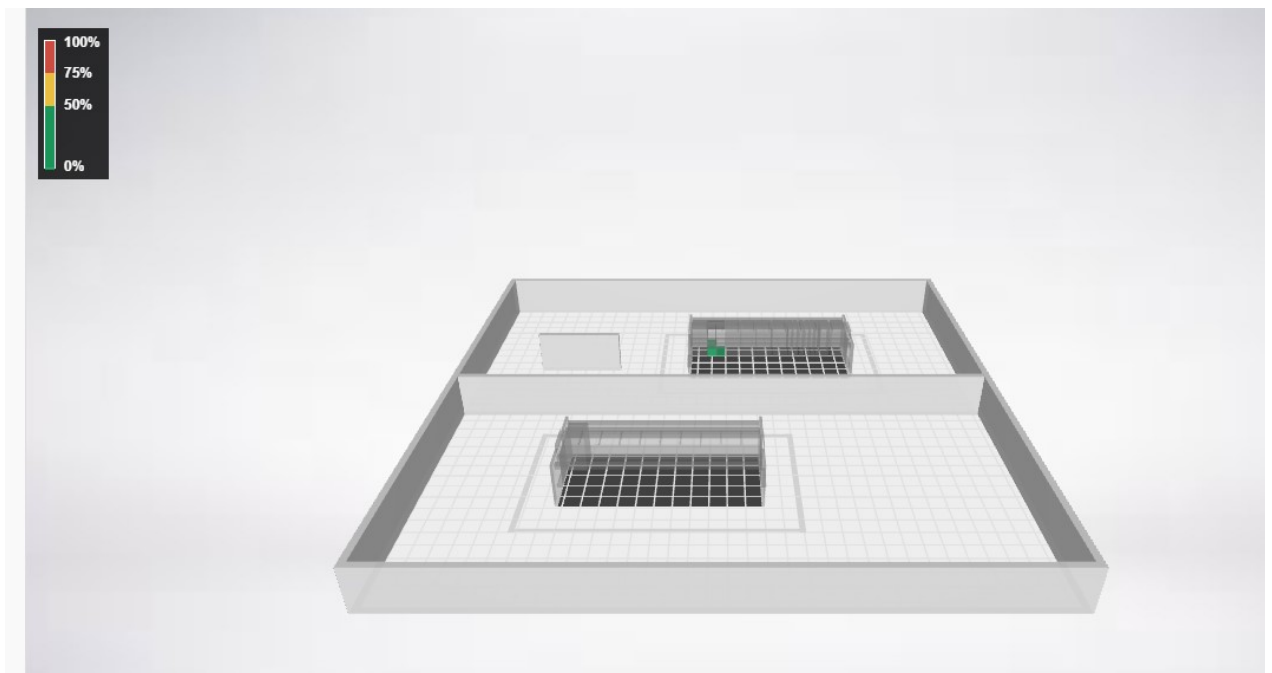
Figure 9-36 Area-level 3D module - Space allocation

Similarly, if you switch to the power or thermal field (temperature label and heat map) mode, you can view the power distribution of all sites in the area as well as the colored temperature changes.

Alarm bubble

Click the alarm bubble on the top of a device to pop up the related alarm information. Click **Locate** to rapidly locate the rack or UPS cabinet that functions abnormally.
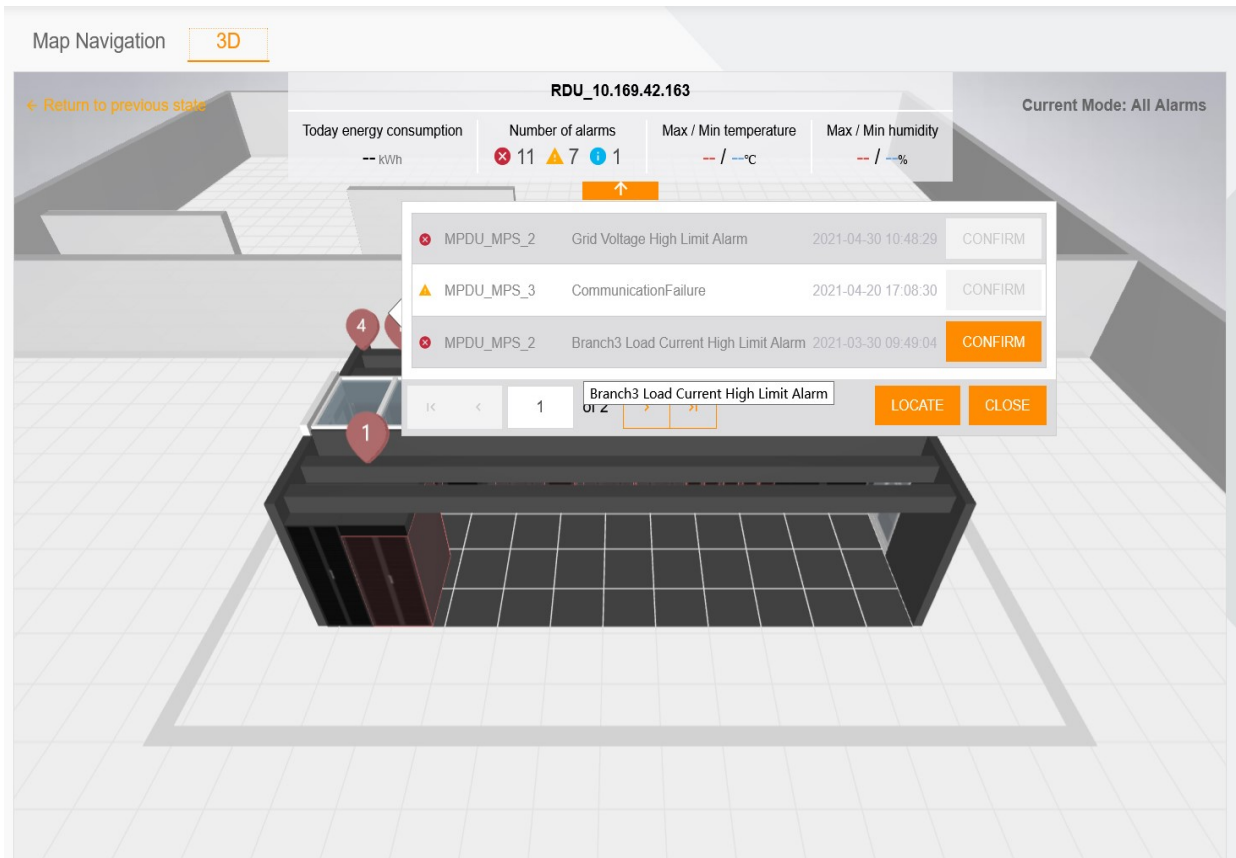
Figure 9-37   Area-level 3D module - Alarm bubble
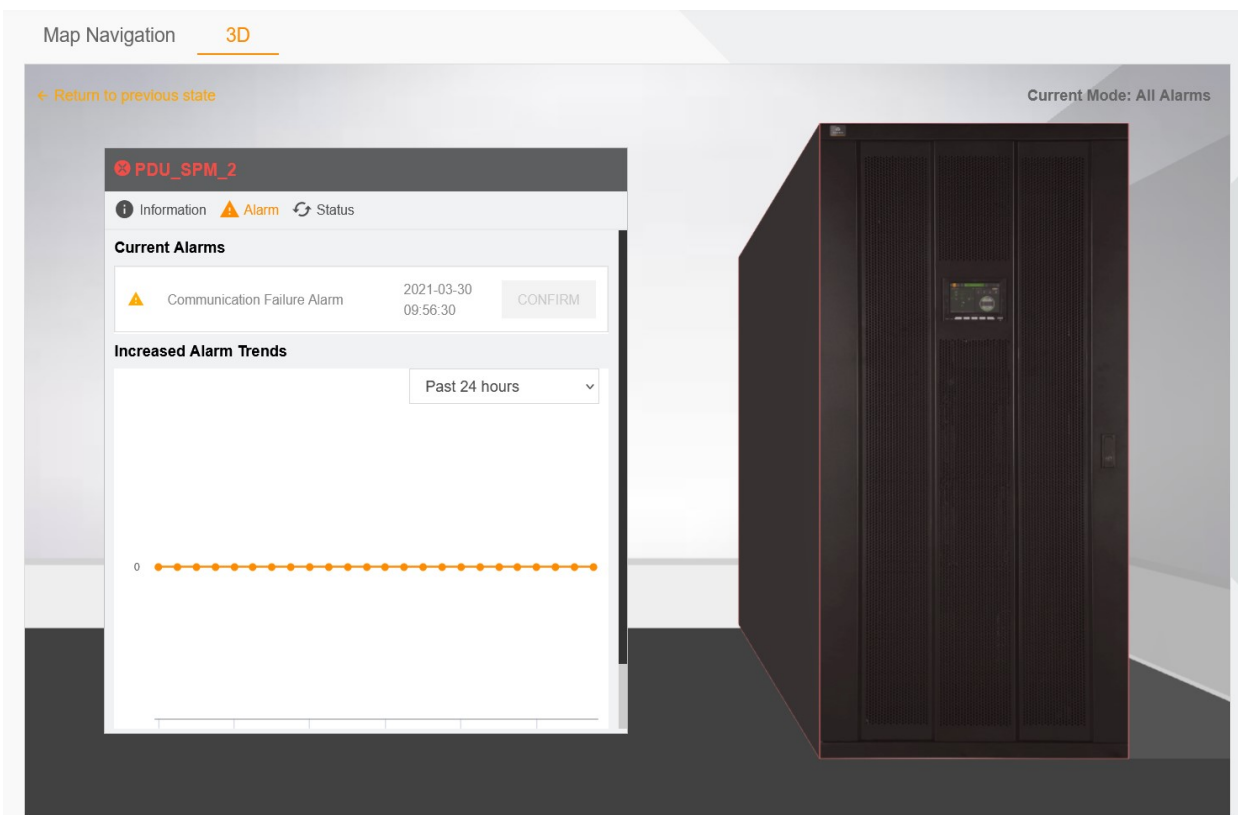
Locating on the alarm bubble

Chapter 10   IT Management

10.1   Overview

10.1.1   Overview

The IT management function implements IT device monitoring and management through server management and console device management functions.

10.1.2   Functional Module

The IT management module contains the following functional modules. For more information about the functional modules, see section *10.4*, *10.5*.

- Server management
- Console device management

10.2   Quick Start

10.2.1   Quick Deployment Procedure

To manage the server and console device using the IT management function, configure as follows:

[1] Open the browser, log in to the RDU collector, create an administrator user on the user management page of the RDU collector, and remember the user name and password.

[2] Open Smart InfraSight with a new browser and configure user authentication by referring to section *10.3*.

[3] Click a site on the monitoring tree and click the **Server** tab to manage the IPMI device, or click the **Switch** tab to manage the console device.

10.3   User Authentication Configuration

Note: Before using the IT management function, you must configure user authentication.

Click a site on the monitoring tree. If the site supports the server management and console device management functions, the **Server** and **Switch** tabs appear at the top of the right page. If you click the **Server** tab, the system displays the IPMI device management page. If you click the **Switch** tab, the system displays the console device management page. You can configure user authentication on either page once only.

Open a new browser, log in to the RDU collector, create an administrator user on the user management page of the RDU collector, and remember the user name and password. Go back to the IPMI device management page or console device management page, and click ✿ in the upper right part to pop up the **User Authentication Configuration** dialog box, as shown in Figure 10-1. Enter the correct user name and password created on the RDU collector, and click **SAVE**.

Figure 10-1   User Authentication Configuration of IT management module

     Note

1. The two-factor authentication login function cannot be enabled on the RDU collector.

2. The user name and password configured for user authentication are information of the RDU collector user, which should be an administrator.

3. This user is used for the communication between Smart InfraSight and RDU collector, and must not be occupied. This user cannot be used to log in to the RDU collector page.

4. If the user information is entered incorrectly, the security policy of the RDU collector may be triggered and the communication may be interrupted. It is necessary to wait for the RDU collector to release the policy restriction for the user. Alternatively, you can use a new RDU collector user.

10.4   Specific Functions of Server Management

The server management function can manage the IPMI devices connected to the system through the RDU collector. IPMI devices specifically refer to IT devices connected to the system through the IPMI2.0 protocol. The accessibility and communication stability of IPMI devices are subjective to the support capabilities of the IT devices.

10.4.1   IPMI Device Management

Click a site on the monitoring tree. If the site supports the server management function, the **Server** tab appears at the top of the right page. Click the **Server** tab to enter the IPMI device management page, as shown in Figure 10-2. The page displays the information about the IPMI device connected to the system through the current RDU collector, including **INDEX**, **DEVICE NAME**, **DESCRIPTION**, **IP ADDRESS**, **PORT**, **POWER STATE**, and **RUNNING STATE**.

- Click 🔍 in the upper right part to display the search box. Enter the filter conditions to display the filtered IPMI devices.

- Click ▥ in the upper right part to control the display of the **INDEX**, **POWER STATE**, and **RUNNING STATE** columns.

- Click ➕ in the upper right part to open the page for adding an IPMI device to the system.

- Click ↻ in the upper right part to re-request the IPMI device information from the RDU collector and refresh the information about the IPMI device on the list.

- Click 🔔 in the upper right part to open the alarm management page of the IPMI device.

- Click ⚙ in the upper right part to pop up the **User Authentication Configuration** dialog box, where you can set or modify the user authentication information. For details, see section *10.2*.
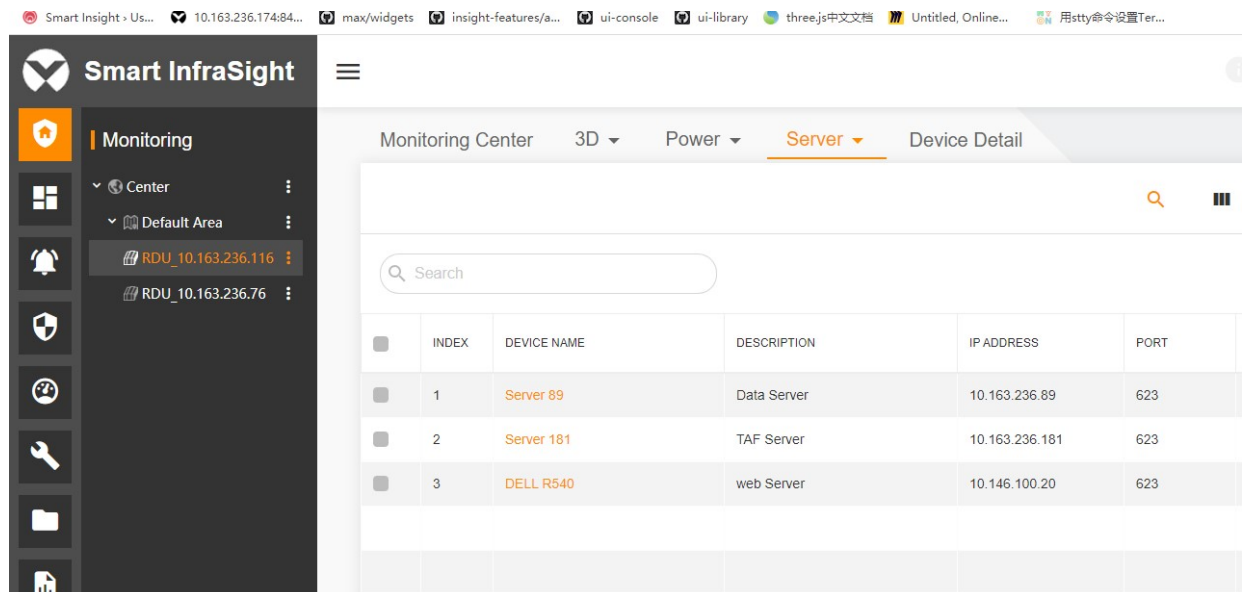
Figure 10-2   List of IPMI devices

Click ⊕ in the upper right part to open the **Create new IPMI device** page. Enter the IPMI device information (**IP Address**, **Port**, **Username**, **Password**, and **User Level**, which must be correctly entered according to the configuration on the IPMI device end), and click **SAVE**, as shown in Figure 10-3. The new IPMI device is synchronously added to the RDU collector.
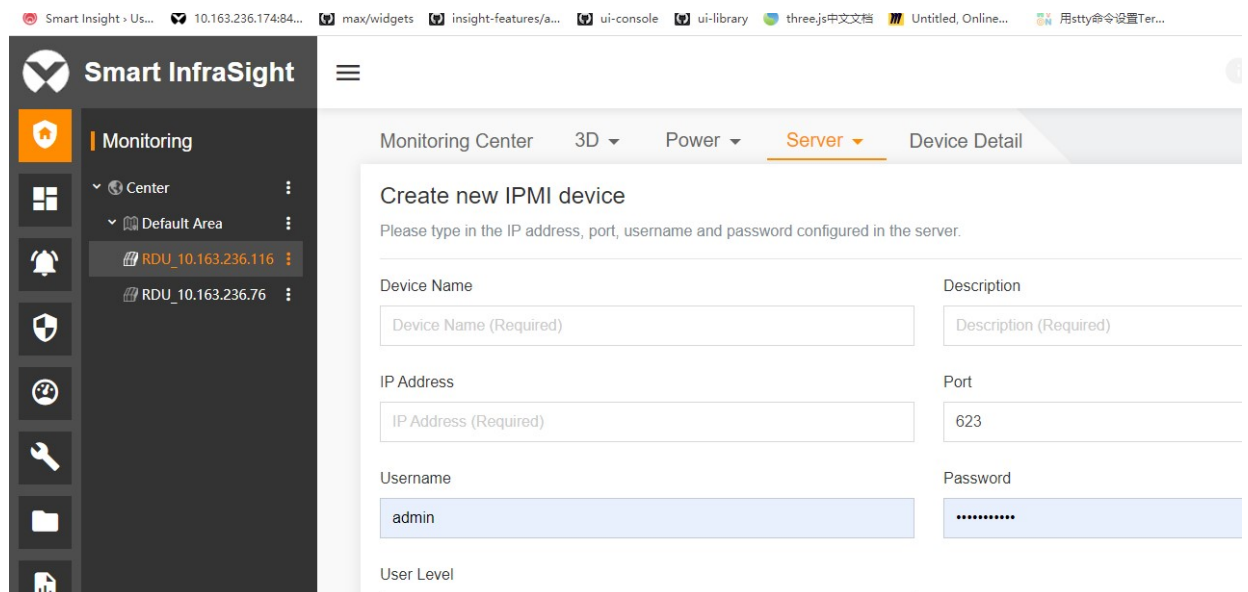
Figure 10-3   Adding an IPMI device

Click the ⋮ list menu suffixed to an IPMI device on the IPMI device list and select **Edit**. The **Edit IPMI device** page is displayed, as shown in Figure 10-4. Enter new IPMI device information (**IP Address** cannot be modified. **Port**, **Username**, **Password**, and **User Level** must be correctly entered according to the configuration on the IPMI device end), and click **SAVE**. The new IPMI device information is synchronously updated to the RDU collector.
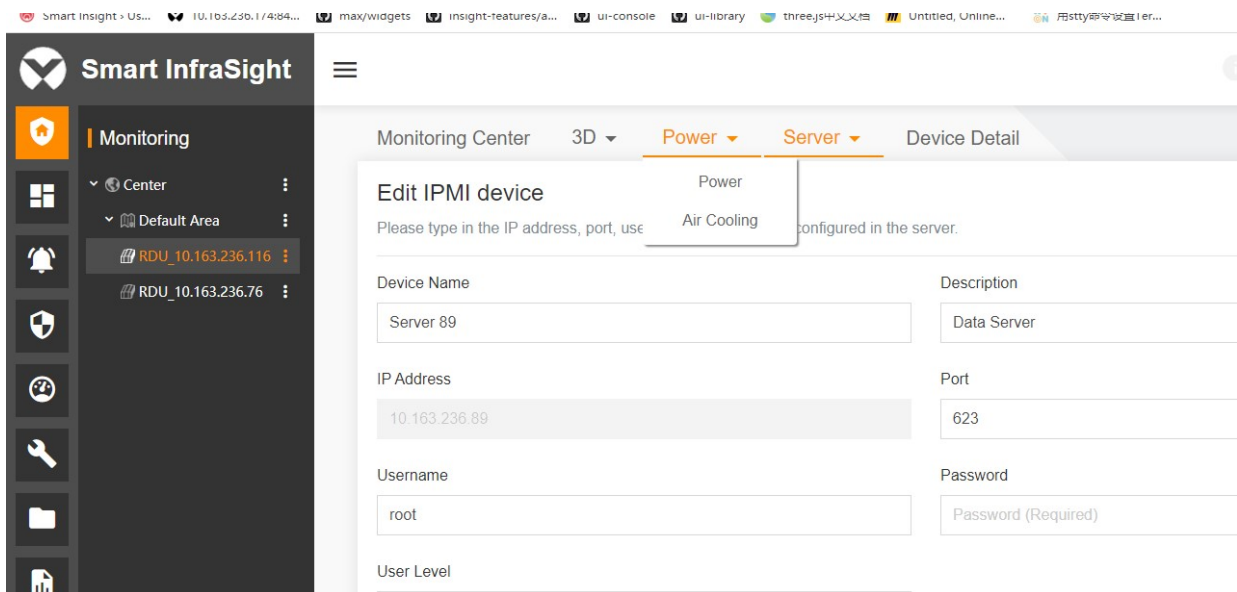
Figure 10-4   Editing the IPMI device

Click the ⋮ list menu suffixed to an IPMI device on the IPMI device list and select **Delete**. The **Confirmation** dialog box is displayed, as shown in Figure 10-5. If you click **DELETE**, the IPMI device is deleted from the system and the RDU collector synchronously.
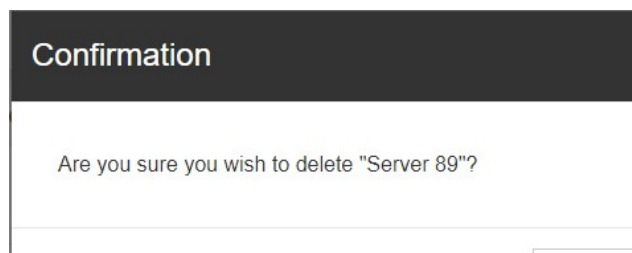
Figure 10-5   Deleting the IPMI device

10.4.2   Viewing IPMI Device Details

Click the ⋮ list menu suffixed to an IPMI device on the IPMI device list and select **View details**. The **IPMI device details** page is displayed, as shown in Figure 10-6. The page displays **Running State** (when the communication is normal, **Running State** is displayed green. When the communication is interrupted, **Running State** is displayed gray. When the device has an alarm, **Running State** is displayed red), **Power State**, **Description**, **IP Address**, **MAC Address**, **Log Capacity**, **Manufacture**, **S/N**, **BIOS Rev**, **BMC Rev**, and **BMC Time** of the IPMI device.

Click the **Event Log** tab on the **IPMI device details** page. The tab page displays the event logs of the IPMI device. To download all event logs, click **EXPORT LOG**. To clear all event logs of the device, click **CLEAR LOG**.

Click the **FRU Information** tab on the **IPMI device details** page. The tab page lists the FRU System Board properties and values.

Click the **Sensor Information** tab on the **IPMI device details** page. The tab page displays the sensor information of the IPMI device. The sensor states include normal, alarm, and unknown. In normal state, a green icon is displayed. In alarm sate, a red icon is displayed. In unknown state, a gray icon is displayed. The sensor information of the IPMI device is refreshed once every 10s.
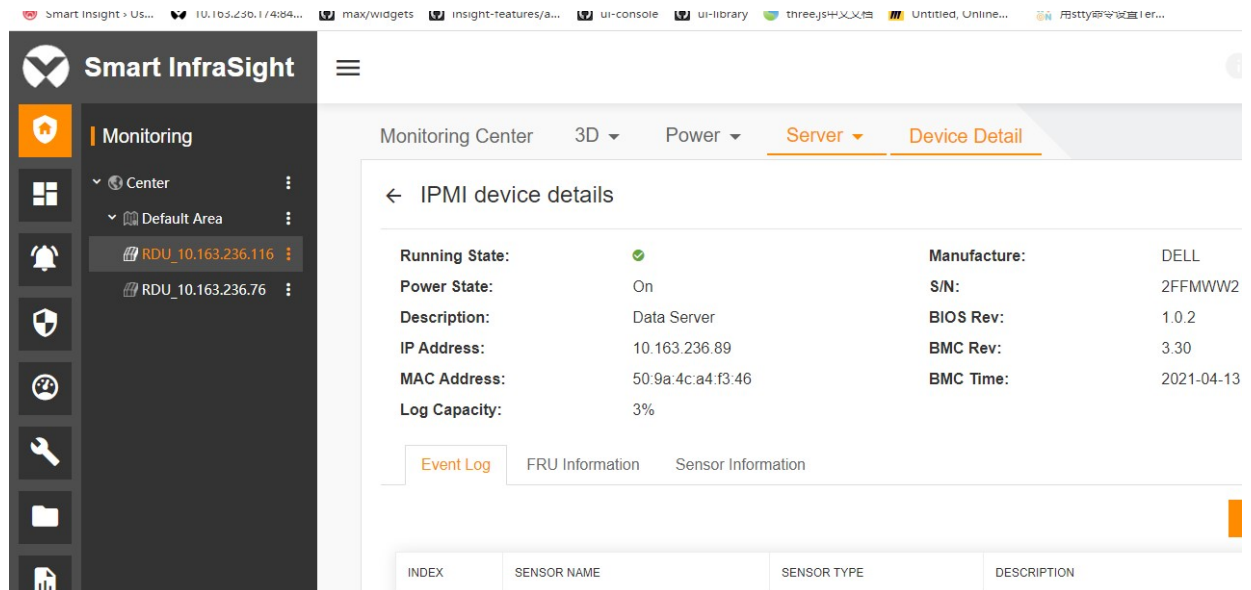
Figure 10-6 IPMI device details page

10.4.3 Time Setting of the IPMI Device

Click the ⋮ list menu suffixed to an IPMI device on the IPMI device list and select **Time Setting**. The **Time Setting** page is displayed, as shown in Figure 10-7. Select the desired time and click **SAVE**. The BMC time of the device is modified.
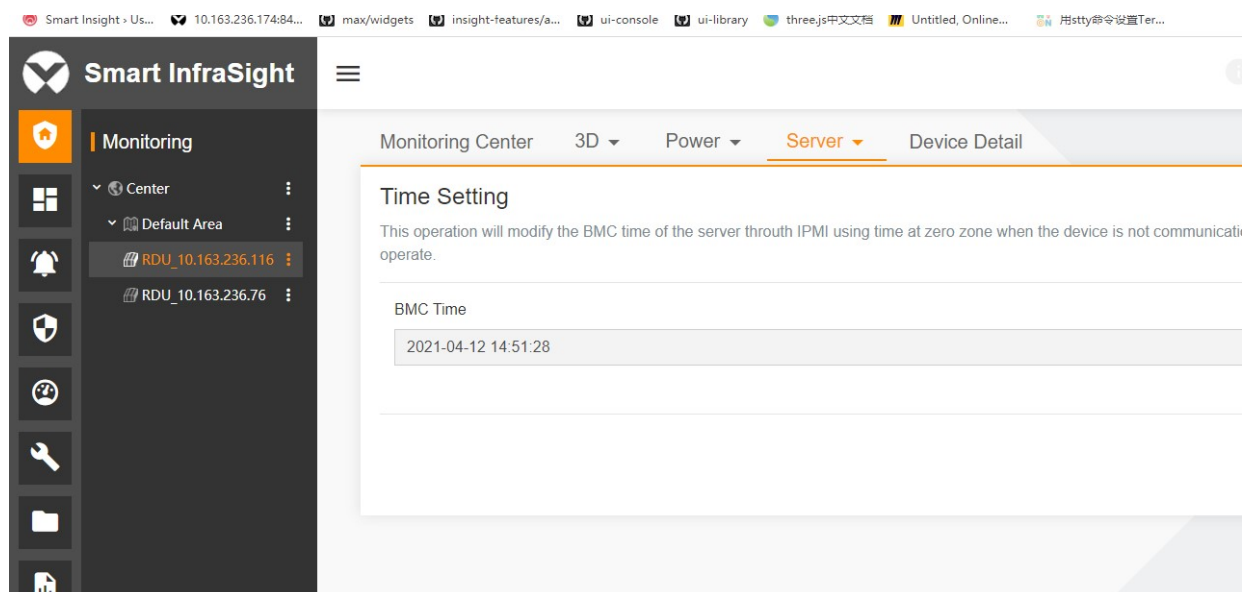
Figure 10-7 Time Setting page of the IPMI device

10.4.4 Power Control of the IPMI Device

Click the ⋮ list menu suffixed to an IPMI device on the IPMI device list and select **Power Control**. The **Power Control** page is displayed, as shown in Figure 10-8. After selecting the control option (**Power On**, **Power Off**, or **Graceful Shutdown**), click **SAVE**. The power control of the device is completed.
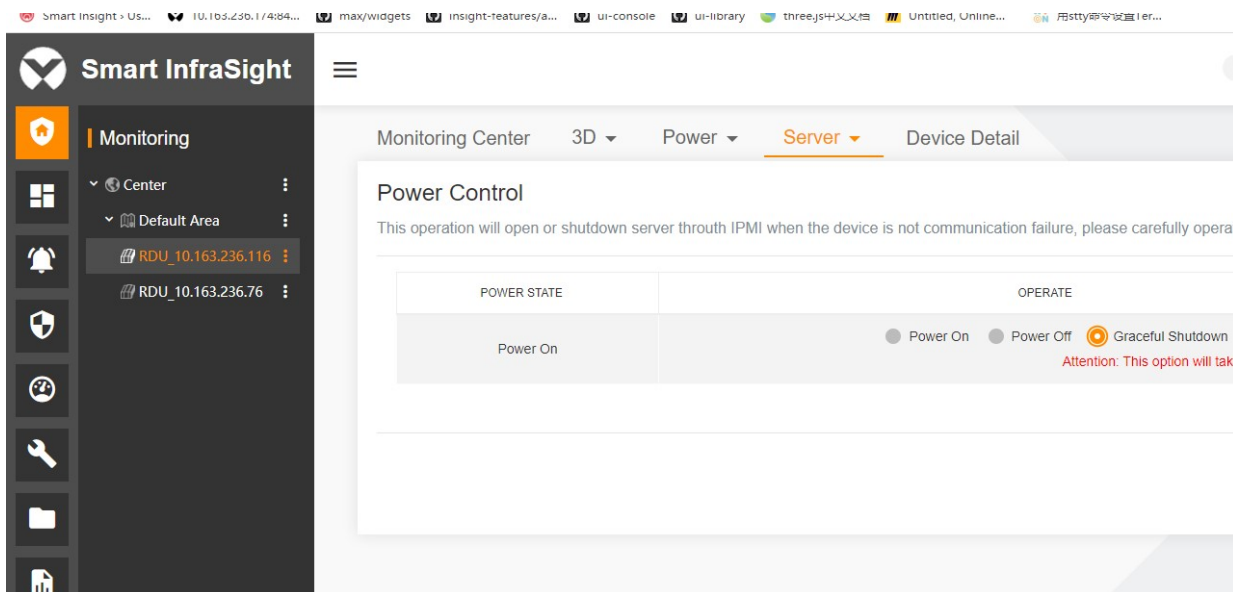
Figure 10-8   Power Control page of the IPMI device

10.4.5 Alarm Management of the IPMI Device

Click 🔔 in the upper right part of the IPMI device list page to open the alarm management page of the IPMI device. The alarm management page of the IPMI device contains the **Current Alarms**, **History Alarms**, and **Alarm Notification** tab pages. By default, the **Current Alarms** tab page is displayed, as shown in Figure 10-9. Select **Confirm** in the ⋮ list menu of the current alarm record to confirm the alarm. The system will not send any alarm notification for the confirmed alarm.
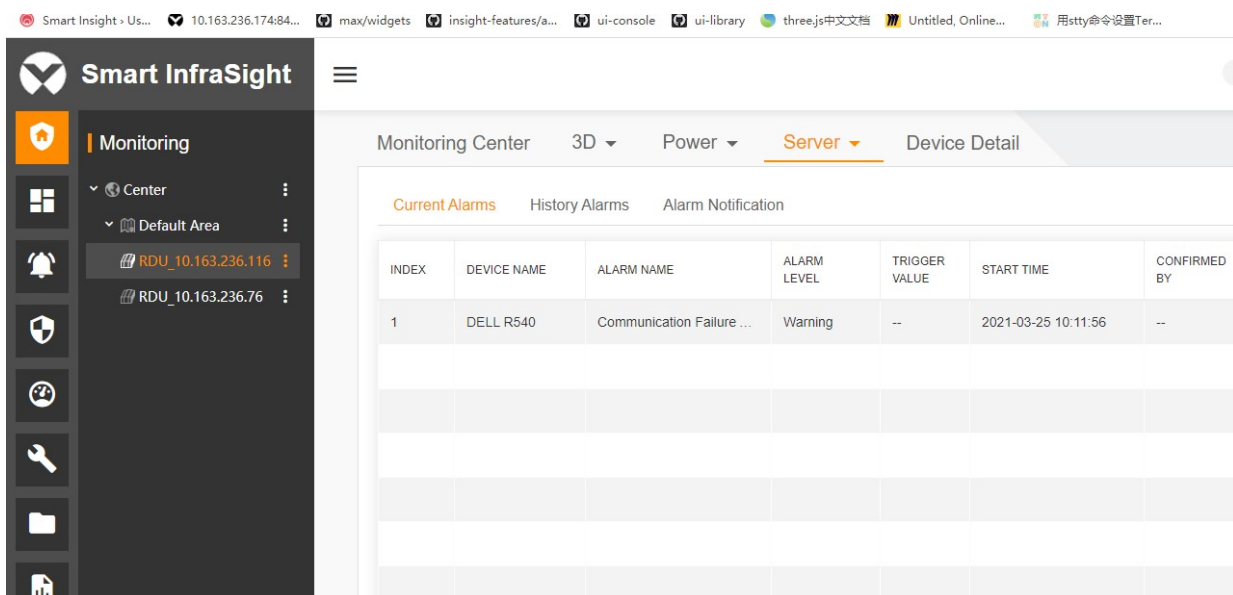
Figure 10-9   Current Alarms page of the IPMI device

Click the **History Alarms** tab. The **History Alarms** tab page is displayed, as shown in Figure 10-10. Set **Device Name** and **Select Time Range**. Click **SEARCH**. The system lists all the historical alarms of the specified device.
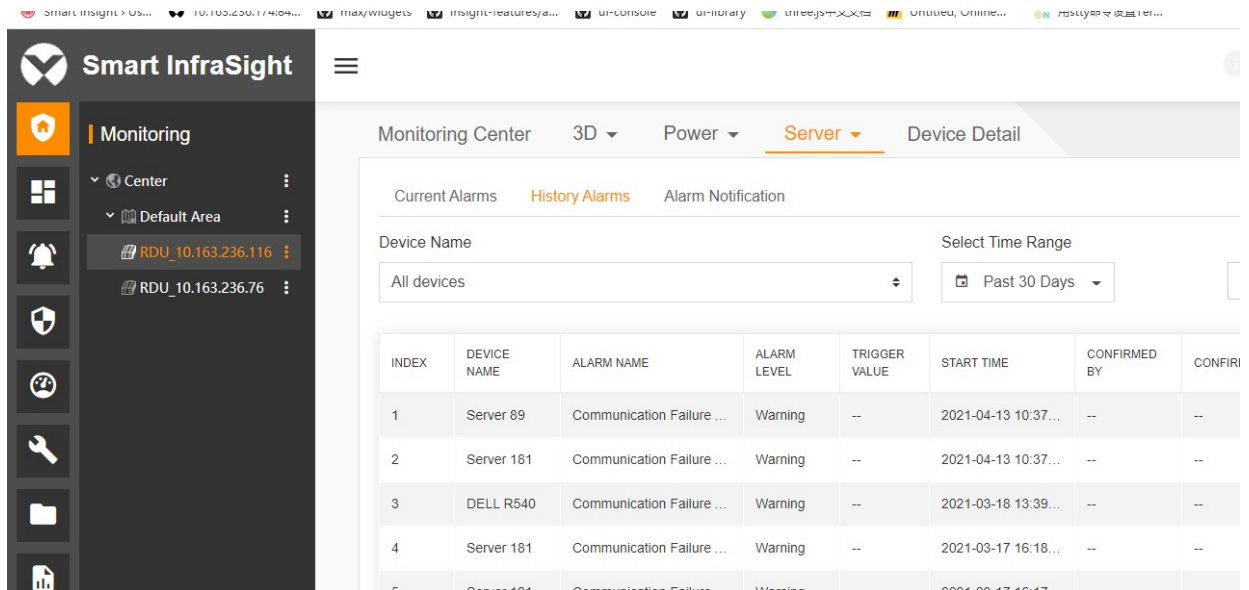
Figure 10-10   History Alarms page of the IPMI device

Click the **Alarm Notification** tab. The **Alarm Notification** tab page displayed, as shown in Figure 10-11. If you select **Enabled Notification**, you can select **Notification Type** (currently, the notification can only be sent by email) and the IPMI devices that can receive the alarm notifications. Then, select **Recipient**, and click **SAVE**. If the alarm that occurs on the selected IPMI device is not cleared, the system sends an alarm notification every four hours. Up to three alarm notifications can be sent.
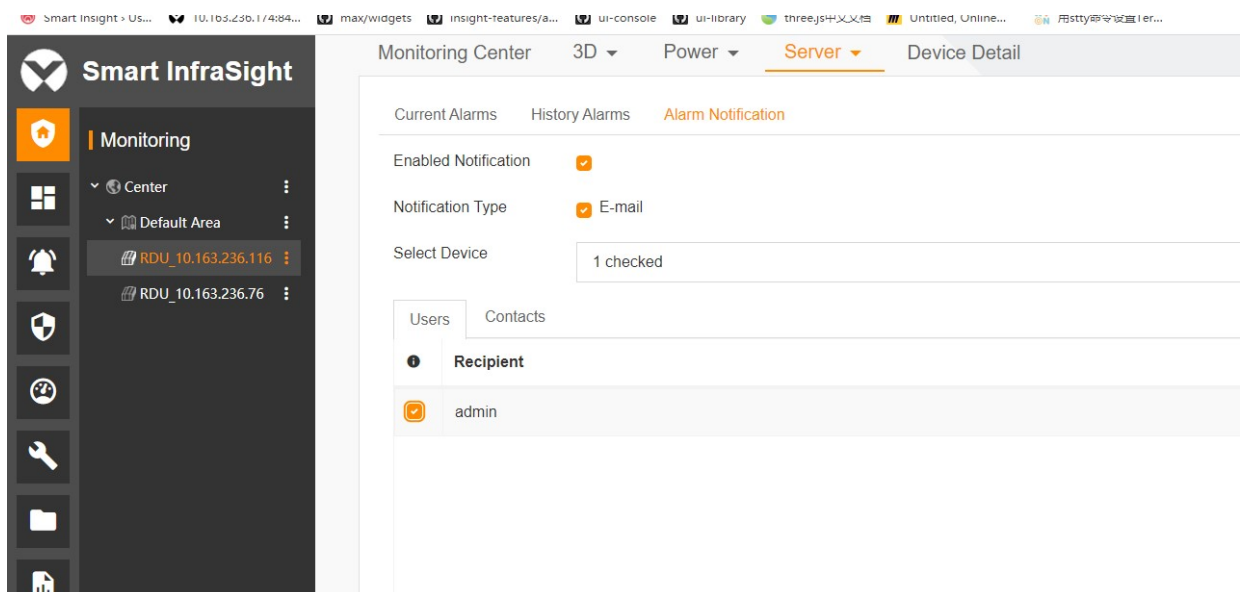
Figure 10-11   Alarm Notification page of the IPMI device

10.5 Specific Functions of Console Device Management

10.5.1 Console Device Management

Click a site on the monitoring tree. If the site supports the console device management function, the **Server** and **Switch** tab appears at the top of the right page. Click the **Switch** tab to enter the console device management page, as shown in Figure 10-12. The page lists the information about the console device connected to the current RDU collector, including **INDEX**, **DEVICE NAME**, **PORT NAME**, **BAUD RATE**, **WORD SIZE**, **PARITY**, **STOP BIT**, and **FLOW CONTROL**.

- Click 🔍 in the upper right part to display the search box. Enter the filter conditions to display the filtered console devices.

- Click ▥ in the upper right part to control whether to display the specified column.

- Click ⊕ in the upper right part to open the page for adding a console device to the system.

- Click ↻ in the upper right part to re-request the console device information from the RDU collector and refresh the information about the console device on the list.

- Click ▤ in the upper right part to open the log management page of the console device.

- Click ⚙ in the upper right part to pop up the **User Authentication Configuration** dialog box, where you can set or modify the user authentication information. For details, see section *10.2*.
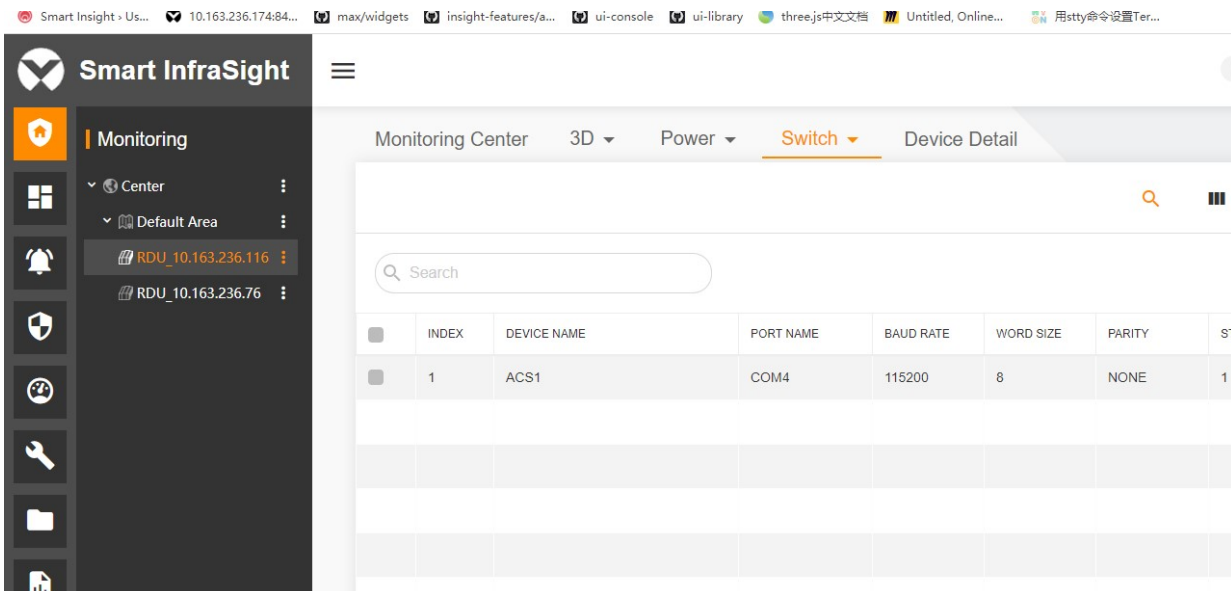
Figure 10-12   List of console devices

Click ⊕ in the upper right part to open the **Create new console device** page. Enter the console device information (**Port Name**, **Baud Rate**, **Word Size**, **Parity**, **Stop Bit**, and **Flow Control**, which must be correctly entered according to the configuration on the console device end), and click **SAVE**, as shown in Figure 10-13. The new console device is synchronously added to the RDU collector.
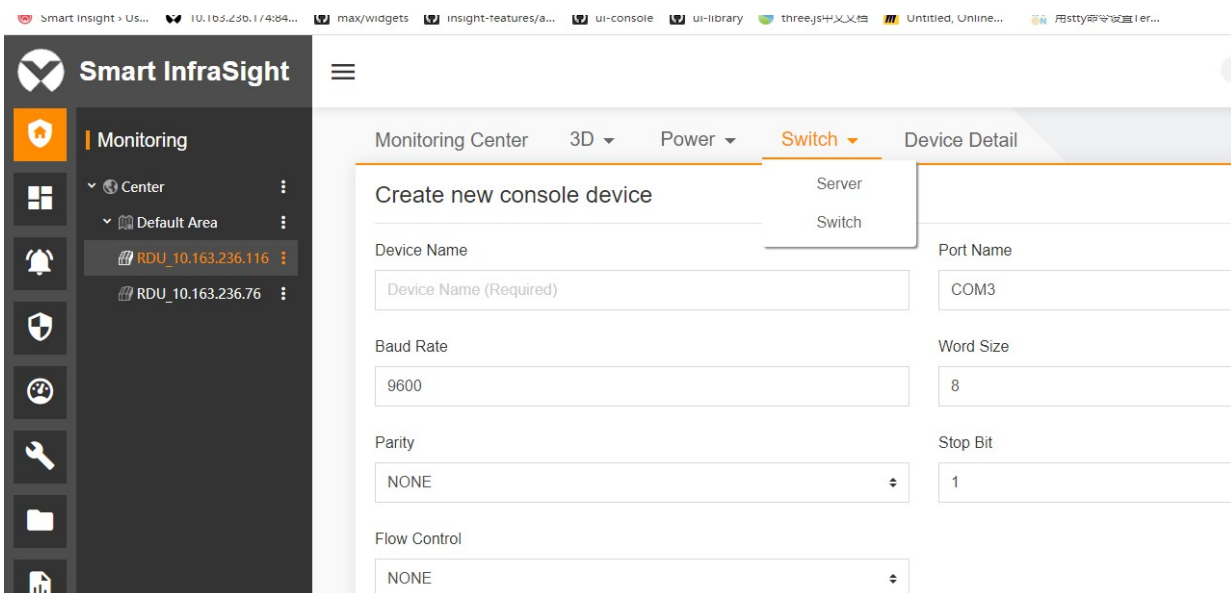
Figure 10-13   Create new console device

Click the ⋮ list menu suffixed to a console device on the console device list and select **Edit**. The **Edit console device** page is displayed, as shown in Figure 10-14. Enter new console device information (**Port Name** cannot be modified. **Baud Rate**, **Word Size**, **Parity**, **Stop Bit**, and **Flow Control** must be correctly entered according to the

configuration on the console device end), and click **SAVE**. The new console device information is synchronously updated to the RDU collector.
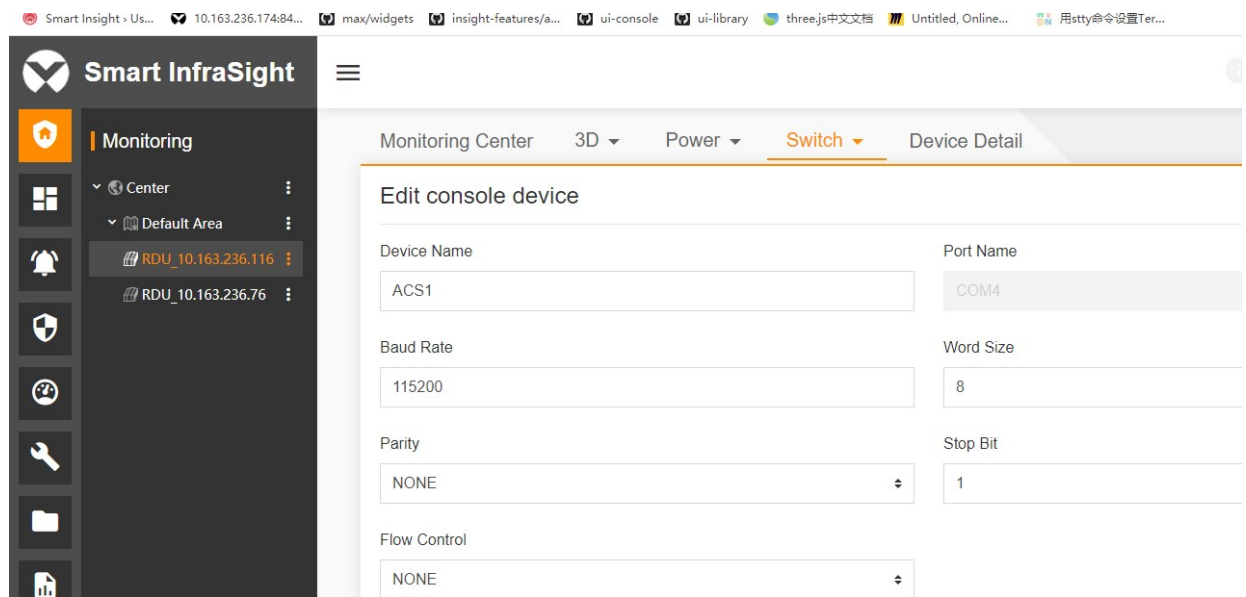
Figure 10-14   Edit console device page

Click the ⋮ list menu suffixed to a console device on the console device list and select **Delete**. The **Confirmation** dialog box is displayed, as shown in Figure 10-15. If you click **DELETE**, the console device is deleted from the system and the RDU collector synchronously.
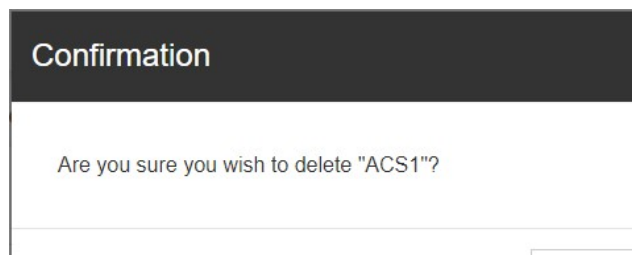
Figure 10-15   Deleting the console device

10.5.2 Console Logs

Click 📄 in the upper right part of the console device list page to open the log management page of the console device. The log types of the console device include **Event Log** and **History Log**. By default, the page displays the event logs, as shown in Figure 10-16. If **Log Type** is set to **Event Log**, you can select the console device and time range, and click **SEARCH**. The system lists all event logs of the specified device within the specified time range. To download the filtered logs, click **EXPORT**.
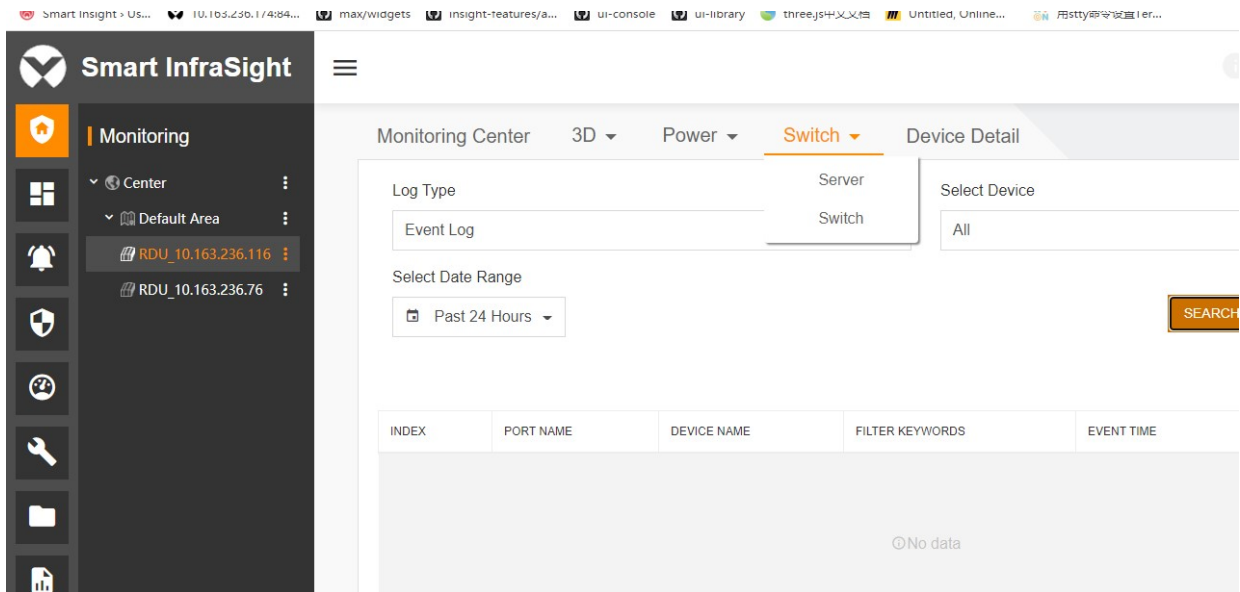
Figure 10-16   Event logs of the console device

The historical logs can be viewed only after download instead of direct query.

If **Log Type** is set to **History Log**, you can select the console device and time range, and click **SEARCH**. To download the filtered logs, click **EXPORT**.

Chapter 11 Consumption Configuration

11.1 Overview

11.1.1 Overview

The consumption module provides the consumption configuration and PUE configuration functions, through which you can calculate the consumption and PUE of the device.

11.1.2 Functional Module

Consumption Configuration contains the following functional modules. For more information about the functional modules, see section *11.3 "Specific Functions."*

- Adding Consumption Configuration
- Searching for Consumption Configuration
- Enabling/Disabling Consumption Configuration
- Editing Consumption Configuration
- Deleting Consumption Configuration

PUE Configuration contains the following functional modules. For more information about the functional modules, see section *11.3 "Specific Functions."*

- Adding Consumption Configuration
- Searching for Consumption Configuration
- Enabling/Disabling Consumption Configuration
- Editing Consumption Configuration
- Deleting Consumption Configuration

11.2 Quick Start

11.2.1 Quick Deployment Procedure

You can quickly configure the consumption as follows:

[1] Click **Consumption**.

[2] Click **Consumption Configuration**.

[3] Click the search icon to view consumption configuration.

[4] Click the add icon to add consumption configuration.

You can quickly configure the PUE as follows:

[1] Click **Consumption Configuration**.

[2] Click **PUE Configuration**.

[3] Click the search icon to view PUE configuration.

[4] Click the add icon to add PUE configuration.

11.2.2   Example

Adding consumption configuration

On the Smart InfraSight homepage, click ⬤ , select Consumption Configuration , and click the ⊕ icon in the upper right corner. The **Add Consumption Configuration** page is displayed, as shown in Figure 11-1.

Figure 11-1   Adding consumption configuration

Searching for consumption configuration

Click 🔍 in the upper right corner. The page for searching for consumption configuration is displayed, as shown in Figure 11-2.

Figure 11-2   Searching for consumption configuration

Enabling consumption configuration

Click ⋮ on the consumption configuration list, and then click ▶ Enable , as shown in Figure 11-3.

Figure 11-3   Enabling consumption configuration

Disabling consumption configuration

Click ⋮ on the consumption configuration list, and then click ■ Disable , as shown in Figure 11-4.

Figure 11-4   Disabling consumption configuration

Editing consumption configuration

Click ⋮ on the consumption configuration list, and then click ✎ Edit , as shown in Figure 11-5.

Figure 11-5   Editing consumption configuration

Deleting consumption configuration

Click ⋮ on the consumption configuration list, and then click 🗑 Delete , as shown in Figure 11-6.

Figure 11-6   Deleting consumption configuration

Adding PUE configuration

On the Smart InfraSight homepage, click [icon], select [PUE Configuration], and click the [+] icon in the upper right corner. The **Update PUE Configuration** page is displayed, as shown in Figure 11-7.

Figure 11-7 Adding PUE configuration

Searching for PUE configuration

Click 🔍 in the upper right corner. The page for searching for PUE configuration is displayed, as shown in Figure 11-8.

Figure 11-8 Searching for PUE configuration

Click ⋮ on the PUE configuration list, and then click ▶ Run , as shown in Figure 11-9.

Figure 11-9 Running PUE configuration

Editing PUE configuration

Click ⋮ on the consumption configuration list, and then click ✎ Edit , as shown in Figure 11-10.

Figure 11-10 Editing PUE configuration

Deleting PUE configuration

Click ⋮ on the PUE configuration list, and then click 🗑 Delete , as shown in Figure 11-11.

Figure 11-11　Deleting PUE configuration

11.3　Specific Functions

11.3.1　Adding Consumption Configuration

On the Smart InfraSight homepage, click [icon], select PUE Configuration, and click the [+] icon in the upper right corner. The **Add Consumption Configuration** page is displayed, as shown in Figure 11-12.

Figure 11-12　Adding consumption configuration

## 11.3.2   Searching for Consumption Configuration

Click 🔍 in the upper right corner. The page for searching for consumption configuration is displayed, as shown in Figure 11-13.
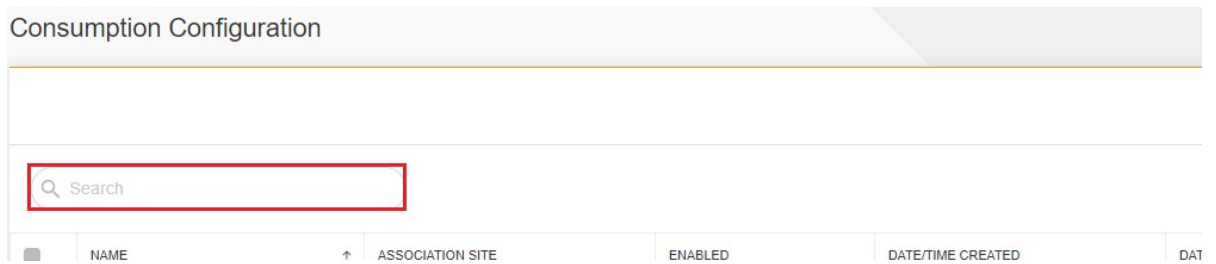
Figure 11-13   Searching for consumption configuration

11.3.3   Enabling Consumption Configuration

Click ⋮ on the consumption configuration list, and then click ▶ Enable, as shown in Figure 11-14.
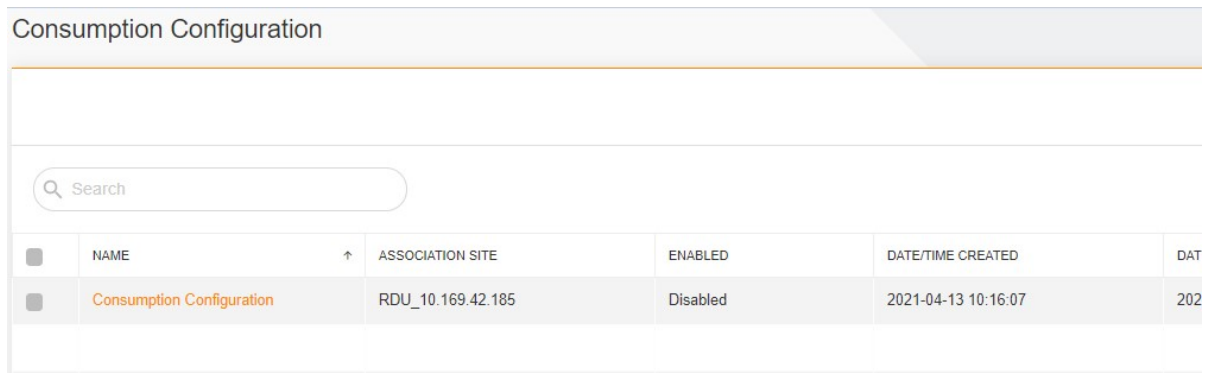
Figure 11-14   Enabling consumption configuration 1

After consumption configuration is enabled, the state in the **ENABLED** column is changed from **Disabled to Enabled**.
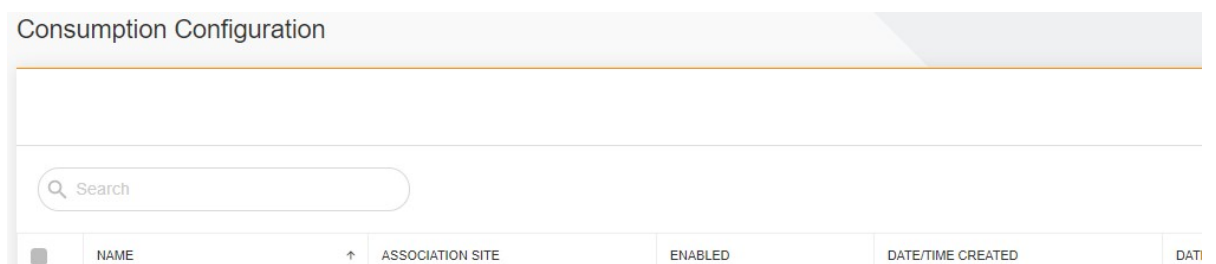

Figure 11-15   Enabling consumption configuration 2

11.3.4   Disabling Consumption Configuration

Click ⋮ on the consumption configuration list, and then click ■ Disable, as shown in Figure 11-16.

Figure 11-16   Disabling consumption configuration 1

After consumption configuration is disabled, the state in the **ENABLED** column is changed from **Enabled** to **Disabled**.

Figure 11-17   Disabling consumption configuration 2

11.3.5 Editing Consumption Configuration

Click ⋮ on the consumption configuration list, and then click ✎ Edit , as shown in Figure 11-18.

Figure 11-18 Editing consumption configuration

11.3.6 Deleting Consumption Configuration

Click ⋮ on the consumption configuration list, and then click 🗑 Delete , as shown in Figure 11-19.
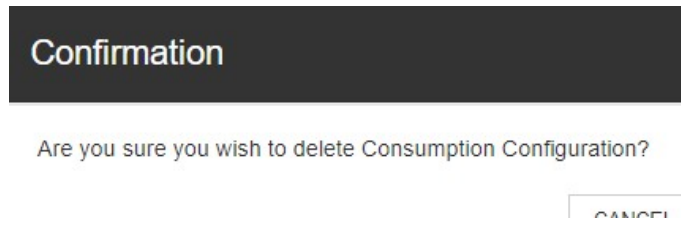
Figure 11-19   Deleting consumption configuration

11.3.7 Adding PUE Configuration

On the Smart InfraSight homepage, click ⬤, select PUE Configuration, and click the ⊕ icon in the upper right corner. The **Update PUE Configuration** page is displayed, as shown in Figure 11-20.

Figure 11-20   Adding PUE configuration

11.3.8 Searching for PUE Configuration

Click 🔍 in the upper right corner. The page for searching for PUE configuration is displayed, as shown in Figure 11-21.
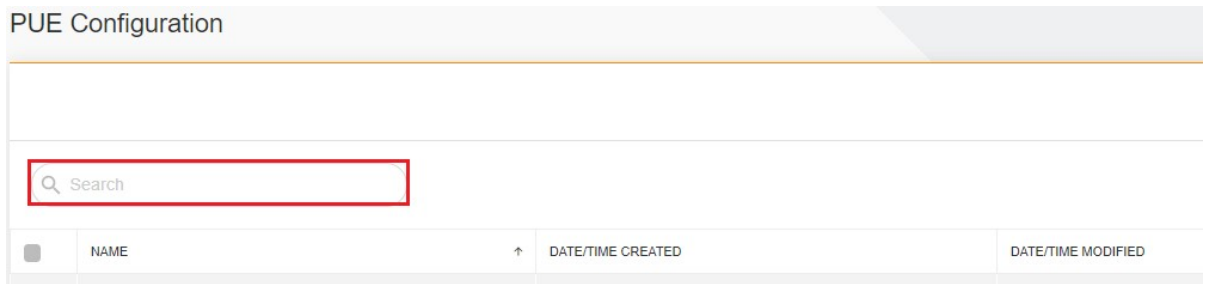
Figure 11-21   Searching for PUE configuration

11.3.9 Running PUE Configuration

Click ⋮ on the PUE configuration list, and then click ▶ Run , as shown in Figure 11-22.
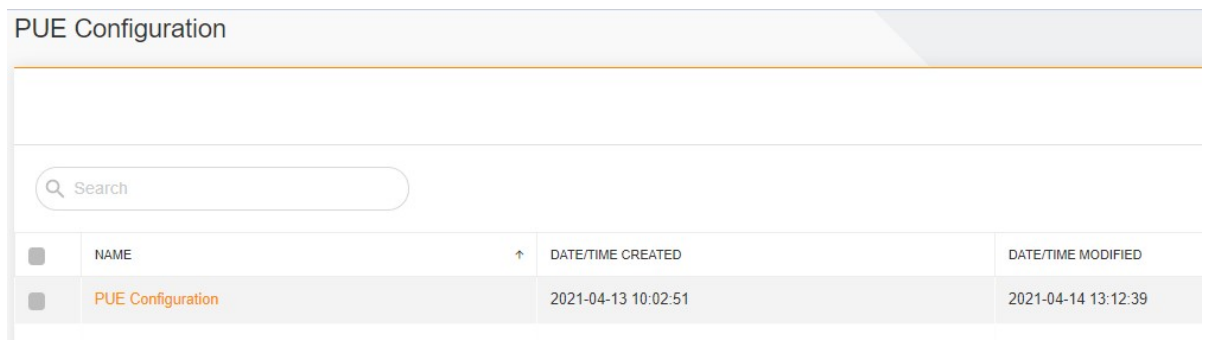
Figure 11-22   Running PUE configuration

11.3.10 Editing PUE Configuration

Click ⋮ on the consumption configuration list, and then click ✎ Edit , as shown in Figure 11-23.
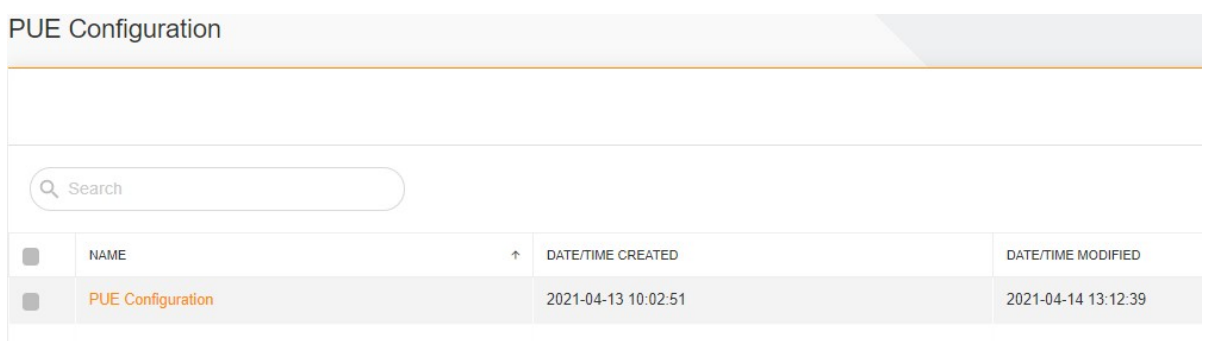
Figure 11-23   Editing PUE configuration 1

Figure 11-24   Editing PUE configuration 2

On the page for editing the PUE configuration, click ⊕ in the upper right corner of the **Total Energy** page. The **Total Energy Adjustments** page is displayed, as shown in Figure 11-25.

Figure 11-25   Total Energy configuration

On the page for editing the consumption configuration, click ➕ in the upper right corner of the **IT Devices** page. The IT device consumption configuration page is displayed, as shown in Figure 11-26.
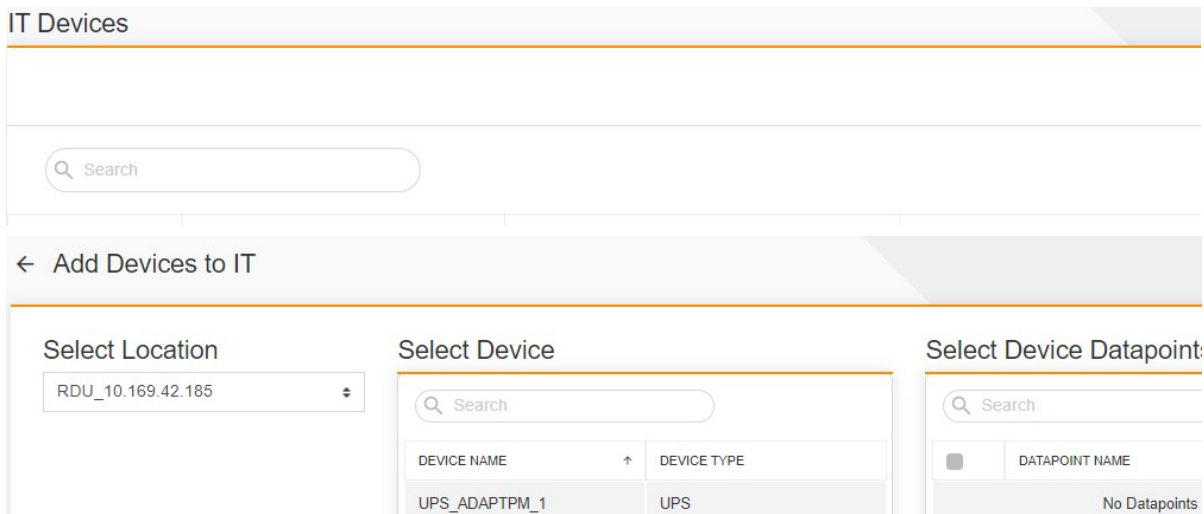
Figure 11-26   Configuring IT device consumption

11.3.11   Deleting PUE Configuration

Click ⋮ on the PUE configuration list, and then click 🗑 Delete , as shown in Figure 11-27.
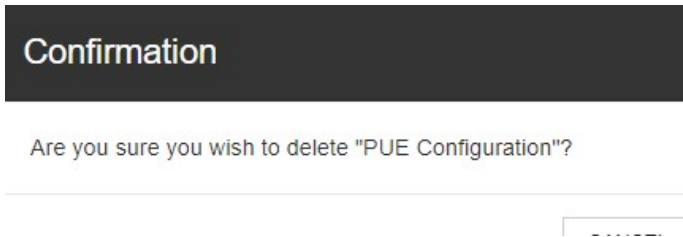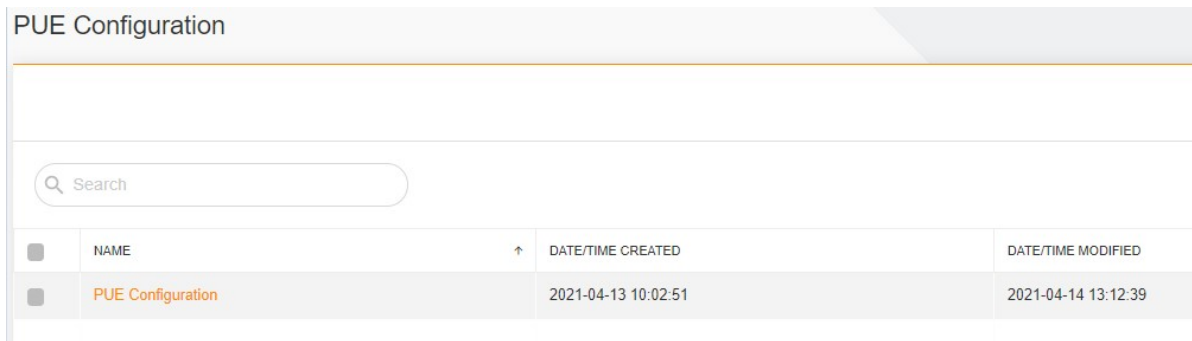
Figure 11-27   Deleting PUE configuration

Chapter 12   Report

12.1   Overview

Reports are classified into basic reports and custom reports, which are mainly used to query or analyze data and alarms generated by the computer room monitoring system. This chapter describes how to configure and view various types of reports.

12.1.1   Functional Module

Report contains the following functional modules. For more information about the functional modules, see section *12.3 "Specific Functions."*

- **Basic Reports** - Historic Data Point
- **Basic Reports** - Alarms Record
- **Basic Reports** - Automation Record
- **Basic Reports** - Control Record
- **Basic Reports** - Door Access Record
- Custom Report

12.2   Quick Start

12.2.1   Quick Deployment Procedure

You can quickly configure the custom report as follows:

[1] Create a custom report in the specified type.

[2] View the created report.

12.2.2   Report Example

This section describes how to view historic data point records within a specified time range taking **Historic Data Point** as an example.

Querying Historic Data Point

Log in to the system. Choose **Report** > **Basic Reports** > **Historic Data Point**. The **Historic Data Point** page is displayed, as shown in Figure 12-1.
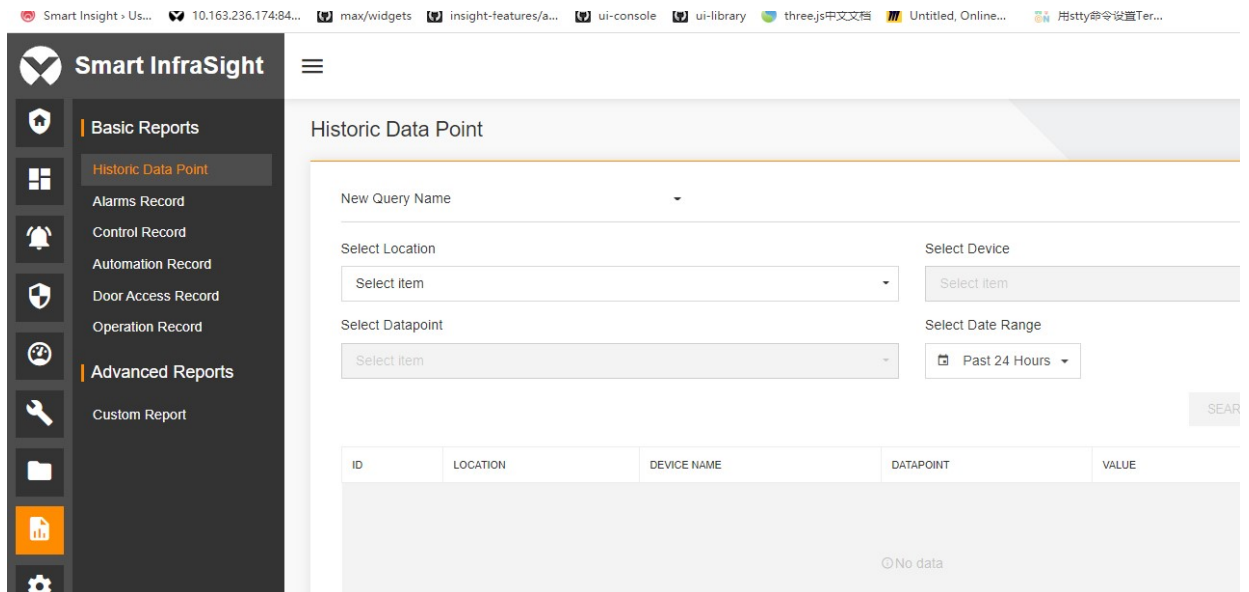
Figure 12-1　Historic Data Point page

When you enter the **Basic Reports** module, the **Historic Data Point** tab page is displayed by default. Select a site from the **Select Location** drop-down list box (mandatory). Select a device of the selected site from the **Select Device** drop-down list box. Select all data points of the selected device from the **Select Datapoint** drop-down list box, as shown in Figure 12-2.
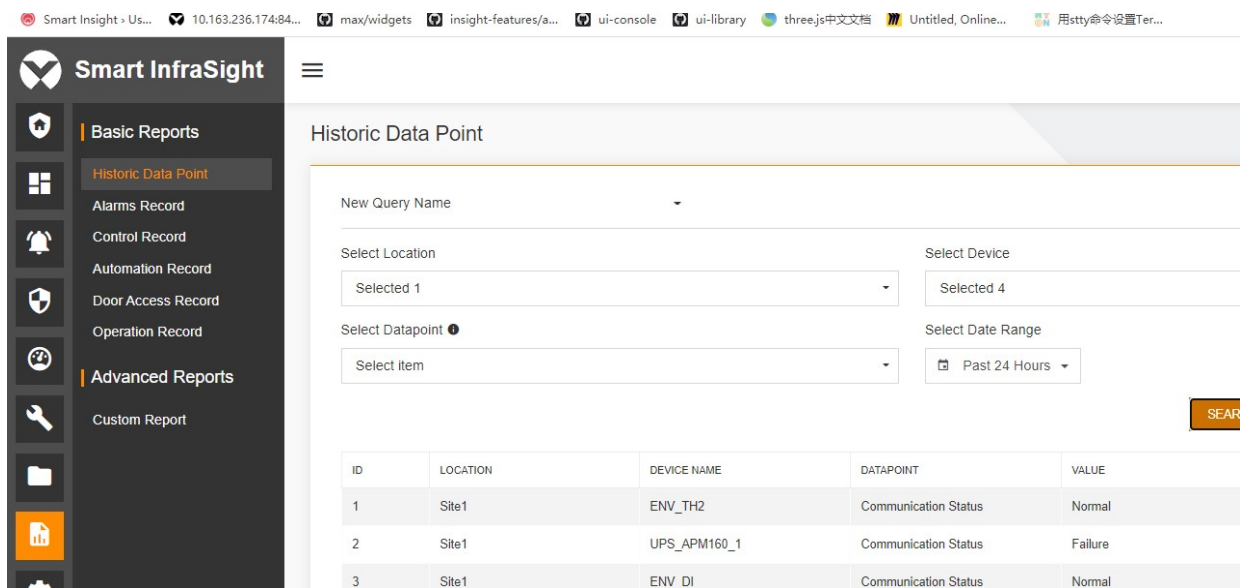
Figure 12-2　Query result page

Saving query conditions:

When the selected query conditions are effective to filter out historic data points, you can click **SAVE QUERY**. The **Save Query** dialog box is displayed. Enter the query name and save it as a commonly used query condition, as shown in Figure 12-3.

Figure 12-3　Save Query dialog box

Enter the query condition name and click **SAVE QUERY**. The saved query name is displayed on the **New Query Name** drop-down list in the upper left part of the page. You can switch between query conditions to query the corresponding reports according to actual needs. If you do not need to save a query condition, click the delete button on the right side.

Downloading historic data point:

After you click **SEARCH** and the system displays the compliant query results, you can click [icon] in the upper right corner to download the query results, as shown in Figure 12-4.
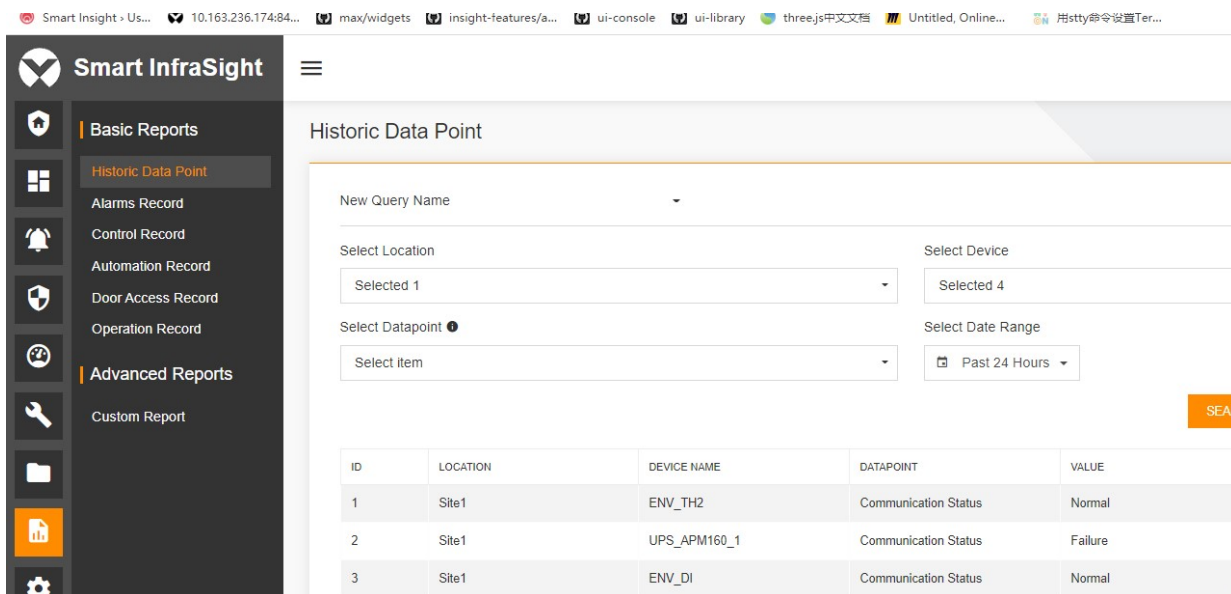
Figure 12-4   Downloading historic data point

12.3   Specific Functions

12.3.1   Basic Reports

Basic reports are mainly used to collectively measure data generated by the monitoring system, including signal, alarm, control, notification, and door access statistics. Basic reports mainly cover **Historic Data Point**, **Alarms Record**, **Automation Record**, **Control Record**, and **Door Access Record**.

Historic Data Point

Log in to the system. Choose **Report** > **Basic Reports** > **Historic Data Point**. The **Historic Data Point** page is displayed, as shown in Figure 12-5.
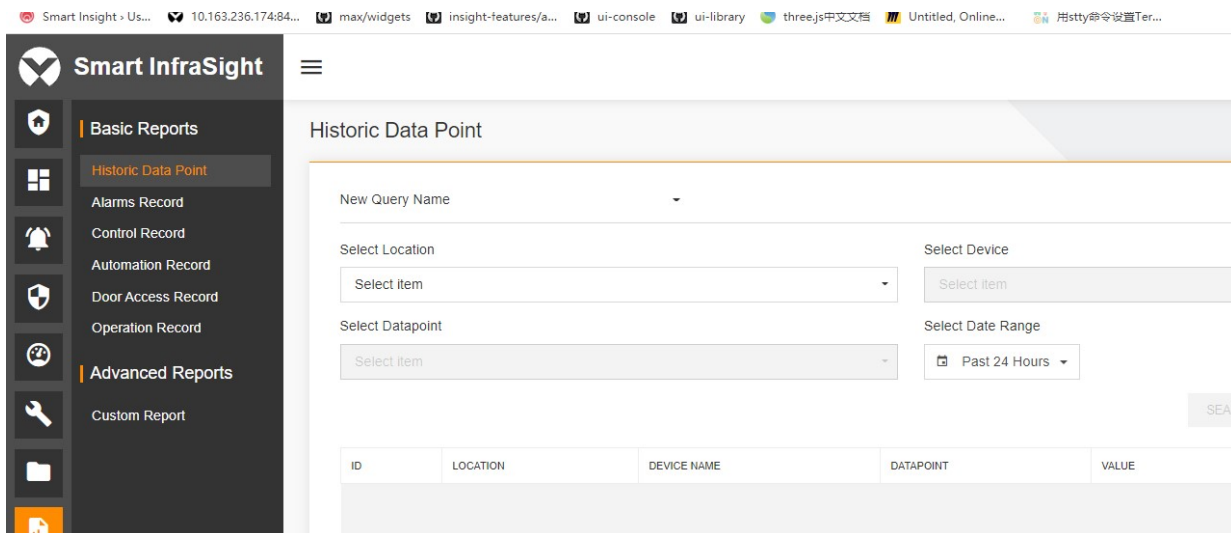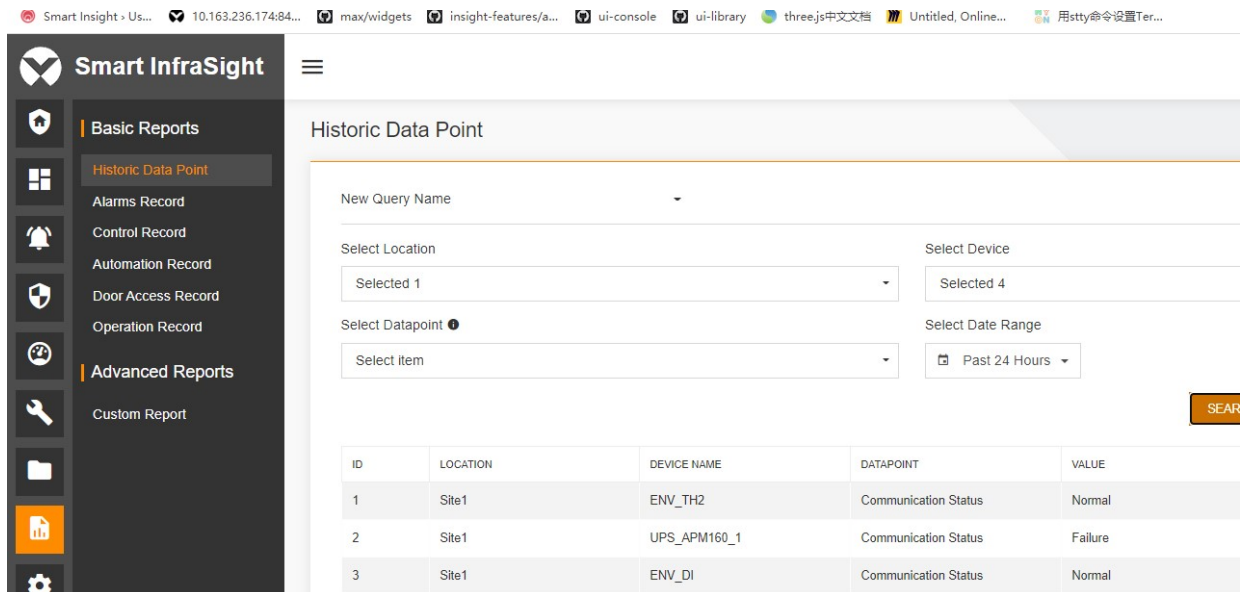
Figure 12-5   Historic Data Point page

Select a site from the **Select Location** drop-down list box (mandatory). Select a device of the selected site from the **Select Device** drop-down list box. Select all data points of the selected device from the **Select Datapoint** drop-down list box. Click **SEARCH**. The statistics of the selected location, device, and data point collected within the specified time range are displayed, as shown in Figure 12-6.

Figure 12-6   Historic Data Point query results

Saving query conditions: When the selected query conditions are effective to filter out historic data points, you can click **SAVE QUERY**. The **Save Query** dialog box is displayed. Enter the query name and save it as a commonly used query condition, as shown in Figure 12-7.

Figure 12-7   Save Query dialog box

Enter the query condition name and click **SAVE QUERY**. The saved query name is displayed on the **New Query Name** drop-down list in the upper left part of the page. You can switch between query conditions to view the corresponding reports according to actual needs. If you do not need to save a query condition, click the delete button on the right side.

Downloading historic data point: After you click **SEARCH** and the system displays the compliant query results, you can click   in the upper right corner to download the query results, as shown in Figure 12-8.
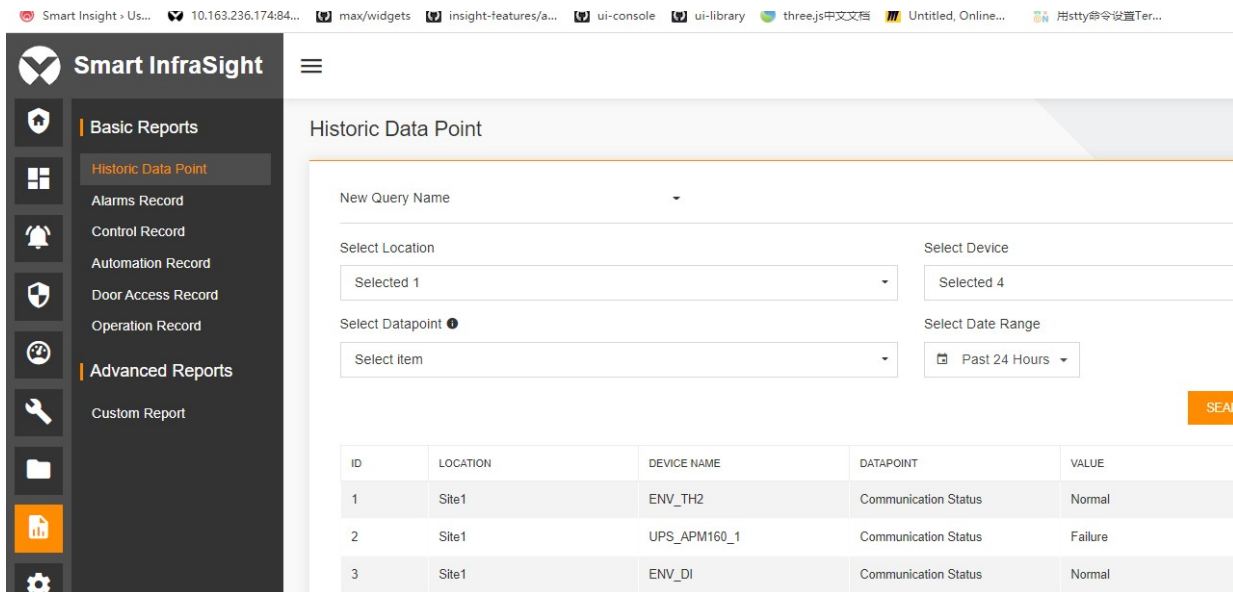
Figure 12-8 Downloading historic data point

📖 **Note**

1. The number of selected locations, devices, or data points cannot exceed 8.

2. The location is mandatory. If other options are not specified, the system returns results of all options by default.

3. After you click **SEARCH** and the system returns the query results, you can save query conditions and download historic data points.

4. The default precision of the displayed signal value is accurate to two decimal places.

5. For standardized FLOOR_PDU and UPS devices, the system displays the non-tributary data points instead of all data points.

Alarms Record

Log in to the system. Choose **Report** > **Basic Reports** > **Alarms Record**. The **Alarms Record** page is displayed, as shown in Figure 12-9.
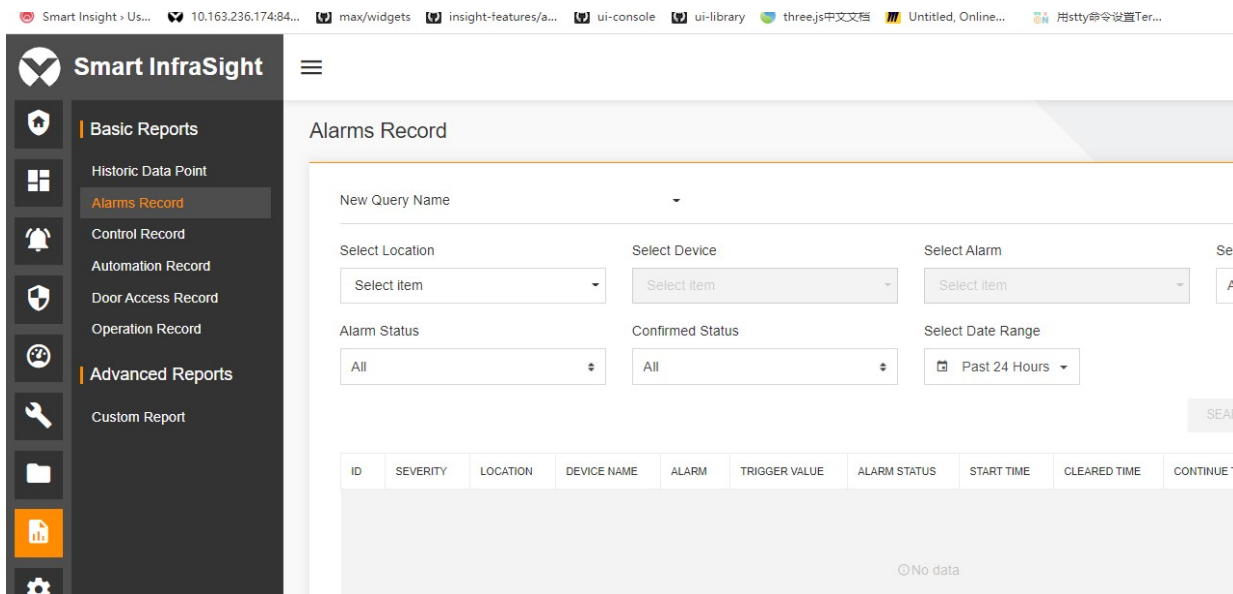
Figure 12-9 Alarms Record

Select a site from the **Select Location** drop-down list box (mandatory). Select a device of the selected site from the **Select Device** drop-down list box. Select all alarms of the selected device from the **Select Alarm** drop-down list box. Select the alarm severity, alarm status, and confirmed status from the **Severity**, **Alarm Status**, and **Confirmed Status** (radio box) drop-down list boxes. If the options are not specified, the system returns all alarms. Select the time range of the query from the **Select Date Range** drop-down list box, which is defaulted to **Past 24 Hours**. Click

SEARCH. The statistics of the selected location, device, alarm, severity, alarm status, and confirmed status collected with the specified time range are displayed, as shown in Figure 12-10.

Figure 12-10 Alarms Record query results

Saving query conditions: After you select the required query conditions, the system returns the corresponding query information on the list. You can click **SAVE QUERY**. The **Save Query** dialog box is displayed. Enter the query name and save it as a commonly used query condition, as shown in Figure 12-11.

Figure 12-11 Save Query dialog box

Enter the query condition name and click **SAVE QUERY**. The saved query name is displayed on the **New Query Name** drop-down list in the upper left part of the page. You can switch between query conditions to view the corresponding reports according to actual needs. If you do not need to save a query condition, click the delete button on the right side.

Downloading alarm records: After you click **SEARCH** and the system displays the compliant query results, you can

click 🗋 in the upper right corner to download the query results, as shown in Figure 12-12.
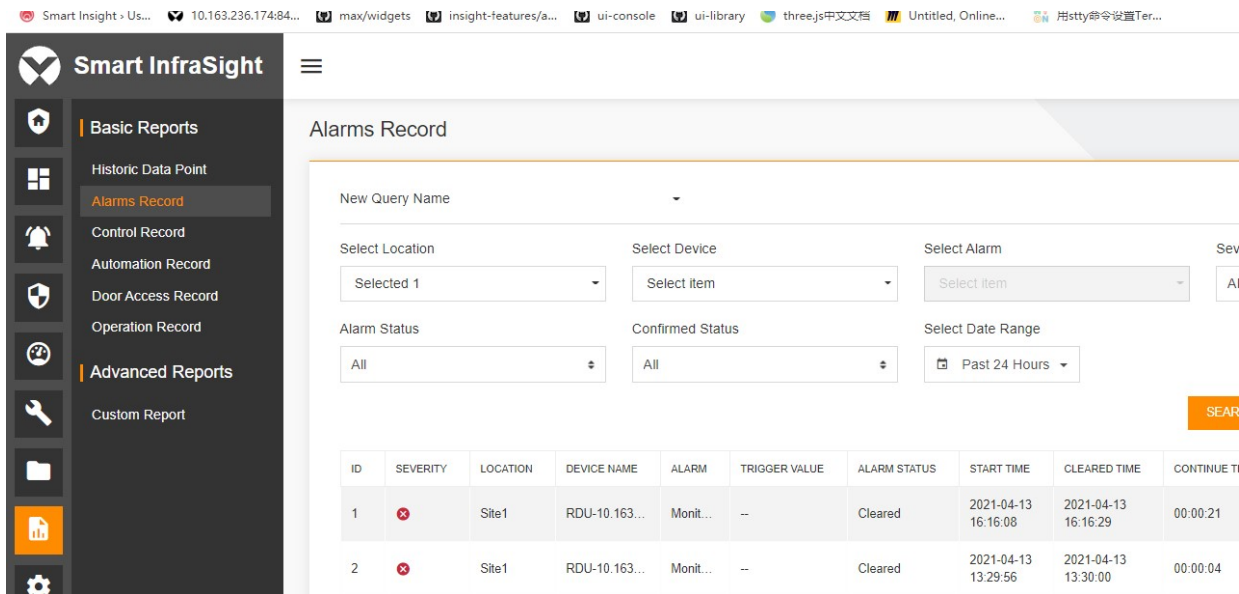
Figure 12-12   Downloading alarm records

📖   **Note**

1. The number of selected locations, devices, or alarms cannot exceed 8.

2. The location is mandatory. If other options are not specified, the system returns results of all options by default.

3. After you click **SEARCH** and the system returns the query results, you can save query conditions and download alarm records.

Control Record

Log in to the system. Choose **Report** > **Basic Reports** > **Control Record**. The **Control Record** page is displayed, as shown in Figure 12-13.
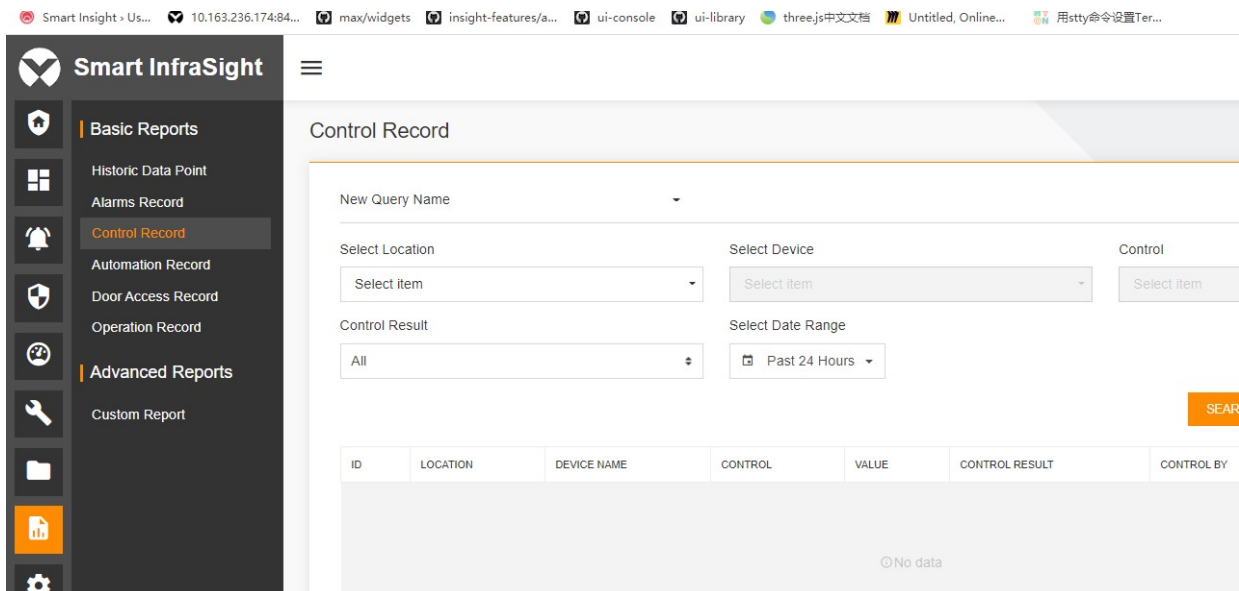
Figure 12-13   Control Record

Select a site from the **Select Location** drop-down list box (mandatory). Select a device of the selected site from the **Select Device** drop-down list box. Select all controls of the selected device from the **Control** drop-down list box. Select the successful control and failed control from the **Control Result** drop-down list box (radio box). If the options are not specified, the system returns all controls. Select the time range of the query from the **Select Date Range** drop-down list box, which is defaulted to **Past 24 Hours**. Click **SEARCH**. The statistics of the selected location, device, control, and control result collected within the specified time range are displayed, as shown in Figure 12-14.

Figure 12-14 Control Record query results

Saving query conditions: After you select the required query conditions, the system returns the corresponding query information on the list. You can click **SAVE QUERY**. The **Save Query** dialog box is displayed. Enter the query name and save it as a commonly used query condition, as shown in Figure 12-15.

Figure 12-15 Save Query dialog box

Enter the query condition name and click **SAVE QUERY**. The saved query name is displayed on the **New Query Name** drop-down list in the upper left part of the page. You can switch between query conditions to view the corresponding reports according to actual needs. If you do not need to save a query condition, click the delete button on the right side.

Downloading control records: After you click **SEARCH** and the system displays the compliant query results, you can click ![icon] in the upper right corner to download the query results, as shown in Figure 12-16.

Figure 12-16   Downloading control records

📖   **Note**

1. The number of selected locations, devices, and controls cannot exceed 8.

2. The location is mandatory. If other options are not specified, the system returns results of all options by default.

3. After you click **SEARCH** and the system returns the query results, you can save query conditions and download control records.

Automation Record

Log in to the system. Choose **Report** > **Basic Reports** > **Automation Record**. The **Automation Record** page is displayed, as shown in Figure 12-17.
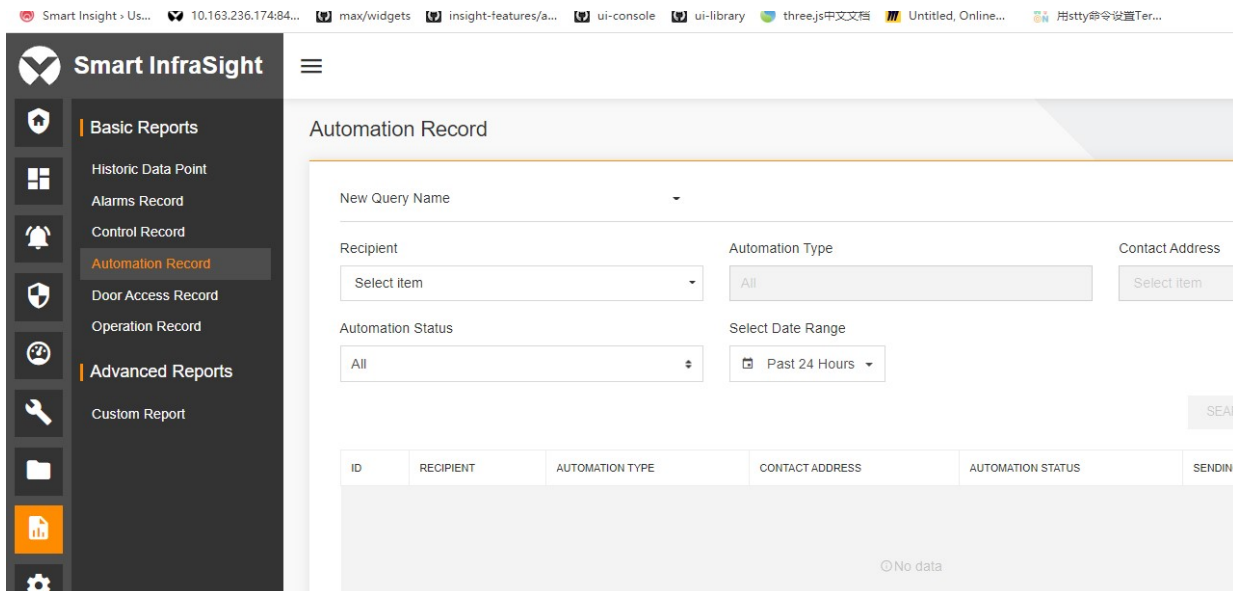
Figure 12-17   Automation Record

Select a recipient from the **Recipient** drop-down list box (mandatory). Select an automation type from the **Automation Type** drop-down list box. Select a contact address from the **Contact Address** drop-down list box. Select the automation status from the **Automation Status** drop-down list box (radio box). If the options are not specified, the system returns all results. Select the time range of the query from the **Select Date Range** drop-down list box. Click **SEARCH**. The statistics of the selected recipient, automation type, contact address, and automation status collected within the specified time range are displayed, as shown in Figure 12-18.

Figure 12-18 Automation Record query results

Saving query conditions: After you select the required query conditions, the system returns the corresponding query information on the list. You can click **SAVE QUERY**. The **Save Query** dialog box is displayed. Enter the query name and save it as a commonly used query condition, as shown in Figure 12-19.
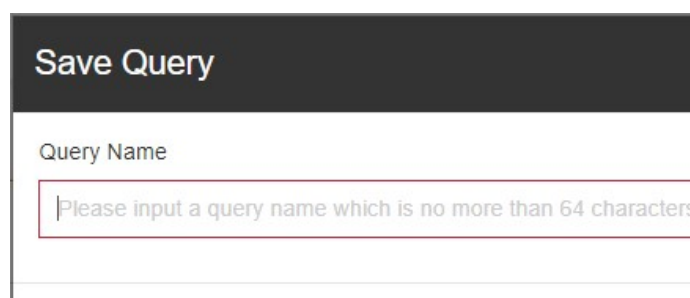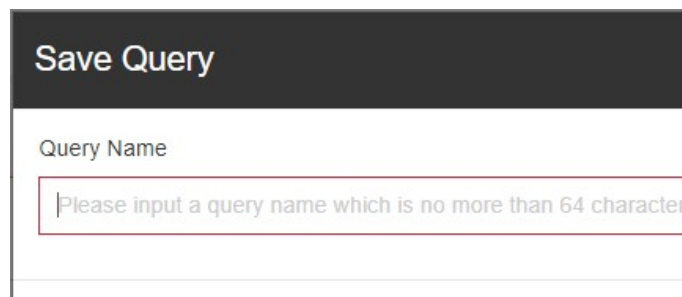

Figure 12-19 Save Query dialog box

Enter the query condition name and click **SAVE QUERY**. The saved query name is displayed on the **New Query Name** drop-down list in the upper left part of the page. You can switch between query conditions to view the corresponding reports according to actual needs. If you do not need to save a query condition, click the delete button on the right side.

Downloading automation records: After you click **SEARCH** and the system displays the compliant query results, you can click in the upper right corner to download the query results, as shown in Figure 12-20.
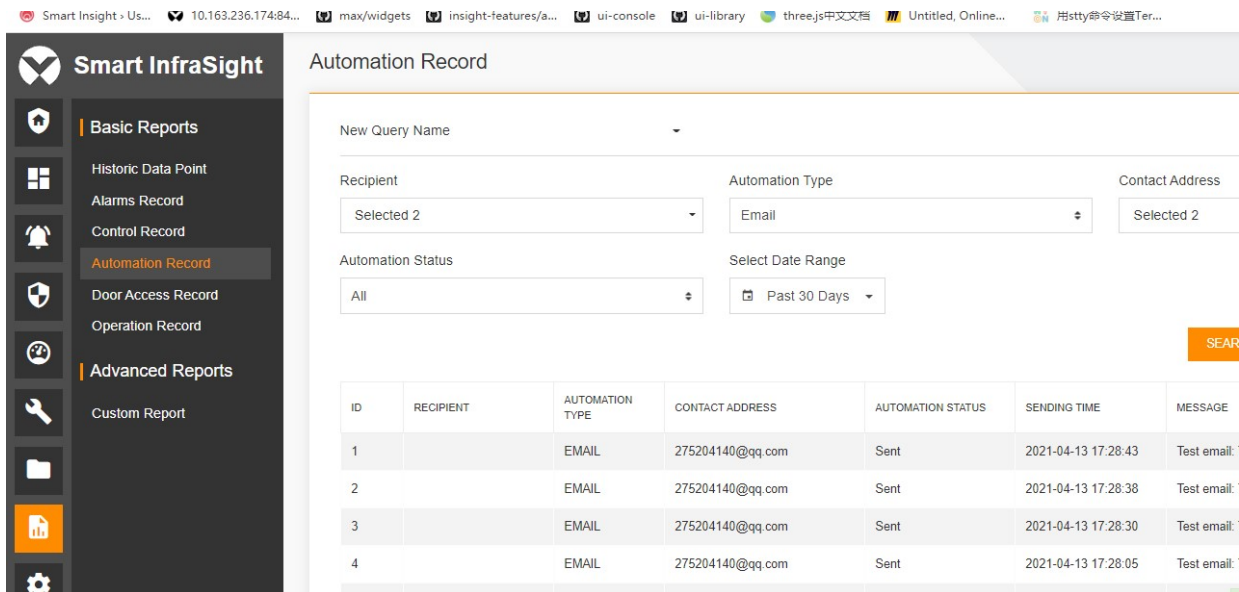
Figure 12-20   Downloading automation records

📖 **Note**

1. The number of selected recipients and contact addresses cannot exceed 8.

2. The **Recipient** is mandatory. If other options are not specified, the system returns results of all options by default.

3. After you click **SEARCH** and the system returns the query results, you can save query conditions and download automation records.

Door Access Record

Log in to the system. Choose **Report** > **Basic Reports** > **Door Access Record**. The **Door Access Record** page is displayed, as shown in Figure 12-21.
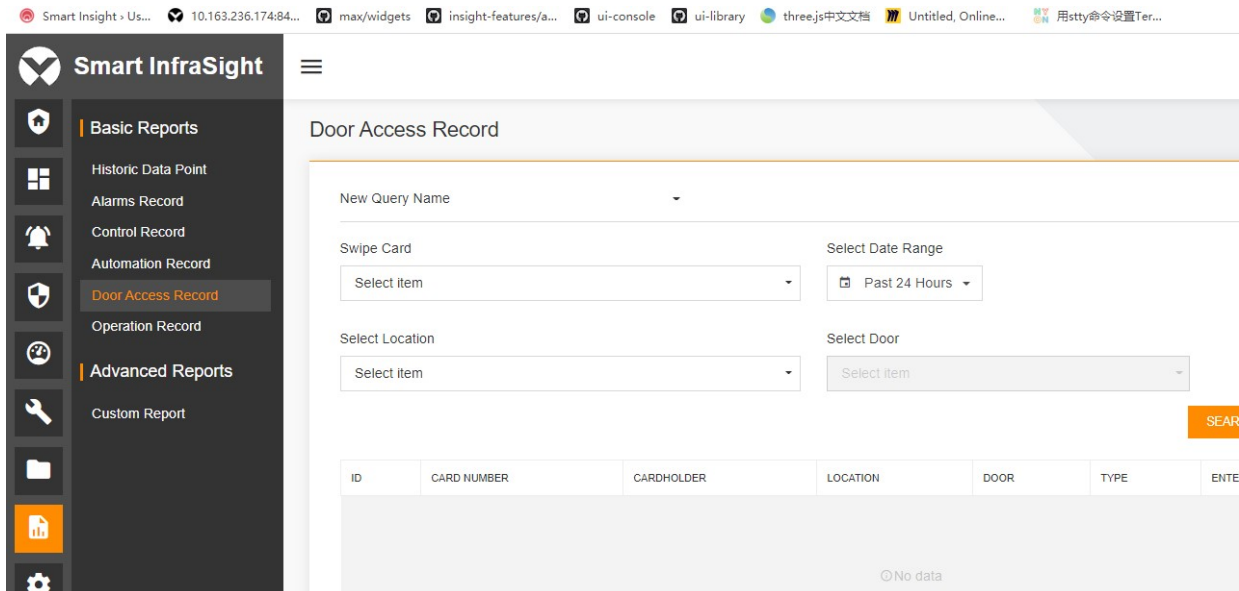
Figure 12-21   Door Access Record

Select the personnel from the **Swipe Card** drop-down list box. Select a site from the **Select Location** drop-down list box. Select a door device from the **Select Door** drop-down list box. Select the time range of the query from the **Select Date Range** drop-down list box, which is defaulted to **Past 24 Hours**. Click **SEARCH**. The statistics of the selected personnel, door, and location collected within the specified time range are displayed, as shown in Figure 12-22.

Figure 12-22 Door Access Record query results

Saving query conditions: After you select the required query conditions, the system returns the corresponding query information on the list. You can click **SAVE QUERY**. The **Save Query** dialog box is displayed. Enter the query name and save it as a commonly used query condition, as shown in Figure 12-23.


Figure 12-23 Save Query dialog box

Enter the query condition name and click **SAVE QUERY**. The saved query name is displayed on the **New Query Name** drop-down list in the upper left part of the page. You can switch between query conditions to view the corresponding reports according to actual needs. If you do not need to save a query condition, click the delete button on the right side.

Downloading door access records: After you click **SEARCH** and the system displays the compliant query results, you can click ![icon] in the upper right corner to download the query results, as shown in Figure 12-24.

Figure 12-24 Downloading door access records

📖   **Note**

1. The number of selected locations, doors, or personnel cannot exceed 8.

2. After you click **SEARCH** and the system returns the query results, you can save query conditions and download alarm records.

Operation Record

Log in to the system. Choose **Report** > **Basic Reports** > **Operation Record**. The **Operation Record** page is displayed, as shown in Figure 12-25.
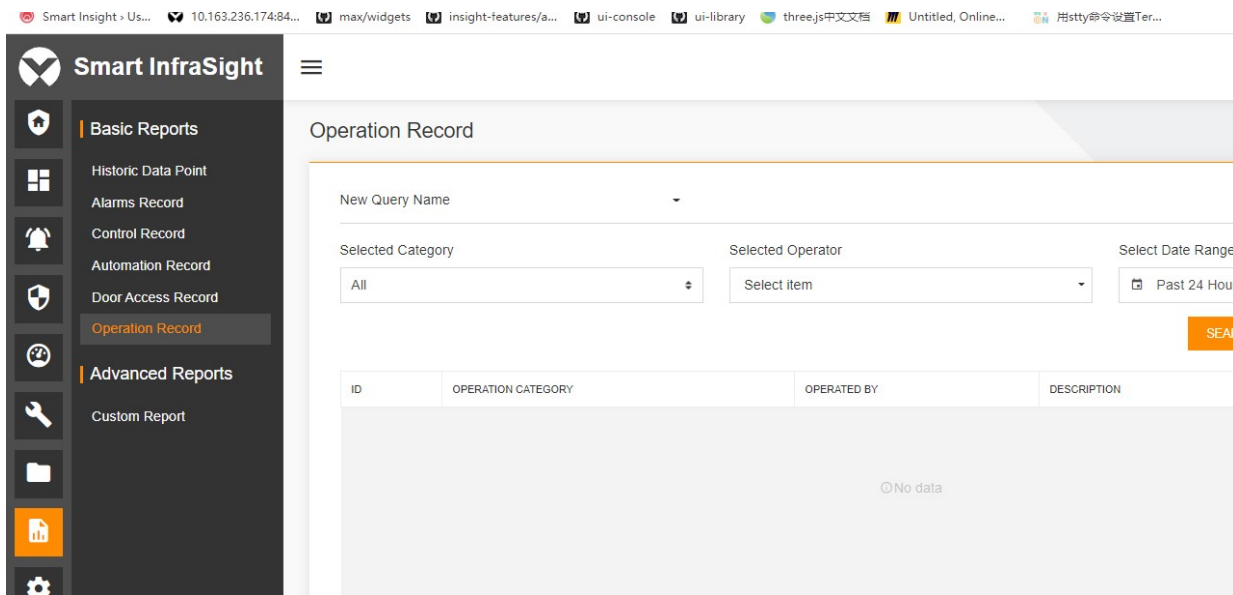

Figure 12-25   Operation Record

Select an operation category from the **Selected Category** drop-down list box. Select an operator from the **Selected Operator** drop-down list box. If the options are not specified, the system returns all operation records. Select the time range of the query from the **Select Date Range** drop-down list box, which is defaulted to **Past 24 Hours**. Click **SEARCH**. The statistics of the selected operation category and operator collected within the specified time range are displayed, as shown in Figure 12-26.
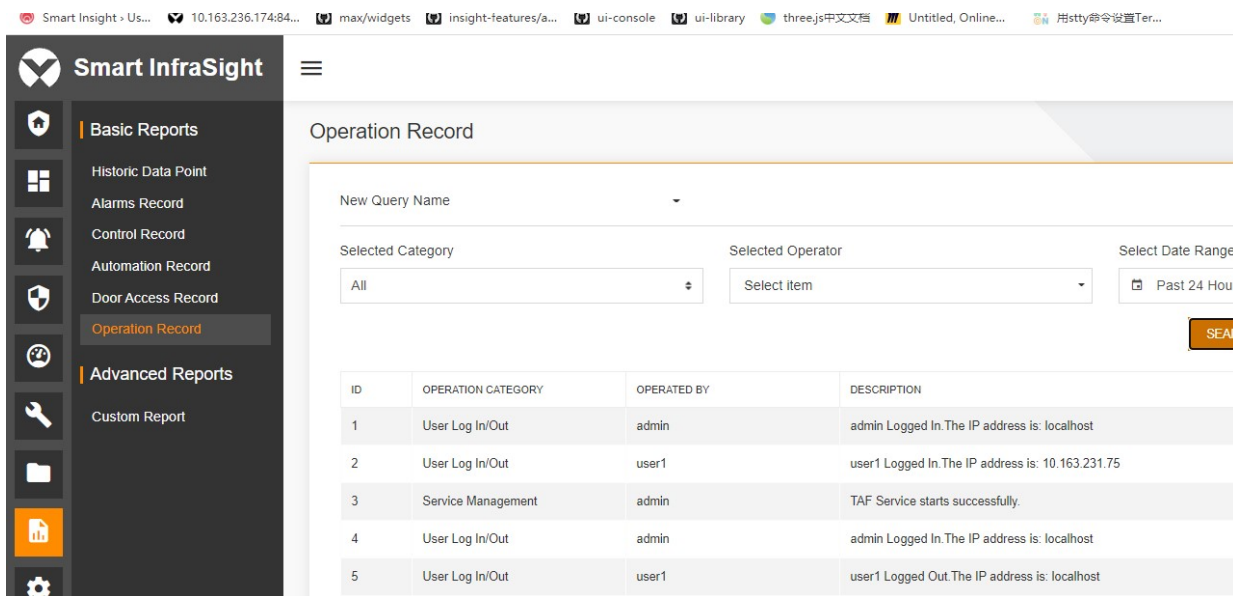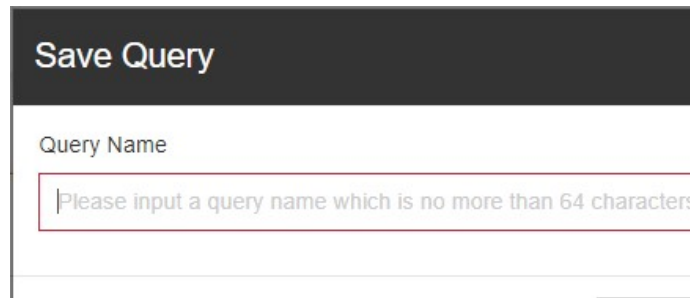
Figure 12-26   Operation Record query results

Saving query conditions: After you select the required query conditions, the system returns the corresponding query information on the list. You can click **SAVE QUERY**. The **Save Query** dialog box is displayed. Enter the query name and save it as a commonly used query condition, as shown in Figure 12-27.

Figure 12-27　Save Query dialog box

Enter the query condition name and click **SAVE QUERY**. The saved query name is displayed on the **New Query Name** drop-down list in the upper left part of the page. You can switch between query conditions to view the corresponding reports according to actual needs. If you do not need to save a query condition, click the delete button on the right side.

Downloading operation records: After you click **SEARCH** and the system displays the compliant query results, you can click in the upper right corner to download the query results, as shown in Figure 12-28.
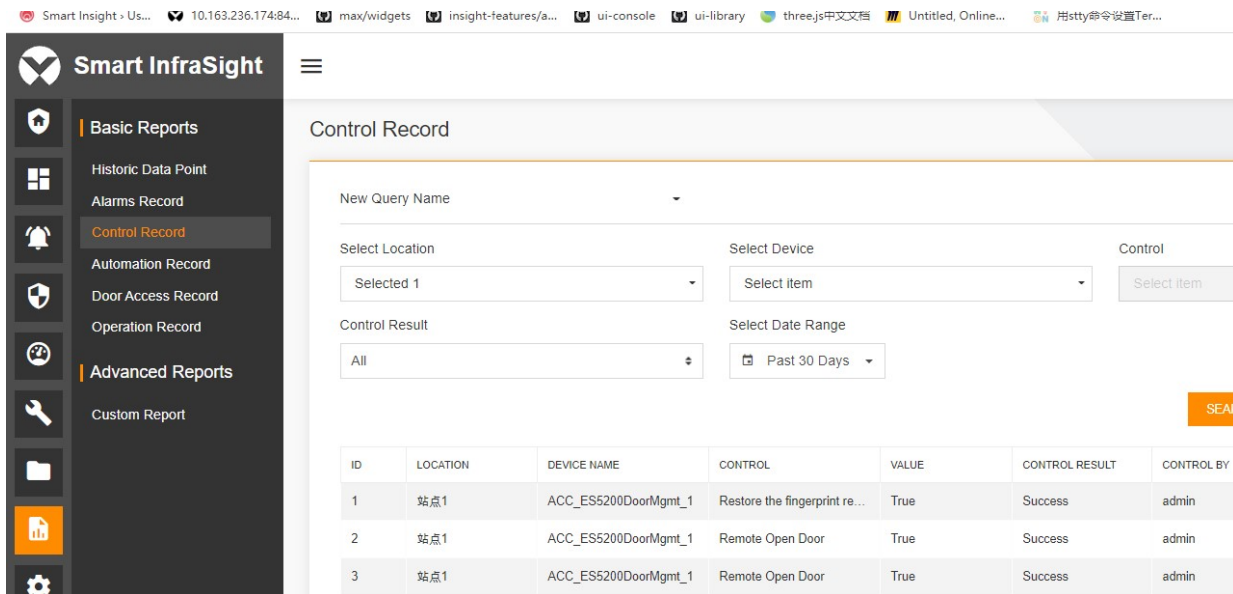

Figure 12-28　Downloading operation records

    📖　　**Note**

1. The number selected operators cannot exceed 8.

2. After you click **SEARCH** and the system returns the query results, you can save query conditions and download operation records.

12.3.2　Custom Report

Custom reports allow you to customize desired reports from the perspective of the X-axis of the graph and the scenario. The line chart includes three scenarios: signal analysis, alarm analysis, and PUE analysis by time. The column chart includes three scenarios: alarm analysis by site and device type; energy analysis by site.

Log in to the system. Choose **Report** > **Custom Report**. The **Custom Report** page is displayed. By default, the system lists all created custom reports, as shown in Figure 12-29.
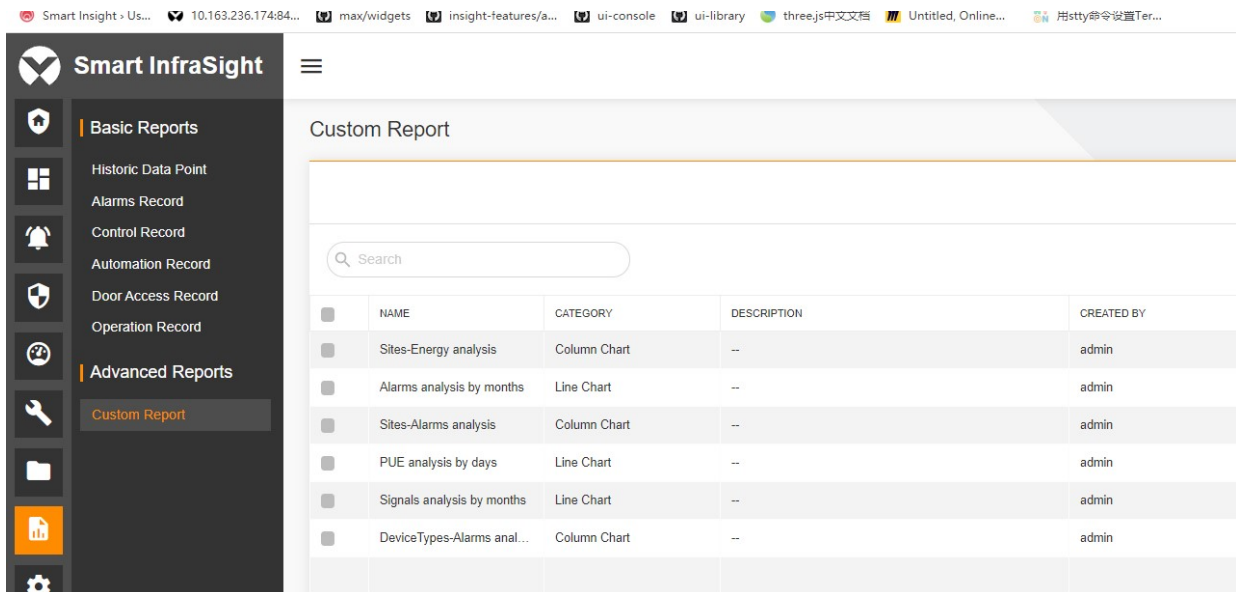
Figure 12-29   List of custom reports

1. Click 🔍 . A search box is displayed, where you can enter the report name to search for the custom report. If you click 🔍 again, the page hides the search box.

2. Click ‖‖ . You can configure the **NAME**, **CATEGORY**, **DESCRIPTION**, **CREATED BY**, and **CREATED TIME** columns displayed on the page.

3. Click ➕ . The page for creating a custom report is displayed. Create a custom report. For details, see the description of specific report types.

4. Click ⋮ suffixed to a report to edit, delete, and preview the report.

Time-signal analysis

The report is created based on the "Custom Report-Line Chart" in the widget template library. The X-axis is time and the data source type is signal analysis. You can collect statistics of device signals by hour, day, month, quarter, and year. The X-axis of the corresponding line chart is time in the hourly/daily/monthly/quarterly/yearly dimension, and the Y-axis shows the value of the signal. The data source indicates the signal collected by the device and can be configured as a virtual signal obtained through the four arithmetic operation based on the device signal.

Log in to the system. Choose **Report** > **Custom Report**. The **Custom Report** page is displayed. On the **Custom Report** page, click ➕ . The system redirects to the widget template library. The "Custom report - Line chart" template can display the thumbnail, name, description, label and add buttons. Click the add button on the template. The system redirects to the custom report configuration page, as shown in Figure 12-30.

Enter **Name** and **Description**, and set **Select Axis**, **Select Period** (**By Hour**, **By Day**, **By Month**, **By Quarter**, and **By Year**), and **Select Time**.

Configure the data source. Click ⊕ suffixed to **Add Data Source** and select the data source for signal analysis. The page for adding a data source is displayed. On the page for adding a data source, select the site, device, and signal in sequence. You can also click the button for configuring a virtual signal, and configure a virtual signal based on the selected signal in the custom formula window. Click **SAVE**. The selected signal or configured virtual signal appears in the data source list on the left.

Figure 12-30 Creating a time-signal analysis report

Select one or more signals (up to eight signals can be selected) in the data source list on the left, and click **PREVIEW**. The report preview area on the right displays the preview of the report effect (as shown in Figure 12-31). After previewing the report, click **SAVE AS** in the lower right part. The system exports the report to a PDF file or PNG image.

Figure 12-31 Previewing the time-signal analysis report

Click **SAVE**. The system generates a new custom report and goes back to the list of custom reports. The created report appears in the list.

📖 **Note**

1. **Name** is mandatory and contains up to 32 characters.

2. **Description** is optional and contains up to 64 characters.

3. Each report can only be configured based on the "signal analysis" data source.

4. After configuring data source items, you must select at least one data source item. Up to eight data source items can be selected. Otherwise, the system does not allow you to preview or save the configuration.

5. In the report configuration process, the report can be exported only when it appears after you click the preview button.

6. The report supports verification of coordinate axis unit. When the selected signal has two units, the dual Y-axis coordinate system is displayed. The selected signal must not have more than two units. Otherwise, it cannot be previewed and saved.

Time-alarm analysis

The report is created based on the "Custom Report-Line Chart" in the widget template library. The X-axis is time and the data source type is alarm analysis. You can collect statistics of device signals by hour, day, month, quarter, and year. The X-axis of the corresponding line chart is time in the hourly/daily/monthly/quarterly/yearly dimension, and the Y-axis shows the number of alarms generated corresponding to the alarm signal. Set the data source to the alarm signal of the device.

Log in to the system. Choose **Report** > **Custom Report**. The **Custom Report** page is displayed. On the **Custom Report** page, click ⊕ . The system redirects to the widget template library. The "Custom report - Line chart" template can display the thumbnail, name, description, label and add buttons. Click the add button on the template. The system redirects to the custom report configuration page, as shown in Figure 12-32.

Enter **Name** and **Description**, and set **Select Axis**, **Select Period** (**By Hour**, **By Day**, **By Month**, **By Quarter**, and **By Year**), and **Select Time**.

Configure the data source. Click ⊕ suffixed to **Add Data Source** and select the data source for alarm analysis. The page for adding a data source is displayed. On the page for adding a data source, select the site, device, and alarm in sequence. Click **SAVE**. The selected alarm appears in the data source list on the left.
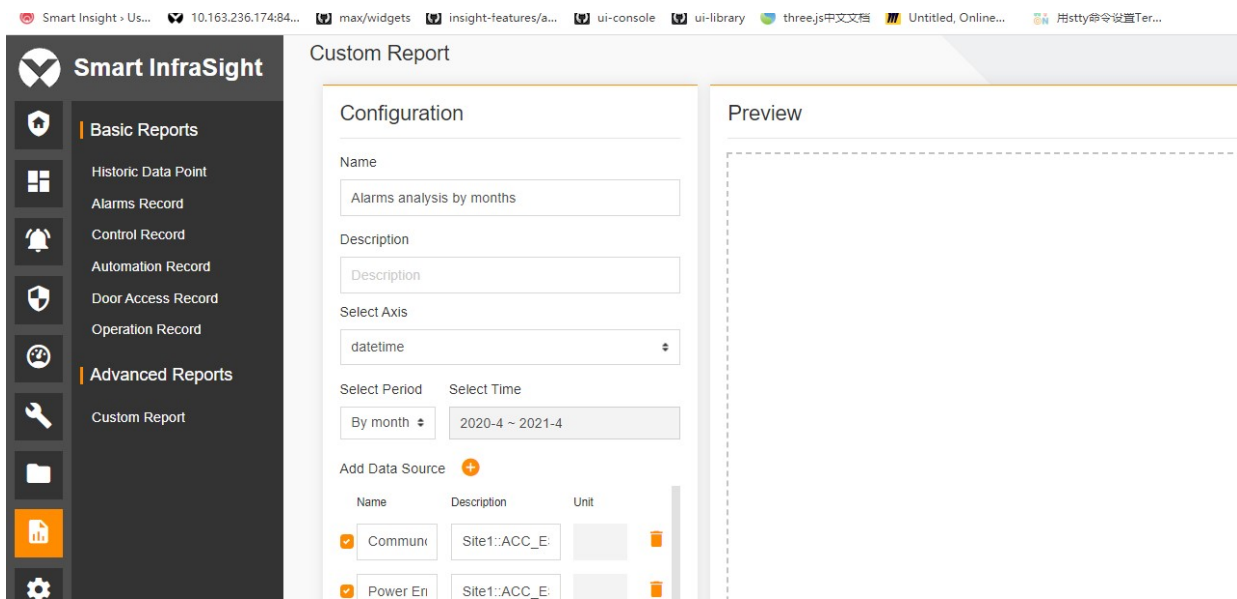
Figure 12-32　Creating a time-alarm analysis report

Select one or more alarms (up to eight alarms can be selected) in the data source list on the left, and click **PREVIEW**. The report preview area on the right displays the preview of the report effect (as shown in Figure 12-33). After previewing the report, click **SAVE AS** in the lower right part. The system exports the report to a PDF file or PNG image.

Figure 12-33　Previewing the time-alarm analysis report

Click **SAVE**. The system generates a new custom report and goes back to the list of custom reports. The created report appears in the list.

📖　**Note**

1. **Name** is mandatory and contains up to 32 characters.

2. **Description** is optional and contains up to 64 characters.

3. The report can only be configured based on the "alarm analysis" data source.

4. After configuring data source items, you must select at least one data source item. Up to eight data source items can be selected. Otherwise, the system does not allow you to preview or save the configuration.

5. In the report configuration process, the report can be exported only when it appears after you click the preview button.

Time-PUE analysis

The report is created based on the "Custom Report-Line Chart" in the widget template library. The X-axis is time and the data source type is signal analysis. You can collect statistics of device signals by day, month, quarter, and year. The X-axis of the corresponding line chart is time in the daily/monthly/quarterly/yearly dimension, and the Y-axis shows the PUE value calculated based on the PUE scheme. The data source indicates the PUE scheme created in the system and can be configured as a virtual signal obtained through the four arithmetic operation based on the PUE scheme.

Log in to the system. Choose **Report** > **Custom Report**. The **Custom Report** page is displayed. On the **Custom Report** page, click ⊕ . The system redirects to the widget template library. The "Custom report - Line chart" template can display the thumbnail, name, description, label and add buttons. Click the add button on the template. The system redirects to the custom report configuration page, as shown in Figure 12-34.

Enter **Name** and **Description**, and set **Select Axis**, **Select Period** (**By Day**, **By Month**, **By Quarter**, and **By Year**), and **Select Time**.

Configure the data source. Click ⊕ suffixed to **Add Data Source** and select the data source for PUE analysis. The page for adding a data source is displayed. On the page for adding a data source, select the PUE scheme created in the system. You can also click the button for configuring a virtual signal, and configure a virtual signal based on the selected PUE scheme in the custom formula window. Click **SAVE**. The selected PUE scheme or configured virtual signal appears in the data source list on the left.
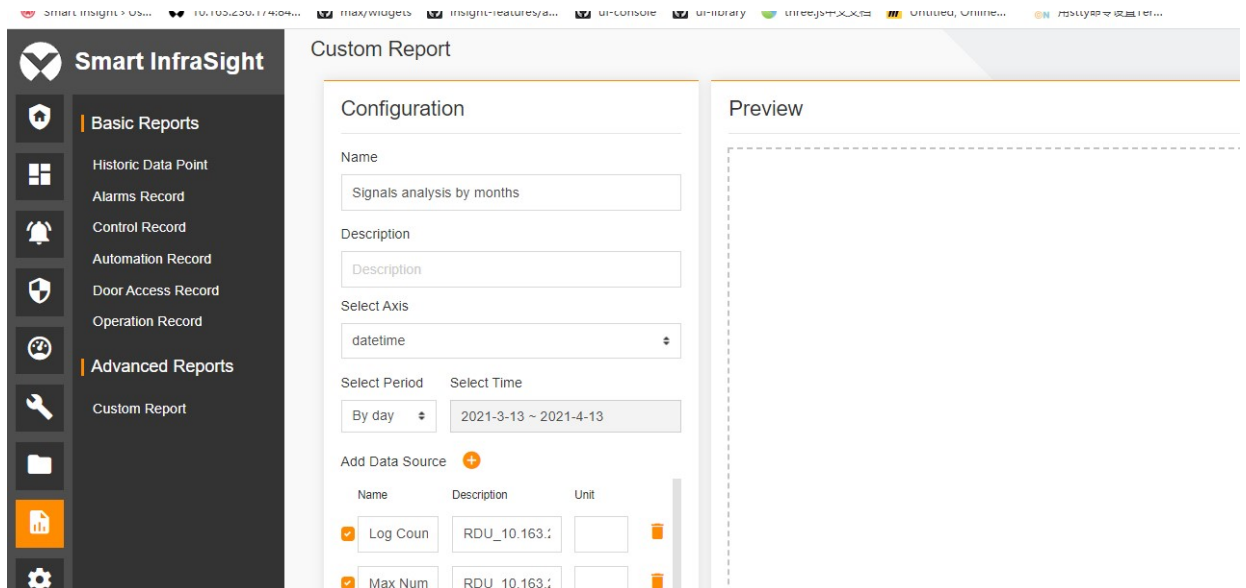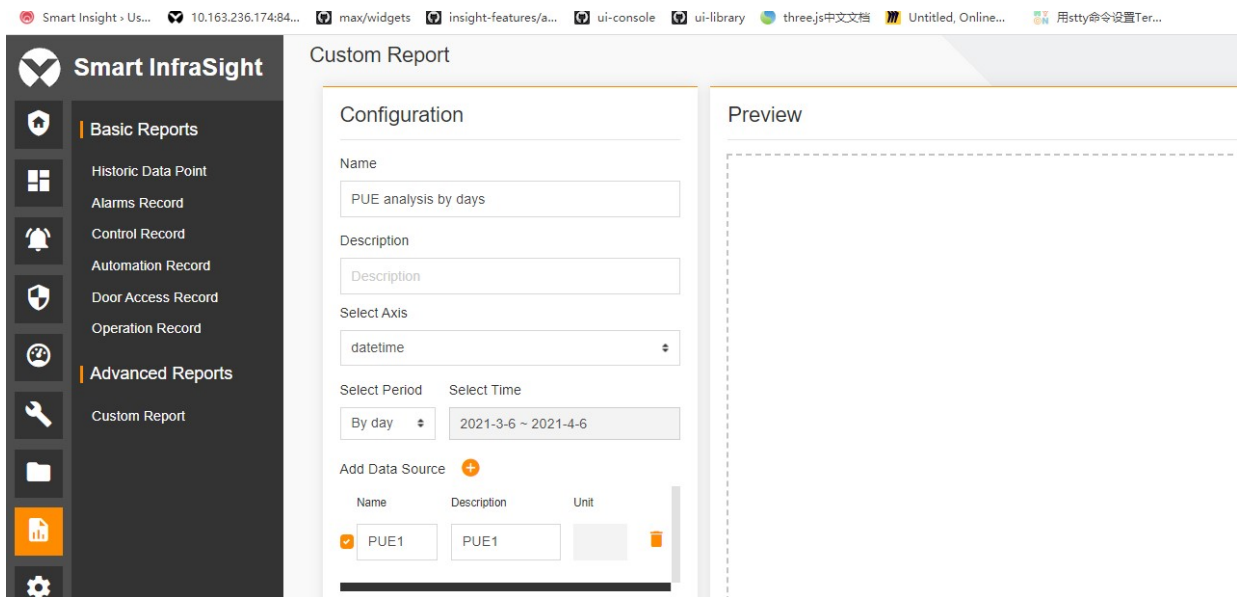
Figure 12-34　Creating a time-PUE analysis report

Select one or more PUE schemes (up to eight PUE schemes can be selected) in the data source list on the left, and click **PREVIEW**. The report preview area on the right displays the preview of the report effect (as shown in Figure 12-35). After previewing the report, click **SAVE AS** in the lower right part. The system exports the report to a PDF file or PNG image.
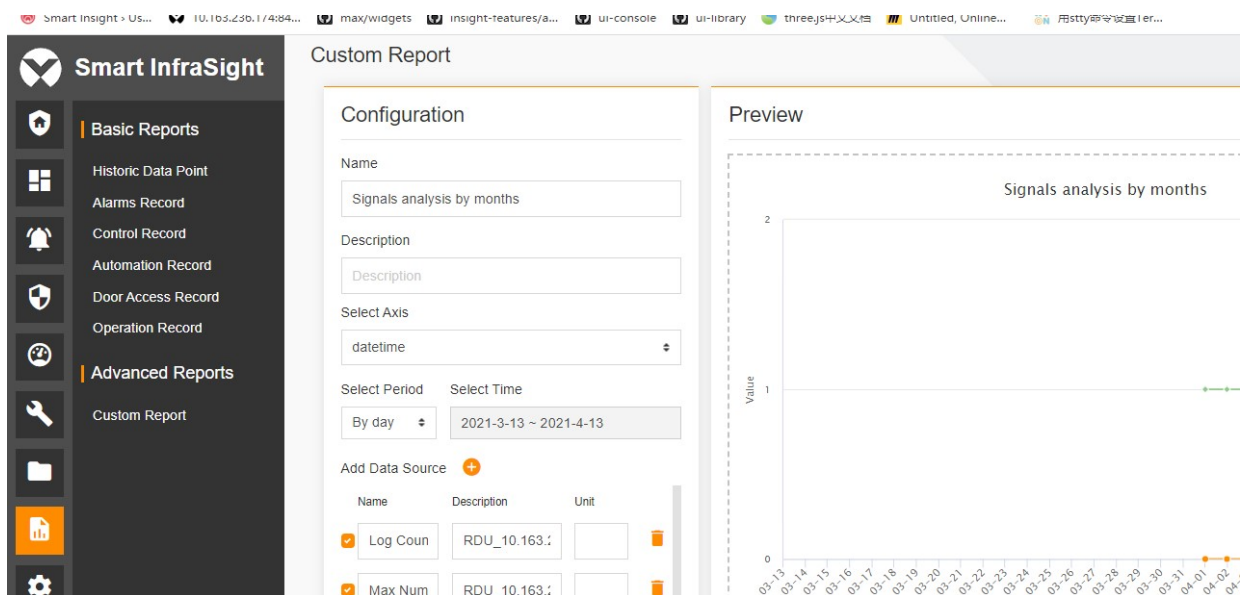

Figure 12-35　Previewing the time-PUE analysis report

Click **SAVE**. The system generates a new custom report and goes back to the list of custom reports. The created report appears in the list.

📖　　**Note**

1. **Name** is mandatory and contains up to 32 characters.

2. **Description** is optional and contains up to 64 characters.

3. Each report can only be configured based on the "PUE analysis" data source.

4. After configuring data source items, you must select at least one data source item. Up to eight data source items can be selected. Otherwise, the system does not allow you to preview or save the configuration.

5. In the report configuration process, the report can be exported only when it appears after you click the preview button.

Device Types-alarm analysis

The report is created based on the "Custom Report-Column Chart" in the widget template library. The X-axis is the device type and the data source type is alarm analysis. The system can collect statistics of device alarms by device type. Each column of the X-axis indicates a device type. The Y-axis indicates the number of alarms generated for each device type.

Log in to the system. Choose **Report** > **Custom Report**. The **Custom Report** page is displayed. On the **Custom Report** page, click   ⊕   . The system redirects to the widget template library. The "Custom report - Column chart" template can display the thumbnail, name, description, label and add buttons. Click the add button on the template. The system redirects to the custom report configuration page, as shown in Figure 12-36.

Enter **Name** and **Description**, and select at least one device type from the **Select Device Type** drop-down list box.

Configure the data source to filter the data corresponding to the data types defined by the X-axis columns, including site, alarm severity, and time range. Click ⊕ suffixed to **Add Data Source** and select the data source for alarm analysis. The page for adding a data source is displayed. On the page for adding a data source, select the site, alarm severity (optional), and time range. Click **SAVE**. The selected items are combined as a single data source item that appears in the data source list on the left.

Figure 12-36   Creating a device types-alarm analysis report

Select an item in the data source list on the left, and click **PREVIEW**. The report preview area on the right displays the preview of the report effect (as shown in Figure 12-37). After previewing the report, click **SAVE** AS in the lower right part. The system exports the report to a PDF file or PNG image.
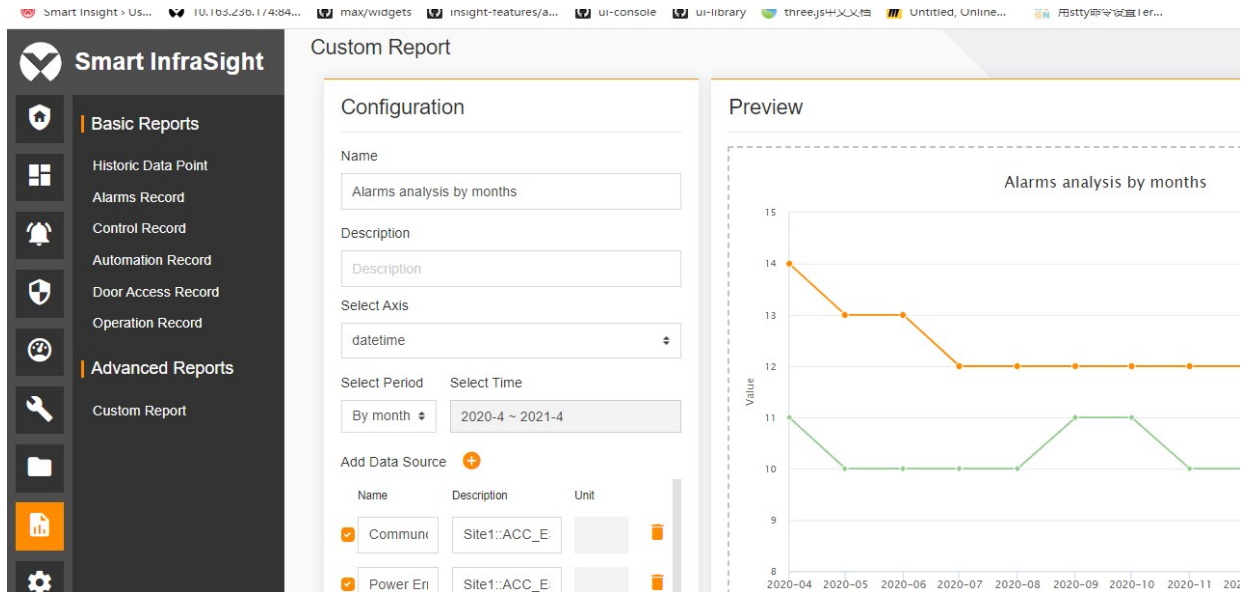
Figure 12-37   Previewing the device types-alarm analysis report

Click **SAVE**. The system generates a new custom report and goes back to the list of custom reports. The created report appears in the list.

📖 **Note**

1. **Name** is mandatory and contains up to 32 characters.

2. **Description** is optional and contains up to 64 characters.

3. The report can only be configured based on the "alarm analysis" data source.

4. After configuring the data source item, you must select the data source item to preview or save the configuration.

5. In the report configuration process, the report can be exported only when it appears after you click the preview button.

Site-alarm analysis

The report is created based on the "Custom Report-Column Chart" in the widget template library. The X-axis is the site and the data source type is alarm analysis. The system can collect statistics of device alarms by site. Each column of the X-axis indicates a site. The Y-axis indicates the number of alarms generated for each site.

Log in to the system. Choose **Report** > **Custom Report**. The **Custom Report** page is displayed. On the **Custom Report** page, click ⊕ . The system redirects to the widget template library. The "Custom report - Column chart" template can display the thumbnail, name, description, label and add buttons. Click the add button on the template. The system redirects to the custom report configuration page, as shown in Figure 12-38.

Enter **Name** and **Description**, and select at least one site from the **Select Location** drop-down list box.

Configure the data source to filter the data corresponding to the sites defined by the X-axis columns, including device type, alarm severity, alarm status, and time range. Click ⊕ suffixed to **Add Data Source** and select the data source for alarm analysis. The page for adding a data source is displayed. On the page for adding a data source, select the site, alarm severity (optional), alarm status (optional), and time range. Click **SAVE**. The selected items are combined as a single data source item that appears in the data source list on the left.
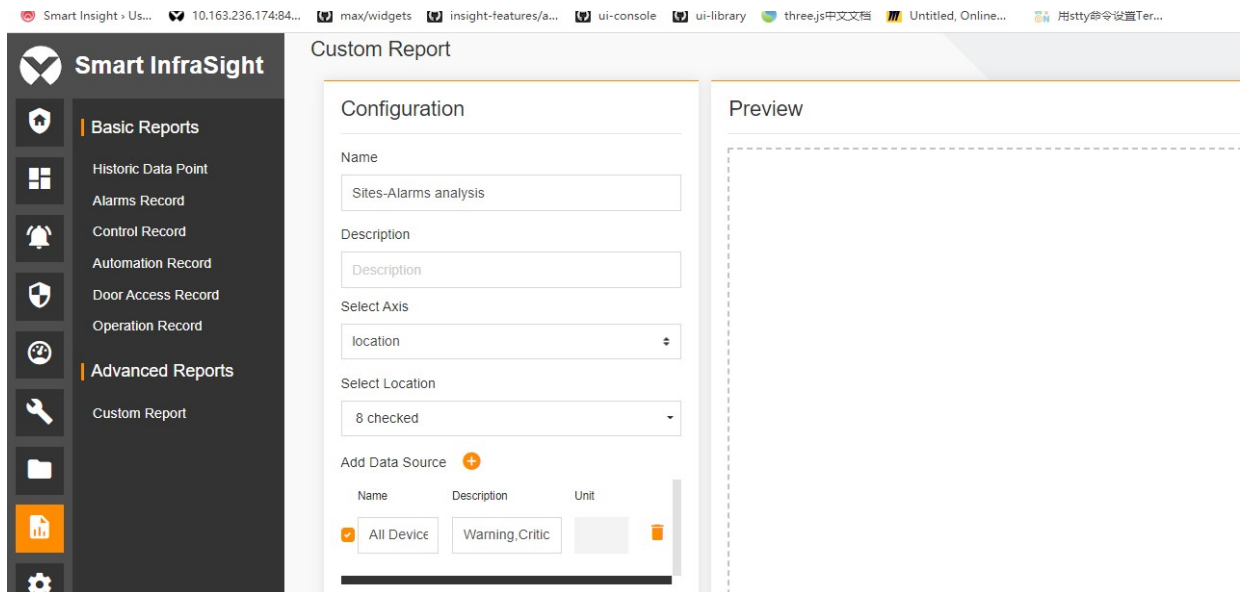
Figure 12-38　Creating a site-alarm analysis report

Select an item in the data source list on the left, and click **PREVIEW**. The report preview area on the right displays the preview of the report effect (as shown in Figure 12-39). After previewing the report, click **SAVE AS** in the lower right part. The system exports the report to a PDF file or PNG image.
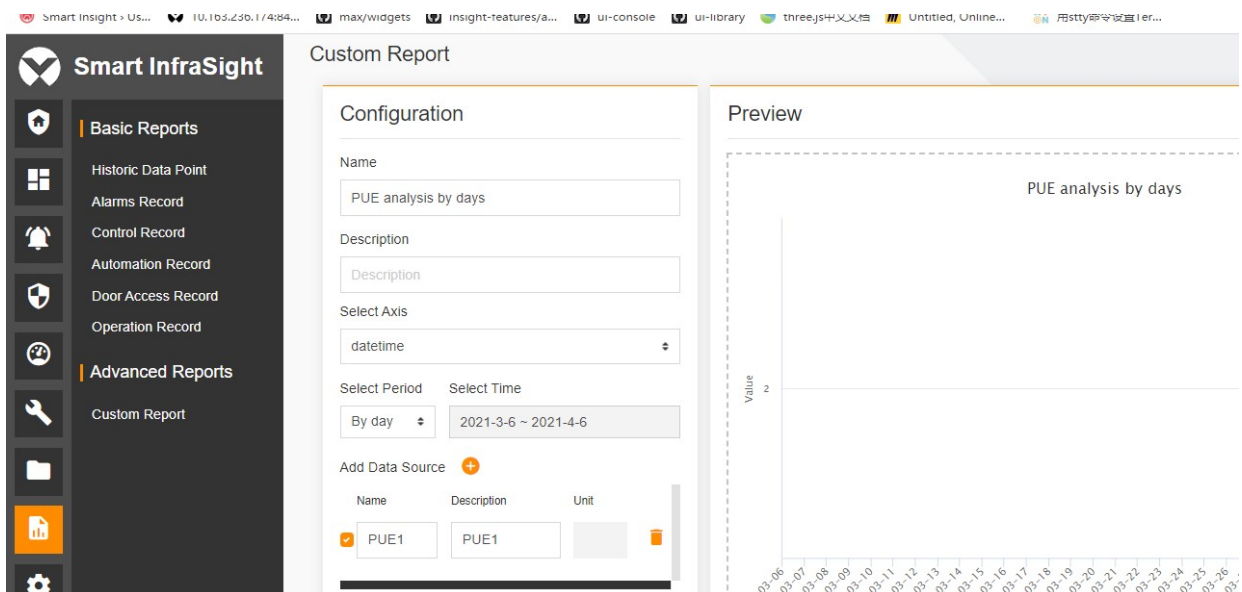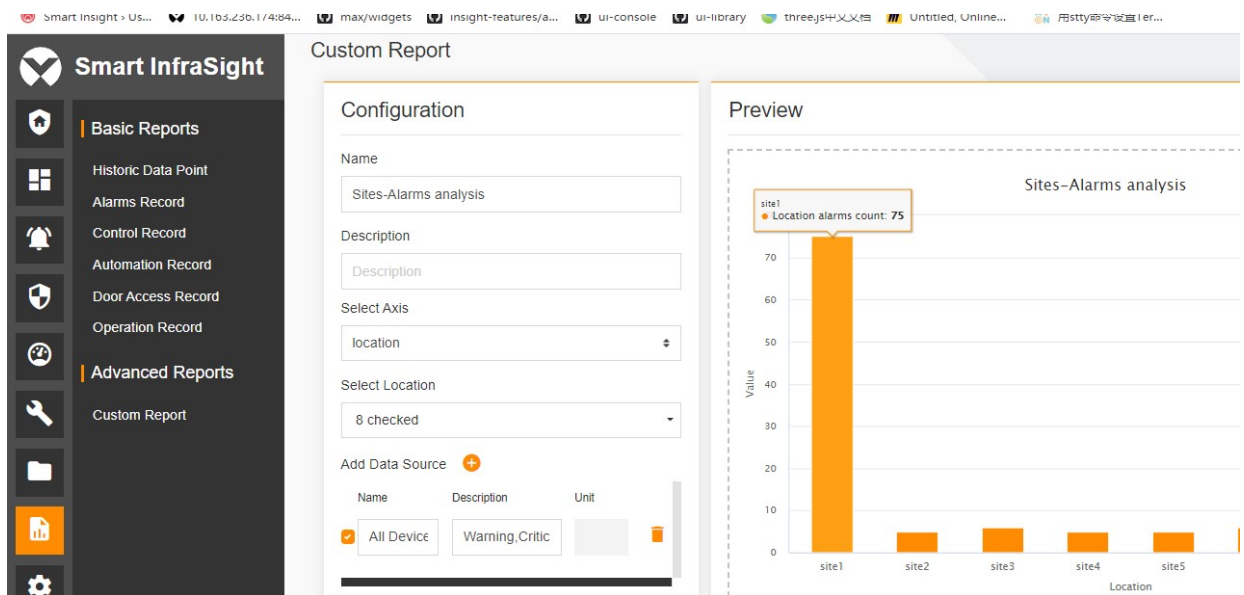

Figure 12-39　Previewing the site-alarm analysis report

Click **SAVE**. The system generates a new custom report and goes back to the list of custom reports. The created report appears in the list.

📖　**Note**

1. **Name** is mandatory and contains up to 32 characters.

2. **Description** is optional and contains up to 64 characters.

3. The report can only be configured based on the "alarm analysis" data source.

4. After configuring the data source item, you must select the data source item to preview or save the configuration.

5. In the report configuration process, the report can be exported only when it appears after you click the preview button.

Site-energy analysis

The report is created based on the "Custom Report-Column Chart" in the widget template library. The X-axis is the site and the data source type is energy analysis. Each column of the X-axis indicates a site. The Y-axis indicates the energy consumed by the corresponding site.

Log in to the system. Choose **Report** > **Custom Report**. The **Custom Report** page is displayed. On the **Custom Report** page, click ⊕ . The system redirects to the widget template library. The "Custom report - Column chart" template can display the thumbnail, name, description, label and add buttons. Click the add button on the template. The system redirects to the custom report configuration page, as shown in Figure 12-40.

Enter **Name** and **Description**, and select at least one site from the **Select Location** drop-down list box.

Configure the data source. Click ⊕ suffixed to **Add Data Source** and select the data source for energy analysis. The page for adding a data source is displayed. On the page for adding a data source, select the time range. Click **SAVE**. The selected time condition appears in the data source list on the left.
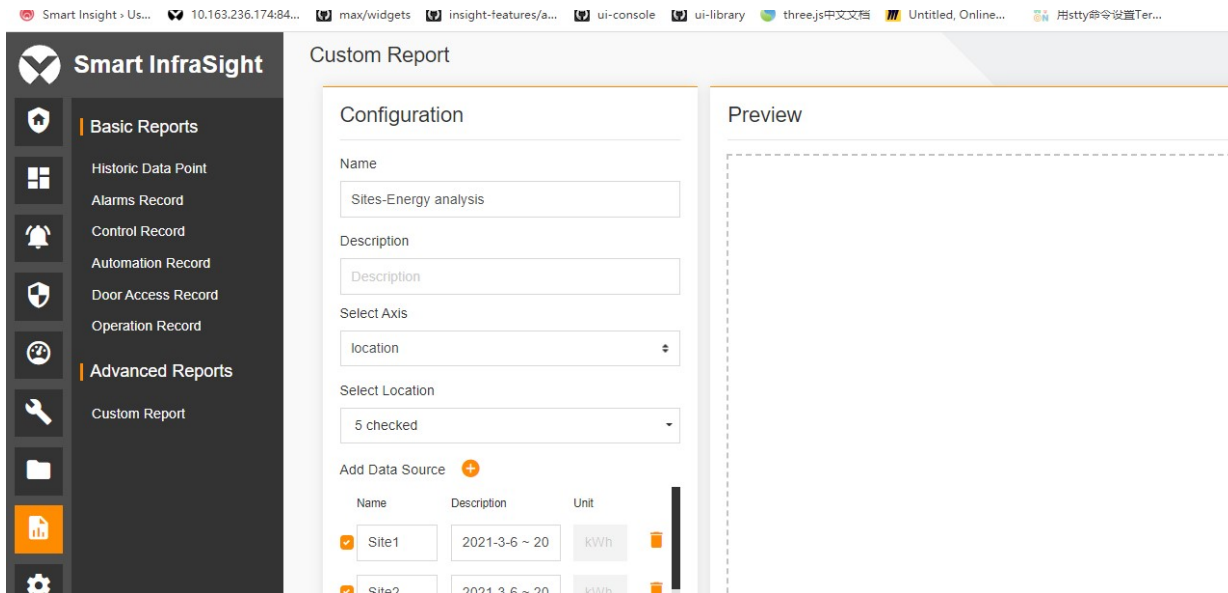
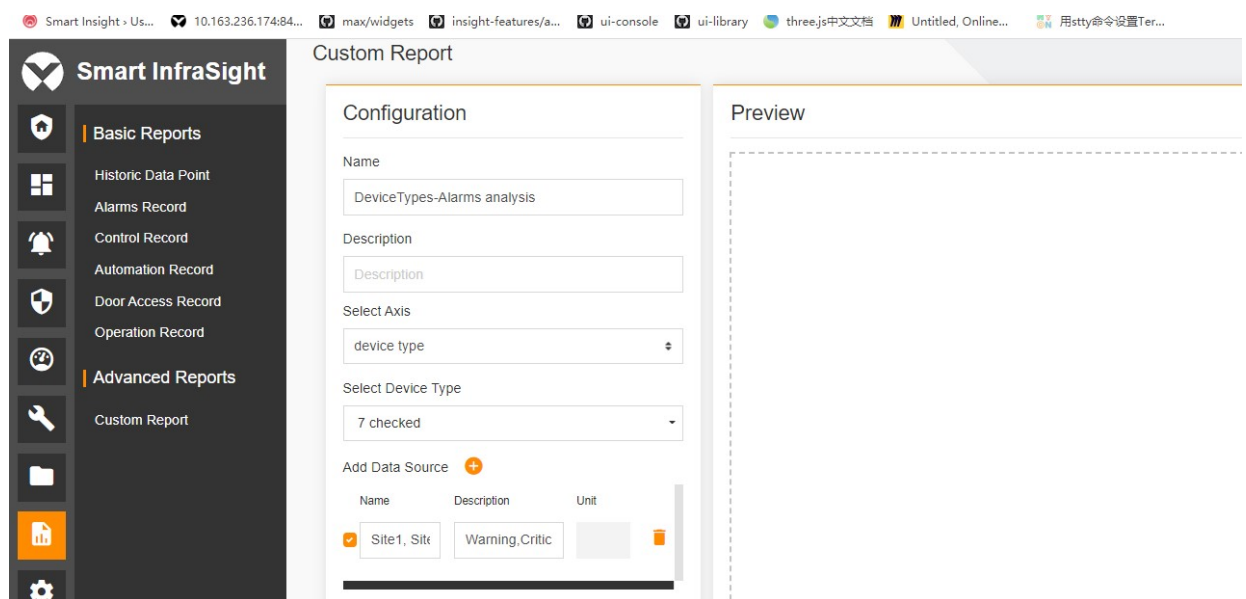*Figure 12-40   Creating a site-energy analysis report*

Select an item in the data source list on the left, and click **PREVIEW**. The report preview area on the right displays the preview of the report effect (as shown in Figure 12-41). The system searches for the energy configuration bound with the site configured in the data source configuration based on the site selected on the X-axis to calculate the consumed energy. After previewing the report, click **SAVE AS** in the lower right part. The system exports the report to a PDF file or PNG image.
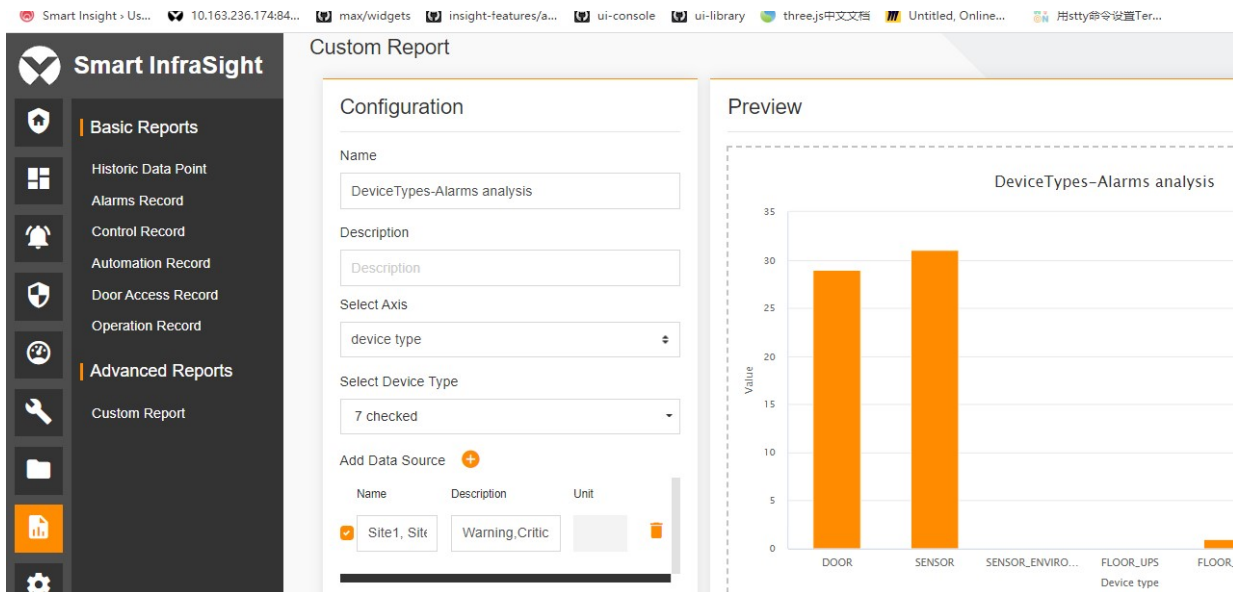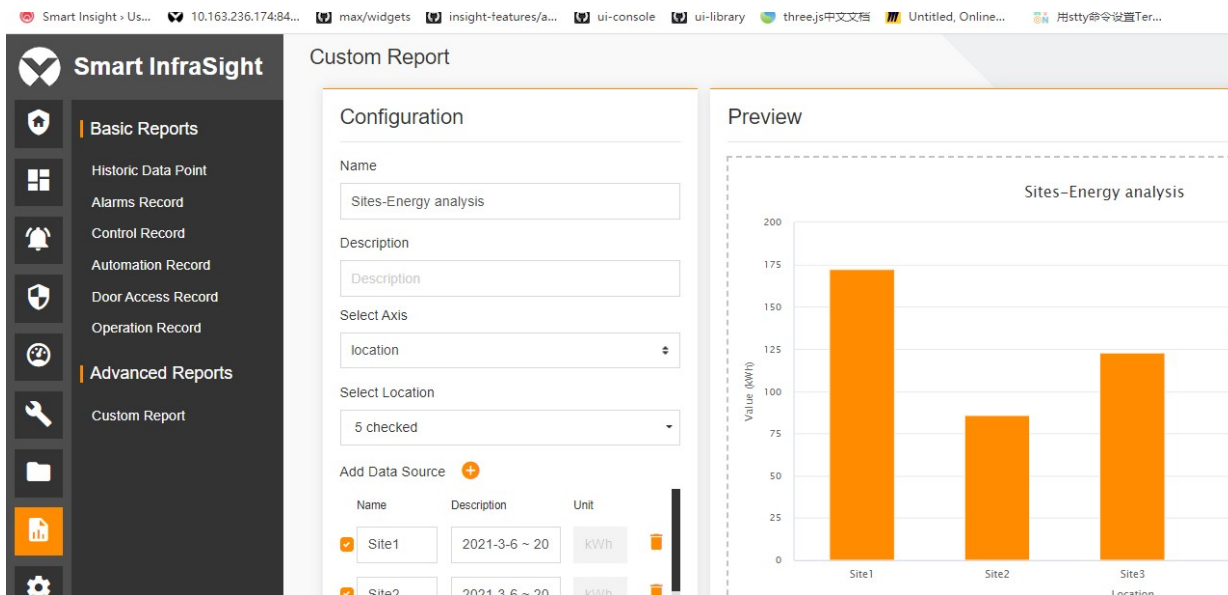

Figure 12-41   Previewing the site-energy analysis report

Click **SAVE**. The system generates a new custom report and goes back to the list of custom reports. The created report appears in the list.

 Note

1. **Name** is mandatory and contains up to 32 characters.

2. **Description** is optional and contains up to 64 characters.

3. Each report can only be configured based on the "energy analysis" data source.

4. After configuring the data source item, you must select the data source item to preview or save the configuration.

5. In the report configuration process, the report can be exported only when it appears after you click the preview button.

Chapter 13   Door Access Management

13.1   Overview

13.1.1   Overview

This module can manage the IP door access devices and serial door access devices connected through the RDU collector. Through the door access module, you can connect the IP access controller to the system; view the door opening/closing status in real time; perform refined door access card authentication, and set the time range within which the door can be opened by card; and conveniently query the card records and events.

13.1.2   Functional Module

Door Access contains the following functional modules. For more information about the functional modules, see section *13.3"Specific Functions."*

- Door Access Monitoring
- Card Management
- Time Setting
- Record Query

13.2   Quick Start

13.2.1   Quick Deployment Procedure

To manage IP door access devices, perform the following steps:

[1] Add the IP access controller and door.

[2] Add the door access card.

[3] Configure the authorization.

[4] Set the time range (optional).

13.2.2   Example

Assume that there is an IP access controller with the model "CHD806D4" and IP address "10.163.236.129". Connect the access controller to the system for management.

Adding the IP access controller and door

On the homepage, select the **Door Access** node. The system displays the **Door Access Monitoring** page by default. You can add the IP access controller and door on the **Door Access Monitoring** page only after you log in to the system as the administrator.

1. On the **Door Access Monitoring** page, click ⊕ to add an IP access controller. The **Add IP Access Controller** page is displayed, as shown in Figure 13-1. Enter **Controller 01** in **Name**, **10.163.236.129** in **IP Address**, and **CHD806D4** in **Model**. Click **SAVE**.

Figure 13-1   Adding the IP access controller

After the IP access controller is successfully added, the page as shown in Figure 13-2 is displayed.

Figure 13-2   Successfully added the IP access controller

2. On **Device List**, click ⋮ on the right side of the IP access controller, and select **Add Door** from the drop-down menu. The **Add Door** page is displayed. Set **Name** to **Door 01** and **Door Number** to **1**. Click **SAVE**, as shown in Figure 13-3.

Figure 13-3   Adding a door

After the door is successfully added, the page as shown in Figure 13-4 is displayed.
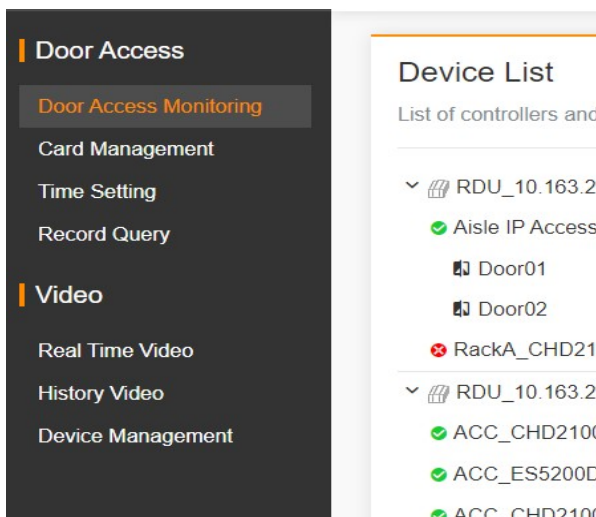
Figure 13-4   List of door access devices

According to the actual number of doors managed by the IP access controller, add the corresponding number of doors using the same method as the preceding steps. When adding a door, select the corresponding door number.

Device List lists the access controllers and doors. The icon prefixed to a controller name indicates the communication status. When the communication is normal, the green icon is displayed. When the communication fails, the red icon is displayed.

When you select a different door in **Device List**, the real-time signal list, current alarm list, and control command list of the selected door are displayed on the right side. Click on the right side of the control command, and select **Send Command** in the pop-up drop-down menu. The selected command is set to the underlying door access device.

Adding a door access card

Choose Door Access > Card Management. The Card Management page is displayed.

Click to add a card. The page as shown in Figure 13-5 is displayed. Set **Card ID** to **0014781355** and **Expiry Date** to today after 5 years (default). Select **Cardholder** (a contact or user in the address book). Set **Phone Number** to **18688888888** (optional) and **Department** to **Department 1** (optional). Select **Fingerprint** (optional). Click **SAVE**.
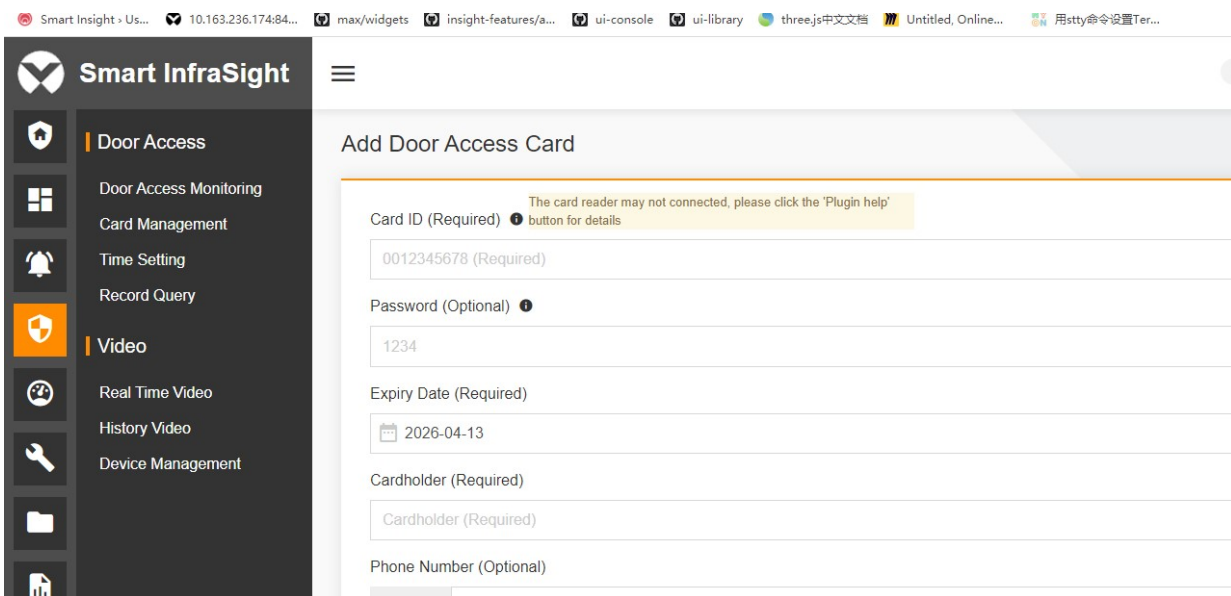
Figure 13-5   Adding a door access card

After the door access card is successfully added, the page as shown in Figure 13-6 is displayed. You can add multiple door access cards according to actual needs.
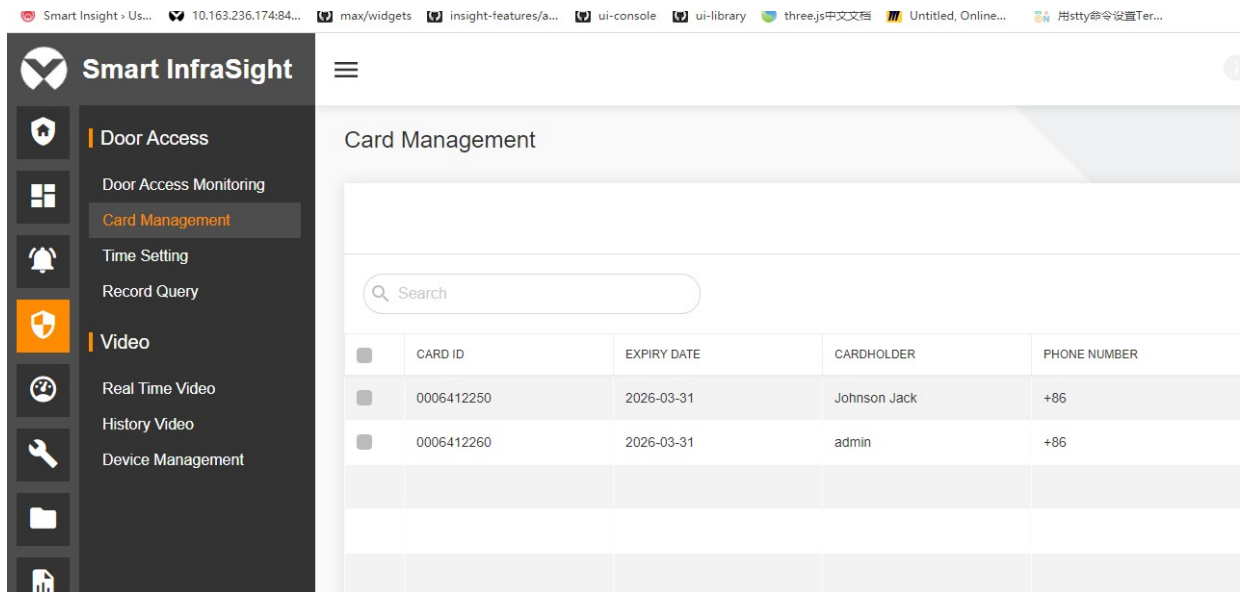
Figure 13-6   List of door access cards

Authorization

You can open the authentication page in two ways: In **Device List**, select a door and open the authorization page to authorize permissions to the door. In the door access card list, select a door access card to open the authorization page to authorize permissions to the door. Both methods support batch authorization. This section takes the first authorization method as an example. The second authorization method is similar.

1. Click ⋮ on the right side of a door. In the pop-up drop-down menu, select **Permission**, as shown in Figure 13-7.
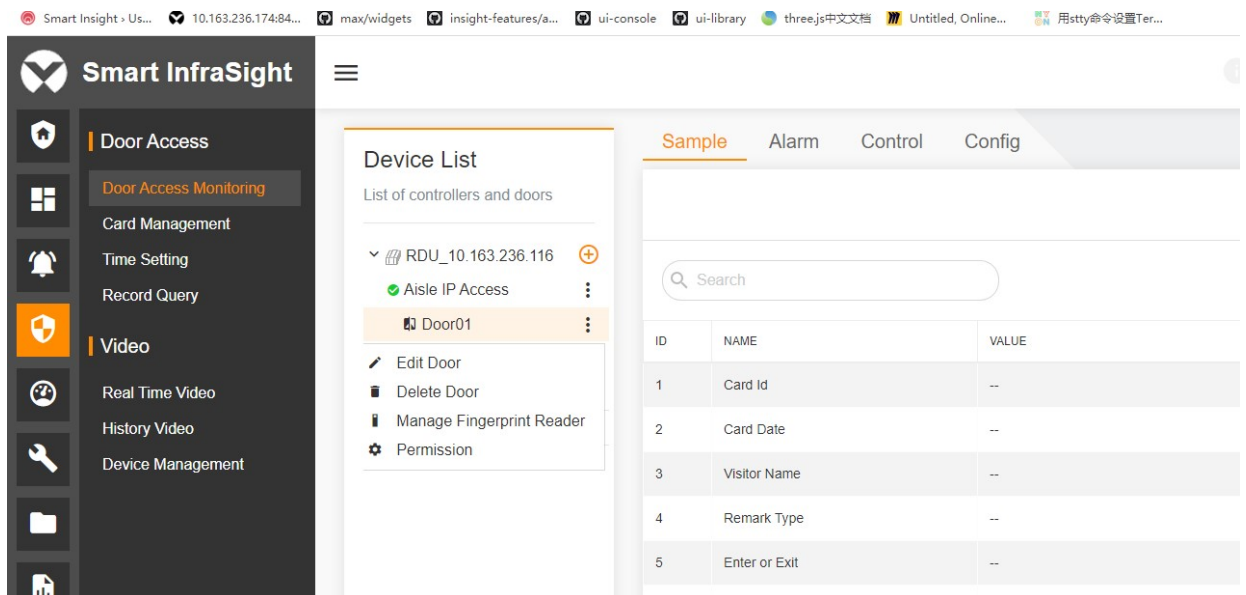
Figure 13-7   Selecting Permission

2. The permission authorization page is displayed, as shown in Figure 13-8. The page displays all door access cards and the corresponding permissions in the system. The **PERMISSION GROUP** column displays the permissions of the selected door (including **No Permission**, **Privilege**, **Group 1**, **Group 2**, **Group 3**, and **Group 4**). When **PERMISSION GROUP** is set to **No Permission**, the door access card does not have permissions to open the door. When **PERMISSION GROUP** is set to **Privilege**, the door access card can open the door in any time range. When **PERMISSION GROUP** is set to **Group 1** to **Group 4**, the door access card can open the door only within the specified time range.

Figure 13-8   Authorization

3. After you select **Group 1** from the **PERMISSION GROUP** drop-down list box, the ⟲ icon appears in the last column, indicating that the authorization is in progress. When the authorization is successful, a green icon ✅ is displayed. When the authorization fails, a red icon ❗ is displayed. In addition, the **PERMISSION GROUP** option restores to the previous setting before it is changed, as shown in Figure 13-9.

Figure 13-9   Authorization - Changing the permission group

Setting the time range (optional)

When you add an IP access controller, the system sets the door opening period of four groups (**Group 1**, **Group 2**, **Group 3**, and **Group 4**) to **00:00-23:59**. Therefore, when you configure the permission in the preceding step, the door access card can open the door in any time range after you select a group. The following part describes how to change the default time range to make the door access card open the door only within the specified time range.

1. Choose **Door Access** > **Time Setting**. The **Set Time** page is displayed. By default, the first item in the access controller list is selected. In addition, the permissions of four groups from Monday to Sunday are all set to **All-day Effective** by default, as shown in Figure 13-10.
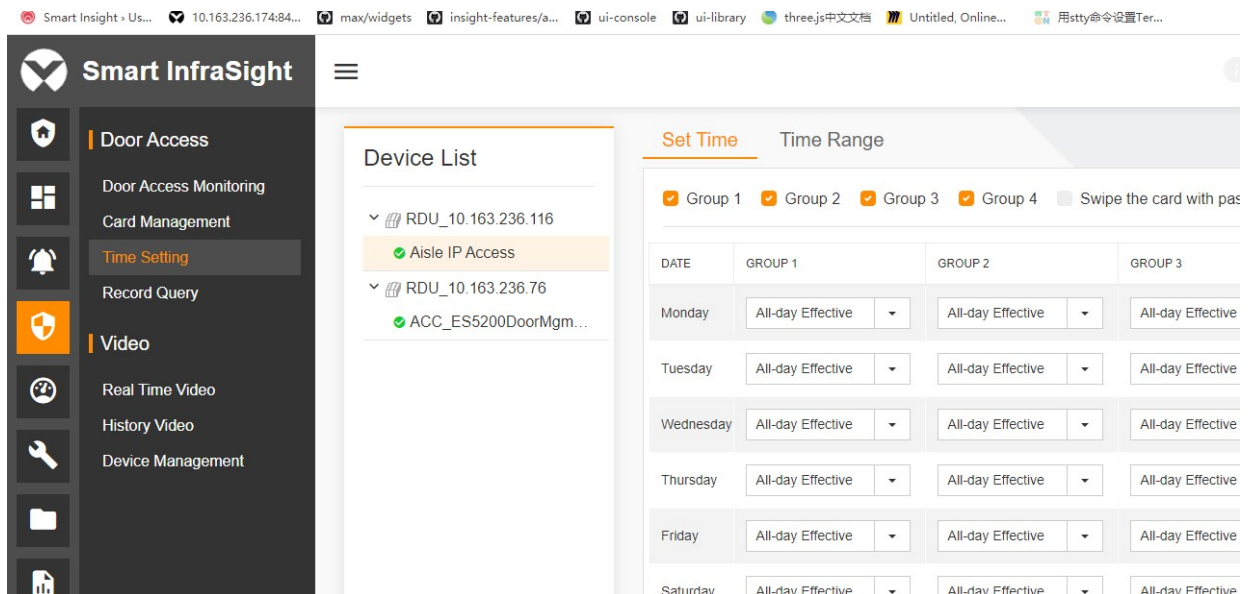
Figure 13-10 Setting the time range

2. To modify the door opening time of a group, you can select the door opening time range of the corresponding group. For example, modify the door opening time range of Group 1 on Monday to **All-day Invalid**, and click **Save**, as shown in Figure 13-11.
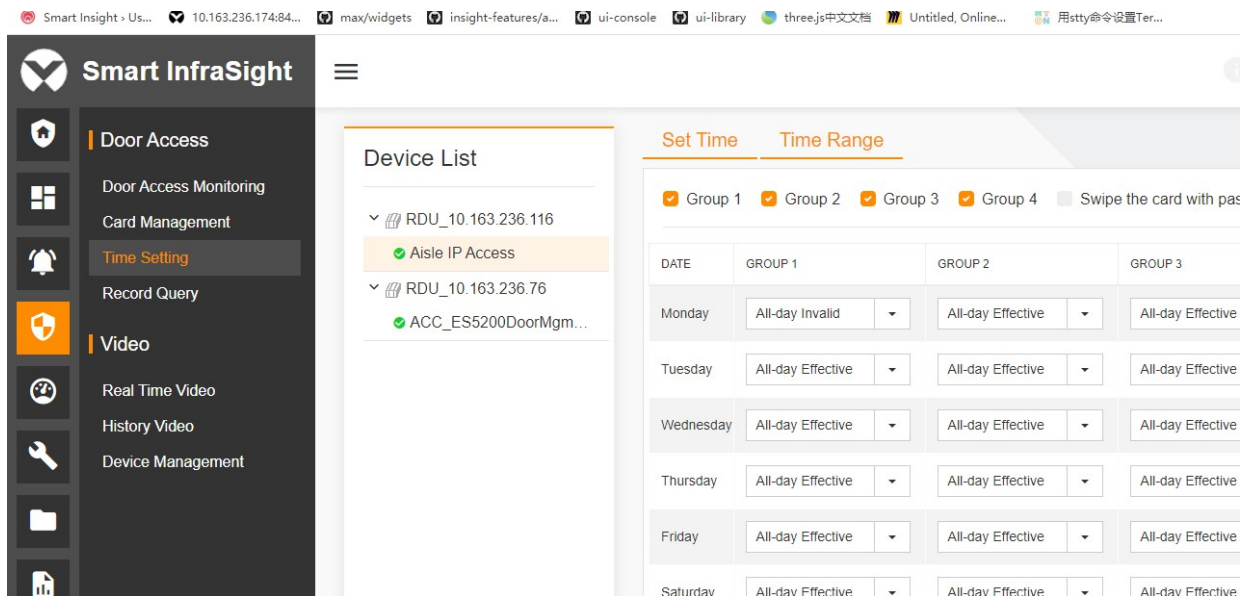
Figure 13-11 Setting the time range

3. By default, the options of the door opening time range include only **All-day Effective** and **All-day Invalid**. To change the time range, switch to the **Time Range** tab page, as shown in Figure 13-12. For details about time range operations, see section *13.3.3 "Time Setting."*
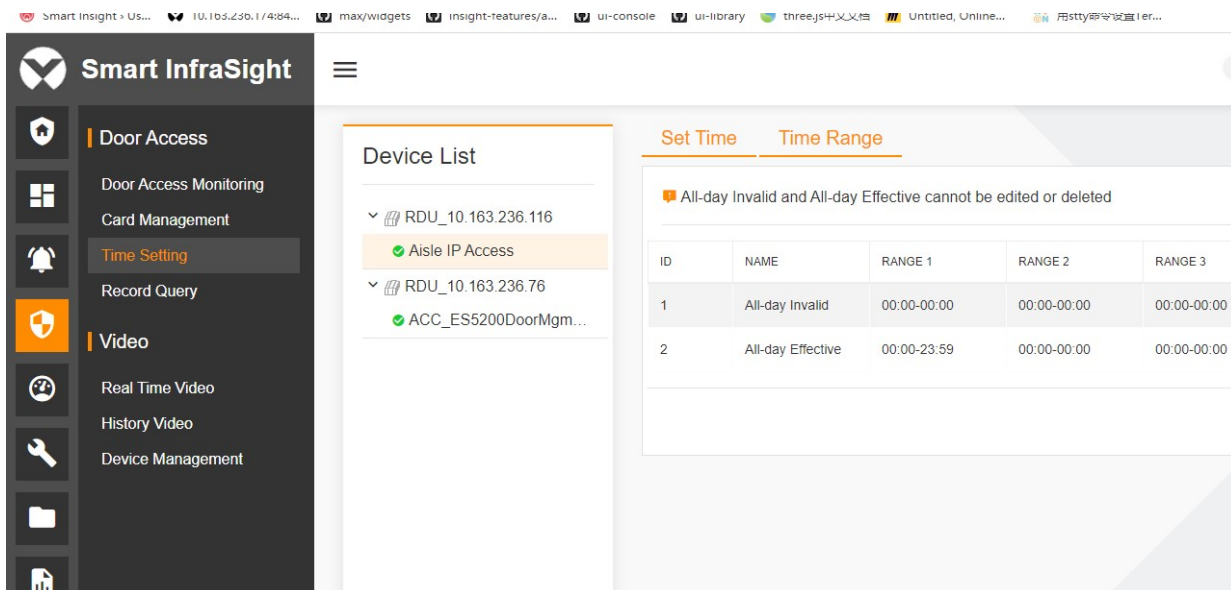
Figure 13-12   Time range management

13.3   Specific Functions

This section describes specific functions of door access management, including the following modules: Door Access Management, Card Management, Time Setting, and Record Query. The supported access control devices include IP access controller and serial access controller, where the IP access controller can directly access the system, and the serial access controller can access the system through the RDU collector.

13.3.1   Door Access Monitoring

This module provides door access monitoring functions, mainly including: adding, deleting, and modifying the IP access controller; adding, deleting, and modifying the door connected to the IP access controller; synchronizing data with the IP access controller; setting the door opening permissions for the card from the perspective of the door connected to the IP access controller; and setting the door opening permissions for the card from the perspective of serial access controller. You can view the real-time signals, active alarms, control commands, and setting signals of the access controllers and doors.

**List of door access devices**

On the homepage, select the **Door Access** node. The system displays the **Door Access Monitoring** of page by default. On this page, you can add the IP access controller and the door. The serial access controller connected through the RDU collector is displayed automatically. The icon prefixed to a controller name indicates the communication status. When the communication is normal, the green icon ⊘ is displayed. When the communication fails, the red icon ⊗ is displayed, as shown in Figure 13-13.
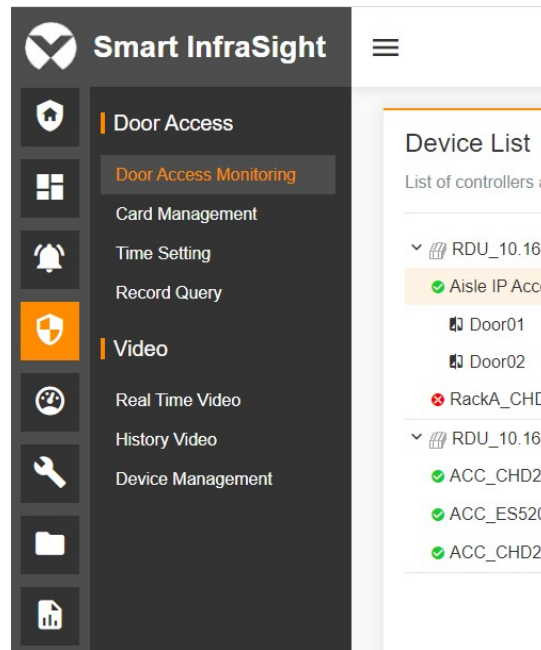
Figure 13-13   List of door access devices

 Note

1. If no access controller is added to the system, **Device List** displays only the site information.

2. The content of **Device List** varies with administrator and common user. The common user cannot perform operations such as adding the IP access controller, adding the door, and authorizing permissions.

Adding the access controller

1. Click to add an IP access controller. The **Add IP Access Controller** page is displayed, as shown in Figure 13-14.

Figure 13-14   Adding the IP access controller

2. Set **Name** and **IP address** of the IP access controller, select **Model**, and click **SAVE**.

 Note

1. This function is only valid for users in the administrator group.

2. **Name** of the access controller should contain 3-64 characters, which cannot be duplicated.

3. **Name** and **IP Address** are mandatory. You are allowed to click **SAVE** only after completely entering and verifying the mandatory information.

Editing the access controller

1. Click ⋮ on the right side of the IP access controller and select **Edit IP Access Controller** from the pop-up drop-down menu. The **Edit IP Access Controller** page is displayed. After editing the name of the IP access controller, click **SAVE**, as shown in Figure 13-15.

Figure 13-15   Editing the IP access controller

📖   **Note**

1. This function is only valid for users in the administrator group.

2. **IP Address** and **Model** of the access controller are not configurable. To modify them, delete the access controller and add it again.

3. In the edit window, you can click **SAVE** only after the information has been modified.

Deleting the IP access controller

1. Click ⋮ on the right side of the IP access controller and select **Delete IP Access Controller** from the pop-up drop-down menu. The **Delete IP Access Controller** page is displayed, as shown in Figure 13-16.

Figure 13-16   Deleting the IP access controller

2. Click **CONFIRM**. The access controller is deleted.

📖   **Note**

1. This function is only valid for users in the administrator group.

2. When an IP access controller is deleted, all doors managed by the controller are deleted accordingly.

Data synchronization

1. Click ⋮ on the right side of the IP access controller and select **Sync Data** from the pop-up drop-down menu. The **Sync Data** page is displayed, as shown in Figure 13-17.
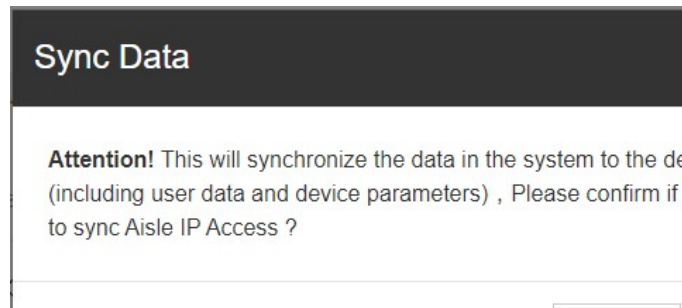
Figure 13-17   Data synchronization

2. Click **CONFIRM**. The system synchronizes the data in the system to the IP access controller, including the user data and device parameters.

     📖   **Note**

1. This function is only valid for users in the administrator group.

2. The data synchronization function is mainly applicable to the scenario of replacing the IP access controller, in which all the raw data in the system needs to be synchronized to the new access controller.

Adding a door

1. Click ⋮ on the right side of the IP access controller and select **Add Door** from the pop-up drop-down menu. The **Add Door** page is, as shown in Figure 13-18.

Figure 13-18   Adding a door

2. Set **Name** and select **Door Number**, and click **SAVE**.

     📖   **Note**

1. This function is only valid for users in the administrator group.

2. **Name** of the door should contain 3-64 characters. The door names of the same site must not be duplicated.

3. On the same IP access controller, the door number can be used once only. The occupied door number cannot be selected.

4. **Name** and **Door Number** are mandatory. You are allowed to click **SAVE** only after completely entering and verifying the information.

Editing the door

1. Click ⋮ on the right side of the door and select **Edit Door** from the pop-up drop-down menu. The **Edit Door** page is displayed. After editing the name of the door, click **SAVE**, as shown in Figure 13-19.

Figure 13-19   Editing the door

☐   **Note**

1. This function is only valid for users in the administrator group.

2. **Name** of the door should contain 3-64 characters. The door names of the same access controller must not be duplicated.

3. **Door Number** is not configurable. To modify it, delete the door and add it again.

4. In the edit window, you can click **SAVE** only after the information has been modified.

Deleting the door

1. Click ⋮ on the right side of the door and select **Delete Door** from the pop-up drop-down menu. The **Delete Door** page is displayed, as shown in Figure 13-20.

*Figure 13-20   Dialog box for deleting the door*

2. Click **CONFIRM**. The door is deleted.

☐   **Note**

This function is only valid for users in the administrator group.

Managing fingerprint reader

If a fingerprint reader is equipped for the door, you can manage the fingerprint reader, which is at the IP access controller level.

1. Click ⋮ on the right side of the door connected to the IP access controller and select **Manage Fingerprint Reader** from the pop-up drop-down menu. The **Manage Fingerprint Reader** page is displayed, as shown in Figure 13-21.

2. Click ⊕. A row is added to the fingerprint reader table. Select **WORK TYPE** for the fingerprint reader. If ✓ is displayed on the right side of **WORK TYPE**, the fingerprint reader is successfully added, and the system automatically generates an address for the fingerprint reader.

3. For the configured fingerprint reader, you can modify its work type instead of the address.

4. Click ⋮ suffixed to a fingerprint reader and select **Delete** to delete the configured fingerprint reader. You can also batch delete multiple configured fingerprint readers.

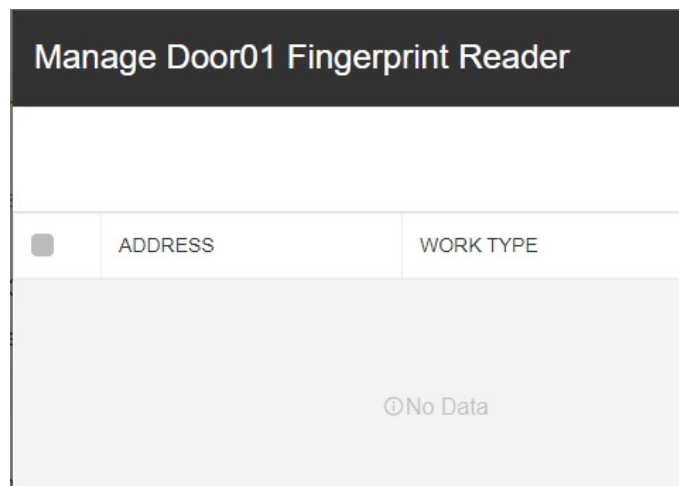5. After the operation on the page is completed, click **CLOSE**.

Figure 13-21   Managing the fingerprint reader

📖   **Note**

1. This function is only valid for users in the administrator group.

2. The baud rate of the access controller and the fingerprint reader must be the same to ensure normal communication. If the access controller and the fingerprint reader cannot communicate with each other, use the manufacturer's debugging tool to set the baud rate. After the communication becomes normal, add the fingerprint reader or modify the work type of the fingerprint reader.

3. You can add up to two fingerprint readers to each door of the IP access controller.

4. The work type of the fingerprint reader includes **Independently**, **Swipe card**, and **fingerprint**, **Swipe card**, and **password,** and **Fingerprint**, and **password**. When the work type of the fingerprint reader is set to **Swipe card**, and **password** or **Fingerprint**, and **password**, you cannot enable the **Swipe card**, and **password** mode for the access controller.

5. If an in-use fingerprint reader is equipped for another door, you should delete it on the **Manage Fingerprint Reader** page, equip the hardware on the new door, and add the fingerprint reader and authorize permissions on the management page again.

Authorizing permissions to door access devices

1. Click ⋮ on the right side of the door connected to the IP access controller or click ⋮ on the right side of the serial door access device, and select **Permission** from the pop-up drop-down menu. The **Permission** page is, as shown in Figure 13-22. The page displays all door access cards and the corresponding permissions in the system. **CARD ID**, **CARDHOLDER**, and **DEPARTMENT** are basic information. The **PERMISSION GROUP** column displays the permissions of the selected door (including **No Permission**, **Privilege**, **Group 1**, **Group 2**, **Group 3**, and **Group 4**).

Figure 13-22   Authorization

📖   **Note**

1. This function is only valid for users in the administrator group.

2. For details about how to manage card functions, see section *13.3.2* "*Card Management*."

2. Enter the search content in the search box above the list. The system searches for the cards according to the entered content, as shown in Figure 13-23. The search function supports fuzzy search by card ID, card holder, and department.
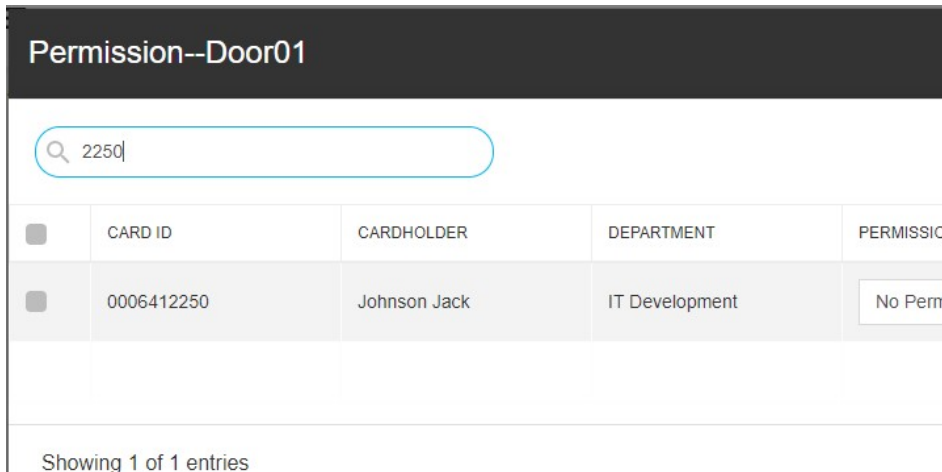

Figure 13-23   Searching for a card

3. After you select an option from the **PERMISSION GROUP** drop-down list box, a rotating icon appears in the last column, indicating that the authorization is in progress. When the authorization is successful, a green icon ✅ is displayed. When the authorization fails, a red icon 🔴 is displayed. In addition, the **PERMISSION GROUP** option restores to the previous setting before it is changed. Taking **Group 1** as an example, the page displayed after the authorization is successfully is as shown in Figure 13-24 .
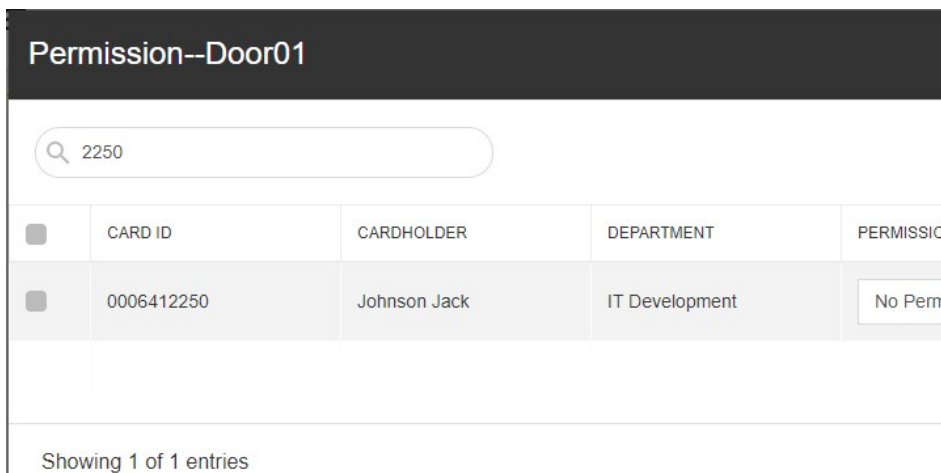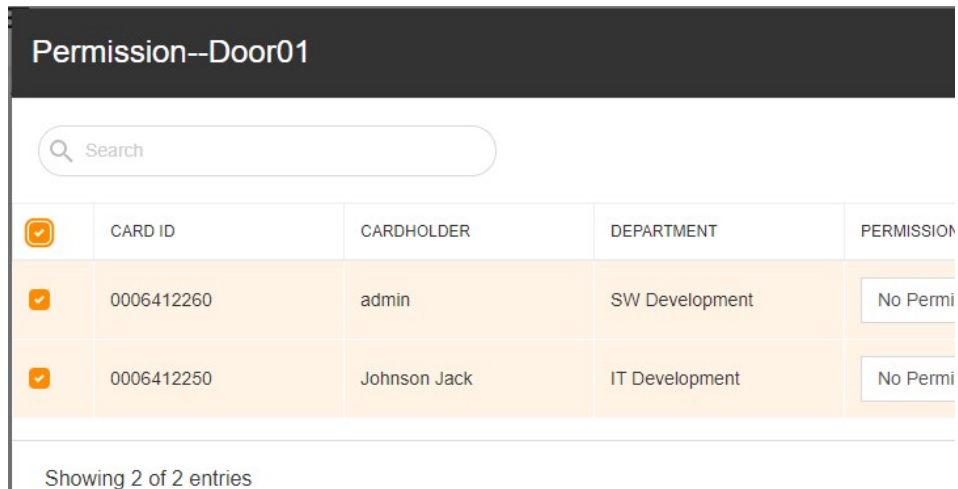

Figure 13-24   Door authorization - Changing the permission group of the card

📖   **Note**

1.When **PERMISSION GROUP** is set to **No Permission**, the door access card does not have the permissions to open the door. When **PERMISSION GROUP** is set to **Privilege**, the door access card can open the door in any time range. When **PERMISSION GROUP** is set to **Group 1** to **Group 4**, the door access card can open the door only within the specified time range.

2. For details about time range settings, see section *13.3.3* "*Time Setting*."

4. If you click the check box in the first column of the table header, all data is selected. If you select two or more items, the **BATCH AUTHORIZE** button appears in the lower right part of the page. After you select the permission group, click **BATCH AUTHORIZE**. The system modifies the permissions of selected door access cards in batches. The last column displays the authorization result. When the authorization is successful, a green icon ✅ is displayed. When

the authorization fails, a red icon 🛑 is displayed. In addition, the **PERMISSION GROUP** option restores to the previous setting before it is changed. Select **Group 2** and click **BATCH AUTHORIZE**. When the batch authorization is successful, the page as shown in Figure 13-25 is displayed.

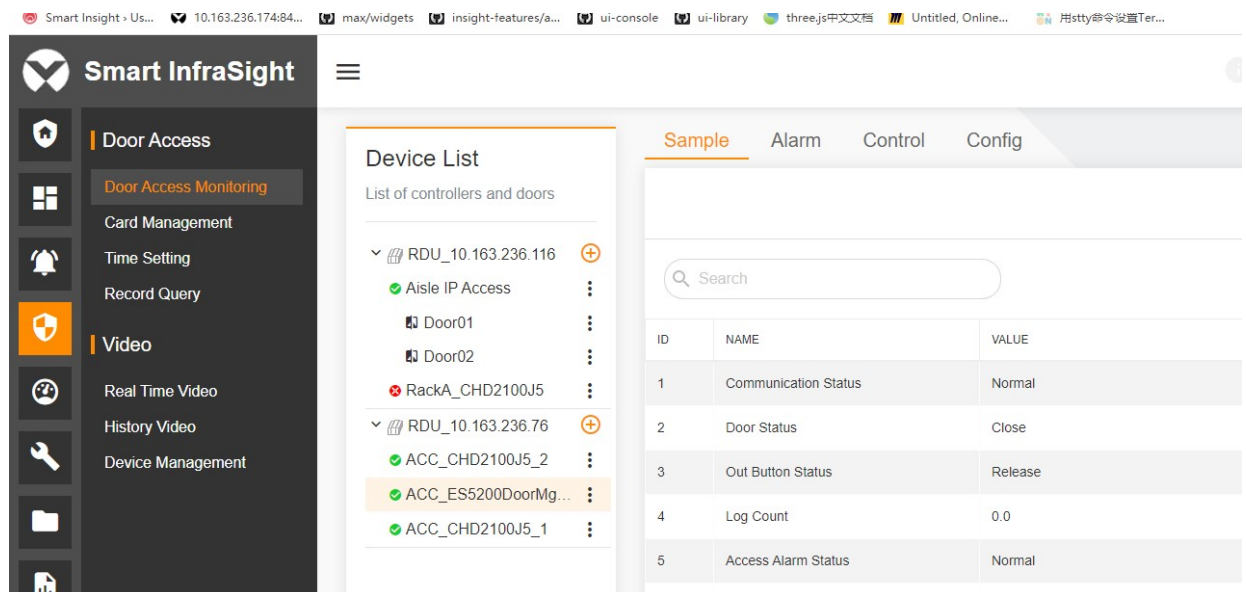*Figure 13-25　Door authorization - batch modification*

📖　**Note**

For doors connected to the IP access controllers, you can authorize permissions to up to 100 cards in batches at a time. If more than 100 cards are selected, the **BATCH AUTHORIZE** button becomes unavailable.

For doors connected to the serial access controllers, you can authorize permissions to up to 4 cards in batches at a time. If more than 4 cards are selected, the **BATCH AUTHORIZE** button becomes unavailable.

Real-time signal

1. On the **Door Access Monitoring** page, select an IP access controller, a door connected to the IP access controller, or a serial access controller. The system displays the **Sample** tab page by default, which lists the real-time signals of the device, as shown in Figure 13-26.

Figure 13-26　Real-time signal

2. Enter the search content in the search box above the real-time signal list. The system performs fuzzy search for the real-time signals according to the entered content.

📖　**Note**

1. The real-time signal data is refreshed regularly at a frequency of 6s.

2. If the system cannot obtain real-time signals, both **VALUE** and **SAMPLING TIME** are displayed as "--".

Active Alarms

1. On the **Door Access Monitoring** page, select an IP access controller, a door connected to the IP access controller, or a serial access controller. Click the **Alarm** tab on the right side. The system lists the active alarms of the selected device, as shown in Figure 13-27. When new alarms are generated, the alarm list is automatically refreshed.
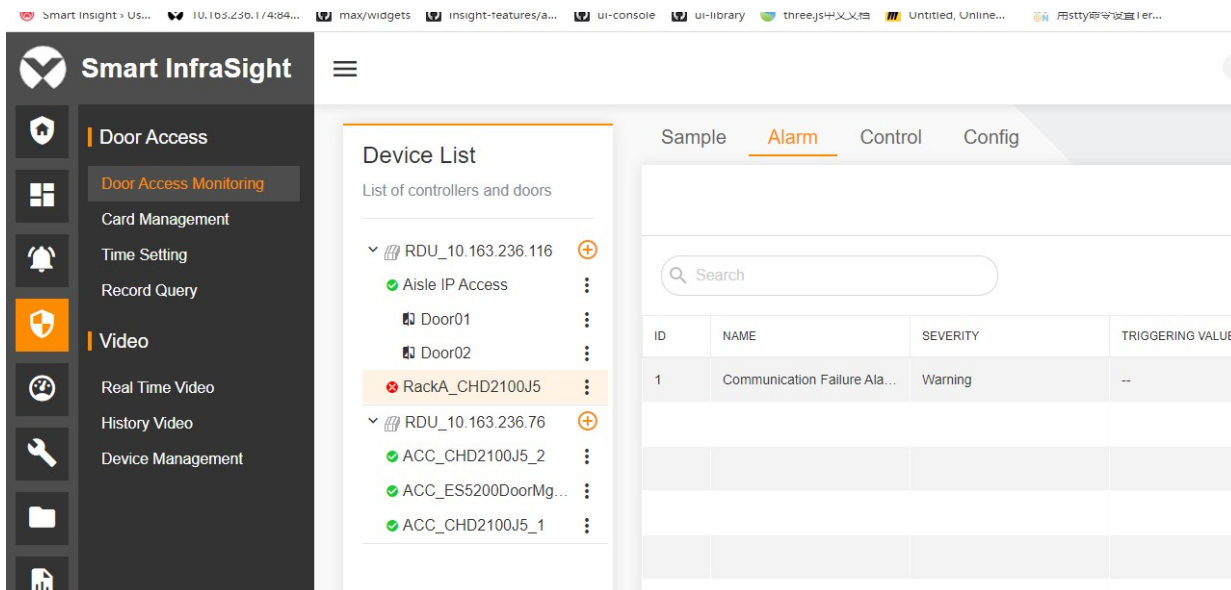

Figure 13-27   Active Alarms

2. Enter the search content in the search box above the active alarm list. The system performs fuzzy search for the active alarms according to the entered content.

Control command

1. On the **Door Access Monitoring** page, select an IP access controller, a door connected to the IP access controller, or a serial access controller. Click the **Control** tab on the right side. The system lists the control commands of the selected device, as shown in Figure 13-28.
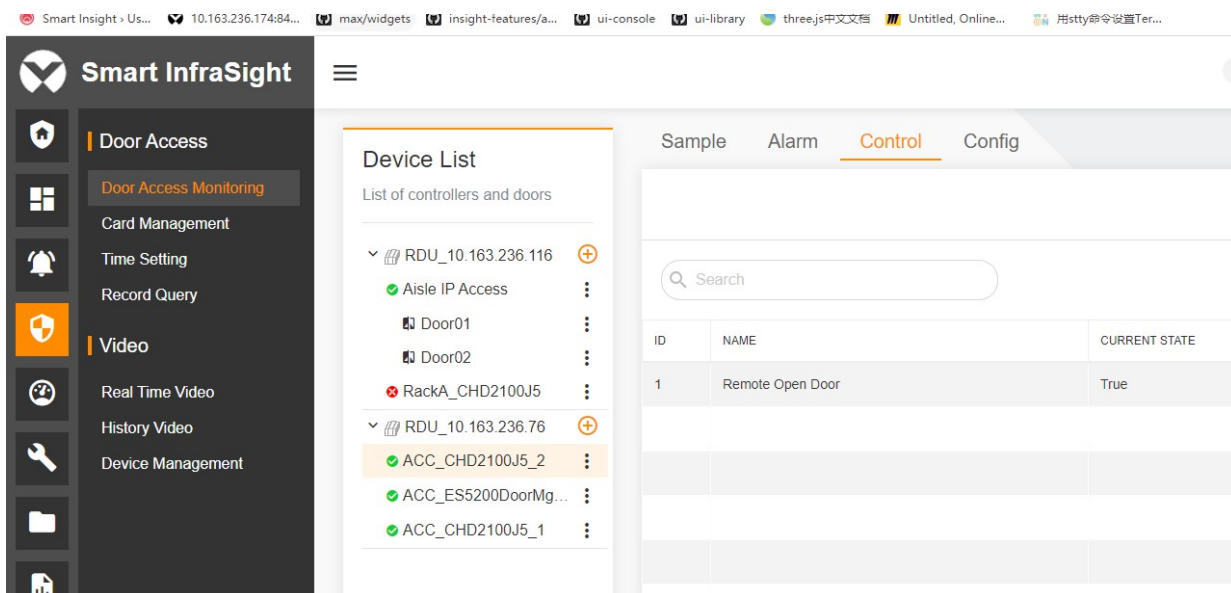

Figure 13-28   Control command - Door

2. Enter the search content in the search box above the control command list. The system performs fuzzy search for the control commands according to the entered content.

📖   **Note**

1. If a control command is not found, the list displays "No Data".

2. The control command data is refreshed regularly at a frequency of 6s.

3. The "delete all users" control command is only valid for users in the administrator group. This control command is not displayed after a common user logs in to the system.

3. Click ⋮ on the right side of the control command and select **Send Commands** from the pop-up drop-down menu. The **Send Commands** page is, as shown in Figure 13-29. Select the control command to be sent from the drop-down list box, and click **SEND COMMAND**. The command is sent to the underlying device. When the control command is successfully sent, the pop-up page is closed, and the system prompts "Operation Success" in the lower right corner of the screen. When the control command fails to be sent, the system prompts "Operation failed" in the lower right corner of the screen.
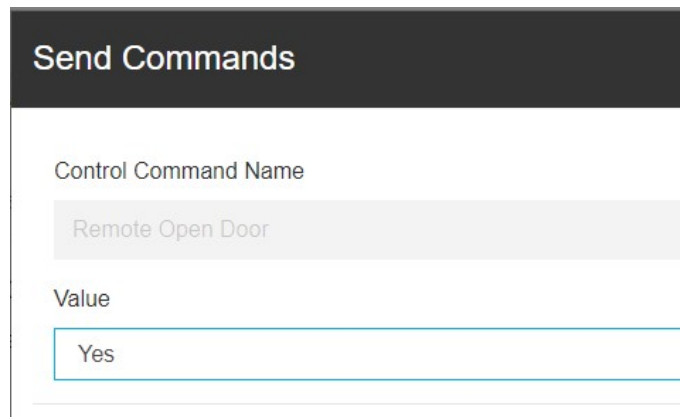

Figure 13-29   Control signal

Configuration signal

1. On the **Door Access Monitoring** page, select an IP access controller, a door connected to the IP access controller, or a serial access controller. Click the **Config** tab on the right side. The system lists the configuration signals of the selected device.
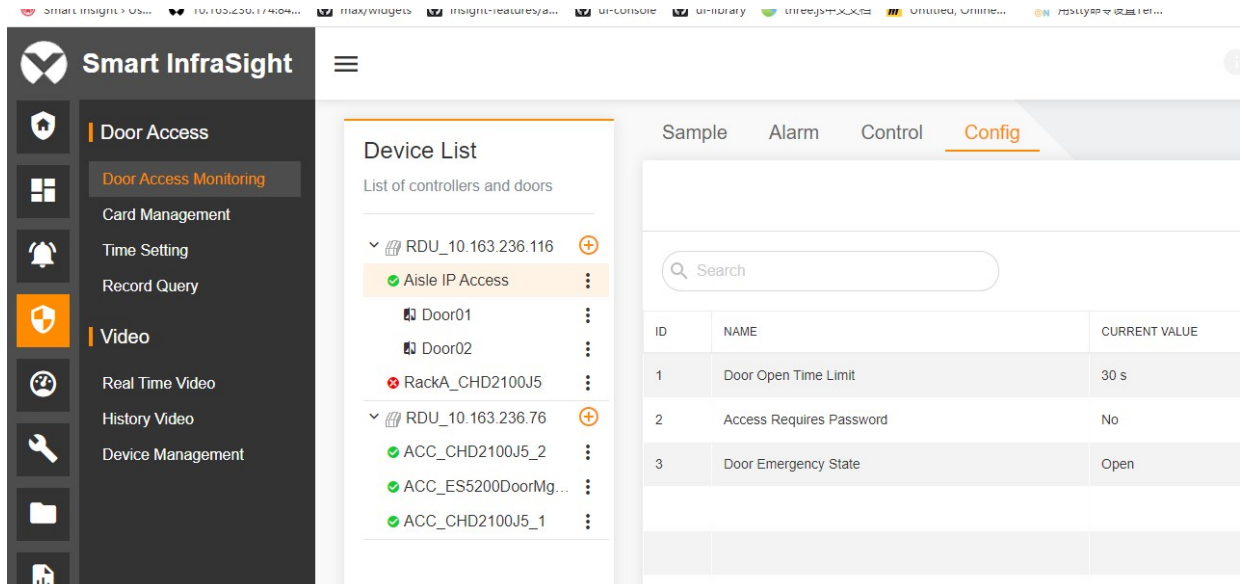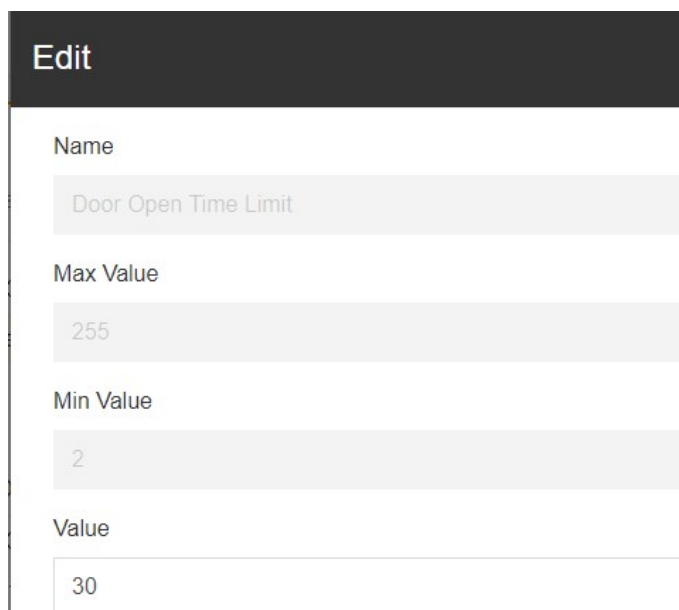

Figure 13-30   Configuration signal - Access controller

2. Enter the search content in the search box above the configuration signal list. The system performs fuzzy search for the configuration signals according to the entered content.

📖   **Note**

1. This function is only valid for users in the administrator group. The **Config** tab is not displayed after a common user logs in to the system.

2. If a configuration signal is not found, the list displays "No Data". If the system cannot obtain configuration signals, **CURRENT VALUE** is displayed as "--".

3. The configuration signal data is refreshed regularly at a frequency of 6s.

3. Click ⋮ on the right side of the controller configuration signal and select **Edit** from the pop-up drop-down menu. The **Edit** page is displayed. Enter the new value in the input box or select the new value from the drop-down list box, and click **SAVE**, as shown in Figure 13-31. When the controller configuration signal is successfully edited, the pop-up page is closed, and the system prompts "Operation Success" in the lower right corner of the screen. When the controller configuration signal fails to be edited, the system prompts "Configuration failed" in the lower right corner of the screen.

Figure 13-31   Editing the configuration signal

13.3.2   Card Management

This module is used to manage the cards, including: adding, deleting, editing, and querying the card; and setting the permissions of the card from the perspective of the card. This function is only valid for users in the administrator group.

List of cards

1. Choose **Door Access** > **Card Management**. The **Card Management** page is displayed. The card data is displayed in pages. Each page displays 10 cards. The card list includes **CARD ID**, **EXPIRY DATE**, **CARDHOLDER**, **PHONE NUMBER**, and **DEPARTMENT**, as shown in Figure 13-32.
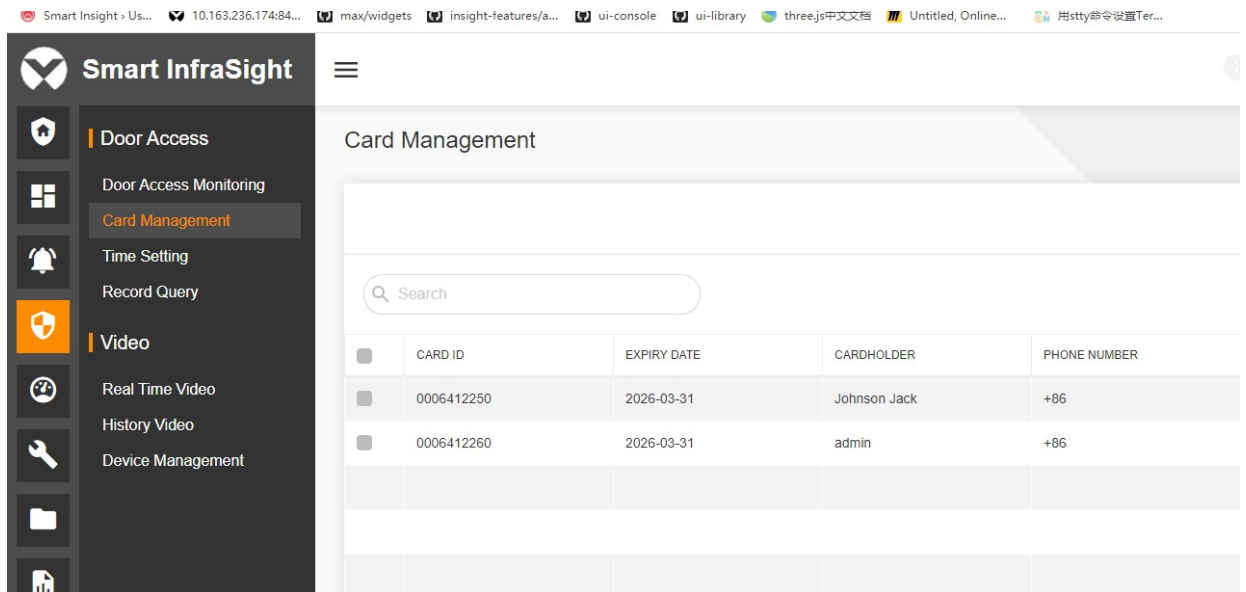
Figure 13-32   List of cards

2. Enter the search content in the search box above the list. The system searches for the cards according to the entered content. The search function supports fuzzy search by card ID, card holder, and department. For example, enter user A. The search result is as shown in Figure 13-33.
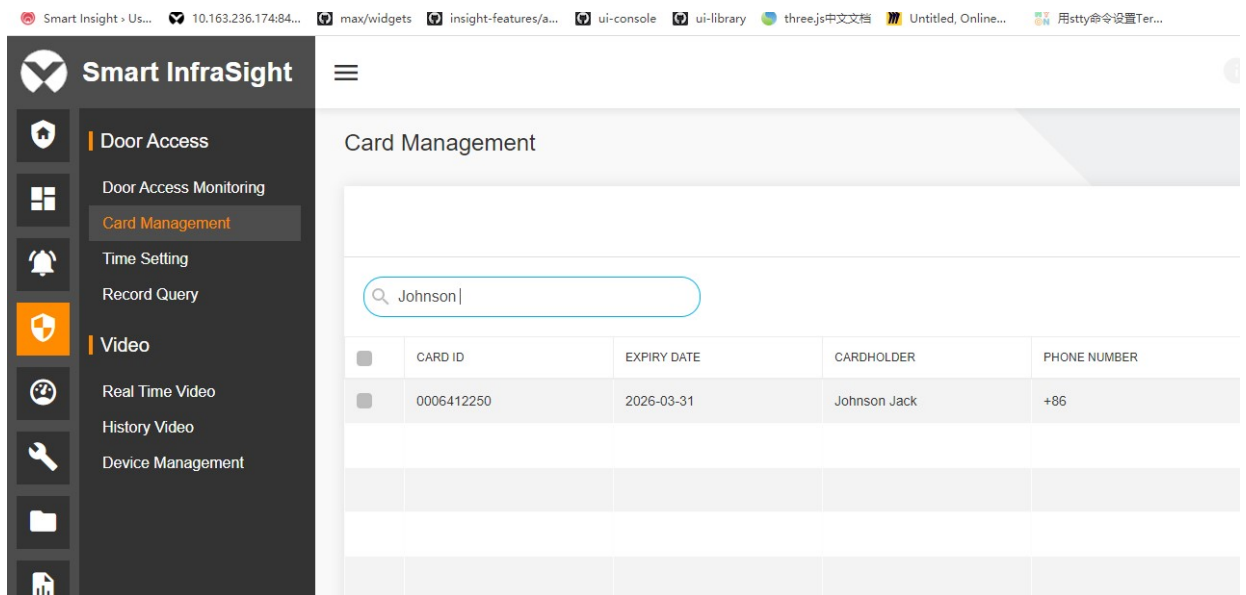

Figure 13-33   List of cards - Search

Adding a door access card

1. Click ⊕ in the upper right corner to add a card. The page as shown in Figure 13-34 is displayed.
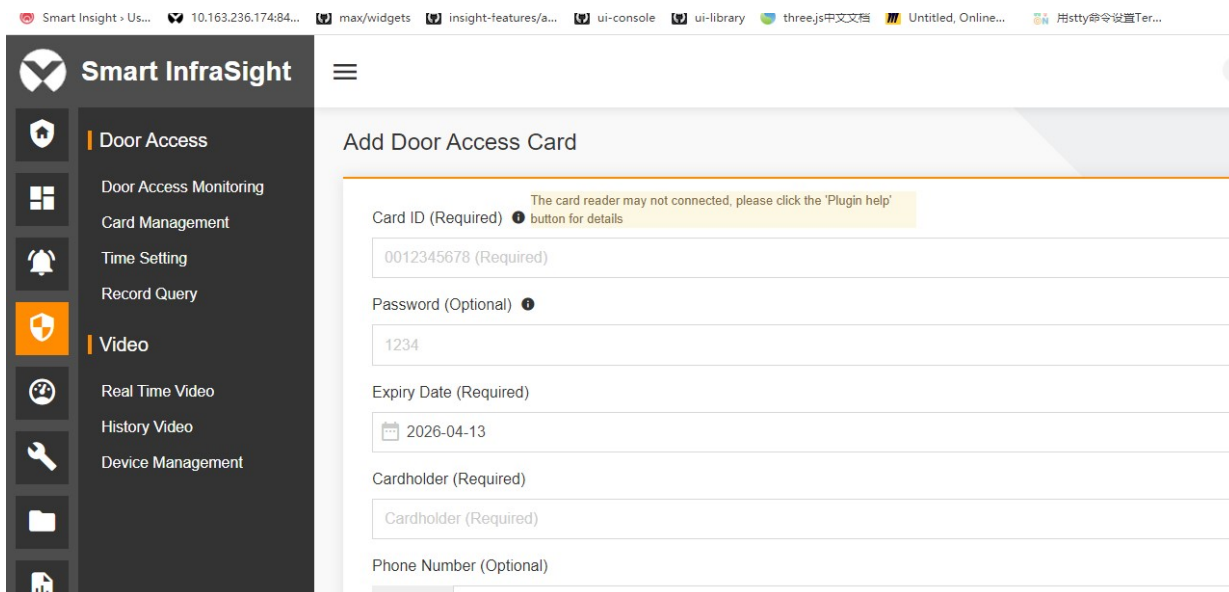
Figure 13-34   Adding a card

3. Enter **Card ID (Required)**, **Password (Optional)**, **Cardholder (Required)**, **Phone Number (Optional)**, and **Department (Optional)**. **Select Expiry Date (Required)** and **Fingerprint (Optional)**.

4. To record fingerprint information, connect the fingerprint reader to the computer and install the fingerprint reader drive and "card reader and fingerprint reader plug-ins". Collect fingerprint 1 and fingerprint 2 in sequence. You can also collect only one fingerprint. For details, see the plug-in help in the upper right corner. You can click the **REMOVE FINGERPRINT** button to delete the recorded fingerprint information.

5. Click **SAVE**.

📖   **Note**

1. **Card ID** must contain 10 digits. If it is less than 10 digits, 0s are prefixed to the card ID. Card IDs cannot be duplicated.

2. **Cardholder** can only be a contact in the address book.

3. When you enter the phone number, the country code is +86 (China) by default. To enter the phone number of another country, switching to the corresponding country code.

4. **Department** must contain 1-64 characters.

5. If you need to record fingerprints in the card, record at least one fingerprint, which can be the collected fingerprint 1 or fingerprint 2.

6. **Card ID** and **Cardholder** are mandatory. You are allowed to click **SAVE** only after completely entering and verifying the mandatory information.

Card Drive

1. On the **Card Management** page, after you click ➕, the page prompts

and . Click the ❓ button in the upper right corner of the page to complete the plug-in installation.

2. After entering the plug-in help page, connect to the corresponding device if the card number is automatically read by the card reader or the fingerprint is recorded by the fingerprint reader as prompted. If the computer cannot automatically recognize the card reader or fingerprint reader, you need to install the corresponding plug-in to recognize the device. Click the **card reader drive** and **fingerprint reader drive** to download the card reader drive **USB_CP2102_XP_2000.exe** and fingerprint reader drive **CH341SER.exe** to install the drives respectively. Click **card reader and fingerprint reader plug-in** to download **card_fingerprint_reader_installer.exe**. Install it.

3. Click [CLOSE] in the lower right corner. Exit and re-enter the page for adding/editing the card to read the card number or collect the fingerprint (you can collect one fingerprint or collect fingerprint 1 and fingerprint 2 in sequence).

If the problem persists, try to perform debugging using the browser.

4. **Click to download certificate**. After the certificate is downloaded, open **card_fingerprint_reader_server.cer**. perform the steps according to the browser settings on the current page.

- Step 2: Click on the right image and follow the instruction to install the certificate.   Install as prompted. If the card reader or fingerprint reader fails to connect, **click this link until you see Welcome to SockJS!**

📖 **Note**

1. Keep the network connected during the download process. If you encounter any network problems, please download it again.
2. You can connect one card reader and one fingerprint reader to the computer simultaneously.

Editing the card

1. Click ⋮ on the right side of the card and select **Edit** from the pop-up drop-down menu. The **Edit Door Access Card** page is displayed, as shown in Figure 13-35. Edit the information such as **Password**, **Expiry Date**, **Cardholder**, **Phone Number** or **Department**, and click **SAVE**.

Figure 13-35　Editing the card

📖　**Note**

1. **Card ID** is not configurable. To modify it, delete the card and add it again.

2. You can click the **REMOVE FINGERPRINT** button to delete the recorded fingerprint 1 or fingerprint 2.

3. In the edit window, you can click **SAVE** only after the information has been modified.

Deleting the card

Click ⋮ on the right side of the card and select **Delete** from the pop-up drop-down menu. The **Delete** page is displayed, as shown in Figure 13-36. Click **CONFIRM**. The card is deleted.
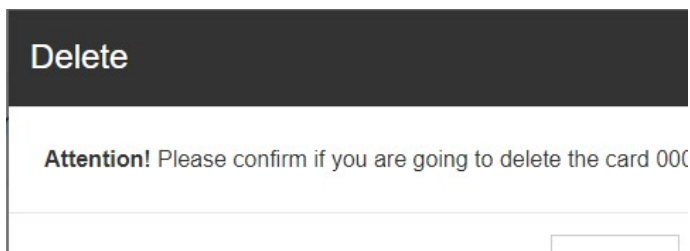
Figure 13-36　Prompt for deleting the card

Authorizing permissions to the card

1. Click ⋮ on the right side of the card and select **Permission** from the pop-up drop-down menu. The **Authority Door Access Card** page is displayed, as shown in Figure 13-37. The page displays all door access devices and the corresponding permissions in the system. The **PERMISSION GROUP** column displays the permissions of the selected card (including **No Permission**, **Privilege**, **Group 1**, **Group 2**, **Group 3**, and **Group 4**).
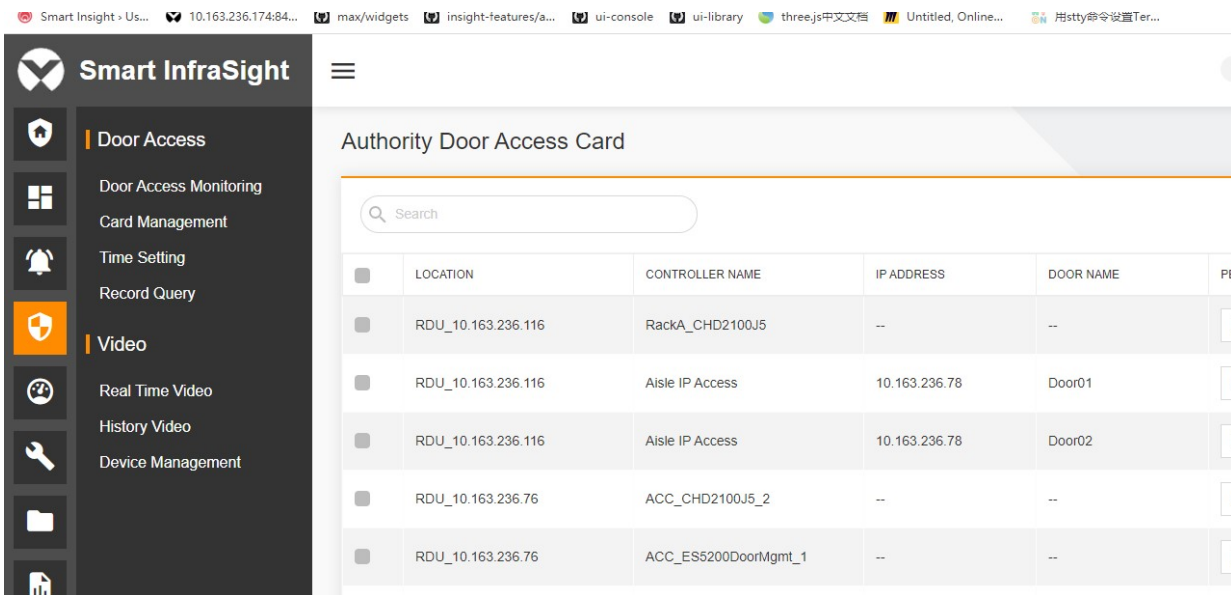
Figure 13-37　Card authorization

2. Enter the search content in the search box above the list. The system searches for the door access devices according to the entered content. The search function supports fuzzy search by name and IP address of the access controller. For example, enter "aisle". The search result is as shown in Figure 13-38.
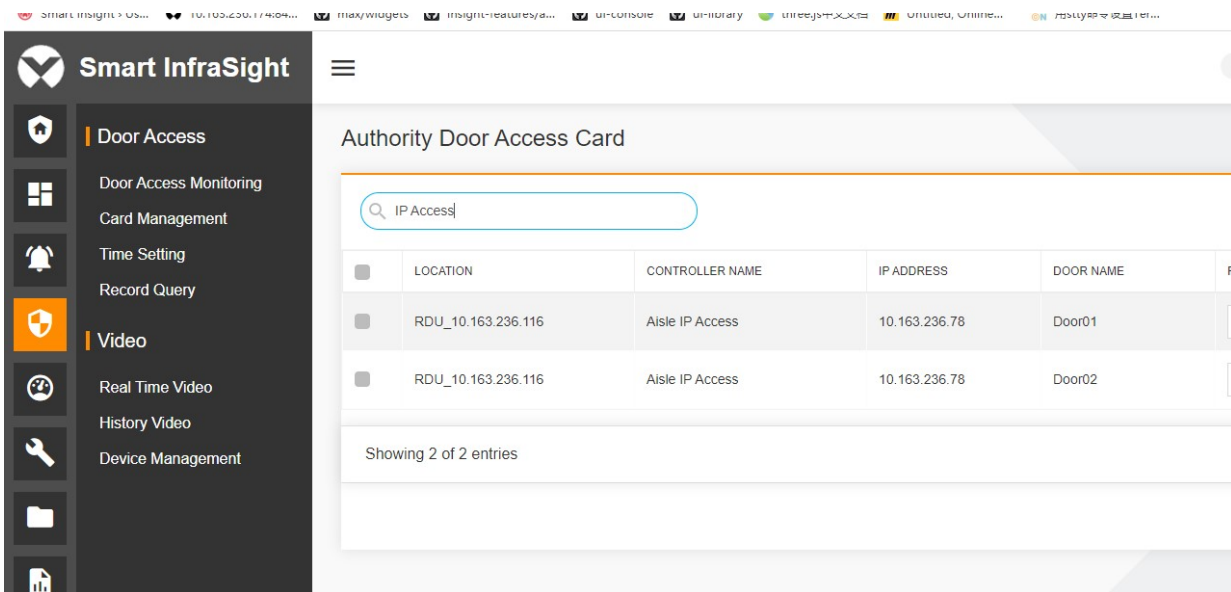
Figure 13-38　Authorization Door Access Card - Search

3. After you select an option from the **PERMISSION GROUP** drop-down list box, a rotating icon appears in the last column, indicating that the authorization is in progress. When the authorization is successful, a green icon ✅ is displayed. When the authorization fails, a red icon 🔴 is displayed. In addition, the **PERMISSION GROUP** option restores to the previous setting before it is changed. Taking **Group 1** as an example, the page displayed after the authorization is successfully is as shown in Figure 13-39.
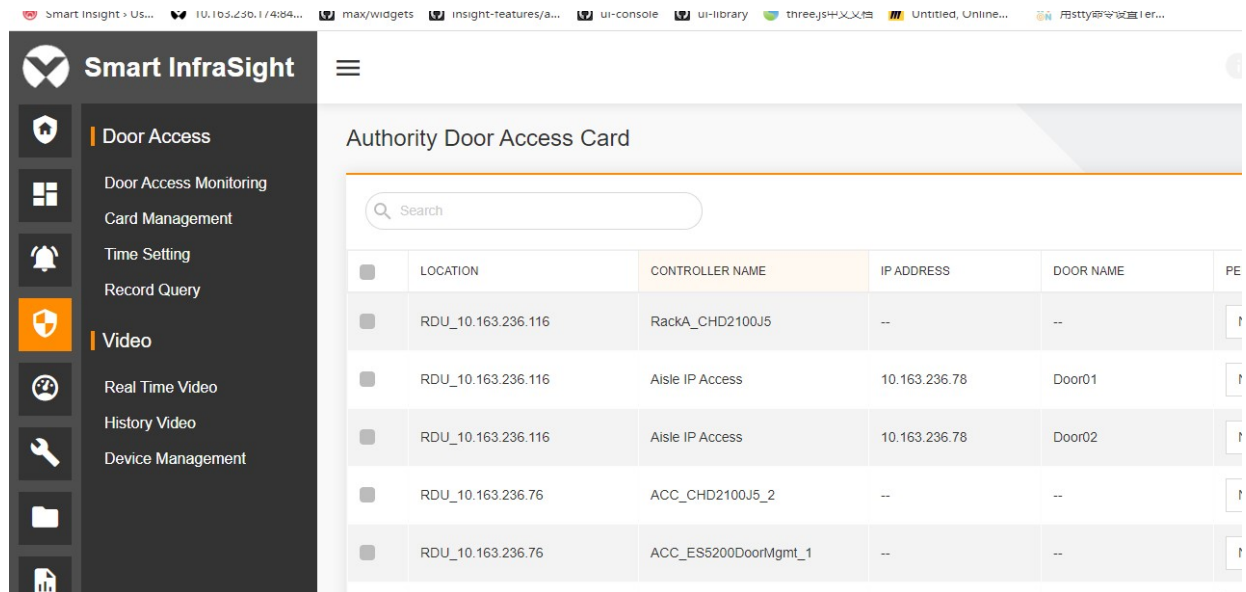

Figure 13-39　Card authorization - Changing the permission group

📖　**Note**

When **PERMISSION GROUP** is set to **No Permission**, the door access card does not have the permissions to open the door. When **PERMISSION GROUP** is set to **Privilege**, the door access card can open the door in any time range. When **PERMISSION GROUP** is set to **Group 1** to **Group 4**, the door access card can open the door only within the specified time range.

For details about time range settings, see section *10.3.3* "*Time Setting*."

4. If you click the check box in the first column of the table header, all data is selected. If you select two or more items, the **BATCH AUTHORIZE** button appears in the lower right part of the page. After you select the permission group, click **BATCH AUTHORIZE**. The system modifies the permissions of selected door devices in batches. The last column displays the authorization result. When the authorization is successful, a green icon ✅ is displayed. When the authorization fails, a red icon 🔴 is displayed. In addition, the **PERMISSION GROUP** option restores to the previous setting before it is changed. Select door 01 and door 02 under access controller 01. Select **Group 2** and click **BATCH AUTHORIZE**. When the batch authorization is successful, the page as shown in Figure 13-40 is displayed.
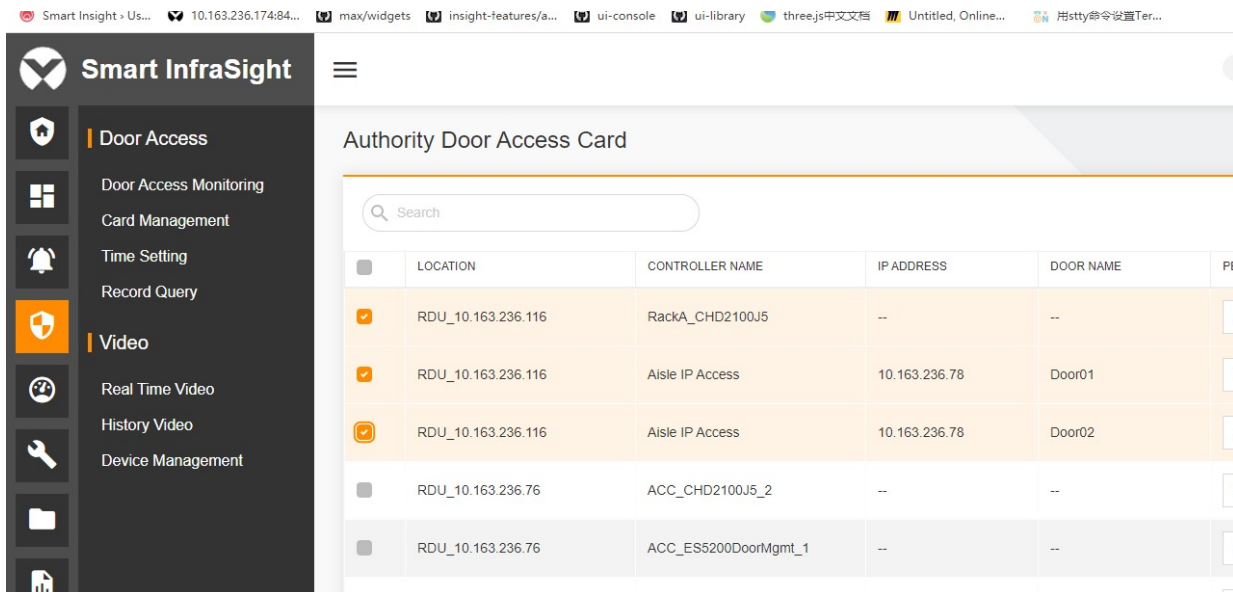
Figure 13-40   Door authorization - batch modification

📖   **Note**

For IP access controllers, you can authorize permissions to up to 100 access controllers in batches at a time. If more than 100 access controllers are selected, the **BATCH AUTHORIZE** button becomes unavailable. The system prompts "The number of devices for batch authorization cannot exceed 100".

For serial access controllers, you can authorize permissions to up to 4 cards in batches at a time. If more than 4 cards are selected, the **BATCH AUTHORIZE** button becomes unavailable.

13.3.3   Time Setting

This module is used to set the time range of access controllers. When authorizing permissions to a card, the card can open the door within the specified time range of the corresponding permission group if you select a certain permission group.

Setting the Time Range

1. Choose **Door Access** > **Time Setting**. The **Set Time** page is displayed. The system lists the access controllers on the left side. By default, the first access controller is selected. The **Set Time** tab page is displayed on the right side. The icon prefixed to an access controller name indicates the communication status. When the communication is

normal, the green icon ✅ is displayed. When the communication fails, the red icon ❌ is displayed, as shown in Figure 13-41. When you hover the cursor over the time range, the specific period of time is displayed.

2. The time range for opening the door with both card and password varies between serial access controller and IP access controller. In addition to the door opening time range, you can also set the time range for door opening with both card and password, time range for constantly opening the door, and time range for IR door monitoring.

Figure 13-41   Time ranges for door opening

📖   **Note**

When you add an access controller, the system sets the door opening time range to **All-day Effective** for four permission groups by default, and sets the time range for **Swipe the card with password** to **All-day Invalid**. The time range of **All-day Effective** is 00:00-23:59, and the time range of **All-day Invalid** is 00:00-00:00.

3. To modify the door opening time of a group, you can select the corresponding door opening time range of the group. For example, set the door opening time range of Group 1 on Monday to **All-day Invalid**, and click **Save**, as shown in Figure 13-42.

Figure 13-42   Modifying the time range

4. If you select **Swipe the card with password**, the **SWIPE THE CARD WITH PASSWORD** column is displayed. If you do not select **Swipe the card with password**, the **SWIPE THE CARD WITH PASSWORD** column is not displayed, as shown in Figure 13-43.
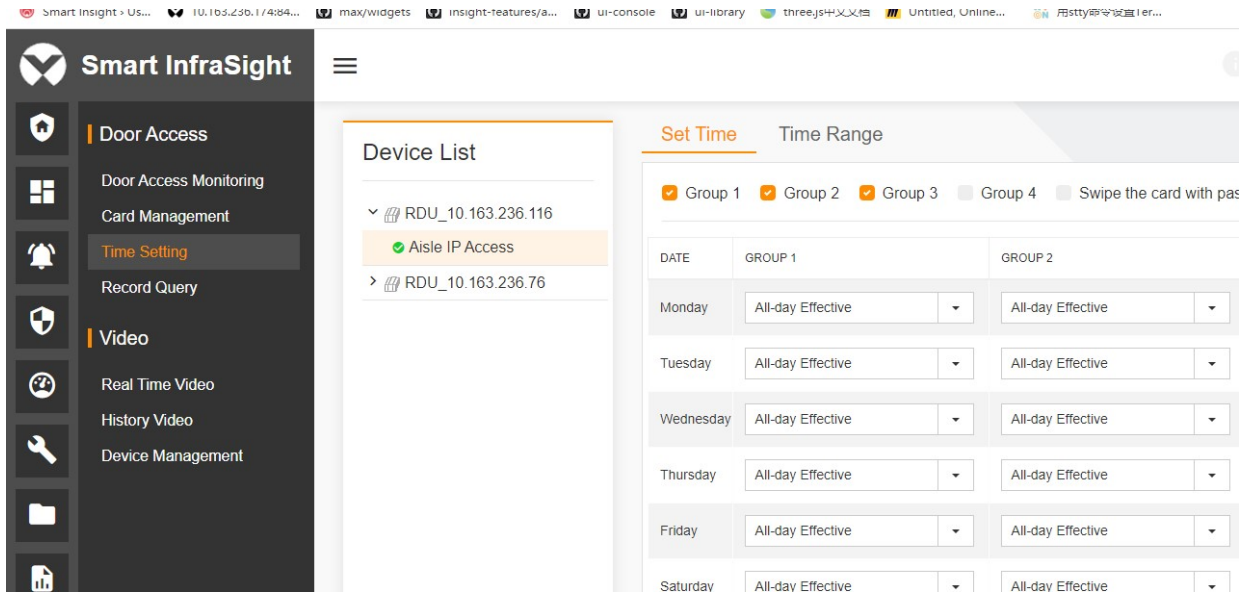
Figure 13-43 Selecting Swipe the card with password

📖 **Note**

1. When you select an access controller and the time range of the entire **SWIPE THE CARD WITH PASSWORD** column is **All-day Invalid**, the **Swipe the card with password** check box is automatically deselected, and the **SWIPE THE CARD WITH PASSWORD** column will disappear.

2. The precondition for validating the **Swipe the card with password** time range is that **Swipe the card with password** is enabled in access controller settings. For details about configuration signal functions of the access controllers, see section "*Configuration signal*."

Time Range

1. Switch from the **Set Time** tab page to **Time Range** tab page. The system writes two default time ranges for each access controller, including **All-day Effective** and **All-day Invalid**, as shown in Figure 13-44.
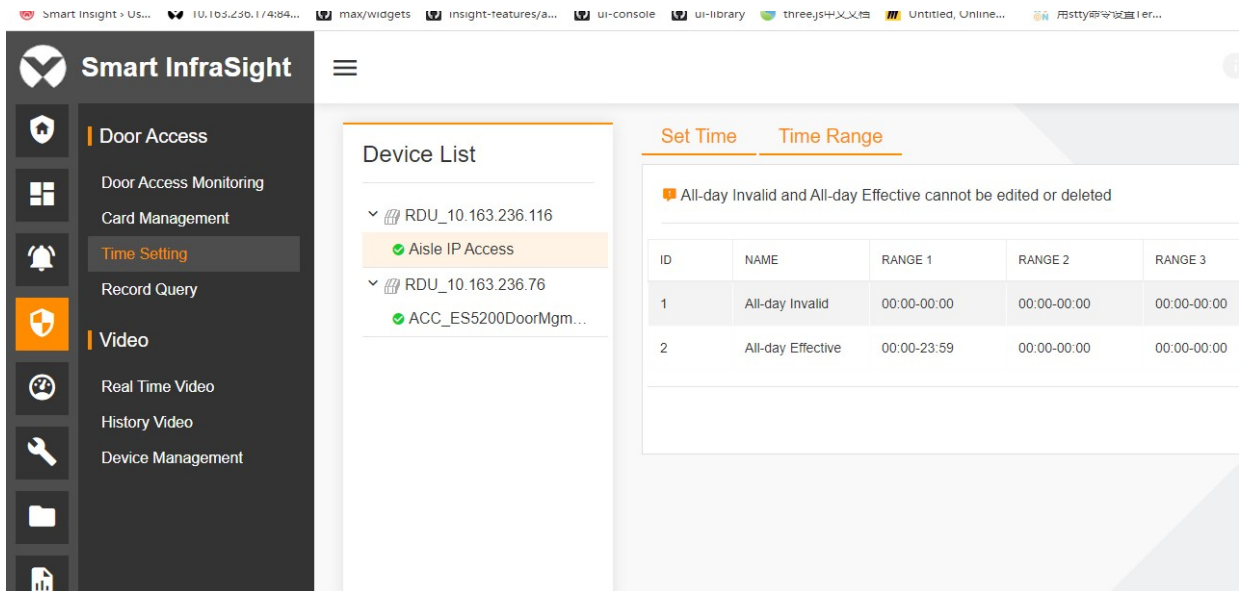
Figure 13-44 Time Range

📖 **Note**

The **All-day Effective** and **All-day Invalid** time ranges cannot be modified or deleted.

2. Click **ADD**. The **Add** dialog box is displayed. Click the time range to be modified. The page for selecting the start time and end time is displayed. You can manually enter the time or modify the time using the "+" or "-" icon. Click the "-" icon prefixed to the time to decrease the minutes, and click the "+" icon suffixed to the time to increase the minutes.

When the value of minutes increases to 59, if you continue to click the "+" icon, the number of hours increases by 1, and the number of minutes becomes 0. When the number of minutes decreases to 0, if you continue to click the "-" icon, the number of hours decreases by 1, and the number of minutes changes to 59. The end time cannot be earlier than the start time. When the start time increases to be equal to the end time, if you continue to click the "+" icon prefixed to the start time, the end time increases simultaneously. When the end time decreases to be equal to the start time, if you continue to click the "-" icon suffixed to the end time, the end time will not continue to decrease. When you click the value of hours and the cursor blinks on the value of hours, you can increase or decrease the number of hours by clicking the "+" or "-" icon. After you enter and set the time range, click **SAVE**, as shown in Figure 13-45.

Figure 13-45   Adding time range - time selection

📖   **Note**

1. **Name** of the time range should contain 3-64 characters. The time range names of the same access controller must not be duplicated.

2. The access controller in the model of CHD806D4 supports up to 32 time ranges. When the number of time ranges reaches 32, the **ADD** button is hidden on the page.

3. After the time range is successfully added, the **ADD** page is automatically closed, and the list of time ranges is automatically refreshed, as shown in Figure 13-46. After adding a time range to the list of time ranges, you can select this time range for the permission group.

Figure 13-46   Time range - Adding "Range 1"

4. To edit the time range, click ✏ on the right side of the time range. The **Edit** page is displayed. After modifying the name or range, click **SAVE**, as shown in Figure 13-47.
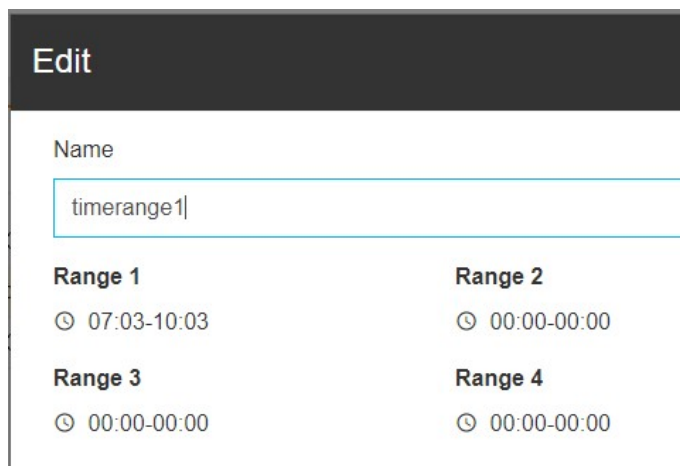
Figure 13-47   Editing the time range

 Note

1. **Name** of the time range should contain 3-64 characters. The time range names of the same access controller must not be duplicated.

2. In the edit window, you can click **SAVE** only after the information has been modified.

7. To delete the time range, click on the right side of the time range. The **Delete** dialog box is displayed, as shown in Figure 13-48. Click **CONFIRM**. The time period data is deleted.
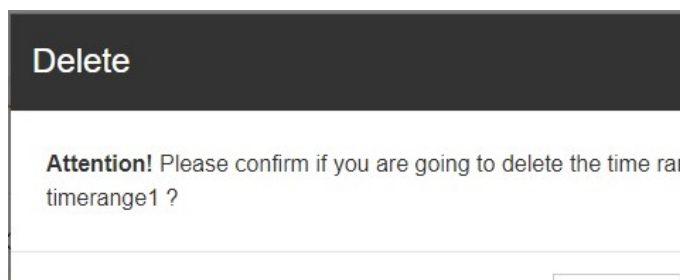

Figure 13-48   Dialog box for deleting the time range

 Note

1. If a time range is used by a permission group, the system prompts that the time period cannot be deleted when you try to delete the time range.

2. Due to the mapping relationship between IDs of time ranges and underlying devices, the time ranges can only be deleted from back to front during deletion.

13.3.4 Record Query

This module is used to display and query door access records, mainly including the functions of displaying and querying the access records and event records.

Access Record

1. Choose **Door Access** > **Record Query**. By default, the **Access Record** page is displayed. The access records are displayed in pages. Each page displays 10 records. The access record contains **CARD ID**, **CARDHOLDER**, **LOCATION**, **CONTROLLER NAME**, **DOOR NAME**, **TYPE**, **ENTER/EXIT**, and **DATE/TIME**. The records are sorted in the reverse order of time, as shown in Figure 13-49.
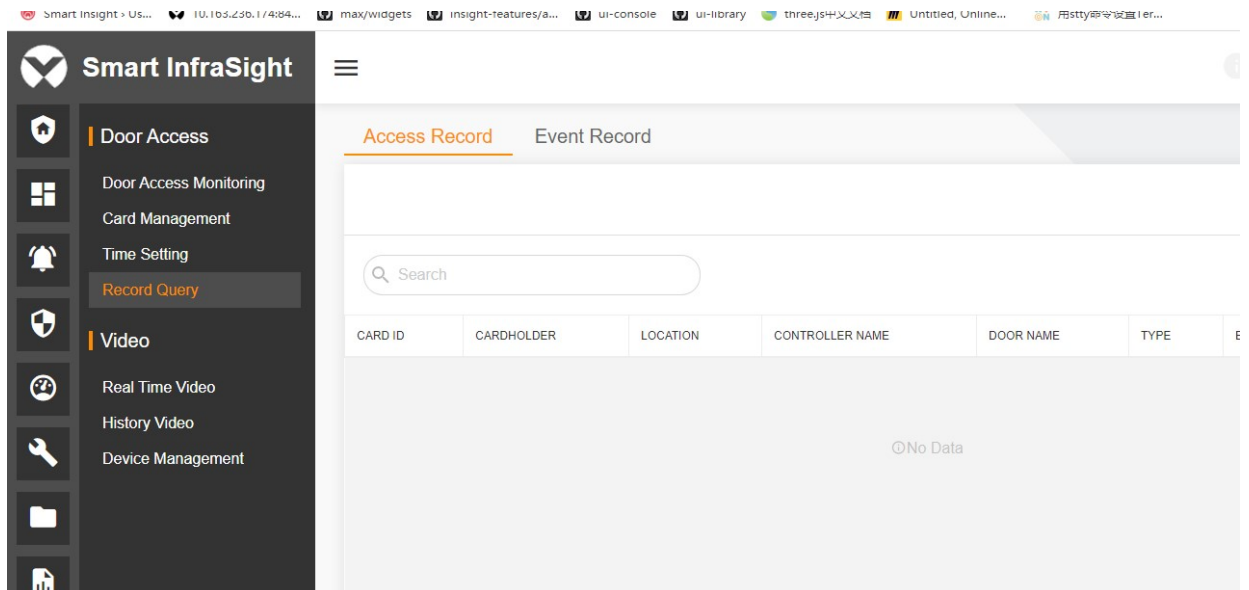
Figure 13-49 Access Record

📖 **Note**

1. If a record is not found, the list displays "No Data".

2. The access record is refreshed regularly at a frequency of 6s.

3. In the table, the search button 🔍 is orange and the search box is displayed by default. After you click the search button 🔍, the search button becomes black, and the search box is hidden. The system saves the last state of the search button.

2. Enter the search content in the search box above the list. The system searches for the access records according to the entered content. The search function supports fuzzy search by card ID, card holder, location, controller name, and door name and sorts the records by time.

3. Click ↻ in the upper right corner of the list. The system immediately refreshes the list of access records.

4. Click ▼ in the upper right corner of the list. The system displays the filter conditions. The filter conditions include **SELECT DATE RANGE**, **GROUP BY**, **TYPE**, and **ENTER/EXIT**. Figure 13-50 shows the results filtered by setting **SELECT DATE RANGE** to **All** and **GROUP BY** to **Type**.
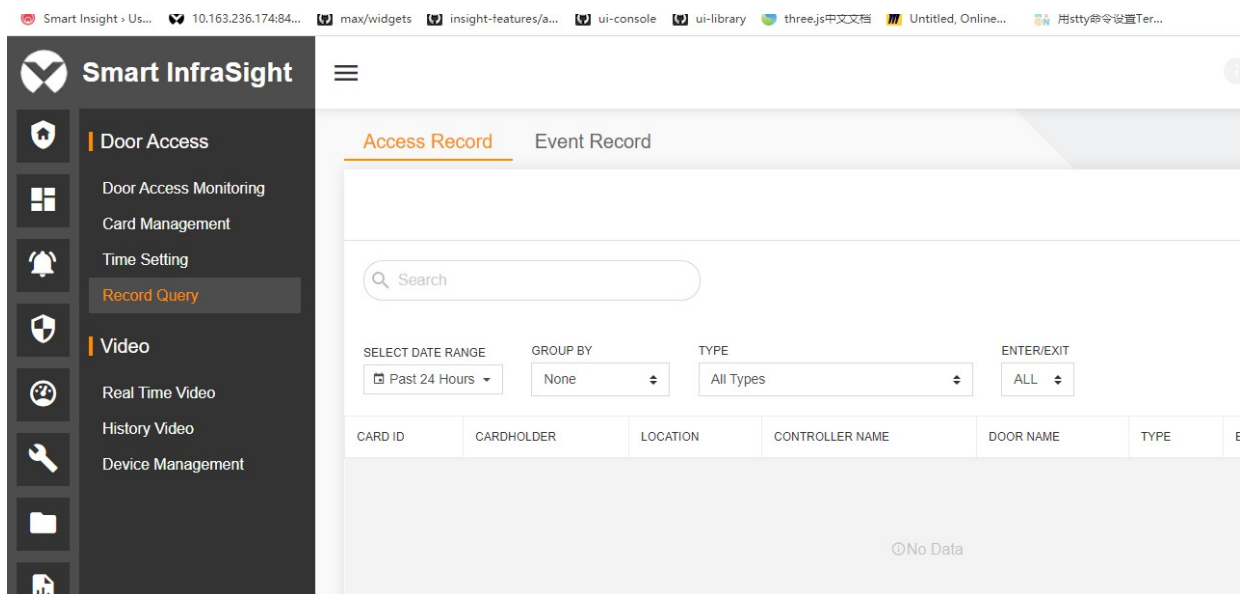
Figure 13-50 Access Record - Filter

📖 **Note**

The filter button ▼ in the table is black by default. That is, the filter conditions are hidden by default. When you click ▼, the button becomes red and filter conditions are displayed. The system saves the last state of the filter button.

Event Records

1. Choose **Door Access** > **Record Query**. Switch from the **Access Record** tab page to the **Event Record** tab page. The event records are displayed in pages. Each page displays 10 records. The event record contains **LOCATION**, **CONTROLLER NAME**, **DOOR NAME**, **EVENT NAME**, and **DATE/TIME**. The records are sorted in the reverse order of time, as shown in Figure 13-51.
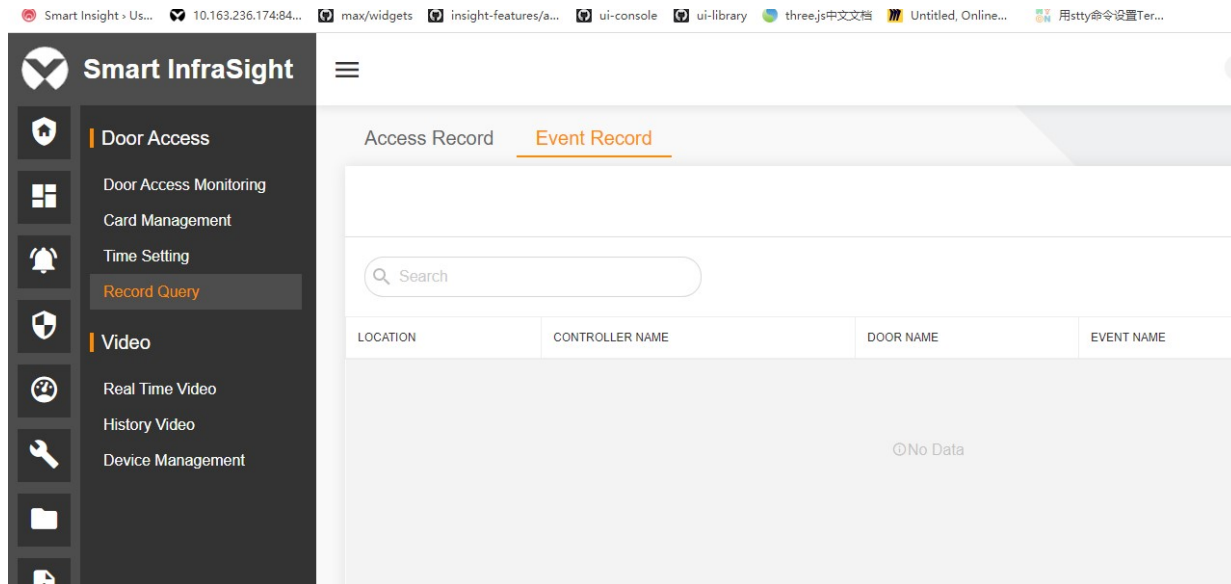
Figure 13-51   Event Records

📖   **Note**

1. If a record is not found, the list displays "No Data".

2. In the table, the search button 🔍 is orange and the search box is displayed by default. After you click the search button 🔍, the search button becomes black, and the search box is hidden. The system saves the last state of the search button.

2. Enter the search content in the search box above the list. The system searches for the event records according to the entered content. The search function supports fuzzy search by location, controller name, and door name.

3. Click ↻ in the upper right corner of the list. The system immediately refreshes the list of event records.

4. Click ▼ in the upper right corner of the list. The system displays the filter conditions. The filter conditions include **SELECT DATE RANGE**, **GROUP BY**, and **EVENT NAME**. Figure 13-52 shows the results filtered by setting **SELECT DATE RANGE** to **All** and **EVENT NAME** to **Reboot**.
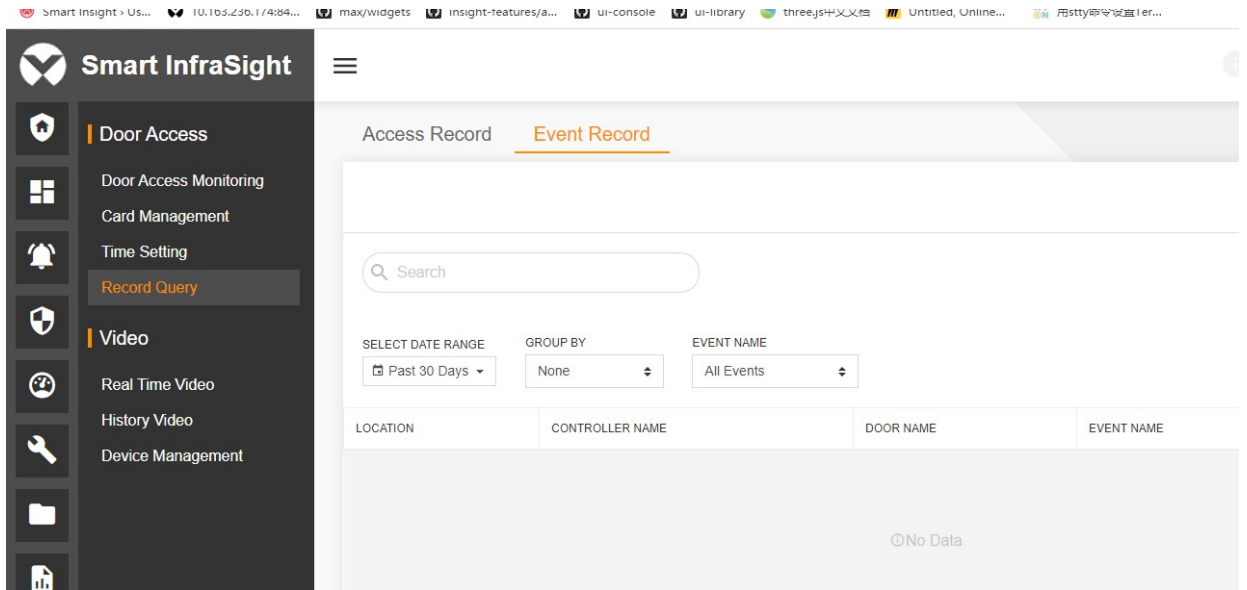
Figure 13-52   Event Record – Filter

Chapter 14   Video Management

14.1   Overview

14.1.1   Overview

This module is used to manage video devices. You can access the video devices into the system through this module for management. You can view the real-time videos of the video devices and query, play, and download historical videos by date and device.

Limitation: The video management module does not support the Edge browser.

14.1.2   Functional Module

Video contains the following functional modules. For more information about the functional modules, see section *11.3* "*Specific Functions."*

- Device Management
- Real Time Video
- History Video

14.2   Quick Start

14.2.1   Quick Deployment Procedure

To manage video devices, perform the following steps:

[1] Add an NVR device.

[2] Add an IPC device to the NVR channel.

14.2.2   Example

When using the video functions for the first time, you need to install a video plug-in. Figure 14-1 shows the video plug-in help.
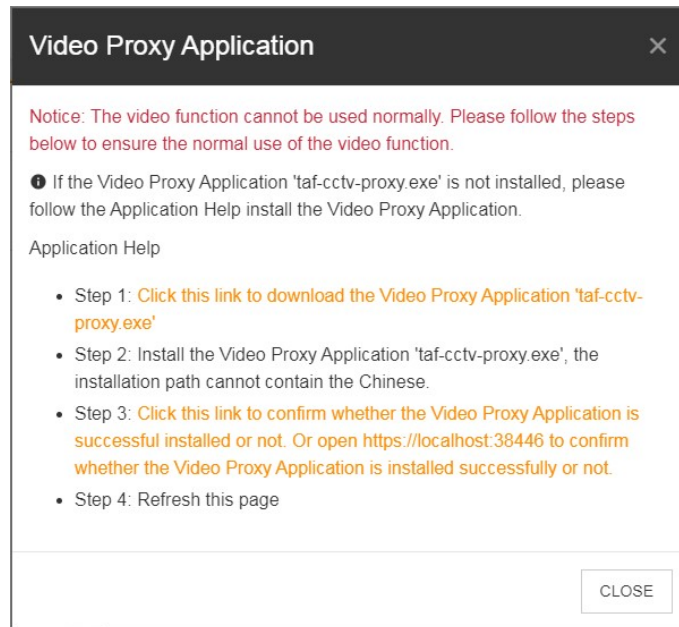
Figure 14-1   Video plug-in help

Perform operations based on the plug-in help.

Assume that there is an NVR device with IP address "10.163.230.196". You can access the video device into the system for management.

Adding an NVR device

Choose **Video** > **Device Management**. (The **Device Management** node is visible only for login users in the system administrator group.)

On the **Device Management** page, click . The **Add** page is displayed, as shown in Figure 14-2. Set **Device Name** to **NVR 01**, **IP Address** to **10.163.230.196**, and **Port** to **80**. Enter **User Name** and **Password** of the NVR device. Click **CONNECTION TEST**. If the entered information is correct, the system prompts "Connection test succeeded". Click **SAVE**. After the device information is saved, the system synchronizes the IP channel data of the device into the system.

Figure 14-2   Adding an NVR device

After the NVR device is successfully added, the page as shown in Figure 14-3 is displayed.
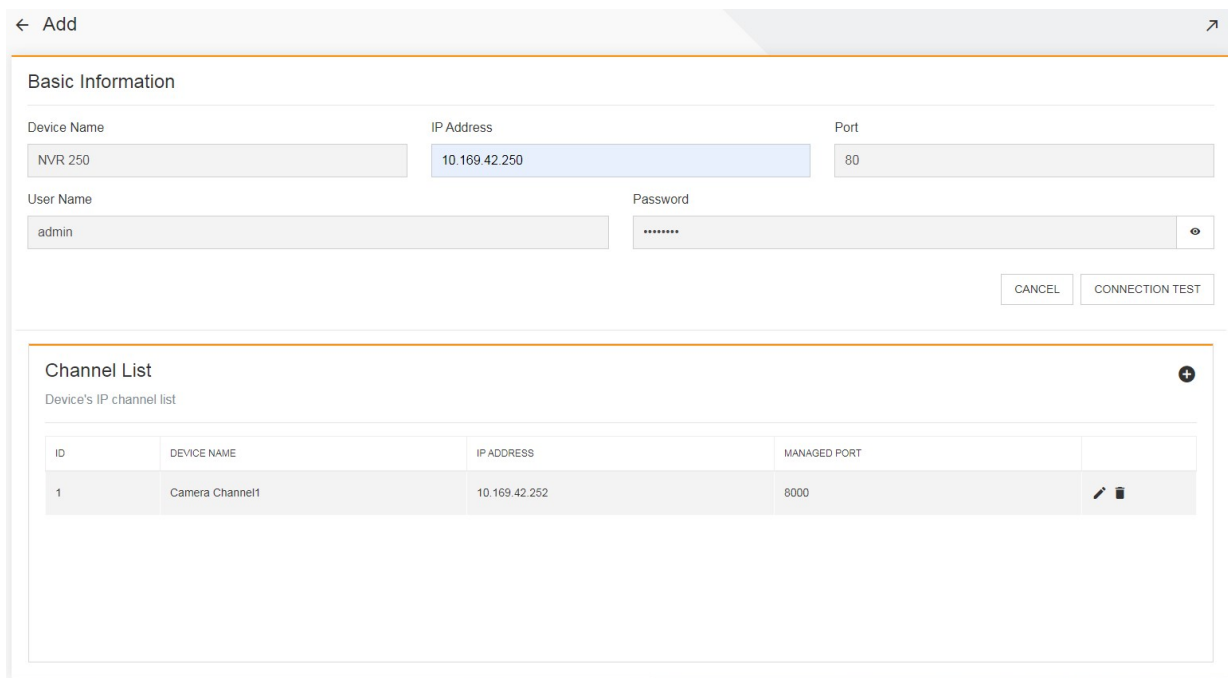
Figure 14-3   Successfully added the NVR device

Adding an IPC device to the NVR channel

The channel list shows all IPC devices in the current NVR channel. If you need to add an IPC device to the channel, click ⊕, the page as shown in Figure 14-4 is displayed. Enter **Device Name**, **IP Address**, **Port** (the management port number is 8000 by default), **User Name**, and **Password** of the IPC device, and click **SAVE**. After the IPC device is successfully added, the system automatically refreshes the channel list.
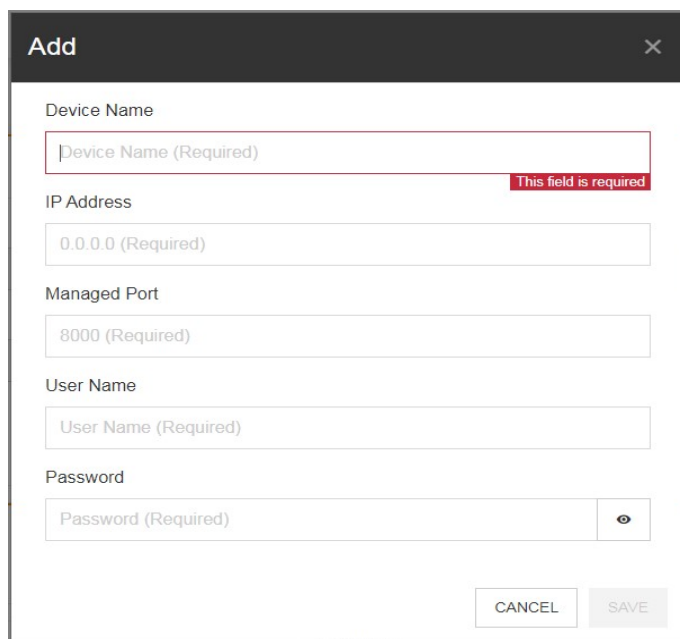
Figure 14-4   Adding an IPC device

After the NVR and IPC devices are added, you can click the **Real Time Video** and **History Video** sub-nodes to preview real-time videos, and play back and download historical videos.

14.3   Specific Functions

This section describes specific functions of video management. The **Video** node includes three modules: **Real Time Video**, **History Video**, and **Device Management**.

14.3.1 Video Plug-in

When you use the video functions for the first time, you need to install a video plug-in. Perform operations based on the plug-in help.

1. The following figure shows the video plug-in help for installing the plug-in on the Google Chrome/Edge browser.
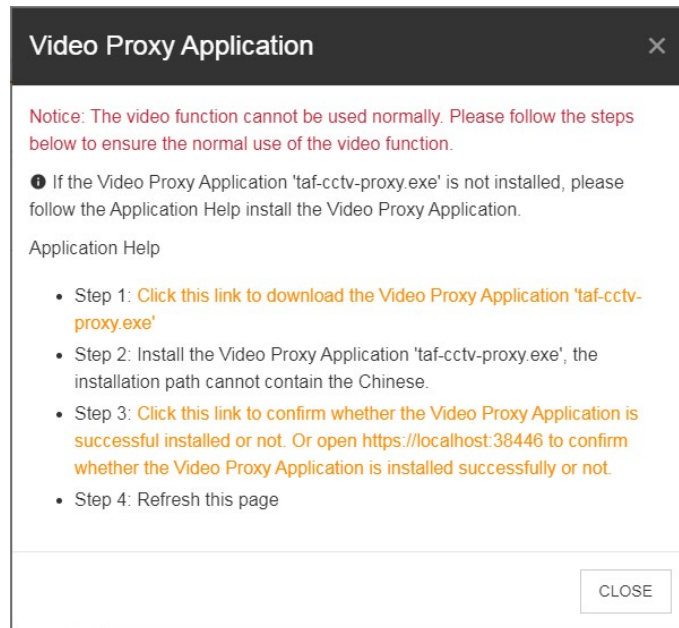
Figure 14-5   Video plug-in help for Google Chrome/Edge browser

2. The following figure shows the video plug-in help for installing the plug-in on the Mozilla Firefox browser.
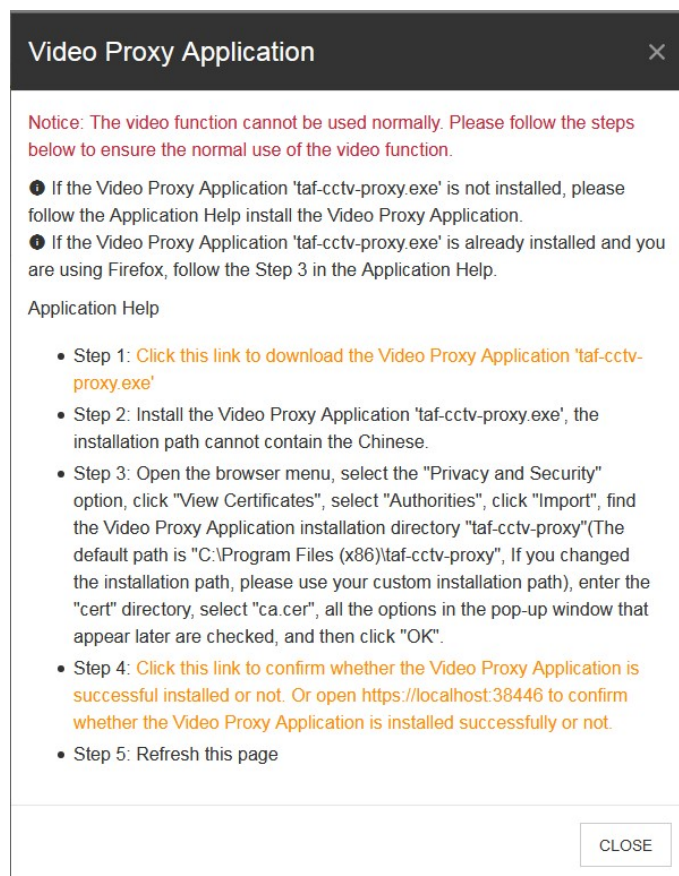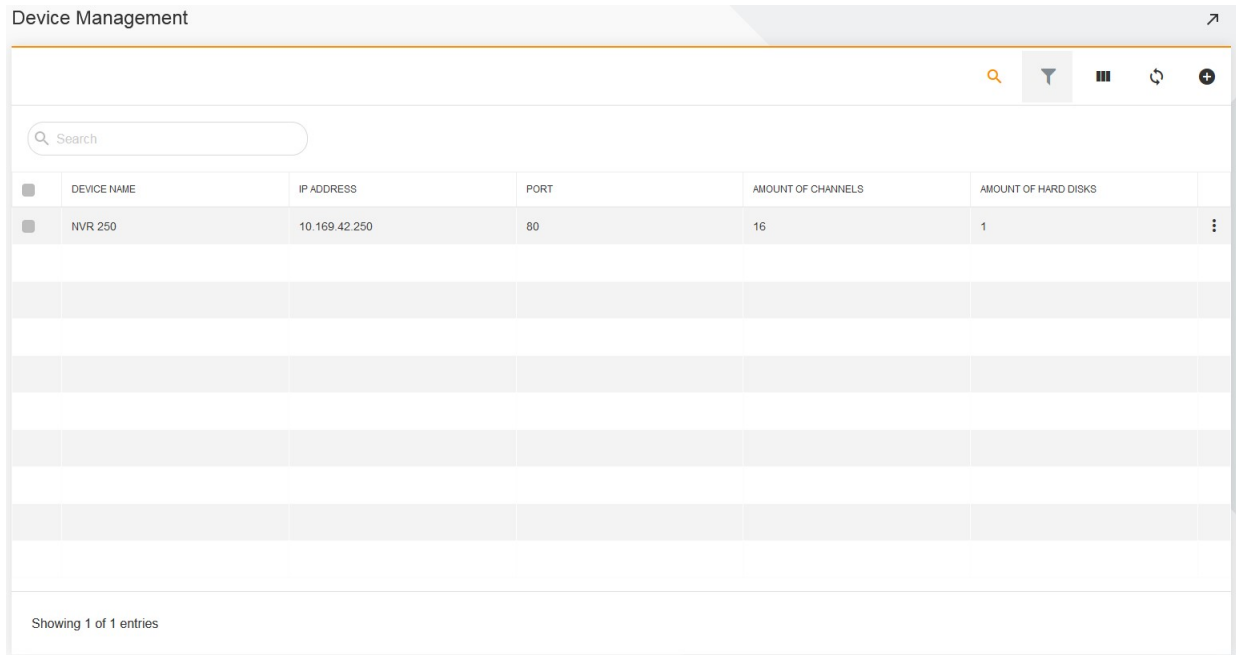
Figure 14-6   Video plug-in help for Mozilla Firefox browser

14.3.2　Device Management

This module supports the following video device management functions: adding, deleting, and modifying the NVR device; and adding, deleting, and modifying the IPC device on the channel list.

Device list

Choose **Video** > **Device Management**. The **Device Management** page is displayed. The device data is displayed in pages. Each page displays 10 devices. The device list contains **DEVICE NAME**, **IP ADDRESS**, **PORT**, **AMOUNT OF CHANNELS**, and **AMOUNT OF HARD DISKS**, as shown in Figure 14-7.
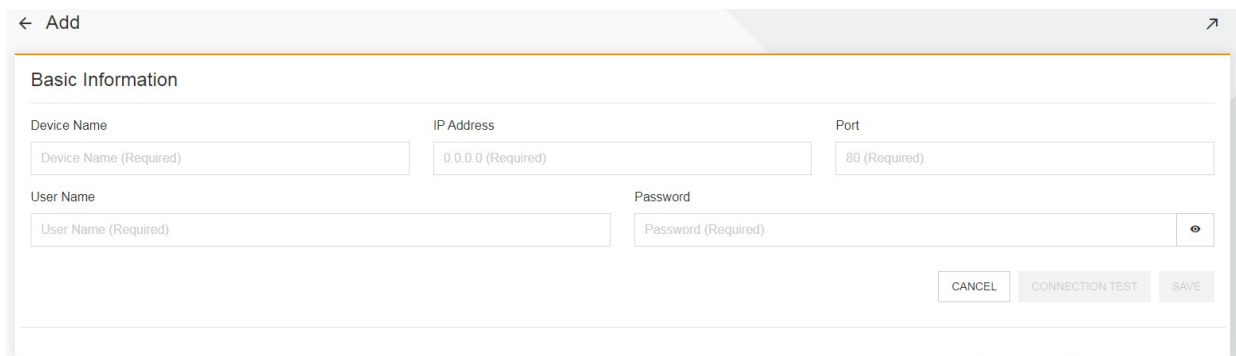
Figure 14-7　List of video devices

    📖　**Note**

If no video device is added to the system, the device list displays "No Data".

Adding a device

1. Click ⊕ to add a device. The **Add** page is displayed, as shown in Figure 14-8.

Figure 14-8　Adding an NVR device
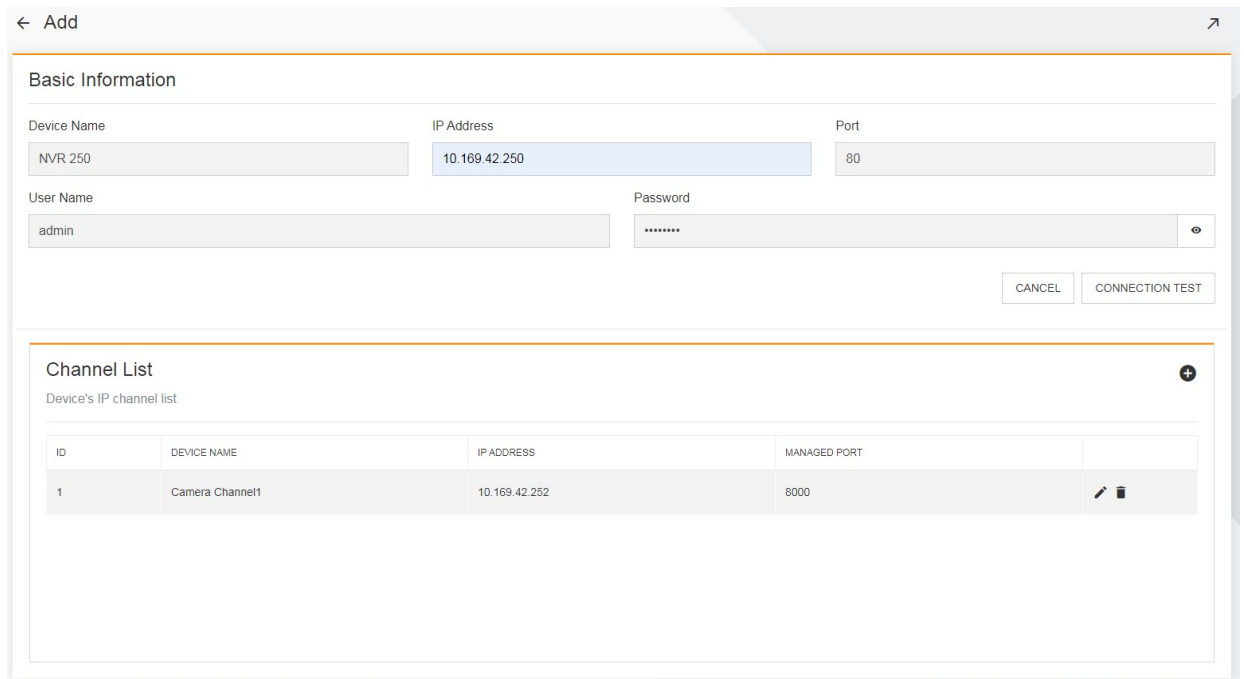
2. Enter **Device Name**, **IP Address**, **Port**, **User Name**, and **Password**.

3. To test whether the entered information is correct, click **CONNECTION TEST**. If the entered information is incorrect, the system generates the corresponding prompt.

4. If the entered information is correct, click **SAVE**. After the device information is saved, the system synchronizes the IP channel data of the device into the system.

    📖   **Note**

1. **Device Name** should contain 3-64 characters, which cannot be duplicated.

2. **IP Address** cannot be duplicated.

3. You are allowed to click **CONNECTION TEST** and **SAVE** only after completely entering and verifying the information.

Editing a device

1. Click ⋮ on the right side of the device data row and select **Edit** from the pop-up drop-down menu. The page as shown in Figure 14-9 is displayed.

Figure 14-9　Editing a device
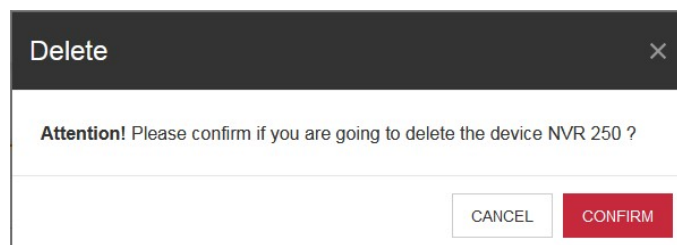
2. Modify the device name, user name, or password. Click **SAVE**.

    📖   **Note**

1. **IP Address** and **Port** of the video device are not configurable. To modify them, delete the device and add it again.

2. In the edit window, you can click **SAVE** only after the information has been modified.

Delete device

1. Click ⋮ on the right side of the device data row and select **Delete** from the pop-up drop-down menu. The page as shown in Figure 14-10 is displayed.

Figure 14-10　Delete device

2. Click **CONFIRM**. The device is deleted.

    📖   **Note**

When a device is deleted, all IPC device data related to the device channel is deleted accordingly.

Adding an IPC device to the channel

1. Choose **Video** > **Device Management**. The **Device Management** page is displayed. Click ⋮ on the right side of the device data row and select **Edit** from the pop-up drop-down menu. On the edit page, click ⊕ on the channel list in the lower part of the page. The **Add** page is displayed, as shown in Figure 14-11.
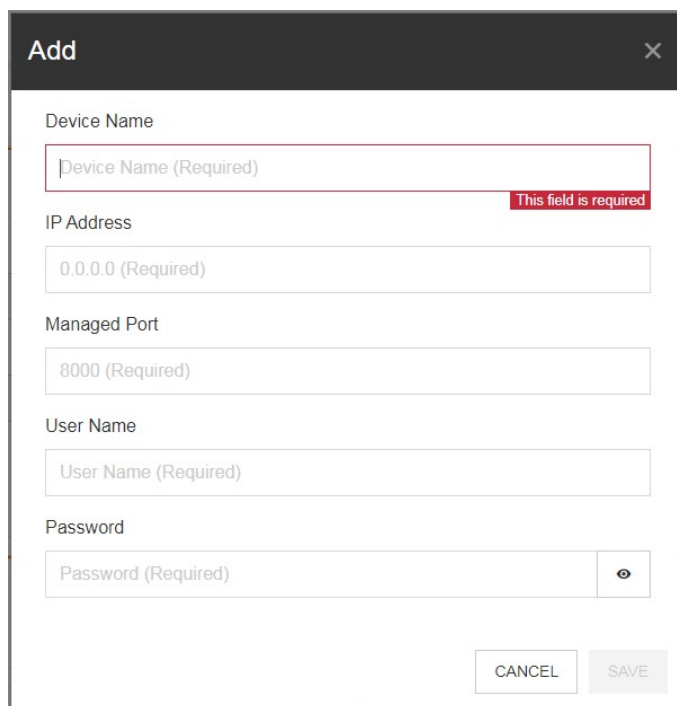
Figure 14-11   Adding an IPC device

2. Enter **Device Name**, **IP Address**, **Managed Port** (the management port number is 8000 by default), **User Name**, and **Password** of the IPC device. Click **SAVE**.

📖   **Note**

1. **Device Name** should contain 3-64 characters. The IPC device names of the same NVR channel must not be duplicated.

2. IP addresses of IPC devices of the same NVR channel must not be duplicated.

3. You are allowed to click **SAVE** only after completely entering and verifying the information.

Editing the IPC device in the channel

1. In the channel list, click 🖊 on the right side of the IPC device information. The page as shown in Figure 14-12 is displayed.

Figure 14-12　Editing the IPC device

2. Modify **Device Name**, **IP Address**, **Managed Port** (the management port number is 8000 by default), **User Name**, or **Password** of the IPC device. Click **SAVE**.

   📖　　**Note**

1. **Device Name** should contain 3-64 characters. The IPC device names of the same NVR channel must not be duplicated.

2. IP addresses of IPC devices of the same NVR channel must not be duplicated.

3. In the edit window, you can click **SAVE** only after the information has been modified.

Deleting the IPC device in the channel

1. In the channel list, click 🗑 on the right side of the IPC device information. The page as shown in Figure 14-13 is displayed.

Figure 14-13　Dialog box for deleting the an IPC device

2. Click **CONFIRM**. The IPC device is deleted from the channel list.

   📖　　**Note**

The operation of deleting a device is just to delete the device data from the system.

14.3.3　Real Time Video

This module is used to preview the real-time video, mainly including the following functions: device list, preview video, snapshot, record, zoom in, view mode, full screen, stop all previews, and double-click to zoom in the window.

Limitations: The Mozilla Firefox browser does not support the record function. The Internet Explorer 11 does not support the functions of stop previews, snapshot, record, and zoom in.

Device list

1. Choose **Video** > **Real Time Video** . The **Real Time Video** page is displayed. The left side of the page displays the video device tree, on which the nodes are NVR devices and sub-nodes are IPC devices in the IP channel, as shown in Figure 14-14.
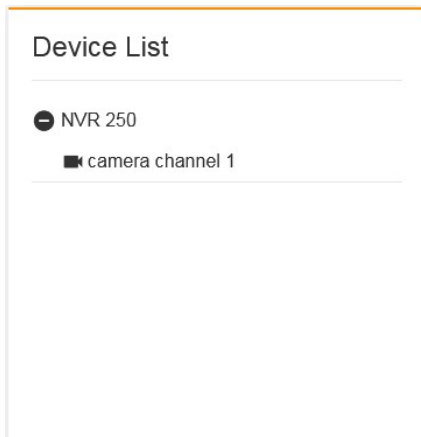
Figure 14-14   Device list

    Note

If device data is not found, the list displays "No Data".

2. The expand/fold button is prefixed to the NVR device. If you click ⊖, the IPC devices in the IP channel of the device are hidden. If you click ⊕, the IPC devices in the IP channel of the device are displayed.

Video preview

1. On the right side of the page, select the window for playing the video and click the IPC device in the device list to preview the real-time video of the device, as shown in Figure 14-15.
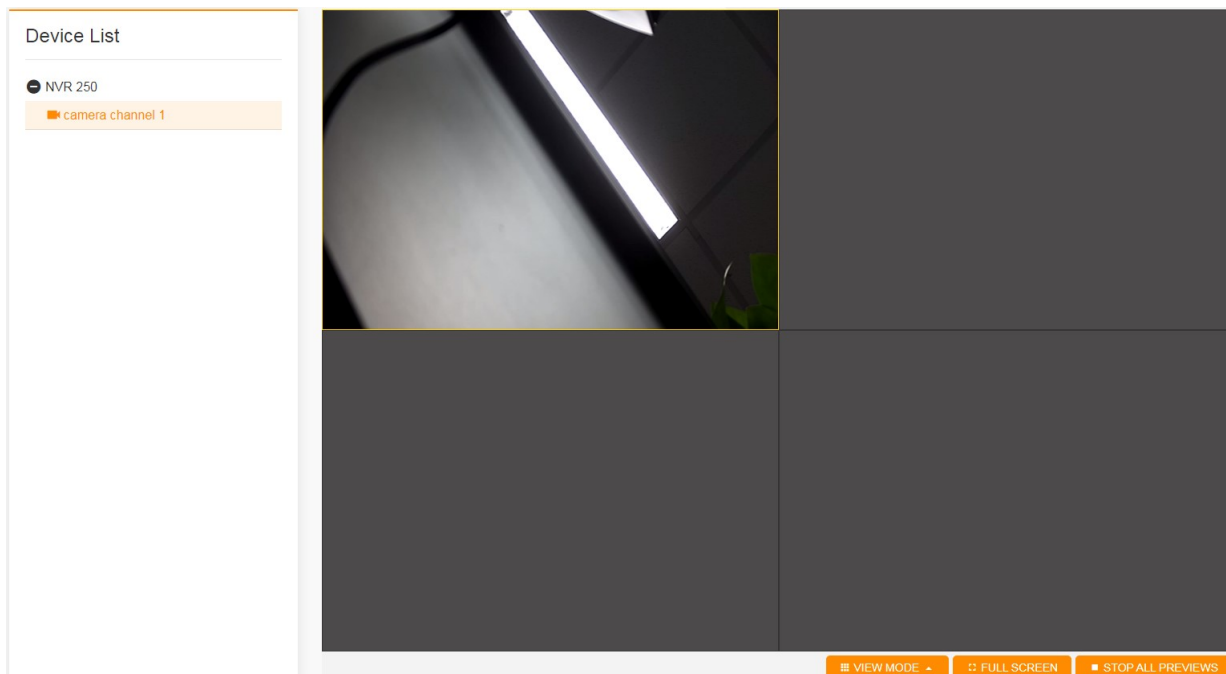
Figure 14-15   Video preview

2. To stop the preview, select the corresponding small window, hover the cursor over the bottom of the window, and click the **Stop Preview** button, as shown in Figure 14-16.
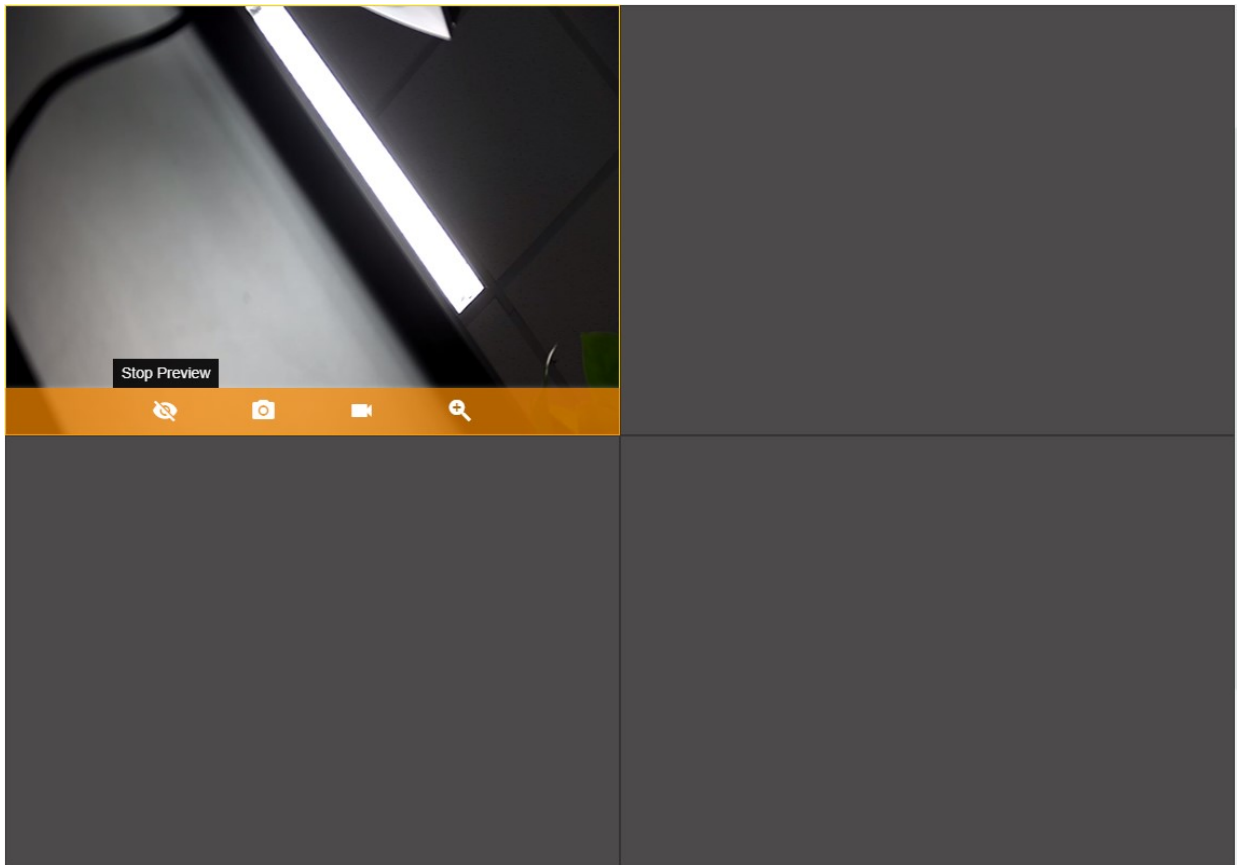
Figure 14-16 Stop preview

📖 **Note**

1. Currently, only the Google Chrome (later than V73), Mozilla Firefox (later than V66), and Internet Explorer (later than V11) browsers support the video preview function.

2. When a new page is open, the first window in the upper left corner on the right side of the video playback page is selected by default. To select another small window, click the corresponding small window.

Snapshot

1. Select the corresponding small window, hover the cursor over the bottom of the window, and click the **Snapshot** button, as shown in Figure 14-17.
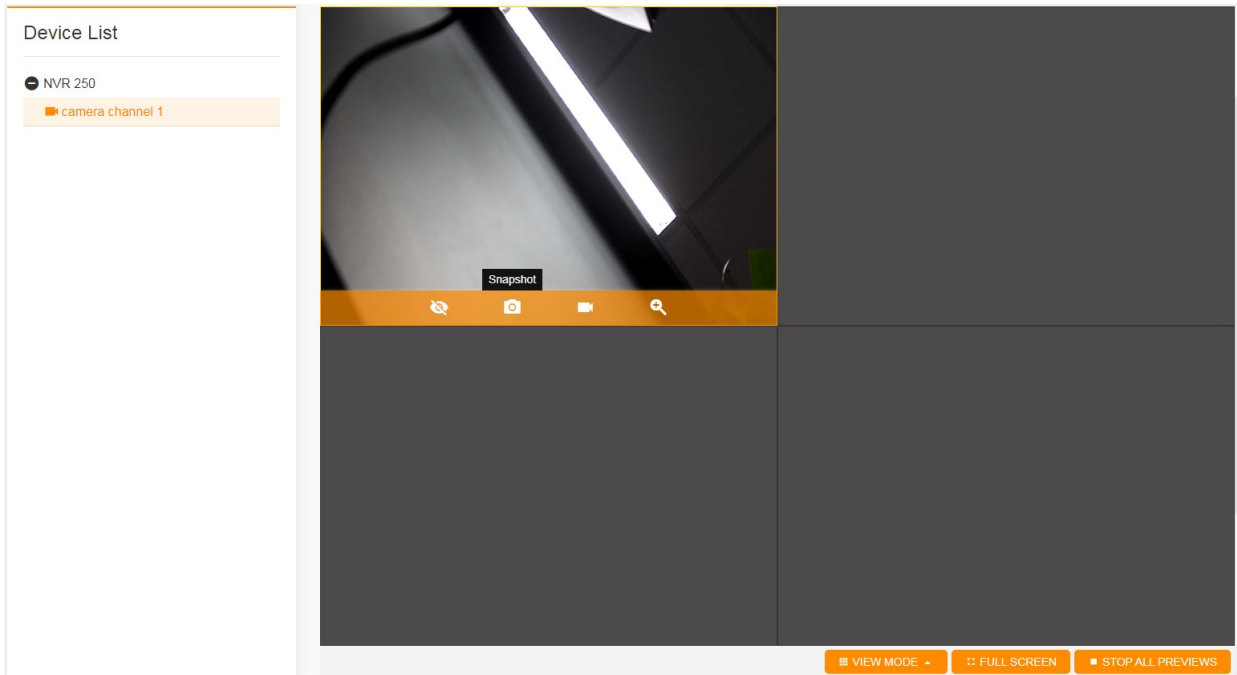
Figure 14-17   Snapshot

2. After you click the **Snapshot** button, the system automatically takes snapshots of the current video.

Record

1. Select the corresponding small window, hover the cursor over the bottom of the window, and click the **Start Record** button, as shown in Figure 14-18.
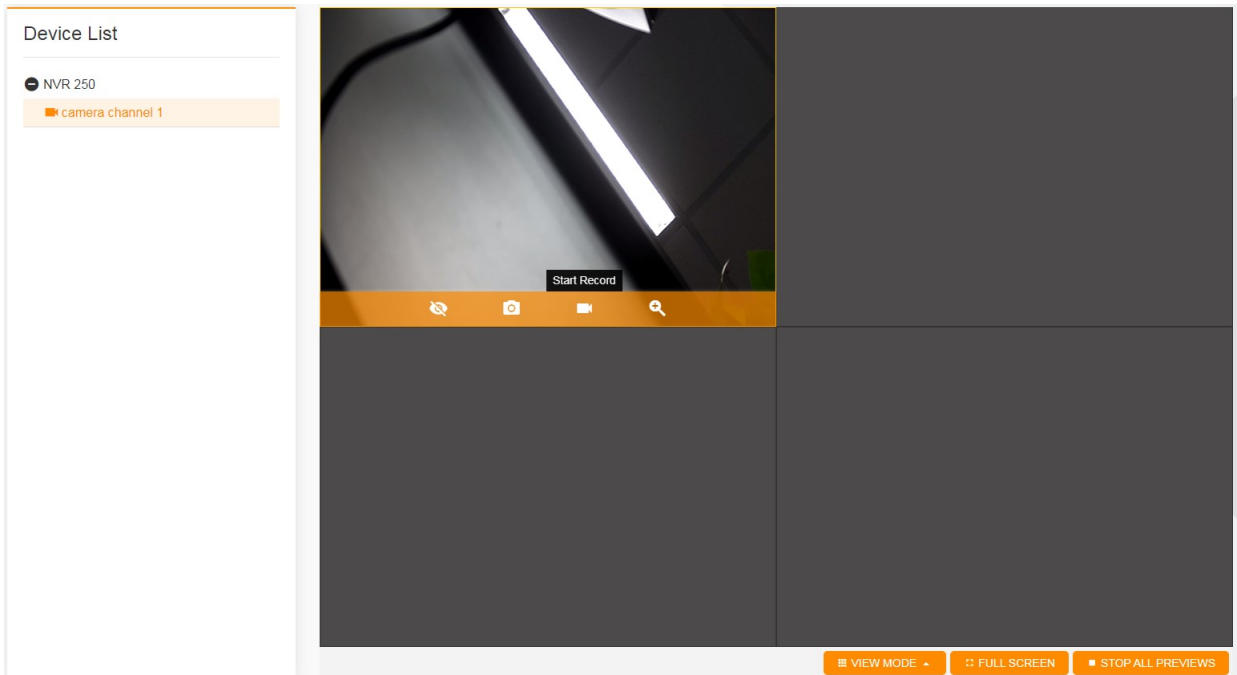
Figure 14-18   Record

2. After you click the **Start Record** button, the REC flag blinks in the upper right corner of the video playback window, as shown in Figure 14-19.

Figure 14-19 Recording

3. To stop recording, select the corresponding small window, hover the cursor over the bottom of the window, and click the **Stop Record** button. The system stops the recording and automatically downloads the record file.

📖 **Note**

1. After you click the **Start Record** button, the button automatically becomes **Stop Record.**

2. You can record multiple videos simultaneously.

3. When you stop the preview of a real time video, the system automatically stops the recording and automatically downloads the record file.

Zoom in

1. Select the corresponding small window, hover the cursor over the bottom of the window, and click the Zoom in button, as shown in Figure 14-20.
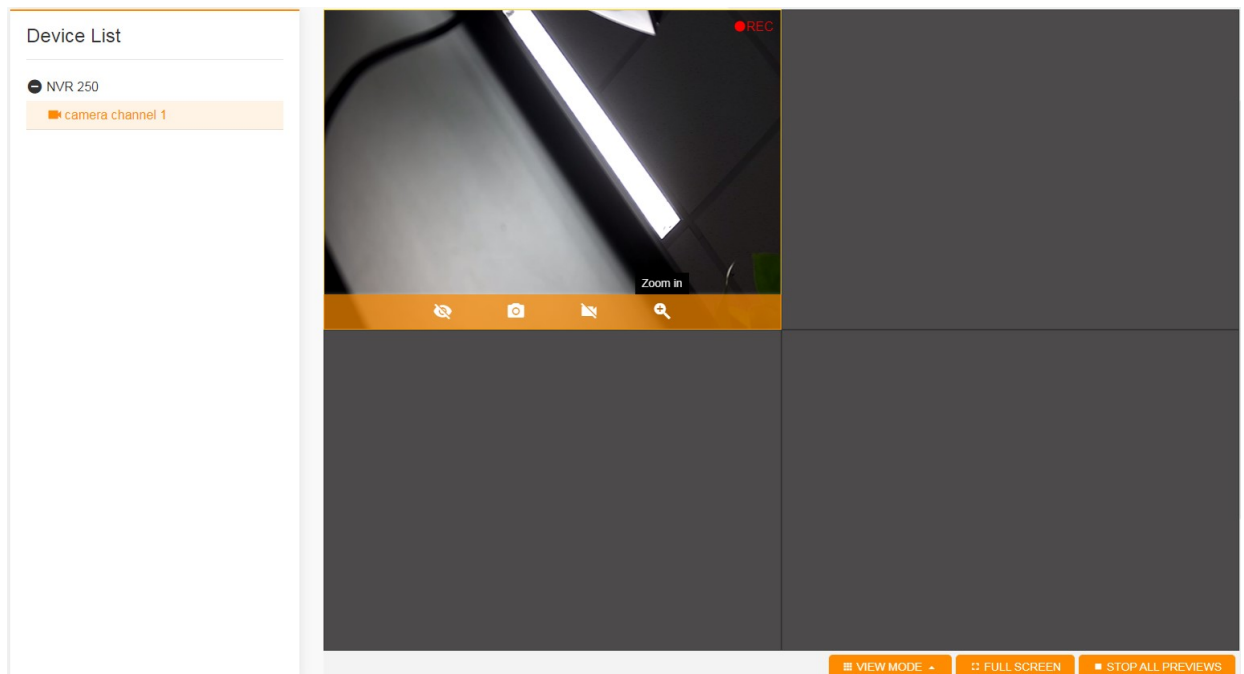
Figure 14-20 Zoom in

2. After you click the **Zoom in** button, frame the area to be zoomed in within the video playback window (press and hold the left button of the mouse and move it. The video playback window displays a red rectangle frame, which is the selected area). The selected area is zoomed in, as shown in Figure 14-21.
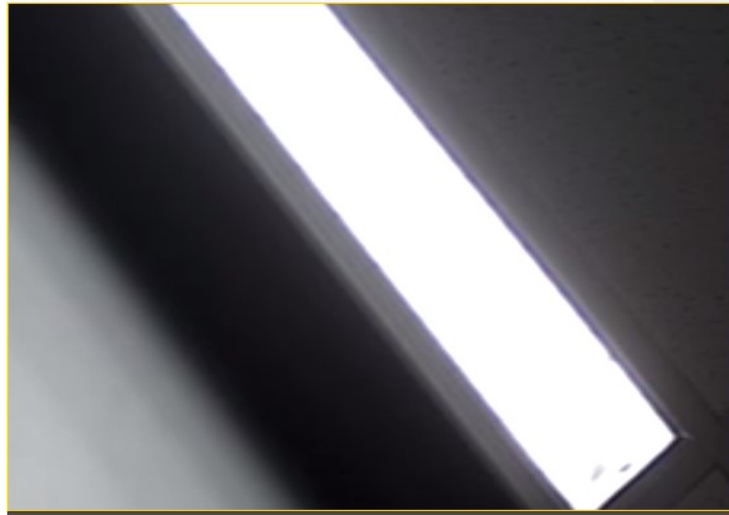
Figure 14-21   Selected area for zoom-in display

3. To disable the zoom-in display, select the corresponding small window, hover the cursor over the bottom of the window, and click the **Restore** button.

📖   **Note**

After you click the **Zoom in** button, the button automatically becomes **Restore**.

Switching between view modes

1. Click **VIEW MODE** at the bottom of the page. The system displays all available view modes, including **1-GRID**, **4-GRID**, and **9-GRID**, as shown in Figure 14-22.
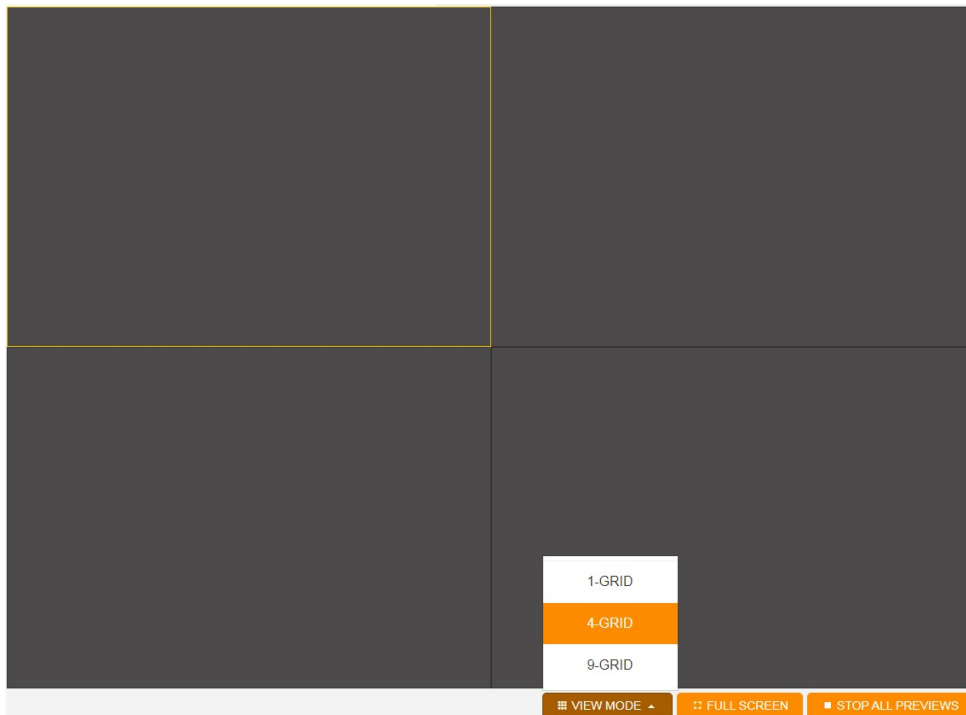
Figure 14-22   Switching between view modes

2. When you click a view mode, the window is split into a corresponding number of small windows. For example, if you click **9-GRID**, the view mode is changed, as shown in Figure 14-23.
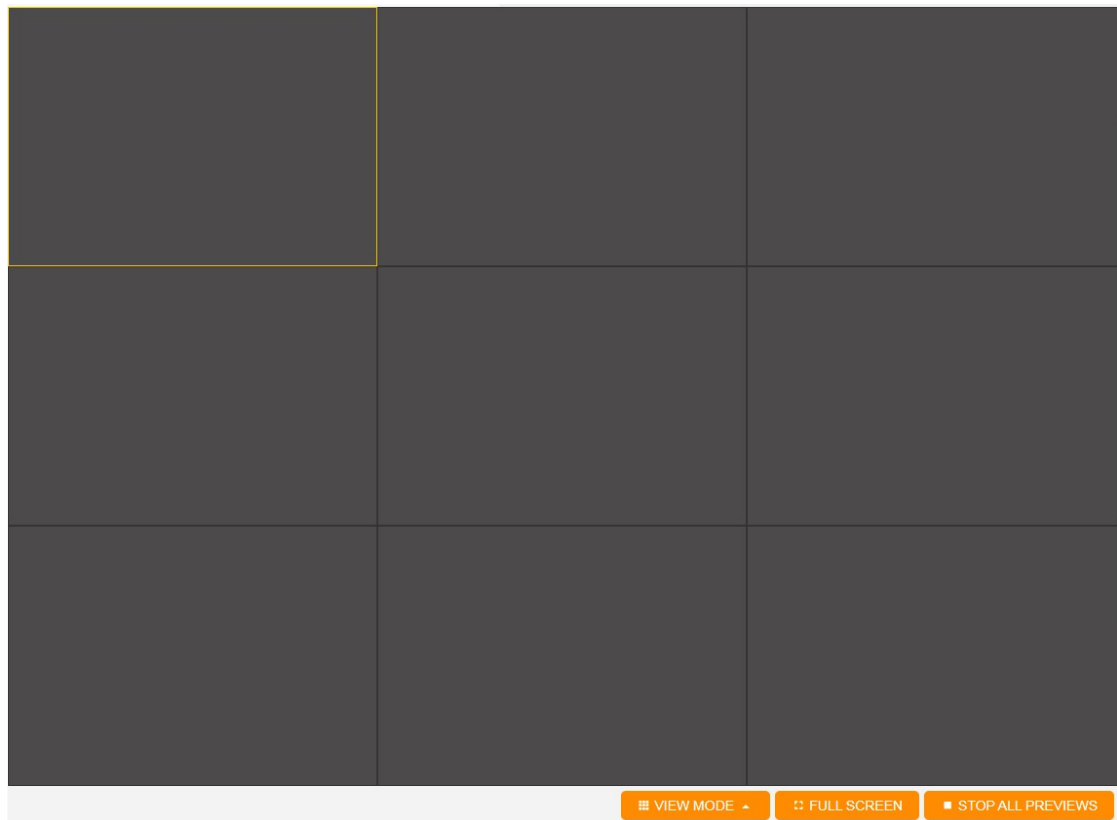
Figure 14-23　9-grid view

📖　**Note**

By default, the system displays the 4-grid view when you open the page. That is, the window is split into four small windows.

Full screen

1. When a small window is playing a real-time video, you can double-click the window to display it in full screen.

2. Click the **FULL SCREEN** button at the bottom of the page. The right playback window is displayed in full screen, as shown in Figure 14-24.
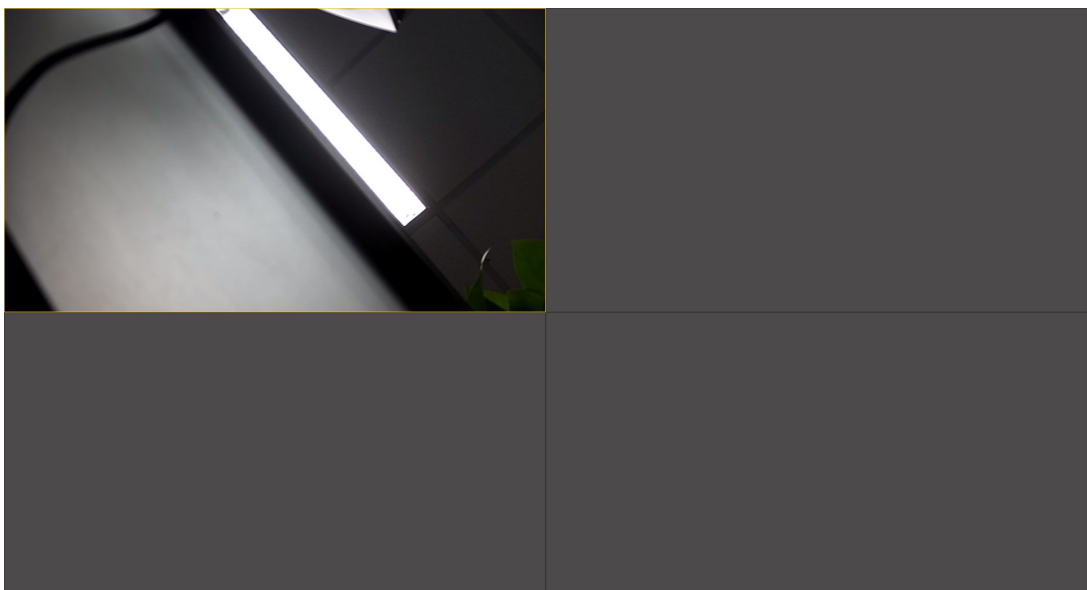
Figure 14-24　Full screen display

3. In full screen display mode, you can press **Esc** to exit the full screen.

Stop all previews

1. Click the **STOP ALL PREVIEWS** button at the bottom of the page. The system stops all devices that preview the real-time videos.

2. If a device is recording a video, the system automatically stops recording and then saves and downloads the record file.

14.3.4   History Video

This module is used to preview history videos, mainly including the following functions: querying and playing the history video; modifying the playback time; pausing and stopping the video playback; playing a video by frame; playing a video in full screen; and downloading a history video.

Querying the history video

1. Choose **Video** > **History Video**. The **History Video** page is displayed. The left side of the page displays the date selection box and video device tree, on which the nodes are NVR devices and sub-nodes are IPC devices in the IP channel. The expand/fold button is prefixed to the NVR device. If you click ➖, the IPC devices in the IP channel of the device are hidden. If you click ➕, the IPC devices in the IP channel of the device are displayed, as shown in Figure 14-25.

Figure 14-25   History Video

2. By default, the date selection box displays the current date. To modify the date, click the date selection box and select the desired date.

3. To query the history videos of a device on a specified date, click the IPC device on the device list. When there are history videos, the timeline at the bottom of the playback window fills the corresponding time range in orange color, as shown in Figure 14-26.

Figure 14-26   Querying the history video

📖   **Note**

1. If device data is not found, the device list displays "No Data".

2. If no history video is found, the system prompts "No history video" in the lower right corner of the page.

Playing the history video

1. After you select a date and click an IPC device in the device list, the ▶ button becomes available if history videos exist within the specified time range.

2. When the **playback** button is available, the system plays the video from the start time of the history video if you click the **playback** button, as shown in Figure 14-27.
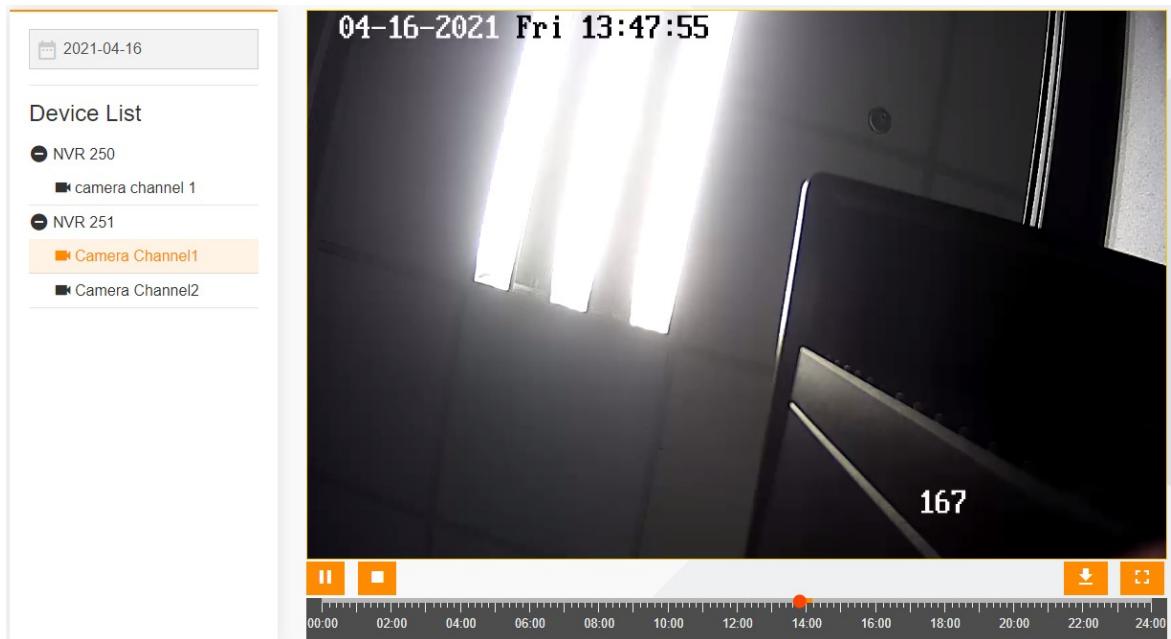
Figure 14-27   Playing the history video

📖   **Note**

Currently, only the Google Chrome (later than V73), Mozilla Firefox (later than V66), and Internet Explorer (later than V11) browsers support the history video playback function.

Changing the playback time

1. There is a red dot in the timeline, indicating the playback progress. If you drag the dot to a certain time point in the orange area on the timeline, the system plays the video from the specified time point.

2. Click a certain time point in the orange area on the timeline. The red dot indicating the playback progress moves to the corresponding position, and the system plays the video from the specified time point.

3. When you hover the cursor over the playback progress dot, the system displays the current playback time, as shown in Figure 14-28.

Figure 14-28   Displaying the current playback time

 📖   **Note**

The red dot indicating the playback progress is displayed at 00:00 by default. If the history video does not start from 00:00, the red dot automatically goes to the start time of the video.

Pause

1. After you click the **playback** button, it becomes the **pause** button ⏸ . If you click the **pause** button, the system pauses the video playback.

2. After you click the **pause** button, it becomes the **playback** button again. You can click the **playback** button to resume the playback.

Stop

1. After you click the **playback** button, the **stop** button ⏹ becomes available. If you click the **stop** button, the system stops the video playback.

2. When the system is playing the video, if you switch to another device or change the selected date, the system automatically stops the video playback.

Full screen

1. Click the ⛶ button at the bottom of the page. The right playback window is displayed in full screen, as shown in Figure 14-29.

Figure 14-29   Full screen of history video

2. In full screen display mode, you can press **Esc** to exit the full screen.

Downloading the history video

1. After you select a date and click an IPC device in the device list, the ⬇ button becomes available if history videos exist within the specified time range.

2. If you click the **download video** button, the **Download Video** page is displayed, as shown in Figure 14-30.

Figure 14-30   Downloading the history video

3. On the **Download Video** page, click ⬇ in the last column of the video file. The system starts to download the video file. In addition, the **download video** button becomes the downloading state, and the download progress bar is displayed at the bottom, as shown in Figure 14-31.

Figure 14-31   Downloading the history video
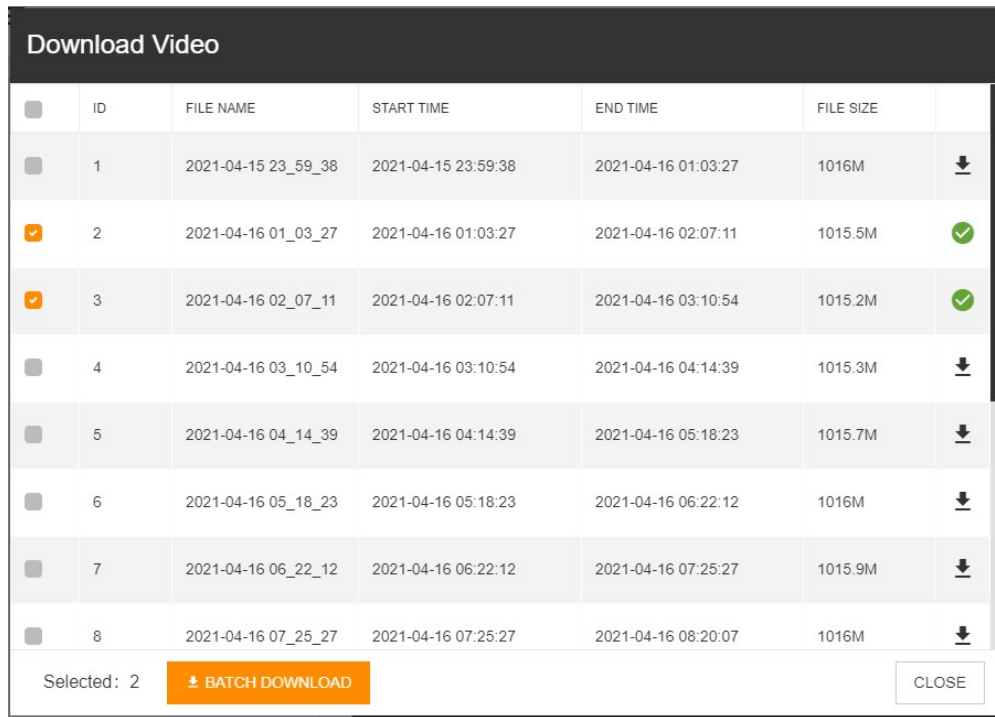
4. After the video file is downloaded, ⬇ in the last column of the video file becomes ✅, and the download progress bar automatically disappears.

5. If you select two or more video files, the **BATCH DOWNLOAD** button automatically appears at the bottom, as shown in Figure 14-32.

Figure 14-32   Selecting two video files

6. After you click **BATCH DOWNLOAD**, the system adds the selected video files to the download queue and starts to download the first video file. The 🕐 icon is displayed for other video files that wait for downloading. The ✅ icon is displayed for video files that have been downloaded, as shown in Figure 14-33.

Figure 14-33　Batch downloading the history video

📖　**Note**

1. After you click **BATCH DOWNLOAD**, the button becomes unavailable, preventing you from repeated download during the download process. After the batch download is completed, the **BATCH DOWNLOAD** button becomes available.

2. Since the downloaded history videos occupy a certain amount of memory space, it is not recommended to download a large number of video files at a time if the size of the video files is large.

Chapter 15   Asset Management

15.1   Overview

15.1.1   Overview

This module is used to monitor assets of all sites monitored by Smart InfraSight. The major functions include querying, adding, modifying, and deleting assets.

15.1.2   Functional Module

Asset Management contains the following functional modules. For more about the functional modules, see section *15.3   "Specific Functions*."

- Adding an Asset
- Importing an Asset
- Exporting an Asset
- Querying an Asset
- Editing an Asset
- Deleting an Asset
- Warranty Notification

15.2   Quick Start

15.2.1   Quick Deployment Procedure

1. In the initial state, there is no asset in the asset list. In this situation, you can manually or batch import assets.

2. To view assets under the RDU, see the Configuration Tool chapter. After you add a site to the monitoring function of Smart InfraSight, the assets of the site are automatically discovered. The asset list displays the automatically discovered assets.

15.2.2   Example

Adding an asset

Click   in the upper right corner. The **Add Asset** page is displayed, as shown in Figure 15-1.
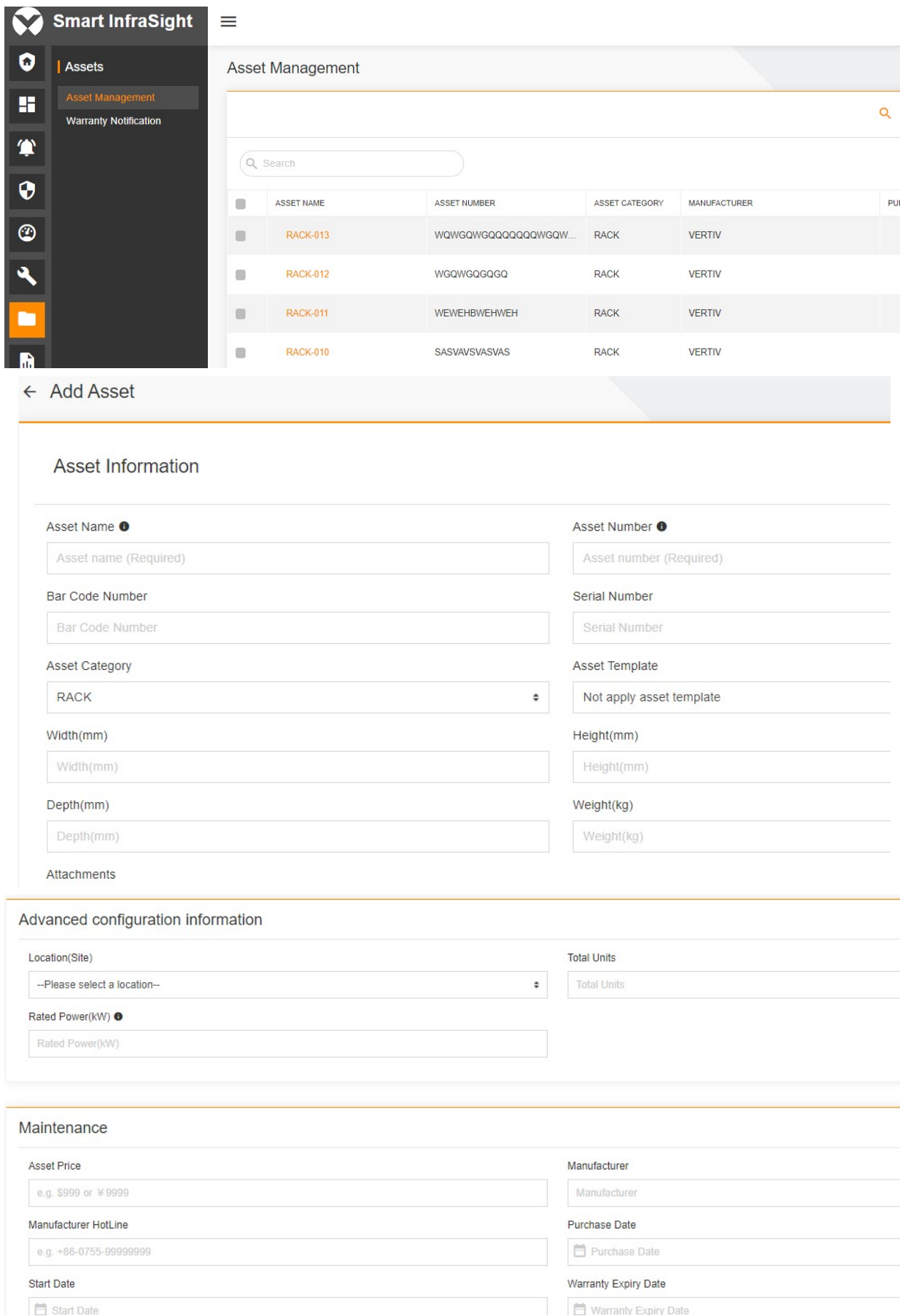
Figure 15-1   Adding an asset

Asset Name and **Asset Number** are mandatory. Other parameters are optional. After the asset information is

entered, click SAVE in the upper right corner to save the configuration.

Importing an asset

You can add assets by importing assets. Click ⊡ in the upper right corner. The **Import Assets** page is displayed, as shown in Figure 15-2.
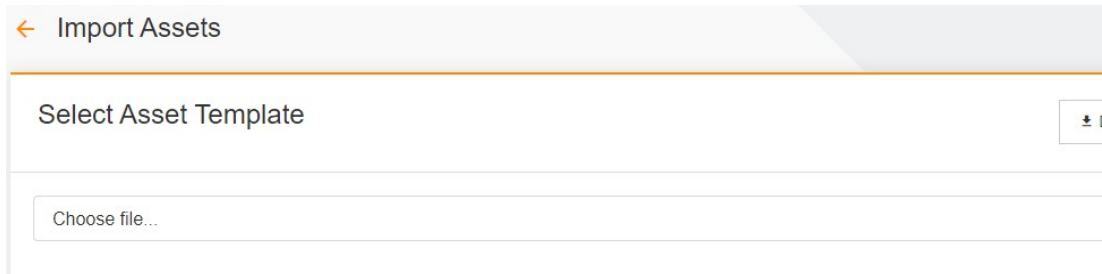

Figure 15-2　Importing an asset

Click **DOWNLOAD ASSET TEMPLATE** in the upper right corner to download the asset template. Open the asset template in Excel format to enter the asset information. Click **Browser**, select the Excel file with information filled, and click **IMPORT**. The system prompts for whether the file is successfully imported.
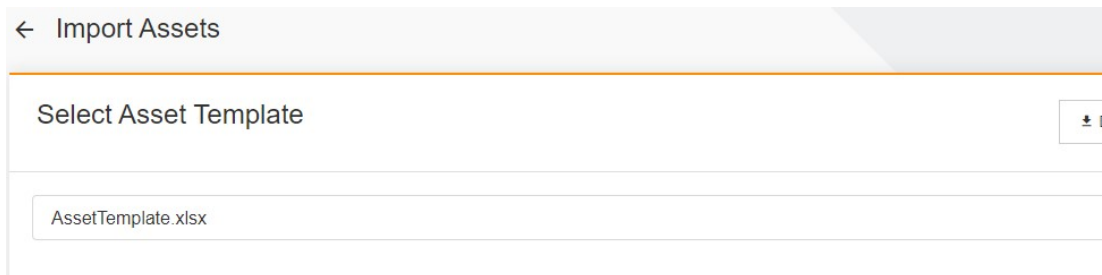

Figure 15-3　Download asset template

Querying an asset

Figure 15-4 shows the asset list.

Figure 15-4　Asset list

Click **ASSET NAME** or ⋮ suffixed to each asset in the asset list, and click 🗑 Delete to view asset details, as shown in Figure 15-5.

Figure 15-5   Asset details

Editing an asset

If the asset information changes, you can edit the asset information. Click **Assets** to enter the asset list page. Click

ASSET NAME or ⋮ suffixed to each asset in the asset list, and click ✎ Edit to enter the **Edit Asset** page, as shown in Figure 15-6.

Figure 15-6   Editing an asset

After the asset information is edited, click SAVE in the upper right corner to save the configuration.

Deleting an asset

To remove an asset, you can delete the asset. Click **Assets** to enter the asset list page. Click **ASSET NAME** or ⋮ suffixed to each asset in the asset list, and click 🗑 Delete to enter the **Delete Assets** page. For devices automatically discovered on the site (the assets are not manually recorded), the 🗑 Delete button is unavailable, and you cannot delete the asset, as shown in Figure 15-7.
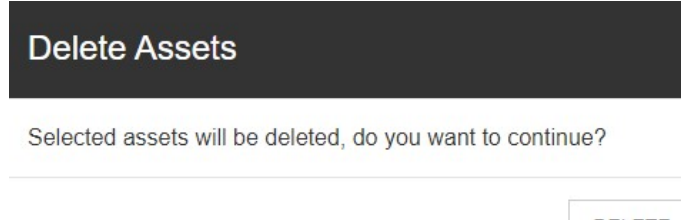
Figure 15-7   Deleting an asset

Click **DELETE** to delete the asset.

Warranty Notification

To use the warranty notification function, choose **Assets** > **Warranty Notification** to enter the **Warranty Notification** page. If the warranty notification function is disabled, enable it, as shown in Figure 15-8.

Figure 15-8   Warranty Notification

Select **Enable Notification**. Select **Recipient** (the email address should be configured in advance), and click **SAVE**, as shown in Figure 15-9. A precondition for normal warranty notification function is that the expiry date of asset warranty notification has been configured.

The policy of warranty notification by email is as follows: The notification is sent on the 1st day of each month three months before the expiry date (if the notification fails to be sent by email, the system retries on the same day. The system will not send any notification after this date).

Figure 15-9   Enabling warranty notification

15.3 Specific Functions

15.3.1 Adding an Asset

You can add assets based on actual needs. Click **Assets**. Click ⊕ in the upper right corner. The **Add Asset** page is displayed, as shown in Figure 15-10. Cu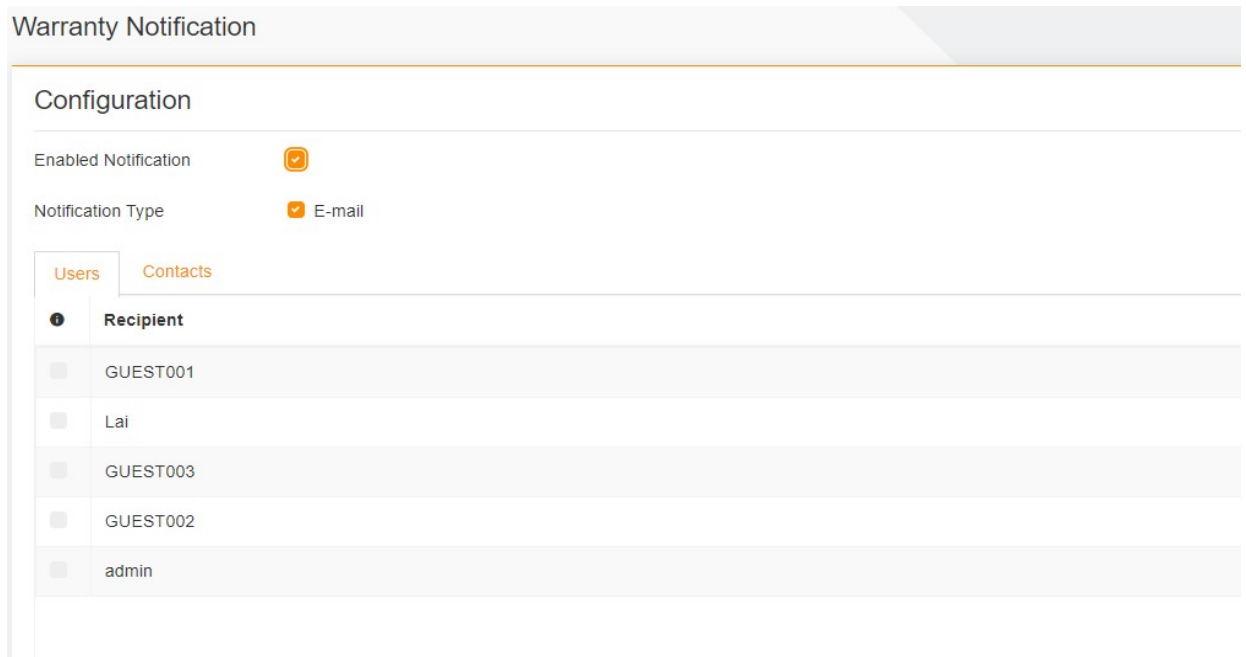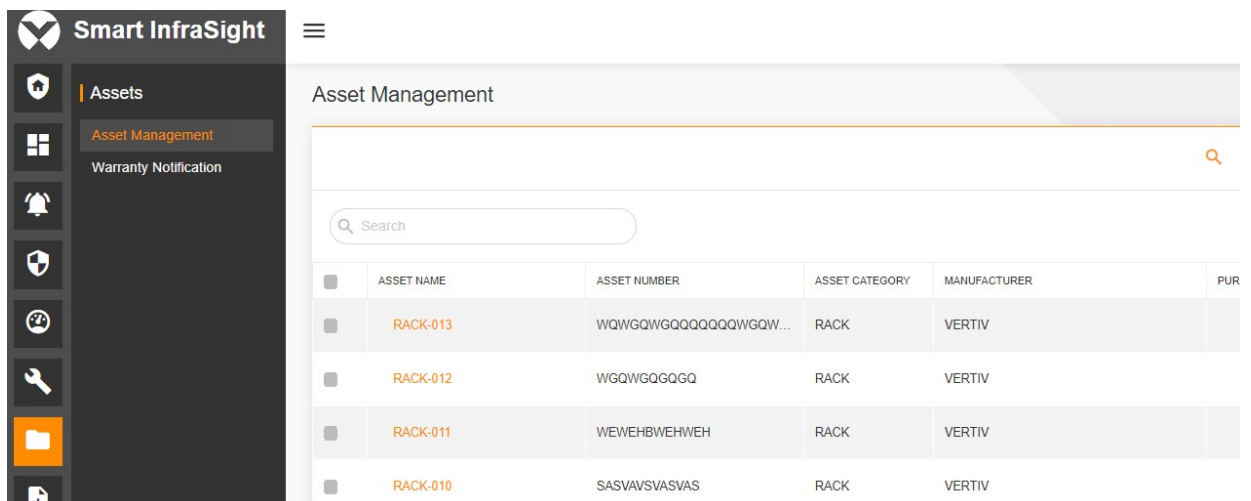rrently, the system supports the following types of assets: rack, rack-mounted PDU, server, switch, and battery cabinet.

Asset Name and **Asset Number** are mandatory. Other parameters are optional. **Asset Number** is unique and must not be duplicated. If **Asset Number** is the same as that of an existing asset, the system prompts "The Asset Number already exists", and **SAVE** is unavailable. **Attachments** can be files for which description can be uploaded or files associated with assets (the system supports the following file
types: .doc, .docx, .pdf, .xls, .xlsx, .ppt, .pptx, .txt, .jpg, .jpeg, .gif, and .png). **Locate (Site)** indicates the site with which the asset is bound. **Start Date** must be earlier than **Purchase Date**, and **Warranty Expiry Date** must be earlier than **Purchase Date**. Otherwise, the system prompts an error message, and the **SAVE** button is unavailable.

Figure 15-10   Adding an asset

15.3.2   Importing an Asset

You can add assets by importing assets. Click **Assets**. Click ⮥ in the upper right corner. The **Import Assets** page is displayed, as shown in Figure 15-11.
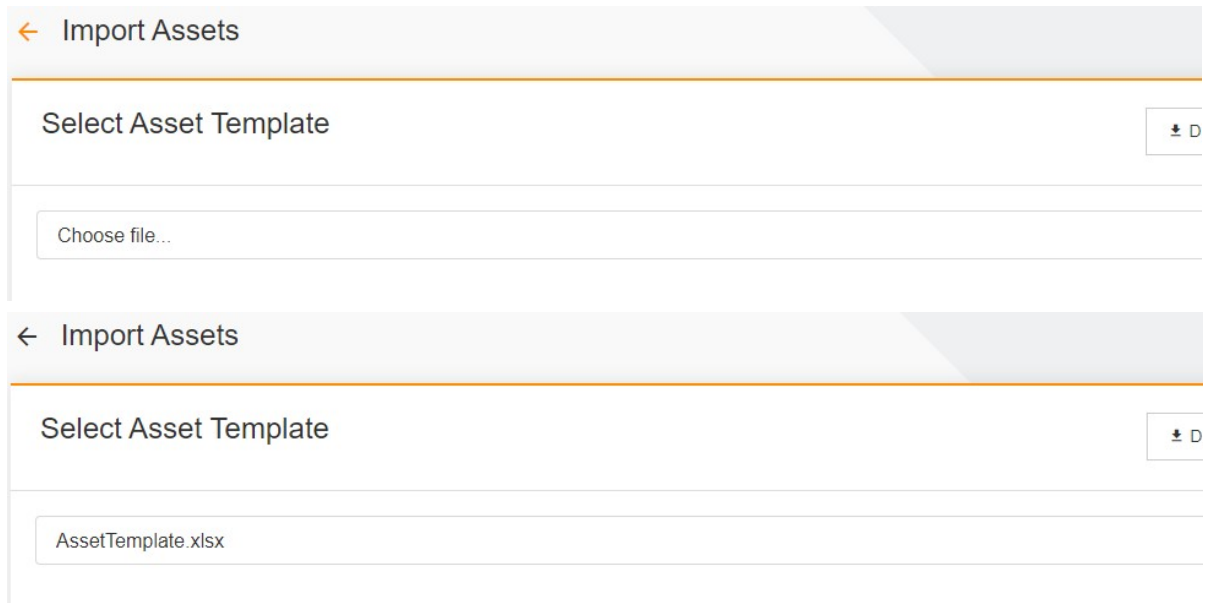
Figure 15-11 Importing an asset

Click **DOWNLOAD ASSET TEMPLATE** in the upper right corner to download the asset template. Open the asset template in Excel format to enter the asset information. Common fields of the asset template includes **Asset Name**, **Asset Number**, **Asset Category**, **Bar Code Number**, **Serial Number**, **Asset Price**, **Manufacturer**, **Purchase Date**, **Start Date**, **Warranty Expiry Date**, **Owner**, **Department**, **Width (mm)**, **Depth (mm)**, **Height (mm)**, **Weight (kg)**, and **Comment**. Five types of assets have own special fields. The rack template sheet includes location (site), total number of U positions, rated power (kW). The rack-mounted PDU template sheet includes rack number, position on the rack, start U position, U height, phase, and rated power (kW). The battery cabinet template sheet includes location (site). The server template sheet includes rack number, start U position, U height, and rated power (kW). The switch template sheet includes rack number, start U position, U height, and rated power (kW). **Asset Name** and **Asset Number** are mandatory. Other parameters are optional. **Asset Number** is unique and must not be duplicated. The rules for filling in the fields are consistent with those on the **Add Asset** page. Click **Browser**, select the Excel file with information filled, and click **IMPORT**. The system prompts for whether the file is successfully imported.

Figure 15-12 Asset template in Excel format

15.3.3 Exporting Assets

Click ⤴ in the upper right corner of the asset management list. You can export asset information to the Excel file in multiple tables by asset type. The order of the fields in the exported file is the same as that of the imported template file, and the fields are arranged based on the basic information, binding relationship, and special information. Since the exported Excel file has the data verification function, the table structure (with additional asset types such as

DEVICE, DOOR, and SENSOR) is inconsistent with that of the imported template file. As a result, the exported Excel file cannot be used as the asset information for import. The following figure shows the asset information.
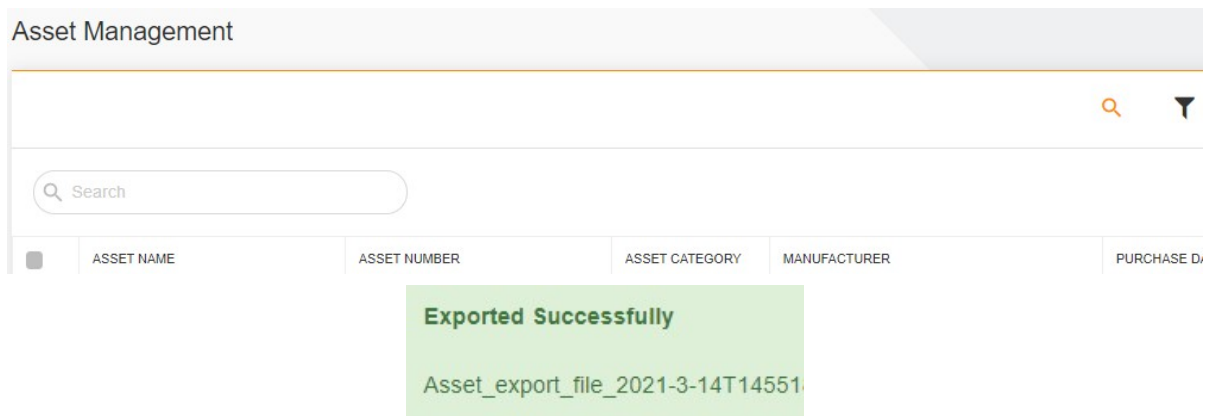

Figure 15-13   Exporting assets

15.3.4   Querying an Asset

You can view information about all assets monitored by TAF. Click **Assets**. The asset list page is displayed, as shown in Figure 15-14. Enter some key information in the search box in the upper left corner to search for assets. Click

in the upper right corner to display or hide the search box (by default, the search box is displayed). Click in the upper right corner to group the assets (groups include: no group (default), asset type, manufacturer, warranty expiry date, owner, and location (site)). After you select a group, the asset list displays the assets by the specified category. The system can display assets by asset type (including all (default), rack, rack-mounted PDU, PDU, server, temperature and humidity sensor, THD sensor, sensor, electricity meter, air conditioner, rack-mounted UPS, floor UPS, door, recorder, switch, battery cabinet, and other devices). The system can also display assets by warranty status (to be expired (1 month), to be expired (3 months), expired, no warranty information, custom, and all (default)).

Click ⫼ to add the number of columns displayed on the page. Currently, the default columns include **ASSET NAME**, **ASSET NUMBER**, **ASSET CATEGORY**, **MANUFACTURER**, **PURCHASE DATE**, and **WARRANTY EXPIRY DATE**. You can add **START DATE**, **OWNER**, and **LOCATION (SITE)** columns. When you click any column name, it is displayed in the asset list.

Figure 15-14   Asset list

Click **ASSET NAME** or ⁝ suffixed to each asset in the asset list, and click 👁 Asset Details to view asset details, as shown in Figure 15-15. You can view desired information by switching among **General**, **Advanced configuration information**, and **Maintenance**.

Figure 15-15   Asset details

15.3.5 Editing an Asset

If the asset information changes, you can edit the asset information. Click **Assets** to enter the asset list page. Click **ASSET NAME** or ⋮ suffixed to each asset in the asset list, and click ✎ Edit to enter the **Edit Asset** page, as shown in Figure 15-16.

Figure 15-16   Editing an Asset

After the asset information is edited, click [SAVE] in the upper right corner to save the configuration.

15.3.6 Deleting an asset

To remove an asset, you can delete the asset. Click Assets to enter the asset list page. Click ASSET NAME or ⋮ suffixed to each asset in the asset list, and click 🗑 Delete to enter the Delete Assets page. For devices automatically discovered on the site (the assets are not manually recorded), the 🗑 Delete button is unavailable, and you cannot delete the asset, as shown in Figure 15-17.
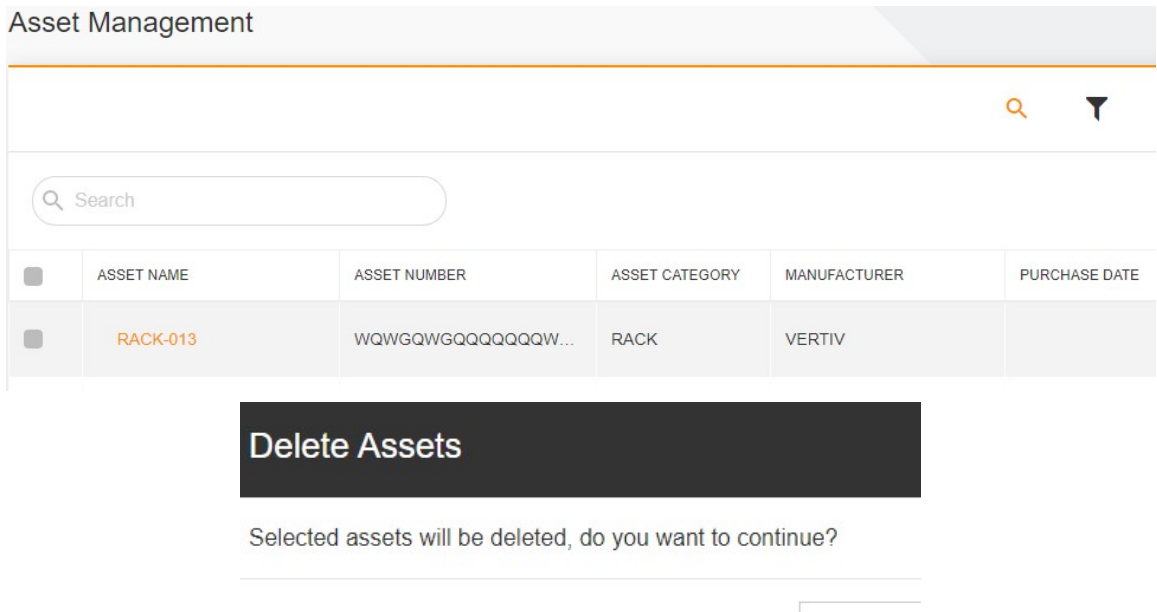
Figure 15-17 Deleting an asset

Click **DELETE** to delete the asset.

15.3.7 Warranty Notification

To use the warranty notification function, choose **Assets** > **Warranty Notification** to enter the **Warranty Notification** page. If the warranty notification function is disabled, enable it, as shown in Figure 15-18.

Figure 15-18 Warranty Notification

Select **Enable Notification**. Select **Recipient** (the email address should be configured in advance), and click **SAVE**, as shown in Figure 15-19. A precondition for normal warranty notification function is that the expiry date of asset warranty notification has been configured.

The policy of warranty notification by email is as follows: The notification is sent to the specified recipient on the 1st day of each month three months before the expiry date. If the notification fails to be sent by email, the system retries. If the notification fails to be sent again, the system will not send any notification in the current month and tries on the 1st day of the next month.
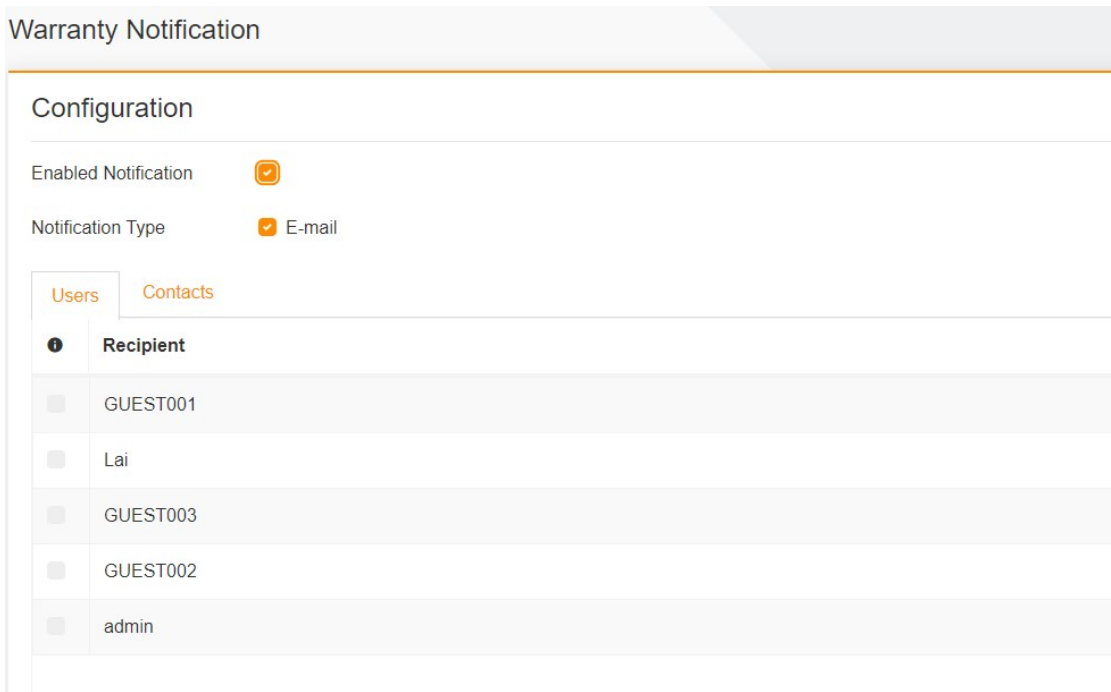
Figure 15-19   Enabling warranty notification

Chapter 16   Automation Notification

16.1   Overview

16.1.1   Overview

The computer room monitoring system can notify users of generated alarms by email, SMS, and voice alert. The system can also control devices in the site through the alarm automation function. This chapter describes how to set three notification modes and control mode.

16.1.2   Functional Module

Notification Settings contains the following functional modules. For more about the functional modules, see section *16.3 "Specific Functions."*

- Action settings, including notification by email, SMS, voice and automation, and notification rules.
- Action set settings
- Automation rule settings

16.2   Quick Start

16.2.1   Quick Deployment Procedure

The automation is mainly set as follows:

[1] Configure the mail server connection, SMS modem, and voice notification testing.

[2] Set the actions.

[3] Set the action sets.

[4] Set the automation rules.

16.2.2   Example

Assume that the "Ambient Temperature Too High" alarm of the temperature sensor on the front door of Rack 1 needs to be notified to the user by email, SMS, or voice alert, to control the related devices.

Setting the notification language

On Smart InfraSight, click ⚙ and then **Notification Settings** to enter the **Notification Settings** page. Set the notification language. By default, it is set to the server language. Select the notification language, and click **SAVE**, as shown in Figure 16-1.
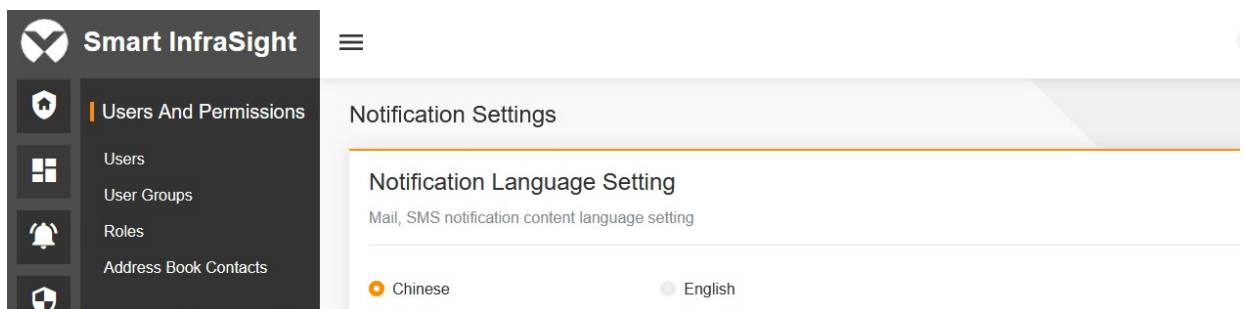
Figure 16-1   Notification Settings - Notification Language Setting

Setting the mail server connection

On Smart InfraSight, click [gear icon] and then **Notification Settings** to enter the **Email Server Connection Configuration** page. Configure the mail server connection, as shown in Figure 16-2.
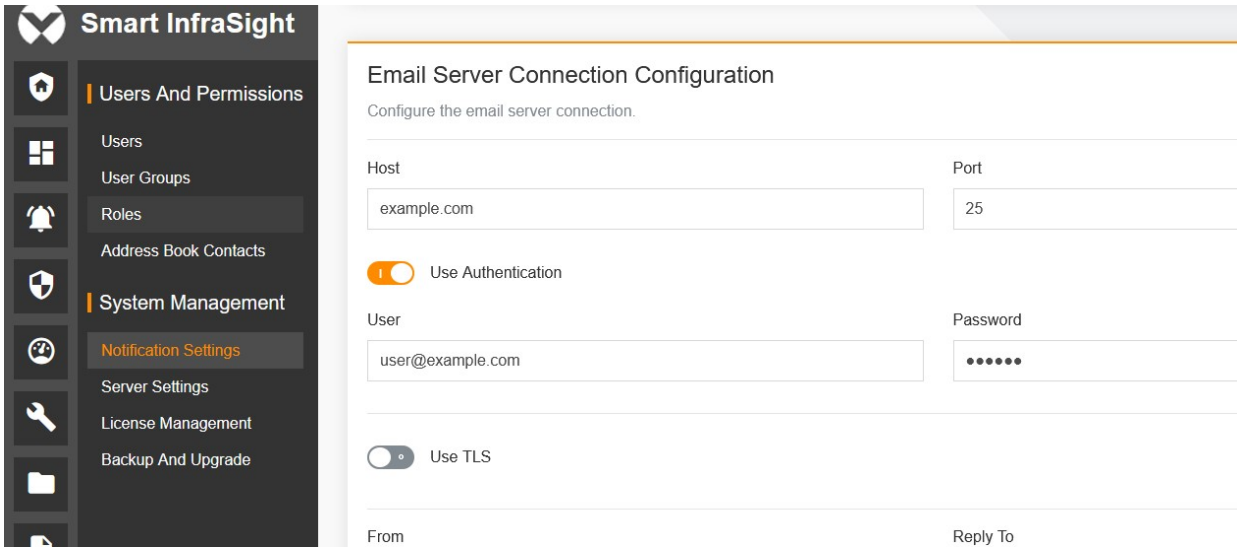
Figure 16-2   Notification Settings - Email Server Connection Configuration

Setting the SMS modem

Set the SMS modem, as shown in Figure 16-3.
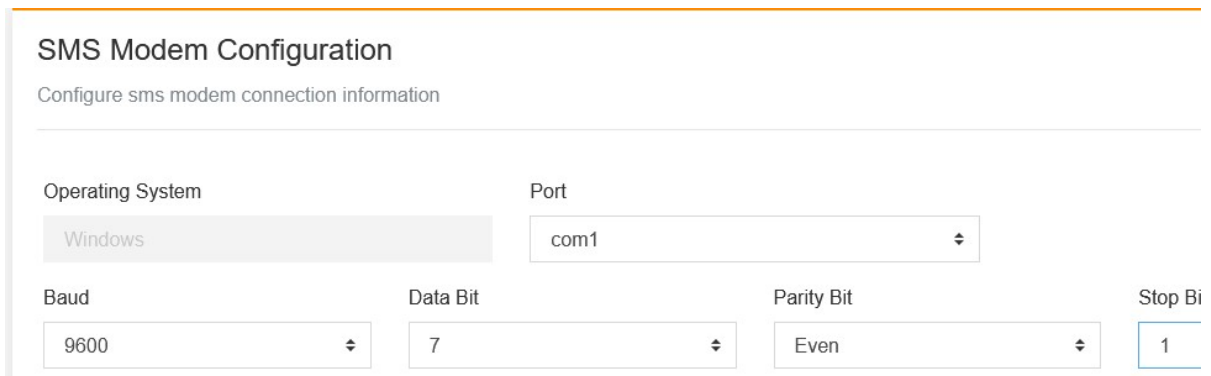
Figure 16-3   Notification Settings - SMS Modem Configuration

Setting the voice alarm

Set the voice alarm, as shown in Figure 16-4.
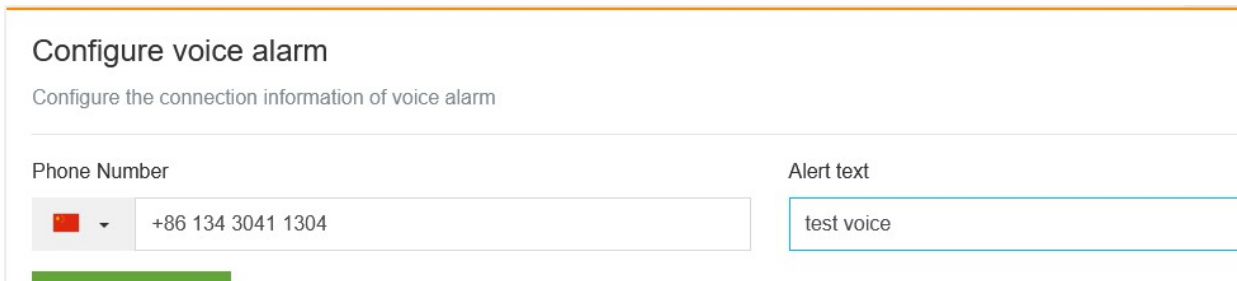
Figure 16-4   Voice alarm configuration

Setting the action

1. On Smart InfraSight, choose **Alarms** > **Automation** > **Actions**. The **Actions** page is displayed by default, as shown in Figure 16-5.
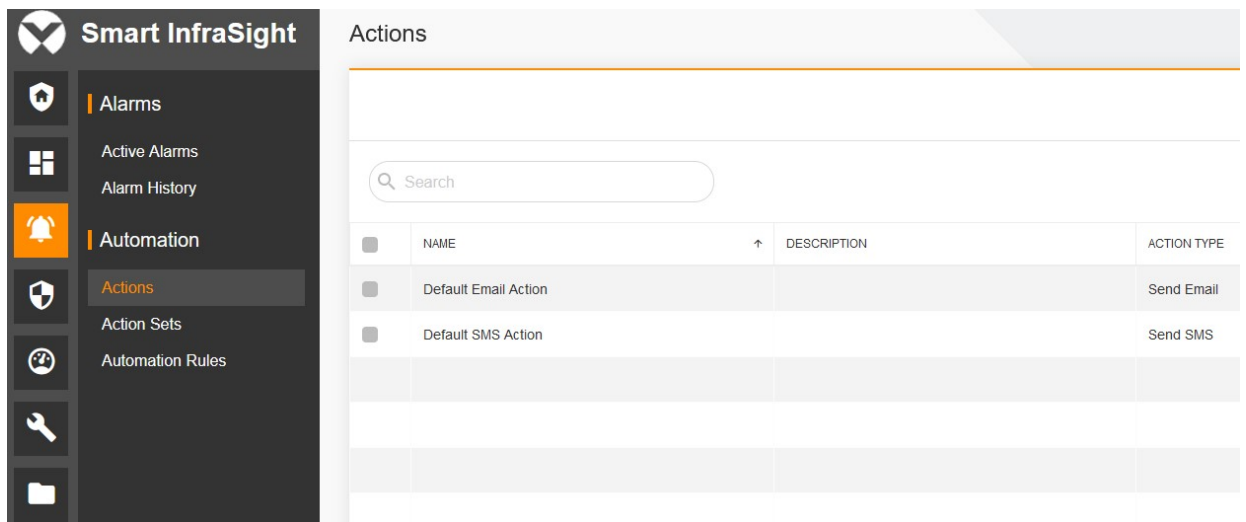
Figure 16-5　Actions page

2. Add an action.

On the **Actions** page, click ⊕. The **Create Action** page is displayed, as shown in Figure 16-6 and Figure 16-7.
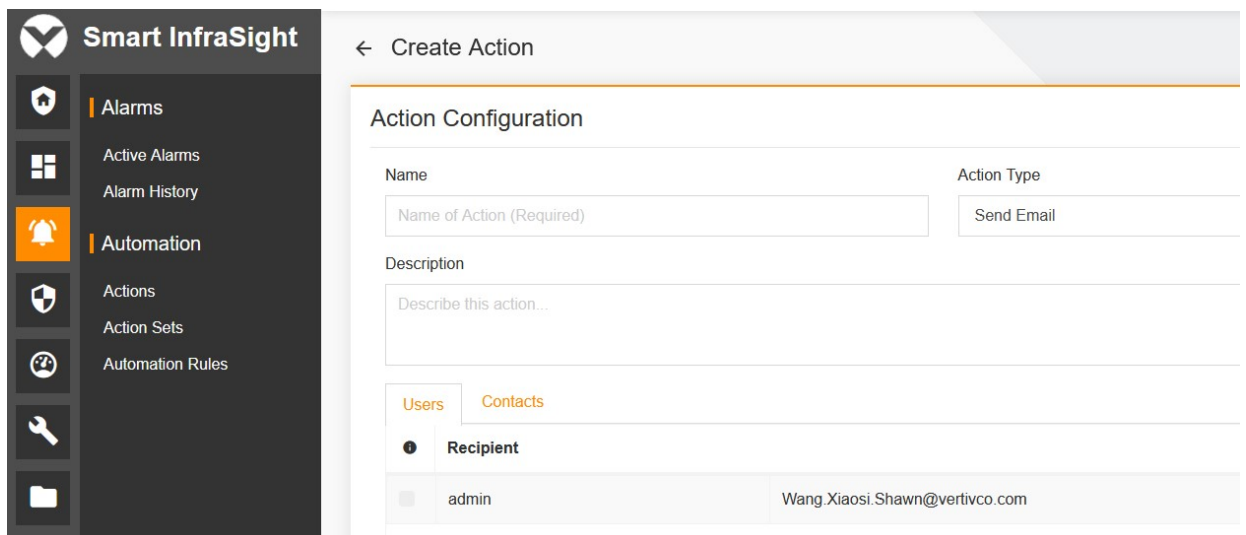
Figure 16-6　Create Action page
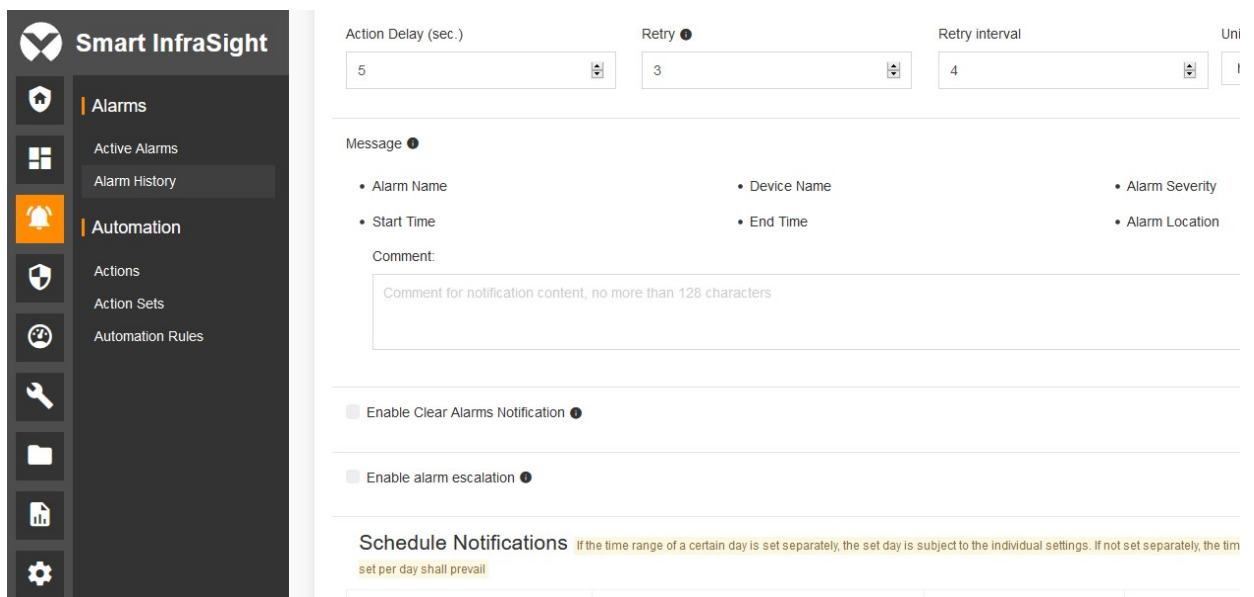
Figure 16-7　Create Action page

3. Set **Name**, **Action Type (Send Email)**, **Description**, **Recipient**, **Action Delay**, **Retry**, **Message**, **Enable Clear Alarms Notification**, **Enable alarm escalation**, and **Range**. Click **SAVE**.

4. Set **Name**, **Action Type (Send SMS)**, **Description**, **Recipient**, **Action Delay**, **Retry**, **Message**, **Enable Clear Alarms Notification**, **Enable alarm escalation**, and **Range**. Click **SAVE**.

5. Set **Name**, **Action Type (Automation)**, **Description**, **Enable Clear Alarms Notification**, **control list**, and **operation delay**. Click **SAVE**.

6. Set **Name**, **Action Type (Voice Alarm)**, **Description**, **Recipient**, **Action Delay**, **Retry**, **Message**, **Enable Clear Alarms Notification**, **Enable alarm escalation**, and **Range**. Click **SAVE**.

Setting the action set

1. On Smart InfraSight, choose **Alarms** > **Automation** > **Action Sets**. The **Action Sets** page is displayed by default, as shown in Figure 16-8.
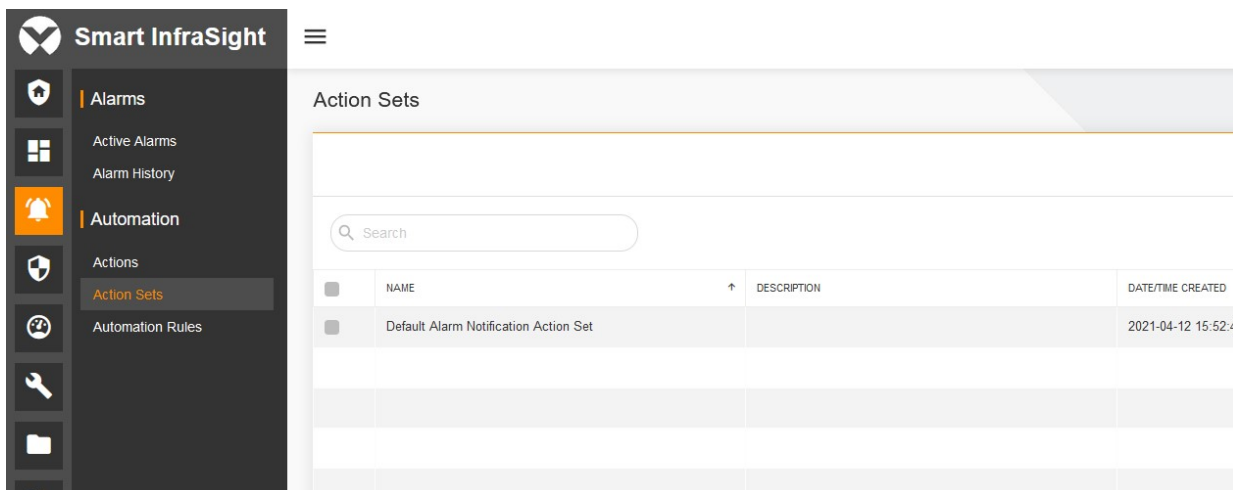
Figure 16-8   Action sets page

2. Add an action set.

On the **Action Sets** page, click ➕. The **New Action Set** page is displayed, as shown in Figure 16-9.
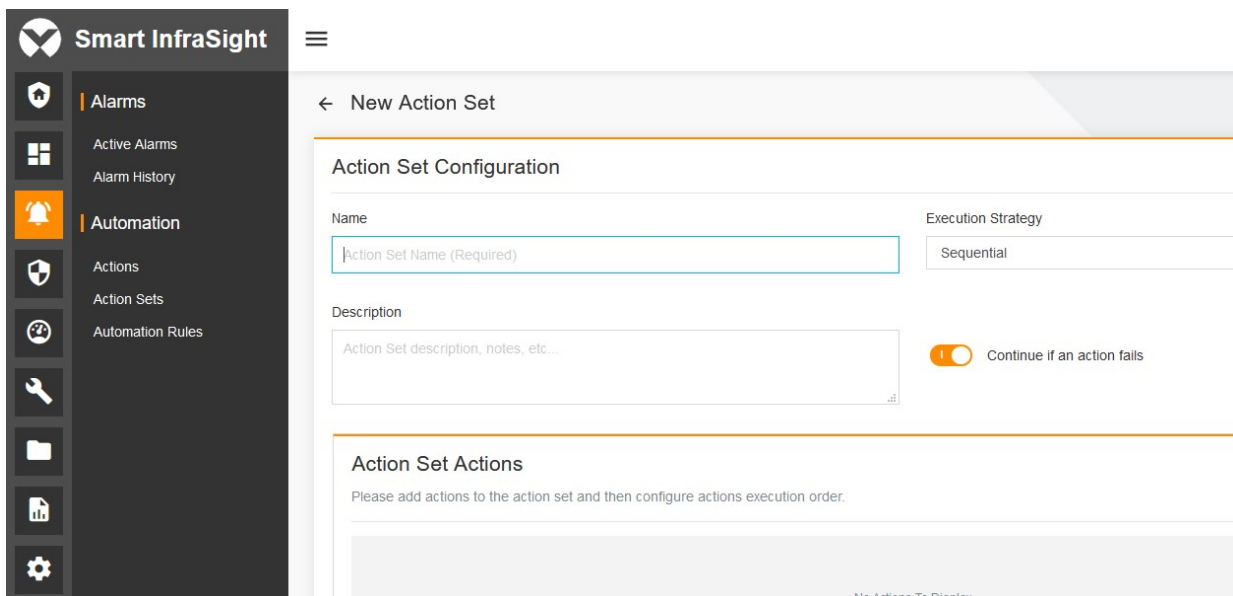
Figure 16-9   Creating an action set

3. Set **Name**, **Execution Strategy**, **Description**, and **Continue if an action fails**. Select the action from the notification action list dialog box, and click **SAVE**.

Setting the automation rule

1. On Smart InfraSight, choose **Alarms** > **Automation** > **Automation Rules**. The **Automation Rules** page is displayed by default, as shown in Figure 16-10.

Figure 16-10   Automation Rules page

2. Add an automation rule.

On the **Automation Rules** page, click ⊕. The **New Rule** page is displayed, as shown in Figure 16-11 and Figure 16-12.

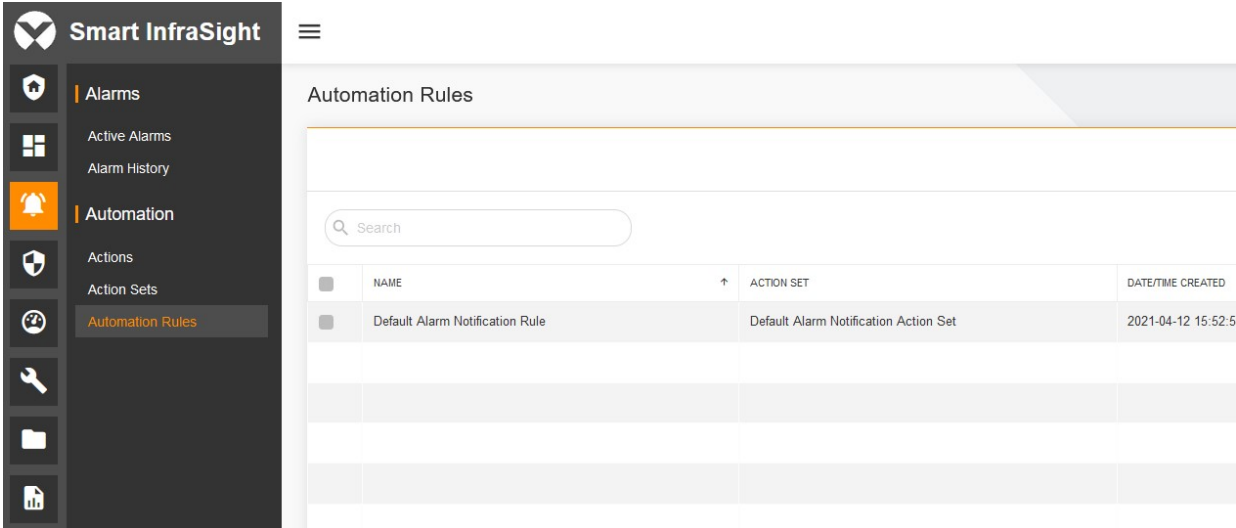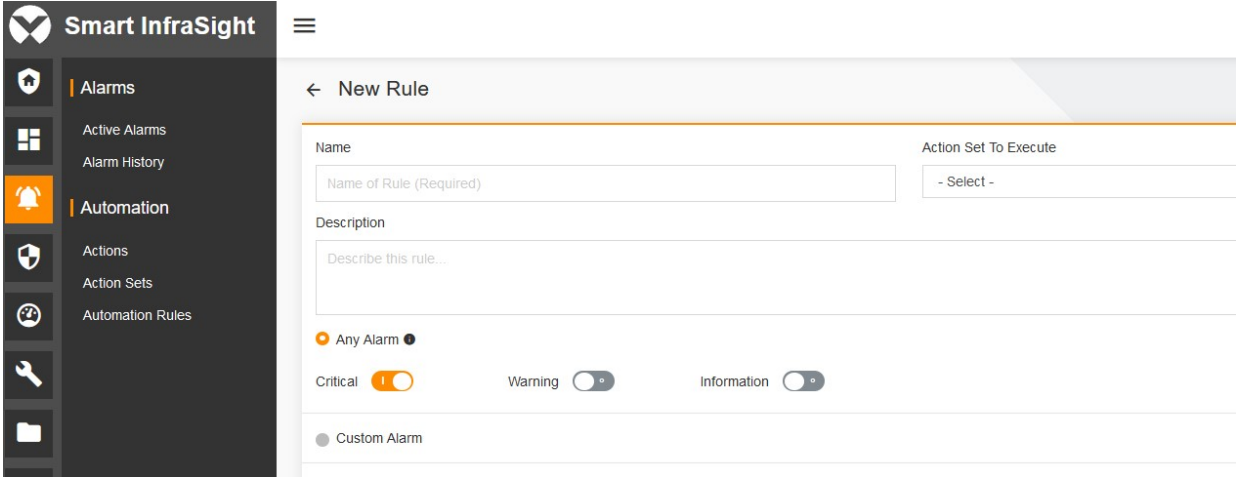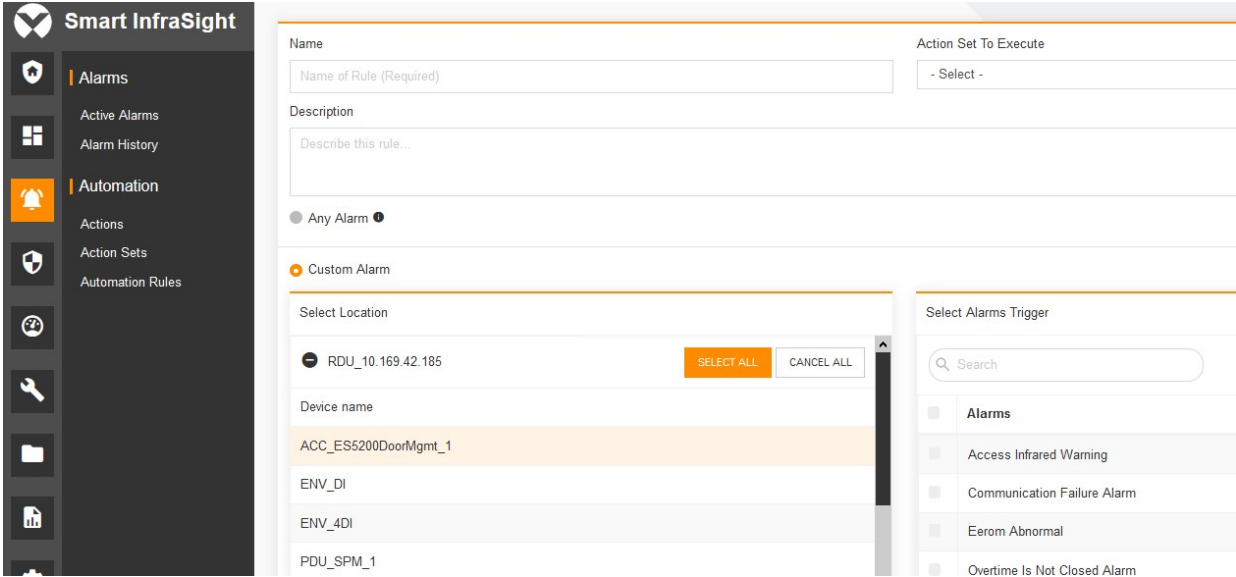
Figure 16-11   New rule page

Figure 16-12   New rule page

3. Select or enter **Name**. Set **Action Set To Execute** and **Description**. Select the temperature sensor on the front door of Rack 1 and the "Ambient Temperature Too High" alarm. Click **SAVE**.

Operation

After the preceding configuration is completed, the system can send the generated "**Ambient Temperature Too High**" alarm of **the temperature sensor on the front door of Rack 1** to the specified email address or mobile number by email, SMS, or voice alert. If the automation control function is configured, the system can also control the device.

16.3   Specific Functions

16.3.1   Setting Notification by Email or SMS

On Smart InfraSight, click [⚙] and then [Notification Settings]. The **Notification Settings** page is displayed, as shown in Figure 16-13.
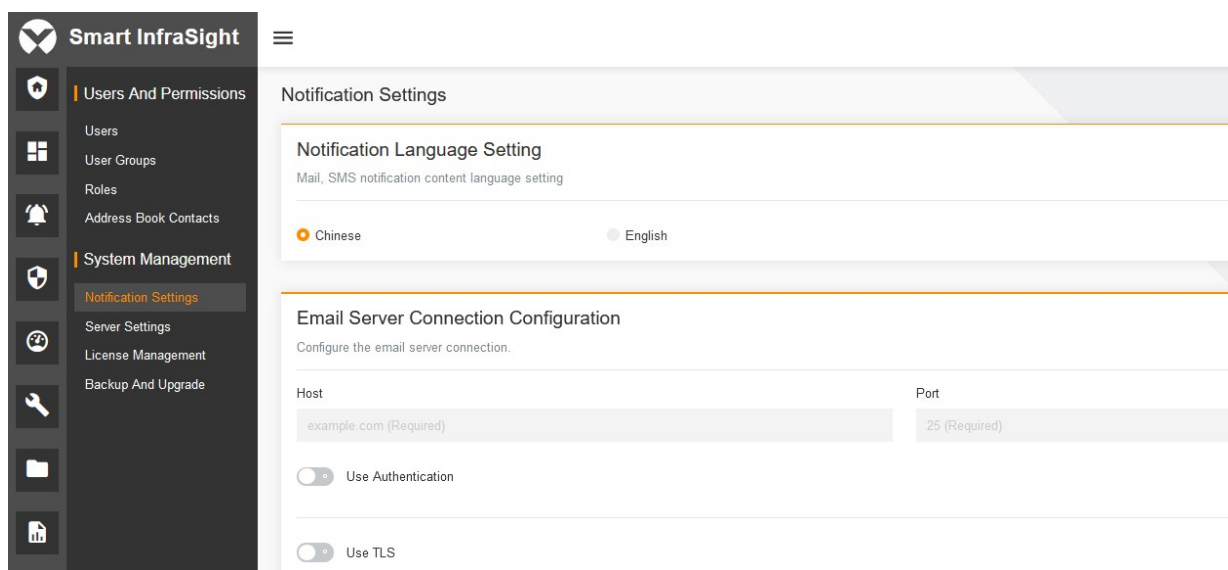
Figure 16-13   Notification Settings page

Notification Settings page

On the **Notification Settings** page, click ✎ in the upper right corner of the **Notification Language Setting** pane. The **Notification Settings** page enters the editable state. Set the language. The email, SMS, or voice alert is sent in the corresponding language. By default, the language is set to **English**.

Setting Notification by Email

1. On the **Notification Settings** page, click ✎ in the **Email Server Connection Configuration** pane. The **Notification Settings** page enters the editable state.

2. Set the host, port (1–65535), user name and password used to log in to the mail server, sender's email address, and reply-to email address (optional. If it is not specified, the reply is set to the sender's email address). Select whether to use TLS.

3. Click **SEND TEST EMAIL** to send the test email. Check whether the email is successfully sent from the sender's email address to the reply-to email address.

4. Click **SAVE** to save the configuration.

5. Note: The sender's email address and the reply-to email address must actually exist on the mail server. After receiving the event notification, the alarm recipient fills in the email content and handles the alarm, so as to achieve a simple alarm handling process. If the recipient of the reply-to email does not respond to the email, it is possible not to set the reply-to email.

Setting Notification by SMS

1. On the **Notification Settings** page, click the edit icon in the **SMS Modem Configuration** pane. The **Notification Settings** page enters the editable state.

2. Set the operating system, port, baud rate, word size, parity, and stop bit (default values are not provided).

3. Click **Send Test SMS**. In the **Send Test SMS** dialog box, select the country code and mobile number of the recipient, as shown in Figure 16-14. Click TEST. Check whether the SMS is successfully sent.
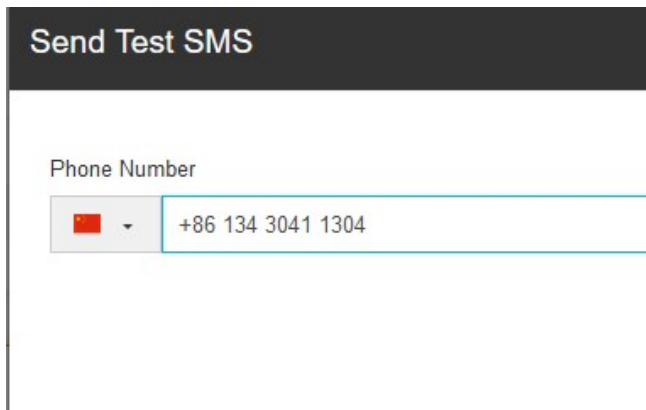
Figure 16-14   Send Test SMS dialog box

1. Click **SAVE** to save the configuration.

2. Note: The system supports the following modem model/carrier system: eTEK TD-8411.

   Note

If the SMS messages are sent frequently, they may be intercepted by carriers. The intercepted SMS messages will not be sent to the target mobile number. If the sender's mobile number is intercepted by the carrier, call the service hotline of the carrier to release the interception. It is recommended to configure the notification by SMS only for important events.

16.3.2 Action Settings

On Smart InfraSight, choose **Alarms** > **Automation** > **Actions**. The **Actions** page is displayed, as shown in Figure 16-15.
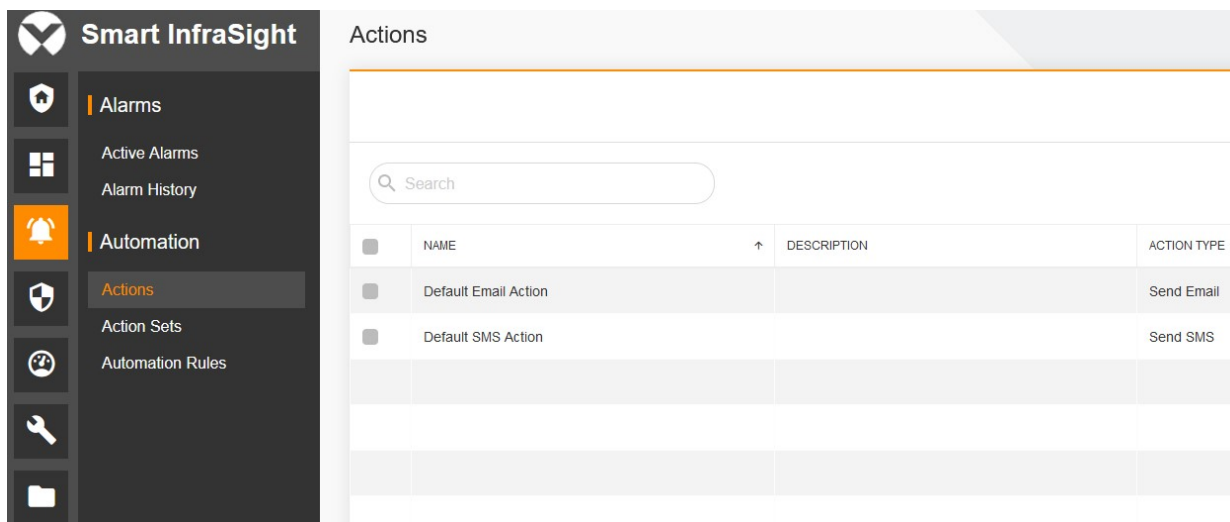
Figure 16-15   Create Action page

Adding an action

1. On the **Actions** page, click ⊕. The **Create Action** page is displayed, as shown in Figure 16-16.

Figure 16-16   Create Action page

2. Set **Name**, **Action Type**, **Description**, **Recipient**, **Action Delay**, **Retry**, **Message**, **Enable Clear Alarms Notification**, **Enable alarm escalation**, and **Range**. Click **SAVE**.

Editing an action

1. On the **Actions** page, click ⋮ in the row of the action to be edited. In the pop-up shortcut menu, select ✎ EDIT to switch to the **Edit Action** page, as shown in Figure 16-17.

Figure 16-17   Edit Action page

Edit **Name**, **Description**, **Recipient**, **Action Delay**, **Retry**, **Message**, **Enable Clear Alarms Notification**, **Enable alarm escalation**, and **Range**. Click **SAVE**.

Configuring alarm escalation

1. On the **Actions** page, click ➕ . The **Create Action** page is displayed, as shown in Figure 16-18.

Figure 16-18   Create an action

2. Select **Enable alarm escalation**, and select **Recipient**, as shown in Figure 16-19.
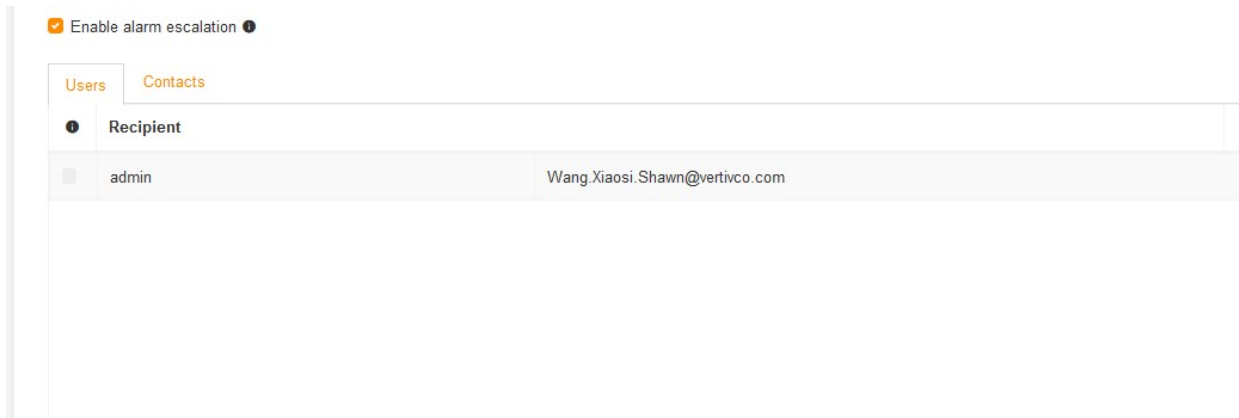
Figure 16-19   Configuring alarm escalation

Deleting a single action

1. On the **Actions** page, click ⋮ in the row of the action to be deleted. In the pop-up shortcut menu, select **Delete**. The page as shown in Figure 16-20 is displayed.

Figure 16-20   Delete Confirmation dialog box

2. Click **DELETE**. The selected action is deleted.

Searching for an action

1. On the **Actions** page, enter the keyword in the search box [🔍 搜索] to search for the action name and description.

Copying a single action

1. On the **Actions** page, click ⋮ in the row of the action to be copied. In the pop-up shortcut menu, select **Copy**.

Batch copying rules

1. On the **Actions** page, select multiple actions to be copied and click **Copy**.

Batch deleting the rules

1. On the **Actions** page, select multiple actions to be deleted and click **Delete**.

16.3.3   Action Set Settings

On Smart InfraSight, choose **Alarms** > **Automation** > **Action Sets**. The **Action Sets** page is displayed, as shown in Figure 16-21.

Figure 16-21   Action Sets page

Creating an action set

1. On the **Action Sets** page, click ⊕. The **New Action Set** page is displayed, as shown in Figure 16-22.

Figure 16-22   Add page

2. Select or set **Name**, **Execution Strategy**, **Description**, and **Continue if an action fails**. Select the action from the action list dialog box, and click **SAVE**.

Editing an action set

1. On the **Action Sets** page, click ⋮ in the row of the action set to be edited. In the pop-up shortcut menu, select ✏ EDIT to switch to the **Update Action Set** page, as shown in Figure 16-23.
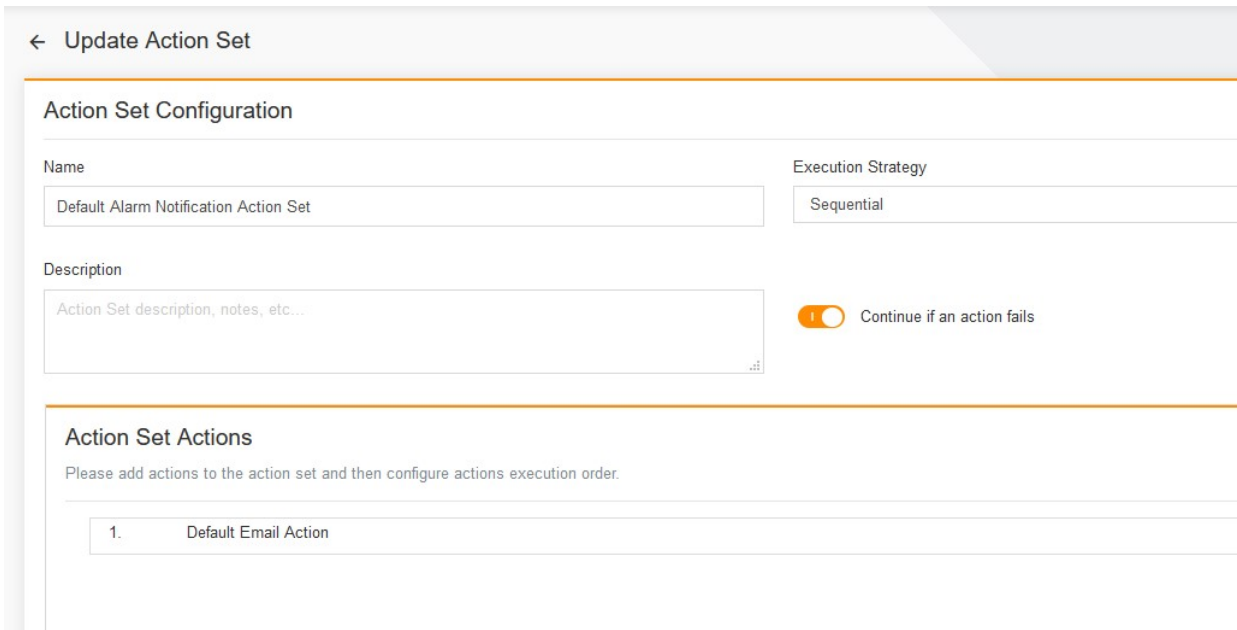
Figure 16-23   Edit page

2. Edit **Name**, **Execution Strategy**, **Description**, and **Continue if an action fails**. Select the action from the action set list dialog box, and click **SAVE**.

Deleting a single action set

1. On the **Action Sets** page, click ⋮ in the row of the action set to be deleted. In the pop-up shortcut menu, select **Delete**. The page as shown in Figure 16-24 is displayed.
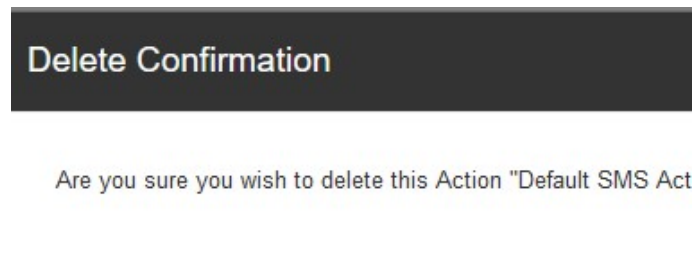

Figure 16-24   Delete Confirmation dialog box

2. Click DELETE . The selected action set is deleted.

Searching for an action set

On the **Action Sets** page, enter the keyword in the search box to search for the action set name and description.

Copying a single action set

On the **Action Sets** page, click ⋮ in the row of the action set to be copied. In the pop-up shortcut menu, select **Copy**.

Batch copying rules

On the **Action Sets** page, select multiple action sets to be copied and click **Copy**.

16.3.4 Automation Rules Settings

On Smart InfraSight, choose **Alarms** > **Automation** > **Automation Rules**. The **Automation Rules** page is displayed, as shown in Figure 16-25.
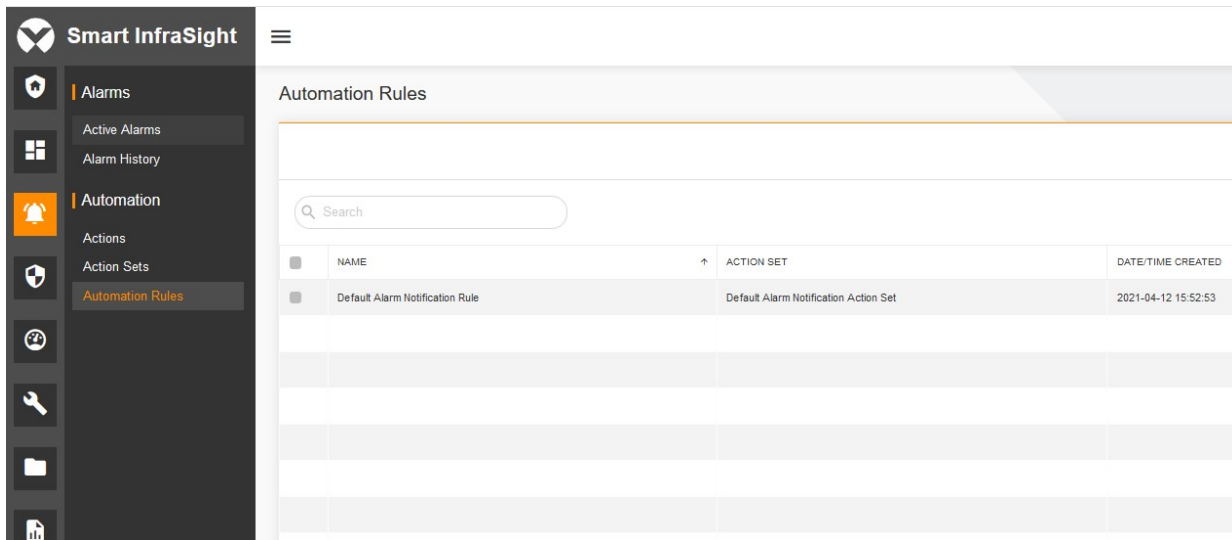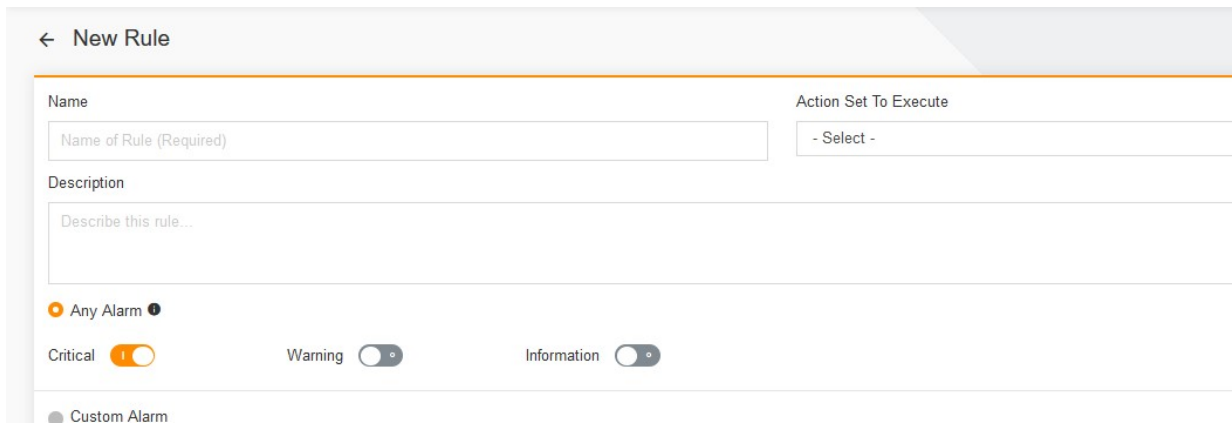
Figure 16-25 Automation rules settings

Adding an automation rule

1. On the **Automation Rules** page, click ⊕. The **New Rule** page is displayed, as shown in Figure 16-26.

Figure 16-26   New rule page

2. Set **Name**, **Action Set To Execute** and **Description**. Select the device and alarm. Click **SAVE**.

Editing an automation rule

1. On the **Automation Rules** page, click ⋮ in the row of the automation rule to be edited. In the pop-up shortcut menu, select ✎ EDIT to switch to the **Edit Rule** page, as shown in Figure 16-27.
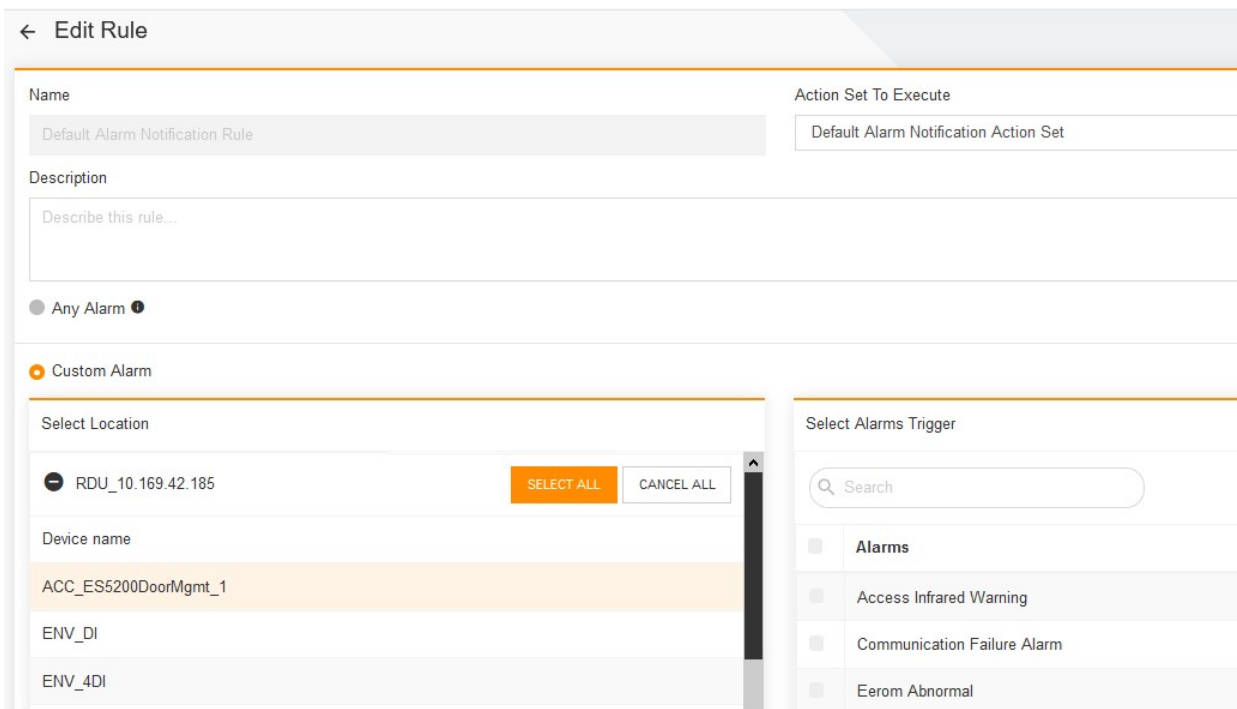

Figure 16-27   Editing an automation rule

2. Edit **Name**, **Action Set To Execute** and **Description**. Select the device and alarm. Click **SAVE**.

Deleting a single automation rule

1. On the **Automation Rules** page, click ⋮ in the row of the automation rule to be deleted. In the pop-up shortcut menu, select **Delete**. The page as shown in Figure 16-28 is displayed.
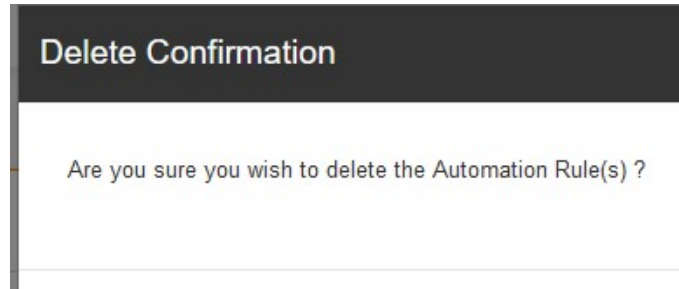
Figure 16-28   Delete Confirmation dialog box
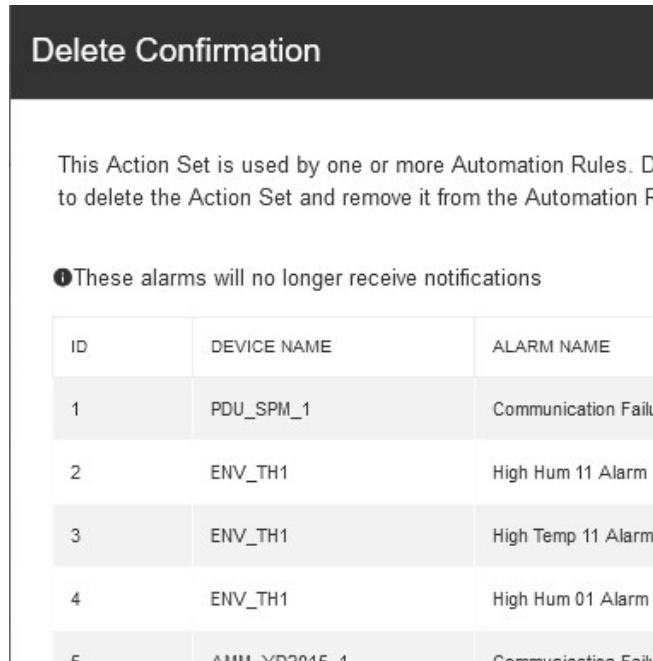
2. Click **DELETE**. The selected the automation rule is deleted.

Searching for an automation rule

On the **Automation Rules** page, enter the keyword in the search box to search for the automation rule name and description.

Chapter 17   System Management

17.1   Overview

17.1.1   Overview

The system settings mainly cover the following functions: management of users and permissions, notifications, security settings and the management of policies such as license, backup, and upgrade policies. Through the relevant settings, the system administrator can uniformly allocate the existing users, user groups, roles, contacts, security and notification settings, license, backup and upgrade policies in the system in an overall manner. Due to some functional requirement designs, only the system administrator has the permissions to manage user, user group, and role upgrade settings. Other users are not allowed to access these settings.

17.1.2   Functional Module

- User
- User group
- Role
- Notification settings
- System settings
- Contact
- License management
- Backup and upgrade

The license management and backup and upgrade functions are detailed in Chapter 18 and Chapter 19. The time settings in system settings are detailed in *Chapter 20* "*Time Settings*." The notification settings have been described in *Chapter 16* "*Automation Notification*", which will not be further described in this chapter. For more information about other functions, see section *17.3* "*Specific Functions*."

17.2   Quick Start

17.2.1   Quick Deployment Procedure

You can quickly manage a user as follows:

[1] Click **Users** to create and edit user information.

[2] Click **User Groups** to create and edit user group information.

[3] Click **Roles** to create and edit role information.

You can quickly carry out system settings as follows:

[1] Click the **Security Settings** tab to configure the session timeout time.

[2] Click the **Time Settings** tab to verify the server time.

[3] Click the **Network Settings** tab to set the NIC information.

17.2.2   Example

Add a custom role and assign this role to a user through the user group.

Choose **Users And Permissions** > **Roles**. Click ⊕ in the upper right corner. On the displayed page, set **Name** (mandatory, no more than 64 characters), **Description** (optional, no more than 128 characters), and **Permissions**

(mandatory. By default, **Address Book Contacts**, **Active Alarms**, **History Alarms**, and monitoring page permissions are selected) to add a role.

Figure 17-1   Adding a role

Click **SAVE**. The added role is displayed on the role list.

Figure 17-2   Role list

Choose **Users And Permissions** > **User Groups**. Click ➕ in the upper right corner. On the displayed page, set **Name** (mandatory, no more than 64 characters), **Description** (optional, no more than 128 characters), new role (mandatory. You can select multiple roles. By default, the system administrator role cannot be selected), and **User** (optional) to add a user group.

Figure 17-3   Adding a user group

Click **SAVE**. The following figure shows the user group list.

Figure 17-4   User group list

When you click ⚙, the **Users** page is displayed by default. Click ➕ in the upper right corner. On the displayed **Add User** page, set the user name (mandatory) and email (mandatory), and select the new user group (optional) to add a user.

Figure 17-5   Adding a user

Click **SAVE**. The following figure shows the user list.

Figure 17-6   User list

Log in to the system using the new user name (**user1**) and initial password (**Password123**).
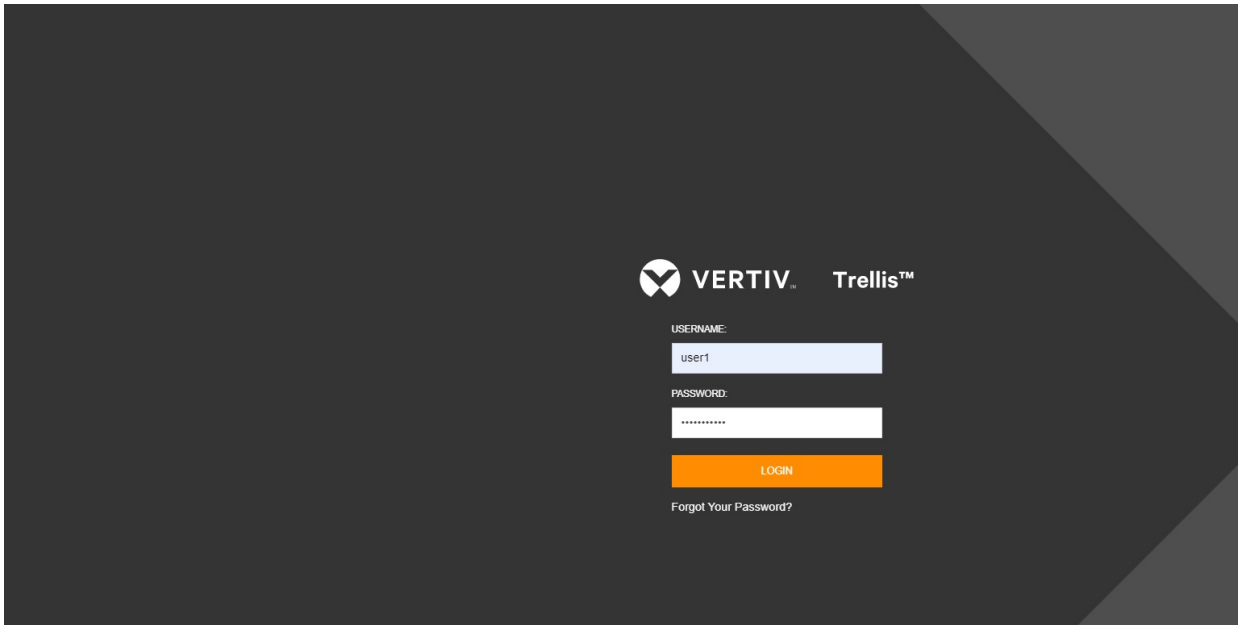
Figure 17-7　Login

After login, change the password.
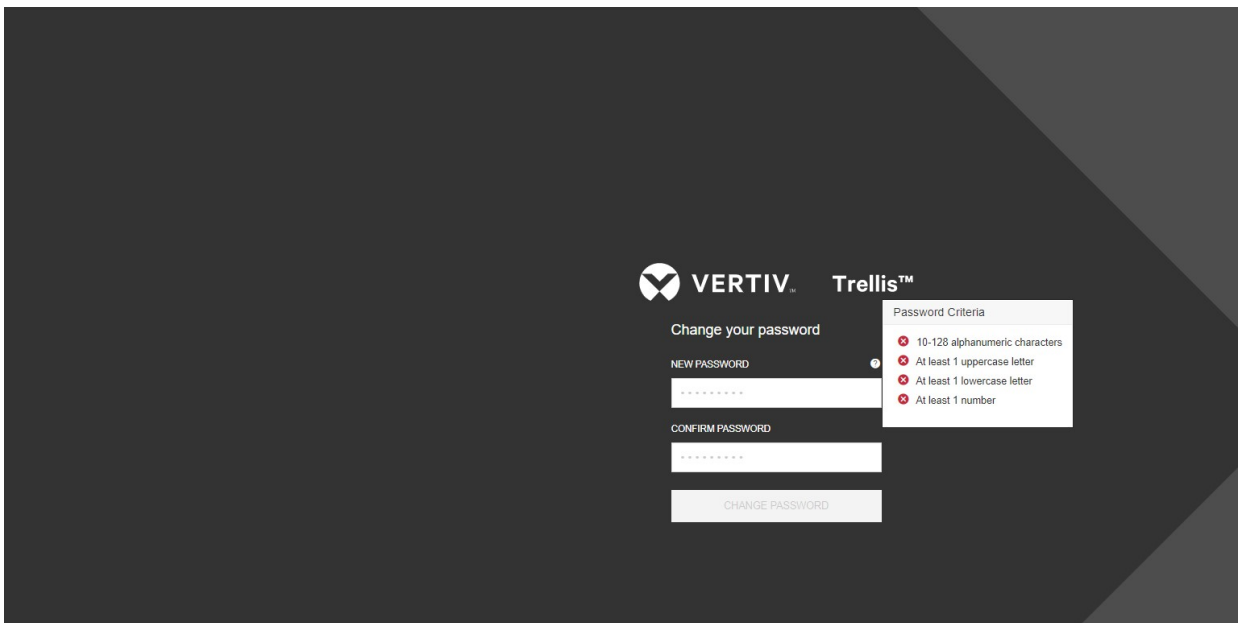
Figure 17-8　Changing the password

After changing the password, log in to the system again.
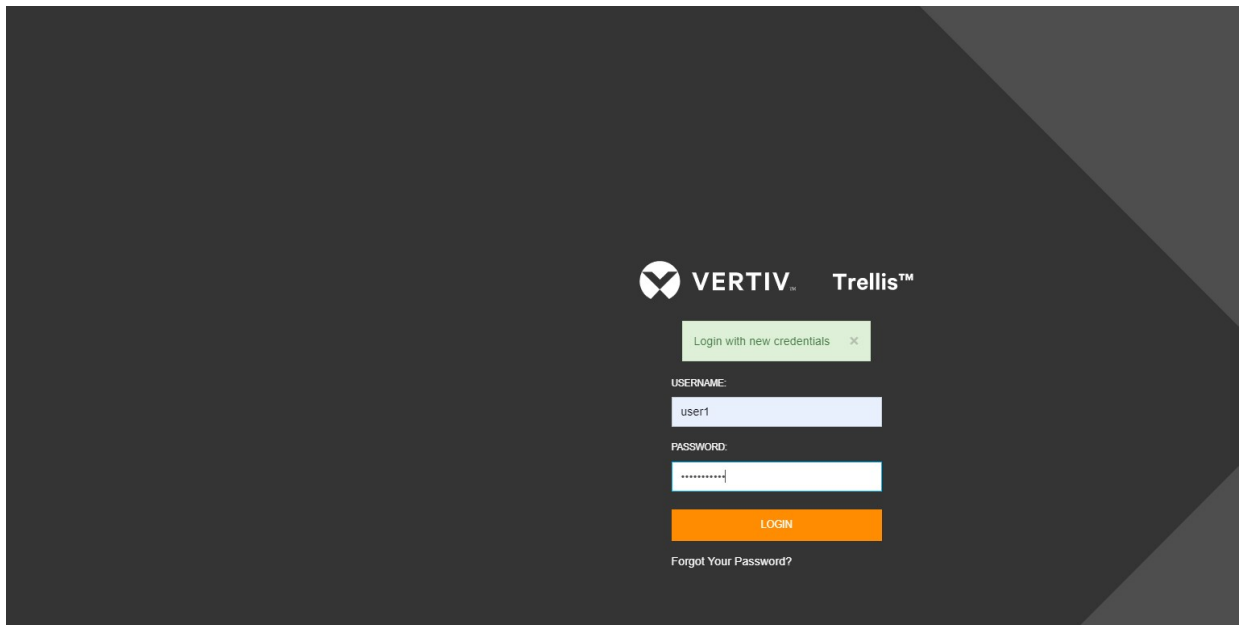
Figure 17-9   Re-login

After you successfully log in to the system, you have the permissions of the corresponding role.
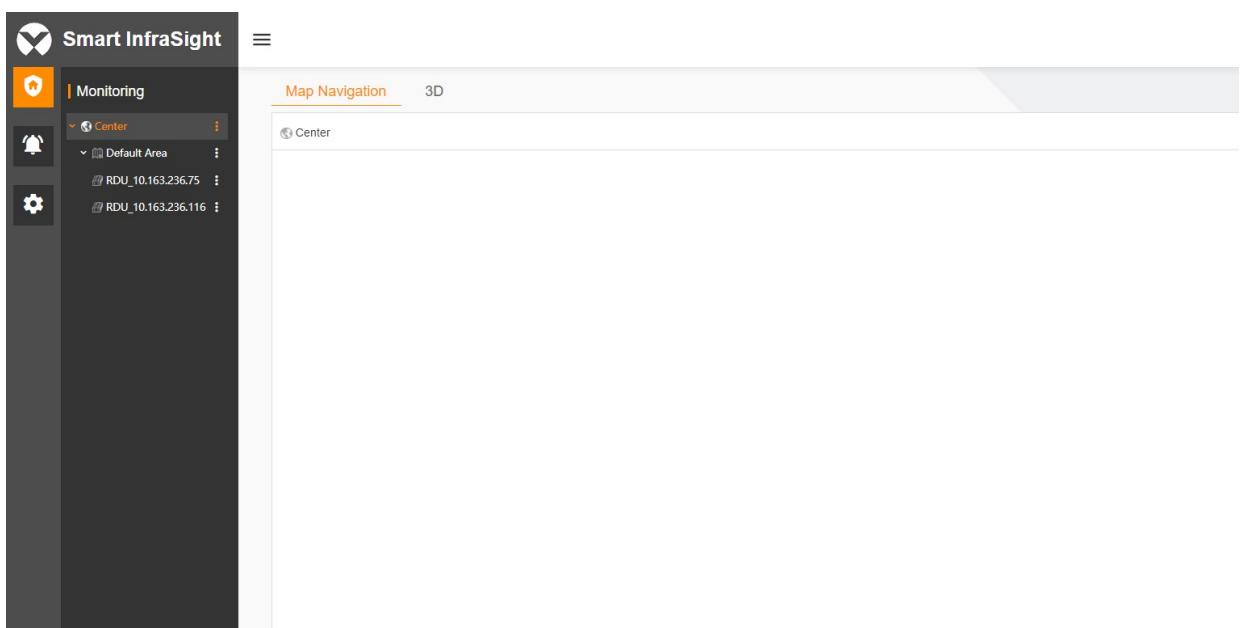
Figure 17-10   Permissions of the corresponding role

17.3   Specific Functions

Only the admin has the permissions to configure the users, roles, user groups, and system settings on the system settings page.

17.3.1   User List

Click [icon]. The **Users** page is displayed by default, showing the user list in the current system. Only the admin is the default administrator, and other users are common users. The list shows the user name, first name, and last name.
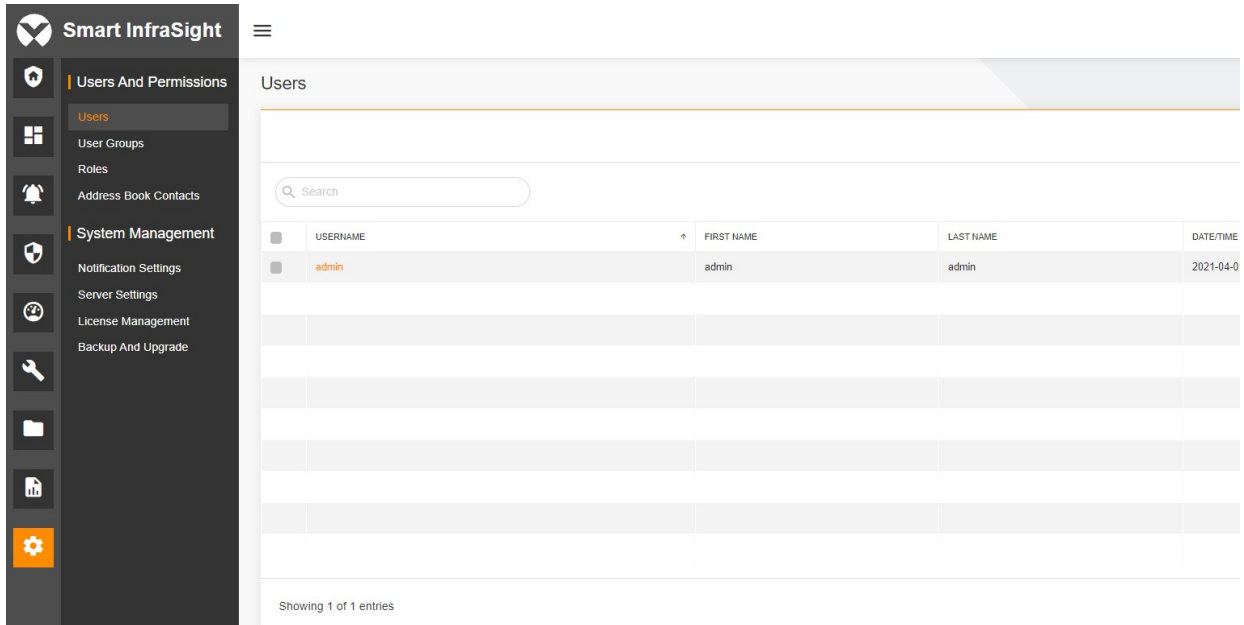
Figure 17-11   User list

17.3.2 Adding a User

When you click , the **Users** page is displayed by default. Click ⊕ in the upper right corner. On the displayed **Add User** page, set **Username** (mandatory), **First Name** (optional, no character limits), **Last Name** (optional, no character limits), **User E-mails** (mandatory), **Phone Numbers** (optional), and **User Groups** (optional) to add a user.

The **Username** must not be duplicated. If **Username** is composed of English letters only, the length should be 1–64 letters. It cannot be composed of both English letters and Chinese characters. If **Username** is composed of Chinese characters only, the length should be 1–64 characters.

The email format needs to meet the following requirements: The email is in the standard email format. The email prefix should contain digits, letters, full stops in English, underscores, and hyphens. The email suffix should contain at least two words, and 2–4 letters of top-level domain name. By default, the prefix or suffix cannot be ended with '_', '-', or '.'. The default password is **Password123**.

📖   **Note**

Username cannot be changed once it is saved. If **Username** is not configured, the system prompts that it is mandatory and the **SAVE** button is unavailable. If **User E-mails** is not configured, the **SAVE** button is unavailable. If **User Groups** is not configured, the **SAVE** button is unavailable.

Figure 17-12   Adding a user

Select the phone number.

In the **Phone Numbers** pane, click ➕ in the upper right corner to enter the **Add User Phone Number** page.

Figure 17-13   Add User Phone Number page

Select **Phone Type**. The options include Mobile, Work, Home, Other, and Custom.

Note: When you click **Custom**, an input box is displayed, where you can enter the custom phone type.

Figure 17-14   Adding a custom phone type

Click the national flag icon prefixed to the phone number input box to select the country code. The country code (such as +86 for China) is prefixed to the phone number by default. Enter the phone number, select whether to enable **SMS Notification**, and click **ADD**.

Figure 17-15   Adding a custom phone number

Select the user group to which the user is allocated. Specifically, switch on the button of the corresponding user group on the right side.

Figure 17-16   Selecting a user group

After the configuration is saved, click **ADD** in the lower right corner of the **Add User Phone Number** page. The information about the new user is saved.

17.3.3   Editing a User

Click [icon]. The **Users** page is displayed by default. Click ⋮ on the right side of the user list and select ✎ Edit. The page for updating the user is displayed. Edit the user information. The columns that can be edited are the same as those on the page for adding a user. Then, click **SAVE**. The user information is updated.
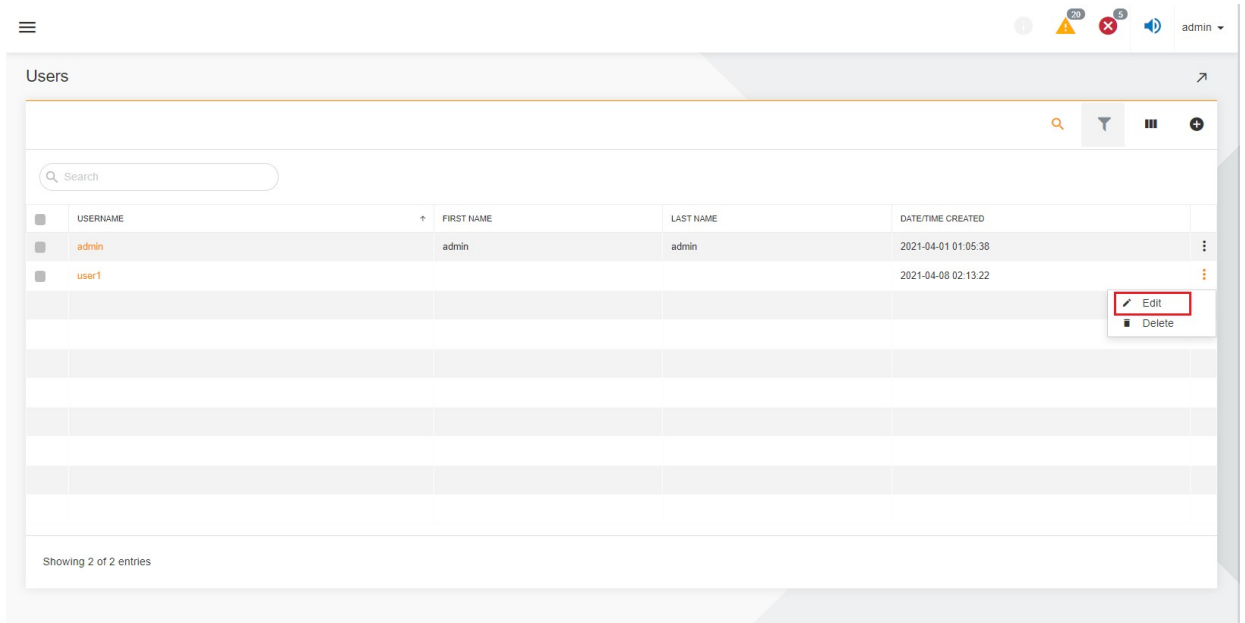
Figure 17-17   Editing a user

17.3.4 Deleting a User

Click [gear icon]. The **Users** page is displayed by default. Click [⋮] on the right side of the user list and select [🗑] Delete.
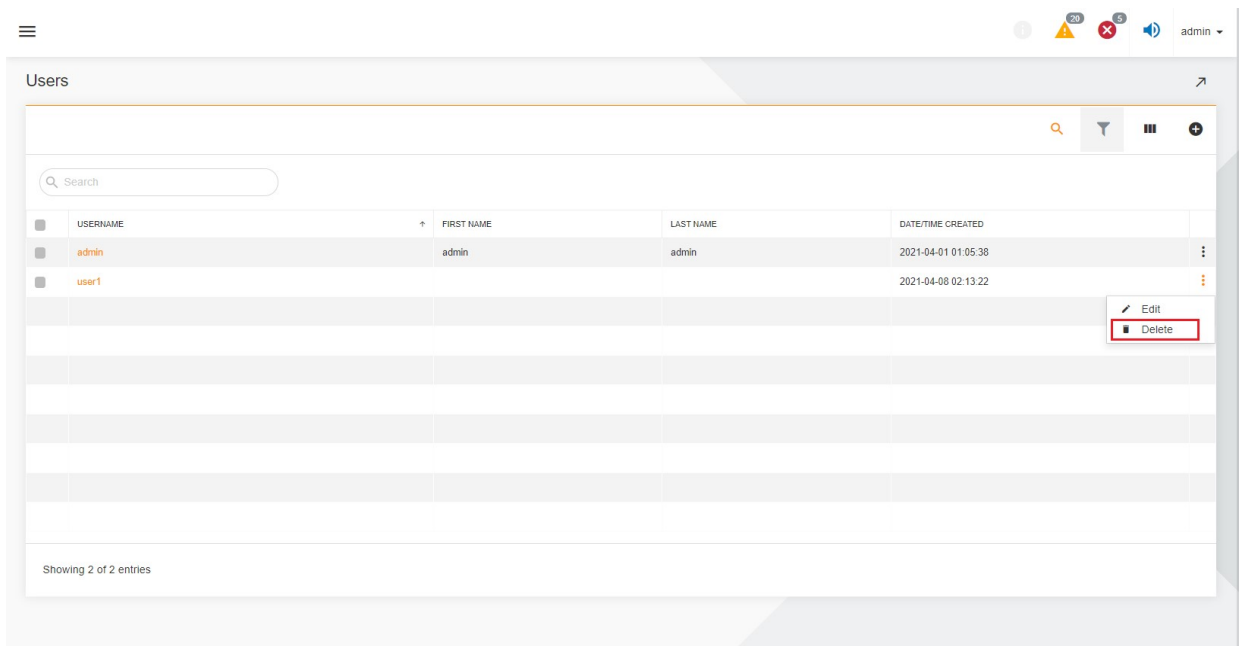
Figure 17-18   Deleting a user

📖   **Note**

The admin can delete other users only, instead of the admin user.

17.3.5 User Group List

Click [gear icon] → User Groups . The system displays three default user groups. The default user groups cannot be deleted. The system administrator user group is not editable.
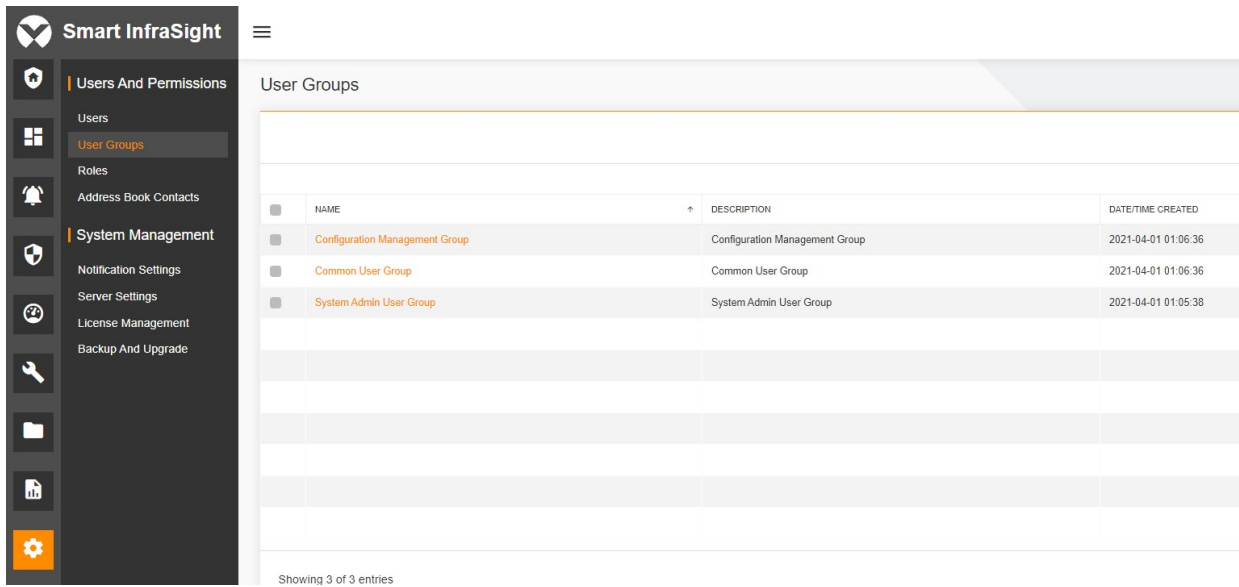
Figure 17-19　User group list

17.3.6　Adding a User Group

Choose **Users And Permissions** > **User Groups**. Click ⊕ in the upper right corner. On the displayed page, set **Name** (mandatory, no more than 64 characters), **Description** (optional, no more than 128 characters), **Roles** (mandatory. You can select multiple roles. By default, the system administrator role cannot be selected), and **User** (optional) to add a user group.
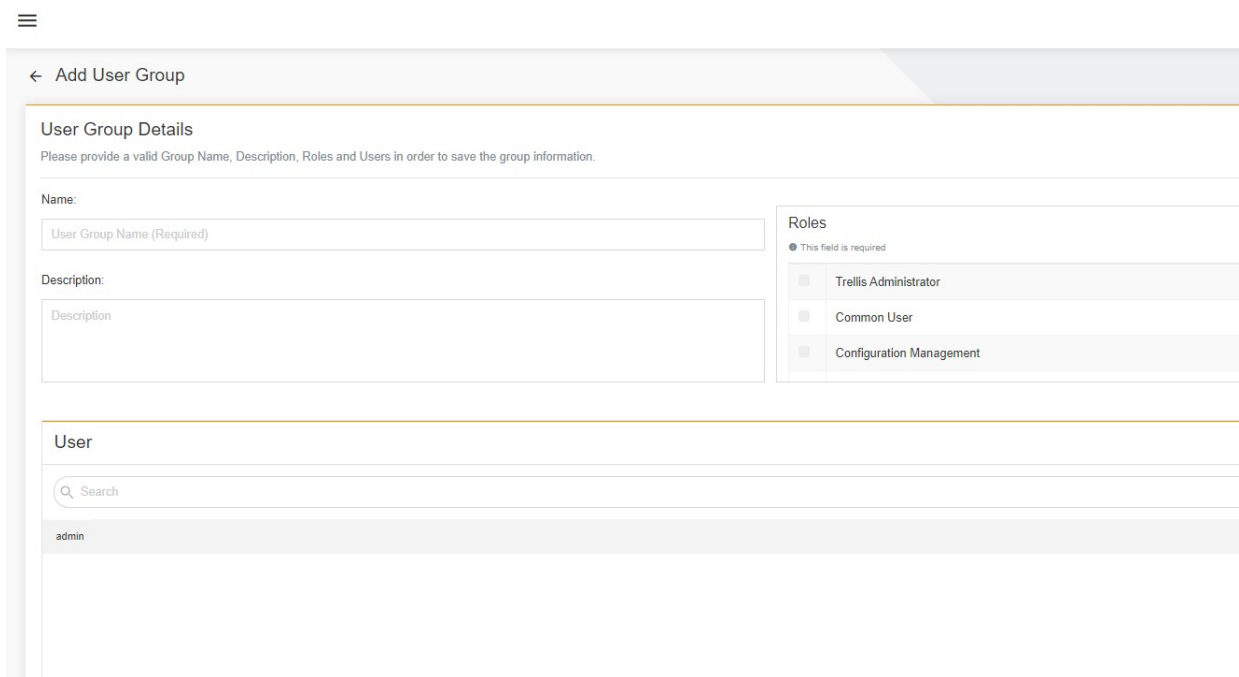
Figure 17-20　Adding a user group

📖　**Note**

1. The user group name cannot be duplicated.

2. In English language environment, special characters such as vertical line, single and double quotation marks, and slash are not allowed.

3. In China language environment, special characters such as vertical line, space, and slash are not allowed.

17.3.7   Editing a User Group

On the user group list page, click ⋮ on the right side of a user group row to pop up the drop-down menu, and select **Edit**. Edit the user group information, where the user group name and role are mandatory. Click **SAVE**. The user group is updated.
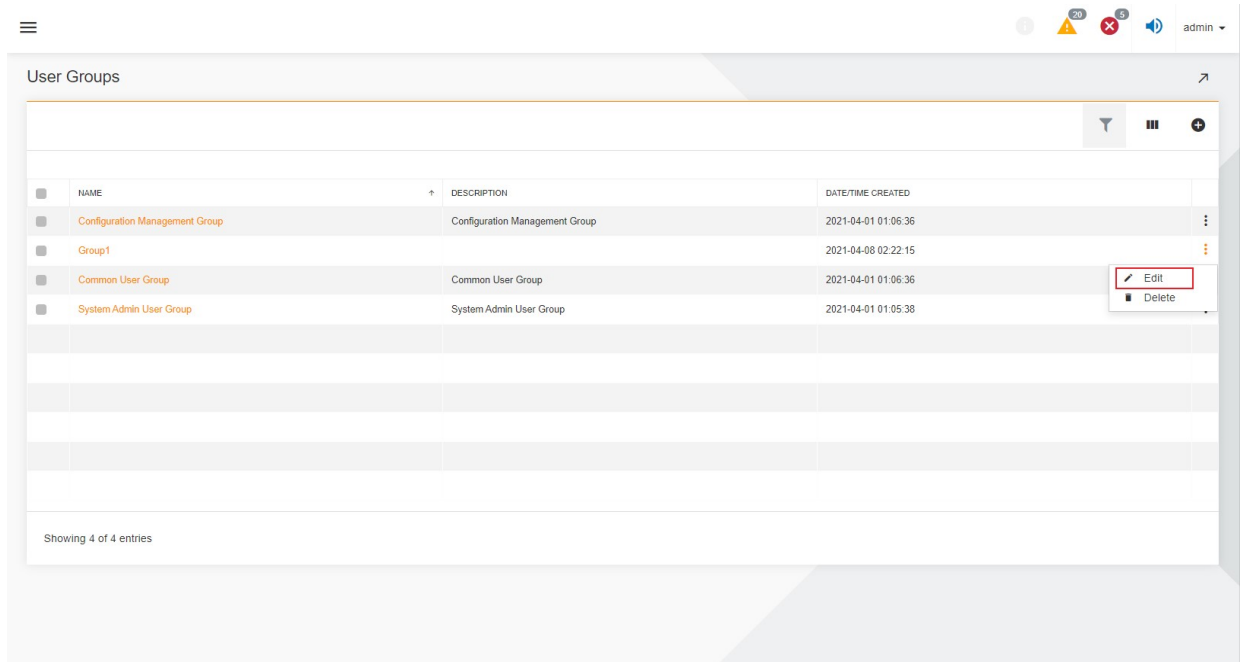
Figure 17-21   Editing a user group

17.3.8   Deleting a User Group

On the user group list page, click ⋮ on the right side of a user group row to pop up the drop-down menu, and select **Delete**.
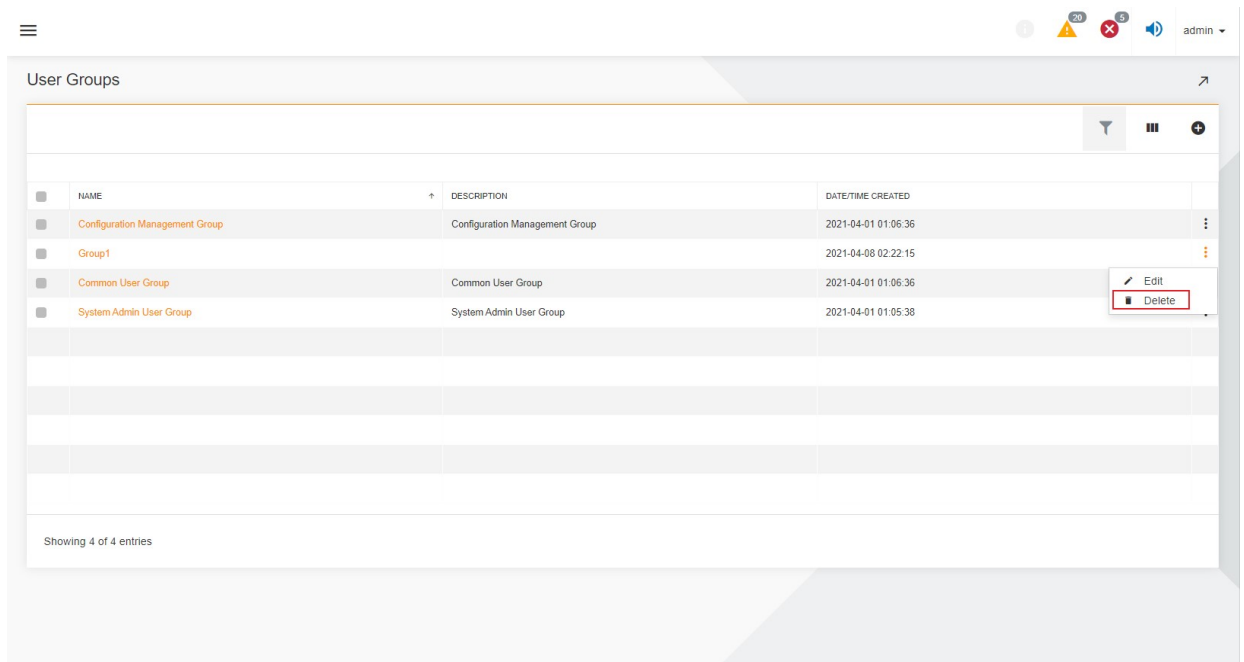
Figure 17-22   Deleting a user group

📖   **Note**

Three default user groups of the system cannot be deleted. You can delete other custom user groups.

17.3.9   Role List

Choose **Users And Permissions → Roles**. The system displays three default user groups. For default roles, you cannot delete or modify the role information.
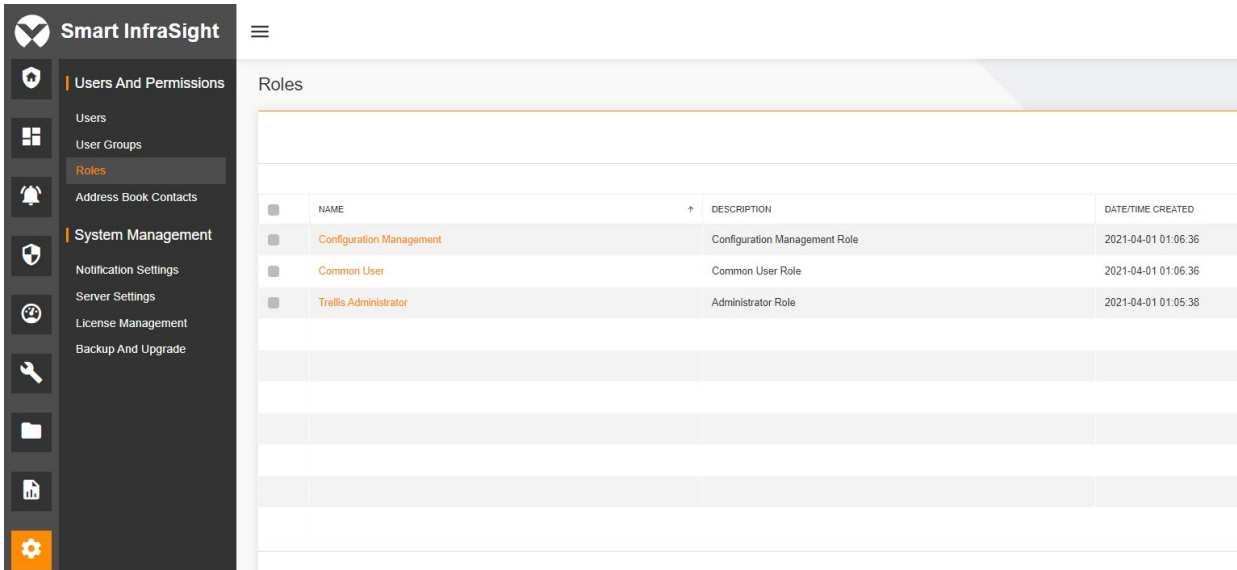
Figure 17-23   Role list

17.3.10   Adding a Role

Choose **Users And Permissions** > **Roles**. Click ➕ in the upper right corner. On the displayed page, set **Name** (mandatory, no more than 64 characters), **Description** (optional, no more than 128 characters), and **Permissions** (mandatory. By default, **Address Book Contacts**, **Active Alarms**, **History Alarms**, and monitoring page permissions are selected) to add a role.
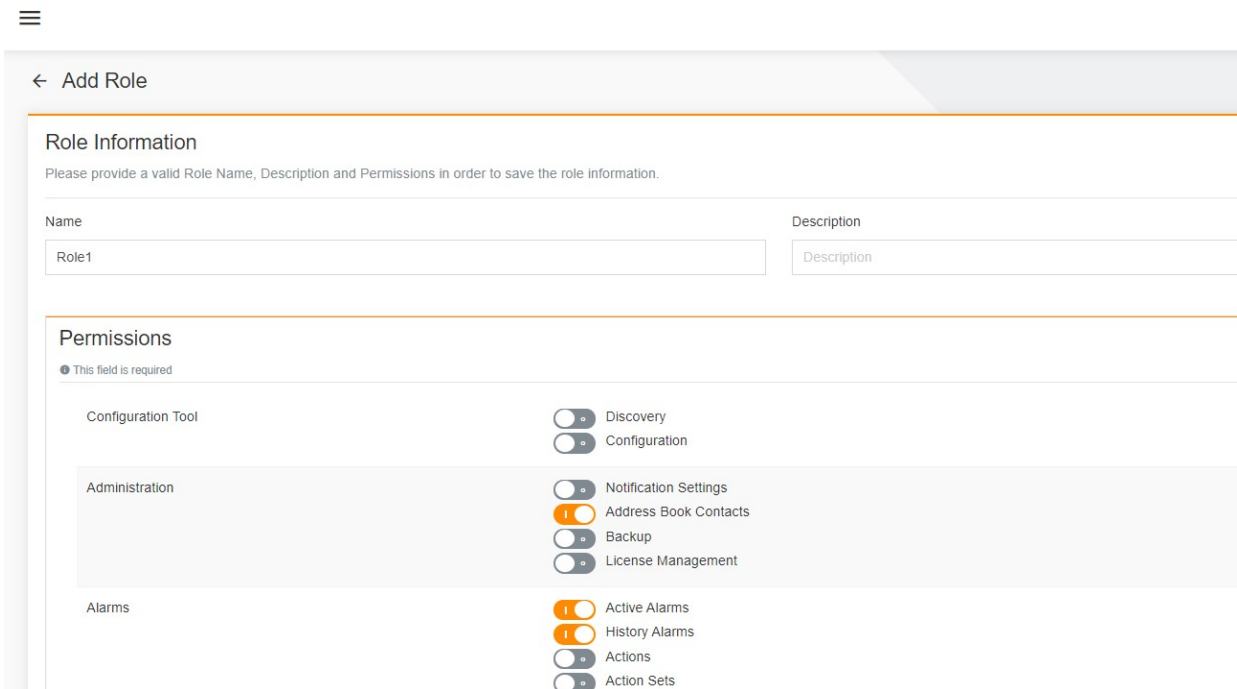
Figure 17-24   Add role

📖   **Note**

1. The role name cannot be duplicated.

2. In English language status, the role name cannot contain special characters such as vertical line, single and double quotation marks, and slash.

3. The permissions selected by default are not editable, which indicate the permissions that a user must have.

17.3.11   Editing a Role

On the role list page, click ⋮ on the right side of a role row to pop up the drop-down menu, and select **Edit**. Edit the role information, where the role name is mandatory. Click **SAVE**. The role is updated.
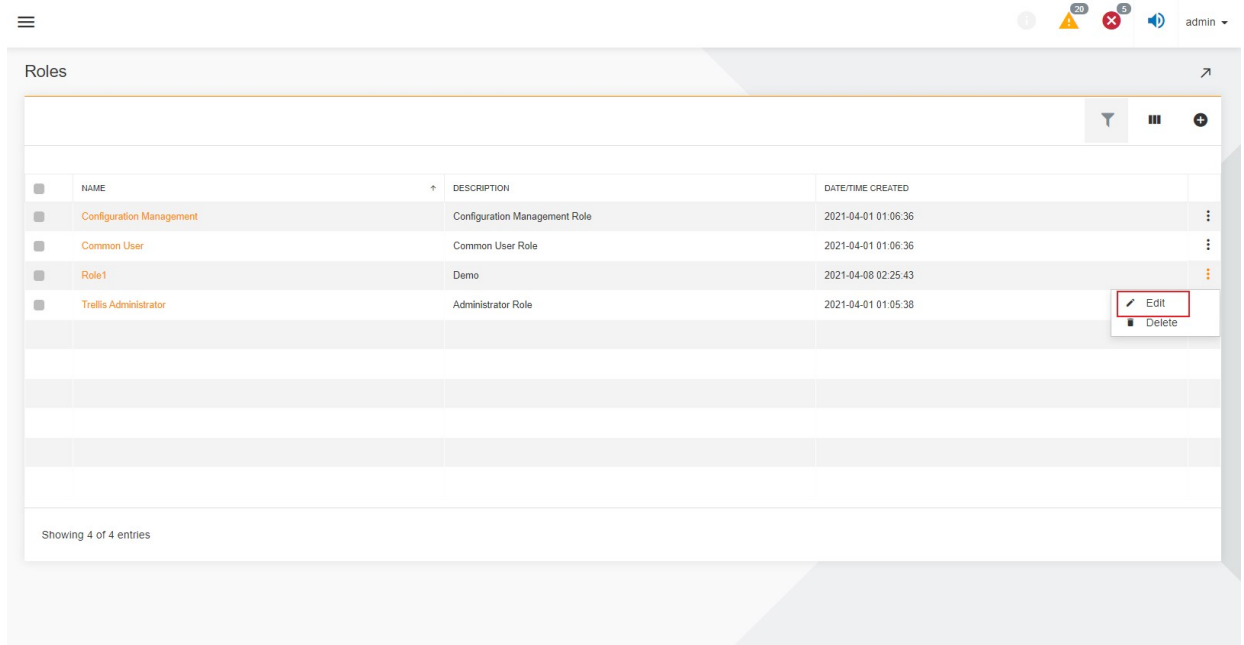
Figure 17-25   Editing a role

17.3.12   Deleting a Role

On the role list page, click ⋮ on the right side of a role row to pop up the drop-down menu, and select **Delete**.
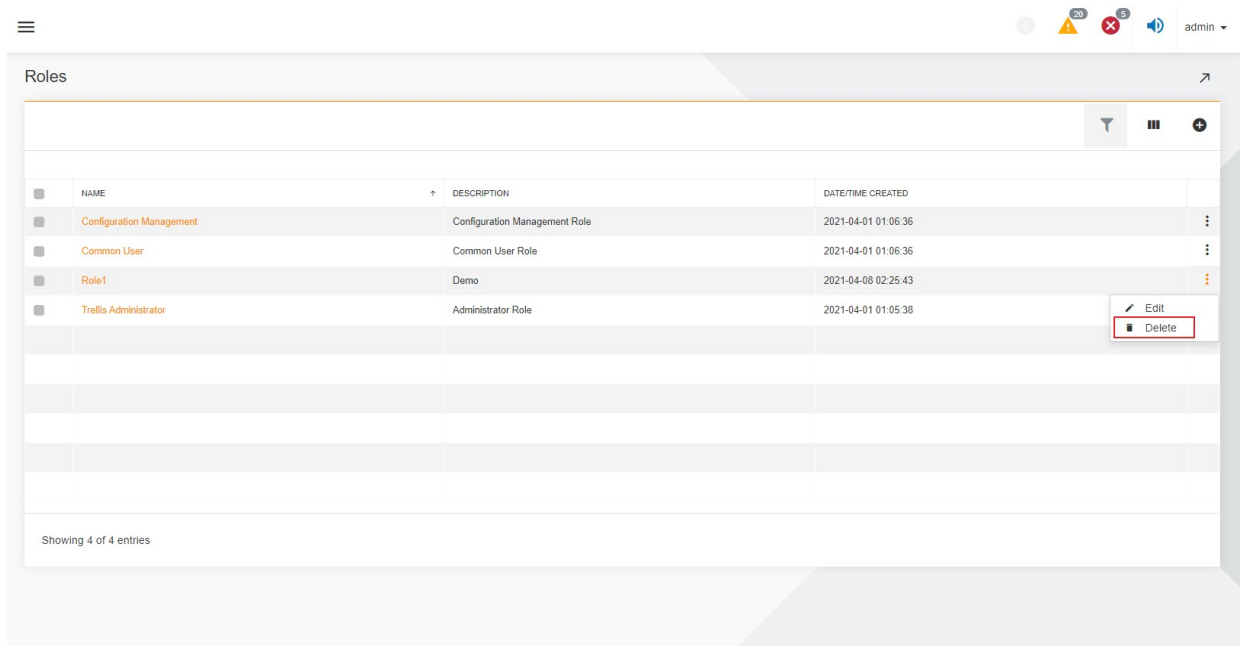
Figure 17-26   Deleting a role

 Note

Three default roles of the system cannot be deleted. You can delete other custom roles.

17.3.13 System Management

System settings

Choose **System Management → Server Settings**. The system displays the **Security Settings** tab page by default. There are also **Time Settings** and **Network Settings** tab pages under **Server Settings**, as shown in the following figure.
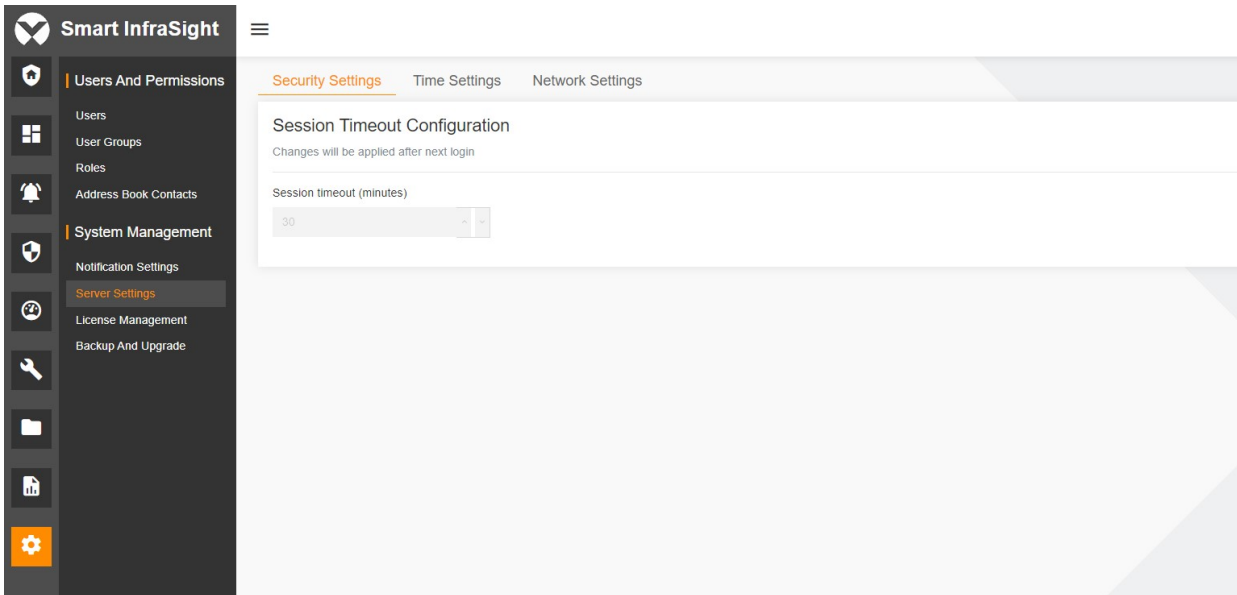
Figure 17-27   Security Settings

Set **Session Timeout Configuration**. Click ✏ in the upper right corner to enter the editable state, as shown in the following figure.
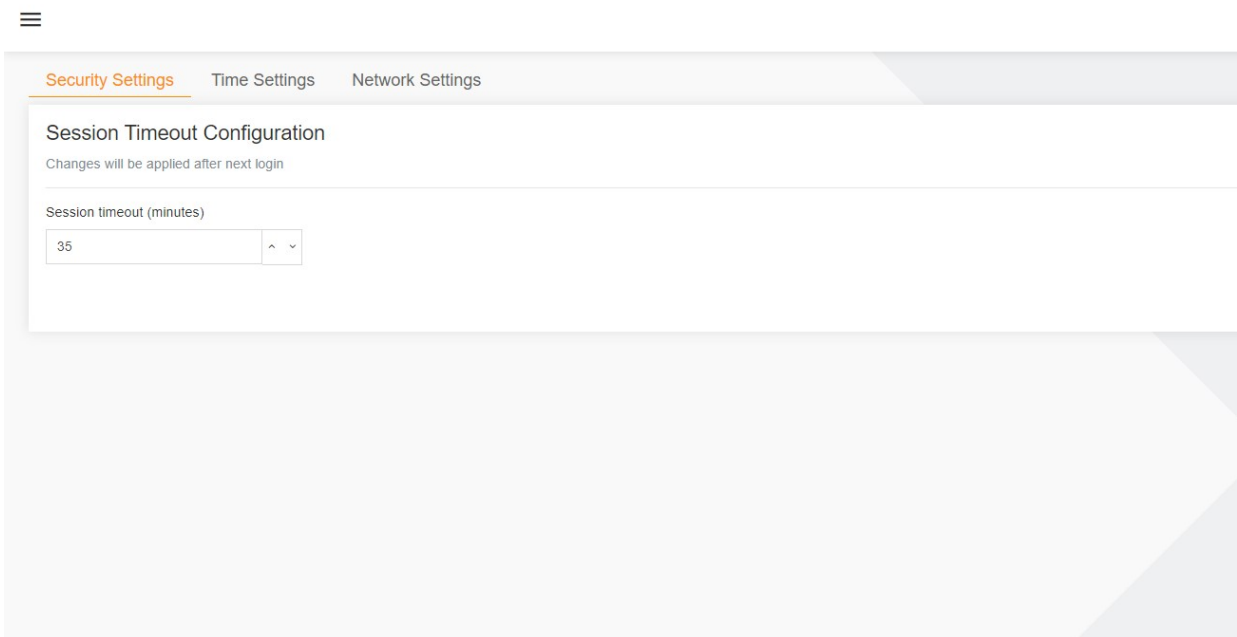
Figure 17-28   Editable state

Set **Session timeout (minutes)**, and click **SAVE**.

Network settings

Choose **System Management → Server Settings**. Click the **Network Settings** tab, as shown in the following figure.
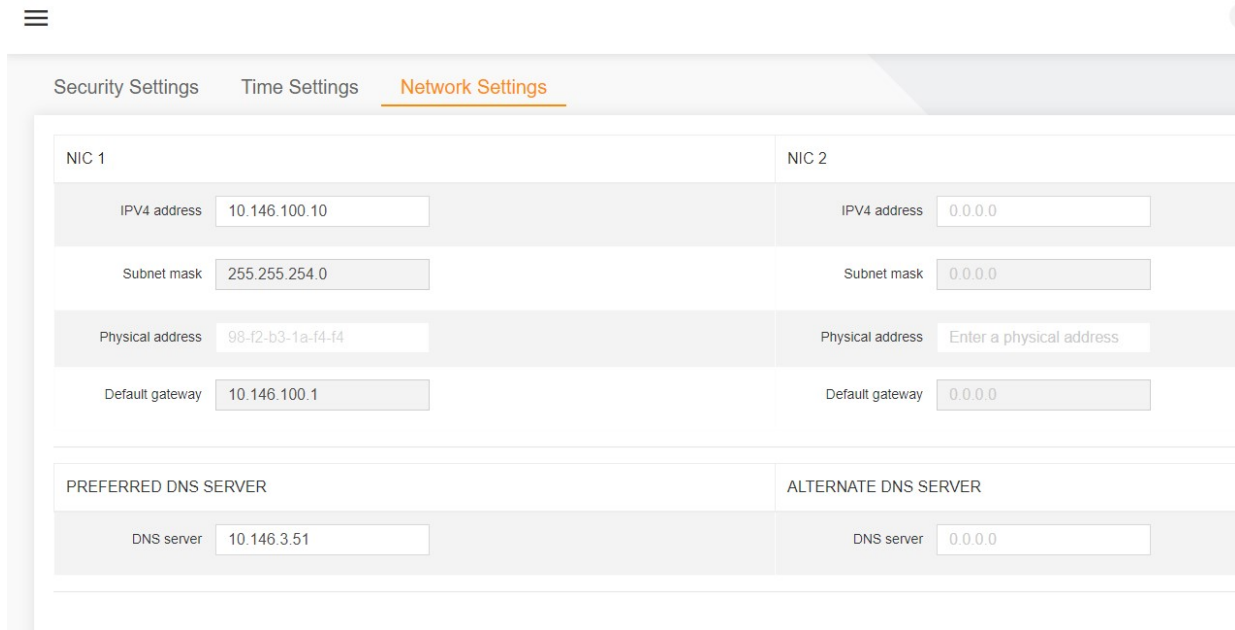
Figure 17-29   Network Settings

Set **IPV4 address**, **Subnet mask**, **DNS Server**, and **Default gateway** of **NIC 1** and **NIC 2**. (**IPV4 address**, **Subnet mask**, and **Default gateway are mandatory**, and **DNS Server** is optional.)

The system automatically obtains the physical address of the server, which is not configurable and is optional. The IP address format must be correct. Otherwise, it cannot be saved.
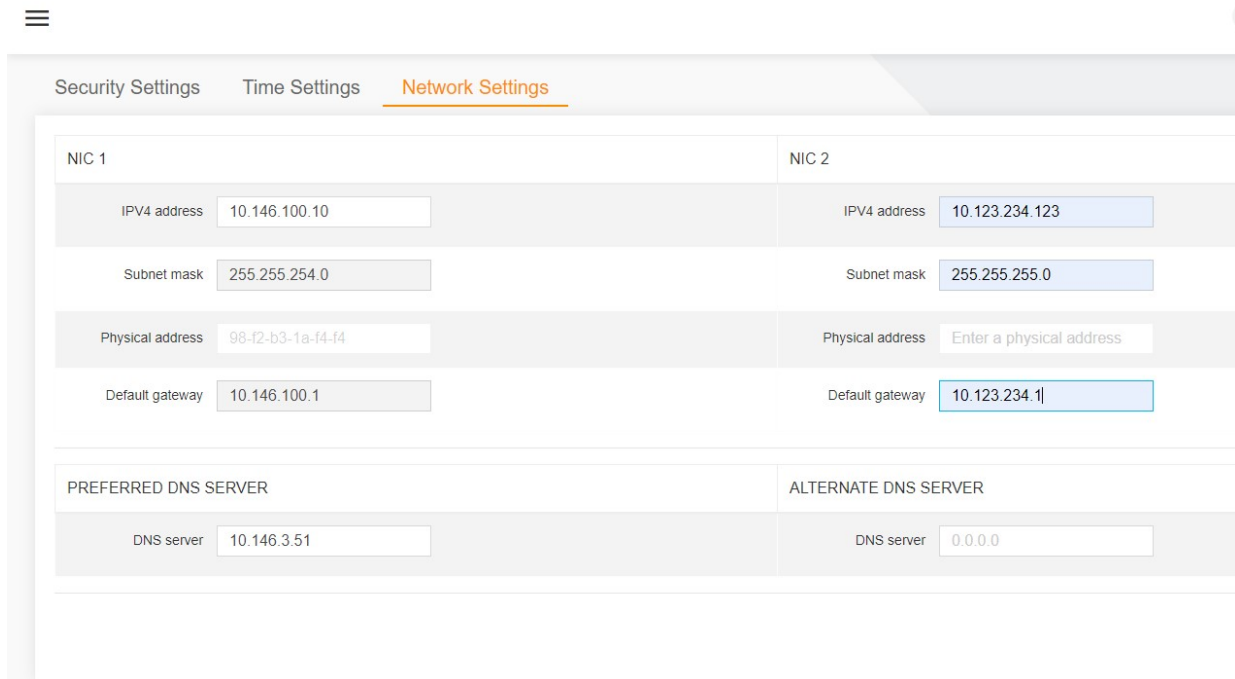
Figure 17-30   Setting the NICs

The preceding parameters must be entered in the correct formats. Otherwise, the system does not allow you to save the configuration. Click **SAVE**.

Chapter 18   License Management

18.1   Overview

18.1.1   Overview

License Management mainly provides two functions: displaying the number of RDUs, door access devices, cameras, and monitored devices as well as their usage, and implementing system license upgrade to expand the upper limits of RDUs, door access devices, and cameras. License management provides Smart InfraSight with licenses that restrict the number of RDUs, door access devices, cameras, and monitored devices accessing to the system. Specifically, there are three types of licenses:

1. Basic: The default number of RDUs that can access the system is 32. The number of RDUs that can access the system extends to 96 after license upgrade. The number of devices that can be monitored by the system is 500. The default number of access controllers that can access the system is 32. The number of access controllers that can access the system extends to 500 after license upgrade. The default number of IP video devices that can access the system is 32. The number of IP video devices that can access the system extends to 500 after license upgrade.

2. Essential: The default number of RDUs that can access the system is 128. The number of RDUs that can access the system extends to 384 after license upgrade. The number of devices that can be monitored by the system is 800. The default number of access controllers that can access the system is 64. The number of access controllers that can access the system extends to 800 after license upgrade. The default number of IP video devices that can access the system is 64. The number of IP video devices that can access the system extends to 800 after license upgrade.

3. Premium: The default number of RDUs that can access the system is 256. The number of RDUs that can access the system extends to 768 after license upgrade. The number of devices that can be monitored by the system is 1500. The default number of access controllers that can access the system is 256. The number of access controllers that can access the system extends to 1500 after license upgrade. The default number of IP video devices that can access the system is 256. The number of IP video devices that can access the system extends to 1500 after license upgrade.

18.1.2   Functional Module

License Management contains the following functional modules. For more about the functional modules, see section *18.3 "Specific Functions."*

- License Overview
- License Upgrade

18.2   Quick Start

18.2.1   Quick Deployment Procedure

You can quickly manage a license as follows:

[1] Click the **License Overview** tab to view the device usage.

[2] If the license file is available, select the license file and upload it to implement the upgrade.

18.2.2   Example

License Overview
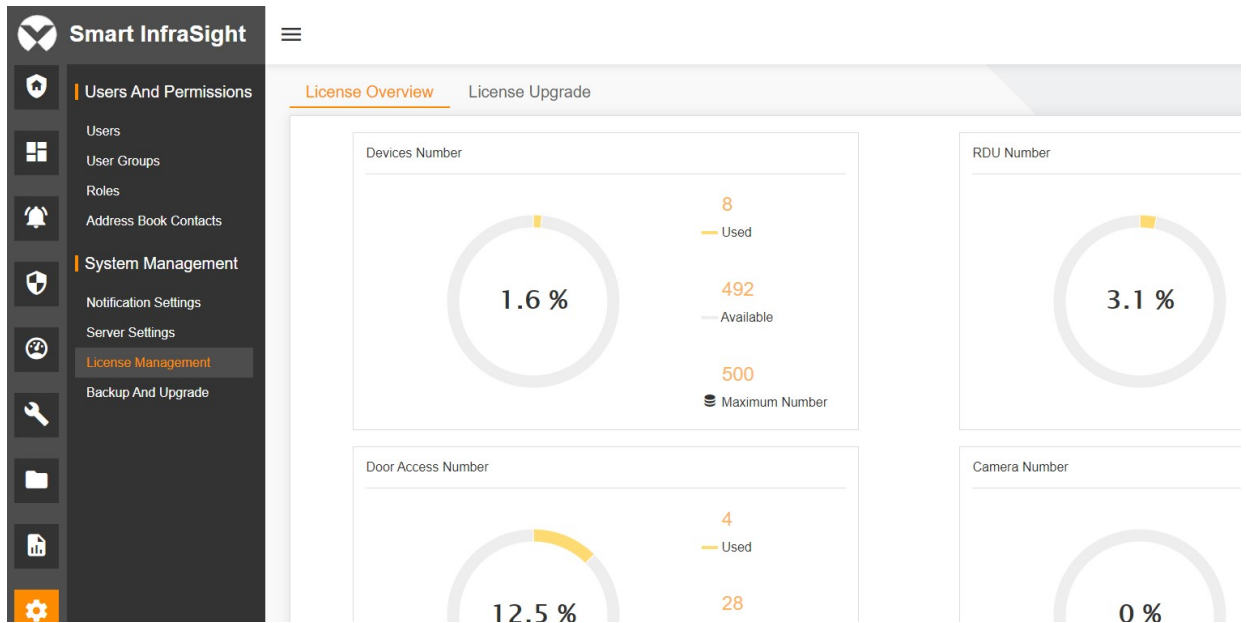
Figure 18-1 License Management - License Overview

License Upgrade

Upload the license file obtained from Vertiv technical support personnel.
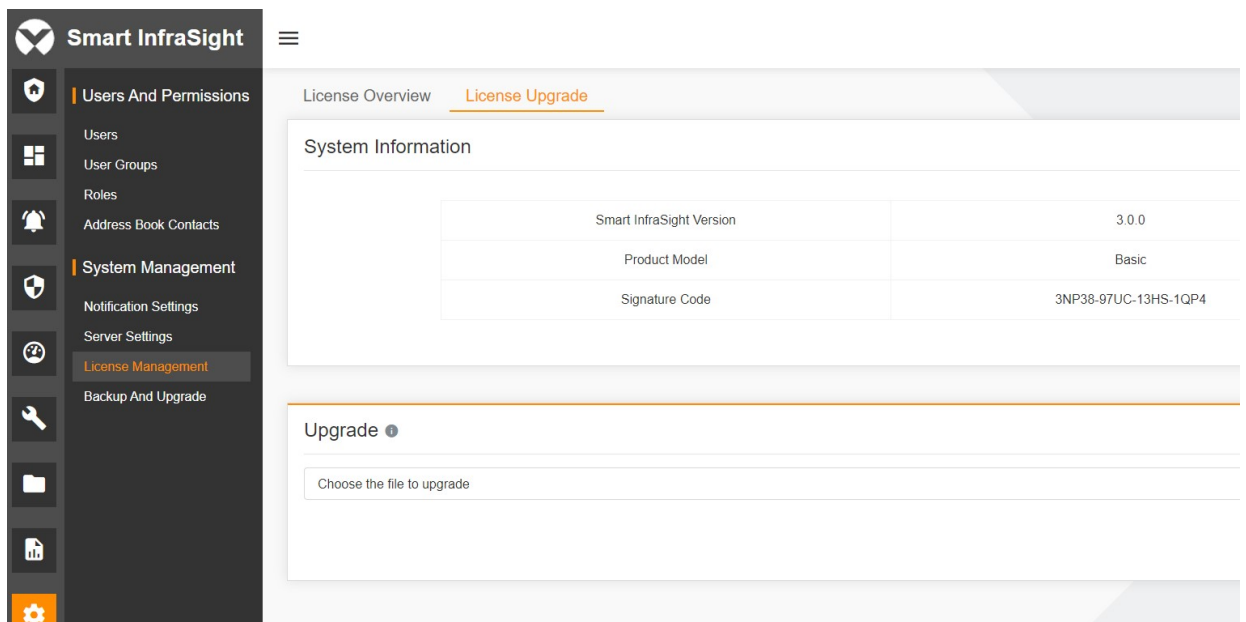
Figure 18-2 License Management - License Upgrade

18.3 Specific Functions

18.3.1 License Overview

The **License Overview** tab page displays the number of RDUs, door access devices, cameras, and monitored devices as well as their usage. For each type of devices, the system displays the number of used devices, number of available devices, and maximum number of devices. The percentage in the figure indicates the number of used devices/maximum number of devices.
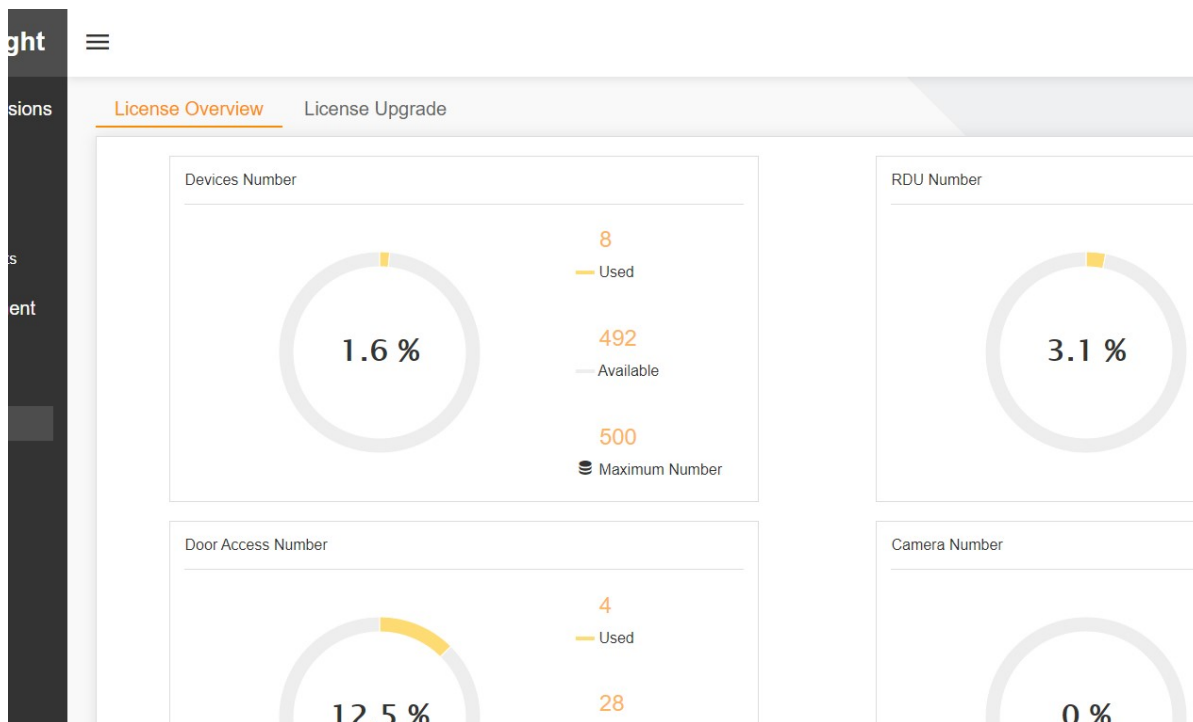
Figure 18-3   License Overview

18.3.2 License Upgrade

The **License Upgrade** tab page allows you to expand the number of RDUs, door access devices, and cameras. This tab page contains two panes. The upper pane displays **Smart InfraSight Version** (software version), **Product Model**, and **Signature Code** (in a one-to-one relationship with the product). The lower pane is the license upgrade area.

After uploading the license file, click UPGRADE . If there is no content in the input box, the **UPGRADE** button is unavailable.

📖   **Note**

1. The license file is generated based on the signature code. To obtain the license file, provide the signature code to Vertiv technical support personnel.
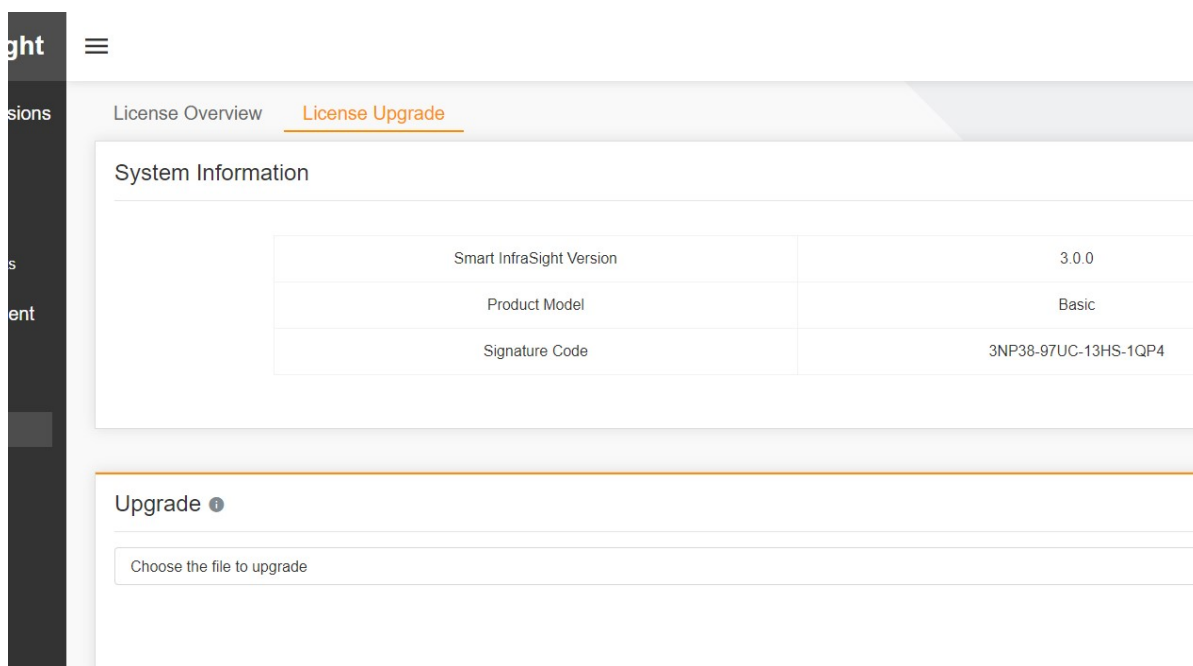
Figure 18-4   License Upgrade

Successful upgrade

If the license file is verified to be correct, the upgrade is successful. The system displays a prompt box in the lower right corner, indicating "License upgrade successfully".
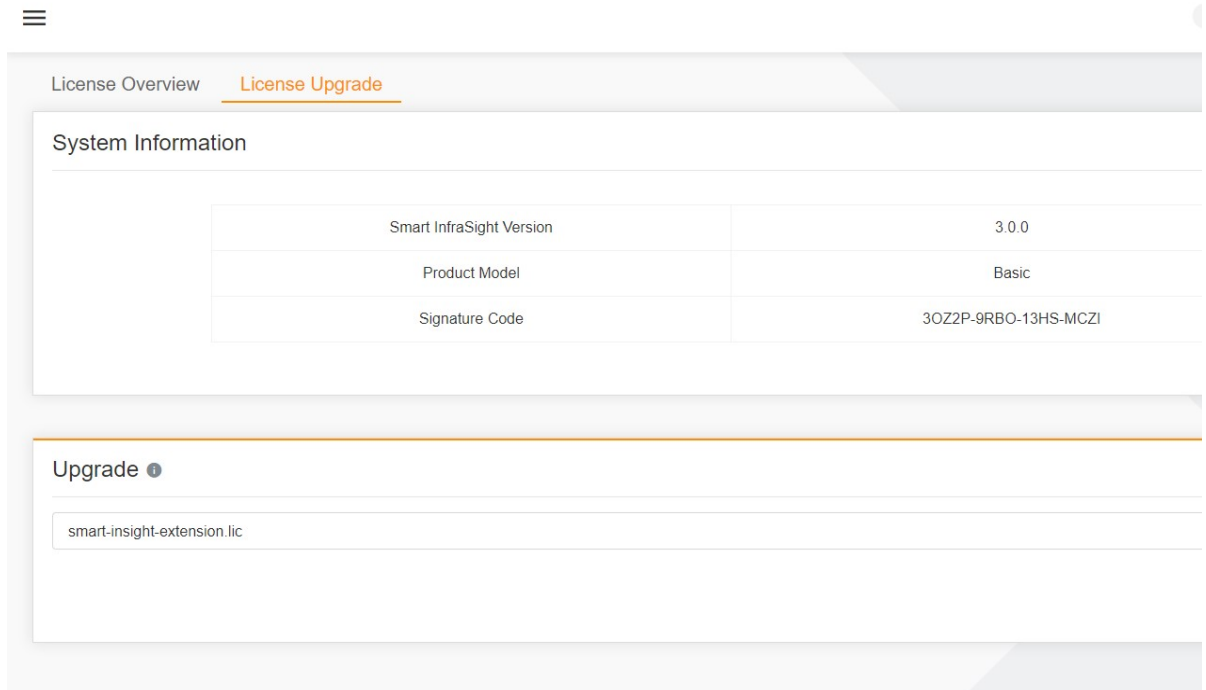
Figure 18-5   Successful upgrade

After the upgrade is successful, the maximum number is changed.
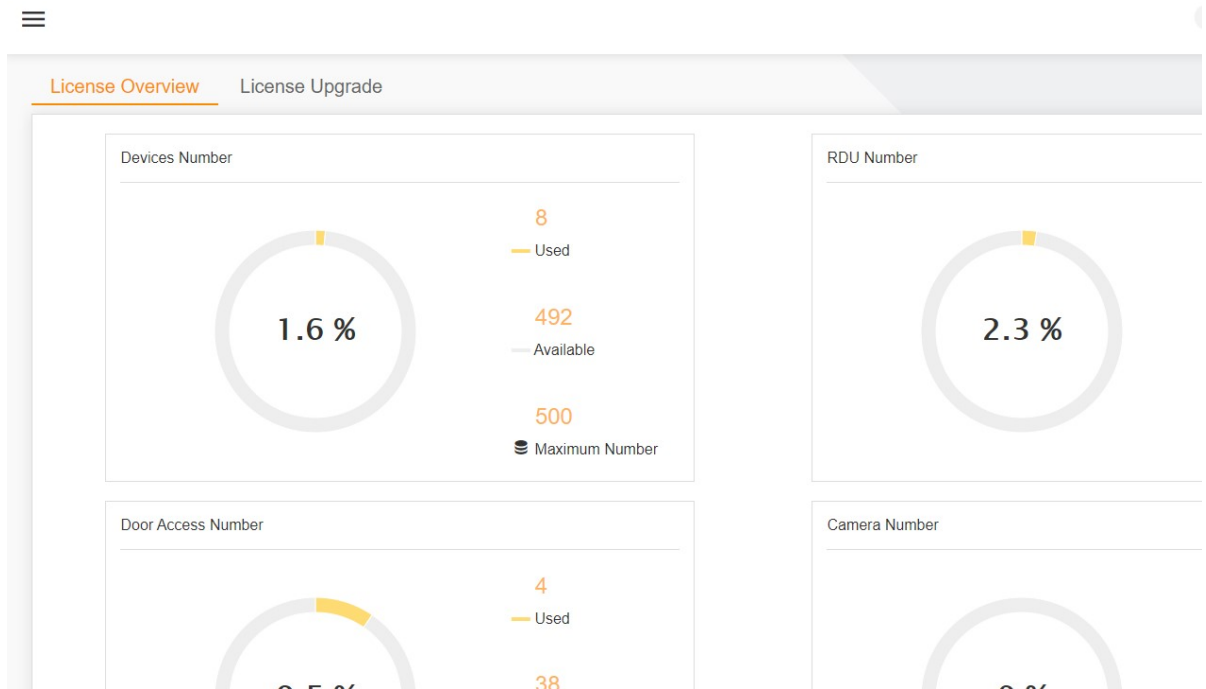
Figure 18-6   Expanding the maximum number

Failed upgrade

If the license file is verified to be invalid, the upgrade fails. The system displays a prompt box in the lower right corner, indicating "Decrypt the authorization file failed". In such a case, contact Vertiv technical support personnel in a timely manner.
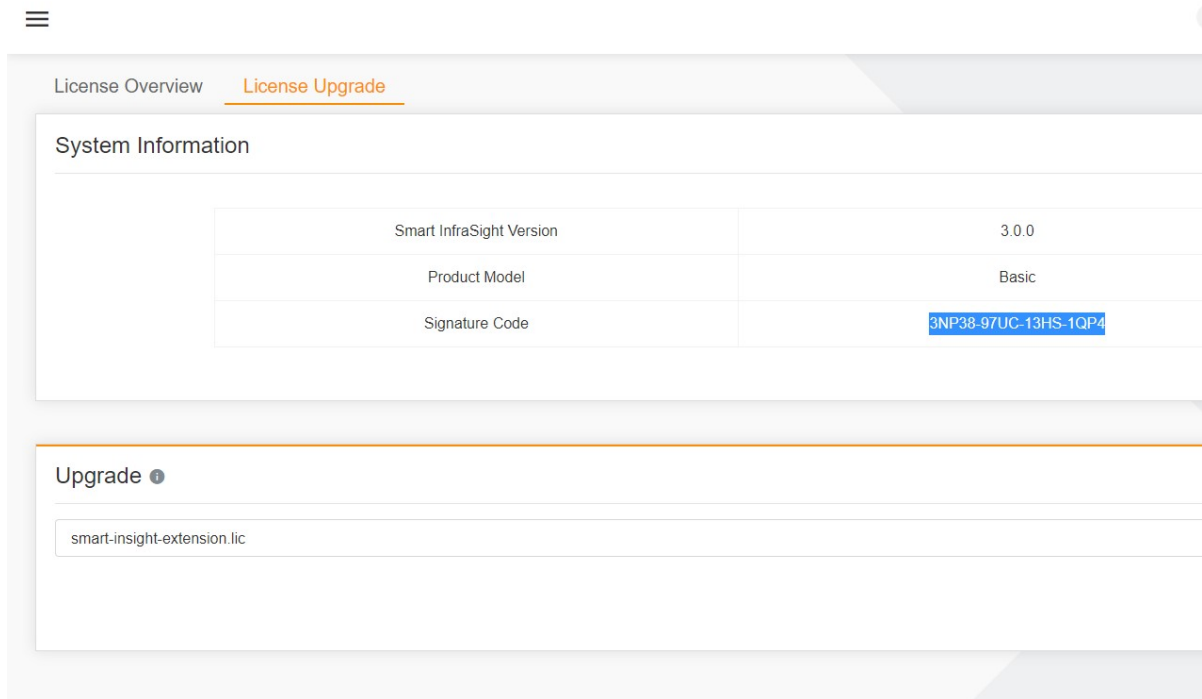
Figure 18-7   Failed upgrade

Chapter 19　Backup and Upgrade

19.1　Overview

19.1.1　Overview

Backup And Upgrade mainly provides three functions: backup, restoration, and system upgrade. **Backup And Upgrade** provides basic assurance for the system data. In addition, it provides interfaces for system upgrade to facilitate subsequent operations of adding new functions and troubleshooting issues.

Backup And Upgrade supports both remote and local backup and restoration. The operation target of remote backup and restoration is on the remote end. That is, back up a file on the remote host, and restore the database using the backup file through the remote host. The operation target of local backup and restoration is the server where Smart InfraSight is installed. That is, back up a file on the server where Smart InfraSight is installed, and restore the database using the backup file through Smart InfraSight server.

The backup mode is full backup. The system backs up all data in the database each time. The restoration mode is full overwrite and restoration. The system writes the content of the restoration file into the database and clears the raw data from the database. Restoration has certain risks. Back up the raw data before restoration to prevent exceptions in the restoration process.

System Upgrade is an interface for implementing system upgrade. You can upload the upgrade package to upgrade the system.

19.1.2　Functional Module

The **Backup And Upgrade** module contains the following functional modules. For more information about the functional modules, see section *19.3 "Specific Functions."*

- Backup And Restore
- System Upgrade

19.2　Quick Start

19.2.1　Quick Deployment Procedure

You can quickly implement backup and upgrade as follows:

[1] Click **Backup And Upgrade**.

[2] Click the **Backup And Restore** tab.

[3] Click the **System Upgrade** tab.

19.2.2　Example

Backup And Restore

Path: **System Management** → **Backup And Upgrade** → **Backup And Restore**
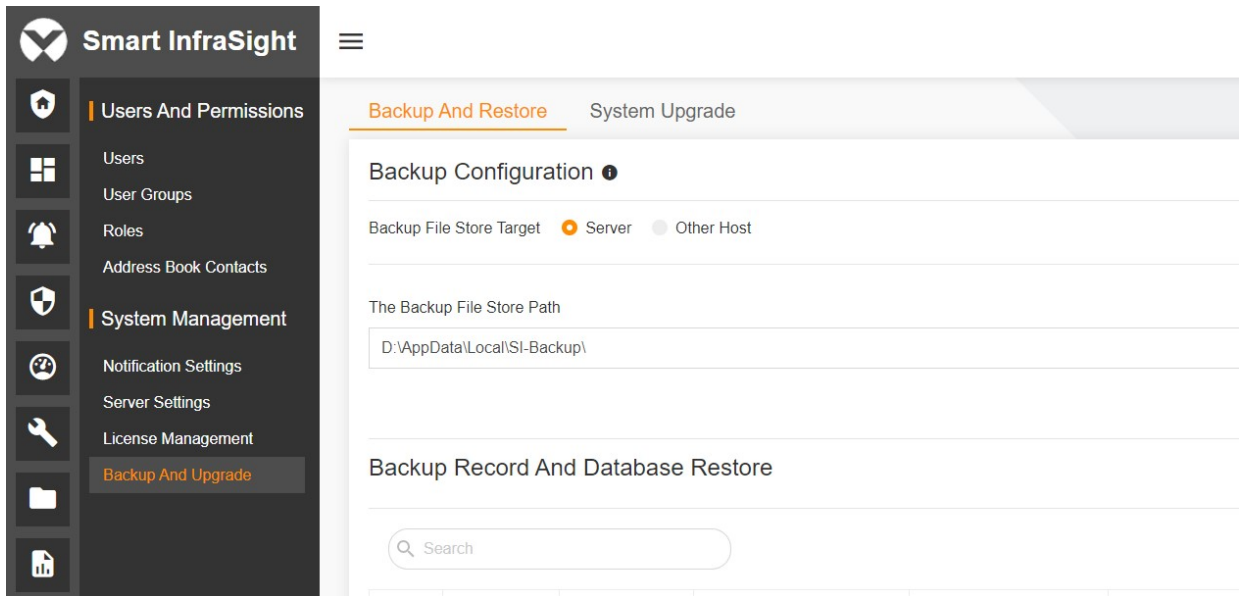
Figure 19-1　Backup And Restore page

System Upgrade

Path: **System Management → Backup And Upgrade → System Upgrade**
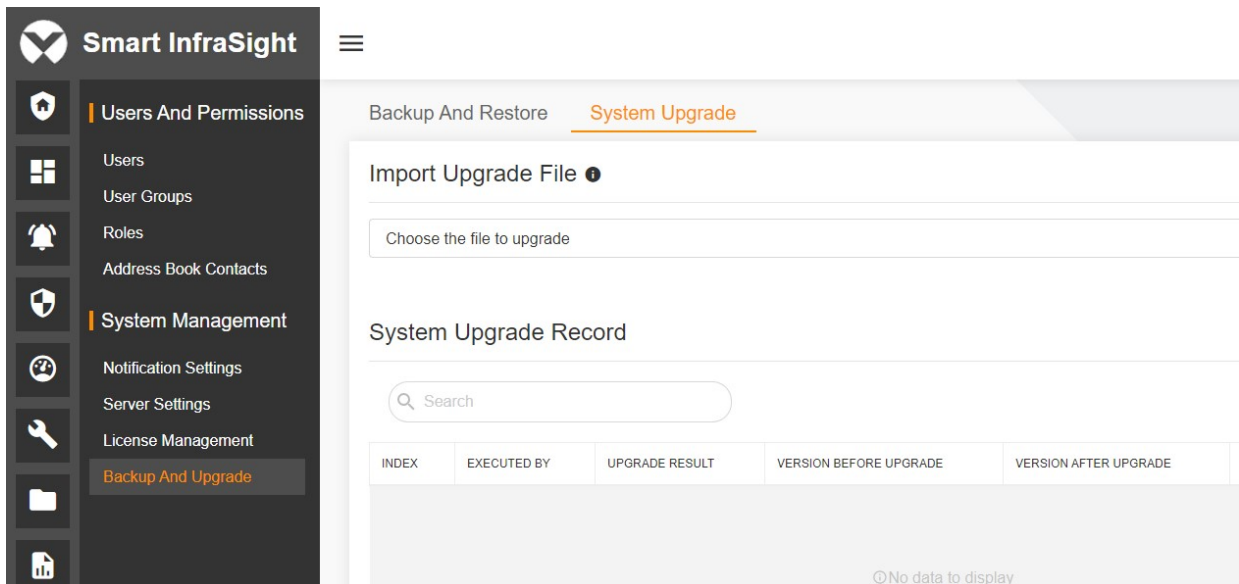
Figure 19-2　System Upgrade page

19.3　Specific Functions

19.3.1　Backup And Restore

On the system backup page, choose **System Management → Backup And Upgrade**.
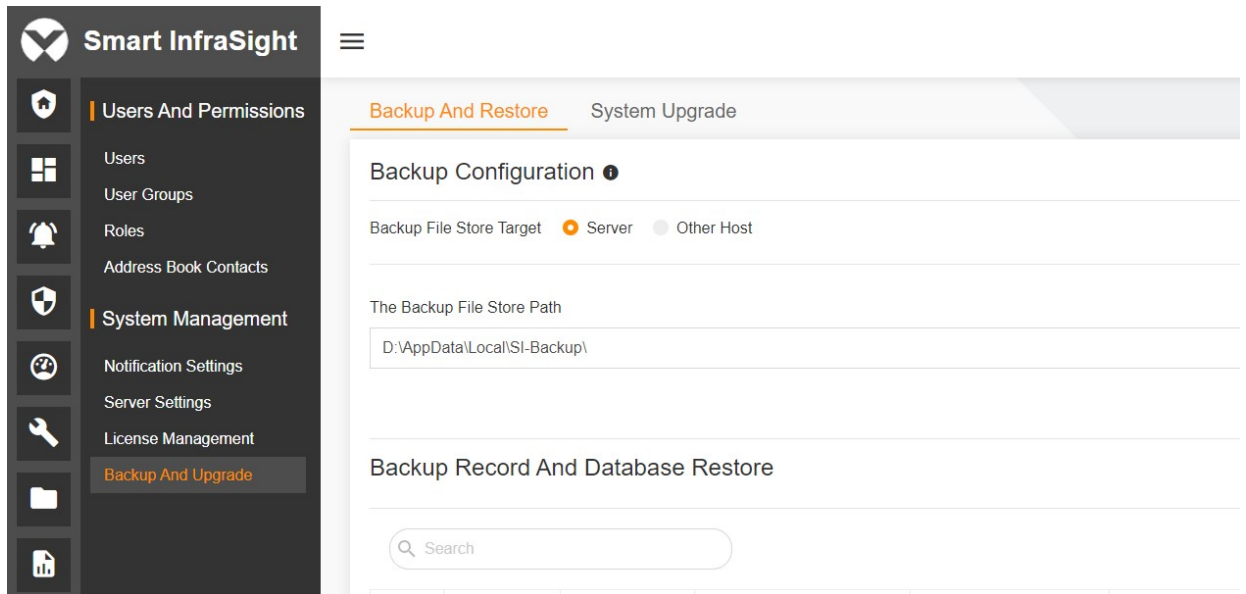
Figure 19-3   Backup And Upgrade page

Backup

Path: **System Management → Backup And Upgrade → Backup And Restore**

Select the backup type.
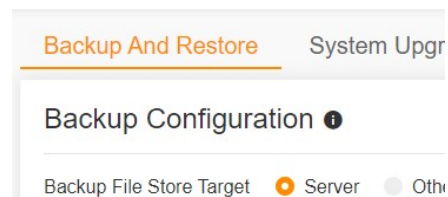
Figure 19-4   Backup And Restore page

The backup has two types:

Type 1: The file is backed up on the server where Smart InfraSight is installed. **Backup File Store Target** is set to **Server**.

Type 2: The file is backed up on a remote server in a shared folder mode. **Backup File Store Target** is set to **Other Host**.

(1) Backup type 1: local backup
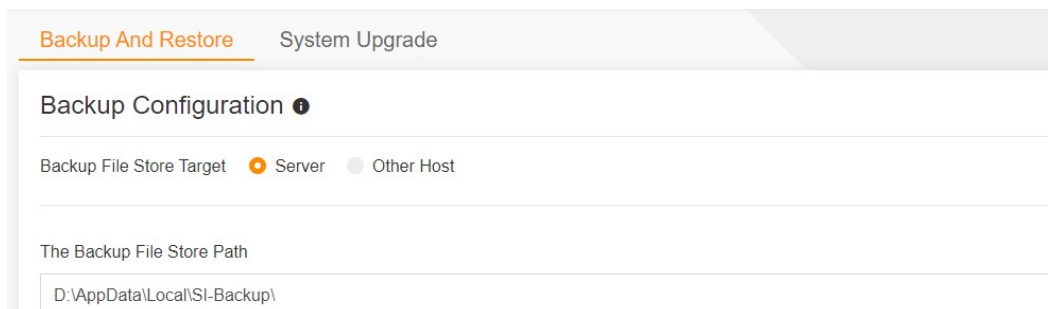
Figure 19-5   Local backup

Step 1: Enter the backup path. The default path is automatically configured in the system. To use the default path, click **USE DEFAULT PATH**.

Step 2: Click **BACKUP**.

The local backup is completed.

Figure 19-6 Backup prompt

📖 **Note**

During the backup operation, do not perform other configuration operations. Otherwise, the validity and reliability of the data will be affected. In addition, keep the system in the started state.

Result 1: The page saves the backup record.

Figure 19-7 Backup record

Result 2: The file is backed up. You can log in to the Smart InfraSight server and enter the configured file path to view the backup file. The successfully backed up file is suffixed with .dbsi.

Figure 19-8 Backup file

(2) Backup type 2: remote backup

Step 1: Configure backup information.

Figure 19-9 Remote backup configuration

Set **Host IP Address**, for example, **10.123.123.123**.

Set **The Backup File Store Path**, for example, **share/backup**. This path is the path where the shared folder is stored on the remote host.

Configure Host Username, which is the user name used to log in to the remote host.

Configure Host Password, which is the password used to log in to the remote host.

📖 **Note**

During the backup operation, do not perform other configuration operations. Otherwise, the validity and reliability of the data will be affected. In addition, keep the system in the started state and the network in the connected state.

Because remote backup transfers data through shared folders, it is necessary to configure the shared folder on the remote host and enable the writable permissions of the shared folder.

Restoration

Path: **System Management → Backup And Upgrade → Backup And Restore → Backup Record And Database Restore**

  📖   **Note**
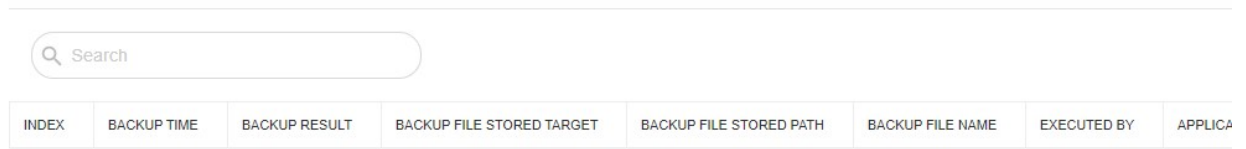
The restoration operation will overwrite all local data, causing a risk of local data loss. Before performing the restoration operation, back up the local data.

During the restoration operation, do not perform other configuration operations. Otherwise, the validity and reliability of the data will be affected. In addition, keep the system in the started state and the network in the connected state.

(3) Convenient restoration - local restoration

Step 1: Click the clock button in the **CONVENIENT RESTORATION** column.

Figure 19-10   Convenient restoration path

Step 2: Enter the admin password, and click **CONFIRM**.

Figure 19-11   Entering the admin password

(4) Convenient restoration - remote restoration

Step 1: Same as above, select the remote file backup record, and click the clock icon.

Step 2: Enter the admin password and the password used to access the remote host. Click **CONFIRM**.

Figure 19-12　Configuring remote restoration

(5) Customized restoration - local restoration

Path: **System Management → Backup And Upgrade → Backup And Restore → Backup Record And Database Restore → CUSTOMIZED RESTORE**

Figure 19-13　Customized restoration - local restoration

Step 1: Enter configuration information.

Enter the admin password.

Enter the restoration file, for example, **mtp_2.0.1_20190226112432-backup**. The suffix name is not required.

Enter the restoration path, for example, **/var/opt/smart-insight-backup/** or **C:\\SMART INFRASIGHT\smart-insight-backup**.

Step 2: Click **CONFIRM**.

(6) Customized restoration - remote restoration

Path: **System Management → Backup And Upgrade → Backup And Restore → Backup Record And Database Restore → CUSTOMIZED RESTORE**

Figure 19-14   Customized restoration - remote restoration

Step 1: Enter configuration information.

Step 2: Click **CONFIRM**

19.3.2 System Upgrade

Path: **System Management → Backup And Upgrade → System Upgrade**

📖   **Note**

During the upgrade process, all services are stopped and the page becomes inoperable. Wait for the system upgrade to complete before performing other operations.
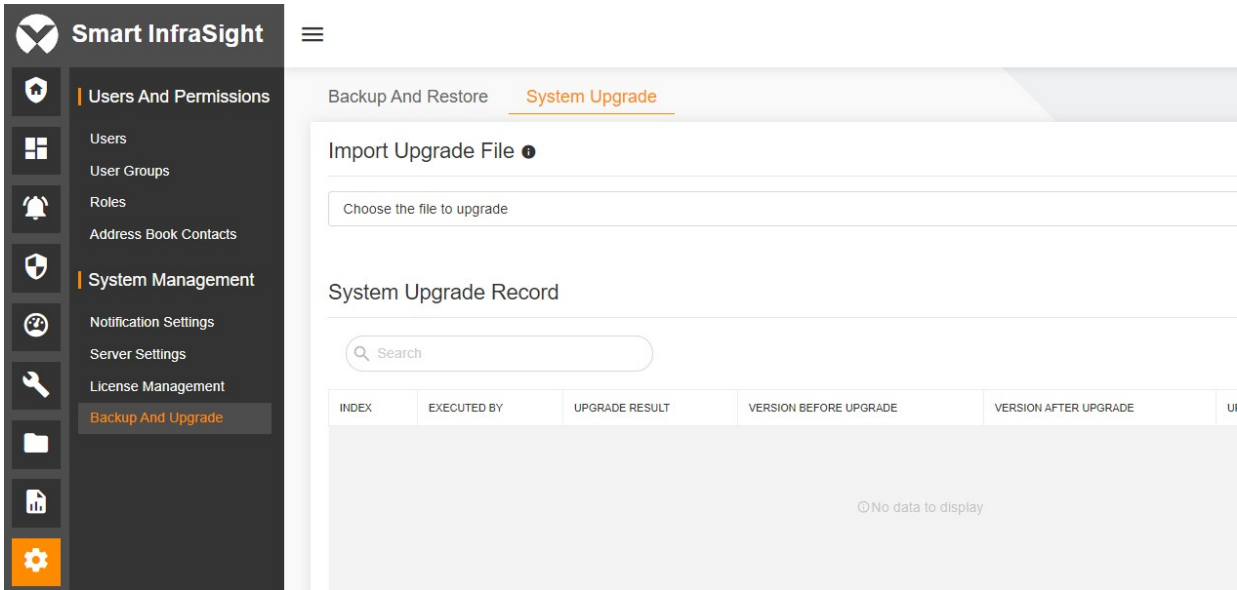
Figure 19-15   System Upgrade

Step 1: Click **Browser**. Select the upgrade file, which is suffixed with .si.
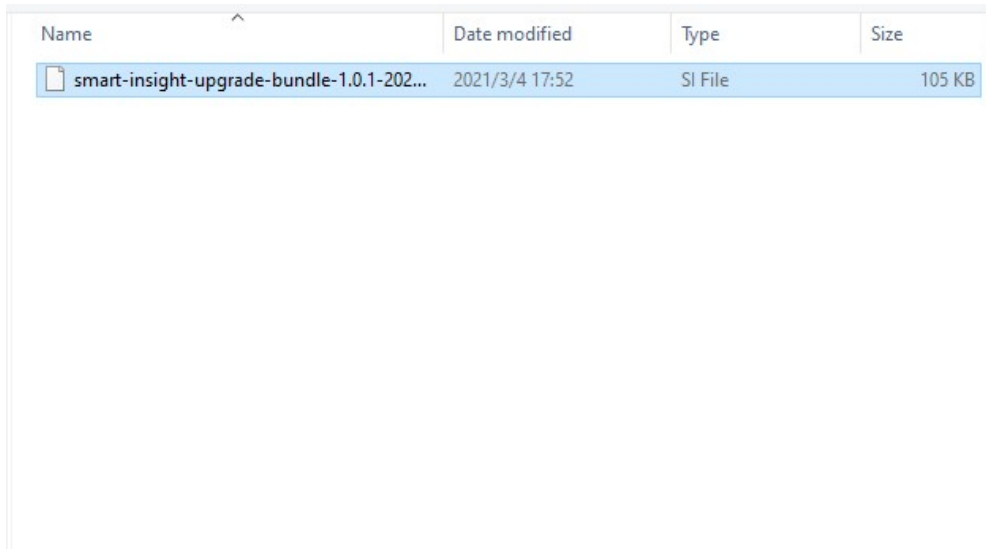
Figure 19-16   Selecting the upgrade file

Step 2: Click **UPGRADE**.
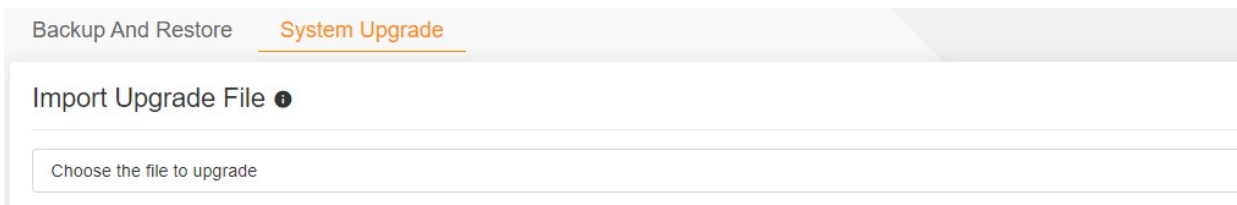
Figure 19-17   Starting the upgrade

Step 3: Wait until the system finishes the upgrade.

Chapter 20   Time Settings

20.1   Overview

20.1.1   Overview

Time Settings mainly provides the functions of time calibration between the current system and the server as well as time zone settings. System time calibration can ensure the consistency of time between server and client. Time zone settings can set the time zone information of the server. Two functions of **Time Settings** ensure that the time zones and time of the server and client are unified. In this way, the system can avoid issues such as inconsistent time zones and time, which will cause the inconsistency between the alarm generation time recorded in the notification and the time when an email or a SMS message is received.

20.2   Quick Start

20.2.1   Quick Deployment Procedure

You can quickly carry out time settings as follows:

[1] Click **System Management**.

[2] Click **Server Settings**.

[3] Click the **Time Settings** tab.

20.2.2   Example

Time Settings

Path: **System Management** → **Server Settings** → **Time Settings**
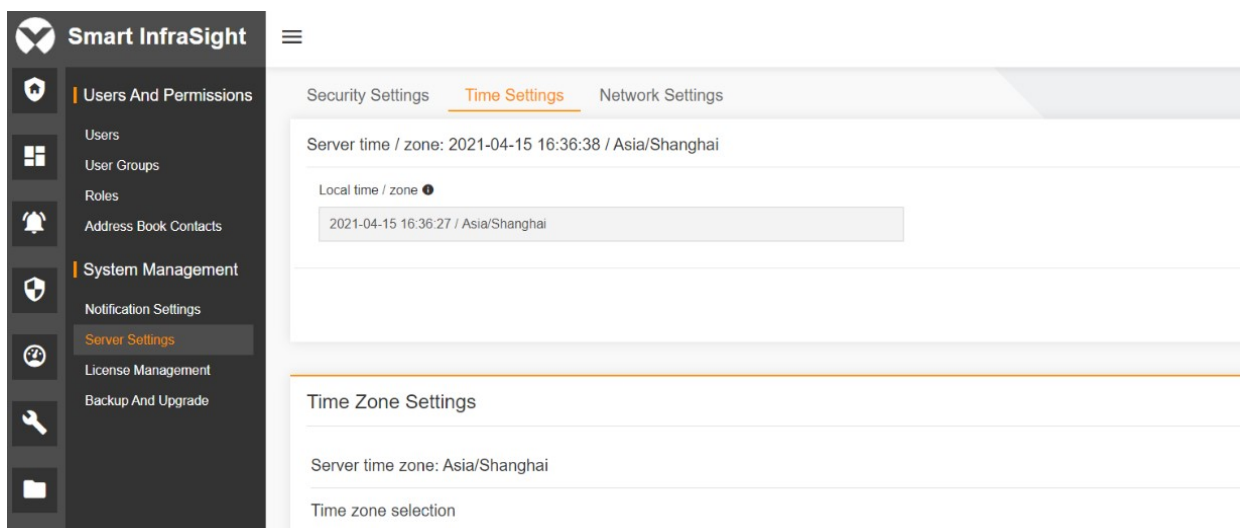
Figure 20-1   Time Settings

20.3   Specific Functions

20.3.1   System Time Calibration

On the system backup page, choose **System Management** → **Server Settings** → **Time Settings**.
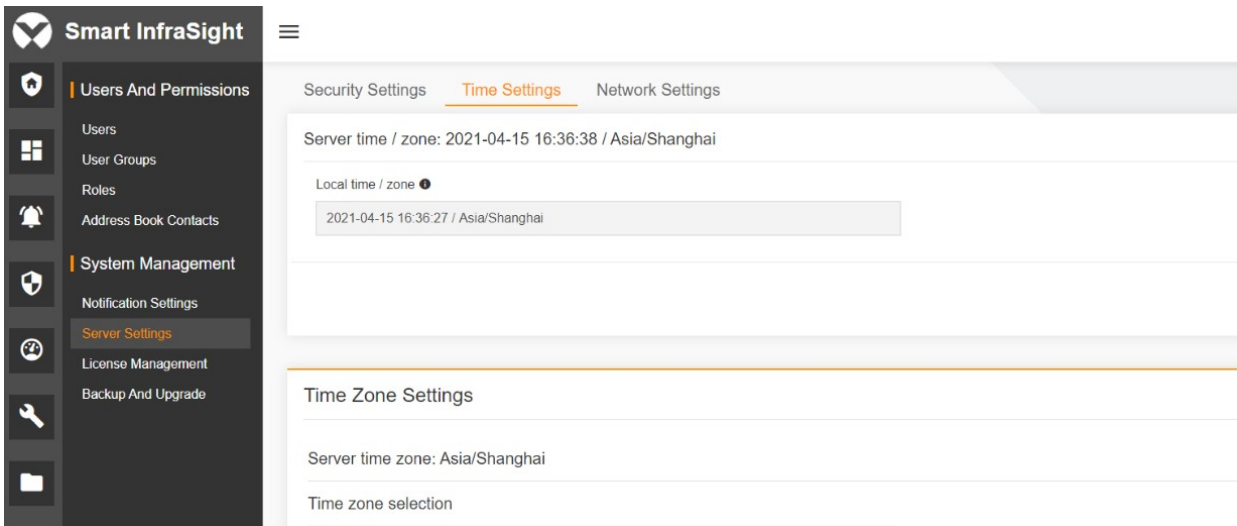
Figure 20-2   Using the local time for calibration

Step 1: Click **SAVE**. The system prompts that the service will be restarted if you synchronize the server time.
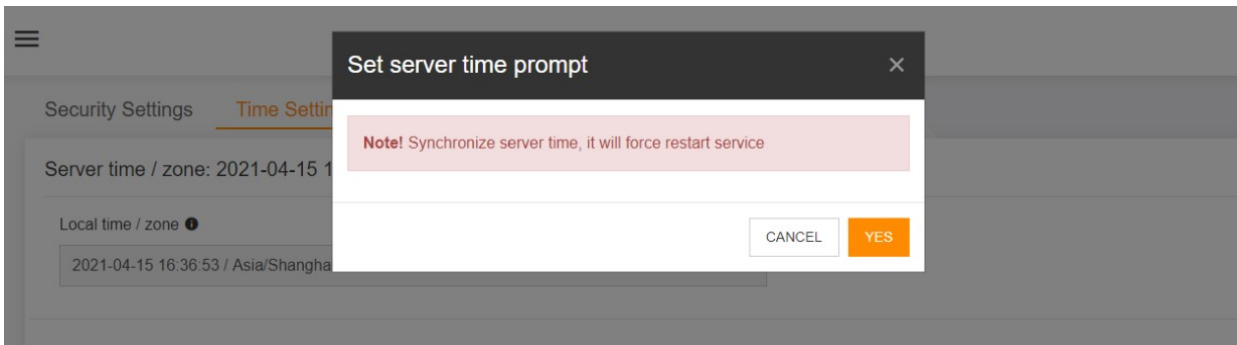
Figure 20-3   Prompt for server time synchronization

📖   **Note**

During the system time calibration operation, do not perform other configuration operations. Otherwise, the validity and reliability of the data will be affected. In addition, keep the system in the started state.

Step 2: If the synchronization is required, click **YES**. The system is restarted. Wait for a while and log in to the system again.

20.3.2   Time Zone Settings

On the system backup page, choose **System Management** → **Server Settings** → **Time Settings**.
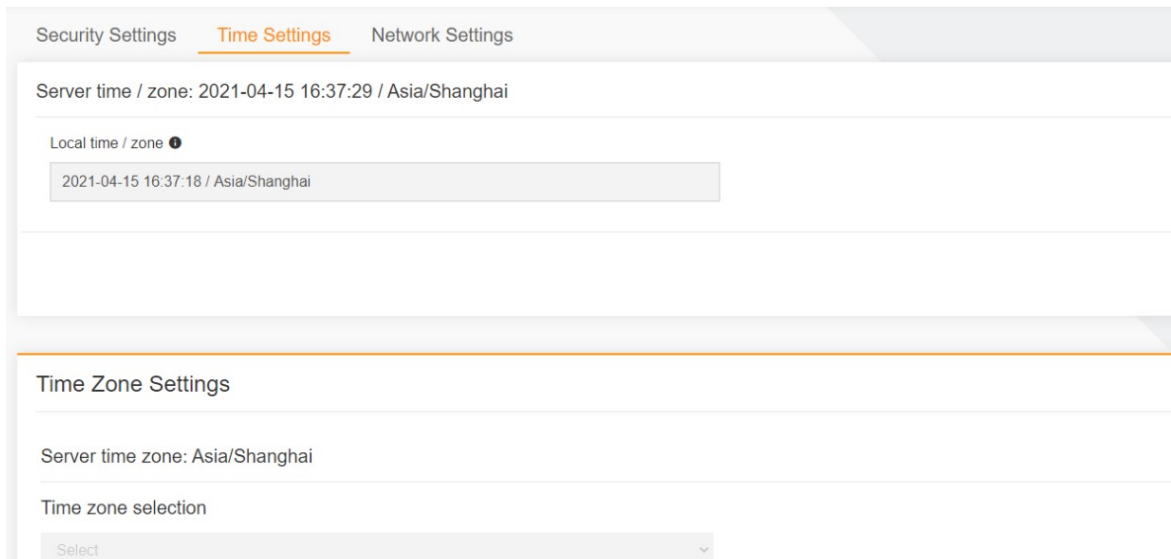
Figure 20-4　Setting the server time zone

Step 1: Click the edit icon on the right side to make the **Time Zone Settings** pane enter the editable state. Select the desired time zone.
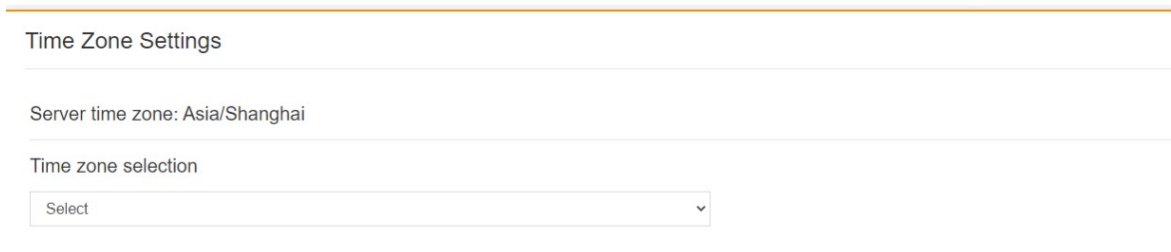
Figure 20-5　Selecting the server time zone

Step 2: After selecting the time zone, click **SAVE**. The system prompts that the service will be restarted if you set the server time zone.
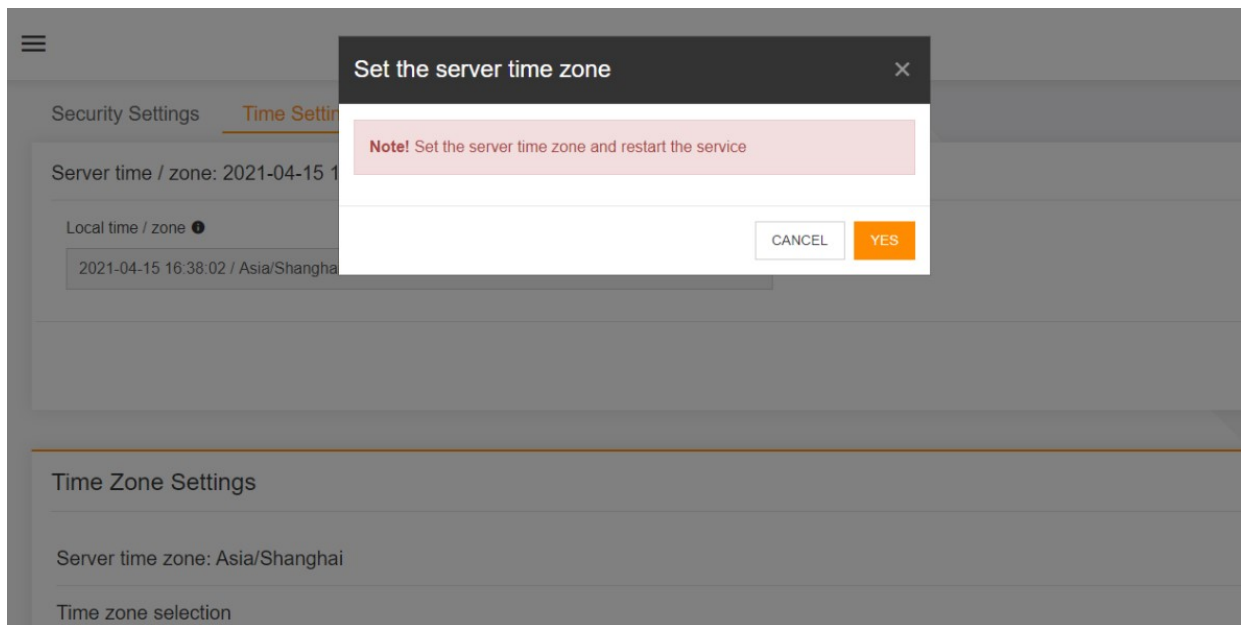
Figure 20-6　Prompt for setting the server time zone

Step 3: Click **YES** in the prompt box. The server is restarted. After the restart is successful, log in to the system again.

Chapter 21   Common Problems Solving

21.1   Browsers Supported by Smart InfraSight

Table 21-1   Description of browsers

Browser	Version
Google Chrome	Google Chrome 73 and later
Mozilla Firefox	Mozilla Firefox 66 and later
Edge	Edge 87 and later
The same browser does not support simultaneous login of multiple users.	
Recommended resolution: 1920*1080; minimum resolution: 1600*900	

21.2   Door Access Card Failed to Be Edited or Deleted after RDU Software Is Upgrade

After the RDU is upgraded, you need to delete the site on Smart InfraSight and configure Smart InfraSight to re-discover and add the site. Then, you can edit and delete the door access card.

21.3   IPMI User Authentication Configuration

After the administrator user is added on the IPMI user authentication configuration page, the device list on this page is still empty. The system prompts "Unable to load device configuration. Please check whether the user authentication configuration is correct".

After Smart InfraSight is connected to RDU 501, disable the two-factor authentication login function of RDU 501, so that users do not need to enter dynamic passwords upon each login.

21.4   Fingerprint Reader Settings

When the fingerprint reader is set to the Swipe card, and fingerprint mode, if you swipe an unauthorized card, the system prompts that the card is unauthorized. However, there is no card swiping record.

When the fingerprint reader is set to a combination mode, for example, Swipe card, and fingerprint, if you swipe an unauthorized card, the system prompts that the card is unauthorized without prompting you to input the fingerprint. When the verification on the fingerprint reader end fails, there is no Wiegand input. As a result, there is no card swiping record.

## 21.5   Startup/Shutdown Failed after BMC Time Is Set for Server

The possible causes and solutions are as follows:

- The account and password entered on the IPMI user authentication configuration page are incorrect. After the first authentication is implemented, RDU 501 requires entering the verification code. Check whether account and password configured on the IPMI user authentication configuration page are correct. Alternatively, log in to the RDU 501 to check whether the verification code needs to be entered manually.
- Check whether Smart InfraSight and RDU 501 are interconnected.
- If Smart InfraSight or RDU 501 is accidentally down, the authenticated information may become invalid. In such a situation, re-authenticate the information on the IPMI user authentication configuration page.

21.6 Difference between Configuration Temperature of the Heat Map on the Homepage and the Temperature Range Displayed on the Page

Because the heat map plug-in can adaptively adjust the temperature range based on the display height of the temperature range and the user-defined temperature range, there is a difference between the display and the user input.

21.7 Engineering Precautions for Connecting Smart InfraSight to RDU

Smart InfraSight is designed with a Dashboard and a Widget for visual display based on the Smart Solution (SmartAisle/SmartRow/SmartCabinet) application scenarios of the standardized equipment.

The following table describes the configuration of the standardized equipment.

Table 21-2   Configuration of the standardized equipment

Equipment Type	TAF Type	Model	Drive Name		
			SmartAisle	SmartRow	SmartCabinet
Temperature and humidity sensor	SENSOR_ENVIRONMENT	TH1/TH2	ENP_ENV_TH1/ENP_ENV_TH2	ENP_ENV_THD/ENP_ENV_THD2	ENP_ENV_TDI[SENSOR]
Serial door access device	DOOR	ACC	ENP_ACC_ES5200DoorMgmt[COM]★		
			ENP_ACC_CHD2100J5[COM]☆		
Electricity meter	POWER_METER	AMM	ENP_AMM_CPM3310_COM☆	ENP_AMM_YD2015[COM]]★	/
Air conditioner	COOLING	CRV+	ENP_AC_CRV+[COM]☆	ENP_AC_SRVII[COM]]★	ENP_AC_SMC[COM]
		CRV	ENP_AC_CRV[COM]		
		PEX+	The access mode is not provided (since this type of equipment has not been connected to the system before. Therefore, this mode is not considered in phase 1).		
		DME		ENP_AC_DME3000[COM]	
UPS	UPS	APM150	ENP_UPS_ADAPTPM[COM]☆		
		GXT4		ENP_UPS_GXT4G[COM]???	
		ITA2		ENP_UPS_ITA2[COM]]★	ENP_UPS_ITA2[COM]
		ITA		ENP_UPS_ITA5_10K[COM] ENP_UPS_ITA16_20K[COM]	
					ENP_UPS_ITA1_3K[COM]
				ENP_UPS_ITA30_40K[COM]]★	
		eXL	The drive is not provided and there is no corresponding plan (since this type of equipment has not been connected to the system before. Therefore, this mode is not considered in phase 1).		
		eXM	ENP_UPS_EXM[COM]		
		HIU	ENP_UPS_HIPULSE[COM]		
PDU	RACK_PDU	MPS	ENP_MPDU_MPS[COM]]★		
		MPI	ENP_MPDU_MPI[COM]		ENP_MPDU_MPSC[COM]

Range of standardized equipment: 2019-04-23					
Equipment Type	TAF Type	Model	Drive Name		
			SmartAisle	SmartRow	SmartCabinet
PDU	RACK_PDU	MPH2		The access mode is not provided since it is not determined. In addition, according to the feedback from Xi'an Institute, standardization cannot be achieved currently because the signal points obtained from the MIB library of the equipment cannot map the standardized signal points in a one-to-one correspondence (since this type of equipment has not been connected to the system before. Therefore, this mode is not considered in phase 1).	
Integrated power distribution cabinet	FLOOR_PDU	SPM	ENP_PDU_SPM2[COM]]★		
			ENP_PDU_SPM[COM]]★		

Precautions for connecting Smart InfraSight to RDU during the transformation of the old drives adopting the Smart Solution

1. Upgrade the old drives on the RDU according to the table.

2. The door access service is uniformly managed by Smart InfraSight. Therefore, the RDU and door access information of the original project, including the card information (including the fingerprint information), authorization information, 501 door access information, and G2 information, many be cleared. The preceding information must be entered to the card configuration and authorized cards again in Smart InfraSight.