



Distributed Video Wall Controller

User Manual

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Preface

Applicable Models

This manual is applicable to the DS-C80N distributed video wall controller.

Default Parameters

Type	Default Parameter
Device	• Login user name: admin
SSH connection	• IP address: 192.0.0.64

Caution

To improve system security, it is highly recommended to change password regularly. In order to protect your privacy and corporate data and avoid network security issues, it is recommended to set strong password that meets security requirements.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 Note	Provides additional information to emphasize or supplement important points of the main text.
 Caution	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
 Danger	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

Safety Instructions



Caution

In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region.



Note

- Provide a surge suppressor at the inlet opening of the device under special conditions such as the mountain top, iron tower, and forest.
- + identifies the positive terminals of the device which is used with, or generates direct current, and - identifies the negative terminals of the device which is used with, or generates direct current.
- The serial port of the device is used for debugging only.
- The interface varies with the models. Please refer to the product datasheet for details.

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Chapter 1 Introduction

1.1 Overview

The distributed video wall controller (hereinafter referred as the device) uses distributed deployment mode, which consists of multiple input nodes and output nodes, realizing the collection and access, transmission and exchange, analysis and processing, and scheduling presentation of video and audio signals. Each node in the architecture has independent data processing and computing capabilities. Compared with the traditional central control equipment, the device scale is more elastic and the device has better stability and robustness because the failure of a single node does not affect the normal operation of other nodes. As a professional audio-visual control product, the device can be widely used in the command centers, exhibition halls, lecture halls, conference rooms, and other places involving audio-visual applications and management scheduling.

The device adopts dual-engine technology, which can not only realize the lossless decoding of signals to meet the local users' needs for high-quality signals, but also through the signal encoding and compression to realize the signal transmission on the WAN to meet the user's needs for remote signal scheduling.

1.2 First-Time Configuration Process

Scenario 1: When the input nodes are used with output nodes

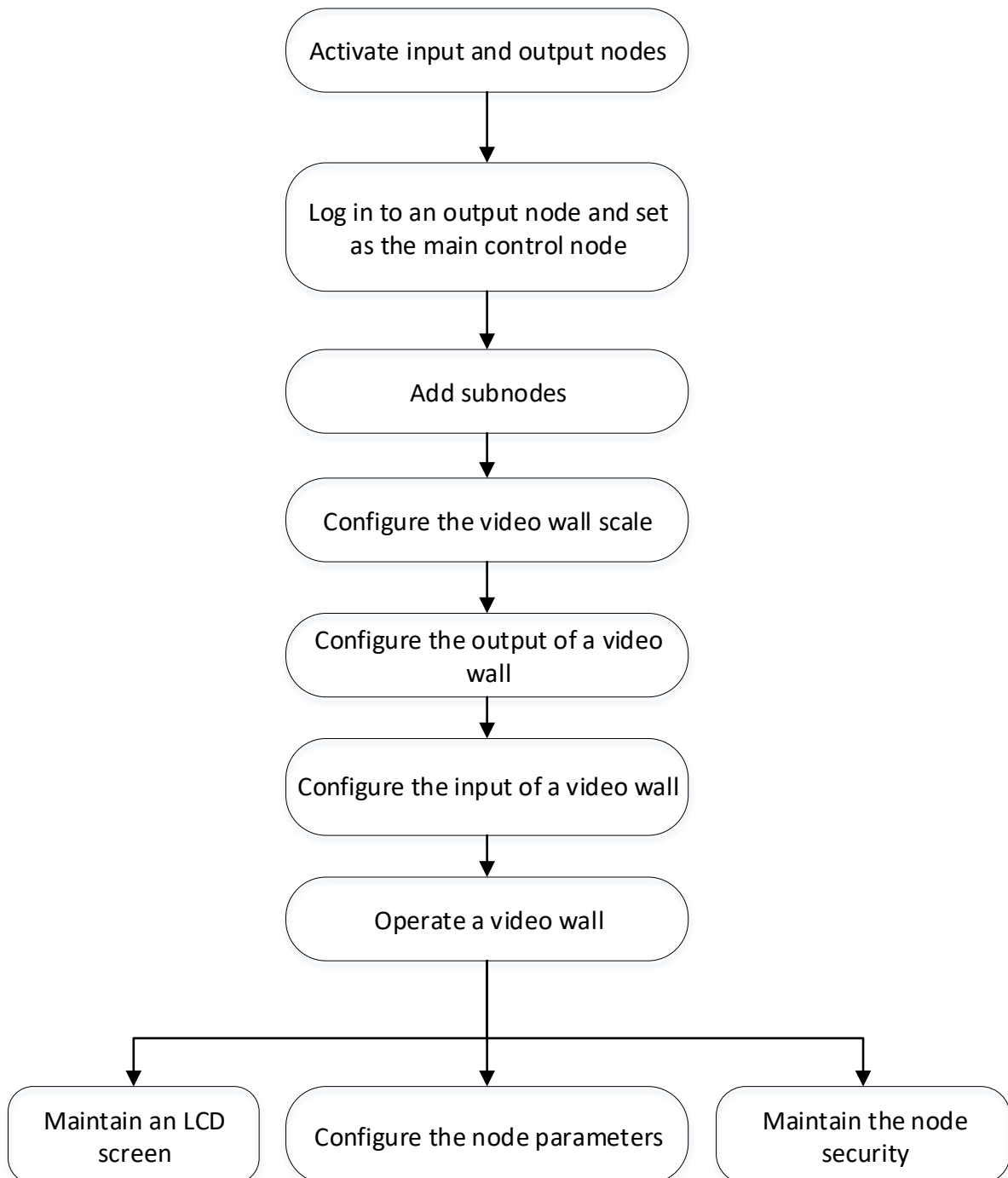


Figure 1-1 First-Time Configuration Process (Scenario 1)

Scenario 2: When the input nodes are used with other decoding devices

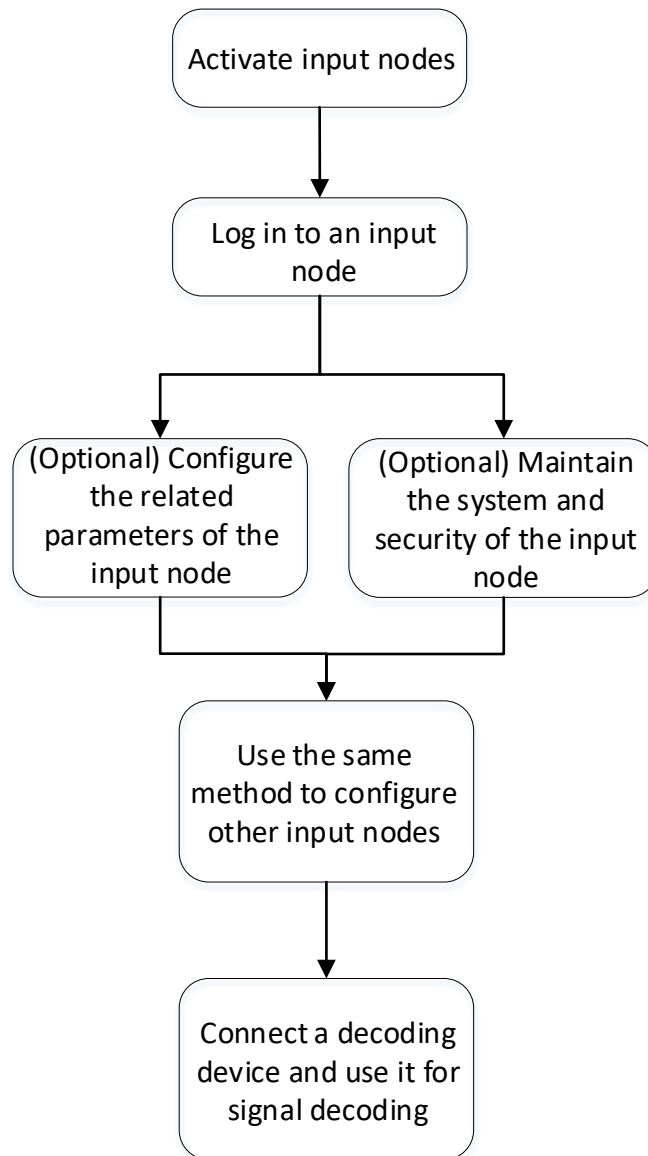


Figure 1-2 First-Time Configuration Process (Scenario 2)

1.3 Node Function Comparison

The differences in web management permissions among the nodes are as follows: the main control node has full system management capabilities, while the input/output nodes' permissions are limited to device configuration and maintenance. Therefore, this document will use the interface of the main control node, which has the most comprehensive functionality, as the benchmark for description. For operations supported by input/output nodes, please refer to the table below.

Table 1-1 Node Function Comparison Table

Function				Main Control Node	Output Node	Input Node	
Video wall operation				√			
Video wall configuration				√			
Screen maintenance				√			
Configuration	System	System Settings	Basic Information	√	√	√	
			Time Settings	√		√	
			Font Settings	√			
		Serial Port Settings	Main Node Serial Port	√			
			Subnode Serial Port	√			
			Screen Control Link	√			
		User Management			√	√	√
	Network	Network Configuration	TCP/IP	√	√	√	
		Network Service	HTTPS	√	√	√	
	Node Configuration	Node Status			√		
		Node Management			√		
		Main Control Configuraiton			√	√	√
	Signal Source Settings	Image Settings	Source Clipping			√	
			Custom Resolution			√	
			OSD			√	
		Encoding Settings					√
	Event			√			
	Signal Source Splicing			√			

Function			Main Control Node	Output Node	Input Node
	Other Settings	Sub-Stream Auto-Switch	√		
		Display Settings	√		
		Scene Change	√		
		Streaming Mode	√		
		Floating Window Switch	√		
		Local Source Mode	√		
		No Signal Image			√
Maintenance and Security	System Maintenance	Restart	√	√	√
		Upgrade	√	√	√
		Backup and Reset	√		√
		Log	√		√
		Device Debugging	√	√	√
	Security Management	IP Address Filter	√		√
		HTTPS Certificate	√	√	√
		Security Service	√	√	√
		SADP	√		√
		Syslog	√		√
		Websocket	√		

Chapter 2 Prerequisite Configuration

2.1 Batch Activate Nodes

You should activate the nodes before using the nodes for the first time. When activating the nodes, obey the following requirements to set the password:

- Password should contain 8 to 16 characters and at least 2 of the following types: digits, lowercase letters, uppercase letters, and special characters.
- Password cannot contain user name, 123, admin, 4 or more continuously ascending or descending digits, or 4 or more consecutive repeated characters.
- The password cannot be 1qaz2wsx, 1qaz@WSX, !@#\$QWER, p@ssword, passw0rd, or p@ssw0rd.
- To improve system security, it is highly recommended to change password regularly.

Use HiTools Delivery

Step 1 Connect all nodes and the computer to the same LAN, ensuring they are on the same IP subnet.

Step 2 Install and launch the [HiTools Delivery client](#) on the computer.

Step 3 Navigate to **Device Management > Current Subnet**, and click **Refresh**.

Step 4 Select the inactive nodes, set the activation password, confirm the password, and click **Activation**.

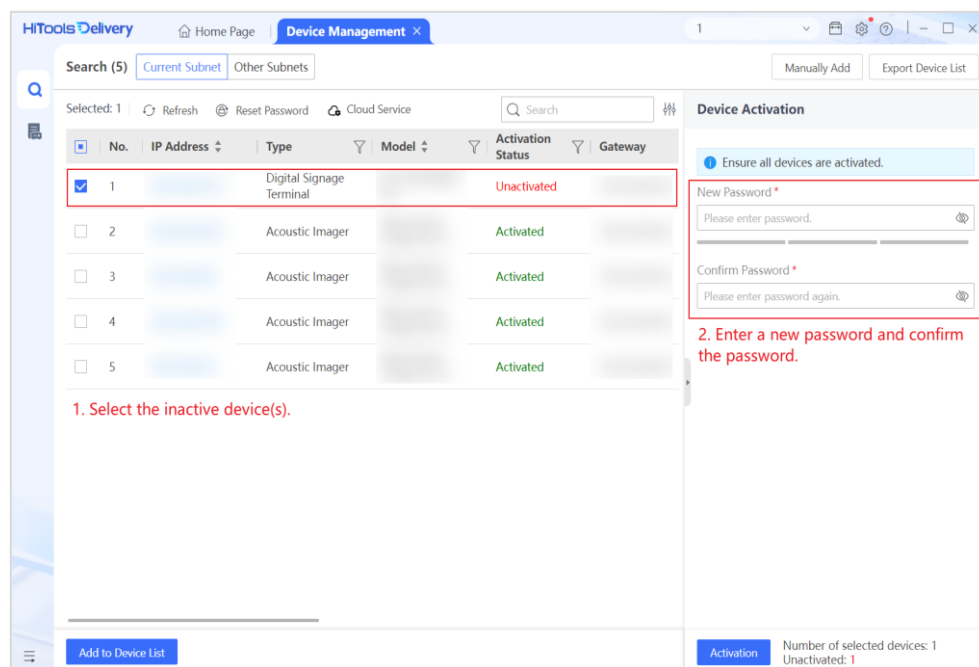


Figure 2-1 Batch Activate Nodes

Note

To activate a single node, you can also log in to its web interface for activation.

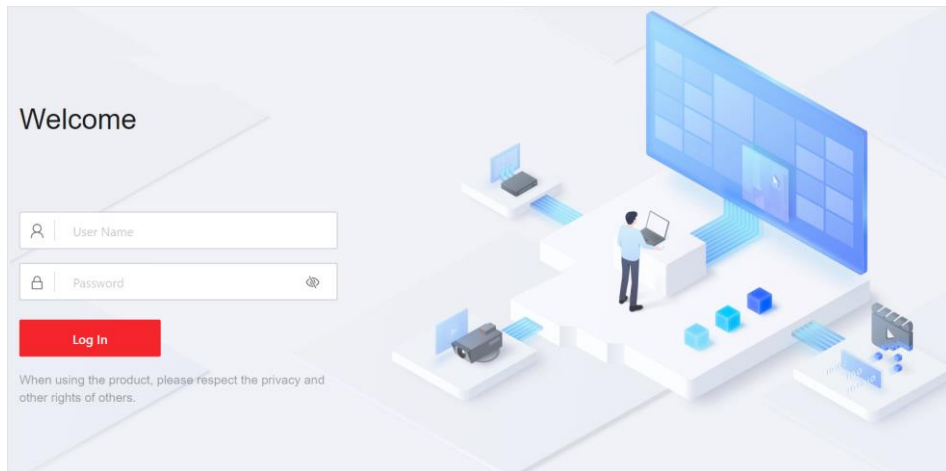


Figure 2-2 Login Page

Step 5 Edit device IP addresses in bulk:

- 1) Check multiple activated devices.
- 2) Set the start IP address, port No., IPv4 subnet mask, IPv4 gateway, etc., and the selected devices will be automatically assigned to increasing IP addresses.
- 3) Enter the admin password and click **OK**.

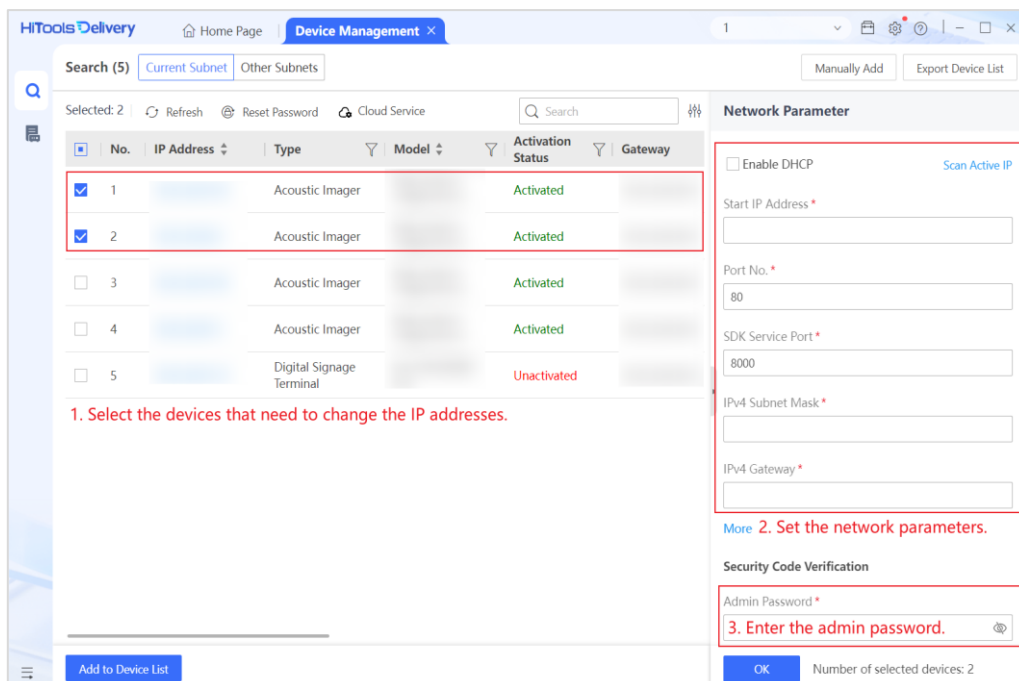


Figure 2-3 Batch Edit Device IP Addresses

Use SADP Client

Step 1 Connect all nodes and the computer to the same LAN, ensuring they are on the same IP subnet.

Step 2 Install and launch the [SADP client](#).

Step 3 Select the inactive nodes, set the activation password, confirm the password, and click **Activate**.

If the nodes cannot be found, try restarting the client.

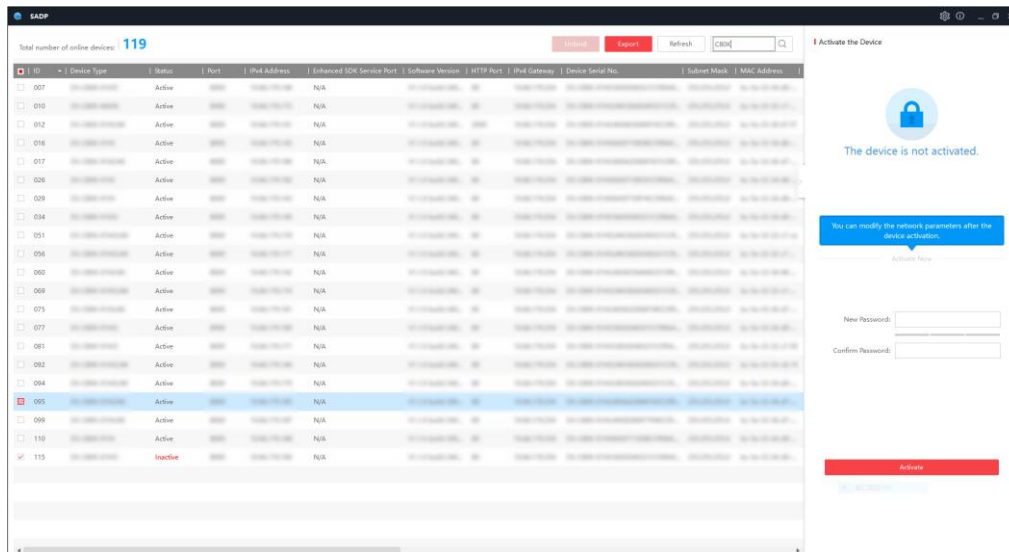


Figure 2-4 Batch Activate Nodes



Note

To activate a single node, you can also log in to its web interface for activation.

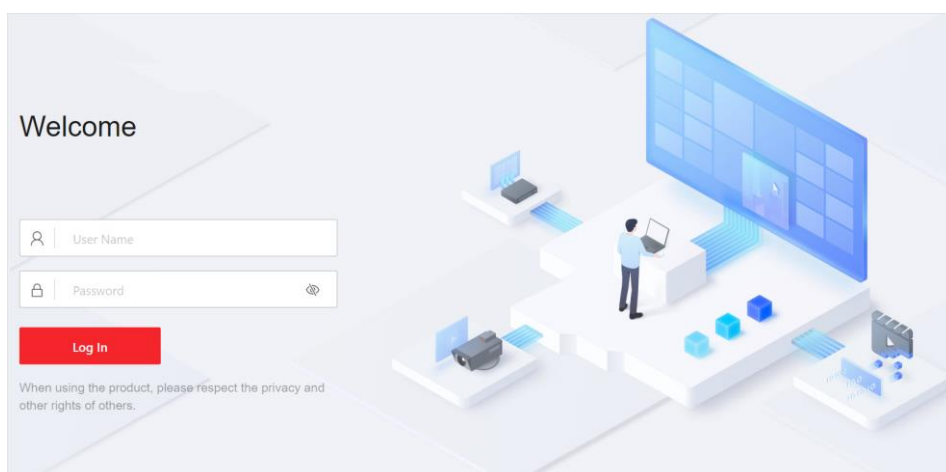


Figure 2-5 Login Page

Step 4 Edit device IP addresses in bulk:

- 1) Check multiple activated devices.

- 2) Manual assignment: Set the start IP address, port number, subnet mask, gateway, etc., and the selected devices will be automatically assigned to increasing IP addresses.
- 3) Enter the administration password and click **OK**.

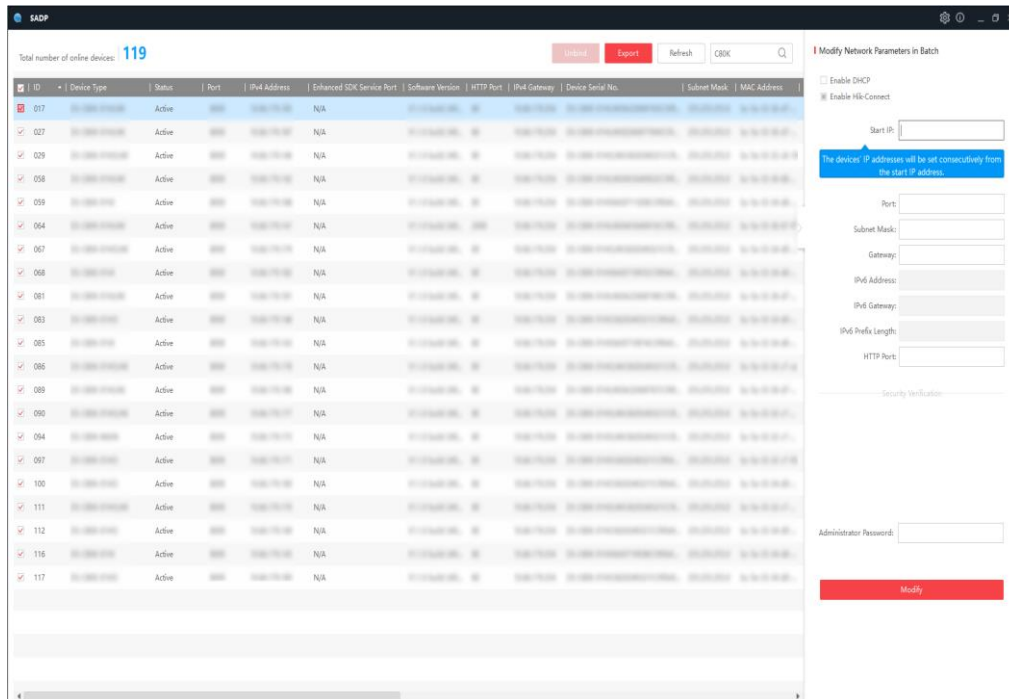


Figure 2-6 Batch Edit Device IP Addresses

2.2 Configure Main Control Node

Step 1 Enter the IP address of an output node in the web browser of the computer.

Step 2 Enter the user name and the set activation password, and click **Log In**.

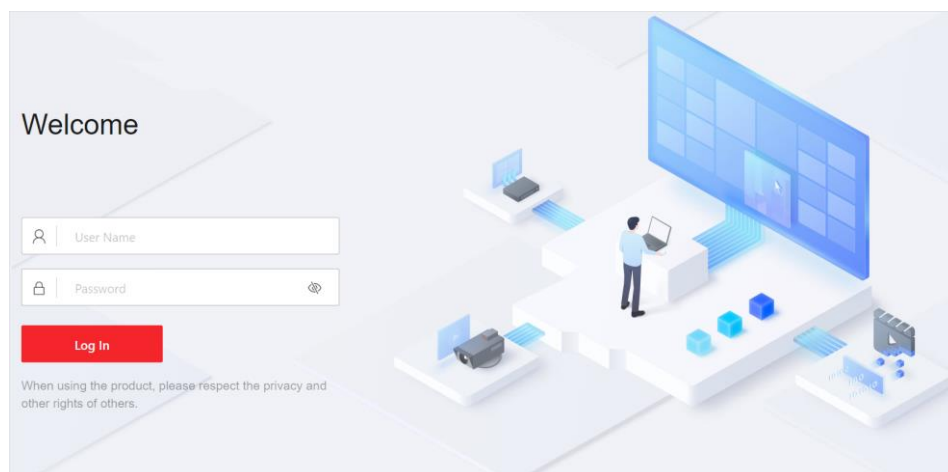


Figure 2-7 Login Page

Step 3 (Optional) To edit the password, you can click the username in the upper right corner of the web page and then click **Change Password**.

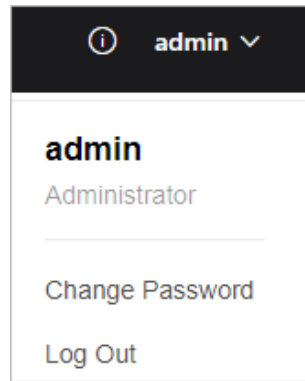


Figure 2-8 Change Password

Step 4 Navigate to **Configuration > Node Configuration > Main Control Configuration**, and enable **Set as Main Control**.



Figure 2-9 Set as Main Control

Note

When disabling **Set as Main Control**, the node will restart automatically.

2.3 Add Subnodes

Step 1 Navigate to **Configuration > Node Configuration > Node Management**, and click **Add**.

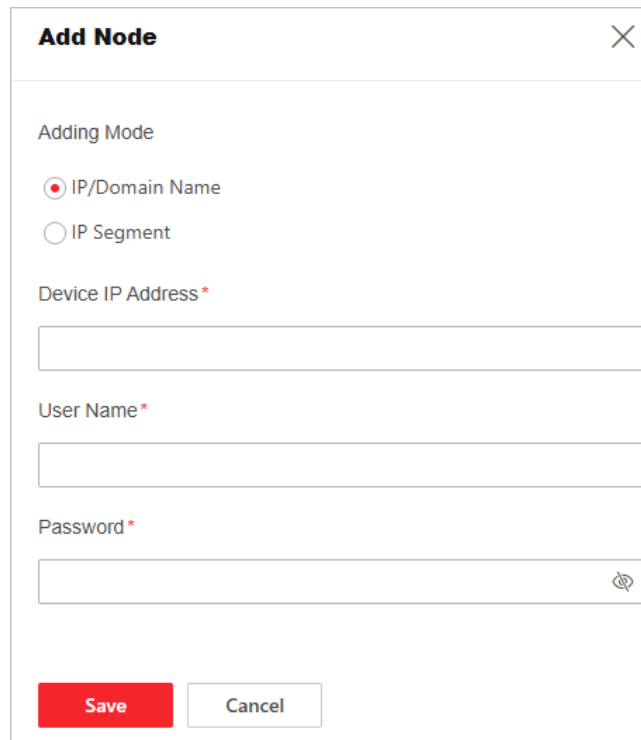
See more details in Node Status after configuration.

+ Add  Set Network Area  Delete  Refresh |  Manage Network Area

☐	No.	Device No.	Device Name	IP Address	Type	Version No. ▲	Network Area	Operation
☐	1	1			DS-C80N-MAIN		Network Area 1	 
☐	2	2			DS-C80K-01HI		Network Area 1	 
☐	3	3			DS-C80K-01HI		Network Area 1	 
☐	4	4			DS-C80N-01HO		Network Area 1	 
☐	5	5			DS-C80N-01HO		Network Area 1	 
☐	6	6			DS-C80N-01HI		Network Area 1	 
☐	7	7			DS-C80N-01HI		Network Area 1	 

Figure 2-10 Node Management

Step 2 Select **IP/Domain Name** or **IP Segment** to add C80N output nodes, C80N input nodes, and C80K input nodes.



Add Node [X]

Adding Mode

☒ IP/Domain Name
☐ IP Segment

Device IP Address *

User Name *

Password *

Save **Cancel**

Figure 2-11 Add a Node

Step 3 Click **Save**.

Note

- After a subnode is successfully added, the username and password of the main control node will be automatically synchronized to all subnodes.
- Log in to the node management page of any input node to view the associated video wall server IP and check the node's online status on the server.
- When the node versions are inconsistent,  will be shown on the version number.



*Video Wall Controller Server I... **Save** **Get Status**  Online

Figure 2-12 Node Management Page (Input Node)

2.4 Configure Node Parameters

View Node Status

Navigate to **Configuration > Node Configuration > Node Status**, the left list shows the node status.

- Click a node, then you can view the detailed node status information on the right side of the page. You can perform the following operations as required:
 - Click **Restart Node**.

- Click **Lighten Node Indicator**.
- Select one or multiple nodes, and click  to restart the nodes.
- Select one or multiple nodes, and click  to lighten the indicators of the selected nodes.

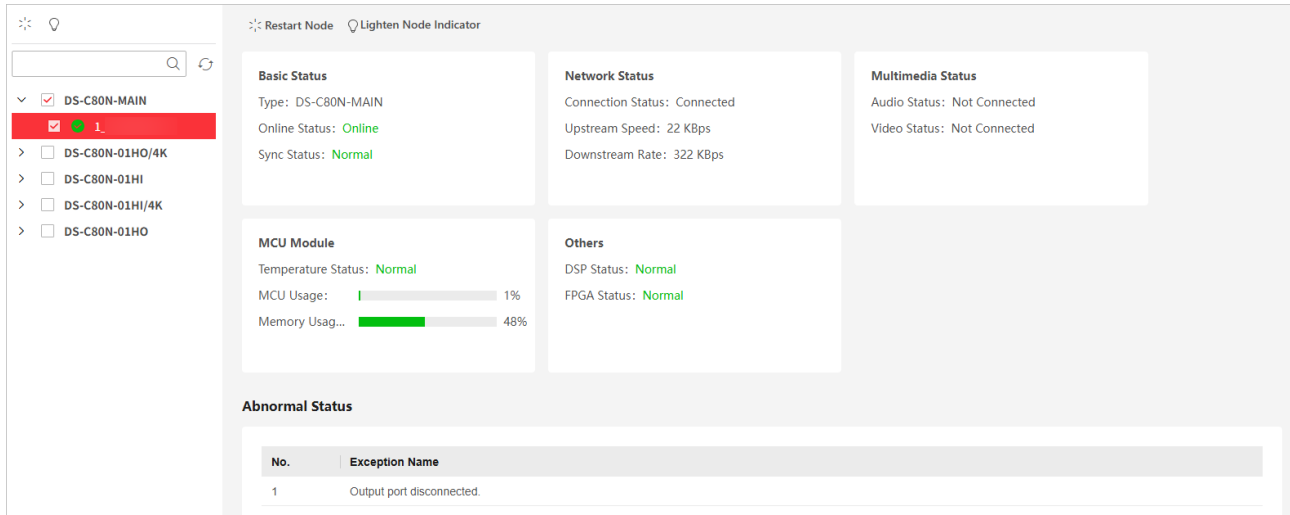


Figure 2-13 View Node Status

Manage Nodes

Navigate to **Configuration > Node Configuration > Node Management** and perform the following operations as required:

- Click **Manage Network Area** to add, edit, or delete a network area.
- Select one or multiple nodes, and click **Set Network Area** to select a network area. If the nodes are in the same network area, the delay will be low, but more bandwidth will be occupied.
- Click  of a node, or select the nodes and click **Delete**.

See more details in Node Status after configuration.

+ Add Set Network Area Delete Refresh Manage Network Area

No.	Device No.	Device Name	IP Address	Type	Version No.	Network Area	Operation
☐ 1	1			DS-C80N-MAIN		Network Area 1	 
☒ 2	2			DS-C80K-01HI		Network Area 1	 
☒ 3	3			DS-C80K-01HI		Network Area 1	 
☐ 4	4			DS-C80N-01HO		Network Area 1	 
☐ 5	5			DS-C80N-01HO		Network Area 1	 
☐ 6	6			DS-C80N-01HI		Network Area 1	 
☐ 7	7			DS-C80N-01HI		Network Area 1	 

Figure 2-14 Node Management

- Click  of a node to edit its main control node.

Edit Main Node ✕

i After the main node is edited, the subnode will not be shown in the original main node list. View the subnode in the changed main node list. ✕

Server IP Address *

Save

Cancel

Figure 2-15 Edit Main Control Node

Chapter 3 Video Wall Management

3.1 Configure the Video Wall Scale

Step 1 Click **Video Wall Configuration**, select a video wall in the upper left corner, and then click **Configure** to configure video wall scale.

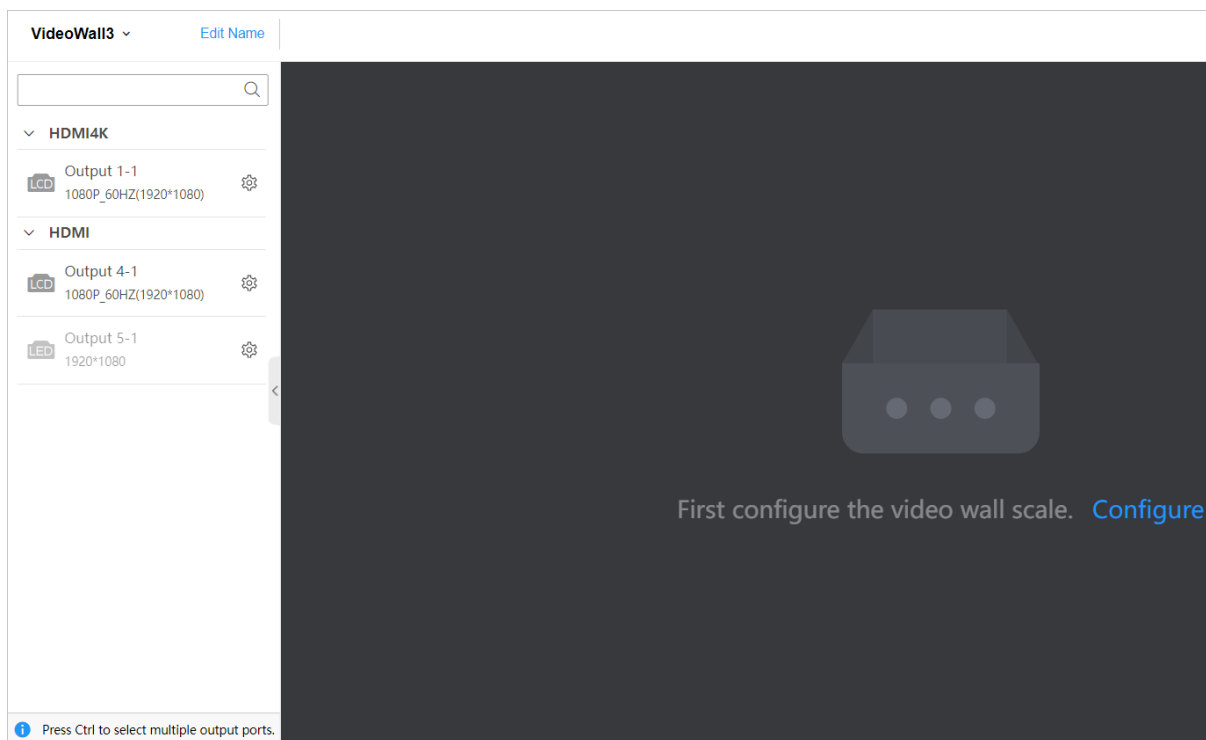


Figure 3-1 Video Wall Configuration Page

Step 2 According to the actual screen quantity, set the video wall scale and click **Save**.

You can also drag the mouse with the left button held to scale the video wall.

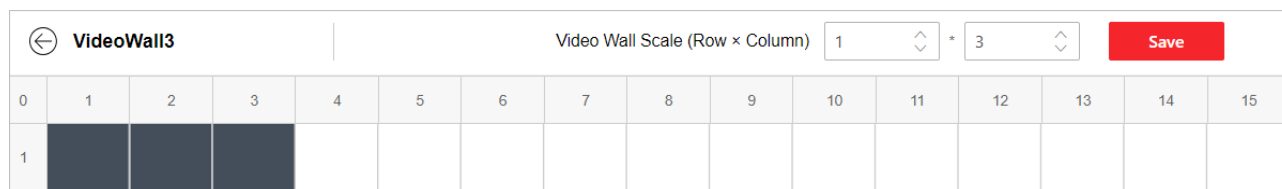


Figure 3-2 Set the Video Wall Scale

Note

After setting the video wall scale, you can click **Edit Video Wall Scale** to change the video wall scale.

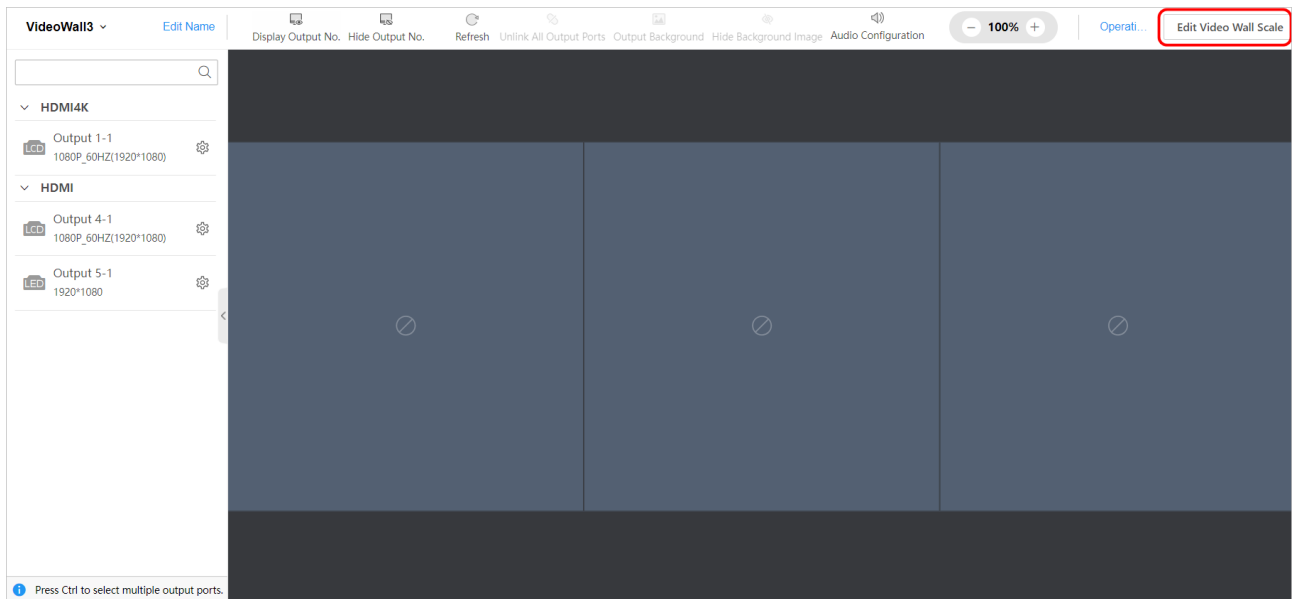


Figure 3-3 Edit Video Wall Scale

3.2 Configure the Output of a Video Wall

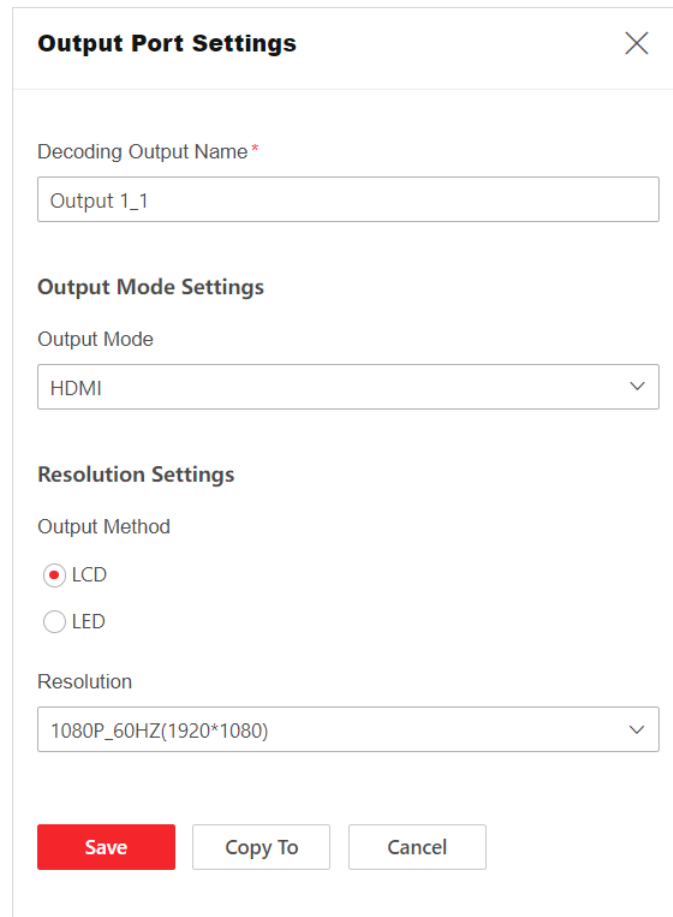
3.2.1 Bind Output Ports with Video Wall

A video wall can contain one screen or multiple screens. At a time, one screen can join only one video wall, and one output port can be bound with only one screen.

Step 1 On the **Video Wall Configuration** page, click  of an output port to configure the following items:

- Set the output mode of the device according to the actual connection between the device and the screen. You can select HDMI, DVI or AUTO. The DVI mode offers better compatibility, HDMI mode supports embedded audio output, and AUTO mode automatically selects the output mode supported by the screen.
- If you select LCD output method, select the LCD screen resolution as required.
- If you select LED output method, make sure that the configured width and height of the output port is same as the width and height of the LED screen.
 - If you select the loading mode, enter the width and height of the LED screen. Make sure that the configured resolution (width × height) of the 2K output node is smaller than 2.6 MP and the configured resolution of the 4K output node is smaller than 8.84 MP.
 - If you select the clipping mode, enter the width and height of the LED screen. Make sure that the configured resolution is smaller than the reference resolution that is shown when you select the LCD output method.
- The resolution of multiple outputs bound to the same video wall needs to be consistent.
- For an LED video wall, the width of the same row needs to be consistent, and the height of the same column needs to be consistent.

- Click **Copy To** to copy the current output configuration to other selected output ports.



Output Port Settings [X]

Decoding Output Name *

Output 1_1

Output Mode Settings

Output Mode

HDMI

Resolution Settings

Output Method

☒ LCD

☐ LED

Resolution

1080P_60HZ(1920*1080)

Save Copy To Cancel

Figure 3-4 Configure HDMI Output Port

Step 2 Click **Display Output No.**

Step 3 According to the output number shown on the actual screen, drag output ports to the screens of the video wall.

- You can press Ctrl to select multiple output ports and then batch bind output ports with the video wall.
- If all screens of the video wall are bound with output ports, click  in the upper right corner of a screen and then bind another output port with the screen.

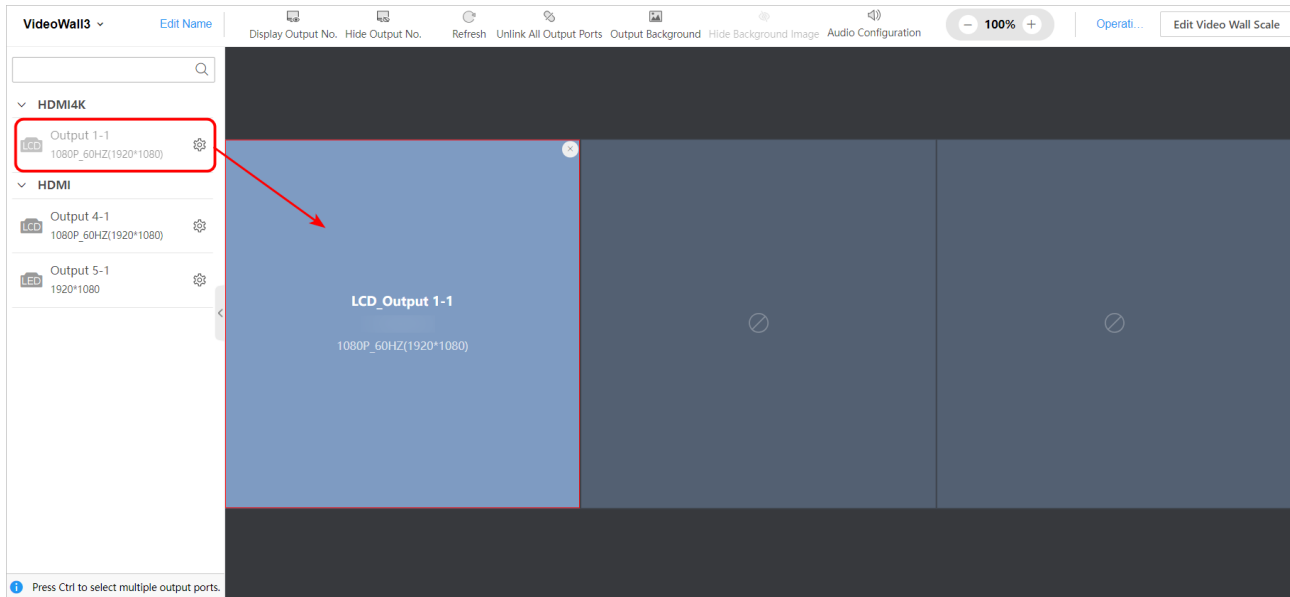


Figure 3-5 Bind Output Ports with Video Wall

Step 4 (Optional) At the top of the **Video Wall Configuration** page, you can perform the following operations as required:

- Click **Output Background** to edit the background color or import images.

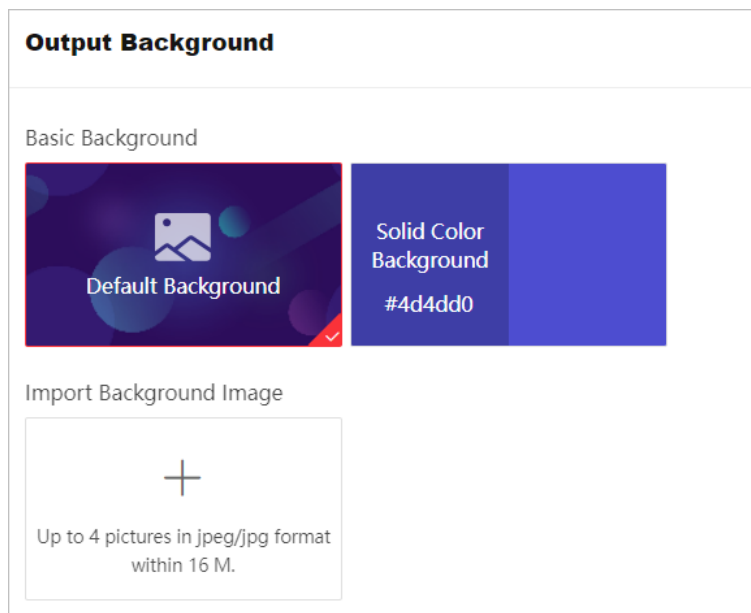


Figure 3-6 Set Output Background

- Click **Unlink All Output Ports**, and then click **OK** on the pop-up window.
- Click **Hide Output No.** to hide the output port number on the screen.

3.2.2 Configure Audio Output

Configure Audio Matrix

If you need to allow multiple audio outputs of one video wall, configure the audio matrix.

Step 1 At the top of the **Video Wall Configuration** page, click **Audio Configuration** and select **Audio Matrix**.

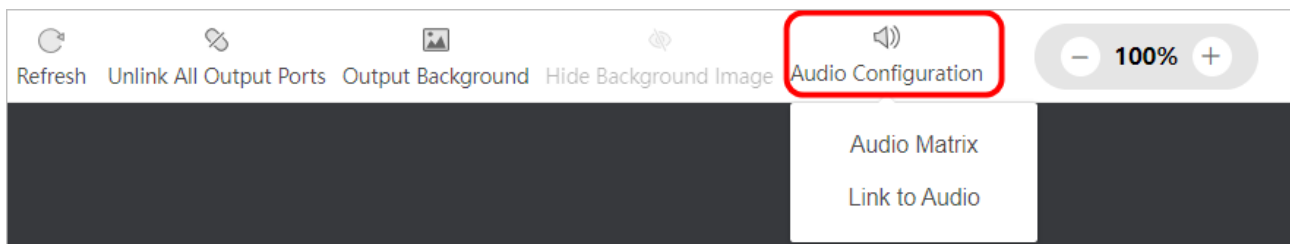


Figure 3-7 Audio Configuration

Step 2 Double click to link the audio input channel and audio output channel.

Double click again or click  to unlink.

Audio Matrix		Edit Table				Save	Unlink All
		1	2	3	4		
		AudiIn 03-01	AudiIn 06-01	AudiIn 07-01			
1	 AudioOut 01-01	 Linked.					
2	 AudioOut 04-01	Double Click to Link	 Linked.				
3	 AudioOut 05-01						

Figure 3-8 Link Audio Input Channel and Audio Output Channel

Step 3 (Optional) You can perform the following operations as required:

- Double click the name of an audio channel to edit its name.
- Click **Edit Table** to customize the channel name and configure the displaying of the audio channel in the table.

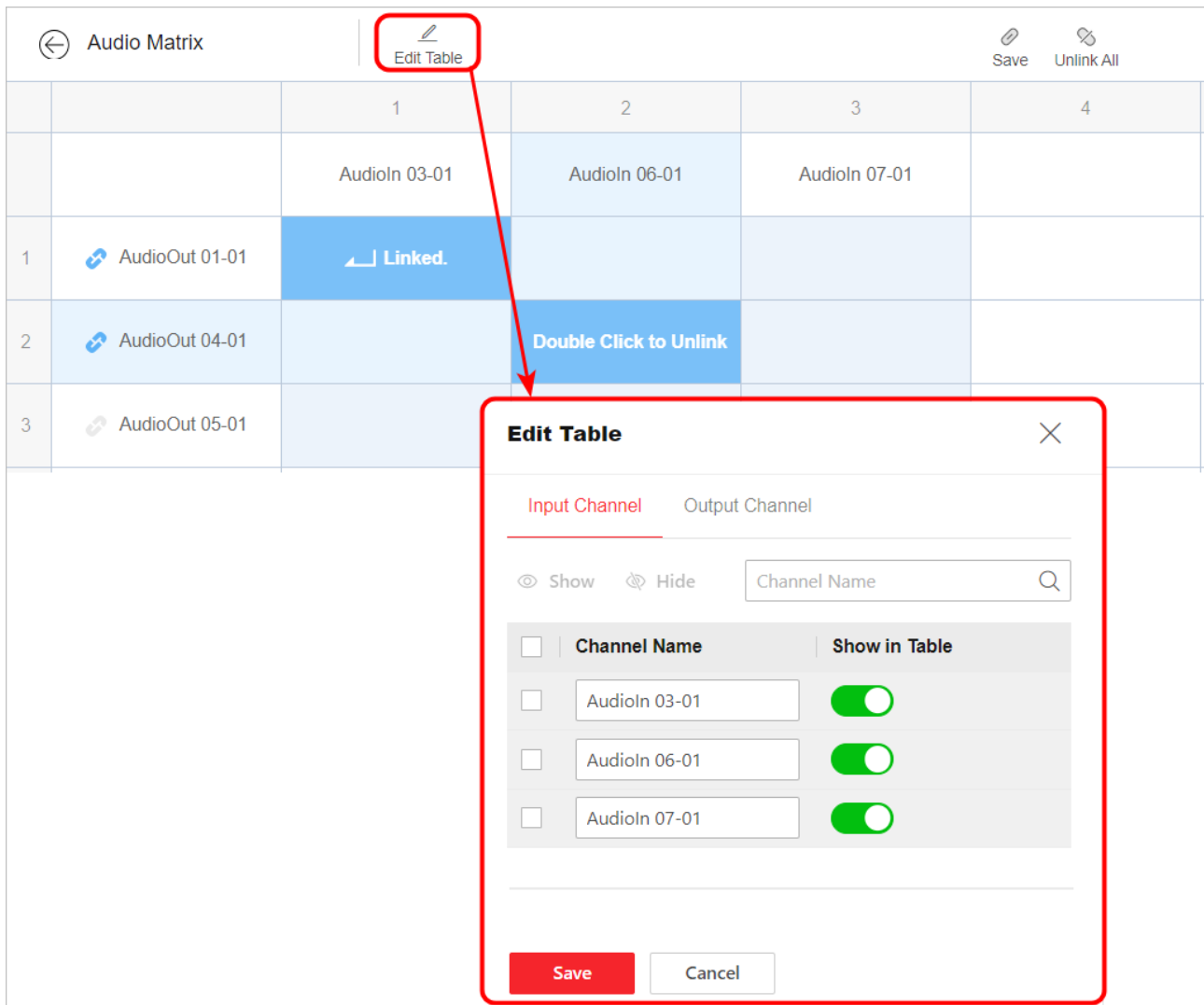


Figure 3-9 Edit Audio Channel Table

- Click **Unlink All** to unlink all configured audio linkages.

Step 4 Click **Save**.

Configure Audio Output Port

On the **Video Wall Configuration** page, click **Audio Configuration** and select **Link to Audio**. Click  at the upper right corner of an audio output to set it as the audio output of the video wall.

- After setting the audio output of a video wall, you need to navigate to the **Video Wall Operation** page to enable audio to allow the audio output.
- One video wall can be linked with only one audio output.

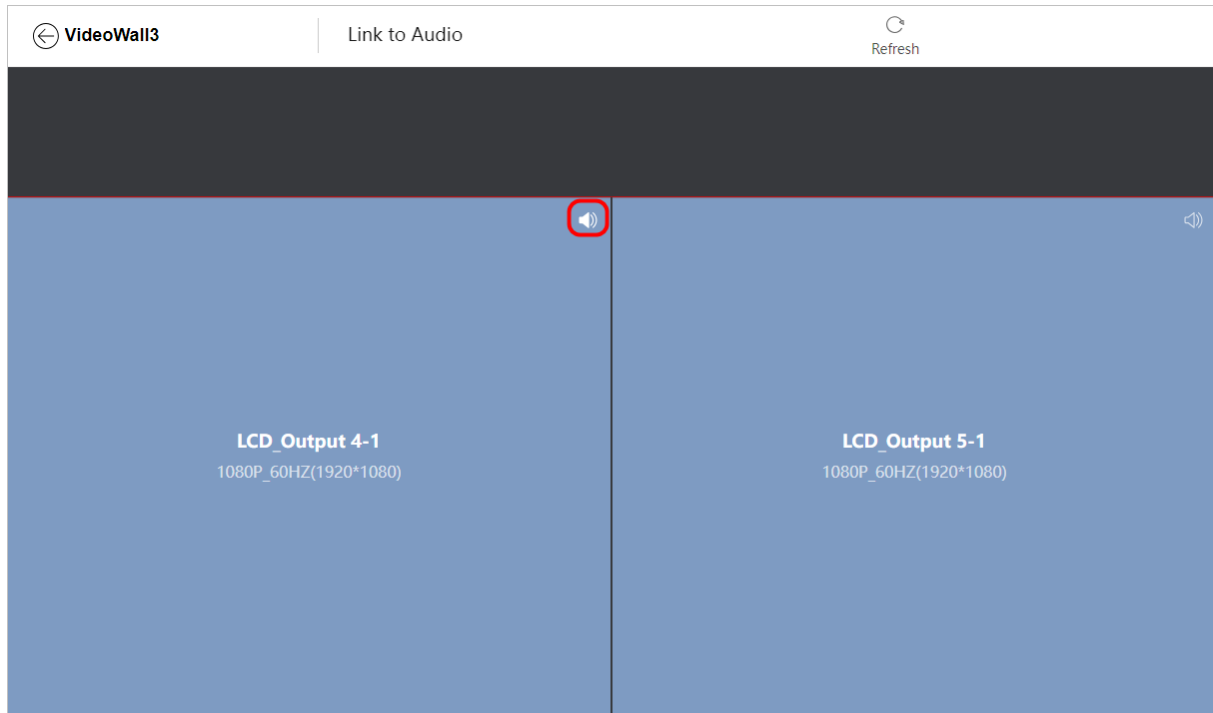


Figure 3-10 Set Output Audio

3.3 Configure the Input of a Video Wall

3.3.1 Add a Network Signal Source

Use IP Address

Step 1 Navigate to **Video Wall Operation > Signal Source**, click , and select **IP Address**.

Step 2 Enter the signal source information and stream media information.

- Select the channel type. You can select **Conventional Network Source** or **Zero-Channel Network Source**. If you select **Conventional Network Source**, enter **Number of Channels** according to the channel quantity of the network signal source, and select the channel to add.
- Select an added group or click **Add Group** to create a new group.
- Click **More** to select the transmission protocol, stream type, device manufacturer, and streaming media information. After enabling **Get Stream via Streaming Server**, you can perform live view data forwarding through the streaming server to reduce network stress.

Figure 3-11 Add a Network Signal Source via IP Address

Step 3 Click **Save**.

Use URL Address

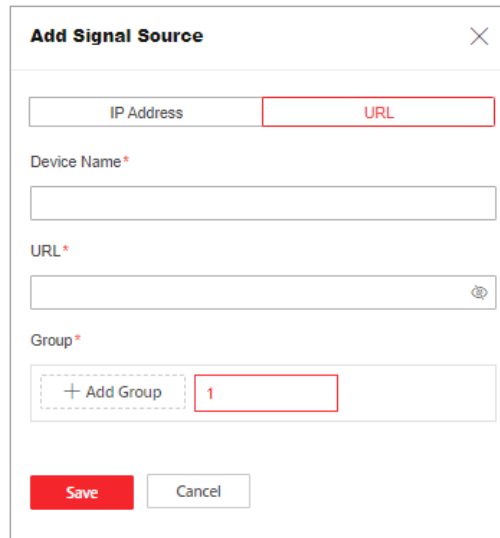
Step 1 Navigate to **Video Wall Operation > Signal Source**, click , and select **URL**.

Step 2 Enter the device name.

Step 3 Enter the URL address of the signal source.

Step 4 Enter the signal source information.

Step 5 Select an added group or click **Add Group** to create a new group.



The 'Add Signal Source' dialog box contains the following fields and controls:

- Two tabs: 'IP Address' and 'URL' (the 'URL' tab is selected and highlighted with a red border).
- 'Device Name*' text input field.
- 'URL*' text input field with a small globe icon on the right.
- 'Group*' section containing a '+ Add Group' button and a text input field with the value '1' (highlighted with a red border).
- 'Save' (red button) and 'Cancel' (grey button) buttons at the bottom.

Figure 3-12 Add a Network Signal Source via URL Address

Step 6 Click **Save**.

3.3.2 Manage Signal Sources

Edit a Local Signal Source

Navigate to **Video Wall Operation**, hover over a local signal source and then click  to edit its parameters:

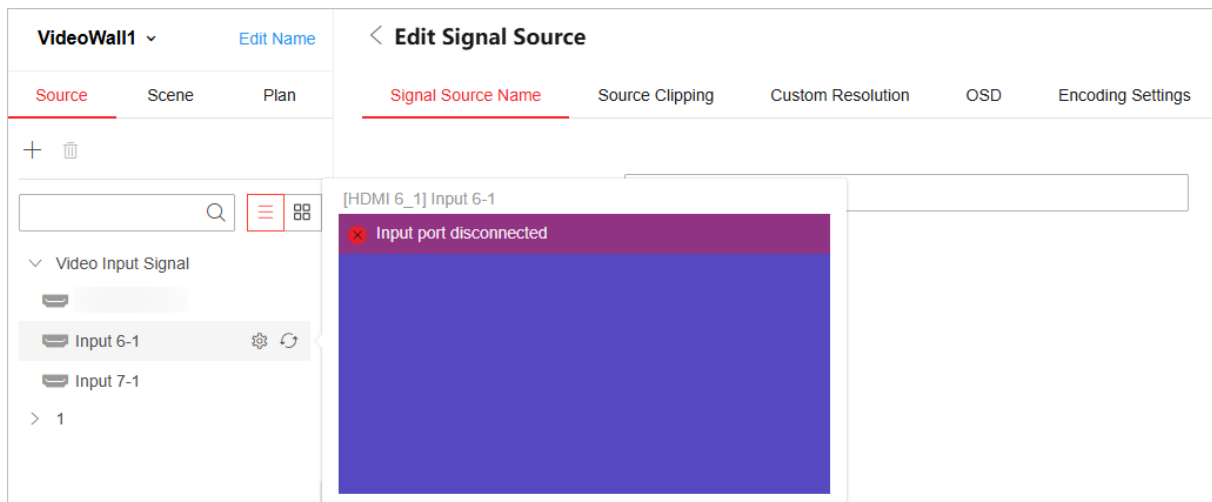


Figure 3-13 Edit a Local Signal Source

- Edit the signal source name.

Note

Both local signal sources and joint signal sources support editing signal source name.

- Click **Source Clipping**, and set the clipping value at top, bottom, left, and right edges.

The clipping value ranges from 0 to 200. The clipping value at the top and bottom edges should be a multiple of 2, and the clipping value at the left and right edges should be a multiple of 4.



Figure 3-14 Clip a Signal Source

- If the resolution of a signal source does not match the resolution of the screen, you can customize the signal source resolution.
 - 1) Click **Custom Resolution**.
 - 2) Enable custom resolution and set the refresh rate and resolution. The width should be a multiple of 4 and the height should be a multiple of 2.
 - 3) (Optional) Click **Copy To** to copy the resolution configuration of the current signal source to other signal sources.
 - 4) Click **Save**.



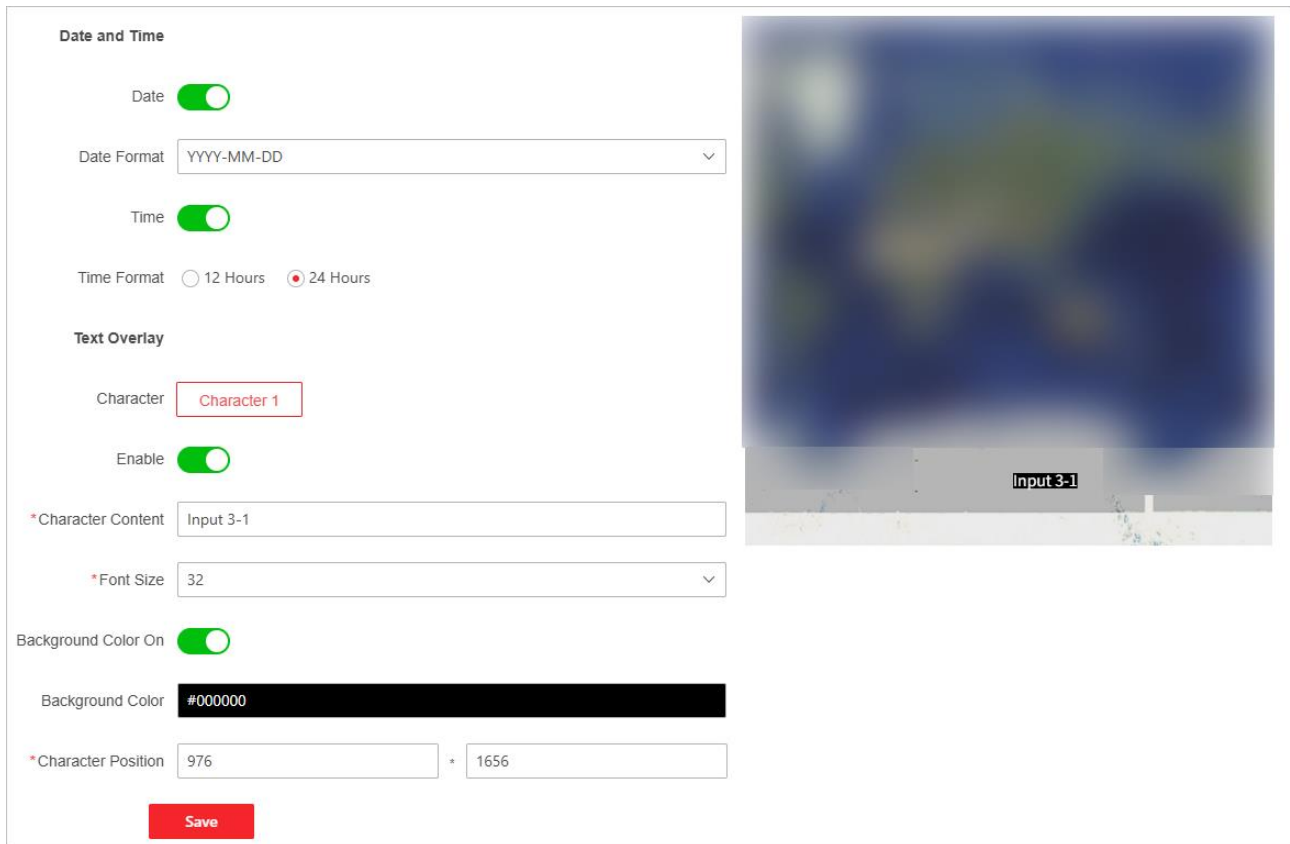
Figure 3-15 Customize Resolution

Note

Both local signal sources and joint signal sources support customizing resolution.

- Click **OSD** to overlay multiple OSDs (On-Screen Displays) on the input signal image.
 - Overlay date and time: After clicking **Save**, the preview window will display the overlaid date and time.
 - Overlay custom text: Set the text content, font size, font color, and background color. Adjust the text position by entering coordinates or dragging directly. Click **Save** to confirm the settings.

- Copy to other signal sources: Click **Copy To** to quickly apply the OSD configuration of the current signal source to other signal sources.



The screenshot displays the OSD configuration interface. On the left, there are settings for 'Date and Time' (Date toggle, Date Format dropdown, Time toggle, Time Format radio buttons), 'Text Overlay' (Character dropdown, Enable toggle, Character Content text field, Font Size dropdown), and 'Background Color' (Background Color On toggle, Background Color color picker, Character Position text fields). A red 'Save' button is at the bottom. On the right, a video feed preview shows the configured OSD: 'Input 3-1' text is overlaid on a dark, blurry image.

Figure 3-16 Add OSDs

- Click **Encoding Settings** to set the video and audio encoding parameters:
 - Select a stream type.
 - Set the bit rate type and maximum bit rate.
 - If you select **Constant Bit Rate**, the device uses the average bit rate for transmission and uses fast compression speed. The video mosaic might occur.
 - If you select **Variable Bit Rate**, the device automatically adjusts the bit rate for transmission as long as the bit rate is within the limit and uses slow compression speed to ensure the image definition in complex scenarios.
 - If you select **Variable Bit Rate**, you should select a video quality. The higher video quality, the higher the bandwidth requirements.
 - Set an I-frame interval: the number of frames between the two key frames. The larger the I-frame interval, the smaller the stream fluctuation, and the lower the image quality.
 - Select a resolution. The higher resolution, the higher the bandwidth requirements.
 - Select a frame rate: the number of frames per second. The higher frame rate, the higher the bandwidth requirements.
 - Select a video encoding type and video type.

- Set shallow/deep compression rate: Set the compression rate according to the actual need. Keep the default value.
 - Shallow compression: Low video compression, high resolution, and high bandwidth requirements.
 - Deep compression: High video compression, average resolution, and low bandwidth requirements.
- Select an audio encoding type.

Signal Source Name Input 6-1

Video Encoding

Stream Type ☒ Main Stream (Scheduled) ☐ Sub-stream

Bit Rate Type ☒ Variable Bit Rate ☐ Constant Bit Rate

Video Quality

*I-Frame Interval

* Custom Max. Bit Rate kbps

Resolution

Frame Rate fps

Encoding Type ☐ H.264 ☒ H.265

Video Type ☐ Video Stream ☒ Video and Audio Stream

Shallow Compression Rate ☐ Weak ☒ Medium ☐ High

Deep Compression Rate ☐ Weak ☒ Medium ☐ High

Audio Encoding

Encoding Type

Save

Figure 3-17 Set Signal Source Encoding Parameters

Edit a Network Signal Source

Navigate to **Video Wall Operation**, hover over a network signal source and then click  to edit its parameters.

Figure 3-18 Edit a Network Signal Source

Splice Signal Source

This function allows you to splice multiple local signal source images into one signal source image. After the signal source splicing, the spliced signal sources will disappear from the signal source list.

Note

- Only UHD signal sources support splicing.
- All spliced signal sources should use the same resolution and frame rate to avoid affecting the display effect.
- The joint signal source will be displayed in one signal source window on the video wall.
- When the joint signal source window is floating or zooming on the video wall, the spliced signal source windows also float and zoom on the video wall.

Step 1 Navigate to **Configuration > Signal Source Settings > Signal Source Splicing**, and click .

Step 2 Customize the joint signal source name and splicing scale.

Step 3 Drag the signal source in the signal source list to the splicing window.

The signal sources that are dragged to the splicing window will be spliced to one-way signal source.

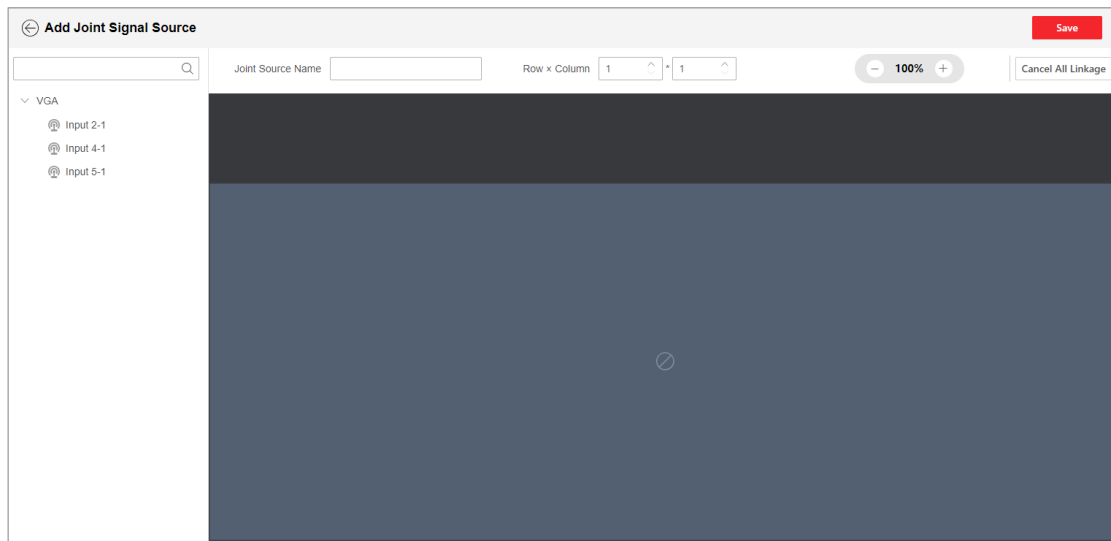


Figure 3-19 Add a Joint Signal Source

Step 4 (Optional) Click **Cancel All Linkage** to cancel the previous signal source splicing and splice the signal sources again.

Step 5 Click **Save**.

Batch Delete Network Signal Sources

To batch delete invalid network signal sources, you can select multiple network signal sources with **Ctrl** or **Shift** pressed and then click .

3.3.3 Bind Signal Sources with a Video Wall

Navigate to **Video Wall Operation** and then select a video wall. Take either of the following methods to bind signal sources with the video wall:

- Select a signal source and then drag it rightward to the video wall.
 - If you bind a signal source to an LCD video wall, the signal source window fully covers a single screen by default.
 - If you bind a signal source to an LED video wall, the signal source window fully covers the LED video wall by default.
- Drag a default signal source group or a newly created signal source group rightwards to the video wall. By default, the local signal sources join the video input signal group.
- Batch bind multiple signal sources:
 - Press **Ctrl** or **Shift** to select multiple network signal sources of the same group, and drag signal sources rightward to the video wall.
 - Press **Ctrl** to select multiple local signal sources of the same group, and drag signal sources rightward to the video wall.

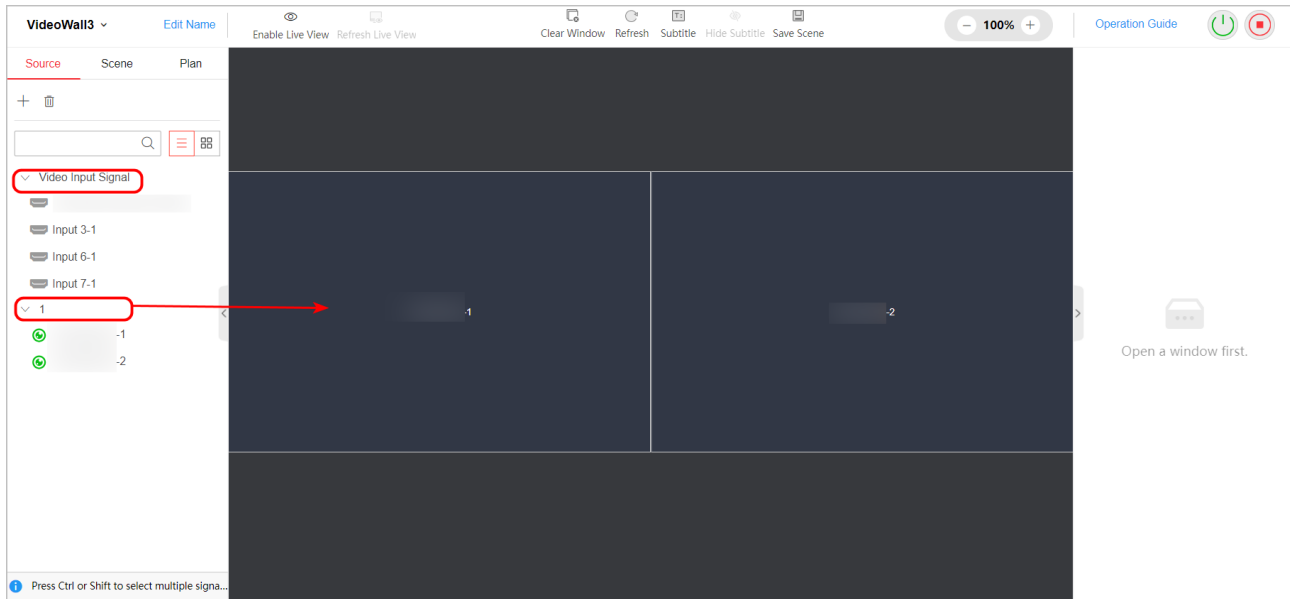


Figure 3-20 Drag Signal Sources to Video Wall

3.4 Operate a Video Wall

3.4.1 Edit Signal Source Window Parameters

Edit a Signal Source Window

On the **Video Wall Operation** page, select a video wall. Select a signal source window and perform the following operations as required:

- Adjust the window position: Move the window directly or enter the specific X and Y values.
- Divide the window: Click a window division icon.
- Adjust the window size:
 - Drag the window edge to adjust its size.
 - Enter W and H values.
 - Click  in the upper right corner of the window to make it fully cover the occupied output ports and click  to restore the original size.
 - Double click the window to make it fully cover the occupied output ports and double click the window again to restore the original size.
- Set the window to the bottom: Click .

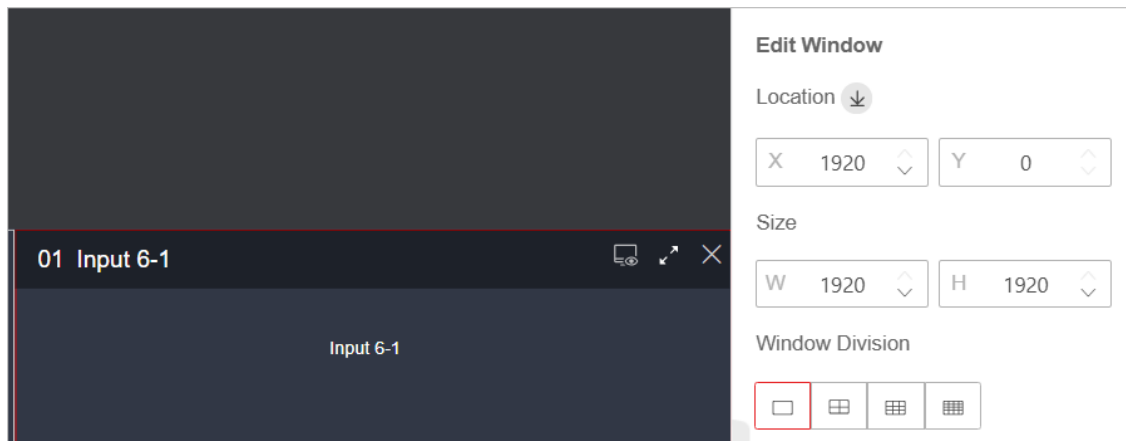


Figure 3-21 Adjust Position of a Signal Source Window

- Enable audio: Make sure that you have configured the audio output for the video wall on the **Video Wall Configuration** page. Click **Audio On**.
- Set the decoding delay level of the device: Click a network signal source window of any video wall, and then click **Decoding Delay** to set the decoding delay level.



Figure 3-22 Enable Audio

- View the window status. You can click **Show All** to enter decoding status list to view details.

Edit Multiple Signal Source Windows

On the **Video Wall Operation** page, select a video wall and perform the following operations as required:

- You can preview only the local signal sources. Preview the local signal sources:
 - Click  in the upper right corner of a signal source window to preview the signal source. Click  to cancel the live view.
 - Click **Enable Live View** at the top of the **Video Wall Operation** page to preview all signal sources on the video wall. Click **Close Live View** to stop previewing all signal sources on the video wall.

- Click **Refresh Live View** at the top of the **Video Wall Operation** page to refresh the live view of all signal sources.

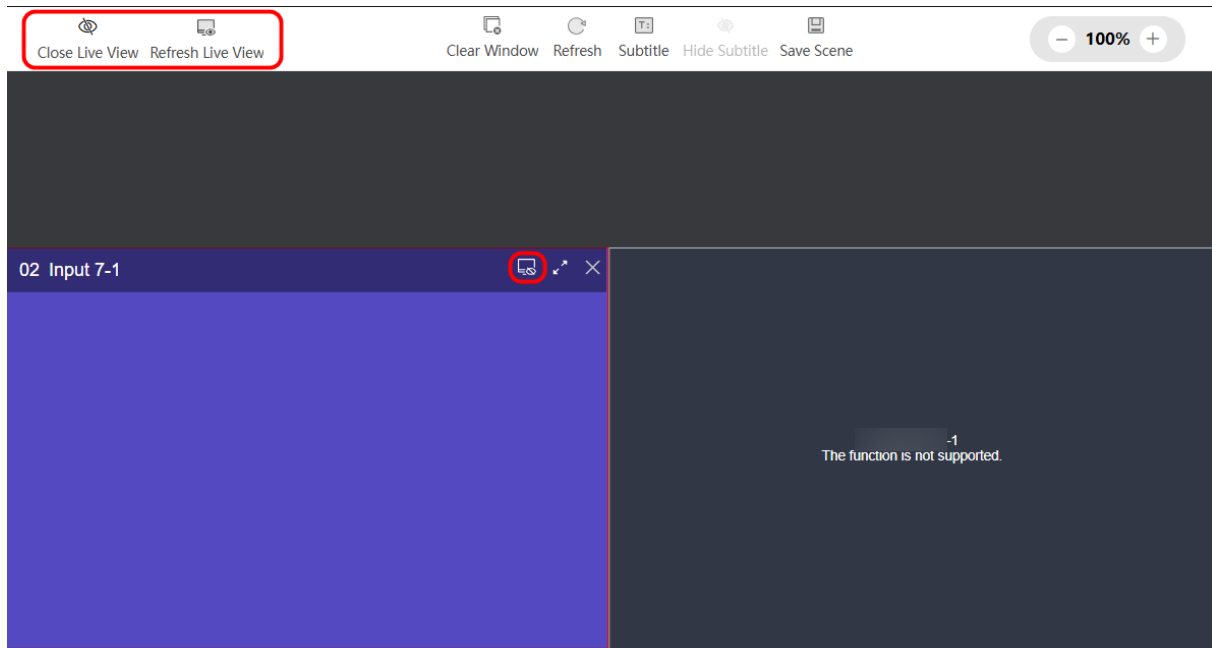


Figure 3-23 Preview Signal Source

- Clear all bound signal source windows: Click **Clear Window**.

3.4.2 Configure Subtitles

Navigate to **Video Wall Operation**, click **Subtitle**, press and hold the left mouse button to drag subtitles to screens. To add multiple subtitles, you can drag the remaining subtitles.

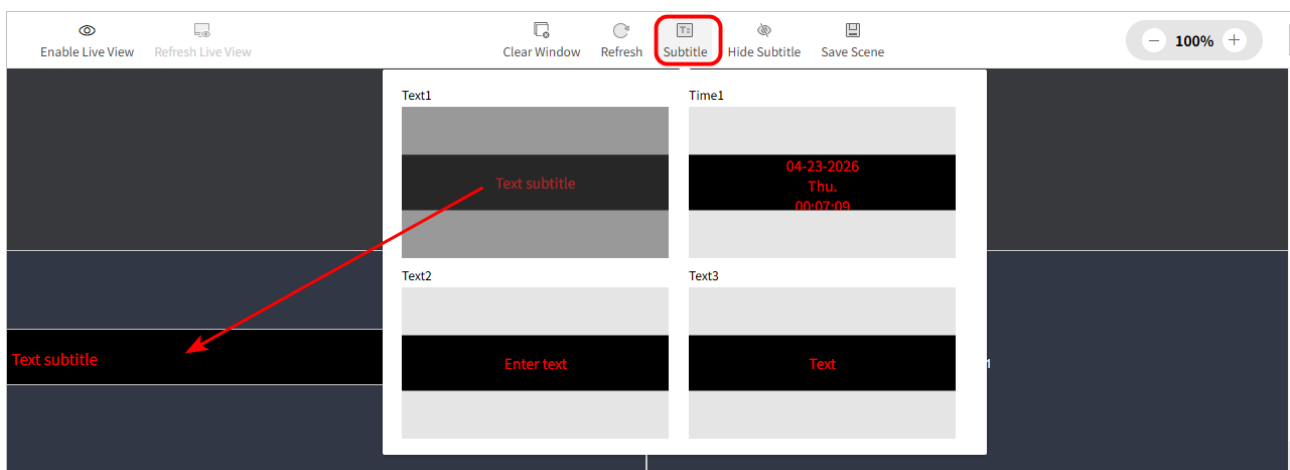


Figure 3-24 Add a Subtitle

- Add a text subtitle:
 - Select **Text** for the subtitle type.
 - Enter the subtitle content, adjust the subtitle position and size, and set the text and background.

3) (Optional) Enable **Move** to set the movement speed.

Subtitle Type

Text Time

Content

Text subtitle 499

Window

Location

X 0 Y 662

Size

W 1920 H 475

Text & Background

Font Size

1

Font Color

#ff0000

Font Direction

Horizontal Vertical

Font

founderLanTingHei

Font Style

B

Alignment

Left Center Right

Background Color

#000000

Background Transparency

Cover

Move

Direction

Left

Speed

1 2 3 4

Figure 3-25 Add a Text Subtitle

- Add a time subtitle:
 - 1) Select **Time** as the subtitle type.
 - 2) Adjust the subtitle position and size, adjust the time format, and set the text and background.

Figure 3-26 Add a Time Subtitle

3.4.3 Manage Scenes

Up to 128 scenes are supported. Navigate to **Video Wall Operation** to manage scenes.

- Click **Save Scene** to save the current video wall configuration as a new scene or overwrite the existing scene.

Figure 3-27 Save Scene

- Click **Scene** and hover over a scene name. Click to call the scene.

- Click **Scene** and hover over a scene name. Click  to edit the scene name.
- Click **Scene** and hover over a scene name. Click  to delete the scene.

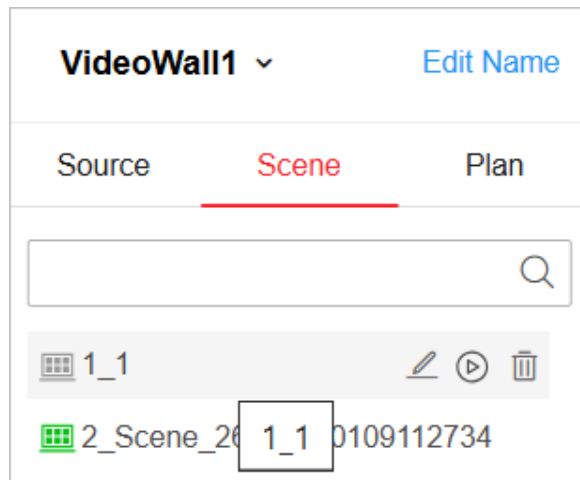


Figure 3-28 Manage Scene

3.4.4 Manage Plans

You can add multiple scenes and set the scene schedule in a plan. Navigate to **Video Wall Operation** and click **Plan** to manage plans.

- Click  to add a plan:
 - 1) Set the plan name.
 - 2) Add tasks.
 - 3) (Optional) Enable **Execute Plan Automatically** and set the schedule.
 - 4) Click **Save**.

Add Plan

Plan Name *

Task

+ Add Task

 Delete

☐	No.	Task	Scene Name	Interval(S)	Sort	Operation
☐	1	Change Scene	scene 2	10		

Execute Plan Automatically

☐

Figure 3-29 Add a Plan

- Click a plan and then click  to edit the plan.
- Click a plan and then click  to call the plan.

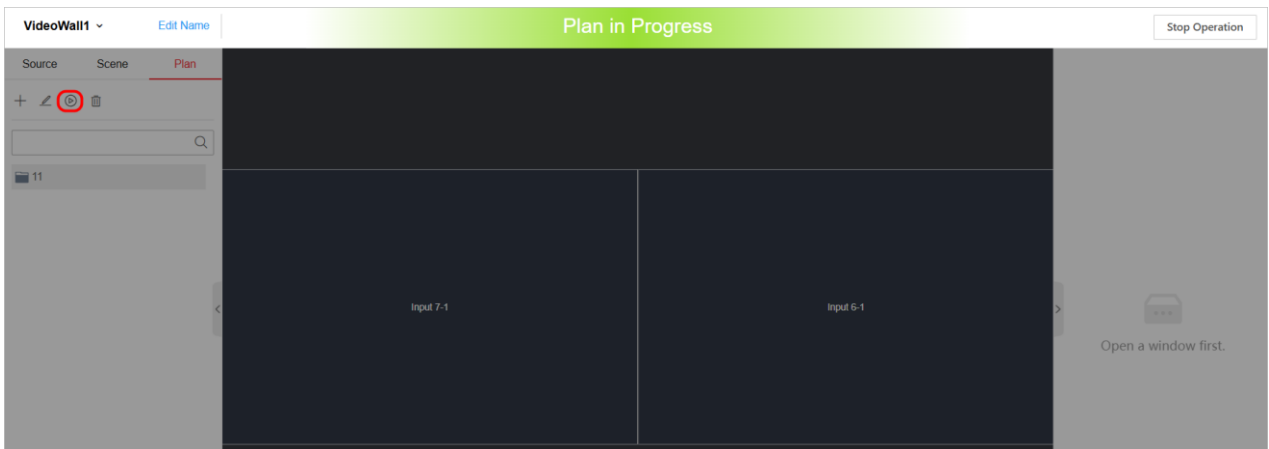


Figure 3-30 Call a Plan

- Click a plan and then click  to delete the plan.

3.5 Maintain an LCD Screen

Step 1 Navigate to **Configuration > System > Serial Port Settings > Subnode Serial Port**, select a subsystem, select **Screen Control** as the working mode, set the baud rate of the node same as the baud rate of the LCD screen, and set other serial port parameters.

Figure 3-31 Configure Subnode Serial Port

Step 2 Navigate to **Screen Control Link**, and click **Add**.

- 1) Select the default main node serial number and subsystem number. By default, they are 1.
- 2) Select sub-board number according to the subsystem on the **Subnode Serial Port** page.

Figure 3-32 Select Sub-Board Number

- 3) Select **Screen Control Protocol** according to the supported protocol of the screen connected with the sub-board.
- 4) Select a video wall to be displayed on the screen.
- 5) Click **Save**.

Figure 3-33 Add Screen Control Link

Step 3 Use a serial port cable to connect the LCD screen and the configured sub-board serial port.

Step 4 Navigate to **Screen Maintenance** and select a video wall.

Step 5 Select the LCD screen that is connected with the serial port cable.

Step 6 Select an input source type, and perform the following operations as required:

- Set the image brightness, contrast, color, and sharpness.
- Adjust the image position.
- Click  or  to power on or power off the LCD screen that is connected with the serial port cable.

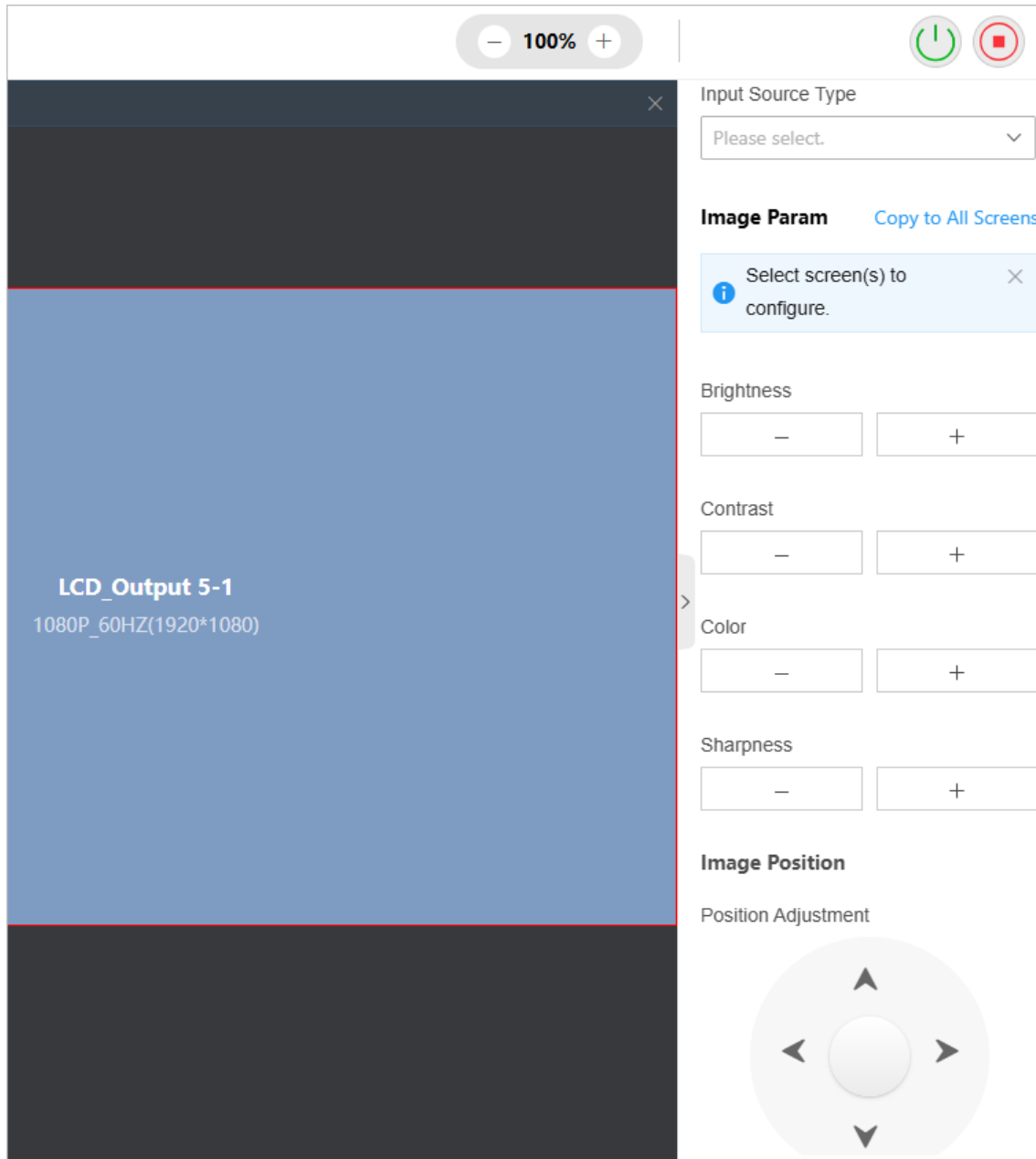


Figure 3-34 Maintain LCD Screen

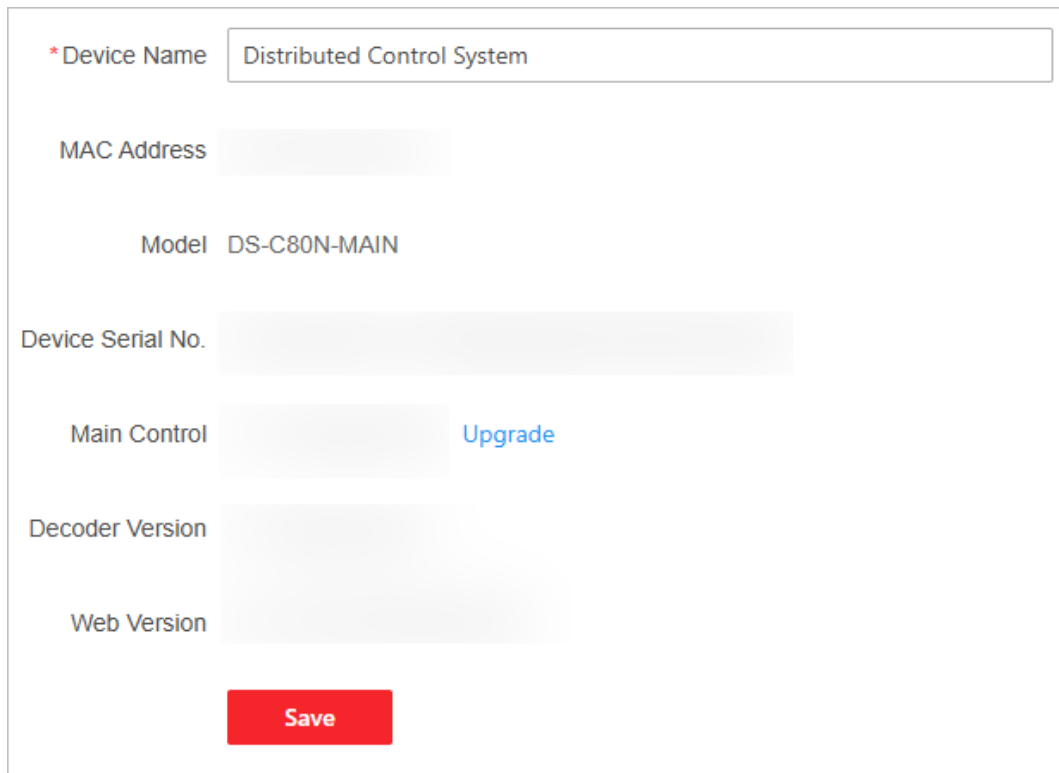
Chapter 4 Node Configuration and Maintenance

4.1 Configure Node Parameters

4.1.1 Configure System Parameters

Navigate to **Configuration > System** to configure the following parameters:

- Navigate to **System Settings > Basic Information** to view the device information and edit the device name as required. You can click **Upgrade** to navigate to the upgrade page.



* Device Name

MAC Address

Model DS-C80N-MAIN

Device Serial No.

Main Control [Upgrade](#)

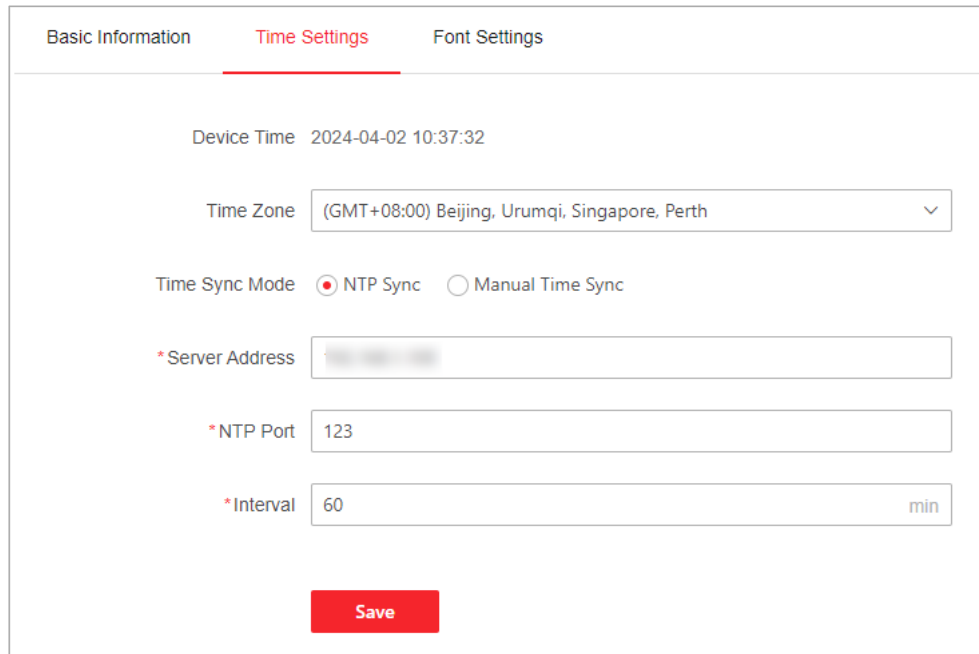
Decoder Version

Web Version

[Save](#)

Figure 4-1 View Basic Information

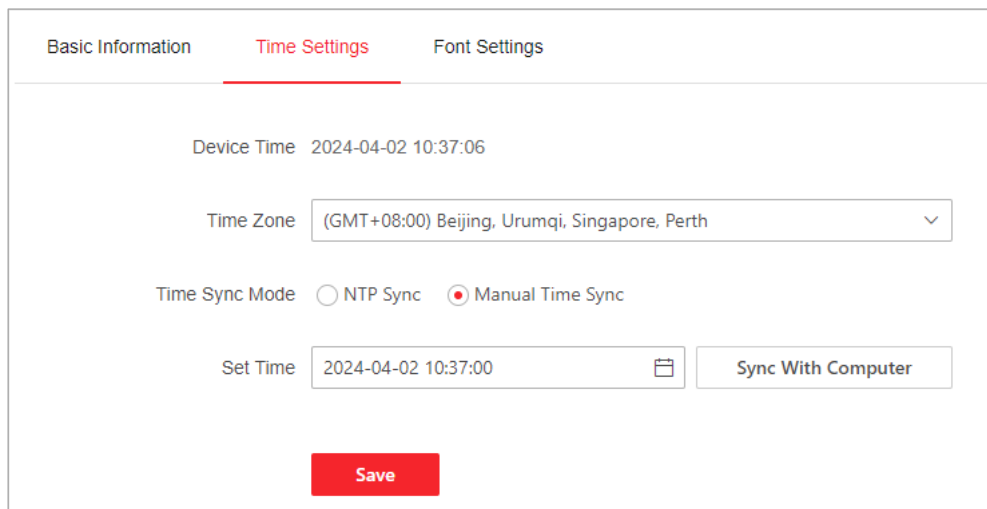
- Navigate to **System Settings > Time Settings**, if you select **NTP Sync**, the device time synchronizes with the time of the NTP server at the specified interval.
 - Set the address and port number of the NTP server.
 - Set the synchronization interval.



The screenshot shows the 'Time Settings' tab in a web interface. At the top, there are three tabs: 'Basic Information', 'Time Settings' (which is active and highlighted with a red underline), and 'Font Settings'. Below the tabs, the 'Device Time' is displayed as '2024-04-02 10:37:32'. The 'Time Zone' is set to '(GMT+08:00) Beijing, Urumqi, Singapore, Perth' with a dropdown arrow. The 'Time Sync Mode' has two radio buttons: 'NTP Sync' (which is selected) and 'Manual Time Sync'. Below this, there are three input fields: '* Server Address' (containing a blurred IP address), '* NTP Port' (set to '123'), and '* Interval' (set to '60' with a 'min' unit). At the bottom, there is a red 'Save' button.

Figure 4-2 Select NTP Sync

- On the **Time Settings** page, if you select **Manual Time Sync**, you can click **Sync with Computer** to make the device time same as the computer time.



The screenshot shows the 'Time Settings' tab in a web interface. At the top, there are three tabs: 'Basic Information', 'Time Settings' (which is active and highlighted with a red underline), and 'Font Settings'. Below the tabs, the 'Device Time' is displayed as '2024-04-02 10:37:06'. The 'Time Zone' is set to '(GMT+08:00) Beijing, Urumqi, Singapore, Perth' with a dropdown arrow. The 'Time Sync Mode' has two radio buttons: 'NTP Sync' and 'Manual Time Sync' (which is selected). Below this, there is a 'Set Time' field with the value '2024-04-02 10:37:00' and a calendar icon. To the right of the 'Set Time' field is a button labeled 'Sync With Computer'. At the bottom, there is a red 'Save' button.

Figure 4-3 Select Manual Time Sync

- Navigate to **System Settings > Font Settings** to set the font of subtitles. You can use the default font, or click **Add** to import a new font.

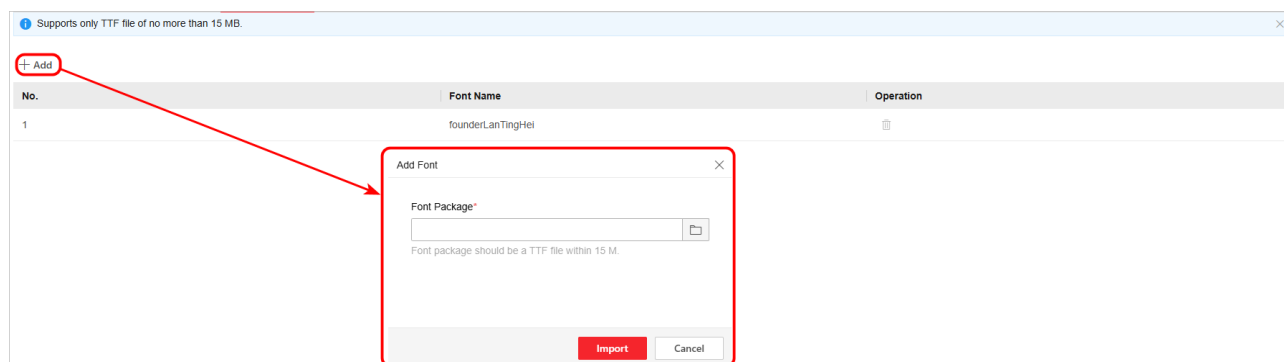


Figure 4-4 Set Font

- To use the keyboard control, navigate to **Configuration > System > Serial Port Settings > Main Node Serial Port** to set the main node serial port parameters.

Figure 4-5 Set Main Node Serial Port

- Navigate to **Configuration > System > User Management**, and click  to edit the password of the admin user.

User Management			
+ Add			
No.	User Name	User Type	Operation
1	admin	Administrator	 

Figure 4-6 Manage Users

4.1.2 Configure Network Parameters

Navigate to **Configuration > Network** to configure TCP/IP and HTTP(S) parameters.

Configure TCP/IP

Step 1 Navigate to **Network Configuration > TCP/IP**.

Step 2 Set IPv4 address, IPv4 subnet mask and IPv4 default gateway.

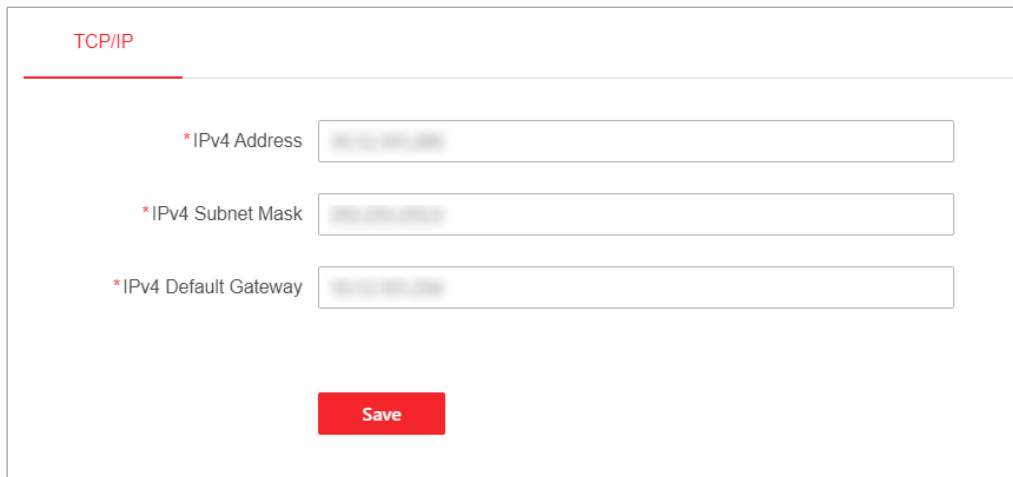


Figure 4-7 Configure Network Parameters



Note

Disable the STP protocol of the switch that is connected with the main control node to avoid function exception.

Step 3 Click **Save**.

Configure HTTP(S)

Step 1 Navigate to **Network Service > HTTP(S)**.

Step 2 Set the HTTP port number.

The port number can be either 80 or any value from 2000 to 65535. After editing the HTTP port, you need to enter HTTP://Device IP Address: Port in the browser to access the device.

Step 3 Enable HTTPS.

- HTTPS security is higher, and HTTPS private certificate is supported. See for details in 4.3 Maintain the Node Security. Enabling HTTPS will increase the loading time of the interface and consume more hardware resources.
- After you change the HTTPS configuration of the node, the node will restart automatically.

Step 4 Set the HTTPS port.

The default port number is 443. After editing the HTTPS port number, you need to enter HTTPS://Device IP Address: Port in the browser to access the device.

HTTP(S)

HTTP

* HTTP Port

HTTPS

Enable ☒

* HTTPS Port

Redirect to HTTPS Automatically ☐

HTTP(S) Authentication

* Authentication Mode

* Digest Algorithm Type

Save

Figure 4-8 Configure HTTP(S) Parameters

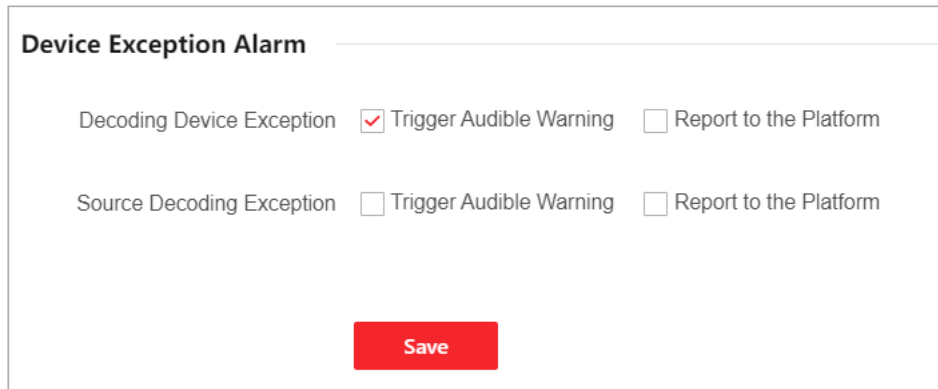
Step 5 (Optional) Enable redirect to HTTPS automatically. Thus, the device access via HTTPS is used by default.

Step 6 Select an authentication mode and digest algorithm type.

Step 7 Click **Save**.

4.1.3 Configure Event

Navigate to **Configuration > Event**. When decoding device exception and source decoding exception occur, configure the audible warning and alarm reporting to the platform.



Device Exception Alarm

Decoding Device Exception ☒ Trigger Audible Warning ☐ Report to the Platform

Source Decoding Exception ☐ Trigger Audible Warning ☐ Report to the Platform

Save

Figure 4-9 Set Device Exception Alarm

4.1.4 Set Other Parameters

Navigate to **Configuration > Other Settings** to set the following parameters:

- Enable **Sub-Stream Auto-Switch** and set the window division threshold. If the window division reaches the window division threshold, the device will automatically use sub-stream to get the images. In low bandwidth networks, you can use sub-stream to get relatively smooth images with a small bandwidth footprint.



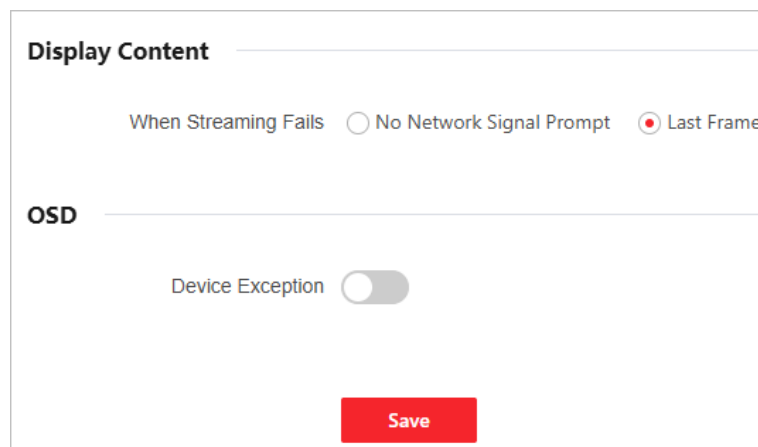
Enable ☒

Division Threshold 16

Save

Figure 4-10 Set Sub-Stream Auto-Switch

- Click **Display Settings** to configure the content displayed when streaming fails and configure the OSDs when the bitrate exception and device exception occur.



Display Content

When Streaming Fails ☐ No Network Signal Prompt ☒ Last Frame

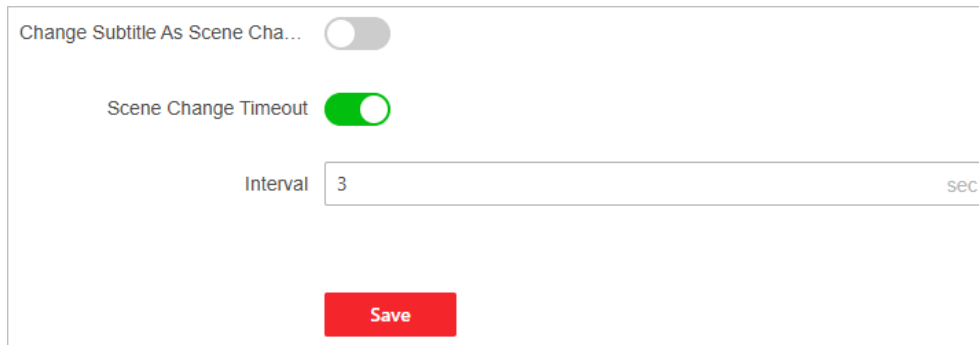
OSD

Device Exception ☐

Save

Figure 4-11 Set Contents Displayed on Screen

- Click **Scene Change**, enable subtitle change as scene change, or enable scene change timeout and set the interval.



Change Subtitle As Scene Cha... ☐

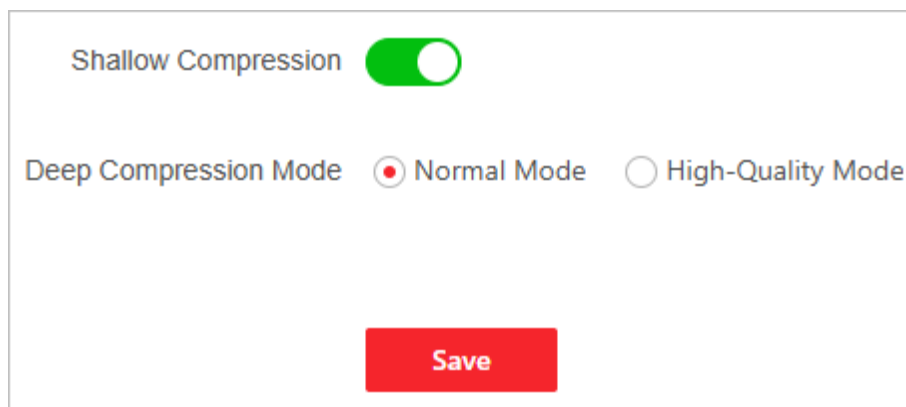
Scene Change Timeout ☒

Interval sec

Save

Figure 4-12 Change Scene

- Click **Streaming Mode**, and then select **Unicast** or **Broadcast**. After setting unicast or broadcast, the device will restart.
- Click **Floating Window Switch**, enable switch timeout and set the interval.
- Click **Local Source Mode** to set the compression mode. In high-quality deep compression mode, the video image has high definition, but it will occupy more bandwidth.



Shallow Compression ☒

Deep Compression Mode ☒ Normal Mode ☐ High-Quality Mode

Save

Figure 4-13 Set Local Source Mode

- Only the input nodes support configuring no signal image. Click **No Signal Image** and select the default image or upload a new image.

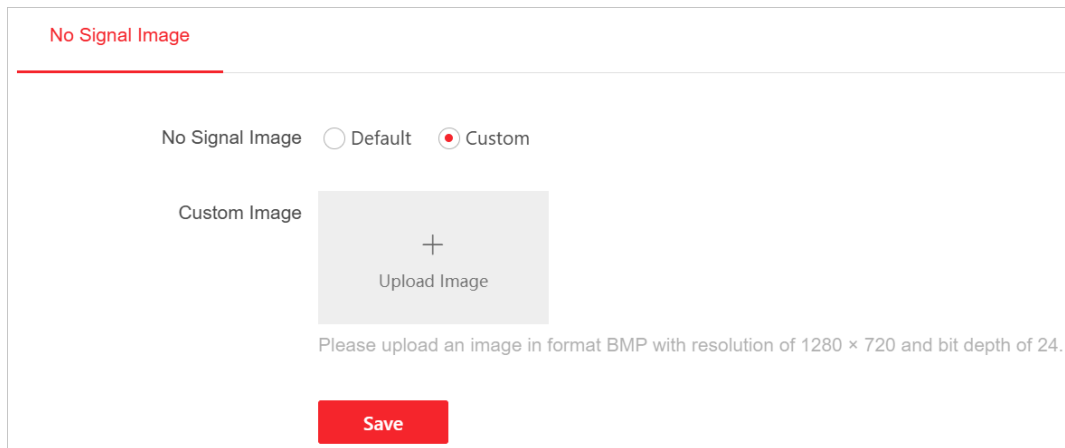


Figure 4-14 No Signal Image

4.2 Maintain the System

Restart and Upgrade

Important

- Upgrading the C80N main control node upgrades only the C80N input and output nodes. The C80K input nodes are not affected.
- To upgrade a single input or output node, access the node directly and perform the upgrade.
- To upgrade multiple nodes, use the HiTools Delivery client.
- Obtain the upgrade file in advance and save it locally. If the upgrade fails despite the file being compatible with the device, please contact technical support.
- During the main control node upgrade, you can view the process and status of all C80N subnodes.

Steps

Step 1 Navigate to **Maintenance and Security > System Maintenance**.

Step 2 On the **Restart** page, click **Restart**.

Step 3 On the **Upgrade** page, click  to select a locally saved upgrade file, and click **Upgrade**.

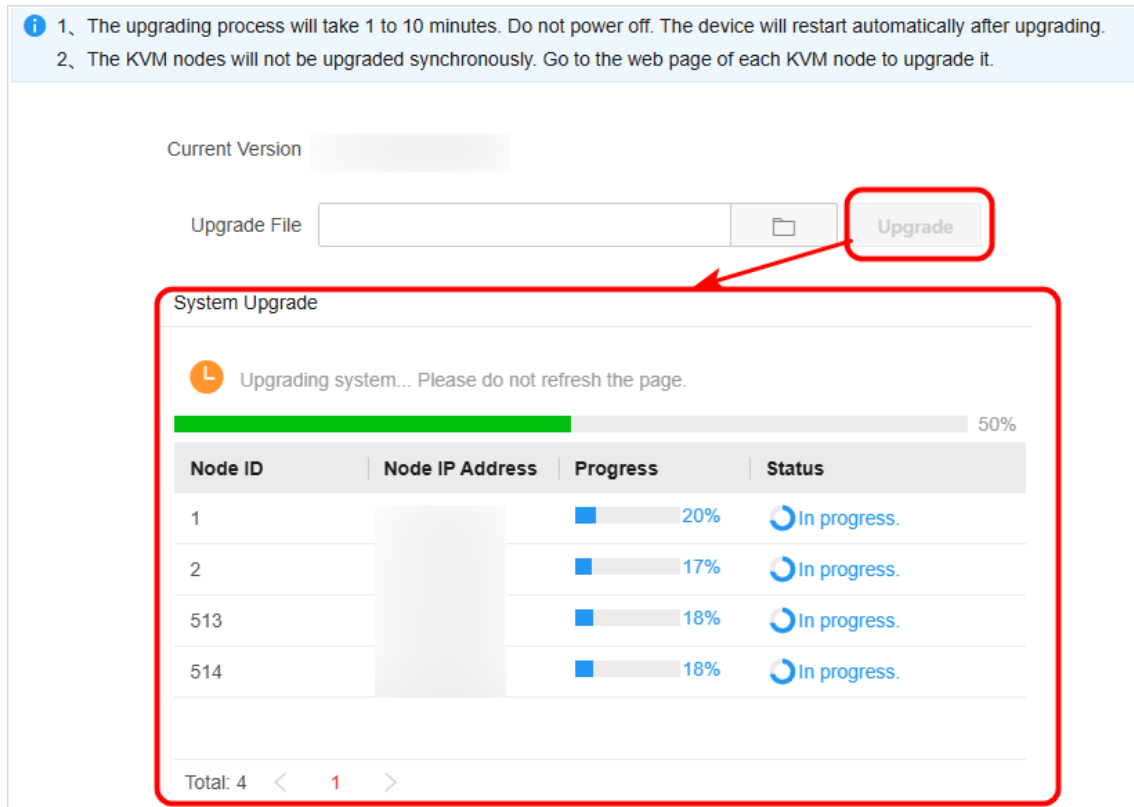


Figure 4-15 Upgrade the Main Control Node

Backup and Reset

Step 1 Navigate to **Maintenance and Security > System Maintenance > Backup and Reset**.

Step 2 Export the parameters of the main control node. To export the parameters of a single input node, log in to the node and export its parameters.

Step 3 Use either of the following methods to reset the main control node. To reset a single input node, log in to the node and reset it.

- Click **Restore Default** to restore the parameters except for user information and network parameters to the default settings. Please use this function with caution.
- Click **Restore Factory** to restore all functions and parameters of the main control node to the factory settings. Please use this function with caution.

Step 4 Import configuration file: Click to select a locally saved parameter file, and click **Import**.

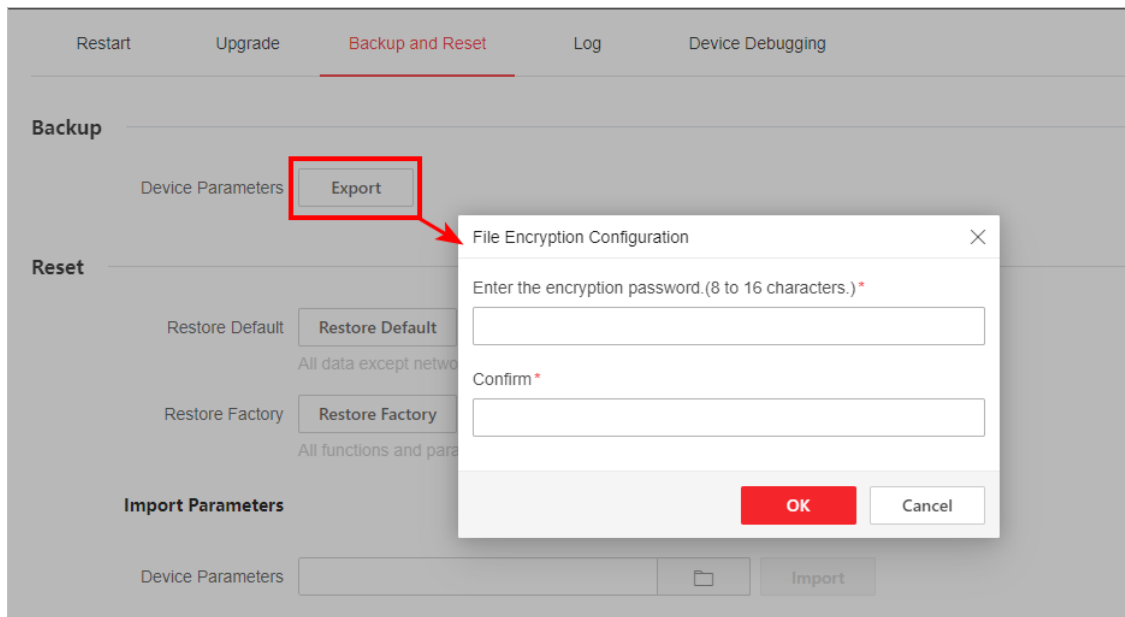


Figure 4-16 Back Up and Reset Main Control Node

Log Management

Step 1 Navigate to **Maintenance and Security > System Maintenance > Log**.

Step 2 Set the search conditions and click **Search**.

Step 3 You can view the searched logs of the main control node and subnodes in the list below. To view the logs of a single input node, log in to the node and view its logs.

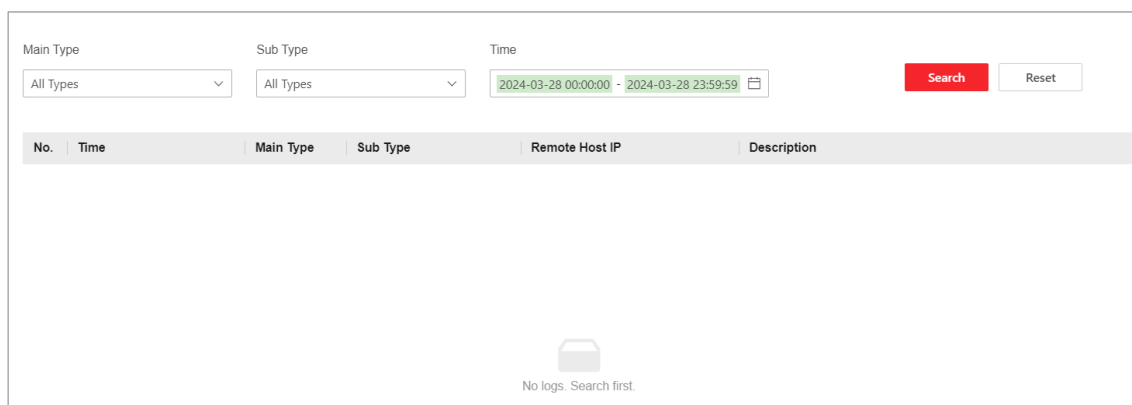


Figure 4-17 Search Logs

Debug Main Control Node

Navigate to **Maintenance and Security > System Maintenance > Device Debugging** to configure the following parameters:

- Enable SSH (Secure Shell), enter the port number and click **Save**. With SSH enabled, you can use a computer installed with the SSH client to access the device.
- Export the logs of the main control node to the USB flash drive: Format the FAT32 USB flash drive, insert the USB flash drive into the main control node, and then click **Export**.

To export the logs of an output node to the USB flash drive: Format the FAT32 USB flash drive, insert the USB flash drive into the output node, and then click **Export**. To export the debugging logs of an input node: Log in to the **Device Debugging** page of the input node and then click **Export**.

- Download the network switching packet file of the main control node: Click **Start Capturing**, and then click **Download** after the network switching packet file is generated.

To download the network switching packet file of a subnode, log in to the **Device Debugging** page of the subnode and then perform the similar operations.

- Download the audio data package of the main control node: Click **Start Capturing**, and then click **Download** after the audio data package is generated.

To download the audio data package of a subnode, log in to the **Device Debugging** page of the subnode and then perform the similar operations.

SSH

Enable ☒

*Port No.

Export Logs to USB

Export Log

USB Drive Status Default

Export Network Switching Packet

Subsystem

Packet Capture File

**PCAP File**
Capture Packet Duration: 02-10 20:04:04

Export Audio Data Package

Capture

Packet Capture File

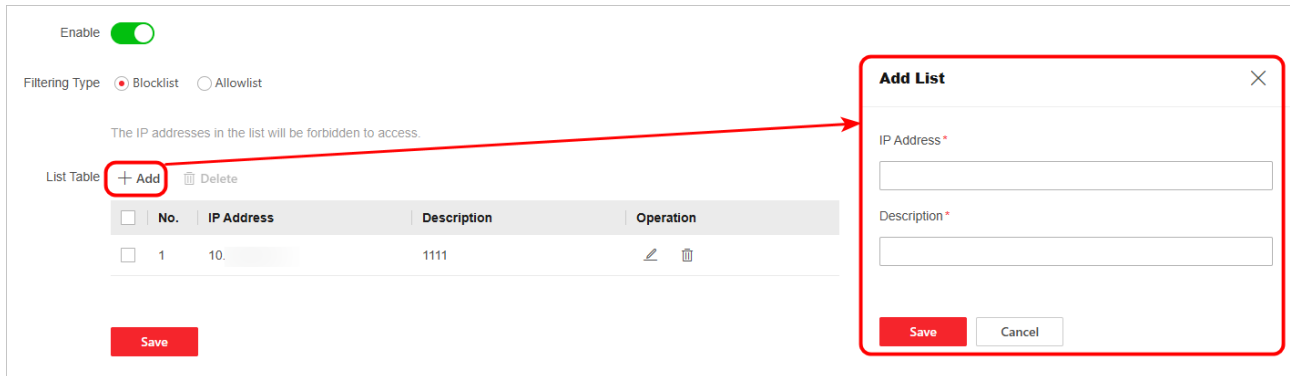

Please click Start Capturing.

Figure 4-18 Debug the Main Control Node

4.3 Maintain the Node Security

Navigate to **Maintenance and Security > Security Management** to configure the following parameters:

- On the **IP Address Filter** page, configure the IP addresses that are allowed to or forbidden to access the device.



Enable ☒

Filtering Type ☒ Blocklist ☐ Allowlist

The IP addresses in the list will be forbidden to access.

List Table + Add Delete

No.	IP Address	Description	Operation
1	10.	1111	Edit Delete

Save

Add List

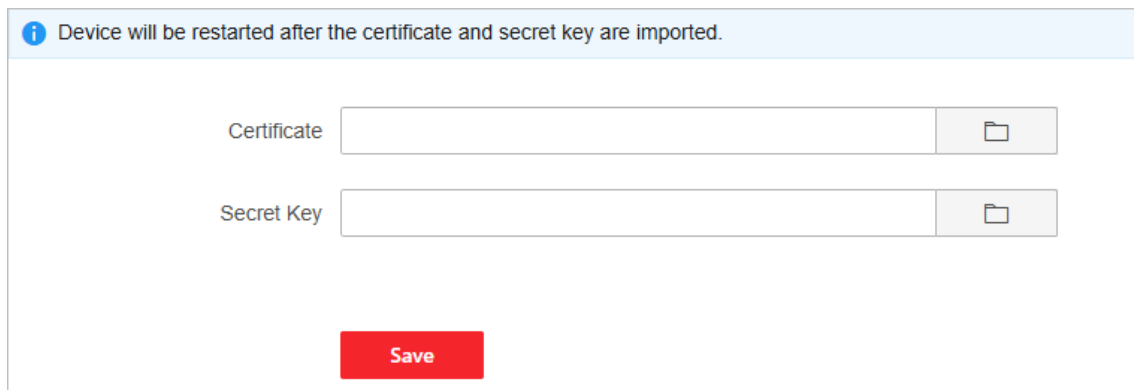
IP Address *

Description *

Save Cancel

Figure 4-19 Configure IP Address Filter

- On the **HTTPS Certificate** page, import the locally saved HTTPS certificate and secret key.



i Device will be restarted after the certificate and secret key are imported.

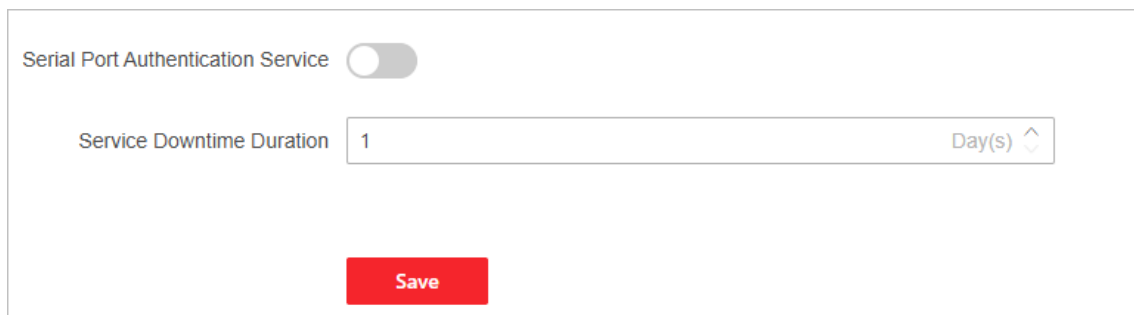
Certificate

Secret Key

Save

Figure 4-20 Import HTTPS Certificate and Secret Key

- On the **Security Service** page, the serial port authentication service is enabled by default. To suspend this service temporarily, please set the service downtime duration and click **Save**.



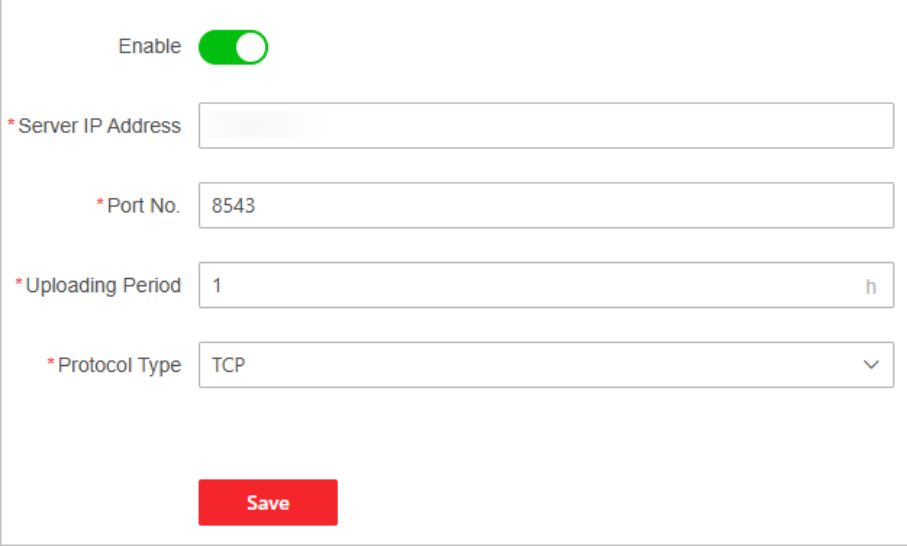
Serial Port Authentication Service ☒

Service Downtime Duration Day(s)

Save

Figure 4-21 Enable Serial Port Authentication Service

- On the **SADP** page, enable SADP as required. With SADP enabled, you can use the SADP software to search the online device that is in the same network segment with the computer.
- On the **Syslog** page, enable Syslog as required. With Syslog enabled, the device logs can be uploaded to the Syslog server.



Enable ☒

* Server IP Address

* Port No.

* Uploading Period h

* Protocol Type

Save

Figure 4-22 Enable Syslog

- On the **Websocket** page, enable Websocket as required. Once Websocket is enabled, the network signal source windows with decoding exceptions on the **Video Wall Operation** page will be displayed in red. Click the red window to view the detailed decoding exception information.

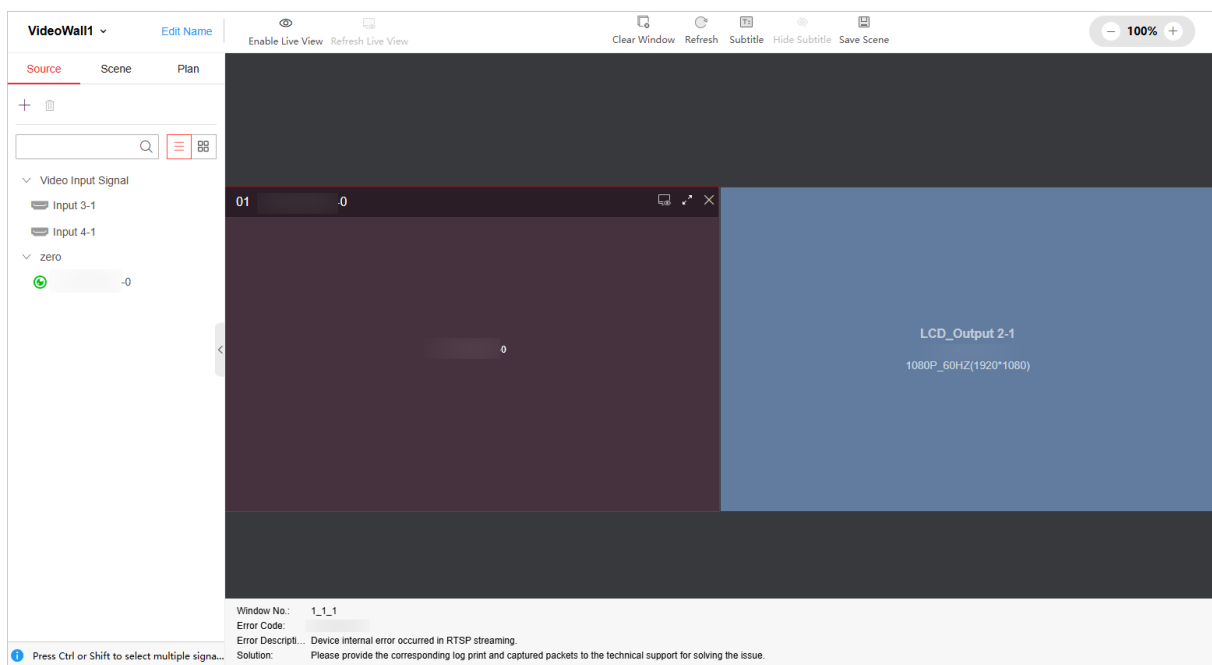
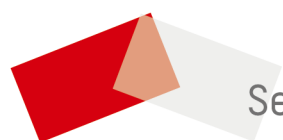


Figure 4-23 Network Signal Source with Decoding Exceptions



See Far, Go Further