



Keyboard Video Mouse

User Manual

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Preface

Applicable Models

This manual is applicable to the DS-C80K keyboard video mouse.

Default Parameters

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



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 keyboard video mouse (hereinafter referred to as the KVM or device) is based on IP architecture and adopts the distributed technology without center server, which consists of multiple input nodes and output nodes. The KVM supports seamlessly data changing of different seats, elastic expansion of the device scale, information sharing and problem solving among seats, and interconnection between the local and remote seats. With a visual operation interface, the KVM supports online monitoring and management of maintenance data and device running condition. It is applicable to the monitoring or command centers in public security, transportation, and electricity industry.

The input nodes provide only the web interface, and the output nodes provide both the web interface and GUI interface.

1.2 First-Time Configuration Process

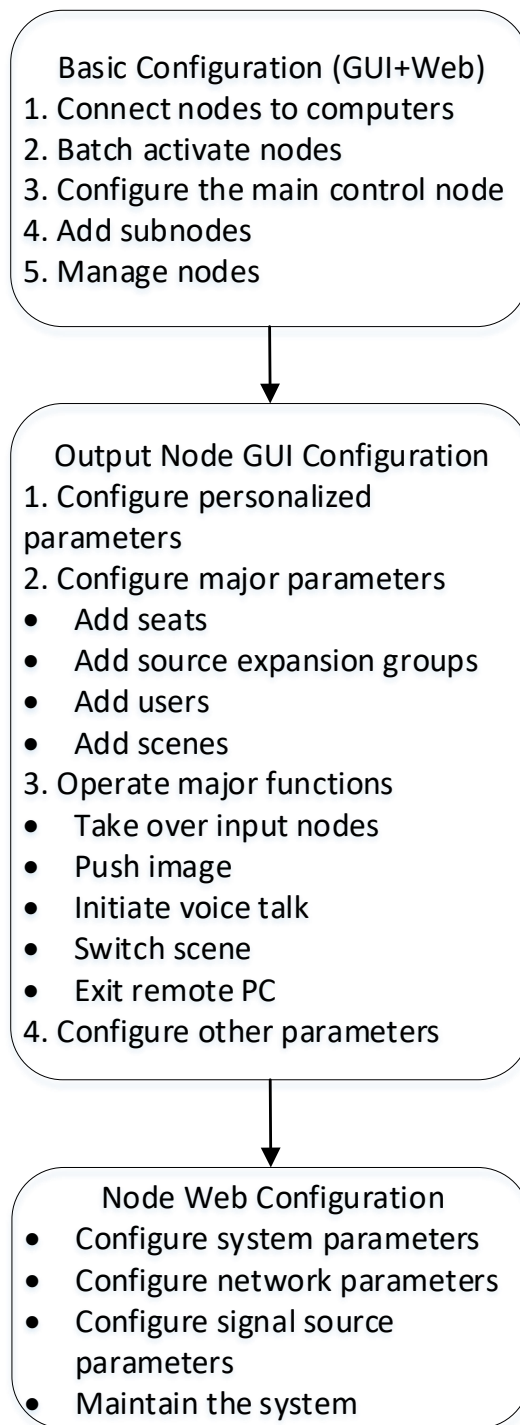


Figure 1-1 First-Time Configuration Process

Chapter 2 Basic Configuration

2.1 Connect Nodes to Computers

Connect Nodes to a Computer with One Display Port

Step 1 Connect an input node to a computer that provides one display port:

- Use a USB to USB cable to connect the HID port of an input node to the USB port of a computer.
- Use an HDMI cable to connect the input node to the computer.

Step 2 Configure at least one output node and connect at least an output node to a display:

- Connect a keyboard and a mouse to the MOUSE/KEYBOARD ports of an output node.
- Use an HDMI cable to connect the output node to a display.

Connect Nodes to a Computer with Multiple Display Ports

Step 1 Determine the number of input nodes and output nodes.

- 1) Configure the same number of input nodes according to the number of display ports of a computer.
- 2) Configure at least the same number of output nodes as the number of input nodes.



Note

- If the number of output nodes in a seat is less than the number of input nodes in a source expansion group, only the images of the same number of input nodes as the output nodes can be displayed after an output node or a seat takes over the input nodes. The order of the input nodes in the source expansion group from left to right is the order of images that can be displayed.
- To display the images of all input nodes on the limited displays when the number of output nodes in a seat is less than the number of input nodes in a source expansion group, you can configure multiple input nodes in one scene. For more information, see 3.2.4 Add Scenes.

Step 2 Connect a keyboard and a mouse to the MOUSE/KEYBOARD ports of each output node, and use an HDMI cable to connect a display to each output node.

Step 3 Use an HDMI cable to connect a computer to each input node, and at least use a USB to USB cable to connect the HID port of the leftmost input node in the source expansion group to the USB port of a computer.

Note

After any output node takes over the input nodes, you can log in to an output node and remotely control the computers connected with the input nodes.

2.2 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 the password regularly.

Use SADP Client

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

Step 2 Download 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.

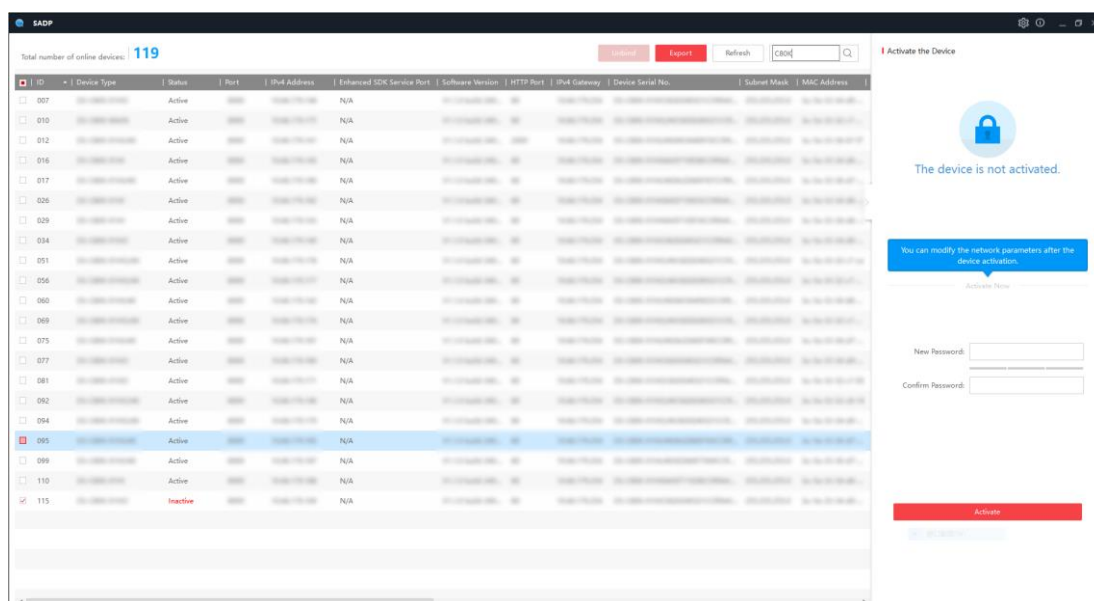


Figure 2-1 Batch Activate Nodes

**Note**

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

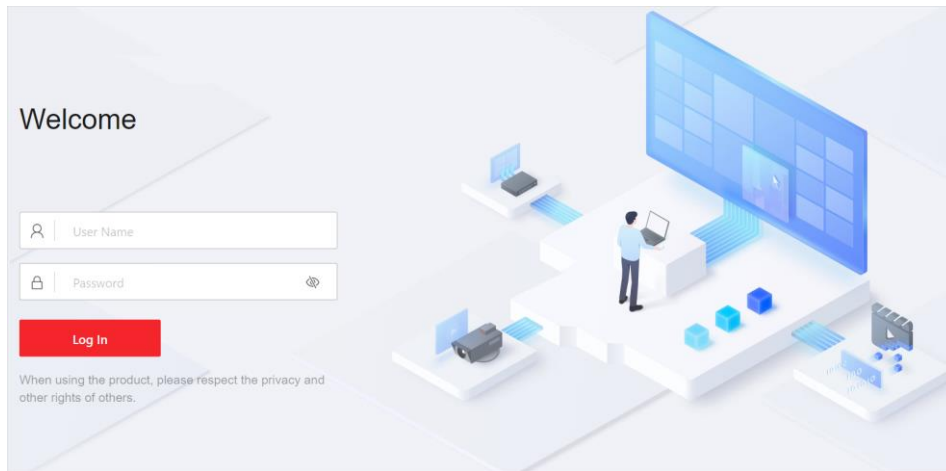


Figure 2-2 Activate a Single Node

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**.

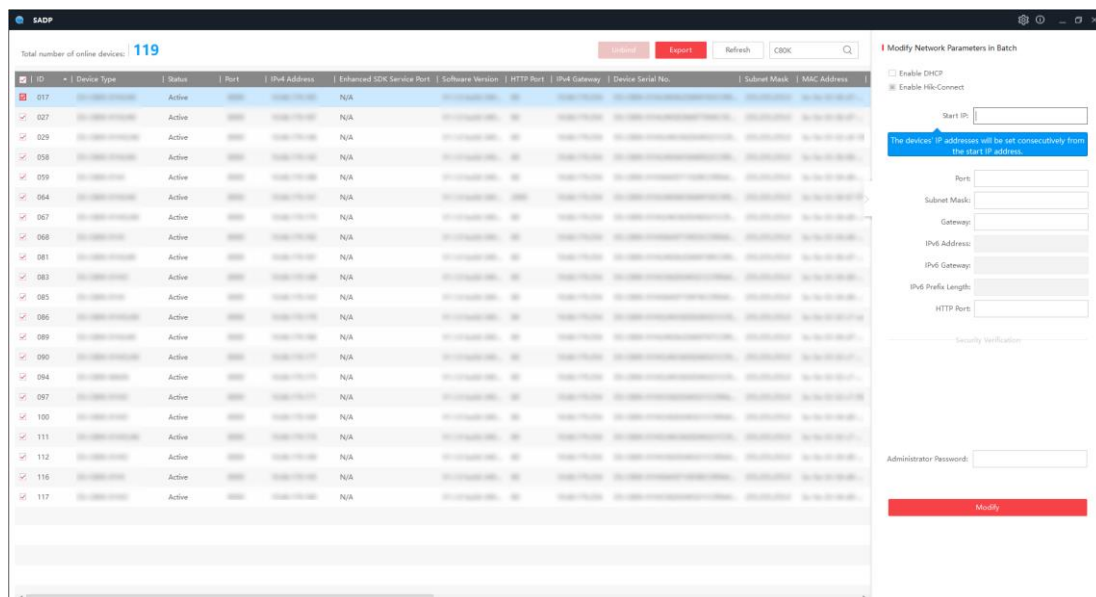


Figure 2-3 Batch Edit IP Addresses

Use HiTools Delivery

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

Step 2 Download 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**.

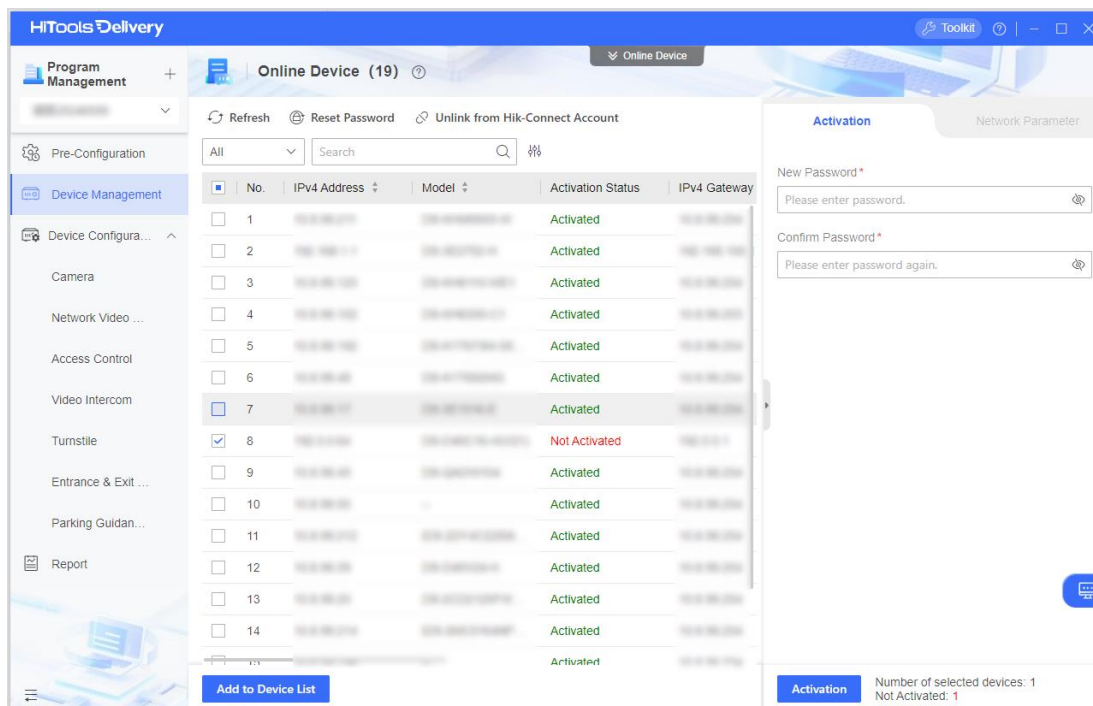


Figure 2-4 Batch Activate Nodes

Note

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

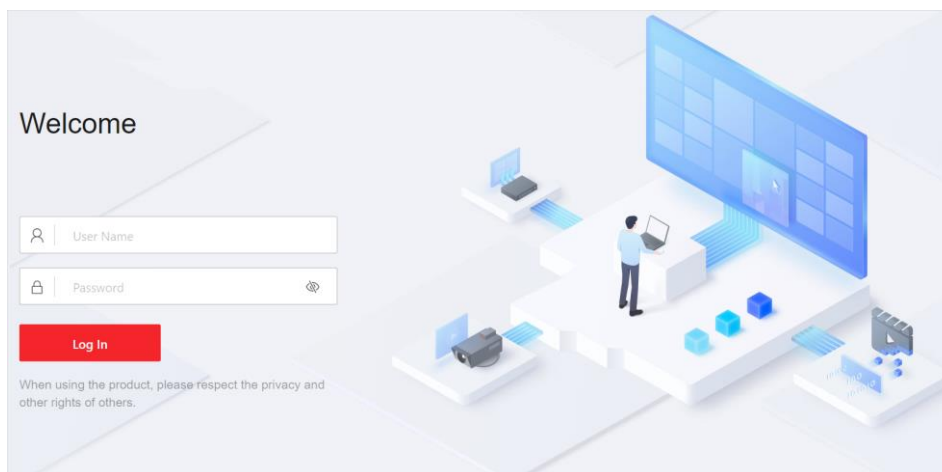


Figure 2-5 Activate a Single Node

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**.

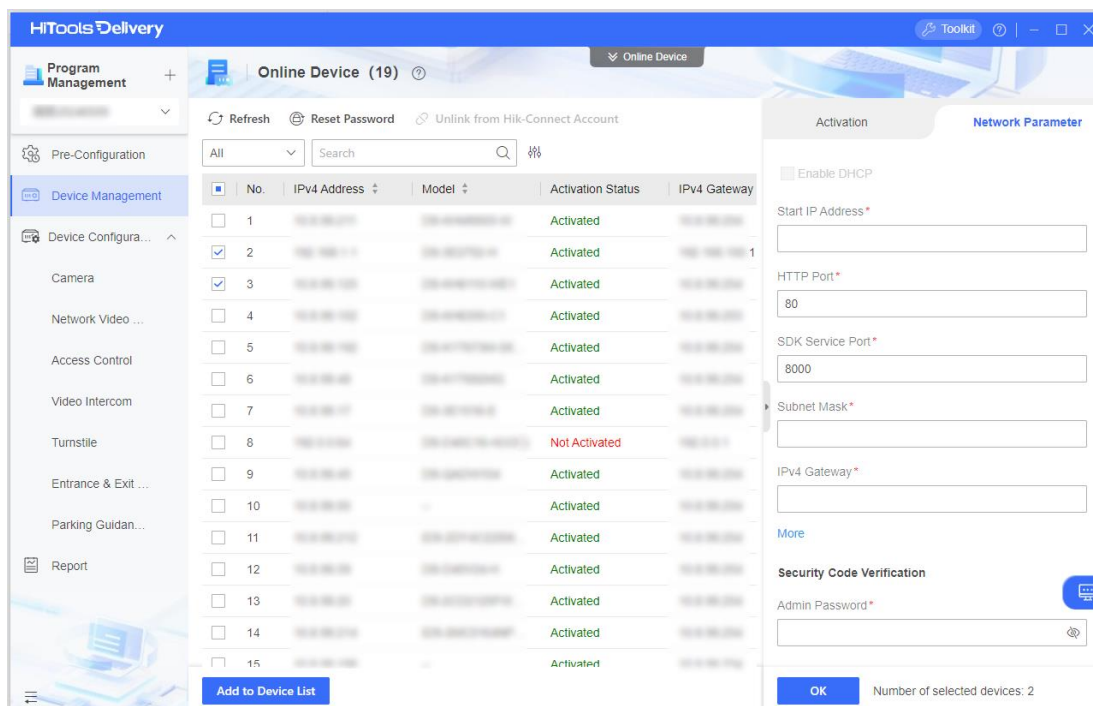


Figure 2-6 Batch Edit IP Addresses

2.3 Configure the 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.

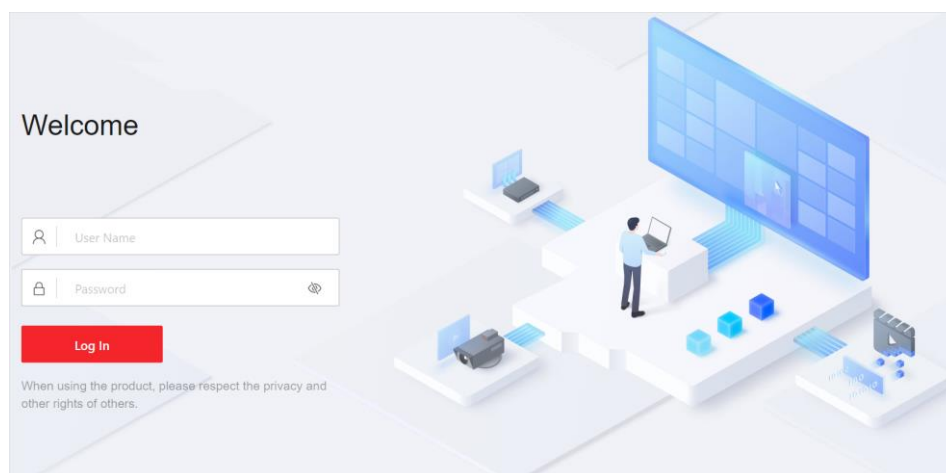


Figure 2-7 Login Page

Step 3 Click **Log In**.

Step 4 Go to **Configuration** → **Node Configuration** → **Main Control Configuration**, enable **Set as Main Control** and set the output resolution.

Set as Main Control ☒

Seat Server IP Address Save Get Status

Output Resolution 1920*1080@60HZ ▼

Figure 2-8 Set as Main Control

Step 5 (Optional) Set the output resolution of the current output node.

2.4 Add Subnodes

The node parameters configured in the web interface and the GUI interface will be synchronized.

2.4.1 Add Subnodes via Web Interface

Batch Add Subnodes

Step 1 Go to **Configuration** → **Node Configuration** → **Node Management**.

See more details in Node Status after configuration. ×

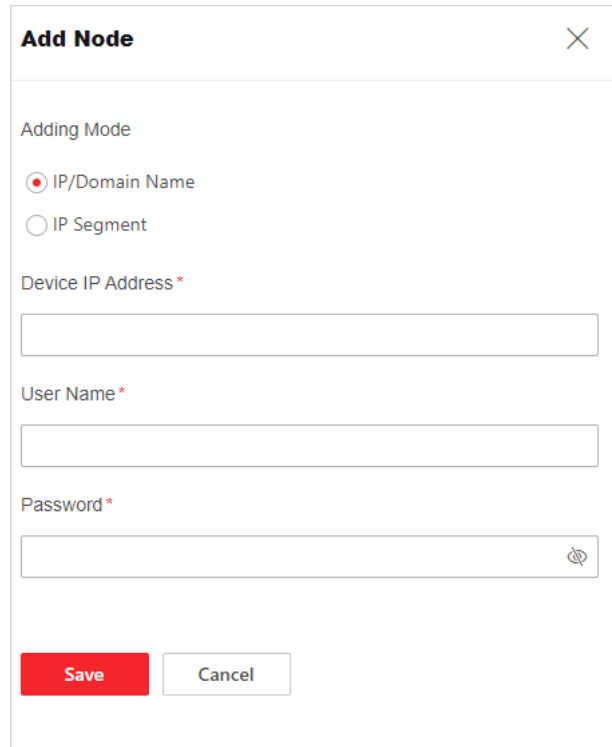
+ Add
⚙ Set Network Area
🗑 Delete
↻ Refresh
🌐 Manage Network Area

☐	No.	Device No.	Device Name	IP Address	Output Re...	Type	Version No.	Network Area	Operation
☐	1	1	Node1-1		1920*1080@60HZ	DS-C80K-MAIN		Network Area 1	📄 🗑
☐	2	2	Node1-2		1920*1080@60HZ	DS-C80K-01HQ/4K		Network Area 1	📄 🗑
☐	3	513	Node2-513		--	DS-C80K-01HI/4K		Network Area 1	📄 🗑
☐	4	514	Node2-514		--	DS-C80K-01HI		Network Area 1	📄 🗑

Figure 2-9 Node Management

Step 2 Click **Add**.

Step 3 Select IP/domain name or IP segment to add output and input nodes.



The 'Add Node' dialog box contains the following elements:

- Title Bar:** 'Add Node' with a close button (X).
- Adding Mode:** Two radio buttons: 'IP/Domain Name' (selected) and 'IP Segment'.
- Device IP Address *:** A text input field.
- User Name *:** A text input field.
- Password *:** A text input field with a toggle icon on the right.
- Buttons:** A red 'Save' button and a grey 'Cancel' button.

Figure 2-10 Add Nodes

Step 4 Click **Save**.



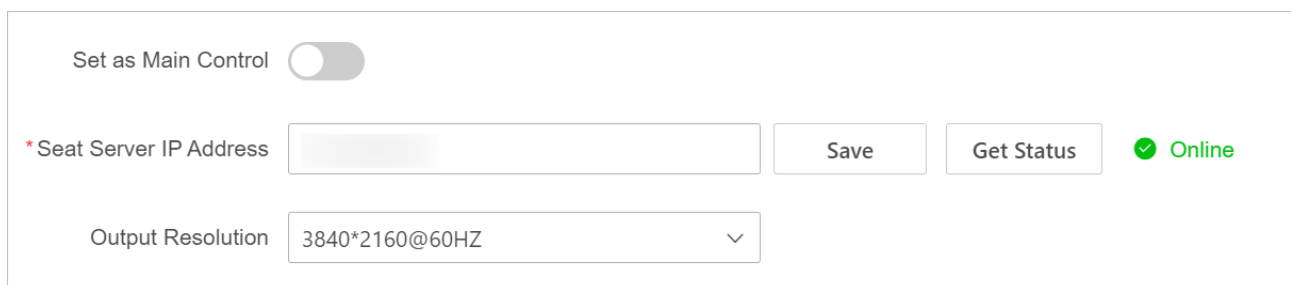
When the node versions are inconsistent,  will be shown on the version number.

Register Output Node to Main Control Node

Step 1 Log in to the web page of an output node, and go to **Configuration → Node Configuration → Main Control Configuration**.

Step 2 Enter the IP address of the main control node in the **Seat Server IP Address** field.

Step 3 Click **Save**.



The 'Main Control Configuration' panel includes:

- Set as Main Control:** A toggle switch.
- * Seat Server IP Address:** A text input field.
- Buttons:** 'Save' and 'Get Status'.
- Status:** A green checkmark and the text 'Online'.
- Output Resolution:** A dropdown menu showing '3840*2160@60HZ'.

Figure 2-11 Register Output Node to Main Control Node

Step 4 Click **Get Status** to check if the current output node has been successfully registered to the main control node.

Step 5 (Optional) Set the output resolution of the current output node.

Register Input Node to Main Control Node

Step 1 Log in to the web page of an input node, and go to **Configuration** → **Node Configuration** → **Main Control Configuration**.

Step 2 Enter the IP address of the KVM main control node in the **Seat Server IP Address** field.

Step 3 Enter the IP address of the video wall controller main control node in the **Video Wall Controller Server IP Address** field.

Step 4 Click **Save**.

* Seat Server IP Address		Save	Get Status	✓ Online
* Video Wall Controller Server I...		Save	Get Status	✗ Unregistered

Figure 2-12 Register Input Node to Main Control Node

Step 5 Click **Get Status** to check if the current input node has been successfully registered to the main control node.

2.4.2 Add Subnodes via GUI Interface

Up to 25 input or output node groups can be created. Up to 20 nodes are allowed in each input or output node group.

Step 1 On the GUI interface of the main control node, enter the user name and password set during activation.

Welcome

☒ Remember Password

☐ Auto-Login

Login

Figure 2-13 Local Login Page

Step 2 Click **Login** to enter the main page of GUI interface.

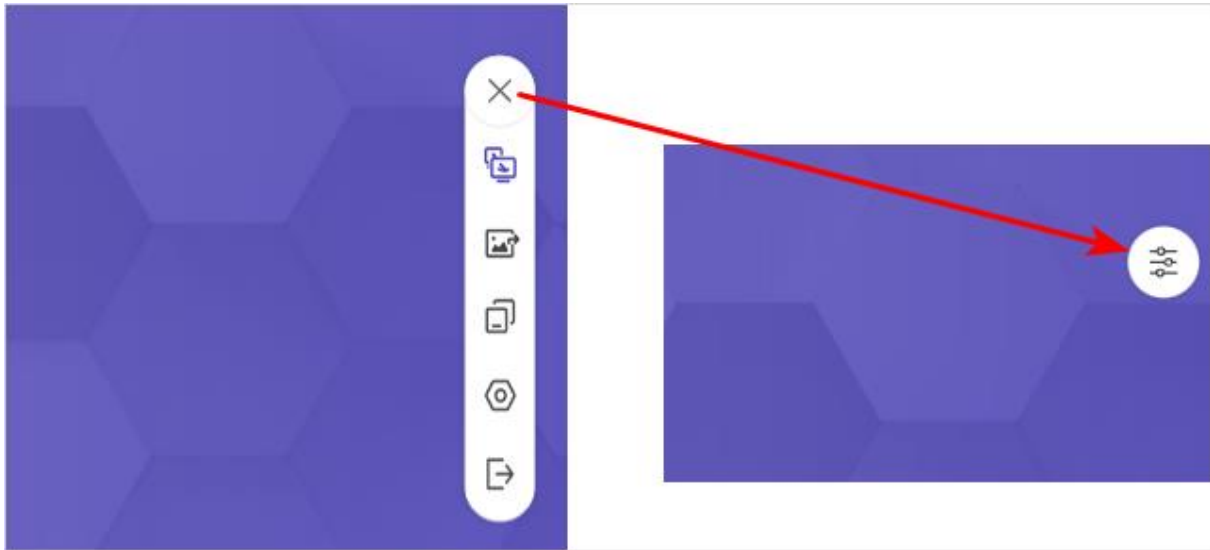


Figure 2-14 Main Page of GUI Interface

Table 2-1 Toolbar Description

Icon	Description
	Click to collapse the toolbar. Move  to adjust the toolbar position. Click  to exit remote PC.
	The output node takes over the input nodes.
	Push the images of the taken-over input nodes to other output nodes or push the control of the taken-over input nodes to other output nodes.
	Configure scenes and change scenes.
	Configure nodes, users, source expansion groups, scenes, and seats.
	Click to logout.

Step 3 Click  → **Node Management**.

Step 4 Select the input node or output node, click **Add**, enter the node group name and click **Save**.

Step 5 Click **Add** to add the nodes:

- Click **Manual**, enter the node name, IP address and password, select a node group as required, and then click **Save** or **Save_Add More**. If a node group has already been selected before adding nodes, there is no need to edit the node group.

- Click **Auto**, select the activated nodes, enter the password, and click **Save**. By default, those nodes will join the first available node group.

Node Group Name

Save Cancel

< Add Input Node

Adding Mode ☒ Manual ☐ Auto

Node Name

IP

Node Group Input-NodeGroup-2

Password

Save Save Add More

Select Node

	IP Address	Version	Status	Operation
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	

① Activate the node before adding.

Password

① Enter the correct password to add the node.

Save

Figure 2-15 Add Input Nodes

Node Group Name

Save Cancel

< Add Output Node

Adding Mode ☒ Manual ☐ Auto

Node Name

IP

Node Group Output-NodeGroup-1

Password

Save Save Add More

Select Node

	IP Address	Version	Status	Operation
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	
☐			Activated	

① Activate the node before adding.

Password

① Enter the correct password to add the node.

Save

Figure 2-16 Add Output Nodes

2.5 Manage Nodes

2.5.1 Manage Subnodes via Web Interface

Step 1 Log in to the web interface of the main control node.

Step 2 Go to **Configuration** → **Node Configuration** → **Node Status**, check the online and offline status.

- Click a node to view its detailed node status information. You can click **Restart Node** or **Lighten Node Indicator** as required.
- Select multiple nodes and click  to restart the selected nodes.
- Select multiple nodes and click  to lighten the indicators of the selected nodes.

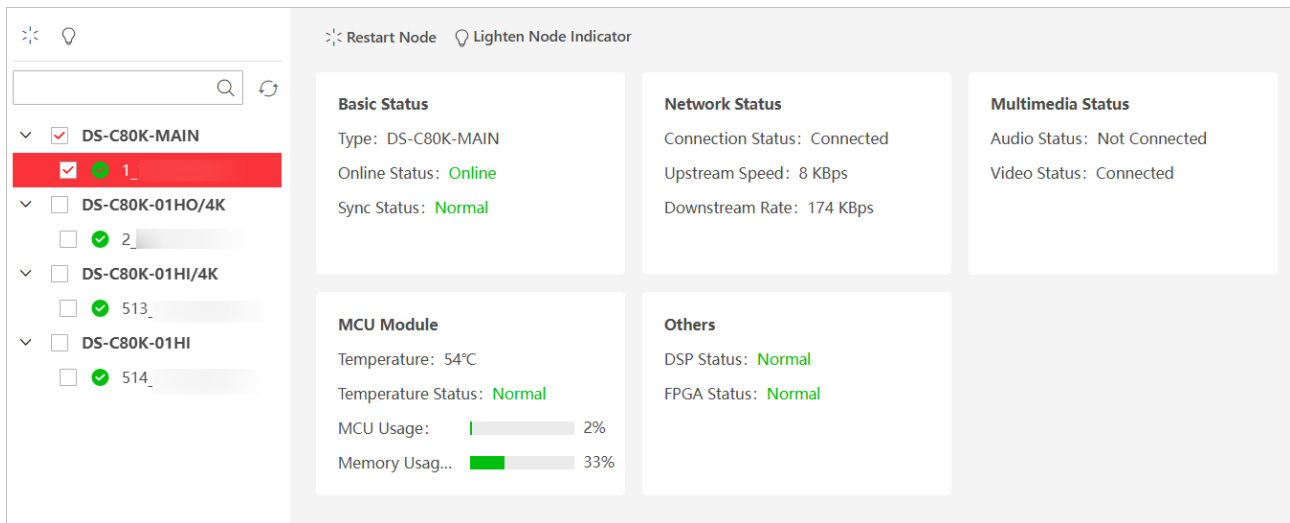


Figure 2-17 View Node Status

Step 3 Click **Node Management** to manage the nodes as required:

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

+ Add ⚙ Set Network Area 🗑 Delete ↻ Refresh 🌐 Manage Network Area										
☐	No.	Device No.	Device Name	IP Address	Output Re...	Type	Version No.	Network Area	Operation	
☐	1	1	Node1-1		1920*11	DS-C80K-MAIN		Network Area 1		
☒	2	2	Node1-2		3840*2	DS-C80K-01HO/4K		Network Area 1		
☐	3	513	Node2-513		--	DS-C80K-01HI		Network Area 1		
☐	4	514	Node2-514		--	DS-C80K-01HI/4K		Network Area 1		

Figure 2-18 Edit Output Resolution

- Select the nodes and click **Delete**, or click of a node.
- Click of a subnode, and enter the server IP address to edit the main control node of the current subnode.

Edit Main Node
×

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 2-19 Edit Main Control Node

2.5.2 Manage Nodes via GUI Interface

Log in to the GUI interface of the main control node, click → **Node Management** to manage the input and output nodes. For details, see the figure and table below.

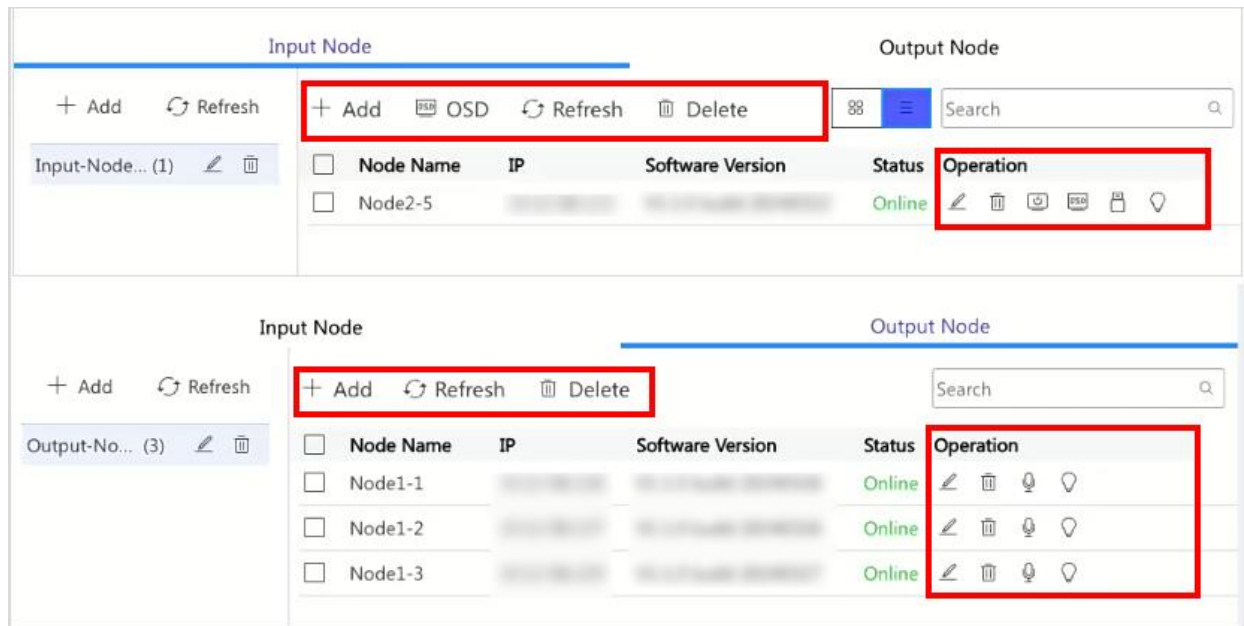


Figure 2-20 Node Management on GUI Interface

Table 2-2 Node Management Icons

Icon	Node Type	Function
	Input/output node	- Edit the node name, network parameters, and node group. - Edit the node group name.
		- Select multiple nodes, and click to delete the nodes. - Delete the node group.
		Make the front panel indicator of the node flash for easy location.
	Input node	Control the on/off status of the computer connected to the input node.
		Click of an input node to enable OSD. Click again to disable OSD. Select multiple input nodes and then click OSD to enable OSD. Click again to disable OSD. The default OSD is the node name. If you need to edit the OSD, you need to edit the node name.
		Insert the USB device to the REMOTE port of an output node, and use a USB to USB cable to connect the REMOTE port of an input node with the USB port of a computer. Click to bind the USB device. Click again to unbind the USB device. After binding a USB flash drive to the output node, you can realize the interaction between the USB flash drive and the

Icon	Node Type	Function
		computer. ● After binding a USB camera to the output node, you can provide camera functionality to the computer that does not have a built-in camera.
		Display input nodes by icons. You can preview the image of the input nodes.
		Display input nodes by list.
	Output node	Initiate the voice talk. For details, see “3.3.3 Initiate Voice Talk”.

Chapter 3 Output Node GUI Configuration

3.1 Configure Personalized Parameters

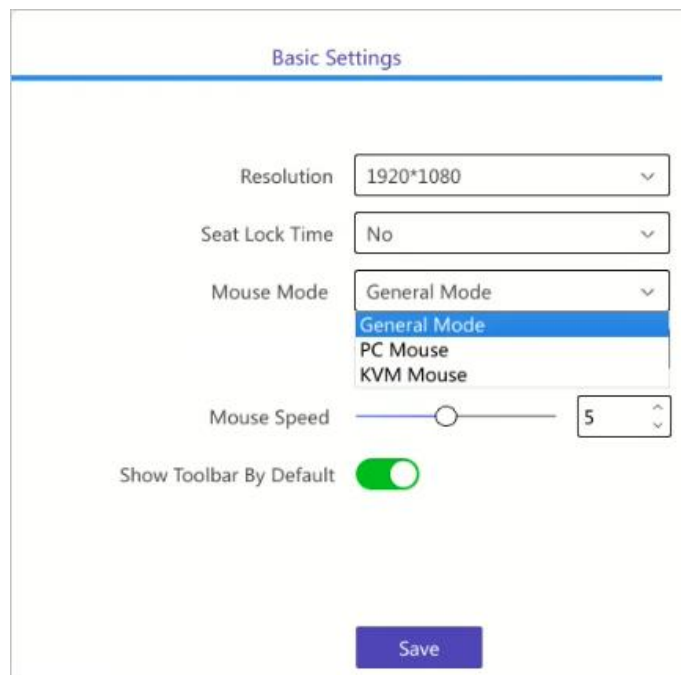
3.1.1 Configure Basic Parameters

Step 1 Go to  → **Personalization** → **Basic Settings**.

Step 2 Configure the basic parameters and shortcut keys:

- Set the resolution of the current login output node. The higher the resolution, the clearer the image.
- Set the seat lock time.
- Set the mouse mode and mouse speed.
 - General mode is used by default.
 - To take over the input node, you can select **PC Mouse** to resolve the air wall issue within the reverse control system.
 - To take over the input node, you can select **KVM Mouse** to resolve the issue of insufficient mouse operation sensitivity.
- Enable **Show Toolbar By Default**. If you disable the default toolbar displaying, you can use the shortcut key to display the toolbar on the main page.

Step 3 Click **Save**. The node will restart automatically.



The screenshot shows the 'Basic Settings' window with the following configuration:

Parameter	Value
Resolution	1920*1080
Seat Lock Time	No
Mouse Mode	General Mode (selected from dropdown)
Mouse Speed	5
Show Toolbar By Default	Enabled (toggle switch)

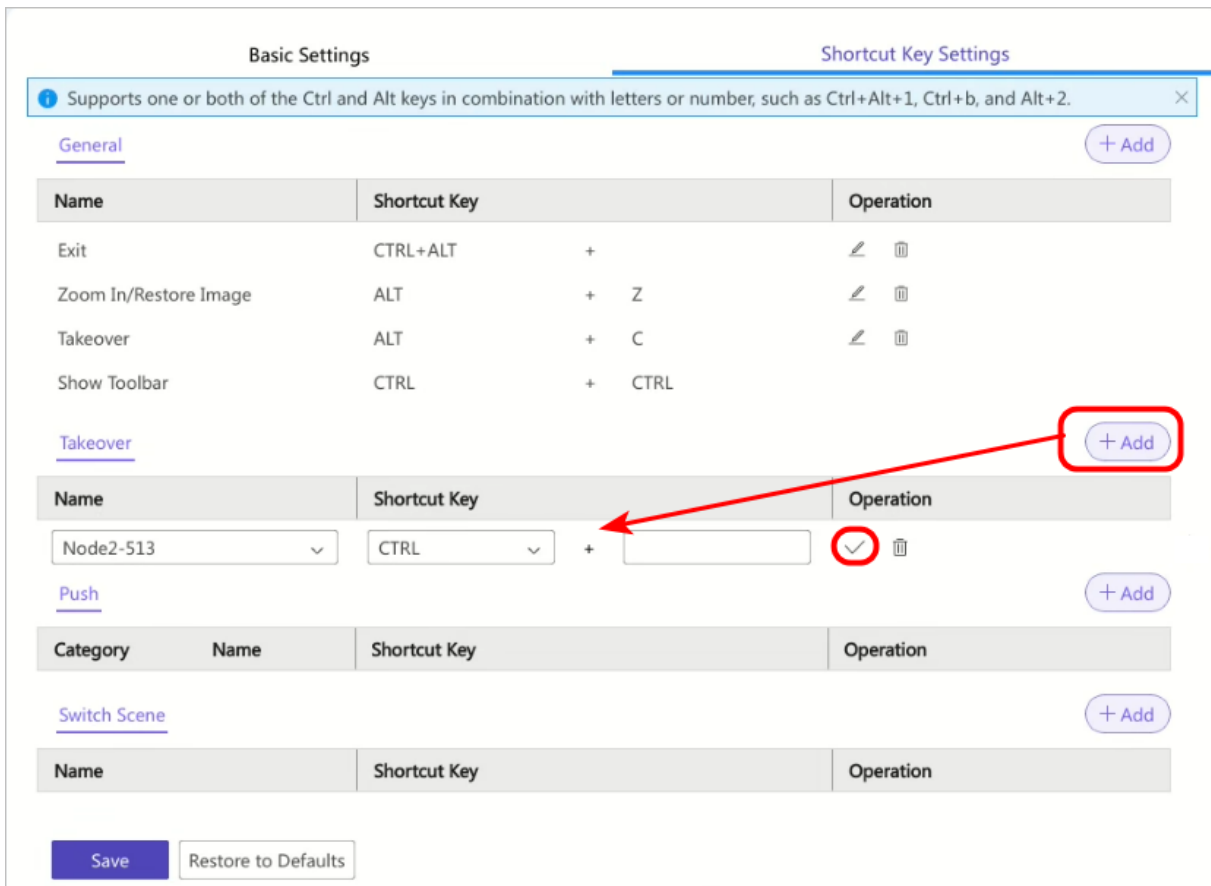
A 'Save' button is located at the bottom center of the window.

Figure 3-1 Configure Basic Parameters

3.1.2 Configure Shortcut Keys

Go to  → **Personalization** → **Basic Settings** → **Shortcut Key Settings**.

- Add a shortcut key:
 - 1) At the general, takeover, push, or scene change area, click **Add**.
 - 2) Enter the name, set the shortcut key, and click ✓.
 - 3) Click **Save**.
- Edit a shortcut key: click  of a shortcut key to edit, and then click **Save**.
- Delete a shortcut key: click  of a shortcut key to edit, and then click **Save**.



Basic Settings Shortcut Key Settings

Supports one or both of the Ctrl and Alt keys in combination with letters or number, such as Ctrl+Alt+1, Ctrl+b, and Alt+2. ×

General + Add

Name	Shortcut Key	Operation
Exit	CTRL+ALT +	 
Zoom In/Restore Image	ALT + Z	 
Takeover	ALT + C	 
Show Toolbar	CTRL + CTRL	

Takeover + Add

Name	Shortcut Key	Operation
Node2-513	CTRL +	 

Push + Add

Category	Name	Shortcut Key	Operation
----------	------	--------------	-----------

Switch Scene + Add

Name	Shortcut Key	Operation
------	--------------	-----------

Save Restore to Defaults

Figure 3-2 Configure Shortcut Keys

3.2 Configure Major Parameters

3.2.1 Add Seats

You can configure multiple output nodes as one seat to allow using one mouse and keyboard to control multiple input nodes.

Step 1 Log in to the GUI interface of an output node, click  → **Seat Settings**, and then click **Add**.

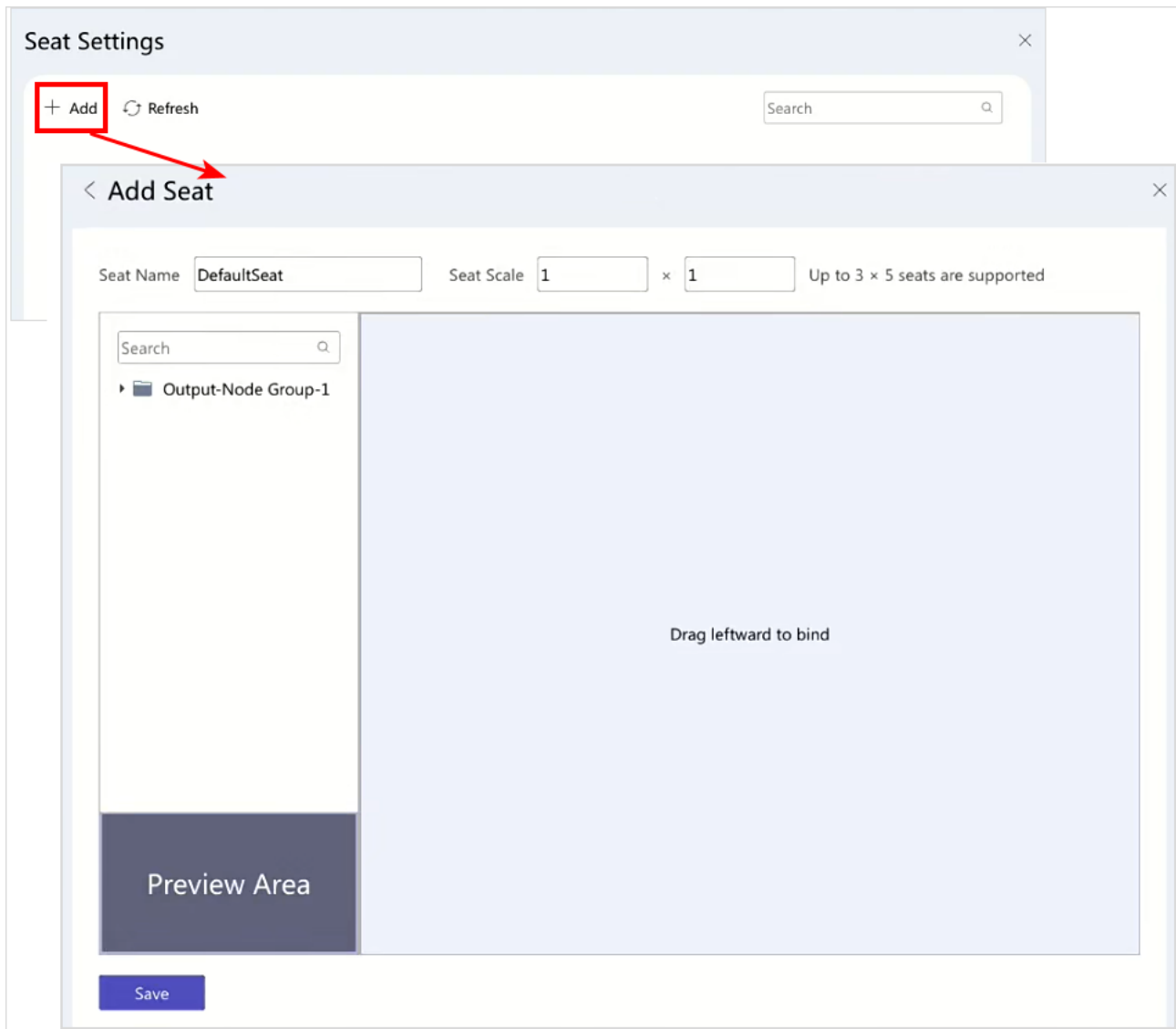


Figure 3-3 Add Seat

Step 2 Enter the seat name and set the seat scale according to the number of output nodes.

The maximum seat scale can be 3×5 .

Step 3 Drag the output nodes to the seat area to bind the output nodes to the seat.

Step 4 Click **Save**.

3.2.2 Add Source Expansion Groups

Step 1 On the computers connected to the input nodes, disable the mouse pointer acceleration function and set the pointer moving speed to the intermediate speed.

Step 2 Click  → **Source Expansion**.

Step 3 Click **Add**.

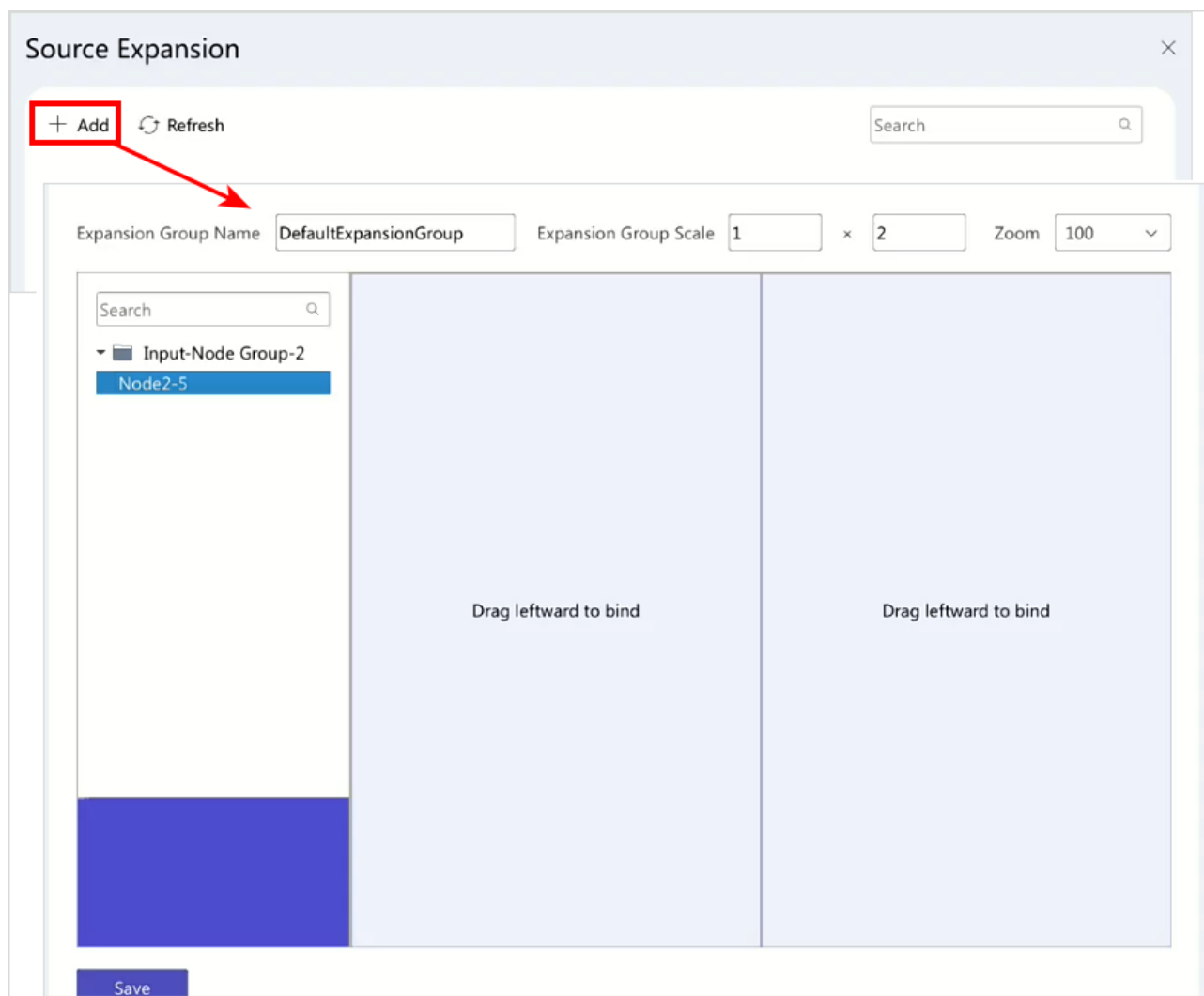


Figure 3-4 Add Source Expansion Group

Step 4 Enter the expansion group name and set the expansion group parameters:

- 1) Set the expansion group scale. Up to 1×4 scale is allowed. Arrange the input nodes according to the actual desktop order.
- 2) Select a zoom rate. If the computers use Windows 10 and above version, the configured zoom rate of the expansion group and the zoom rates of the computers must be consistent.
- 3) Drag the input nodes to the source expansion group area to bind the input nodes to the source expansion group.

Step 5 Click **Save**.

3.2.3 Add Users

Step 1 Click  → **User Management**, and then click **Add**.

When you use the super admin account to log in to the GUI interface, you can change the password of the super admin account, the user name and password of the admin account, and the user name and password the operator.

Step 2 Select a user role.

- If you select **Admin**, you can change the password of the current admin account and the passwords of all operators. You cannot change the password of other admin accounts.
- If you select **Operator**, you can change the password of the current operator account. You cannot change the password of other operator accounts.

The screenshot shows the 'User Management' interface. At the top, there is a table with columns: User Name, User Role, and Operation. The table lists three users: 'admin' (Super Admin), 'zch' (Admin), and 'test001' (Operator). Above the table are buttons for '+ Add', 'Delete', and 'Refresh'. A red circle highlights the '+ Add' button, with a red arrow pointing to the 'Add User' form below. The 'Add User' form has two tabs: 'Admin' and 'Operator'. The 'Operator' tab is selected. The form includes fields for 'User name', 'New Password', 'Confirm Password', and 'Login Password'. There is also a 'Permission Control' section with a 'Signal Source' dropdown and a 'Seat' list. The 'Signal Source' dropdown is set to '111111'. The 'Seat' list includes 'Node2-513' and 'Node2-514'. A red box highlights the entire 'Add User' form.

Figure 3-5 Add a User

Step 3 Enter the user name, new password and confirm password.

- Both the user name and password support illegal character check. Up to 32 characters are allowed for the user name and up to 16 characters are allowed for the password.
- 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 a strong password that meets security requirements.
- Password should contain at least 8 characters, including 2 or more character types (digits, lowercase letters, uppercase letters, and special characters).

- Password cannot contain user name, 123, admin (case-insensitive), 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.

Step 4 Set the permission control:

- Select **Signal Source** to set the user permission for input nodes or source expansion groups.
- Select **Seat** to set the user permission for output nodes or seats.

Step 5 Enter the login password for the currently logged in user.

Step 6 Click **Save**.

After adding a new user, you can use the new user name and password to log in the web page of any input or output node and the GUI interface of any output node.

3.2.4 Add Scenes

Configure the layout of input node images and save the layout as a scene. After an output node takes over the input nodes, the layout of input node images can be used quickly.



Note

The scene settings page varies by the user type. One user can add up to 8 scenes.

Step 1 Click  → **Scene Settings**, and then click **Add**.



Figure 3-6 Scene Settings Page

Step 2 Enter the scene name.

Step 3 Enter the division number. You can select 1, 4, 6, or 8 as the division number or customize the scene scale. The maximum scene scale can be 2×4 .

Step 4 Drag the input nodes to the scene area to bind the input nodes to the scene.

Step 5 Click **Save**.

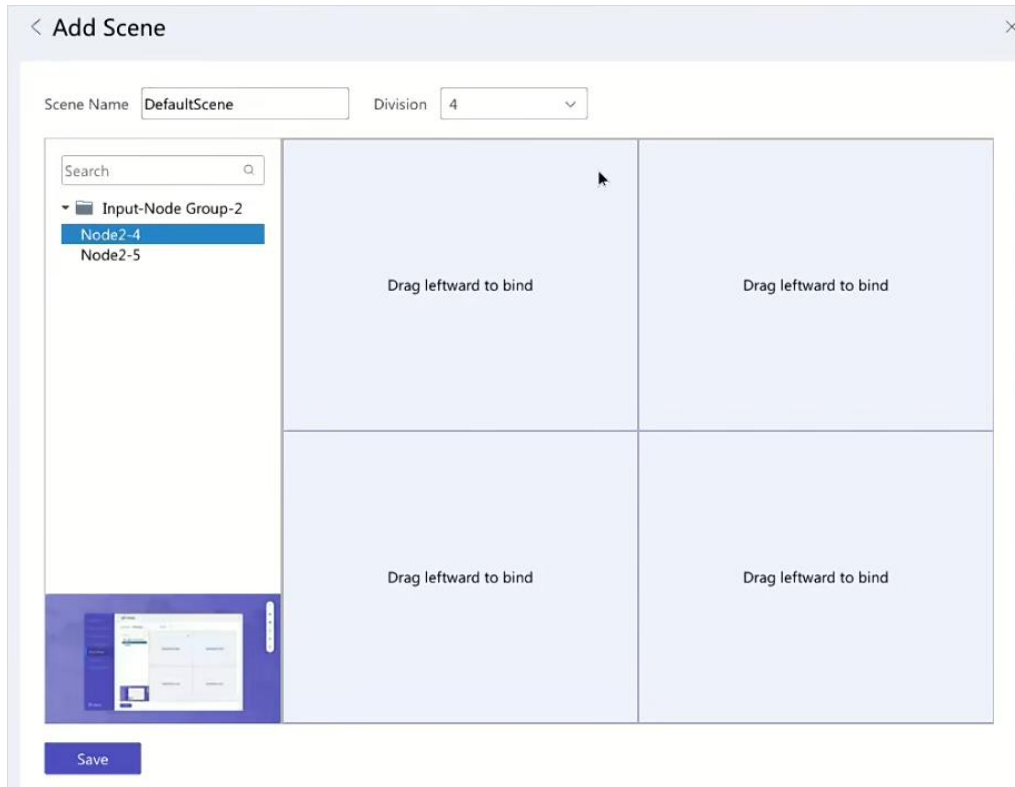


Figure 3-7 Add Scene

3.3 Operate Major Functions

3.3.1 Take Over Input Nodes

After an output node takes over input nodes, the output node can control the computers that are connected with the input nodes.

Click  on the main page and then select the image to be taken over:

- Select an input node group and then select a single input node to be taken over.

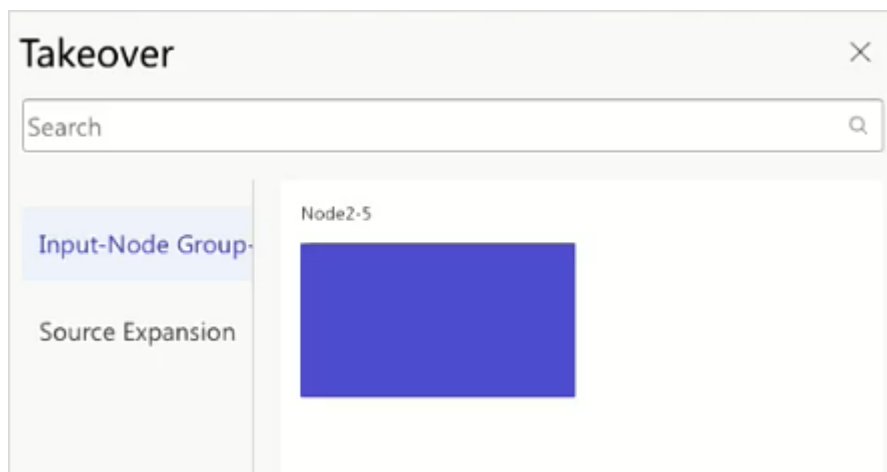


Figure 3-8 Take Over a Single Input Node

- Select a source expansion group and then select one or multiple input nodes of the same source expansion group to be taken over.

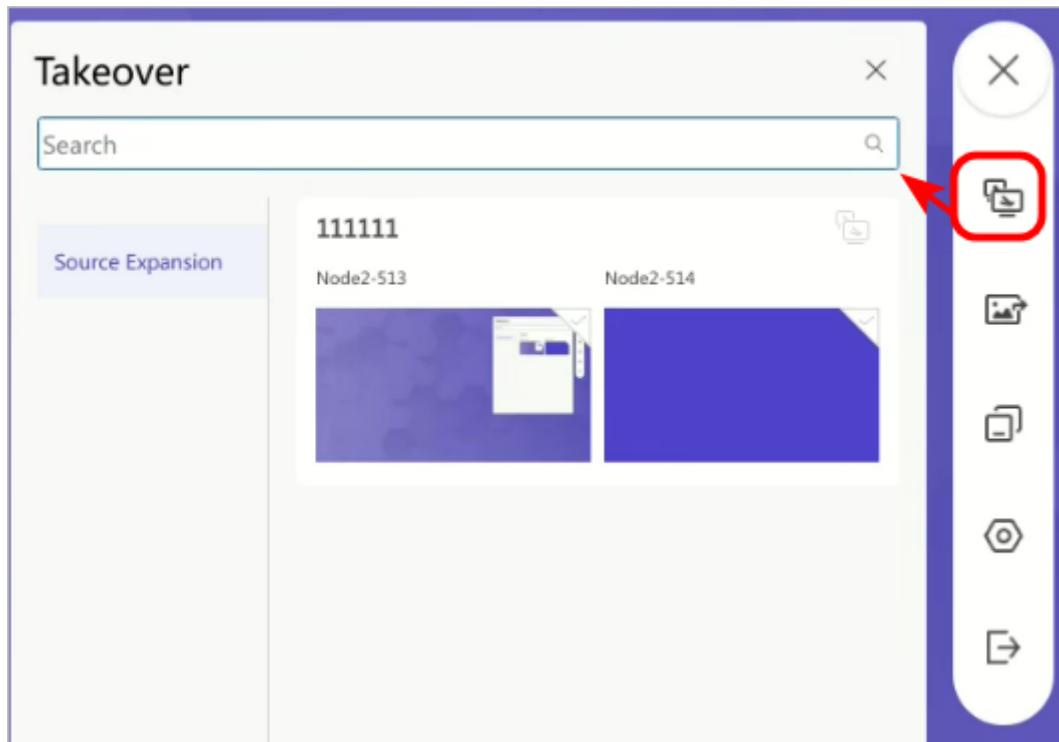


Figure 3-9 Take Over Multiple Input Nodes

Note

You can use the shortcut key to enter the takeover settings page. For more information about shortcut key, see 3.1.2 Configure Shortcut Keys.

3.3.2 Push Image

If an output node that sends the image pushing request manages only one input image, you can push the input image to another output node. If an output node that sends the image pushing request manages multiple input images, you can push only the first valid input image to another output node.

Step 1 On the main page, click .

Step 2 Select an output node to be pushed and select a pushing method:

- Click  to push the control permission and image of the input node controlled by the selected output node to another output node. The output node that receives and accepts the image pushing request can remotely control the computer connected with the input node.

- Click  to push the image of the input node controlled by the selected output node to another output node. The output node that receives and accepts the image pushing request can view the image of the computer connected with the input node.

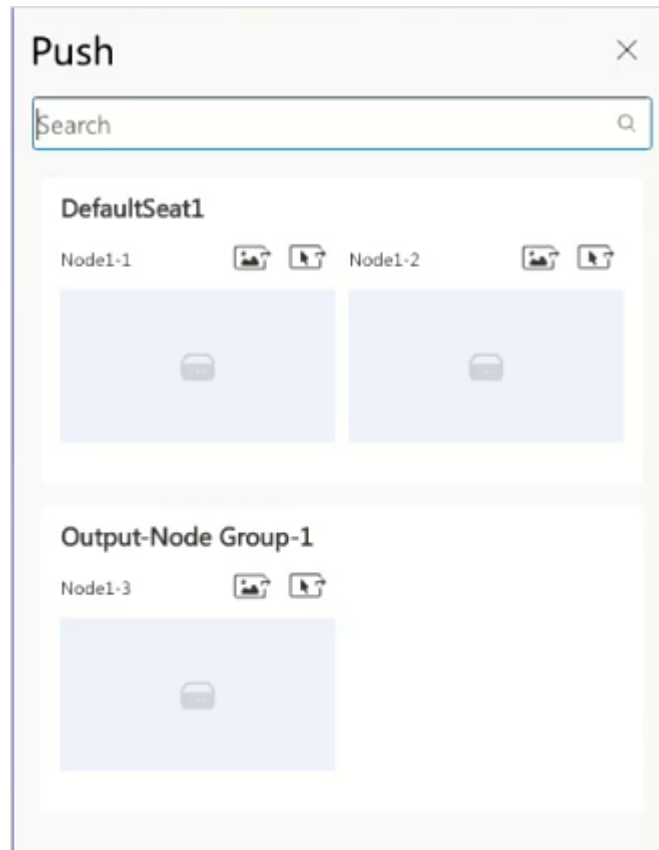


Figure 3-10 Image Push Settings Page

Step 3 The output node that receives the image pushing request accepts the request.

Step 4 (Optional) The output node that sends the image pushing request can cancel pushing as required.

3.3.3 Initiate Voice Talk

Initiate Voice Talk Between Output Nodes

Two output nodes in the same network segment support the voice talk.

Step 1 Connect the LINE IN port of the output node to an active microphone, and connect the LINE OUT port of the output node to an audio output equipment, such as a speaker.

Step 2 On the main page, click  → **Node Management** → **Output Node**.

Step 3 Select an output node and click  to initiate the voice talk request between the logged-in output node and the selected output node.

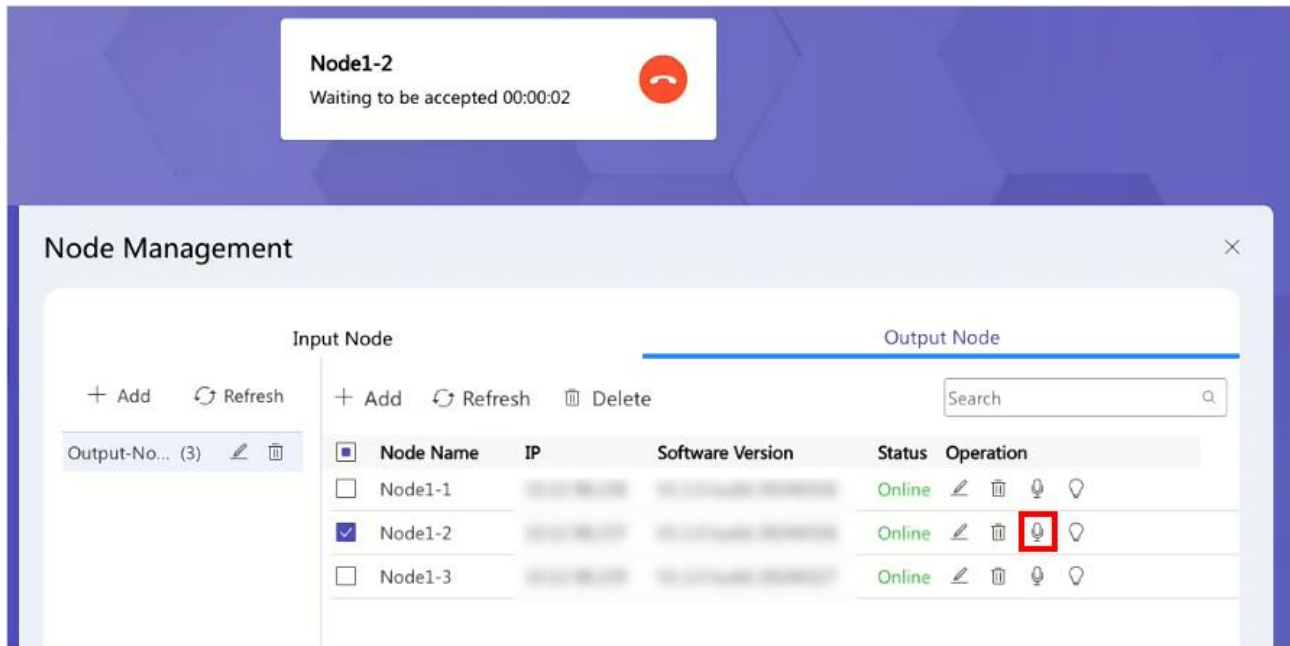


Figure 3-11 Initiate Voice Talk

Step 4 The other output node accepts the request.

The two output nodes can start the voice talk.

Initiate Voice Talk Between Input and Output Nodes

To perform voice talk between an input node and an output node:

- Connect an active microphone to the LINE IN port of the output node, and connect an audio output equipment such as a speaker to the LINE OUT port of the output node.
- Connect the LINE IN port of the input node to the audio output port of the computer, and connect the LINE OUT port of the input node to the audio input port of the computer.

3.3.4 Switch Scene

On the main page, click  and then click  to switch scene.

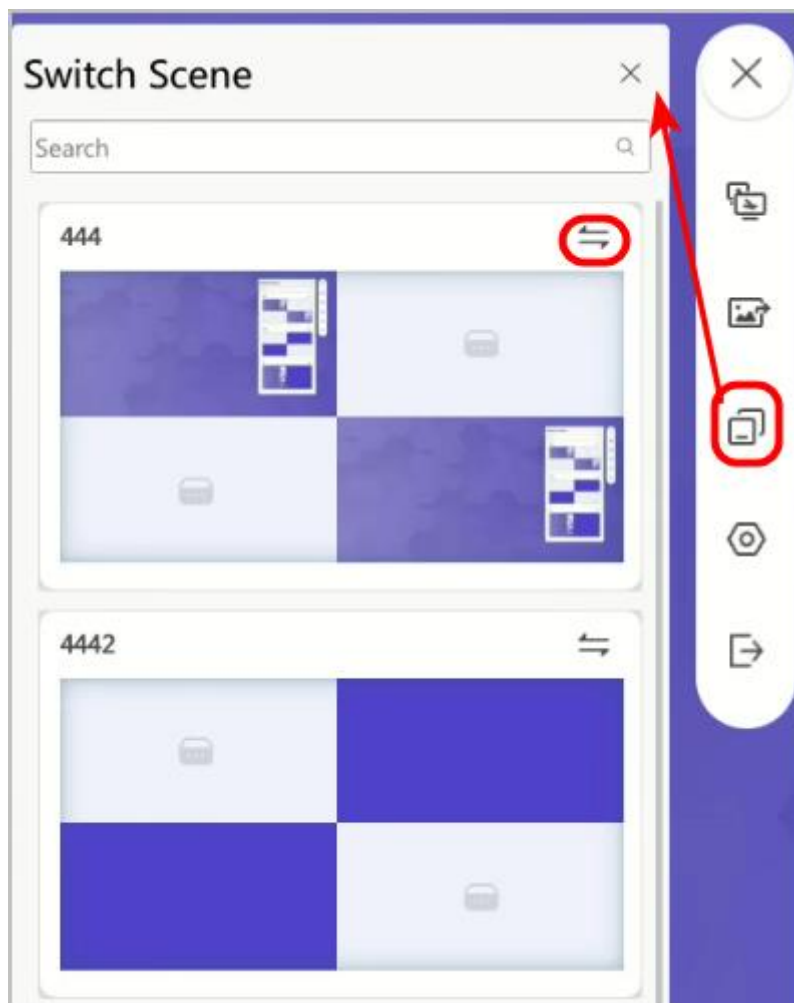


Figure 3-12 Switch Scene

3.3.5 Exit Remote PC

After taking over the input nodes, you can use either of the following methods to exit remote PC:

- Click .
- Use the shortcut key. For more information about shortcut key, see 3.1.2 Configure Shortcut Keys.
- When you can view the image of a computer on the display, click an area except the toolbar.



Figure 3-13 Computer Image on the Display

3.4 Configure Other Parameters

3.4.1 Manage Users

Click  → **User Management** to manage users as required:

- Edit user information: Click  of a user, enter the login password of the current user, and then edit the user information.
- Delete user:
 - Click  of a user, and then enter the login password of the current user to delete the user.
 - Select the users to delete, click **Delete**, and then enter the login password of the current user to delete the selected users.
- Refresh user information: Click **Refresh**.

3.4.2 View Node Status

Go to  → **Visual Maintenance** to view the health status and exception events of input and output nodes.

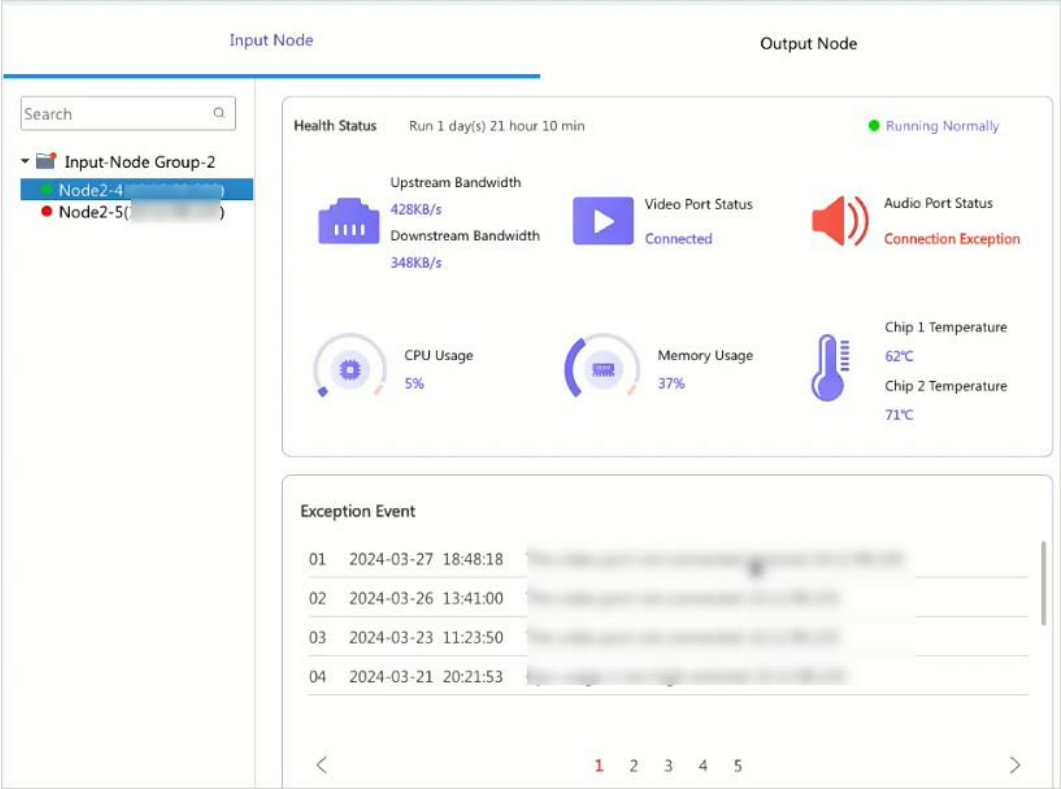


Figure 3-14 View Node Status

Chapter 4 Node Web Configuration

4.1 Web Function Comparison

The web functions supported by the main control node, output node, and input node differ. For specific comparisons, see the table below.

Table 4-1 Web Function Comparison

Web Page				Main Control Node	Output Node	Input Node
Configuration	System	System Settings	Basic Information	√	√	√
			Time Settings		√	√
		User Management			√	√
	Network	Network Configuration	TCP/IP		√	√
		Network Service	HTTPS		√	√
	Node Configuration	Node Status				
		Node Management				
		Main control configuration			√	√
	Preference					
	Signal Source Settings	Image Settings	Source Clipping			√
			Custom Resolution	√		√
			OSD			√
		Encoding Settings		√		√
	Other Settings	Streaming Mode		√		
		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		✓	
		SADP		✓	
		Syslog			

4.2 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-C80K-MAIN

Device Serial No.

Main Control [Upgrade](#)

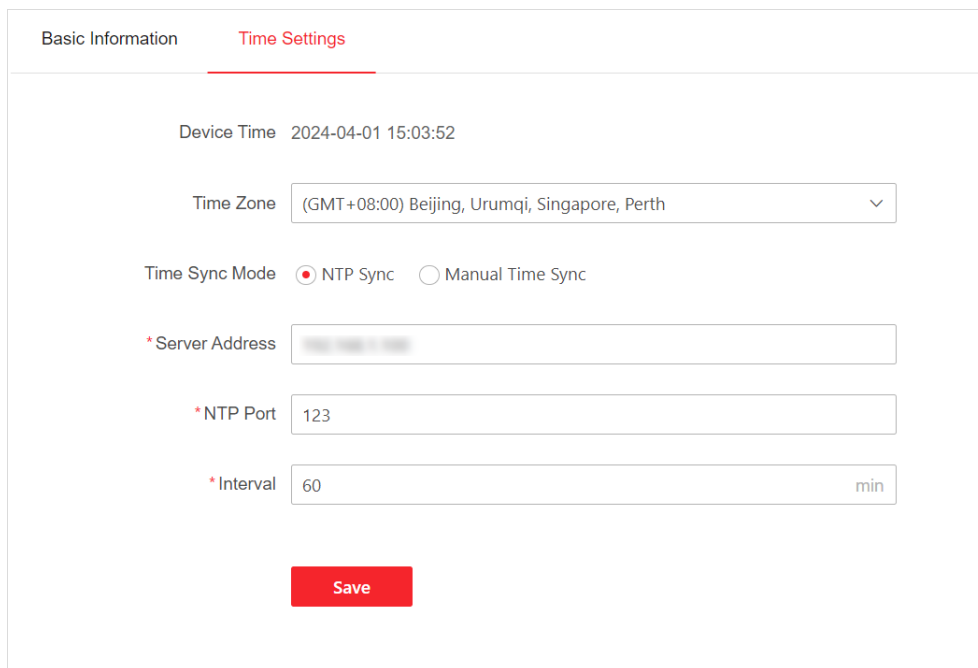
Decoder Version

Web Version

[Save](#)

Figure 4-1 View Basic Information

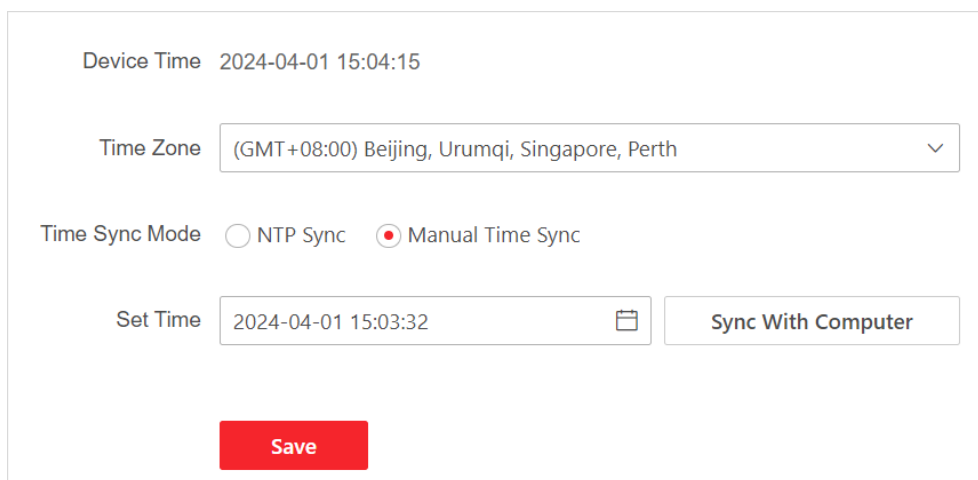
- Go to **System Settings** → **Time Settings**, if you select **NTP Sync**, the device time synchronizes with the time of the NTP server at the specified interval.
 - Set the address and port number of the NTP server.
 - Set the synchronization interval.



The screenshot shows the 'Time Settings' tab in a web interface. At the top, there are two tabs: 'Basic Information' and 'Time Settings', with 'Time Settings' being the active tab. Below the tabs, the 'Device Time' is displayed as '2024-04-01 15:03:52'. Under 'Time Zone', a dropdown menu shows '(GMT+08:00) Beijing, Urumqi, Singapore, Perth'. The 'Time Sync Mode' section 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' (containing '123'), and '* Interval' (containing '60' with a 'min' unit label). At the bottom of the form 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 with 'Manual Time Sync' selected. The 'Device Time' is '2024-04-01 15:04:15'. The 'Time Zone' dropdown is the same as in Figure 4-2. The 'Time Sync Mode' section now has 'Manual Time Sync' selected. Below this, there is a 'Set Time' section with a text input field containing '2024-04-01 15:03:32' and a calendar icon to its right. To the right of the 'Set Time' input is a button labeled 'Sync With Computer'. At the bottom of the form is a red 'Save' button.

Figure 4-3 Select Manual Time Sync

- On the **Time Settings** page, if you enable DST (Daylight Saving Time), the device time is set forward a specified time during the summer months.

DST

Enable ☒

Start Time Apr. First Sun. 02:00

End Time Oct. Last Sun. 02:00

Bias Time 30min

Save

Figure 4-4 Enable DST

- Go 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 4-5 Manage Users

4.3 Configure Network Parameters

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

4.3.1 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 4-6 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**.

4.3.2 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 4.6 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.

HTTP

*HTTP Port

HTTPS

Enable ☒

*HTTPS Port

Redirect to HTTPS Automatically ☒

HTTP(S) Authentication

*Authentication Mode

*Digest Algorithm Type

Save

Figure 4-7 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 a digest algorithm type.

Step 7 Click **Save**.

4.4 Configure Signal Source Parameters

Customize Resolution (Main Control Node)

If the resolution of a signal source does not match the resolution of the display, you can customize the resolution of the signal source.

Step 1 Go to **Configuration** → **Signal Source Settings** → **Image Settings**, and select a signal source.

Step 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.

Step 3 (Optional) Click **Copy To** to copy the current signal source configuration to other signal sources.

Step 4 Click **Save**.

The screenshot shows the 'Image Settings' tab with the 'Custom Resolution' section expanded. The 'Select Signal Source' dropdown is set to 'Input 4-1'. The 'Enable' toggle is turned on. The 'Refresh Rate' dropdown is set to '30'. The 'Resolution' is set to '1920' by width and '1080' by height. At the bottom are 'Save' and 'Copy To' buttons.

Figure 4-8 Customize Resolution (Main Control Node)

Customize Resolution (Input Node)

If the resolution of a signal source does not match the resolution of the display, you can customize the resolution of the signal source.

Step 1 Log in to the web page of an input node, and click **Configuration** → **Signal Source Settings** → **Image Settings** → **Custom Resolution**.

Step 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.

Step 3 Click **Save**.

Figure 4-9 Customize Resolution (Input Node)

Clip Signal Source

Step 1 Log in to the web page of an input node, and click **Configuration** → **Signal Source Settings** → **Image Settings**.

Step 2 On **Source Clipping** page, 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.

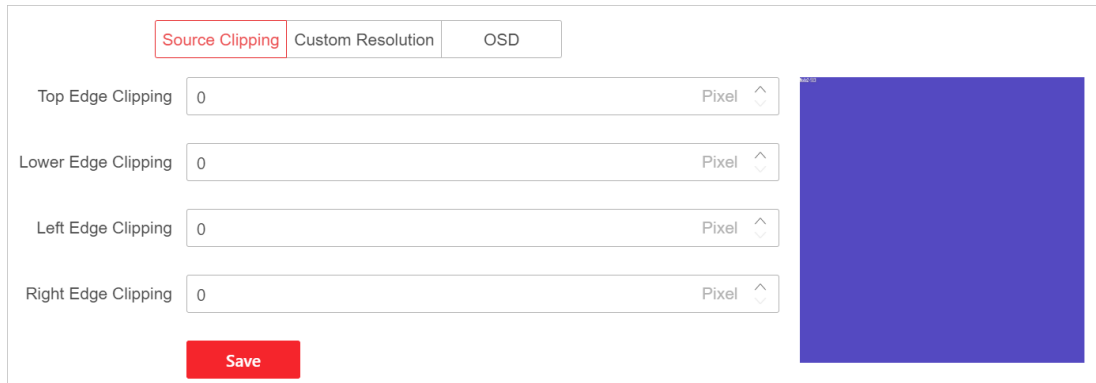


Figure 4-10 Clip Signal Source

Step 3 Click **Save**.

Configure OSD

Step 1 Log in to the web page of an input node, and click **Configuration** → **Signal Source Settings** → **Image Settings**.

Step 2 Click **OSD** to add OSDs as required:

- Overlay the date and time to the input signal image. You can select the data format and time format.
- Overlay the character 1 to the input signal image. Set the content, font size, and font color. You can enter the position values or directly drag the character to adjust the position.

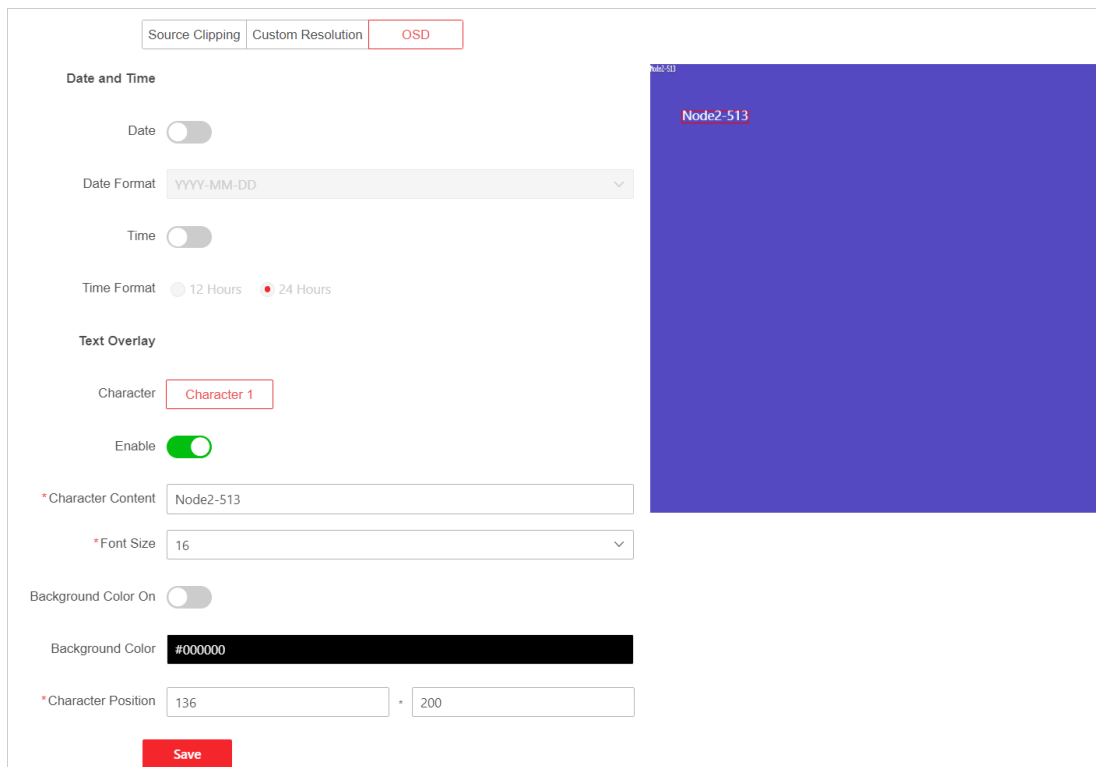


Figure 4-11 Configure OSD

Step 3 Click **Save**.

Set Encoding Parameters

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

Step 2 (Optional) For the main control node, 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: Node2-513

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: 8192 kbps

Resolution: 1280*720

Frame Rate: Full Frame Rate

Audio Encoding

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

Encoding Type: G.711ulaw

Save

Figure 4-12 Set Signal Source Encoding Parameters (Main Control Node)

Set Other Parameters

- Go to **Configuration** → **Preference** to use the default background or upload a new background image.

Select Output Background

Basic Background

Default Background

Import Background Image

Up to 1 pictures in jpeg/jpg format within 3 M.

Figure 4-13 Set Background

- Go to **Configuration** → **Other Settings** → **Streaming Mode**, select **Unicast** or **Broadcast**, and click **Save**. After setting the unicast or broadcast streaming mode, the main control node will restart.
- Go to **Configuration** → **Other Settings** → **Local Source Mode**, select **Normal Mode** or **High-Quality Mode**, and click **Save**. If you select the high-quality mode, the video image has high definition, but it will occupy more bandwidth.

- Log in to the web page of an input node, click **Configuration** → **Other Settings** → **No Signal Image**, use the default image or upload a new image, and click **Save**.

No Signal Image ☐ Default ☒ Custom

Custom Image

Upload Image

Please upload an image in format BMP with resolution of 1280 × 720 and bit depth of 24.

Save

Figure 4-14 Set No Signal Image

4.5 Maintain the System

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

- On the **Restart** page, click **Restart**.
- On the **Upgrade** page, 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 nodes controlled by the main control node 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

Upgrade File

Upgrade

System Upgrade

Upgrading system... Please do not refresh the page.

50%

Node ID	Node IP Address	Progress	Status
1		20%	In progress.
2		17%	In progress.
513		18%	In progress.
514		18%	In progress.

Total: 4 < 1 >

Figure 4-15 Upgrade the Main Control Node

Note

When you upgrade the main control node, you can view the upgrading process and status of all subnodes.

- On the **Backup and Reset** page, import and export the node parameters.
 - Click **Export** and enter the password to export the node parameters.
 - Click  to select a parameter file saved locally, and click **Import** to import node parameters.
- On the **Backup and Reset** page, reset the node:
 - 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.

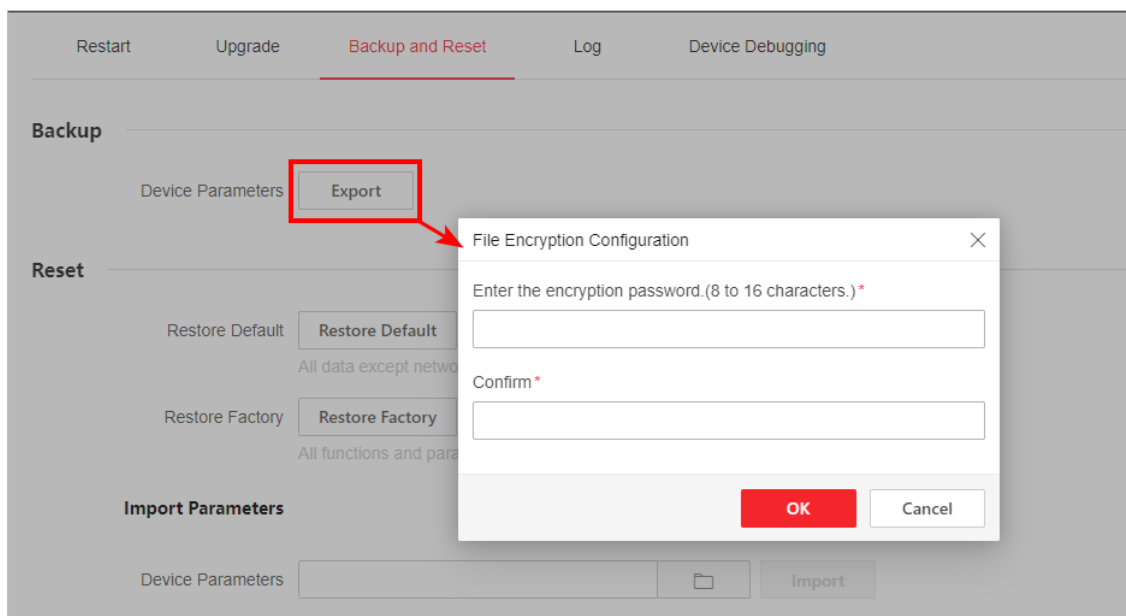


Figure 4-16 Back and Reset the Main Control Node

- On the **Backup and Reset** page, 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.

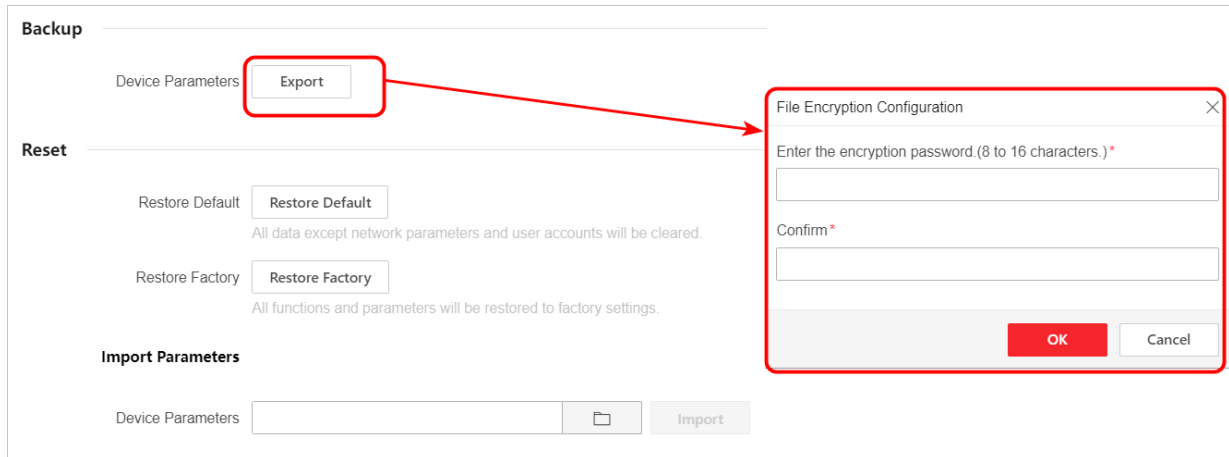


Figure 4-17 Reset Main Control Node

- On the **Log** page, set the search condition and click **Search**. You can view the searched logs of the node in the list below.

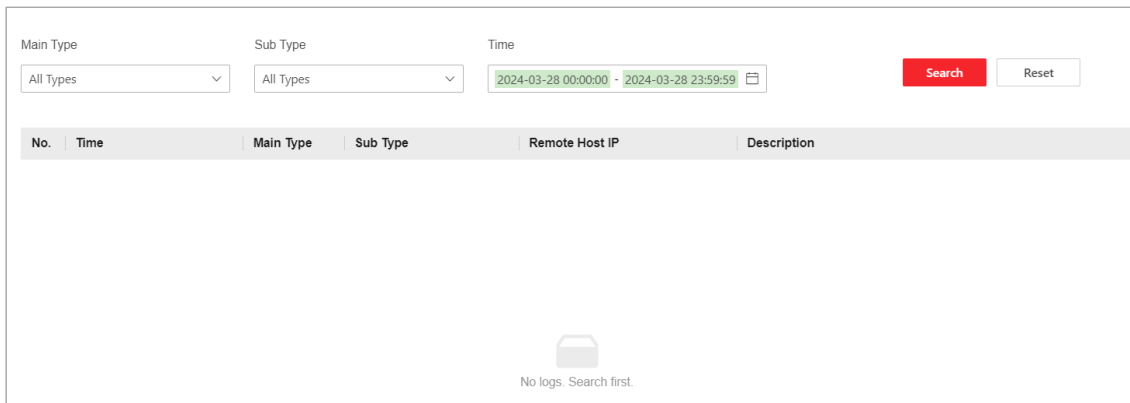


Figure 4-18 Search Logs

Debug Main Control Node

The output nodes and main control node only support enabling SSH, exporting debug logs, and exporting network switching packet, while the input nodes also support exporting audio data package. On the **Device Debugging** page, configure the following parameters as required:

- 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. If SSH is not needed, it is recommended to disable SSH to ensure network security.
- Click **Export** to export debugging logs.
- Click **Start Capturing**. After the network switching packet capture file is generated, click **Download**.
- Click **Start Capturing**. After the audio data packet capture file is generated, click **Download**.

SSH

Enable ☒

* Port No.

Export Debugging Log

Debug Log

Export Network Switching Packet

Subsystem

Packet Capture File

**PCAP File**
Capture Packet Duration: 2025-01-22 09:12:20

Export Audio Data Package

Capture

Packet Capture File

**File**
Capture Packet Duration: 2025-01-22 09:13:23

Figure 4-19 Debug the Input Node

4.6 Maintain the Security of Main Control Node

Go 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.

IP Address Filter | HTTPS Certificate | SADP | Syslog

Enable ☒

Filtering Type ☐ Blocklist ☒ Allowlist

Only IP addresses in the list are allowed to access.

List Table

☐	No.	IP Address	Description	Operation
☐	1		local ip	Edit Delete

Add List

IP Address *

Description *

Figure 4-20 Configure IP Address Filter

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

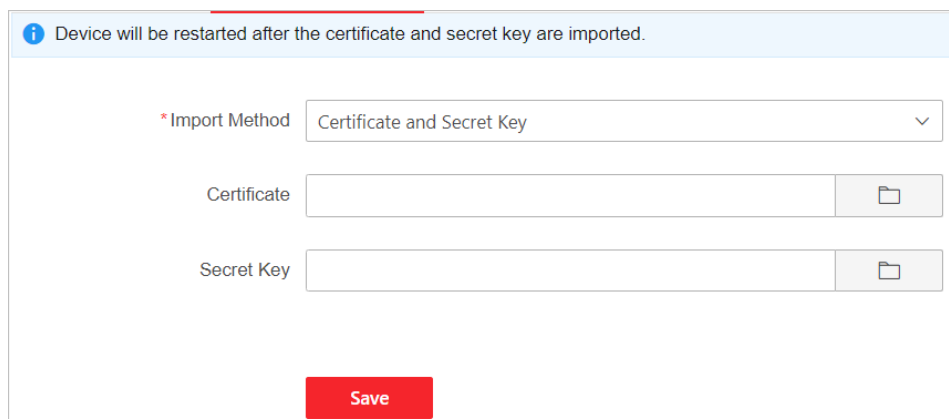


Figure 4-21 Import HTTPS Certificate and Secret Key

- On the **SADP** page, 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.
- On the **Syslog** page, enable Syslog as required. With Syslog enabled, the node logs can be uploaded to the Syslog server.

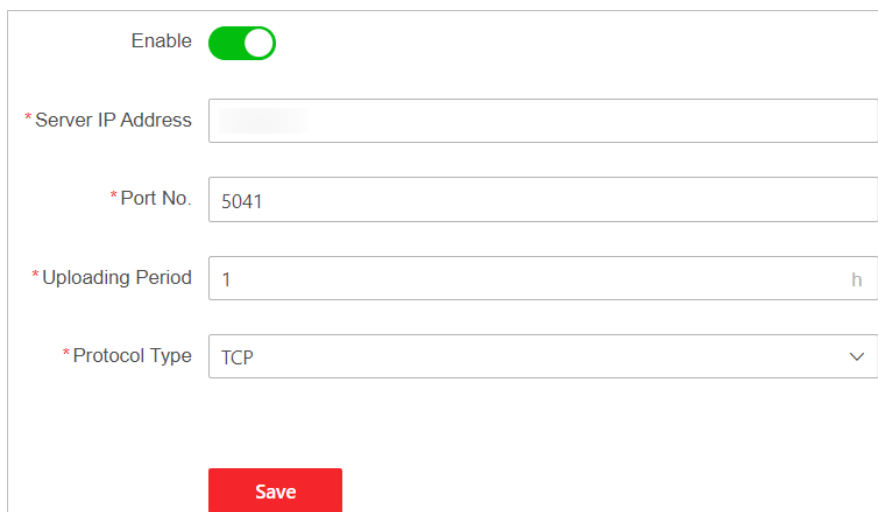
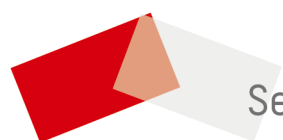


Figure 4-22 Enable Syslog



See Far, Go Further