

PD Series

Dual-Streaming AVoIP Processor

User Manual

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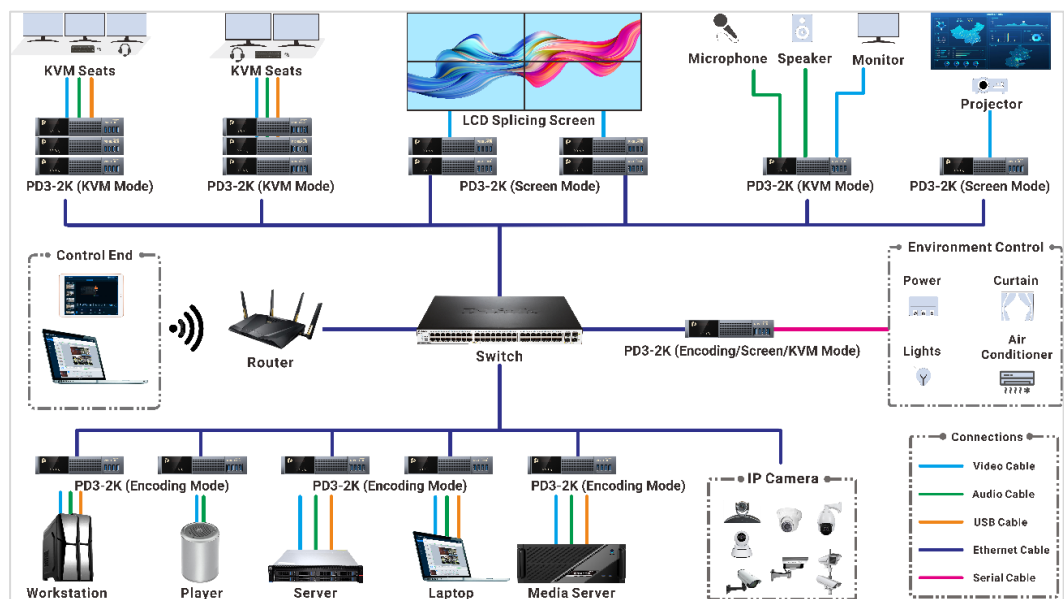
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1 System Topology



2 Hardware Connections

2.1 Input Connections

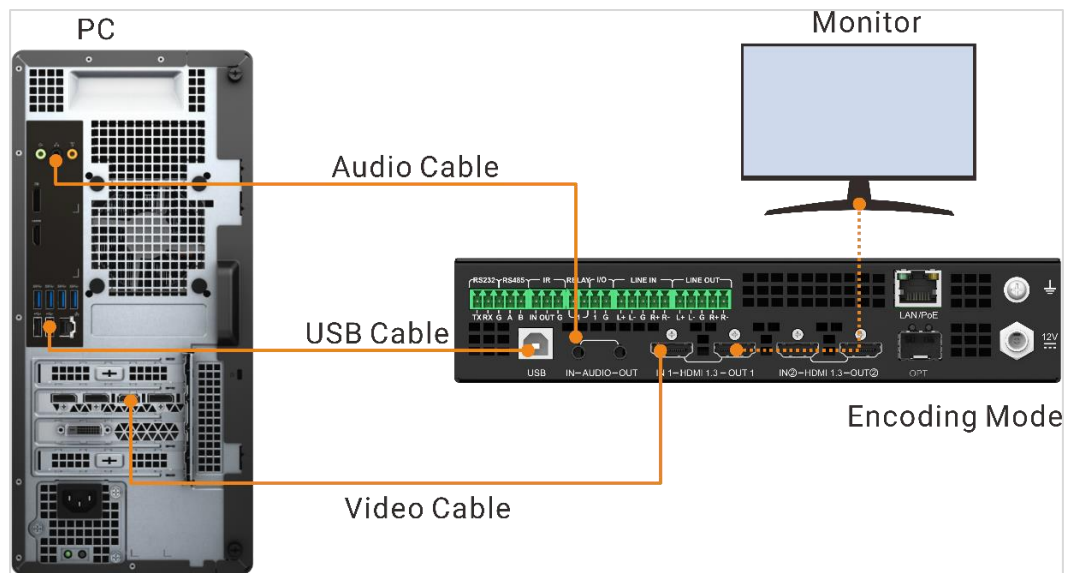
In encoding mode, the PD3-2K or PD3-4K can be used for encoding and transmitting the input signals.

This user manual takes the PD3-2K as an example.

The inputs include the audio, video and control signals.

When the input sources come from the computer or server, the KVM remote control is supported.

Figure 2-1 Connect the input signal to the encoder



Audio Cable

Connect the audio output connector on the computer or server to the AUDIO IN connector on the encoder using a 3.5 mm audio cable.

Video Cable

Connect the output connector on the computer or server to the HDMI IN connector on the encoder using an HDMI cable.

Connect the LOOP OUT connector with the monitor using an HDMI cable, and then the input image can be viewed on the monitor.

USB Cable

When the input sources come from the computer or server, the KVM operations are supported. Connect the computer or server with the encoder using a USB cable.

Connect the Type-B connector of the USB cable to the Type-B USB connector on the encoder, and then plug the other end to the USB connector on the computer or server.

2.2 Network Connections

The encoder is able to encode the input video, audio and USB control signals and transmit them via the network signals. The encoder and switch can be connected in the following two ways.

- Ordinary switch

Connect the LAN/PoE port on the encoder to the Ethernet port on the ordinary switch using an Ethernet cable. After a successful connection, the encoder will automatically start.

When an ordinary switch is connected, the encoder needs to be connected with a power adapter to get powered.

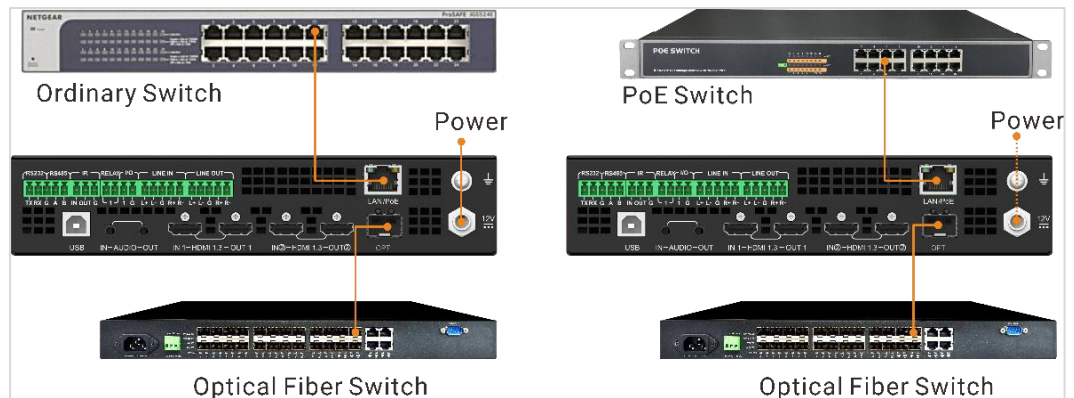
- PoE switch

Connect the LAN/PoE port on the encoder to the Ethernet port on the PoE switch using an Ethernet cable. After a successful connection, the encoder will automatically start.

- Optical fiber switch

Insert the connected optical fiber cable into the optical module, and then plug the optical modules at both ends into the OPT ports on the encoder and optical fiber switch respectively to complete the connection.

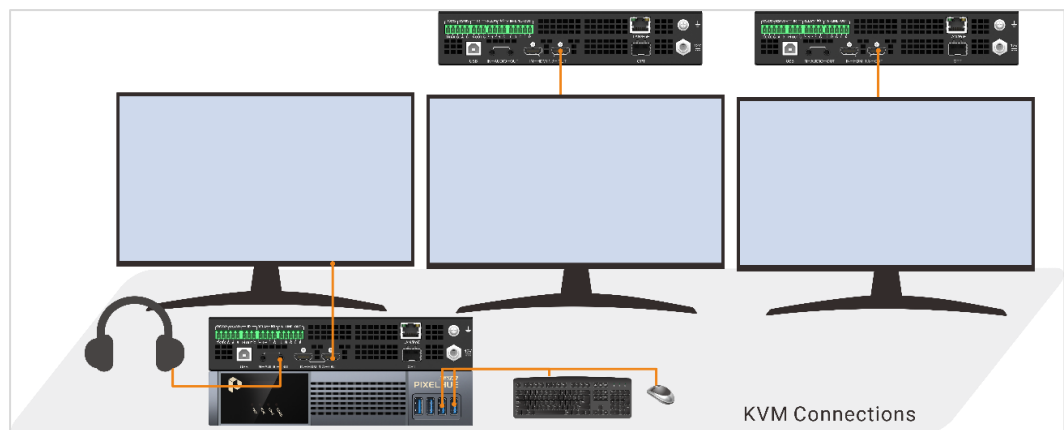
Figure 2-2 Switch connections



2.3 Decoder-KVM Connections

When the PD3-2K serves as a KVM node, each monitor is connected to one PD3-2K.

Figure 2-3 Decoder-KVM connections



Keyboard and Mouse Connections

Connect the mouse and keyboard to the PD3-2K.

Note

- If the decoders are connected to multiple monitors, the keyboard and mouse can be connected to any of the decoders. You need to log in to the KVM operator system on the monitor connected to the decoder with the keyboard and mouse.
- The wireless mouse and keyboard are supported and the USB ports connected to the keyboard and mouse can be shared.

Monitor Connections

Connect the HDMI OUT connector on the decoder to that on the monitor using an HDMI cable.

Audio Connections

- Independent microphone, speaker or headphones

Connect the microphone to the AUDIO IN connector on the decoder.

Connect the speaker or headphones to the AUDIO OUT connector on the decoder.

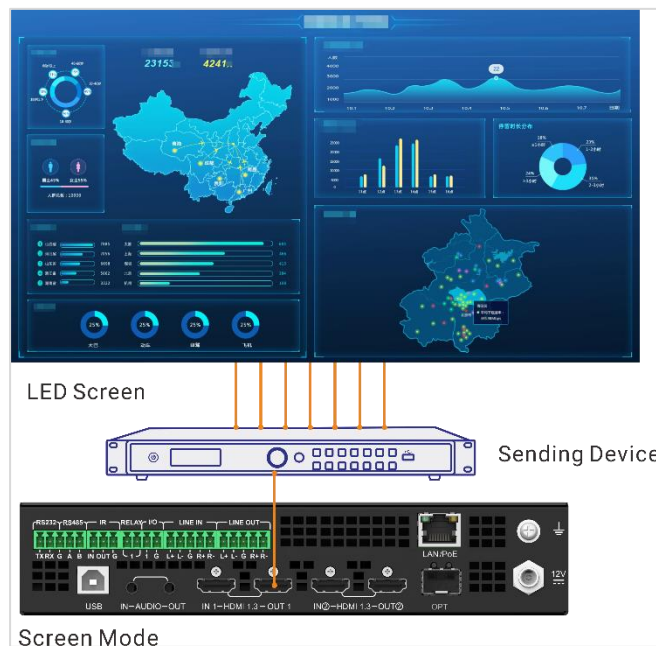
- Headphones with microphone

Connect the microphone connector to the AUDIO IN connector and plug the other connector to the AUDIO OUT connector according to the icon on the headphone jacks.

2.4 Screen Connections

LED Screen Connections

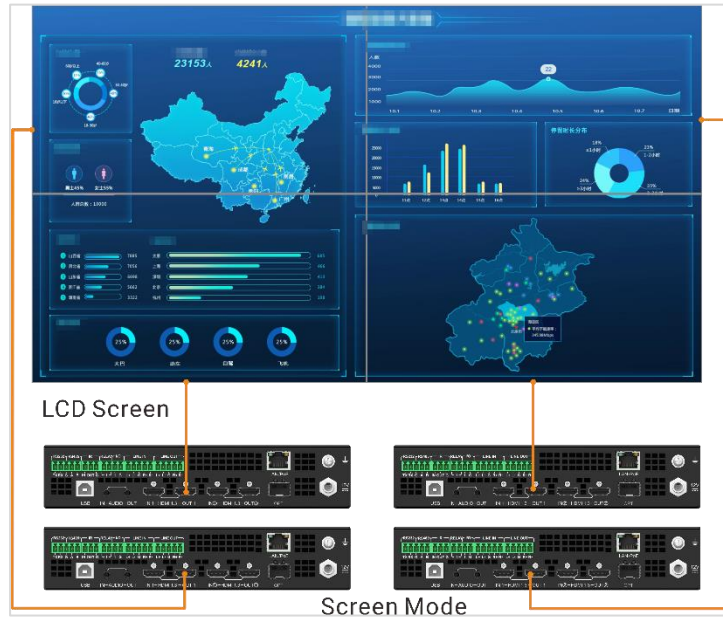
Figure 2-4 LED screen connections



1. Connect the HDMI OUT connector on the PD3-2K to the input connector on the sending device using an HDMI cable.
2. Connect the sending device and LED screen using Ethernet cables.
3. Configure the screen on the sending device.

LCD Screen Connections

Figure 2-5 LCD screen connections



Connect the HDMI OUT connector on the PD3-2K (screen node) to the LCD screen using an HDMI cable.

If the screen is configured on the Web page, the screen connection order must be the same as the configuration order.

If the screen is not configured on the Web page, you can directly connect the screen and remember the relationship between the screen and the matched decoder to help the screen configurations on the Web page.

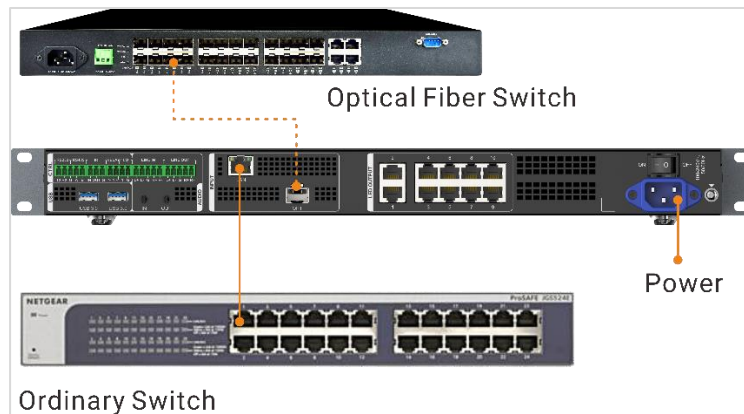
2.5 All-in-One Decoding Node Connections

The all-in-one decoding nodes of the PD series include the PD3-S10 and PD3-S20. This section takes the PD3-S10 as an example to illustrate.

2.5.1 Network Connections

The Ethernet port and optical fiber port on the all-in-one decoding node can decode the accessed inputs, audio and control signals. The connection method is shown as follows.

Figure 2-6 Network connections



2.5.2 Screen Connections

2.5.2.1 LED Screen

With the sending function, the PD3-S10 can directly load the LED screen. The connection method is shown as follows.

Figure 2-7 LED screen connections



2.5.2.2 Screen Configurations

Configure the LED screen in LCT when the all-in-one decoder is used,

Prerequisites

- The IP address of the primary management node is obtained.
- If the screens are built, you need to obtain the cabinet data flow.
- The control computer is installed with LCT.

Operating Procedure

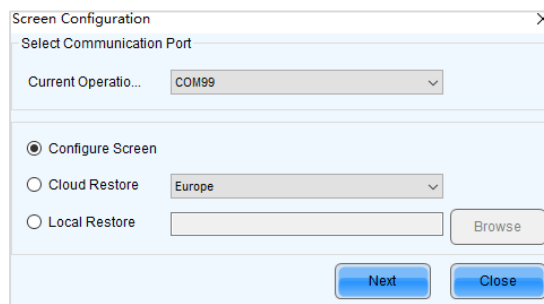
Step 1 Start LCT.

Step 2 In the menu bar, go to **User > Advanced Synchronous System User Login**. Enter the password and click **Login**.

The default password is "admin".

Step 3 Click  or go to **Settings > Screen Configuration** to open the Screen Configuration window.

Figure 2-8 Screen configuration

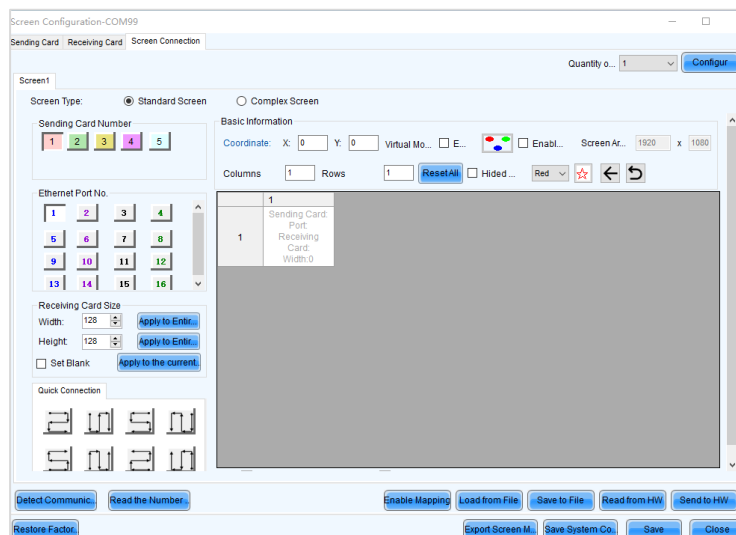


Step 4 Select the IP address of the primary management node and communication port.

Step 5 Select **Configure Screen** and click **Next**.

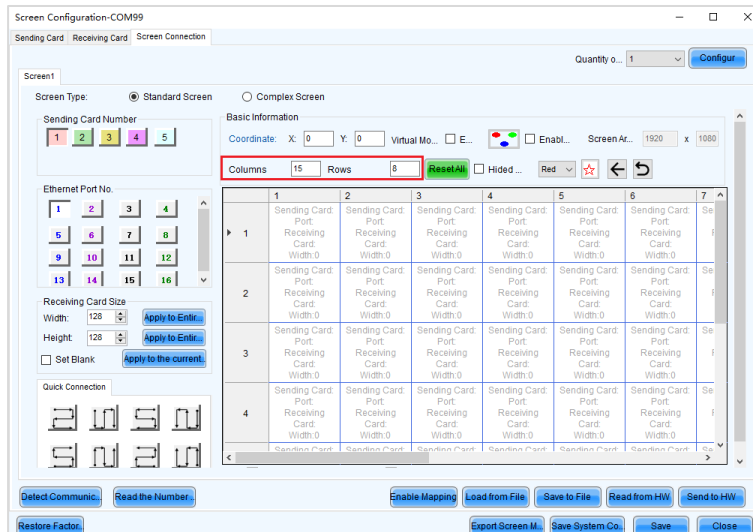
Step 6 Select the **Screen Connection** tab to show the screen configuration settings.

Figure 2-9 Screen configuration



Step 7 On the **Standard Screen** window, set the column and row quantities of receiving cards. As shown in [Figure 2-10](#), the values of **Columns** and **Rows** are set to 15 and 8 respectively.

Figure 2-10 Column and row quantities of receiving cards



Step 8 Select the sending card number which indicates the sequence number of the all-in-one decoder.

The connected all-in-one decoders are automatically linked. Each decoder corresponds to a sending card number in LCT.

Step 9 Select the Ethernet port number.

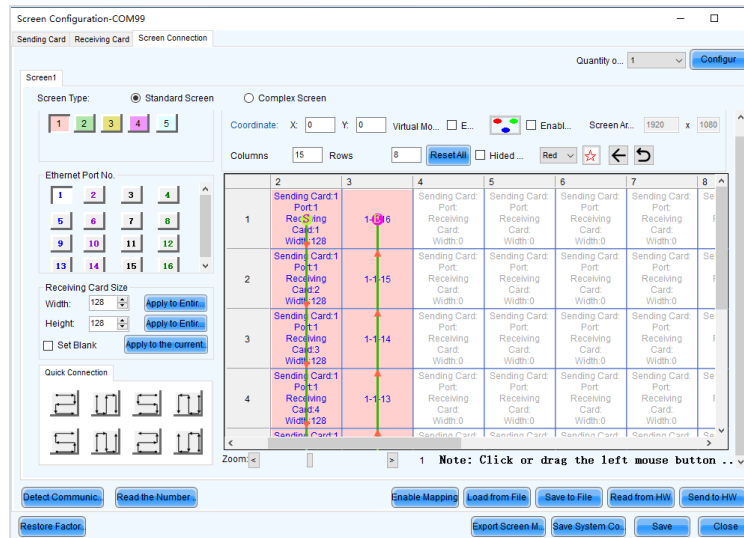
Step 10 Draw lines between cabinets based on the cabinet connection and the connection mode between the device and screen.

- Custom connection: Click the cells or drag the mouse to draw lines.
- Quick Connection: Click a quick connection mode and drag the mouse to select an area in the form.

When you draw lines, the loading capacity is set to the current value by default. If needed, you can change the values of **Width** and **Height** on the left.

The connection rule of the receiving cards loaded by the Ethernet port No.1 is shown as follows. Right click the receiving card to cancel the configuration for this card.

Figure 2-11 Receiving card connection



- Step 11 Repeat [Step 8](#) to [Step 10](#) to complete the connection of the receiving cards loaded by other Ethernet ports.
- Step 12 Click **Send to HW** to send the configuration information to the hardware.
- Step 13 After the settings, click **Save** to save the configuration information to the hardware and complete the screen configuration.

Note

- Click **Save to File** to save the configuration information as a local file.
- For configuration for irregular screens, please refer to *LCT User Manual*.

2.5.3 Audio Connection

Directly connect an external speaker via the AUDIO port.

Figure 2-12 Audio output connection



3

Device Configuration

The PD series devices integrate the encoding and decoding functions. Before using the device, you need to set the device type to **Encoder**, **Decoder-Screen** or **Decoder-KVM** in BCTools.

3.1 Software Installation

3.1.1 Obtaining

The BCTools software installation package can be obtained through the following methods.

- Get the BCTools installation package from the device provider and copy it to your control PC.
- Please contact your sales or our technical support engineer to obtain the software installation package and copy it to your control PC.

3.1.2 Install Software

Extract the control software package to the computer, double click the BCTools.exe installation package, and follow the prompts to complete the installation.

BCTools tool currently only supports installation on Windows 7 and later systems.

3.2 Connect Devices

Prerequisites

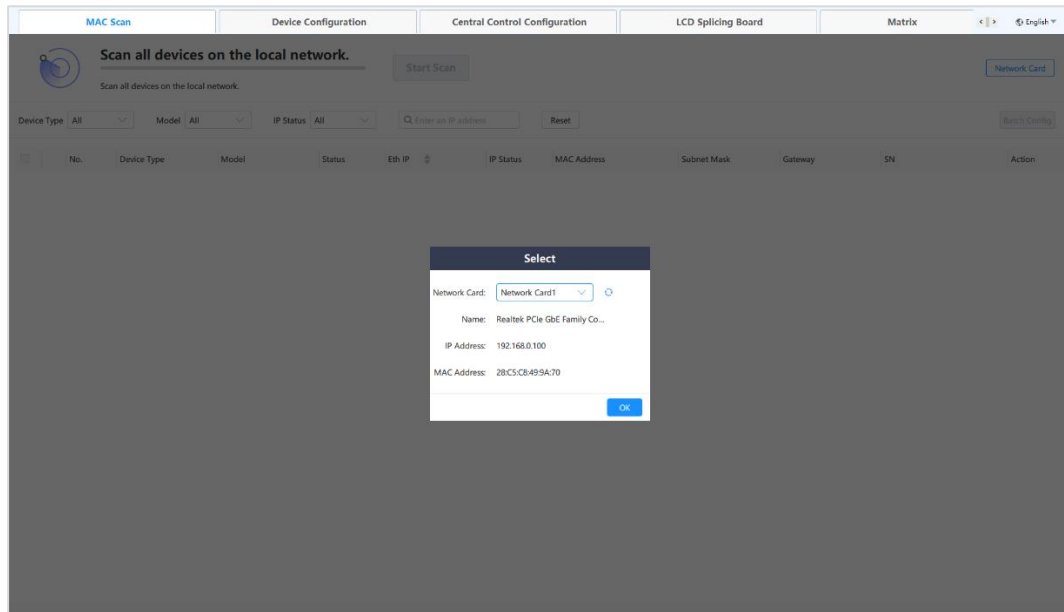
The control PC and all PD series devices must be on the same network segment.

Operating Procedure

Step 1 Double click on the BCTools shortcut icon  to run the program.

Step 2 Select the network card connected to the PD series device in the popup window.

Figure 3-1 Select network cards



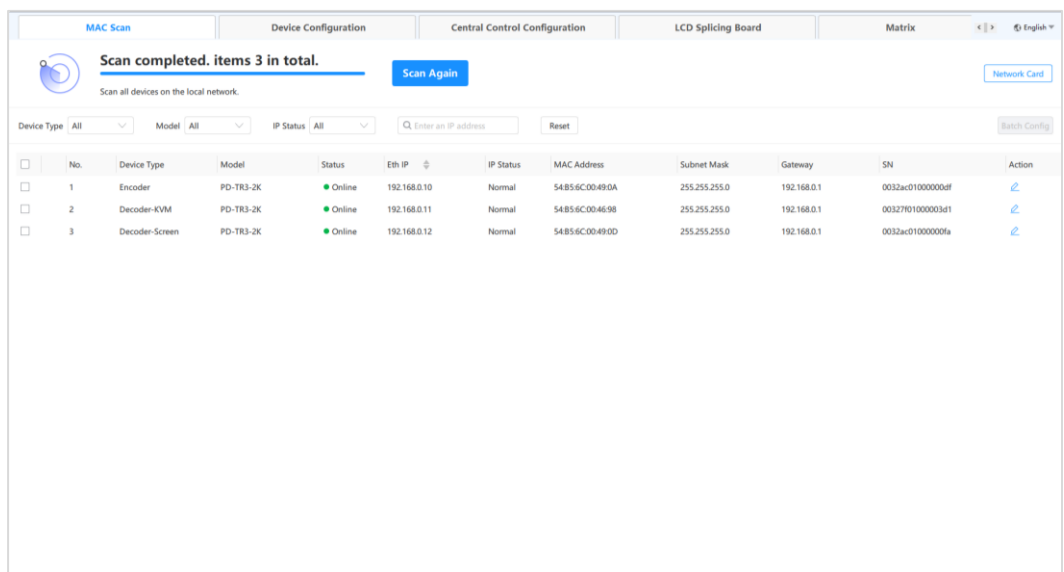
Note

If only one network card can be installed into the control PC, there is no need to select the network card.

Step 3 Click **OK** to complete the settings.

Step 4 Click **Scan** and the system will automatically scan the MAC addresses of all PD series devices on the current network segment. The scanned devices will also be displayed.

Figure 3-2 Scan devices



3.3 Change Device IP Addresses

3.3.1 Change Single Device IP Address

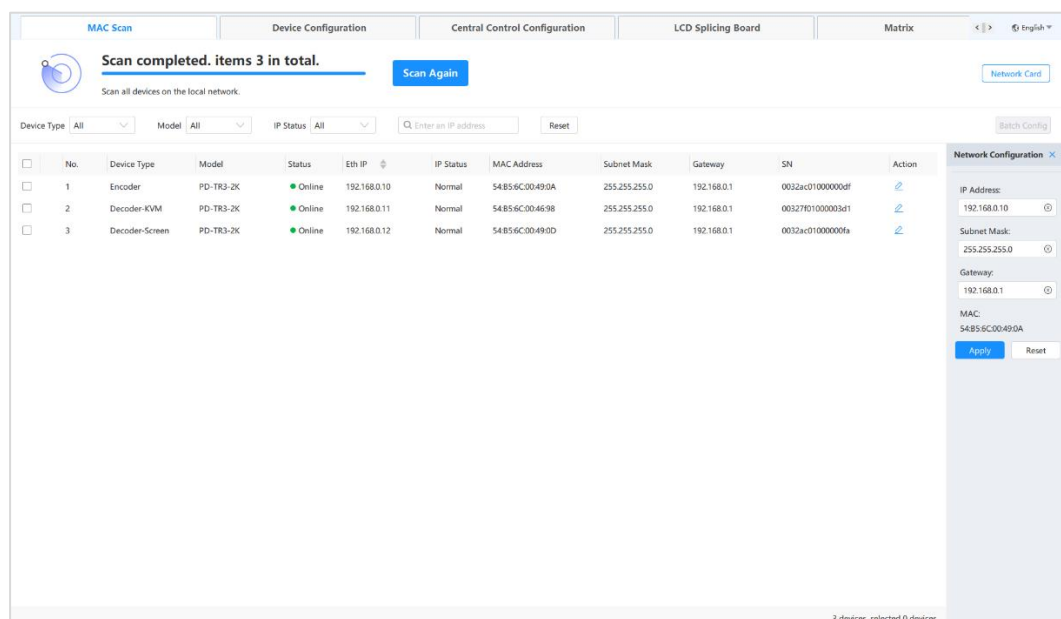
Prerequisites

The device is successfully scanned in BCTools.

Operating Procedure

- Step 1 In the device list, click  in the column of **Action** to expand the network configuration pane.

Figure 3-3 Set network parameters



- Step 2 Set the device IP address, subnet mask and gateway individually.

Please note that the set IP parameters cannot conflict with IP addresses of other devices on the current network segment.

- Step 3 Click **Apply** to save and apply the settings.

3.3.2 Change Multiple Device Addresses

You can batch change the IP addresses of all the connected devices in BCTools.

Prerequisites

The devices are successfully scanned in BCTools.

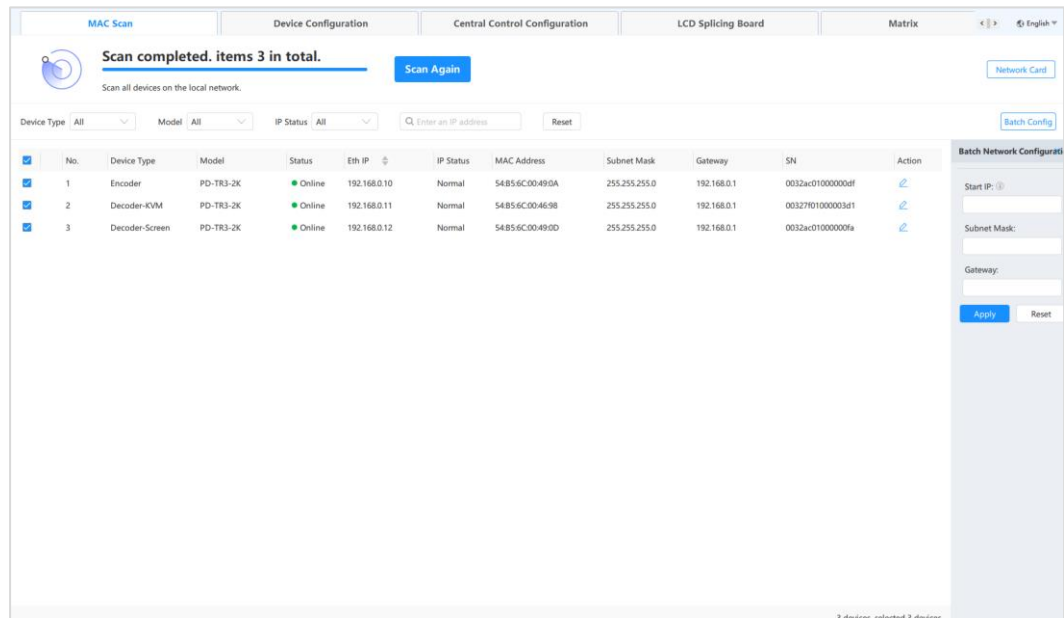
Operating Procedure

Step 1 Check the boxes next to the desired devices.

Check the box next to **No.** to select all the connected devices.

Step 2 Click **Batch Config** to expand the batch network configuration pane.

Figure 3-4 Batch editing



Step 3 Enter the start IP address.

After the start IP address is set successfully, the IP addresses of subsequent devices are sequentially increased by 1 according to their order in the device list.

For example: If the start IP address is 192.168.0.10, the IP address of the second device in the device list becomes 192.168.0.11.

Step 4 Set the subnet mask and gateway respectively.

Step 5 Click **Apply** to make the settings take effect.

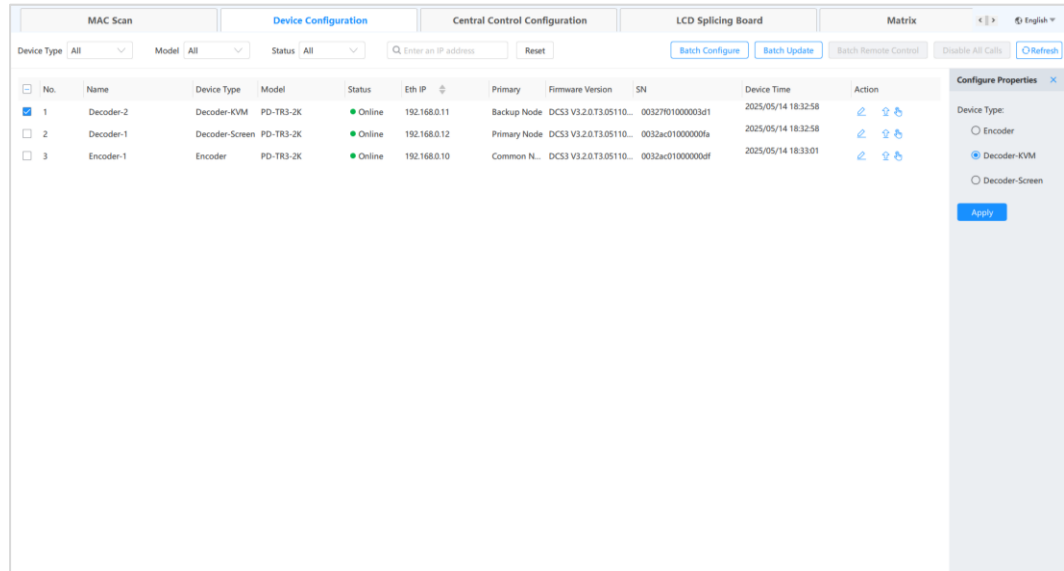
3.4 Change Device Type

3.4.1 Change Single Device Type

Step 1 In BCTools, click **Device Configuration** to enter the device configuration interface.

Step 2 Click  in the column of **Action** next to the desired device to expand the device properties pane.

Figure 3-5 Set device properties



Step 3 Set the device type to **Encoder**, **Decoder-Screen** or **Decoder-KVM**.

- Encoder: Set the device as an encoding node.
- Decoder-Screen: Set the device as a decoding node that is used to load a screen.
- Decoder-KVM: Set the device as a decoding node that is used to connect a KVM monitor.

Step 4 Click **Apply** to save and apply the settings.

3.4.2 Change Multiple Device Types

You can batch change the properties of the connected devices in BCTools.

Prerequisites

The devices are successfully scanned in BCTools.

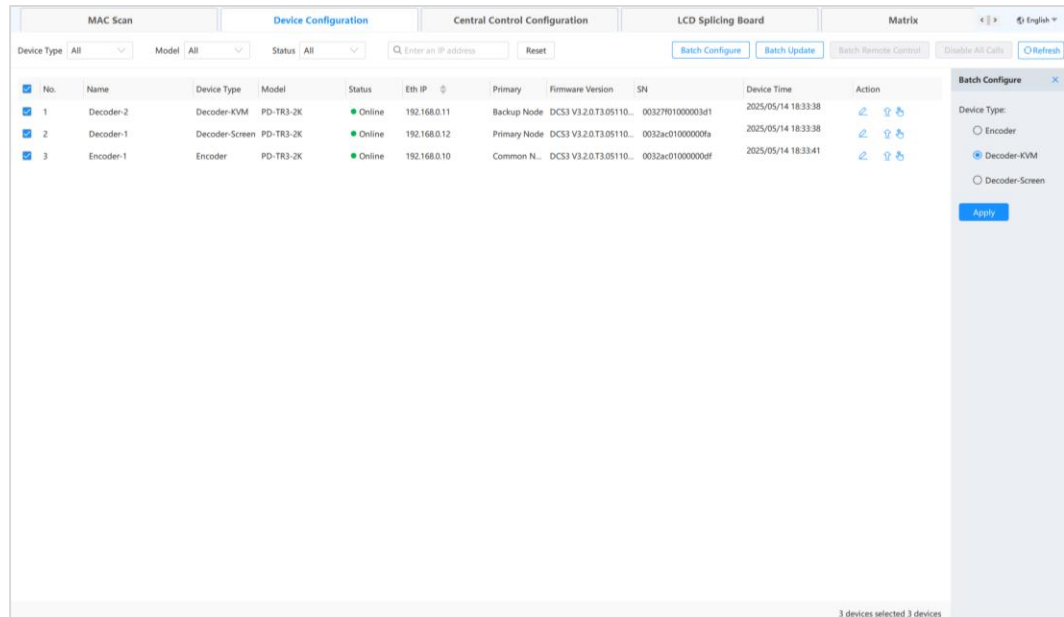
Operating Procedure

Step 1 Check the boxes next to the desired devices.

Check the box next to **No.** to select all the connected devices.

Step 2 Click **Batch Configure** to expand the batch editing pane.

Figure 3-6 Batch editing



Step 3 Set the device type to **Encoder**, **Decoder-Screen** or **Decoder-KVM**.

Step 4 Click **Apply** to make the settings take effect.

3.5 Set Primary Nodes

You can set the connected device as a primary node in BCTools and multiple primary nodes can be set.

Prerequisites

The device is successfully scanned in BCTools.

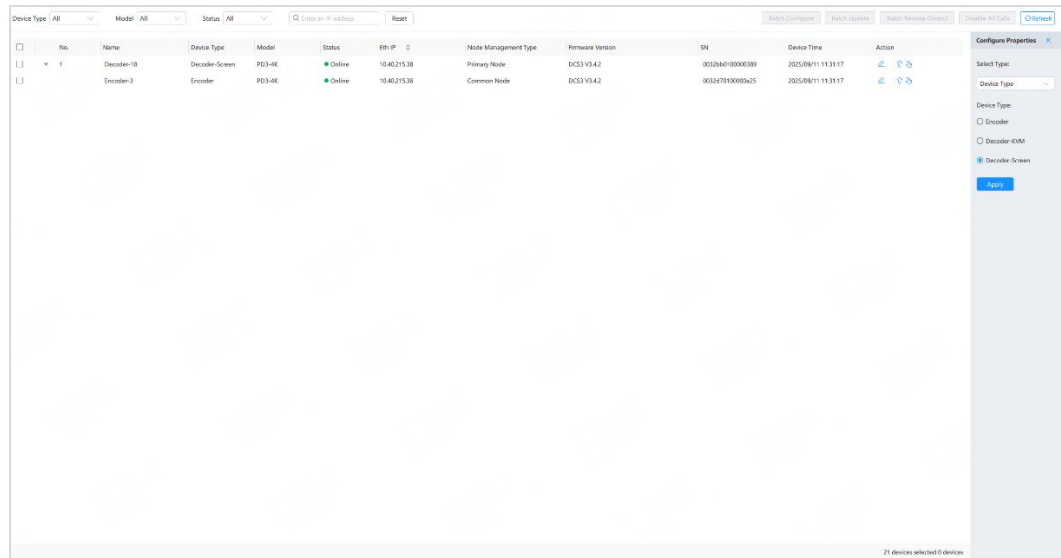
Operating Procedure

Step 1 In the device list, Click  in the column of **Action** to expand the device properties settings pane.

When you set multiple devices, check the boxes next to the desired devices, and then click **Batch Configure** to expand the corresponding pane.

Step 2 Select **Node Management Type** from the drop-down list below **Select Type**.

Figure 3-7 Set device properties



Step 3 Set the device as a primary node.

Step 4 Click **Apply** to make the settings take effect.

3.6 Add Devices to Primary Nodes

After the primary node is successfully set, add other devices to the primary node to complete the system configuration.

Step 1 Check the boxes next to the desired devices, and then click **Batch Configure** to expand the corresponding pane.

Step 2 Select **Add to Primary Node** from the drop-down list next to **Select Type**.

Step 3 Select the primary node added in 3.5 Set Primary Nodes.

Step 4 Click **Apply** to add the selected device to the primary node.

4 Web Control

4.1 Log into Web Page

4.1.1 Configure Primary Management Nodes

For multiple devices in the distributed system, configuring each of them is not efficient and also increases the management difficulty. The primary management node is used for centralized management and distribution of the configuration information to realize the standardized system management.

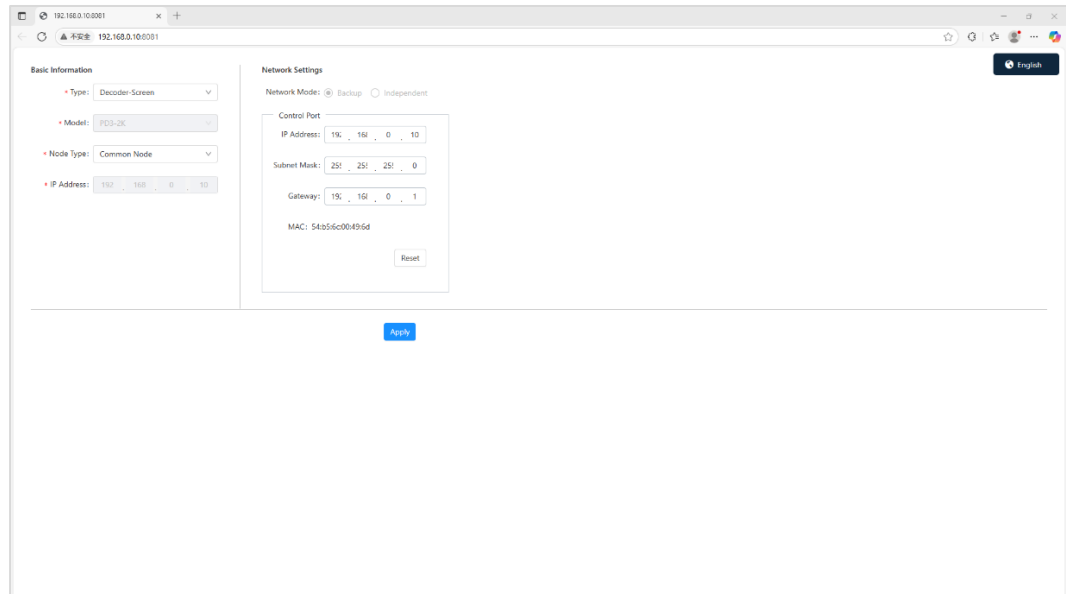
Prerequisites

- The IP address of the device used as the primary management node is obtained.
- The Google Chrome (64 bit) 90 or later is installed on the control PC.
- Only the decoding node can be set as the primary management node.

Operating Procedure

- Step 1 Open the browser, enter the IP address and port number of the primary management node in the address bar, and then press **Enter** to open the primary management node settings page. The default port number is 8081 (IP: 8081).

Figure 4-1 Primary management node settings



Step 2 Select Primary Management Node from the drop-down list next to Node Management Type.

Step 3 Click **Apply** and all the nodes in the system will automatically restart and be added to the system.



Note

- In the **Network Settings** area, you can change the IP information of the primary node. Click **Apply** to complete the editing and the device will automatically restart.
- When you want to change the primary node, go to **Configuration > Device** to open the device management page where you can find the device used as the primary node. Click the device name to show the device detailed information. Select **Common Node** from the drop-down list next to **Node Type** to change the node type of the device used as the primary node, and then reconfigure the primary management node.

4.1.2 Log into System

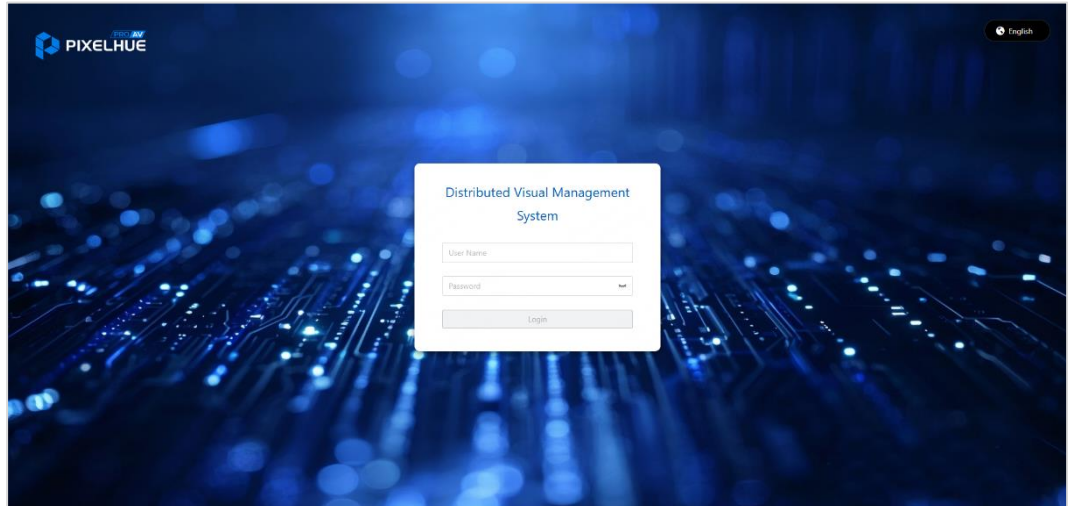
Prerequisites

- The IP address of the primary management node or any distributed node is obtained.
- The user name and password are obtained.
 - The default user name is "admin".
 - The default password is "password123".

Operating Procedure

- Step 1 Open the browser, enter the IP address of the primary management node in the address bar, and then press **Enter** to jump to the login interface.

Figure 4-2 Web login page



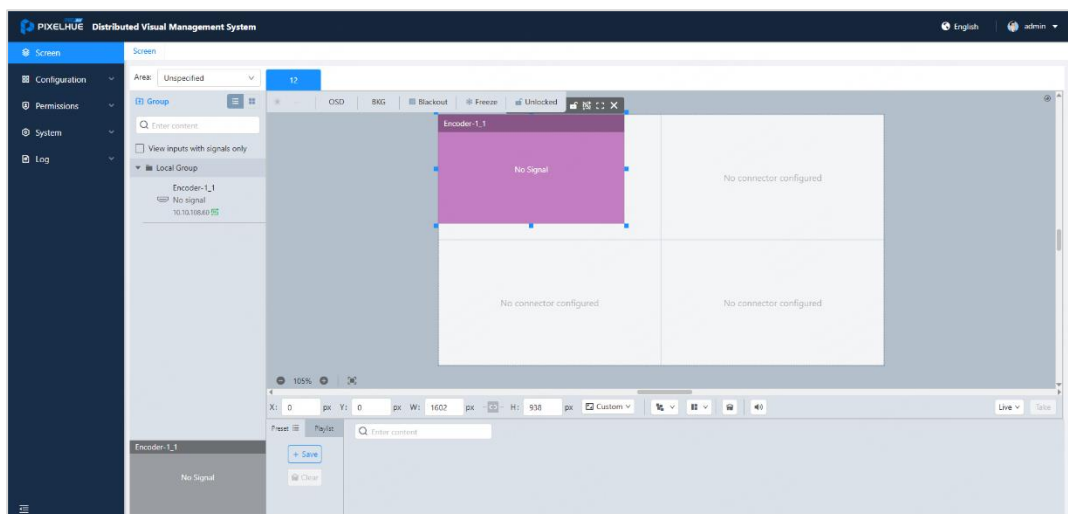
Note

Open the browser, enter the IP address of any distributed node in the address bar, and then the system will automatically redirect to the IP address of the primary management node and jump to the login interface.

- Step 2 Enter the user name and password, and click Login to log into the primary management node control page.

The home page on first login is shown as follows.

Figure 4-3 Home page



Note

Click  or  at the bottom left to change the main menu style.

4.2 Configure Basic Data

The basic data includes the user, department, role and area configurations.

4.2.1 Configure Areas

The system supports the management of the devices, signal sources and video walls based on different areas.

4.2.1.1 Add Areas

Add the areas where the devices, video walls, IPC sources and other devices are located to the system. When managing the devices and video walls, you can add the area information for future device management.

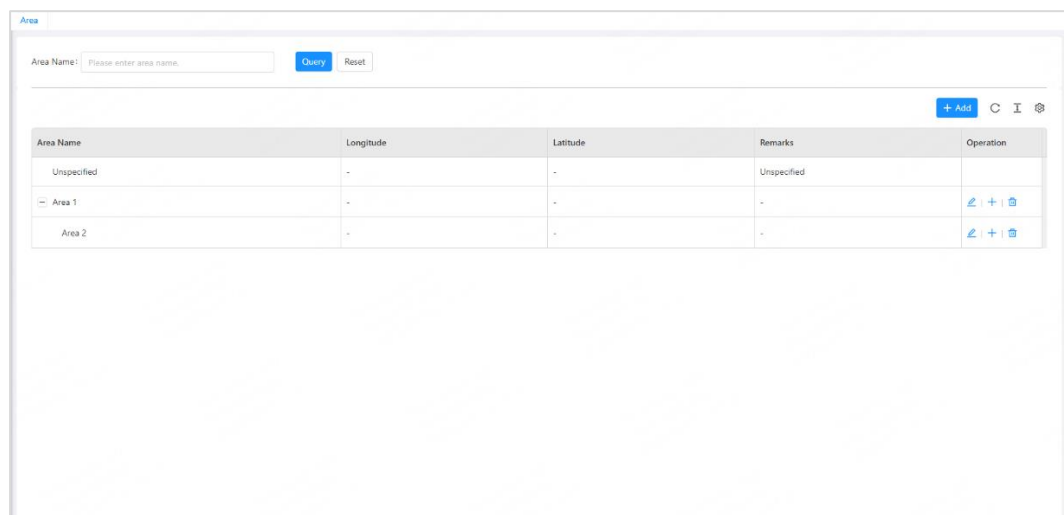
Prerequisites

N/A

Operating Procedure

- Step 1 In the main menu bar, go to **Configuration > Area** to enter the area management page.

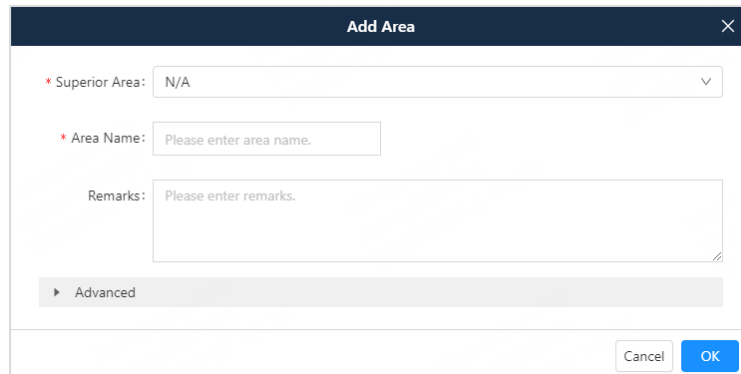
Figure 4-4 Area management



Area Name	Longitude	Latitude	Remarks	Operation
Unspecified	-	-	Unspecified	
Area 1	-	-	-	  
Area 2	-	-	-	  

- Step 2 Click **Add** to open the area adding window to add a new area.

Figure 4-5 Add Areas



Step 3 Fill the area-related information. If you need to set the precise location for the area, click **Advanced** to expand the settings area and enter the values in the **Longitude** and **Latitude** text boxes respectively.

- Superior Area: Select the superior area for the current area. If you need to add the first-level area, please select **N/A**.
- Remarks (optional): Enter the supplementary area information.

Step 4 Click **OK** to complete the settings.

The added area is shown in the area list after a successful adding.

4.2.1.2 Add Sub-Areas

Multiple-level area management is supported for more detailed area division and device management.

The area level is up to 5.

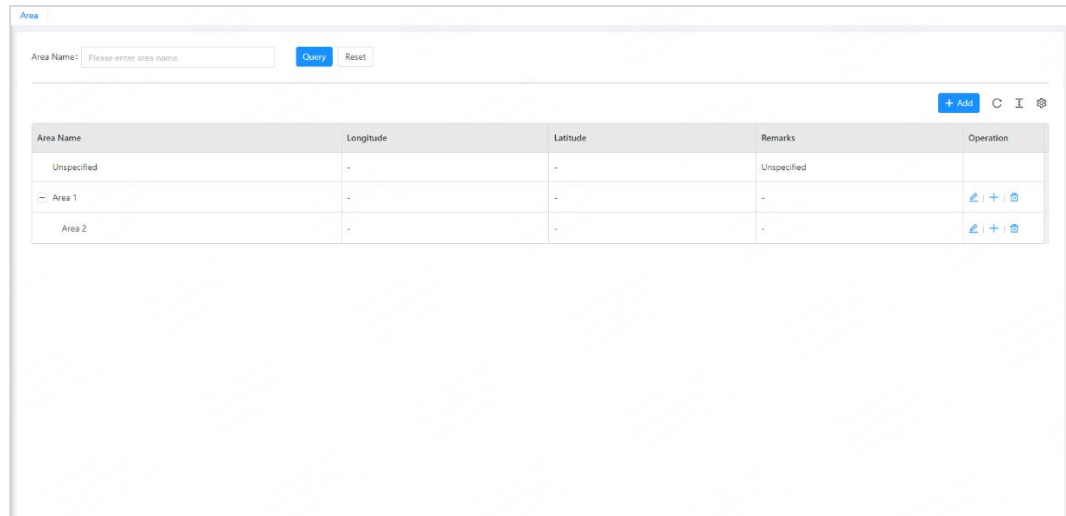
Prerequisites

The superior area is configured.

Operating Procedure

Step 1 In the main menu bar, go to **Configuration > Area** to enter the area management page.

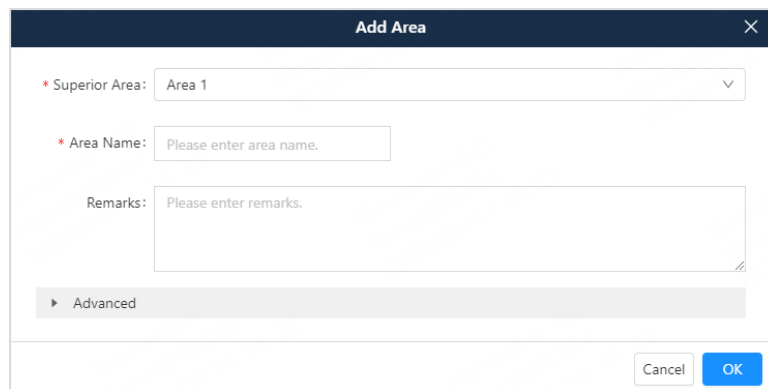
Figure 4-6 Area management



Area Name	Longitude	Latitude	Remarks	Operation
Unspecified	-	-	Unspecified	
Area 1	-	-	-	+
Area 2	-	-	-	+

Step 2 Click **+** in the column of **Operation** of an existing area to open the sub-area adding window.

Figure 4-7 Add new sub-areas



Step 3 Fill the area-related information. If you need to set the precise location for the area, click **Advanced** to expand the settings area and enter the values in the **Longitude** and **Latitude** text boxes respectively.

Step 4 Click **OK** to complete the adding.

Note

When adding a sub-area, you can click **Add** to open the area adding window where you can select the desired area from the drop-down list next to **Superior Area**.

4.2.1.3 Edit Areas

You can change the area-related information.

**Note**

When the area name is changed, the original area where the devices are located will be changed automatically.

Prerequisites

The area is added.

Operating Procedure

- Step 1 In the main menu bar, go to **Configuration > Area** to enter the area management page.
- Step 2 Click  in the column of **Operation** to open the area editing window.
- Step 3 Change the superior area, area name, remarks and other information.
- Step 4 Click **OK** to complete the editing.

4.2.1.4 Delete Areas

- Step 1 In the main menu bar, go to **Configuration > Area** to enter the area management page.
- Step 2 Select the desired area and click  in the column of **Operation** to open a dialog.
- Click **OK** to delete the selected area.
 - Click **Cancel** to cancel the deletion.

**Note**

- When the superior area is deleted, its sub-areas will automatically be deleted.
- When the superior area and its sub-areas are deleted, the devices, video walls, signal sources in these areas will be listed in the unspecified area.

4.2.2 Add Video Walls

Configure a video wall in the current environment to build the relationship between the wall and the device in the system.

Configure a video wall in advance because its permission needs to be configured for a user.

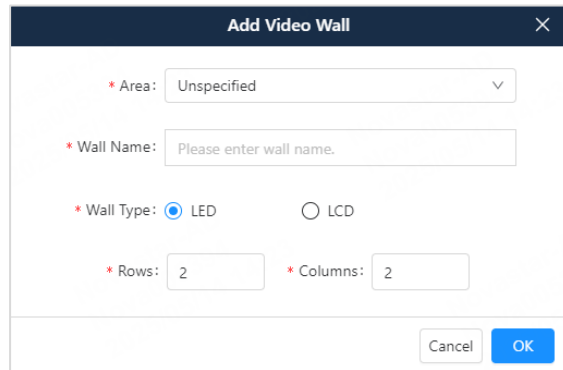
Prerequisites

The area is configured.

Operating Procedure

- Step 1 In the main menu bar, go to **Configuration > Video Wall** to enter the video wall management page.

Figure 4-8 Add new video walls

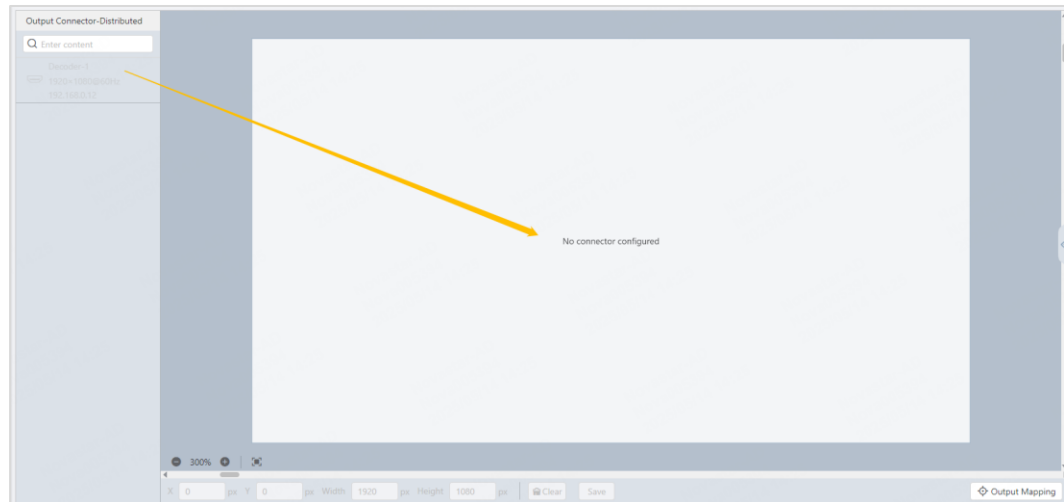


- Step 2 Select the area where the wall is located from the drop-down list next to **Area**.
- Step 3 Enter the wall name in the text box next to **Wall Name**.
- Step 4 Select the wall type according to the wall loaded by the decoder.
- Step 5 Enter the values in the text boxes next to **Rows** and **Columns**.
- When the wall type is the LED screen, set the values according to the number of the mosaic decoders.
 - When the wall type is the LCD screen, set the values according to the actual number of rows and columns of the current screen.
- Step 6 Click **OK** to enter the video wall configuration page.
- Step 7 Select and drag a decoder node named **Decoder-Screen** on the left to the screen editing area to complete the editing.

Note

If the hardware connection is completed, when configuring the screen, you need to follow the actual connection order. If the screen configurations are completed on the Web page, you need to draw lines based on the configuration order.

Figure 4-9 Screen configurations



Note

- The devices of different types cannot be used to load the same screen.
- The decoding nodes with the same output resolution and frame rate can be configured in the same video wall.
- For quickly locating the screen position in the editing area, select the loaded screen and click  at the top left next to the coordinates to enter the values of **X** and **Y**, and then click . The reference point is at the top left of the editing area.

Step 8 [Optional] Set the LCD bezel compensation.

1. Click  on the right edge to expand the screen properties pane.
2. Check the box next to **LCD Bezel Compensation** to turn on the bezel compensation function.
3. Enter the values in the **H Spacing** and **V Spacing** text boxes based on the LCD edge width.

The rules for setting the **H Spacing** and **V Spacing** values are as follows.

- **H Spacing**: The horizontal spacing value is set to the edge width (H) plus the half spacing (H) between the two screens. The unit is pixel.
- **V Spacing**: The vertical spacing value is set to edge width (V) plus the half spacing (V) between the two screens in pixels. The unit is pixel.

Step 9 Click **Save** to complete the screen configurations.

4.2.3 Configure Departments

The department management is used to maintain and manage the organization flexibly. The multiple department level settings are supported. Each superior department can be configured with multiple sub-departments, and each sub-department can also be configured with subordinate departments. Level relations can be extended infinitely and the department level is up to 5.

Each department has its permissions, and the sub-departments inherit the permissions of their superiors. The department information includes the department name and superior department name.

4.2.3.1 Add Departments

Step 1 In the main menu bar, go to **Permission > Department** to enter the department management page.

Step 2 Click **Add** to open the department adding window.

Figure 4-10 Add new departments

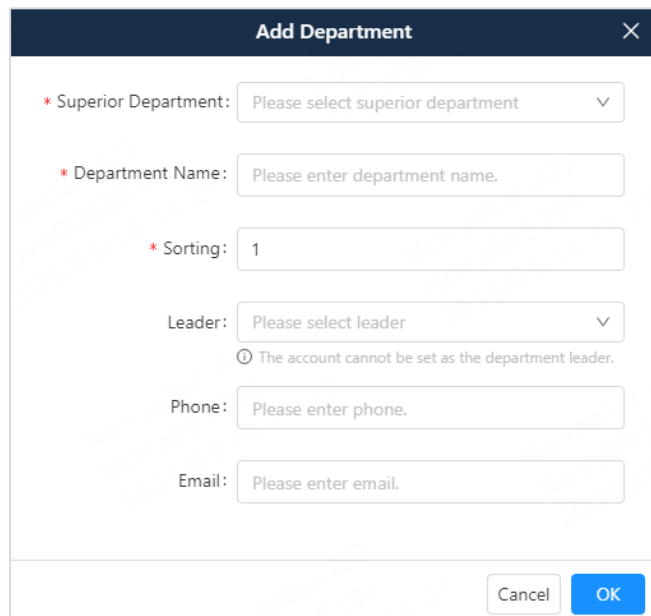


Table 4-1 Department parameters

Parameter	Description	Configuration Method
Superior Department	Superior department name	Required Select the superior department name from the drop-down list.
Department Name	Department name	Required The department name is the only identity information of the department and supports English letters, numbers, en dashes, underlines and spaces.
Sorting	Display rank in the department list	Required The sorting number refers to the display rank in the department list. You can enter the numbers, such as 1, 2, 3. When

Parameter	Description	Configuration Method
		the sorting number is set to 1, the department name will be shown in the first row of the list. Note: The sorting number of the root department is 0 and cannot be changed.
Leader	Leader name	Optional Select an added user to be the department leader from the drop-down list.
Phone	Leader phone number	Optional Enter the leader phone number in the text box.
Email	Leader email address	Optional Enter the leader email address in the text box.

Step 3 Configure the department parameters according to [Table 4-1](#).

Step 4 Click **OK** to complete the adding.

Note

- When you want to add second-level and third-level departments, please refer to the steps mentioned above.
- Click **+** in the column of **Operation** to quickly add a sub-department.

4.2.3.2 Edit Departments

When the department-related information is changed, such as the leader and phone number, you can edit them to maintain the department information.

Step 1 Select the desired department and click  in the column of **Operation** to open the department editing window.

Step 2 Change the department-related information.

Step 3 Click **OK** to complete the editing.

4.2.3.3 Delete Departments

When a department is abolished or merged, you need to delete it to avoid the redundant information maintenance.

Select the desired department and click  in the column of **Operation** to open a dialog.

- Click **OK** to delete the selected department.
- Click **Cancel** to cancel the deletion.

4.2.4 Configure Roles

The role is a set label in the system based on the requirement of operational management. Each role has permissions to access and operate the KVM operator system and Web page, and the permissions will not change when a user is added or removed. The role management facilitates the distribution and management of system permission resources, improving the permission distribution efficiency and reducing the workload for repeated permission settings.

4.2.4.1 Add Roles

Step 1 In the main menu bar, go to **Permission > Role** to enter the role management page.

Step 2 Click **Add** to open the role adding window.

Figure 4-11 Add new roles

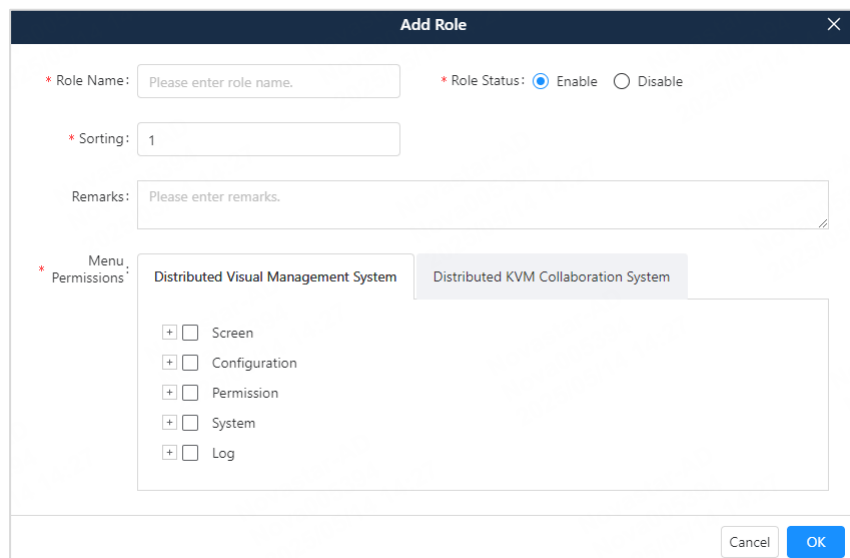


Table 4-2 Role parameters

Parameter	Description	Configuration Method
Role Name	Role name	Required The role name is the only identity information of a role and supports English letters, numbers, en dashes, underlines and spaces.

Parameter	Description	Configuration Method
Role Status	Enabled status of a role	Required Set the role status. The options include Enable and Disable. • Enable: The permissions that the role has will be enabled. • Disable: The permissions that the role has cannot be used.
Sorting	Display rank in the role list	Required The smaller value you set, the higher the role ranks.
Remarks	Supplementary information for a role	Optional Enter other role information in the text box.
Menu Permissions	Set the role permissions. Configure the menu permissions for the current role below the Distributed Visual Management System and Distributed KVM Collaboration System tabs.	Required Check the boxes next to the desired menus to obtain the matched permissions. Check the box next to the superior menu to obtain all the permissions. Expand the superior menu and check the boxes next to its sub-menus to obtain all the sub-menu permissions. • ☒: Obtain all the control permissions. • ☐: Obtain some permissions of the current menu.

Step 3 Configure a new role according to [Table 4-2](#).

Step 4 Click **OK** to complete the adding.

4.2.4.2 Edit Roles

When the permissions of a role are changed, you can reselect the permissions below the **Menu Permissions** tab. The permissions of all the users associated with the role will also be changed

Step 1 Click  in the column of **Operation** of an existing role to enter the editing page.

Step 2 Grant the desired menu permissions to the role.

Step 3 Click **OK** to complete the editing.

4.2.4.3 Assign Users for Roles

After a role is created, you can assign the users for it, and then the users will obtain the permissions that the role has.

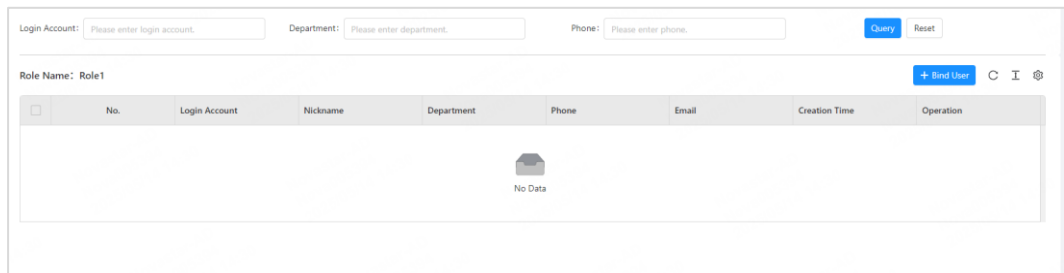
Prerequisites

The user is added.

Operating Procedure

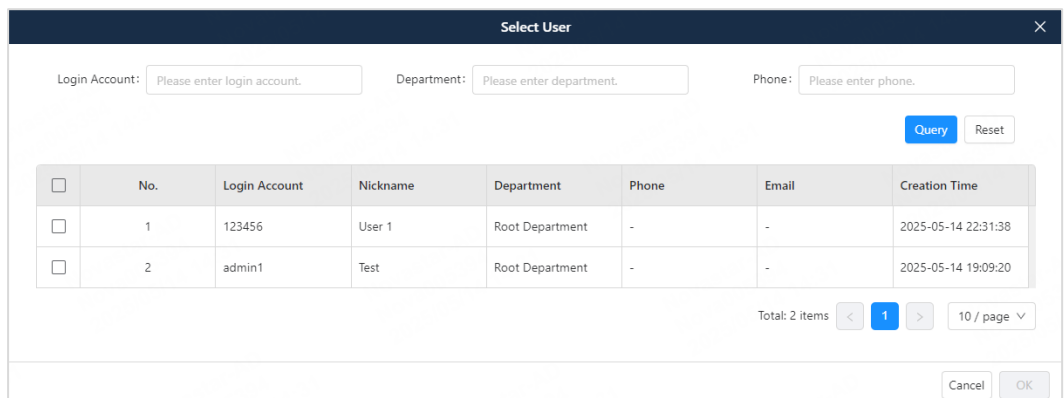
Step 1 Select the desired role and click  in the column of **Operation** to enter the role assignment page.

Figure 4-12 Assign users



Step 2 Click **Bind User** at the top right to open the user selection page.

Figure 4-13 Select users



Step 3 Check the boxes next to the user names.

Step 4 Click **OK** to complete the user assignment.



Note

- When selecting the user, you can perform a fuzzy or exact search in the **Login Account**, **Department** and **Phone** text boxes.
- On the role assignment page, select the user assigned for a role and click **Batch Remove Permissions** or click  in the column of **Operation** to remove the permissions.

4.2.4.4 Delete Roles

You can delete a role that is not assigned with users or no longer used.

Select the desired role and click  in the column of **Operation** to open a dialog.

- Click **OK** to delete the selected role.
- Click **Cancel** to cancel the deletion.

4.2.5 Configure Users

The user management function is used to manage the basic information of the users in the system. The management dimensions include the administrative relations and business framework. From the two dimensions, the interrelated individuals can be managed in groups. After being grouped based on different dimensions, the users in the corresponding groups have similar function requirements and operation permission levels.

4.2.5.1 Add Users

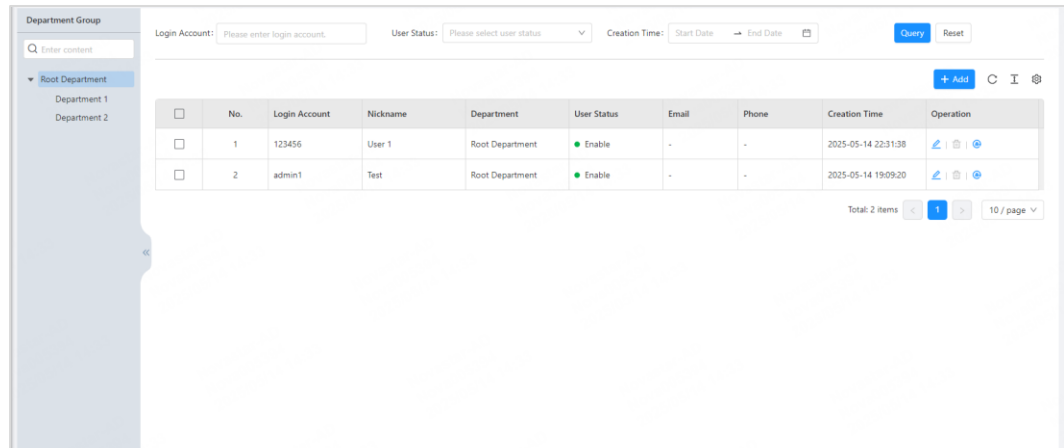
Prerequisites

The role is configured.

Operating Procedure

Step 1 In the main menu bar, go to **Permissions > User** to enter the user management page.

Figure 4-14 User management



Step 2 Click **Add** to open the user adding window.

Figure 4-15 Add new users

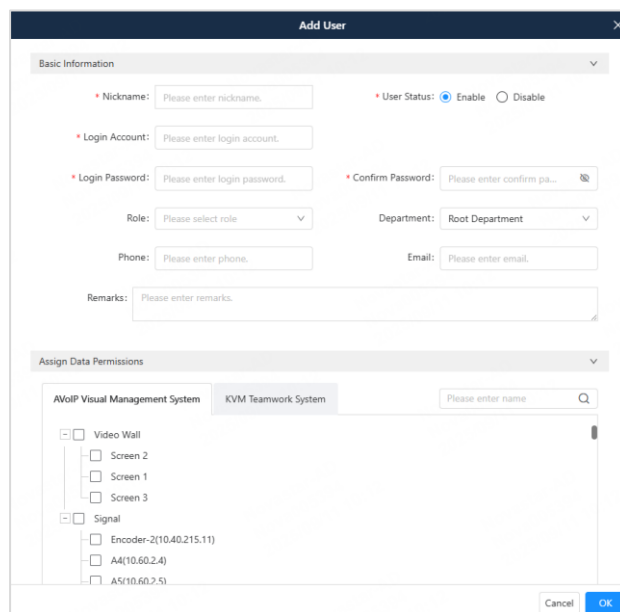


Table 4-3 User Information

Parameter	Description	Configuration Method
Nickname	User name displayed in the system	Required The user name is identity information. It is recommended to use a name that is easy to identify.
User Status	Enabled status of a user	Required The current user can use the system or

Parameter	Description	Configuration Method
		not. • Enable: The user can log into and operate the system using the current account and password. • Disable: The user cannot log into the system.
Login Account	The account used to log into the system	Required The account used to log into the system is unique. Note: After configuring the login account, it cannot be changed when you edit the user information.
Login Password	The password used to log into the system	Required Configure the password for a user.
Confirm Password	Enter again the password to confirm it.	The password you entered must be the same as the login password.
Role	The role information of a configured user	Optional Configure the role information according to the actual job position. Select a role from the drop-down list. Please refer to 4.2.4 Configure Roles for the job position configuration.
Department	User department	Optional Select the user department from the drop-down list. Please refer to 4.2.3 Configure Departments for the department configuration.
Phone	User phone number	Optional Enter the user phone number in the text box.
Email	User email	Optional Enter the user email address in the text box.
Remarks	Supplementary information of a user	Optional Enter other user information in the text

Parameter	Description	Configuration Method
		box.
Data Permissions	Configure user permissions.	The data permission includes the permissions below the Distributed Visual Management System and Distributed KVM Collaboration System tabs. • Distributed Visual Management System: Grant the management and operation permissions of the video walls and signals in the system. • Distributed KVM Collaboration System: Grant the operation permissions in the system. – Configure permissions for the video walls, output nodes and KVM operators. – Configure permissions for the signals. The option includes View Only, Control and Monopolize.

Step 3 Configure a new user according to [Table 4-3](#).

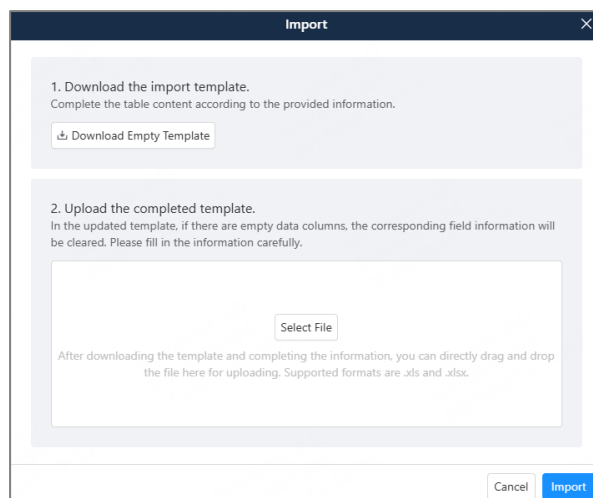
Step 4 Click **OK** to complete the adding.

4.2.5.2 Import Users

Add the user information to an Excel spreadsheet and upload the spreadsheet for batch import.

Step 1 Click **Import** to open the **Import** window.

Figure 4-16 Import users



Step 2 Click **Download Empty Template** to download the user importing template.

Step 3 Open the template and fill in the target user information.

Please carefully read the instructions in the first row and fill in the user information following the instructions.

Step 4 In the **Import** window, click **Select File** and select the added template file in the popup window.

Step 5 Click **Import** to import the user information filled in the table to the system.

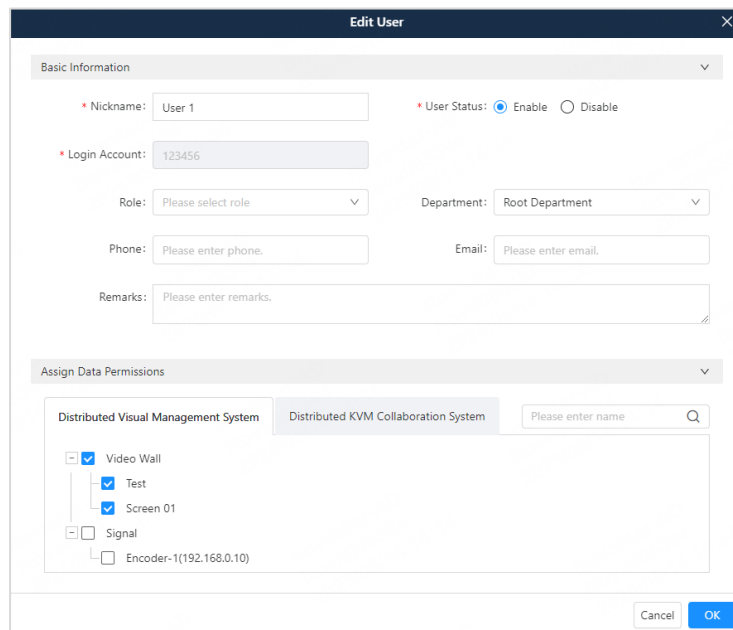
4.2.5.3 Edit Users

After a user is added, you can change the relevant information on the user management page.

When the user permissions are changed, the user needs to log into the system again.

Step 1 Select the desired user name and click  in the column of **Operation** to enter the user editing page.

Figure 4-17 Edit users



Step 2 Change the relevant information, including the role, department and permissions.

- Select a role from the drop-down list next to **Role** to change the user permissions. A user can have multiple role permissions.
- After the user login account is configured for the first time, it cannot be changed.

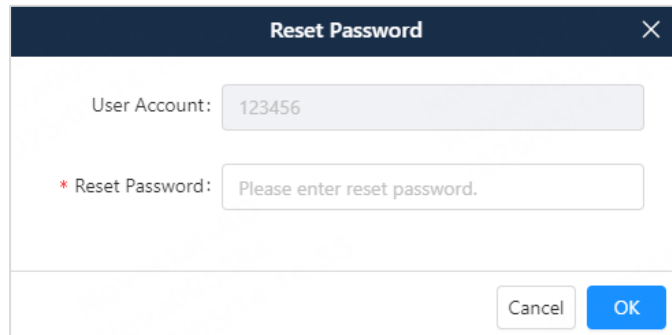
Step 3 Click **OK** to complete the editing.

4.2.5.4 Reset Passwords

The system administrator can reset the password for a user who forgets the password.

- Step 1 Select the desired user and click  in the column of **Operation** to open the password resetting window.

Figure 4-18 Reset passwords



The dialog box titled "Reset Password" contains two input fields. The first field is labeled "User Account:" and contains the text "123456". The second field is labeled "* Reset Password:" and contains the placeholder text "Please enter reset password.". At the bottom right of the dialog box are two buttons: "Cancel" and "OK".

- Step 2 Enter a new password in the text box next to **Reset Password**.

- Step 3 Click **OK** to complete the resetting.

4.2.5.5 Delete Users

You can delete a user who leaves the system or no longer logs into and operates the system.

Select the desired user and click  in the column of **Operation** to open a dialog.

- Click **OK** to delete the selected user.
- Click **Cancel** to cancel the deletion.

4.3 Manage Devices

You have set the encoding and decoding modes in BCTools.

You can perform the settings as follows for an encoding node or decoding node.

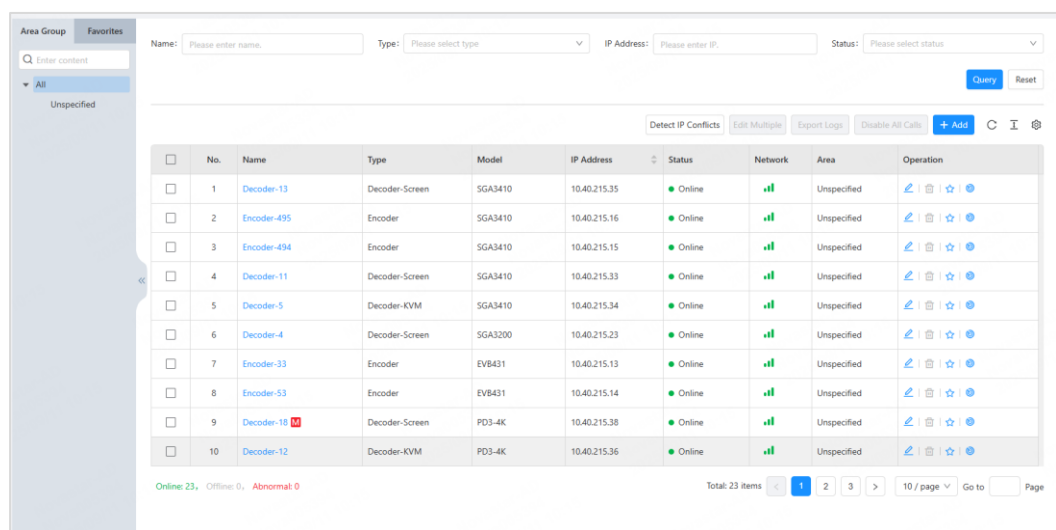
- Encoding node
 - Change the encoding node name.
 - Set an input connector for an encoding node.
 - Set the video stream encoding mode.
 - Change the IP address of an encoding node.
- Decoding node
 - Set the decoding node name.

- Set the decoding node type. The options are **Decoder-KVM** and **Decoder-Screen**.
- Set the management type for the decoding node. The options are **Primary Management Node**, **Backup Management Node** and **Common Node**.
- Change the IP address of a decoding node.
- Run diagnostics and restart the device.

In the main menu bar, go to **Configuration > Device** to enter the device management page.

All the encoders, decoders and statistic information are displayed on this page.

Figure 4-19 Device management



No.	Name	Type	Model	IP Address	Status	Network	Area	Operation
1	Decoder-13	Decoder-Screen	SGA3410	10.40.215.35	Online	Online	Unspecified	[Edit] [Refresh] [Star] [More]
2	Encoder-495	Encoder	SGA3410	10.40.215.16	Online	Online	Unspecified	[Edit] [Refresh] [Star] [More]
3	Encoder-494	Encoder	SGA3410	10.40.215.15	Online	Online	Unspecified	[Edit] [Refresh] [Star] [More]
4	Decoder-11	Decoder-Screen	SGA3410	10.40.215.33	Online	Online	Unspecified	[Edit] [Refresh] [Star] [More]
5	Decoder-5	Decoder-KVM	SGA3410	10.40.215.34	Online	Online	Unspecified	[Edit] [Refresh] [Star] [More]
6	Decoder-4	Decoder-Screen	SGA3200	10.40.215.23	Online	Online	Unspecified	[Edit] [Refresh] [Star] [More]
7	Encoder-33	Encoder	EV8431	10.40.215.13	Online	Online	Unspecified	[Edit] [Refresh] [Star] [More]
8	Encoder-53	Encoder	EV8431	10.40.215.14	Online	Online	Unspecified	[Edit] [Refresh] [Star] [More]
9	Decoder-18	Decoder-Screen	PD3-4K	10.40.215.38	Online	Online	Unspecified	[Edit] [Refresh] [Star] [More]
10	Decoder-12	Decoder-KVM	PD3-4K	10.40.215.36	Online	Online	Unspecified	[Edit] [Refresh] [Star] [More]

Online: 23, Offline: 0, Abnormal: 0

Total: 23 items

- Online: The number of the online and running devices
- Offline: The number of the offline devices
- Abnormal: The number of the devices whose working temperature or voltage is abnormal

4.3.1 Search for Devices

You can quickly search for the device by setting the query conditions on the device management page.

- Type: Classify the devices according to the device type.
 - Encoder: Display all the encoders in the device list.
 - Decoder-KVM: Display all the decoders of the **Decoder-KVM** type in the device list.
 - Decoder-Screen: Display all the decoders of the **Decoder-Screen** type in the device list.
 - Decoder-All-in-One: Display all the decoders of the **Decoder All-in-One** type in the device list.
- Name: Query the device name. The fuzzy keywords search is supported.

- Status: Classify the devices according to the device status.
 - Online: Count and display all the online devices.
 - Offline: Count and display all the offline devices.
 - Abnormal: Count and display all the devices whose working temperature or voltage is abnormal.
- IP Address: Perform a precise search according to the IP address or a fuzzy one according to the network segment.
- Query: Click **Query** and the system will search for the device according to its type, name, status and IP address.
- Reset: Delete all the query conditions.

4.3.2 Add Devices

In BCTools, after one or multiple primary nodes are configured successfully, you can quick add the devices that are not assigned to a primary node through the device adding function. This simplifies the device management process and improves device management efficiency.

Step 1 On the device management page, click **Add** to open the device adding window.

The system will automatically search for floating nodes on the network segment of the current primary node and display them.

Step 2 Check the box next to the desired device.

Step 3 Click **Add** to add the selected device to the current environment.

4.3.3 Device Calls

On the device management page, you can use the device call function to quickly and precisely locate the target device.

In the device list, click  in the column of **Operation**. The RUN, LAN, OPT and VIDEO indicators on the front panel of the target distributed device will flash simultaneously.

When the device call function is enabled, the icon changes to . Click  to disable the call function. When multiple devices are called, click **Disable All Calls** to disable the calls of all devices, and then the indicator status on the device front panel will restore to the corresponding function indicator status.

4.3.4 Set Device Types

The PD3-2K/PD3-4K can be set as an encoding or decoding node. After the device is connected, you can set the device type.

On the device management page, click the desired device in the column of **Name** to enter the device details page, and then select the desired device type from the drop-down list next to **Type**.

- Decoder-KVM: Set the device type to a KVM node. Once set, this node can be used for the KVM operators only, and cannot be used to load a screen.

- **Decoder-Screen:** Set the device type to a screen node. Once set, this node can be used to load a screen only, and does not have the KVM operator menu.
- **Encoder:** Set the device type to an encoding node.

Note

- You cannot change the type of the device being used.
- The PD3-S10/PD3-S20 does not support the device type settings.

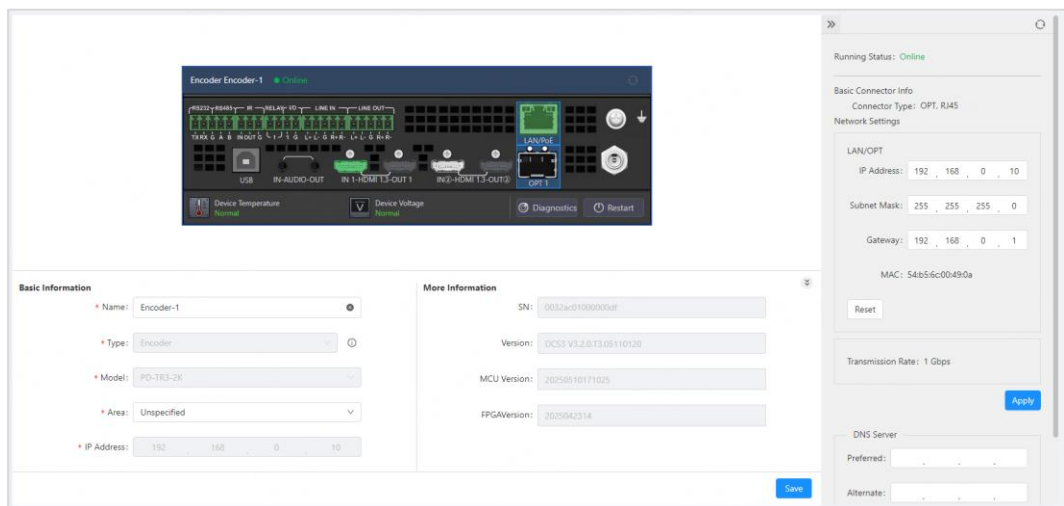
4.3.5 Configure Encoders

4.3.5.1 Change Encoder Names

When an encoder is connected to the system, the encoder will be named as "Encoder-x" by default. (x indicates the sequence number.) The default name is not easy to be identified. You can change it for quickly locating the encoder and input sources connected to the encoder.

- Step 1** In the main menu bar, go to **Configuration > Device** to enter the device management page.
- Step 2** In the device list, click  in the column of **Operation** or click the desired encoder name to show the device details.

Figure 4-20 Device details



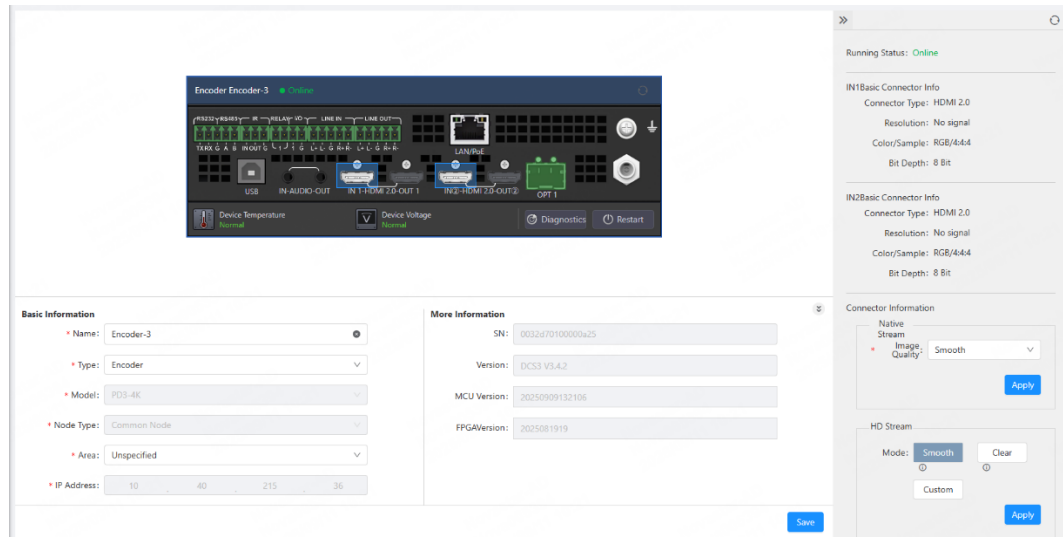
- Step 3** Enter a new name in the text box next to **Name**.

- Step 4** Click **Save** to complete the editing.

4.3.5.2 Edit Encoder Connectors

- Step 1 On the device management page, click  in the column of **Operation** or click the desired encoder name to show the device details.
- Step 2 Click a connector shown on the device rear panel.

Figure 4-21 Video connectors



- Step 3 In the **Connector Information** area, set the video stream information.
- The supported options include **Native Stream** and **HD Stream**.

Native Stream

The native stream refers to the primary stream (video content in high quality). You can set the primary stream image quality.

- Step 1 Select the target image quality from the drop-down list next to **Image Quality**.
- The supported options include **Superior** (lowest compression), **Excellent** and **Smooth** (highest compression). The image quality is set to **Smooth** by default.
- Step 2 Click **Apply** to make the settings take effect.

HD Stream

Set the secondary stream (video content in standard quality).

- Step 1 In the **Mode** area, select a video input mode.
- The supported options include **Smooth**, **Clear** and **Custom**.
- Smooth: Ensure the video fluency first.
 - Clear: Ensure the video clarity first.
 - Custom: Set the desired parameters of the video.

- **Image Quality:** Set the quality of the video. The options are **Low**, **Medium**, and **High**.
Low: The quality of the video is relatively low compared to the original video quality.
High: Keep the quality of the video nearly the same as the original video quality.
Medium: The quality of the video is between the high and low quality.
- **Code Rate Type:** Set the code rate type of the video. The options are **Constant Code Rate** and **Variable Code Rate**.
Constant Code Rate: The code rate of the output code stream is constant, which influences the output video quality.
Variable Code Rate: The system automatically distributes the code stream according to the quantity of the signal information to effectively use the information resources.
- **Code Rate Limit:** Set the code rate limit of the video. The higher the code rate, the better the video quality.
- **Encoding Mode:** The supported encoding modes include **H.264** and **H.265**.
- **Keyframe Interval:** The keyframe intervals, also called I-frame intervals, are the distance in time between two keyframes.
- **Quantization Parameter (QP):** The quantization parameter controls the amount of compression for every macroblock in a frame. Large values mean that there will be higher quantization, more compression, and lower quality. Lower values mean the opposite. The smaller value of QP ranges from 5 to 51, while the larger one ranges from 20 to 51.
- **Sampling Quality:** Set the precision in compressing the original video signal during video data collection and encoding. The supported options include **Auto**, **High** and **Medium**.
Auto: The encoder automatically adjusts compression parameters based on the video content to achieve optimal coding efficiency and image quality.
High: In high sample quality or high bit rate mode, the encoder will employ a lower compression ratio to preserve more image details and reduce the distortion caused by compression.
Medium: The encoder balances between image quality and file size. Both image quality and transmission efficiency within the current network are considered.
- **Bit Depth:** Set the video bit depth during video capture and encoding. The supported options include **Auto**, **10bit** and **8bit**.
- **Coding Resolution:** Set the resolution of the encoded video. The supported options include **Auto** and **Custom**.
Auto: The resolution of the encoded video is the same as that of the original video.
Custom: Set the video resolution by adjusting the width and height values. For the PD3-2K, the custom width and height range from 800 to 1920 and 600 to 1200 respectively. For the PD3-4K, the custom width and height range from 800 to 4096 and 600 to 2160 respectively.
- **Refresh Rate:** Set the refresh rate of the encoded video. The supported options include **100%** and **50%**.

Step 2 Click **Apply** to complete the configurations.

4.3.5.3 Change IP Information

Set Network Information

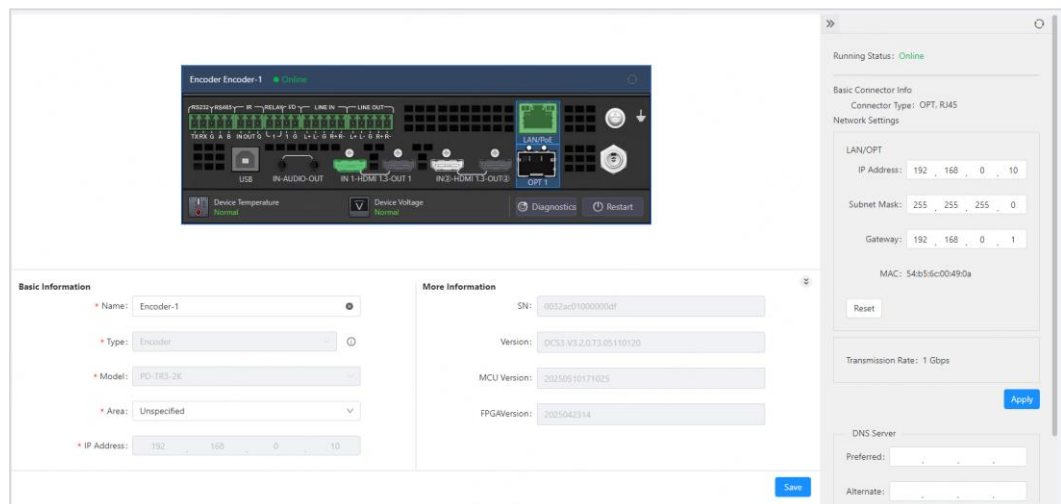
Step 1 On the device details page, click an Ethernet port on the device rear panel to expand the **Network Settings** pane where you can change the device IP information.

Step 2 Select the connected Ethernet port or OPT port.

Step 3 Set the device IP address, subnet mask and gateway individually.

Step 4 Click **Apply** to complete the editing and the device will automatically restart.

Figure 4-22 Change IP information



- IP Address: Set the device IP address. On each network segment, the IP address is unique. When you change it, it cannot conflict with the IP addresses of other devices.
- Subnet Mask: Set the subnet mask. On the same network segment, the subnet masks are the same.
- Gateway: Set the IP address of the gateway.

Set DNS Servers

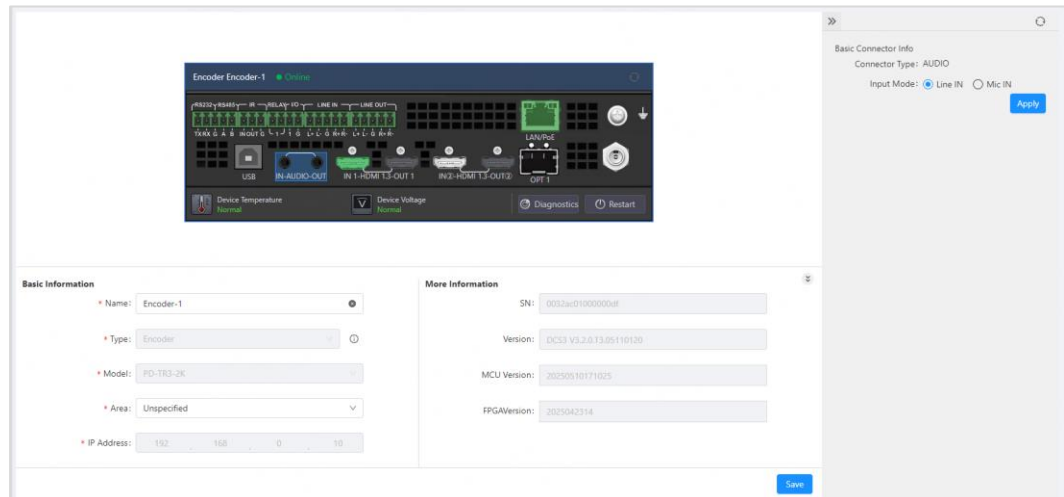
Configure the DNS server to ensure the device can smoothly access Internet resources and accurately obtain weather OSD data.

You need to configure the DNS server for the primary node only.

4.3.5.4 Set Audio Connector Mode

When the audio connector is connected, click it on the device details page to set the audio input mode.

Figure 4-23 Audio input mode



Select the audio input mode based on the current audio input format. The supported options include **Line IN** and **Mic IN**.

After the settings are done, click **Apply** to make the settings take effect.

4.3.5.5 Backup Descriptions

- Automatically switch input sources.

The device has two HDMI input connectors, which serve as the backup for each other. If one of connectors fails, the device will automatically switch to another normal connector to avoid image interruption.

- Uninterrupted image in case of power failure

Two HDMI OUT connectors can loop out the images from HDMI IN connectors normally after power failure.

- Backup between the OPT port and Ethernet port

4.3.6 Configure Decoders

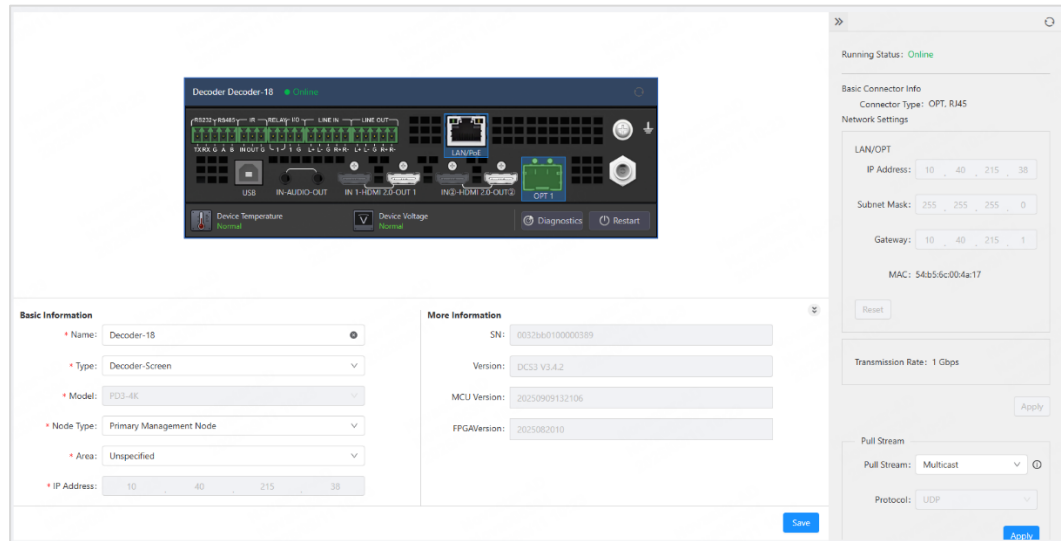
4.3.6.1 Change Decoder Names

When a decoder is connected to the system, the decoder will be named as "Decoder-x" by default. (x indicates the sequence number.) The default name is not easy to be identified. You can change it for quickly locating the decoder when you manage the decoder-KVM and create the screens.

- Step 1 In the main menu bar, go to **Configuration > Device** to enter the device management page.

Step 2 In the device list, click  in the column of **Operation** or click the desired decoder name to show the device details.

Figure 4-24 Device details



Step 3 Enter a new name in the text box next to **Name**.

Step 4 Click **Save** to complete the editing.

4.3.6.2 Set Decoder Management Types

The system adopts a decentralized design. Because no central node is configured, you need to set a management node and configure the data on the Web page. After a successful configuration, the data will be synchronized to other nodes automatically.

Only the decoder can be set as the primary management node and backup management node.

On the device details page, select the node management type from the drop-down list next to **Node Type**.

- Common Node: Set the node as the common node. The common node is not used for Web operations.
- Backup Management Node: Set the node as the backup management node. When the primary management node is offline or faulty, the backup management node will automatically become the primary management node.

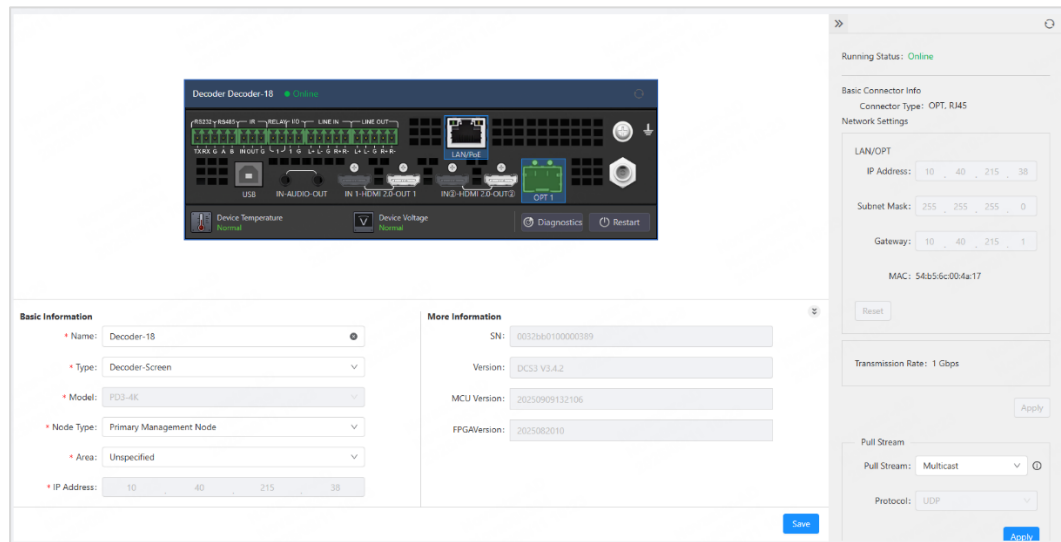
4.3.6.3 Set Device Areas

On the device details page, select the area from the drop-down list next to **Area** to manage the devices based on different areas.

4.3.6.4 Change IP Information

- Step 1 On the device details page, click an Ethernet port on the device rear panel to expand the **Network Settings** pane where you can change the device IP information.
- Step 2 Set the IP addresses of the connected Ethernet port or OPT port respectively.
- Step 3 Set the device IP address, subnet mask and gateway individually.
- Step 4 Click **Apply** to complete the editing and the device will automatically restart.

Figure 4-25 Change IP information



Note

The IP address of the primary management node cannot be changed.

4.3.6.5 Configure DNS Servers

Set the DNS server for easy access to Internet resources. This helps to achieve the functions such as system time synchronization, OSD weather data retrieval, and time update in time OSD.

- Step 1 On the device management page, click the desired primary node or click  in the column of **Operation** to enter the device details page.
- Step 2 Click the Ethernet port on the device rear panel.
- Step 3 Enter the IP addresses of the DNS servers next to **Preferred** and **Alternate** respectively.

It is recommended to use a reliable public DNS server, such as Google 8.8.8.8 and 8.8.4.4.

- Step 4 Click **Apply** to make the IP address and DNS server addresses take effect.

4.3.6.6 Configure Stream Pulling Methods

Flexibly adjust data transmission mechanisms to meet the network environments and business requirements of different scenarios, achieving efficient, stable, and reliable video stream transmission.

Prerequisites

- You have logged into the system using the admin account.
- Stream pulling configuration is supported by a decoding node only.

Single Device Configuration

- Step 1 On the device management page, click the desired decoding node or click  in the column of **Operation** to enter the device details page.
- Step 2 Click the Ethernet port on the device rear panel.
- Step 3 Select the desired stream pulling method from the drop-down next to **Pull Stream**. The supported options include **Unicast** and **Multicast**.
- Multicast: With the transmission mode of one-to-multiple, send the same data from a single encoder to multiple decoders.
 - Unicast: With the transmission mode of one-to-one, an independent data channel is created between each encoder and decoder for data transmission.
- Step 4 Select the transmission protocol from the drop-down list next to **Protocol**. The supported options include **UDP** and **TCP**.
- UDP: Keep the low latency feature, suitable for scenarios with high real-time requirements.
 - TCP: Establish a reliable connection through three-way handshake, ensuring data transmission integrity during transmission.
 - In **Multicast** mode, only UDP is supported.
 - In **Unicast** mode, each encoding node supports up to 30 stream pulls. Exceeding this limit will result in unsuccessful stream pulls and a prompt will appear.
- Step 5 Click **Apply** to complete the stream pulling settings.

4.3.7 Edit Multiple Devices

The system supports batch parameter edit. In device management scenarios, users can simultaneously update parameters for multiple devices with shared properties, thereby reducing manual operations and improving work efficiency.



Note

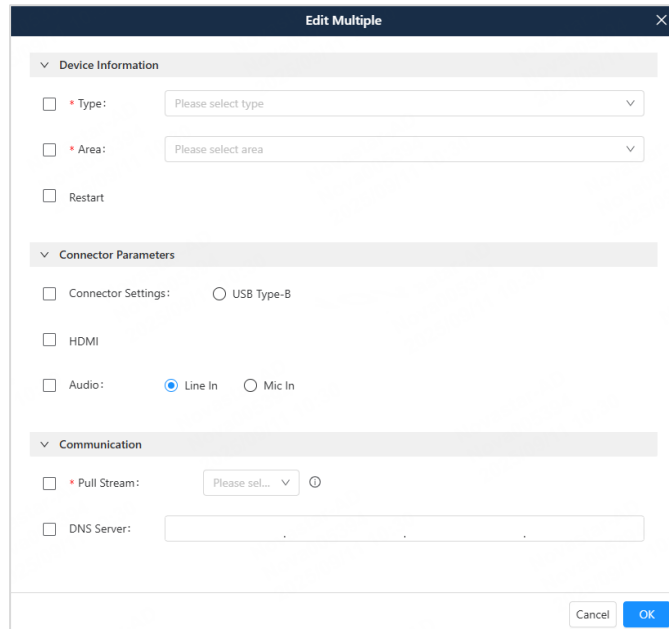
Editing multiple parameters will only take effect on models that match correctly. Parameter editing will be automatically skipped for unmatched models.

Step 1 Go to **Configuration > Device** to enter the device management page.

Step 2 Check the boxes next to the desired devices.

Step 3 Click **Edit Multiple** to open the corresponding window.

Figure 4-26 Batch edit



Change Device Information

- **Type:** Change the device type of the selected devices. The supported options include **Encoder**, **Decoder-Screen** or **Decoder-KVM**.
- **Area:** Select the desired area from the drop-down list to change the area of the selected devices.
- **Restart:** Restart the selected devices with one-click.

Change Connector Parameters

- **Connector Settings:** Configure the USB port of the selected devices.
USB Type-B: Select the USB Type-B port to set the mouse mode. The supported options include **Absolute Mouse** and **Relative Mouse**.
 - **Absolute Mouse:** Devices (such as touchscreens) directly transmit the absolute coordinates of touch points (such as screen pixel positions) to the target host via USB port, making it suitable for precise interaction scenarios.
 - **Relative Mouse:** The USB port transmits incremental values of cursor movement (e.g., moving 100 units right and 50 units down). The target host accumulates displacement based on the current cursor position, making it ideal for everyday navigation and sliding operations.
- **HDMI:** Set the image quality of the HDMI connector and enable the low latency mode.

- Image Quality: The supported options include **Superior** (lowest compression), **Excellent** and **Smooth** (highest compression). The default option is **Smooth**.
- Enable Low Latency: Enable or disable low latency for the HDMI connector.

Change Communication Information

- Pull Stream: Select the stream pulling method. The supported options include **Unicast** and **Multicast**.
 - Multicast: With the transmission mode of one-to-multiple, send the same data from a single encoder to multiple decoders.
 - Unicast: With the transmission mode of one-to-one, an independent data channel is created between each encoder and decoder for data transmission.
- DNS Server: Set the DNS server for easy access to Internet resources.

4.3.8 Run Diagnostics

Diagnose the device components through the device programs for troubleshooting.

On the device details page, click **Diagnostics** on the rear panel to diagnose the device.

In the process of the device diagnostics, the input and output may be temporarily abnormal and will be restored after the diagnostics is completed.

Figure 4-27 Run diagnostics

Diagnostics			
ARM	Normal	Category	Status
INFO	Normal	usage_cpu	●
VIDEOCONNECTOR	Normal	usage_gpu	●
		usage_emmc	●
		usage_ddr	●
		process_dcsmaster	●
		process_decd	●
		process_osdd	●
		process_screensd	●
		Diagnose Close	

4.3.9 Restart Devices

When a device is faulty, you can restart it to remove the faults first.

On the device details page, click **Restart** on the rear panel to power off the device and restart it.

4.3.10 Other Operations

On the device management page, you can also perform the following operations.

- Delete a device: Click  in the column of **Operation** to delete the selected device. Only an offline device can be deleted.
- Delete multiple devices: Check the boxes next to the desired devices, and then click **Delete Multiple** to delete the selected devices.
- Add a device to favorites: Click  in the column of **Operation**, and then create a favorite folder or select an existing one in the popup window. When the device is added to favorites successfully, the icon changes to .

On the device management page, click the **Favorites** tab on the left and select the desired folder name to expand the corresponding device list.

- Export device logs: Import the selected device logs to your local computer for analyzing the device running status.

Check the box next to the desired device, and then click **Export Logs** to export the device logs to your local computer.

- Detect IP Conflicts: Detect whether there are conflicting IPs on the current network segment.

Click **Detect IP conflicts** to open the IP conflict detection window, and then set the starting IP and ending IP of the network segment to be checked. Click Start and the system will automatically check the IPs of devices on the current network segment. If an IP conflict is found, the system will provide a prompt, and the administrator can modify the conflicting IP information according to the prompt.

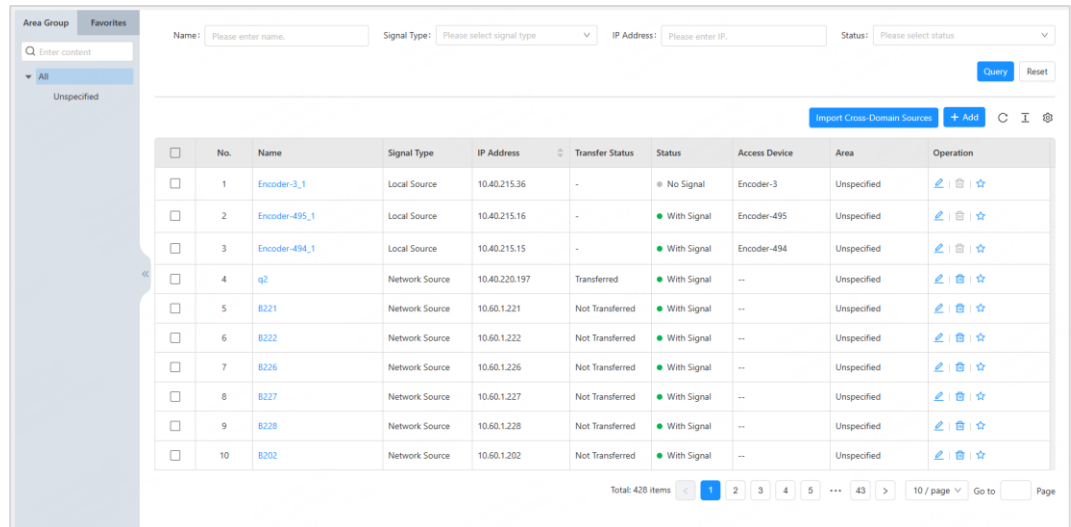
Note

- To reduce the latency to 2 ms, the following requirements need to be met.
 - Enable the low latency mode on the device details page.
 - The node type is set to **Decoder-KVM**.
 - The output mode must be in pixel-to-pixel mode.
 - The specification of the decoded video stream is SL or lower.
- If you switch the layer source in low latency mode, the screen will go black.
- If you open a layer before enabling the low latency mode, you need to open the layer again.

4.4 Manage Signal Sources

In the main menu bar, go to **Configuration > Signal** to enter the signal source management page. All the input sources connected to the encoders and the added IPC sources are shown in the signal list.

Figure 4-28 Signal source management



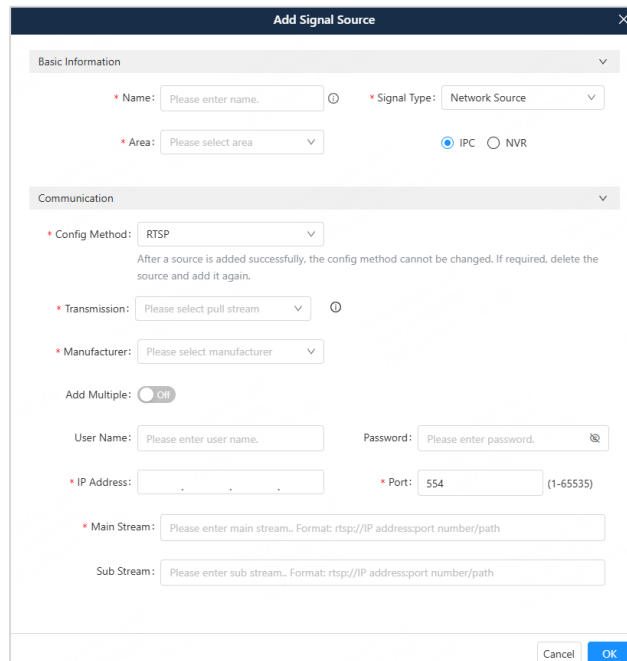
No.	Name	Signal Type	IP Address	Transfer Status	Status	Access Device	Area	Operation
1	Encoder-3_1	Local Source	10.40.215.36	-	No Signal	Encoder-3	Unspecified	Edit Delete Star
2	Encoder-495_1	Local Source	10.40.215.16	-	With Signal	Encoder-495	Unspecified	Edit Delete Star
3	Encoder-494_1	Local Source	10.40.215.15	-	With Signal	Encoder-494	Unspecified	Edit Delete Star
4	q2	Network Source	10.40.220.197	Transferred	With Signal	--	Unspecified	Edit Delete Star
5	B221	Network Source	10.60.1.221	Not Transferred	With Signal	--	Unspecified	Edit Delete Star
6	B222	Network Source	10.60.1.222	Not Transferred	With Signal	--	Unspecified	Edit Delete Star
7	B226	Network Source	10.60.1.226	Not Transferred	With Signal	--	Unspecified	Edit Delete Star
8	B227	Network Source	10.60.1.227	Not Transferred	With Signal	--	Unspecified	Edit Delete Star
9	B228	Network Source	10.60.1.228	Not Transferred	With Signal	--	Unspecified	Edit Delete Star
10	B202	Network Source	10.60.1.202	Not Transferred	With Signal	--	Unspecified	Edit Delete Star

4.4.1 Add Signal Sources

When an encoder is connected, the system will automatically add the input sources connected to the encoder, whereas the IPC sources need to be added manually.

Step 1 On the signal management page, click **Add** to open the signal source adding window.

Figure 4-29 Add IPC sources



Basic Information

Name:

Signal Type:

Area:

☒ IPC
☐ NVR

Communication

Config Method:

Transmission:

Manufacturer:

Add Multiple: ☐

User Name:

Password:

IP Address:

Port: (1-65535)

Main Stream:

Sub Stream:

Cancel

OK

Step 2 Fill the source-related information.

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The signal source information includes **Basic Information** and **Communication**. For different signal types, the configuration method of parameters in the **Communication** area varies.

The system supports two types of signal sources, including IPC and NVR. The main configuration parameters are shown in [Table 4-5](#).

Table 4-4 Basic information

Parameter	Description
Name	Enter a name for the added signal source. It is recommended to assign a friendly name to easily search for the signal and switch the layer input source. When you add multiple signals, the system will automatically add a number after the entered signal name to generate a new name.
Type	The supported options include Network Source and Cross-Domain Signal Source . - Network Source: The signal source is provided by the IP camera and needs to be manually added to the signal list. - Cross-Domain Signal Source: Add video signal sources on other network segments.
Area	Select an area for the signal source.

Table 4-5 Communication parameters of IPC sources

Parameter	Description	
Signal Type	IPC	NVR
Config Method	Select a protocol used by the IP camera. The options include RTSP and ONVIF . - Set the config method to RTSP when the camera only support this protocol - ONVIF: When the camera supports both the RTSP and ONVIF protocols, it is recommend to set the config method to ONVIF for adjusting the camera angle, focal length, aperture via the PTZ control function.	Select the protocol used by the NVR camera. Only RTSP is supported.
Transmission	Set the stream pulling method. The supported options include Auto and Manual . - Automatic: TCP preferred and automatically switch to UDP after three failed pulling attempts. - Manual: You need to set the stream pulling protocol. The supported options include TCP and UDP.	
Manufacturer	Select the camera manufacturer. When you select Dahua, Hikvision, Uniview, Xiongmai or Jovision, the URL address is obtained automatically by the system. You only need to enter the IP address, user name and password.	

Parameter	Description	
User Name	User name of the IPC signal management end	User name of the NVR signal management end
Password	Password of the IPC signal management user	Password of the NVR signal management user
IP	IP address of the IPC signal source	IP address of the NVR signal source
Port	Port number information of the IPC signal source	Port number information of the NVR signal source
Main Stream	The main stream is used to transfer the high-definition video and monitoring images. It requires a high transmission bandwidth. Config format: rtsp://user name:password@IP address:port number When you set the config method to RTSP and set the manufacturer to Other, the path configuration is required.	N/A
Sub Stream	The sub stream is used to transfer the standard-definition video and monitoring images. It requires a relatively low transmission bandwidth. Config format: rtsp://user name:password@IP address:port number When you set the config method to RTSP and set the manufacturer to Other, the path configuration is required.	N/A
Adding Method	Methods to add the IP address • Manual: Add the IP address manually. If you need to add multiple network sources, set the Add Multiple button to  and set the IP address range. • Scan: When you set the adding method to Scan, the system will scan all the cameras supporting the ONVIF protocol in the LAN network and lists them. After entering the user name and password, if you need to test the correctness, please click Test. • When you set the config method to ONVIF, this parameter is available.	N/A

Parameter	Description	
URL Channel Count	N/A	Fill in the NVR signal channel count according to the added NVR device.
URL Address	N/A	Configure the address information for the main stream and sub stream of each NVR channel. Config format: rtsp://IP address.port number/path Main stream: High-definition stream address information Sub stream: Standard-definition address information
Channel Name	N/A	Configure the channel name. On the screen management page, it is shown as the source name.

Step 3 Click **OK** to complete the settings.

The added signal is shown in the signal list after a successful adding.

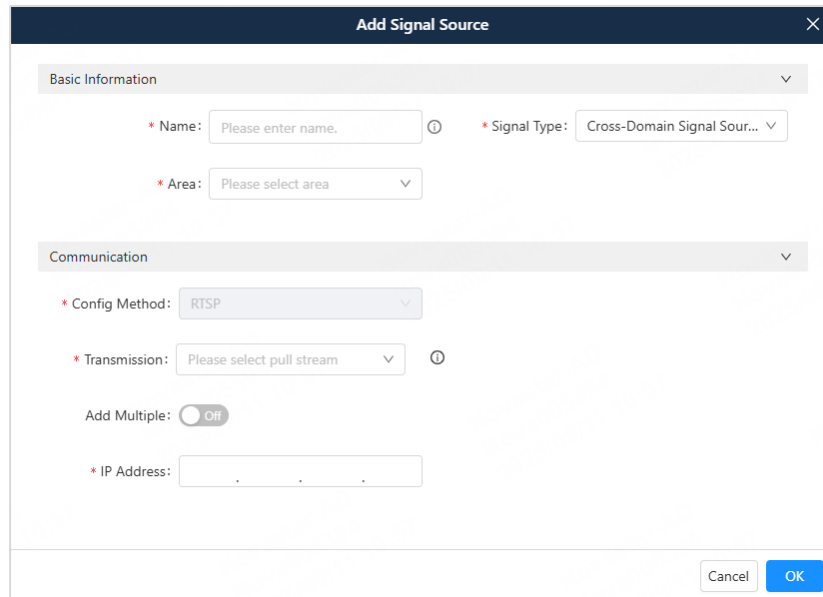
4.4.2 Add Cross-Domain Sources

Cross-domain signal sources support a multi-level networking architecture, realizing real-time access and interconnection of signals between different network segments. This enables quick construction of visual command links.

After a cross-domain signal source is added, it will be displayed in the signal source list. The source name format is "signal source name (area)".

Step 1 On the signal source management page, click **Add** to open the signal source adding window.

Figure 4-30 Add cross-domain sources



Step 2 Select **Cross-Domain Source** from the drop-down list next to **Signal Type**.

Step 3 Enter a signal source name and select the source area.

Step 4 Enter the IP address of the signal source to be added.

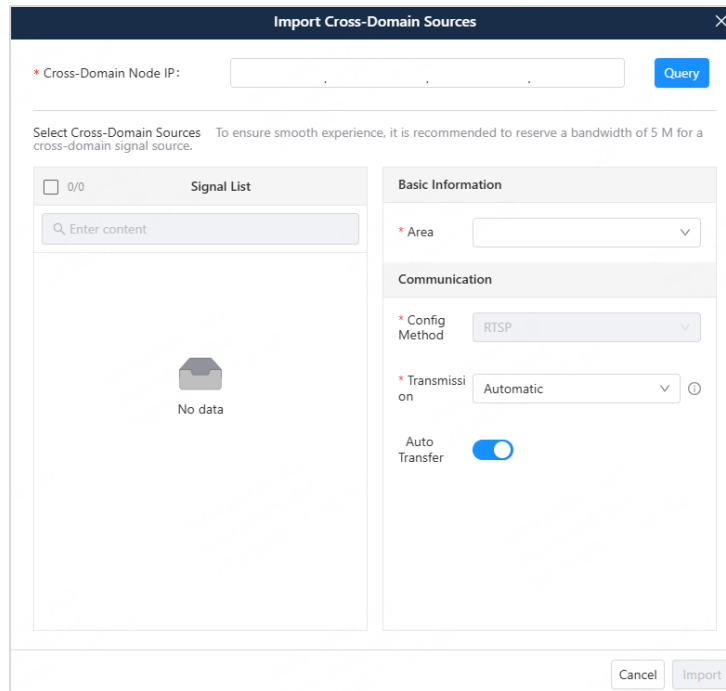
If you need to add multiple signal sources, toggle the switch next to **Batch Add**, and then enter the start IP address and end IP address respectively.

Step 5 Click **OK** to complete the adding.

4.4.3 Import Cross-Domain Sources

Step 1 On the signal source management page, click **Import Cross-Domain Sources** to open the corresponding window.

Figure 4-31 Import cross-domain sources



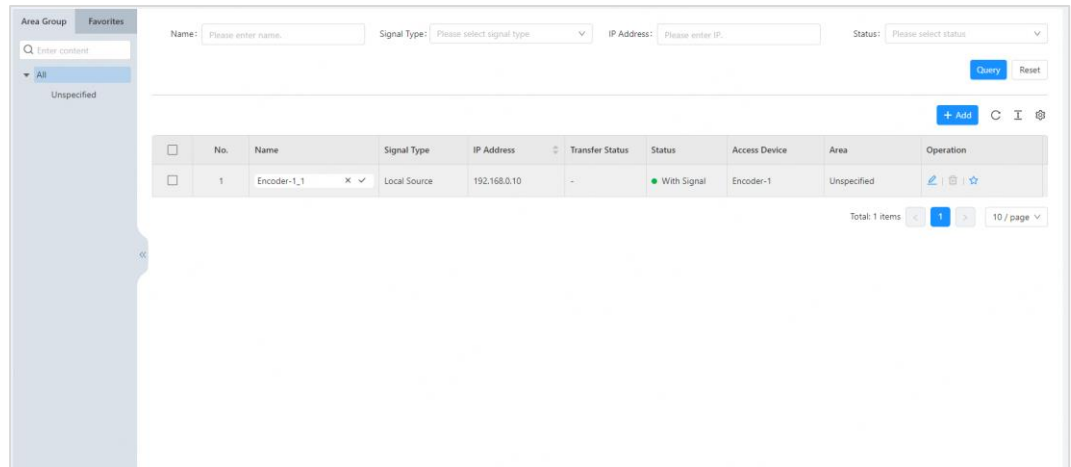
- Step 2 Enter the IP address of the signal source node to be added in the text box next to **Cross-Domain Node IP**.
- Step 3 In the **Basic Information** area, select the device area.
- Step 4 Click **Query** and the system will automatically search for the IP addresses of all the signal sources of the current cross-domain source node.
- Step 5 Check the boxes next to the desired signal sources in the signal list.
- Step 6 Click **Import** to import all the selected signal sources.

4.4.4 Change Signal Names

When the signal is connected to the encoder, it will be named as "Encoder-x" by default. (x indicates the sequence number.) The default name is not easy to be identified in the screen and KVM operator system. You can change it for quick identification, so that the work efficiency can be improved.

- Step 1 On the signal source management page, hover the mouse over the desired signal name. The  icon appears next to the signal name.
- Step 2 Click  to enable the signal name editing status.
- Step 3 Enter a new name in the text box.

Figure 4-32 Change signal names



Step 4 Click  to complete the editing.

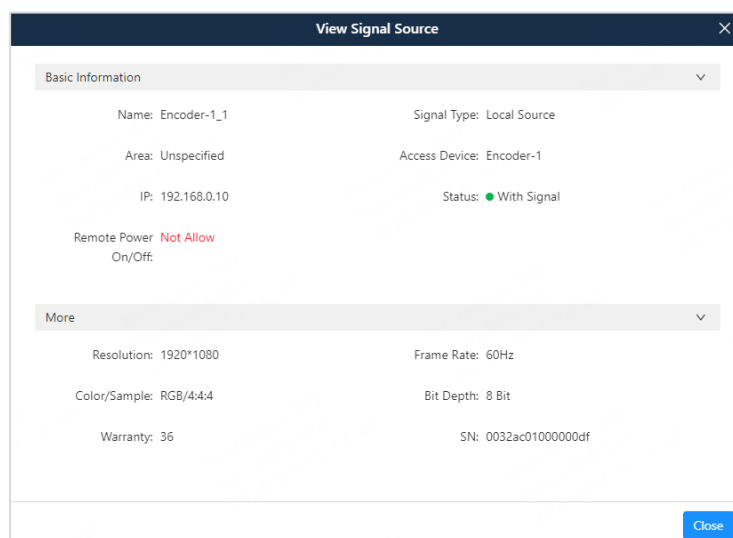
Note

- The signal connected to the encoder cannot be deleted.
- Only the basic information of the IPC source can be changed.
- The signal name can also be changed on the screen management page.

4.4.5 View Signal Information

On the signal management page, click the desired signal name to view the signal information.

Figure 4-33 Signal source information

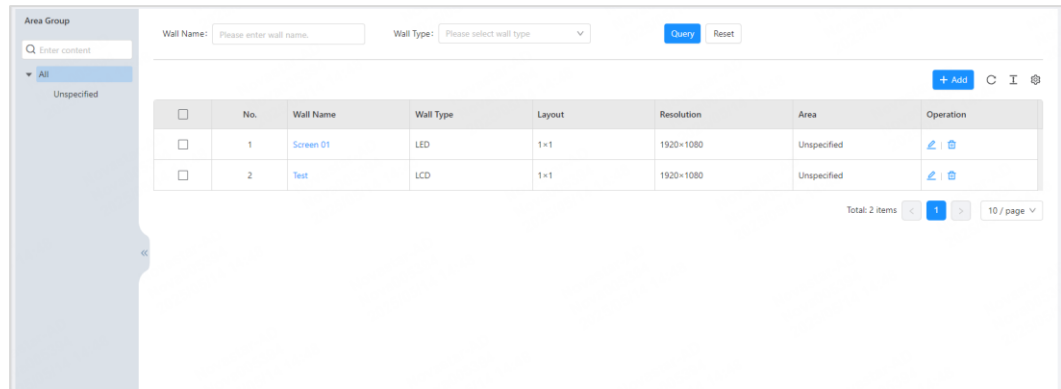


4.5 Manage Video Walls

The video wall is the screen loaded by the Decoder-Screen nodes. The wall in the distributed system is mainly used to display the decision information.

In the main menu bar, go to **Configuration > Video Wall** to enter the video wall management page.

Figure 4-34 Video wall management



4.5.1 Add Video Walls

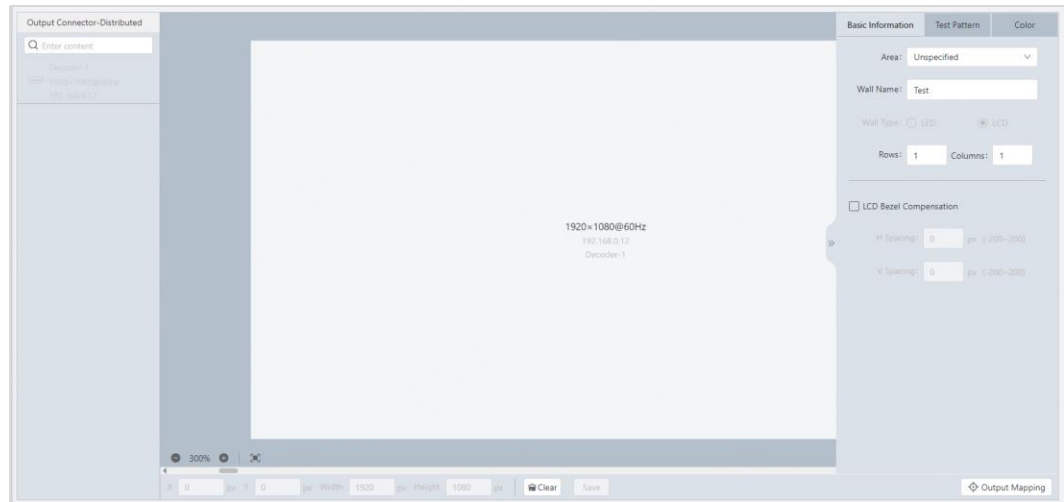
For detailed operations, please refer to [4.2.2 Add Video Walls](#).

4.5.2 Change Video Wall Properties

After adding the video wall, you can change the wall name, structure and output image quality in the wall properties pane, and also use the test patterns to check whether the display is normal.

On the video wall management page, click  in the column of **Operation** to enter the wall editing page.

Figure 4-35 Video wall information

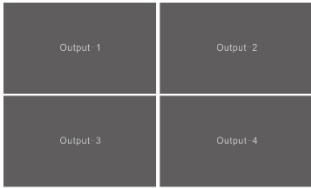


Basic Information

Click  on the right edge to expand the wall properties pane. The Basic Information tab is shown by default.

Table 4-6 Basic Information

Function	Description
Video wall information	Wall name: Enter a name for the video wall to easily manage it. The name supports English letters, numbers, spaces, underlines and en dashes, and cannot contain only spaces. The length cannot be greater than 20 characters. You can set the values of Rows and Columns to change the wall structure. Note: In the wall properties pane, when you set the values of Rows and Columns to change the wall structure, the current configured wall will be deleted and you need to configure it again.
LCD bezel compensation	Check the box next to LCD Bezel Compensation to enable the bezel compensation function. - H spacing: The value is set to the edge width (R+L) plus the half spacing (H) of the two screens. - V spacing: The value is set to the edge width (T+B) plus the half spacing (V) of the two screens. The compensation effect displayed on the physical LCD screens and Web page is as follows.

Function	Description
	LCD Splicing Screen  Screen Displayed on Web Page 

Test Patterns

After configuring the screen, you can set the test patterns to check the screen display effect.

- Step 1 In the main menu bar, go to **Configuration > Video Wall** to enter the video wall management page.
- Step 2 Click the wall name or click  in the column of **Operation** to enter the wall editing page.
- Step 3 Click  on the right edge to expand the wall properties pane.
- Step 4 Click the **Test Pattern** tab.
- Step 5 Check the box next to **Enable**, select the desired test pattern and set the relevant parameters.

Observe the image displayed on the wall and compare it with the test pattern to check the order, color and brightness of the screen.

Color

You can set the contrast, brightness, saturation and hue of the image displayed on the wall to improve the image quality.

- Step 1 In the main menu bar, go to **Configuration > Video Wall** to enter the video wall management page.
- Step 2 Click the wall name or click  in the column of **Operation** to enter the wall editing page.
- Step 3 Click  on the right edge to expand the wall properties pane.
- Step 4 Click the **Color** tab.
- Step 5 Drag the slider to set the values of the **Contrast, Brightness, Saturation** and **Hue**.

In the process of adjusting the color, the image is displayed in real time. You can adjust and observe the image till the display effect meets your requirements. Click **Reset** to restore to the default values.

4.6 Manage KVM Operators

A KVM matrix is composed of multiple monitors. These monitors are controlled by one KVM operator.

Prerequisites

- Each monitor is connected to one decoding node.
- The operator has been granted the access permissions to the matrix.
- The decoders have been connected with the network and monitors.
- The keyboard and mouse have been connected to the KVM matrix. Make sure that they are connected to the same decoding node.

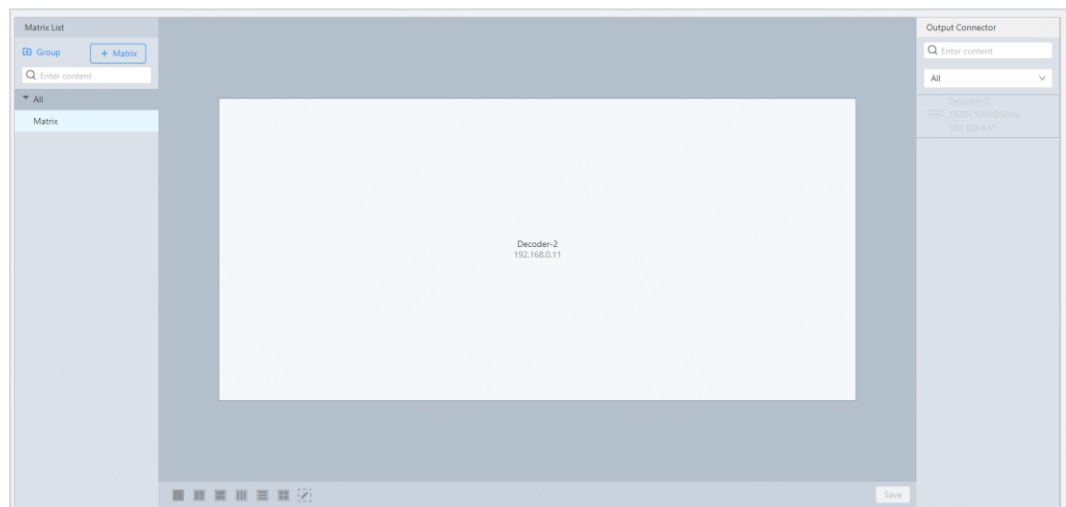
Note

The PD3-2K and PD3-4K cannot be added to the same KVM matrix.

4.6.1 Add KVM Operators

Step 1 In the main menu bar, go to **Configuration > KVM Operator** to enter the KVM operator management page.

Figure 4-36 KVM operator management

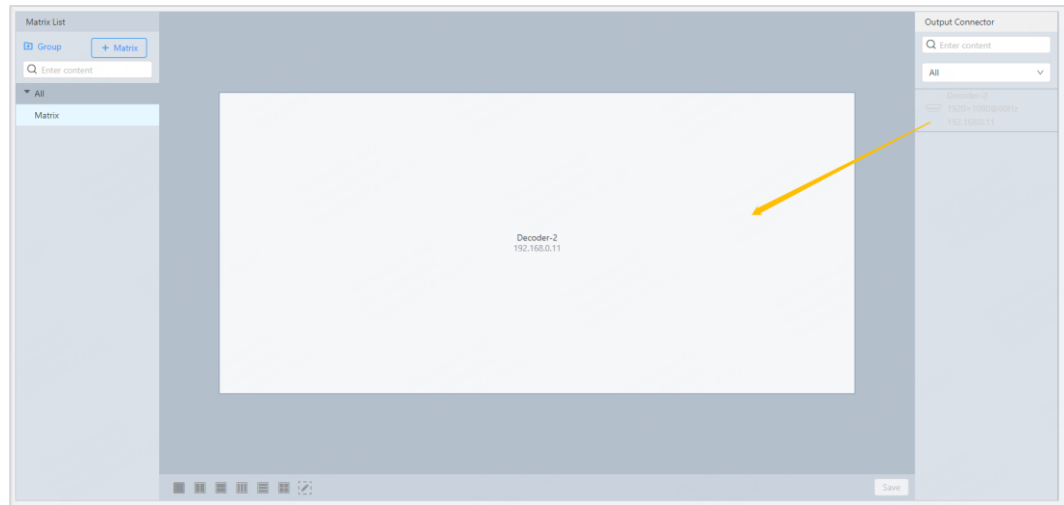


Step 2 Click **Matrix** to create a KVM matrix.

- Hover the mouse over the added matrix and click  to change the matrix name.
- Click  to change the matrix arrangement.
- Click  at the bottom and enter the values in the text boxes next to **Row** and **Column** based on the node quantity and monitor arrangement.

Step 3 Click and drag a decoding node on the right to the editing area.

Figure 4-37 KVM matrix



Step 4 Click **Save** to complete the configurations.

4.6.2 Add Groups

Step 1 In the navigation bar, go to **Configuration > KVM Operator** to enter the KVM operator management page.

Step 2 Click **Group** and the system will add a group on the left.

The group is named as "Group-x" by default. (x indicates the sequence number.)

Step 3 Hover the mouse over the added group and click  to change the group name.

Step 4 Click  to complete the editing.

Step 5 Hold and drag the added KVM operator to the group to complete the group management.

Hover the mouse over the group name or KVM operator name, and then click  to delete the selected group or KVM operator.

4.7 Manage Transfer Nodes

After an IPC signal source is connected or a cross-domain source is imported, the video streams provided by an IPC source or cross-domain source are limited. Once the limit of provided video streams is exceeded, the image of the layer using the current signal source cannot be displayed. To break the video stream limitations of an IPC source or cross-domain source, you can add a transfer node for a decoding node to increase signal source numbers. This helps to take over and control more nodes, and also improves the flexibility of the monitoring system.

Prerequisite

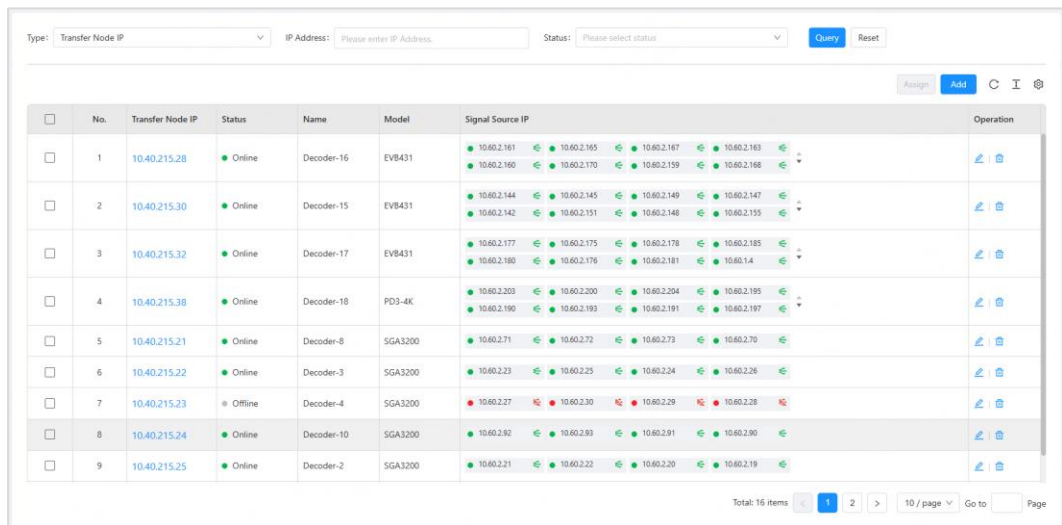
- You have added IPC sources following the steps in [4.4.1 Add Signal Sources](#).

- You have added cross-domain sources following the steps in [4.4.2 Add Cross-Domain Sources](#) or [4.4.3 Import Cross-Domain Sources](#).
- Only the admin user can perform the following operations.

Operating Procedure

Step 1 In the navigation bar, go to **Configuration > Transfer Node** to enter the transfer node management page.

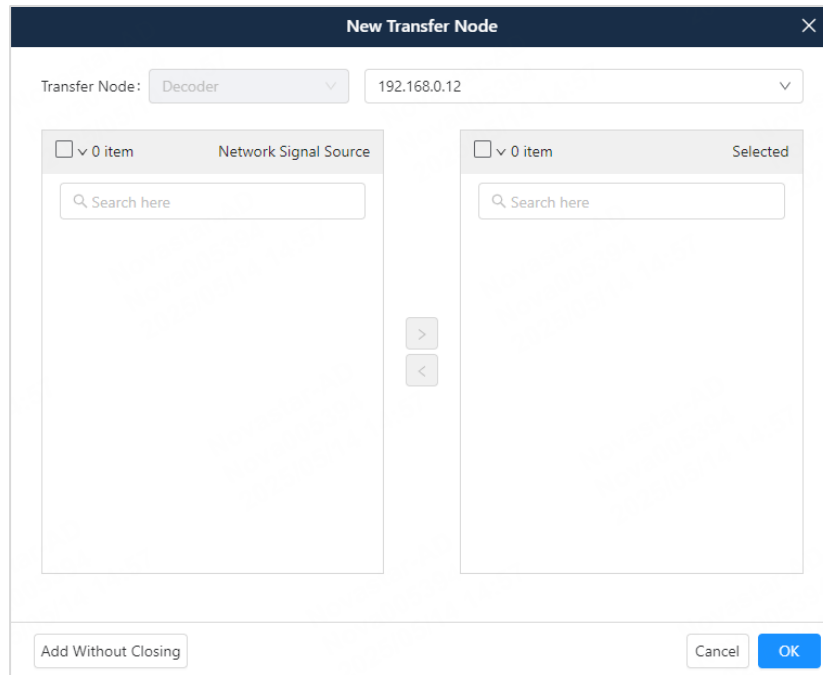
Figure 4-38 Transfer node management



No.	Transfer Node IP	Status	Name	Model	Signal Source IP	Operation
1	10.40.215.28	Online	Decoder-16	EV8431	10.60.2.161, 10.60.2.165, 10.60.2.167, 10.60.2.163, 10.60.2.180, 10.60.2.170, 10.60.2.159, 10.60.2.168	[Edit] [Delete]
2	10.40.215.30	Online	Decoder-15	EV8431	10.60.2.144, 10.60.2.145, 10.60.2.149, 10.60.2.147, 10.60.2.142, 10.60.2.151, 10.60.2.148, 10.60.2.155	[Edit] [Delete]
3	10.40.215.32	Online	Decoder-17	EV8431	10.60.2.177, 10.60.2.175, 10.60.2.178, 10.60.2.185, 10.60.2.180, 10.60.2.176, 10.60.2.181, 10.60.1.4	[Edit] [Delete]
4	10.40.215.38	Online	Decoder-18	PD3-4K	10.60.2.203, 10.60.2.200, 10.60.2.204, 10.60.2.195, 10.60.2.190, 10.60.2.193, 10.60.2.191, 10.60.2.197	[Edit] [Delete]
5	10.40.215.21	Online	Decoder-8	SGA3200	10.60.2.71, 10.60.2.72, 10.60.2.73, 10.60.2.70	[Edit] [Delete]
6	10.40.215.22	Online	Decoder-3	SGA3200	10.60.2.23, 10.60.2.25, 10.60.2.24, 10.60.2.26	[Edit] [Delete]
7	10.40.215.23	Offline	Decoder-4	SGA3200	10.60.2.27, 10.60.2.30, 10.60.2.28, 10.60.2.28	[Edit] [Delete]
8	10.40.215.24	Online	Decoder-10	SGA3200	10.60.2.82, 10.60.2.83, 10.60.2.91, 10.60.2.90	[Edit] [Delete]
9	10.40.215.25	Online	Decoder-2	SGA3200	10.60.2.21, 10.60.2.22, 10.60.2.20, 10.60.2.19	[Edit] [Delete]

Step 2 Click **Add** at the top right corner to open the transfer node adding window.

Figure 4-39 Add transfer nodes



Step 3 Select the IP address of the decoding node from the drop-down list next to **Transfer Node**.

Step 4 In the **Network Signal Source** area on the left, select the IPC/NVR source or cross-domain source transferred by the decoding node selected in [Step 3](#).

Up to 6 IPC sources or NVR sources can be transferred by each decoding node.

Step 5 Click > to add the selected network source to the **Selected** area.

Step 6 Click **OK** to complete the settings.

Click **Add Without Closing** to enter the page as shown in [Figure 4-40](#), and then you can set the transferred IPC sources for other decoding nodes.

Figure 4-40 Configure transferred sources

Type:

Transfer Node IP

IP Address:

Please enter IP Address.

Status:

Please select status

Query

Reset

Assign

Add

☐	No.	Transfer Node IP	Status	Name	Model	Signal Source IP	Operation
☐	1	10.40.215.28	Online	Decoder-16	EV8431	10.60.2.161 10.60.2.160 10.60.2.165 10.60.2.170 10.60.2.167 10.60.2.159 10.60.2.163 10.60.2.168	
☐	2	10.40.215.30	Online	Decoder-15	EV8431	10.60.2.144 10.60.2.142 10.60.2.145 10.60.2.151 10.60.2.149 10.60.2.148 10.60.2.147 10.60.2.155	
☐	3	10.40.215.32	Online	Decoder-17	EV8431	10.60.2.177 10.60.2.180 10.60.2.175 10.60.2.176 10.60.2.178 10.60.2.181 10.60.2.185 10.60.1.4	
☐	4	10.40.215.38	Online	Decoder-18	PD3-4K	10.60.2.203 10.60.2.190 10.60.2.200 10.60.2.193 10.60.2.204 10.60.2.191 10.60.2.195 10.60.2.197	
☐	5	10.40.215.21	Online	Decoder-8	SGA3200	10.60.2.71 10.60.2.72 10.60.2.73 10.60.2.70	
☐	6	10.40.215.22	Online	Decoder-3	SGA3200	10.60.2.23 10.60.2.25 10.60.2.24 10.60.2.26	
☐	7	10.40.215.23	Offline	Decoder-4	SGA3200	10.60.2.27 10.60.2.30 10.60.2.29 10.60.2.28	
☐	8	10.40.215.24	Online	Decoder-10	SGA3200	10.60.2.82 10.60.2.83 10.60.2.81 10.60.2.90	
☐	9	10.40.215.25	Online	Decoder-2	SGA3200	10.60.2.21 10.60.2.22 10.60.2.20 10.60.2.19	

Total: 16 items

1

2

10 / page

Go to

Page

Total: 16 items

Note

Click **Assign** and the system will automatically assign the transfer node for IPC signals in the current environment. After successful assignment, you can click  next to desired transfer node to edit it.

4.8 Set Input and Output EDID

Set the resolutions of the input and output connectors of the encoder and decoder.

Step 1 In the main menu bar, go to **Configuration > EDID** to enter the EDID management page.

Figure 4-41 EDID management

Input

Output

All

Enter name or IP

Select All

Encoder-1_1

1920x1080@60Hz

192.168.0.10

Set EDID

Connector Type: HDMI 1.3

Mode: ☒ Standard ☐ Custom

Resolution: 1920x1080

Frame Rate: 60 Hz

Apply

Import/ExportEDID

Import File:

Step 2 Click the **Input** or **Output** tab to view the input connector resolution of the encoder or output connector resolution of the decoder.

Step 3 Check the box next to the desired input connector or output connector. You can change the EDID information in the following three ways.

The KVM node does not support the EDID settings.

- Standard

Select a standard resolution from the drop-down list.

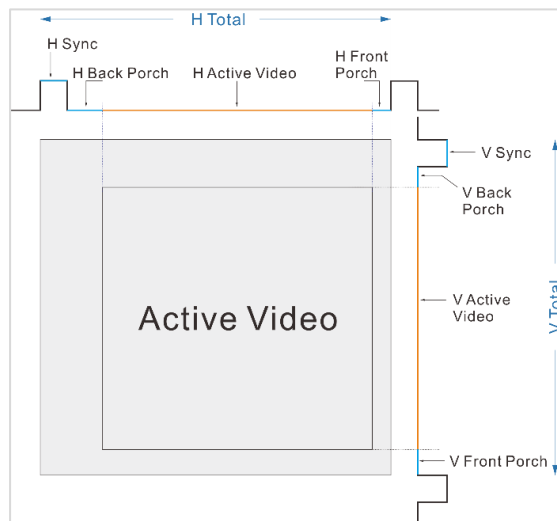
- Custom

Set the width, height and frame rate for the input or output connector, and then click **Apply** to complete and apply the settings.

- Advanced

Under **Custom** mode, select **Advanced** to enable the advanced EDID settings function. The professional familiar with the EDID settings is advised to adopt this method. The parameters for the advanced EDID settings are shown as follows.

Figure 4-42 Parameters for advanced EDID settings



- Import/Export EDID

Export the configured resolution parameters file for future use, or import an existing EDID configuration file.

- Export EDID: Only the input or output resolution of a single connector can be exported.
- Import EDID: The configuration file can be imported to multiple connectors of the same type.

Step 4 Click **Apply** to complete and apply the EDID settings.

The output EDID settings will take effect after the device restarts.

4.9 Update Firmware

Updating the firmware for all the devices is supported in the system.

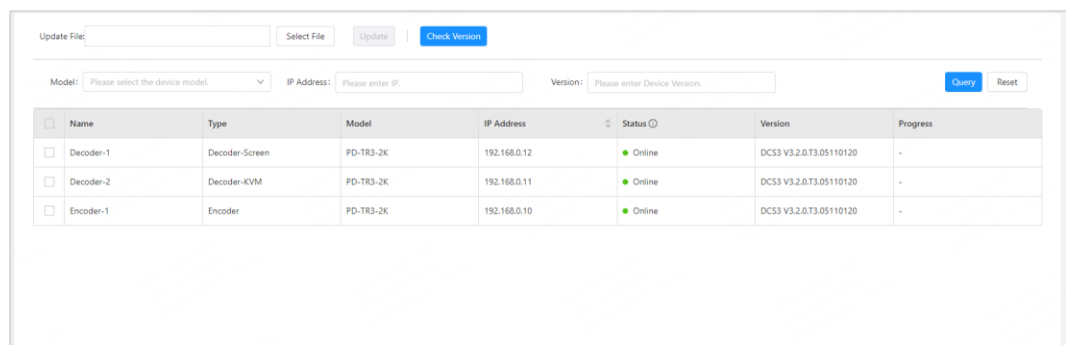
Prerequisites

You have obtained the needed firmware packages.

Operating Procedure

Step 1 In the main menu bar, go to **Configuration > Firmware Update** to enter the firmware update page.

Figure 4-43 Update firmware



☐	Name	Type	Model	IP Address	Status	Version	Progress
☐	Decoder-1	Decoder-Screen	PD-TR3-2K	192.168.0.12	Online	DCS3 V3.2.0.T3.05110120	-
☐	Decoder-2	Decoder-KVM	PD-TR3-2K	192.168.0.11	Online	DCS3 V3.2.0.T3.05110120	-
☐	Encoder-1	Encoder	PD-TR3-2K	192.168.0.10	Online	DCS3 V3.2.0.T3.05110120	-

Step 2 Click **Select File** and select the target update file in the popup window.

Step 3 Select the desired device model from the drop-down list next to **Model**.

Step 4 In the device list, check the boxes next to the desired devices.



Note

- Check the box next to **Name** in the title bar of the device list to select all the devices shown below.
- Click **Check Version** to check the hardware versions of the devices in the system.

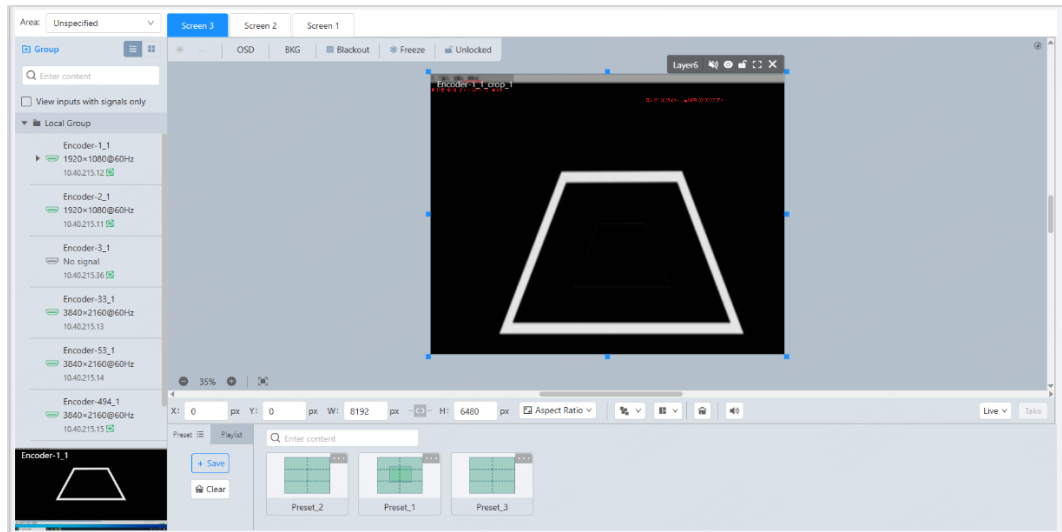
Step 5 Click **Update** to update all the selected devices.

4.10 Manage Screens

After configuring the video wall, you can add and delete the layer, change the layer properties, switch the layer input sources, save and load the presets and perform other operations on the screen management page.

In the main menu bar, click **Screen** to enter the screen management page.

Figure 4-44 Manage screens

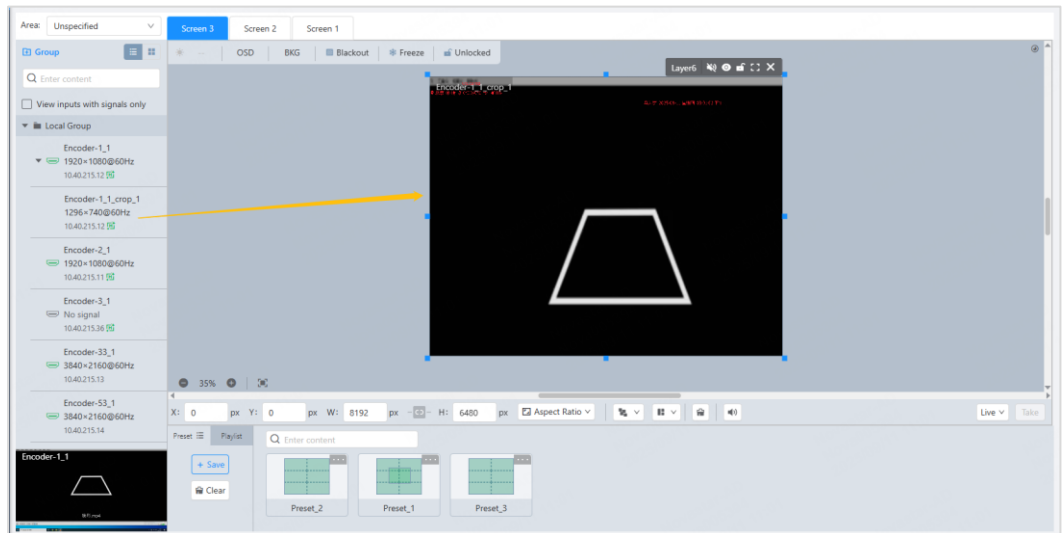


4.10.1 Add Layers

Step 1 On top of the screen management page, select the video wall that you will operate.

Step 2 Click an input source in the signal list on the left and drag it to the editing area to add a layer.

Figure 4-45 Add layers



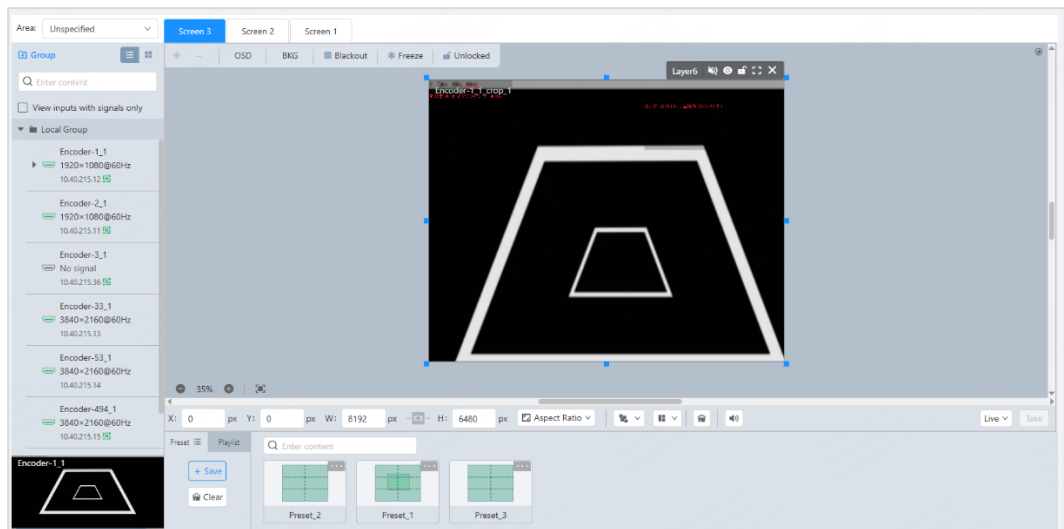
4.10.2 Adjust Layers

Click a layer to select it, and then you can adjust its size and position.

Quick Adjustment

- Adjust the layer size: Click the small square on the layer edge, and drag the square when the cursor turns to a double-sided arrow to quickly adjust the layer size.
- Adjust the layer position: Click and drag the layer to quickly move the layer

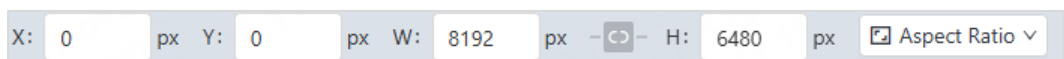
Figure 4-46 Quick adjustment



Precise Adjustment

- Adjust the layer size: Enter specific numbers in the **W** and **H** text boxes below the layer editing area to precisely adjust the layer size.
 - : Lock the layer aspect ratio. Once selected, the icon is highlighted. When you change one of the parameters, the other one will be automatically changed based on the aspect ratio of the current signal source or the set aspect ratio.
 - : Set the layer aspect ratio. Once set, the system will automatically adjust the layer size based on the set value.
- Adjust the layer position: Enter specific numbers in the **X** and **Y** text boxes below the layer editing area to precisely adjust the layer position. The adjustment reference is the top corner of the layer. If the **X** and **Y** values are both 0, the layer's top left corner locates at the top left corner of the screen.

Figure 4-47 Precise adjustment



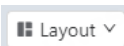
Layer Priorities Adjustment

Step 1 Click the desired layer to select it.

Step 2 Click  below the layer editing area to adjust the layer priorities.

- Bring to Front: Bring the selected layer to the front, and the layer image will be displayed completely.
- Send to Back: Send the selected layer to the back, and the layer will be partially covered by other overlapping layers.
- Bring Forward: Bring the selected layer forward.
- Send Backward: Bring the selected layer backward.

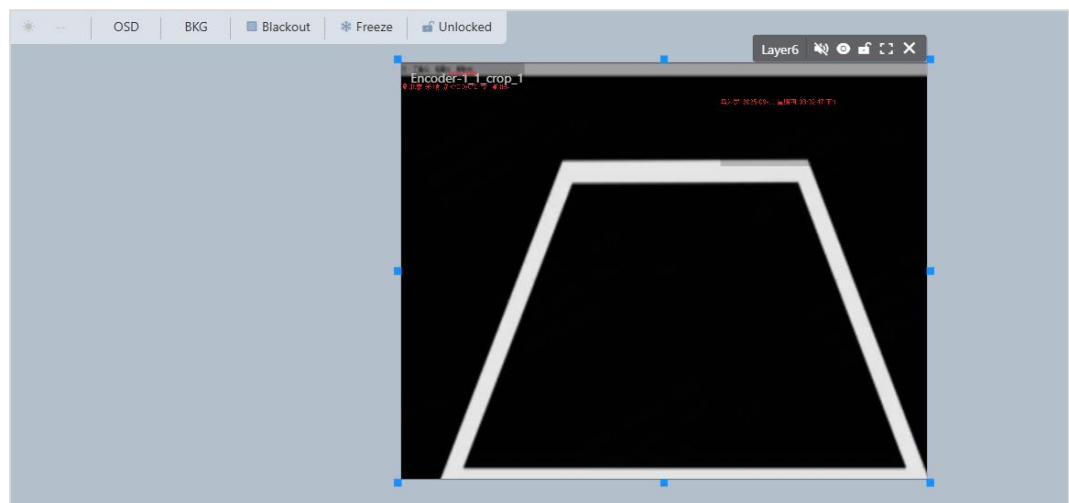
Layer Layout

Click  below the layer editing area to select the desired layout, and then the system will automatically divide the layer editing area based on the selected layout. When you drag the signal to a layout area, the added layer will automatically fill the target area.

Layer Control

Click a layer to select it, and then the following control icons will be shown at the top right of the selected layer.

Figure 4-48 Layer control



- : Turn on the layer output volume.
- : Turn off the layer output volume.
- : Enable monitoring of the layer image on the Web page.
- : Disable monitoring of the layer image on the Web page.
- : The layer is unlocked. Click to lock the layer.

- : The layer is locked. Click to unlock the layer.
- : Enable the layer native stream.
- : Disable the layer native stream and enable the HD stream.
- : Make the selected layer fill the screen.
- : Restore to the original layer size.
- : Delete the selected layer.

Layer Volume Adjustment

Step 1 Click the desired layer to select it.

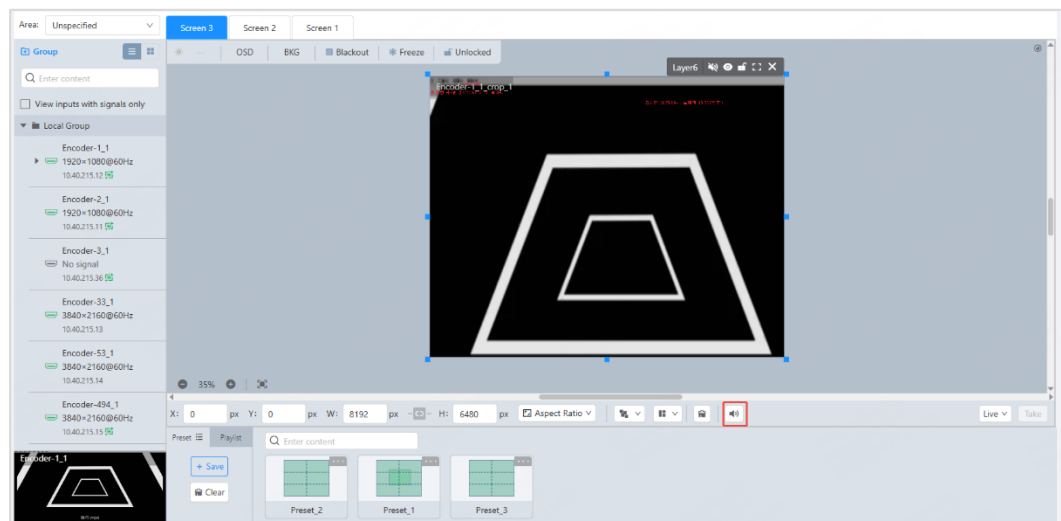
Step 2 Check whether the layer volume is turned on.

- If turned on, the  will be shown at the top right of the selected layer, and then follow the next step.
- If turned off, the  will be shown at the top right of the selected layer. Click the icon to turn on the layer volume.

Step 3 Click  below the layer editing area to enable the volume adjustment function.

Step 4 Drag the slider block to adjust the volume.

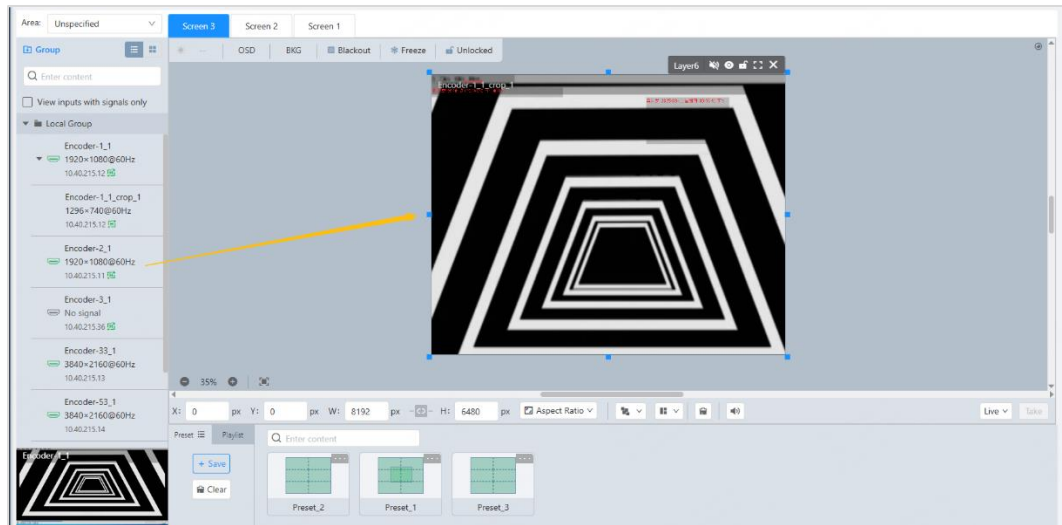
Figure 4-49 Adjust volume



4.10.3 Switch Layer Input Sources

Click an input in the signal list on the left and drag it to an added layer to quickly switch the layer input source. The layer size and position remain the same.

Figure 4-50 Switch layer input sources



4.10.4 Save Presets

The preset is used to save all the layer-related information in the current screen. After saving the preset, you can directly load it for future use, and there is no need to configure and operate a layer.

- Step 1 On the screen management page, click **Save** below the **Preset** tab and the system will automatically add a new preset.
- Step 2 After saving the preset, you can enter a new name for the added preset.
- Step 3 Click the blank area to save the preset.

4.10.5 Load Presets

After saving the preset, you can click the desired preset in the preset list to load it.

Figure 4-51 Preset list



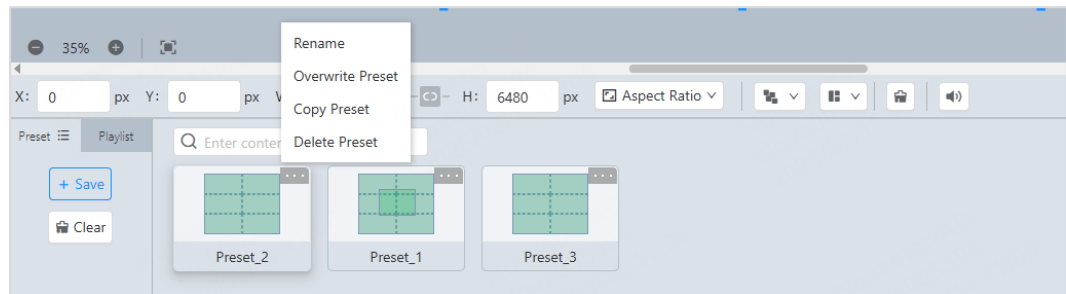
The green area indicates the layer layout.

4.10.6 Delete Presets

Delete Single Preset

In the preset list, select the desired preset and click  at the right corner to expand the preset operations menu. Click **Delete Preset** to delete the selected preset.

Figure 4-52 Delete single preset



Delete All Presets

Click **Clear** below the **Preset** tab to clear all the presets saved in the current screen.

4.10.7 Rename Presets

Rename the saved preset to ensure that the preset can be correctly identified.

Step 1 Hover the mouse over  or click this icon at the top right of the selected preset thumbnail to expand the preset operations menu, and then click **Rename**.

Step 2 Enter a new name in the text box.

4.10.8 Copy Presets

Copy the saved preset to another one. When you need to create a preset with the same layer layout as a saved preset, you can copy the target preset for quick arrangement of layers.

Hover the mouse over  or click this icon at the top right of the selected preset thumbnail to expand the preset operations menu, and then click **Copy Preset**. The system will automatically add a preset whose layer info is the same as the selected preset.

4.10.9 Overwrite Presets

By overwriting the preset, you can directly change the layer info in the saved preset.

Step 1 Change the layer info in the editing area.

Step 2 Click the **Preset** tab to show the preset list.

Step 3 Select the desired preset and click  at the top right.

Step 4 Click **Overwrite Preset** to complete the overwriting.

4.10.10 Set Preset Playlists

Prerequisites

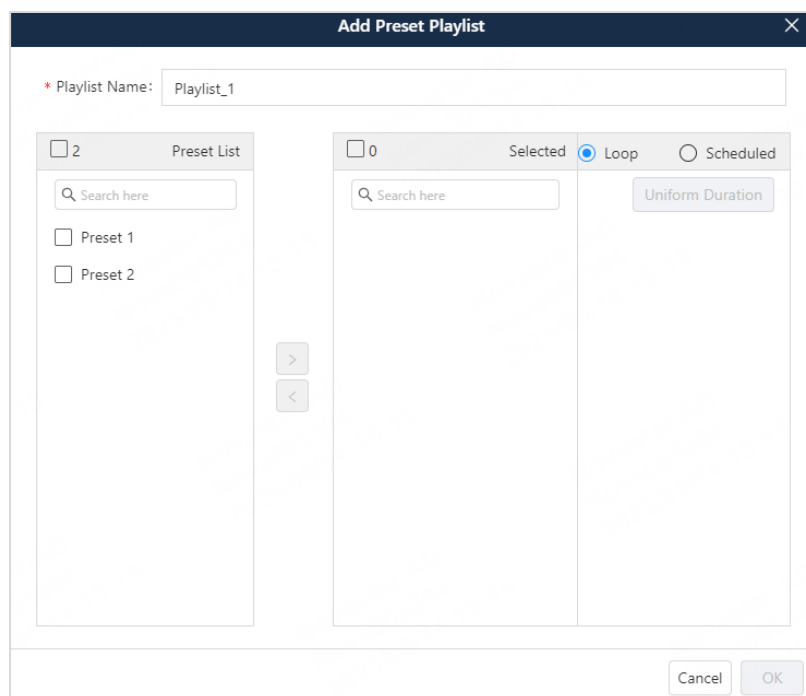
The presets have been saved.

Add Preset Playlists

Step 1 On the screen management page, click the **Playlist** tab to show the preset playback list.

Step 2 Click **Add** below the **Playlist** tab to open the preset playlist adding window.

Figure 4-53 Add preset playlists

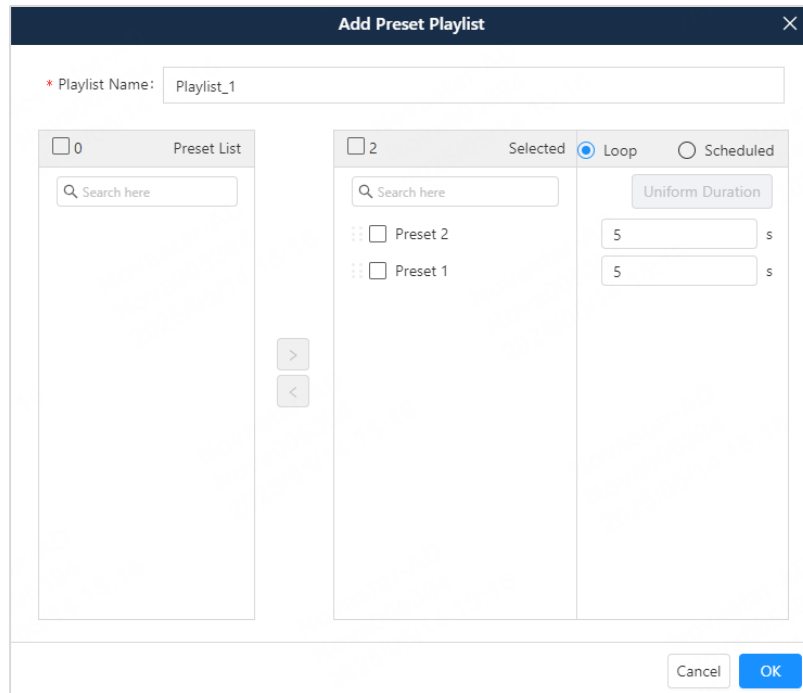


Step 3 Enter a name for the new playlist.

Step 4 Select the desired presets in the **Preset List** area on the left.

Step 5 Click  to add the selected presets to the **Selected** area.

Figure 4-54 Add presets to playlist

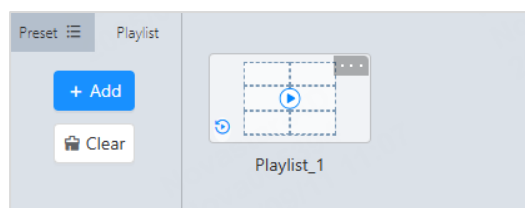


Step 6 Set the preset playback mode. The options include **Loop** and **Scheduled**.

- Loop: The preset playback is performed according to a set duration.
 1. Check the box next to **Loop** to set the playback mode to **Loop**.
 2. Select the presets in the **Selected** list.
 3. Enter the playback duration in the text box next to the preset name.
 When you want to set the same playback duration for all the presets, select all the presets in the **Selected** list and then click **Uniform Duration** to set the desired duration.
- Scheduled: The preset playback is performed according to a set schedule.
 1. Check the box next to **Scheduled** to set the playback mode to **Scheduled**.
 2. Select the presets in the **Selected** list.
 3. Enter the playback start time in the text box next to the preset name.

Step 7 Click **OK** to complete the settings.

Figure 4-55 Preset playlists



The icon displayed at the bottom left corner indicates the playback mode.

- : The playback mode is set to **Loop**.
- : The playback mode is set to **Scheduled**.

Play Presets

Step 1 On the screen management page, click the **Playlist** tab to show the preset playback list.

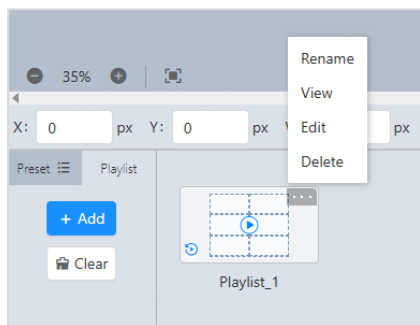
Step 2 Click  to play the selected preset playlist. The screen is locked during the playback.

Click  to pause the playback.

Other Operations

Click  at the top right of the selected preset playlist thumbnail to expand the playback operations menu.

Figure 4-56 Preset playlists



- **Rename:** Change the playlist name.
- **View:** View the playlist name, playback mode, playback duration, and also start time of each preset.
- **Edit:** Open the playlist editing window where you can change the playlist name, playback list, playback mode, duration, and also start time of each preset.
- **Delete:** Delete the selected preset playlist.

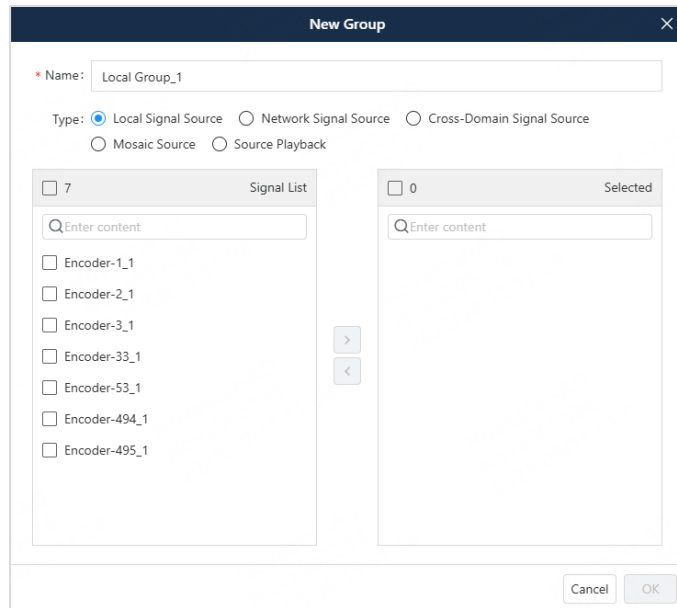
4.10.11 Add Signal Source Groups

When there are many video sources, network sources, and cross-domain sources connected in the system, the signal sources can be grouped for convenient management and searching. You can customize the signal source group, making it easier and more convenient to find the required signal source.

Step 1 In the system navigation bar, Click **Screen** to enter the screen management page.

Step 2 On top of the signal source list, click **Group** to open the source group adding window.

Figure 4-57 Add signal source groups



Step 3 Enter a name for the group

Step 4 Select the desired signal source type.

The supported options include **Local Signal Source**, **Network Signal Source**, **Cross-Domain Signal Source** and **Mosaic Source**.

- **Local Signal Source**: The signal source is provided by the device directly connected to the video device via video cables.
- **Network Signal Source**: The signal source is provided by the device connected to the network, such as IPC signals.
- **Cross-Domain Signal Source**: The signal source is added from other network segments.

Step 5 Check the boxes next to the desired signal sources in the left signal source list.

Check the box next to **Signal List** to select all signal sources.

Step 6 Click  to add the selected signal sources to the **Selected** area.

Step 7 Click **OK** to complete the adding.

4.10.12 Configure Mosaic Sources

When the input signal is provided by a graphics card with multiple connectors, you need to connect multiple encoders for connecting and transcoding. The system can group them to quickly and precisely search for the desired input.

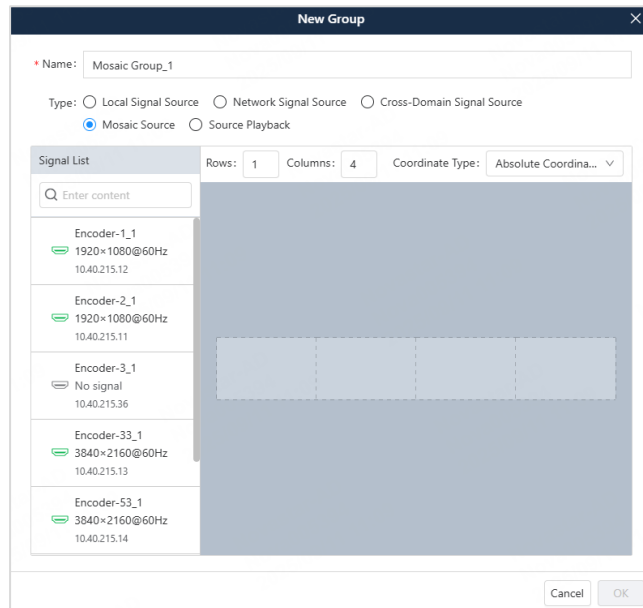
Step 1 In the system navigation bar, click **Screen** to enter the screen management page.

Step 2 On top of the signal source list, click **Group** to open the input source grouping window.

Step 3 Enter a name for the group.

Step 4 Set the input source type to **Mosaic Source**.

Figure 4-58 Mosaic sources



Step 5 Select the encoding nodes connected to the same graphics card from the signal list on the left.

You can enter the encoding node name or IP address in the search box at the top of the signal list to quickly search for the desired node.

Step 6 Enter the values of **Rows** and **Columns** to set the encoder quantities for mosaic and adjust the mosaic layout as required.

Step 7 Drag the encoding nodes from the signal list on the left to the target mosaic areas.

Step 8 Click **OK** to complete the configurations.

Step 9 On the screen management page, click the added group on the left to expand the grouped mosaic sources.

Step 10 Drag the signal sources respectively to the target areas to complete the layer mosaic.

4.10.13 Set Signal Source Playlists

Flexibly group multiple signal sources. The signal source playlist can be used as an independent signal source to open a layer. After the layer is successfully added, the signal sources will be automatically switched in sequence based on the set playback duration, providing a continuous and rich signal display experience.

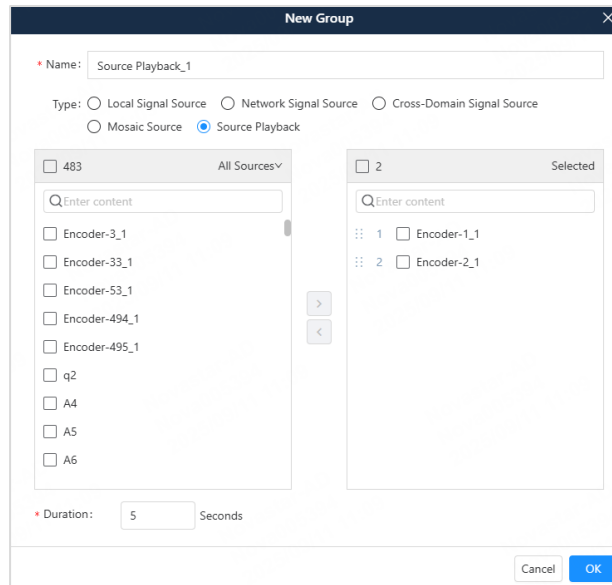
Step 1 In the system navigation bar, click **Screen** to enter the screen management page.

Step 2 On top of the input source list, click **Group** to open the grouping window. On top of the signal source list, click **Group** to open the input source grouping window

Step 3 Enter a name for the group.

Step 4 Set the input source type to **Source Playback**.

Figure 4-59 Source playback



Step 5 Select the desired signals from the signal list on the left.

Check the box next to **All Sources** to select all the signals.

Step 6 Click  to add the selected signals to the **Selected** area on the right.

Step 7 Set the playback duration that specifies the time length each signal lasts.

Step 8 Click **OK** to complete the settings.

On the screen management page, you can view the added signal source playback group in the signal list, and perform the following operations.

- Drag the new group from the signal list on the left to the screen editing area to add a layer.
- Hover the mouse over the added group, and then click  to play the source group.
- Click  to pause the playback. Once paused, the first signal source in the playback group will be played.
- Hover the mouse over the added group, and then click  to edit or dissolve the group.

4.10.14 Crop Input Sources

Crop a partial area of the input source image. The cropped image can be used as a new input source.

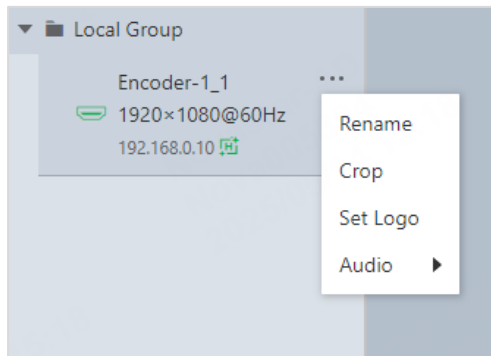
If the selected signal source is added to a source playlist and the playback is enabled, cropping is not allowed.

Step 1 On the screen management page, select an input source in the signal list on the left and ... appears next to the input source name.

- The image of the selected input source is shown at the bottom of the signal list.
- The green connectors are accessed with signal sources.

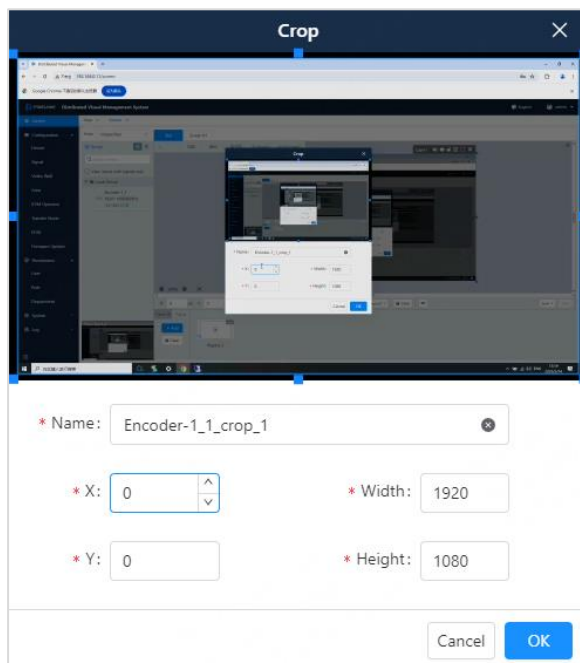
Step 2 Click ... to open the input source operations menu.

Figure 4-60 Input source operations menu



Step 3 Click **Crop** to open the input source cropping window.

Figure 4-61 Crop input sources



Step 4 Name the cropped input source image.

Step 5 Enter the values in the **X** and **Y** text boxes to set the horizontal and vertical start positions respectively for the cropping. The cropping reference is the top left corner of the input source image.

Step 6 Enter the values in the **Width** and **Height** text boxes to set the width and height of the left area after cropping.

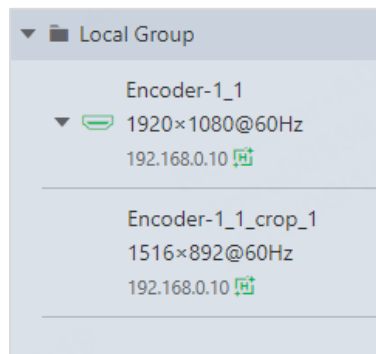
Note

After the width and height values are set, click and drag the highlighted frame in the input source area to quickly adjust the start position for the cropping.

Step 7 Click OK to complete the cropping.

After the cropping, the new input source appears below the original input source in the signal list. You can rename, delete and edit the new input source.

Figure 4-62 Cropped input sources

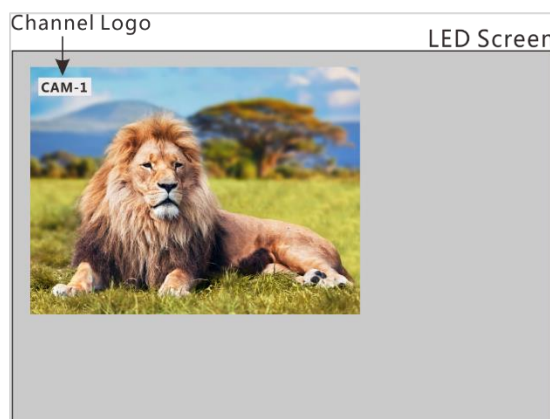


4.10.15 Set Channel Logos

The channel logo function allows you to set a logo for each input source, which is displayed on the top left of the layer. By using this function, you can quickly locate and identify the input source of the layer. The channel logo effect is shown as follows.

You can set a channel logo for a local signal source only. The logo is displayed on the screen, output monitoring on the Web page and KVM operation page.

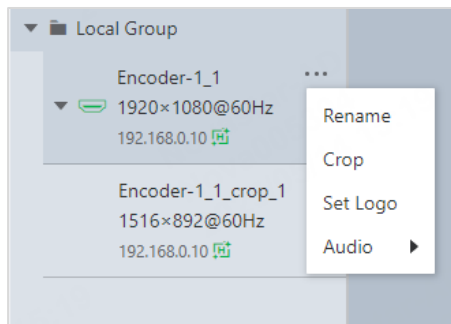
Figure 4-63 Channel logo



Step 2 Select an input source and ... appears next to the input source name.

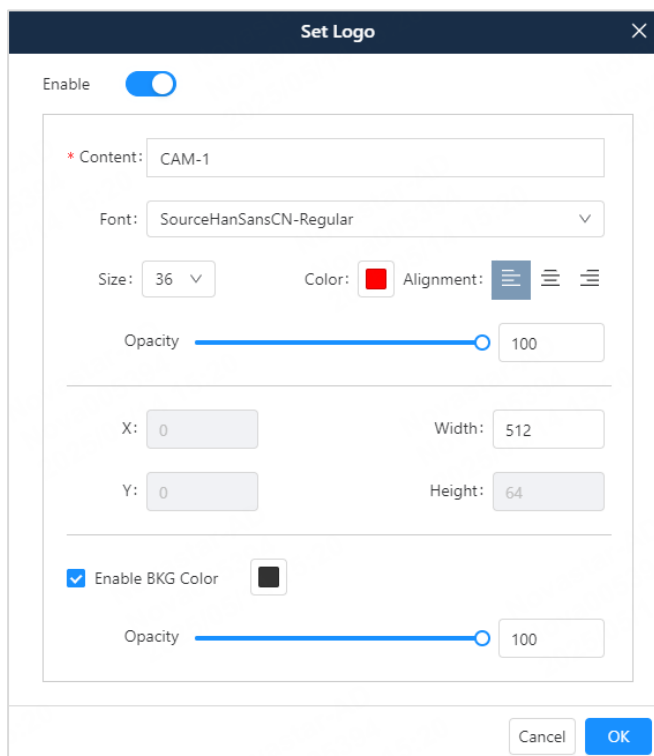
Step 3 Click ... to expand the input source operations menu.

Figure 4-64 Input source operations menu



Step 4 Select **Set Logo** to open the channel logo settings window.

Figure 4-65 Set channel logos



Step 5 Enable the logo function.

Step 6 Enter the logo text in the **Content** text box.

Step 7 Set the text font for the logo text.

Step 8 Set the text size and color for the logo text.

Step 9 Set the logo text alignment method.

-  (Align left): Align the text content with the left margin of the signal area.
-  (Center): Center the text content in the signal area.

-  (Align right): Align the text content with the right margin of the signal area.

Step 10 Drag the opacity slider to set the logo text opacity.

Step 11 Enter the values in the **X** and **Y** text boxes to set the position of the logo upon the input source.

Step 12 Enter the values in the **Width** and **Height** text boxes to set the logo size.

Step 13 Check the box in front of **Enable BKG Color** to select a color for the logo background.

Step 14 Drag the opacity slider to set the logo background opacity.

Step 15 Click **OK** to complete the settings.

4.10.16 Set Signal Audio

The signal connected to the encoder supports the accompanied and analog audio. You can select the desired audio based on different application scenarios.

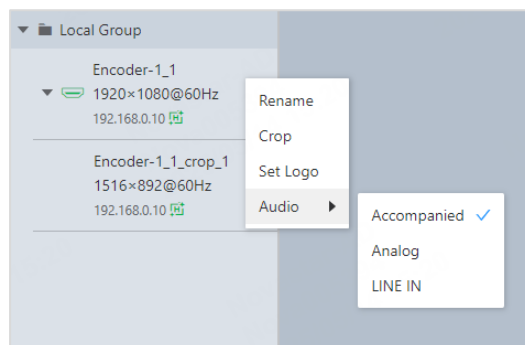
The IPC source does not support audio settings.

- Accompanied audio: The input audio connected to the HDMI connector of an encoder
- Analog audio: The input audio connected to a 3.5 mm audio connector
- Line In: The input audio connected to the Line In connector of an encoder
- The cross-domain source does not support audio changing.

Step 1 On the screen management page, select an input source in the signal list on the left and ... appears next to the input source name.

Step 2 Click ... to open the input source operations menu.

Figure 4-66 Input source operations menu



Step 3 In the popup menu, select the desired audio for a signal source.

4.10.17 Add OSD

The system supports the text OSD, weather OSD and time OSD.

OSD has the highest priority which cannot be adjusted.

Up to 15 OSDs can be added to a single screen.

Prerequisites

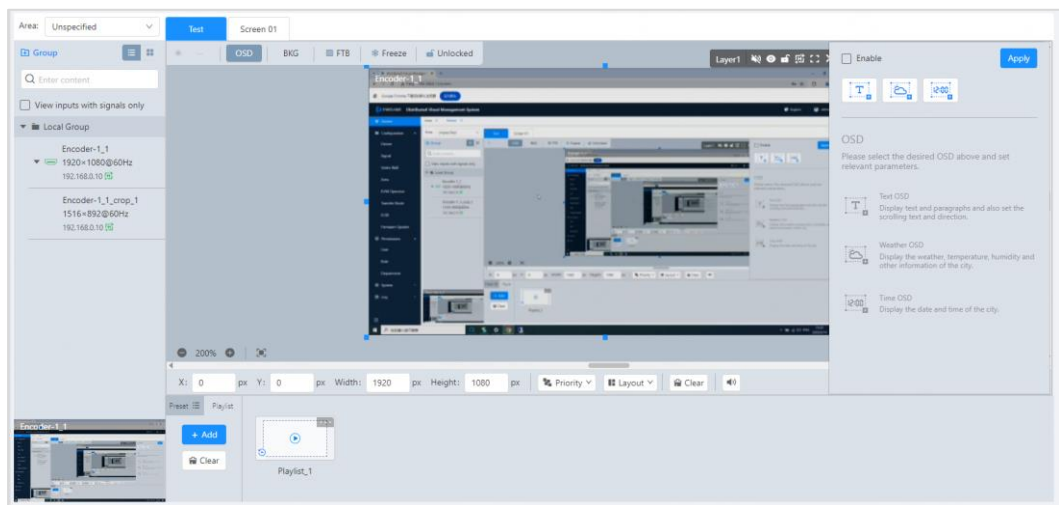
The screen is configured.

Operating Procedure

Step 1 On the screen management page, select a screen in the screen list at the top to enter the screen editing page.

Step 2 Click **OSD** below the screen list area to expand the OSD settings pane.

Figure 4-67 OSD settings



Step 3 Check the box next to **Enable** to enable the OSD function.

4.10.17.1 Add Text OSD

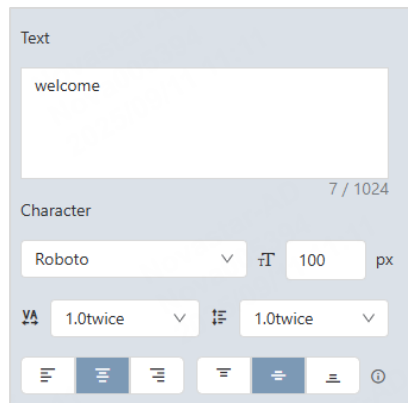
Up to 15 text OSDs can be added to each screen, including one dynamic text OSD.

Step 1 On the OSD settings pane, click  to enable the text OSD function.

Step 2 In the text box below **Text**, enter the text OSD content.

Step 3 Set the text OSD properties, including the font, size, text spacing, line height and color.

Figure 4-68 Text OSD properties



- Font Size: Set the font size. The value ranges from 8 to 512 and it defaults to 100.
- Character Spacing: Select the spacing between two letters or characters from the drop-down list.
- Row Height: Select the row height from the drop-down list. When there are multiple rows, this parameter is available.

Step 4 Set the text alignment method.

- Three horizontal alignment options are provided. When the text is static which means the text scrolling speed is set to 0, this setting takes effect.
 -  (Align left): Align the text content with the left margin of the OSD area.
 -  (Center): Center the text content in the OSD area.
 -  (Align right): Align the text content with the right margin of the OSD area.
- Three vertical alignment options are provided.
 -  (Align top): Align the text to the top.
 -  (Center vertically): Center the text vertically.
 -  (Align bottom): Align the text to the bottom.

Step 5 Set the text OSD scrolling properties.

1. Check the box next to **Enable Scrolling** to enable this function.
2. Speed: Set the scrolling speed. The value ranges from 1 to 10. The higher the value, the faster the scrolling speed.
3. Direction: Set the scrolling direction. The options are **From Right to Left**, **From Left to Right**, **From Bottom to Top** and **From Top to Bottom**.

Step 6 Set the OSD position and size.

- Position: The position of the text OSD displayed on the screen
 - X: Set the horizontal distance from the top left corner of the OSD to that of the screen.

- Y: Set the vertical distance from the top left corner of the OSD to that of the screen.
- Size: The size of OSD area displayed on the screen
 - Width: Set the OSD area width. The value ranges from 64 to 32768 pixels.
 - Height: Set the OSD area height. The value ranges from 64 to 4320 pixels.

Step 7 Click **Apply** to complete the text OSD settings and display the text OSD on the screen.

4.10.17.2 Add Weather OSD

Before setting a weather OSD, please ensure that the device is connected to the network to obtain the precise weather information.

Up to 15 weather OSDs can be added to each screen.

Step 1 On the OSD settings pane, click  to enable the weather OSD function.

Step 2 Set the weather information.

- Weather Source: Set the method to obtain the weather data. The supported options include **Auto** and **Manual**.
 - Auto: The system automatically obtains the weather data and display it on the screen.
 - Manual: Manually enter the weather information to be displayed on the screen.
- City: Set the city that you want to display its weather information.
- Refresh Cycle: Set the refresh cycle for the weather data. The value ranges from 5 to 1440 minutes.
- Data Type: Check the box next to the desired the data type to be displayed.
- Type Icon: Set whether to display the data type icon.
 - Check: Display the data type icon.
 - Uncheck: Hide the data type icon.

Step 3 Set the character properties.

- Font: Select the desired text font from the drop-down list.
- Font Size: Set the font size. The value ranges from 8 to 512.
-  (Character spacing): Select the spacing between two letters or characters from the drop-down list.
-  (Row Height): Select the row height from the drop-down list. When there are multiple rows, this parameter is available.
- Language: Select the text language from the drop-down list.
- Temperature Unit: Select the temperature unit. The supported options include °C or °F.

Step 4 Set the text alignment method.

Set the display mode and alignment method of the weather OSD within the OSD area.

- Display mode: Set the display mode of the weather OSD. The supported options are as follows.
 - : Display the weather OSD on a single line.
 - : Display the weather OSD on multiple lines. Each data type is displayed on a separate line.
- Three horizontal alignment options are provided.
 -  (Align left): Align the text content with the left margin of the OSD area.
 -  (Center): Center the text content in the OSD area.
 -  (Align right): Align the text content with the right margin of the OSD area.
- Three vertical alignment options are provided.
 -  (Align top): Align the text to the top.
 -  (Center vertically): Center the text vertically.
 -  (Align bottom): Align the text to the bottom.

Step 5 Set the OSD position and size.

- Position: The position of the weather OSD displayed on the screen
 - X: Set the horizontal distance from the top left corner of the OSD to that of the screen.
 - Y: Set the vertical distance from the top left corner of the OSD to that of the screen.
- Size: The size of OSD area displayed on the screen
 - Width: Set the OSD area width. The value ranges from 64 to 32768 pixels.
 - Height: Set the OSD area height. The value ranges from 64 to 4320 pixels.

Step 6 Click **Apply** to complete the weather OSD settings and display the weather OSD on the screen.

4.10.17.3 Add Time OSD

Up to 4 time OSDs can be added to each screen.

Step 1 On the OSD settings pane, click  to enable the time OSD function.

Step 2 Set the time OSD properties.

- Clock Style: Set the clock display style. Only **Digital Clock** is supported.
- Time Zone: Select the clock's time zone from the drop-down list.
- Date Format: Select the date format from the drop-down list.
- Time Format: Select the time format from the drop-down list.

- 24-hour: Set weather to enable the 24-hour display mode. If disabled, the 12-hour display mode will be adopted.
- Data Type: Check the box next to the desired the data type to be displayed.

Step 3 Set the character properties.

- Font: Select the desired text font from the drop-down list.
- Font Size: Set the font size. The value ranges from 8 to 512.
-  (Character spacing): Select the spacing between two letters or characters from the drop-down list.
-  (Row Height): Select the row height from the drop-down list. When there are multiple rows, this parameter is available.
- Language: Select the text language from the drop-down list.

Step 4 Set the text alignment method.

Set the display mode and alignment method of the time OSD within the OSD area.

- Display mode: Set the display mode of the time OSD. The supported options are as follows.
 - : Display the time OSD on a single line.
 - : Display the time OSD on multiple lines. Each data type is displayed on a separate line.
- Three horizontal alignment options are provided.
 -  (Align left): Align the text content with the left margin of the OSD area.
 -  (Center): Center the text content in the OSD area.
 -  (Align right): Align the text content with the right margin of the OSD area.
- Three vertical alignment options are provided.
 -  (Align top): Align the text to the top.
 -  (Center vertically): Center the text vertically.
 -  (Align bottom): Align the text to the bottom.

Step 5 Set the OSD position and size.

- Position: The position of the weather OSD displayed on the screen
 - X: Set the horizontal distance from the top left corner of the OSD to that of the screen.
 - Y: Set the vertical distance from the top left corner of the OSD to that of the screen.
- Size: The size of OSD area displayed on the screen
 - Width: Set the OSD area width. The value ranges from 64 to 1920 pixels.
 - Height: Set the OSD area height. The value ranges from 64 to 1080 pixels.

- Step 6 Click **Apply** to complete the time OSD settings and display the time OSD on the screen.

4.10.17.4 Set Common Properties for OSDs

Click **OSD** below the screen list area to set the text color and background for all OSDs on the current screen.

- Step 1 On the screen management page, select a screen in the screen list at the top to enter the screen editing page.
- Step 2 Click **OSD** below the screen list area to expand the OSD settings pane.
- Step 3 In the **Common Properties** area, set the text color and background color.
- Text Color: Click the color block icon to select an existing color or enter the RGB values to define a custom color in the window that appears.
 - Background Color: Click the color block icon next to **Background Color** to open a window where you can select or customize the color.
 - No Fill: After you select **No Fill**, both the text and OSD background will not be displayed.
 - More Colors: Select the standard color or customize the color by setting the Hex or RGBA values.
 - Recent Colors: The system will automatically record recently used colors, you can select the desired color to reuse it.

4.10.18 Add BKG

Import BKG images before adding BKG. After the BKG is added successfully, the BKG image will automatically fit the screen and be placed at the bottom. The size and priority of a BKG image cannot be adjusted.

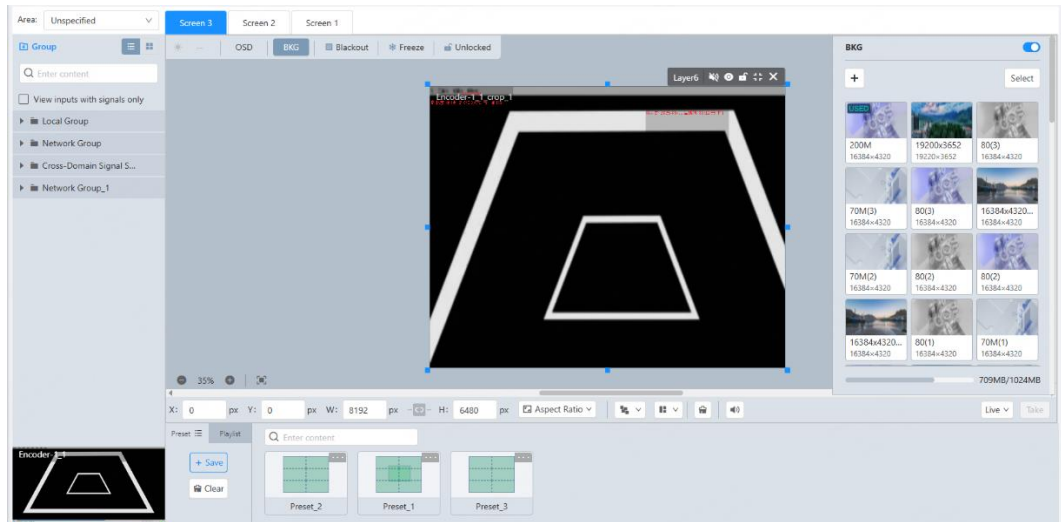
The BKG image does not occupy the layer resources and the maximum storage capacity is 1 GB.

- $68 \times 64 \text{ pixels} \leq \text{BKG image resolution} \leq 70.77 \text{ million pixels}$
- Imported PNG files must be under 70 MB.
- Up to 256 BKG images can be imported, and the capacity of all BKG images must not exceed 1 GB.
- If the transparency of an imported BKG image has been set, the system will remove the transparency setting when you use this image.

Import BKG Images

- Step 1 On the screen management page, select a screen in the screen list at the top to enter the screen editing page.
- Step 2 Click **BKG** below the screen list area to expand the BKG settings pane.

Figure 4-69 Import BKG images



Step 3 Click  to open the BKG image adding window.

Step 4 Select a BKG image and click **Open** to import the selected image to the BKG list.

Add BKG

Step 1 On the BKG settings pane, select the desired BKG image.

Step 2 Toggle the switch next to **BKG**.

The system will use the selected image as a BKG.

After the BKG function is enabled, you can select another image to replace the current one.

Delete BKG

- Delete a single BKG: Hover the mouse over the desired BKG, and click  at the top right corner to delete the selected BKG.
- Delete multiple BKGs: In the BKG list, click **Select** at the top right corner, check the boxes next to the desired BKGs, and then click  at the top left corner to delete all the selected BKGs.

4.10.19 Other Operations

Adjust Screen Brightness

For a screen loaded by an all-in-one decoder, click  and drag the slider block to adjust the screen brightness. After the settings are done, click **Save**.

Enable/Disable FTB

Click  **FTB** to enable the **FTB** function and click  to disable it. If enabled, the output image will fade to black and the input image is displayed normally.

Enable/Disable Freeze

Click  **Freeze** to enable the **Freeze** function and click  to disable it. If enabled, the current frame of the output image is frozen and the input image is displayed normally.

Lock/Unlock

Click  **Unlocked** to lock the layer editing area, and click  **Locked** to unlock the area.

4.11 System Management

The system management allows you to reset the device to factory settings, import and export backup files, view the device manufacturer information and system version.

4.11.1 System Configurations

- **Decoding Mode:** Select the desired video decoding mode.
 - **H.265 Hardware Decoding:** Decode video streams through decoders. This mode is suitable for decoding of video streams displayed in a browser.
 - **H.265 Software Decoding:** Select this option if there are display problems in the browser on the screen.
- **Lock Aspect Ratio:** Once enabled, the aspect ratio of the layer will be set to that of the input source by default.
- **Configure the displayed image if IPC decoding failure occurs.**
 - **Abnormal Display:** Display the layer background by default if IPC decoding failure occurs.
 - **Hold on Last Frame:** Display the last frame image before decoding failure.

Click **Reset** to reset all configuration parameters set on this page to default settings.

4.11.2 Security Settings

Enable or disable **Save Password in KVM System**.

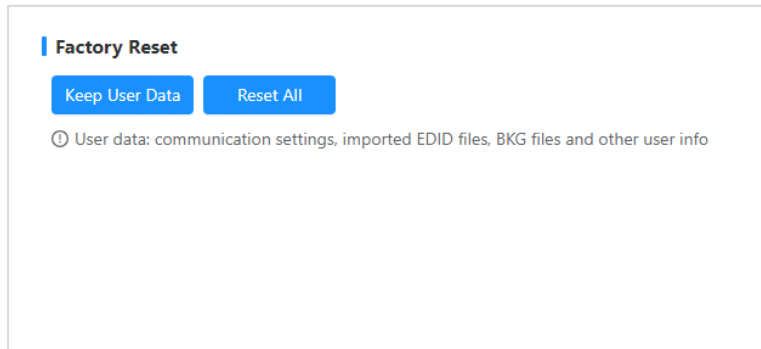
- **Enable:** If you enable this function and also check the box next to **Remember Password** in the KVM system, the system will automatically save your login credentials. The next time you log into the system, there's no need to enter the password. Simply click **Login** to enter the system.

- **Disable:** The password will not be recorded in the KVM system. Users need to enter the password again when logging into the system.

4.11.3 Factory Reset

In the main menu bar, go to **System > Factory Reset** to enter the factory reset page.

Figure 4-70 Factory reset



- **Keep User Data:** When you click **Keep User Data**, some configured information will still be kept in the system and other parameters are reset to the default values. The kept information is shown in [Table 4-7](#).

Table 4-7 Kept information after factory reset

Module	Kept Information
Screen	Imported pictures
EDID	Imported EDID files Note: The EDID parameters configured via EDID files will not be reset to the default values, while the parameters configured manually will be reset.
Permissions	User basic info (user account, password, status and nickname), department configurations, role configurations and permission configurations

- **Reset All:** Click **Reset All** to restore all the parameters to the default values.

Note

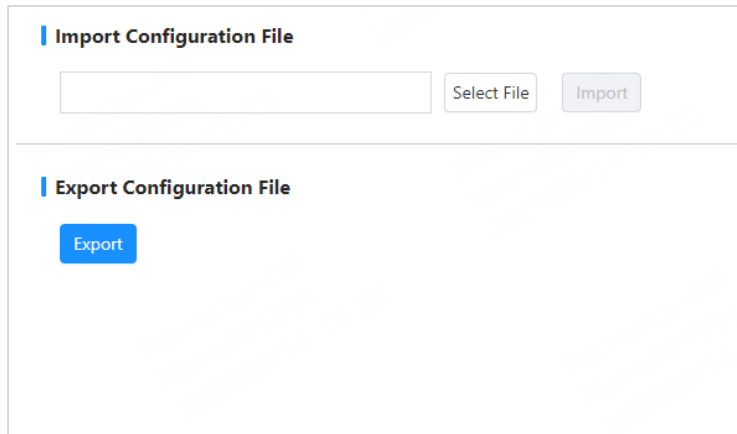
During factory reset, some configuration info will be cleared. Please be careful to perform the operation.

4.11.4 Backup Management

The system supports exporting the configuration info saved in the primary management code to your local computer. After resetting the system, you can import the local backup file to quickly configure the system.

In the main menu bar, go to **System > Backup** to enter the backup management page.

Figure 4-71 Backup Management

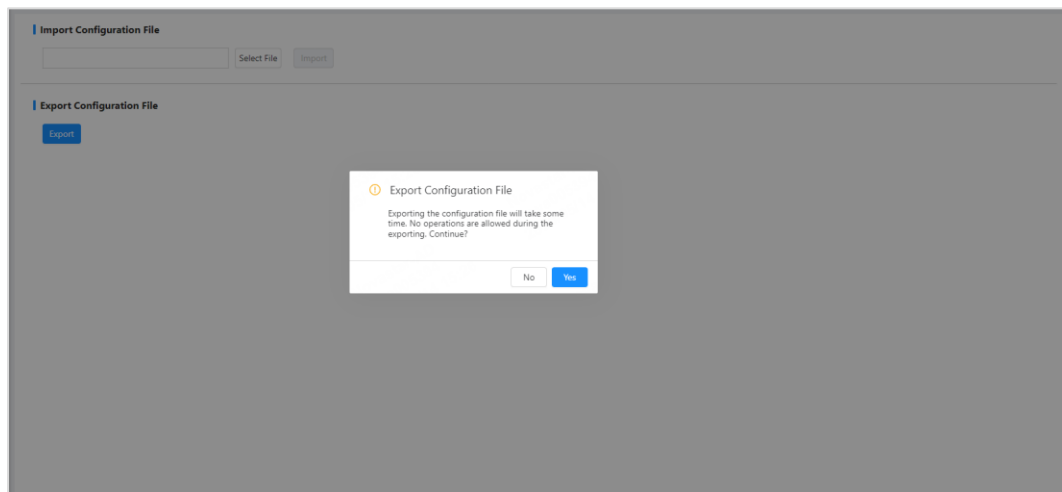


The screenshot shows a web interface for backup management. It has two main sections: 'Import Configuration File' and 'Export Configuration File'. The 'Import' section contains a text input field, a 'Select File' button, and an 'Import' button. The 'Export' section contains a single 'Export' button.

Export Configuration Files

On the backup management page, click **Export** and then click **Yes** in the popup window. The system will automatically export the configuration file to your local computer.

Figure 4-72 Export configuration files



This screenshot shows the same backup management interface as Figure 4-71, but with a confirmation popup window displayed in the center. The popup is titled 'Export Configuration File' and contains the text: 'Exporting the configuration file will take some time. No operations are allowed during the exporting. Continue?'. At the bottom of the popup are two buttons: 'No' and 'Yes'.

Import Configuration Files

On the backup management page, click **Select File** in the **Import Configuration File** area. Select the configuration file saved locally in the popup window.

Click **Import** and the system will automatically import the configuration file.

4.11.5 About

View the company website, email address and software version.

In the main menu bar, go to **System > About** to view the company and software information.

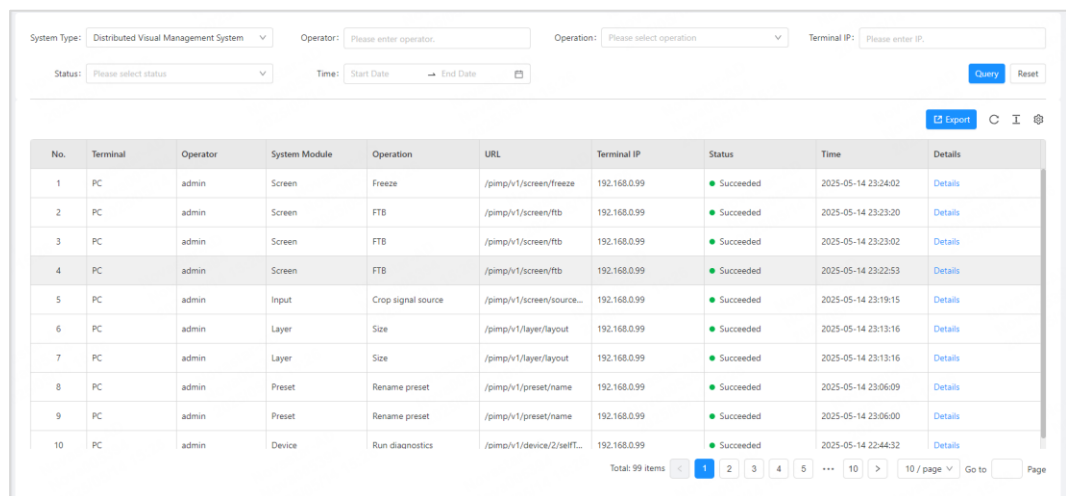
4.12 Manage Logs

The system records the operations performed by the users to track the problems.

Step 1 In the main menu bar, go to **Log > Operation Logs** to enter the operation logs page.

All the operation logs are displayed by default. Click **Export** at the top right corner to export all the logs to your local file system.

Figure 4-73 Operation logs



No.	Terminal	Operator	System Module	Operation	URL	Terminal IP	Status	Time	Details
1	PC	admin	Screen	Freeze	/pimp/v1/screen/freeze	192.168.0.99	Succeeded	2025-05-14 23:24:02	Details
2	PC	admin	Screen	FTB	/pimp/v1/screen/ftb	192.168.0.99	Succeeded	2025-05-14 23:23:20	Details
3	PC	admin	Screen	FTB	/pimp/v1/screen/ftb	192.168.0.99	Succeeded	2025-05-14 23:23:02	Details
4	PC	admin	Screen	FTB	/pimp/v1/screen/ftb	192.168.0.99	Succeeded	2025-05-14 23:22:53	Details
5	PC	admin	Input	Crop signal source	/pimp/v1/screen/source...	192.168.0.99	Succeeded	2025-05-14 23:19:15	Details
6	PC	admin	Layer	Size	/pimp/v1/layer/layout	192.168.0.99	Succeeded	2025-05-14 23:13:16	Details
7	PC	admin	Layer	Size	/pimp/v1/layer/layout	192.168.0.99	Succeeded	2025-05-14 23:13:16	Details
8	PC	admin	Preset	Rename preset	/pimp/v1/preset/name	192.168.0.99	Succeeded	2025-05-14 23:06:09	Details
9	PC	admin	Preset	Rename preset	/pimp/v1/preset/name	192.168.0.99	Succeeded	2025-05-14 23:06:00	Details
10	PC	admin	Device	Run diagnostics	/pimp/v1/device/2/selfT...	192.168.0.99	Succeeded	2025-05-14 22:44:32	Details

Step 2 Set the query conditions and click **Query** to display all the operation logs according to the set conditions.

Click **Reset** to clear all the query conditions.

Step 3 Click **Details** to view the operation log details in the popup window.

4.13 Configure Central Control

The PD series supports the control of backend devices via central control connectors.

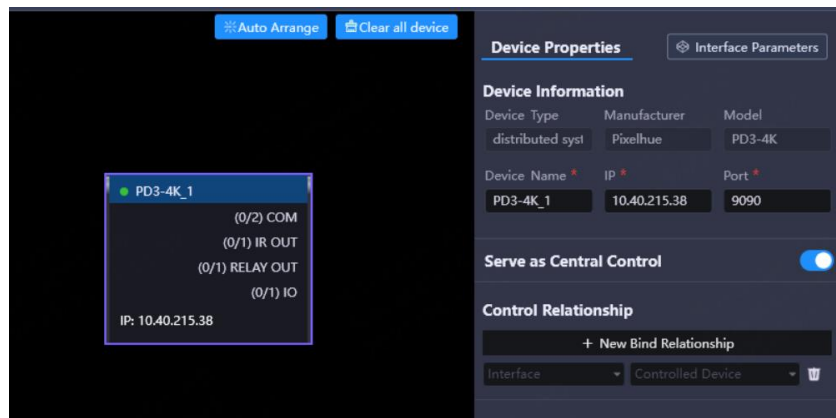
Prerequisites

- You have installed VI Designer of V6.4.0 or above on the control PC.
- You have added the controlled device and related commands in VI Designer.
- The control PC and PD series device are on the same network segment.

Operating Procedure

- Step 1 In VI Designer, Click **Topology** at the top right corner to enter the device topology interface.
- Step 2 Click **MAC Scan** at the top left corner to open the device searching window.
- Step 3 Select the control PC's network card which is connected to the central control device.
- Step 4 Click **Apply** to complete the network card settings.
- Step 5 Click **Scan** and the system will automatically scan all the devices on the current network segment. All the scanned devices will be added to the device list.
- Step 6 Check the box next to the distributed processor connected to the controlled device, and then click **Add to Project**.
- Step 7 In the left device library, click and drag the controlled device to the editing area.
- Step 8 On the device topology interface, click the added distributed processor.
- Step 9 On the right device properties pane, toggle the switch next to **Serve as Central Control**.
- Step 10 In the **Control Relationship** area, click **New Bind Relationship**.

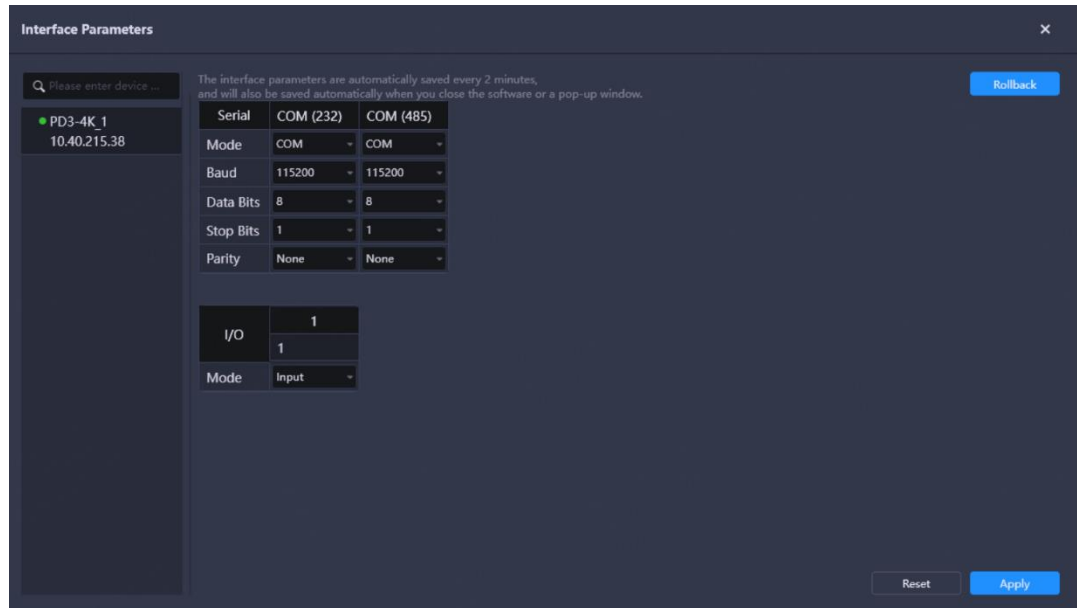
Figure 4-74 Bind relationship



- Step 11 From the left drop-down list, select the central control connector of the distributed processor.
- Step 12 From the right drop-down list, select the controlled device.

Select the distributed processor, click and drag  next to the central control connector to that next to the controlled device to complete the binding.
- Step 13 After the connection between the distributed processor and controlled device is completed, select the distributed processor and click **Interface Parameters** at the top right corner to enter the interface parameter configuration interface.

Figure 4-75 Interface parameters



- Read back device information.
 - Select the desired device from the left device list.
 - Click **Read Back** and the system will automatically read back and display the latest device information.

- Configure serial port information.

When the distributed processor and controlled device are connected via a serial port, you need to configure the serial port connection parameters to ensure normal communication between the devices.

For the serial port, two connection modes are supported, including **COM** and **Modbus**. Select either of them based on the control protocol supported by the controlled device.

Supported baud rates: 1200, 1800, 2400, 4800, 9600, 19200, 38400, 57600 and 115200 (default)

- Configure I/O mode.

For the I/O connector, three modes are supported, including **Input**, **Output-High** and **Output-Low**. Select the target mode based on the device connected to each connector.

When the I/O connector is connected to a device that sends input signals, such as smoke sensors, temperature and humidity sensors, the connector should be set to **Input** mode.

When the I/O connector is connected to a controlled device, and needs to be controlled via I/O connector, the connector must be set to either **Output-High** or **Output-Low** mode. The mode selection depends on the signal type required by the controlled device.

Step 14 Close the topology interface, and return to the VI Designer's project editing interface.

Step 15 Drag the button to the VI Designer's editing interface, and set the control events.



Note

For the event control and operation details, please refer to the user manual of VI Designer.

5 KVM Operator System

5.1 Log into System

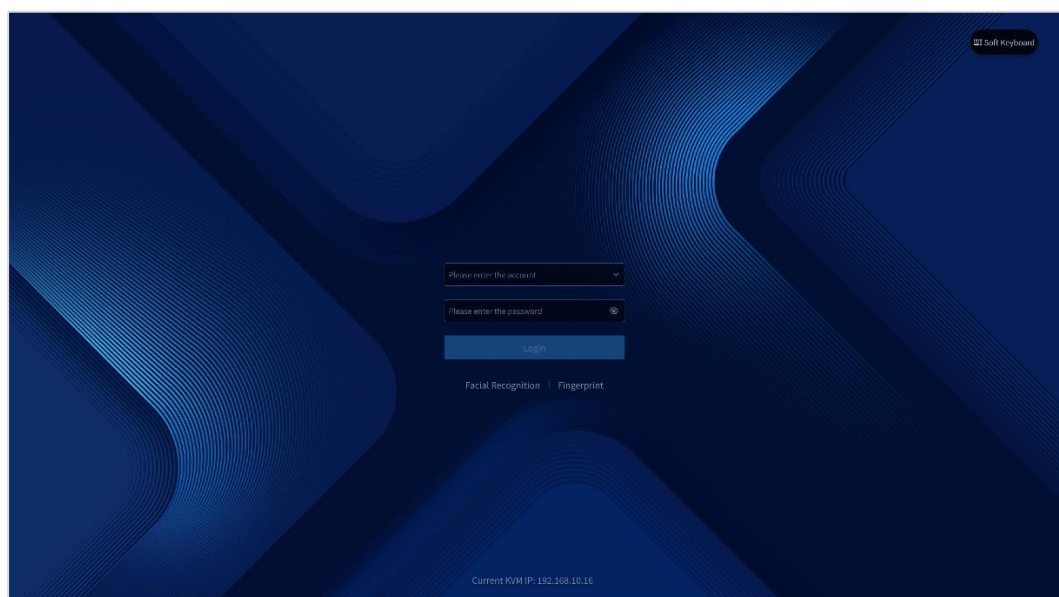
Prerequisites

- The user information is configured on the Web page.
- All the KVM connections are completed.

Operating Procedure

After all the KVM connections are completed, the login page will be displayed on the screen connected to the decoder with the keyboard and mouse.

Figure 5-1 Login page



Step 2 Enter the user account.

Step 3 Enter the matched password.

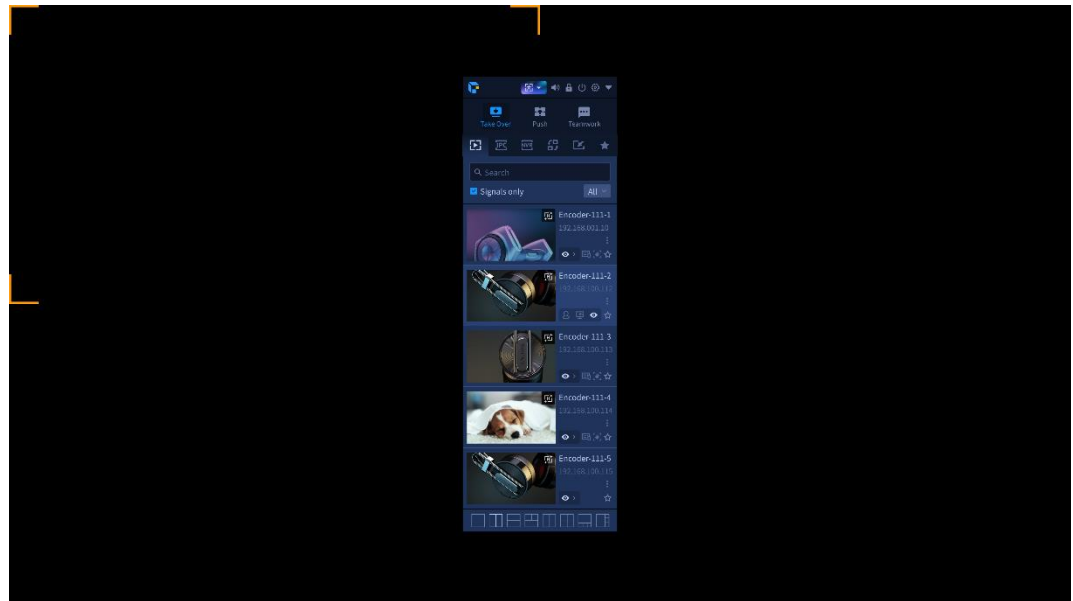
Step 4 Click **Login** to log into the system.

- If a fingerprint scanner is connected and fingerprint registration has been completed, click **Fingerprint** to log into the system through fingerprint verification.
- If a facial recognition camera is connected and facial information registration has been completed, click **Facial Recognition** to log into the system through facial verification.

Note

When the PD3-4K serves as a KVM node, both fingerprint and facial recognition are supported for login. Before using either of the two methods for login, you need to log into the system using your account first, and go to **Settings > Preferences** to collect the fingerprint or facial information.

Figure 5-2 Main interface



Note

- If you are not the "admin" user, you must change the password on first login. Please follow the prompt to change it.
- If the menus shown in [Figure 5-2](#) are not shown completely after login, please go to the role and user management page on the web control page to check whether you have the corresponding permissions.

You can quickly switch to the target the menu via the following shortcut keys on the OSD operations interface.

Table 5-1 Default shortcut keys on the OSD menu

Menu	Shortcut Key
Take Over	Alt+F1
Push	Alt+F2
Teamwork	Alt+F3
Settings	Alt+F4
Log Out	Shift+Esc

5.2 Change Layout

After login, the default layout is 2×2 which means four images can be displayed on each monitor. You can adjust the layout based on your habit or requirements.

8 layout options are provided. Select a layout icon to set the image layout.



Note

- If an operator controls multiple decoder-KVMs, the layout of each monitor can be adjusted separately if needed
- After the layout is adjusted, the image in each layout area will be automatically re-arranged.

5.3 Take Over Signals

Switch a signal to a layer displayed on your computer, and then you have the signal-related permissions. When you take over a signal, there are three kinds of permission requests, including **View**, **Control** and **Exclusive**.

- View: When taking over a signal by **View** mode, you can only view it and cannot remotely operate it.
- Control: When taking over a signal by **Control** mode, both you and others can remotely operate it.
- Exclusive: When taking over a signal by **Exclusive** mode, you can remotely operate it but others cannot view and remotely operate it.



Note

- The types of signal sources include **Video**, **Network** and **NVR**.
- The permissions of a video source include **View**, **Control** and **Exclusive**, while the permissions of a network source or a NVR source include **View** and **Exclusive** only.

In the navigation bar, click **Take Over** to enter the signal taking over interface where all the signals for which you have the permissions are displayed.

Figure 5-3 Take over signals

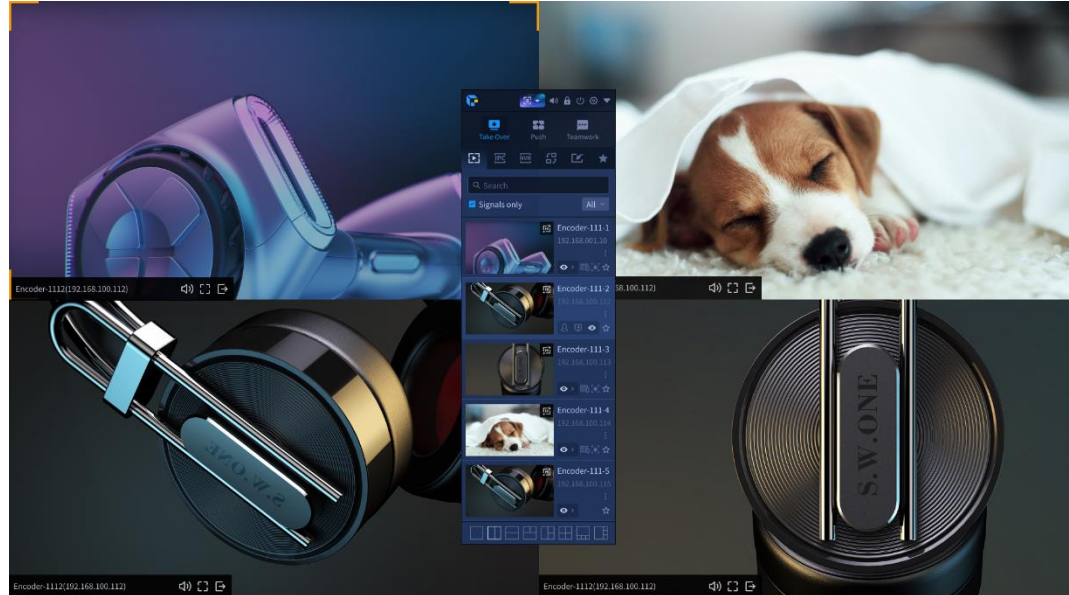


Table 5-2 Status descriptions

Status Icon	Description
	The input source is online.
	The input source is offline and cannot be used.
	The signal is not added to favorites. Click the icon to add the signal to favorites.
	The signal is added to favorites and can be quickly searched from favorites.
	Another KVM operator takes exclusive control of this signal source.
	The decoding node and input source are connected via the USB connector, and the KVM control is available.
	The USB drive is not identified.
	The USB drive is identified and the Read Only permission is enabled.
	The USB drive is identified and the Read and Write permission is enabled.

- Click  to select the audio channel or set the remote power on/off.
 - Audio Channel: Select the audio channel type. The supported options include **Accompanied**, **Analog** and **Line In**.
 - Remote Power On/Off: Click **OK** in the pop window to perform remote power on/off.
 - Set to Auto Takeover: Set a signal source to be taken over by default, and then the system will automatically take over the set signal source with 1×1 layout after login.
- Take over signals

Hover the mouse over the desired signal and the signal taking over status will be displayed.

 -  : Click to take exclusive control of the current signal.
 -  : Click to control the current signal.
 -  : Click to view the current signal.
 -  : Click to add the current signal to favorites. Once added, the icon changes to .

5.3.1 Take Over Signals

Prerequisites

The current operator is configured with the signal operation permissions.

Operating Procedure

Step 1 On the signal taking over interface, select the desired signal.

You can enter the signal name or IP address to search for the signal. The fuzzy search is supported.

View signals of different types.

-  : Click to view local video sources.
-  : Click to view IPC sources.
-  : Click to view NVR sources.
-  : Click to view cross-domain sources.
-  : Click to view received signal sources.
-  : Click to view signal sources added to favorites.

Step 2 Select the operation permission for the signal.

Step 3 Click the signal, press and hold the left mouse button and drag it to the editing area, and then release the mouse to control this signal.

Rules for Taking Over Signals

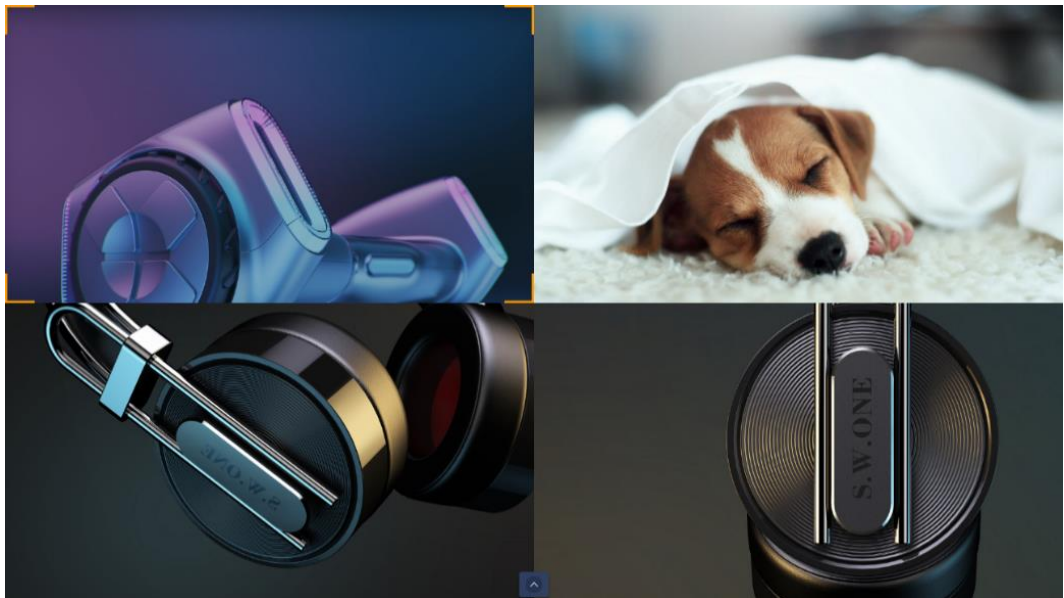
- One signal can be taken exclusive control by one user only, but can be controlled or viewed by multiple users.
- One signal can be controlled by multiple KVM operators.

5.3.2 KVM Operations

When the KVM operator is able to control or takes exclusive control of the signal provided by the computer or media server, the remote operations are supported.

Step 1 Click  at the bottom to hide the navigation bar.

Figure 5-4 Hide navigation bar



Step 2 Move the mouse to the desired image to enable the KVM remote editing status.

Note

- Display the navigation bar to complete the KVM remote operations, or double press **CTRL** to exit the KVM control.
- When an operator has the permission to control the signal, and other operator is operating it, wait for other operator to complete the operations, and then this operator can operate the signal.

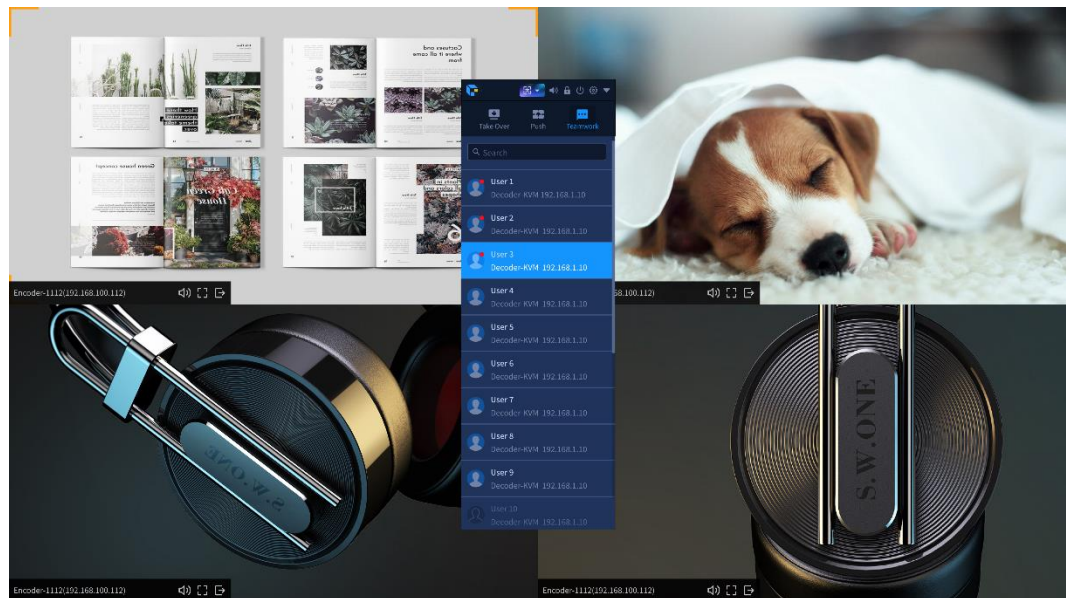
5.4 Push Signals

Push the signal taken over by the current operator to other operators or to the LED screen with the operation permissions, allowing the problem to be discussed and handled together.

5.4.1 Push Signal to KVM Operators

Step 1 In the navigation bar, click **Teamwork** to enter the teamwork interface.

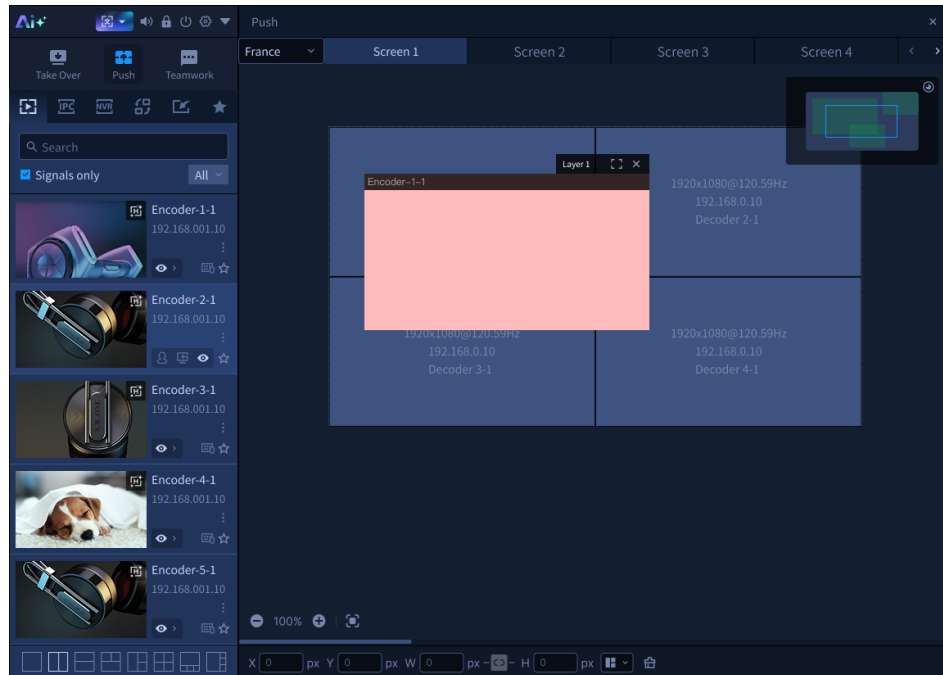
Figure 5-5 Teamwork



Step 2 In the user list, select the desired user and double click it to open the dialog box and expand the right pane.

Step 3 In the signal list on the right, select the desired signal to be pushed.

Figure 5-6 Push signals



Step 4 Click **Push** to push the signal to the selected KVM operator.

- If the box next to **Control** is unchecked, the selected KVM operator has the **View** permission for the pushed signal and you must have the **Control** or **Exclusive** permissions.
- If the box next to **Control** is checked, the selected KVM operator has the **Control** permission for the pushed signal and you must have the **View** or **Exclusive** permissions.

5.4.2 Push Signals to LED Screens

The operator can push the signal to the LED screen, allowing the problem to be discussed and handled together.

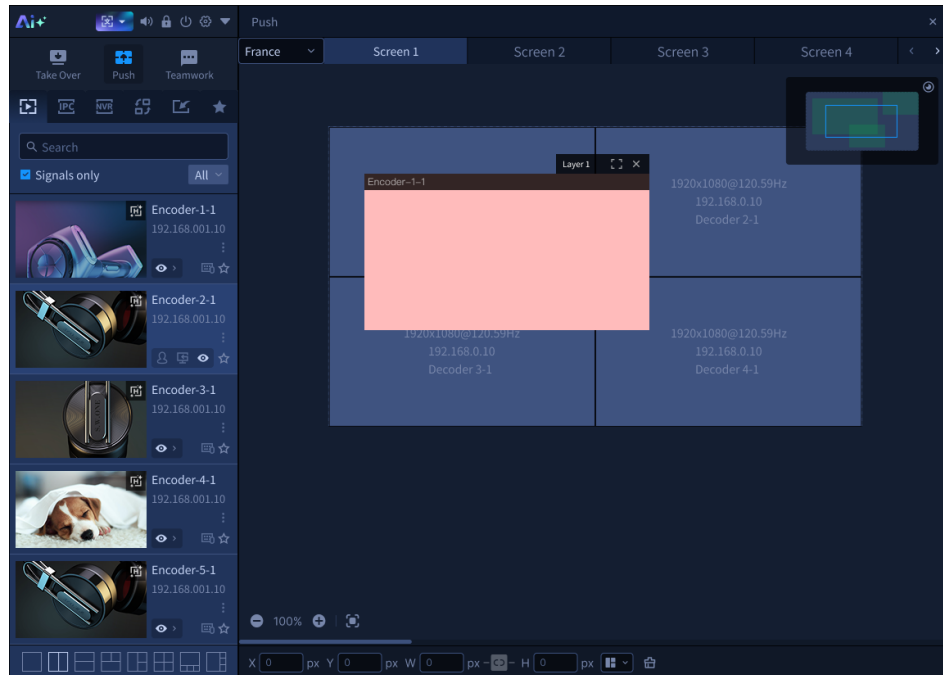
Prerequisites

- The screen and layers are configured on the Web page.
- The current operator is configured with the screen operation permissions.

Operating Procedure

Step 1 In the navigation bar, click **Push** to enter the screen pushing interface.

Figure 5-7 Push signals to LED screens



Step 2 Select the desired screen.

Step 3 Select the desired signal source group and signal source.

Step 4 Click and drag the desired signal source to the screen editing area to add a layer on the selected screen.

Layer Operations

- Adjust the layer position: Enter the values in the text boxes next to **X** and **Y** to precisely adjust the layer position.
- Adjust the layer size: Enter the values in the text boxes next to **W** and **H** to precisely adjust the layer size.
- : Change or customize the current layer layout.
- : Clear all layers on the current screen.

5.5 Toolbar Settings

Set the system and desktop toolbars.

5.5.1 Adjust Output Volume

When a headphone or an external speaker is connected to a decoder-KVM, you can adjust the output volume.

Step 1 Click  in the toolbar at the top to expand the volume adjustment pane.

Step 2 Drag the slider to adjust the volume.

5.5.2 Desktop Toolbar

Table 5-3 Status descriptions

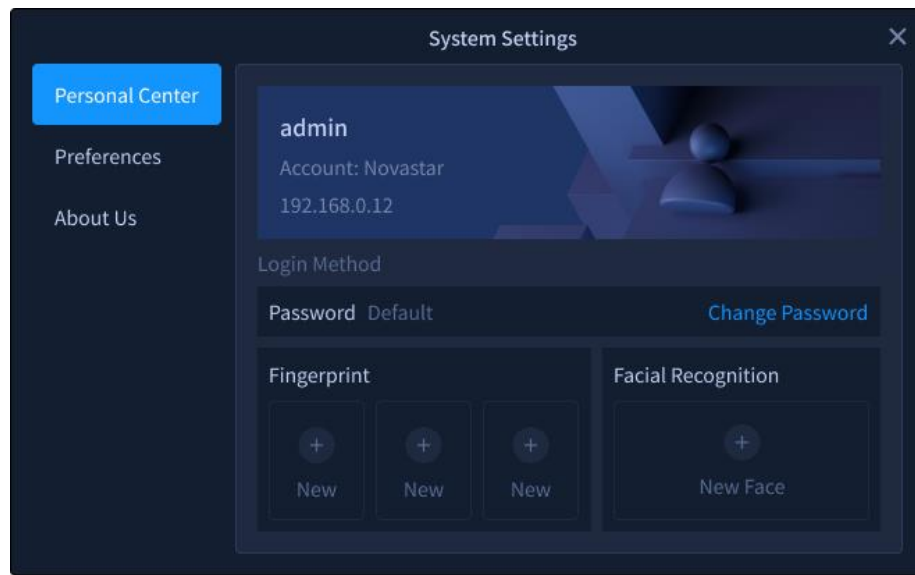
Status Icon	Description
	The volume of the current signal is turned on.
	The volume of the current signal is turned off.
	You have the USB drive permissions and the USB drive is unmounted.
	You have the USB drive permissions and the USB drive is mounted.
	You have the USB drive permissions and the USB drive cannot be mounted.
	The signal is displayed in full screen.
	The signal is restored to a normal size.
	Cancel the signal takeover.

5.6 System Settings

Set the relevant functions of the KVM operator system.

In the navigation bar, click  to enter the system settings interface.

Figure 5-8 System settings



Note

When the PD3-4K serves as a KVM node, both fingerprint and facial recognition are supported for login.

5.6.1 Change Operator Passwords

- Step 1 Click **Personal Center** to enter the personal center interface.
- Step 2 Click **Change Password** to enter the password changing interface.
- Step 3 Enter the old and new passwords respectively and confirm the new one.
- Step 4 Click **OK** to complete the editing.

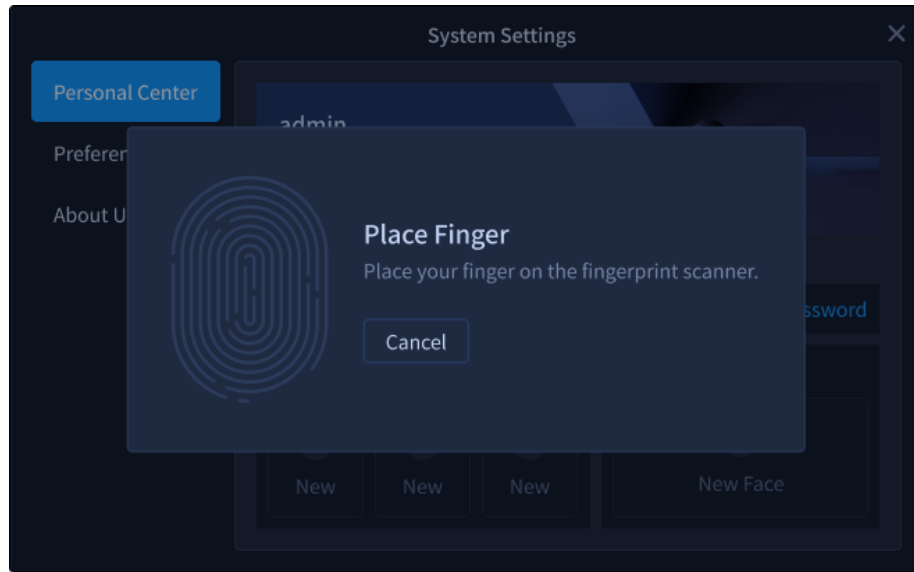
5.6.2 Configure Fingerprint Login

When the PD3-4K servers as a KVM node, fingerprint login is supported. Up to three fingerprints can be added for each KVM operator.

Before adding a fingerprint or using the fingerprint for login, you need to connect a fingerprint scanner to the KVM node with the main interface of the KVM system.

- Step 1 Click **Personal Center** to enter the personal center interface.
- Step 2 In the **Fingerprint** area, click **New** to enter the fingerprint adding interface.
- Step 3 Read the privacy policy, check the box next to **View and agree to the Service Agreement and Privacy Policy**, and then click **Next** to enter the fingerprint collection interface.

Figure 5-9 Fingerprint collection

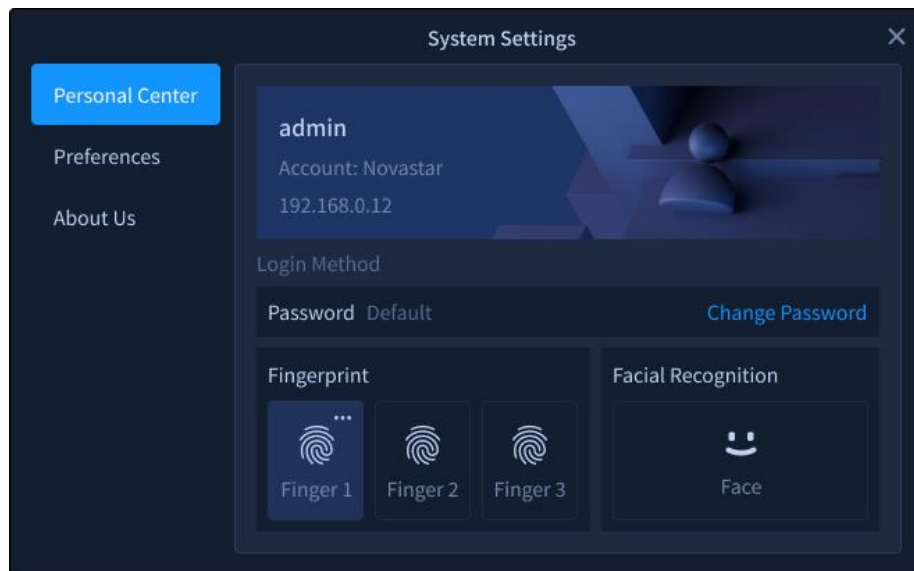


Step 4 Place your finger on the fingerprint scanner.

Step 5 After the fingerprint is successfully collected, click **OK** to complete the collection.

The collected fingerprint will be display in the **Fingerprint** area.

Figure 5-10 Fingerprint collected successfully



Click **⋮** at the top right corner of the desired fingerprint to recollect and change the fingerprint.

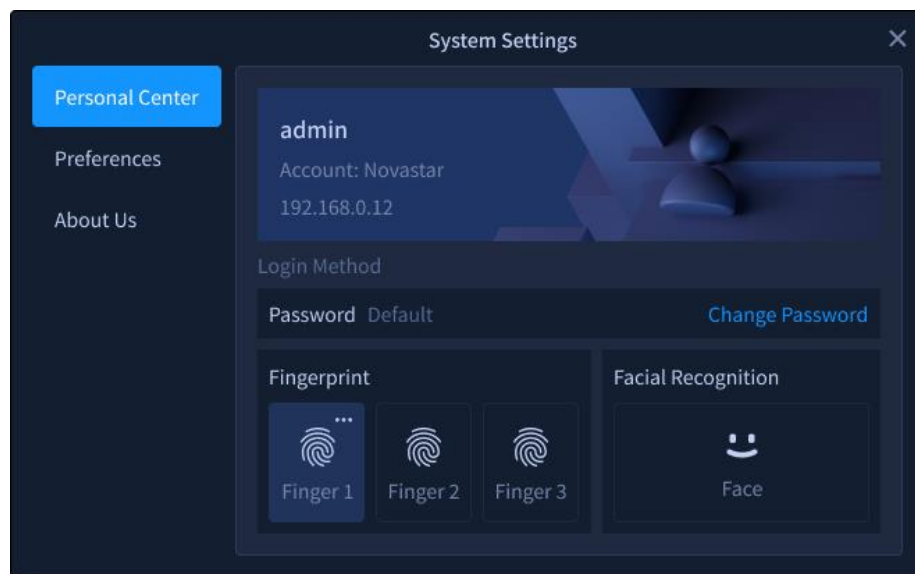
5.6.3 Configure Facial Information

When the PD3-4K servers as a KVM node, facial recognition is supported for login. Only one facial information can be added for each KVM operator.

Before adding the facial information or using the facial information for login, you need to connect a camera to the KVM node with the main interface of the KVM system.

- Step 1 Click **Personal Center** to enter the personal center interface.
- Step 2 In the **Facial Recognition** area, click **New** to enter the face adding interface.
- Step 3 Click the back button to enter the facial information collection interface.
- Step 4 Follow the prompt to collect your facial information.
- Step 5 Click **Save** to save the collected facial information.

Figure 5-11 Facial information collected successfully

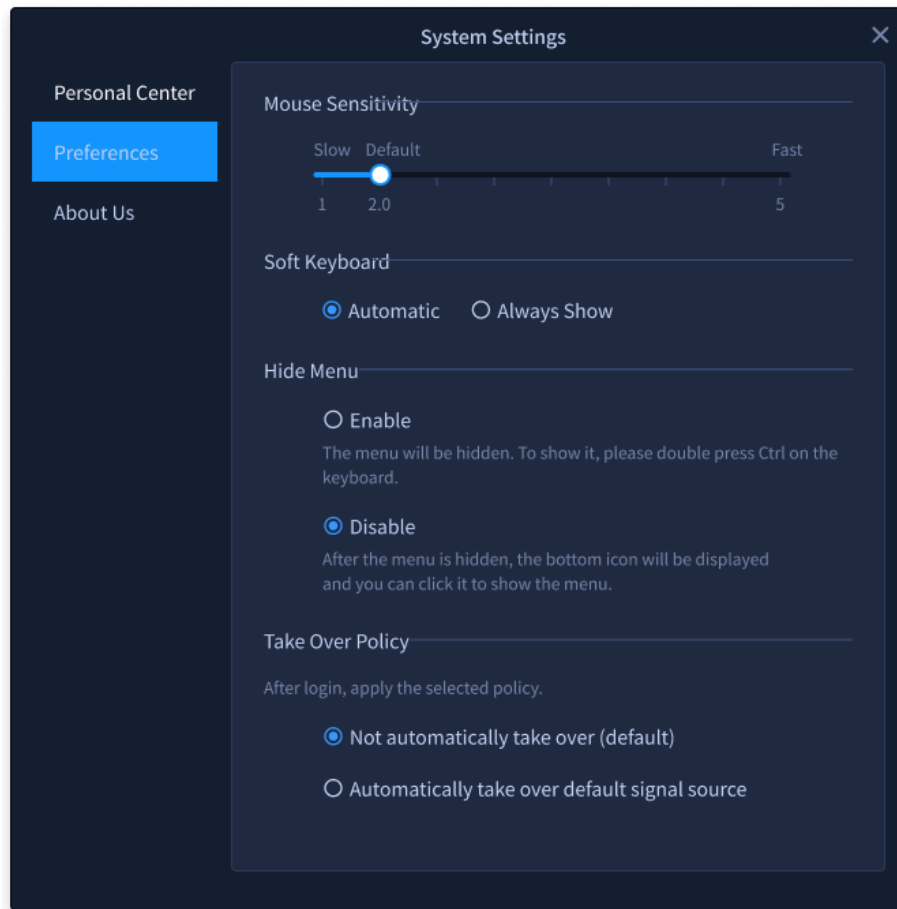


Click **...** at the top right corner of the desired face to recollect and change the facial information.

5.6.4 Preference Settings

- Step 1 In the navigation bar, click  to enter the system settings interface.
- Step 2 Click **Preference** to enter the preference settings interface.

Figure 5-12 Preference settings



Step 3 Set the following functions.

- **Mouse Sensitivity:** Drag the slider block or enter the desired value in the text box to adjust the mouse sensitivity. The value ranges from 1 to 2 and it defaults to 2.0.
- **Soft Keyboard:** The supported options include **Always Show** and **Always Hide**.
- **Hide Menu:** Set whether to hide the KVM menu.
 - **On:** Click  at the top right corner of the KVM menu to hide the menu. After the menu is hidden, all images will be displayed and all menu information will be hidden. To show the menu, please double press **Ctrl** on the keyboard.
 - **Off:** Click  at the top right corner of the KVM menu to hide the menu, while the  icon will be displayed at the bottom. Click this icon to expand the menu.
- **Take Over Policy:** Set whether to automatically take over the signal source after logging into the KVM system.
 - **Not automatically take over (default):** Manually take over the signal source after logging into the KVM system.

- Automatically take over default signal source: Set the default signal source to be taken over. After logging into the KVM system, the system will automatically take over this signal source in 1×1 layout.

5.6.5 View System information

- Step 1 In the navigation bar, click  to enter the system settings interface.
- Step 2 Click **About Us** to view the system version.

5.7 Log out

After logout, all the controlled signals will be released. The signals need to be controlled again on next login.

In the navigation bar, click  and select **Yes** in the pop window. The system will return to the login interface

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