



Distributed Video Wall Controller

User Manual

Legal Information

About this Document

- This Document includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only.
- The information contained in the Document is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of the Document at the Hikvision website (<https://www.hikvision.com>). Unless otherwise agreed, Hangzhou Hikvision Digital Technology Co., Ltd. or its affiliates (hereinafter referred to as "Hikvision") makes no warranties, express or implied.
- Please use the Document with the guidance and assistance of professionals trained in supporting the Product.

About this Product

This product can only enjoy the after-sales service support in the country or region where the purchase is made.

Acknowledgment of Intellectual Property Rights

- Hikvision owns the copyrights and/or patents related to the technology embodied in the Products described in this Document, which may include licenses obtained from third parties.
- Any part of the Document, including text, pictures, graphics, etc., belongs to Hikvision. No part of this Document may be excerpted, copied, translated, or modified in whole or in part by any means without written permission.
- **HIKVISION** and other Hikvision's trademarks and logos are the properties of Hikvision in various jurisdictions.
- Other trademarks and logos mentioned are the properties of their respective owners.
- **HDMI**[™] The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.

LEGAL DISCLAIMER

- TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THIS DOCUMENT AND THE PRODUCT DESCRIBED, WITH ITS HARDWARE, SOFTWARE AND FIRMWARE, ARE PROVIDED "AS IS" AND "WITH ALL FAULTS AND ERRORS". HIKVISION MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY, SATISFACTORY QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE. THE USE OF THE PRODUCT BY YOU IS AT YOUR OWN RISK. IN NO EVENT WILL HIKVISION BE LIABLE TO YOU FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGES, INCLUDING, AMONG OTHERS, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, OR LOSS OF DATA, CORRUPTION OF SYSTEMS, OR LOSS OF DOCUMENTATION, WHETHER BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE), PRODUCT LIABILITY, OR OTHERWISE, IN CONNECTION WITH THE USE OF THE PRODUCT, EVEN IF HIKVISION HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSS.
- YOU ACKNOWLEDGE THAT THE NATURE OF THE INTERNET PROVIDES FOR INHERENT SECURITY RISKS, AND

HIKVISION SHALL NOT TAKE ANY RESPONSIBILITIES FOR ABNORMAL OPERATION, PRIVACY LEAKAGE OR OTHER DAMAGES RESULTING FROM CYBER-ATTACK, HACKER ATTACK, VIRUS INFECTION, OR OTHER INTERNET SECURITY RISKS; HOWEVER, HIKVISION WILL PROVIDE TIMELY TECHNICAL SUPPORT IF REQUIRED.

- YOU AGREE TO USE THIS PRODUCT IN COMPLIANCE WITH ALL APPLICABLE LAWS, AND YOU ARE SOLELY RESPONSIBLE FOR ENSURING THAT YOUR USE CONFORMS TO THE APPLICABLE LAW. ESPECIALLY, YOU ARE RESPONSIBLE, FOR USING THIS PRODUCT IN A MANNER THAT DOES NOT INFRINGE ON THE RIGHTS OF THIRD PARTIES, INCLUDING WITHOUT LIMITATION, RIGHTS OF PUBLICITY, INTELLECTUAL PROPERTY RIGHTS, OR DATA PROTECTION AND OTHER PRIVACY RIGHTS. YOU SHALL NOT USE THIS PRODUCT FOR ANY PROHIBITED END-USES, INCLUDING THE DEVELOPMENT OR PRODUCTION OF WEAPONS OF MASS DESTRUCTION, THE DEVELOPMENT OR PRODUCTION OF CHEMICAL OR BIOLOGICAL WEAPONS, ANY ACTIVITIES IN THE CONTEXT RELATED TO ANY NUCLEAR EXPLOSIVE OR UNSAFE NUCLEAR FUEL-CYCLE, OR IN SUPPORT OF HUMAN RIGHTS ABUSES.
- IN THE EVENT OF ANY CONFLICTS BETWEEN THIS DOCUMENT AND THE APPLICABLE LAW, THE LATTER PREVAILS.

© Hangzhou Hikvision Digital Technology Co., Ltd. All rights reserved.

Preface

Applicable Models

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

Default Parameters




Type	Default Parameter
Device	<ul style="list-style-type: none"> • Login user name: admin
SSH connection	<ul style="list-style-type: none"> • 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.

TABLE OF CONTENTS

Chapter 1 Introduction	1
1.1 Overview	1
1.2 First-Time Configuration Process	2
1.3 Node Function Comparison	3
Chapter 2 Node Batch Activation	6
2.1 Use SADP Client	6
2.2 Use HiTools Delivery	7
Chapter 3 Main Control Node Configuration	10
3.1 Log In to a Node via Web Browser	10
3.2 Set as the Main Control Node and Add Subnodes	10
3.3 Configure a Video Wall	12
3.3.1 Configure the Video Wall Scale	12
3.3.2 Bind Output Ports with Video Wall	13
3.3.3 Configure Audio	15
3.3.4 Add a Network Signal Source	17
3.3.5 Bind Signal Sources with Video Wall	19
3.4 Operate a Video Wall	20
3.4.1 Edit a Signal Source Window	20
3.4.2 Configure Subtitles	23
3.4.3 Manage Scenes	24
3.4.4 Manage Plans	25
3.4.5 Maintain Screens	26
3.5 Configure Screen Display Effect	29
3.5.1 Configure Screen Parameters	29
3.5.2 Set Encoding Parameters	31
3.5.3 Splice Signal Source	33
3.5.4 Set Other Parameters	34
3.6 Configure Parameters of the Main Control Node	35
3.6.1 Configure System Parameters	35
3.6.2 Configure Network Parameters	38
3.6.3 Configure Node Parameters	40
3.6.4 Configure Event	43
3.7 Maintain the System	43
3.8 Maintain the Security of Main Control Node	46

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

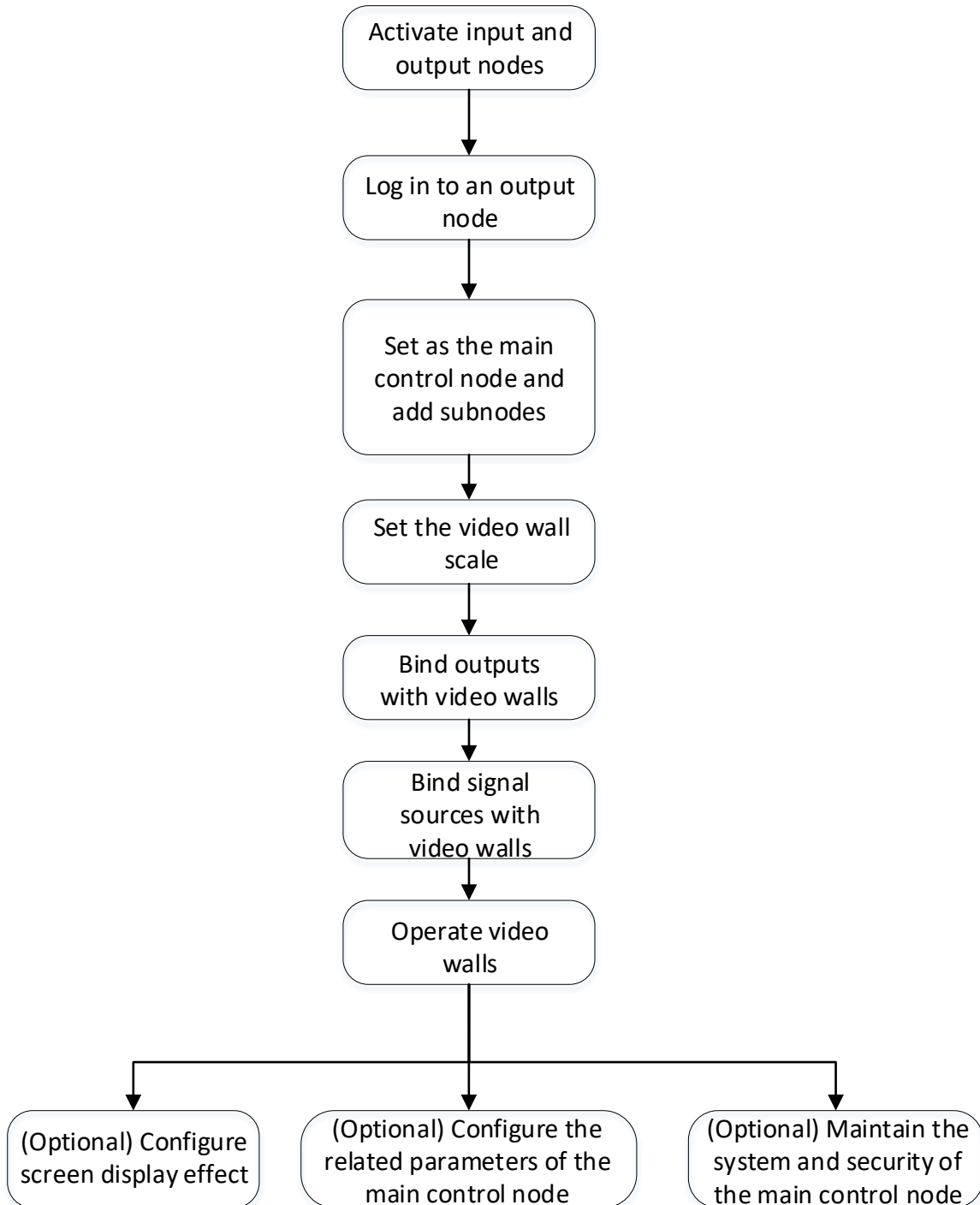


Figure 1-1 First-Time Configuration Process (Scene 1)

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

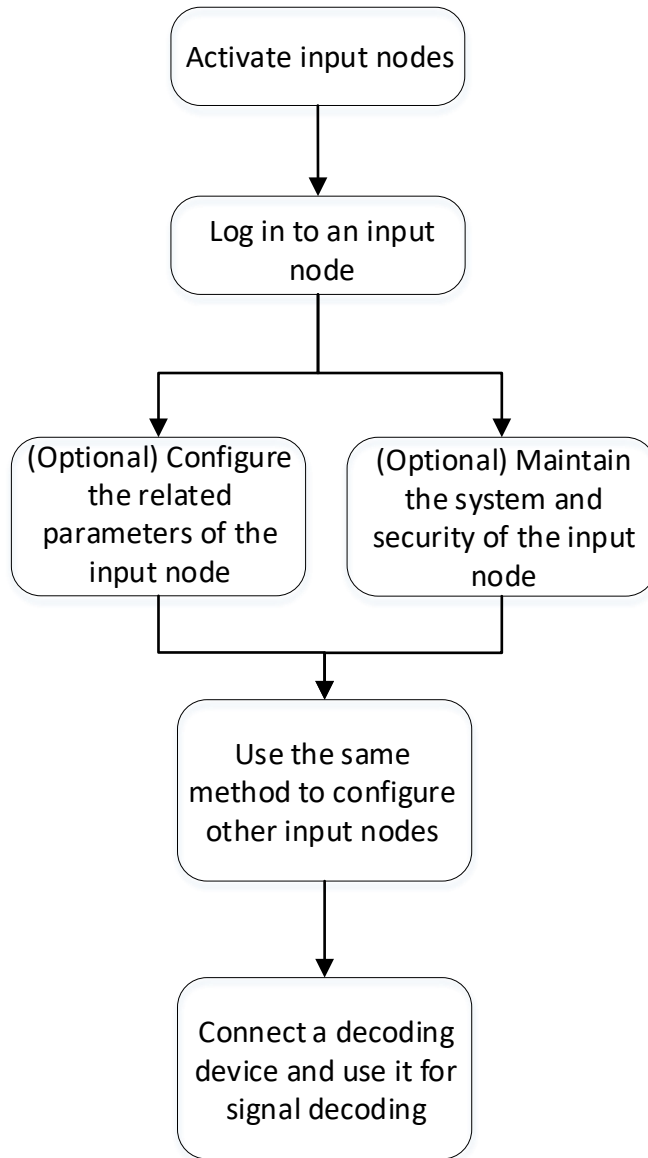


Figure 1-2 First-Time Configuration Process (Scene 2)

1.3 Node Function Comparison

The main control node supports video wall operation, video wall configuration, screen maintenance, configuration, and maintenance and security, and the input nodes and other output nodes support configuration, and maintenance and security. On the **Configuration** and **Maintenance and Security** pages, the supported functions vary by the node type.

Table 1-1 Configuration Page

Function			Main Control Node	Output Node	Input Node
System	System Settings	Basic Information	√	√	√
		Time Settings			√
		Font Settings			
	Serial Port Settings				
	User Management			√	√
Network	Network Configuration	TCP/IP		√	√
	Network Service	HTTPS		√	√
Node Configuration	Node Status				
	Node Management				
Device Settings				√	
Signal Source Settings	Image Settings	Source Clipping	√		√
		Custom Resolution			√
		OSD			√
	Encoding Settings			√	
	Signal Source Splicing				
Event					
Other Settings	Sub-Stream Auto-Switch				
	Display Settings				
	Scene Change				
	Streaming Mode				
	Local Source Mode				

Table 1-2 Maintenance and Security Page

Web Page		Main Control Node	Output Node	Input Node
System Maintenance	Restart	√	√	√
	Upgrade		√	
	Backup and Reset			
	Log			
	Device Debugging		√	
Security Management	IP Address Filter			
	HTTPS Certificate		√	
	SADP			
	Syslog			

 **Note**

The main control node supports more functions than an input node or output node. This manual uses the main control node as an example.

Chapter 2 Node Batch Activation

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.
- To improve system security, it is highly recommended to change password regularly.

2.1 Use SADP Client

Step 1 Connect all nodes and the computer to the same LAN.

Step 2 Visit <https://www.hikvision.com/en/support/tools/hitools/clea8b3e4ea7da90a9/> to download the SADP client from the Hikvision website and install the SADP client on the computer.

Step 3 Open the SADP client.

Step 4 Select the nodes that are not activated, enter the activation password and confirm it, and click **Activate**.

If no nodes can be found, you can restart the SADP client.

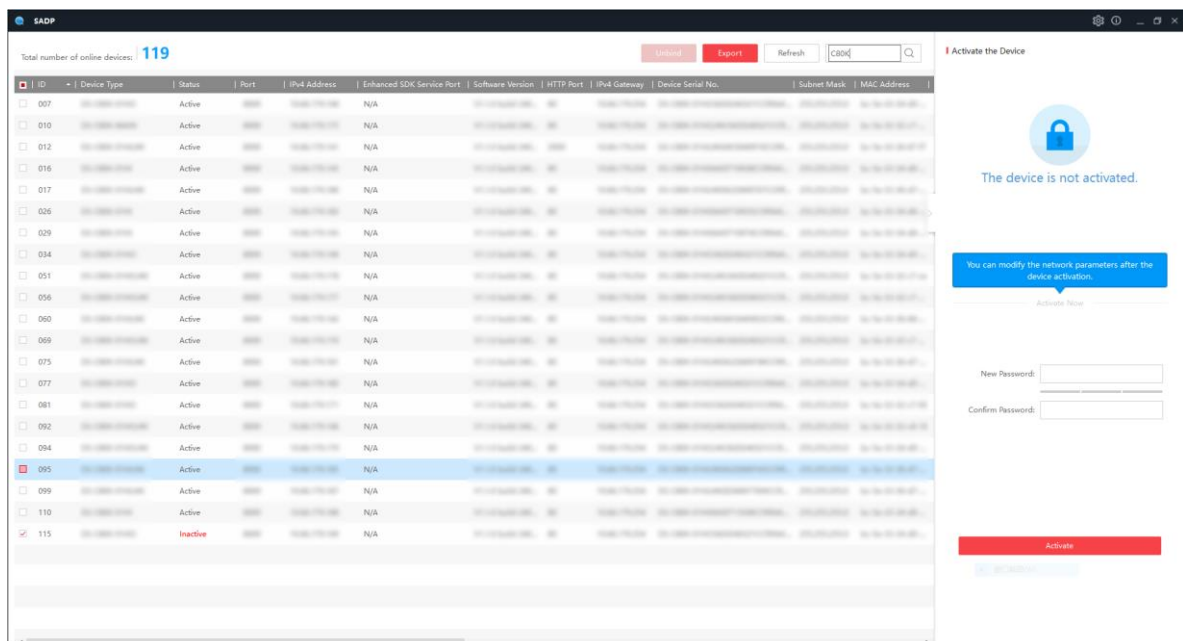


Figure 2-1 Batch Activate Nodes

Note

To activate a single node, you can log in to the web page of the node and activate it.

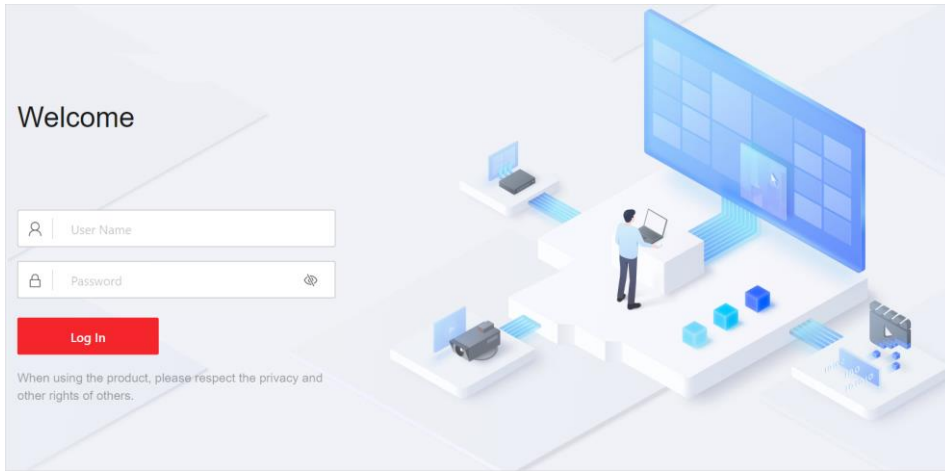


Figure 2-2 Activate a Single Node

Step 5 Select the activated nodes to batch edit their IP addresses.

Enter the start IP, port No., subnet mask, gateway, HTTP port No. and the administrator password, and then click **Modify**.

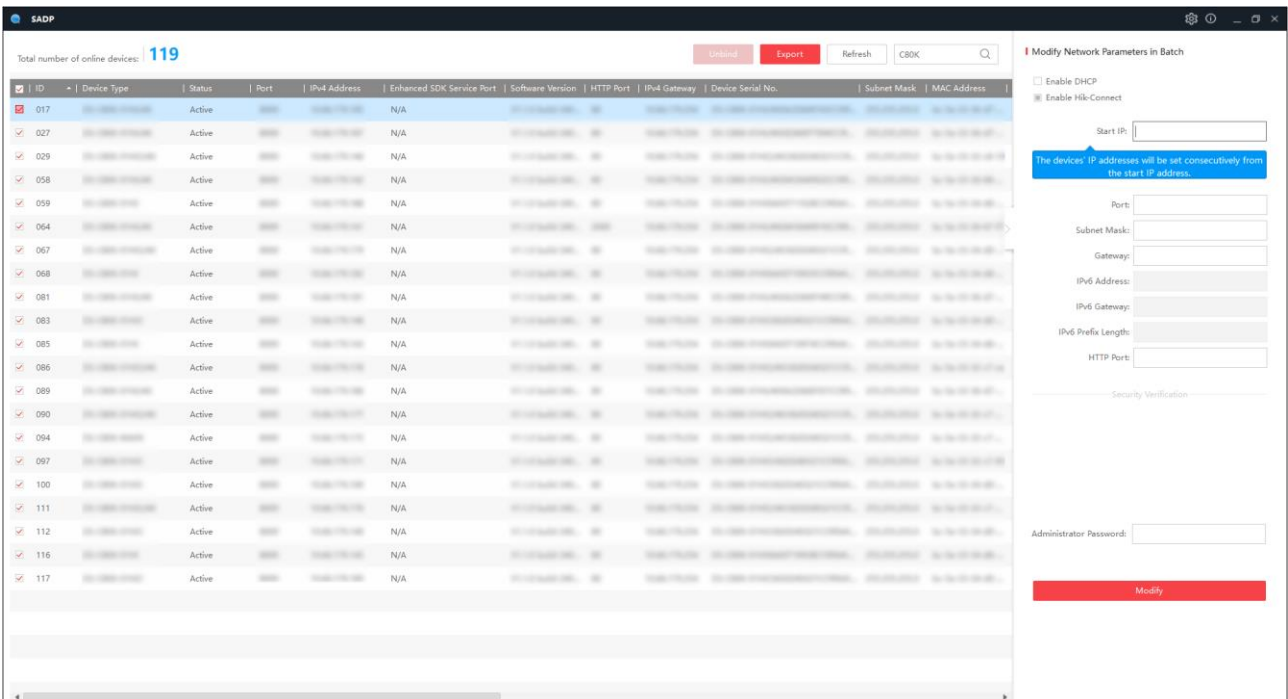


Figure 2-3 Batch Edit IP Addresses

2.2 Use HiTools Delivery

Step 1 Connect all nodes and the computer to the same LAN.

Step 2 Visit <https://www.hikvision.com/en/support/tools/hitools/cl7f0143d2c781a3e3/> to download the HiTools Delivery client from the Hikvision website and install the HiTools Delivery client on the computer.

Step 3 Open the HiTools Delivery client.

Step 4 Select the nodes that are not activated, enter the activation password and confirm it, and click **Activation**.

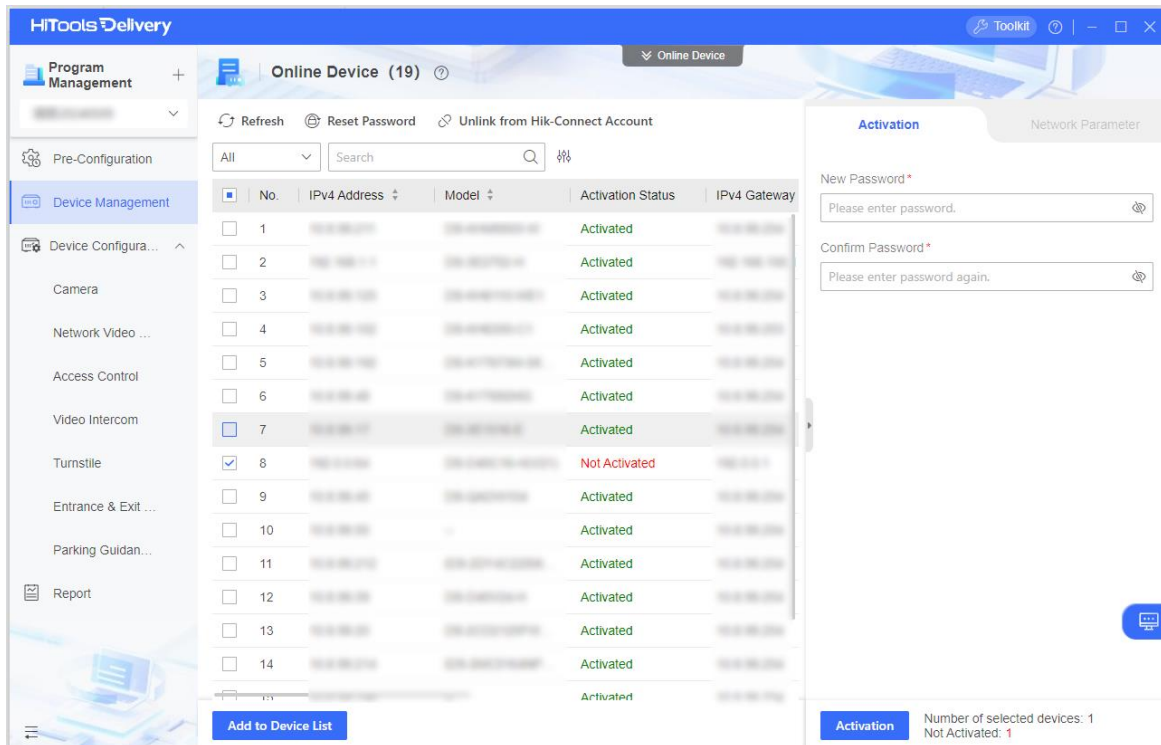


Figure 2-4 Batch Activate Nodes

Note

To activate a single node, you can log in to the web page of the node and activate it.

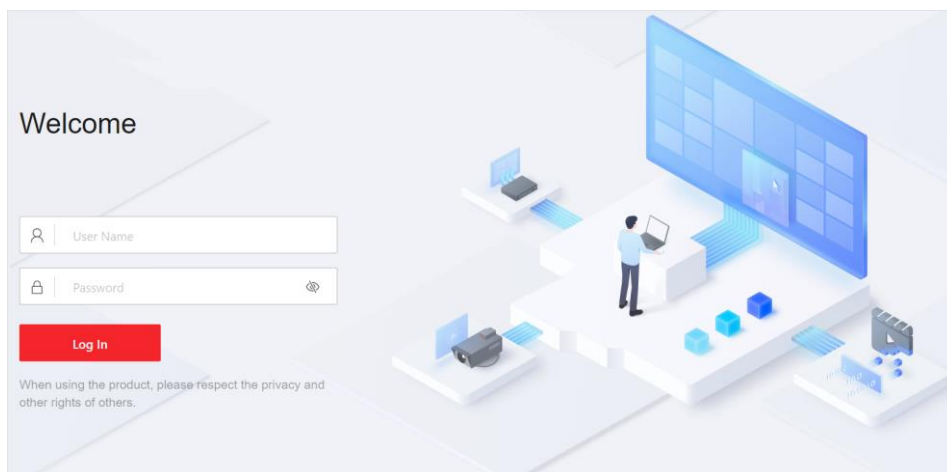


Figure 2-5 Activate a Single Node

Step 5 Select the activated nodes to batch edit their IP addresses.

Enter the start IP address, HTTP port No., SDK service port No., subnet mask, IPv4 gateway, and the admin password, and then click **OK**.

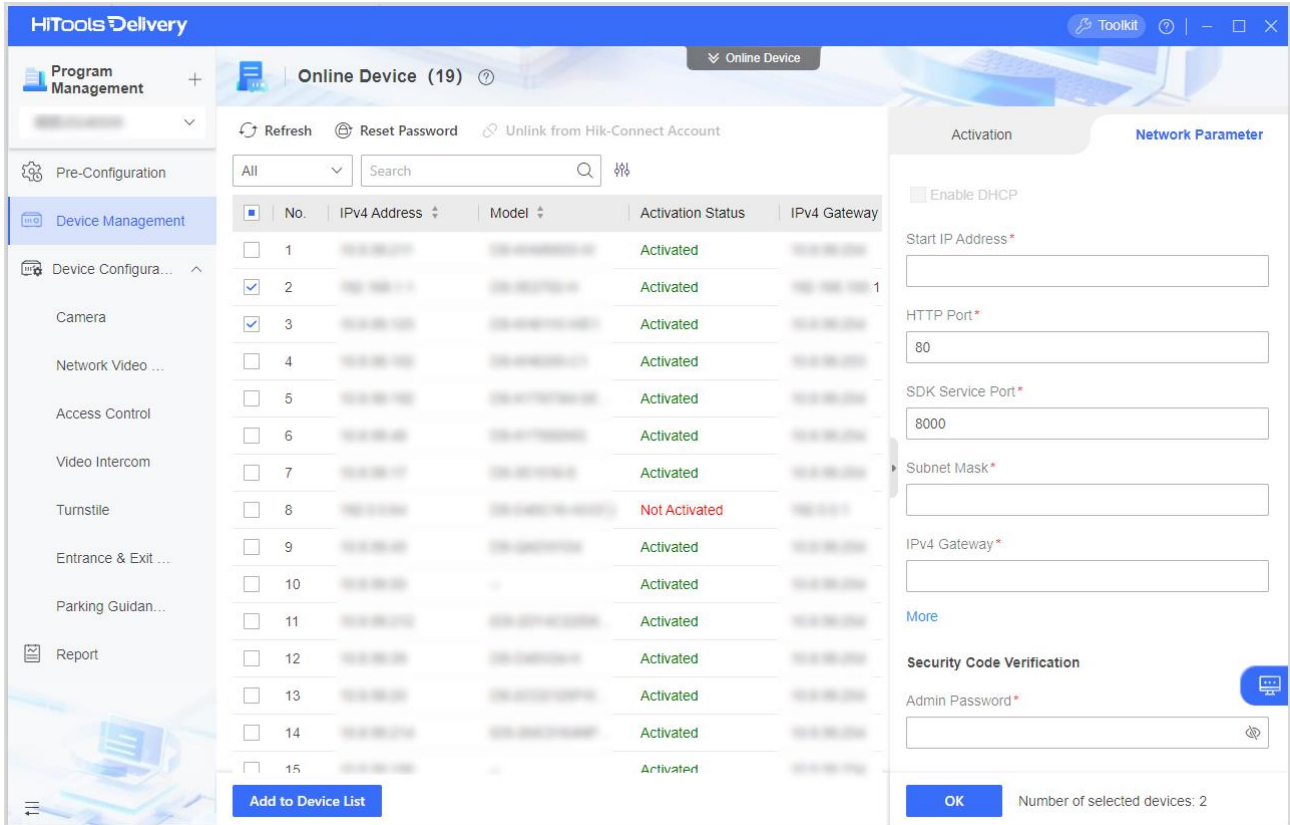


Figure 2-6 Batch Edit IP Addresses

Chapter 3 Main Control Node Configuration

On the web page of the main control node, you can configure video walls, operate video walls, configure the parameters, and maintain the system and security.

3.1 Log In to a Node via Web Browser

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.

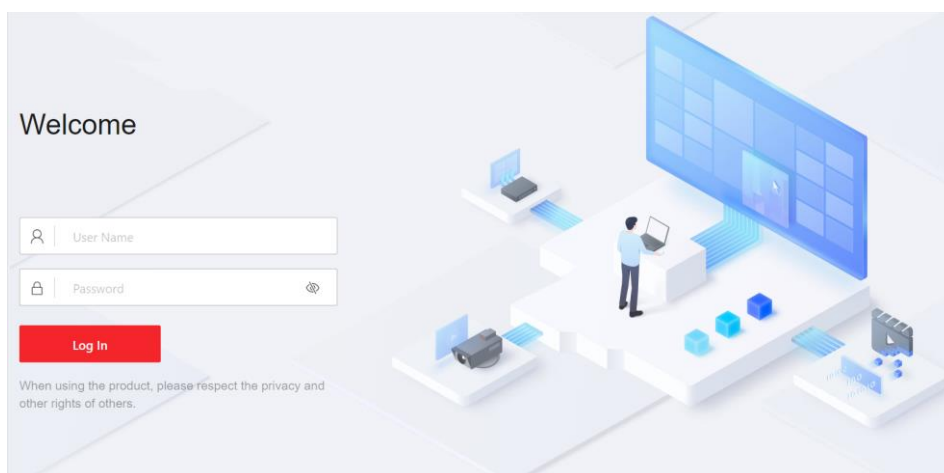


Figure 3-1 Login Page

Step 3 Click **Log In**.

3.2 Set as the Main Control Node and Add Subnodes

Configure an output node as the main control node and add other input nodes and output nodes as the subnodes of the main control node. You can operate the video wall management only after configuring the main control node.

Step 1 Go to **Configuration** → **Device Settings**, and enable **Set as Main Control**.

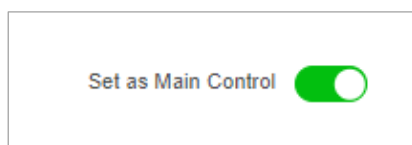


Figure 3-2 Set as Main Control

Note

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

Step 2 Go to **Configuration** → **Node Configuration** → **Node Management**.

No.	Device No.	Device Name	IP Address	Type	Network Area	Operation
1	1				Network Area 1	
2	2				Network Area 1	
3	3				Network Area 1	
4	4				Network Area 1	
5	5				Network Area 1	
6	6				Network Area 1	
7	7				Network Area 1	
8	9				Network Area 1	
9	10				Network Area 1	
10	11				Network Area 1	

Figure 3-3 Node Management

Step 3 Click **Add**.

Step 4 Select **IP/Domain Name** or **IP Segment** to add output nodes and input nodes.

Add Node ✕

Adding Mode

IP/Domain Name

IP Segment

Device IP Address *

Port No. *

User Name *

Password *

Figure 3-4 Add a Node

Step 5 Click **Save**.

3.3 Configure a Video Wall

3.3.1 Configure the Video Wall Scale

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

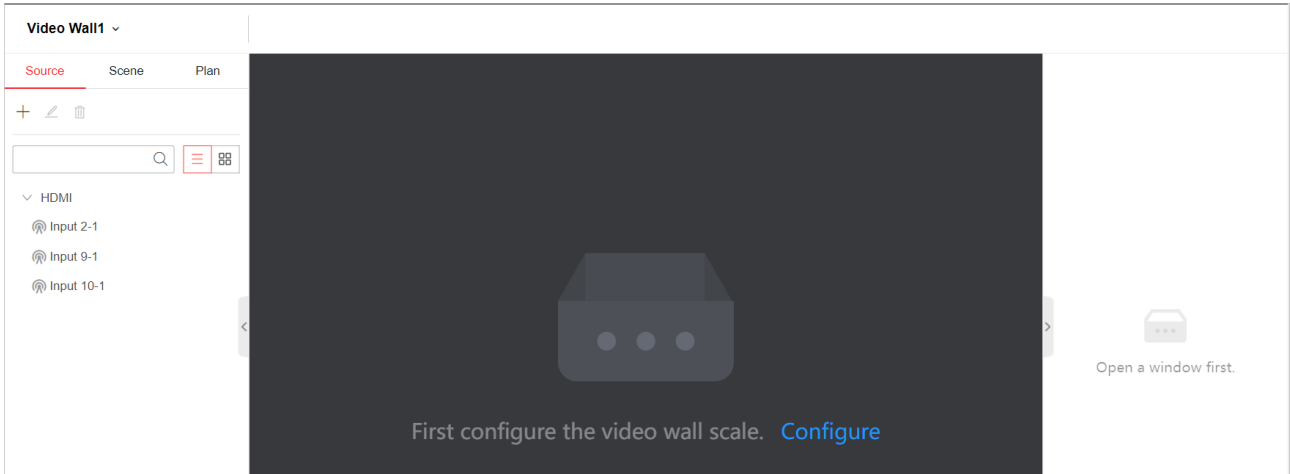


Figure 3-5 Video Wall Configuration Page

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.

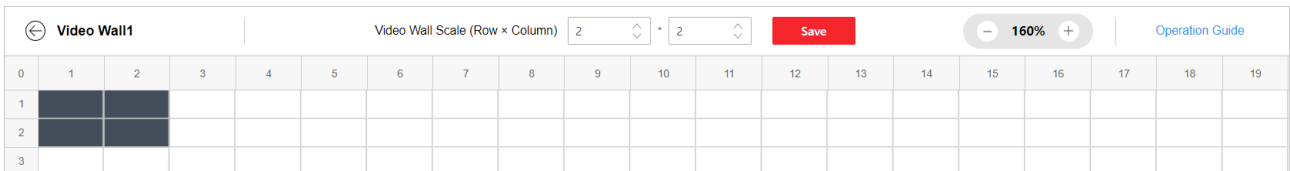


Figure 3-6 Set the Video Wall Scale

Note

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

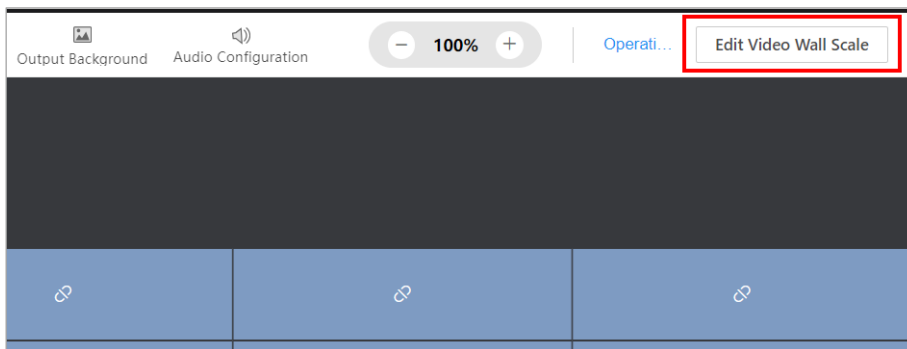



Figure 3-7 Edit Video Wall Scale

3.3.2 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, drag output ports to the screens of 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.
- You can press Ctrl to select multiple output ports and then batch bind output ports with the video wall.

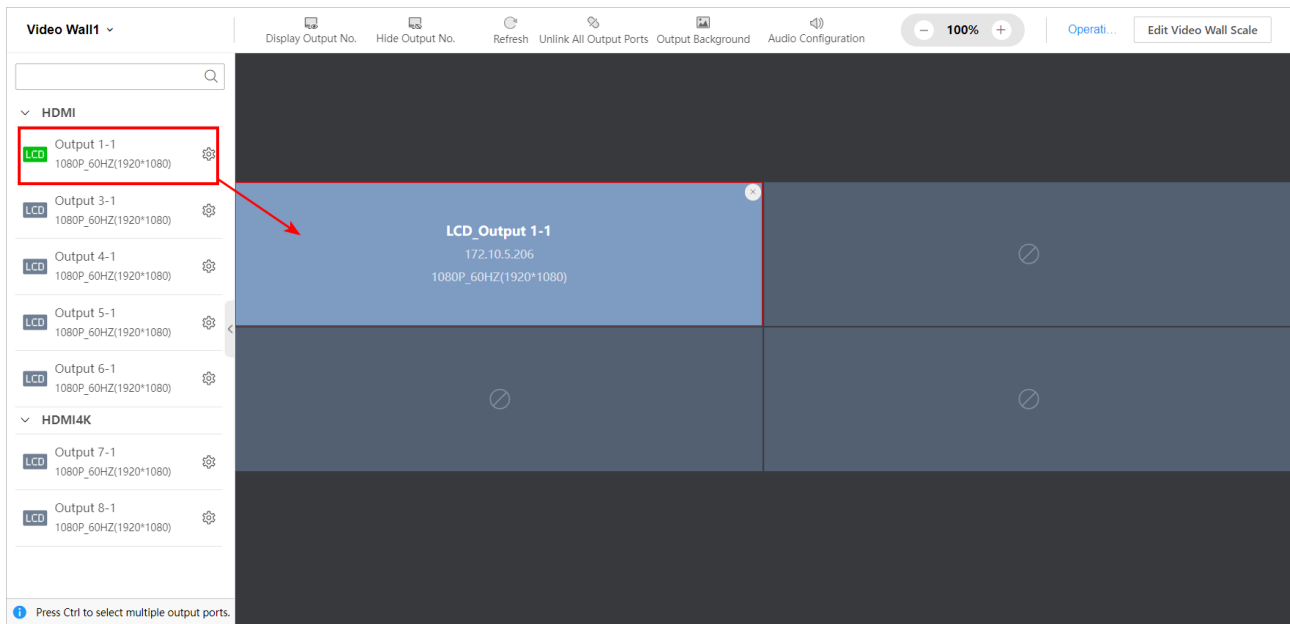



Figure 3-8 Bind Output Ports with Video Wall

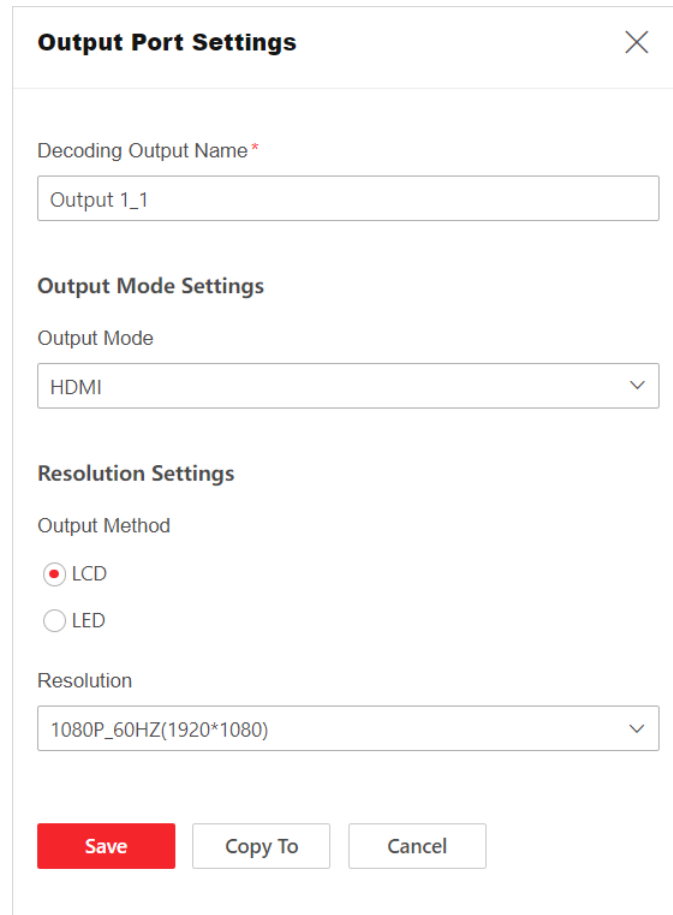
Step 2 Click  of an output port to configure the following items:

- 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.
- 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 8.8 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.

Step 3 (Optional) Click **Copy To** to copy the current output configuration to other selected output ports.

Step 4 Click **Save**.



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 3-9 Configure HDMI Output Port

Step 5 (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.

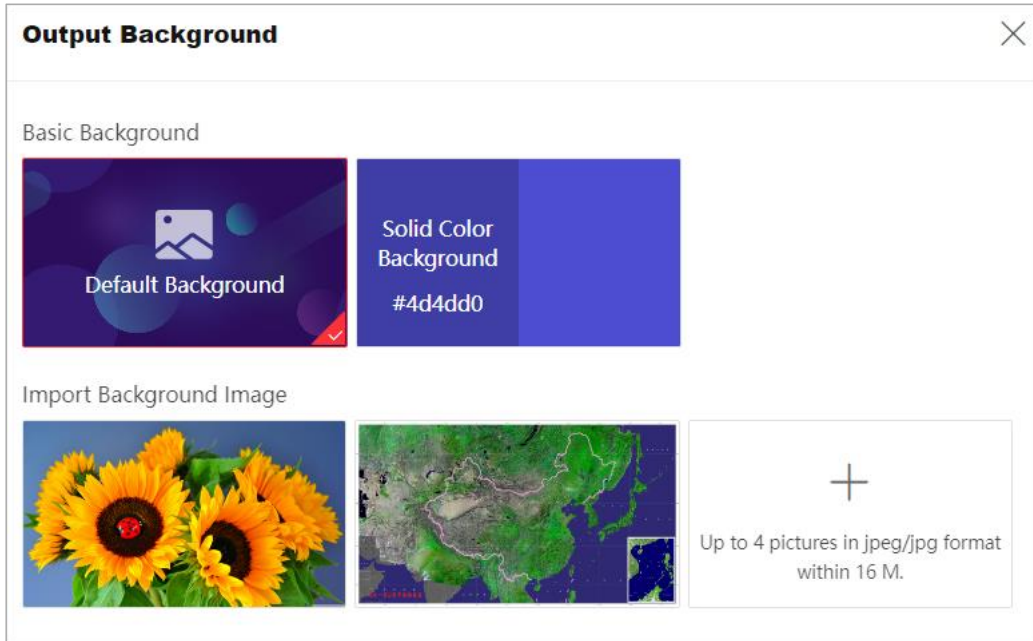


Figure 3-10 Set Output Background

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

3.3.3 Configure Audio

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**.

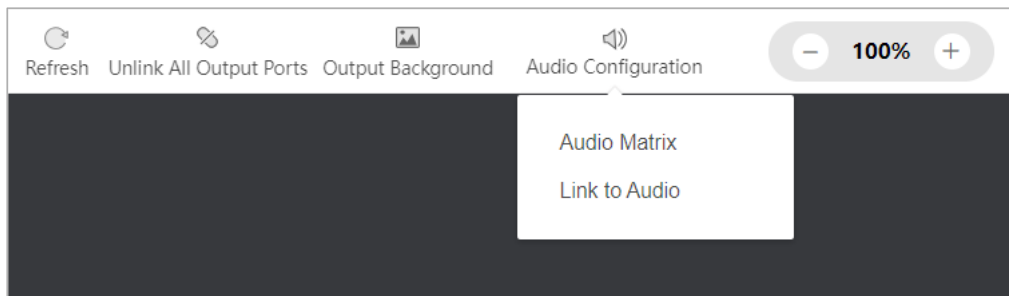



Figure 3-11 Audio Configuration

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 02-01	AudiIn 04-01	AudiIn 05-01	AudiIn 11-01		
1	AudioOut 01-01		Linked.				
2	AudioOut 03-01						
3	AudioOut 06-01		Double Click to Link				
4	AudioOut 07-01						
5	AudioOut 09-01						
6	AudioOut 10-01						

Figure 3-12 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.

Edit Table ✕

Input Channel Output Channel

Show Hide


	Channel Name	Show in Table
<input type="checkbox"/>	AudiIn 02-01	<input checked="" type="checkbox"/>
<input type="checkbox"/>	AudiIn 04-01	<input checked="" type="checkbox"/>
<input type="checkbox"/>	AudiIn 05-01	<input checked="" type="checkbox"/>
<input type="checkbox"/>	AudiIn 11-01	<input checked="" type="checkbox"/>

Figure 3-13 Edit Audio Channel Table

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

Step 4 Click **Save**.

Configure Audio Output Port

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

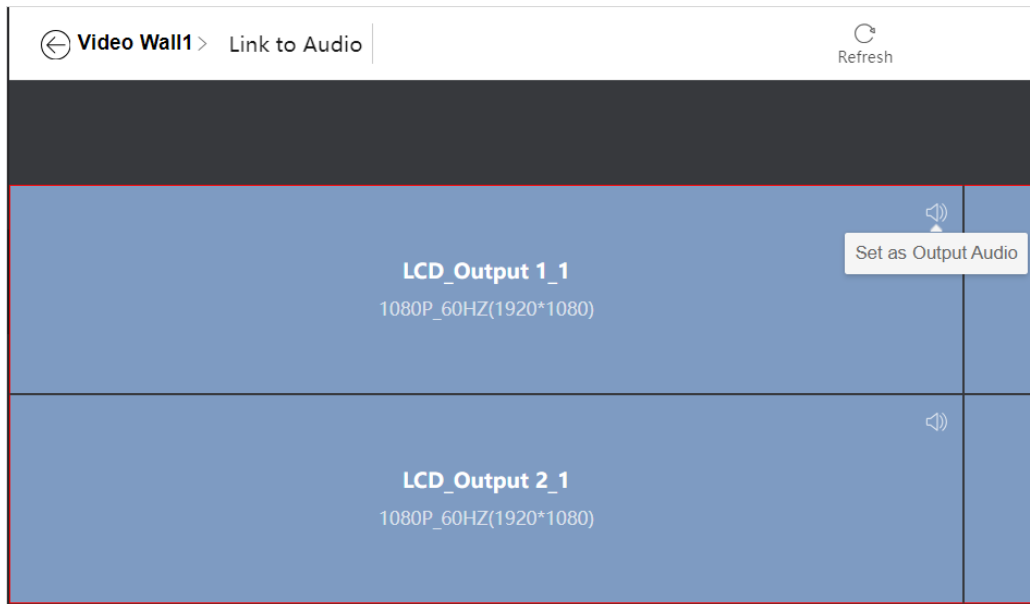


Figure 3-14 Set Output Audio

Note

- After setting the audio output port of the video wall, you need to go 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 port.

3.3.4 Add a Network Signal Source

Add a Network Signal Source via IP Address

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

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

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

- If you want to add a Network Video Recorder (NVR), the number of channels should start from 33. The first 32 channels are reserved. For example, if you want to add a 32-channel NVR, the number of channels should be 64.
- 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 3-15 Add a Network Signal Source via IP Address

Step 3 Click **Save**.

Add a Network Signal Source via URL Address

Step 1 Go to **Video Wall Operation** → **Signal Source**, click , and select **URL**.

Step 2 Enter the signal source information.

- Enter the URL address of the signal source. URL parameter description:
rtsp://IP:554/h264/ch1/main/av_stream/?username=username?password=password?linkmode=tcp
- Select an added group or click **Add Group** to create a new group.

Figure 3-16 Add a Network Signal Source via URL Address

Step 3 Click **Save**.

3.3.5 Bind Signal Sources with Video Wall

Step 1 Go to **Video Wall Operation** and then select a video wall.

Step 2 Take either of the following methods to bind signal sources with the video wall:

- Drag a signal source to the video wall. Repeat the operation to bind multiple signal sources to the video wall.

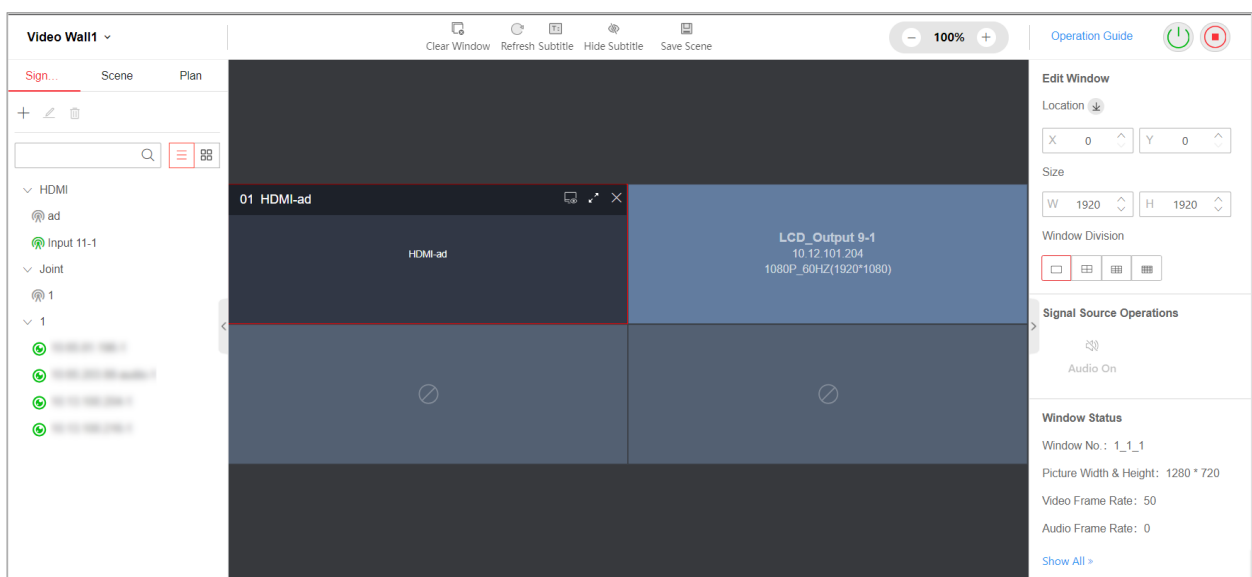


Figure 3-17 Drag Signal Sources to Video Wall

- Drag a signal source folder to the video wall to batch bind multiple signal sources with the video wall.





Figure 3-18 Drag a Signal Source Folder to Video Wall

3.4 Operate a Video Wall

3.4.1 Edit a Signal Source Window

Go to **Video Wall Operation** and perform the following operations as required:

- Click  to power on the screen or click  to power off the screen.
- Adjust the position of a signal source window:
 - Select a signal source window to move directly.
 - Select a signal source window, and enter the specific X and Y values in the pop-up window.

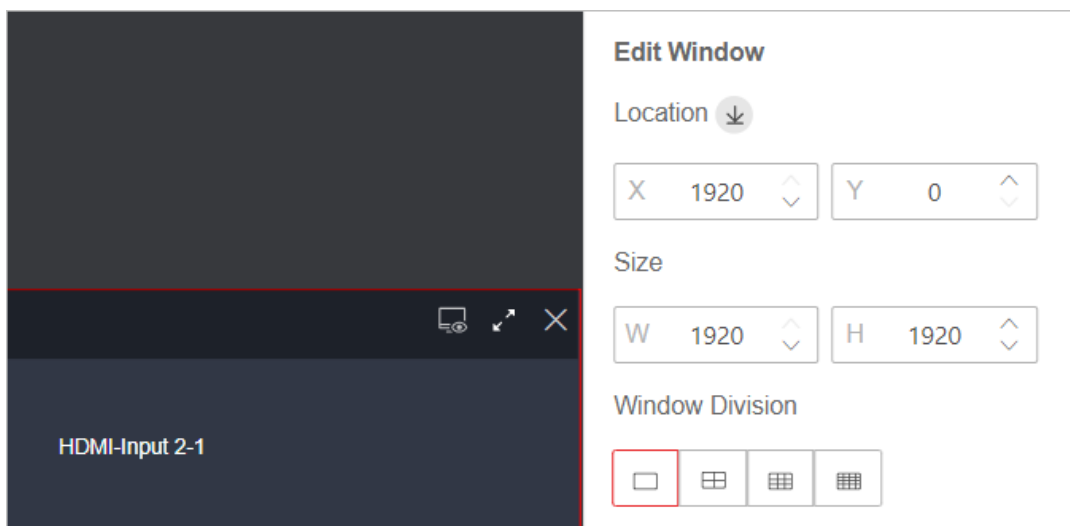




Figure 3-19 Adjust Position of a Signal Source Window

- Divide a signal source window: Select a signal source window, and click the window division icon.

- Adjust the size of a signal source window:
 - Drag the edge of a signal source window to adjust its size.
 - Select a signal source window and enter W and H values in the pop-up window.
 - Click  at the upper right corner of a signal source window to make it fully cover the occupied output ports and click  to restore the original size.

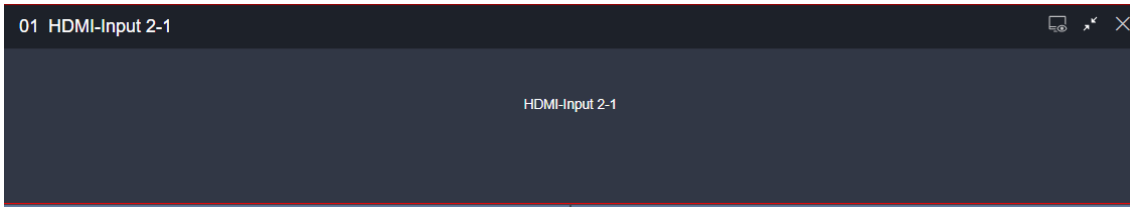



Figure 3-20 Roaming Window

- Select a signal source window, and click  to set the signal source window to the bottom.
- Enable audio for a signal source window.
 - Select a local signal source and configure audio status. Make sure you have configured the output audio for the video wall on the **Video Wall Configuration** page.

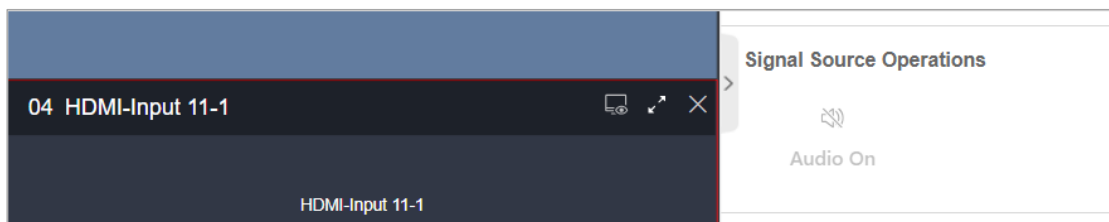


Figure 3-21 Configure Audio for Local Signal Source

- Select a network signal source to configure the decoding status, audio status and decoding delay. Make sure you have configured the output audio for the video wall on the **Video Wall Configuration** page.

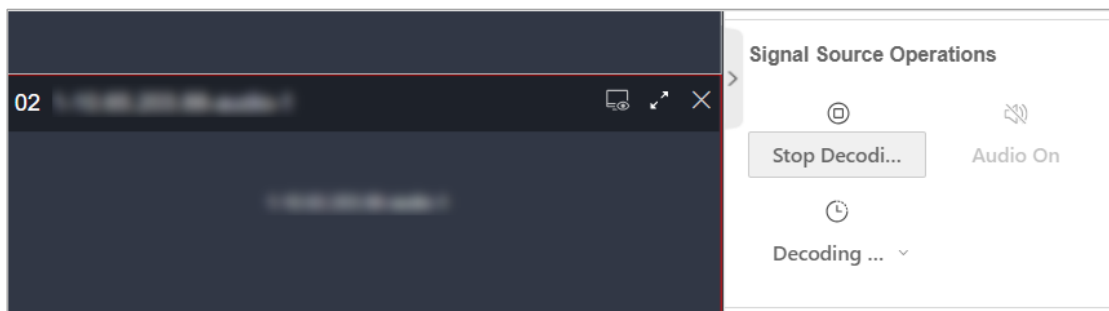


Figure 3-22 Configure Audio for Network Signal Source

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

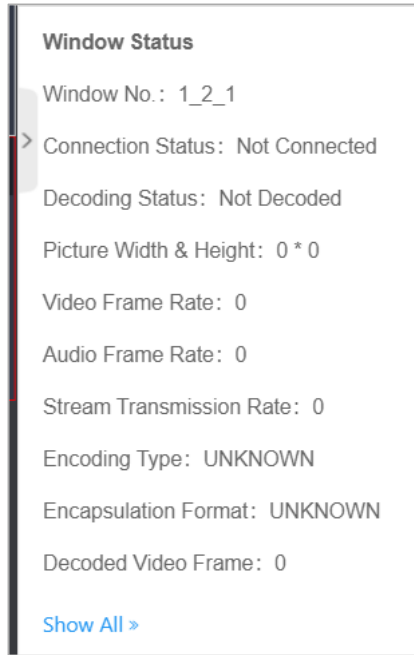


Figure 3-23 View Window Status




- Click  at the upper right corner of a signal source window to preview the signal source. Click  to cancel the live view.



Figure 3-24 Preview Signal Source

- Click **Clear Window** at the top of the **Video Wall Operation** page to clear all bound signal source windows.
- Select a signal source, and then click  to edit its name.

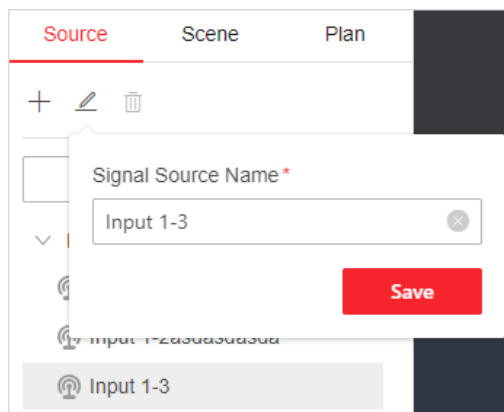


Figure 3-25 Edit Signal Source Name

3.4.2 Configure Subtitles

Go to **Video Wall Operation**, click **Subtitle**, press and hold the left mouse button to drag subtitles to screens that are bound with output ports. To add multiple subtitles, you can drag the remaining subtitles.

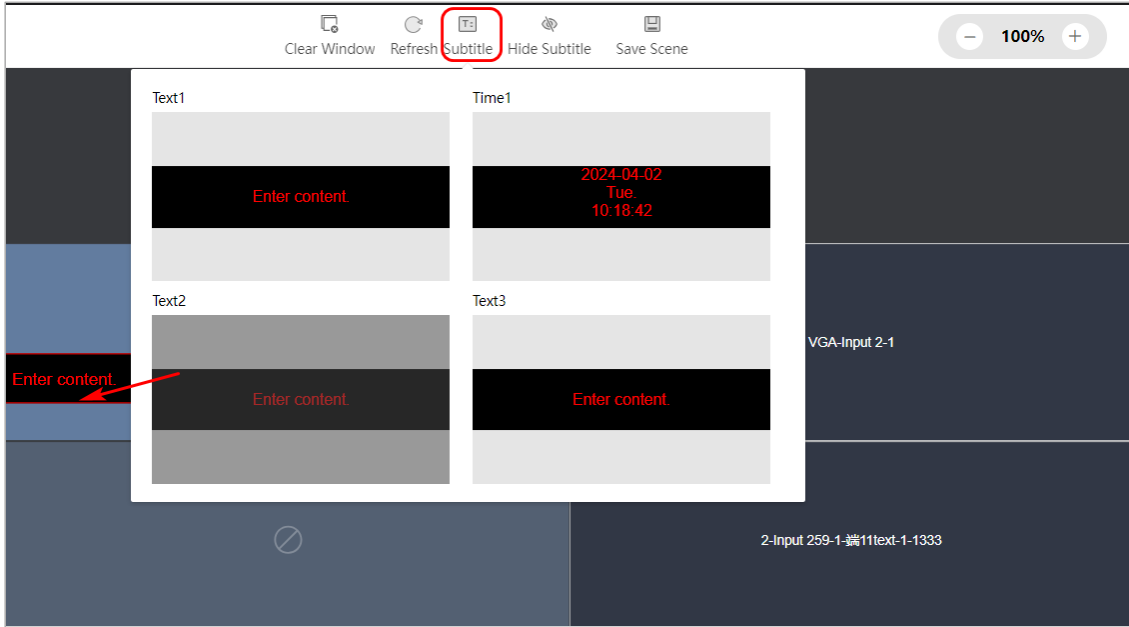


Figure 3-26 Add a Subtitle

- Add a text subtitle:
 - 1) Select **Text** for the subtitle type.
 - 2) 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.

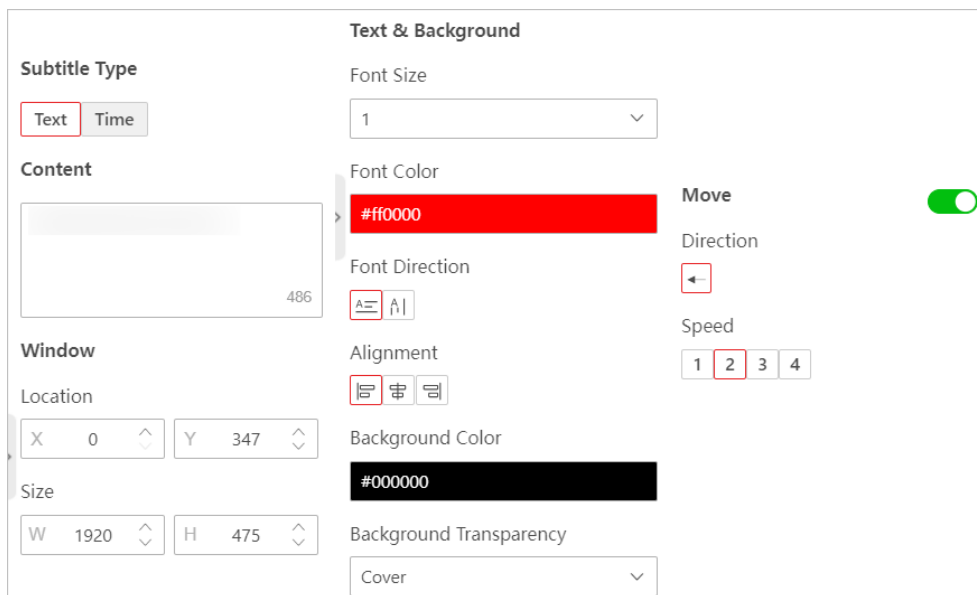


Figure 3-27 Add a Text Subtitle

- 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.

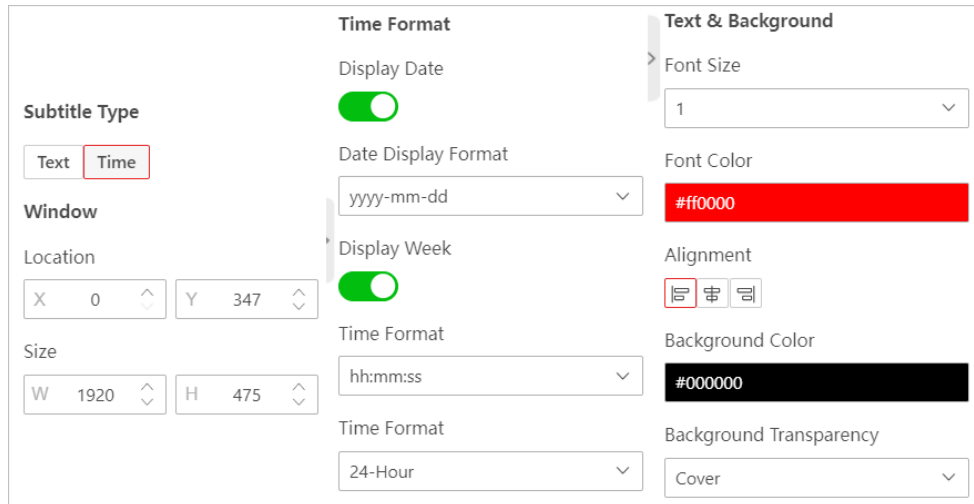


Figure 3-28 Add a Time Subtitle

3.4.3 Manage Scenes

Up to 128 scenes are supported. Go 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.

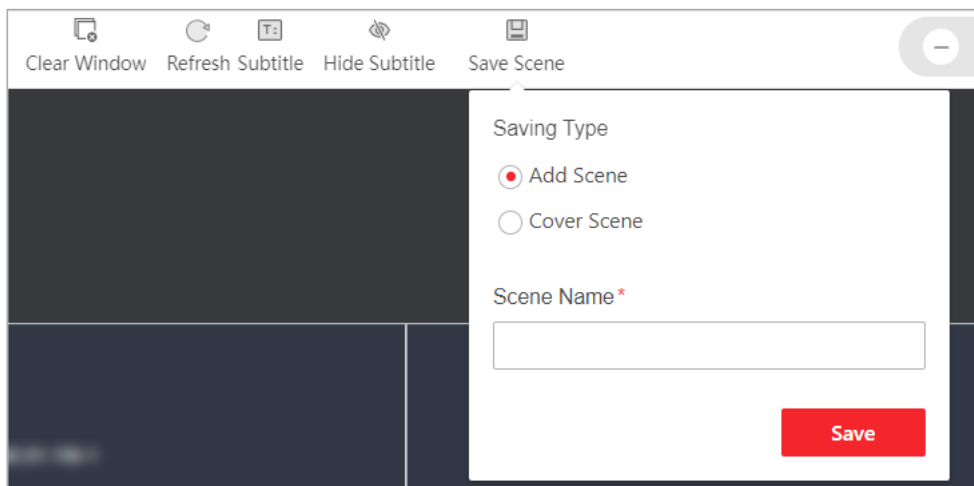


Figure 3-29 Save Scene

- Click **Scene**. Click a scene and then click to call the scene.
- Click **Scene**. Click a scene and then click to edit the scene name.
- Click **Scene**. Click a scene and then click to delete the scene.

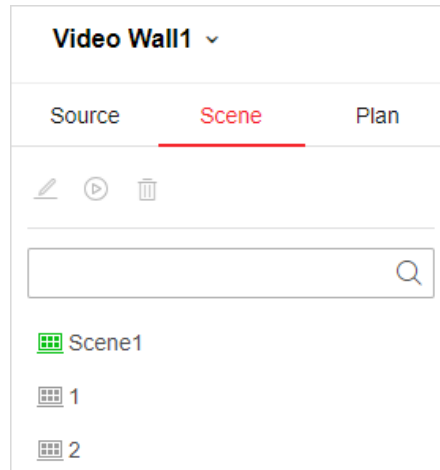


Figure 3-30 Manage Scene

3.4.4 Manage Plans

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

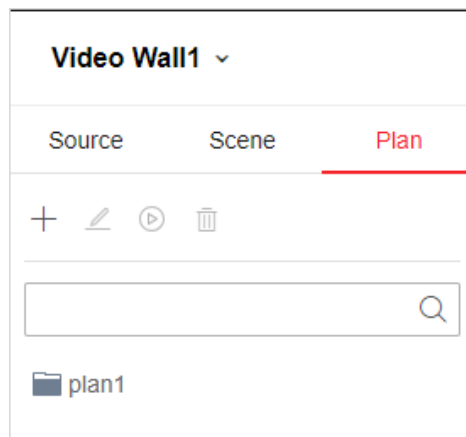



Figure 3-31 Manage Plan

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

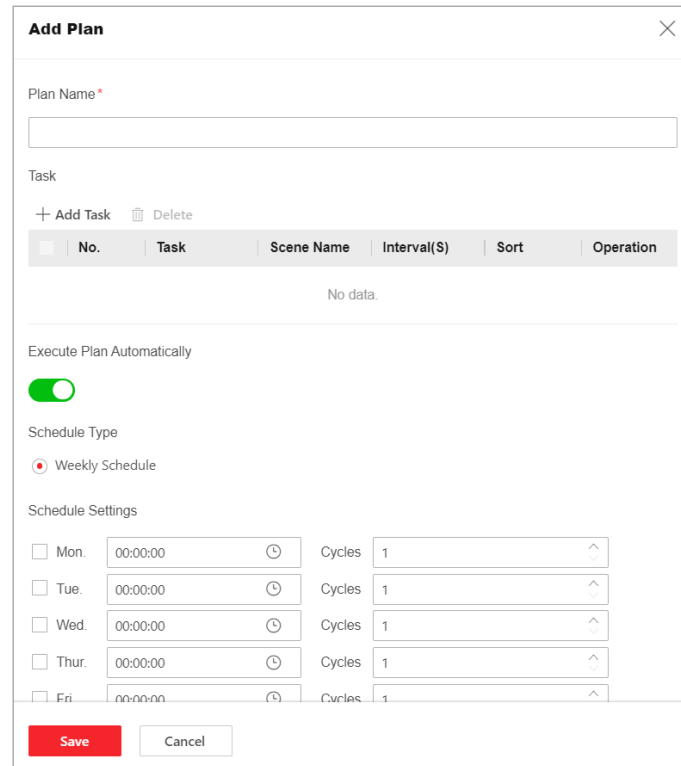


Figure 3-32 Add a Plan

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

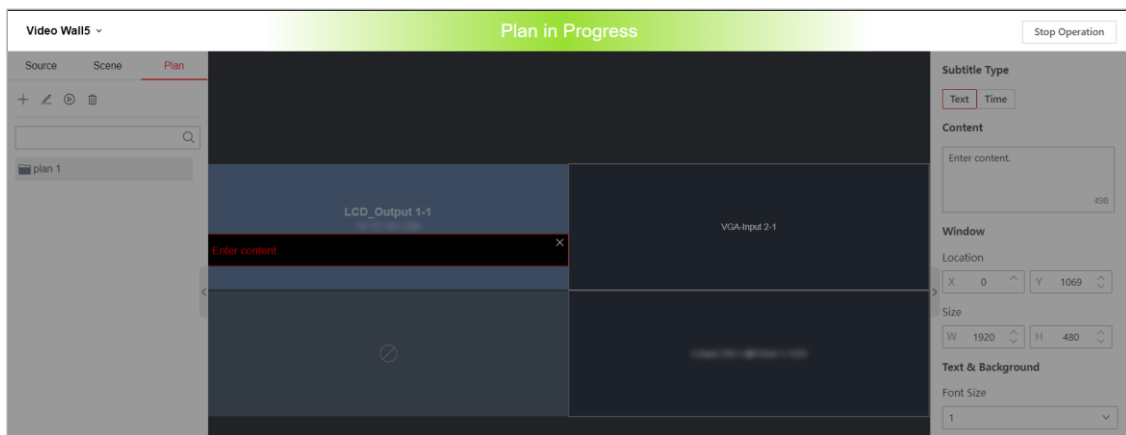


Figure 3-33 Call a Plan

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

3.4.5 Maintain Screens

Step 1 Go 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 screen, and set other serial port parameters.

Figure 3-34 Configure Subnode Serial Port

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

- 1) Select the default main node serial No. and subsystem No. By default, they are 1.
- 2) Select sub-board No. according to the subsystem on the **Subnode Serial Port** page.

Figure 3-35 Select Sub-Board No.

- 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**.

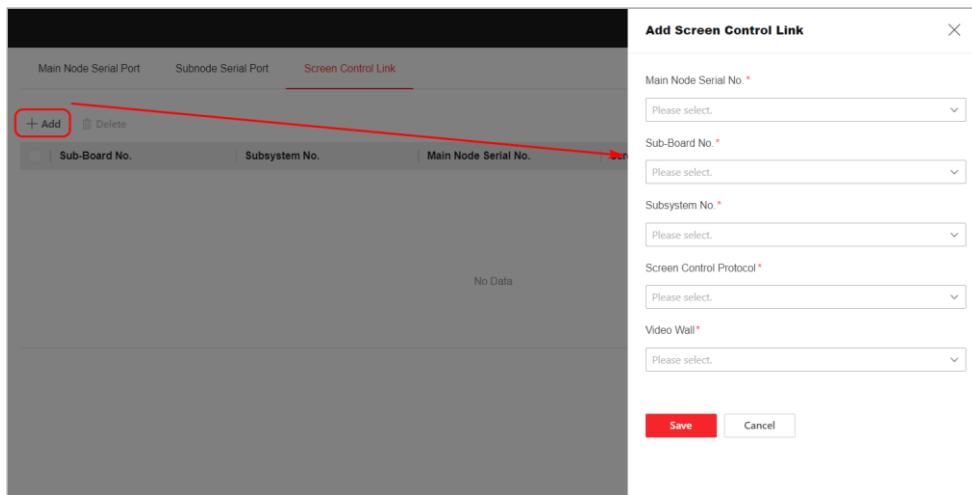


Figure 3-36 Add Screen Control Link

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

Step 4 Go to **Screen Maintenance** and select an output port.

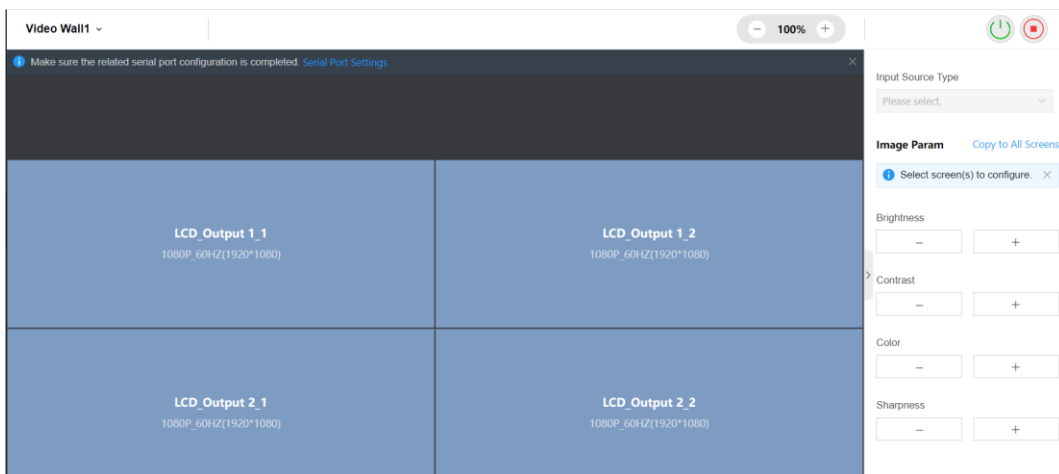




Figure 3-37 Screen Maintenance Page

Step 5 Select an input source type.

Step 6 Set the image brightness, contrast, color, and sharpness.

Step 7 Adjust the image position.

Step 8 (Optional) Click **Copy to All Screens** to copy the parameter configuration to all screens.

Step 9 (Optional) Click  to power on the screen or click  to power off the screen. You can also power on or power off the screen via the serial port.

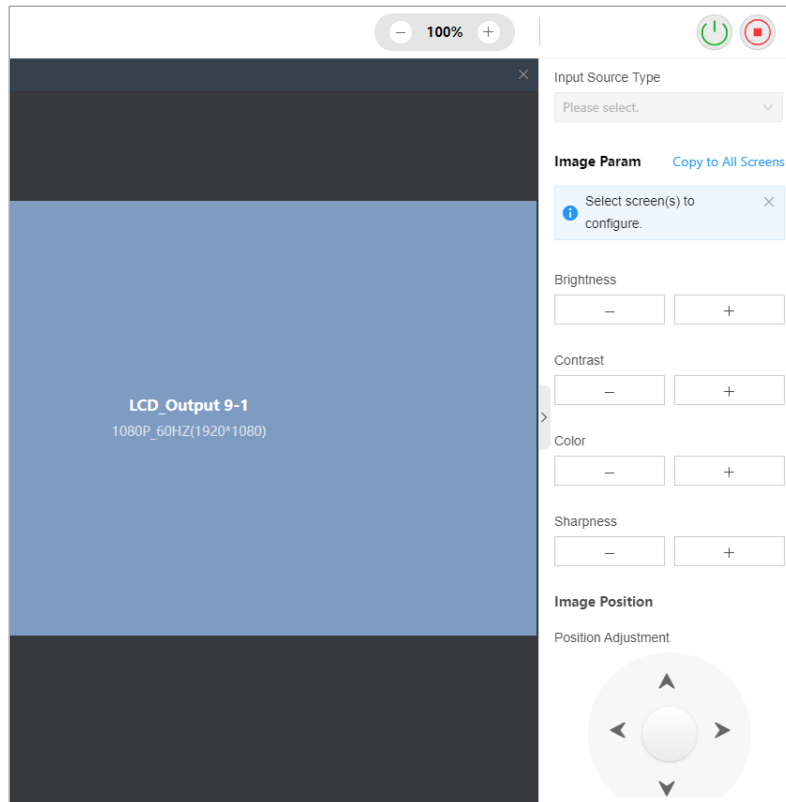


Figure 3-38 Maintain Screens

3.5 Configure Screen Display Effect

3.5.1 Configure Screen Parameters

Go to **Configuration** → **Signal Source Settings** → **Image Settings** to configure the following parameters.

- Click **Source Clipping**, select a signal source, 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.

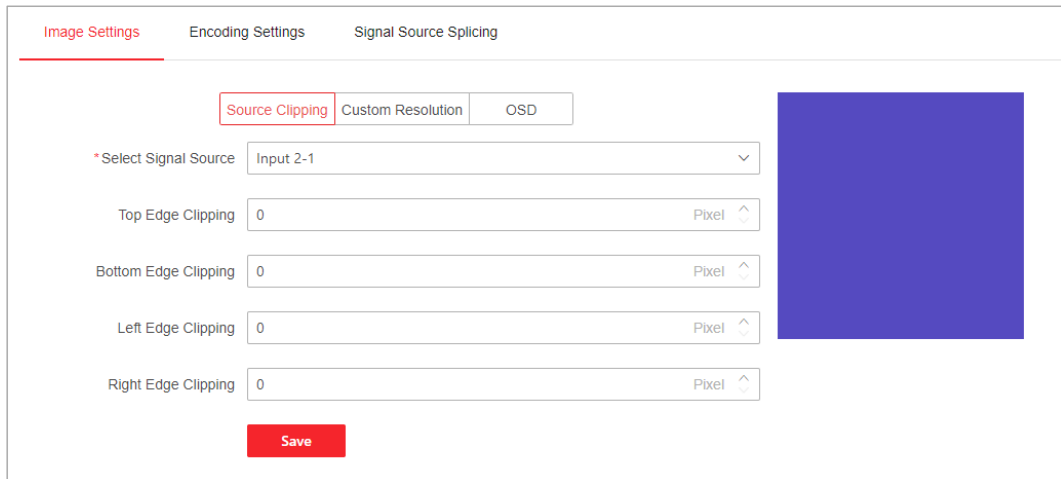


Figure 3-39 Clip a Signal Source

- If the resolution of a signal source does not match the resolution of the screen, you can customize the resolution of the signal source.
 - 1) Click **Custom Resolution** and select a signal source.
 - 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. For a UHD signal source, the resolution should be between 1920 × 1080 and 4092 × 2160, and the refresh rate can be 30 or 60. For a normal signal source, the resolution should be between 1280 × 720 and 1920 × 1200, and the refresh rate can be 30 or 60.
 - 3) (Optional) Click **Copy To** to copy the current signal source configuration to other signal sources.
 - 4) Click **Save**.

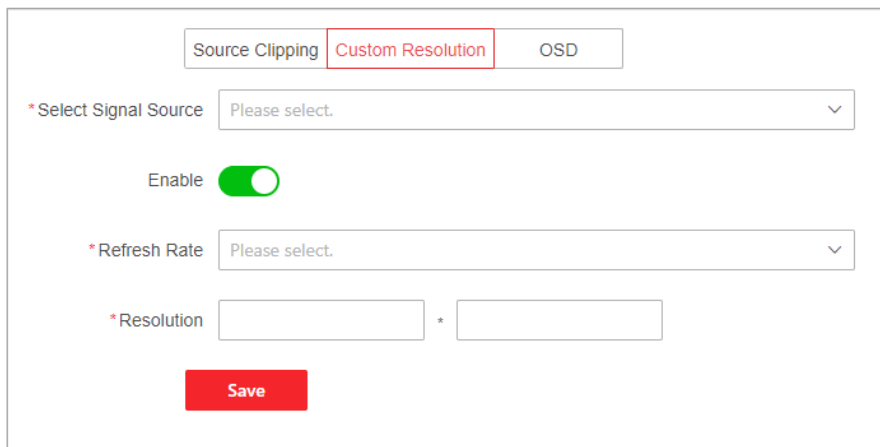


Figure 3-40 Customize Resolution

- You can add multiple OSDs (On-Screen Displays) to the input signal image.
 - 1) Click **OSD** and select a signal source.
 - 2) (Optional) Overlay the date and time to the input signal image. Select the format.
 - 3) (Optional) Overlay the text to the input signal image. Enter the content, select the font size, and enter the position values.

- 4) (Optional) Enable background for all OSDs and select a background color.
- 5) (Optional) Click **Copy To** to copy the current signal source configuration to other signal sources.
- 6) Click **Save**.

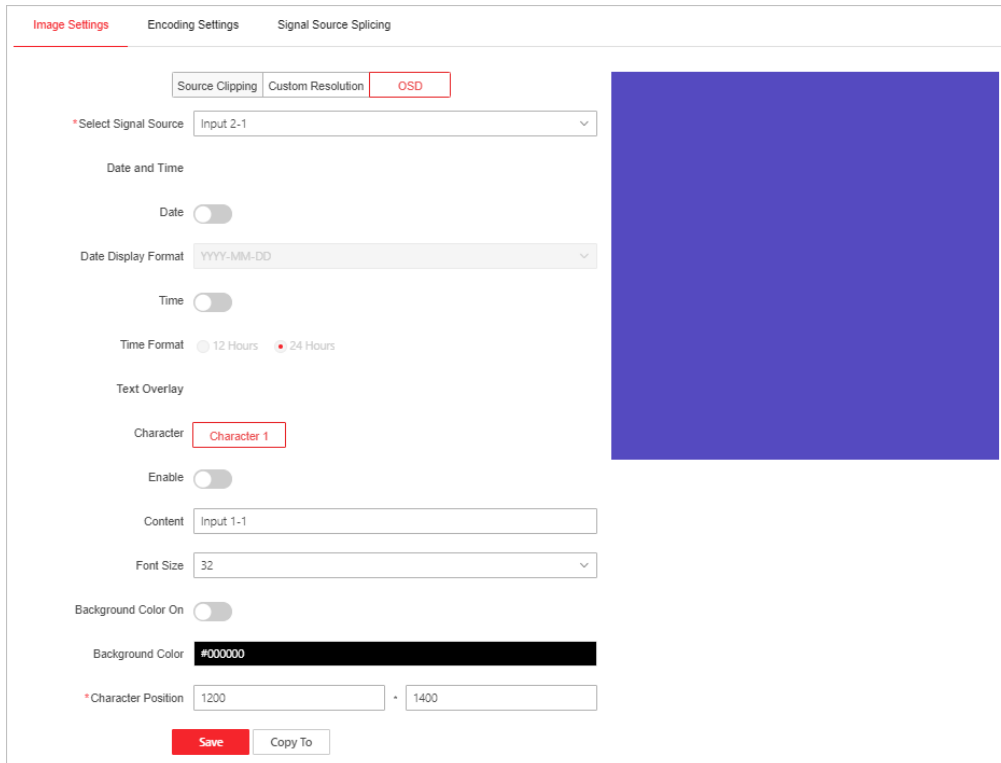


Figure 3-41 Overlay Date, Time, and Text

3.5.2 Set Encoding Parameters

Step 1 Go to **Configuration** → **Signal Source Settings** → **Encoding Settings**.

Step 2 Select a signal source.

Step 3 Set the video 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, H.264 or H.265.
- Select a 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.

Step 4 Select an audio encoding type, G722.1, G711ulaw, G711alaw or AAC.

Step 5 Click **Save**.

Select Signal Source: ad

Video Encoding

Stream Type: Main Stream (Scheduled) Sub-stream

Bit Rate Type: Variable Bit Rate Constant Bit Rate

Video Quality: Medium

*I-Frame Interval: 60

* Custom Max. Bit Rate: 4096 kbps

Resolution: 1280*720

Frame Rate: Full Frame Rate fps

Encoding Type: H.264 H.265

Video Type: Video Stream Video & Audio

Shallow Compression Rate: Weak Medium High

Deep Compression Rate: Weak Medium High

Audio Encoding

Encoding Type: G.711ulaw

Save

Figure 3-42 Set Signal Source Encoding Parameters

3.5.3 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 Go to **Configuration** → **Signal Source Settings** → **Signal Source Splicing**, and click .

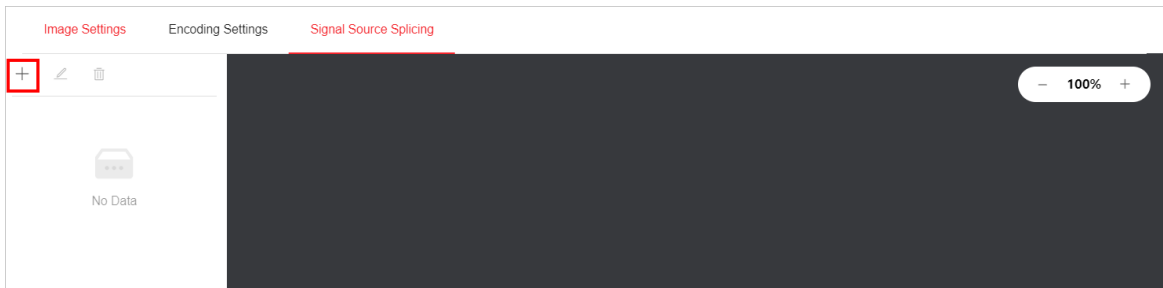


Figure 3-43 Signal Source Splicing Page

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.

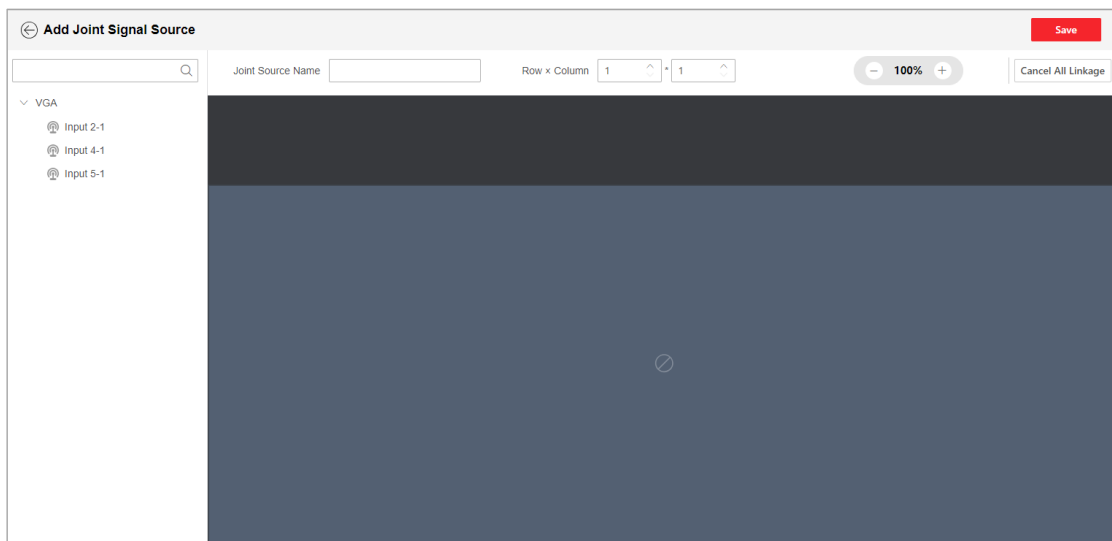


Figure 3-44 Add a Joint Signal Source

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

Step 5 Click **Save**.

3.5.4 Set Other Parameters

Go 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.

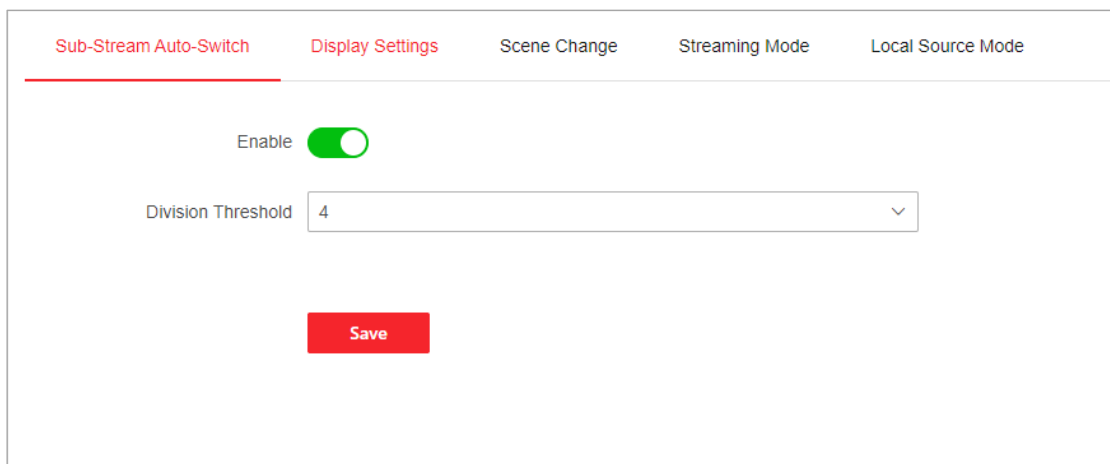


Figure 3-45 Set Sub-Stream Auto-Switch

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

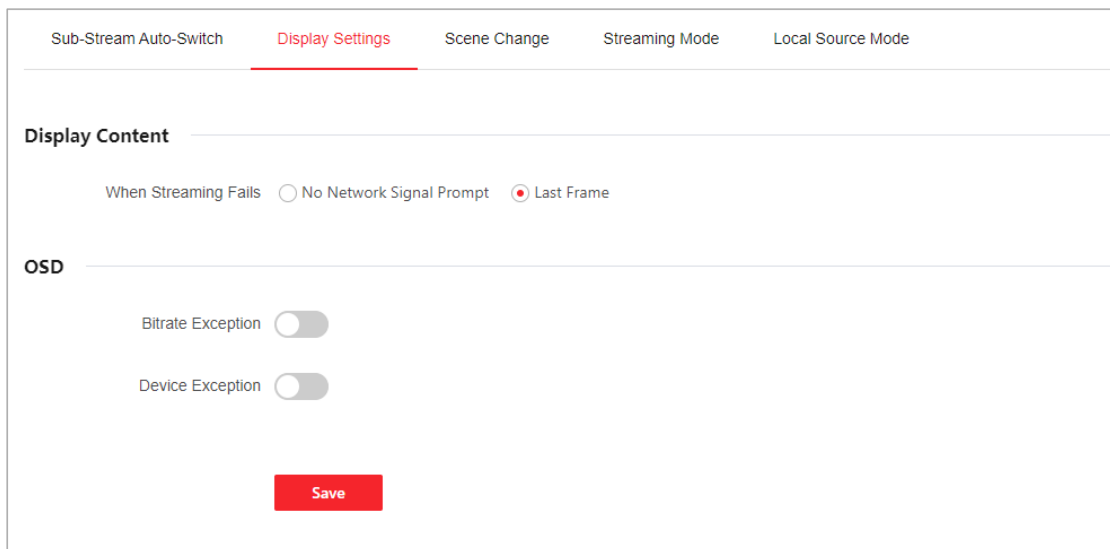


Figure 3-46 Set Contents Displayed on Screen

- Click **Scene Change**. Enable scene change timeout and set the interval.

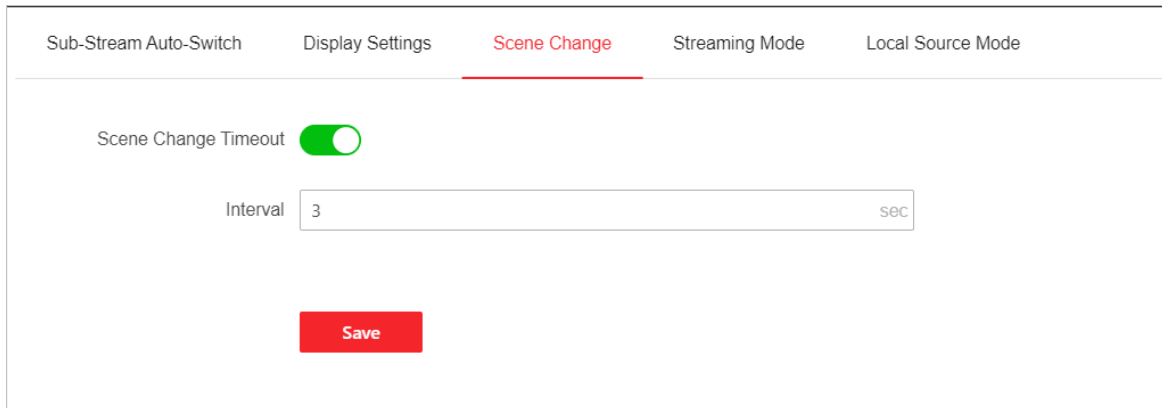


Figure 3-47 Change Scene

- Click **Streaming Mode**, and then select **Unicast** or **Broadcast**. After setting unicast or broadcast, the device will restart.

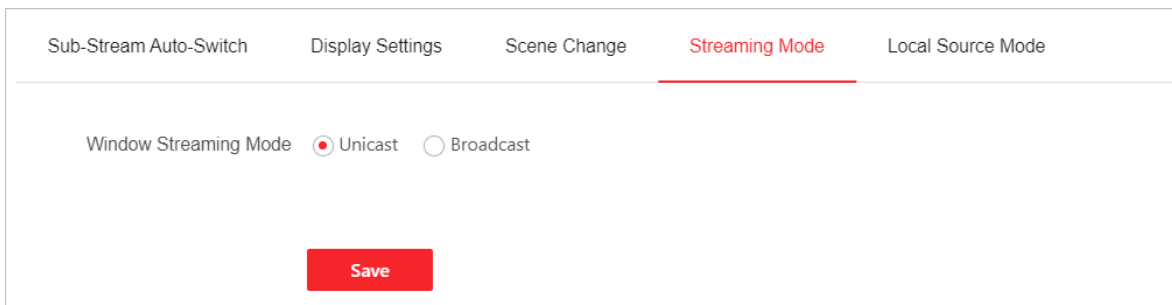


Figure 3-48 Select Streaming Mode

- Click **Local Source Mode** to set the compression mode. In high-quality mode, the video image has high definition, but it will occupy more bandwidth.

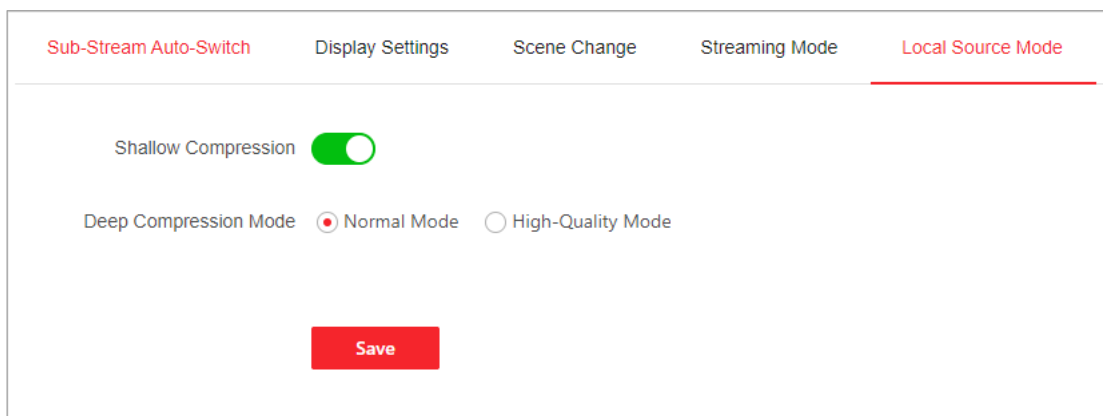


Figure 3-49 Set Local Source Mode

3.6 Configure Parameters of the Main Control Node

3.6.1 Configure System Parameters

Go to **Configuration** → **System** to configure the following parameters:

- Go to **System Settings** → **Basic Information** to view the device information and edit the device name as required. You can click **Upgrade** to go to the upgrade page.

* Device Name

MAC Address

Model DS-C80N-MAIN

Device Serial No.

Main Control [Upgrade](#)

Decoder Version

Web Version

Plug-in Version

Figure 3-50 View Basic Information

- Go 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.

Basic Information **Time Settings** Font Settings

Device Time 2024-04-02 10:37:32

Time Zone

Time Sync Mode NTP Sync Manual Time Sync

* Server Address

* NTP Port

* Interval min

Figure 3-51 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.

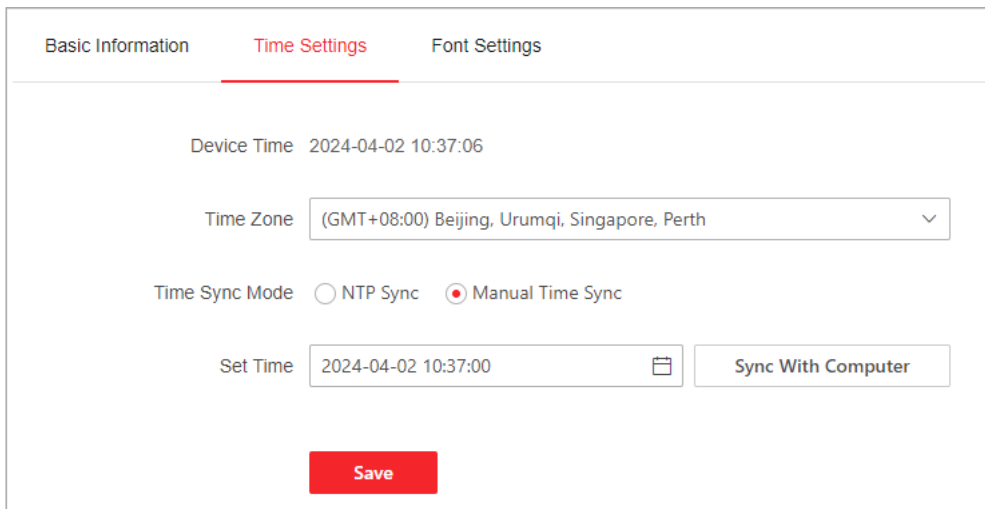


Figure 3-52 Select Manual Time Sync

- Go 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.

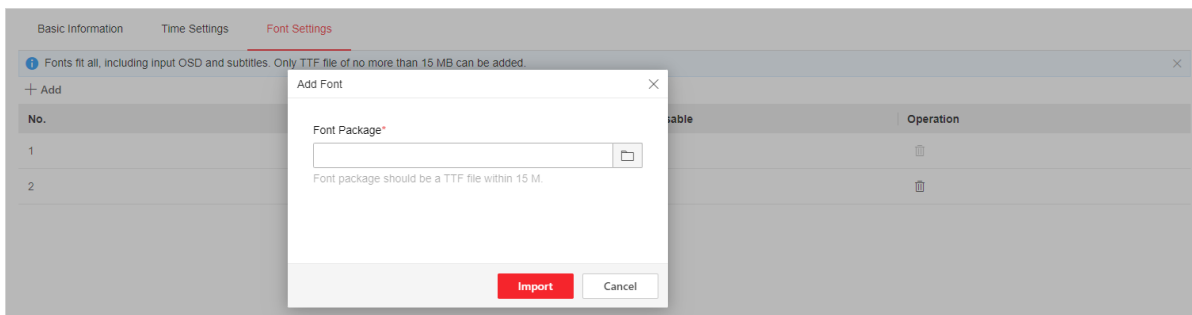


Figure 3-53 Set Font

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

Figure 3-54 Set Main Node Serial Port

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



No.	User Name	User Type	Operation
1	admin	Administrator	 

Figure 3-55 Manage Users

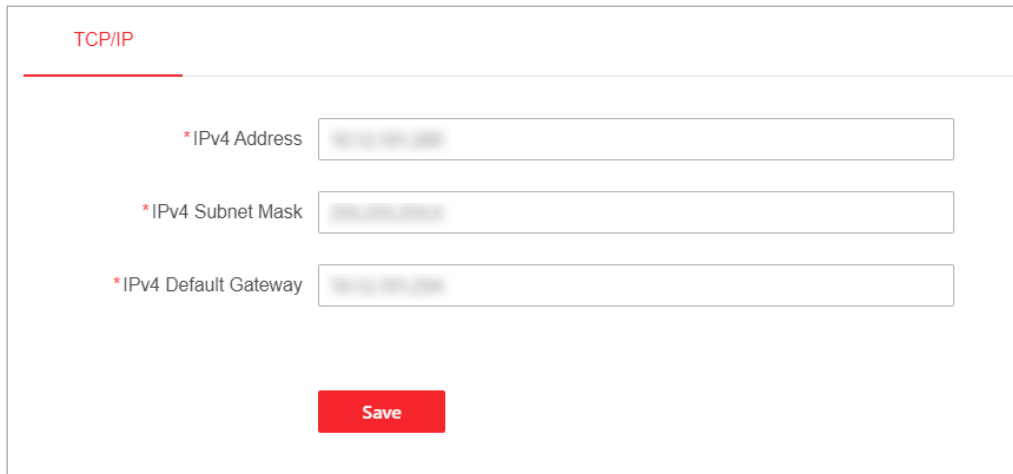
3.6.2 Configure Network Parameters

Go to **Configuration** → **Network** to configure TCP/IP and HTTP(S) parameters.

Configure TCP/IP

Step 1 Go to **Network Configuration** → **TCP/IP**.

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



TCP/IP

*IPv4 Address

*IPv4 Subnet Mask

*IPv4 Default Gateway

Save

Figure 3-56 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 Go 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 3.8 Maintain the Security of Main Control Node. Enabling HTTPS will increase the loading time of the interface and consume more hardware resources.
- After you change the HTTPS configuration of the input node, the input node will restart automatically.

Step 4 Set the HTTPS port.

The default port number is 443. After editing the HTTPS port No., you need to enter HTTPS://Device IP Address: Port in the browser to access the device.

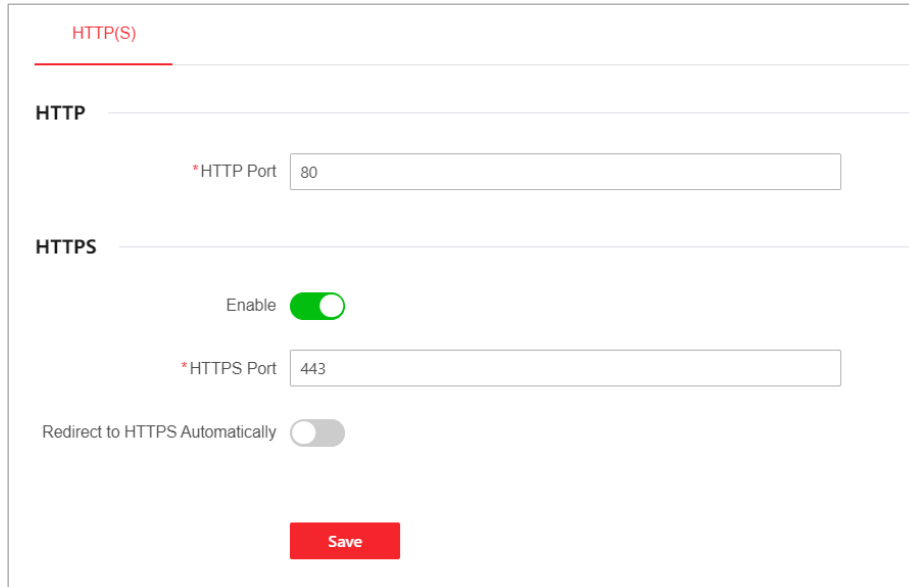


Figure 3-57 Configure HTTP(S) Parameters

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

Step 6 Click **Save**.

3.6.3 Configure Node Parameters

View Node Status

Go to **Configuration** → **Node Configuration** → **Node Status**, select a node to view its status, restart it or lighten its indicator.

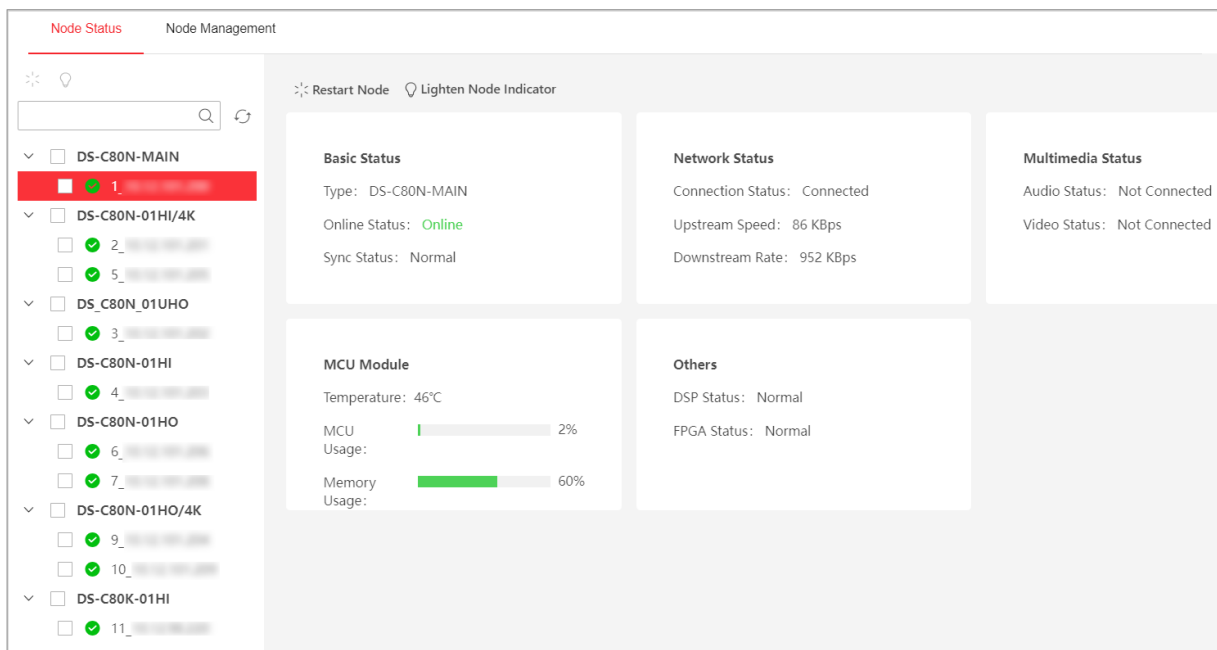


Figure 3-58 View Node Status

Manage Nodes

Go to **Configuration** → **Node Configuration** → **Node Management**.

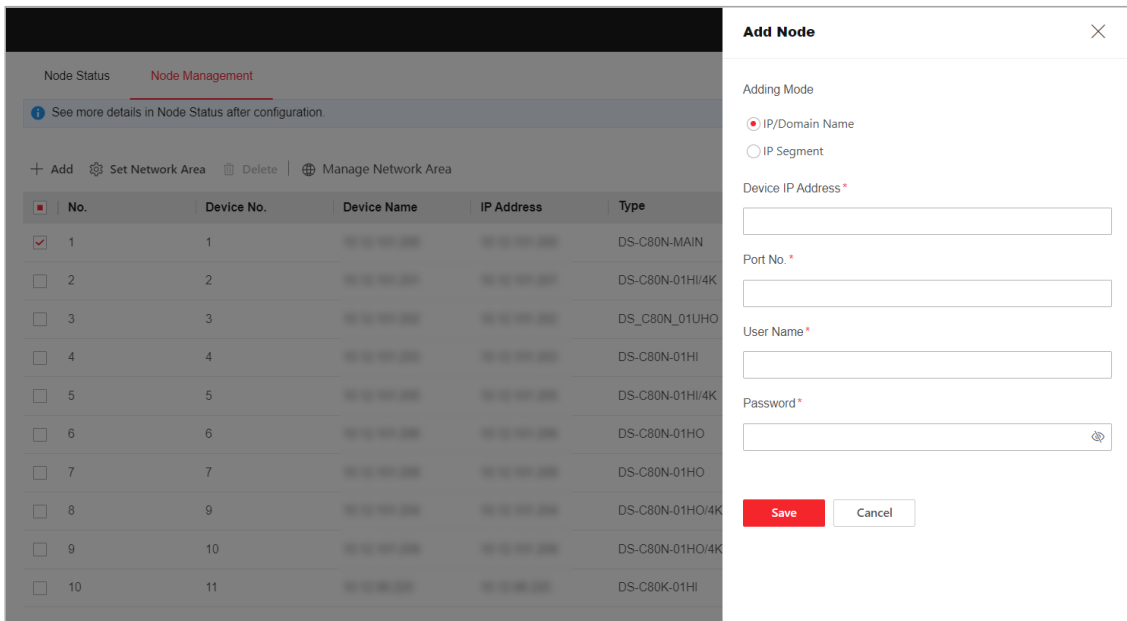



Figure 3-59 Node Management

- Select a node and click **Delete**.
- Click  to edit the main control node.

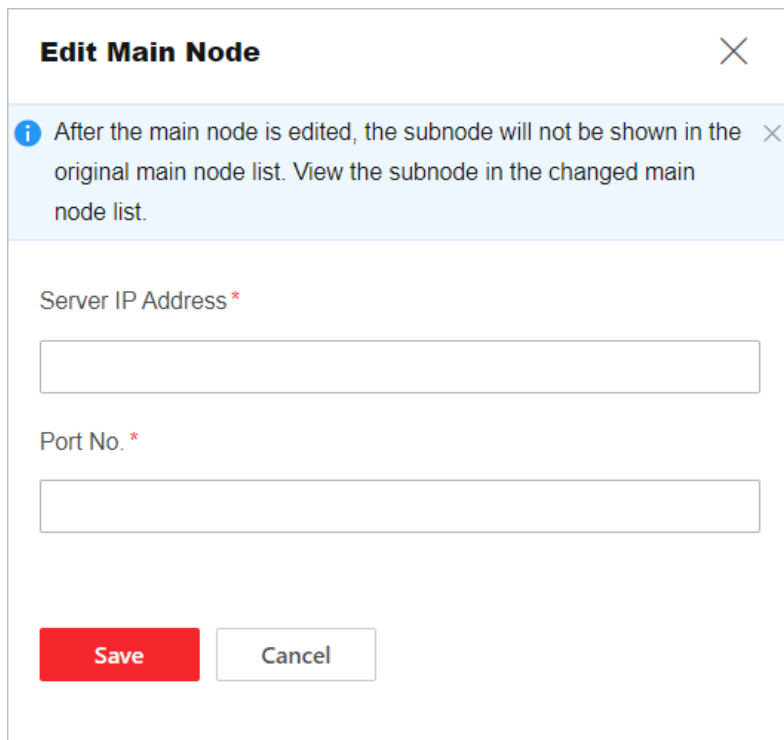


Figure 3-60 Edit Main Control Node

- Set the network area for nodes: Click **Manage Network Area** to add, edit, or delete network areas. Select the nodes, and click **Set Network Area** to set the network area of the node. If the nodes are in the same network area, the delay will be low, but more bandwidth will be occupied.

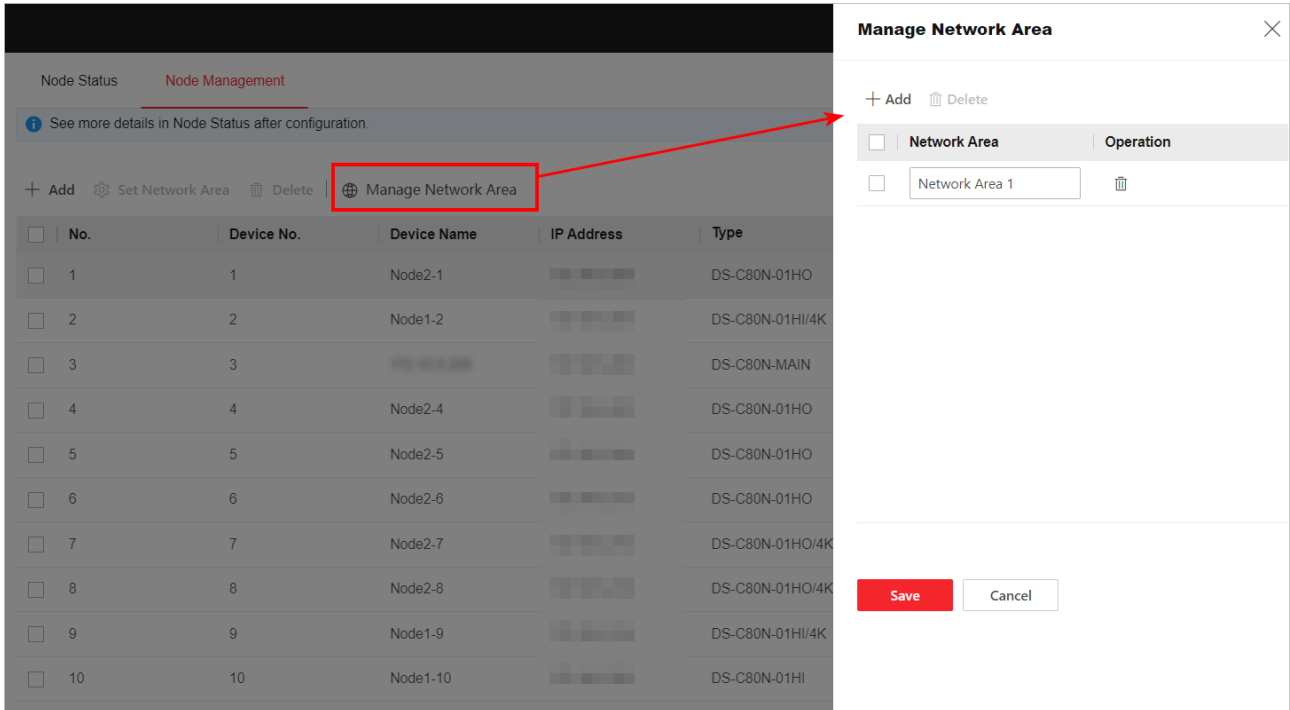


Figure 3-61 Manage Network Area

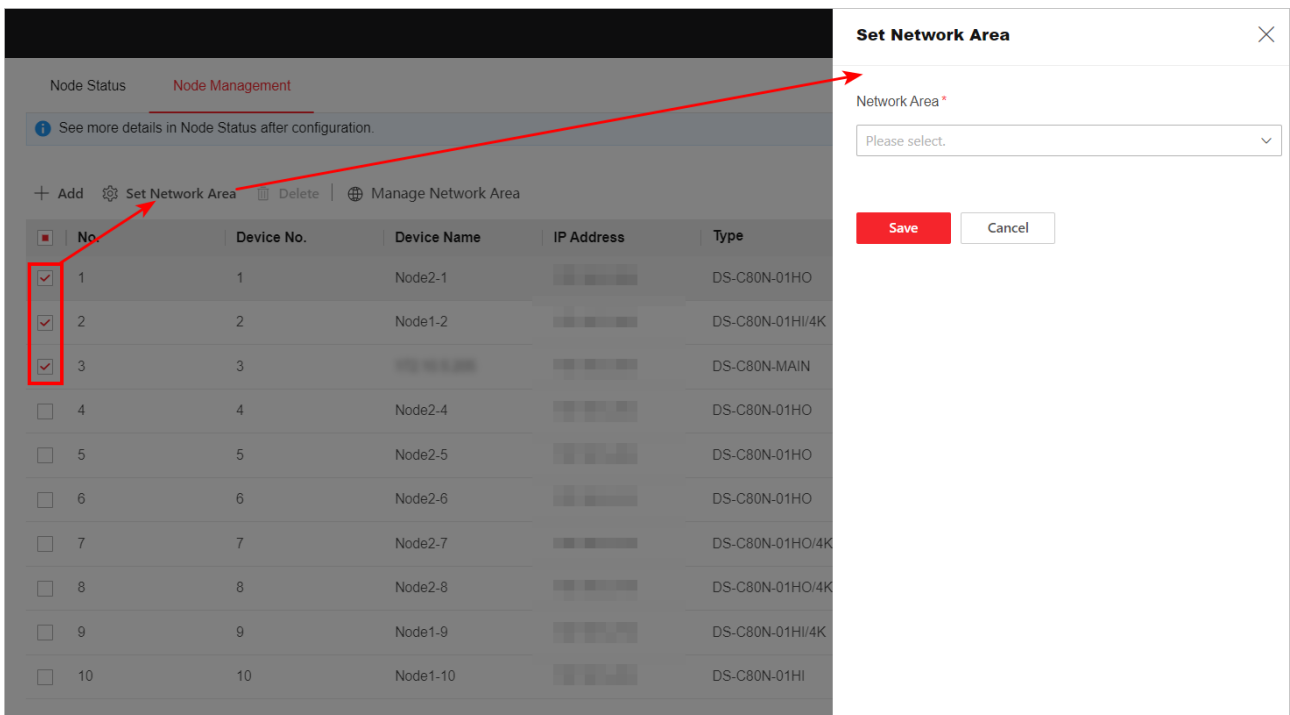


Figure 3-62 Set Network Area

3.6.4 Configure Event

Go 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 3-63 Set Device Exception Alarm


3.7 Maintain the System

Go to **Maintenance and Security** → **System Maintenance** to configure the following parameters:

- Click **Restart** to restart the device.
- Click  to select an upgrade file, and click **Upgrade**.

You need to get the upgrade file in advance and save it locally.

Upgrading the main control node will upgrade the subnodes simultaneously. To upgrade a single input node or output node, log in to the node and upgrade it. To upgrade multiple input nodes or output nodes, you can use the HiTools Delivery client to upgrade those nodes.

 The upgrading process will take 1 to 10 minutes. Do not power off. The device will restart automatically after upgrading.

Current Version V1.1.0 build 240328


Upgrade File  **Upgrade**

Figure 3-64 Upgrade the Main Control Node

- 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.

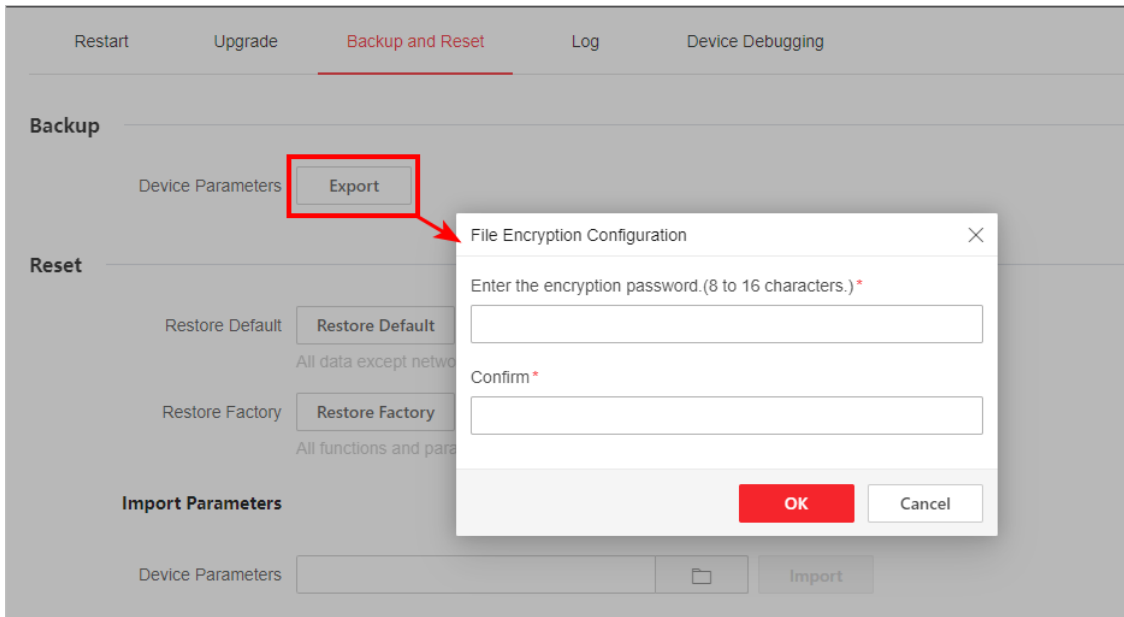



Figure 3-65 Export Parameters of Main Control Node

- 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.
 - Click  to select a parameter file saved locally, and click **Import** to import device parameters.

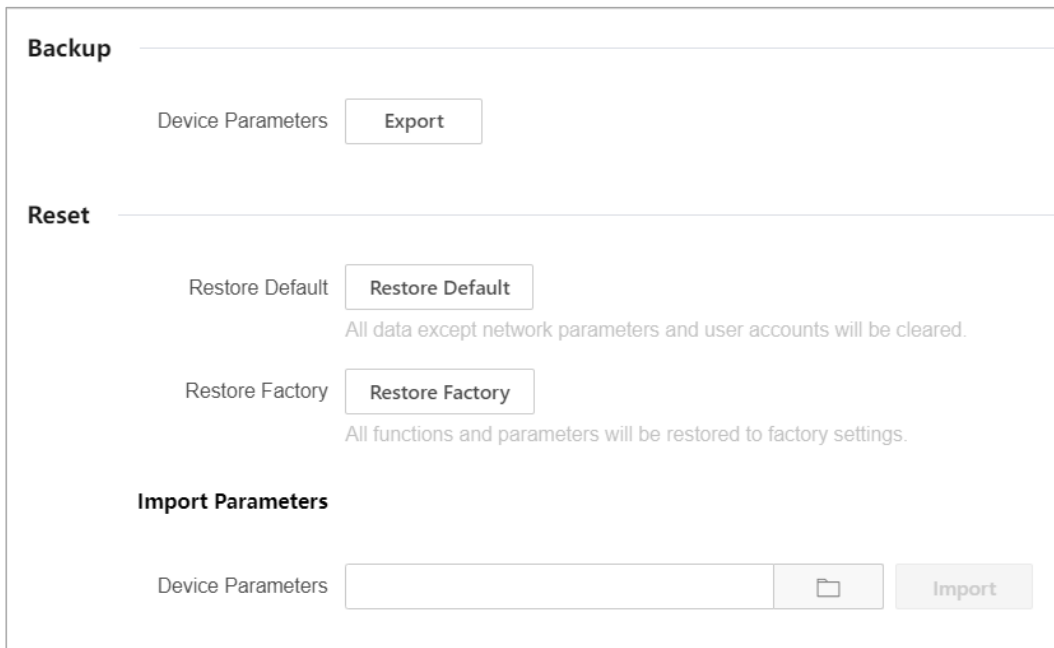


Figure 3-66 Reset Main Control Node

- Search logs: Click **Log** to set the search condition and click **Search**. 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.

No.	Time	Main Type	Sub Type	Remote Host IP	Description
No logs. Search first.					

Figure 3-67 Search Logs

Debug Main Control Node

Click **Device Debugging** to configure the following parameters:

- Enable SSH (Secure Shell) as required. With SSH enabled, you can use a computer installed with the SSH client to access the device.
- Format the FAT32 USB flash drive before inserting it into the node, and then export logs to the USB flash drive:
 - To export the logs of the main control node, insert a USB flash drive into the main control node, and click **Start Exporting**.
 - To export the logs of an output node, insert a USB flash drive into the output node, and click **Start Exporting**.
 - To export the logs of an input node, insert a USB flash drive into the input node, and click **Start Exporting**.
- Select a sub-system, click **Start Capturing** and then you can download the obtained packet capture file of the main control node. To download the packet capture file of a single input node or output node, log in to the node to download the obtained packet capture file of the node.

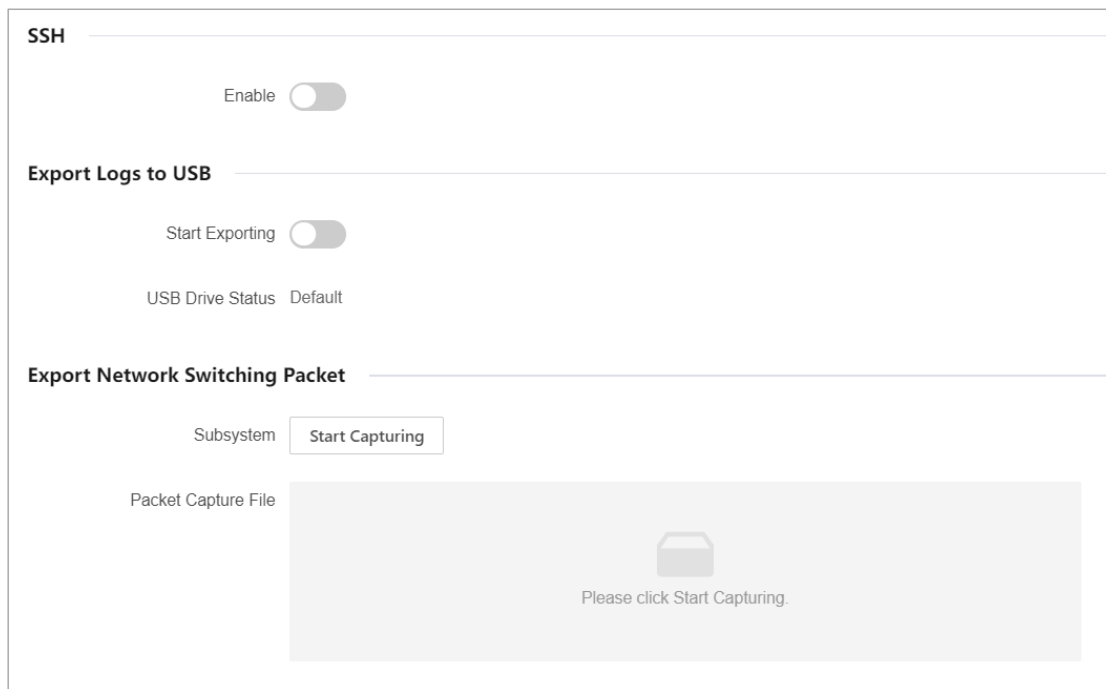


Figure 3-68 Debug the Device

3.8 Maintain the Security of Main Control Node

Go to **Maintenance and Security** → **Security Management** to configure the following parameters:

- Configure the IP addresses that are allowed to or forbidden to access the device.

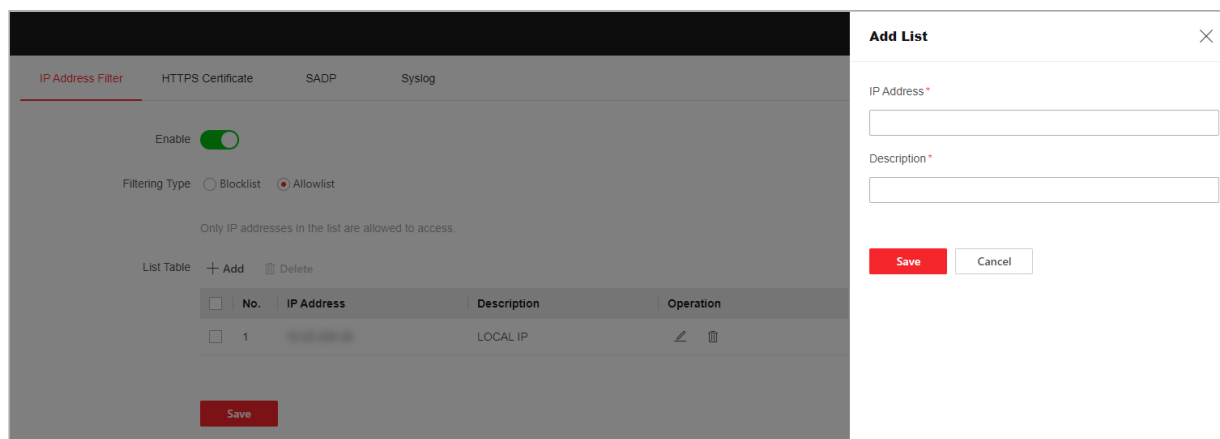


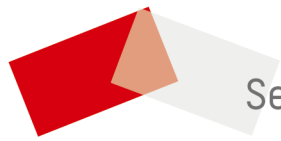
Figure 3-69 Configure IP Address Filter

- Click **HTTPS Certificate**, and then import the locally saved HTTPS certificate and secret key.

Figure 3-70 Import HTTPS Certificate and Secret Key

- Enable SADP as required. With SADP enabled, you can use the SADP client to search for the node when it is in the same network segment with the computer.
- Enable Syslog as required. With Syslog enabled, the node logs can be uploaded to the Syslog server.

Figure 3-71 Enable Syslog



See Far, Go Further