

HWT-NVR800 9.0.0 User Guide

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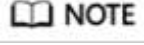
1 Product Package Information

1.1 Conventions

This section describes the conventions in the document.

Symbol Conventions

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

Symbol	Description
	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
	Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
	Supplements the important information in the main text. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

GUI Conventions

Format	Description
""	Buttons, menus, parameters, tabs, window, and dialog titles are in boldface. For example, click OK .

Format	Description
>	Multi-level menus are in boldface and separated by the ">" signs. For example, choose File > Create > Folder .

Keyboard Operation

Format	Description
Key	Key names are in boldface. For example, press Enter , Tab , Backspace , and a .
Key 1+Key 2	Press the keys concurrently. For example, pressing Ctrl+Alt+A means that the three keys should be pressed concurrently.
Key 1, Key 2	Press the keys in turn. For example, pressing Alt, F means the two keys should be pressed in turn.

Mouse Operation

Format	Description
Click	Select and release the primary mouse button without moving the pointer.
Double-click	Press the primary mouse button twice continuously and quickly without moving the pointer.
Drag	Press and hold the primary mouse button and move the pointer to a certain position.

1.2 Feedback and Technical Support

This section describes how to submit a feedback and seek technical support.

Feedback

If you have any comments on the product documentation, submit your feedback in either of the following ways:

- Leave comments on the document page when browsing a document, as shown in Figure 1-1.

Figure 1-1 Feedback

> Your Feedback is Appreciated

Please rate this information: very poor ☐ ☐ ☐ ☐ ☐ excellent

Does this information help you solve your problem? ☒ Yes ☐ No

Feedback: This document provides detailed information and vivid pictures. Very good!

Submit

Your comments are in the driving force of our continuous improvement

We will quickly reply to you.

Technical Support

You can seek technical support using contact information provided in Table 1-1.

Table 1-1 Technical support

Purchase Channel	Contact
HOLLOWITS channel partners	See the contact provided by the channel partners.

1.3 Security Statement

Content Conventions

The purchased products, services, and features are stipulated by the contract made between HOLLOWITS and the customer. All or part of the products, services, and features described in this document may not be within the purchase scope or usage scope. Unless otherwise stipulated, content in this document does not constitute a warranty of any kind, express or implied.

Notices About Secure Operations

Before performing operations on an HWT-NVR800 device, engineers must comply with the following requirements. **Read the safety instructions carefully to prevent personal injury and damage to the device and other connecting devices.**

- Use the power supply provided or specified by the manufacturer. Using an unspecified power supply may damage the device.

NOTE

The device should be connected to the power output socket of the power grid with protection grounding.

- Power plugs and appliance couplers used as disconnectors must be easy to operate.
- To avoid electric shocks or other accidents, do not pass any object through or push any object into openings of the device.

- Do not place the device in a dusty place.
- Do not place the device in a rainy or damp environment, such as an outdoor place without any protection against wind or rain, or a damp basement. If the device comes into contact with water, remove the power cable immediately and contact the authorized reseller immediately.
- Keep the device surface clean and dry. Before cleaning the device shell, dry the soft wet cloth.

NOTE

Do not use liquid aerosol cleaners to spray the shell surface. Otherwise, water vapor may enter the device and cause damage and danger.

- If the device generates any odor or noise, immediately remove the power cable or turn off the power switch. Do not perform any other operations. Contact the authorized reseller or service center.

NOTE

To avoid electric shocks, do not remove the cover of the device when the power is on.

- Handle the device with care to avoid damage to the hard disks or other components. If the device does not work due to collision with hard objects, contact the authorized reseller for repair or replacement.
- If the system clock fails to work, replace the standard 3 V lithium battery on the main board with a standard lithium battery or a battery provided or specified by the manufacturer. Before replacing the battery, disconnect the power supply from the device. Otherwise, serious electric shocks may occur. Dispose of the used battery properly.
- Install or place the device in a well-ventilated place. Do not block the cooling system of ventilation openings (on the top, bottom, both sides, and the back) because the mainboard and hard disks may generate a large amount of heat when the device is running.
- The attached power adapter can be used for only one device at a time. If you connect the power adapter to multiple devices, the devices may restart repeatedly due to insufficient power supply.
- Do not place any water-containing objects, such as vases, on the device. Otherwise, a water leak may occur, which will damage the device or cause dangers.
- To avoid device damage due to pressure, do not place any objects on the device.
- Obtain the customer's authorization before performing maintenance operations.
- Obtain the customer's authorization before taking troubleshooting data out of the customer's network. Personal information in such data must be rendered anonymous to ensure that the device provider cannot restore personal information in any ways.

Notices About Feature Usage

- Strictly follow your local laws and regulations when using video services, for example, recording video and taking snapshots. Do not use them for illegitimate purposes, for example, snooping on people's privacy or illegally installing these devices in offices to observe employee behavior.
- The product hardware provides the USB port for connecting to a mouse or an external storage device to export recordings and logs when using the local display unit (LDU) function. You need to control the usage scope of the USB port.

Notices About Device Running

- Warning: Running this device in a living environment may cause radio interference.

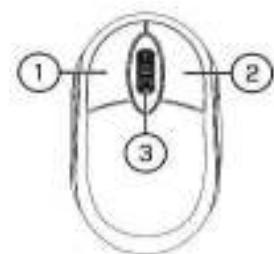
- It is recommended that this product be used in non-tropical climates.
- This product contains a coin/button cell battery. If the battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death. Keep new and used batteries away from children.
- If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
- The battery can explode if it is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- If the battery compartment does not close securely, stop using the product and keep it away from children.
- Do not dispose of a battery into fire or a hot oven, or mechanically crush or cut a battery, which may result in an explosion.
- Do not leave a battery in an extremely high temperature or extremely low pressure surrounding environment that can result in an explosion or the leakage of flammable liquid or gas.
- Do not swallow the battery and chemical burn hazard.
- Some models are equipped with internal fans. Keep your body away from the fans when using the device.
- Avoid any unauthorized modification on the design of the structure, safety, or performance. Use product-attached auxiliaries and recommended fittings.

1.4 Network Quality Requirements

- Average network conditions: $0.1\% < \text{E2E packet loss rate} < 1\%$; $100 \text{ ms} < \text{client network latency} < 500 \text{ ms}$; $20 \text{ ms} < \text{network jitter} < 100 \text{ ms}$
- Poor network conditions: $1\% < \text{E2E packet loss rate} < 3\%$; $100 \text{ ms} < \text{client network latency} < 500 \text{ ms}$; $20 \text{ ms} < \text{network jitter} < 100 \text{ ms}$

1.5 Tools

1.5.1 Mouse Usage Description



1. Left mouse button

- You can left-click a menu item to access related function or page.
- In the multi-pane layout, you can double-click a channel to view the live video from the channel in full screen, and double-click the channel again to exit the full screen mode.
- You can left-click and drag a slider or ruler to adjust the value.

- After you left-click a channel during live video viewing, a shortcut toolbar is displayed.
2. **Right mouse button**
 - You can right-click the screen to open the taskbar.
 3. **Mouse wheel**
 - You can scroll up and down to view the menu items.
 - When you move the mouse pointer over the volume control bar, you can scroll up or down to increase or decrease the system volume.

1.5.2 Virtual Keyboard Usage

When you need to enter data, click the input position. The virtual keyboard is automatically displayed.



2 Product Description

2.1 Positioning

The HWT-NVR800 is a video device developed by HOLOWITS for edge applications in scenarios such as campuses, chain stores, communities, schools, hospitals, and homes. The device features streamlined intelligence, user-friendly Local Display Unit (LDU) design, device plug-and-play, easy management and O&M, and high reliability.

Computing power collaboration: The HWT-NVR800 does not provide computing power. It performs intelligent services such as intelligent search based on data features extracted by intelligent cameras.

2.2 Features

AI

- Supports behavior analysis such as motion detection, intrusion detection, tripwire crossing detection, and audio diagnosis based on AI capabilities of cameras.
- Supports target detection and structured target data extraction based on AI capabilities of cameras.
- Displays information such as the occurrence time, frequency, and number of persons in different scenarios.

User-friendly LDU

- Provides a convenient startup wizard, helping users quickly set and use the product.
- Provides a user-friendly easy-to-use layout and architecture, ensuring better application and experience for users.
- Allows users to customize pane layouts so that users can view live video from desired channels more clearly.
- Supports PTZ controls on cameras for a wider angle and coverage, and allows users to adjust the focal length for better angles and depths of field (DoFs).
- Supports accurate segment playback, allowing users to quickly locate the incident time when checking a long video clip.
- Allows users to add tags during live video viewing or recording playback to quickly locate and play the content that they are interested in.

- Pushes alarms to mobile apps.
- Allows users to upgrade multiple cameras simultaneously, shortening the operation time.

Management and O&M

- Supports a maximum of two administrators and six common users.
- Allows users to log in through the LDU, web client, iClient S100, and mobile apps.

High Reliability

- Supports single-disk and multi-disk modes. Automatically switches to the remaining hard disks for storage when a single hard disk is full.
- Supports recording lock, preventing important recordings from being overwritten within a specified period.
- Allows users to import, export, and back up parameter settings and recording data.

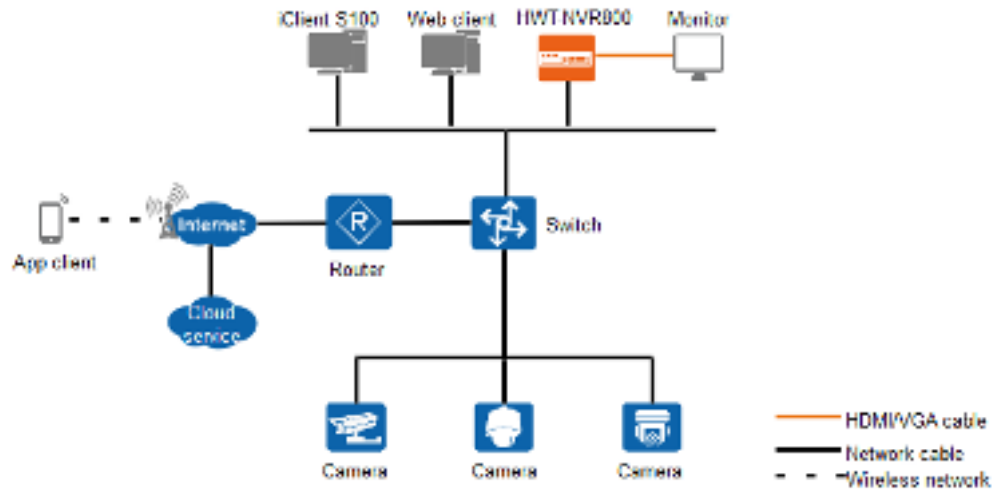
2.3 Typical Network

The HWT-NVR800 applies to small-scale scenarios such as supermarkets and shopping malls. Figure 2-1 shows a typical HWT-NVR800 network.

The HWT-NVR800 supports the following access modes:

- LDU: You can use a monitor to access and manage the HWT-NVR800. In this access mode, no computer is required.
Only one HWT-NVR800 can be managed.
- iClient S100: You can use the iClient S100 installed on a computer to access and manage the HWT-NVR800.
Multiple HWT-NVR800s can be managed.
- Web client: You can use a browser installed on a computer to access the HWT-NVR800 and perform operations such as live video viewing.
Only one HWT-NVR800 can be managed.
- Mobile app: You can use an app installed on a mobile phone to access and manage the HWT-NVR800.
Multiple HWT-NVR800s can be managed.

Figure 2-1 Typical network



2.4 Structure

2.4.1 HWT-NVR800-A01

Front Panel

Figure 2-2 shows the front panel of the HWT-NVR800-A01.

Figure 2-2 Front panel



Table 2-1 Port description

No.	Port	Type	Function
3	USB port	USB 2.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk, whose output electrical specification is less than or equal to that of the USB port.

Table 2-2 describes the status of indicators on the front panel.

Table 2-2 Indicator status description

No.	Indicator	Status
1	Power status indicator	- Steady on: The device is working properly. - Off: The device is stopped or powered off.
2	Hard disk status indicator	- Steady on: The hard disk is properly connected but no data is being read from or written to the hard disk. - Blinking: Data is being read from or written to the hard disk. - Off: The hard disk is faulty or not detected.

Rear Panel

Figure 2-3 shows the rear panel of the HWT-NVR800-A01.

Figure 2-3 Rear panel



Table 2-3 describes the ports and buttons on the rear panel.

Table 2-3 Port and button description

No.	Port/Button	Type	Function
1	Ground port	-	Grounds the device.
2	Audio output port	RCA	Used for audio output. This port can be used to listen to channel-associated voice of cameras.
3	VGA port	VGA	Connects to a monitor through VGA cables. This port supports 1080p video output.
4	HDMI port	HDMI	Connects to a monitor through HDMI cables. This port supports 2K/4K video output.

No.	Port/Button	Type	Function
5	Network port	RJ-45	Connects network cables to one 10/100/1000 Mbit/s Ethernet port.
6	USB port	USB 2.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk
7	Reset button	-	Restores the device to factory settings. If you hold down the button for about 10s, the device automatically restores to factory settings and the buzzer produces four beeps.
8	Power port	-	Connects to the power supply.
9	Power button	-	Powers on or off the device.

Table 2-4 describes the status of indicators on the rear panel.

Table 2-4 Indicator status description

Indicator	Status
Network port ACT indicator	• Off: No data is being transmitted. • Blinking: Data is being transmitted.
Network port LINK indicator	• Steady on: The network port is connected properly. • Off: The network port is not connected.

2.4.2 HWT-NVR800-A01-04P

Front Panel

Figure 2-4 shows the front panel of the HWT-NVR800-A01-04P.

Figure 2-4 Front panel



Table 2-5 Port description

No.	Port	Type	Function
3	USB port	USB 2.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk, whose output electrical specification is less than or equal to that of the USB port.

Table 2-6 describes the status of indicators on the front panel.

Table 2-6 Indicator status description

No.	Indicator	Status
1	Power status indicator	• Steady on: The device is working properly. • Off: The device is stopped or powered off.
2	Hard disk status indicator	• Steady on: The hard disk is properly connected but no data is being read from or written to the hard disk. • Blinking: Data is being read from or written to the hard disk. • Off: The hard disk is faulty or not detected.

Rear Panel

Figure 2-5 shows the rear panel of the HWT-NVR800-A01-04P.

Figure 2-5 Rear panel

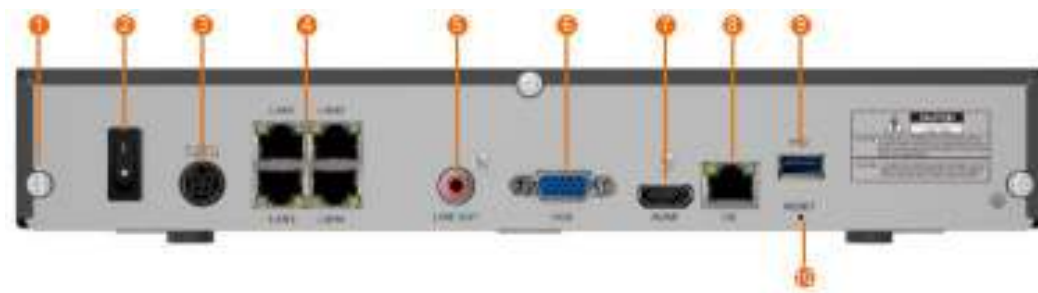


Table 2-7 describes the ports and buttons on the rear panel.

Table 2-7 Port and button description

No.	Port/Button	Type	Function
1	Ground port	-	Grounds the device.
2	Power button	-	Powers on or off the device.
3	Power port	-	Connects to the power supply.
4	PoE port	PoE	Connects and supplies power to a camera.
5	Audio output port	RCA	Used for audio output. This port can be used to listen to channel-associated voice of cameras.
6	VGA port	VGA	Connects to a monitor through VGA cables. This port supports 1080p video output.
7	HDMI port	HDMI	Connects to a monitor through HDMI cables. This port supports 2K/4K video output.
8	Network port	RJ-45	Connects network cables to one 10/100/1000 Mbit/s Ethernet port.
9	USB port	USB3.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk
10	Reset button	-	Restores the device to factory settings. If you hold down the button for about 10s, the device automatically restores to factory settings and the buzzer produces four beeps.

Table 2-8 describes the status of indicators on the rear panel.

Table 2-8 Indicator status description

Indicator	Status
Network port ACT indicator	• Off: No data is being transmitted. • Blinking: Data is being transmitted.
Network port LINK indicator	• Steady on: The network port is connected properly. • Off: The network port is not connected.

2.4.3 HWT-NVR800-A02-08P

Front Panel

Figure 2-6 shows the front panel of the HWT-NVR800-A02-08P.

Figure 2-6 Front panel



Table 2-9 Port description

No.	Port	Type	Function
3	USB port	USB 2.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk, whose output electrical specification is less than or equal to that of the USB port.

Table 2-10 describes the status of indicators on the front panel.

Table 2-10 Indicator status description

No.	Indicator	Status
1	Power status indicator	• Steady on: The device is working properly. • Off: The device is stopped or powered off.

No.	Indicator	Status
2	Hard disk status indicator	- Steady on: The hard disk is properly connected but no data is being read from or written to the hard disk. - Blinking: Data is being read from or written to the hard disk. - Off: The hard disk is faulty or not detected.

Rear Panel

Figure 2-7 shows the rear panel of the HWT-NVR800-A02-08P.

Figure 2-7 Rear panel



Table 2-11 describes the ports and buttons on the rear panel.

Table 2-11 Port and button description

No.	Port/Button	Type	Function
1	Audio input port	RCA	Used for audio input. This port can be used for voice intercom with cameras equipped with microphones.
2	Audio output port	RCA	Used for audio output. This port can be used to listen to channel-associated voice of cameras.
3	VGA port	VGA	Connects to a monitor through VGA cables. This port supports 1080p video output.
4	HDMI port	HDMI	Connects to a monitor through HDMI cables. This port supports 2K/4K video output.

No.	Port/Button	Type	Function
5	USB port	USB 2.0/USB 3.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk
6	Reset button	-	Restores the device to factory settings. If you hold down the button for about 10s, the device automatically restores to factory settings and the buzzer produces four beeps.
7	PoE port	PoE	Connects and supplies power to a camera.
8	Power button	-	Powers on or off the device.
9	Network port	RJ-45	Connects network cables to one 10/100/1000 Mbit/s Ethernet port.
10	Power port	-	Connects to the power supply.
11	Ground port	-	Grounds the device.

Table 2-12 describes the status of indicators on the rear panel.

Table 2-12 Indicator status description

Indicator	Status
Network port ACT indicator	• Off: No data is being transmitted. • Blinking: Data is being transmitted.
Network port LINK indicator	• Steady on: The network port is connected properly. • Off: The network port is not connected.

2.4.4 HWT-NVR800-A02-16P

Front Panel

Figure 2-8 shows the front panel of the HWT-NVR800-A02-16P.

Figure 2-8 Front panel



Table 2-13 Port description

No.	Port	Type	Function
3	USB port	USB 2.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk, whose output electrical specification is less than or equal to that of the USB port.

Table 2-14 describes the status of indicators on the front panel.

Table 2-14 Indicator status description

No.	Indicator	Status
1	Power status indicator	• Steady on: The device is working properly. • Off: The device is stopped or powered off.
2	Hard disk status indicator	• Steady on: The hard disk is properly connected but no data is being read from or written to the hard disk. • Blinking: Data is being read from or written to the hard disk. • Off: The hard disk is faulty or not detected.

Rear Panel

Figure 2-9 shows the rear panel of the HWT-NVR800-A02-16P.

Figure 2-9 Rear panel



Table 2-15 describes the ports and buttons on the rear panel.

Table 2-15 Port and button description

No.	Port/Button	Type	Function
1	Audio input port	RCA	Used for audio input. This port can be used for voice intercom with cameras equipped with microphones.
2	Audio output port	RCA	Used for audio output. This port can be used to listen to channel-associated voice of cameras.
3	VGA port	VGA	Connects to a monitor through VGA cables. This port supports 1080p video output.
4	HDMI port	HDMI	Connects to a monitor through HDMI cables. This port supports 2K/4K video output.
5	USB port	USB 2.0/USB 3.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk
6	Reset button	-	Restores the device to factory settings. If you hold down the button for about 10s, the device automatically restores to factory settings and the buzzer produces four beeps.
7	PoE port	PoE	Connects and supplies power to a camera.
8	Power button	-	Powers on or off the device.
9	Network port	RJ-45	Connects network cables to one 10/100/1000 Mbit/s Ethernet port.
10	Power port	-	Connects to the power supply.
11	Ground port	-	Grounds the device.

Table 2-16 describes the status of indicators on the rear panel.

Table 2-16 Indicator status description

Indicator	Status
Network port ACT indicator	• Off: No data is being transmitted. • Blinking: Data is being transmitted.
Network port LINK indicator	• Steady on: The network port is connected properly. • Off: The network port is not connected.

2.4.5 HWT-NVR800-B04

Front Panel

Figure 2-10 shows the front panel of the HWT-NVR800-B04.

Figure 2-10 Front panel



Table 2-17 Port description

No.	Port	Type	Function
3	USB port	USB 2.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk, whose output electrical specification is less than or equal to that of the USB port.

Table 2-18 describes the status of indicators on the front panel.

Table 2-18 Indicator status description

No.	Indicator	Status
1	Power status indicator	- Steady on: The device is working properly. - Off: The device is stopped or powered off.
2	Hard disk status indicator	- Steady on: The hard disk is properly connected but no data is being read from or written to the hard disk. - Blinking: Data is being read from or written to the hard disk. - Off: The hard disk is faulty or not detected.

Rear Panel

Figure 2-11 shows the rear panel of the HWT-NVR800-B04.

Figure 2-11 Rear panel



Table 2-19 describes the ports and buttons on the rear panel.

Table 2-19 Port and button description

No.	Port/Button	Type	Function
1	Audio input port	RCA	Used for audio input. This port can be used for voice intercom with cameras equipped with microphones.
2	Audio output port	RCA	Used for audio output. This port can be used to listen to channel-associated voice of cameras.
3	Network port	RJ-45	Connects network cables to one 10/100/1000 Mbit/s Ethernet port.
4	VGA port	VGA	Connects to a monitor through VGA cables. This port supports 1080p video output.

No.	Port/Button	Type	Function
5	HDMI port	HDMI	Connects to a monitor through HDMI cables. This port supports 2K/4K video output.
6	USB port	USB 2.0/USB 3.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk
7	Reset button	-	Restores the device to factory settings. If you hold down the button for about 10s, the device automatically restores to factory settings and the buzzer produces four beeps.
8	Alarm input/output port	I/O terminal	• Alarm input port (IN): connects to external alarm input devices, such as the access control system. • Alarm output port (OUT): connects to external alarm output devices, such as the alarm bell system.
9	Power button	-	Powers on or off the device.
10	Power port	-	Connects to the power supply.
11	Ground port	-	Grounds the device.

Table 2-20 describes the status of indicators on the rear panel.

Table 2-20 Indicator status description

Indicator	Status
Network port ACT indicator	• Off: No data is being transmitted. • Blinking: Data is being transmitted.
Network port LINK indicator	• Steady on: The network port is connected properly. • Off: The network port is not connected.

2.4.6 HWT-NVR800-B04D

Front Panel

Figure 2-12 shows the front panel of the HWT-NVR800-B04D.

Figure 2-12 Front panel



Table 2-21 Port description

No.	Port/Button	Type	Function
3	USB port	USB2.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk, whose output electrical specification is less than or equal to that of the USB port.

Table 2-22 describes the status of indicators on the front panel.

Table 2-22 Indicator status description

No.	Port/Button	Status
1	Power status indicator	• Steady on: The device is working properly. • Off: The device is stopped or powered off.
2	Hard disk status indicator	• Steady on: The hard disk is properly connected but no data is being read from or written to the hard disk. • Blinking: Data is being read from or written to the hard disk. • Off: The hard disk is faulty or not detected.

Rear Panel

Figure 2-13 shows the rear panel of the HWT-NVR800-B04D.

Figure 2-13 Rear panel



Table 2-23 describes the ports and buttons on the rear panel.

Table 2-23 Port and button description

No.	Port/Button	Type	Function
1	Audio input port	RCA	Used for audio input. This port can be used for voice intercom with cameras equipped with microphones.
2	Audio output port	RCA	Used for audio output. This port can be used to listen to channel-associated voice of cameras.
3	LAN port	RJ45	Connects network cables to one 10/100/1000 Mbit/s Ethernet port. This port provides internal services and is used to connect to cameras on a LAN.
4	WAN port	RJ45	Connects network cables to one 10/100/1000 Mbit/s Ethernet port. This port provides external services. It must be connected to the network port when an external system accesses the HWT-NVR800. This port can also be used to connect to cameras.
5	VGA port	VGA	Connects to a monitor through VGA cables. This port supports 1080p video output.
6	HDMI port	HDMI	Connects to a monitor through HDMI cables. This port supports 2K/4K video output.
7	USB port	USB 2.0/USB 3.0	Connects to one of the following USB devices: • USB flash drive • USB mouse • Portable hard disk
8	Reset button	-	Restores the device to factory settings. If you hold down the button for about 10s, the device automatically restores to factory settings and the buzzer produces four beeps.

No.	Port/Button	Type	Function
9	Alarm-in/Alarm-out port	I/O terminal	- Alarm-in port (IN): connects to external alarm input devices, such as the access control system. - Alarm-out port (OUT): connects to external alarm output devices, such as the alarm bell system.
10	Power button	-	Powers on or off the device.
11	Power port	-	Connects to the power supply.
12	Ground port	-	Grounds the device.

Table 2-24 describes the status of indicators on the rear panel.

Table 2-24 Indicator status description

Indicator	Status
Network port ACT indicator	- Off: No data is being transmitted. - Blinking: Data is being transmitted.
Network port LINK indicator	- Steady on: The network port is connected properly. - Off: The network port is not connected.

2.5 Specifications

2.5.1 HWT-NVR800-A01

Category	Sub-category	HWT-NVR800-A01 (4-Channel)	HWT-NVR800-A01 (8-Channel)
Device performance	Network video access	4-channel, up to 80 Mbit/s access bandwidth	8-channel, up to 80 Mbit/s access bandwidth
	Video forwarding	4-channel, up to 64 Mbit/s forwarding bandwidth	8-channel, up to 64 Mbit/s forwarding bandwidth
	Playback/Download	4-channel, up to 64 Mbit/s playback bandwidth Simultaneous playback: up to 4 channels on the LDU or web client	8-channel, up to 64 Mbit/s playback bandwidth Simultaneous playback: up to 8 channels on the LDU; up to 4 channels on the web client

Category	Sub-category	HWT-NVR800-A01 (4-Channel)	HWT-NVR800-A01 (8-Channel)
	Decoding	8MP (4K): 1-channel at 30 fps 5MP: 2-channel at 20 fps 4MP: 3-channel at 30 fps 2MP (1080p): 6-channel at 30 fps 720p: 8-channel at 30 fps The decoding specification is halved when intelligent services are enabled.	
Video output	HDMI	One HDMI 1.4 port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, 1920 x 1080, 2560 x 1440, and 3840 x 2160) The hardware resources of a device with only one disk tray are limited. If a 2K/4K monitor is connected to the device, the system responds slowly. It is recommended that the video output resolution be 1080p or lower.	
	VGA	One VGA port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, and 1920 x 1080)	
Platform performance	Cameras connected	4 cameras to one device	8 cameras to one device
	Number of online users	Up to 8 online users (apiadmin is used to access the iClient only)	
Controller	Processor	Hi3536CRBCV100	
	Memory	512 MB (1 x DDR3)	
Storage capacity	Disk quantity	1	
	Disk port	1 x SATA 3.0 port	
	Disk type	Supported monitoring disks: 1 TB/2 TB/4 TB/6 TB/8 TB The typical power consumption of a hard disk must be less than or equal to 14 W. For compatibility purposes, you are advised to use only hard disks listed in the <i>HWT-NVR800 Compatibility List</i> .	
Intelligent search	Total list capacity	10,000	
	Total capacity of the dynamic list	300,000	

Category	Sub-category	HWT-NVR800-A01 (4-Channel)	HWT-NVR800-A01 (8-Channel)
Target intelligence	Maximum number of target recognition cameras that can be connected	Full-channel target recognition Typical scenario: 4 for a static list with 10,000 records	
External port	Network port	1 x 10/100/1000 Mbit/s Ethernet port	
	PoE port	-	
	USB port	2 x USB 2.0 port (one on the front panel, and the other on the rear panel) Output voltage/current of USB 2.0 ports: 5 V DC, 500 mA	
	Audio input	-	
	Audio output	1 channel, RCA port	
	Boolean value	-	
Others	Operating temperature	0°C to 45°C	
	Operating humidity	20% to 90%	
	Altitude	0-3000 m. When the altitude is above 1800 m, the maximum operating temperature is reduced by 1°C for every 200 m increment in altitude.	
	Maximum power consumption (with hard disks)	20 W	
	Noise	50 dB	
	Power supply	12 V/2 A	
	Dimensions (H x W x D)	54 mm x 300 mm x 227 mm	
	Weight	1.0 kg	

2.5.2 HWT-NVR800-A01-04P

Category	Sub-category	HWT-NVR800-A01-04P
Device performance	Network video access	8-channel, up to 80 Mbit/s access bandwidth
	Video forwarding	8-channel, up to 64 Mbit/s forwarding bandwidth
	Playback/Download	8-channel, up to 64 Mbit/s playback bandwidth Simultaneous playback: up to 8 channels on the LDU; up to 4 channels on the web client
	Decoding	8MP (4K): 1-channel at 30 fps 5MP: 2-channel at 20 fps 4MP: 3-channel at 30 fps 2MP (1080p): 6-channel at 30 fps 720p: 16-channel at 30 fps The decoding specification is halved when intelligent services are enabled.
Video output	HDMI	One HDMI 1.4 port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, 1920 x 1080, 2560 x 1440, and 3840 x 2160) The hardware resources of a device with only one disk tray are limited. If a 2K/4K monitor is connected to the device, the system responds slowly. It is recommended that the video output resolution be 1080p or lower.
	VGA	One VGA port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, and 1920 x 1080)
Platform performance	Cameras connected	8 cameras to one device
	Number of online users	Up to 8 online users (apiadmin is used to access the iClient only)
Controller	Processor	Hi3536CRBCV100
	Memory	512 MB (1 x DDR3)
Storage capacity	Disk quantity	1
	Disk port	1 x SATA 3.0 port

Category	Sub-category	HWT-NVR800-A01-04P
	Disk type	Supported monitoring disks: 1 TB/2 TB/4 TB/6 TB/8 TB The typical power consumption of a hard disk must be less than or equal to 14 W. For compatibility purposes, you are advised to use only hard disks listed in the <i>HWT-NVR800 Compatibility List</i> .
Intelligent search	Total list capacity	10,000
	Total capacity of the dynamic list	300,000
Target intelligence	Maximum number of target recognition cameras that can be connected	Full-channel target recognition Typical scenario: 8 for a static list with 10,000 records
External port	Network port	1 x 10/100/1000 Mbit/s Ethernet port
	PoE port	4 x 10/100 Mbit/s Ethernet port
	USB port	2 x USB 2.0 port (one on the front panel, and the other on the rear panel) Output voltage/current of USB 2.0 ports: 5 V DC, 500 mA
	Audio input	-
	Audio output	1 channel, RCA port
	Boolean value	-
Others	Operating temperature	0°C to 45°C
	Operating humidity	20% to 90%
	Altitude	0-3000 m. When the altitude is above 1800 m, the maximum operating temperature is reduced by 1°C for every 200 m increment in altitude.
	Maximum power consumption (with hard disks)	57 W
	Noise	50 dB
	Power supply	48 V/1.2 A
	Dimensions (H x W x D)	54 mm x 300 mm x 227 mm
	Weight	1.0 kg

2.5.3 HWT-NVR800-A02-08P

Category	Sub-category	HWT-NVR800-A02-08P
Device performance	Network video access	16-channel, up to 168 Mbit/s access bandwidth
	Video forwarding	16-channel, up to 128 Mbit/s forwarding bandwidth
	Playback/Download	16-channel, up to 128 Mbit/s playback bandwidth Simultaneous playback: up to 16 channels on the LDU; up to 4 channels on the web client
	Decoding	8MP (4K): 2-channel at 25 fps 5MP: 4-channel at 20 fps 4MP: 4-channel at 25 fps 2MP (1080p): 8-channel at 25 fps 720p: 16-channel at 25 fps The decoding specification is halved when intelligent services are enabled. NOTE Video delay occurs if the HWT-NVR800 runs beyond the specifications.
Video output	HDMI	One HDMI 1.4 port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, 1920 x 1080, 2560 x 1440, and 3840 x 2160)
	VGA	One VGA port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, and 1920 x 1080)
Platform performance	Cameras connected	16 cameras to one device
	Number of online users	Up to 8 online users (apiadmin is used to access the iClient only)
Controller	Processor	Hi3796MRTCV201
	Memory	1 GB (2 x DDR4)
Storage capacity	Disk quantity	2
	Disk port	2 x SATA 3.0 port

Category	Sub-category	HWT-NVR800-A02-08P
	Disk type	Supported monitoring disks: 1 TB/2 TB/4 TB/6 TB/8 TB The typical power consumption of a hard disk must be less than or equal to 14 W. For compatibility purposes, you are advised to use only hard disks listed in the <i>HWT-NVR800 Compatibility List</i> .
Intelligent search	Total list capacity	15,000
	Total capacity of the dynamic list	300,000
Target intelligence	Maximum number of target recognition cameras that can be connected	Full-channel target recognition Typical scenario: 8 for a static list with 15,000 records Maximum scenario: 16 for a static list with 10,000 records
External port	Network port	1 x 10/100/1000 Mbit/s Ethernet port
	PoE port	8 x 10/100 Mbit/s Ethernet port
	USB port	3 x USB port (one USB 2.0 port on the front panel, and one USB 2.0 port and one USB 3.0 port on the rear panel) Output voltage/current of USB 2.0 ports: 5 V DC, 500 mA Output voltage/current of a USB 3.0 port: 5 V DC, 1000 mA
	Audio input	1 channel, RCA port NOTE After an active microphone is inserted into the LINE IN port on a two-disk-tray device, if the intercom volume is low, you are advised to use the voice intercom function of the iClient S100.
	Audio output	1 channel, RCA port
	Boolean value	-
Others	Operating temperature	0°C to 45°C
	Operating humidity	20% to 90%
	Altitude	0-3000 m. When the altitude is above 1800 m, the maximum operating temperature is reduced by 1°C for every 200 m increment in altitude.
	Maximum power consumption (with hard disks)	96 W

Category	Sub-category	HWT-NVR800-A02-08P
	Noise	50 dB
	Power supply	48 V/2 A
	Dimensions (H x W x D)	54 mm x 300 mm x 302 mm
	Weight	2.3 kg

2.5.4 HWT-NVR800-A02-16P

Category	Sub-category	HWT-NVR800-A02-16P
Device performance	Network video access	16-channel, up to 168 Mbit/s access bandwidth
	Video forwarding	16-channel, up to 128 Mbit/s forwarding bandwidth
	Playback/Download	16-channel, up to 128 Mbit/s playback bandwidth Simultaneous playback: up to 16 channels on the LDU; up to 4 channels on the web client
	Decoding	8MP (4K): 2-channel at 25 fps 5MP: 4-channel at 20 fps 4MP: 4-channel at 25 fps 2MP (1080p): 8-channel at 25 fps 720p: 16-channel at 25 fps The decoding specification is halved when intelligent services are enabled. NOTE Video delay occurs if the HWT-NVR800 runs beyond the specifications.
Video output	HDMI	One HDMI 1.4 port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, 1920 x 1080, 2560 x 1440, and 3840 x 2160)
	VGA	One VGA port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, and 1920 x 1080)
Platform performance	Cameras connected	16 cameras to one device
	Number of online users	Up to 8 online users (apiadmin is used to access the iClient only)
Controller	Processor	Hi3796MRTCV201
	Memory	1 GB (2 x DDR4)

Category	Sub-category	HWT-NVR800-A02-16P
Storage capacity	Disk quantity	2
	Disk port	2 x SATA 3.0 port
	Disk type	Supported monitoring disks: 1 TB/2 TB/4 TB/6 TB/8 TB The typical power consumption of a hard disk must be less than or equal to 14 W. For compatibility purposes, you are advised to use only hard disks listed in the <i>HWT-NVR800 Compatibility List</i> .
Intelligent search	Total list capacity	15,000
	Total capacity of the dynamic list	300,000
Target intelligence	Maximum number of target recognition cameras that can be connected	Full-channel target recognition Typical scenario: 8 for a static list with 15,000 records Maximum scenario: 16 for a static list with 10,000 records
External port	Network port	1 x 10/100/1000 Mbit/s Ethernet port
	PoE port	16 x 10/100 Mbit/s Ethernet port
	USB port	3 x USB port (one USB 2.0 port on the front panel, and one USB 2.0 port and one USB 3.0 port on the rear panel) Output voltage/current of USB 2.0 ports: 5 V DC, 500 mA Output voltage/current of a USB 3.0 port: 5 V DC, 1000 mA
	Audio input	1 channel, RCA port NOTE After an active microphone is inserted into the LINE IN port on a two-disk-tray device, if the intercom volume is low, you are advised to use the voice intercom function of the iClient S100.
	Audio output	1 channel, RCA port
	Boolean value	-
Others	Operating temperature	0°C to 45°C
	Operating humidity	20% to 90%
	Altitude	0-3000 m. When the altitude is above 1800 m, the maximum operating temperature is reduced by 1°C for every 200 m increment in altitude.

Category	Sub-category	HWT-NVR800-A02-16P
	Maximum power consumption (with hard disks)	180 W
	Noise	50 dB
	Power supply	48 V/3.75 A
	Dimensions (H x W x D)	54 mm x 300 mm x 302 mm
	Weight	2.3 kg

2.5.5 HWT-NVR800-B04

Category	Sub-category	HWT-NVR800-B04
Device performance	Network video access	32-channel, up to 320 Mbit/s access bandwidth The total access and forwarding bandwidth is less than or equal to 320 Mbit/s.
	Video forwarding	32-channel, up to 320 Mbit/s forwarding bandwidth The total access and forwarding bandwidth is less than or equal to 320 Mbit/s.
	Playback/Download	16-channel, up to 128 Mbit/s playback bandwidth Simultaneous playback: up to 16 channels on the LDU; up to 4 channels on the web client
	Decoding	8MP (4K): 4-channel at 30 fps 5MP: 9-channel at 20 fps 4MP: 8-channel at 30 fps 2MP (1080p): 16-channel at 30 fps 720p: 32-channel at 20 fps
Video output	HDMI	One HDMI 1.4 port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, 1920 x 1080, 2560 x 1440, and 3840 x 2160)
	VGA	One VGA port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, and 1920 x 1080)
Platform	Cameras connected	32 cameras to one device

Category	Sub-category	HWT-NVR800-B04
performance	Number of online users	Up to 8 online users (apiadmin is used to access the iClient only)
Controller	Processor	Hi3536RBCV100
	Memory	2 GB (4 x DDR3)
Storage capacity	Disk quantity	4
	Disk port	4 x SATA 3.0 port
	Disk type	Supported monitoring disks: 1 TB/2 TB/4 TB/6 TB/8 TB The typical power consumption of a hard disk must be less than or equal to 14 W. For compatibility purposes, you are advised to use only hard disks listed in the <i>HWT-NVR800 Compatibility List</i> .
Intelligent search	Total list capacity	50,000
	Total capacity of the dynamic list	600,000
Target intelligence	Maximum number of target recognition cameras that can be connected	Full-channel target recognition Typical scenario: 16 for a static list with 12,500 records Maximum scenario: 32 for a static list with 6250 records
External port	Network port	1 x 10/100/1000 Mbit/s Ethernet port
	PoE port	-
	USB port	3 x USB port (one USB 2.0 port on the front panel, and one USB 2.0 port and one USB 3.0 port on the rear panel) Output voltage/current of USB 2.0 ports: 5 V DC, 500 mA Output voltage/current of a USB 3.0 port: 5 V DC, 1000 mA
	Audio input	1 channel, RCA port
	Audio output	1 channel, RCA port
	Boolean value	16-channel Boolean value input and 1-channel relay output
Others	Operating temperature	0°C to 45°C
	Operating humidity	20% to 90%

Category	Sub-category	HWT-NVR800-B04
	Altitude	0-3000 m. When the altitude is above 1800 m, the maximum operating temperature is reduced by 1°C for every 200 m increment in altitude.
	Maximum power consumption (with hard disks)	55 W
	Noise	50 dB
	Power supply	12 V/6 A
	Dimensions (H x W x D)	66 mm x 378 mm x 326 mm
	Weight	2.4 kg

2.5.6 HWT-NVR800-B04D

Category	Sub-category	HWT-NVR800-B04D
Device performance	Network video access	32-channel, up to 320 Mbit/s access bandwidth The total access and forwarding bandwidth is less than or equal to 320 Mbit/s.
	Video forwarding	32-channel, up to 320 Mbit/s forwarding bandwidth The total access and forwarding bandwidth is less than or equal to 320 Mbit/s.
	Playback/Download	16-channel, up to 128 Mbit/s playback bandwidth Simultaneous playback: up to 16 channels on the LDU; up to 4 channels on the web client
	Decoding	8MP (4K): 4-channel at 30 fps 5MP: 9-channel at 20 fps 4MP: 8-channel at 30 fps 2MP (1080p): 16-channel at 30 fps 720p: 32-channel at 20 fps
Video output	HDMI	One HDMI 1.4 port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, 1920 x 1080, 2560 x 1440, and 3840 x 2160)

Category	Sub-category	HWT-NVR800-B04D
	VGA	One VGA port (1024 x 768, 1280 x 720, 1280 x 1024, 1440 x 900, and 1920 x 1080)
Platform performance	Cameras connected	32 cameras to one device
	Number of online users	Up to 8 online users (apiadmin is used to access the iClient only)
Controller	Processor	Hi3536RBCV100
	Memory	2 GB (4 x DDR3)
Storage capacity	Disk quantity	4
	Disk port	4 x SATA 3.0 port
	Disk type	1 TB/2 TB/4 TB/6 TB/8 TB video security disks The typical power consumption of a hard disk must be less than or equal to 14 W. For compatibility purposes, you are advised to use only hard disks listed in the <i>HWT-NVR800 Compatibility List</i> .
Intelligent search	Total list capacity	50,000
	Total capacity of the dynamic list	600,000
Target intelligence	Maximum number of target recognition cameras that can be connected	Full-channel target recognition Typical scenario: 16 for a static list with 12,500 records Maximum scenario: 32 for a static list with 6250 records
External port	Network port	2 x 10/100/1000 Mbit/s Ethernet port
	PoE port	-
	USB port	3 x USB port (one USB 2.0 port on the front panel, and one USB 2.0 port and one USB 3.0 port on the rear panel) Output voltage/current of USB 2.0 ports: 5 V DC, 500 mA Output voltage/current of a USB 3.0 port: 5 V DC, 1000 mA
	Audio input	1 channel, RCA port
	Audio output	1 channel, RCA port
	Boolean value	16-channel Boolean value input and 1-channel relay output

Category	Sub-category	HWT-NVR800-B04D
Others	Operating temperature	0°C to +45°C
	Operating humidity	20% to 90%
	Altitude	0-3000 m. When the altitude is above 1800 m, the maximum operating temperature is reduced by 1°C for every 200 m increment in altitude.
	Maximum power consumption (with hard disks)	55 W
	Noise	50 dB
	Power supply	12 V, 6 A
	Dimensions (H x W x D)	66 mm x 378 mm x 326 mm
	Weight	2.4 kg

2.6 Hazardous Substance Statement for Electronic and Electrical Products

RoHS

Com pone nt	Hazardous Substances									
-	Ca dm iu m (C d)	Le ad (P b)	M er cu ry (H g)	He xav ale nt Chr omi um (Cr +6)	Pol ybr omi nate d Bip hen yl (PB B)	Poly bro min ated Dip hen yl Ethe r (PB DE)	Di (2- Ethylhexyl) Phthalate (DEHP)	Benzyl Butyl Phthala te (BBP)	Dibutyl Phthala te (DBP)	Diisobut yl Phthalate (DIBP)
Alloy parts	O	X	O	O	O	O	O	O	O	O
Metal fittings	O	O	O	O	O	O	O	O	O	O
Cable	O	X	O	O	O	O	O	O	O	O

Com pone nt	Hazardous Substances									
Batter y	O	O	O	O	O	O	O	O	O	O
PCB A	O	O	O	O	O	O	O	O	O	O
Capac itor	O	O	O	O	O	O	O	O	O	O
Mous e	O	X	O	O	O	O	O	O	O	O
Powe r adapt er	O	X	O	O	O	O	O	O	O	O
Other electr onics	O	O	O	O	O	O	O	O	O	O
Solde r	O	O	O	O	O	O	O	O	O	O
Plasti c and poly mer	O	O	O	O	O	O	O	O	O	O

The presented information is in accordance with SJ/T 11364.

O: indicates that the content of the hazardous substance contained in all of the homogenous materials for the component is below the limit specified in GB/T 26572.

X: indicates that the content of the hazardous substance contained in at least one homogenous material exceeds the limit specified in GB/T 26572 and that there is no proven alternative temporarily to pass RoHS compliance.

3 Configuration Guide

3.1 Startup Wizard

Prerequisites

- The HWT-NVR800 has been connected to a monitor through the VGA/HDMI cable.
 - VGA: 1080p video output
 - HDMI: 2K/4K video output
- The HWT-NVR800 has been connected to a USB mouse.

Procedure

Step 1 Connect the power cable to the HWT-NVR800 and power on the HWT-NVR800.

Step 2 Fine-tune the resolution.

1. (Optional) Change the resolution of the HWT-NVR800 connected to the monitor through the HDMI cable to the detected adaptive resolution.
2. Save the settings, as shown in Figure 3-1.

Figure 3-1 Saving the settings



Step 3 Register an account.

1. Set the user name, user password, and camera password as prompted upon the first login, as shown in Figure 3-2.

The default user name is **admin**. You can change the user name as required. By default, the password of the **admin** user is synchronized to the password for activating and adding required HOLOWITS cameras. To set the password for activating and adding required HOLOWITS cameras, deselect **Use camera activation password**.

NOTE

You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.

Figure 3-2 Setting the user name and password



2. Set password recovery parameters, as shown in Figure 3-3.

If you skip this step upon the first login, you can configure password recovery on the user configuration page.

NOTE

- **Security question:** You can answer the preset security questions (that can be customized) for password recovery.
- **GUID file:** You can import a GUID file (that can only be exported to the USB flash drive) for password recovery.

Figure 3-3 Setting password recovery parameters



3. On the page shown in Figure 3-4, draw an unlock pattern.

If you skip this step during the first login, refer to User Management to draw an unlock pattern.

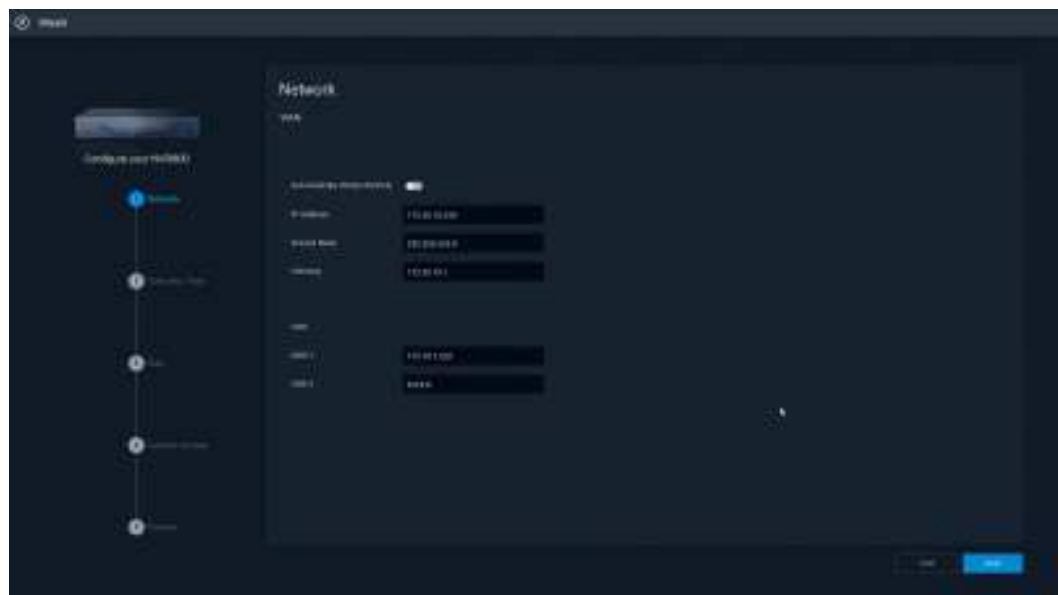
You will automatically log in to the HWT-NVR800 after drawing the unlock pattern.

Figure 3-4 Drawing an unlock pattern



Step 4 Configure network information, as shown in Figure 3-5.

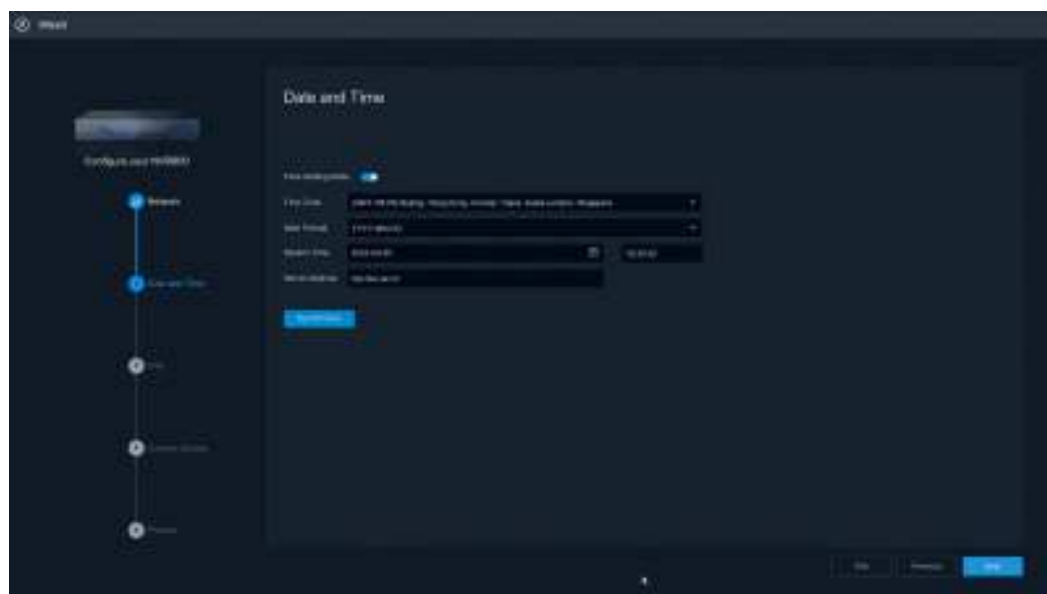
Figure 3-5 Configuring network information



Area	Parameter	Description
WAN	Automatically Obtain IP(IPv4)	Indicates whether to enable a switch to automatically assign all network settings to the HWT-NVR800. If the switch connected to the HWT-NVR800 supports the DHCP function, toggle on Automatically Obtain IP(IPv4) . In this case, you do not need to manually set other network parameters (such as the IP address and subnet mask) in the Automatically Obtain IP(IPv4) area.
	IP Address	Unique ID of the HWT-NVR800 on the network. Example: 192.168.0.100 NOTE For the HWT-NVR800-B04D, the value is the IP address of the WAN port on the rear panel.
	Subnet Mask	Subnet mask of a LAN. Example: 255.255.255.0
	Gateway	IP address for communication between two LANs. Example: 192.168.8.1
DNS	DNS 1	IP address of the primary DNS. If there is no primary DNS, leave this parameter empty.
	DNS 2	IP address of the secondary DNS. If there is no primary DNS, leave this parameter empty.

Step 5 Configure date information, as shown in Figure 3-6.

Figure 3-6 Configuring date information



Parameter	Description
Date and Time	Method for setting the HWT-NVR800 time. - If you toggle off Time Setting Mode, you need to manually set the date format, time zone, and system time as required. - If you toggle on Time Setting Mode, the HWT-NVR800 synchronizes its time with a connected NTP server. In this case, you need to enter the IP address of the server and click Synchronize.

Step 6 Configure disks, as shown in Figure 3-7.

If the information about some hard disks is not displayed, for example, only two out of three hard disks are listed here, ensure that the cables of the hard disks are properly connected. If any hard disk fails, replace it with a normal one.

Figure 3-7 Configuring disks



Parameter/Button	Description
Type	Read/Write type. Read/Write: Data can be read and written. Read-only: Data can be read only.
Disk Group	Recording disk group to which hard disks belong. After this parameter is set, choose Storage > Disk Group and configure recording channels for the disk group.

Parameter/Button	Description
Overwrite	Policy of overwriting data on hard disks when the hard disks are full. • Auto: The system automatically deletes the earliest recording files and continues to record new video. • X days: The system stores only recording files generated in the latest <i>X</i> days. • Off: The system does not delete recording files from or write new recording files to the hard disks. In this mode, you need to periodically check the hard disk status to ensure that the hard disks have sufficient space for storing recording files.
Format Hard Disk	Button for formatting a hard disk. When a hard disk is used on the HWT-NVR800 for the first time, you need to format this hard disk in the following way: 1. Select the hard disk to be formatted. 2. Click Format Hard Disk.
Press and hold down RESET to restore factory settings. (Data such as video, images, target library, operation logs, and audit logs will be deleted.)	Indicates whether to delete data stored on hard disks when you press and hold down the RESET button on the rear panel for 10 seconds to restore factory settings. • If this check box is not selected: When the HWT-NVR800 is restored to factory settings, only system settings (such as channel management, storage management, and network settings) are deleted. • If this check box is selected: When the HWT-NVR800 is restored to factory settings, both system settings and data stored on hard disks are deleted. Deleted data cannot be restored. Exercise caution when performing this operation.

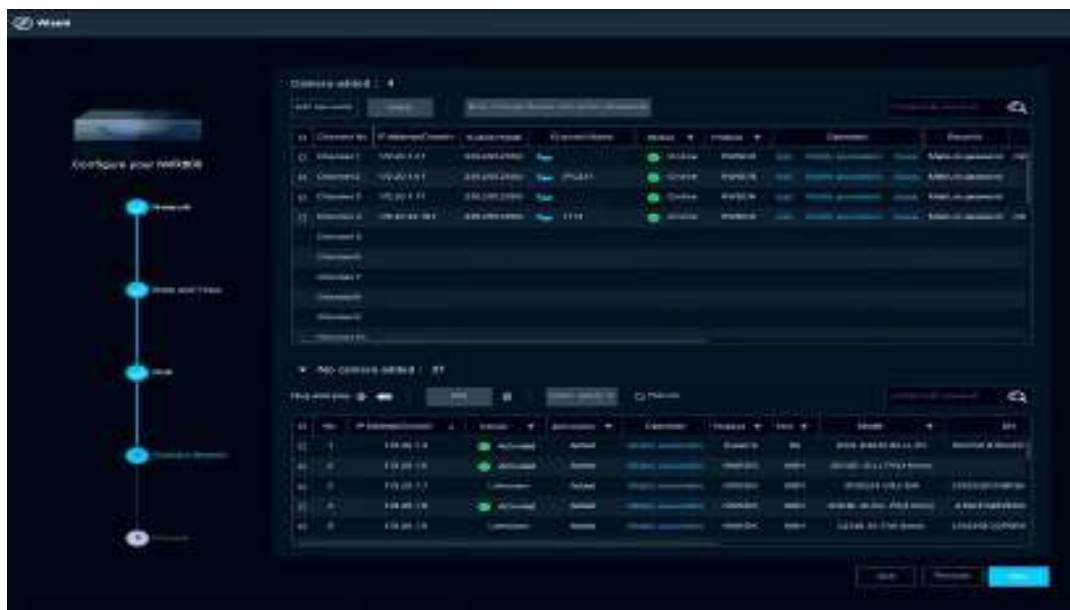
For details about the hard disk compatibility, see the *HWT-NVR800 9.0.0 Compatibility List*.

For compatibility purposes, you are advised to use only hard disks listed in the *HWT-NVR800 Compatibility List*.

Step 7 Connect cameras, as shown in Figure 3-8.

The HWT-NVR800 of the PoE model can automatically discover cameras connected to PoE ports.

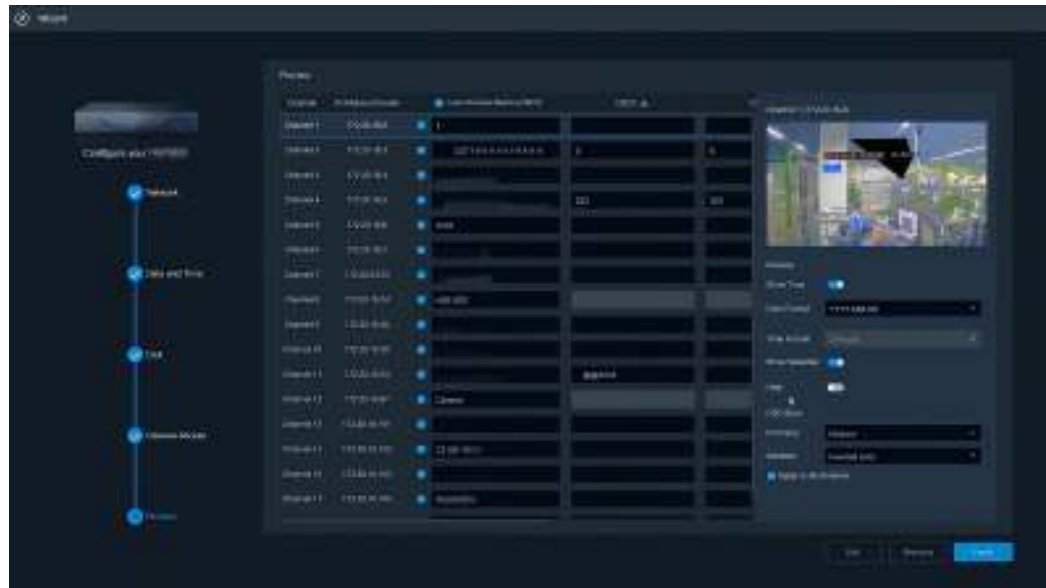
Figure 3-8 Connecting network cameras



Parameter/Button	Description
Add manually	Button for adding cameras by camera IP address.
Delete	Button for deleting the selected cameras.
Bulk Change Device Connection Passwords	Button for changing the passwords for adding the selected cameras to the HWT-NVR800.
Plug-and-play	Indicates whether to automatically add unactivated cameras on the LAN. Clicking Next does not affect the process of adding cameras.
Add	Button for adding the selected cameras to the HWT-NVR800. NOTE If the IP address of a camera is in a different network segment from the HWT-NVR800 IP address, the camera IP address will be changed to be in the same network segment after the camera is added.
Batch modify IP	Button for changing the IP addresses of the selected cameras based on the customized configuration.
Refresh	Button for refreshing camera lists.
<i>Please enter keyword</i>	Text box for searching for cameras by specified network segment. The search results are displayed by IP address in ascending order. For example, if you enter 172.20.19 in the text box and click the search button, the found cameras are displayed in ascending order starting from 172.20.19.1.

Step 8 On the page shown in Figure 3-9, set the camera OSD.

Figure 3-9 Live video display



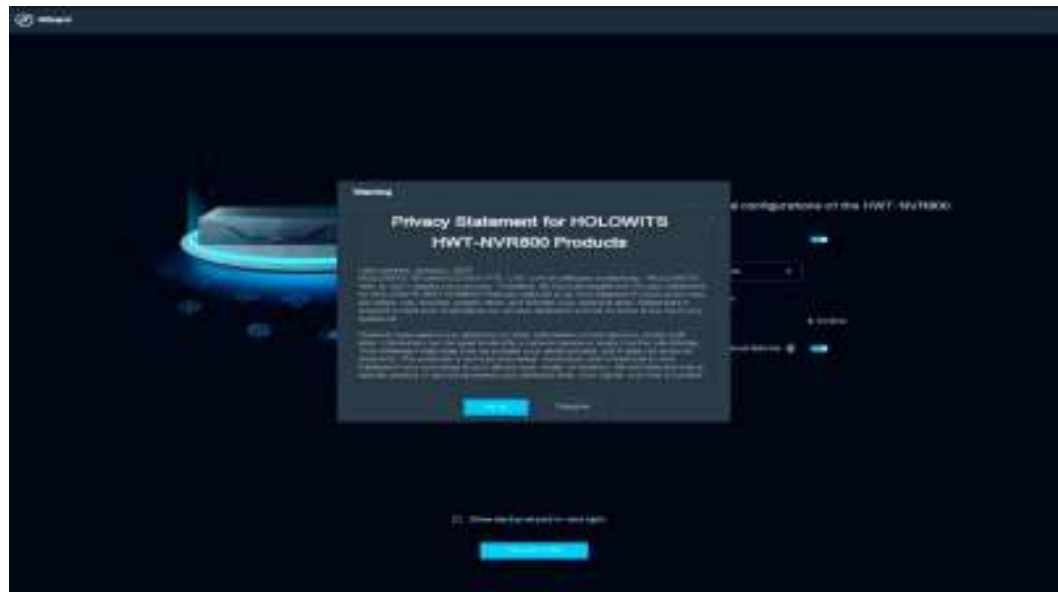
Parameter	Description
Use Channel Name (OSD1)	Indicates whether to display the customized channel name on the video image.
OSD2-OSD5	Indicates whether to display customized OSD on the video image of the selected channels.
Show Time	Indicates whether to display the channel time (whose format can be customized).
Hide	Indicates whether to hide images. You can disable this function in the configuration later.
OSD Style	Area for customizing the font size and attribute.
Apply to all channels	Indicates whether to synchronize the configured live video content to all channels.

Step 9 Wait until the startup configurations are complete, as shown in Figure 3-10. Connect to the cloud service, as shown in Figure 3-11.

Figure 3-10 Page displayed after configurations are complete



Figure 3-11 Connecting to the cloud service



Parameter	Description
Cloud Service	Indicates whether to enable the cloud service. To enable it, you need to agree to the <i>Privacy Statement for HOLOWITS HWT-NVR800 Products</i> that is popped up. Ensure that the HWT-NVR800 has connected to the Internet through the router.

Parameter	Description
Status	Status indicating whether the HWT-NVR800 is connected to the cloud service.
Show startup wizard in next login.	Indicates whether to start the user wizard upon the next login. You can configure this function on the configuration page.
Synchronize System Time Through Cloud Service	Indicates whether the HWT-NVR800 automatically synchronizes time with the cloud service. If this function is enabled when the NTP server information is configured, the HWT-NVR800 starts to synchronize time with the cloud service rather than the NTP server.
QR Code	QR code of the HWT-NVR800. You can scan the QR code using the mobile app to identify the HWT-NVR800 and manage cameras connected to the HWT-NVR800.

----End

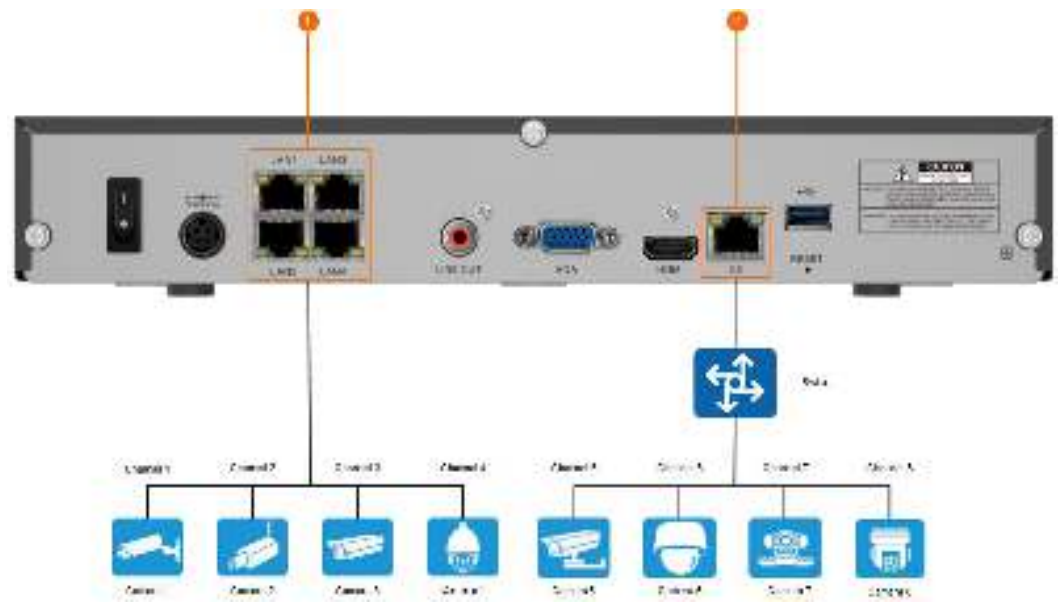
3.2 Device Access

3.2.1 Scenario

PoE Model

- The HWT-NVR800 of the PoE model can connect to cameras through the PoE ports or GE port.
For example, the first four channels of the HWT-NVR800-A01-04P are PoE channels by default, which are used to connect cameras through PoE ports LAN1 to LAN4. The last four channels are non-PoE channels, which are used to connect cameras through the GE port, as shown in Figure 3-12.

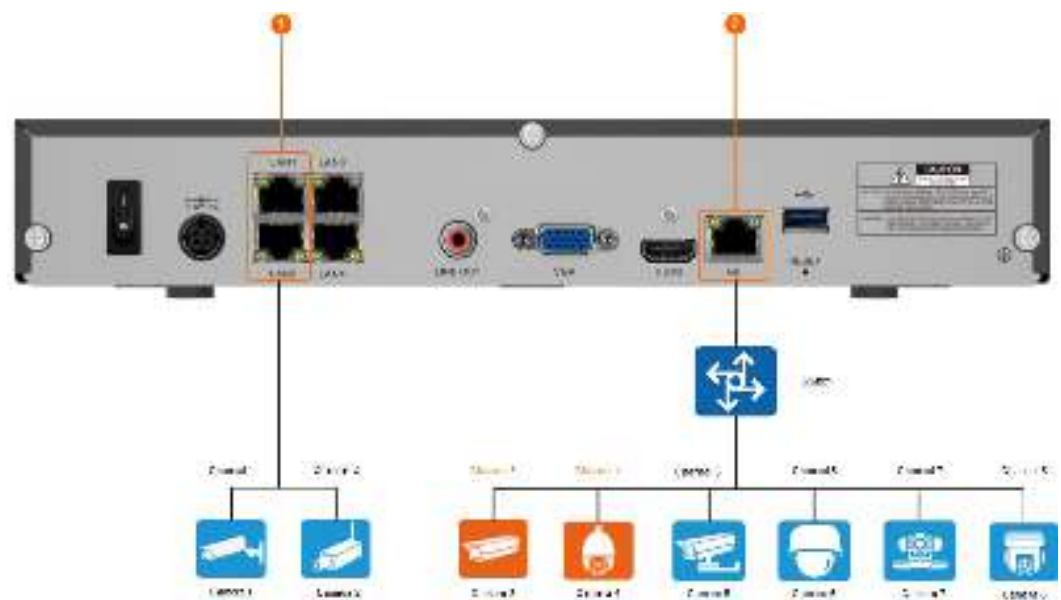
Figure 3-12 Access mode



- If you want to connect more than four cameras through the GE port, change the switch mode of the PoE channels from automatic to manual to increase the number of non-PoE channels.

Then cameras connected through the GE port can use channel IDs (for example, channels 3 and 4) that are assigned to the PoE ports before the switch mode change, as shown in Figure 3-13.

Figure 3-13 Access mode

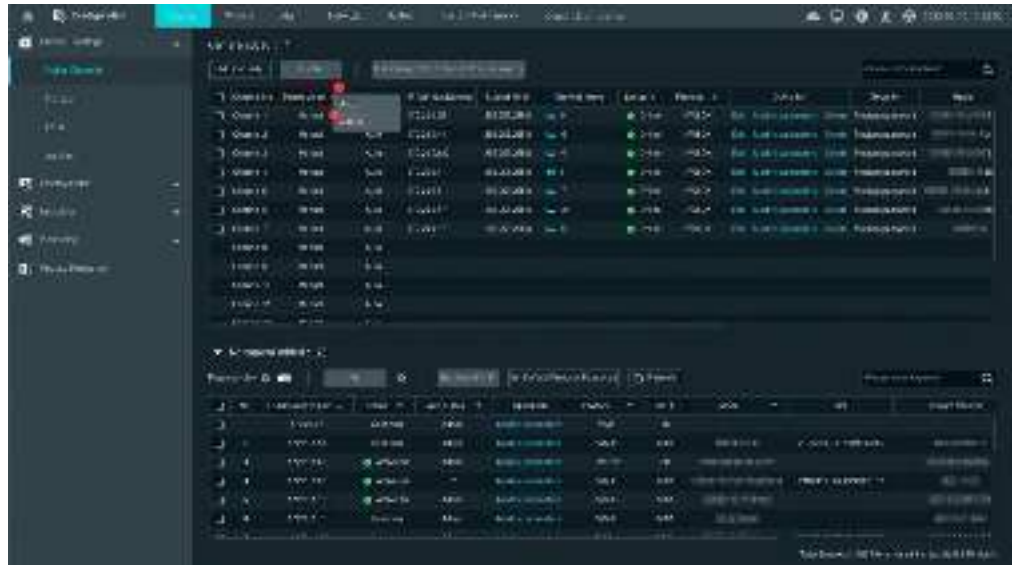


To switch to the manual mode, perform the following steps:

1. Right-click the screen.

2. Choose **Configuration > Channel > Channel Settings > Digital Channels**.
 3. Set **Switch Mode** to **Manual**, as shown in Figure 3-14.
- When the switch mode is changed, **PoE** at the beginning of this row disappears.

Figure 3-14 Switching to the manual mode



Non-PoE Model

The HWT-NVR800 of the non-PoE model can connect to cameras through the GE port.

Figure 3-15 shows how to connect cameras to the HWT-NVR800-A01.

Figure 3-15 Access mode



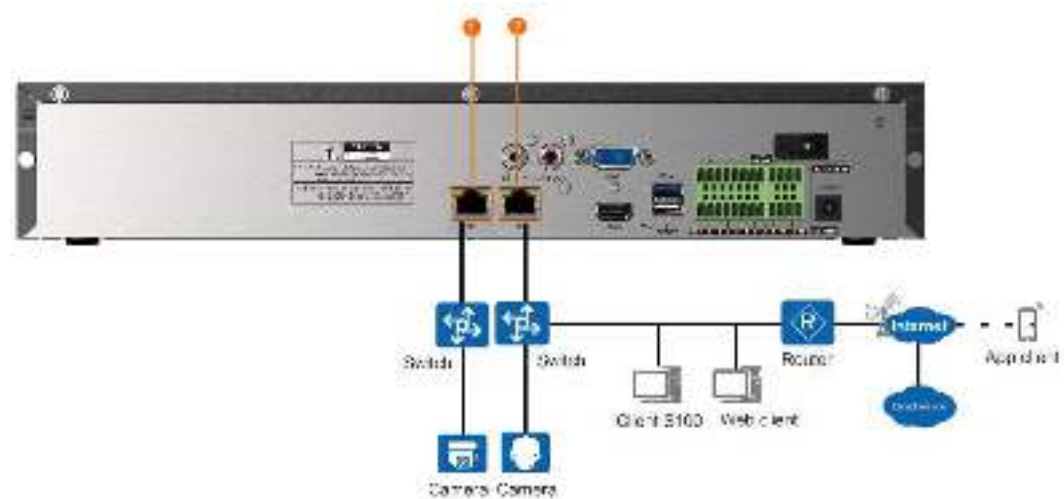
HWT-NVR800 with Dual Network Ports

The rear panel of the HWT-NVR800-B04D has a LAN port and a WAN port.

- The LAN port can be used to connect cameras on the LAN.
- The WAN port can be used to connect cameras and access external networks.

Figure 3-16 shows the access mode of the HWT-NVR800-B04D.

Figure 3-16 Access mode



3.2.2 Access from PoE Ports

Prerequisites

- Basic camera parameters have been set.
 - HOLOWITS camera
No configuration is required.
 - Non-HOLOWITS camera
Configure ONVIF information. For example, enable the ONVIF protocol and set the user name and password.
Set the camera IP address.
The camera IP address must be in the same network segment as the internal IP address of the HWT-NVR800.
- The internal IP address or network segment of the HWT-NVR800 has been configured.
- The switch mode of the channels corresponding to the access network ports has been set.
- The default protocol password has been set.

Procedure

Step 1 Set the default protocol password.

1. Right-click the screen.
2. Choose **Configuration > Channel > Channel Settings > Digital Channels**.
3. Click **Set Default Protocol Password** and set the protocol password, as shown in Figure 3-17.

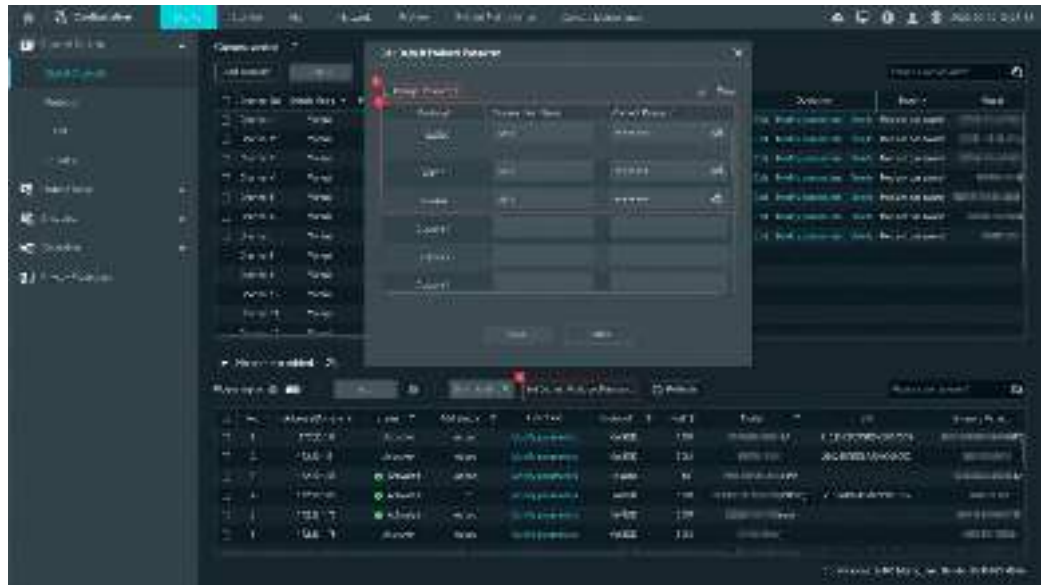
You can set the password for either the HWSDK or ONVIF protocol, and you are advised to set the same password for cameras connected through the same protocol.

NOTE

You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.

- HWSDK, used to connect HOLOWITS cameras to the HWT-NVR800.
Set the default password of the HWSDK protocol.
- ONVIF, used to connect non-HOLOWITS cameras to the HWT-NVR800.
Set the password based on the site requirements.

Figure 3-17 Setting the default protocol password



Step 2 Connect cameras.

Connect cameras to the channels corresponding to the PoE ports and check whether **Switch Mode** of the channels is set to **Auto**.

- HOLOWITS cameras
 - If the default password has been set for the HWSDK protocol on the page shown in Figure 3-17, skip this step.
 - If the default protocol password has not been set yet, click  corresponding to a channel ID and set the protocol password.

After the password is verified, the HWT-NVR800 automatically connects to the cameras through HWSDK and brings them online. In addition, the HWT-NVR800 automatically assigns internal IP addresses to them.

For example, the IP address allocated to the camera connected through the LAN1 port is xxx.xxx.xxx.151, and the IP address allocated to the camera connected to the LAN2 port is xxx.xxx.xxx.152.

In the preceding IP addresses, xxx.xxx.xxx indicates the internal network segment of the HWT-NVR800.

- Non-HOLOWITS cameras

- If the default password has been set for ONVIF on the page shown in Figure 3-17, skip this step.
- If the default protocol password has not been set yet, click  corresponding to a channel ID and set the protocol password.

After the password is verified, the HWT-NVR800 automatically connects to the cameras through ONVIF and brings them online.

----End

Verification

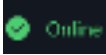
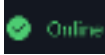
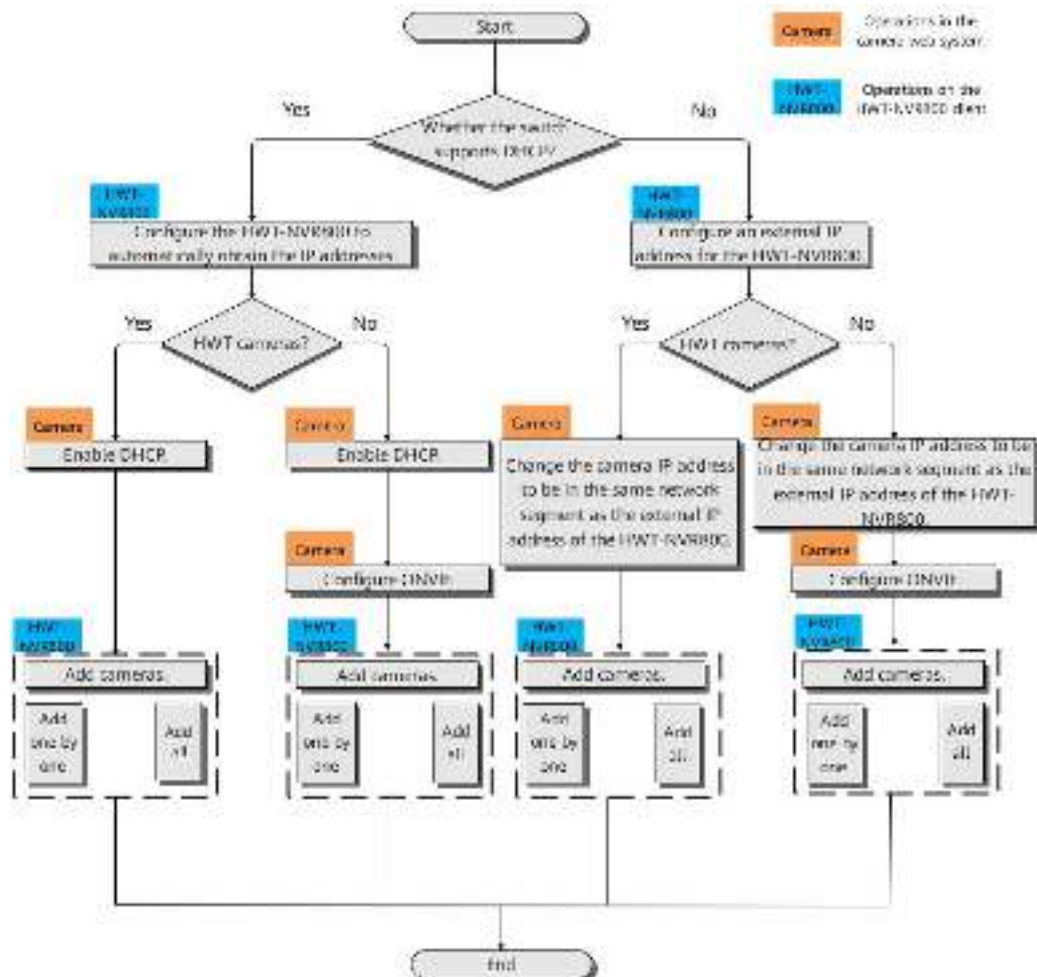
-  indicates that the camera is online. You can click  to view live video from the camera.
-  indicates that the camera is offline. You can click  to view the cause. Table 3-1 lists the causes and their solutions.

Table 3-1 Causes of cameras going offline

Cause	Solution
Incorrect user name or password.	Click  and enter the correct user name and password.
Failed to connect to camera. Check network connection.	Change the IP address of the camera to be in the same network segment as the IP address of the HWT-NVR800.

3.2.3 Access from the GE Port

Flowchart



Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Configuration > Channel > Channel Settings > Digital Channels**.
- Step 3** Click **Set Default Protocol Password** and set the protocol password, as shown in Figure 3-18.

You can set the password for either the HWSDK or ONVIF protocol, and you are advised to set the same password for cameras connected through the same protocol.

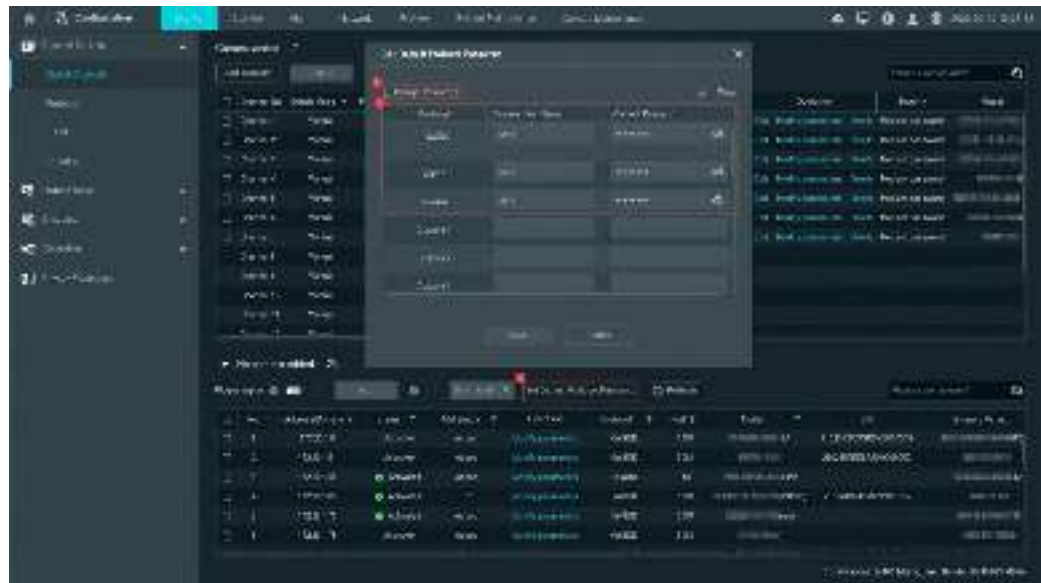
NOTE

You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.

- The HWSDK protocol is used to connect HOLOWITS cameras to the HWT-NVR800. Set the default password for the HWSDK protocol.
- The ONVIF protocol is used to connect non-HOLOWITS cameras to the HWT-NVR800.

Set the default password for the ONVIF protocol.

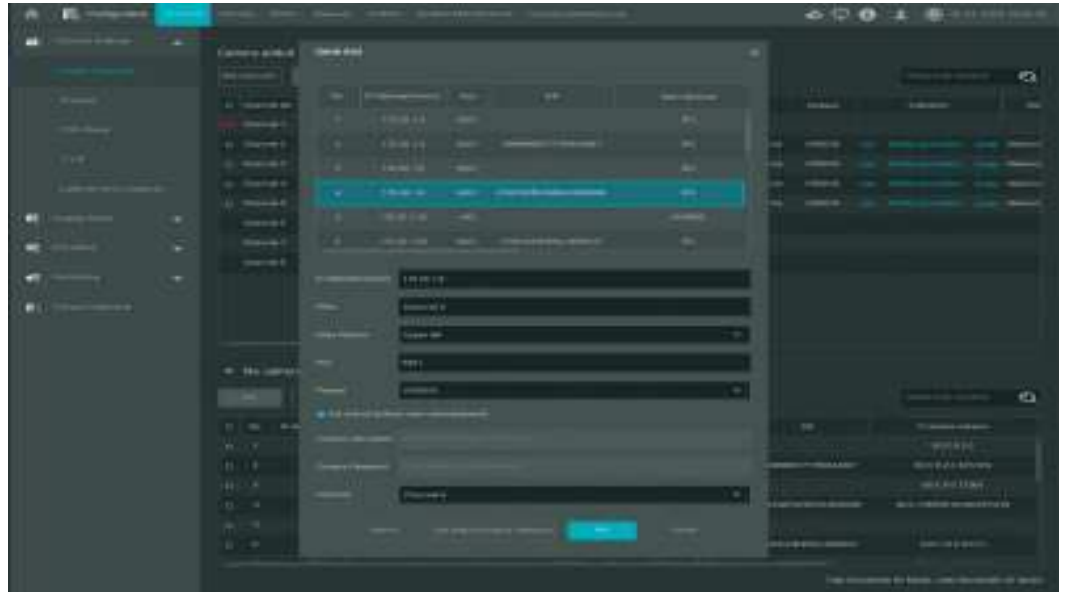
Figure 3-18 Set Default Protocol Password



Step 4 Manually connect cameras.

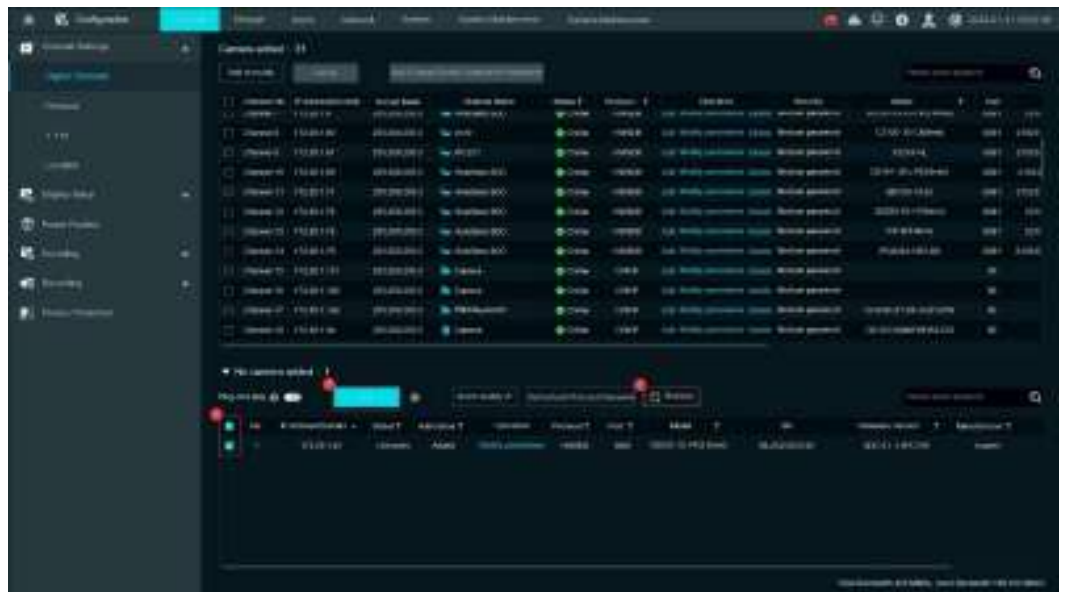
- Click **Add manually** to connect cameras one by one, as shown in Figure 3-19.
 - You can connect HOLOWITS cameras through the HWS SDK protocol and non-HOLOWITS cameras through the ONVIF protocol.
 - If you have set the default protocol password on the page shown in Figure 3-18, skip this step.
 - If you have not set the default protocol password yet, enter the protocol password in the text box.

Figure 3-19 Add manually



- Click **Add** to connect cameras, as shown in Figure 3-20.
 - Click **Refresh** in the **No camera added** area.
 - Select cameras to be connected.
 - If you have set the default protocol password on the page shown in Figure 3-18, skip this step.
 - If you have not set the default protocol password yet, enter the protocol password in the text box.

Figure 3-20 Add



----End

Verification

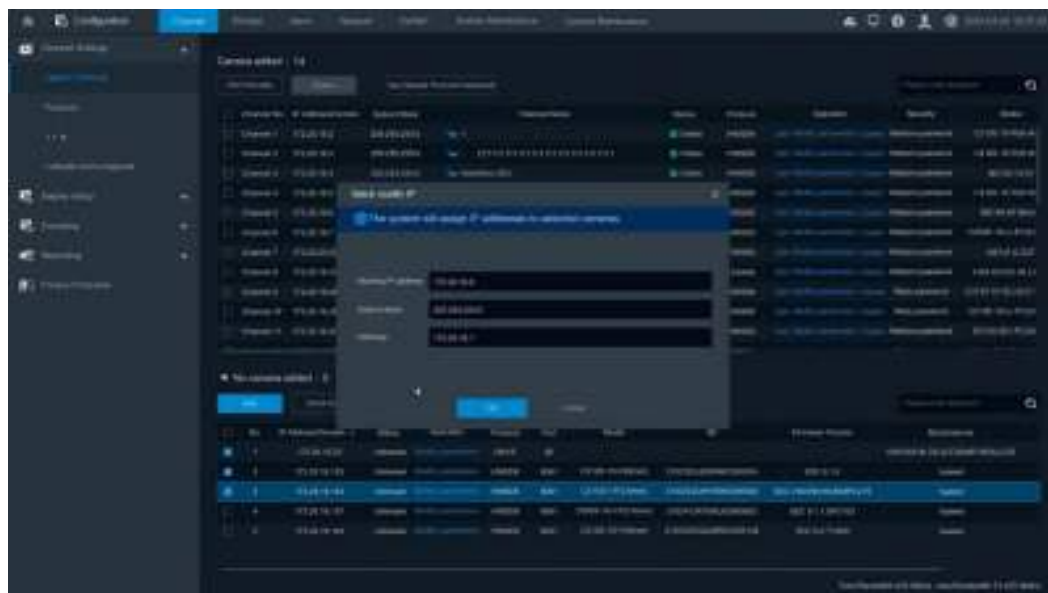
-  indicates that the camera is online. You can click  to view the live video from the camera.
-  indicates that the camera is offline. You can click  to view the cause. Table 3-2 lists the causes and their solutions.

Table 3-2 Causes of cameras going offline

Cause	Solution
Incorrect user name or password	Click  and enter the correct user name and password.
Camera connection failure	Change the IP address of the camera to be in the same network segment as the IP address of the HWT-NVR800.

- Click **Batch modify IP**. The page shown in Figure 3-21 is displayed.
 - Click **Refresh** in the **No camera added** area.
 - Select the cameras whose IP addresses need to be changed in the camera list and click **Batch modify IP**.
 - Enter the last byte of the start IP address. (The first three bytes are automatically set based on the NVR network.) Then IP addresses are allocated in sequence from the entered start IP address.
IP addresses can be changed in batches only for HWSDK-based connection.

Figure 3-21 Batch modify IP



3.3 Basic Services

3.3.1 Live Video Viewing

Procedure

Step 1 Right-click the screen.

Step 2 Choose **Live**.

Step 3 View live video from an online camera, as shown in Figure 3-22.

For details about the button functions, see 5.1.1.1 Overview.

Figure 3-22 Live video viewing



----End

3.3.2 Superimposing Intelligent Analysis Frame on Live Video

Procedure

1. Right-click the screen.
2. Choose **Live**.
3. Select a channel for which you want to enable the function of superimposing the intelligent analysis frame on live video. Double-click the channel to play live video from the channel and click  in the lower part of the live video pane.



NOTICE

- This function is available only single-pane or 4-pane mode.
- Devices with one or two disk trays do not support intelligent analysis frame overlay; devices with 4, 8, or 16 disk trays support two channels of intelligent analysis frame overlay.

----End

3.3.3 Recording Playback

Context

The HWT-NVR800 supports the following playback types:

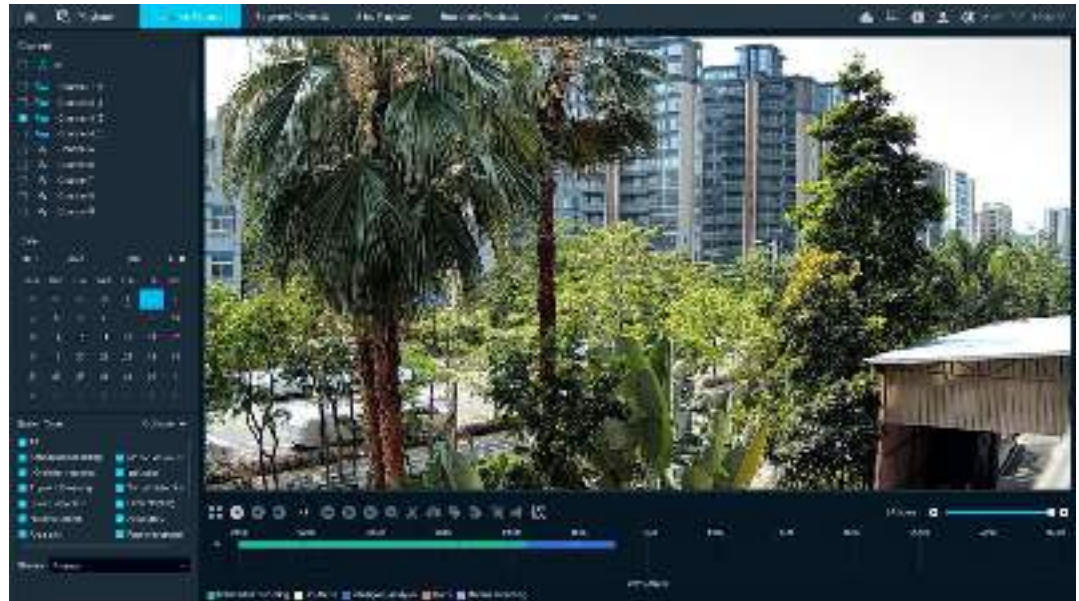
- **Common Playback:** allows users to play back recordings of different time segments from an online camera.
- **Segment Playback:** allows users to play back video clips at the same time from a recording with a long period. This recording is evenly divided into these video clips.
- **Slice Playback:** allows users to play back a slice of a recording file within the specified time period.
- **Bookmark Playback:** allows users to play back a recording from the specified bookmark.
- **External File:** allows users to play video files from a USB flash drive.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Playback > Common Playback**.
- Step 3** View the recording from a camera, as shown in Figure 3-23.

You can add bookmarks on the recording.

Figure 3-23 Recording playback



----End

3.4 Behavior Analysis

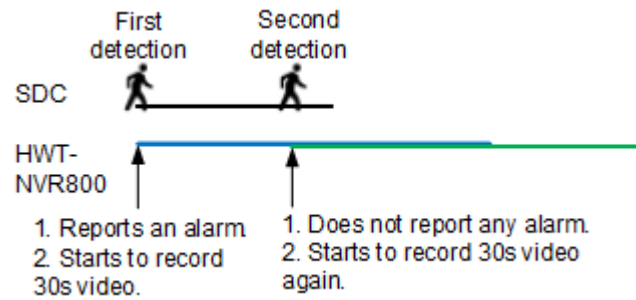
3.4.1 Detection Principles

When a camera detects an alarm event, it reports the alarm to the HWT-NVR800. The HWT-NVR800 displays an alarm dialog box on the **Live** page and starts intelligent recording.

- **Detection interval**
The camera performs detection in the detection area at the specified interval. If multiple persons or vehicles appear in this interval, only one alarm is reported.
The default detection interval is 5s.
- **Extended recording duration**
When an alarm is displayed, the HWT-NVR800 continues to record live video for the specified period.
The default setting is 30s.

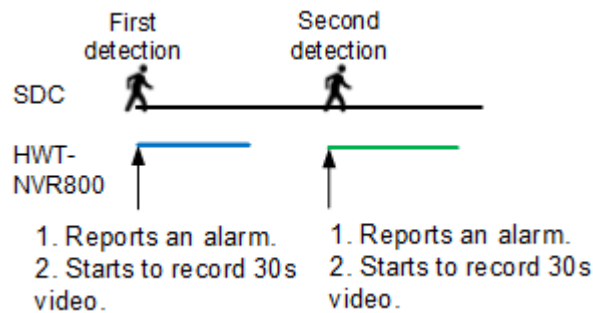
The display effect on the HWT-NVR800 side varies depending on the detection interval and recording extension time.

- **Detection interval (5s) < Extended recording duration (30s)**
The HWT-NVR800 is still recording video triggered by the first alarm when the second detection starts. If a new alarm is detected, no more alarm is displayed but the video is recorded for 35s (5s + 30s). In this example, only an alarm is reported on the **Live** page. You can click the alarm to view the 35s recording.



- Detection interval (40s) > Extended recording duration (30s)

The HWT-NVR800 has finished recording video triggered by the first alarm when the second detection starts. If a new alarm is detected, the alarm is displayed and video is recorded for 30s. In this example, two alarms are reported on the **Live** page. You can click each alarm to view the 30s recording.



3.4.2 Global Configuration

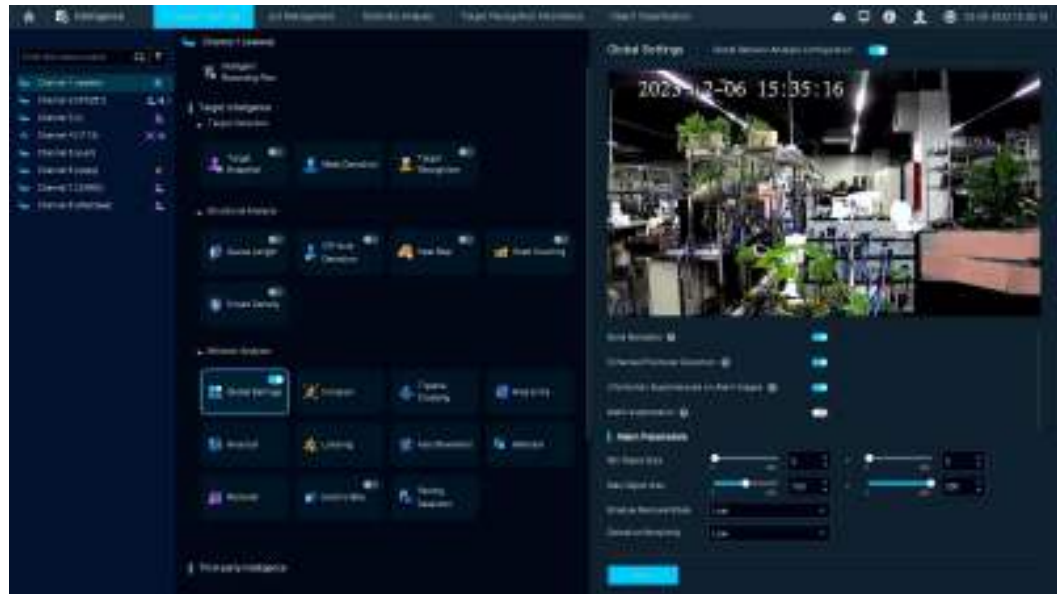
Restrictions

The behavior analysis function is available for the HWT-NVR800 connected to HOLOWITS HWT-Dxxx-10 cameras. For details, see the *HWT-NVR800 9.0.0 Compatibility List*.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Global Settings**.
- Step 3** Set global behavior analysis parameters, as shown in Figure 3-24.

Figure 3-24 Setting global behavior analysis parameters



Parameter/Button	Description
Global Behavior Analysis Configuration	Indicates whether to enable global configuration for behavior analysis. The following parameters can be set only after this function is enabled.
Send Metadata	Indicates whether to send metadata. After this function is enabled, the camera will send metadata such as intelligent analysis rules and intelligent analysis results as well as live video images to the video security platform. If the platform requests metadata streams, enable this function. NOTE Some camera models do not support this function.

Parameter/Button	Description
Enhanced Perimeter Detection/Information Superimposed on Alarm Images	• Enhanced Perimeter Detection: After this function is enabled, the camera sends the full image, object frame, and rule frame when an alarm is generated to the video security platform as metadata. Then the platform can superimpose the object frame and rule frame on the full image. • Information Superimposed on Alarm Images: After this function is enabled, the camera will send the full image where the object frame and rule frame are superimposed when an alarm is generated to the video security platform as metadata. To enable this function, you need to first enable enhanced perimeter detection. If only enhanced perimeter detection is enabled, the platform needs to superimpose required information on images. If both functions are enabled, the platform can directly send images where the object frame and rule frame are superimposed. For a low-performance platform, you can enable both functions to enhance the detection effect. NOTE Some camera models do not support this function.
Alarm suppression	Indicates whether to send only the alarm that is triggered upon detecting an object for the first time.
Min Object Size	Minimum size (in pixels) of an object that can be detected on video images in the CIF (352 x 288) resolution. No alarm is generated when the resolution of an identified object is less than the value of this parameter. The minimum object size supported by behavior analysis is 5 x 5 pixels (at the video resolution of 352 x 288 pixels).
Max Object Size	Maximum size (in pixels) of an object that can be detected on video images in the CIF (352 x 288) resolution. No alarm is generated when the size of an object is greater than the value of this parameter. The maximum object size supported by behavior analysis is 200 x 200 pixels (at the video resolution of 352 x 288 pixels).
Shadow Removal Mode	Mode in which the shadow is removed. The shadow generated when objects are moving affects the detection size. In a scenario with no shadow or small shadows, Low is recommended to ensure complete detection of objects. In a scenario with obvious shadows, High is recommended to cut objects from shadows so that the detection frame can accurately cover the objects or separate objects overlapped with shadows.

Parameter/Button	Description
Detection Sensitivity	Sensitivity in which an object can be detected. A higher sensitivity indicates a higher detection rate but also a higher false positive rate and more device performance consumption. If there is any interference such as lamplight and rustling leaves, Low is recommended to prevent false alarms. If the foreground and background are of similar colors, High is recommended.
Apply	Button for saving the parameter settings.

----End

3.4.3 Intrusion Detection

Scenario

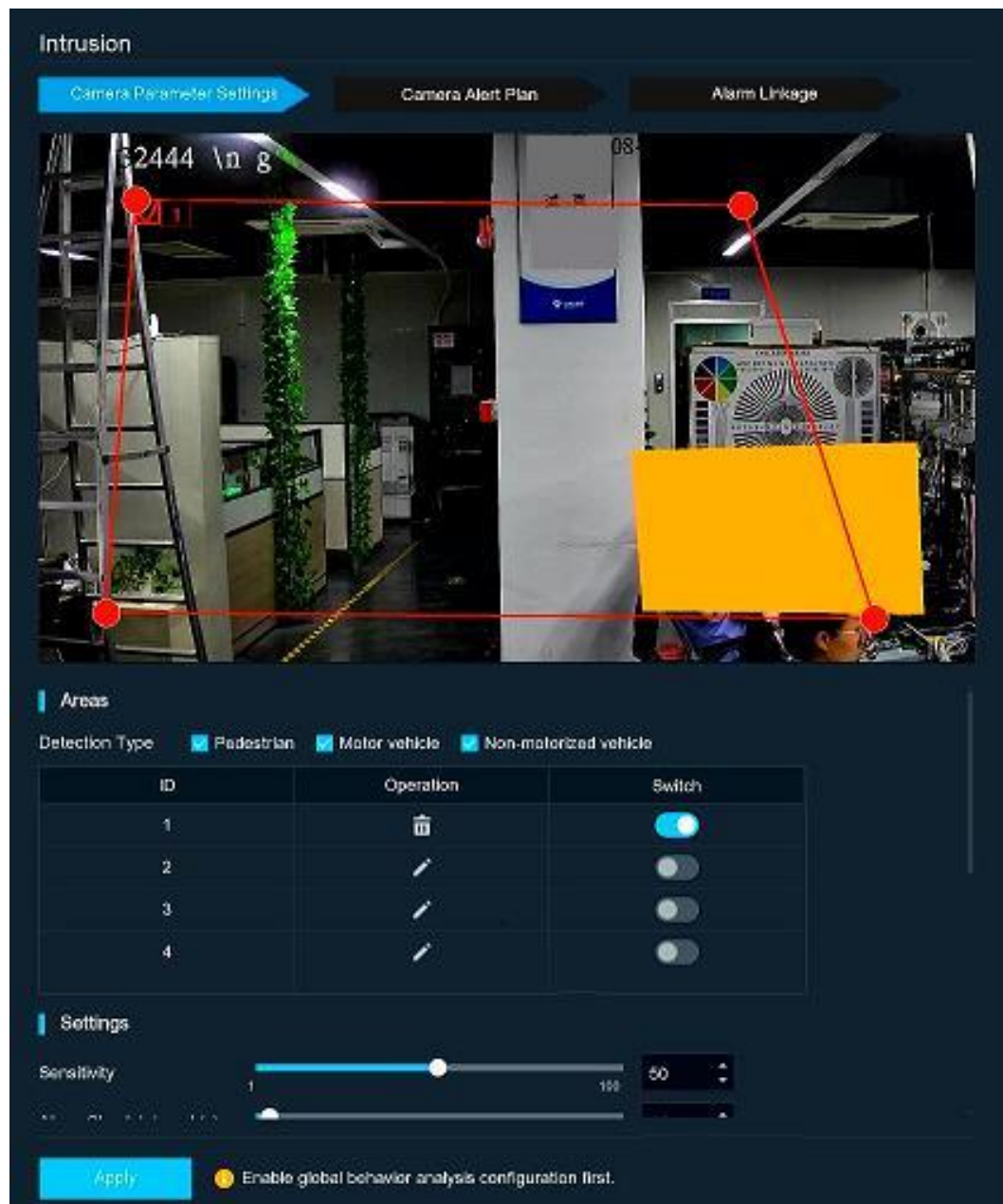
- You can draw one or more detection areas to detect whether persons or vehicles intrude into these areas.
If so, the HWT-NVR800 reports alarms and triggers configured alarm-linked actions (if any).
- Intrusion detection covers the whole areas you have drawn, as shown in the following figure.



Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Intrusion**.
- Step 3** Draw a detection area, as shown in Figure 3-25.
 - A maximum of four detection areas can be drawn. For details about how to draw a detection area, see 5.3.2 Drawing a Detection Area for Behavior Analysis.
 - Dxxx-10-LI-PV cameras support audible and visual alarms.** You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-25 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-26.

Specify the time segment when alarming is effective.

Figure 3-26 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

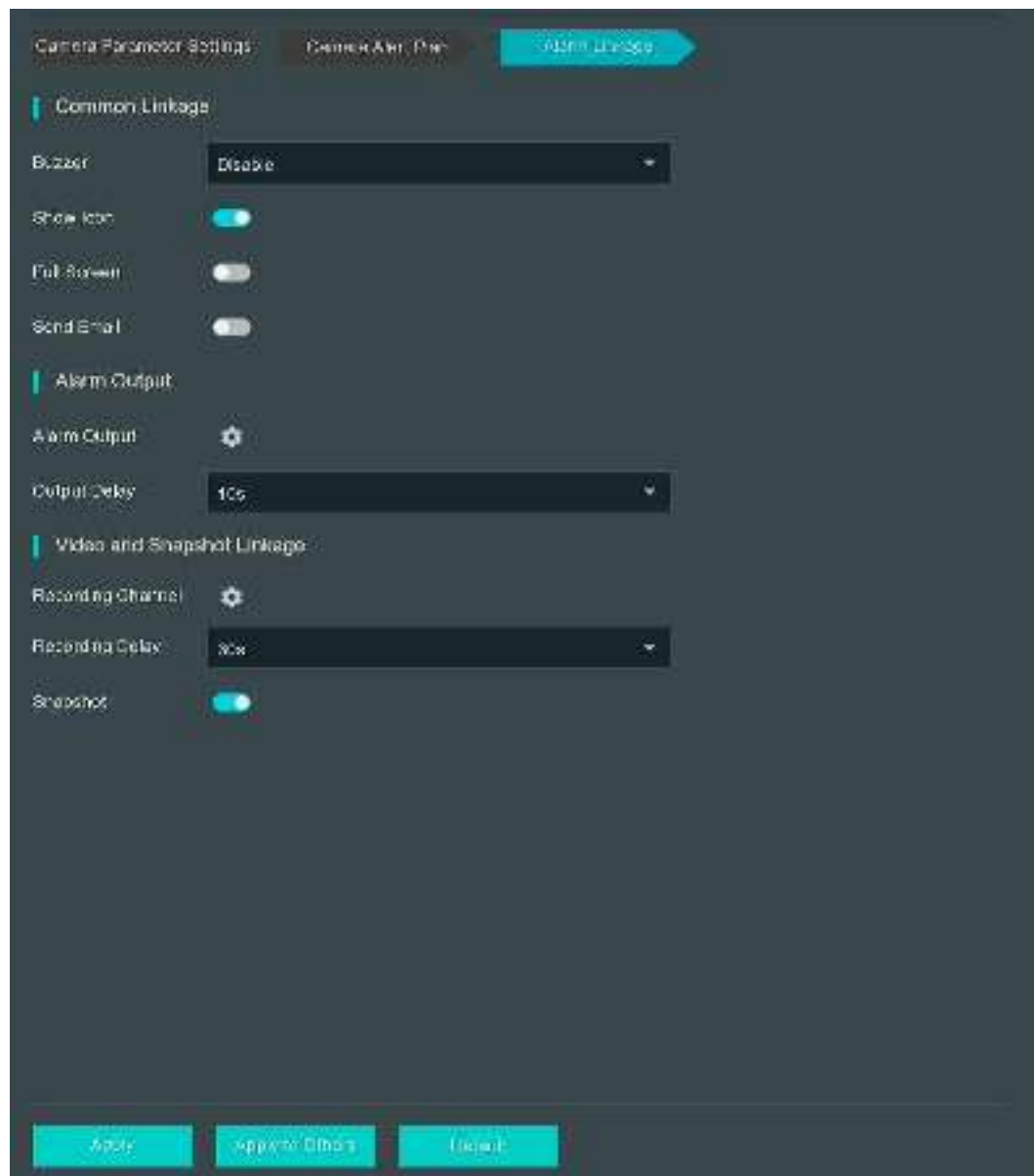
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-27.

Linked actions will be triggered when an alarm is generated.

Figure 3-27 Configuring an alarm linkage policy

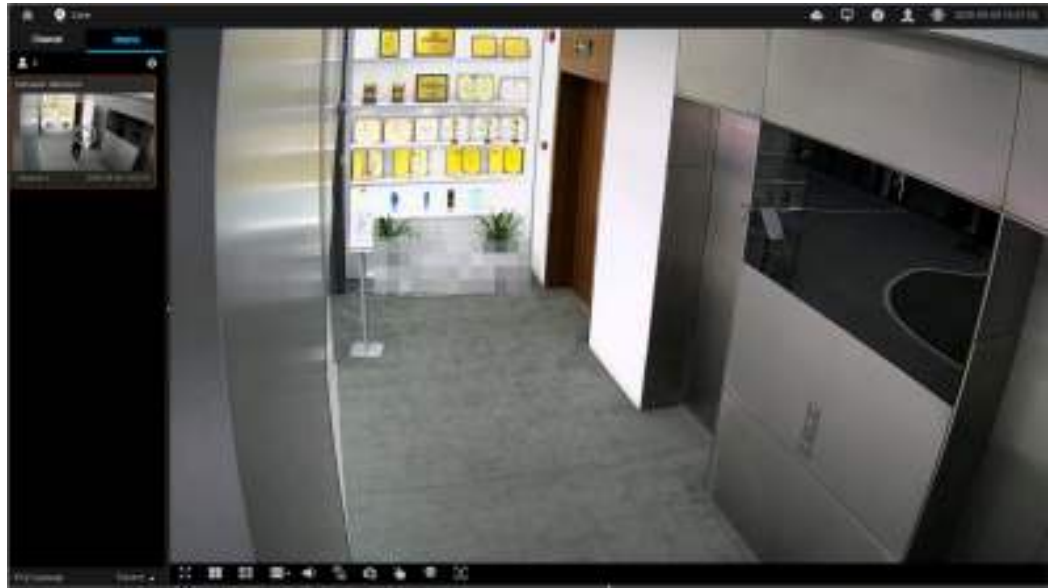


----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-28.

Figure 3-28 Viewing an alarm



- The alarm type is **Intrusion detection**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.4.4 Tripwire Crossing Detection

Scenario

- You can draw one or more tripwires to detect whether persons or vehicles cross these tripwires in the specified direction.
If so, the HWT-NVR800 reports alarms and triggers configured alarm-linked actions (if any).
- For example, when a person crosses the tripwire in the same direction as the blue arrow indicated in the following figure, an alarm is reported.



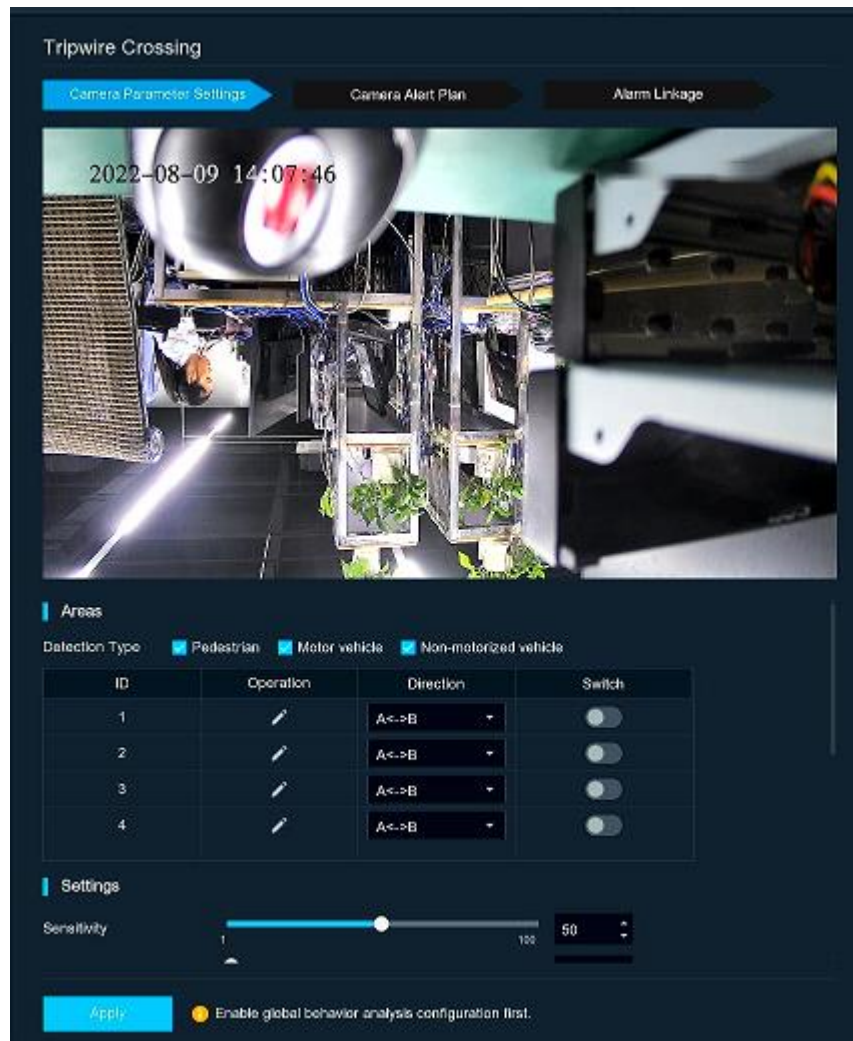
Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Tripwire Crossing**.

Step 3 Draw tripwires, as shown in Figure 3-29.

- A maximum of four detection areas can be drawn. For details about how to draw a detection area, see 5.3.2 Drawing a Detection Area for Behavior Analysis.
- **Dxxx-10-LI-PV cameras support audible and visual alarms.** You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-29 Drawing tripwires



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-30.

Specify the time segment when alarming is effective.

Figure 3-30 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

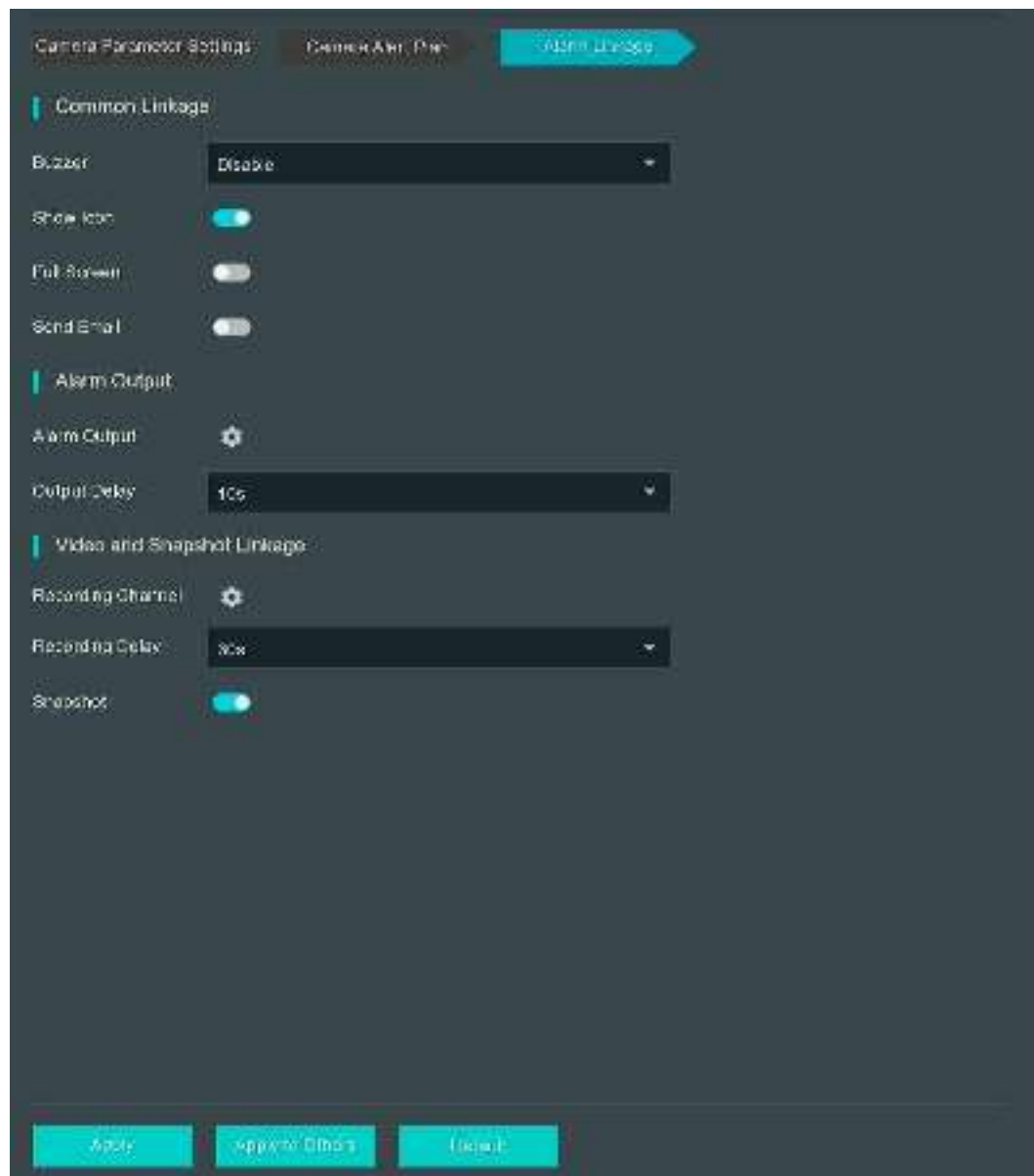
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-31.

Linked actions will be triggered when an alarm is generated.

Figure 3-31 Configuring an alarm linkage policy



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-32.

Figure 3-32 Viewing an alarm



- The alarm type is **Tripwire crossing**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.4.5 Area Entry Detection

Scenario

- You can draw one or more detection areas to detect whether persons or vehicles enter these areas.
If so, the HWT-NVR800 reports alarms and triggers configured alarm-linked actions (if any).
- Area entry detection covers only the areas circled by the edge lines (including the lines).

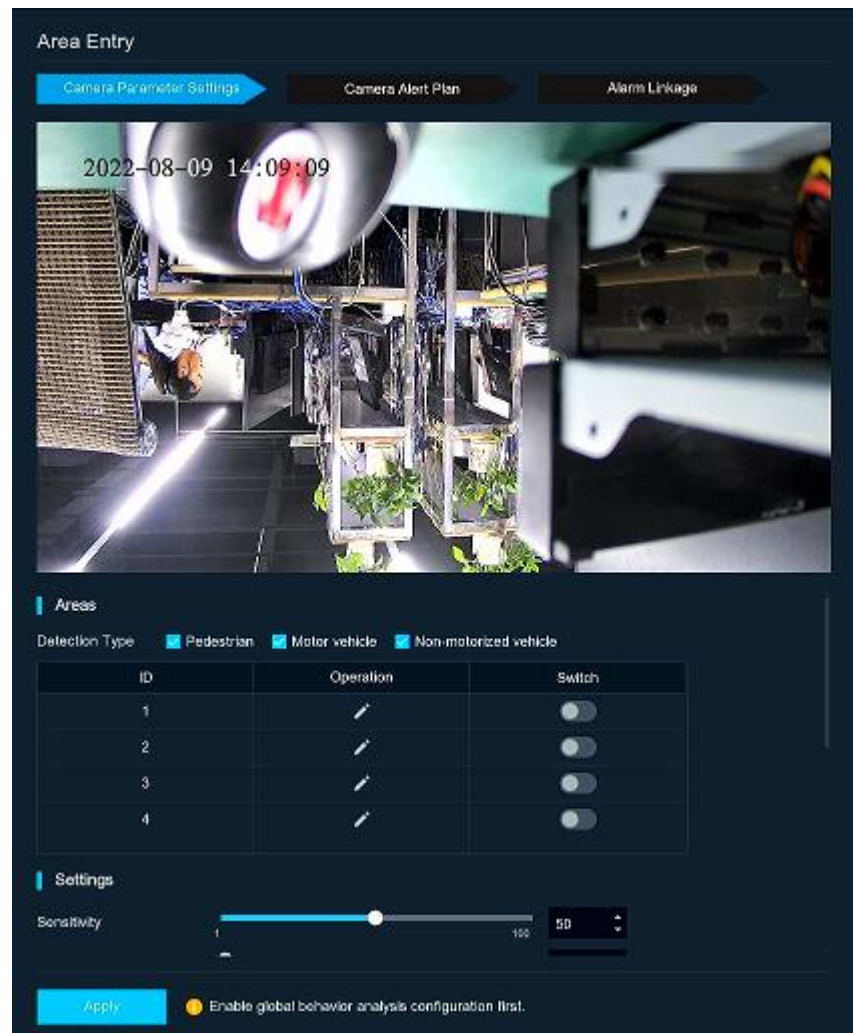


Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Area Entry**.
- Step 3** Draw a detection area, as shown in Figure 3-33.
 - A maximum of four detection areas can be drawn. For details about how to draw a detection area, see 5.3.2 Drawing a Detection Area for Behavior Analysis.

- **Dxxx-10-LI-PV cameras support audible and visual alarms.** You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-33 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-34.

Specify the time segment when alarming is effective.

Figure 3-34 Configuring an alert plan

Camera Parameter Settings | **Camera Alert Plan** | Alarm Linkage

Camera Alert Plan

+ Add | Delete All

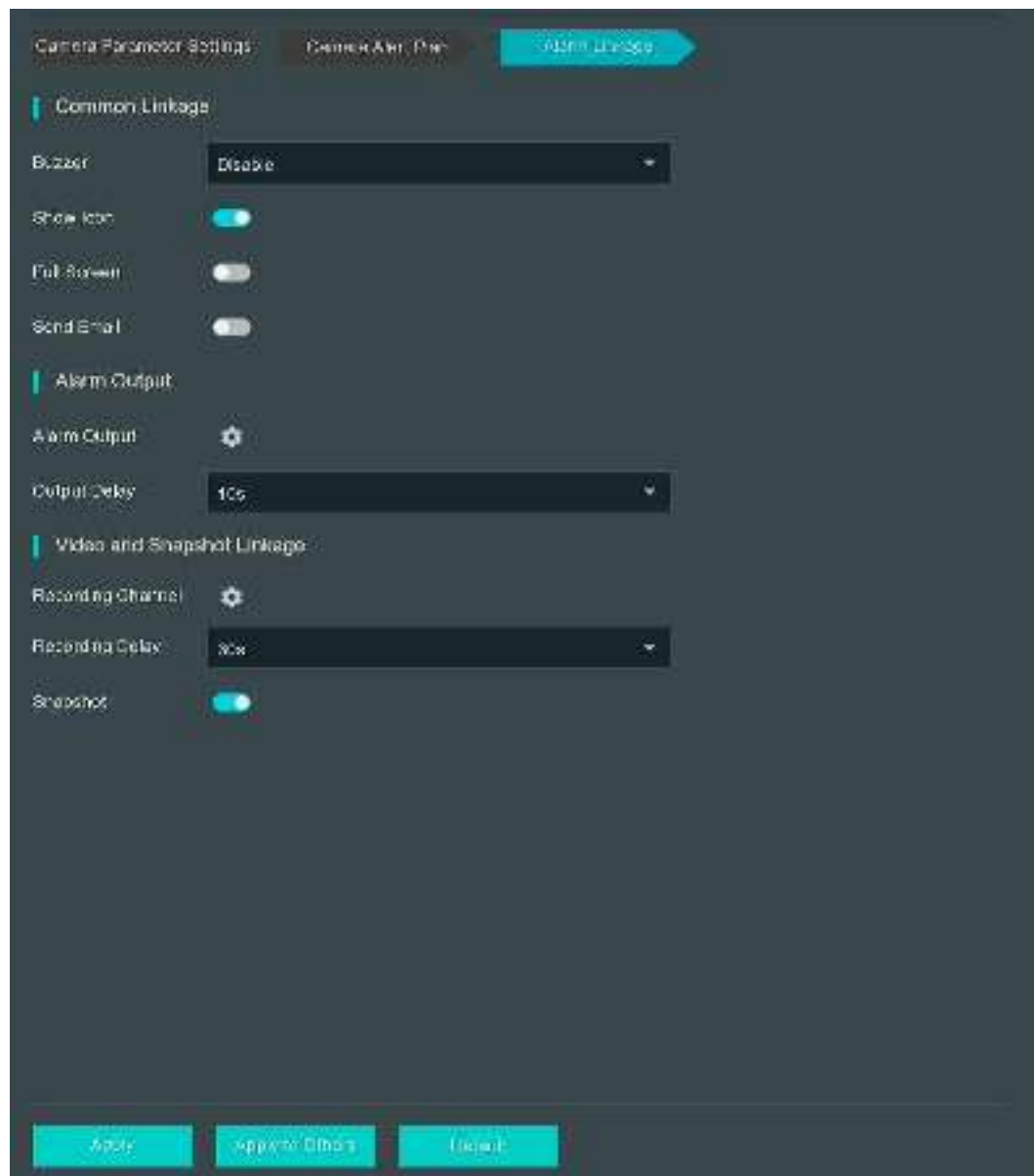
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-35.

Linked actions will be triggered when an alarm is generated.

Figure 3-35 Configuring an alarm linkage policy

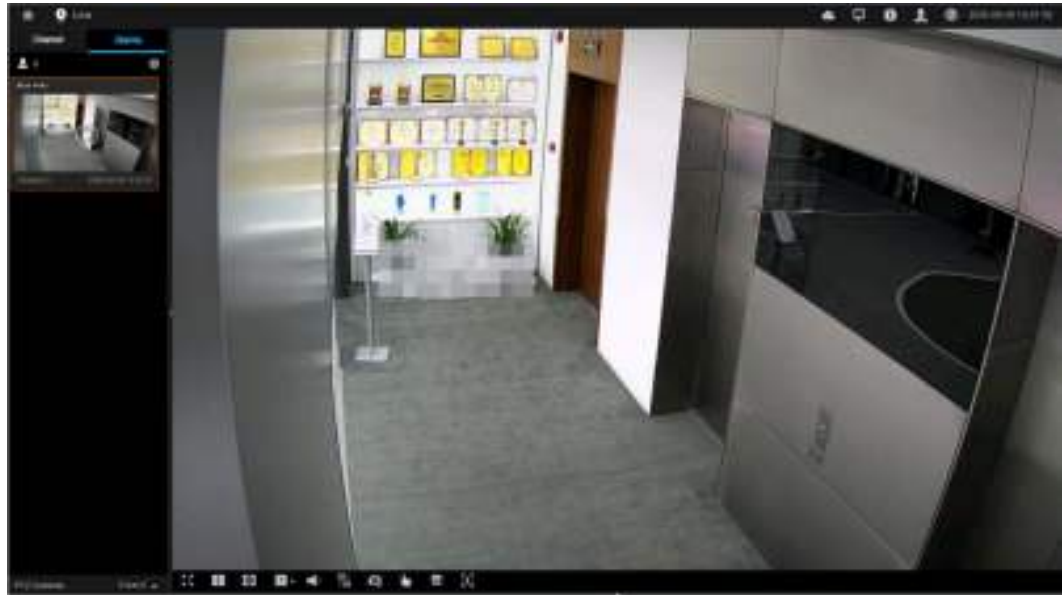


----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-36.

Figure 3-36 Viewing an alarm



- The alarm type is **Area entry**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.4.6 Area Exit Detection

Scenario

- You can draw one or more detection areas to detect whether persons or vehicles leave these areas.
If so, the HWT-NVR800 reports alarms and triggers configured alarm-linked actions (if any).
- Area exit detection covers only the areas circled by the edge lines (including the lines).

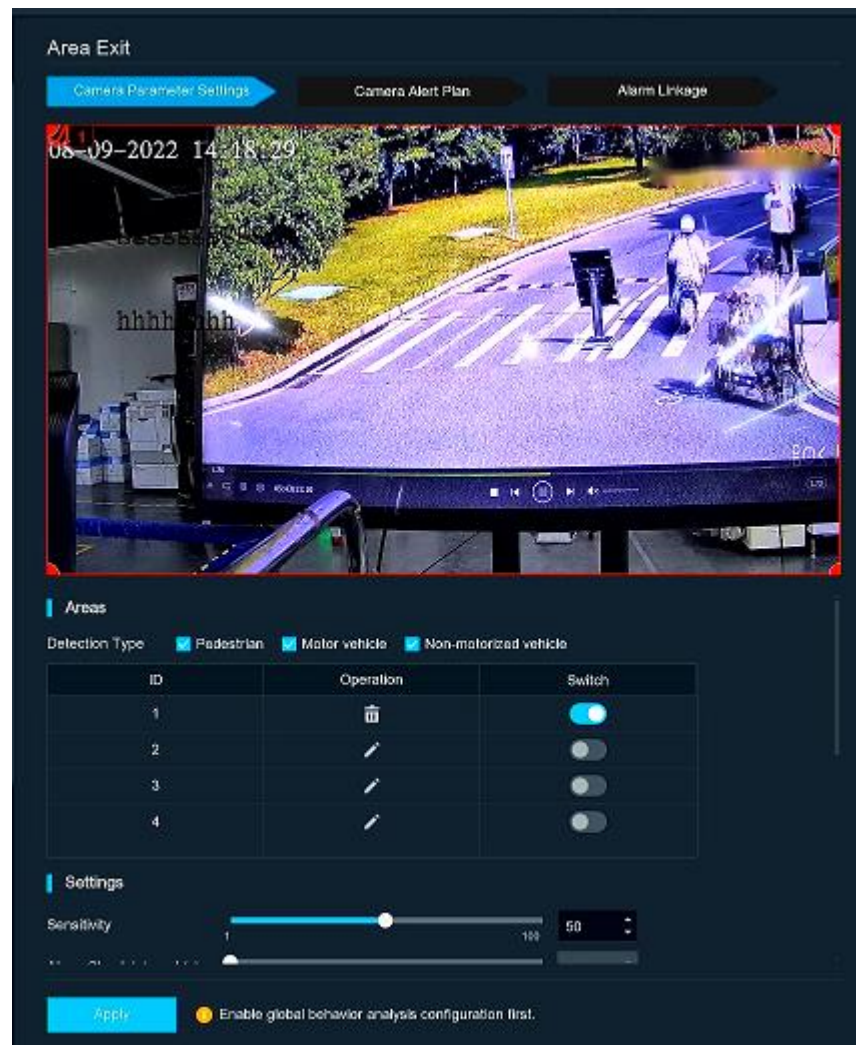


Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Area Exit**.
- Step 3** Draw a detection area, as shown in Figure 3-37.
 - A maximum of four detection areas can be drawn. For details about how to draw a detection area, see 5.3.2 Drawing a Detection Area for Behavior Analysis.

- **Dxxx-10-LI-PV cameras support audible and visual alarms.** You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-37 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-38.

Specify the time segment when alarming is effective.

Figure 3-38 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

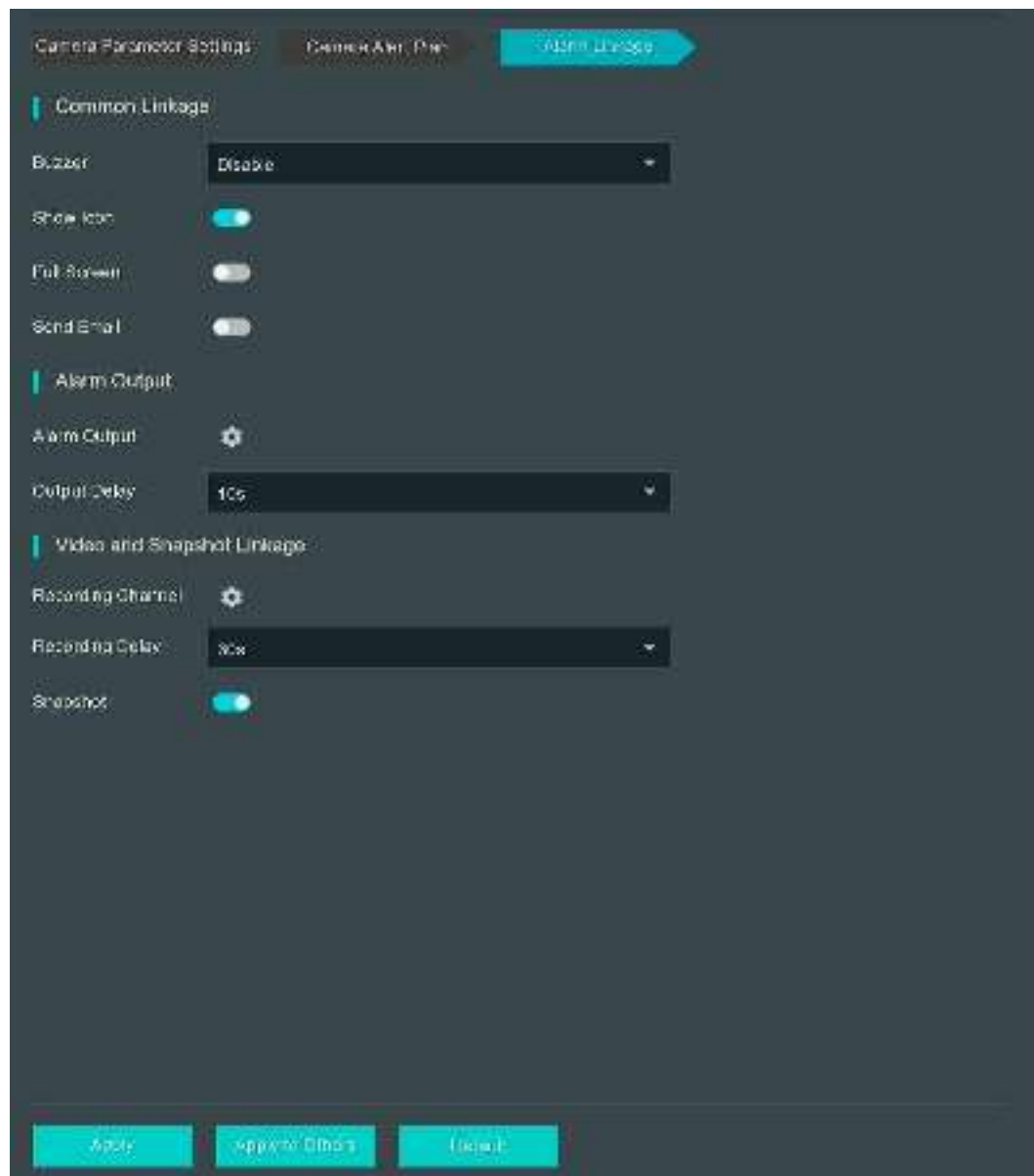
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-39.

Linked actions will be triggered when an alarm is generated.

Figure 3-39 Configuring an alarm linkage policy



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-40.

Figure 3-40 Viewing an alarm



- The alarm type is **Area exit**. You can click the alarm to view the recording.
 - If there are too many alarms, you can click  to search by channel ID and alarm type.
- End

3.4.7 Loitering Detection

Scenario

- You can draw one or more detection areas to detect whether persons or vehicles loiter these areas for a specified period of time.
If so, the HWT-NVR800 reports alarms and triggers configured alarm-linked actions (if any).
- Loitering detection covers the whole areas you have drawn, as shown in the following figure.

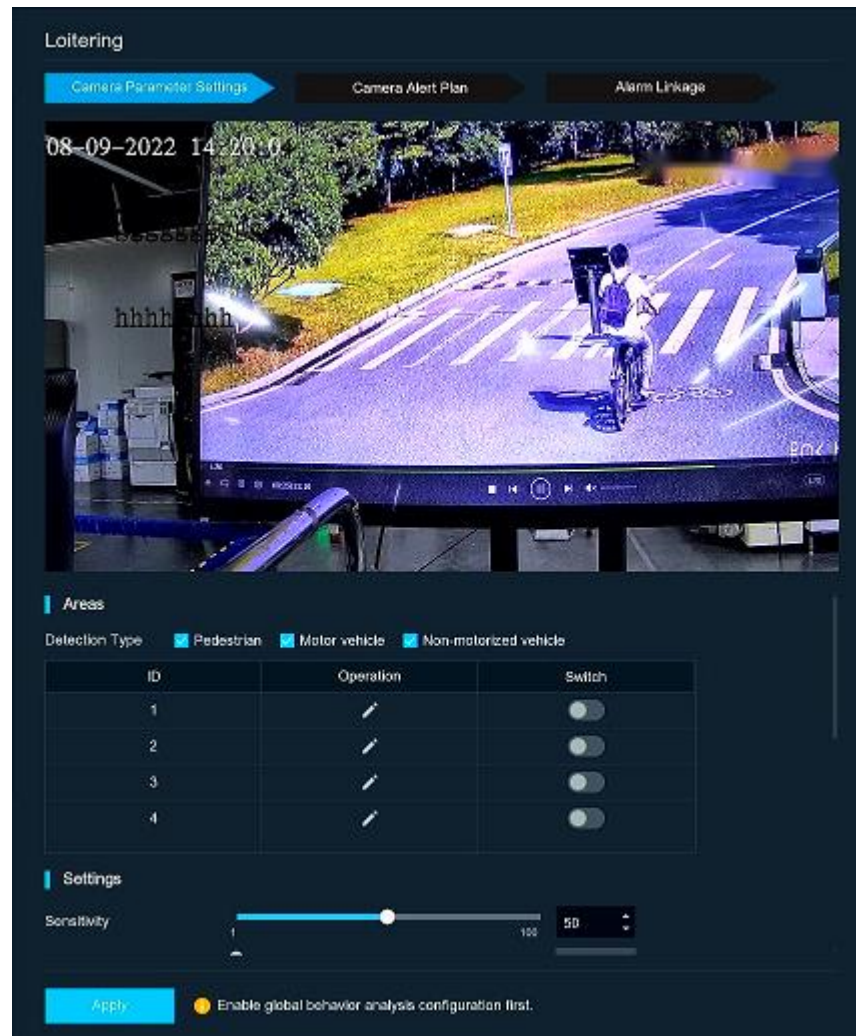


Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Loitering**.
- Step 3** Draw a detection area, as shown in Figure 3-41.

- A maximum of four detection areas can be drawn. For details about how to draw a detection area, see 5.3.2 Drawing a Detection Area for Behavior Analysis.
- **Dxxx-10-LI-PV cameras support audible and visual alarms.** You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-41 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-42.

Specify the time segment when alarming is effective.

Figure 3-42 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

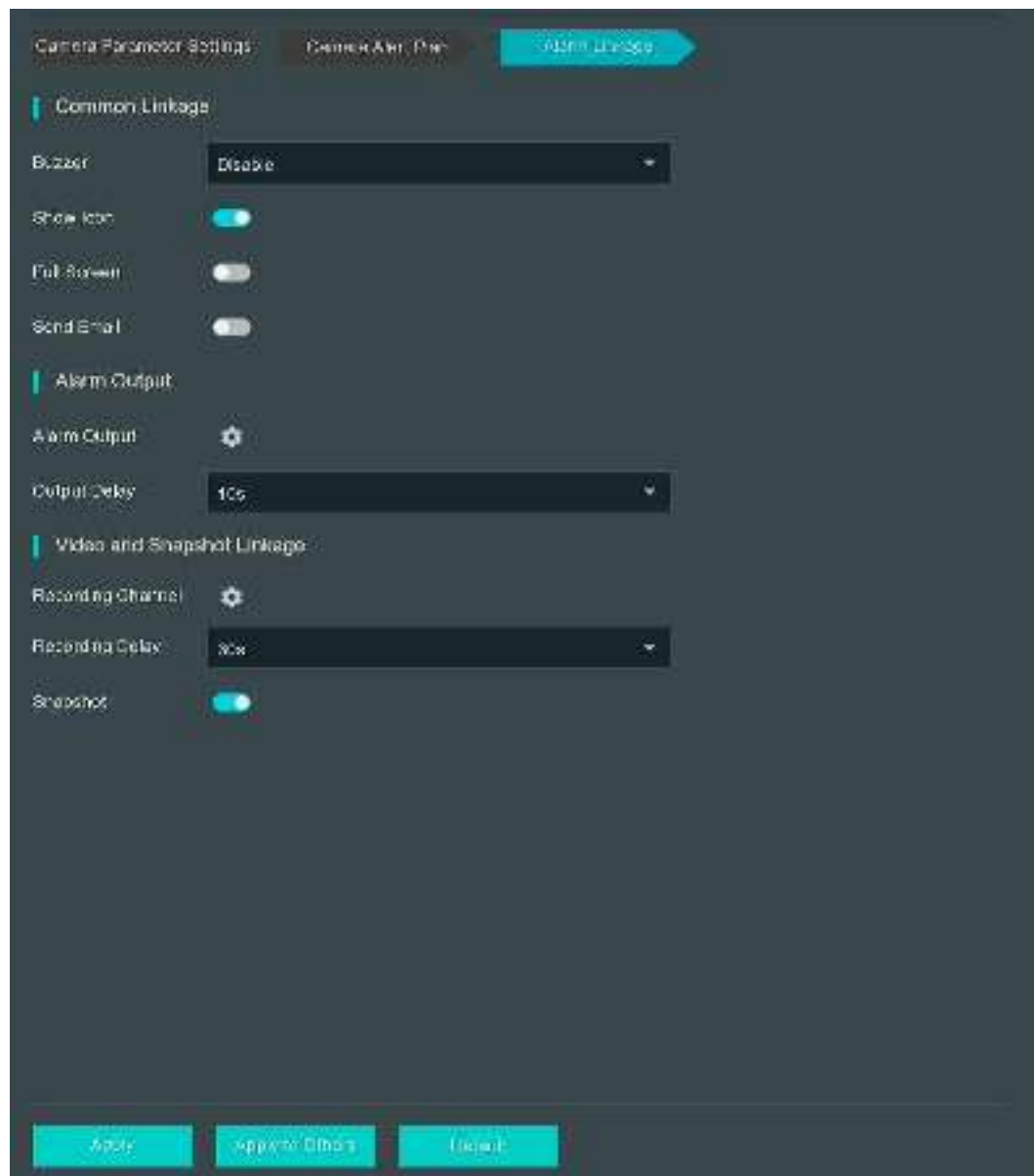
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-43.

Linked actions will be triggered when an alarm is generated.

Figure 3-43 Configuring an alarm linkage policy

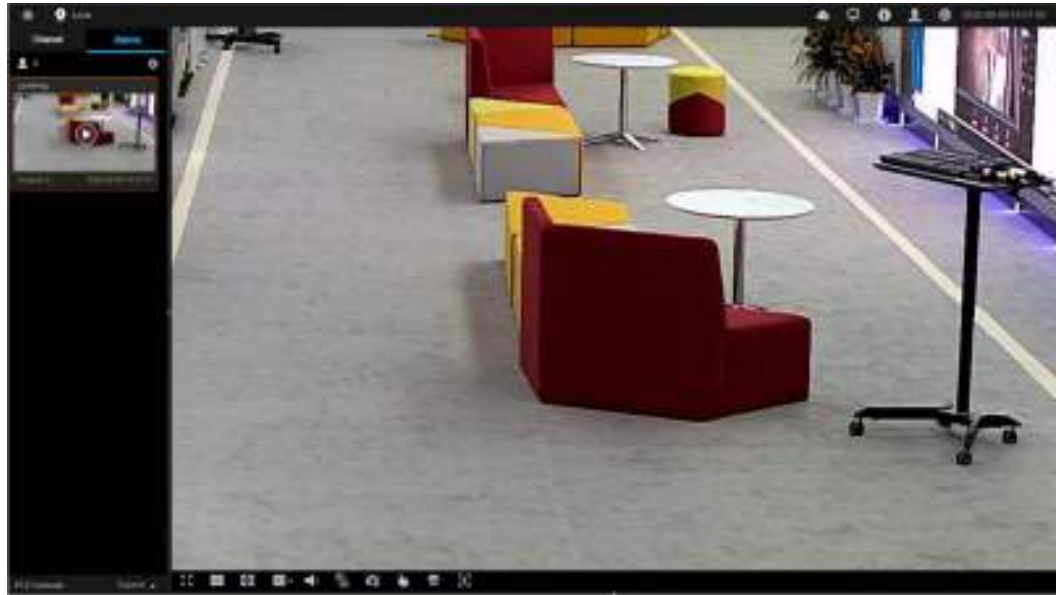


----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-44.

Figure 3-44 Viewing an alarm



- The alarm type is **Loitering**. You can click the alarm to view the recording.
 - If there are too many alarms, you can click  to search by channel ID and alarm type.
- End

3.4.8 Fast Movement Detection

Scenario

- You can draw one or more detection areas to detect whether persons or vehicles move fast in these areas.
If so, the HWT-NVR800 reports alarms and triggers configured alarm-linked actions (if any).
- Fast movement detection covers the whole areas you have drawn, as shown in the following figure.

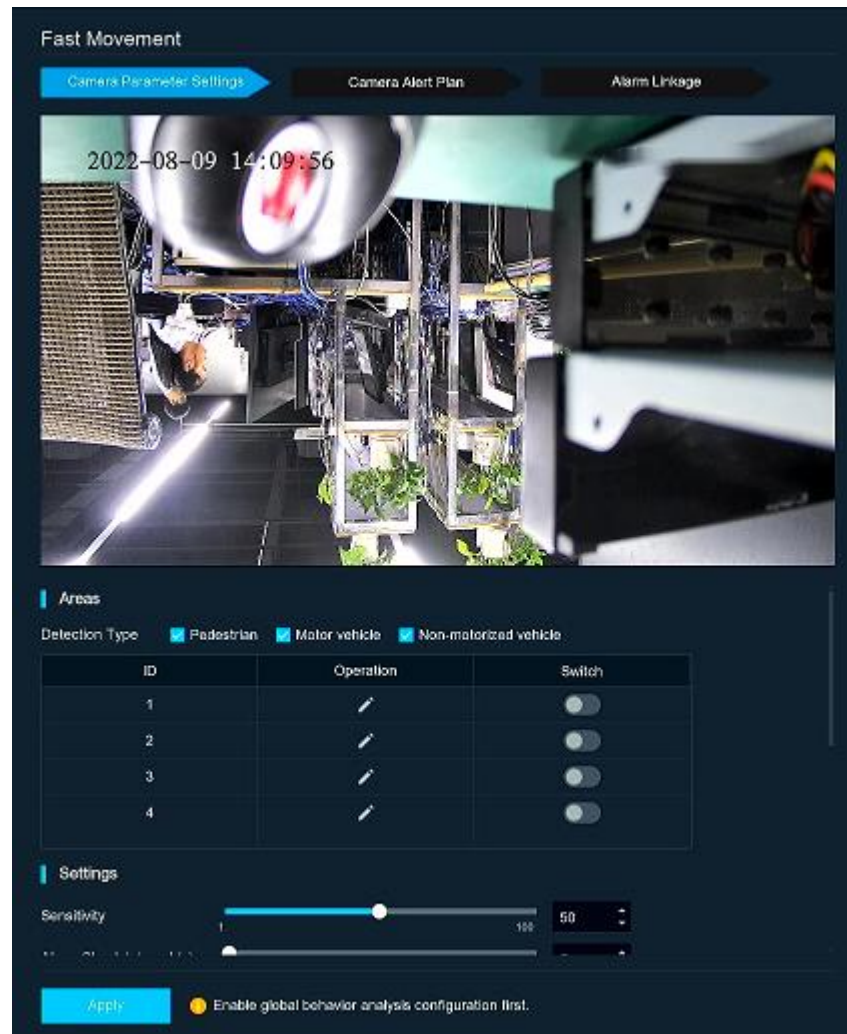


Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Fast Movement**.
- Step 3** Draw a detection area, as shown in Figure 3-45.

- A maximum of four detection areas can be drawn. For details about how to draw a detection area, see 5.3.2 Drawing a Detection Area for Behavior Analysis.
- **Dxxx-10-LI-PV cameras support audible and visual alarms.** You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-45 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-46.

Specify the time segment when alarming is effective.

Figure 3-46 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

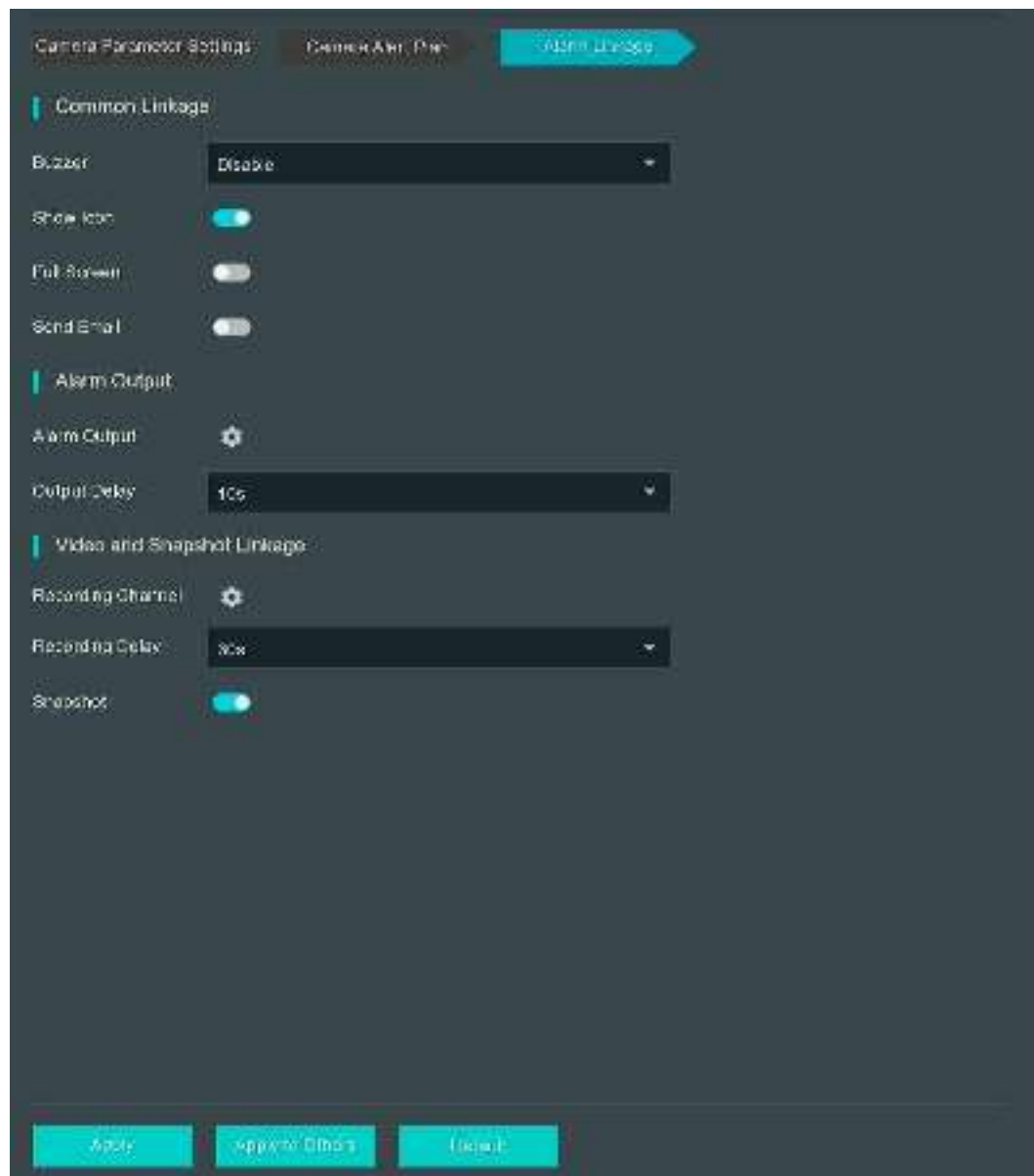
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-47.

Linked actions will be triggered when an alarm is generated.

Figure 3-47 Configuring an alarm linkage policy

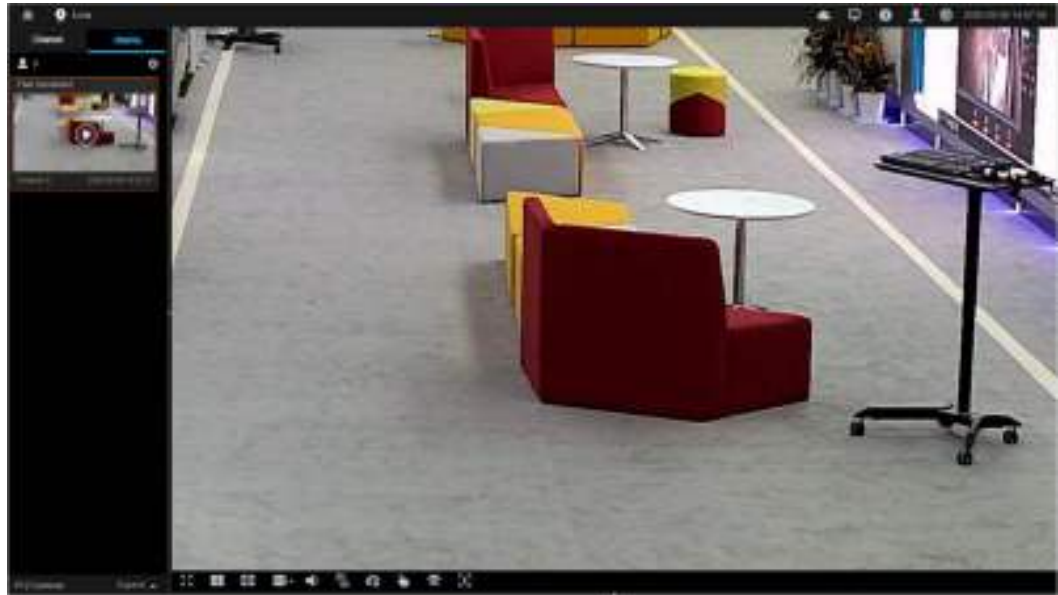


----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-48.

Figure 3-48 Viewing an alarm



- The alarm type is **Fast movement**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.4.9 Abandoned Object Detection

Scenario

You can draw one or more detection areas to check whether objects are abandoned in these areas for a specified period of time.

If so, the HWT-NVR800 reports alarms and triggers configured alarm-linked actions (if any).

Procedure

Step 1 Right-click the screen.

Step 2 Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Abandon**.

Step 3 Draw a detection area, as shown in Figure 3-49.

- A maximum of four detection areas can be drawn. For details about how to draw a detection area, see 5.3.2 Drawing a Detection Area for Behavior Analysis.
- **Dxxx-10-LI-PV cameras support audible and visual alarms.** You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-49 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-50.

Specify the time segment when alarming is effective.

Figure 3-50 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

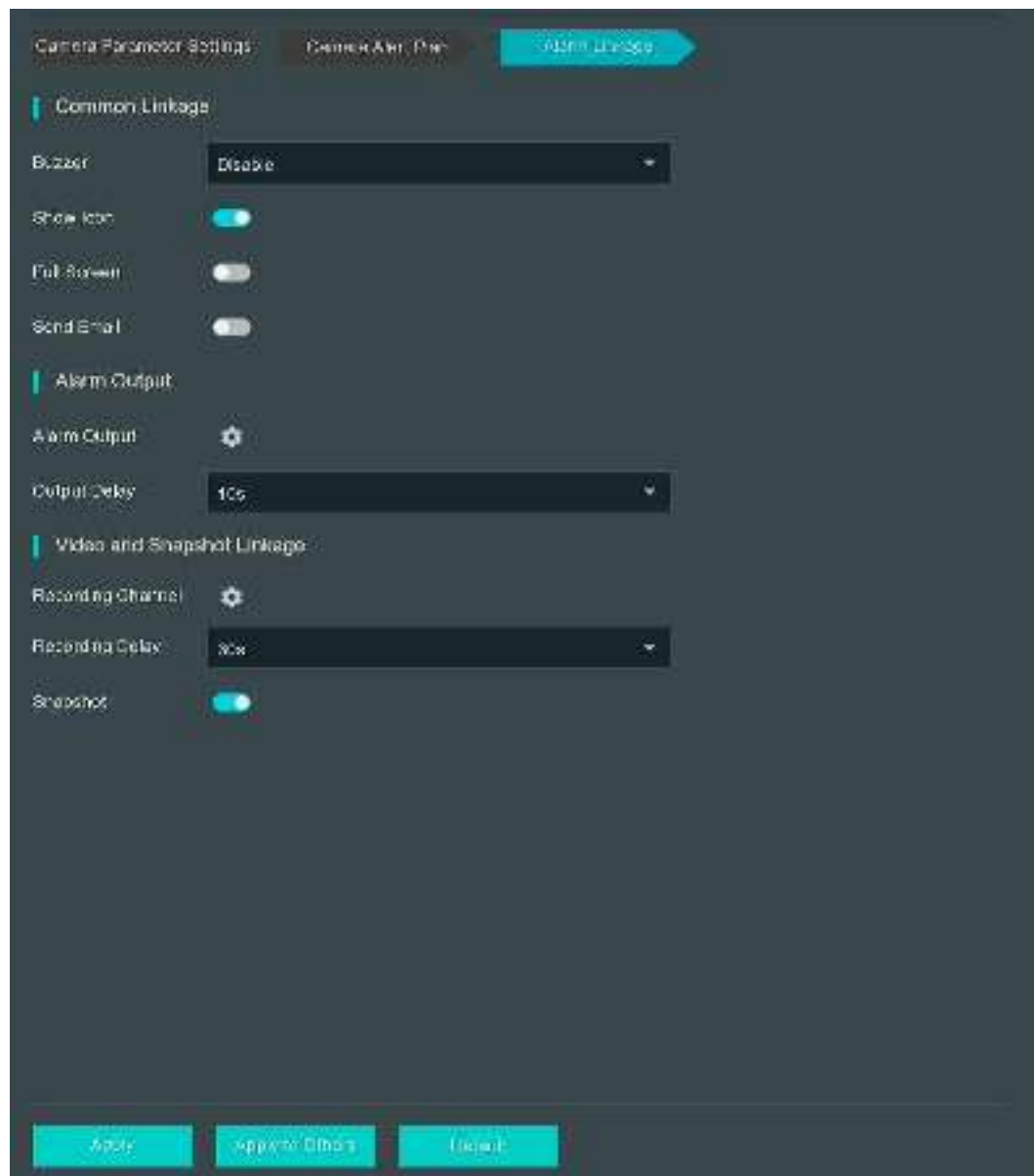
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-51.

Linked actions will be triggered when an alarm is generated.

Figure 3-51 Configuring an alarm linkage policy



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-52.

Figure 3-52 Viewing an alarm



- The alarm type is **Abandon**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.4.10 Removed Object Detection

Scenario

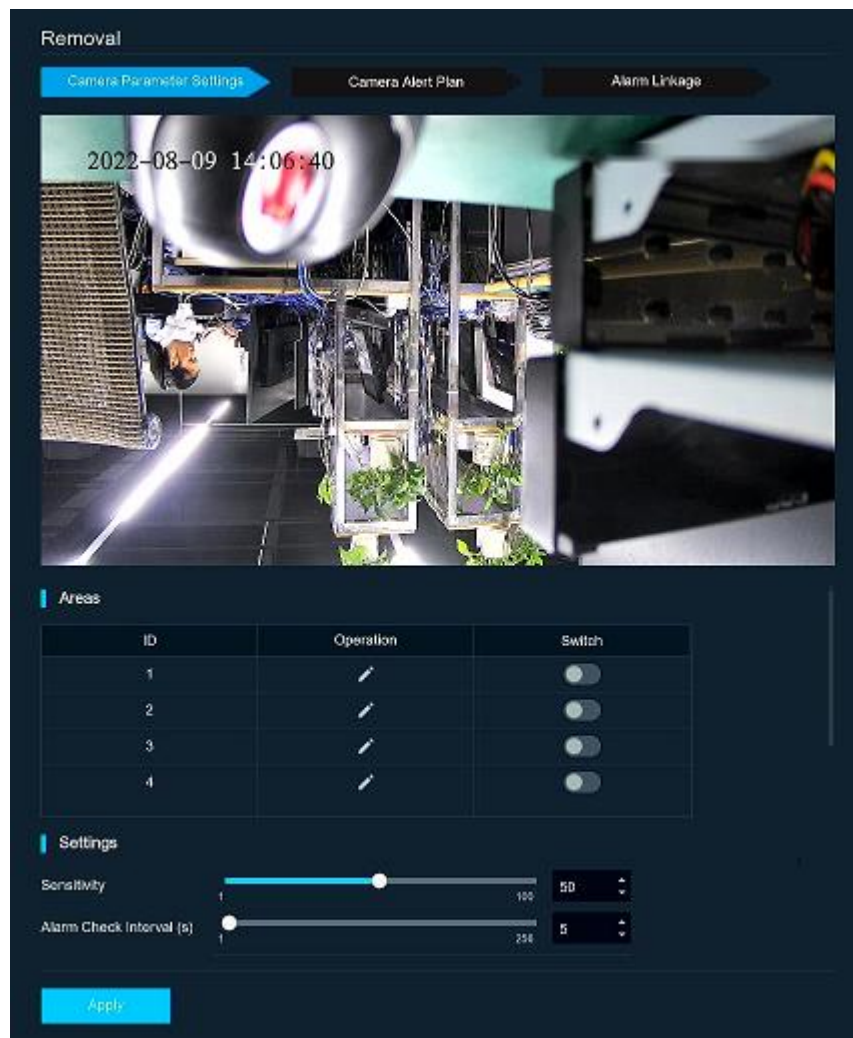
You draw one or more detection areas to check whether objects are removed from these areas.

If so, the HWT-NVR800 reports alarms and triggers configured alarm-linked actions (if any).

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Removal**.
- Step 3** Draw a detection area, as shown in Figure 3-53.
 - A maximum of four detection areas can be drawn. For details about how to draw a detection area, see 5.3.2 Drawing a Detection Area for Behavior Analysis.
 - **Dxxx-10-LI-PV cameras support audible and visual alarms.** You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-53 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-54.
Specify the time segment when alarming is effective.

Figure 3-54 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

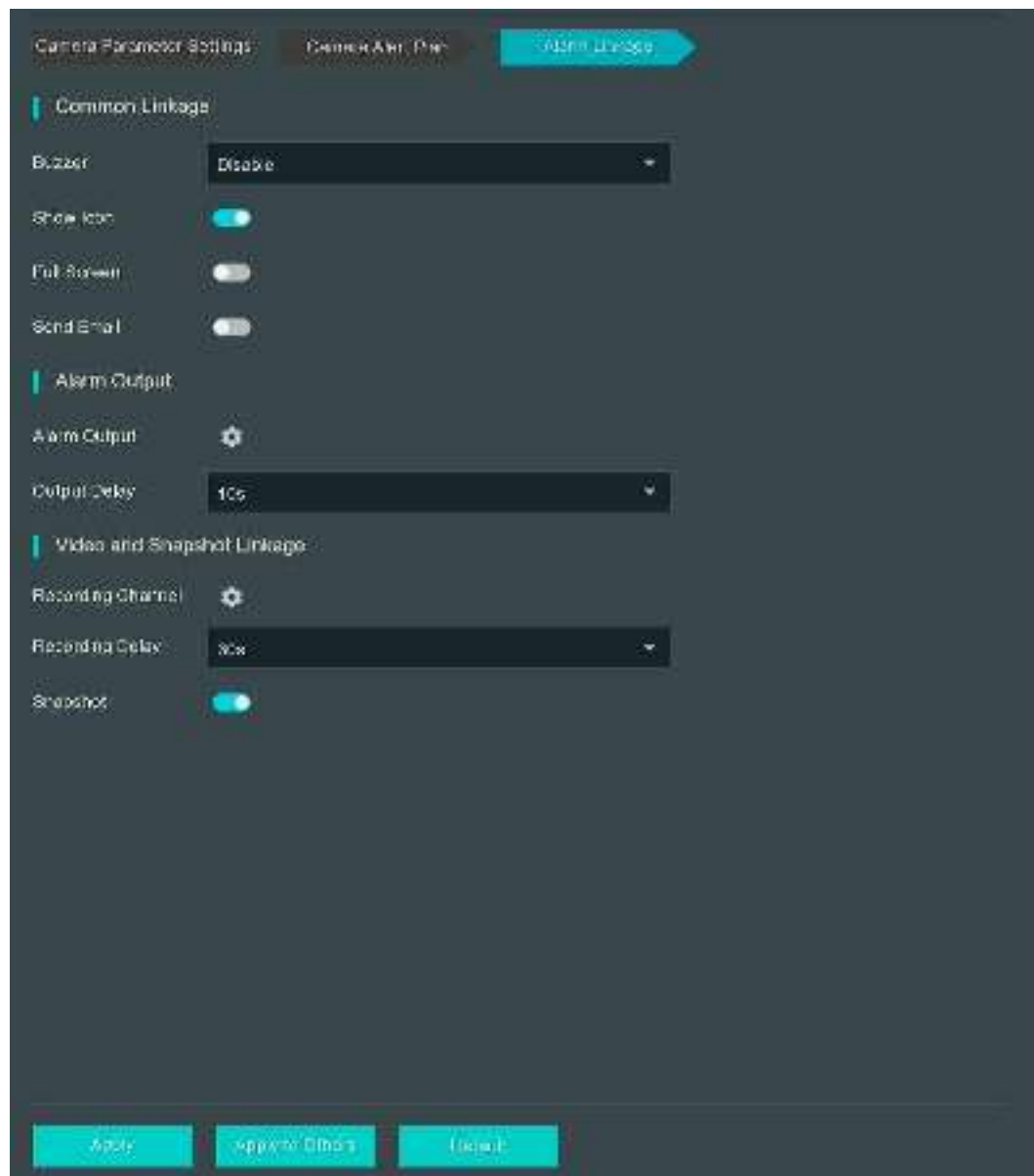
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-55.

Linked actions will be triggered when an alarm is generated.

Figure 3-55 Configuring an alarm linkage policy



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-56.

Figure 3-56 Viewing an alarm



- The alarm type is **Removal**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.4.11 Electric Bike Detection

Scenario

You can draw a detection area to check whether electric bikes enter the area.

If so, the HWT-NVR800 reports alarms and triggers configured alarm-linked actions (if any).

Restrictions

- The electric bike detection function is available for the HWT-NVR800 connected to HOLOWITS HWT-Dxxxx-10-LI-PV cameras. For details about the version mappings, see the *HWT-NVR800 9.0.0 Compatibility List*.
- You can perform electric bike detection in elevators or along perimeters. Before enabling detection of electric bikes in elevators, you need to disable global behavior analysis.
- The HWT-NVR800 of versions earlier than 9.0.0.SPC900 cannot connect to HWT-DXXXX-10-ELIV-Eb or HWT-CXXXX-10-ELIV-Eb cameras dedicated to electric bike detection.

Procedure

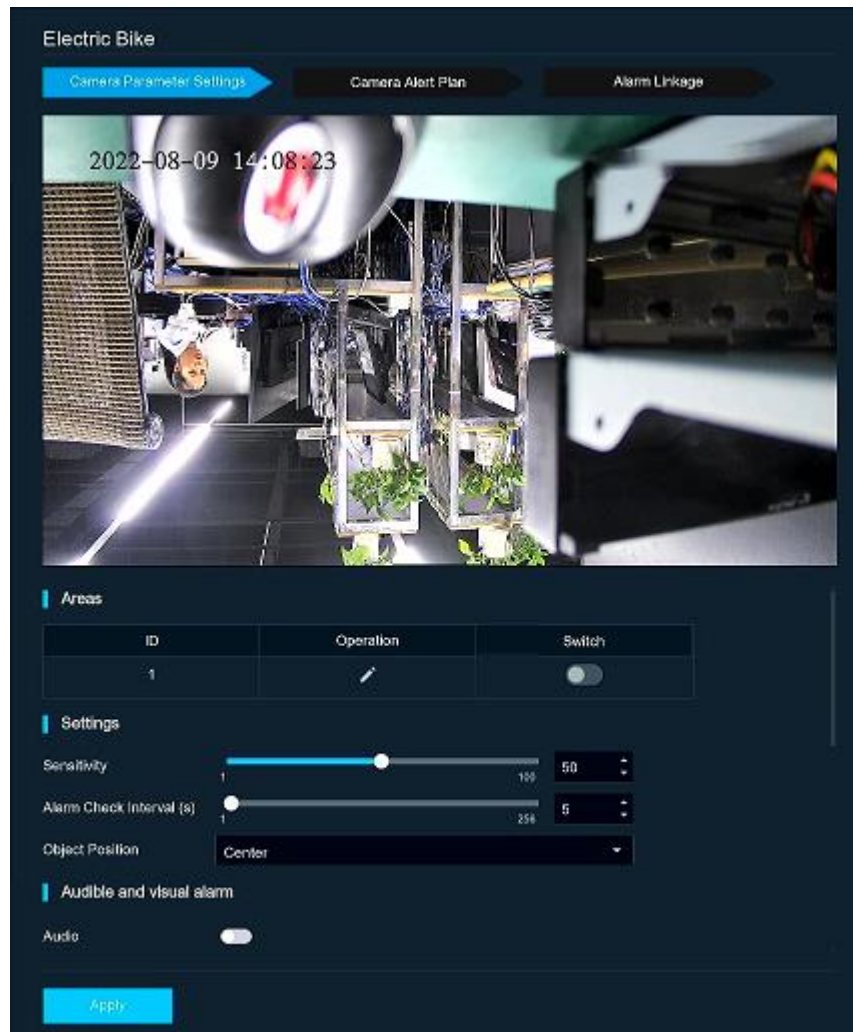
Step 1 Right-click the screen.

Step 2 Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Electric Bike**.

Step 3 Draw a detection area, as shown in Figure 3-57.

- A maximum of four detection areas can be drawn. For details about how to draw a detection area, see 5.3.2 Drawing a Detection Area for Behavior Analysis.
- **Dxxx-10-LI-PV cameras support audible and visual alarms.** You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-57 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-58.

Specify the time segment when alarming is effective.

Figure 3-58 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

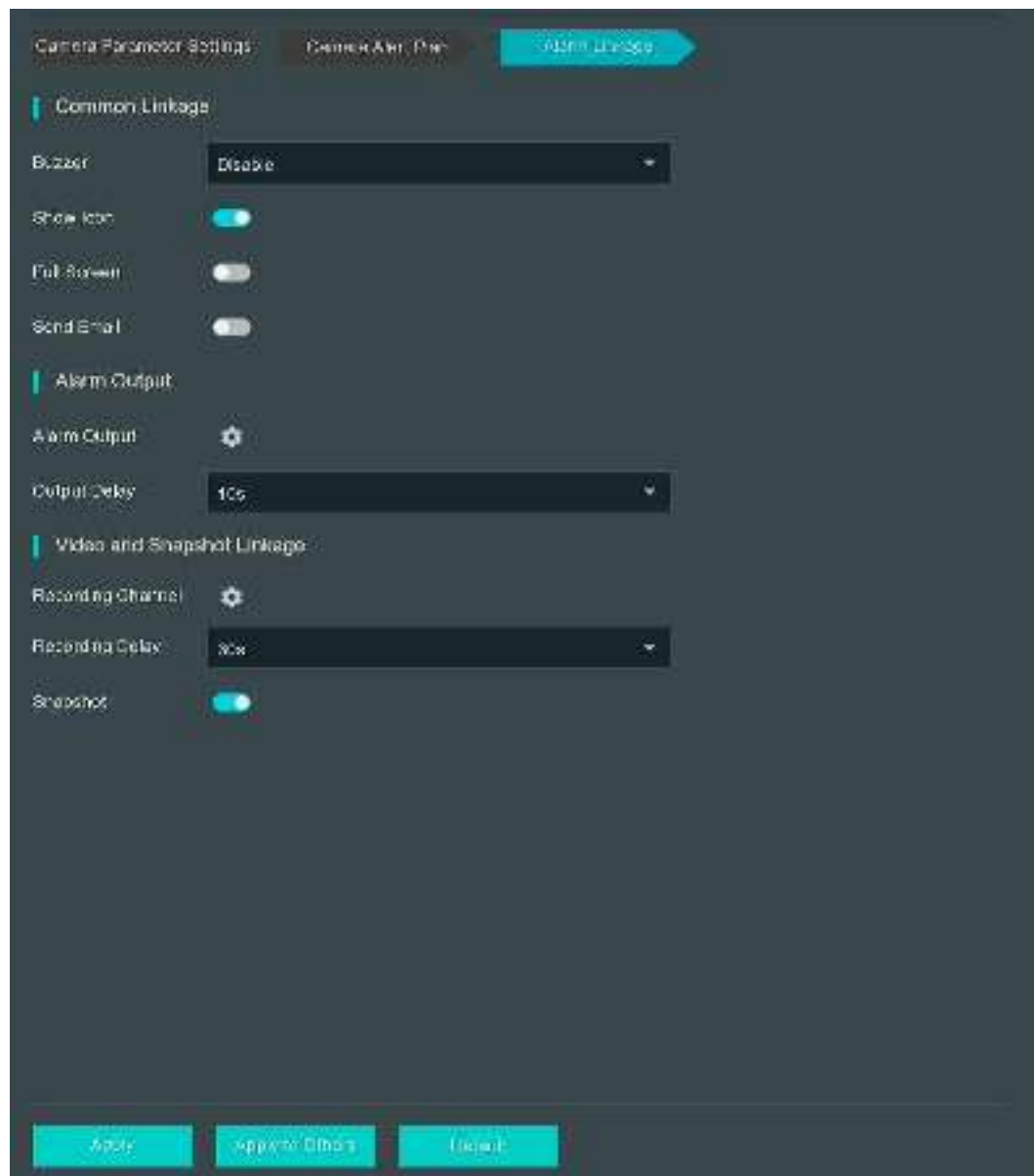
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-59.

Linked actions will be triggered when an alarm is generated.

Figure 3-59 Configuring an alarm linkage policy



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-60.

Figure 3-60 Viewing an alarm



- The alarm type is **Electric Bike**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.4.12 Parking Detection

Scenario

You can draw a detection area to check whether vehicles park in the area.

If so, the HWT-NVR800 reports alarms and triggers configured alarm-linked actions (if any).

Restrictions

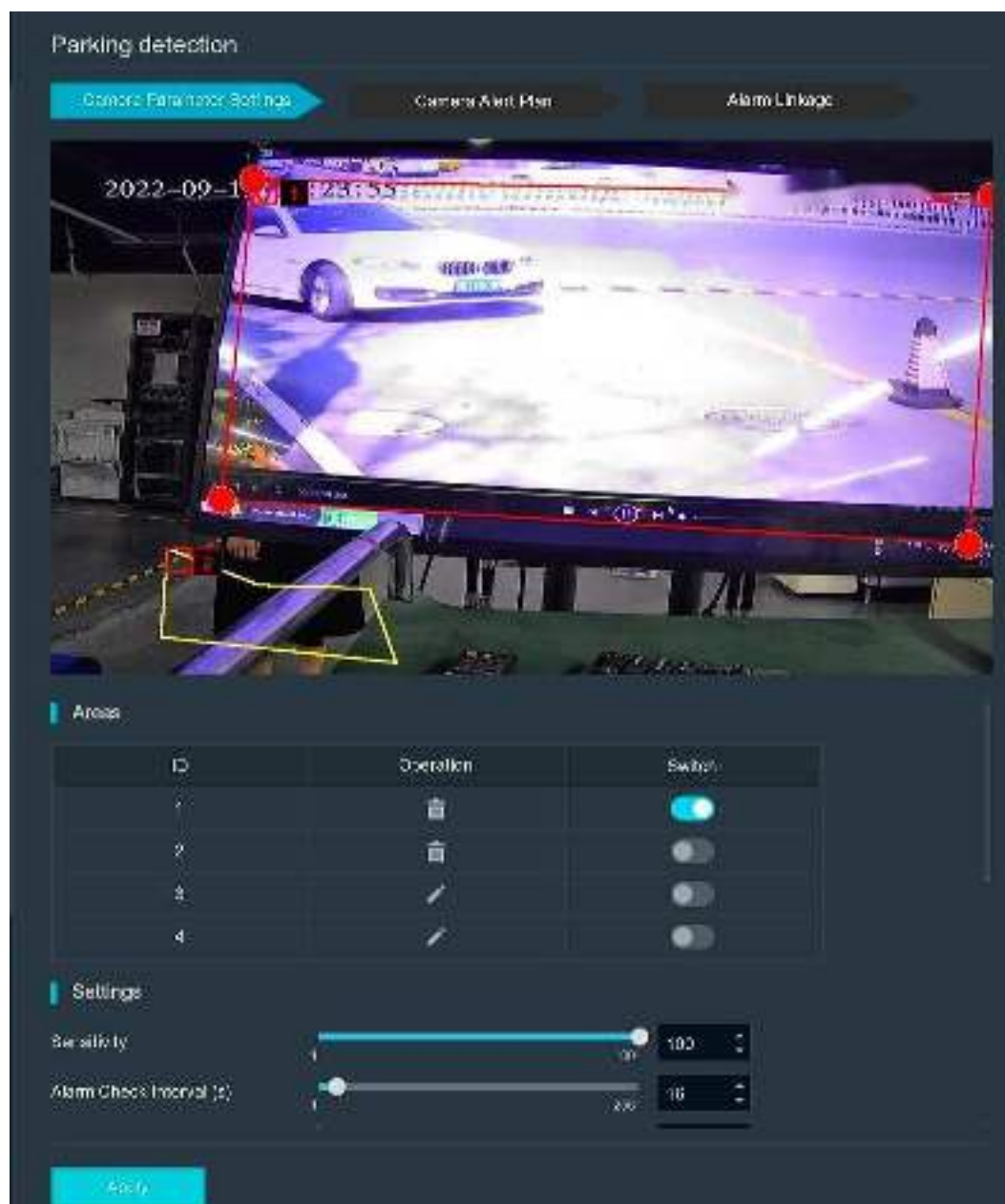
The parking detection function is available for the HWT-NVR800 connected to HOLOWITS HWT-Dxxxx-10-LI-PV cameras. For details about the version mappings, see the *HWT-NVR800 9.0.0 Compatibility List*.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Parking detection**.
- Step 3** Draw a detection area, as shown in Figure 3-61.
 - A maximum of four detection areas can be drawn. For details about how to draw a detection area, see 5.3.2 Drawing a Detection Area for Behavior Analysis.

- **Dxxx-10-LI-PV cameras support audible and visual alarms.** You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-61 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-62.

Specify the time segment when alarming is effective.

Figure 3-62 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

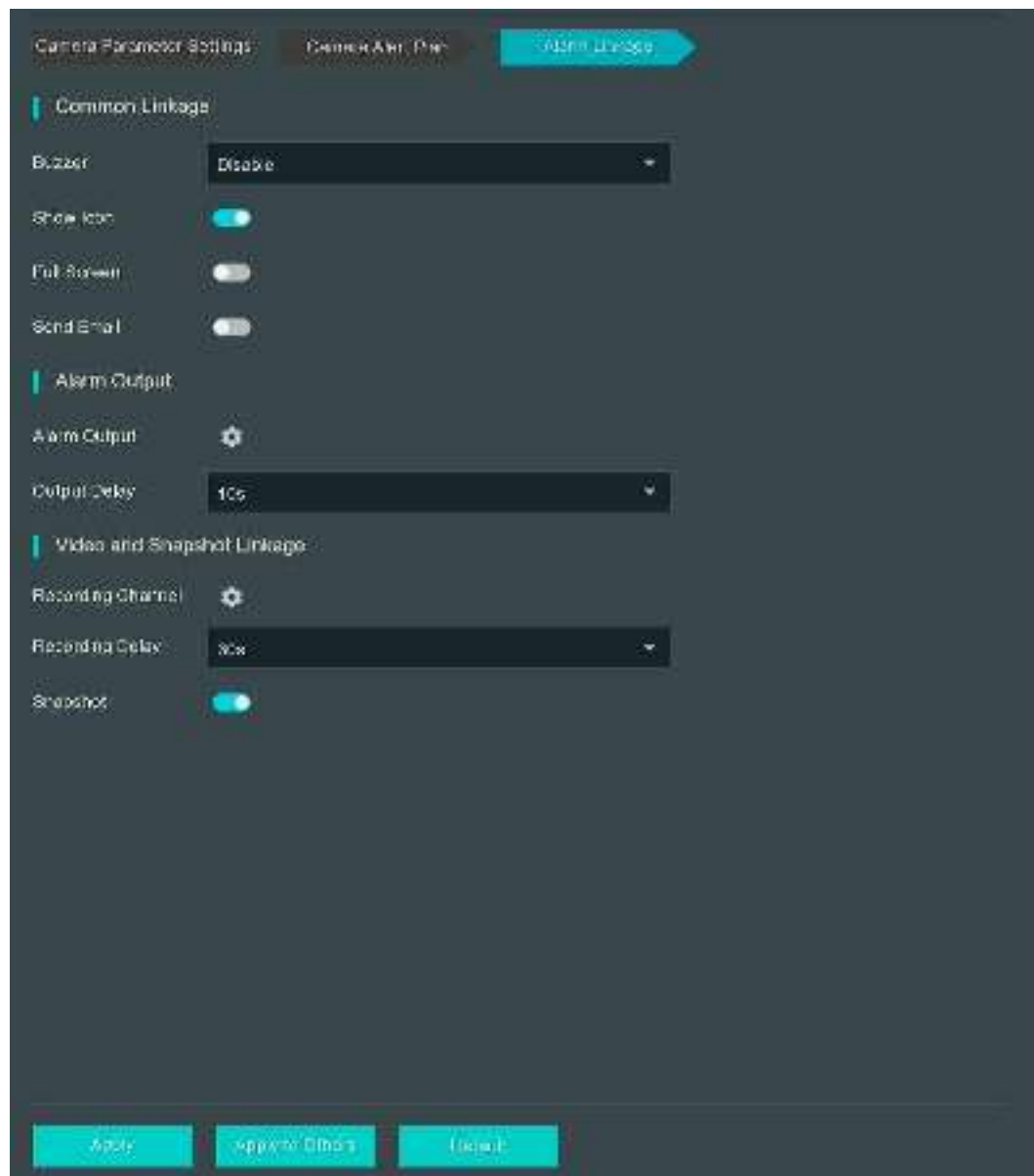
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-63.

Linked actions will be triggered when an alarm is generated.

Figure 3-63 Configuring an alarm linkage policy



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-64.

Figure 3-64 Viewing an alarm



- The alarm type is **Parking detection**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.5 Situation Analysis

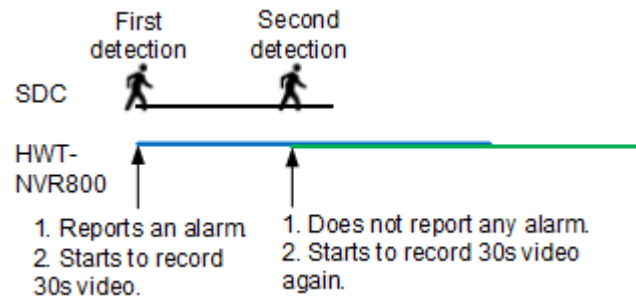
3.5.1 Detection Principles

When a camera detects an alarm event, it reports the alarm to the HWT-NVR800. The HWT-NVR800 displays an alarm dialog box on the **Live** page and starts intelligent recording.

- **Detection interval**
The camera performs detection in the detection area at the specified interval. If multiple persons or vehicles appear in this interval, only one alarm is reported.
The default detection interval is 5s.
- **Extended recording duration**
When an alarm is displayed, the HWT-NVR800 continues to record live video for the specified period.
The default setting is 30s.

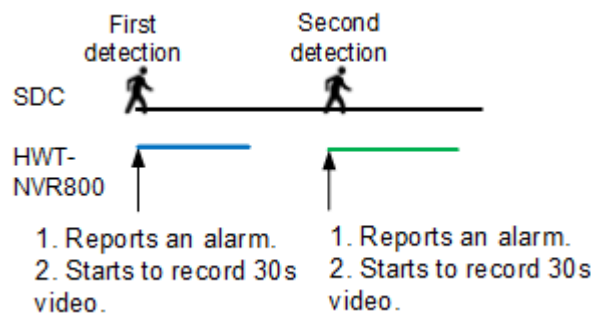
The display effect on the HWT-NVR800 side varies depending on the detection interval and recording extension time.

- **Detection interval (5s) < Extended recording duration (30s)**
The HWT-NVR800 is still recording video triggered by the first alarm when the second detection starts. If a new alarm is detected, no more alarm is displayed but the video is recorded for 35s (5s + 30s). In this example, only an alarm is reported on the **Live** page. You can click the alarm to view the 35s recording.



- Detection interval (40s) > Extended recording duration (30s)

The HWT-NVR800 has finished recording video triggered by the first alarm when the second detection starts. If a new alarm is detected, the alarm is displayed and video is recorded for 30s. In this example, two alarms are reported on the **Live** page. You can click each alarm to view the 30s recording.



3.5.2 Head Counting

Scenario

You can draw a detection line in a detection area to collect statistics on the number of persons crossing the detection line.

When a person crosses the detection line, the system counts the number of people exiting and entering. When the sum reaches the preset alarm threshold, the HWT-NVR800 reports an alarm and triggers configured alarm-linked actions (if any).

Restrictions

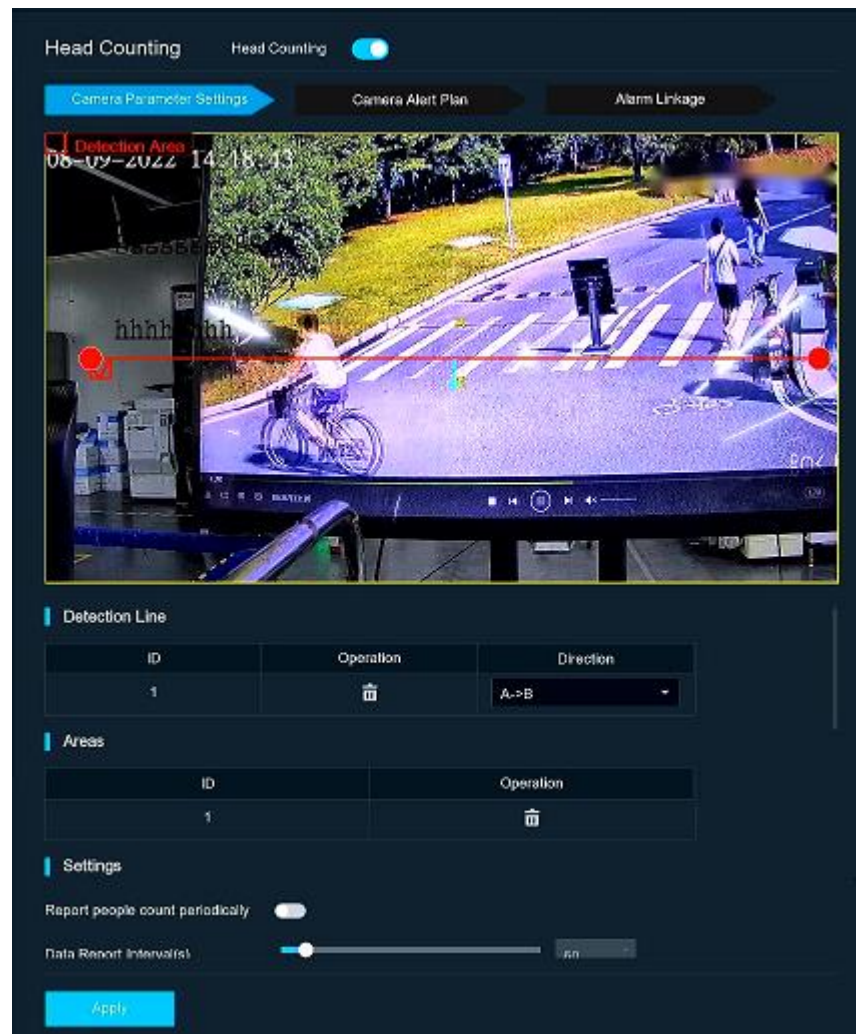
The head counting function is available for the HWT-NVR800 connected to HOLOWITS HWT-Dxxx-10 cameras. For details about the version mappings, see the *HWT-NVR800 9.0.0 Compatibility List*.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Situational Analysis > Head Counting**.
- Step 3** Draw a detection area, as shown in Figure 3-65.
 - A maximum of one detection area can be drawn. For details about how to draw a detection area, see 5.3.3 Drawing a Detection Area for Situation Analysis.

- Dxxx-10-LI-PV cameras support audible and visual alarms.

Figure 3-65 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-66.
Specify the time segment when alarming is effective.

Figure 3-66 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

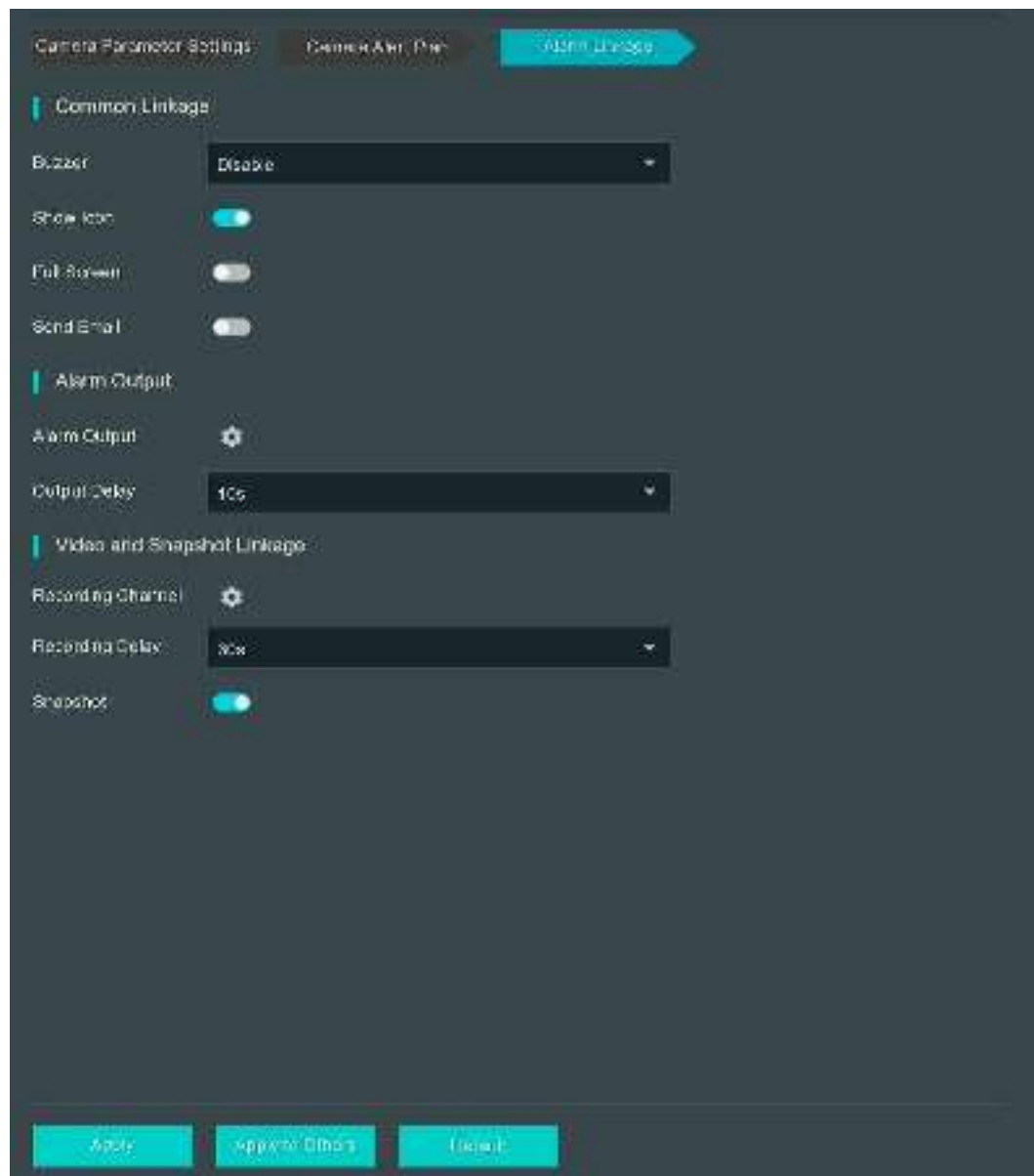
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-67.

Linked actions will be triggered when an alarm is generated.

Figure 3-67 Configuring an alarm linkage policy



----End

Verification

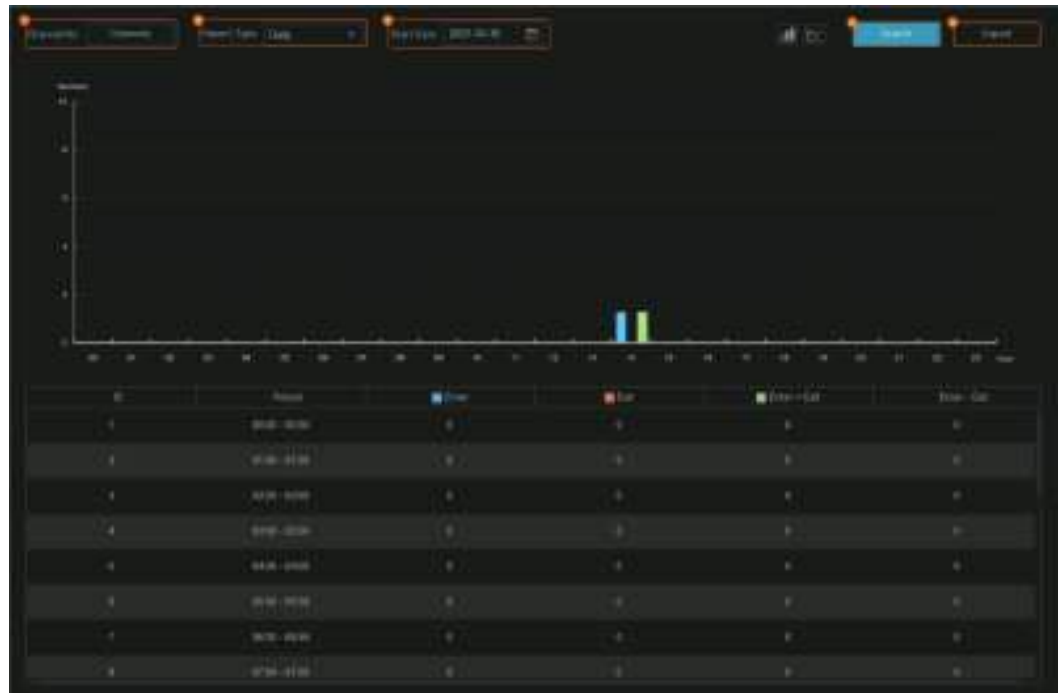
- Step 1** Right-click the screen.
- Step 2** Check the configuration results.
- Viewing an alarm
 - a. Choose **Live > Alarms**.
 - b. View an alarm reported, as shown in Figure 3-68.

Figure 3-68 Viewing an alarm



- The alarm type is **Head counting**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.
- You can click  to view real-time statistics in the upper right corner of the screen.
- Viewing the statistics
 - a. Choose **Intelligence > Statistics Analysis > Head Counting**.
 - b. View the statistics, as shown in Figure 3-69.

Figure 3-69 Viewing the statistics



----End

3.5.3 Queue Length Detection

Scenario

You can draw a detection area to detect the queue length in the area.

You can set the single-person queuing duration based on the service type (such as ticket check). When the total queuing duration in the detection area exceeds the preset threshold, the HWT-NVR800 reports an alarm and triggers configured alarm-linked actions (if any).

Restrictions

The queue length detection function is available for the HWT-NVR800 connected to HOLOWITS HWT-Dxxx-10 cameras. For details about the version mappings, see the *HWT-NVR800 9.0.0 Compatibility List*.

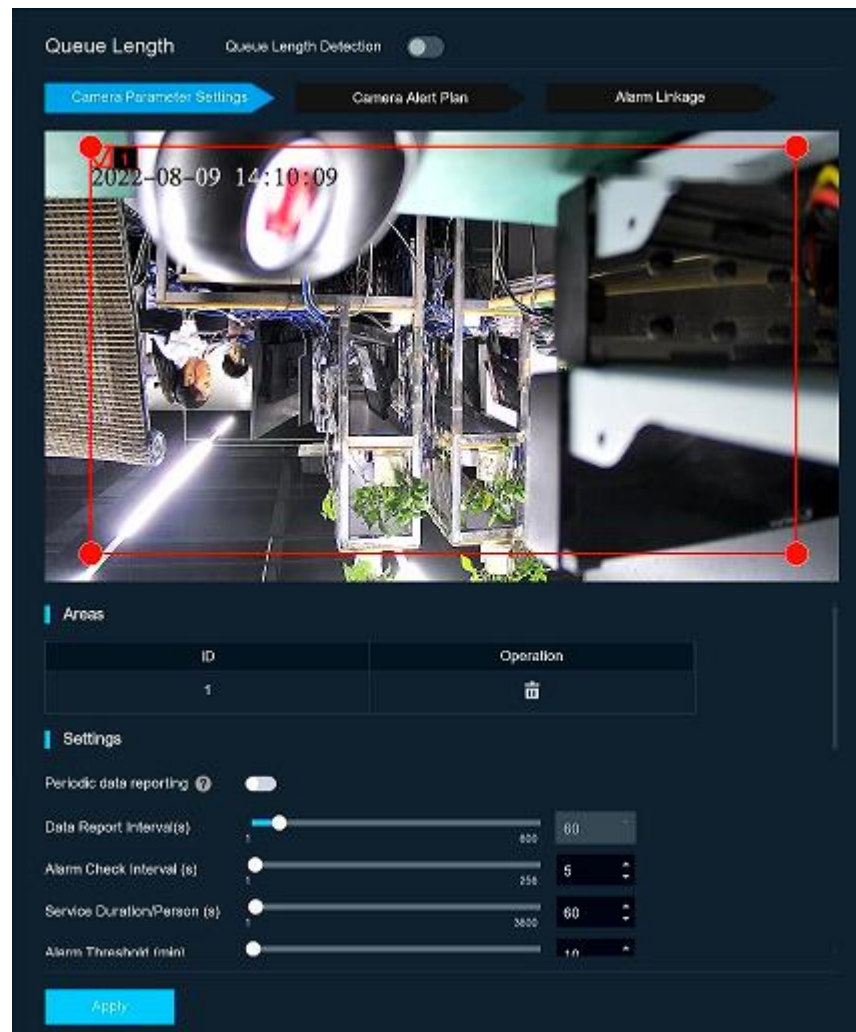
Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Situational Analysis > Queue Length**.
- Step 3** Draw a detection area, as shown in Figure 3-70.

An alarm is triggered when persons queue for a period reaching the value of **Alarm Threshold (min)** or a person queues for a period reaching the value of **Service Duration/Person (s)** in a detection area.

- A maximum of one detection area can be drawn. If no area is drawn, the full image is used as the detection area by default. For details about how to draw a detection area, see 5.3.3 Drawing a Detection Area for Situation Analysis.
- Dxxx-10-LI-PV cameras support audible and visual alarms.

Figure 3-70 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-71.

Specify the time segment when alarming is effective.

Figure 3-71 Configuring an alert plan

Camera Parameter Settings | **Camera Alert Plan** | Alarm Linkage

Camera Alert Plan

+ Add - Delete All

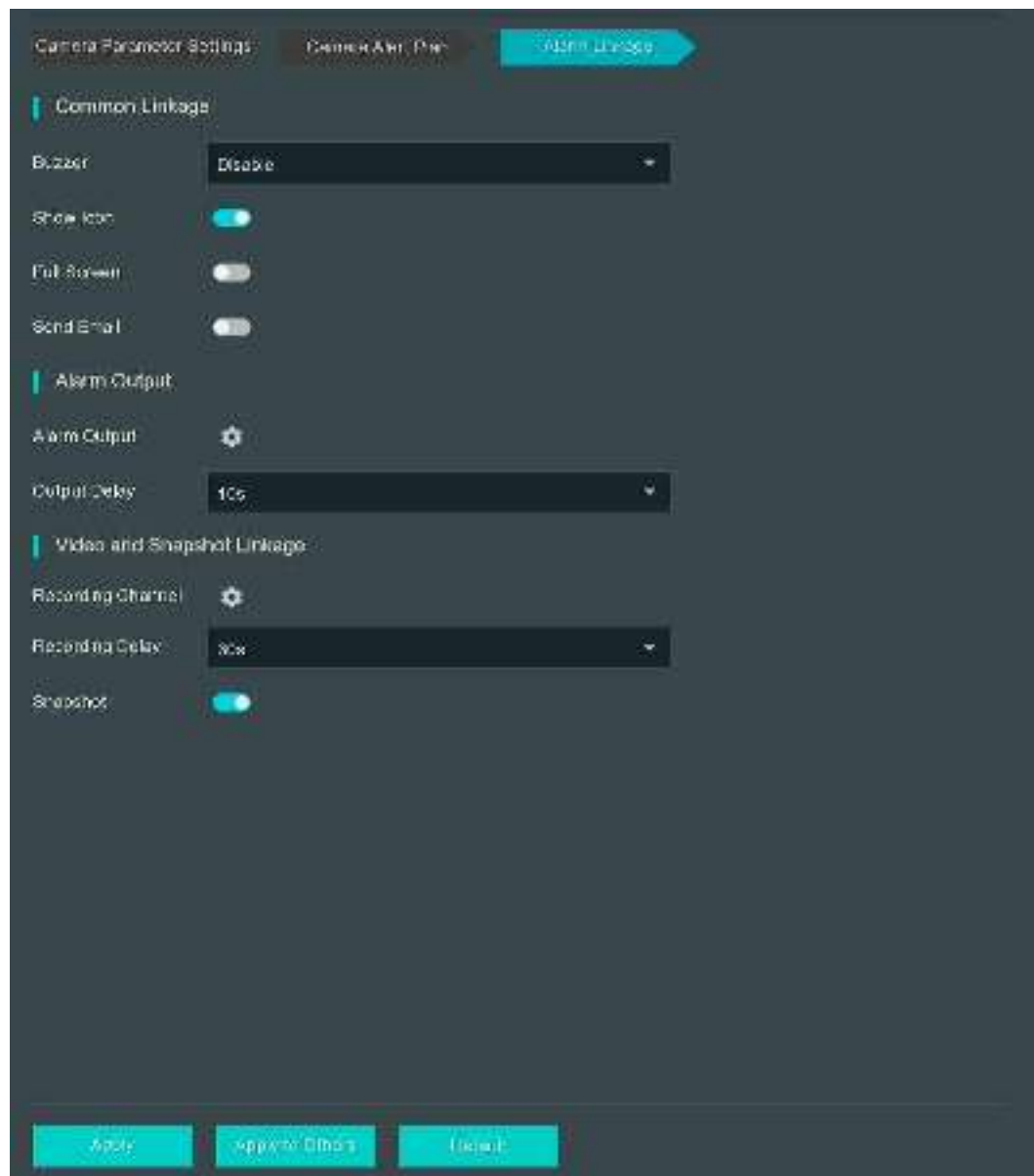
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-72.

Linked actions will be triggered when an alarm is generated.

Figure 3-72 Configuring an alarm linkage policy



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-73.

Figure 3-73 Viewing an alarm



- The alarm type is **Queue length**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.
- You can click  to view real-time statistics in the upper right corner of the screen.

----End

3.5.4 Absence Detection

Scenario

You can draw a detection area to detect absence status in the area.

When detecting that the person absence period reaches the preset threshold, the HWT-NVR800 reports the alarm generated by the camera and triggers configured alarm-linked actions (if any).

Restrictions

The absence detection function is available for the HWT-NVR800 connected to HOLOWITS HWT-Dxxx-10 cameras. For details about the version mappings, see the *HWT-NVR800 9.0.0 Compatibility List*.

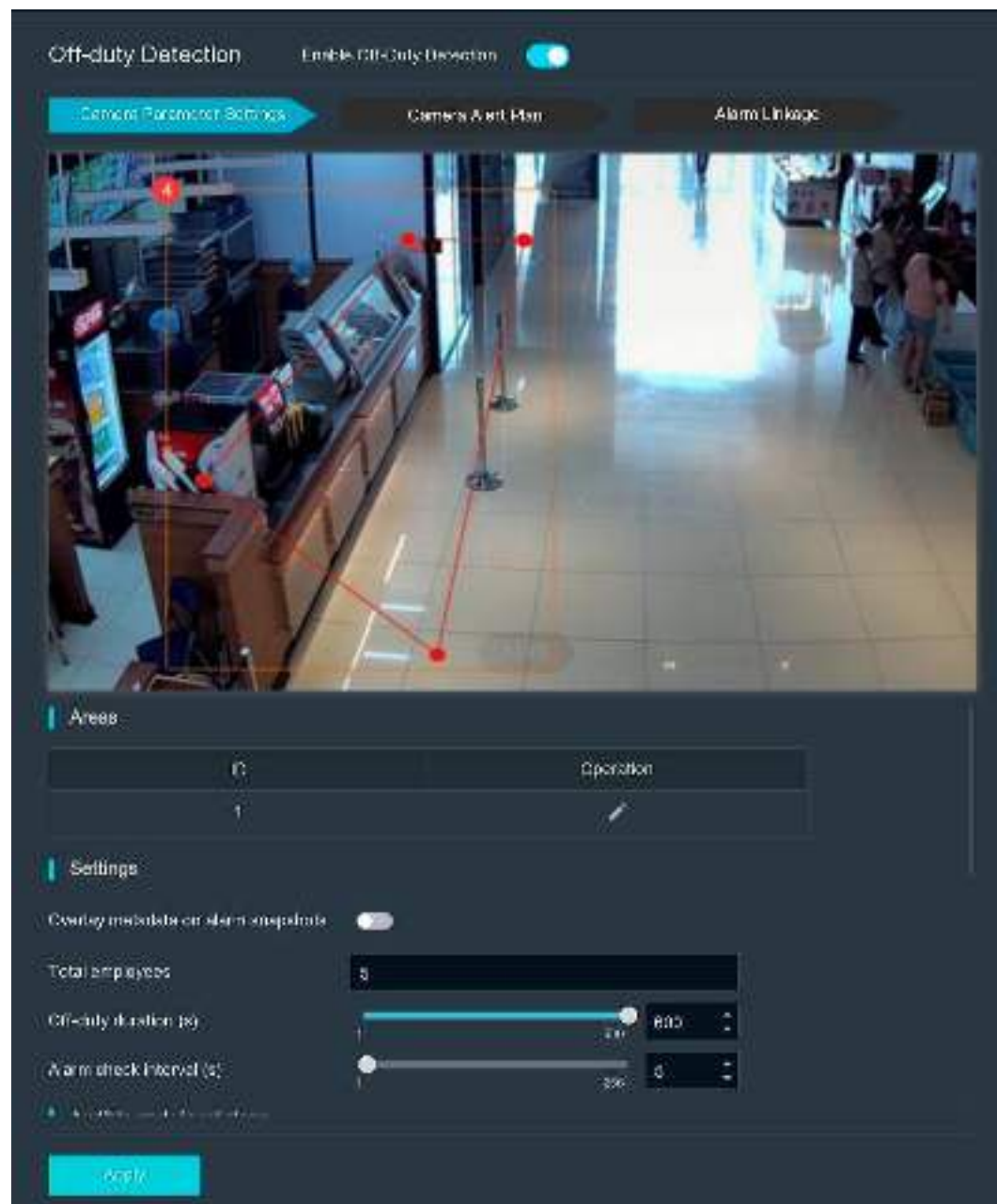
Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Situational Analysis > Off-duty detection**.
- Step 3** Draw a detection area, as shown in Figure 3-74.

An alarm is triggered when the person absence period in the detection area reaches the specified value of **Off-duty duration (s)**.

- A maximum of one detection area can be drawn. If no area is drawn, the full image is used as the detection area by default. For details about how to draw a detection area, see 5.3.3 Drawing a Detection Area for Situation Analysis.
- Dxxx-10-LI-PV cameras support audible and visual alarms.

Figure 3-74 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-75.

Specify the time segment when alarming is effective.

Figure 3-75 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

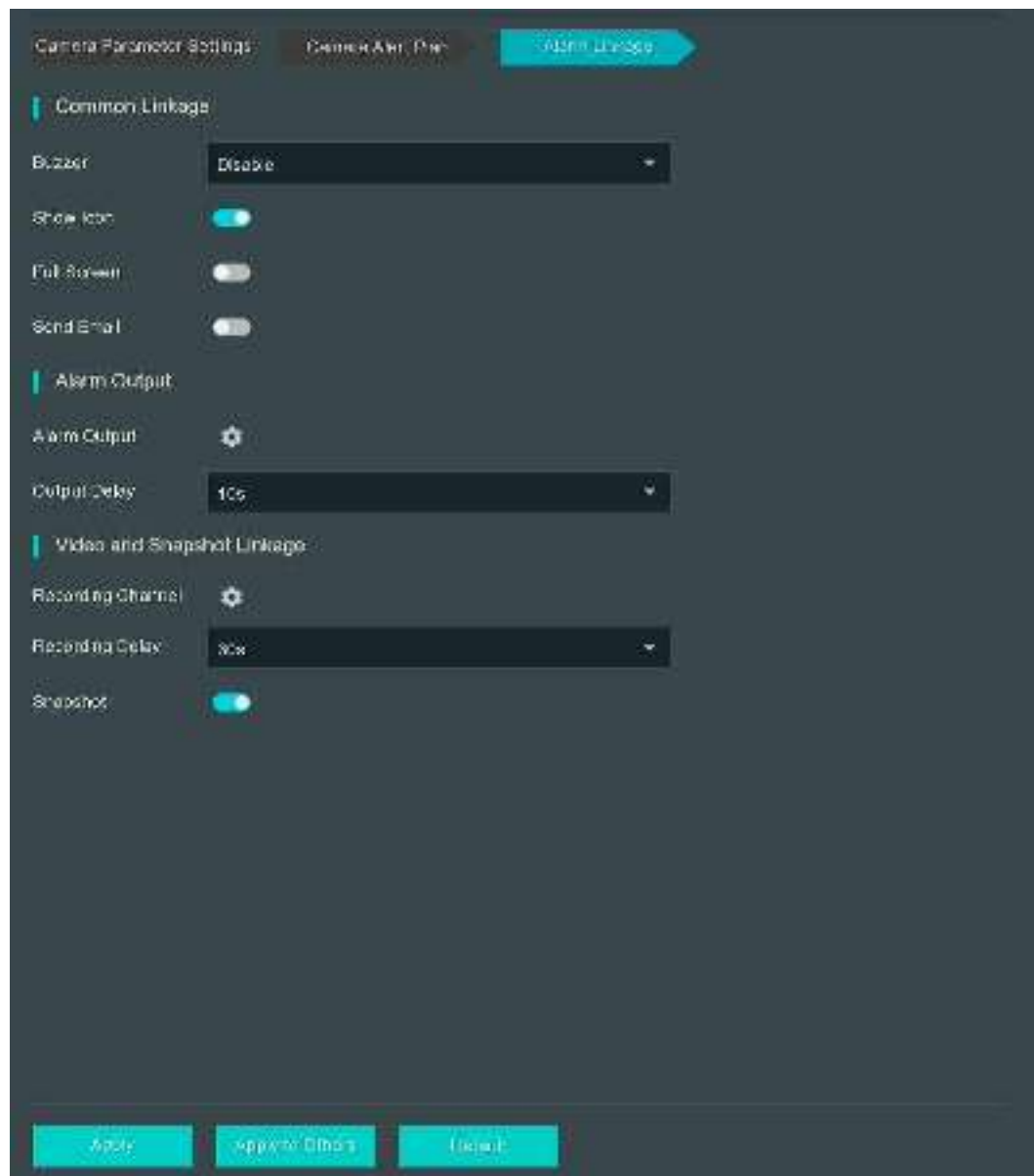
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-76.

Linked actions will be triggered when an alarm is generated.

Figure 3-76 Configuring an alarm linkage policy



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-77.

Figure 3-77 Viewing an alarm



- The alarm type is **Off-duty detection**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.
- You can click  to view real-time statistics in the upper right corner of the screen.

----End

3.5.5 Crowd Density Detection

Scenario

You can draw a detection area to detect the crowd density in the area.

When detecting that the crowd density reaches the preset threshold, the HWT-NVR800 reports an alarm and triggers configured alarm-linked actions (if any).

Restrictions

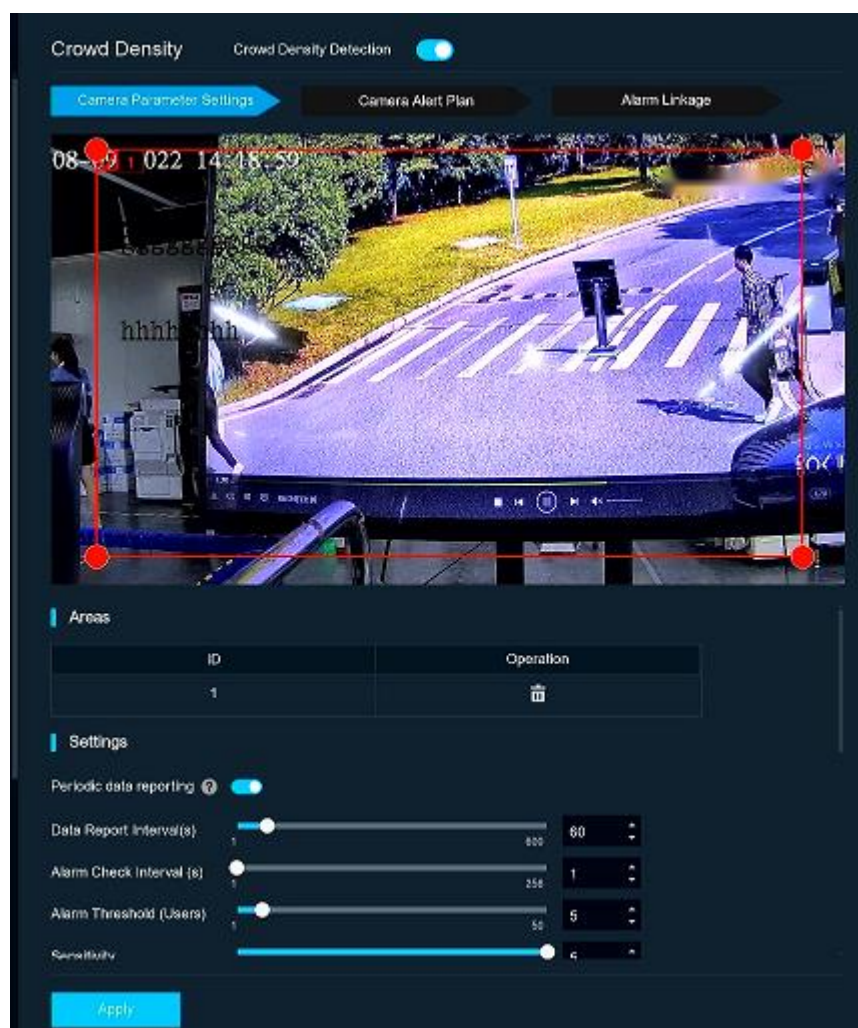
The crowd density detection function is available for the HWT-NVR800 connected to HOLOWITS HWT-Dxxx-10 cameras. For details about the version mappings, see the *HWT-NVR800 9.0.0 Compatibility List*.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Target Intelligence > Situational Analysis > Crowd Density**.
- Step 3** Draw a detection area, as shown in Figure 3-78.

- A maximum of one detection area can be drawn. If no area is drawn, the full image is used as the detection area by default. For details about how to draw a detection area, see 5.3.3 Drawing a Detection Area for Situation Analysis.
- Dxxx-10-LI-PV cameras support audible and visual alarms.

Figure 3-78 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-79.
Specify the time segment when alarming is effective.

Figure 3-79 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

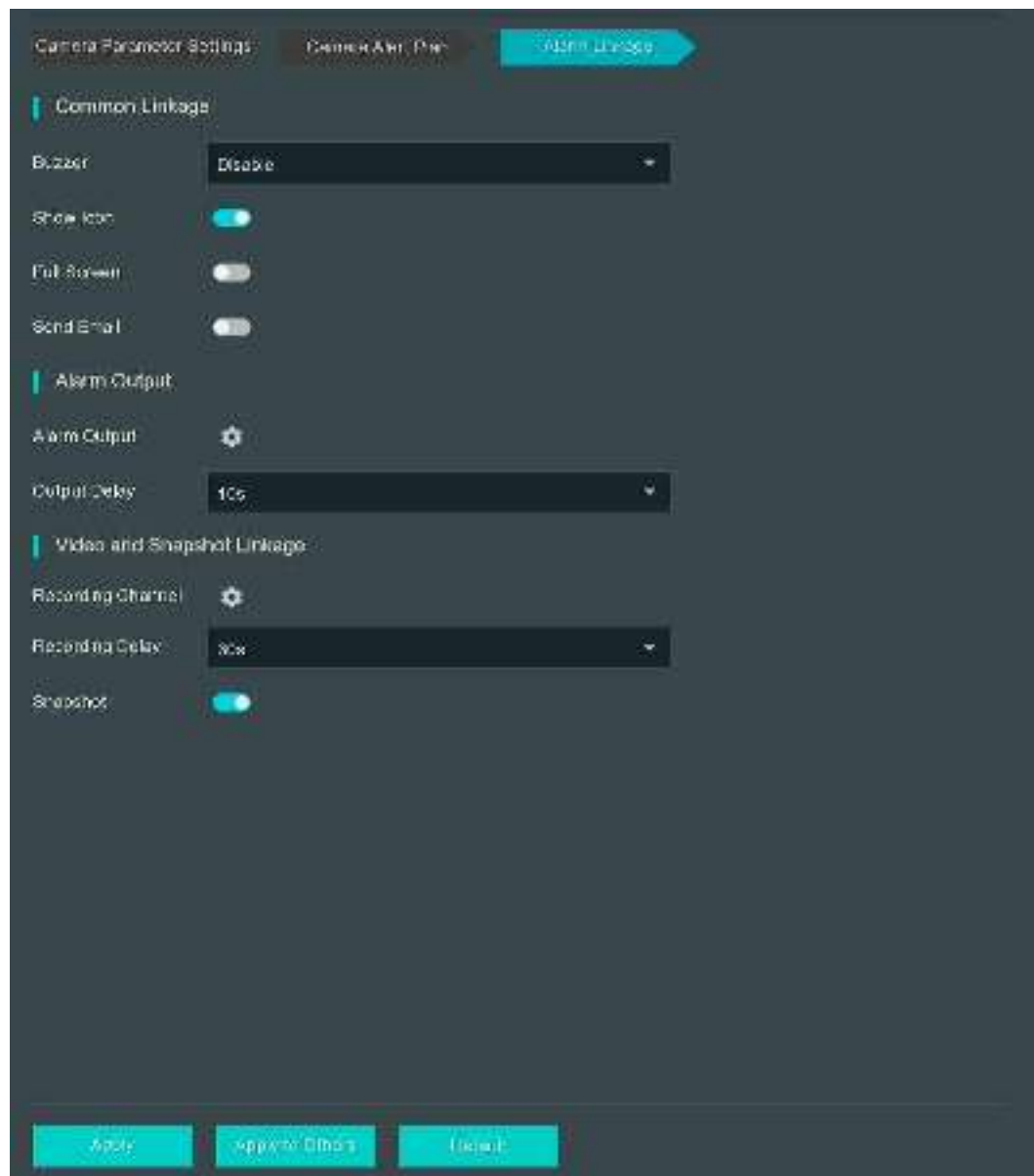
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-80.

Linked actions will be triggered when an alarm is generated.

Figure 3-80 Configuring an alarm linkage policy



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-81.

Figure 3-81 Viewing an alarm



- The alarm type is **Crowd density**. You can click the alarm to view the alarm-triggered recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.
- You can click  to view real-time statistics in the upper right corner of the screen.

----End

3.5.6 Heat Map

Scenario

You can draw one or more detection areas to detect the activity degree of persons in these areas. Heat maps can be displayed by time and space.

- Spatial heat map: displays the activity degree of persons in different areas. The red area has the highest density and activity degree, and the blue one has the lowest density.
- Temporal heat map: displays the activity degree of people at different time points. The vertical coordinate is an index calculated based on the number of people and duration of stay (but does not indicate the number of persons). A larger value indicates a higher activity degree.

Restrictions

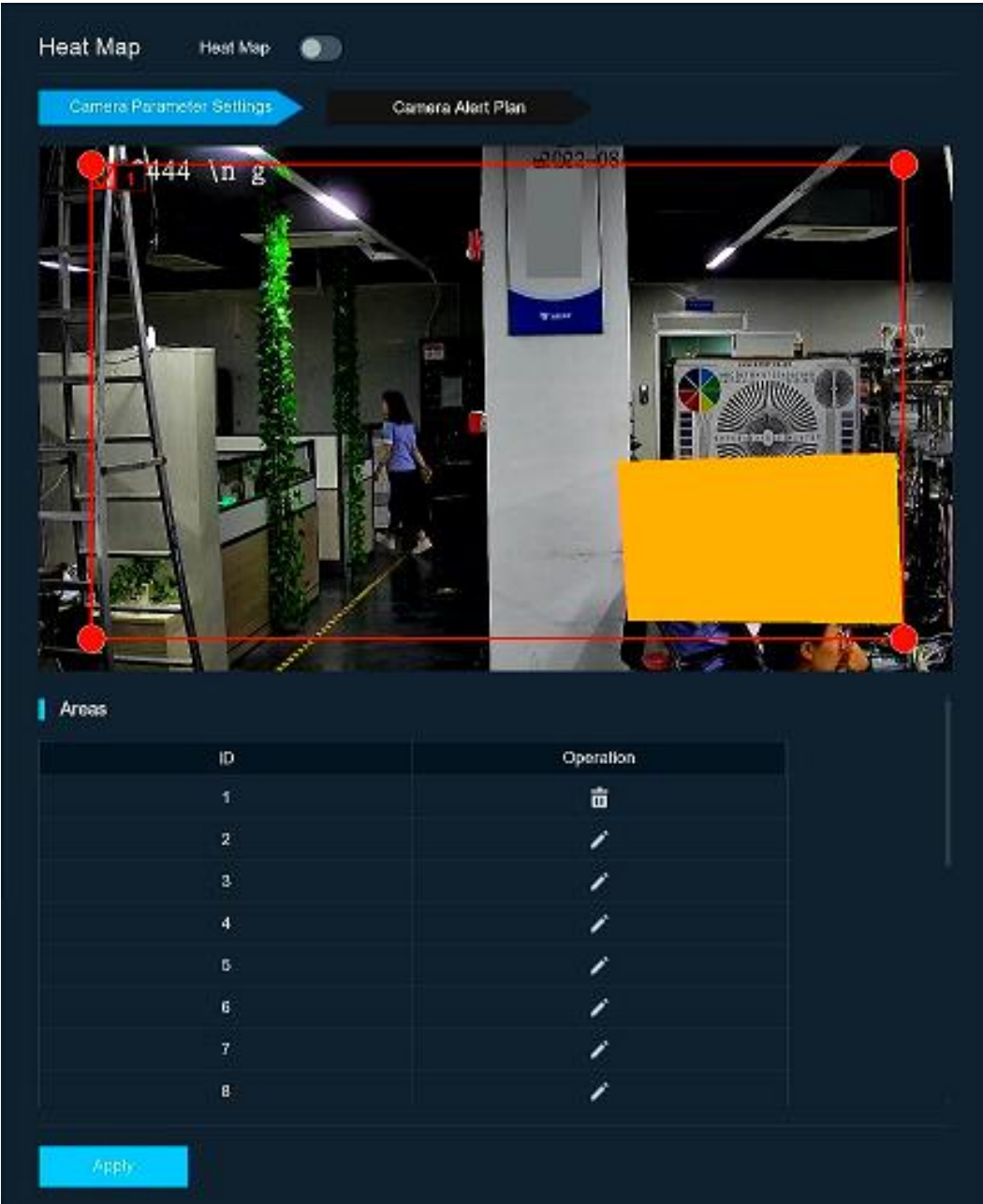
- The intelligent camera must be equipped with an available SD card. The heat map data will be stored on the SD card for a maximum of one year.
- The heat map function is available for the HWT-NVR800 connected to HOLOWITS HWT-Dxxx-10 cameras. For details about the version mappings, see the *HWT-NVR800 9.0.0 Compatibility List*.

Procedure

- Step 1 Right-click the screen.
- Step 2 Choose **Intelligence > Intelligent Settings > Target Intelligence > Situational Analysis > Heat Map**.
- Step 3 Draw a detection area, as shown in Figure 3-82.

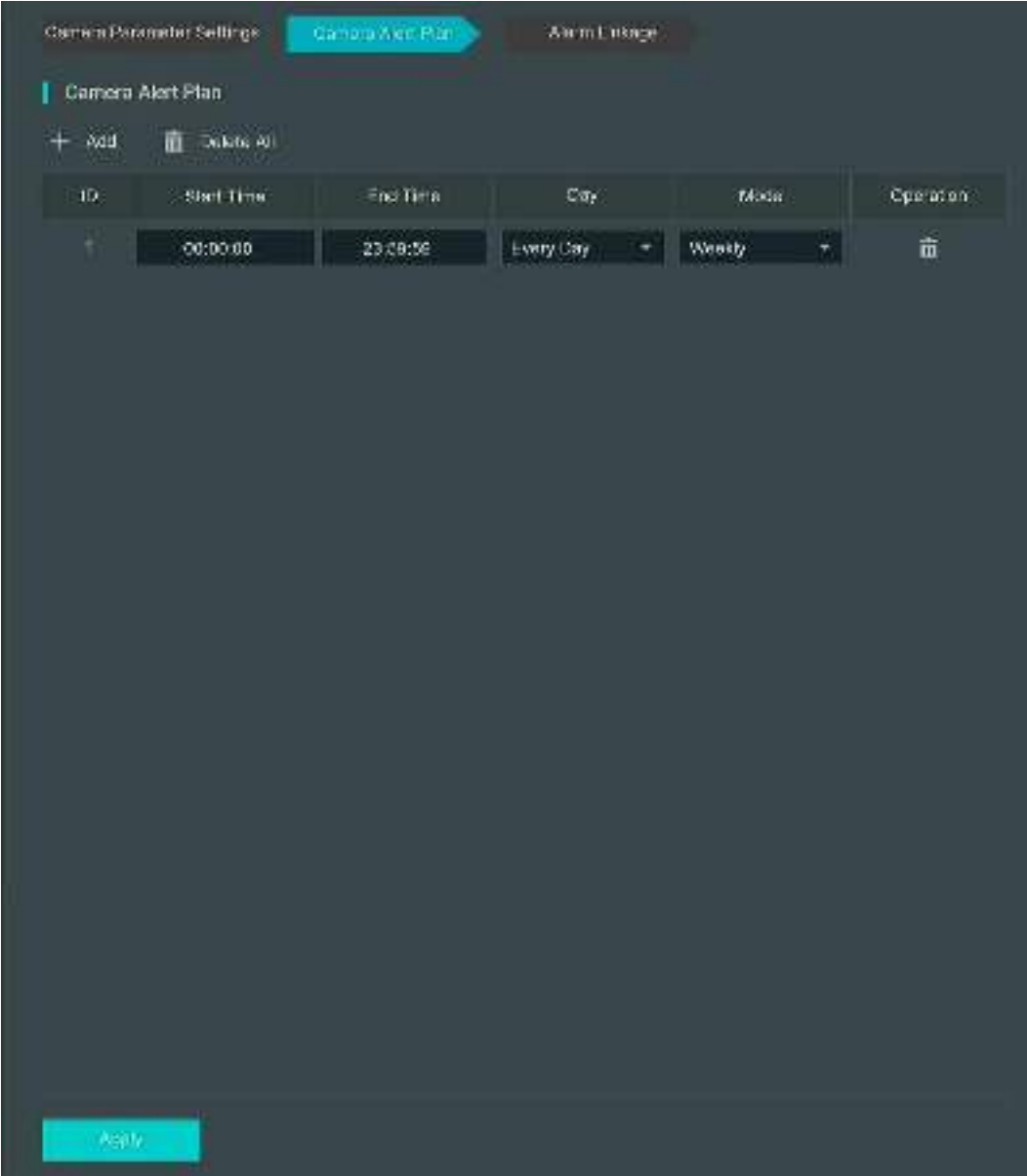
A maximum of eight detection areas can be drawn. For details about how to draw a detection area, see 5.3.3 Drawing a Detection Area for Situation Analysis.

Figure 3-82 Drawing a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-83.
Specify the time segment when alarming is effective.

Figure 3-83 Configuring an alert plan



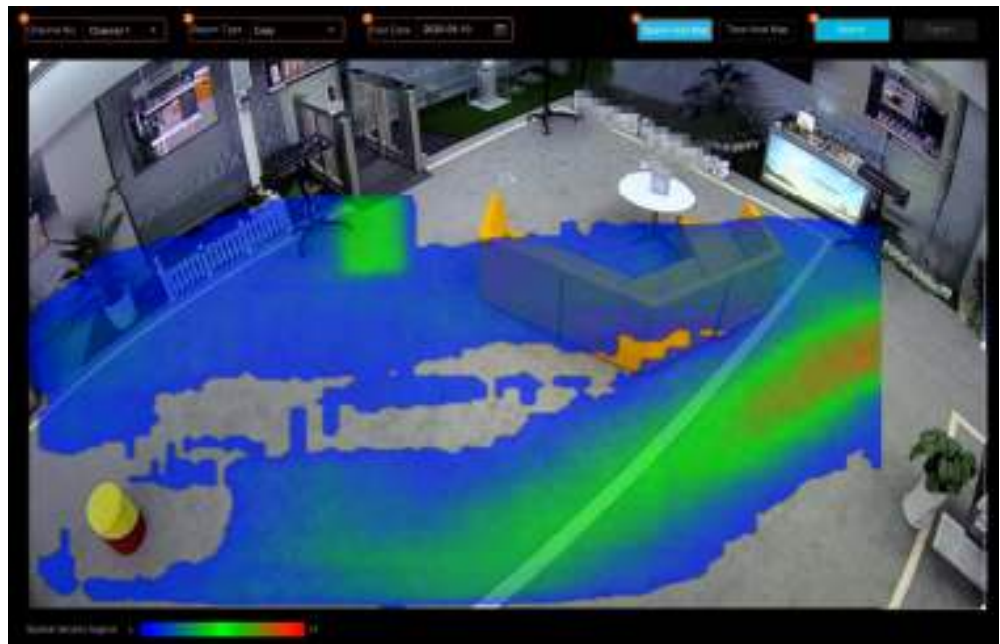
----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Statistics Analysis > Heat Map Statistics**.
- Step 3** View heat map statistics.

- View heat map statistics by space, as shown in Figure 3-84.

Figure 3-84 Spatial heat map



- View heat map statistics by time, as shown in Figure 3-85.

Figure 3-85 Temporal heat map



----End

3.6 Target-related Intelligence

3.6.1 Global Configuration

Restrictions

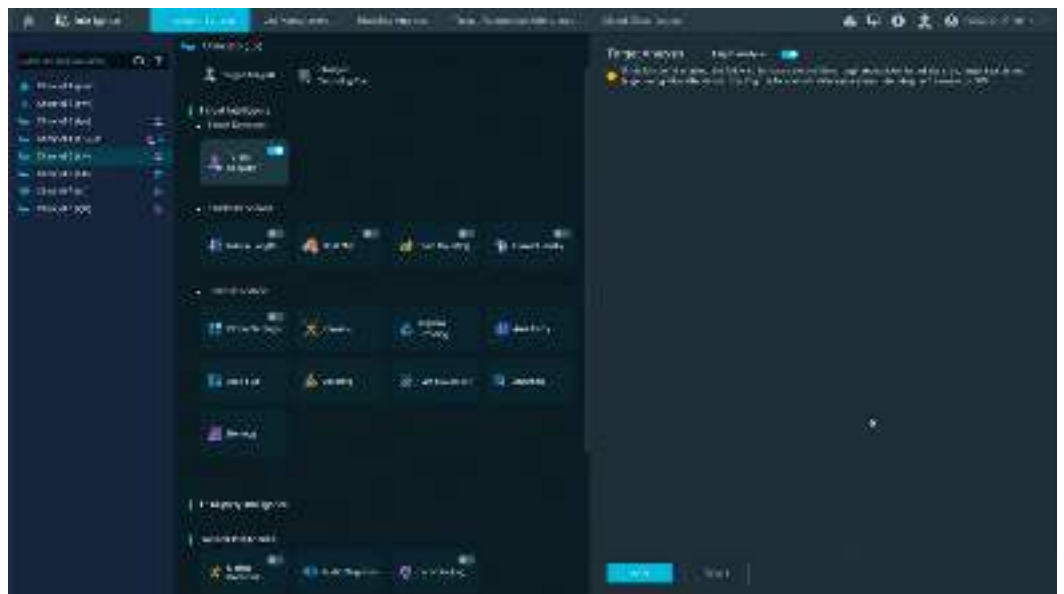
- The target capture function is available for the HWT-NVR800 connected to HOLOWITS HWT-Dxxx-10 cameras.
- The target recognition function is available for the HWT-NVR800 connected to HOLOWITS HWT-Dxxx-10-SIU cameras, HWT-D2141-10 cameras, HWT-D2181-10 cameras, HWT-Dxxx-10-LI-PV cameras, HWT-Dxx50-10 cameras of versions later than 8.1.1.SPC109, or HWT-Dxxx-10-LI-SV cameras.
- The target recognition function is available only after intelligent target analysis is authorized.

For details, see the *HWT-NVR800 9.0.0 Compatibility List*.

Procedure

- Step 1** Right-click the screen.
- Step 2** Enable target analysis. **Perform this step only for the HWT-NVR800 with one or two disk trays.**
1. Choose **Intelligence > Intelligent Settings > Target Analysis**.
 2. Toggle on **Target Analysis**, as shown in Figure 3-86.

Figure 3-86 Enabling target analysis



- By default, target analysis is enabled for the HWT-NVR800 with one or two disk trays.
 - If target analysis is disabled, the HWT-NVR800 cannot use target analysis.

- If target analysis is enabled, the decoding capability of the HWT-NVR800 is halved.

For example, an HWT-NVR800 with one disk tray supports 6-channel 1080p video decoding by default, and 3-channel 1080p video decoding when target analysis is enabled.

- Target analysis is always enabled for the HWT-NVR800 with 4 disk trays.
The decoding capability of the HWT-NVR800 remains unchanged regardless of whether target analysis is enabled.

NOTE

After target analysis is enabled, the HWT-NVR800 will restart.

Step 3 Configure the algorithm mode. **Perform this step only for HWT-Dxxxx-10-SIU, HWT-Cxxxx-10-SIU, and HWT-D2181-10 cameras.**

1. Choose **Intelligence > Intelligent Settings > Algorithm Mode**.
2. Set **Algorithm Mode** to **Target checkpoint**.

NOTE

After the algorithm mode is switched, the camera will restart for the setting to take effect. Wait for 3 minutes and then configure the target capture and recognition services.

Step 4 Enable intelligent service authorization.

1. Choose **Configuration > System > Intelligent Service Authorization**.
2. Toggle on **Authorize Intelligent Target Analysis**, as shown in Figure 3-87.

Figure 3-87 Toggling on Authorize Intelligent Target Analysis



NOTE

- Before enabling this function, read and agree to the *Intelligent Vision Target Recognition Service Agreement*. Otherwise, the function cannot be enabled.
- If you select **Authorize intelligent target analysis for connected cameras**, this function will be enabled for all cameras of 10.0.0 or later versions connected to the HWT-NVR800.

Step 5 Set target capture parameters.

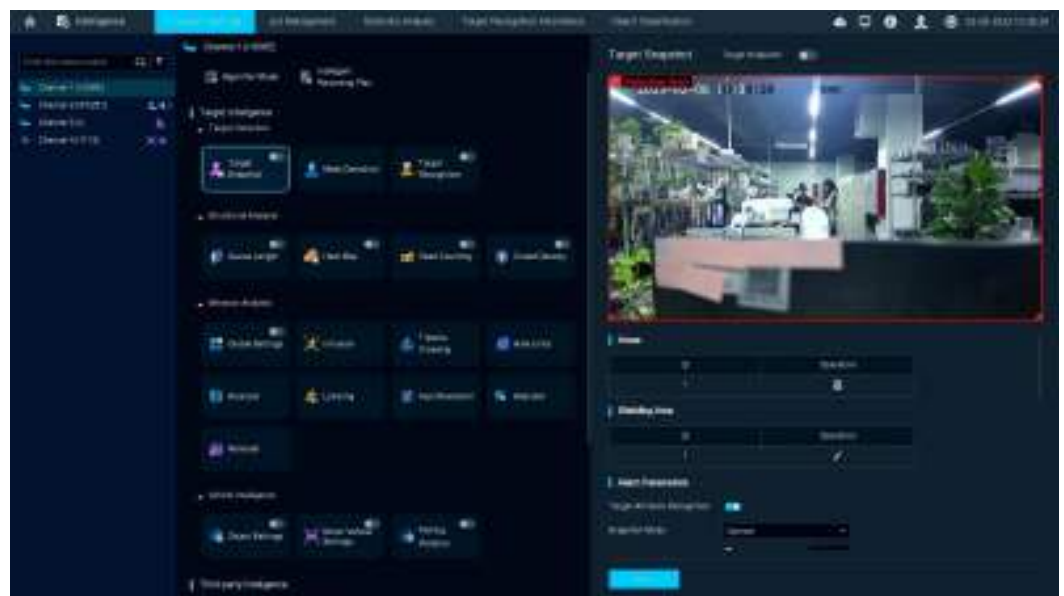
1. Choose **Intelligence > Intelligent Settings > Target Intelligence > Target Detection > Target Snapshot**.
2. Set target capture parameters, as shown in Figure 3-88.

NOTE

When the secondary stream resolution of Dxx2x-10-LI-PV cameras reaches D1 (720p) or higher, target capture parameters cannot be set.

- After you toggle on **Target Attribute Recognition**, you can view target attributes.
- For details about how to draw a detection area, see 5.3.4 Drawing a Detection Area for Object Capture.

Figure 3-88 Setting target capture parameters



Step 6 Configure target recognition.

1. Choose **Intelligence > Intelligent Settings > Target Intelligence > Target Detection > Target Recognition**.
2. Configure target recognition, as shown in Figure 3-89.

NOTE

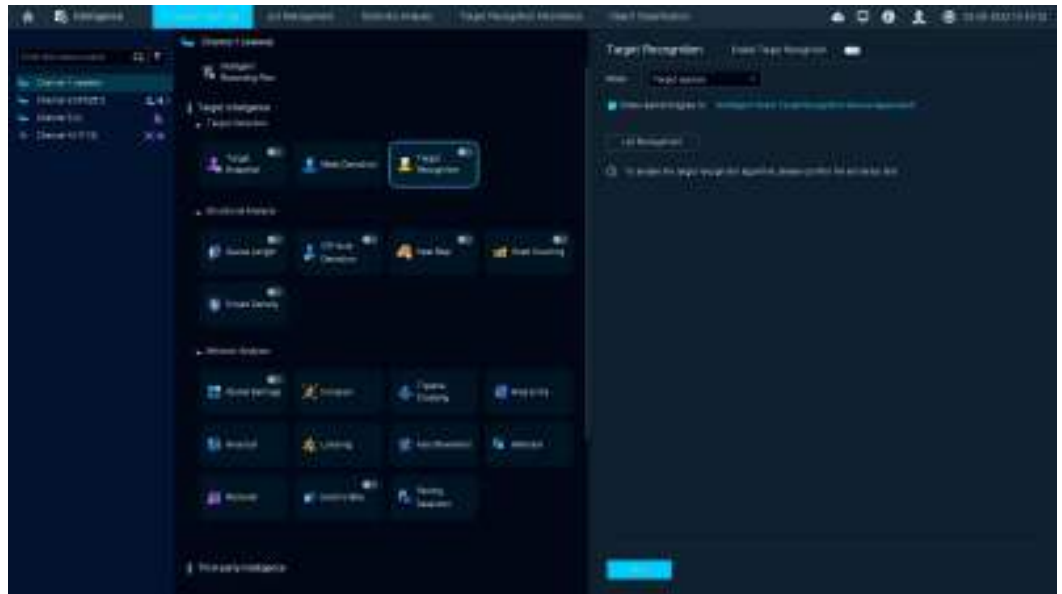
- The **Target capture** mode is applicable to most target capture scenarios and ensures optimal quality of captured images.

In this case, you need to set **Snapshot Mode** to **Optimal** in the camera web system.

- The **Access control** mode is only applicable to access control scenarios when up to four targets are queuing in the camera view. (**Only HWT-Dxxxx-10-SIU and HWT-Dxxxx-10-LI-PV cameras support this mode.**)

In this case, you need to set **Snapshot Mode** to **Fast** in the camera web system.

Figure 3-89 Configuring target recognition



----End

3.6.2 Computing Power Sharing

Context

- Target recognition cameras: HWT-Dxx50-10 cameras of versions later than 8.1.1.SPC109, HWT-Dxxxx-10-SIU cameras, HWT-D2141-10 cameras, HWT-D2181-10 cameras, and HWT-Dxxxx-10-LI-PV cameras
- Target capture cameras: HWT-Dxxxx-10 cameras

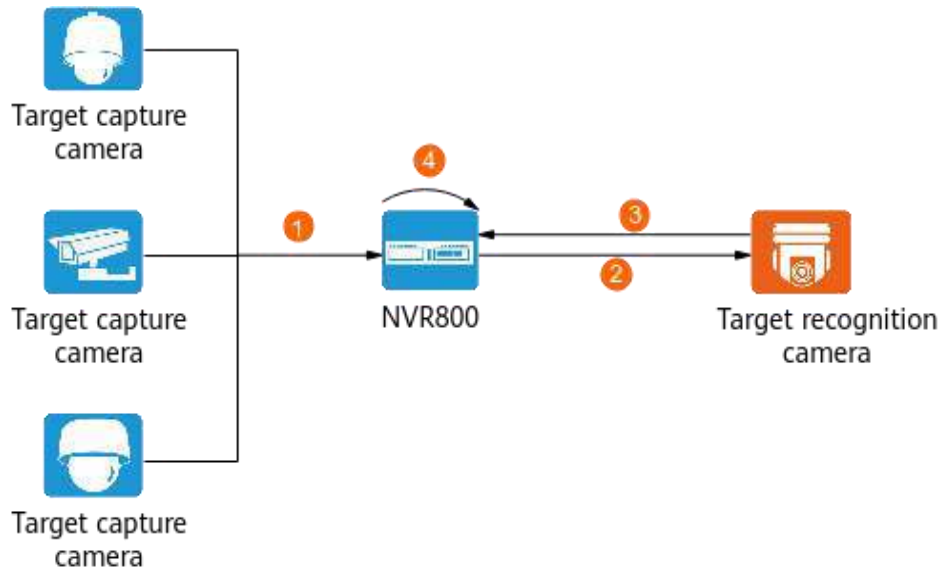
Restrictions

- One target recognition camera can share computing power with a maximum of three target capture cameras.
- Only HOLOWITS cameras connected through HOLOWITS protocols can share computing power.
- To share computing power, the connected target recognition cameras must use the same target recognition algorithm.

For details about how to check target recognition algorithms, see Target Recognition.

Networking

Figure 3-90 Networking



1. Target capture cameras upload snapshots to the HWT-NVR800.
2. The HWT-NVR800 sends target snapshots from which features have not been extracted to the target recognition camera for analysis and feature extraction.
3. The target recognition camera sends the extracted target features to the HWT-NVR800.
4. The HWT-NVR800 matches these target features with those in the target list.

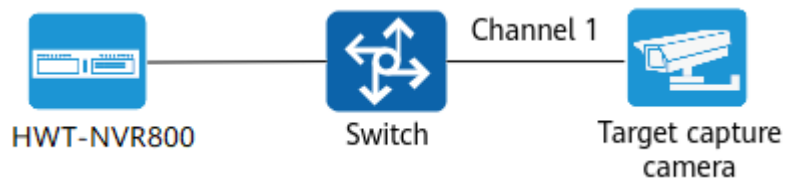
NOTE

- Before the target recognition camera is connected, the target capture cameras cannot extract target features and the detected target information cannot be used for target search.
- After the target recognition camera is connected, the target capture cameras can extract target features, but cannot re-extract target features from images collected earlier.

Procedure

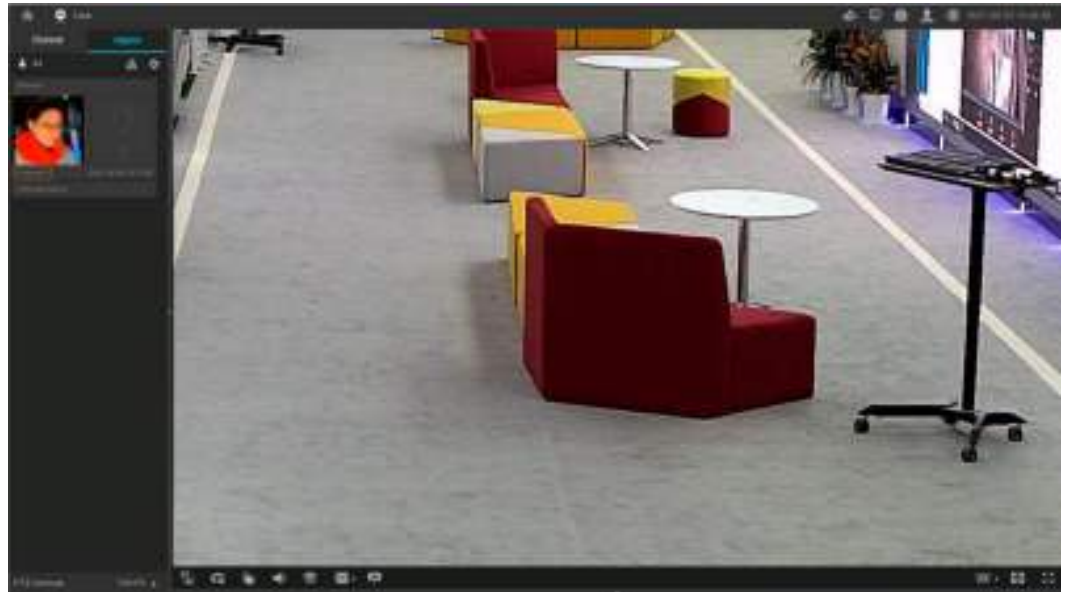
Step 1 Connect a target capture camera to channel 1, as shown in Figure 3-91.

Figure 3-91 Connecting a camera



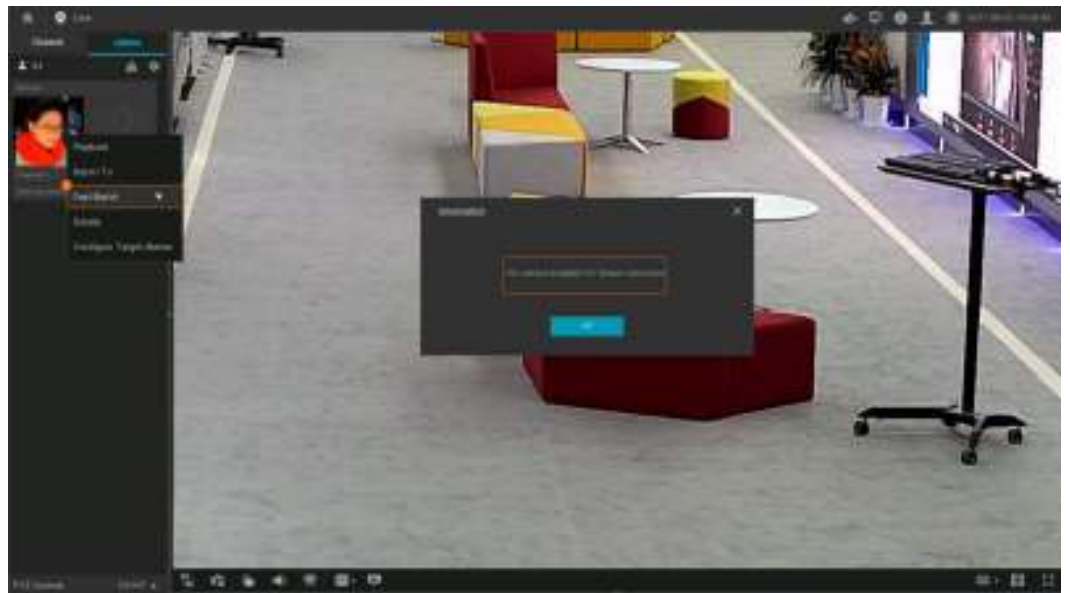
1. Check whether an alarm is generated when a target is detected, as shown in Figure 3-92.

Figure 3-92 Viewing an alarm



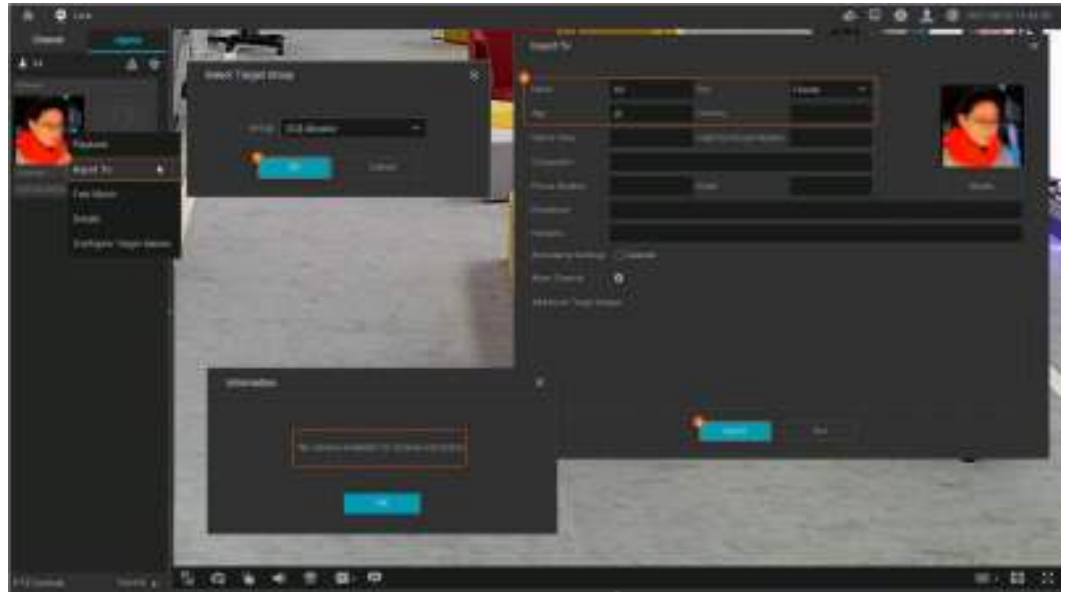
2. Perform fast match on the captured target image and check whether the system displays a message indicating that no camera is available for feature extraction, as shown in Figure 3-93.

Figure 3-93 Fast match



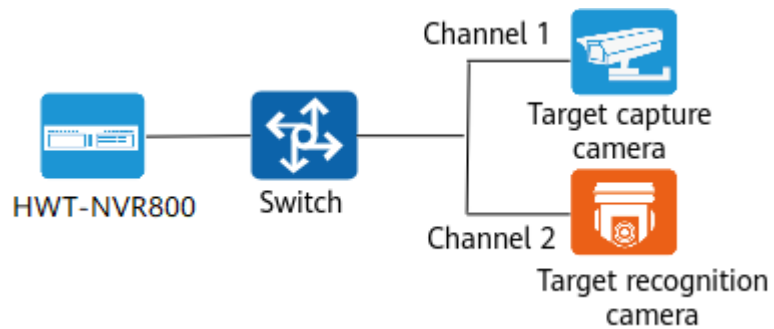
3. Check whether the system displays a message indicating that no camera is available for feature extraction when you import the captured target image to a target list, as shown in Figure 3-94.

Figure 3-94 Importing the target image to a target list



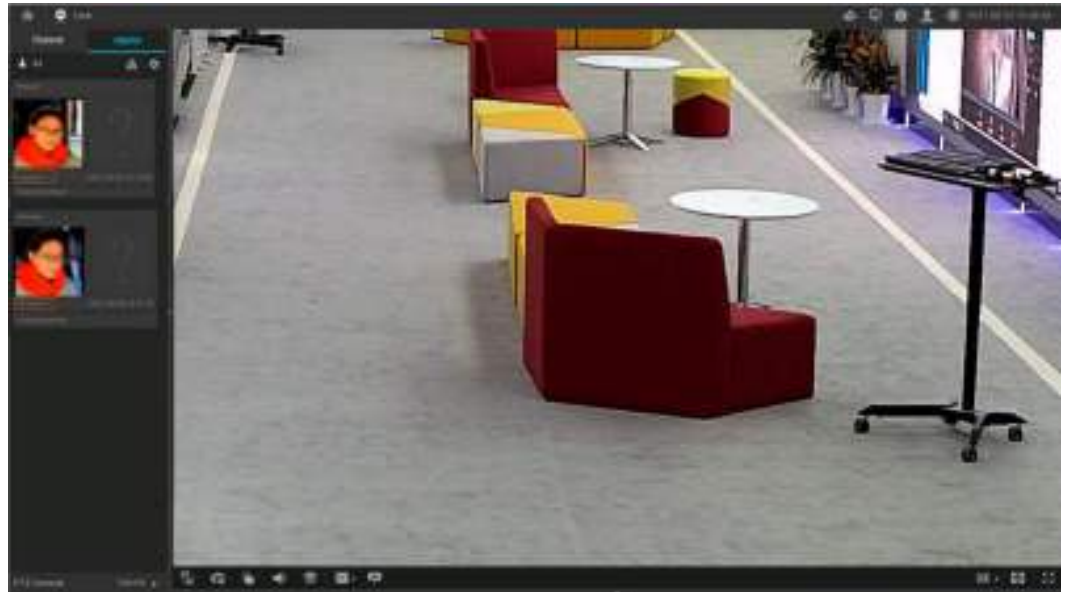
Step 2 Connect a target recognition camera to channel 2, as shown in Figure 3-95.

Figure 3-95 Connecting a camera



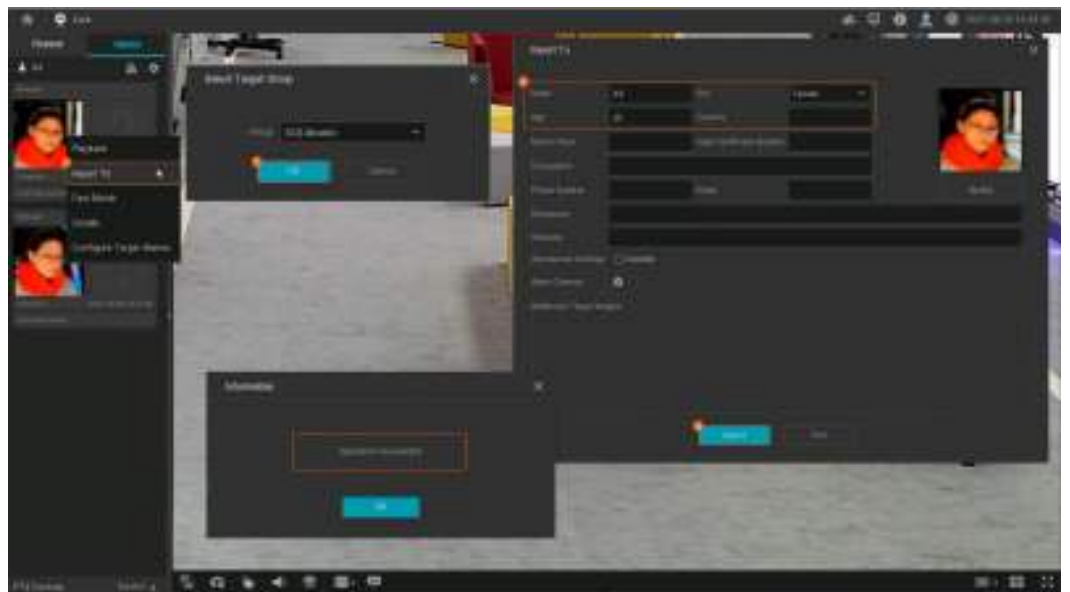
1. Check whether an alarm is generated when the target is detected in channel 1 again, as shown in Figure 3-96.

Figure 3-96 Viewing an alarm



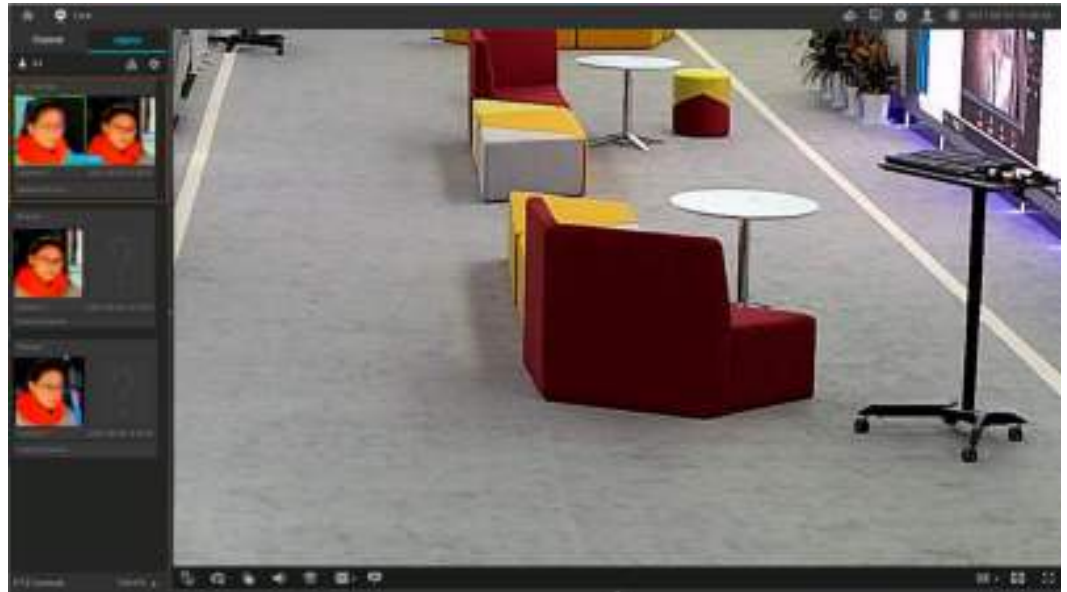
2. Import the captured target image to a target list. The import is successful, as shown in Figure 3-97.

Figure 3-97 Importing the target image to a target list



3. Check whether a list-based alert alarm is generated when the target is detected in channel 1 again, as shown in Figure 3-98.

Figure 3-98 Viewing an alarm



----End

3.6.3 List Management

Scenario

You can add different targets to different target lists as required, and set recognition policies by list.

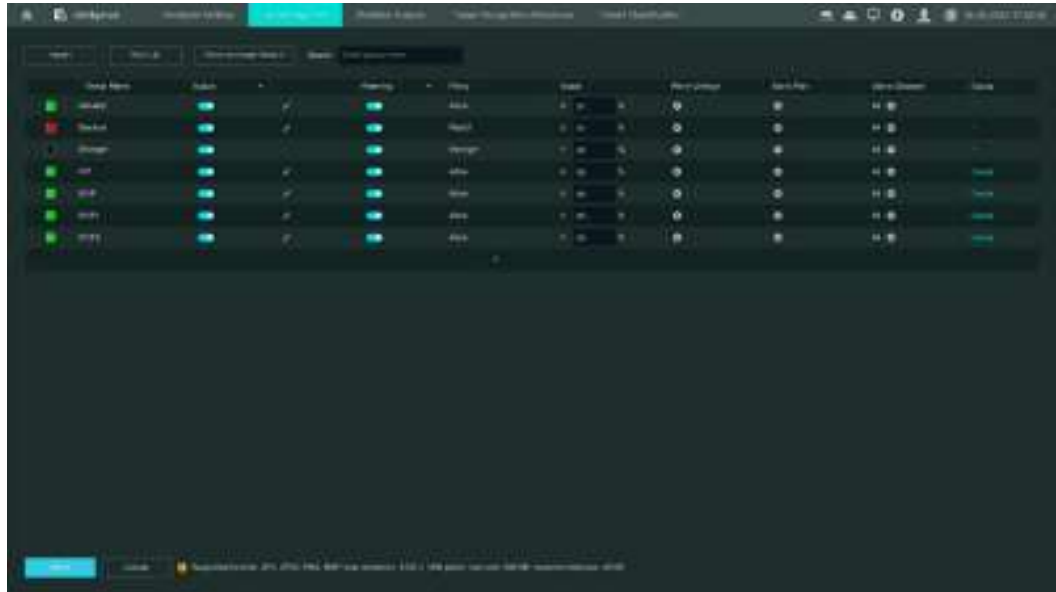
- Configure a VIP list to provide services for high-quality customers in a timely manner.
- Configure an attendance list to check employees' daily attendance.
- Configure an alert list so that the system will notify you of alerted persons promptly.

The following describes how to configure a VIP list.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > List Management**.
- Step 3** Configure a VIP list, as shown in Figure 3-99.

Figure 3-99 Configuring a VIP list



Step 4 Import target images.

Table 3-3 describes the target image import methods.

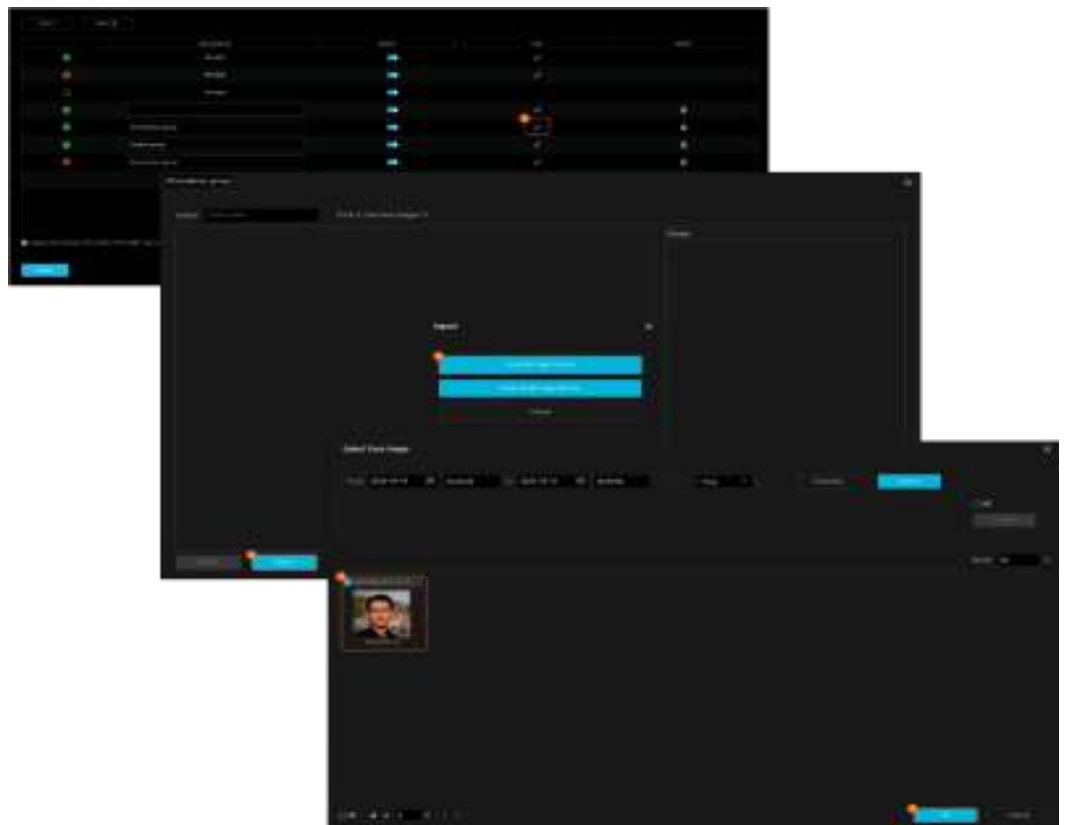
Table 3-3 Import methods

Import Method	Image Source	Procedure
Import from the local storage	Target snapshot list on the HWT-NVR800.	For details, see Import from the local storage .
Import from an external storage	External USB flash drive. Target images to be imported must meet the following requirements: - The image format must be JPG, JPEG, PNG, or BMP. - The maximum resolution is 1200 x 1200 pixels. - The maximum size of an image is 500 KB (no more than 50 KB recommended).	For details, see Import from external storage .

Import Method	Image Source	Procedure
Batch import	External USB flash drive. Target images to be imported must meet the following requirements: • The image format must be JPG, JPEG, PNG, or BMP. • The maximum resolution is 1200 x 1200 pixels. • The maximum size of an image is 500 KB (no more than 50 KB recommended).	For details, see Batch import .
Screenshot import	Screenshots of targets in a recording.	For details, see Import from screenshot .

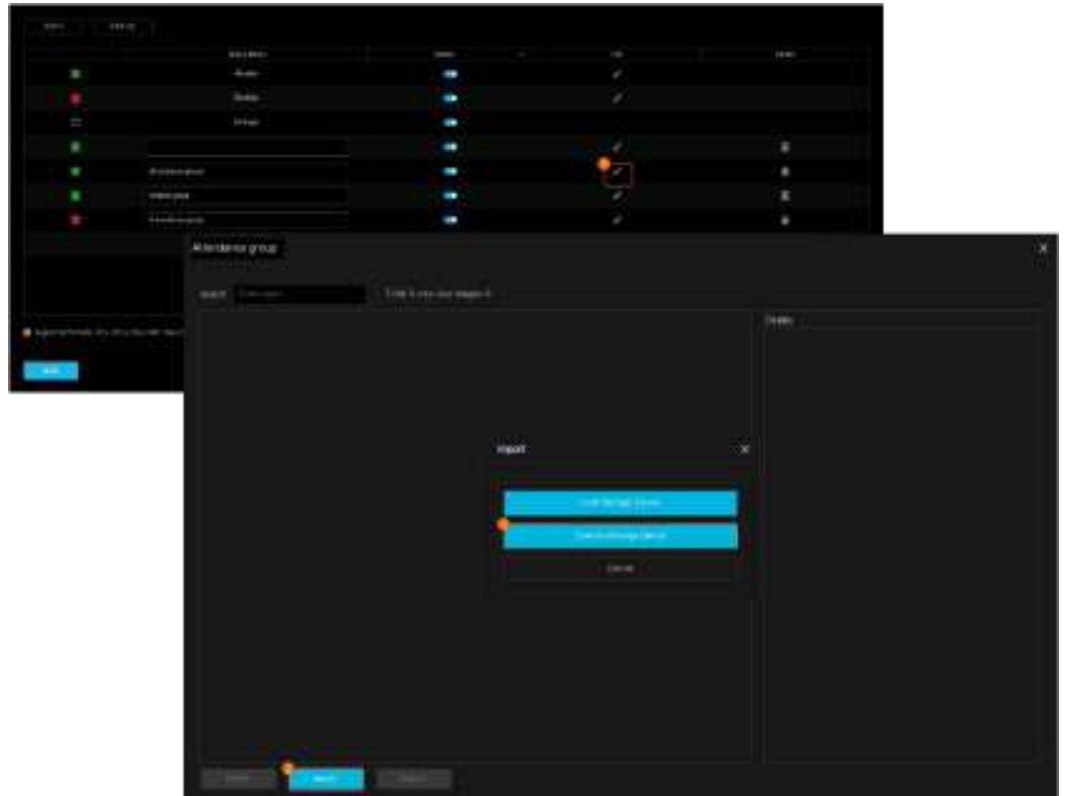
- Import a target image from the local storage, as shown in Figure 3-100.

Figure 3-100 Import from the local storage



- Import a target image from an external storage, as shown in Figure 3-101.

Figure 3-101 Selecting a storage device



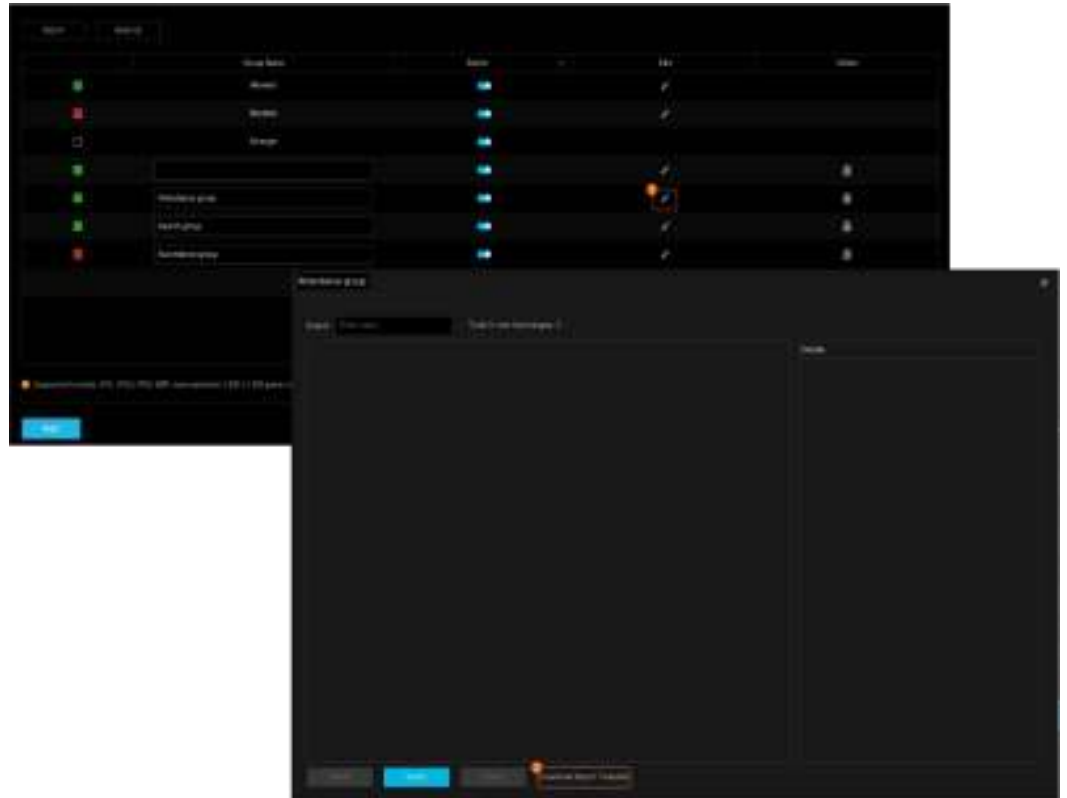
- Import images in batches.
 - a. Download the template, as shown in Figure 3-102.

NOTE

The template encoding format varies depending on the HWT-NVR800 system language.

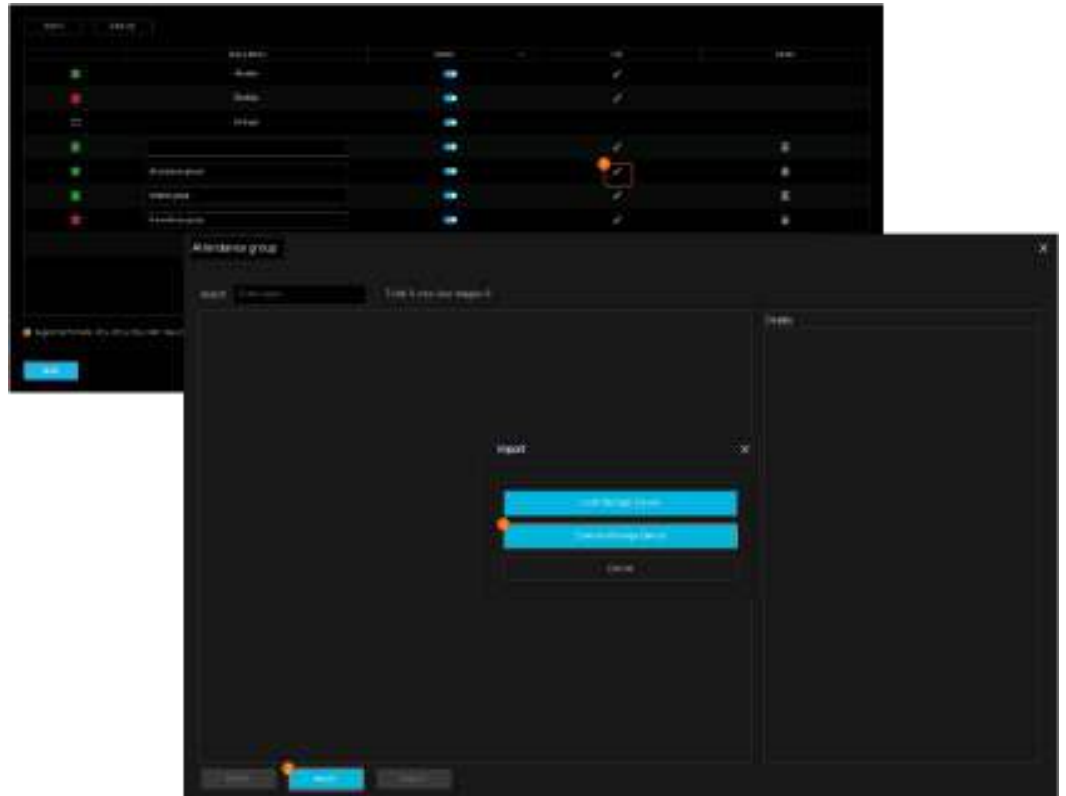
- Simplified Chinese: GB2312
- English: UTF-8

Figure 3-102 Downloading the template



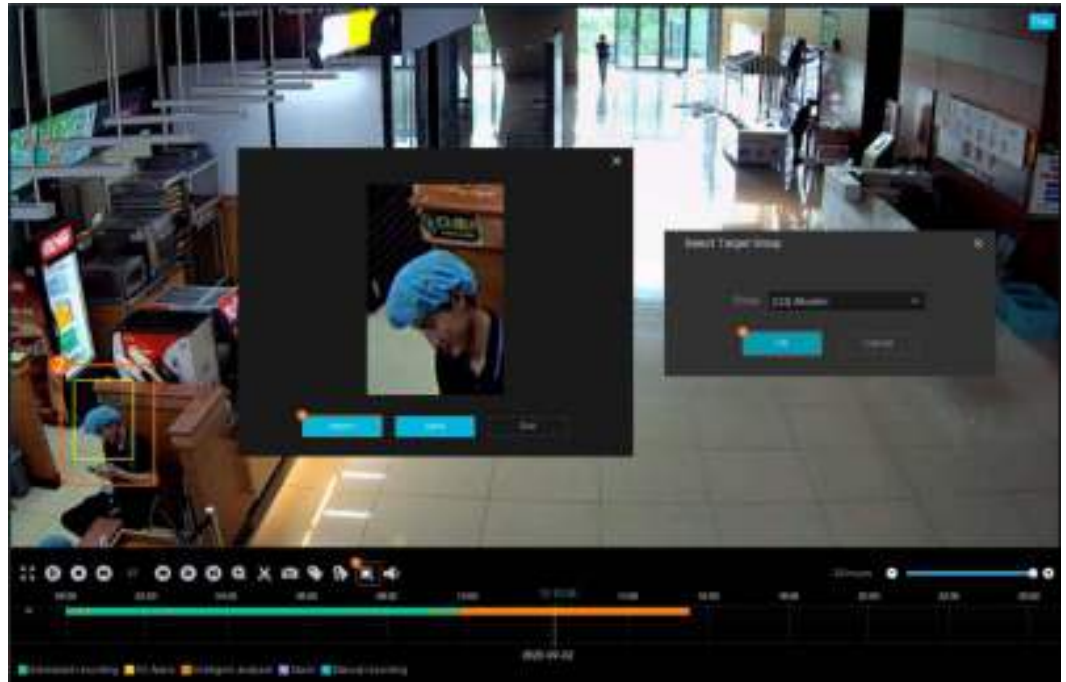
- b. Fill in the exported template as required on the computer.
 - The image path is the relative path of the CSV file.
For example, if the path of the CSV file is **/hidev/usb1-1/face-import/import.csv** and the image path is **/hidev/usb1-1/face-import/pic/image.png**, the relative path is **pic/image.png**.
 - The cell format for large numbers should be **text** to prevent incorrect formats similar to **x.xxxE+xx**.
 - The name and image path are mandatory. If one of them is not set or the format is incorrect, the information will fail to be read. Ensure that the entered information is correct.
 - A maximum of 5000 images can be imported in a batch.
- c. Put the template and images in the same folder and save this folder to the USB flash drive.
- d. Import target images in batches, as shown in Figure 3-103.
Import the CSV file and select the character encoding format.
 - Simplified Chinese: GB2312
 - English: UTF-8

Figure 3-103 Importing target images in batches



- Import a screenshot. Only the HWT-NVR800 with 1, 4, 8, or 16 disk trays supports this function.
 - a. Right-click the screen.
 - b. Choose **Playback** > **Common Playback**.
 - c. Import a screenshot, as shown in Figure 3-104.

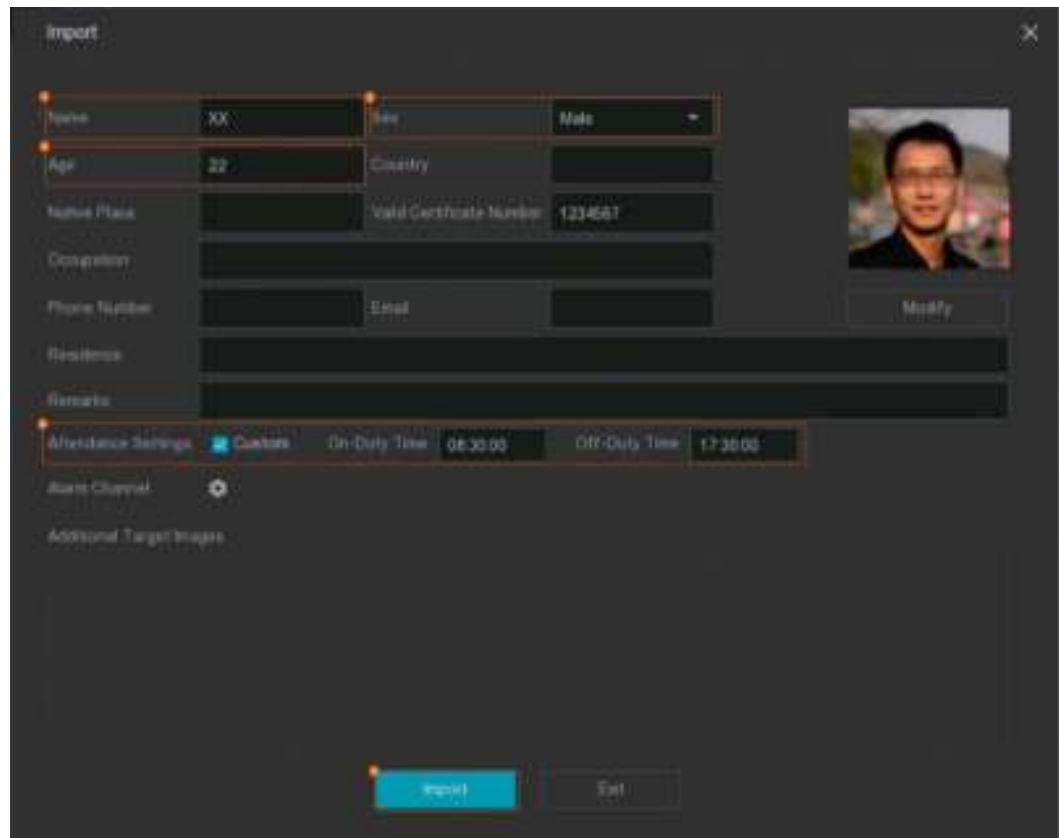
Figure 3-104 Importing a screenshot



Step 5 Configure target image details, as shown in Figure 3-105.

- When adding multiple target images, you need to configure details for each image.
- You are advised to enter the name, gender, and age of the target in a target image. Enter other information based on the site requirements.
- You can customize the attendance time, which is used for statistics collection during target attendance query.
- If you add the same target image for multiple times, only one image can be successfully added.

Figure 3-105 Configuring target image details



The screenshot shows a software interface titled "Import" with a close button (X) in the top right corner. The interface is divided into several sections for configuring a target image:

- Personal Information:** Includes fields for Name (containing "XX"), Sex (a dropdown menu set to "Male"), Age (containing "22"), Country, Native Place, Valid Certificate Number (containing "1234567"), Occupation, Phone Number, Email, Residence, and Remarks.
- Attendance Settings:** A section with a "Custom" icon, "On-Duty Time" (08:30:00), and "Off-Duty Time" (17:30:00).
- Alarm Channel:** A section with a gear icon.
- Additional Target Images:** A large empty rectangular area for uploading more images.

At the bottom of the dialog, there are two buttons: "Import" (highlighted in blue) and "Exit".

Step 6 (Optional) Add a supplementary target image, as shown in Figure 3-106.

Multiple supplementary images can be added to improve the target recognition accuracy.

Figure 3-106 Adding a supplementary target image

The screenshot shows a dark-themed 'Import' window with a close button (X) in the top right corner. The window contains several input fields and buttons:

- Name:** A text field containing 'XX'.
- Sex:** A dropdown menu set to 'Male'.
- Age:** A text field containing '22'.
- Country:** A text field.
- Native Place:** A text field.
- Valid Certificate Number:** A text field containing '1234567'.
- Occupation:** A text field.
- Phone Number:** A text field.
- Email:** A text field.
- Residence:** A text field.
- Remarks:** A text field.
- Attendance Settings:** A section with a 'Custom' button and a gear icon.
- On-Duty Time:** A text field containing '08:30:00'.
- Off-Duty Time:** A text field containing '17:30:00'.
- Alarm Channel:** A text field.
- Additional Target Images:** A section with a large icon of a person with a plus sign inside a square frame.
- Buttons:** A 'Modify' button is located below the main form, and another 'Modify' button is located below the 'Additional Target Images' section. An 'Exit' button is also present at the bottom right.

----End

3.6.4 Target Search

Scenario

The HWT-NVR800 can quickly match the time when and the location where a target appears based on the specified target image.

It can also generate trajectories of detected targets until the targets disappear from the predefined area.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Search > Target Search**.
- Step 3** Search for a target image.

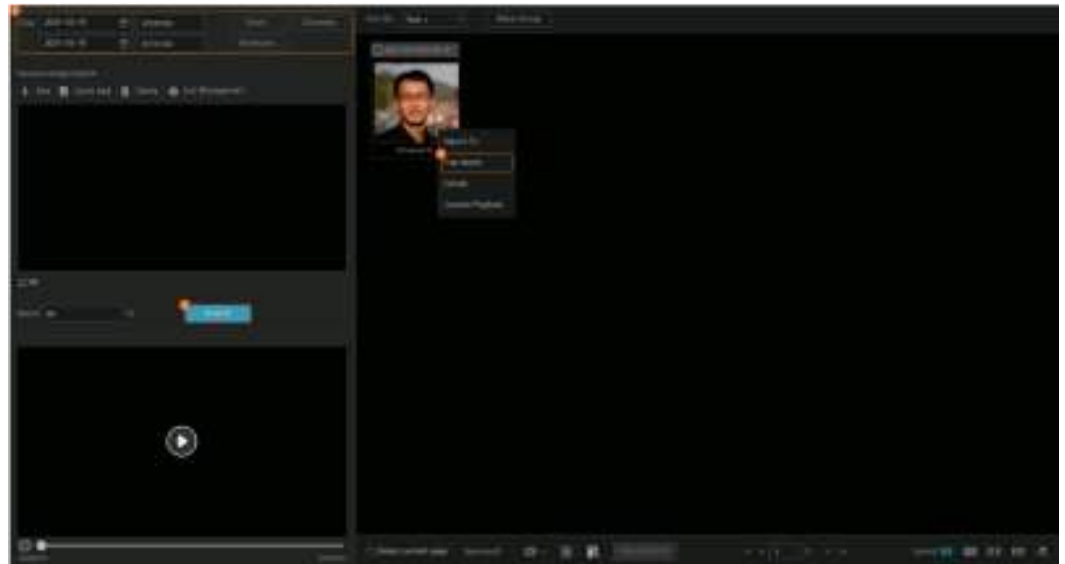
Table 3-4 describes the target image search methods supported by the HWT-NVR800.

Table 3-4 Search method

Method	Source	Procedure
Search in the snapshot library	Target images in the snapshot library.	For details, see target search in the snapshot library .
Search in target lists	Target images in target lists.	For details, see target search in target lists .
Search on a USB flash drive	Target images on a USB flash drive. Target images to be imported must meet the following requirements: • The image format must be JPG, JPEG, PNG, or BMP. • The maximum resolution is 1200 x 1200 pixels. • The maximum size of an image is 500 KB (no more than 50 KB recommended).	For details, see target search on a USB flash drive .

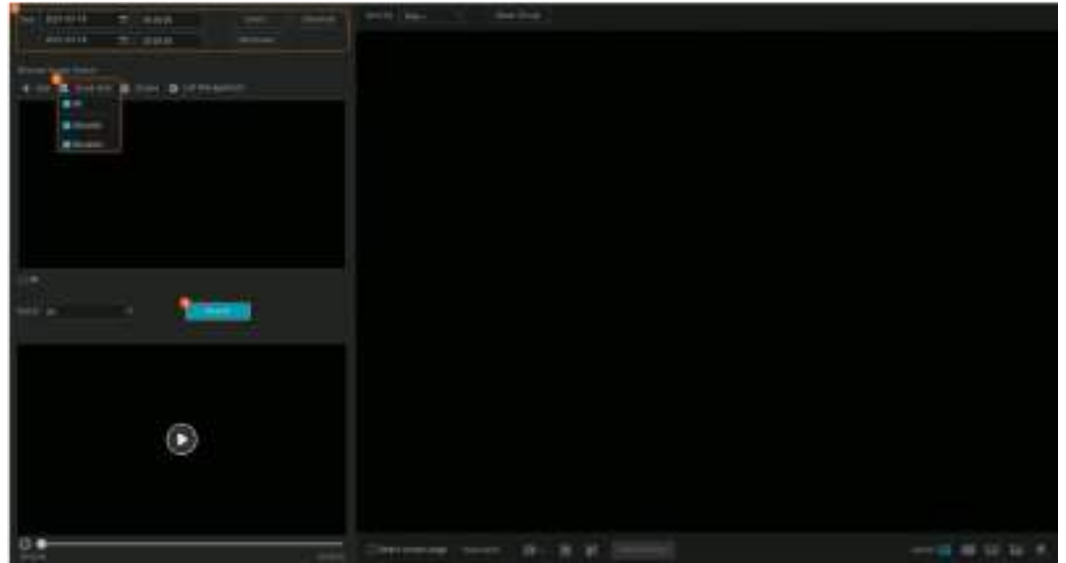
- Search for a target image in the snapshot library, as shown in Figure 3-107.

Figure 3-107 Searching the snapshot library



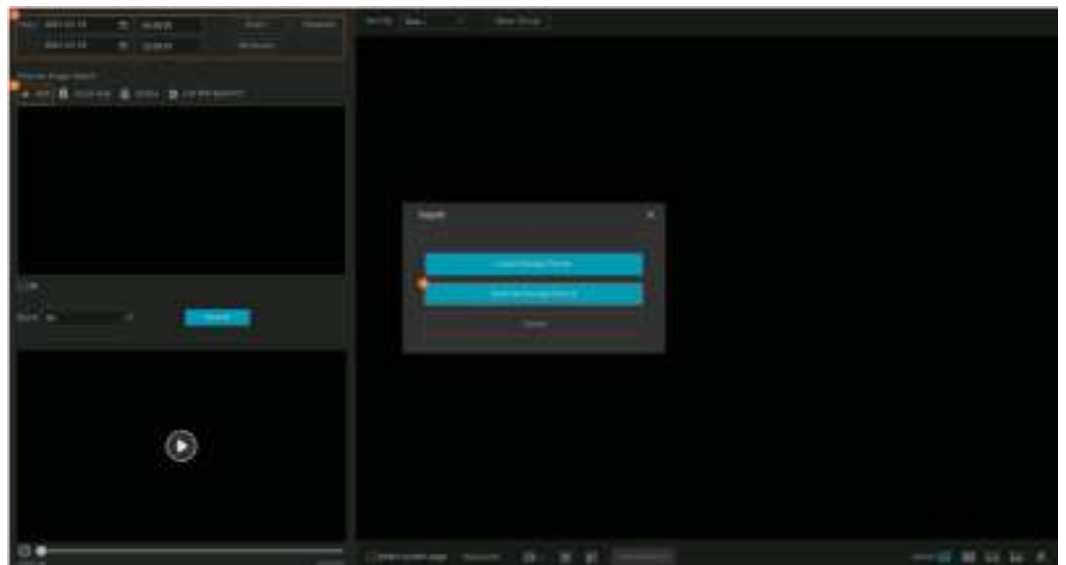
- Search for a target image in target lists, as shown in Figure 3-108.
All target images in a search group are searched. For details about how to configure a search group, see 3.6.3 List Management.

Figure 3-108 Searching target lists



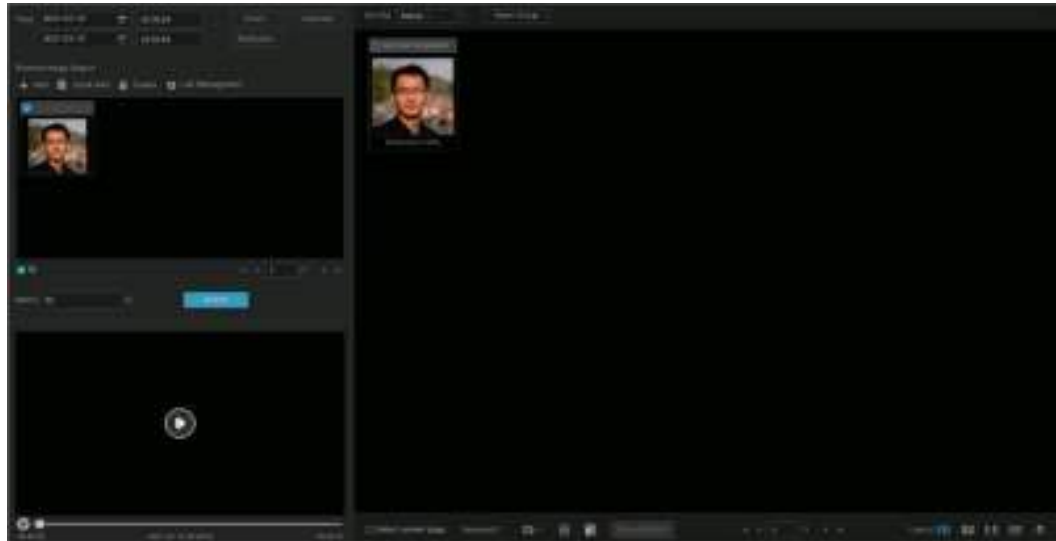
- Search for a target image on a USB flash drive, as shown in Figure 3-109.

Figure 3-109 Searching a USB flash drive



Step 4 View the search results, as shown in Figure 3-110.

Figure 3-110 Search results



Click a target search result to play back the corresponding recording.

Step 5 Search for the target trajectory, as shown in Figure 3-111.

1. Click **Load Map** to import the floor plan of the location where the camera is located from a USB flash drive.

Maps to be imported must meet the following requirements:

- The maximum resolution is 2560 x 1600 pixels.
- The maximum size is 3 MB.
- The image format must be JPG, JPEG, PNG, or BMP.

2. Select **Edit** and drag  to the location of the camera.
3. Click **Export Trajectory** and import the generated trajectory to a USB flash drive in an **Excel file**.

Figure 3-111 Trajectory search



Table 3-5 Icon description

Icon	Description
	Cameras with snapshots.
	Cameras without snapshots.

----End

3.6.5 Target Recognition-based Attendance Search

Scenario

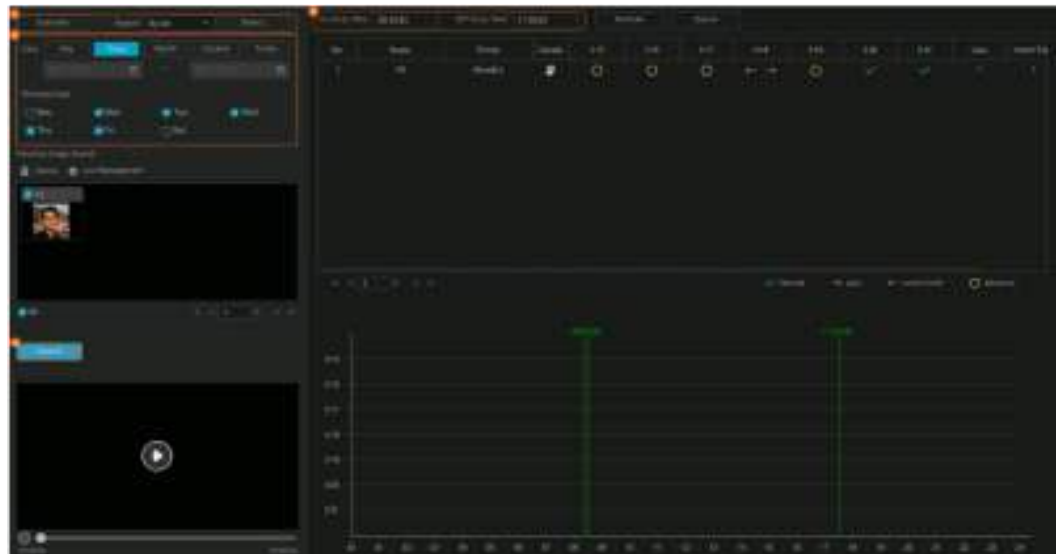
The HWT-NVR800 supports target recognition-based attendance of employees. It automatically collects employee attendance information based on the preset working days and hours, reducing management costs.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Search > Target Recognition-based Attendance Search**.
- Step 3** Search for attendance data, as shown in Figure 3-112.

All target images in an attendance group are searched. For details about how to configure an attendance group, see 3.6.3 List Management.

Figure 3-112 Searching for attendance data



Step 4 View the search results, as shown in Figure 3-113.

1. Click  to view the details, attendance time, and recording of an employee.
2. Click a time segment to play back the recording.

NOTE

- If the attendance time has been customized in the person information, the customized attendance time is used.
- If the attendance time is not customized, the public configuration of the on-duty time and off-duty time is used.

Figure 3-113 Attendance results

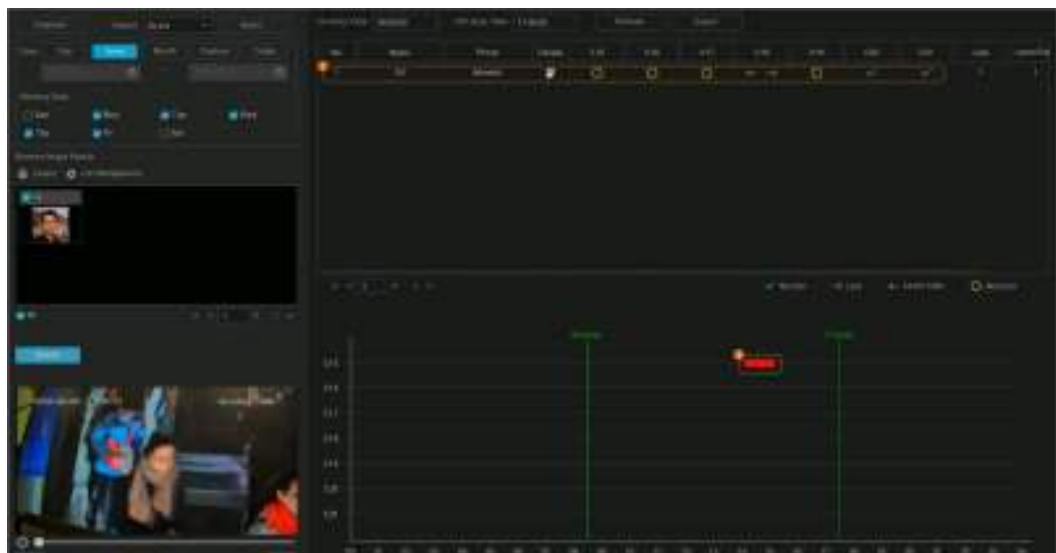


Table 3-6 Icon description

Icon	Status	Attendance Rule
	Normal	The earliest time is earlier than the on-duty time, and the latest time is later than the off-duty time.
	Late arrival	The earliest time is later than the on-duty time, and the latest time is later than the off-duty time.
	Early departure	The earliest time is earlier than the on-duty time, and the latest time is earlier than the off-duty time.
	Absence	The earliest time is later than the off-duty time, or there is no attendance record.

----End

3.6.6 Blocklist-based Target Recognition

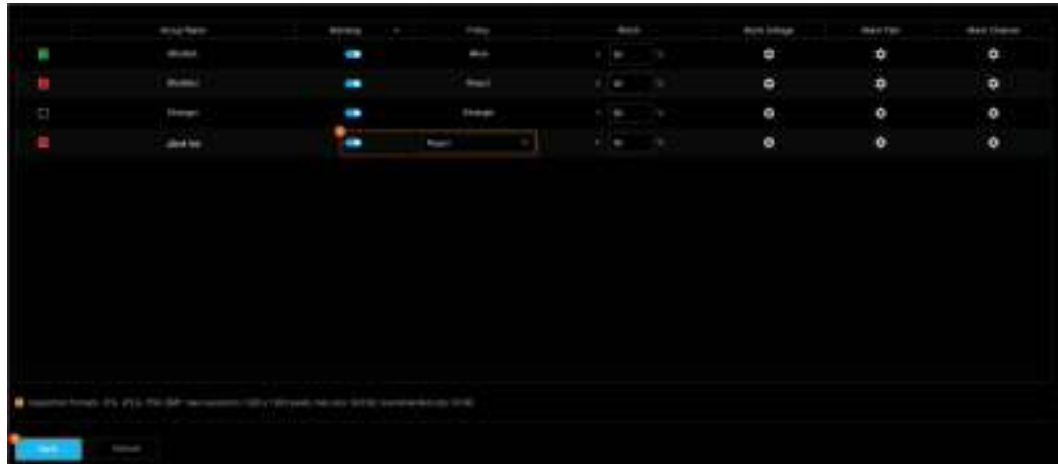
Scenario

Blocklist-based target recognition is used to detect whether a dangerous person or missing person appears in a detection area. If so, an alarm is generated.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > List Management**.
- Step 3** Configure an alert list.
For details, see 3.6.3 List Management.
- Step 4** Choose **Intelligence > List Management**.
- Step 5** Set alarm parameters, as shown in Figure 3-114.

Figure 3-114 Setting alarm parameters



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** Check the configuration results.
 - If **Alarming** is disabled, the page shown in Figure 3-115 is displayed.

Figure 3-115 Recognition result



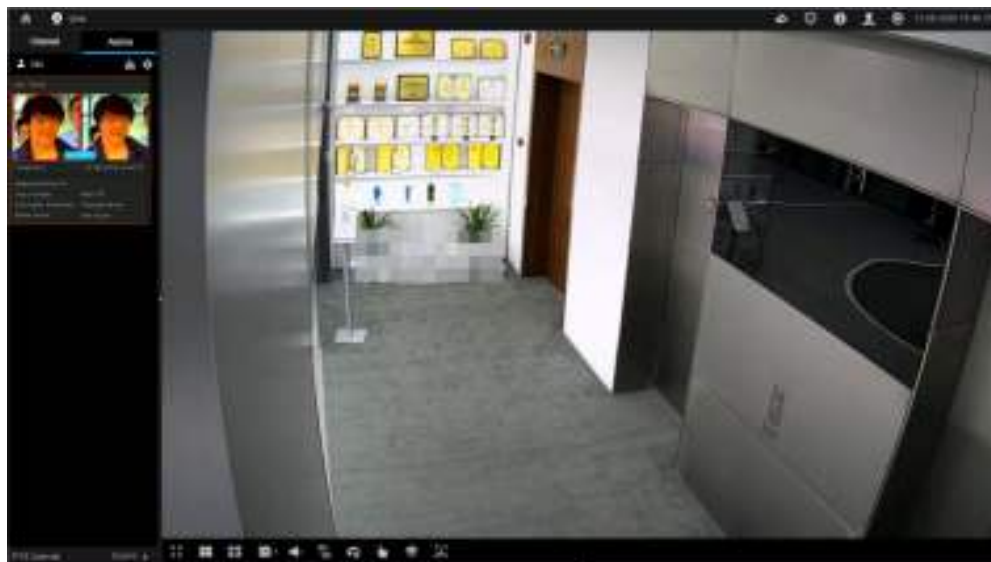
- You can double-click a snapshot to view the information about alarm-triggered recording.

The target recognition result contains two images. The image on the left is the real-time snapshot, and the image on the right is the snapshot from the target list.

- If there are too many snapshots, you can perform the following operations:

- Click  to pause refreshing the result.
 - Click  to clear the result.
- If **Alarming** is enabled, the page shown in Figure 3-116 is displayed.

Figure 3-116 Recognition result



- The alarm type is target recognition. You can click the alarm to view the recording.
 - The target recognition result contains two images. The image on the left is the real-time snapshot, and the image on the right is the snapshot from the target list.
 - If the alert list is a blocklist, a red box is displayed on the matched target image in the target recognition alarm information.
- If there are too many alarms, you can perform the following operations:
 - Click  to search for alarms by channel ID and alarm type.
 - Click  to clear the alarm list.

----End

3.6.7 Stranger Recognition

Scenario

Stranger recognition is used to detect whether an unknown person appears in a detection area. If so, an alarm is generated.

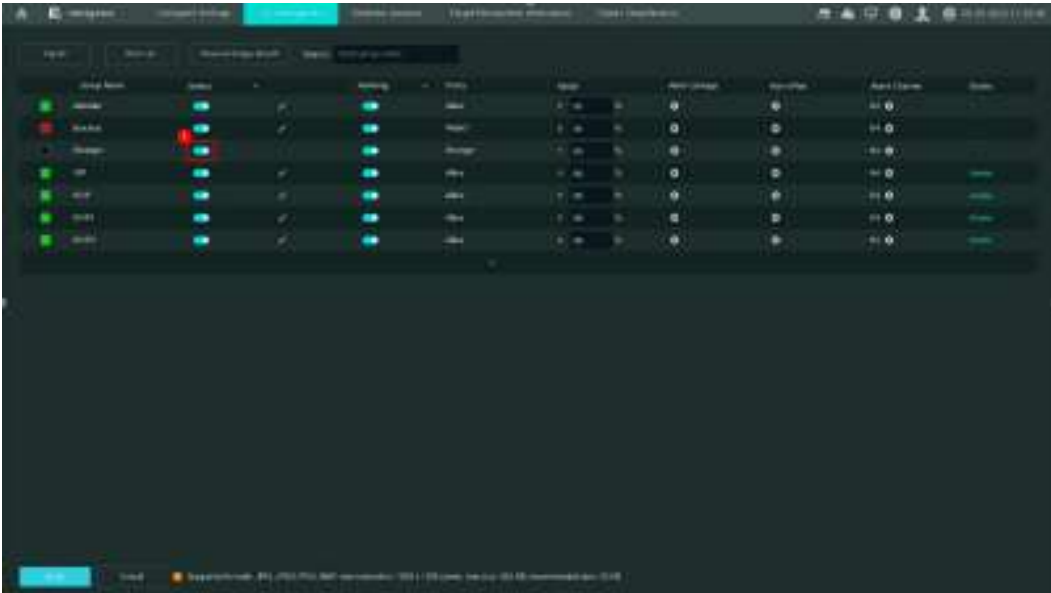
Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > List Management**.

Step 3 Enable the stranger list, as shown in Figure 3-117.

By default, the stranger list is enabled.

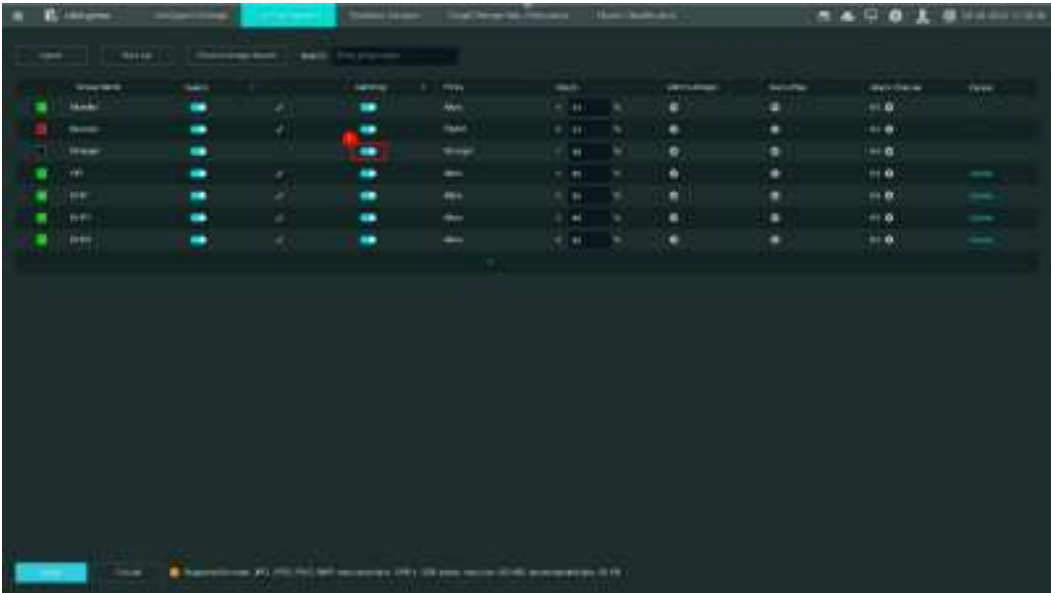
Figure 3-117 Enabling the stranger list



Step 4 Choose **Intelligence > List Management**.

Step 5 Set alarm parameters, as shown in Figure 3-118.

Figure 3-118 Setting alarm parameters



----End

Verification

Step 1 Right-click the screen.

Step 2 Choose **Live > Alarms**.

Step 3 Check the configuration result.

- If **Alarming** is disabled, the page shown in Figure 3-119 is displayed.

Figure 3-119 Capture result



- You can double-click a snapshot to view the information about alarm-triggered recording.

The result of stranger recognition is a snapshot taken in real time.

- If there are too many snapshots, you can perform the following operations:
 - Click  to pause refreshing the result.
 - Click  to clear the result.

- If **Alarming** is enabled, the page shown in Figure 3-120 is displayed.

Figure 3-120 Recognition result



- The alarm type is target recognition. You can click the alarm to view the recording. The result of stranger recognition is a snapshot taken in real time.
- If there are too many alarms, you can perform the following operations:
 - Click  to search for alarms by channel ID and alarm type.
 - Click  to clear the alarm list.

----End

3.6.8 Audio Alarm Triggered by List-based Target Recognition

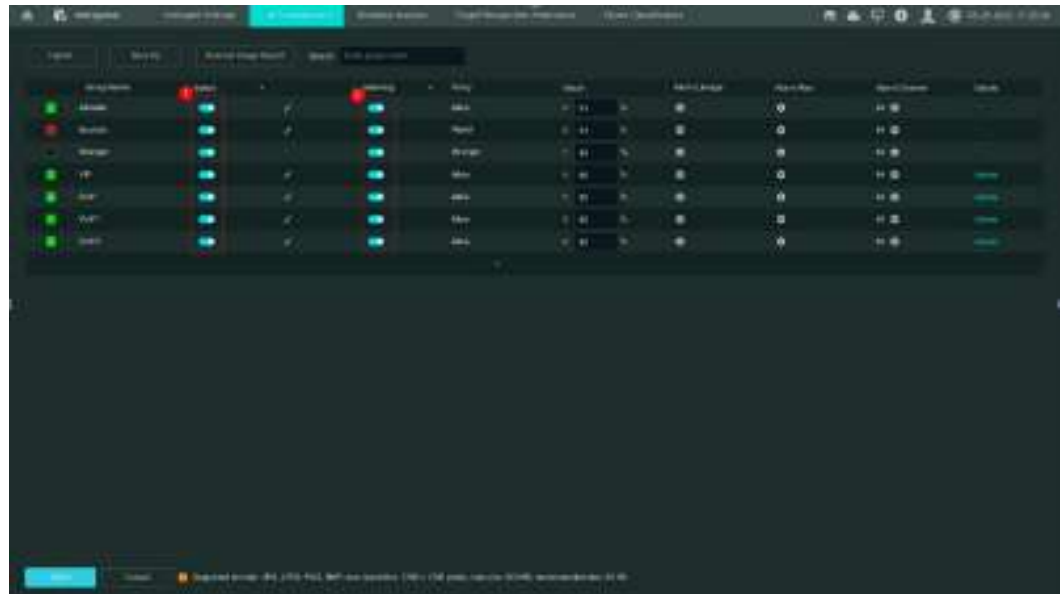
Scenario

You can configure audio alarms triggered by list-based target recognition.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > List Management**.
- Step 3** Enable lists and alarming, as shown in Figure 3-121.

Figure 3-121 Enabling lists and alarming



Step 4 Choose **Intelligence > List Management > Alarm Linkage**.

Step 5 Configure alarm audio for the target recognition channel, as shown in Figure 3-122.

Figure 3-122 Configuring alarm audio for the target recognition channel



----End

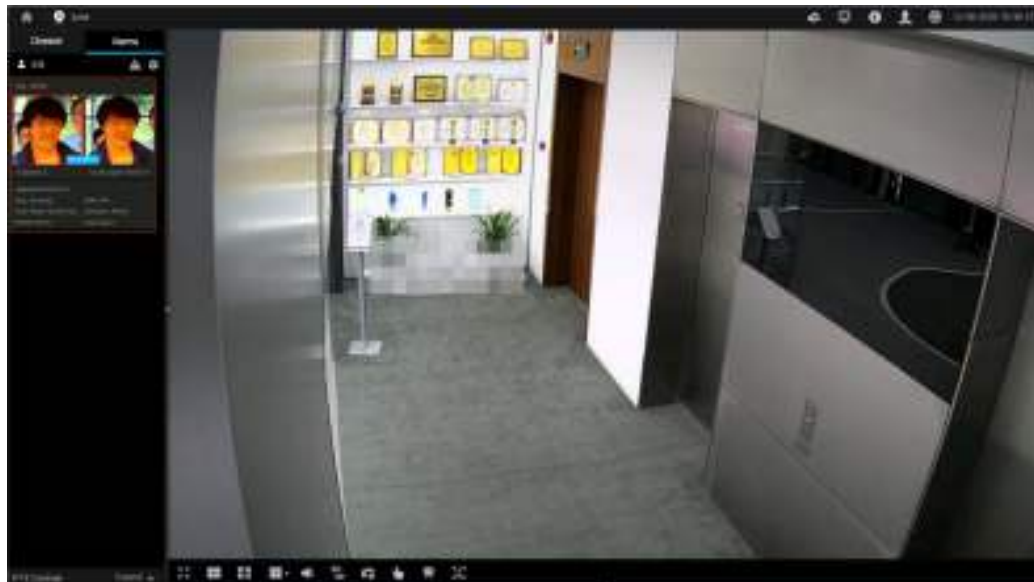
Verification

Step 1 Right-click the screen.

Step 2 Choose **Live > Alarms**.

Step 3 View an alarm reported, as shown in Figure 3-123.

Figure 3-123 Viewing an alarm



- The alarm type is target recognition. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.
- You can hear the alarm audio played by the camera.

----End

3.6.9 Mask Detection

Scenario

Mask detection is used to detect whether a person wears a mask in a detection area. When detecting a person wears or does not wear a mask, the system generates an alarm.

Procedure

Step 1 Right-click the screen.

Step 2 Choose **Intelligence > Intelligent Settings > Target Intelligence > Target Detection > Mask Detection**.

Step 3 Configure mask detection, as shown in Figure 3-124.

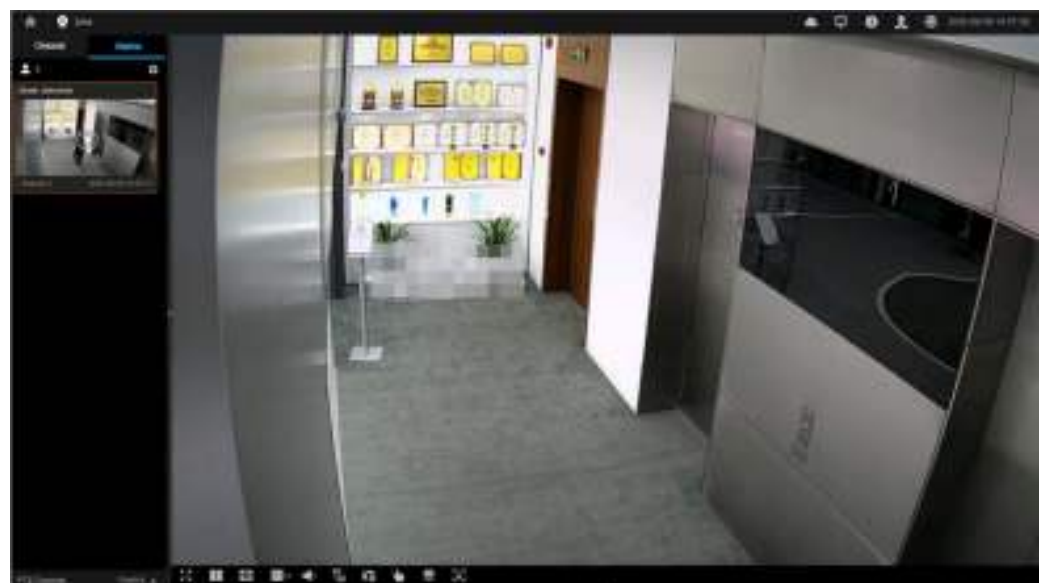
[illegible]

---End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-125.

Figure 3-125 Viewing an alarm



- The alarm type is **Mask detection**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.6.10 Target Statistics Report

Scenario

In locations with high people flow such as business districts and restaurants, the HWT-NVR800 provides the target statistics report analysis function to provide effective data support for user behavior analysis.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Statistics Analysis > Target Report**.
- Step 3** View the target statistics report, as shown in Figure 3-126.

Figure 3-126 Viewing the target statistics report



----End

3.6.11 Target Statistics

Scenario

In locations with high people flow such as supermarkets and campus entries and exits, the HWT-NVR800 provides the function of collecting statistics on the target number, offering effective data support for user behavior analysis.

Viewing Target Statistics Collected by Camera Channel

Step 1 Right-click the screen.

Step 2 Choose **Live > Alarms**.

Step 3 View the target statistics, as shown in Figure 3-127.

For target statistics, the default statistical period is one day. You can view the target number by statistical period and channel ID.

Select a statistic method as required.

NOTE

- **1 Day/2 days/3 days/4 days/5 days/6 days/7 days:** collects statistics on the detection results of the last *X* days.
- **Week:** collects statistics on the detection results in the current week. (Results generated from Monday to Sunday are collected.)
- **Month:** collects statistics on the detection results in the current month.
- **Year:** collects statistics on the detection results in the current year.

Figure 3-127 Target statistics



----End

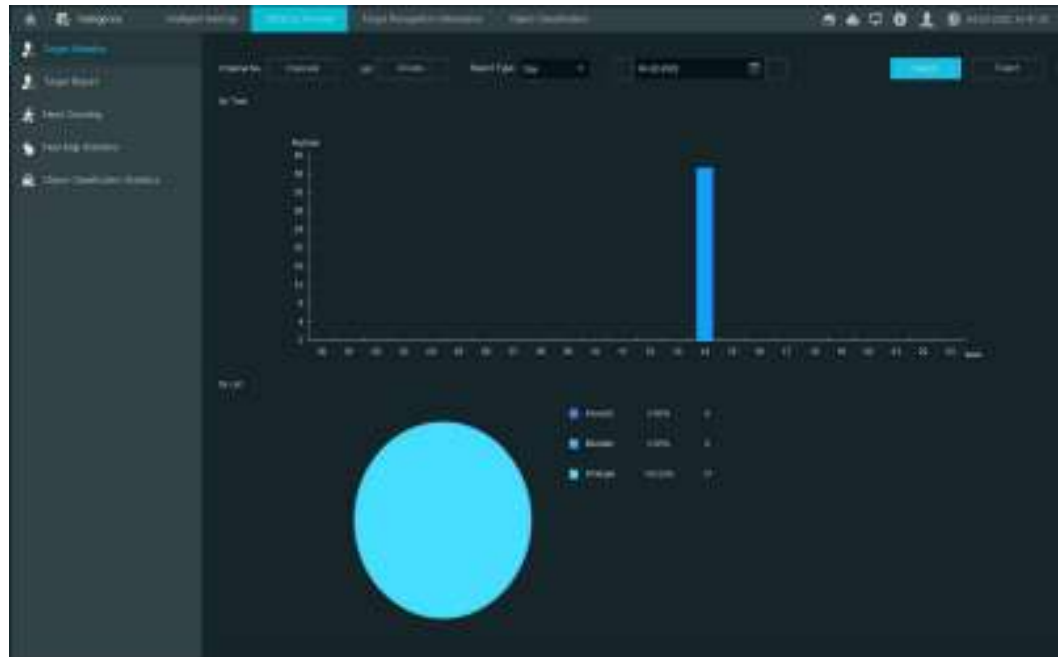
Viewing Target Statistics by List

Step 1 Right-click the screen.

Step 2 Choose **Intelligence > Statistics Analysis > Target Statistics**.

Step 3 View target statistics by list, as shown in Figure 3-128.

Figure 3-128 Target statistics by list



----End

3.6.12 Target Recognition-based Attendance

Scenario

The HWT-NVR800 can collect statistics on employees' attendance in real time.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Target Recognition Attendance**.
- Step 3** Click  and configure attendance information, as shown in Figure 3-129.

For details about how to configure a list, see 3.6.3 List Management.

Figure 3-129 Setting parameters

Set

Channel No Channels

List Groups... ⚙

GUI Theme

Show Strangers ☒

Stranger Title Stranger

Send Email Periodically ☐

Daily Sending Time 00:00:00

Recipient ⚙

Apply Default Cancel

Table 3-7 Parameter description

Parameter	Description
List	List used for target recognition-based attendance.
Show Strangers	Indicates whether to display snapshots of strangers.
Stranger Title	Short description for a stranger.
Send Email Periodically	Indicates whether to periodically send attendance records.
Recipient	Email address for receiving messages.

----End

Verification

When the camera recognizes an employee in a list, the name, ID, list, and attendance information is displayed, as shown in Figure 3-130.

Figure 3-130 Target recognition-based attendance

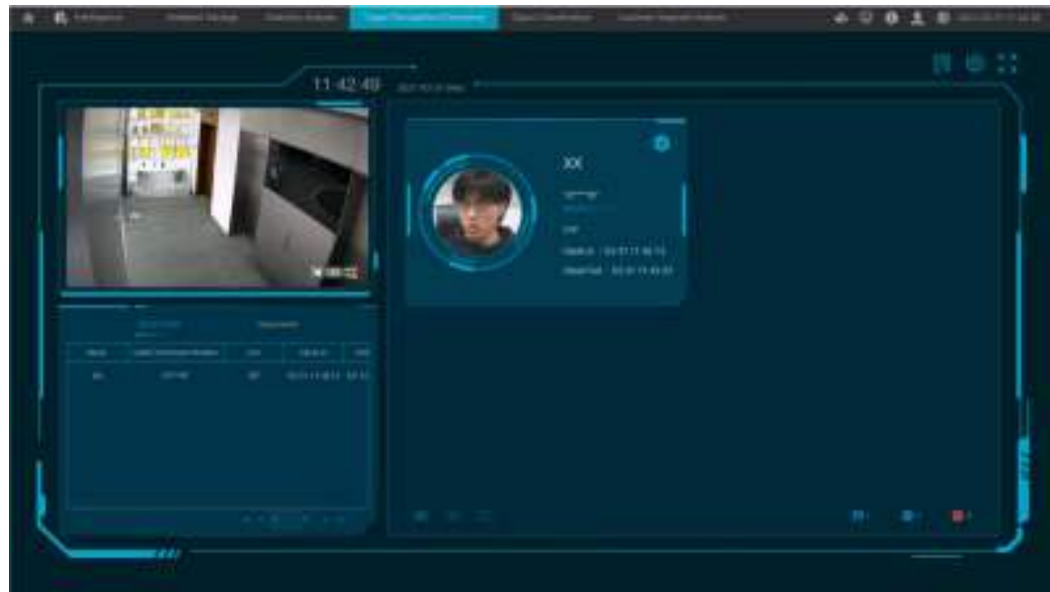


Table 3-8 Icon description

Icon	Description
	Goes to the target recognition-based attendance search page and displays the target attendance details.
	Displays the target recognition-based attendance page in full screen mode.
	Number of persons whose attendance statistics need to be collected.
	Number of persons with attendance statistics.
	Number of persons without attendance statistics.

3.7 Common Intelligence

3.7.1 Audio Diagnosis

Scenario

You can enable audio diagnosis to check for abnormal sounds around a camera.

When detecting abnormal sounds around the camera, the HWT-NVR800 reports an alarm, and triggers linked actions (if an alarm linkage policy has been configured).

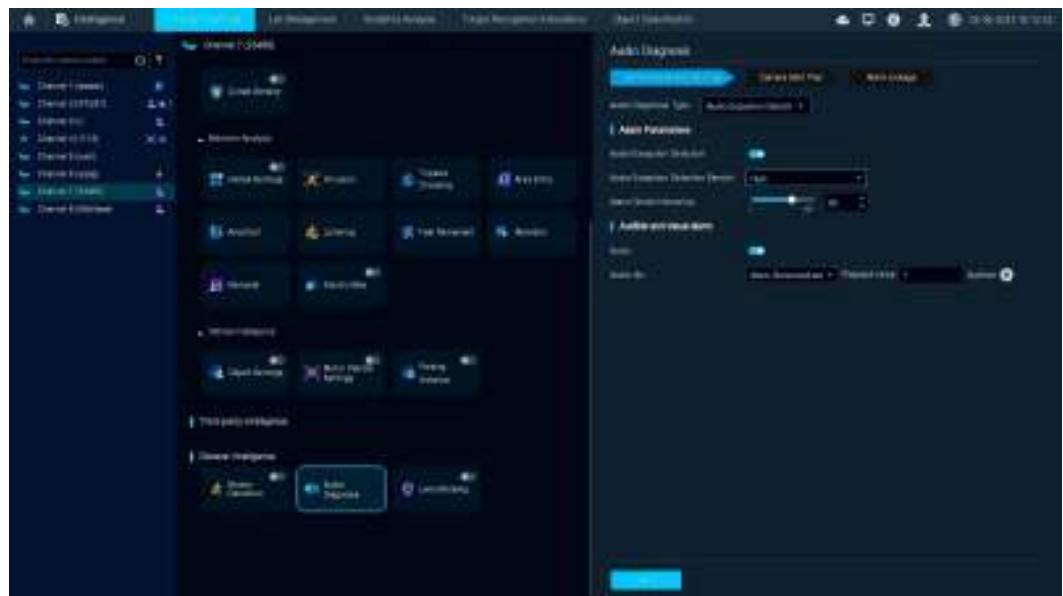
Restrictions

- Intelligent cameras must provide microphones.
- HOLOWITS-specified cameras for intelligent behavior analysis functions must be used. For details about the mapping between HOLOWITS-specified cameras and intelligent behavior analysis functions, see the *HWT-NVR800 9.0.0 Compatibility List*.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence** > **Intelligent Settings** > **Common Intelligence** > **Audio Diagnosis**.
- Step 3** Configure audio diagnosis, as shown in Figure 3-131.

Figure 3-131 Configuring audio diagnosis



- Step 4** (Optional) Configure an alert plan, as shown in Figure 3-132.

Specify the time segment when alarming is effective.

Figure 3-132 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

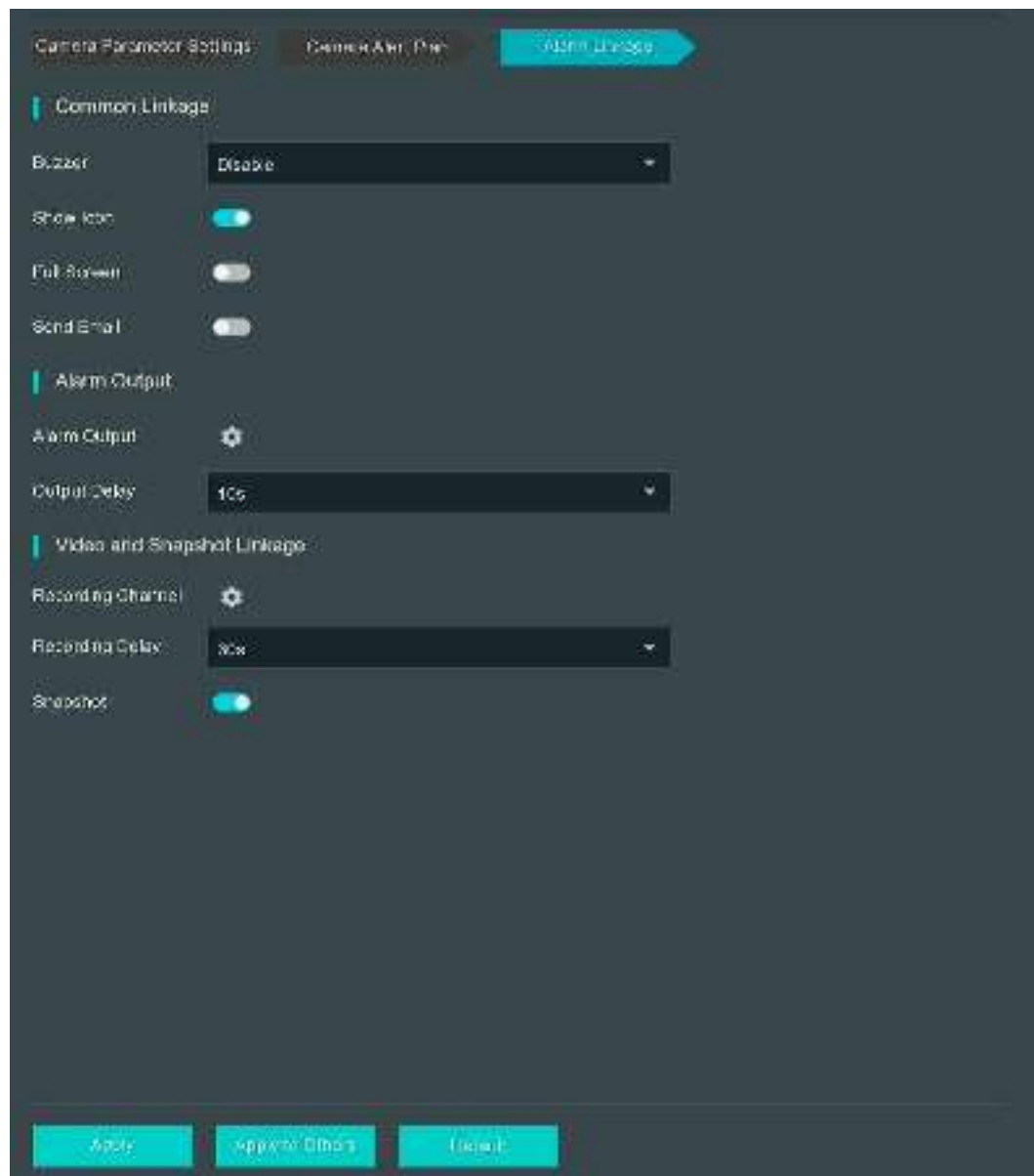
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-133.

Linked actions will be triggered when an alarm is generated.

Figure 3-133 Configuring an alarm linkage policy

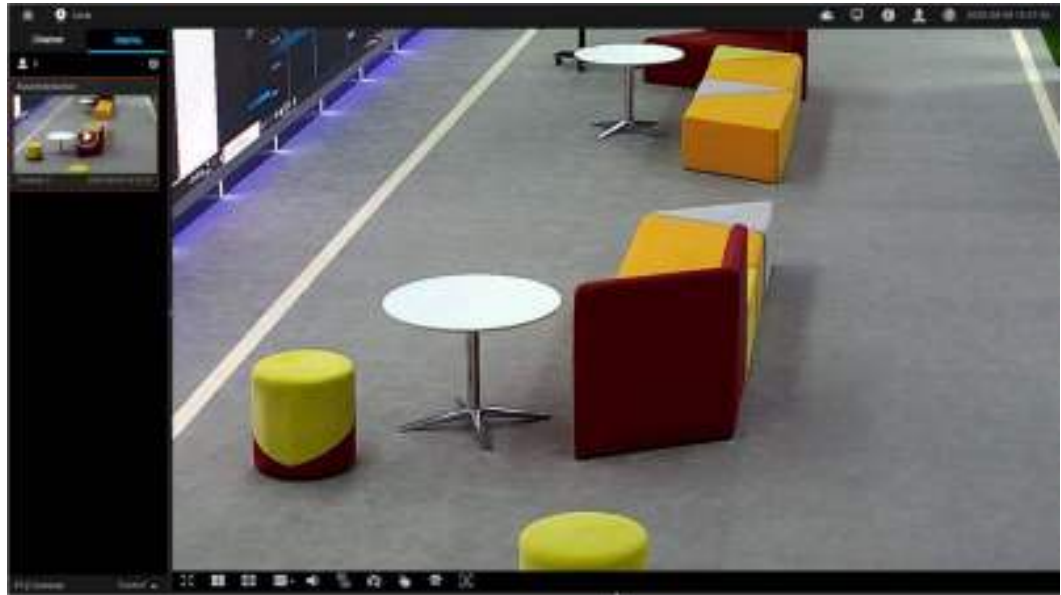


----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-134.

Figure 3-134 Viewing an alarm



- The alarm type is **Sound detection**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.7.2 Lens Blocking Detection

Scenario

You can enable lens blocking detection to check whether the camera lens is blocked by other objects. If the camera lens is blocked, video cannot be properly viewed or recorded.

When detecting an object blocking the camera lens, the HWT-NVR800 reports an alarm, and triggers linked actions (if an alarm linkage policy has been configured).

Restrictions

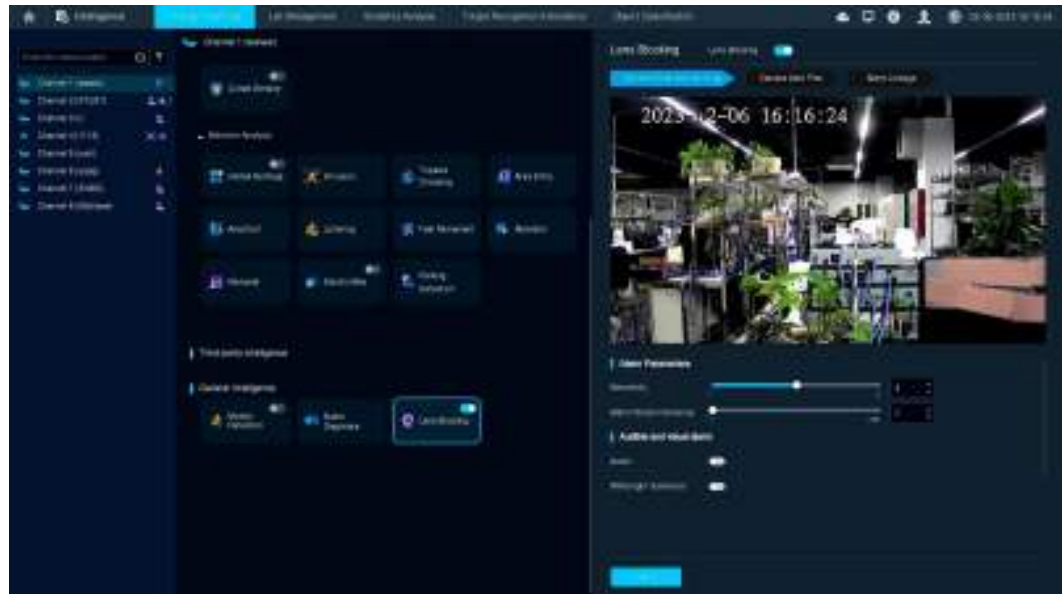
HOLOWITS-specified cameras for intelligent behavior analysis functions must be used. For details about the mapping between HOLOWITS-specified cameras and intelligent behavior analysis functions, see the *HWT-NVR800 9.0.0 Compatibility List*.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Common Intelligence > Lens Blocking**.
- Step 3** Configure lens blocking detection, as shown in Figure 3-135.

Dxxx-10-LI-PV cameras support audible and visual alarms. You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-135 Configuring lens blocking detection



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-136.

Specify the time segment when alarming is effective.

Figure 3-136 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

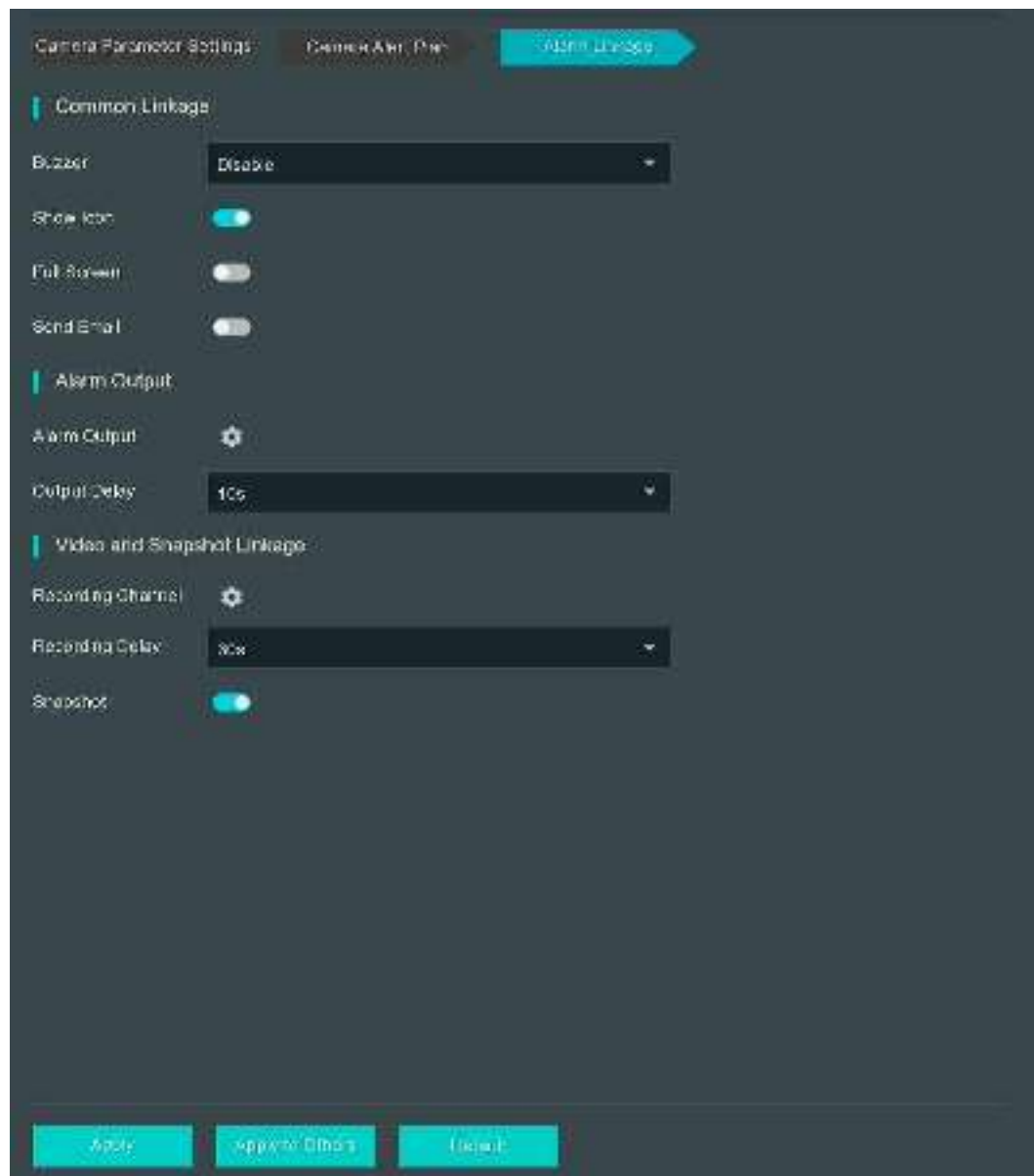
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-137.

Linked actions will be triggered when an alarm is generated.

Figure 3-137 Configuring an alarm linkage policy

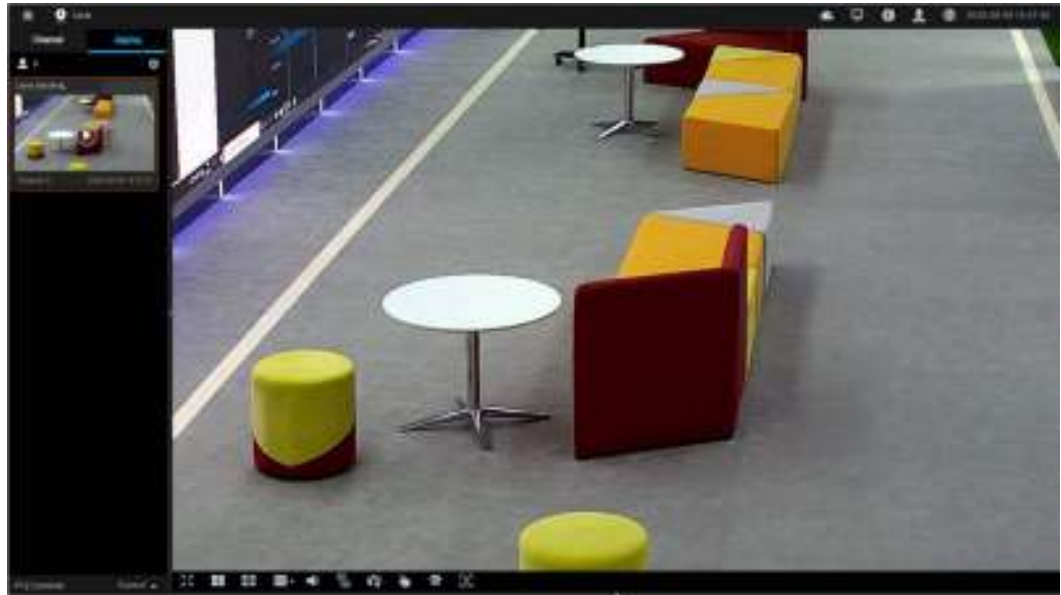


----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-138.

Figure 3-138 Viewing an alarm



- The alarm type is **Lens blocking**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.7.3 Motion Detection

Scenario

You can configure a detection area to check for moving objects in it.

When detecting an object moving in the detection area, the HWT-NVR800 reports an alarm, and triggers linked actions (if an alarm linkage policy has been configured).

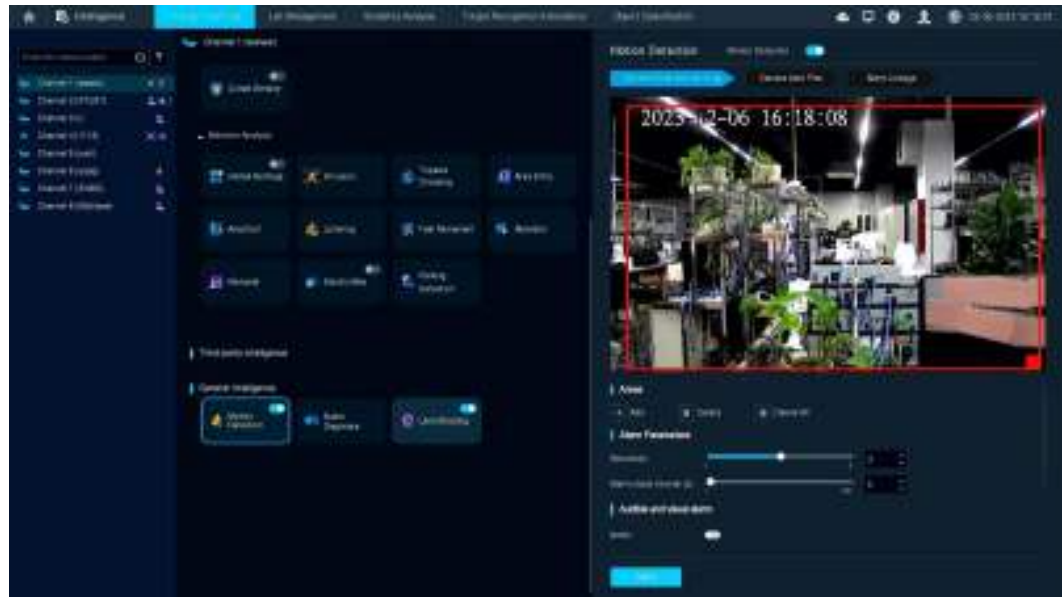
Restrictions

HOLOWITS-specified cameras for intelligent behavior analysis functions must be used. For details about the mapping between HOLOWITS-specified cameras and intelligent behavior analysis functions, see the *HWT-NVR800 9.0.0 Compatibility List*.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Common Intelligence > Motion Detection**.
- Step 3** Configure a detection area, as shown in Figure 3-139.
 - A maximum of four detection areas can be configured.
 - Dxxx-10-LI-PV cameras support audible and visual alarms. You can customize audible alarms using audio files by referring to Alarm-Audio Linkage Configuration.

Figure 3-139 Configuring a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-140.

Specify the time segment when alarming is effective.

Figure 3-140 Configuring an alert plan

Camera Parameter Settings **Camera Alert Plan** Alarm Linkage

Camera Alert Plan

+ Add Delete All

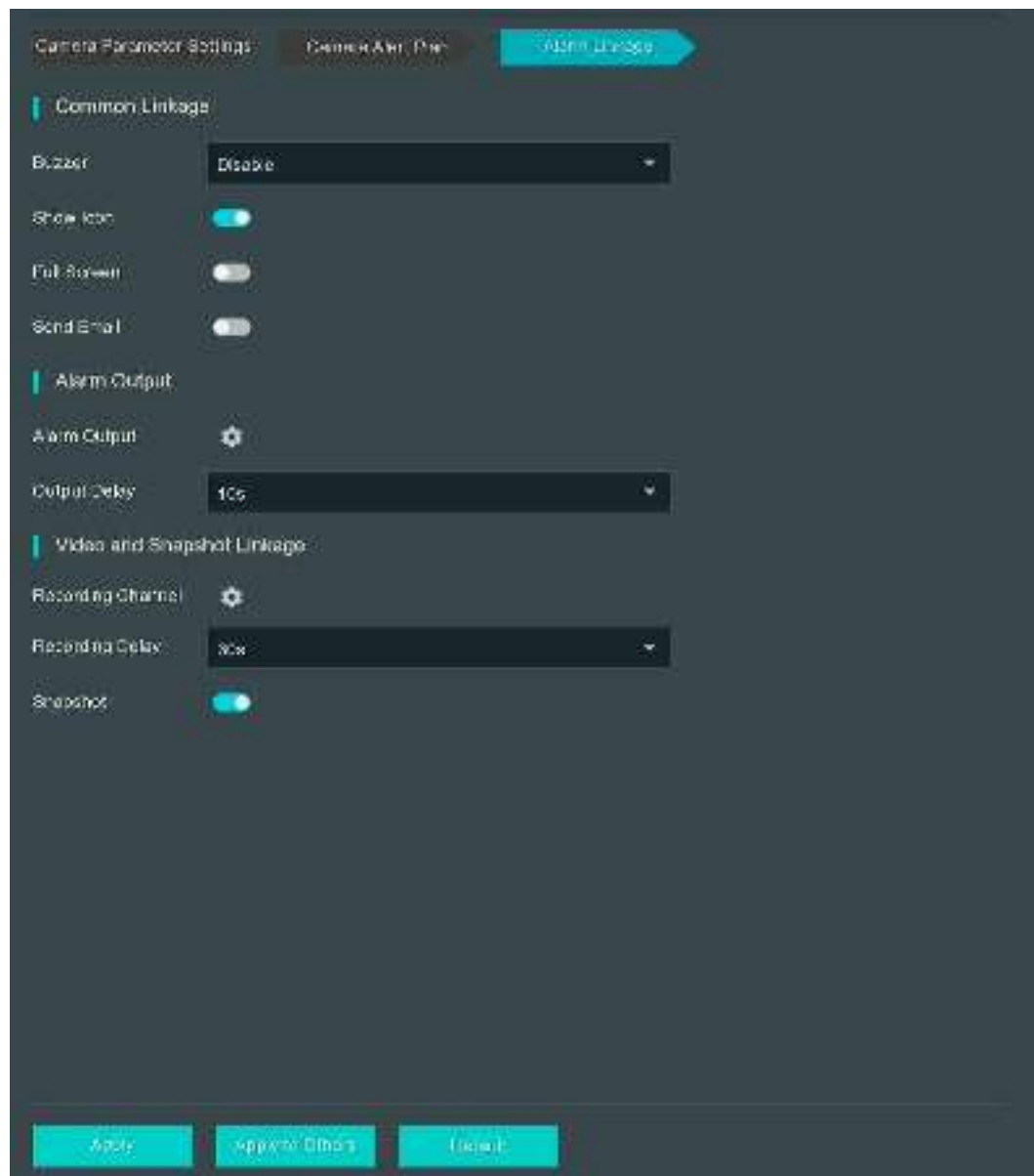
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-141.

Linked actions will be triggered when an alarm is generated.

Figure 3-141 Configuring an alarm linkage policy

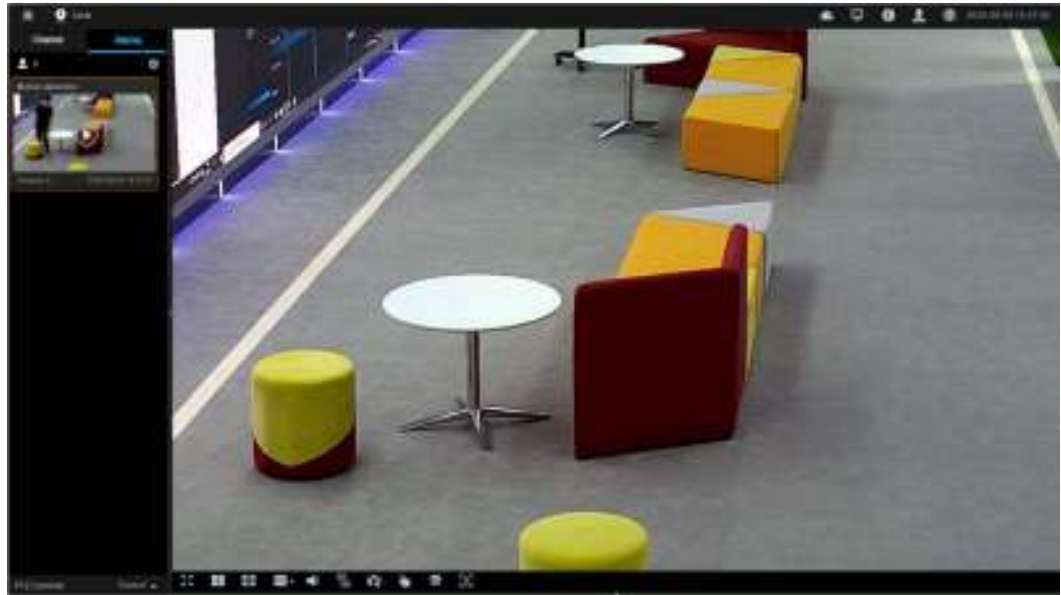


----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-142.

Figure 3-142 Viewing an alarm



- The alarm type is **Motion detection**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.7.4 Privacy Protection

Scenario

Information (such as information written on a whiteboard in an office) in some zones may involve business secrets and should not be disclosed to others. In this scenario, the privacy protection function is required.

The privacy zones are covered in both the live video and recording.

Restrictions

HOLOWITS-specified cameras for intelligent behavior analysis functions must be used. For details about the mapping between HOLOWITS-specified cameras and intelligent behavior analysis functions, see HWT-NVR800 9.0.0 Compatibility List.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Configuration > Channel > Privacy Protection**.
- Step 3** Configure a privacy zone, as shown in Figure 3-143.

A maximum of eight privacy zones can be configured.

Figure 3-143 Configuring a privacy zone



----End

Verification

Step 1 Right-click the screen.

Step 2 Choose **Live**.

The HWT-NVR800 automatically plays live video from the online camera.

Step 3 View the video from the camera, as shown in Figure 3-144.

Figure 3-144 Video from the camera



----End

3.7.5 I/O Alarm

3.7.5.1 Scenario

Only HWT-NVR800 devices with 4 disk trays can connect to multiple I/O alarm input devices, such as the smoke sensor and infrared probe, and multiple I/O alarm output devices, such as the warning light and speaker.

Assume that a smoke sensor functions as an alarm input device. When detecting smoke, the smoke sensor generates an alarm signal and sends it to the HWT-NVR800. Then, the HWT-NVR800 links to the warning light, sends emails, or records video based on the preset linkage policy.

HWT-NVR800 with Four Disk Trays

The 4-tray HWT-NVR800 supports 16-channel alarm input and 1-channel alarm output.

Figure 3-145 shows the HWT-NVR800-B04.

Figure 3-145 HWT-NVR800 with four disk trays



Table 3-9 Port description

No.	Name	Type	Description
1	Ground port (G)	I/O terminal	Used with alarm input ports. One ground port can be used for multiple alarm input ports.
2	Alarm output port (OUT)	I/O terminal	Used to connect to an external alarm output device, for example, an alarm bell.
3	Alarm input port (IN)	I/O terminal	Used to connect to an external alarm input device, for example, a smoke sensor.

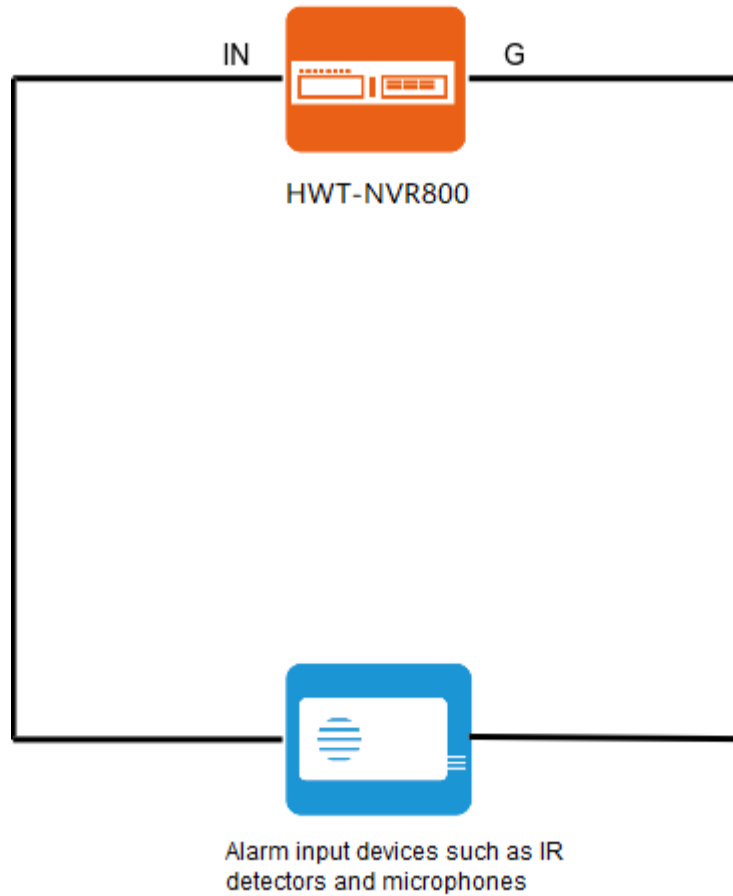
3.7.5.2 I/O Alarm Input

Procedure

Step 1 Connect an I/O alarm input device to the HWT-NVR800.

1. Remove the I/O terminals (to which the alarm input device is to be connected) from the HWT-NVR800.
2. Connect one end of the alarm input device to the alarm input port (IN) and the other end to the ground port (G), as shown in Figure 3-146.

Figure 3-146 Device connection



3. Use a flat-head screwdriver to tighten the connector.
4. Insert the I/O terminal into the HWT-NVR800.

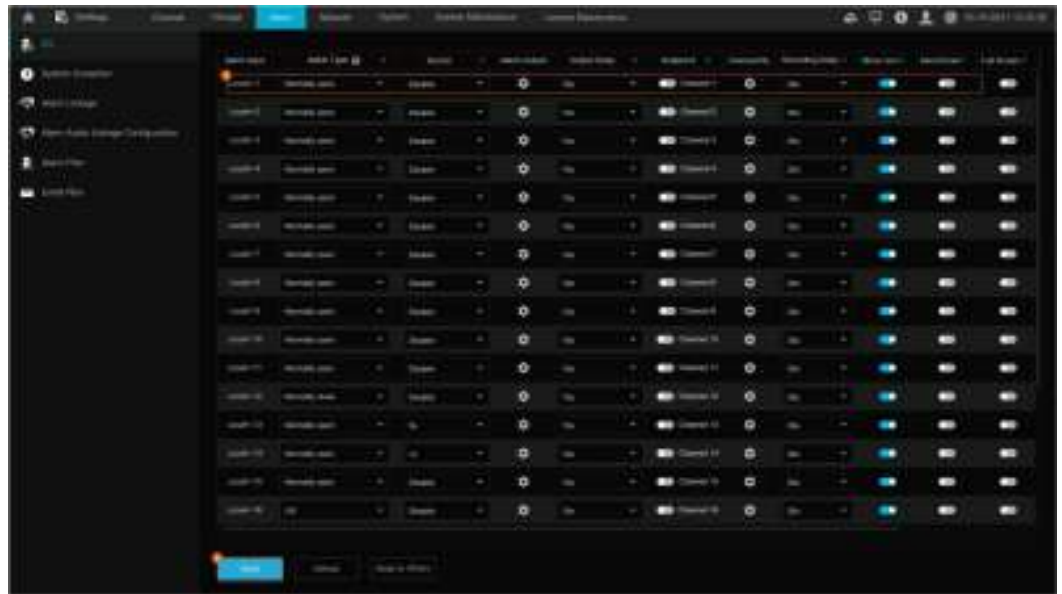
NOTE

To avoid electric shocks, power off the device before connecting cables.

Step 2 Configure I/O alarm input.

1. Right-click the screen.
2. Choose **Configuration > Alarm > I/O**.
3. Configure I/O alarm input, as shown in Figure 3-147.
For details about I/O alarm parameters, see I/O Alarm.

Figure 3-147 Configuring I/O alarm input

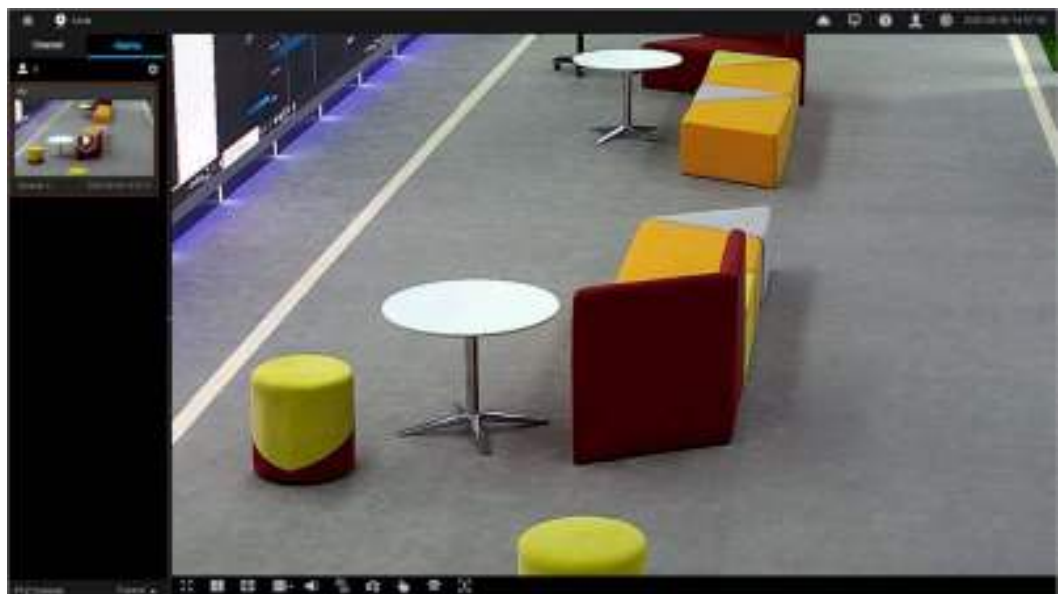


----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-148.

Figure 3-148 Viewing an alarm



- The alarm type is **I/O**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

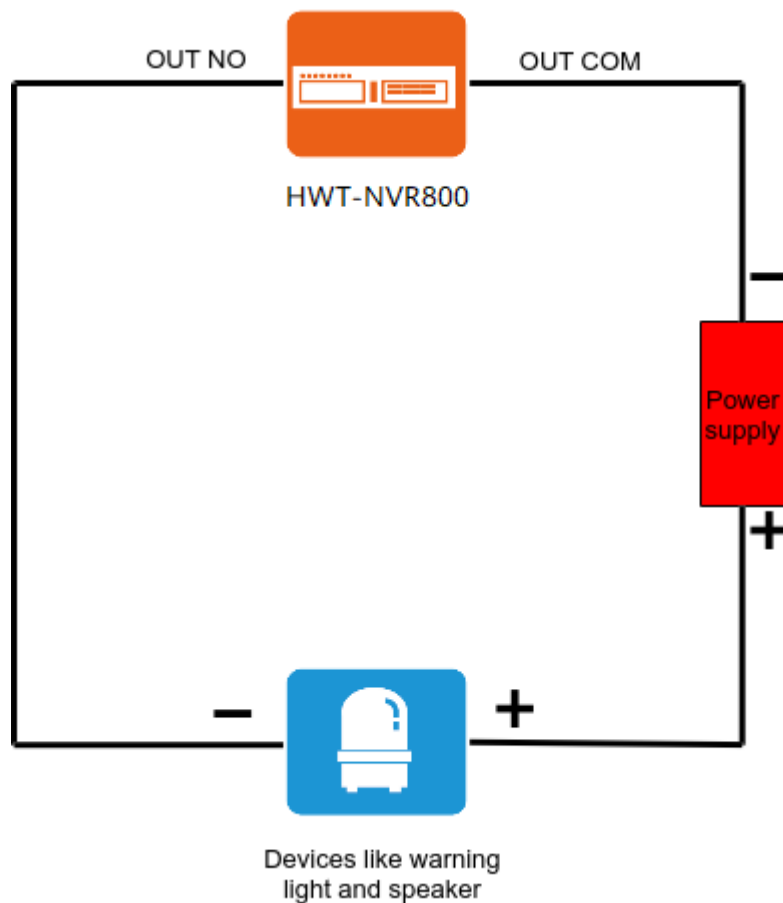
3.7.5.3 I/O Alarm Output

Procedure

Step 1 Connect an I/O alarm output device to the HWT-NVR800.

1. Remove the I/O terminals to which the alarm output device is to be connected from the HWT-NVR800.
2. Connect the negative pole of the alarm output device to the I/O output port (OUT NO), the positive pole of the alarm output device to the positive pole of the power supply, and the negative pole of the power supply to the I/O output port (OUT COM), as shown in Figure 3-149.

Figure 3-149 Device connection



3. Use a flat-head screwdriver to tighten the connector.
4. Insert the I/O terminal into the HWT-NVR800.

NOTE

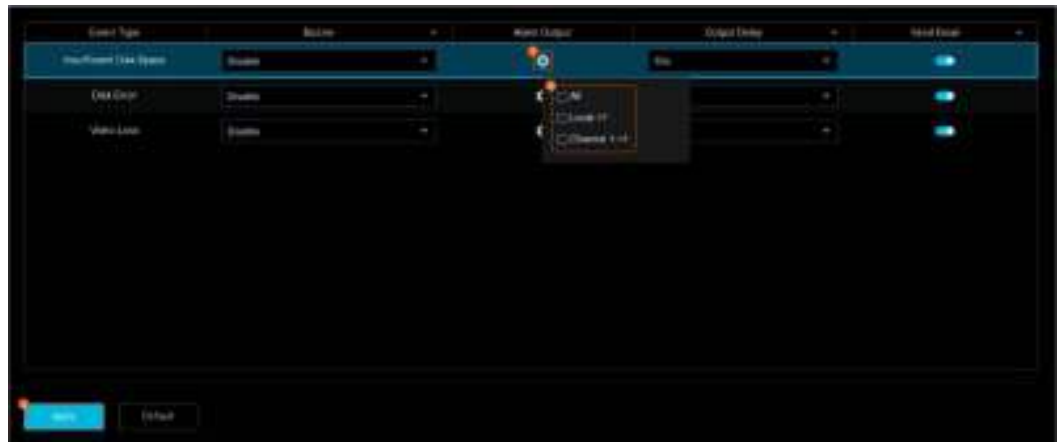
To avoid electric shocks, power off the device before connecting cables.

Step 2 Configure I/O alarm output.

Select the alarm output function to be linked. The following takes exception alarm configuration as an example.

1. Right-click the screen.
2. Choose **Configuration > Alarm > Exception**.
3. Configure I/O alarm output, as shown in Figure 3-150.

Figure 3-150 Configuring an alarm



NOTE

I/O alarm output device.

- **Local->1:** I/O alarm output device connected to the rear panel of the HWT-NVR800
- **Channel->1:** I/O alarm output device connected to the selected camera

----End

Verification

When the disk space is insufficient, an alarm is generated and the alarm indicator is on.

3.8 Third-Party Algorithms

3.8.1 Third-Party Algorithms

Scenario

The HWT-NVR800 allows you to configure alarm linkage policies using third-party algorithms on cameras.

When a camera detects an alarm event, it reports an alarm to the HWT-NVR800. The HWT-NVR800 displays an alarm dialog box on the **Live** page and starts intelligent recording.

Prerequisites

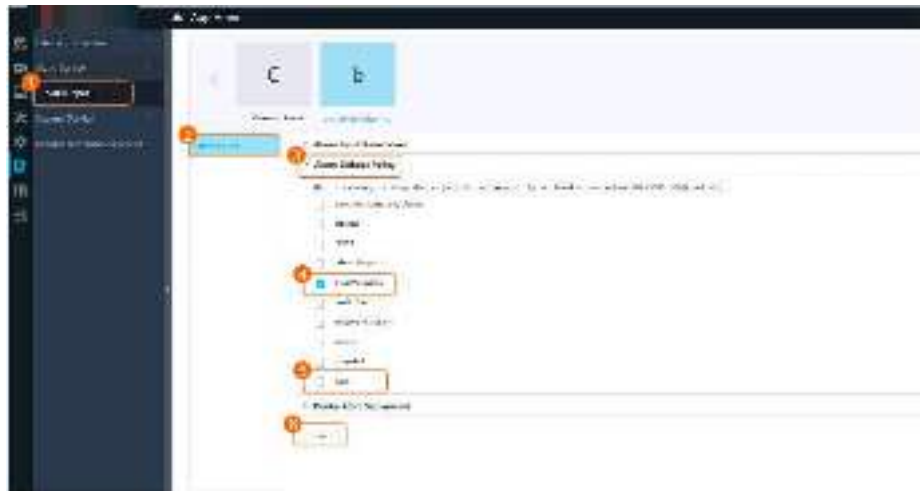
- Third-party algorithms have been installed on a HWT-Dxx5x-10-SIU camera of 8.1.1 or later versions. For details about how to install third-party algorithms, see the camera product documentation.

You can install third-party algorithms by referring to **Configuration > Configuration Guide > Maintaining Devices > Installing an Application** in this documentation.

- Third-party algorithms have been configured in the HWT-Dxx5x-10-SIU camera web system. Currently, the HWT-NVR800 allows you to configure alarm linkage but does not allow you to configure third-party algorithms.
- An alarm linkage policy has been configured in the HWT-Dxx5x-10-SIU camera web system.
 - a. Log in to the camera web system.
 - b. Choose **Service > Alarm Service > Alarm Input**.
 - c. Select a third-party algorithm.
 - d. Enable **HOLOWITS media** or **SDK** for the third-party algorithm. For details, consult the algorithm vendor.

For example, the falling object detection algorithm reports alarm data in TLV format. If you select this algorithm, you need to enable **HOLOWITS media** and disable **SDK**, as shown in Figure 3-151.

Figure 3-151 Parameter settings

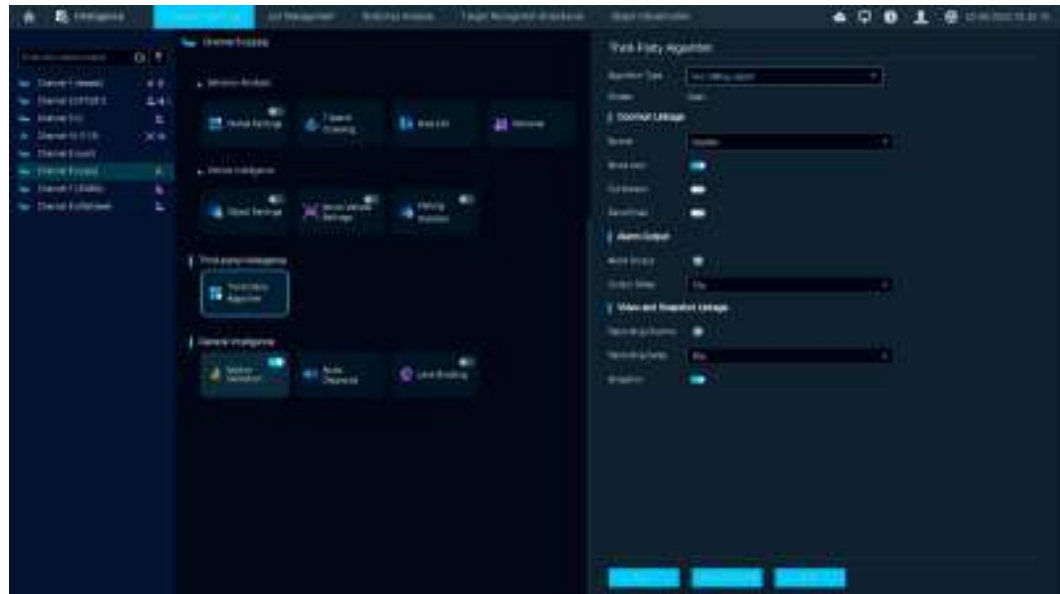


Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Intelligent Settings > Third-party algorithm > Third-party algorithm**.
- Step 3** Select an algorithm type and configure a linkage policy, as shown in Figure 3-152.

After the algorithm type is selected, its status is displayed.

Figure 3-152 Configuring an alarm linkage policy



----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-153.

Figure 3-153 Viewing an alarm



- The alarm type is **Third-party Algorithm**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.9 Vehicle Intelligence

3.9.1 Global Configuration

Restrictions

- The HWT-NVR800 provides the vehicle intelligence function when it is connected to HWT-D2181-10 or HWT-Dxxxx-10-SIU cameras. For details about the version mappings, see the *HWT-NVR800 9.0.0 Compatibility List*.
- The object classification and motor vehicle detection functions cannot be enabled at the same time.
 - Object classification: takes snapshots of persons, motor vehicles, and non-motorized vehicles.
 - Motor vehicle detection: takes snapshots of motor vehicles and detects parking violations.

Configuring Object Classification

Step 1 Right-click the screen.

Step 2 Configure the algorithm mode. **Perform this step only for HWT-Dxxxx-10-SIU, HWT-Cxxxx-10-SIU, and HWT-D2181-10 cameras.**

1. Choose **Intelligence > Intelligent Settings > Algorithm Mode**.
2. Set **Algorithm Mode** to **Micro checkpoint**.

NOTE

After the algorithm mode is switched, the camera will restart for the setting to take effect. Wait for 3 minutes and then configure vehicle-related intelligent services.

Step 3 Set object classification parameters.

1. Choose **Intelligence > Intelligent Settings > Vehicle Intelligence > Object Settings**.
2. Enable object classification, as shown in Figure 3-154.

Figure 3-154 Enabling object classification



----End

Configuring Motor Vehicle Detection

Step 1 Right-click the screen.

Step 2 Configure the algorithm mode. **Perform this step only for HWT-Dxxxx-10-SIU, HWT-Cxxxx-10-SIU, and HWT-D2181-10 cameras.**

1. Choose **Intelligence > Intelligent Settings > Algorithm Mode**.
2. Set **Algorithm Mode** to **Micro checkpoint**.

NOTE

After the algorithm mode is switched, the camera will restart for the setting to take effect. Wait for 3 minutes and then configure vehicle-related intelligent services.

Step 3 Set motor vehicle detection parameters.

1. Choose **Intelligence > Intelligent Settings > Vehicle Intelligence > Motor Vehicle Settings**.
2. Enable motor vehicle detection, as shown in Figure 3-155.

Figure 3-155 Enabling motor vehicle detection



----End

3.9.2 Vehicle Search

Scenario

- The HWT-NVR800 can provide details about captured pedestrians, motor vehicles, and non-motorized vehicles.
- The HWT-NVR800 can recognize vehicle features based on the vehicle attributes, time segment, and lane ID.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Search > Vehicle Search**.
- Step 3** Search for object (motor vehicles, non-motorized vehicles, and pedestrians) images, as shown in Figure 3-156.

Figure 3-156 Searching for object images



Step 4 Right-click a vehicle image and click **Match** from the shortcut menu to view the vehicle search result.

- View the detailed information, as shown in Figure 3-157.

Figure 3-157 Details



- View the license plate match result, as shown in Figure 3-158.

Figure 3-158 License plate match



----End

3.9.3 Object Classification Statistics

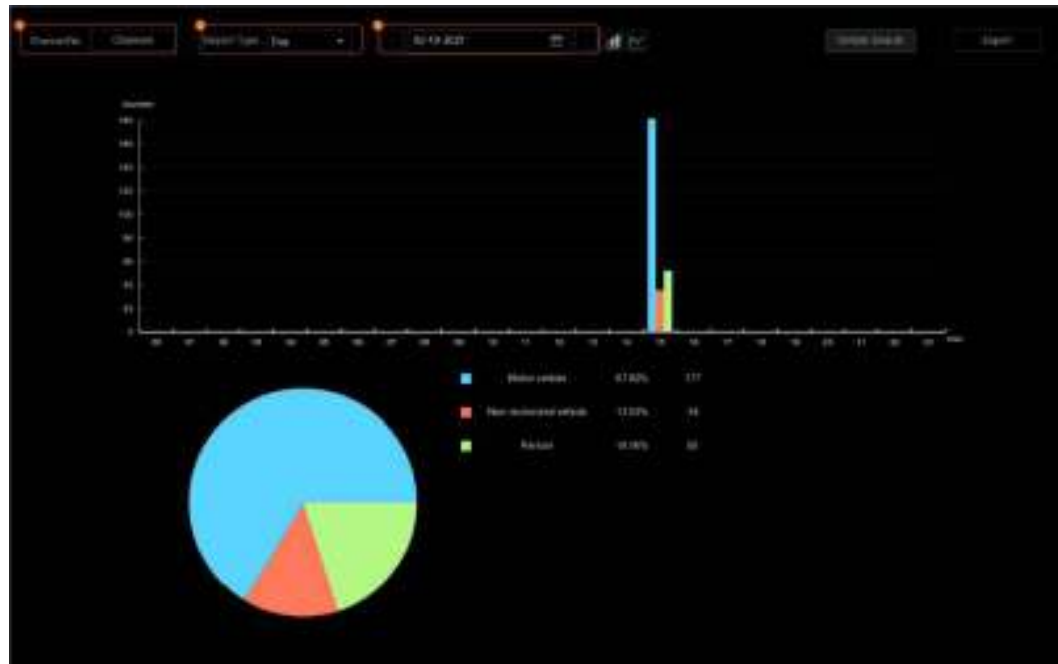
Scenario

For areas with heavy pedestrian and vehicle traffic such as intersections, the HWT-NVR800 provides the function of collecting statistics on and analyzing motor vehicles, non-motorized vehicles, and pedestrians. The HWT-NVR800 displays the total number of motor vehicles, non-motorized vehicles, and pedestrians in each lane in different statistical modes.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Statistics Analysis > Object Classification Statistics**.
- Step 3** View the object classification statistics, as shown in Figure 3-159.

Figure 3-159 Object classification statistics



----End

3.9.4 Object Classification

Scenario

The HWT-NVR800 supports real-time object classification.

Procedure

- Step 1** Right-click the screen.
- Step 2** Choose **Intelligence > Object Classification**.
- Step 3** Click  and configure information about motor vehicles, non-motorized vehicles, and pedestrians, as shown in Figure 3-160.

NOTE

Select a statistic method as required.

- **1 Day/2 days/3 days/4 days/5 days/6 days/7 days**: collects statistics on the detection results of the last *X* days.
- **Week**: collects statistics on the detection results in the current week. (Results generated from Monday to Sunday are collected.)
- **Month**: collects statistics on the detection results in the current month.
- **Year**: collects statistics on the detection results in the current year.

Figure 3-160 Setting parameters



----End

Verification

Figure 3-161 shows information about motor vehicles, non-motorized vehicles, and pedestrians detected by cameras.

NOTE

For the HWT-NVR800 with one disk tray, you are advised to reduce the bit rate or the number of connected cameras to ensure smooth video on the video wall.

Figure 3-161 Object classification



Table 3-10 Icon description

Icon	Description
	Number of captured targets.
	Total number of captured persons.
	Number of captured motor vehicles.
	Number of captured non-motorized vehicles.
	Displays the object classification page in full screen mode.

3.9.5 Parking Violation Detection

Scenario

You can configure a detection area to check for parking violations in it.

When detecting a parking violation, the HWT-NVR800 reports an alarm and triggers linked actions (if an alarm linkage policy has been configured).

Restrictions

To detect violated parking, you need to enable motor vehicle detection first.

Procedure

Step 1 Right-click the screen.

Step 2 Choose **Intelligence > Intelligent Settings > Vehicle Intelligence > Parking Violation**.

Step 3 Configure a detection area, as shown in Figure 3-162.

A maximum of four detection areas can be configured.

Figure 3-162 Configuring a detection area



Step 4 (Optional) Configure an alert plan, as shown in Figure 3-163.

Specify the time segment when alarming is effective.

Figure 3-163 Configuring an alert plan

Camera Parameter Settings Camera Alert Plan Alarm Linkage

Camera Alert Plan

+ Add Delete All

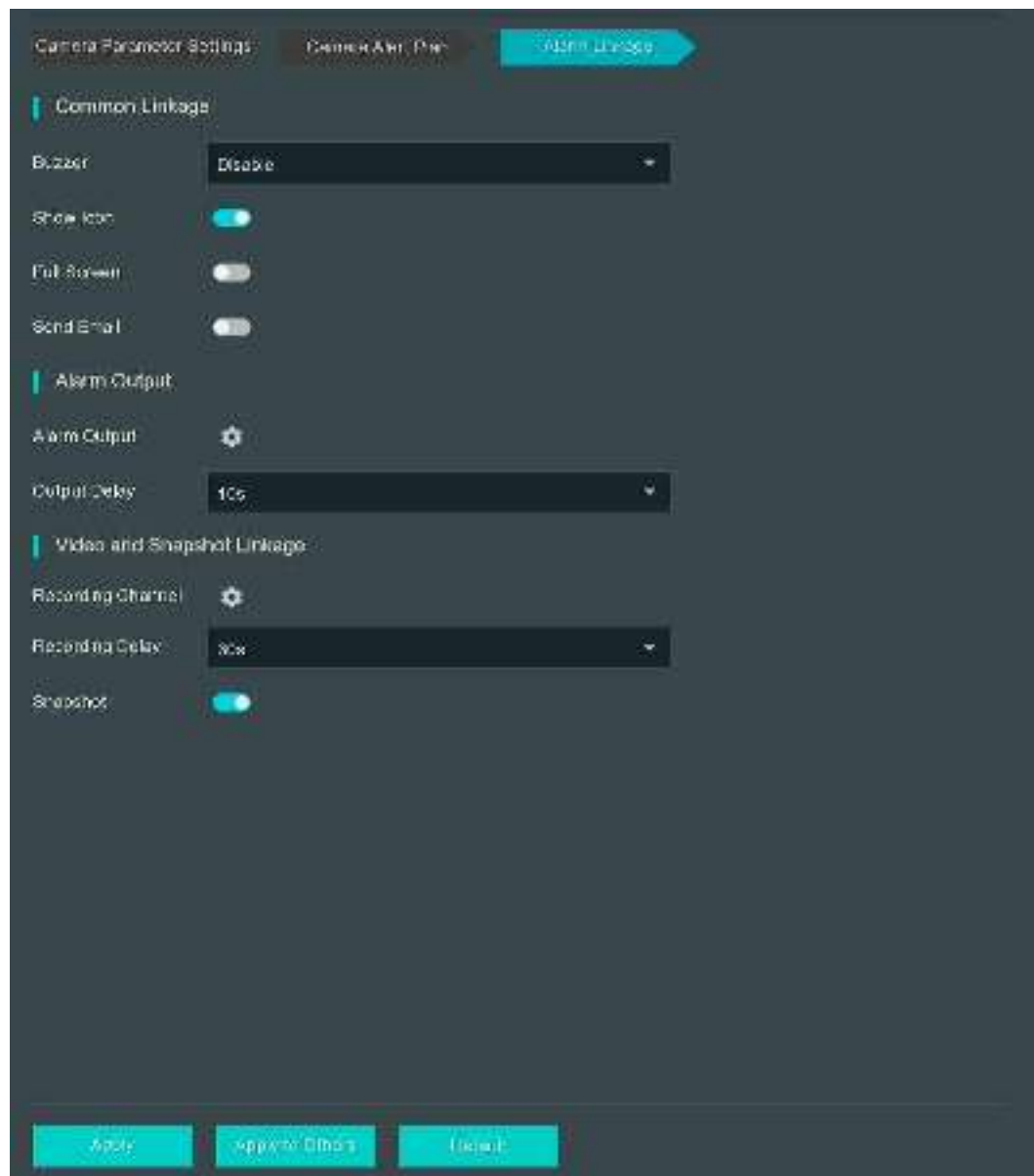
ID	Start Time	End Time	Day	Mode	Operation
1	00:00:00	23:59:59	Every Day	Weekly	

Apply

Step 5 (Optional) Configure an alarm linkage policy, as shown in Figure 3-164.

Linked actions will be triggered when an alarm is generated.

Figure 3-164 Configuring an alarm linkage policy

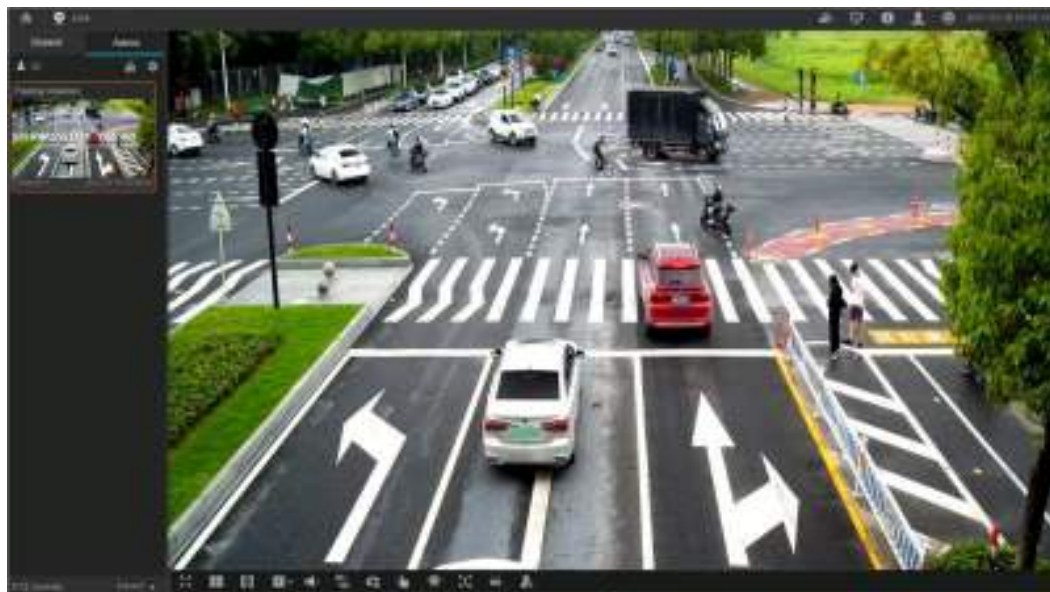


----End

Verification

- Step 1** Right-click the screen.
- Step 2** Choose **Live > Alarms**.
- Step 3** View an alarm reported, as shown in Figure 3-165.

Figure 3-165 Viewing an alarm



- The alarm type is **Parking Violation**. You can click the alarm to view the recording.
- If there are too many alarms, you can click  to search by channel ID and alarm type.

----End

3.10 Cloud Service

3.10.1 Downloading and Registering the App

Contact the local dealer to download and register the app.

3.10.2 Connection to the Cloud Service

Prerequisites

- The HWT-NVR800 has connected to the Internet through a router.
- The 8443, 7010, 7050, and 7070 ports have been allowed to traverse the firewall on the network connected to the HWT-NVR800.

Context

- The first user who accesses the HWT-NVR800 becomes the administrator of the HWT-NVR800. One HWT-NVR800 can have only one administrator.
After the administrator accesses the HWT-NVR800, other users can access it only after being authorized by the administrator.
- After the administrator unbinds from the HWT-NVR800, the first user scanning the QR code to access the HWT-NVR800 becomes the administrator.

Procedure

- Perform operations on the HWT-NVR800.
 - a. Log in to the LDU as the **admin** user.
 - b. Choose **Configuration > Network > Cloud Service**.
 - c. Enable the cloud service, as shown in Figure 3-166.

After you select **Synchronize System Time Through Cloud Service**, the HWT-NVR800 automatically synchronizes the system time with the cloud service.

Figure 3-166 Enabling the cloud service

The screenshot shows the 'Cloud Service' configuration page. It has a dark blue background with white text and buttons.

Step 1: Access cloud service.

Cloud Service: ☒

Area: Singapore

Data Center Location: Singapore

Status: Online

Server Address: [Hikvision Follow \(a.com app\)](#)

Synchronize System Time Through Cloud Service: ☒

☒ I have read and agree [Privacy Statement](#)

[Apply](#) [Default](#)

Step 2: Scan QR code to add NVR.

Start Hikvision and scan QR code to add NVR to device list. Please click Refresh button in the Binding Status to check whether the binding is successful.

SN: 2100

Verification Code: W20HemD

Bound	No
User Name	Not bound yet
Phone Number	Not bound yet
Email	Not bound yet

[Unbind](#)

The QR code here is the HWT-NVR800 QR code. Use your mobile app to scan it and connect to the HWT-NVR800.

- Perform operations on the app.
 - a. Log in to the app.
 - b. Scan the QR code of the HWT-NVR800.

Related Operations

- After the HWT-NVR800 is successfully connected on the app, you can view the user information on the HWT-NVR800, as shown in Figure 3-167.

Figure 3-167 User information



- If you need to change the bound user, you can forcibly unbind the user as the **admin** user, as shown in Figure 3-168.

Figure 3-168 Forcibly unbinding a user

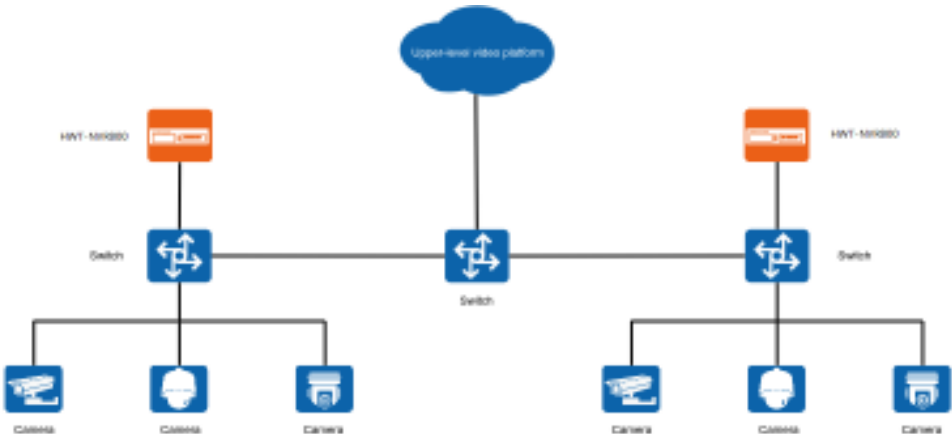


3.11 Platform Connection

3.11.1 Network Diagram

Figure 3-169 shows the network where the HWT-NVR800 is connected to an upper-level video platform.

Figure 3-169 Network diagram



3.11.2 ONVIF-based Connection

Application Limitations

After the HWT-NVR800 is connected to an upper-level video platform, you can only view live video from cameras connected to the HWT-NVR800, in addition to PTZ controls.

Setting HWT-NVR800 Parameters

- Step 1** Right-click the screen.
- Step 2** Choose **Configuration > Network > Platform Connection > ONVIF Server**.
- Step 3** Enable the ONVIF protocol, as shown in Figure 3-170.

Figure 3-170 Enabling the ONVIF protocol

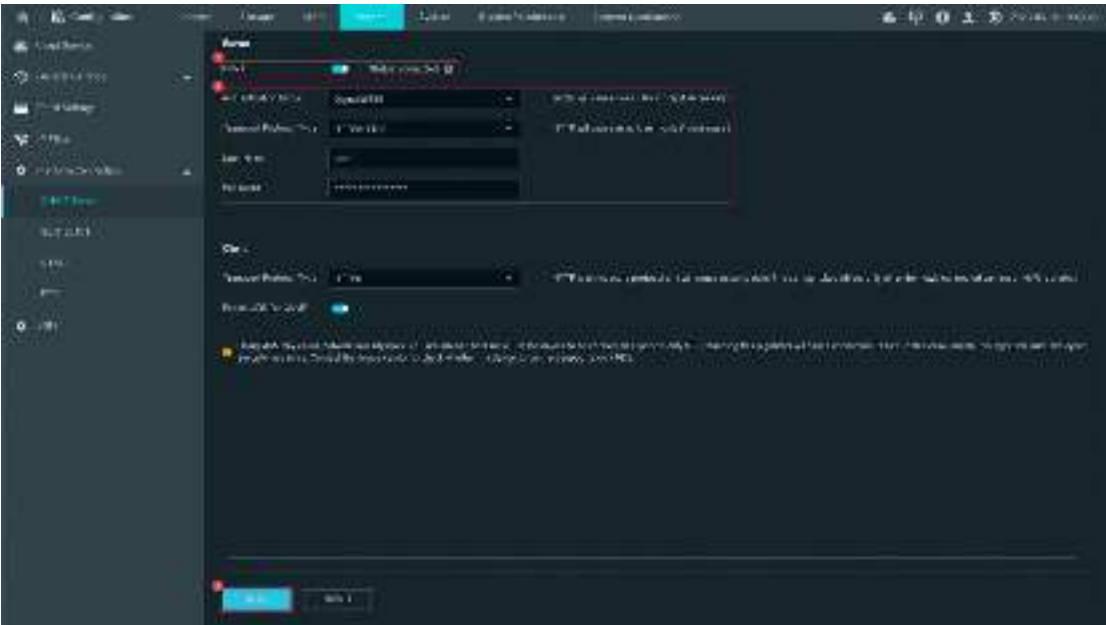


Table 3-11 Parameter/Button description

Area	Parameter /Button	Description
Server	ONVIF	Indicates whether to enable the ONVIF server. If the HWT-NVR800 is successfully connected to the upper-level video platform, the platform's IP address and connection status will be displayed.

Area	Parameter /Button	Description
	Authentica tion Mode	ONVIF authentication mode. The default value is Digest_sha256. • Digest_sha256 • Digest • Digest/WSSE • WSSE • None: No authentication is performed, which poses security risks. Exercise caution when selecting this mode. The authentication mode used by the device for connecting to the upper-level video platform must be the same as that supported by the upper-level video platform. To obtain the authentication mode supported by the upper-level video platform, contact the provider of the upper-level video platform.
	Transport Protocol Type	Transmission protocol for connecting the device to the upper-level video platform. The value must be the same as the transmission protocol configured for the upper-level video platform. • HTTP/HTTPS • HTTPS • HTTP HTTP has security risks. If you select this option, the system displays a message indicating that the system is prone to attacks. HTTP/HTTPS is recommended.
	User Name	User name and password for connecting the HWT-NVR800 to the ONVIF server. NOTE You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.
	Password	
Client	Transport Protocol Type	Transmission protocol for connecting the device to the lower-level device. The value must be the same as the transmission protocol configured for the lower-level device. • HTTPS • HTTP
	Enable MD5 for ONVIF	• Using the MD5 algorithm will cause cyber security risks. You are advised to disable it. If the device to be connected supports only the MD5 algorithm, disabling this algorithm will cause connection failure. In this case, you need to perform cyber security controls after enabling this algorithm. • Contact the device vendor to check whether the device to be connected supports only the MD5 algorithm.
-	Apply	Applies the parameter settings.

Area	Parameter /Button	Description
-	Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

----End

Setting Upper-Level Video Platform Parameters

The setting method varies depending on the upper-level video platform type. This section uses the IVS3800 as an example.

Step 1 Log in to the iClient of the IVS3800, as shown in Figure 3-171.

Figure 3-171 Logging in to the iClient

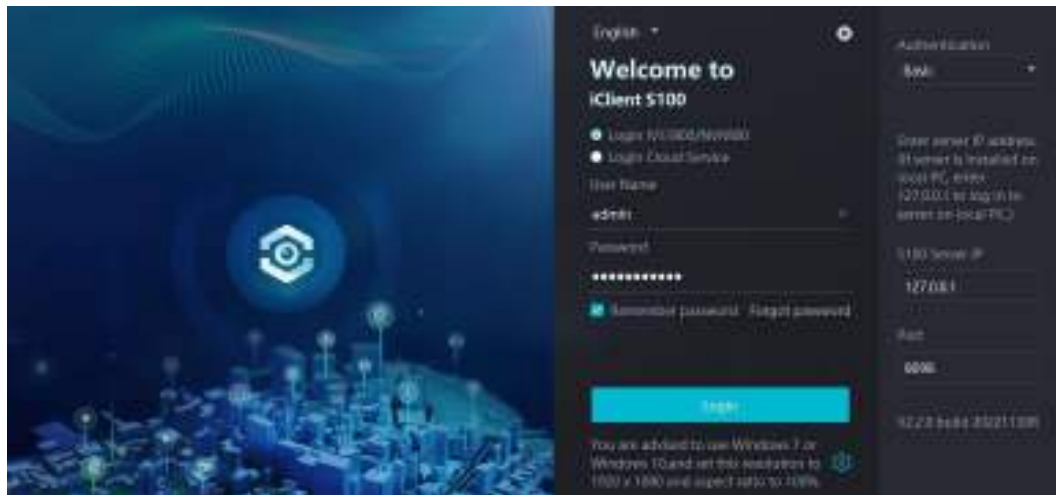


Table 3-12 Parameter description

Parameter	Description
Product	Platform Mode: Select this mode for the IVS3800, IVS9000, or CloudIVS 3000.
Port	- If Enable TLS is selected, use the default value 9910. - If Enable TLS is not selected, use the default value 9900. If Enable TLS is not selected, the system displays a message indicating that the system is prone to attacks. For security purposes, you are advised to select this check box.

Parameter	Description
Enable TLS	If this check box is selected, the system encrypts signaling between the iClient and the server to prevent data interception. If this check box is not selected, the system displays a message indicating that the system is prone to attacks. For security purposes, you are advised to select this check box.
Enable security certificate	You can select this check box only when Enable TLS is selected. If you select this check box, the iClient will perform security verification for the IVS3800 during login. If you do not select this check box, the system displays a message indicating that the system is prone to attacks. For security purposes, you are advised to select this check box.
User Name	- The default user name and password are admin and Change_Me, respectively. - If you want to create an account, refer to the IVS3800 product documentation.
Password	

Step 2 Choose **System Management > Device Access**.

Step 3 Choose **Manual Single Access** and click **Start**.

Step 4 Connect an HWT-NVR800, as shown in Figure 3-172.

Figure 3-172 Connecting an HWT-NVR800

The screenshot shows a web-based configuration interface for connecting an HWT-NVR800. The interface is divided into several sections:

- Access Mode:** Three radio buttons are present: "Video" (selected), "Image", and "Video + Image".
- Device Name:** A text input field containing "HW-NVR800".
- Platform Code:** An empty text input field.
- Connection Code:** An empty text input field.
- Vendor:** A dropdown menu.
- Model:** A dropdown menu.
- NVR List:** A list containing "HW-NVR800" with a "Select Server" button next to it.
- Video Access Settings:**
 - User Name:** A text input field.
 - Password:** A password input field with masked characters.
 - IP Address:** A text input field.
 - Access Gateway:** A dropdown menu with "(Default server)" selected.
 - Confirm Password:** A password input field with masked characters.
 - Device Login Port:** A text input field.
- Buttons:** A large blue "Start" button and a smaller "Cancel" button are at the bottom.

A red note at the bottom states: "Change initial device password promptly and change password regularly afterwards."

Table 3-13 Parameter description

Parameter	Description
Access Mode	Access mode. Click Video .
Device Name	Device name displayed on the iClient. You are advised to enter the installation location or area.
Driver	Protocol. Select ONVIF .
NVR List	Cluster node to which a device is connected.
User Name	The values must be the same as the user name and password set in Figure 3-170. Otherwise, the connection will fail.
Password	
Confirm Password	
IP Address	IP address of a device.
Access Gateway	Select Default server .
Device Login Port	Device connection port, which must be the same on both the IVS and HWT-NVR800 sides. For details about how to view the HWT-NVR800 connection port, see Port Settings. The default port number is 443.

Step 5 Click **Finish**.

----End

Verification

Step 1 Check whether the HWT-NVR800 is online on the iClient.

1. Choose **System Management > Devices > Main Devices**.
2. Select an IVS3800 server or cluster.
3. In the **Device Status** column, check whether the status of the connected HWT-NVR800 is **Online**.

Step 2 View live video from a camera on the iClient.

1. Choose **Basic Operations > Live > Cameras**.
2. Drag a camera connected to the HWT-NVR800 to a live video pane. If the live video is properly played, the HWT-NVR800 is successfully connected to the IVS3800.

----End

3.11.3 GB/T 28181-based Connection

Application Limitations

After the HWT-NVR800 is connected to an upper-level video platform, you can only view live video and play back recordings from cameras connected to the HWT-NVR800, in addition to PTZ controls.

Setting HWT-NVR800 Parameters

- Step 1** Right-click the screen.
- Step 2** Choose **Configuration > Network > Platform Connection > GB/T 28181**.
- Step 3** Enable GB/T 28181, as shown in Figure 3-173.

Figure 3-173 Enabling GB/T 28181

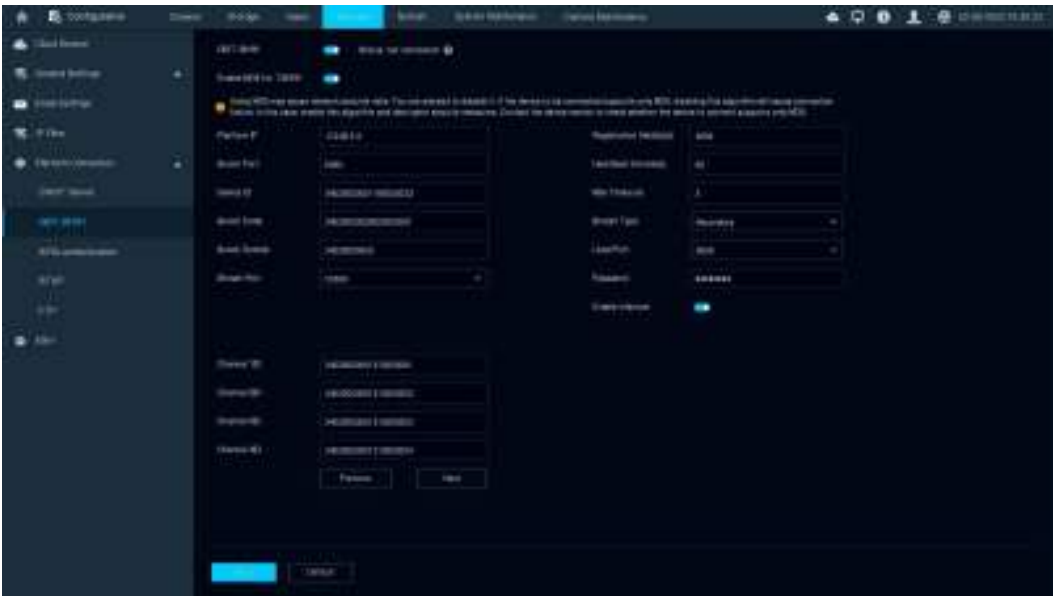


Table 3-14 Parameter/Button description

Parameter/Button	Description
GB/T 28181	Indicates whether to connect the HWT-NVR800 to an upper-level video platform through GB/T 28181. After the HWT-NVR800 is successfully connected to the upper-level video platform, the connection status is displayed.

Parameter/Button	Description
Enable MD5 for T28181	- Using the MD5 algorithm will cause cyber security risks. You are advised to disable it. If the device to be connected supports only the MD5 algorithm, disabling this algorithm will cause connection failure. In this case, you need to perform cyber security controls after enabling this algorithm. - Contact the device vendor to check whether the device to be connected supports only the MD5 algorithm.
Device	Customized name of a GB/T 28181-compliant device.
Platform IP	Floating gateway IP address for connecting to the upper-level video platform.
Server Port	Server port number. The default value is 5060. NOTE To connect to the IVS3800, set the server port number to 5080.
Device ID	Device ID consisting of 20 digits. The eleventh to thirteenth digits must be 118. The value must meet the requirements illustrated in 5.3.1 GB/T 28181 Connection Code Formats.
Server Code	Connection code for connecting to the upper-level video platform. Enter a string of 20 digits. The eleventh to thirteenth digits must be 200. The value must meet the requirements illustrated in 5.3.1 GB/T 28181 Connection Code Formats.
Server Domain	Server domain of the upper-level video platform. The default value is the first 10 digits of the server code.
Stream Port	Stream port number. The default value is 55550 .
Registration Validity(s)	Registration validity. If a device is not successfully registered within this specified period, the registration fails. The default value 3600 is recommended.
Heartbeat Interval(s)	Time interval at which the camera sends heartbeat messages. The default value 60 is recommended. The HWT-NVR800 and the camera must have the same heartbeat interval.
Max Timeouts	Maximum timeouts. If the number of consecutive heartbeat timeouts reaches the value specified by this parameter, the HWT-NVR800 cannot connect to the platform. The default value 3 is recommended. The value of Max Timeouts for the camera and HWT-NVR800 must be the same.

Table 3-15 Parameter description

Parameter	Description
Product	Platform Mode: Select this mode for the IVS3800, IVS9000, or CloudIVS 3000.
Port	• If Enable TLS is selected, use the default value 9910. • If Enable TLS is not selected, use the default value 9900. If this check box is not selected, the system displays a message indicating that the system is prone to attacks. For security purposes, you are advised to select this check box.
Enable TLS	If this check box is selected, the system encrypts signaling between the iClient and the server to prevent data interception. If this check box is not selected, the system displays a message indicating that the system is prone to attacks. For security purposes, you are advised to select this check box.
Enable security certificate	You can select this check box only when Enable TLS is selected. If you select this check box, the iClient will perform security verification for the IVS3800 during login. If you do not select this check box, the system displays a message indicating that the system is prone to attacks. For security purposes, you are advised to select this check box.
User Name	• The default user name and password are admin and Change_Me, respectively. • If you want to create an account, refer to the IVS3800 product documentation.
Password	

Step 2 Choose **System Management > Device Access**.

Step 3 Choose **Manual Single Access** and click **Start**.

Step 4 Connect a HWT-NVR800, as shown in Figure 3-175.

Figure 3-175 Connecting a HWT-NVR800

Table 3-16 Parameter description

Parameter	Description
Access Mode	Access mode. Click Video .
Device Name	Device name displayed on the iClient. You are advised to enter the installation location or area.
Driver	Protocol. Select T28181 .
Connection Code	Set this parameter to the value of Device ID set in Figure 3-173.
NVR List	Cluster node to which a device is connected.
Access Gateway	Floating gateway of the IVS3800. Set this parameter to the value of Platform IP set in Figure 3-173.
Password	Set this parameter to the value of Password set in Figure 3-173. Otherwise, the connection will fail.
Confirm Password	

Step 5 Click **Finish**.

----End

Verification

Step 1 Check whether the HWT-NVR800 is online on the iClient.

1. Choose **System Management > Devices > Main Devices**.
2. Select an IVS3800 server or cluster.
3. In the **Device Status** column, check whether the status of the connected HWT-NVR800 is **Online**.

Step 2 View live video from a camera on the iClient.

1. Choose **Basic Operations > Live > Cameras**.
2. Drag a camera connected to the HWT-NVR800 to a live video pane. If the live video is properly played, the HWT-NVR800 is successfully connected to the IVS3800.

----End

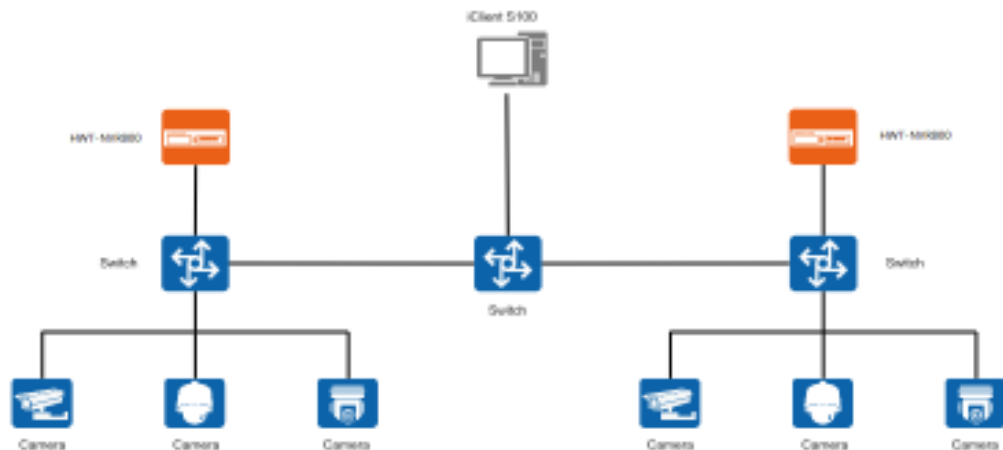
3.12 Connection to the iClient S100

3.12.1 Scenario Description

The iClient S100 is a management system that integrates basic video operations and intelligent applications, as well as access control, attendance, and epidemic prevention applications. It is designed for edge application scenarios such as small- and medium-sized enterprise campuses and small-sized branches.

You can use the iClient S100 to centrally manage multiple HWT-NVR800s as shown in Figure 3-176.

Figure 3-176 Network diagram



3.12.2 Setting HWT-NVR800 Parameters

Application Limitations

You are advised to log in as the admin user by default. If different users need to be connected at the same time, you can enable multiple users.

Procedure

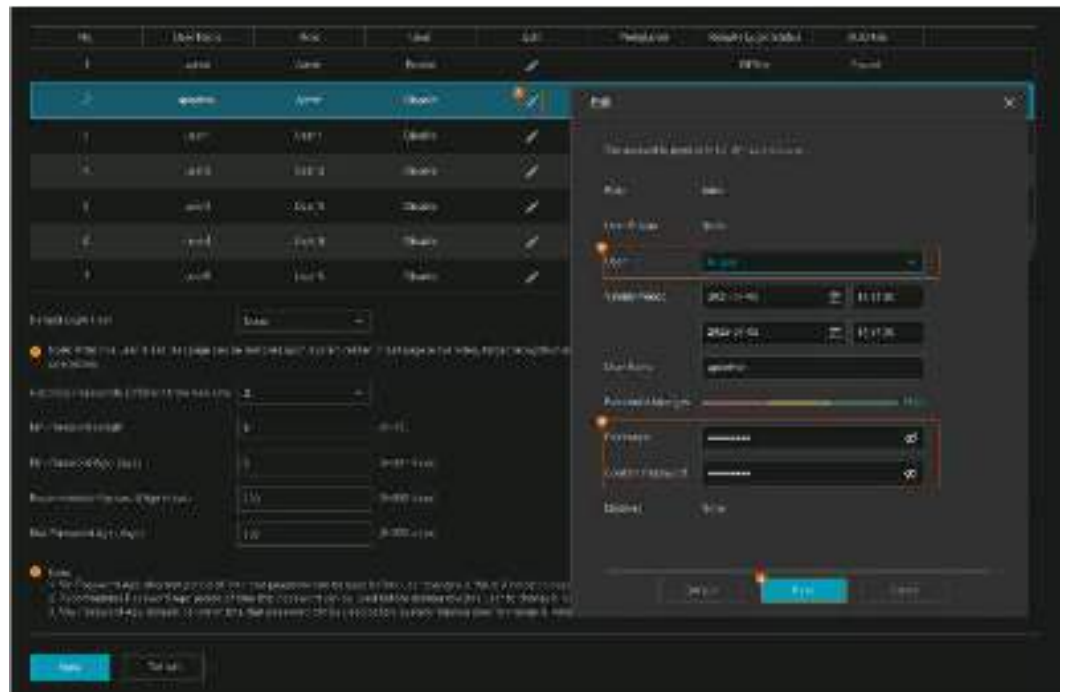
Log in to the LDU of the HWT-NVR800 and enable the **apiadmin** user and common users such as **user1** and **user2**.

- Enabling the **apiadmin** user
 - a. Log in to the LDU as the **admin** user.
 - b. Choose **Configuration > System > User Management**.
 - c. Enable the **apiadmin** user, as shown in Figure 3-177.

NOTE

You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.

Figure 3-177 Enabling a user

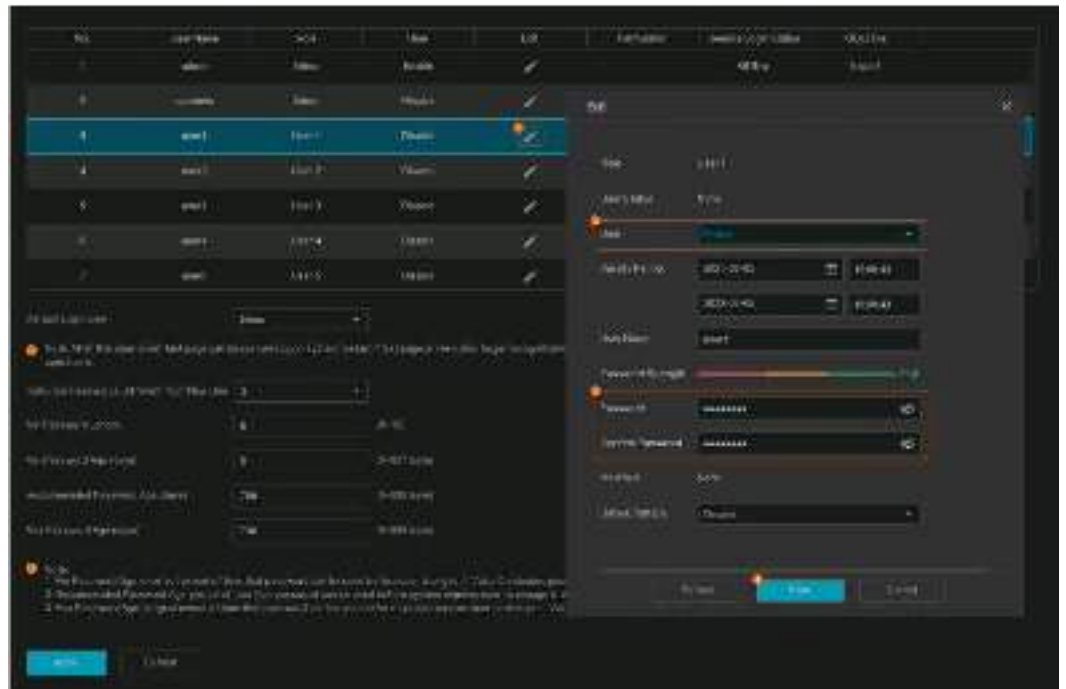


- Enabling common users such as **user1** and **user2**
 - a. Log in to the web system as the **admin** user.
 - b. Choose **Configuration > System > User Management**.
 - c. Enable **user1** and **user2**, as shown in Figure 3-178.

NOTE

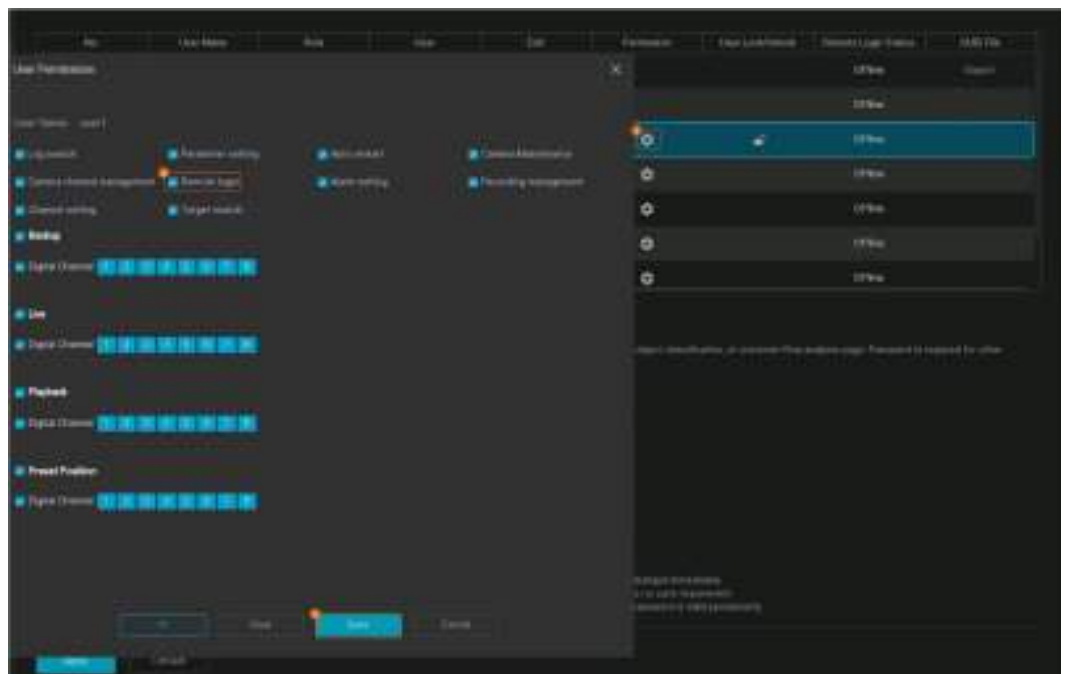
You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.

Figure 3-178 Enabling a user



- d. Configure permissions for **user1** and **user2**, as shown in Figure 3-179.

Figure 3-179 Configuring user permissions



3.12.3 Parameter Settings on the iClient S100

Application Limitations

The iClient S100 supports a maximum of 32 NVR800s and 1024 video channels (including video channels of the NVR800s).

Procedure

Step 1 Log in to the **iClient S100**, as shown in Figure 3-180.

Figure 3-180 Logging in to the iClient S100

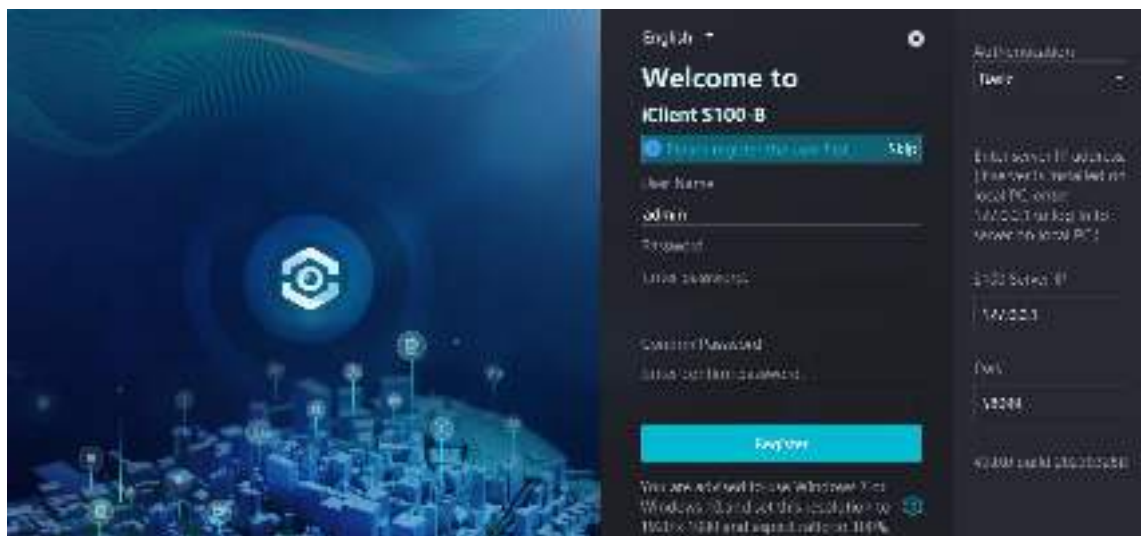


Table 3-17 Parameter description

Parameter	Description
S100 Server IP	IP address of the S100 server.
Port	Port number. Default value: 58099
User Name	- Upon the first login, you need to initialize the password of the admin user. For details, see the iClient S100 product documentation. - The default user name and password are admin and Changeme_123. - User-defined account. For details about how to create a user-defined account, see the iClient S100 product documentation.
Password	

Step 2 Choose **Maintenance Management > Video Device > Main Devices**.

Step 3 Click **Add** in the device list to add a device. The page shown in Figure 3-181 is displayed.

Figure 3-181 Adding a HWT-NVR800

New Device

×

Device Type

NVR800

Address

Enter address.

Port

443

User Name

admin

Password

Enter password.👁

Name

Enter name.

OK

Cancel

Table 3-18 Parameter description

Parameter	Description
Device Type	Device type. Select HWT-NVR800 from the drop-down list box.
Address	HWT-NVR800 address. The address is in xxx.xxx.xxx.xxx format. An example address is 192.168.6.5 .
Port	Device port. If the device type is HWT-NVR800 , the default port number is 443 .
User Name	User name and password for logging in to the HWT-NVR800.
Password	
Name	User-defined device name.

Step 4 Change the password as prompted upon the first login, as shown in Figure 3-182.

Figure 3-182 Changing the password upon the first login

Please change password by first login ✕

1 Old Password

2 New Password

Confirm Password

3 OK Cancel

----End

3.12.4 Verification

Step 1 Check whether the HWT-NVR800 is online on the iClient S100.

1. Choose **Maintenance Management > Video Device**.
2. In the **Device Status** column, check whether the status of the connected HWT-NVR800 is **Online**.

Step 2 View live video from the camera on the iClient S100.

1. Choose **Basic Operations > Live > Devices**.
2. Drag a camera connected to the HWT-NVR800 to a live video pane. If the live video is properly played, the HWT-NVR800 is successfully connected to the iClient S100.

----End

NOTICE

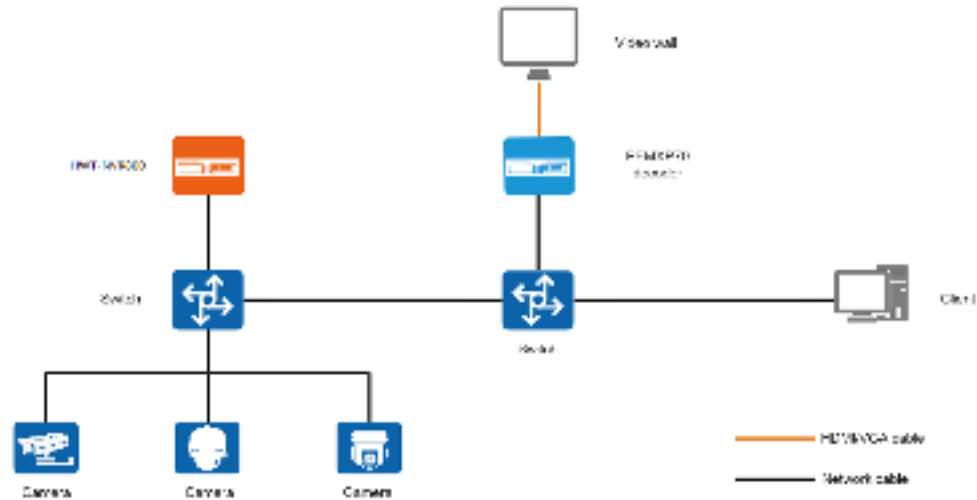
In the scenario where a HWT-NVR800 on the on-premises network is connected to the iClient S100, if more than 500 alarms are generated within 1 minute in the network featuring 500 ms delay and 100 ms jitter, alarm data on the upper-level platform may be lost.

3.13 Connection to a Video Wall

3.13.1 Scenario Description

You can connect the HWT-NVR800 to a PEMXP70 decoder to push video to a video wall, as shown in Figure 3-183.

Figure 3-183 Video display on a video wall



3.13.2 ONVIF-based Connection

Setting HWT-NVR800 Parameters

- Step 1** Right-click the screen.
- Step 2** Choose **Configuration > Network > Platform Connection > ONVIF Server**.
- Step 3** Enable the ONVIF protocol, as shown in Figure 3-184.

Figure 3-184 Enabling the ONVIF protocol

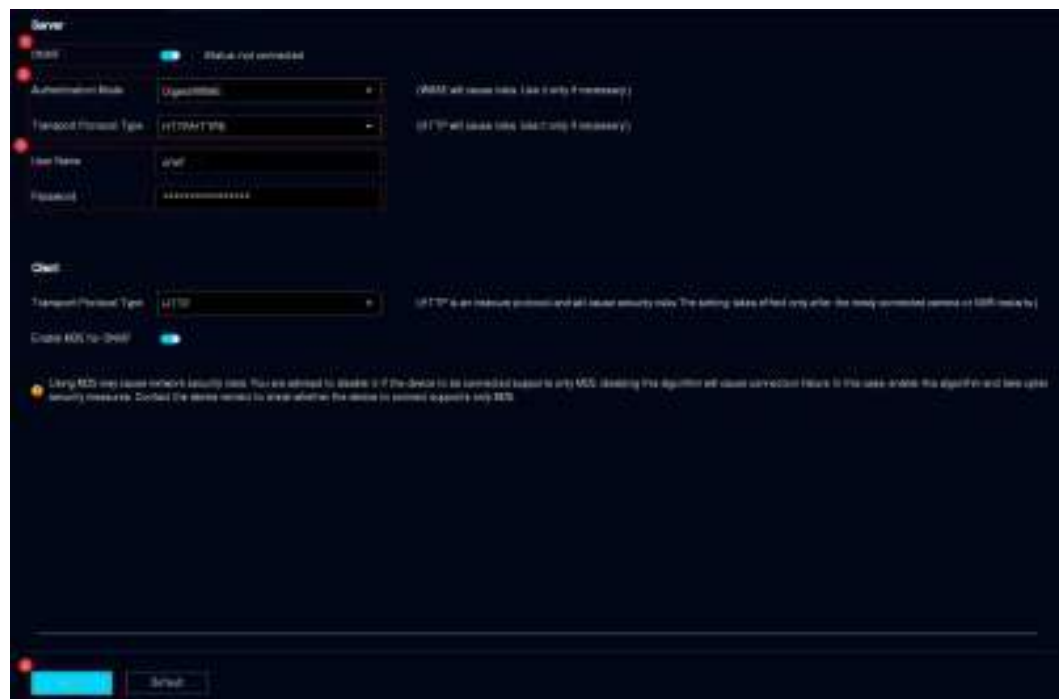


Table 3-19 Parameter/Button description

Area	Parameter /Button	Description
Server	ONVIF	Indicates whether to enable the ONVIF server. If the HWT-NVR800 is successfully connected to the upper-level video platform, the platform's IP address and connection status will be displayed.
	Authentica tion Mode	ONVIF authentication mode. The default value is Digest_sha256. • Digest_sha256 • Digest • Digest/WSSE • WSSE • None: No authentication is performed, which poses security risks. Exercise caution when selecting this mode. The authentication mode used by the device for connecting to the upper-level video platform must be the same as that supported by the upper-level video platform. To obtain the authentication mode supported by the upper-level video platform, contact the provider of the upper-level video platform.
	Transport Protocol Type	Transmission protocol for connecting the device to the upper-level video platform. The value must be the same as the transmission protocol configured for the upper-level video platform. • HTTP/HTTPS • HTTPS • HTTP HTTP has security risks. If you select this option, the system displays a message indicating that the system is prone to attacks. HTTP/HTTPS is recommended.
	User Name	User name and password for connecting the HWT-NVR800 to the ONVIF server. NOTE You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.
	Password	
Client	Transport Protocol Type	Transmission protocol for connecting the device to the lower-level device. The value must be the same as the transmission protocol configured for the lower-level device. • HTTPS • HTTP

Area	Parameter /Button	Description
	Enable MD5 for ONVIF	- Using the MD5 algorithm will cause cyber security risks. You are advised to disable it. If the device to be connected supports only the MD5 algorithm, disabling this algorithm will cause connection failure. In this case, you need to perform cyber security controls after enabling this algorithm. - Contact the device vendor to check whether the device to be connected supports only the MD5 algorithm.
-	Apply	Applies the parameter settings.
-	Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

----End

Setting Decoder Parameters

Step 1 Log in to the IP MATRIX CLIENT, as shown in Figure 3-185.

The default user name and password are **admin** and **12345**, respectively.

Figure 3-185 Logging In to the IP MATRIX CLIENT



Step 2 Choose **Workbench > Configuration > Cameras**.

Step 3 Connect an HWT-NVR800, as shown in Figure 3-186.

1. **User Name/Password:** Enter the user name and password for logging in to the HWT-NVR800 through ONVIF.
2. **Ip Address:** Enter the local IP address (WAN port) of the HWT-NVR800.
3. **Service Address:** service address. The port number is 443.

Figure 3-186 Connecting an HWT-NVR800



Step 4 Connect cameras, as shown in Figure 3-187.

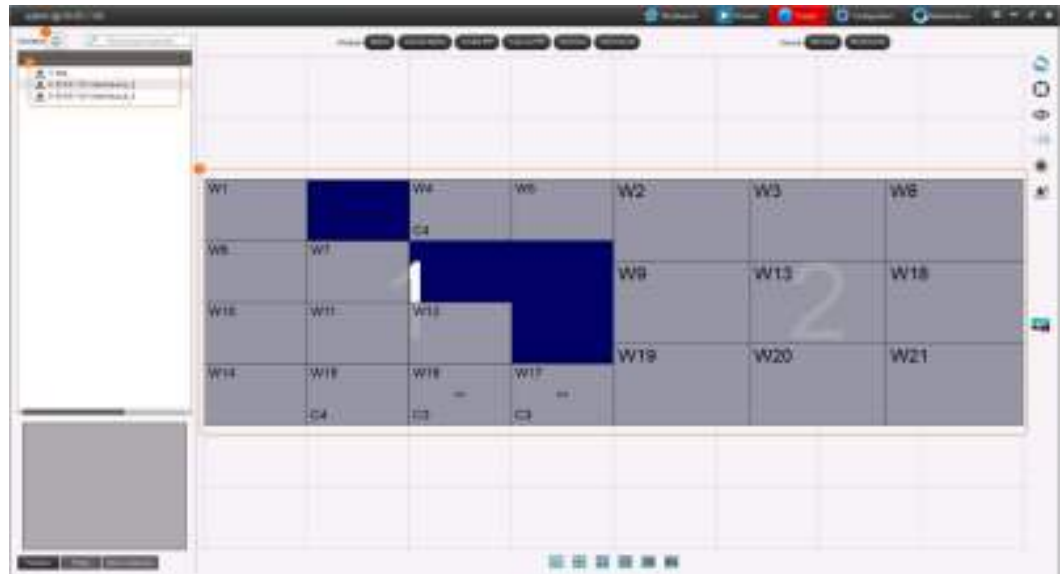
Figure 3-187 Connecting cameras



Step 5 Configure a video wall, as shown in Figure 3-188.

1. Select a video wall.
2. Push video to the video wall.

Figure 3-188 Configuring a video wall



----End

3.13.3 Access Through RTSP

Setting HWT-NVR800 Parameters

- Step 1** Right-click the screen.
- Step 2** Choose **Configuration > Network > Platform Connection > RTSP > Server**.
- Step 3** Set the **Authentication Mode** to **MD5 Authentication**, as shown in Figure 3-189.



Step 1 Log in to the IP MATRIX CLIENT, as shown in Figure 3-190.

The default user name and password are **admin** and **12345** respectively.

Step 3 Add cameras, as shown in Figure 3-191.

NOTE

The video stream pulling format is as follows: `rtsp://A:B@C:D/rtsp/streaming?channel=E&subtype=F`

- **A**: user name for logging in to the HWT-NVR800
- **B**: password for logging in to the HWT-NVR800
- **C**: IP address of the HWT-NVR800
- **D**: port number. The default port number is 443.
- **E**: channel ID of the camera on the HWT-NVR800
- **F**: video encoding parameter. The value **0** indicates primary streams, and the value **1** indicates secondary streams.

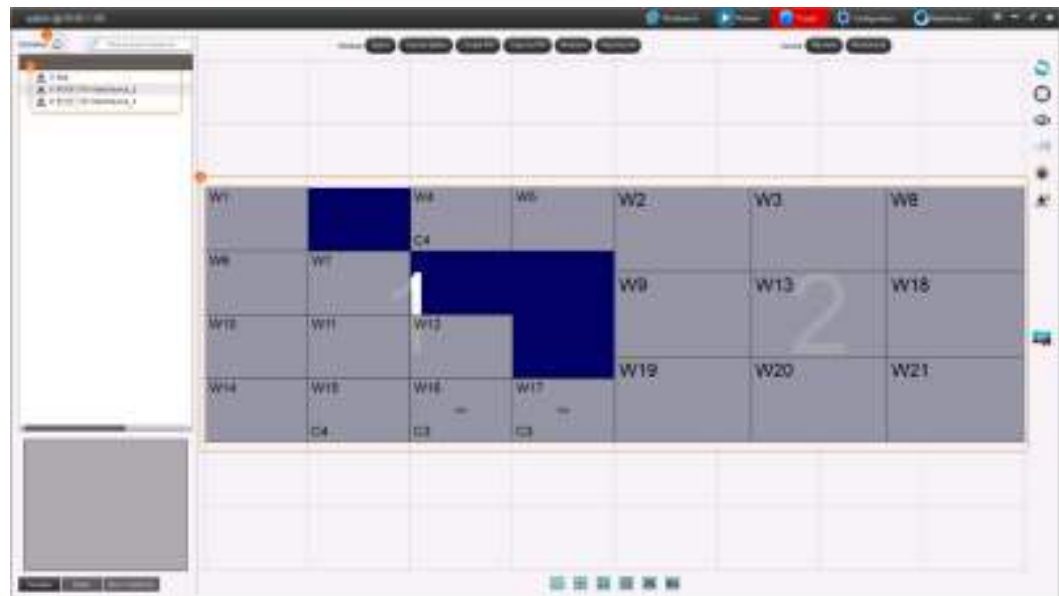
Figure 3-191 Adding cameras



Step 4 Configure a video wall, as shown in Figure 3-192.

1. Select a video wall.
2. Push video to the video wall.

Figure 3-192 Configuring a video wall



----End

4 System Maintenance

4.1 Device Upgrade

4.1.1 Upgrading the HWT-NVR800

4.1.1.1 Precautions

Description

- After the software version is upgraded from V100R019C50 to 9.0.0, you need to format common partitions of hard disks. Then, target lists and snapshot lists will be cleared.
- After the software version is upgraded from V100R019C50 to 9.0.0, the maps loaded for trajectory search are cleared.

Solution

- Back up the dynamic library
 - a. Insert the USB flash drive into the HWT-NVR800.
 - b. Back up target records.

Right-click the screen.

Choose **Intelligence > Intelligent Settings > Target Recognition > List Management**.

Click **Edit** and export the target records in the group to the USB flash drive.
 - c. Upgrade the HWT-NVR800.
 - Upgrade the HWT-NVR800 using the cloud service by referring to 4.1.1.2 Upgrade Using the Cloud Service.

The software version will be upgraded from the current version to 9.0.0.
 - Upgrade the HWT-NVR800 from the USB flash drive by referring to 4.1.1.3 Upgrade Using a USB Flash Drive.
 - Upgrade the HWT-NVR800 from the computer by referring to 4.1.1.4 Upgrade Using a Computer.
 - d. Format a hard disk.

Right-click the screen.

Choose **Configuration > Storage > Disk**.

Click **Format Hard Disk**.

- If you want to retain existing recordings, format common partitions only.
- If you want to clear all data, format the entire hard disk.

e. Import target records.

Right-click the screen.

Choose **Intelligence > Intelligent Settings > Target Recognition > List Management**.

Click **Edit** and import the target records from the USB flash drive to the list.

NOTE

The databases of the V100R019C50 and 9.0.0 versions are incompatible. Therefore, backup lists cannot be directly imported.

- Back up maps

The previously loaded maps cannot be exported to a USB flash drive. After the upgrade, you need to reload maps.

4.1.1.2 Upgrade Using the Cloud Service

Prerequisites

The HWT-NVR800 has been connected to the cloud service.

Upgrade Restriction

The software version cannot be rolled back after the upgrade.

Upgrade on the LDU

Step 1 Right-click the screen.

Step 2 Choose **Configuration > System Maintenance > Upgrade**.

Step 3 Click **Check Version**, as shown in Figure 4-1.

If the cloud service displays a message indicating that a new software version is available for the HWT-NVR800, you can upgrade the HWT-NVR800 as required.

Figure 4-1 Upgrading the HWT-NVR800



NOTE

The upgrade takes about 2 to 3 minutes.

During the upgrade, do not power off the HWT-NVR800 or disconnect the HWT-NVR800 from the network. Otherwise, the HWT-NVR800 program may be damaged and cannot be restarted.

----End

Upgrade on a Computer

Step 1 Enter the HWT-NVR800 IP address in the address box of a browser and press **Enter**.

Step 2 Choose **Configuration > System Maintenance > System Upgrade**.

Step 3 Click **Check Version**, as shown in Figure 4-2.

If the cloud service displays a message indicating that a new software version is available for the HWT-NVR800, you can upgrade the HWT-NVR800 as required.

Figure 4-2 Upgrading the HWT-NVR800



NOTE

The upgrade takes about 2 to 3 minutes.

During the upgrade, do not power off the HWT-NVR800 or close the browser. Otherwise, the HWT-NVR800 program may be damaged and cannot be restarted.

----End

4.1.1.3 Upgrade Using a USB Flash Drive

Prerequisites

The HWT-NVR800 upgrade package obtained from device vendors has saved to a USB flash drive.

Upgrade Restriction

The software version cannot be rolled back after the upgrade.

Context

The HWT-NVR800 can be upgraded using a USB flash drive in either of the following ways:

- U-Boot Upgrade

Save the upgrade package to **uboot_upgrade** (root directory on the USB flash drive) and restart the HWT-NVR800. During the restart, the HWT-NVR800 automatically reads the upgrade file in the root directory to perform the upgrade.

The following upgrade packages are used in this scenario:

- **uboot_HWT-NVR800-A01XX_XX.sw**: used for upgrading the HWT-NVR800 with one disk tray.
- **uboot_HWT-NVR800-A02XX_XX.sw**: used for upgrading the HWT-NVR800 with two disk trays.
- **uboot_HWT-NVR800-B04_XX.sw**: used for upgrading the non-PoE HWT-NVR800 with four disk trays.

- Manual upgrade

Log in to the LDU and use the upgrade file in the directory on the USB flash drive to perform the upgrade.

The following upgrade packages are used in this scenario:

- **HWT-NVR800-A01XX_XX.sw**: used for upgrading the HWT-NVR800 with one disk tray.
- **HWT-NVR800-A02XX_XX.sw**: used for upgrading the HWT-NVR800 with two disk trays.
- **HWT-NVR800-B04_XX.sw**: used for upgrading the non-PoE HWT-NVR800 with four disk trays.

U-Boot Upgrade

The following describes how to upgrade the HWT-NVR800 with one disk tray. The upgrade methods for other HWT-NVR800s with multiple disk trays are similar.

Step 1 Create a **uboot_upgrade** directory in the root directory on a USB flash drive.

Step 2 Obtain the upgrade package of the HWT-NVR800 with one disk tray and decompress it. Double-click the **hdvrugrade** directory extracted from the upgrade package.

Step 3 Change the file name **uboot_HWT-NVR800-A01XX_XX.sw** to **uboot_HWT-NVR800-A01XX_XX_W.sw**.

Step 4 Copy the **uboot_HWT-NVR800-A01XX_XX_W.sw** file to the **uboot_upgrade** directory on the USB flash drive.

The file on the USB flash drive must be of the FAT32 type. Otherwise, the upgrade will fail.

Step 5 Insert the USB flash drive into the HWT-NVR800.

NOTE

- If a wireless Bluetooth mouse or keyboard is connected to the HWT-NVR800, remove it. Otherwise, the upgrade may fail.
- Insert the USB flash drive into the USB2.0 port on the HWT-NVR800. Otherwise, the upgrade may fail.
- The HWT-NVR800 has one USB 2.0 port on the front panel and the other on the rear panel.

- The USB 2.0 ports on the HWT-NVR800 are white with the silkscreen , as shown in Figure 4-3.

Figure 4-3 Rear panel (HWT-NVR800 with two disk trays)



Step 6 Restart the HWT-NVR800.

The HWT-NVR800 automatically upgrades. The upgrade takes about 5 to 10 minutes.

NOTE

During the upgrade, do not power off the HWT-NVR800 or remove the USB flash drive from the HWT-NVR800. Otherwise, the HWT-NVR800 program may be damaged and cannot be restarted.

----End

Manual Upgrade

Step 1 Right-click the screen.

Step 2 Choose **Configuration > System Maintenance > Upgrade**.

Step 3 Upgrade the HWT-NVR800, as shown in Figure 4-4.

- The file path can contain a maximum of 255 characters.
- When selecting the upgrade file, you need to enter the password of the **admin** user.

Figure 4-4 Upgrading the HWT-NVR800



NOTE

The upgrade takes about 2 to 3 minutes.

During the upgrade, do not power off the HWT-NVR800 or remove the USB flash drive from the HWT-NVR800. Otherwise, the HWT-NVR800 program may be damaged and cannot be restarted.

----End

4.1.1.4 Upgrade Using a Computer

Prerequisites

The HWT-NVR800 upgrade package obtained from device vendors has been saved to a computer.

- **HWT-NVR800-A01XX_xx.sw**: used for upgrading the HWT-NVR800 with one disk tray.
- **HWT-NVR800-A02XX_xx.sw**: used for upgrading the HWT-NVR800 with two disk trays.
- **HWT-NVR800-B04_xx.sw**: used for upgrading the non-PoE HWT-NVR800 with four disk trays.

Upgrade Restriction

The software version cannot be rolled back after the upgrade.

Procedure

Step 1 Enter the HWT-NVR800 IP address in the address box of a browser and press **Enter**.

Step 2 Choose **Configuration > System Maintenance > System Upgrade**.

Step 3 Upgrade the HWT-NVR800, as shown in Figure 4-5.

The file path can contain a maximum of 255 characters.

When selecting the upgrade file, you need to enter the password of the **admin** user.

Figure 4-5 Upgrading the HWT-NVR800



NOTE

The upgrade takes about 2 to 3 minutes.

During the upgrade, do not power off the HWT-NVR800 or close the browser. Otherwise, the HWT-NVR800 program may be damaged and cannot be restarted.

----End

4.1.2 Upgrading a Camera

4.1.2.1 Upgrade Using the Cloud Service

Prerequisites

The HWT-NVR800 has been connected to the cloud service.

Upgrade Restrictions

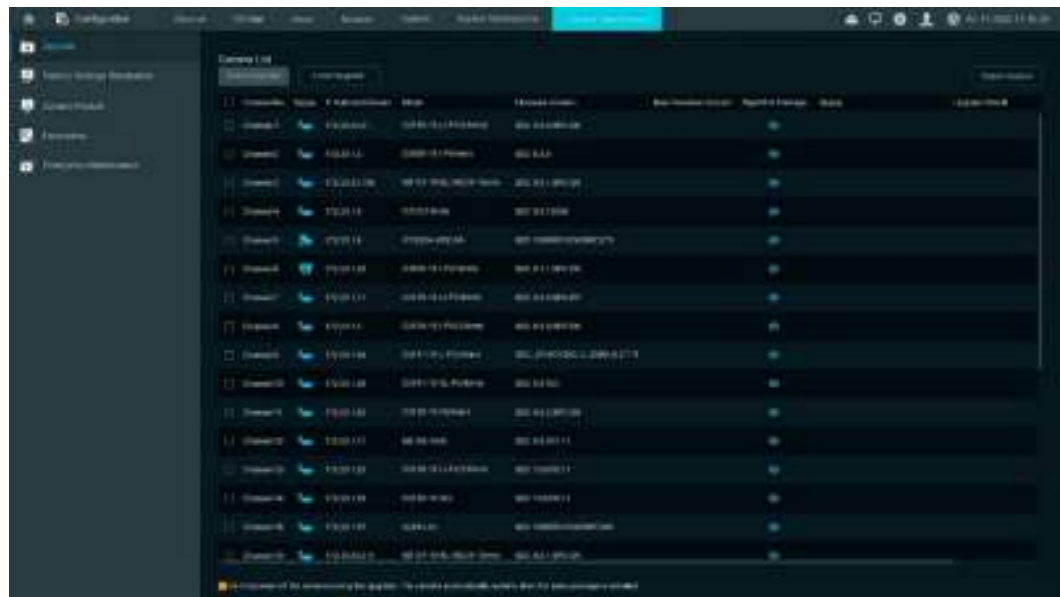
During the upgrade of a camera that has a third-party algorithm installed, only the basic package is upgraded, and the self-developed algorithm package is not upgraded.

Upgrade on the LDU

- Step 1** Right-click the screen.
- Step 2** Choose **Configuration > Camera Maintenance > Upgrade**.
- Step 3** Click **Check Version**, as shown in Figure 4-6.

If the cloud service displays a message indicating that a new software version is available for the HWT-NVR800, users can upgrade the HWT-NVR800 based on the site requirements.

Figure 4-6 Upgrading a camera



NOTE

The upgrade takes about 2 to 3 minutes.

During the upgrade, do not power off the HWT-NVR800 or camera or remove the USB flash drive from the HWT-NVR800. Otherwise, the camera program may be damaged and cannot be started again.

----End

4.1.2.2 Upgrade Using a USB Flash Disk

Prerequisites

The camera upgrade package has been obtained and saved to a USB flash drive. Obtain the camera upgrade package from the official website of related products.

Procedure

- Step 1** Insert the USB flash drive into the HWT-NVR800.
- Step 2** Right-click the screen.
- Step 3** Choose **Configuration > Camera Maintenance > Upgrade**.
- Step 4** Upgrade a camera, as shown in Figure 4-7.

1. Select an installation package. Enter the password of the **admin** user.

NOTE

The installation package path can contain a maximum of 255 characters.

2. Select the required installation package. You can select the ZIP package that contains the basic software package and algorithm packages for 10.0.0 and later versions. Table 4-1 describes the common installation packages.

Upgrade the basic package and then the algorithm package.

Table 4-1 Camera installation packages

Package	Installation Package Type
SDC_XXX.bin	Basic package.
SDC_XXX_facedt-dl.bin	Target and person detection algorithm package.
SDC_XXX_face-rec.bin	Target recognition algorithm package.
SDC_XXX_vhd.bin	Object classification algorithm.
SDC_XXX_image- alg.bin SDC_XXX_scene- adapt.bin	Scene adaptation algorithms. • For 9.0.0 and later versions, use SDC_XXX_image- alg.bin. • For versions earlier than 9.0.0, use SDC_XXX_scene- adapt.bin.
SDC_XXX_Qlen- CrowdCnt.bin	Queue length/crowd density detection algorithm package.
SDC_XXX_beh.bin	Algorithm package dedicated to BEI perimeter intrusion detection cameras.
SDC_XXX_emie.bin	Algorithm package dedicated to detect electric bikes in elevators.
SDC_XXX.zip	ZIP package that contains the basic software package and algorithm packages.

Package	Installation Package Type
SDC_XXX folder	Folder that contains the .zip basic software package and .zip algorithm package.

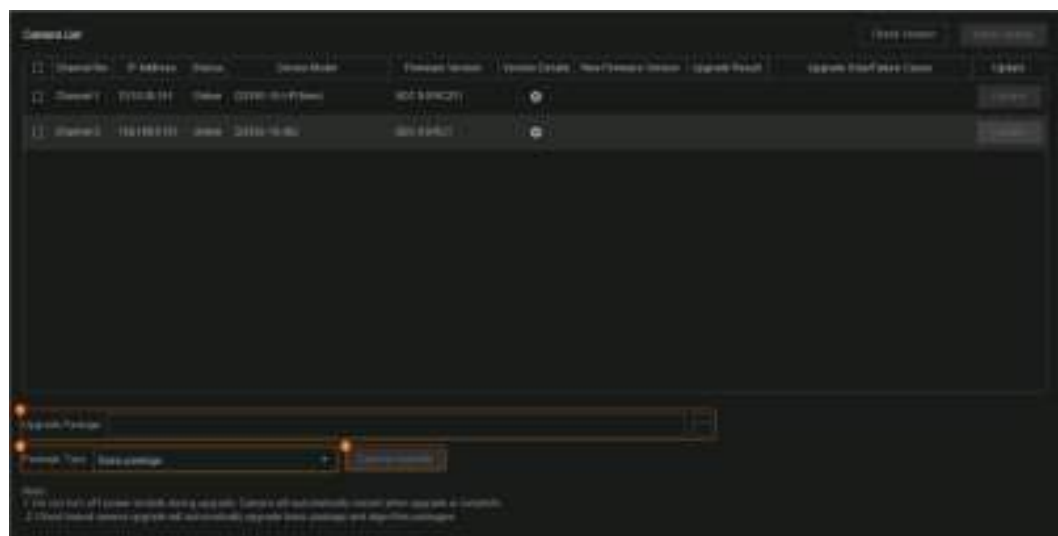
3. Click **Camera Upgrade**.

NOTE

The installation takes about 2 to 3 minutes.

During the upgrade, do not power off the HWT-NVR800 or camera or remove the USB flash drive from the HWT-NVR800. Otherwise, the camera program may be damaged and cannot be started again.

Figure 4-7 Upgrading a camera



----End

4.2 System Backup

4.2.1 Data Backup

To prevent data loss caused by misoperations or system faults, you are advised to periodically back up data.

4.2.1.1 Exporting System Parameters

Context

To avoid parameter conflicts, the following system parameters cannot be exported.

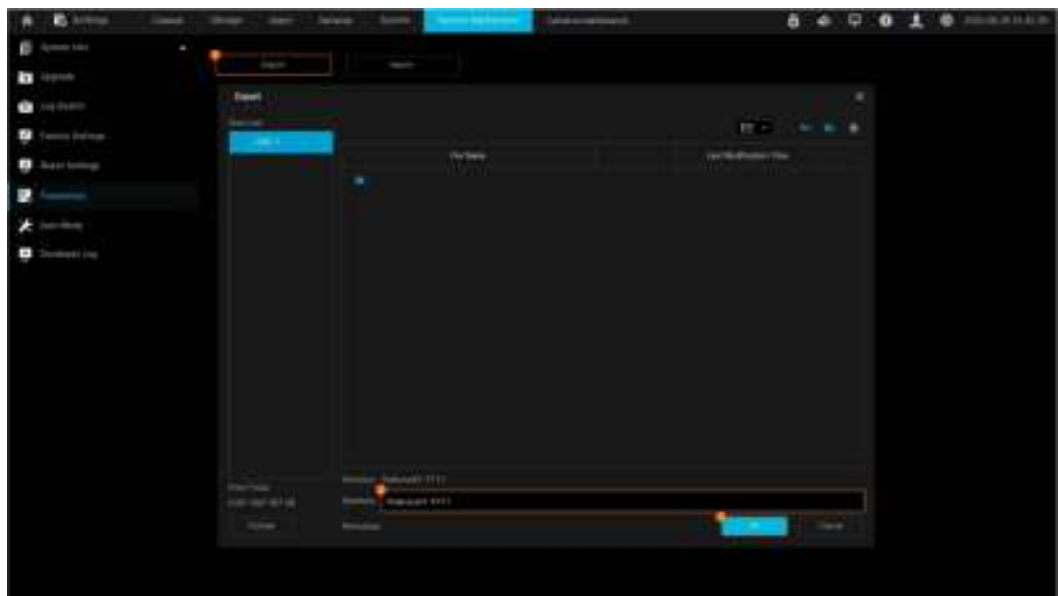
- Device name.
- Port settings, including the HTTP and HTTPS ports.

- Basic settings on the **Network** page, including DHCP, IP address, subnet mask, gateway, IPv6 address, IPv6 gateway, DDNS, as well as IP address and subnet mask used for internal connection.

Procedure

- Step 1** Prepare a USB flash drive with more than 1 GB available space and insert it into the USB port on the HWT-NVR800.
- Step 2** Log in to the LDU as the **admin** user.
- Step 3** Right-click the screen.
- Step 4** Choose **Configuration > System Maintenance > Parameters**.
- Step 5** Export parameters, as shown in Figure 4-8.

Figure 4-8 Exporting parameters

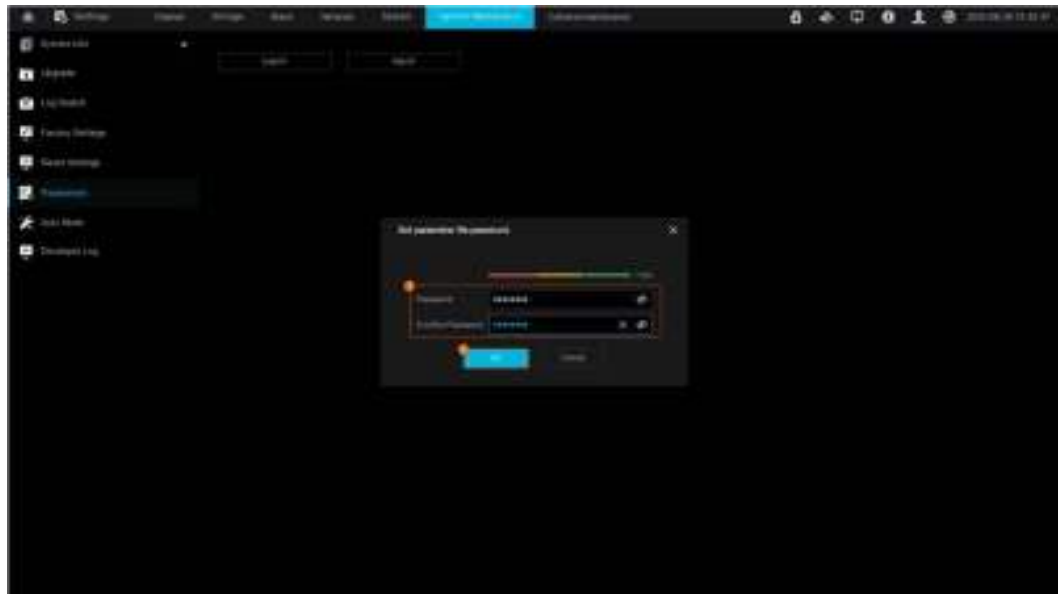


- Step 6** Set a password for the parameter file, as shown in Figure 4-9.

NOTE

You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.

Figure 4-9 Set parameter file password



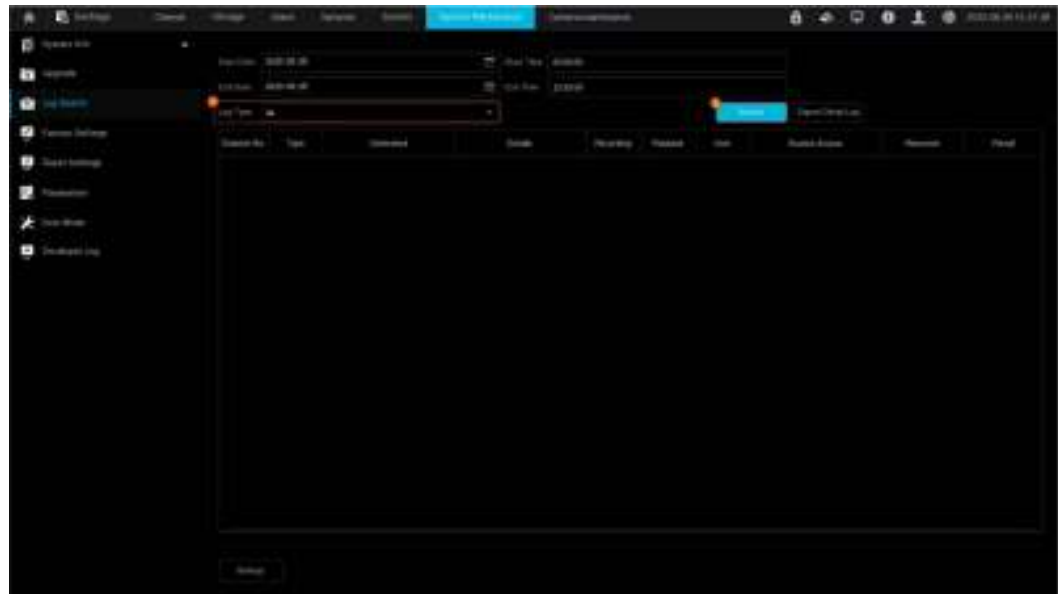
----End

4.2.1.2 Backing Up Logs

Procedure

- Step 1** Prepare a USB flash drive with more than 1 GB available space and insert it into the USB port on the HWT-NVR800.
- Step 2** Log in to the LDU as the **admin** user.
- Step 3** Right-click the screen.
- Step 4** Choose **Configuration > System Maintenance > Log Search**.
- Step 5** Set the search criteria and click **Search**, as shown in Figure 4-10.

Figure 4-10 Searching for logs

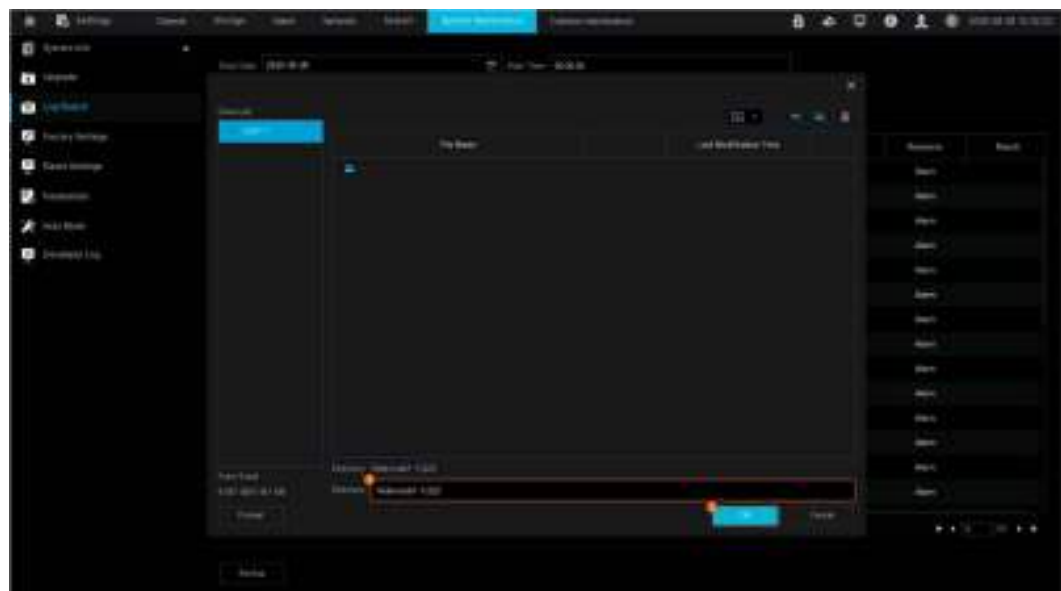


Step 6 Click **Backup**.

Step 7 Enter the password of the **admin** user.

Step 8 Select the file directory on the USB flash drive, as shown in Figure 4-11.

Figure 4-11 Backing up logs



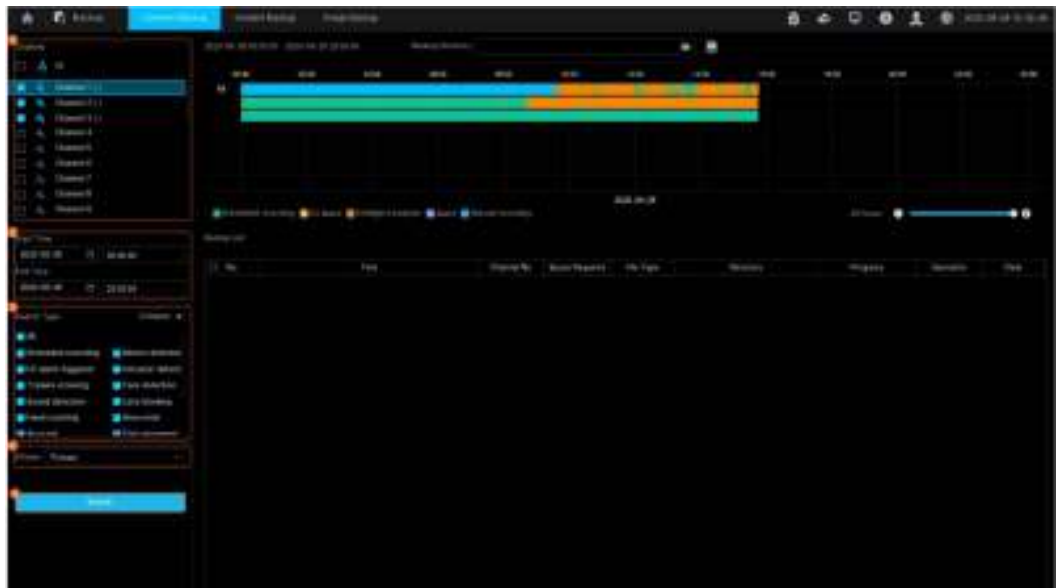
----End

4.2.1.3 Backing Up Common Recordings

Procedure

- Step 1** Prepare a USB flash drive with more than 1 GB available space and insert it into the USB port on the HWT-NVR800.
- Step 2** Log in to the LDU as the **admin** user.
- Step 3** Right-click the screen.
- Step 4** Choose **Backup > Common Backup**.
- Step 5** Set **Channel**, **Start Time**, **End Time**, **Search Type**, and **Stream**, and click **Search**, as shown in Figure 4-12.

Figure 4-12 Searching for common recordings



- Step 6** Select a backup directory, click , set a backup encryption password, and click **Start Backup**, as shown in Figure 4-13.

The backup directory can contain a maximum of 128 characters.

NOTE

You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.

Figure 4-13 Backing up common recordings



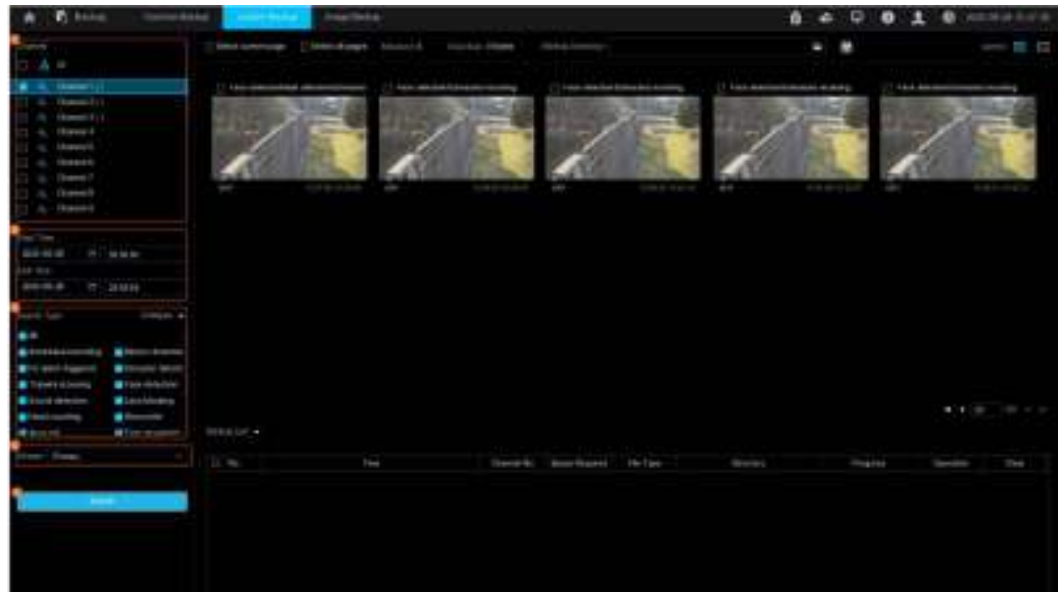
----End

4.2.1.4 Backing Up Incident Recordings

Procedure

- Step 1** Prepare a USB flash drive with more than 1 GB available space and insert it into the USB port on the HWT-NVR800.
- Step 2** Log in to the LDU as the **admin** user.
- Step 3** Right-click the screen.
- Step 4** Choose **Backup > Incident Backup**.
- Step 5** Set **Channel**, **Start Time**, **End Time**, **Search Type**, and **Stream**, and click **Search**, as shown in Figure 4-14.

Figure 4-14 Searching for incident recordings



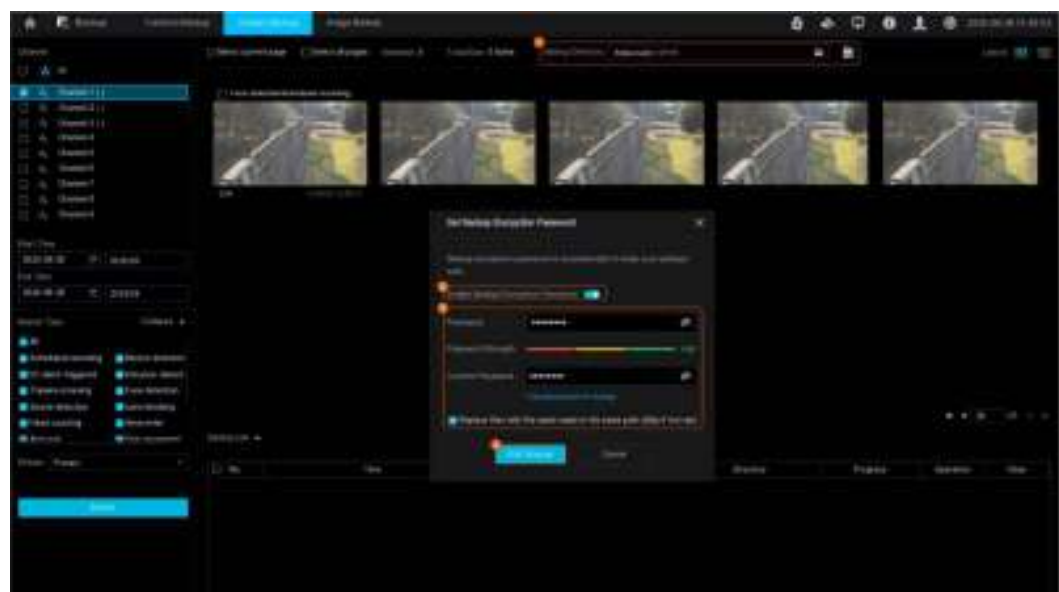
Step 6 Select a backup directory, click , set a backup encryption password, and click **Start Backup**, as shown in Figure 4-15.

The backup directory can contain a maximum of 128 characters.

NOTE

You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.

Figure 4-15 Backing up incident recordings



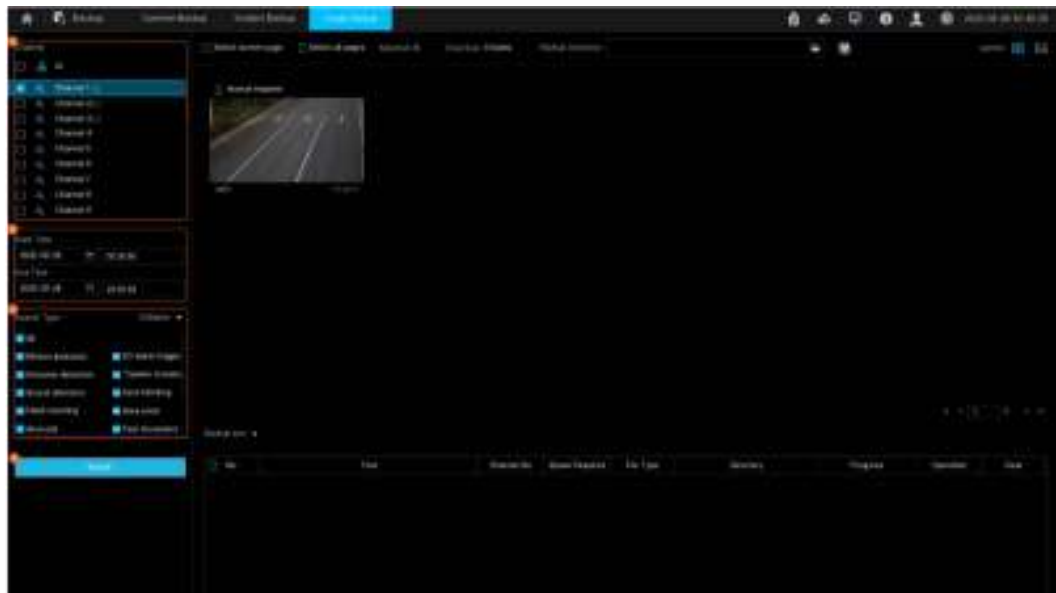
----End

4.2.1.5 Backing Up Images

Procedure

- Step 1** Prepare a USB flash drive with more than 1 GB available space and insert it into the USB port on the HWT-NVR800.
- Step 2** Log in to the LDU as the **admin** user.
- Step 3** Right-click the screen.
- Step 4** Choose **Backup > Image Backup**.
- Step 5** Set **Channel**, **Start Time**, **End Time**, and **Search Type**, and click **Search**, as shown in Figure 4-16.

Figure 4-16 Searching for images



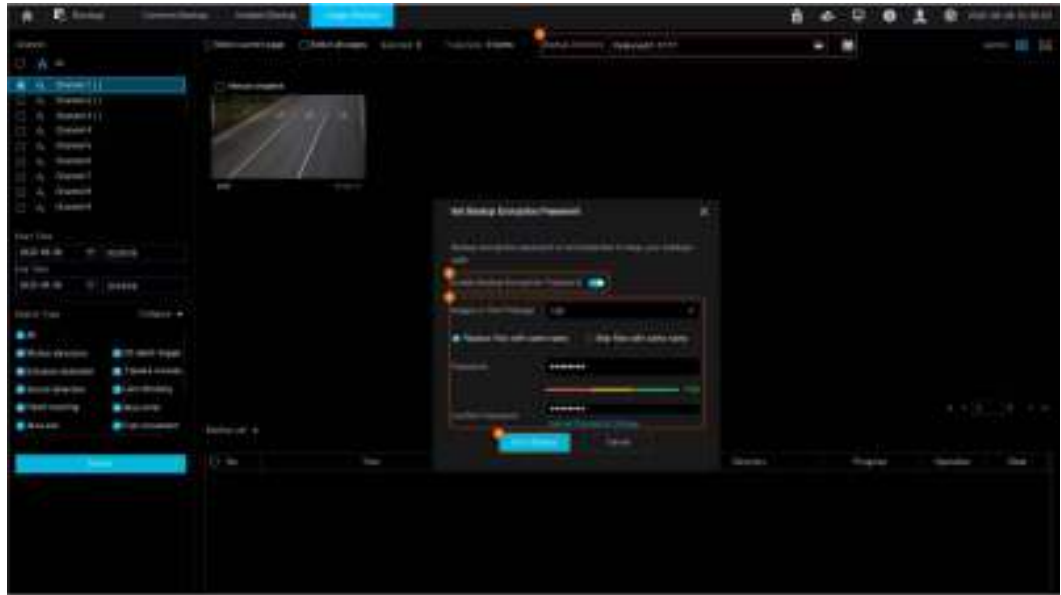
- Step 6** Select a backup directory, click , set a backup encryption password, and click **Start Backup**, as shown in Figure 4-17.

The backup directory can contain a maximum of 128 characters.

 NOTE

Customize the password. For details about the requirements on the password complexity, see 6.1.4.3 Password Maintenance Suggestions.

Figure 4-17 Backing up images



----End

4.2.2 Data Restoration

4.2.2.1 Importing System Parameters

Context

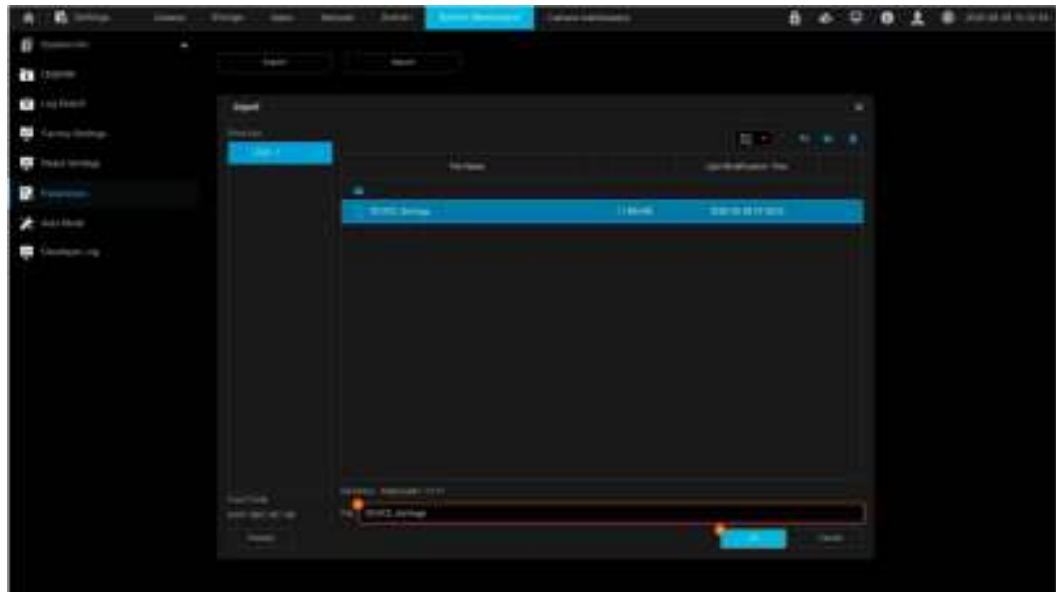
The exported system parameters do not contain the following parameters. Therefore, these parameters need to be manually set after other parameters are imported.

- Device name.
- Port settings, including the HTTP, media, and HTTPS ports.
- Basic settings on the **Network** page, including DHCP, IP address, subnet mask, gateway, IPv6 address, IPv6 gateway, DDNS, as well as IP address and subnet mask used for internal connection.

Procedure

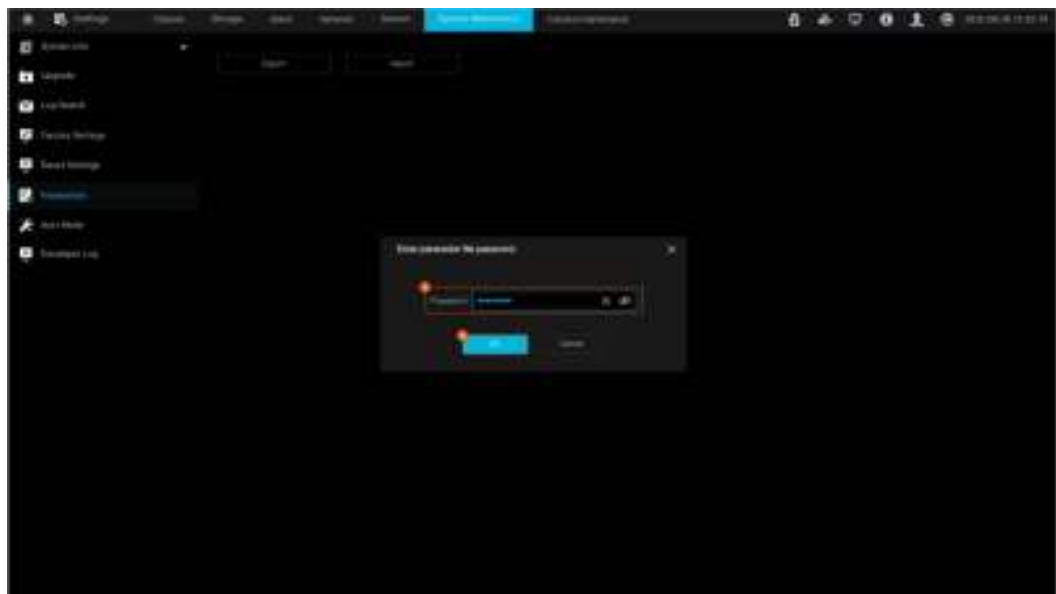
- Step 1** Insert the USB flash drive that stores the system parameter file into the USB port.
- Step 2** Log in to the LDU as the **admin** user.
- Step 3** Right-click the screen.
- Step 4** Choose **Configuration > System Maintenance > Parameters**.
- Step 5** Click **Import**.
- Step 6** Select the exported parameter file on the USB flash drive, as shown in Figure 4-18.

Figure 4-18 Importing the parameter file



Step 7 Enter the password of the parameter file, as shown in Figure 4-19.

Figure 4-19 Entering the password



The system automatically restarts after the import is complete.

Step 8 Configure basic network information, including the IP address and port, by referring to 3.1 Startup Wizard.

----End

4.2.2.2 Restoring Factory Settings

Context

If you press and hold down the **RESET** button on the rear panel for 10 seconds, factory settings will be restored. Deleted data cannot be restored. Exercise caution when performing this operation.

Procedure

- Step 1** Set the parameters for restoring the HWT-NVR800 to factory settings.
1. Log in to the LDU as the **admin** user.
 2. Right-click the screen.
 3. Choose **Configuration > System Maintenance > Reset Settings**.
 4. Set the mechanism for restoring the HWT-NVR800 to factory settings.

Figure 4-20 Parameter/Button description

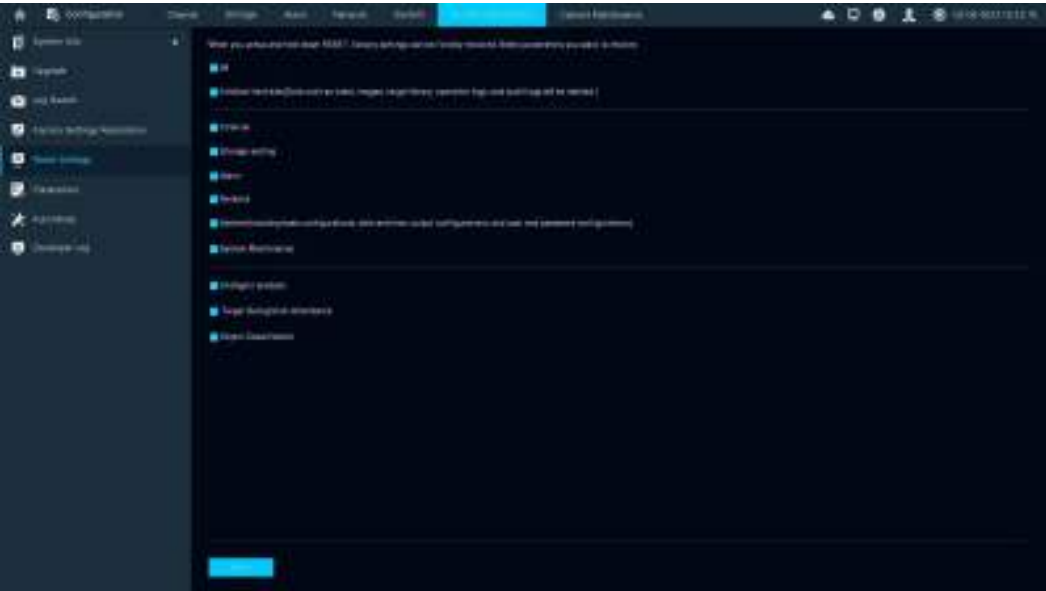


Table 4-2 Parameter/Button description

Parameter	Description
All	If you select this item, when you hold down the reset button on the device, the device will automatically clear all the system parameter settings. This item is selected by default.

Parameter	Description
Initialize hard disk	Indicates whether to initialize the hard disk during factory setting restoration. If this item is selected, when you hold down the reset button, the device automatically deletes all data such as recordings, images, target lists, and logs from the hard disk. Deleted data cannot be restored. Exercise caution when performing this operation. This item is selected by default.
Channel	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Channel page.
Storage setting	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Storage page.
Alarm	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Alarm page.
Network	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Network page.
System (Including basic configurations, date and time, output configurations, and user and password configurations)	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the System page.
System Maintenance	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the System Maintenance page.
Intelligent analysis	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Intelligent Settings page.
Target Recognition Attendance	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Target Recognition Attendance page.
Object Classification	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Object Classification page.
Apply	Applies the parameter settings.

- Step 2** Press and hold down the reset button on the rear panel for more than 10 seconds using a needle-type object, as shown in Figure 4-21. **Ensure that the device is powered on when you press and hold down the reset button.**

Figure 4-21 Rear panel



- When the device beeps four times, the system restores the factory settings.
- It takes about 5 minutes to restore factory settings.

----End

4.3 Parts Replacement

4.3.1 Replacing Hard Disks

Prerequisites

- Tools such as a Phillips screwdriver (PH2) are ready.
- New hard disks are available.

Context

- Figure 4-22 shows the hard disk status indicator on the HWT-NVR800 with 1, 2, or 4 disk trays.
 - When all hard disks of the HWT-NVR800 are faulty, the hard disk status indicator on the front panel is off.
 - When one hard disk of the HWT-NVR800 is faulty, the hard disk status indicator on the front panel is still on. However, some recording files are lost or fail to be stored.

Figure 4-22 Hard disk status indicator



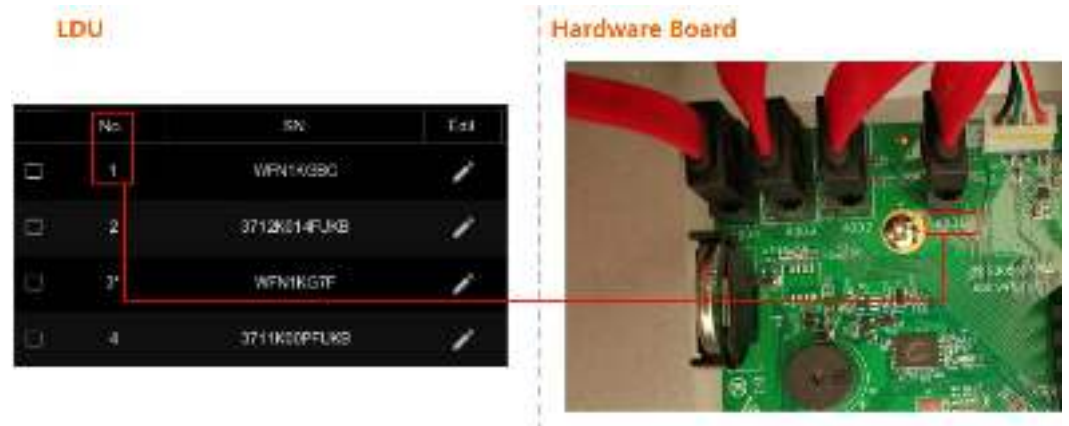
Procedure

- Step 1** Locate the faulty hard disk.

1. Log in to the LDU as the **admin** user.
2. Choose **Configuration > Storage > Disk**.
3. Check the **Status** column and locate the faulty hard disk.
4. Check the **No.** column of the faulty hard disk and obtain its number.
 - Figure 4-23 shows the disk tray IDs of the HWT-NVR800 with 1, 2, or 4 disk trays.

The number of a hard disk on the LDU is the same as the ID of the disk tray into which the hard disk is inserted using a data cable.

Figure 4-23 Disk tray IDs of the HWT-NVR800 with 1, 2, or 4 disk trays



Step 2 Replace the faulty disk.

1. Power off and unplug the HWT-NVR800.
 2. Replace the faulty hard disk with a new one.
- Remove the faulty hard disk and install a new one.

For details about how to unpack the HWT-NVR800 and install hard disks, see the *Quick Start* delivered with the HWT-NVR800.

Step 3 Plug in and power on the HWT-NVR800.

Step 4 Check whether the hard disk status indicator on the front panel of the HWT-NVR800 is normal.

- If the hard disk status indicator is steady green or blinking green, the faulty hard disk is successfully replaced.
- If the hard disk status indicator is off, the hard disk port may not be in good contact or the hard disk may be faulty. In this case, rectify the fault accordingly.

Step 5 View hard disk information.

1. Log in to the LDU as the **admin** user.
2. Choose **Configuration > Storage > Disk**, and check whether information about the new hard disk is displayed.
 - If so, the hard disk is successfully replaced.

- If not, the hard disk port may not be in good contact or the hard disk may be faulty. In this case, rectify the fault accordingly.
3. Select the new hard disk and click **Format Hard Disk**.

 NOTE

- For details about the hard disk compatibility, see the *HWT-NVR800 9.0.0 Compatibility List*.
- For compatibility purposes, you are advised to use only hard disks listed in the *HWT-NVR800 Compatibility List*.

----End

4.3.2 Replacing the HWT-NVR800

Prerequisites

- Tools such as a Phillips screwdriver (PH2) are ready.
- The new HWT-NVR800 is available.

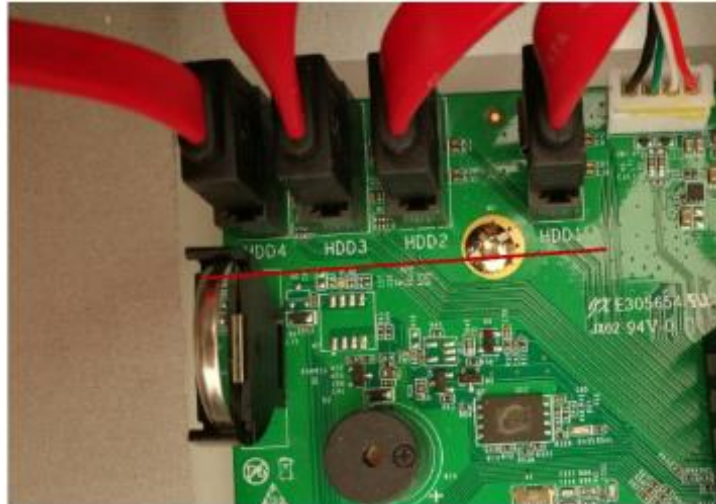
Note

When replacing the HWT-NVR800, ensure that the device models and software versions before and after the replacement are the same.

Procedure

Step 1 Perform the following operations on the **faulty HWT-NVR800**.

1. Back up the system data. If the device cannot be powered on or the USB flash drive cannot be identified, skip this step.
For details about how to back up system data, see 4.2.1.1 Exporting System Parameters.
2. Back up the target list data. For details about how to back up target list data, see 3.6.3 List ManagementList Management.
3. Turn off and unplug the faulty HWT-NVR800.
Removing hard disks when the HWT-NVR800 is powered on may cause data loss.
4. Remove hard disks. During the removal, record the slot ID of each hard disk, so that you can install the hard disks to the same slots of the new NVR.
For details about how to remove hard disks, see the *Quick Start* delivered with the HWT-NVR800.



Step 2 Perform the following operations on the new **HWT-NVR800**.

1. Install the removed hard disks to the same slots in the new HWT-NVR800.
2. Plug in and power on the new HWT-NVR800.
3. Check whether the power indicator and hard disk status indicator on the front panel of the HWT-NVR800 is normal.

Table 4-3 Indicator description

No.	Indicator	Description
1	Power status indicator	- Steady on: The device is working properly. - Off: The device is stopped or powered off.
2	Hard disk status indicator	- Steady on: The hard disk is properly connected but no data is being read from or written to the hard disk. - Blinking: Data is being read from or written to the hard disk. - Off: The hard disk is faulty or not detected.

Step 3 On the wizard-based configuration page that is displayed, enter information such as the login user password, HWT-NVR800 IP address, and information of cameras to be connected.

NOTE

- If the recording files on the original hard disks do not need to be retained, format all hard disks.
- **If you want to retain the recording files on the original hard disks, do not format hard disks. Otherwise, the recording files will be lost.**
- After a device is replaced, the list is unavailable. You need to format the general partition of the hard disk to generate a new list.

Step 4 Set system parameters.

- If the system parameters have been backed up, import the parameter backup file.
- If the target list data files have been backed up, import the target list data file. For details, see 3.6.3 List ManagementList Management.

- If the system parameters are not backed up, manually set related parameters and ensure that the parameters of the new HWT-NVR800 are the same as those of the faulty HWT-NVR800.

Step 5 View historical recordings.

----End

4.4 Hard Disk Expansion and External Connection

4.4.1 Expanding the Hard Disk Capacity

Prerequisites

- Tools such as a Phillips screwdriver (PH1) are ready.
- New hard disks are available.

Context

Table 4-4 lists the maximum number of hard disks supported by different HWT-NVR800 models.

- If the number of hard disks on the HWT-NVR800 does not reach the maximum, you can expand the hard disk capacity by referring to this section.
- The total capacity of the HWT-NVR800 is the sum of the capacity of all hard disks.

For example, after a 6 TB hard disk is added to the HWT-NVR800 that already has a 4 TB hard disk, the total capacity of the HWT-NVR800 is 10 TB.

For details about the maximum number of hard disks supported by each HWT-NVR800 model, see the *HWT-NVR800 9.0.0 Compatibility List*.

For compatibility purposes, you are advised to use only hard disks listed in the *HWT-NVR800 Compatibility List*.

Table 4-4 Mappings

Model	Maximum Hard Disk Quantity
HWT-NVR800-A01	1
HWT-NVR800-A01-04P	1
HWT-NVR800-A02	2
HWT-NVR800-A02-08P	2

Model	Maximum Hard Disk Quantity
HWT-NVR800-A02-16P	2
HWT-NVR800-B04	4
HWT-NVR800-B04D	4

Procedure

Step 1 Power off and unplug the HWT-NVR800.

Step 2 Install new hard disks.

Step 3 For details about how to unpack the chassis and install hard disks, see the *Quick Start* delivered with the HWT-NVR800.

Step 4 Plug in and power on the HWT-NVR800.

Step 5 View hard disk information.

1. Log in to the LDU as the **admin** user.
2. Choose **Configuration > Storage > Disk**, and check whether information about the new hard disks is displayed.
 - If so, the hard disks are successfully replaced.
 - If not, the hard disk ports may not be in good contact or the hard disks may be faulty. In this case, rectify the fault accordingly.
3. Select the new hard disks and click **Format Hard Disk**.

Step 6 Set disk group parameters.

1. Choose **Configuration > Storage > Disk Group**.
2. Set the recording channel in a disk group.

----End

5 References

5.1 Online Help

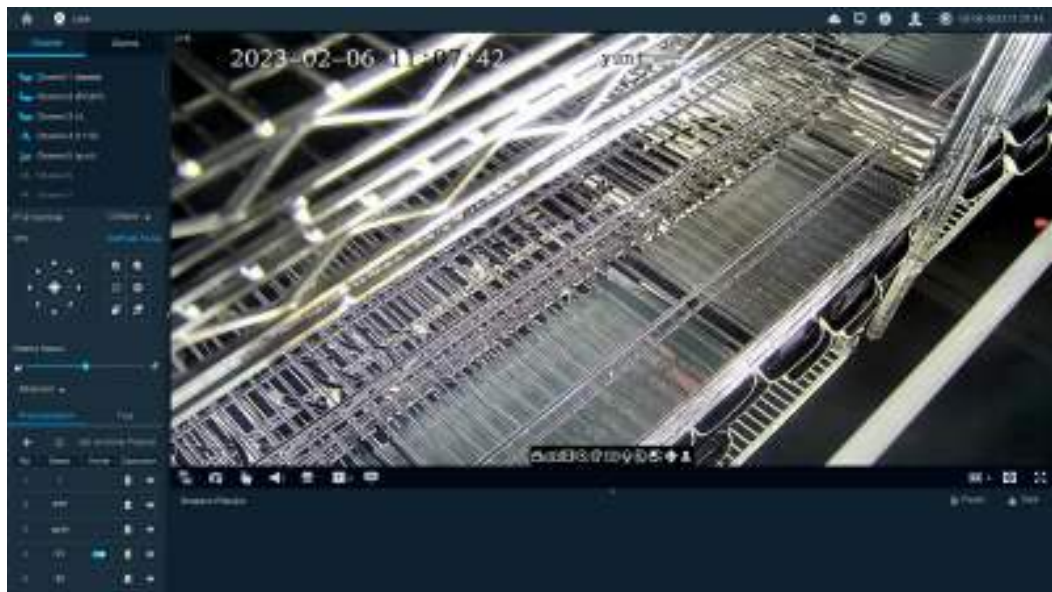
5.1.1 LDU

5.1.1.1 Overview

Function

- Allows users to view live video from cameras.
- Allows users to check alarm information reported by cameras.
- Allows users to perform PTZ control, for example, panning or tilting a camera and fine-tuning the focal length. This function is available only for cameras with the PTZ function.

GUI Layout



System Configuration Icons

Table 5-1 Description of system configuration icons

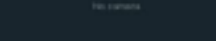
Icon	Description
	Connect to the cloud service.

Icon	Description
	Checks network status of HWT-NVR800s. : disconnected : connected
	Checks information about and network status of the LDU system.
	Allows you to perform the following operations: Switch User: switches to another account. Lock: locks the system. After the system is locked, no operation is allowed, and you can enter the user password to unlock it.
	Allows you to perform the following operations: Logout: logs out the current account. Restart: restarts device software. Standby: stops HWT-NVR800 software. This option is available only for HWT-NVR800s with one, two, or four disk trays. After the device enters the standby state, you cannot wake up the system by moving the mouse pointer. You can press the power button on the rear panel of the device to power off the device, and then power on the device again to restart the system.

Status Icons

Table 5-2 Descriptions of status icons

Icon	Description
	Clears message in the alarm list.
	Indicates a box camera.
	Indicates a bullet camera.
	Indicates a PTZ dome camera.
	Indicates a fixed dome camera.
	Indicates that manual recording is in progress on the HWT-NVR800.
	Indicates that scheduled recording is in progress on the HWT-NVR800.
	The external I/O alarm device is triggered and video recording is in progress.

Icon	Description
	The external I/O alarm device is triggered but no video is recorded.
	An intelligent alarm is triggered and video recording is in progress.
	An intelligent alarm is triggered but no video is recorded.
	A motion detection alarm is triggered and video recording is in progress.
	A motion detection alarm is triggered but no video is recorded.
	The hard disk is faulty.
	Some recording channels are not in the disk group.
	The hard disk is not formatted.
	The hard disk is used up.
	No hard disk is detected.
	The hard disk is in read-only state.
	The camera is disconnected from the HWT-NVR800.
	The user name or password of the camera is incorrect.
	No camera is added to the channel.
	The user account is locked for 5 minutes after the user name or password is entered incorrectly for three consecutive times.

Icons on the Shortcut Toolbar

Table 5-3 Descriptions of icons on the shortcut toolbar

Icon	Description
	Manually takes a snapshot. You can view manual snapshots on the image search page. For details about how to view manual snapshots, see 5.1.1.4.2 Image Search.
	Starts manual recording. The recording duration can be customized. The value ranges from 0 to 86400, in seconds. Value 0 indicates permanent recording. If manual recording is in progress, Enable Recordings is displayed when you click this icon. You can click it again to stop manual recording. Then Schedule Recording is displayed.
	Plays back recorded video. After you click this icon, video recorded by a camera in the last 5 minutes is played.
	Switches streams. After you click this icon, the live video stream is switched over. • HD: displays the primary stream. • SD: displays a secondary stream.
	Implements one-click focus. When the image is unclear, zoom cameras connected through HWSDK automatically focus with one click on this icon.
	Enters the zoom-in/out mode. • After you click this icon, a small video pane is displayed in the lower right corner. You can scroll the mouse wheel to zoom in or out on the video image, hold down the left mouse button and drag the image to view it in zoom-in/out mode, and right-click the LDU desktop to exit the zoom-in/out mode. • You can restore the original image size only by scrolling the mouse wheel. If you access another page in zoom-in/out mode, the image is still in zoom-in/out mode when you view the live video from the camera next time.

Icon	Description
	Enables voice intercom from the HWT-NVR800 side to the camera side. This function can be enabled only when the following conditions are met: • The camera supports the voice intercom function. • The HWT-NVR800 has two, four, eight, or 16 disk trays. • Both the camera and HWT-NVR800 have been configured with a microphone and a loudspeaker. • The microphone must have active RCA ports.
	Disables or enables the function of superimposing the intelligent analysis frame on live video. • Only cameras connected through HWSDK support this function. • In behavior analysis mode, if this function is enabled after Focus only on abnormal objects is selected, only the alarm detection frame in red is displayed on live video.
	Adds a customized recording bookmark. The bookmark helps you quickly locate the current image when you play back the recording next time. For details about how to search for and view desired recordings by bookmark, see 5.1.1.3.4 Bookmark Playback.
	Sets image colors. After you click this icon, the image color setting page pops up, where you can adjust the hue, brightness, contrast, and saturation of images.
	Masks a specified area on the live video image for privacy protection. After you click this icon, you can configure a maximum of four rectangular areas for live video mask on the configuration page.
	Collects target statistics. You can move the mouse pointer to the icon to view the number of captured targets.

Icons on the Taskbar

Table 5-4 Descriptions of icons on the taskbar

Icon	Description
	Selects one of the following preview policies: • Real-time: Images are displayed with the shortest delay. Video stuttering may occur under poor network conditions. • Smooth: The buffer size is increased to improve the smoothness of images on IP channels. However, the display delay may be increased. • Balanced: A balance is reached between real-time performance and smoothness. This preview policy affects image quality of live video only.
	Quickly accesses the playback page. You can select 5s, 10s, 30s, 1 minute, or 5 minutes for playback.
	• Enables or disables manual recording. • Triggers or clears a manual I/O alarm.
	Switches streams from all cameras. • HD: displays primary streams. • SD: displays secondary streams.
	Adjusts the audio volume. This icon takes effect only for cameras with microphones.
	• Redirects to the Intelligent Screen page. • Target Recognition-based Attendance: redirects to the Target Recognition-based Attendance page. • Object Classification: redirects to the Object Classification page.
	Displays real-time statistics about services including head counting detection, queue length detection, off-duty detection, and crowd density detection. • : displays real-time statistics. • : Hides real-time statistics.
	Turns pages. During live video viewing, you can click the arrows to turn pages in split-screen mode.
	Selects a channel display layout.

Icon	Description
	Displays live video from each channel in cycling mode. For details about how to set the cycling mode, see Output Settings.
	Enables or disables the full-screen mode.

PTZ Controls

- In the **PTZ Control** area, click the triangle icon next to **Expand** to show the PTZ control menus, and click the icon again to hide the menus.
- In the **PTZ Control** area, click the triangle icon next to **Advanced** to show the preset position setting, and click the icon again to hide the setting.

Figure 5-1 PTZ Controls

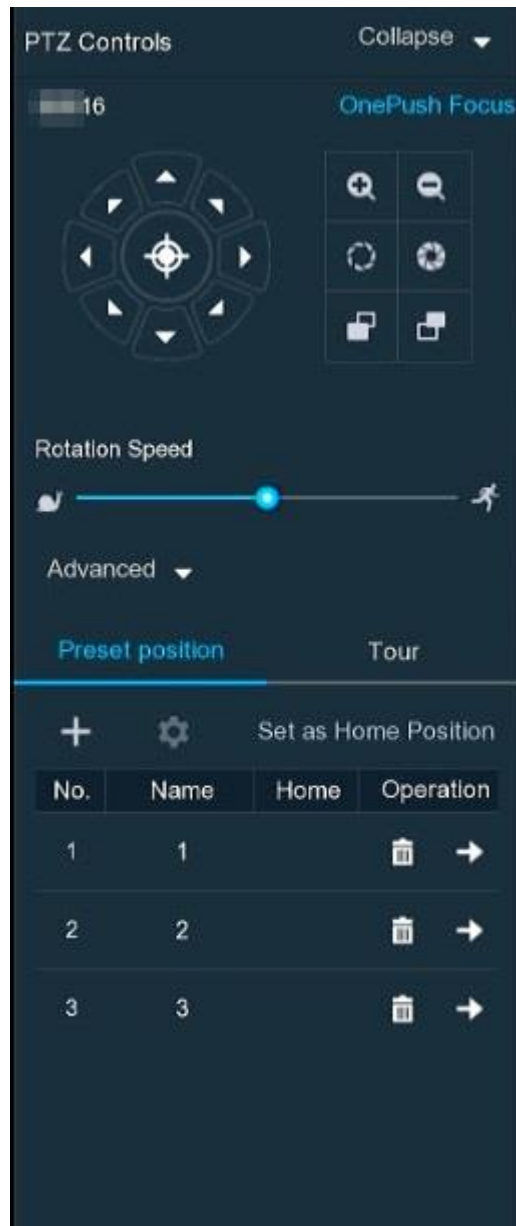


Table 5-5 PTZ Controls

SN	Item	Description
1	Channel Name	Camera channel ID.
2	Zoom in/out	Zooms in or out on the video image.
3	Aperture adjustment	Adjusts the aperture size.

SN	Item	Description
4	Focus adjustment	Adjusts the camera focus.
5	Direction control	- Central key: starts/stops automatic tour. - Arrow keys: selects the rotation direction or angle of the PTZ camera.
6	Speed adjustment	Adjusts the PTZ rotation speed. Drag the slider towards  to speed up PTZ rotation, and drag the slider towards  to slow down PTZ rotation.
7	New Preset	Adds a preset position.
8	Tour	Accesses the tour control page.
9	Delete Preset	Deletes a preset position.
10	Display Preset	Steers the camera to a preset position.
11	Edit Preset	Edits the preset position name.
12	Setting a preset position as the home position	Sets a preset position as the home position.
13	Focusing by one click	Enables zoom cameras connected through HWSDK to automatically focus when the image is unclear, with one click.

5.1.1.2 PTZ Control

Context

The camera's pan angle, tilt angle, and zoom ratio can be stored as a preset position. Preset positions can be numbered.

Configuring Preset Positions

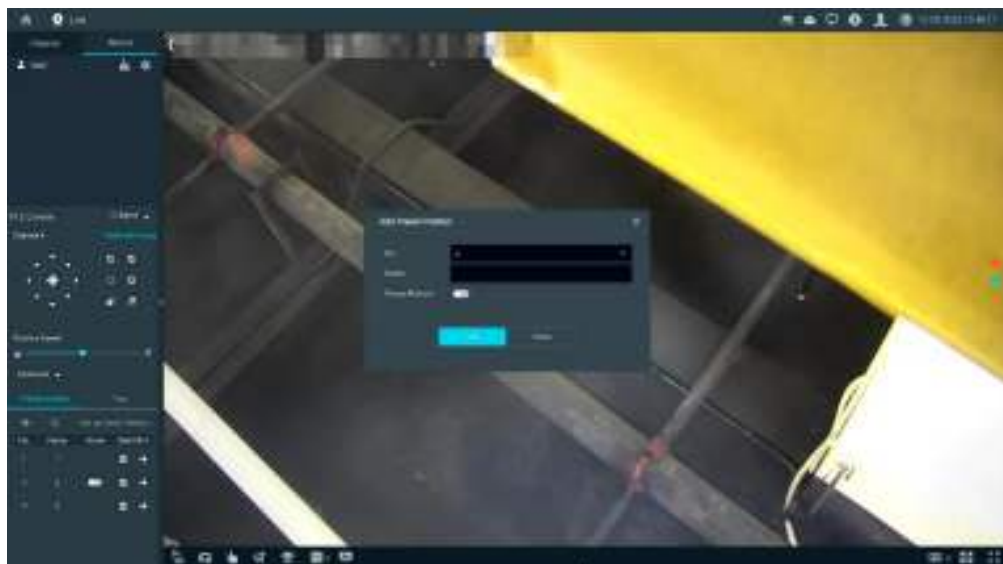
After a preset position is configured, you can quickly steer the camera to this position. You can add, modify, and delete preset positions. A maximum of 256 preset positions (including a home position) can be added for a camera.

Step 1 Add a PTZ device.

Choose **Live > PTZ Controls > Preset position**.



Step 2 Rotate the PTZ device to steer the camera view to the preset position to be added.
Click +. The **Add Preset Position** dialog box is displayed.



Step 3 Select a preset position number and name the preset position.

A preset position name can contain a maximum of 31 characters, including letters, digits, and other characters available on the keyboard.

Step 4 Click **Add**.

The added preset position is displayed in the preset position list.

----End

Configuring a Home Position

NOTE

- A home position is a special preset position to which a PTZ camera automatically rotates if you do not rotate the camera within a specified period.

- The preset position numbered **0** is the home position by default. You can steer the camera to a specified position through the PTZ control panel and set the position as the home position.
- If no home position is configured, the name displayed is **Home position (Not set)**. If a home position is configured, the name displayed is **Home position (Custom location)**.
- The home position cannot be deleted.

Step 1 On the **Preset position** tab page, rotate the PTZ device to steer the camera view to the desired position.

Step 2 Select a preset position and click **Set as Home Position**.

Step 3 Set the waiting duration and click **OK**.

----End

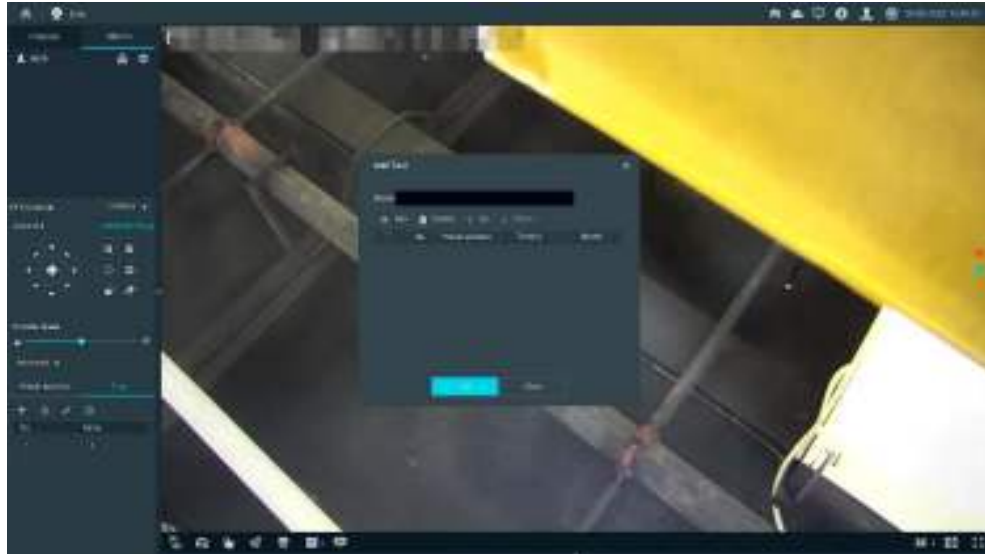
Configuring a Tour

You can set a tour that consists of multiple preset positions. After you enable the tour, the camera shoots video along the tour. You can set a maximum of eight tours. Each tour can consist of a maximum of 32 preset positions.

Step 1 Choose **Live > PTZ Controls > Tour** and configure a tour.



Step 2 Click **+**. The **Add Tour** dialog box is displayed.



Step 3 Set tour information.

1. Set **Name**.

A tour name can contain a maximum of 31 characters, including Chinese characters, letters, digits, and other characters available on the keyboard.

NOTE

A Chinese character occupies three characters on this web page. If you attempt to set the tour name to Chinese words, a maximum of 10 Chinese characters are allowed.

2. Click **Add**.

Select specified preset positions from the **Preset position** drop-down list box and set **Time(s)**. The recommended value of **Time(s)** is at least 120s. Set the tour speed.

3. Add more preset positions depending on your needs.

NOTE

You can click **Up** and **Down** to adjust the sequence of preset positions.

Step 4 Click **Add**.

The tour is successfully added.

NOTE

- Select a tour and click the play button to enable the tour.
- You can enable a tour at a time. If a tour has been enabled and you enable another tour, the tour that has been enabled will automatically stop.
- To modify or delete a tour, select the tour and click  or .
- To modify a tour, stop the tour first.

----End

5.1.1.3 Playback

5.1.1.3.1 Common Playback

Function

Allows users to play back different types of recordings from online cameras by time.

GUI Layout



Table 5-6 Parameter description

Parameter	Description
Channel	• All: enables all online cameras. • Other options: enables selected online cameras.
Date	Date range of recording files.
Search Type	• All: searches for all recordings. • Other options: searches for recordings of selected types.
Stream	Stream type. The options include Primary and Secondary . For details about how to check whether recording is enabled and check stream recording information about a camera, see Encoding.
	Enables full-screen playback.
	Starts or pauses playback.
	Stops playback.
	Rewinds recordings at the speed of 2x, 4x, 8x, or 16x.

Parameter	Description
	Fast-forwards recordings at the speed of 2x, 4x, 8x, or 16x.
	Slows down recordings at the speed of 1/2x, 1/4x, 1/8x, or 1/16x.
	Plays a recording frame by frame. Click this icon once to play a video frame.
	Enters the zoom-in mode. Click this icon to enter the zoom-in mode, and click and drag the image selection box to zoom in on the selected image. Right-click to restore the original image size.
	Clips and saves video. Click this icon to select a video range and quickly save the video clip to a USB flash drive. Downloaded MP4 video files can be played using Storm Player, Thunder Player, VLC, or iQIYI but cannot be played using Windows Media Player.
	Manually takes a snapshot and saves it to a USB flash drive. During multi-channel playback, you can move the mouse pointer to the channel for which you want to manually take a snapshot and click this icon to save the snapshot to a USB flash drive.
	Adds a default recording bookmark named "Bookmark". The bookmark helps you quickly locate the current image when you play back the recording next time. For details about how to query recordings by bookmark, see 5.1.1.3.4 Bookmark Playback.
	Adds a customized recording bookmark. The bookmark helps you quickly locate the current image when you play back the recording next time. For details about how to query recordings by bookmark, see 5.1.1.3.4 Bookmark Playback.
	Takes a snapshot of a specific area on the video image. Click this icon and drag the image selection box to take a snapshot, and save the snapshot to a USB flash drive or list. For details about how to configure a list, see List Management.
	Controls the volume. Click this icon and drag the slider to increase or decrease the volume.

Parameter	Description
	Disables or enables the function of superimposing the intelligent analysis frame on live video. - This function is available only single-pane or 4-pane mode. - Devices with one or two disk trays do not support intelligent analysis frame overlay; devices with 4, 8, or 16 disk trays support two channels of intelligent analysis frame overlay.
	Recording types, which are displayed in different colors on the timeline.
	Timeline, which is displayed based on the selected time.

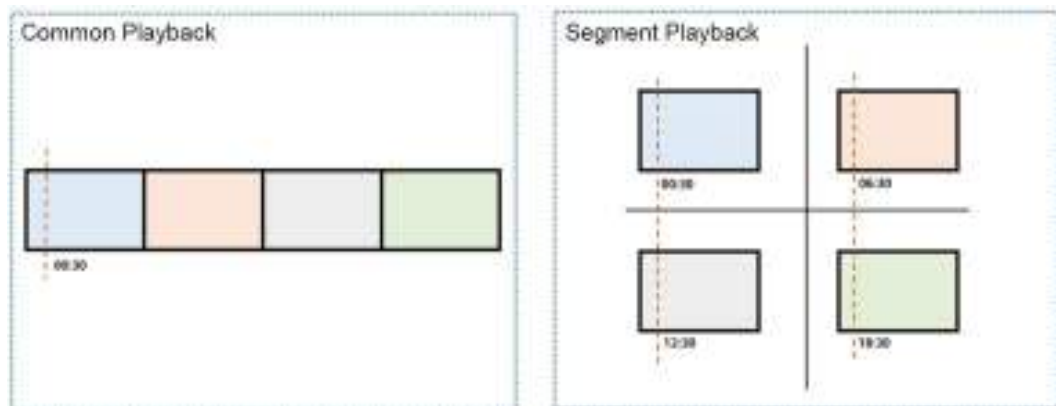
5.1.1.3.2 Segment Playback

Function

Allows users to play back a recording with a long period. This recording will be divided into N video clips and they will be played back at the same time.

The differences between common playback and segment playback are as follows:

- Normal playback: allows users to play back recordings by time in sequence.
- Segment playback: allows users to evenly divide a recording into N video clips and play back these video clips in multiple video panes at the same time.



GUI Layout



Table 5-7 Parameter description

Parameter	Description
Channel	Segment playback is supported for only one camera at a time.
Date	Date range of recording files.
Time	Time range of recording files.
Multi-pane	Number of video panes that play back the segments of a recording at the same time.
Search Type	All: searches for all recordings. - Other options: searches for recordings of selected types.
Stream	Stream type. The options include Primary and Secondary . For details about how to check whether recording is enabled and check stream recording information about a camera, see Encoding.
	Enables full-screen playback.
	Starts or pauses playback.
	Stops playback.
	Rewinds recordings at the speed of 2x, 4x, 8x, or 16x.
	Fast-forwards recordings at the speed of 2x, 4x, 8x, or 16x.
	Slows down recordings at the speed of 1/2x, 1/4x, 1/8x, or 1/16x.

Parameter	Description
	Plays a recording frame by frame. Click this icon once to play a video frame.
	Enters the zoom-in mode. Click this icon to enter the zoom-in mode, and click and drag the image selection box to zoom in on the selected image. Right-click to restore the original image size.
	Clips and saves video. Click this icon to select a video range and quickly save the video clip to a USB flash drive. Downloaded MP4 video files can be played using Storm Player, Thunder Player, VLC, or iQIYI but cannot be played using Windows Media Player.
	Manually takes a snapshot and saves it to a USB flash drive. During multi-channel playback, you can move the mouse pointer to the channel for which you want to manually take a snapshot and click this icon to save the snapshot to a USB flash drive.
	Adds a default recording bookmark named "Bookmark". The bookmark helps you quickly locate the current image when you play back the recording next time. For details about how to query recordings by bookmark, see 5.1.1.3.4 Bookmark Playback.
	Adds a customized recording bookmark. The bookmark helps you quickly locate the current image when you play back the recording next time. For details about how to query recordings by bookmark, see 5.1.1.3.4 Bookmark Playback.
	Controls the volume. Click this icon and drag the slider to increase or decrease the volume.
	Recording types, which are displayed in different colors on the timeline.
	Timeline, which is displayed based on the selected time.

5.1.1.3.3 Slice Playback

Function

Allows users to play back a slice of a recording file within the specified time period.

Recordings can be sliced by day or by hour.

- Slice by day: Divide the video recorded by a camera on the current day into 24 slices.

- Slice by hour: Divide the video recorded by a camera within a selected hour into 60 slices.

Figure 5-2 Slice by day



GUI Layout



Table 5-8 Parameter description

Parameter	Description
Stream Type	Stream type. The options are Primary and Secondary . For details about how to check whether recording is enabled and check stream recording information about a camera, see Encoding.
Slice	• Time: searches for channels that meet the criteria by time. • Channel: searches for time segments that meet the criteria by channel.
Channel	Slice playback is supported for only one camera at a time.
Year	Time range, which must be accurate to day or hour. • If the time range is accurate to hour, the system automatically divides the recording of the hour into 60 slices.
Month	
Day	

Parameter	Description
hours	If the time range is accurate to day, the system automatically divides the recording of the day into 24 slices.

5.1.1.3.4 Bookmark Playback

Function

Allows you to play back a recording from a bookmarked position.

GUI Layout

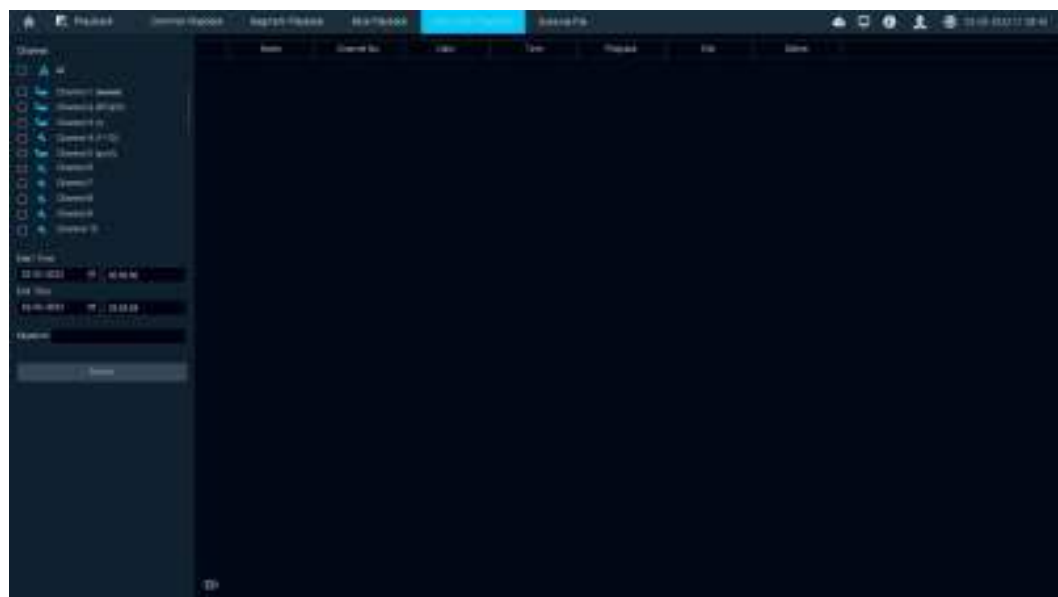


Table 5-9 Parameter/Button description

Parameter/Button	Description
Channel	All: enables all online cameras. - Other options: enables selected online cameras.
Start Time	Time range in which a recording file to be played back is generated.
End Time	
Keyword	Keywords for quickly searching for bookmarks that meet the criteria.
Search	Searches for bookmarks that meet the criteria.
	Plays back a recording from the bookmarked position.
	Changes a bookmark name.

Parameter/Button	Description
	Deletes a selected bookmark.

5.1.1.3.5 External File

Function

Allows users to play video files from the USB flash drive.

GUI Layout



Table 5-10 Parameter/Icon description

Parameter/Icon	Description
Device	Name of an inserted USB flash drive.
File Type	Type of files in the USB flash drive.
	Enables full-screen playback.
	Starts or pauses playback.
	Stops playback.
	Fast-forwards recordings at the speed of 2x, 4x, 8x, or 16x.
	Slows down recordings at the speed of 1/2x, 1/4x, 1/8x, or 1/16x.
	Plays recordings frame by frame. Click this icon once to play a video frame.

Parameter/Icon	Description
	Controls the volume. Click this icon and drag the slider to increase or decrease the volume.

5.1.1.4 Search

5.1.1.4.1 Event Search

Function

Allows you to search for different types of recordings from online cameras by event.

GUI Layout

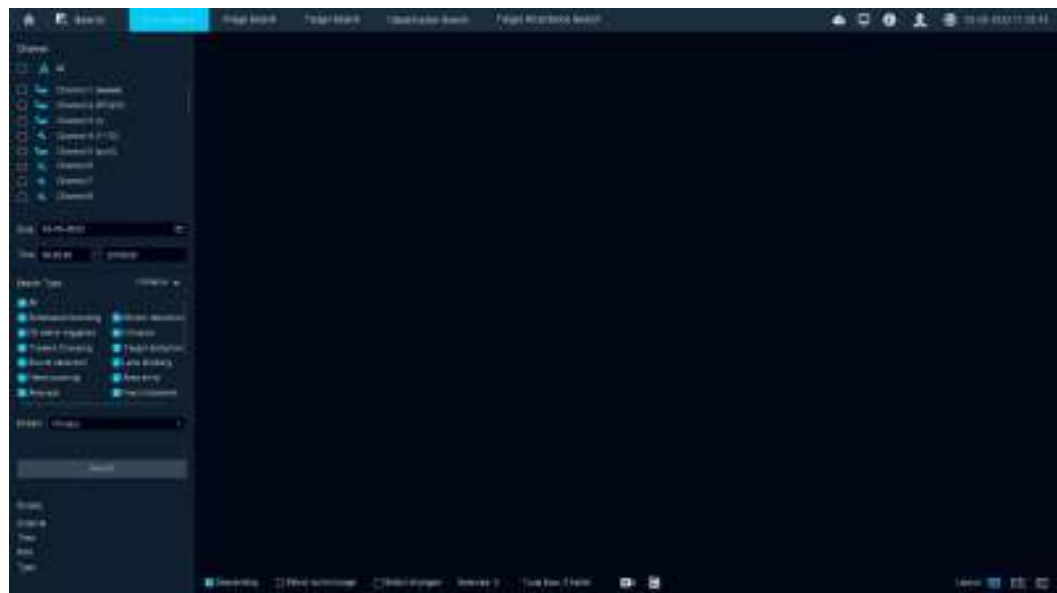


Table 5-11 Parameter/Button description

Parameter/Button	Description
Channel	All: enables all online cameras. - Other options: enables selected online cameras.
Date	Date on which a recording file to be searched is generated.
Time	Time range in which a recording file to be searched is generated.
Search Type	All: searches for all recordings. - Other options: searches for recordings of selected types.

Parameter/Button	Description
Stream	Stream type. The options include Primary and Secondary . For details about how to check whether recording is enabled and check stream recording information about a camera, see Encoding.
Search	Searches for recordings that meet the criteria.
Descending	Sorts recordings in descending order.
Select current page	Selects all recordings on the current page.
Select all pages	Selects all recordings.
	Plays back one or more selected alarm-triggered recordings.
	Disables or enables the function of superimposing the intelligent analysis frame on live video. - This function is available only single-pane or 4-pane mode. - Devices with one or two disk trays do not support intelligent analysis frame overlay; devices with 4, 8, or 16 disk trays support two channels of intelligent analysis frame overlay.
	Selects one or more alarm-triggered recordings and saves them to a USB flash drive. NOTE Downloaded MP4 video files can be played using Storm Player, Thunder Player, VLC, or iQIYI but cannot be played using Windows Media Player.
	Locks a recording. Locked recordings will not be deleted from the hard disk.
	Displays recordings as thumbnails.
	Displays recordings in a simplified list.
	Displays recordings in a detailed list.

5.1.1.4.2 Image Search

Function

Allows you to search for images of different types from online cameras.

GUI Layout

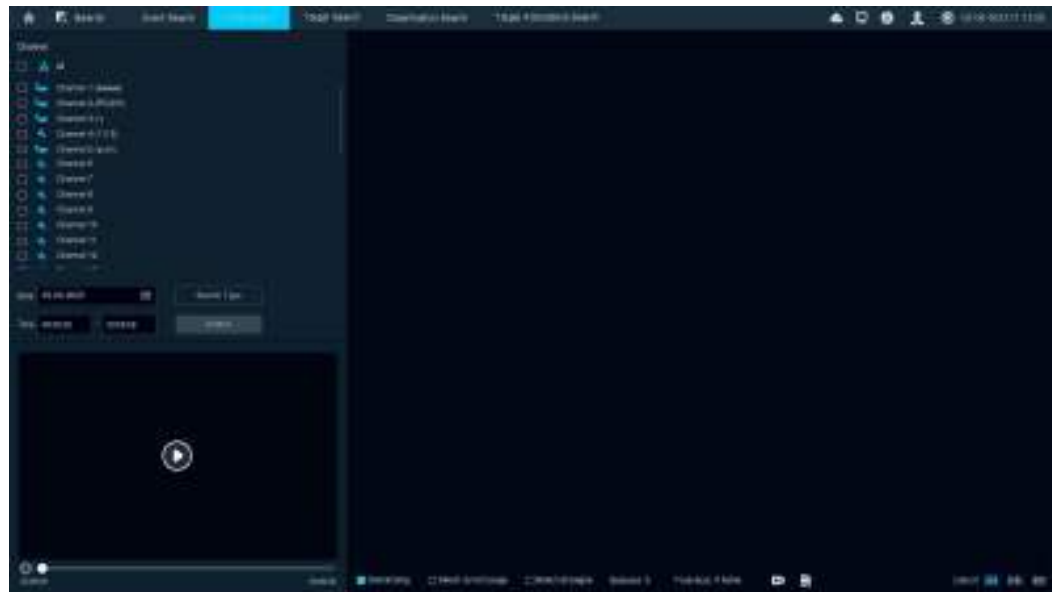


Table 5-12 Parameter/Button description

Parameter/Button	Description
Channel	All: enables all online cameras. - Other options: enables selected online cameras.
Date	Date on which an image file to be searched is generated.
Time	Time range in which an image file to be searched is generated.
Search Type	All: searches for all images. - Other options: searches for images of selected types.
Search	Searches for images that meet the criteria.
Descending	Sorts images in descending order.
Select current page	Selects all images on the current page.
Select all pages	Selects all images.
	Plays back the video recorded when a selected snapshot is taken.
	Disables or enables the function of superimposing the intelligent analysis frame on live video. - This function is available only single-pane or 4-pane mode. - Devices with one or two disk trays do not support intelligent analysis frame overlay; devices with 4, 8, or 16 disk trays support two channels of intelligent analysis frame overlay.
	Selects one or more alarm-triggered images and saves them to a USB flash drive.

Parameter/Button	Description
	Displays recordings as thumbnails.
	Displays recordings in a simplified list.
	Displays recordings in a detailed list.

5.1.1.4.3 Target Search

Function

- Allows you to search for target snapshots.
- Allows you to perform target match.
- Allows you to play back recordings.

GUI Layout

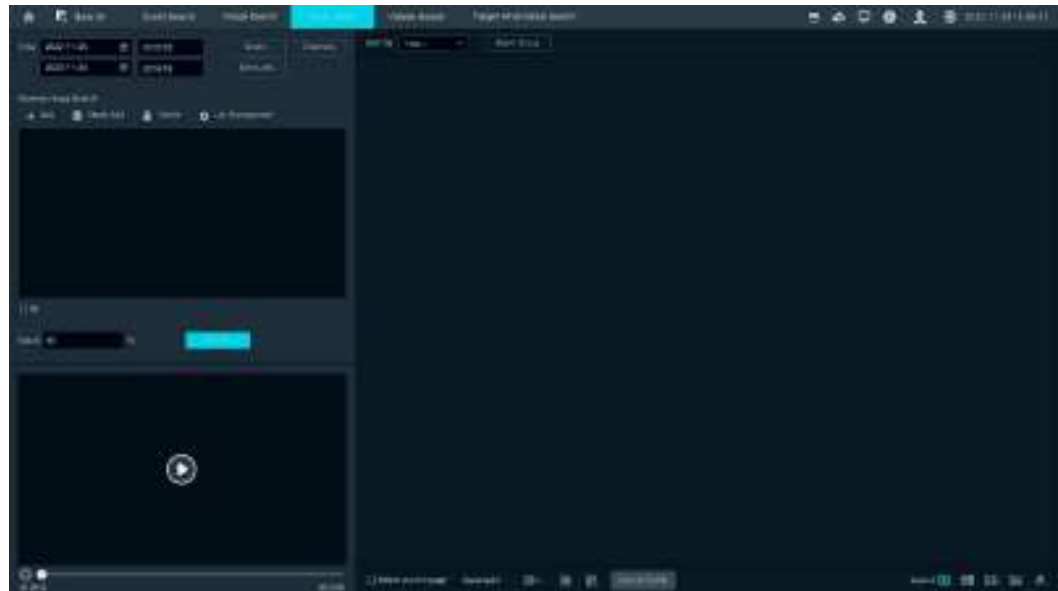


Table 5-13 Parameter/Button description

Parameter/Button	Description
Time	Time period in which target images are generated.
Event	Alarm event. • Target recognition • Others
Channels	Camera for target search. All cameras are selected by default.
Attributes	Target features for target search.

Parameter/Button	Description
Add	Imports a target image from the local computer or external storage device.
Quick Add	Imports a target image from a list.
Delete	Deletes the selected target image.
List Management	Configures and manages lists.
Match	Target similarity threshold for target search. Only targets whose similarity is higher than this threshold are displayed in the search result. Lower similarity indicates a higher false positive rate. Higher similarity indicates higher target search accuracy.
Search	Searches for images that meet the criteria.
Sort By	Mode for sorting search results. • Time ↑: in ascending order of occurrence time • Time ↓: in descending order of occurrence time
Alarm Group	Alarm group for displaying target images.
Select current page	Selects all images on the current page.
	Plays back the video recorded when a selected image is captured.
	Disables or enables the function of superimposing the intelligent analysis frame on live video. • This function is available only single-pane or 4-pane mode. • Devices with one or two disk trays do not support intelligent analysis frame overlay; devices with 4, 8, or 16 disk trays support two channels of intelligent analysis frame overlay.
	Selects one or more images and saves them to a USB flash drive.
	Backs up images on all pages.
Manual Match	Manually matches captured images with a selected target image.
	Displays recordings as thumbnails.
	Displays recordings as detailed thumbnails.
	Displays recordings in a simplified list.
	Displays recordings in a detailed list.
	Displays the target trajectory.

5.1.1.4.4 Object Search

Function

- Allows you to view images of motor vehicles, non-motorized vehicles, and persons.
- Recognizes vehicle license plates.

GUI Layout

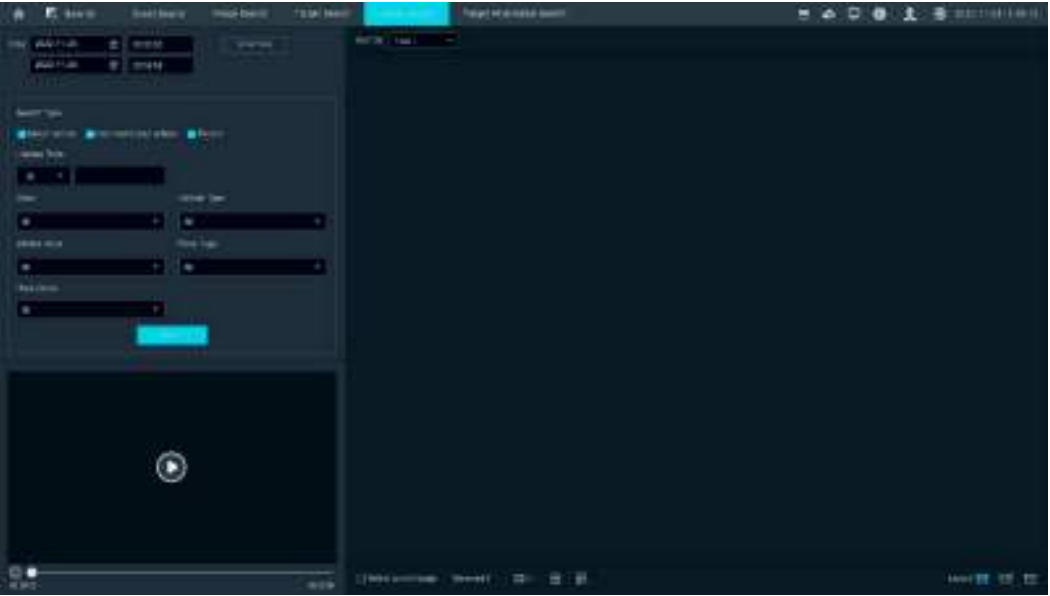


Table 5-14 Parameter/Button description

Parameter/Button	Description
Time	Time period in which images are generated.
Channels	Camera for search. All cameras are selected by default.
Search Type	Object type. • Motor vehicle • Non-motorized vehicle • Person
License Plate	Criteria to filter vehicles.
Vehicle Type	
Vehicle Color	
Plate Type	
Plate Color	
Search	Searches for images that meet the criteria.

Parameter/Button	Description
Sort By	Mode for sorting search results. • Time ↑: in ascending order of occurrence time • Time ↓: in descending order of occurrence time
Select current page	Selects all images on the current page.
	Plays back the video recorded when a selected image is captured.
	Disables or enables the function of superimposing the intelligent analysis frame on live video. • This function is available only single-pane or 4-pane mode. • Devices with one or two disk trays do not support intelligent analysis frame overlay; devices with 4, 8, or 16 disk trays support two channels of intelligent analysis frame overlay.
	Selects one or more images and saves them to a USB flash drive.
	Backs up images on all pages.
	Displays recordings as thumbnails.
	Displays recordings as detailed thumbnails.
	Displays recordings in a simplified list.
	Displays recordings in a detailed list.

5.1.1.4.5 Target Recognition-based Attendance Search

Function

Allows users to collect attendance statistics by time when a target is detected.

- A maximum of 200,000 target images can be stored for target recognition-based attendance.
- Target recognition-based attendance data is stored for one month.

GUI Layout

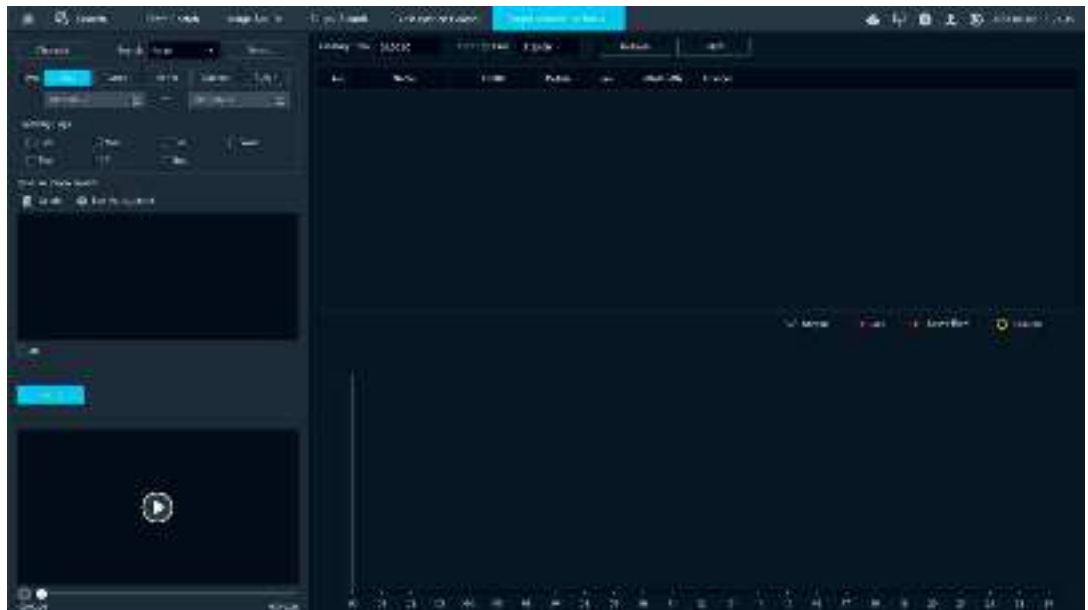


Table 5-15 Parameter description

Parameter	Description
Channels	Camera channel.
Search	Target recognition-based attendance mode. • By list: performs target recognition-based attendance by list. • By person: performs target recognition-based attendance by listed person.
Date	Time dimension for filtering data. The options are Day , Week , Month , Custom , and Today .
Delete	Deletes the selected target image.
List Management	Configures and manages lists.
Search	Searches for recordings that meet the criteria.
On-Duty Time	Time range of attendance.
Off-Duty Time	
Refresh	Displays the time range on the coordinate axis.
Export	Exports attendance data to a USB flash drive.
 Normal	The earliest time is earlier than the on-duty time, and the latest time is later than the off-duty time.
 Late	The earliest time is later than the on-duty time, and the latest time is later than the off-duty time.

Parameter	Description
	The earliest time is earlier than the on-duty time, and the latest time is earlier than the off-duty time.
	The earliest time is later than the off-duty time, or there is no attendance record.

5.1.1.5 Intelligence

5.1.1.5.1 Intelligent Settings

5.1.1.5.1.1 Global Intelligence Settings

5.1.1.5.1.1.1 Algorithm Mode Configuration

Function

Allows users to select the required algorithm mode when a camera of the HWT-Dxxxx-10-SIU, HWT-Cxxxx-10-SIU, or HWT-D2181-10 model is connected.

GUI Layout

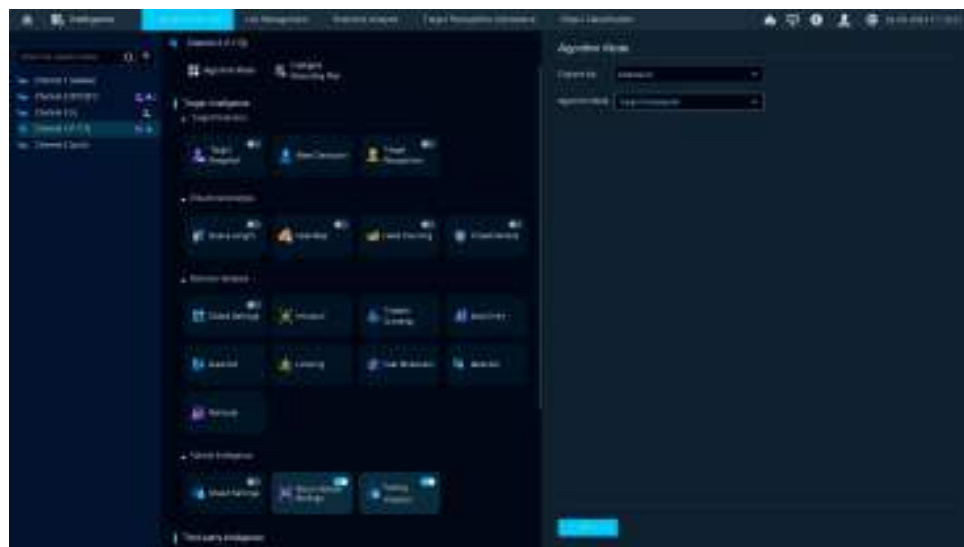


Table 5-16 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.

Parameter/Button	Description
Algorithm Mode	Algorithm mode. • Target Checkpoint: The camera supports target analysis. • Micro Checkpoint : The camera supports vehicle analysis. • Behavior Analysis: The camera supports behavior analysis and situation analysis.
Apply	Applies the parameter settings.

Table 5-17 Parameter/Button description

Parameter/Button	Description
Target Analysis	Indicates whether to enable target analysis. After enabling or disabling this function, you need to restart the system for the setting to take effect. If this function is enabled, the following functions are available: target recognition, target statistics, target search, and target recognition-based attendance search. • By default, target analysis is enabled for the HWT-NVR800 with one or two disk trays. • If target analysis is disabled, the HWT-NVR800 cannot use the intelligent target analysis function. • If target analysis is enabled, the decoding capability of the HWT-NVR800 with one or two disk trays is halved. For example, an HWT-NVR800 with one disk tray supports 6-channel 1080p video decoding by default, and 3-channel 1080p video decoding when target analysis is enabled. • Target analysis is always enabled for the HWT-NVR800 with 4 disk trays. The decoding capability of the HWT-NVR800 with 4 disk trays remains unchanged regardless of whether target analysis is enabled.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.5.1.1.3 Intelligent Recording Plan

Function

Allows users to set time for intelligent recording plans.

GUI Layout

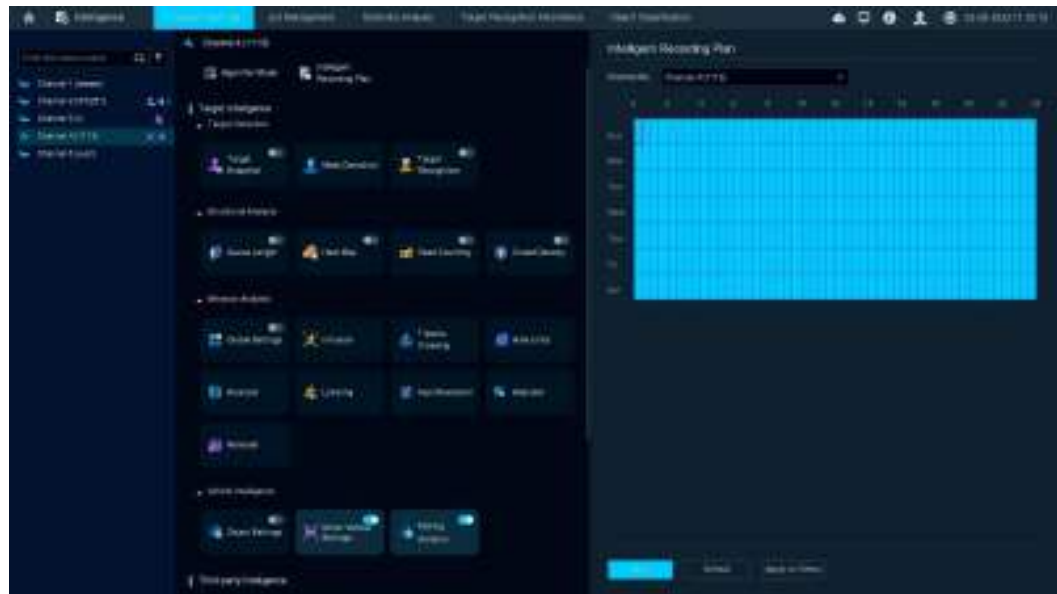


Table 5-18 Parameter description

Parameter	Description
Channel	Channel ID.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to others	Applies the intelligent recording plan of a channel to other channels.

1. Select a time segment on the timeline on the left.
 - Blue: indicates that an intelligent recording plan is available in the time segment.
 - No color: indicates that no intelligent recording plan is available in the time segment.
2. Click **Apply**.
3. To quickly apply the intelligent recording plan of a channel to other channels, click **Apply to Others** on the intelligent recording plan page, select channels, and click **Apply**.

5.1.1.5.1.2 Target Intelligence

5.1.1.5.1.2.1 Target Capture

Function

- Allows users to enable or disable target detection.
- Allows users to enable or disable target attribute recognition.

- Allows users to draw a target detection area and set related parameters.
- Displays only cameras that support target detection.

GUI Layout



Table 5-19 Parameter description

Area	Parameter	Description
-	Channel	Channel ID.
-	Target Snapshot	Indicates whether to enable target capture.
Areas	Areas	• Click  and draw a detection area on the video image. The camera takes snapshots of targets in the detection area. • Click  to delete a detection area.
Shielding Area	Shielding Area	• Click  and draw an exclude area on the video image. The camera does not take snapshots of targets in the area. • Click  to delete an exclude area.
Settings	Target Attribute Recognition	Indicates whether to enable target attribute recognition.

Area	Parameter	Description
	Snapshot Mode	Snapshot mode. • Optimal: When a target enters the detection area, the camera takes snapshots of the target and evaluates each snapshot. After the target leaves the detection area, the snapshot with optimal quality is selected as the capture result. This mode applies to most target capture scenarios and ensures optimal quality of snapshots. • Fast: When a target is in the view, the camera takes snapshots of the target and evaluates each snapshot. Once a snapshot of the target meets the requirement specified by Snapshot sensitivity, the snapshot is selected as the capture result. Then the camera still detects the target but does not take snapshots of the target subsequently. • Scheduled: When a target is in the view, the camera takes snapshots of the target and generates the optimal snapshot at a specified interval determined by Scheduled Snapshot Interval (s).
	Snapshot Sensitivity	Snapshot sensitivity. The value ranges from 1 to 10. A larger value indicates a higher sensitivity. NOTE This parameter is available when Snapshot Mode is set to Fast.
	Scheduled Snapshot Interval (s)	Interval at which snapshots are taken. NOTE This parameter is available when Snapshot Mode is set to Scheduled.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Target Detection Sensitivity	Target detection sensitivity. The value ranges from 1 to 5. A larger value indicates a higher sensitivity.
	Person Detection Sensitivity	Person detection sensitivity. The value ranges from 1 to 5. A larger value indicates a higher sensitivity.
	Detection Mode	Detection mode. • Target detection: detects only targets. • Person detection: detects only persons. • Both: detects both targets and persons.
	Min Target	Click  and draw the maximum and minimum target sizes on the video image.
	Max Target	

Area	Parameter	Description
	Send target images	Indicates whether to send target images.
	Send person images	Indicates whether to send person images.
	Target Snapshot Quality	Target snapshot quality. The value ranges from 1 to 5. A larger value indicates higher quality. Higher image quality consumes more storage space.
	Person Snapshot Quality	Person snapshot quality. The value ranges from 1 to 5. A larger value indicates higher quality. Higher image quality consumes more storage space.
	Send full images	Indicates whether to send full images.
	Full Image Quality	Full image quality. The value ranges from 1 to 5. A larger value indicates higher quality. Higher image quality consumes more storage space.
	Brightness Compensation	Indicates whether to enable brightness compensation. Open: The exposure is automatically decreased in highlight or increased in backlight to ensure ideal brightness in different environments. Close: Brightness compensation is disabled.
	Compensation Coefficient	Maximum brightness compensation coefficient. The default value is 50 . The camera will automatically adjust the compensation level within the specified range based on the image brightness. The value of this parameter can be properly increased in frontlight or backlight conditions.
	Target Exposure Duration (min)	Duration of target exposure, in minutes. When a target is detected, target exposure is performed for a specified period of time. You are advised to set this parameter to 10 minutes in densely populated scenarios and 5 minutes in sparsely populated scenarios.
-	Apply	Applies the parameter settings.

5.1.1.5.1.2.2 Mask Detection

Function

Allows users to enable or disable mask detection.

GUI Layout

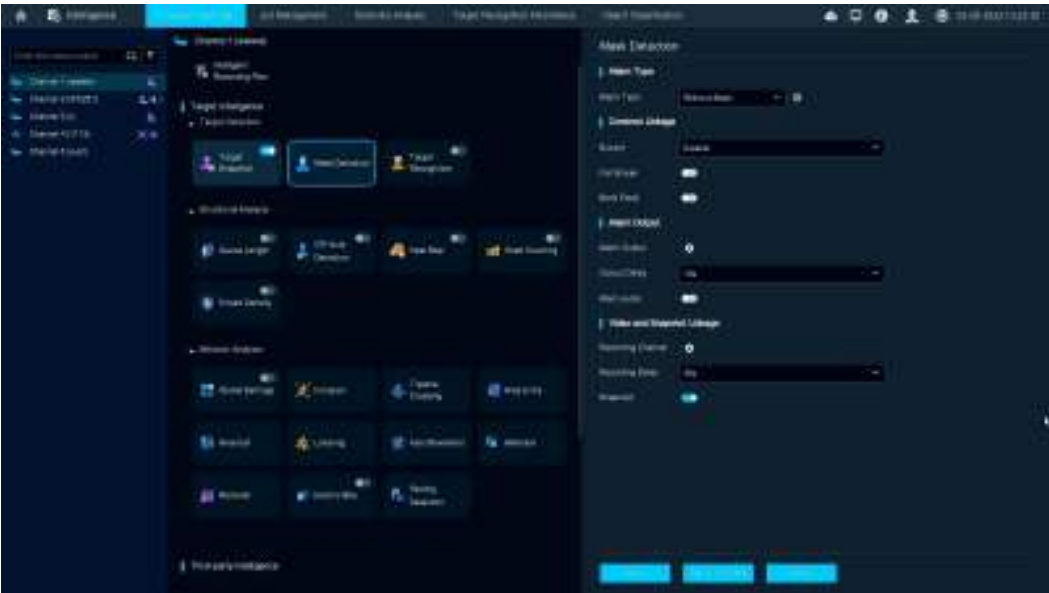


Table 5-20 Parameter description

Area	Parameter	Description
Alarm Type	Alarm Type	Alarm type. • Without Mask: generates an alarm when detecting a target not wearing a mask. • With Mask: generates an alarm when detecting a target wearing a mask. • Close
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.

Area	Parameter	Description
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O alarm output device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O alarm output device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot Linkage	Recording Channel	Recording channel.
	Recording Delay	Recording duration. The default value is 30s . NOTE • If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30 seconds by default. • If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.
-	Apply	Applies the parameter settings.
-	Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
-	Apply to Others	Applies the alarm linkage policy of a channel to other channels.

5.1.1.5.1.2.3 Target Recognition

Function

Allows users to enable or disable target recognition.

GUI Layout

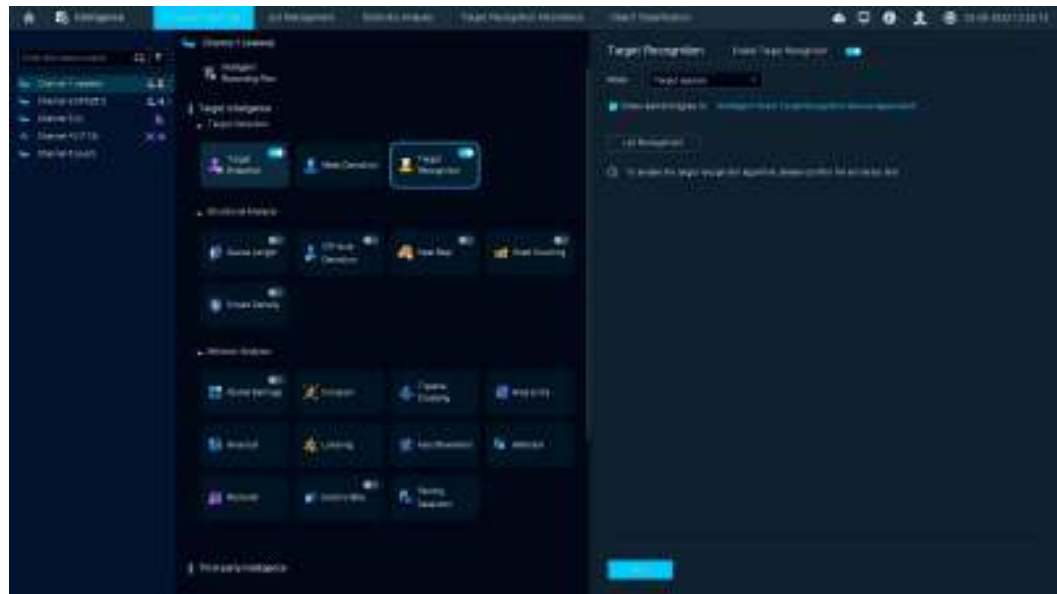


Table 5-21 Parameter description

Parameter	Description
Device/Channel	Target recognition camera. The system automatically discovers cameras that support target recognition.
Mode	Application mode. Target capture: extracts features from an optimal target snapshot and reports the match result. NOTE If Mode is set to Target capture, Snapshot Mode must be set to Optimal. Access control: reports extracted features multiple times for target match, ensuring smooth access control. NOTE - The Access control mode is applicable only to access control scenarios where up to four targets are queuing in the camera view. - If Snapshot Mode is set to Fast, Mode must be set to Access control. Optimal: For cameras of versions earlier than 9.0.0, this parameter cannot be set and its value changes with the snapshot mode for target detection. Fast: For cameras of versions earlier than 9.0.0, this parameter cannot be set and its value changes with the snapshot mode for target detection. Scheduled: For cameras of versions earlier than 9.0.0, this parameter cannot be set and its value changes with the snapshot mode for target detection.
Target Recognition	Indicates whether to enable target recognition.

Parameter	Description
List Management	Jumps to the list management page.
Apply	Applies the parameter settings.

5.1.1.5.1.2.4 Upgrading the Target Recognition Algorithm

Function

After target recognition is enabled for a new camera (with the target recognition algorithm of a version later than those of existing connected cameras) that is just connected to the HWT-NVR800, the HWT-NVR800 updates the list data to the latest version. The target recognition algorithm of the later version is automatically enabled after the list data is updated.

Before the target recognition algorithm of the later version is enabled for cameras, back up the database on the **List Management** page. For details about how to back up the database, see section [List Management](#).

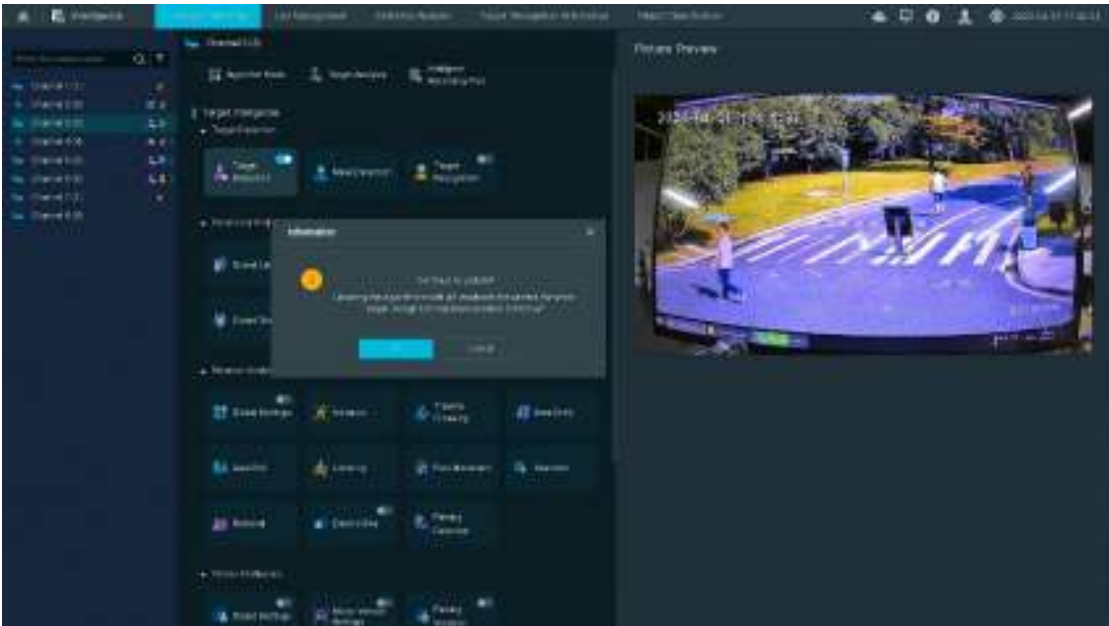
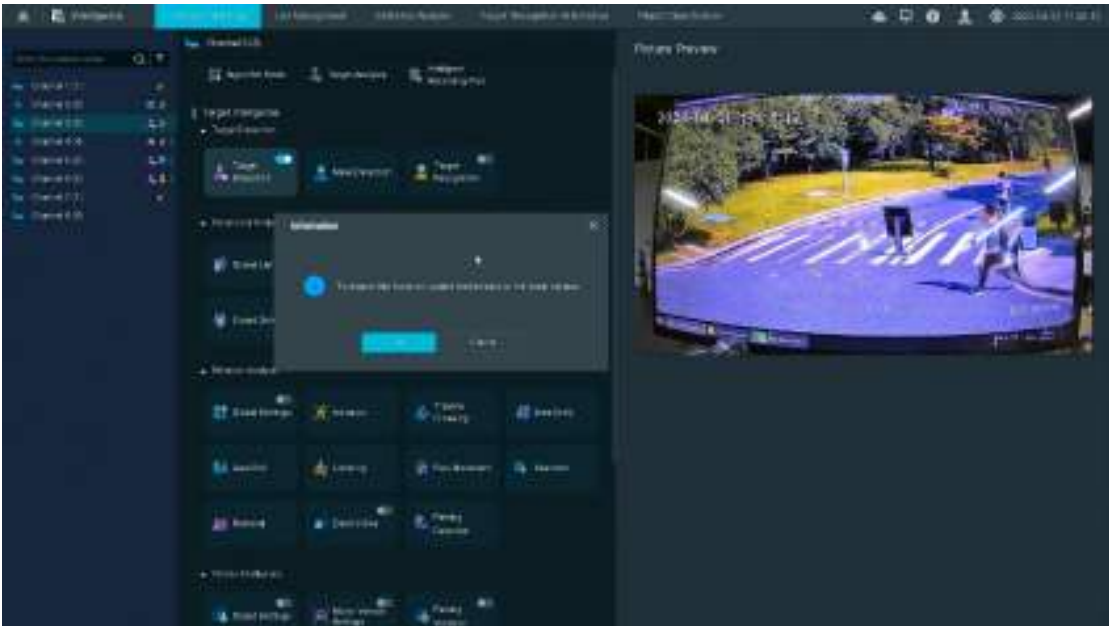
Function Restrictions

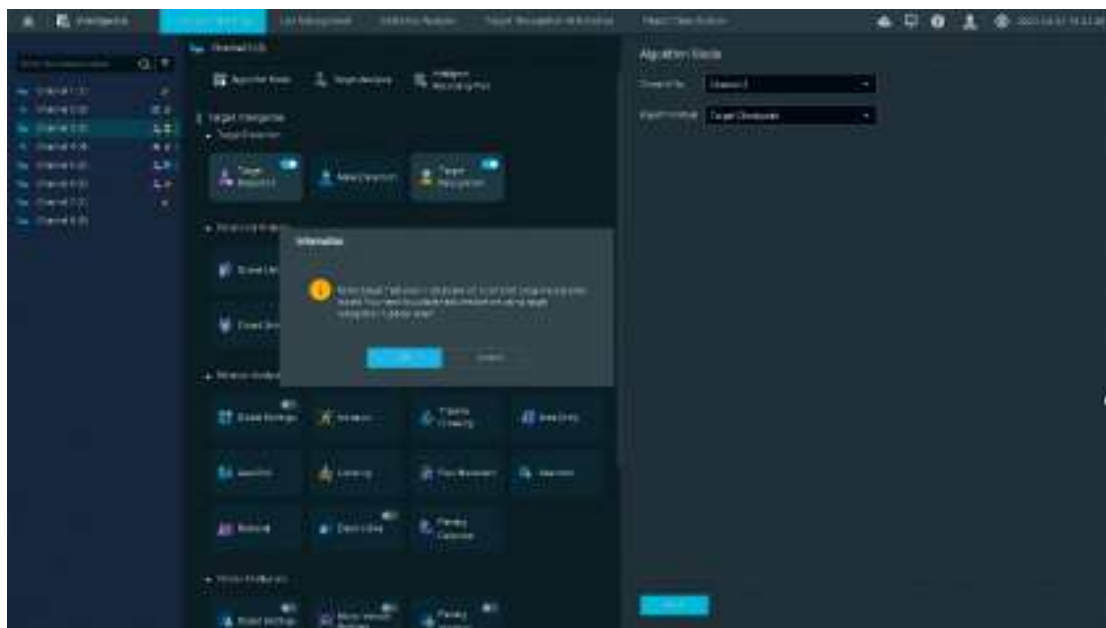
- During the update, the HWT-NVR800 disables the target recognition function for all cameras of earlier versions and suspends the target recognition alarm function.
- The HWT-NVR800 cannot roll back the updated target recognition algorithm to the source version.



- It takes about 3 minutes to 10 hours to update dynamic list data, depending on the number of dynamic lists and connected V6 target recognition cameras.
 - After the dynamic list data is updated to the target recognition features of the V6 version, the dynamic list data is incompatible with the target data captured by cameras of the V3 version. The target recognition of the V6 version cannot be used to search for target data captured by cameras of the V3 version. As a result, reverse image search in the historical dynamic list is affected.
-

GUI Layout





Camera Version	Target Recognition Algorithm Version
8.0.0/8.1.0/8.2.0/9.0.0/10.0.0	V3
11.0.0	V6(for HWT-D2150-10-SIR/HWT-C2150-10-SIR cameras)

5.1.1.5.1.3 Situation Analysis

5.1.1.5.1.3.1 Head Counting

Function

- Allows users to enable or disable head counting and draw a detection area. When the number of persons crossing the detection line exceeds the alarm threshold, the camera generates an alarm, and the HWT-NVR800 links the buzzer to generate an alarm sound, records video, or sends alarm information by email.
- Allows users to clear head counting statistics at 00:00 every day and set the alarm check interval and alarm threshold.

GUI Layout



Table 5-22 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-23 describes related parameters.
Camera Alert Plan	Table 5-24 describes related parameters.
Alarm Linkage	Table 5-25 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-23 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
-	Head Counting	Indicates whether to enable head counting.
Detection Line	ID	ID of a detection line. Only one detection line can be drawn.
	Operation	Draws or deletes a detection line on the video image.

Area	Parameter	Description
	Direction	A->B: Collects statistics on the number of persons who cross the detection line from A to B. B->A: Collects statistics on the number of persons who cross the detection line from B to A.
Areas	ID	ID of a detection area. Only one detection area can be drawn.
	Operation	Draws or deletes a detection area on the video image.
Settings	Report people count periodically	Indicates whether to periodically report the number of persons crossing the detection line.
	Data Report Interval (s)	Interval at which data is reported.
	Clear Statistics at 00:00	Indicates whether to clear statistics on the live video viewing page at 00:00 of the next day.
	Clear Statistics Now	Indicates whether to clear statistics on the live video viewing page now.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Alarm Threshold	Alarm threshold for the number of persons who cross the detection line.
Audible and visual alarm NOTE Audible and visual alarms are supported by the HWT-	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.

Area	Parameter	Description
Dxxxx-10-LI-PV camera s. • Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU camera s. An external audio device needs to be connected to play the alarm sound.	Flash frequency	Frequency at which the light flashes. • High • Medium • Low • Steady on

Table 5-24 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day. NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-25 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable.
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s.
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.3.2 Queue Length Detection

Function

- Allows users to enable or disable queue length detection and draw a detection area. When the number of queuers exceeds the alarm threshold, the camera generates an alarm, and the HWT-NVR800 links the buzzer to generate an alarm sound, records video, or sends alarm information by email.
- Allows users to set the alarm check interval, single-person queuing duration, alarm threshold, and sensitivity for queue length detection.

GUI Layout

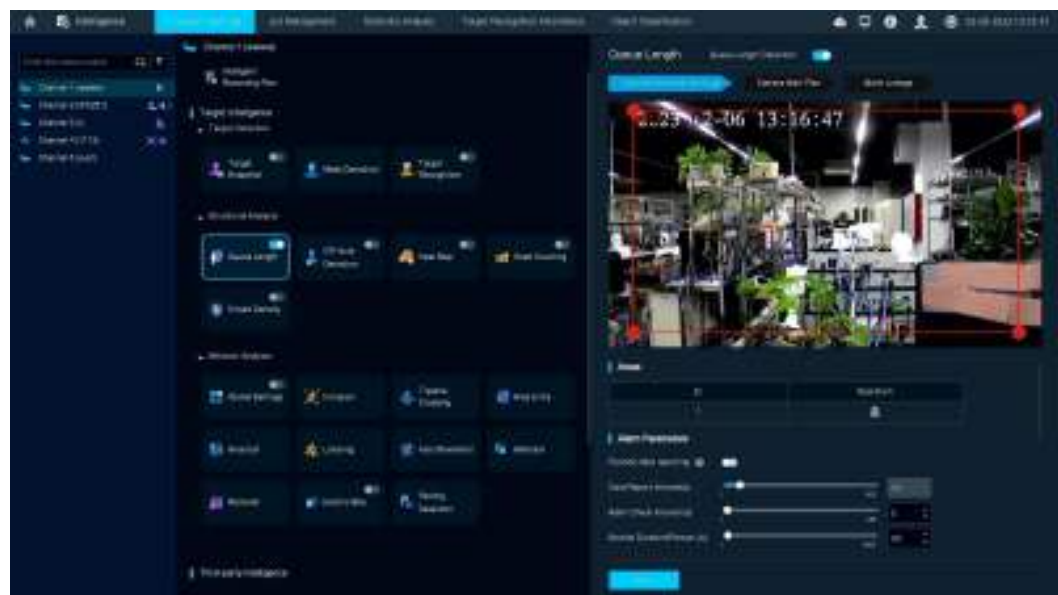


Table 5-26 Parameter description

Parameter	Description
Channel	Channel ID.

Parameter	Description
Camera Parameter Settings	Table 5-27 describes related parameters.
Camera Alert Plan	Table 5-28 describes related parameters.
Alarm Linkage	Table 5-29 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-27 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
-	Queue Length Detection	Indicates whether to enable queue length detection.
Areas	ID	ID of a detection area. Only one detection area can be drawn.
	Operation	Draws or deletes a detection area on the video image. If no detection area is drawn, the full image is used as the detection area by default.
Settings	Periodic data reporting	Indicates whether to periodically report the number of queuing persons.
	Data Report Interval (s)	Interval at which data is reported.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Service Duration/Person (s)	Queuing duration of a single person.
	Alarm Threshold (min)	Alarm threshold.
	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.

Area	Parameter	Description
Audible and visual alarm NOTE - Audible and visual alarms are supported by the HWT-Dxxx-10-LI-PV cameras. - Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxx-SIU cameras. An external audio device needs to be connected to play the alarm sound.	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.
	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-28 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.

Area	Parameter	Description
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	
	Day	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. - Weekly - One-off
	Operation	Deletes an alert plan.

Table 5-29 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. Local->1: I/O device connected to the rear panel of the HWT-NVR800 Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30 seconds by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.3.3 Off-Duty Detection

Function

Allows users to enable or disable off-duty detection and draw a detection area. When detecting that a person is absent for a duration exceeding the preset threshold, the camera generates an alarm, and the HWT-NVR800 links the buzzer to generate an alarm sound, records video, or sends alarm information by email.

GUI Layout

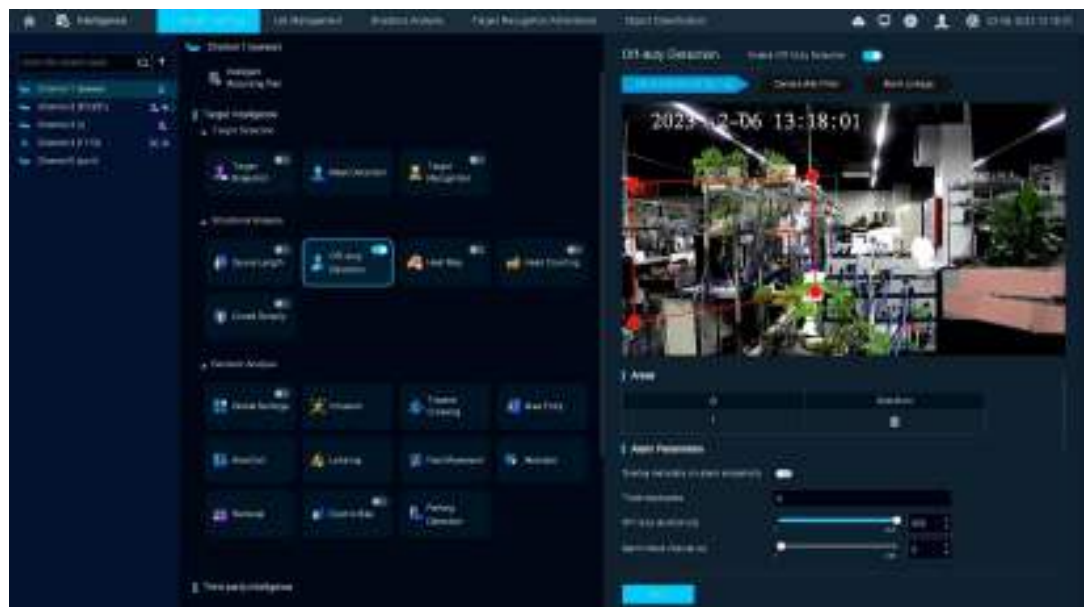


Table 5-30 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.

Parameter/Button	Description
Camera Parameter Settings	Table 5-31 describes related parameters.
Camera Alert Plan	Table 5-32 describes related parameters.
Alarm Linkage	Table 5-33 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-31 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
-	Enable Off-Duty Detection	Indicates whether to enable the off-duty detection function.
Areas	ID	ID of a detection area. Only one detection area can be drawn.
	Operation	Column that contains the edit icon for drawing a detection area on or deleting a drawn area from the video image. If no detection area is drawn, the full image is used as the detection area by default.
Settings	Overlay metadata on alarm snapshots	Indicates whether to superimpose metadata information on alarm-triggered snapshots, such as intelligent analysis rules and results.
	Number of persons that should be on duty.	Number of people who should be on duty in the detection area. The value is an integer ranging from 1 to 5.
	Off-duty duration (s)	Interval between the time when off-duty behavior occurs and the time when an alarm is generated. The value is an integer ranging from 1 to 600.
	Alarm Check Interval (s)	Interval at which alarms are checked.
Audible and visual alarm	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.

Area	Parameter	Description
NOTE - Audible and visual alarms are supported by the HWT-Dxxxx-10-LI-PV cameras. - Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU cameras. An external audio device needs to be connected to play the alarm sound.	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes light based on the preset frequency and duration.
	Flash duration (s)	Light flashing duration.
	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-32 Camera Alert Plan

Area	Parameter /Button	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	
	Date	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or Every Day . If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is displayed as Every Day . However, the actual execution day is the same as the settings in the camera web system.
	Mode	Mode in which an alert plan is executed. - Weekly - One-off
	Operation	Column that contains the icon for deleting an alert plan.

Table 5-33 Parameters on the Alarm Linkage tab page

Area	Parameter /Button	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay, in seconds. The default value is 10s .
Video and Snapshot Linkage	Recording Channel	Recording channel.
	Recording Delay	Recording duration. The default value is 30s . NOTE • If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. • If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.3.4 Crowd Density Detection

Function

- Allows users to enable or disable crowd density detection and draw a detection area. When the number of persons in a detection area exceeds the alarm threshold, the camera generates an alarm, and the HWT-NVR800 links the buzzer to generate an alarm sound, records video, or sends alarm information by email.
- Allows users to set the alarm check interval, alarm threshold, and sensitivity for crowd density detection.

GUI Layout

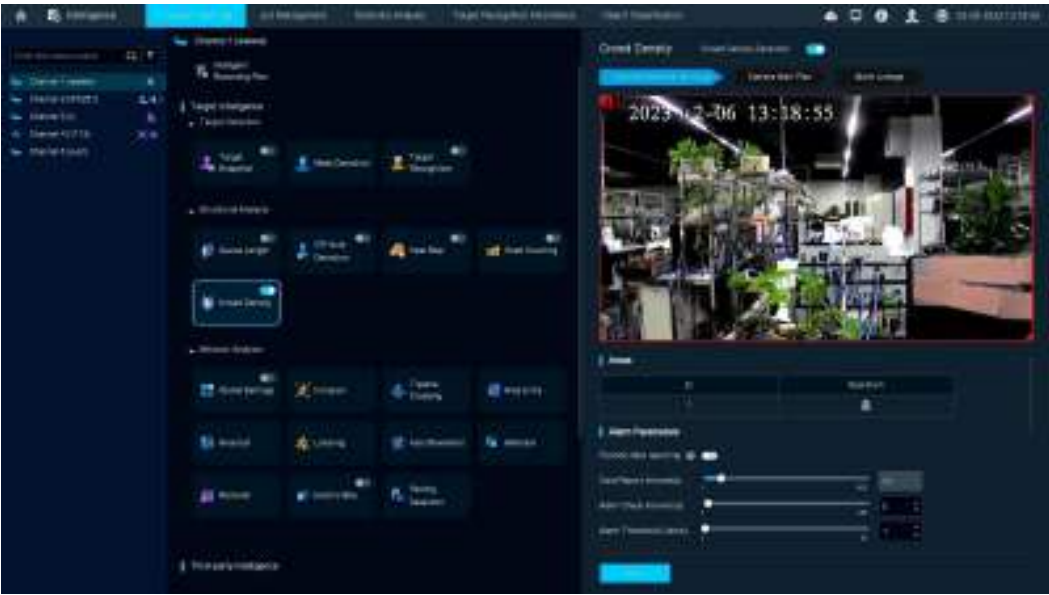


Table 5-34 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-35 describes related parameters.
Camera Alert Plan	Table 5-36 describes related parameters.
Alarm Linkage	Table 5-37 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-35 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
-	Crowd Density Detection	Indicates whether to enable crowd density detection.
Areas	ID	ID of a detection area. Only one detection area can be drawn.
	Operation	Draws or deletes a detection area on the video image. If no detection area is drawn, the full image is used as the detection area by default.

Area	Parameter	Description
Settings	Periodic data reporting	Indicates whether to periodically report the crowd density.
	Data Report Interval (s)	Interval at which data is reported.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Alarm threshold (users)	Alarm threshold for the number of persons in a detection area.
	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
Audible and visual alarm NOTE Audible and visual alarms are supported by the HWT-	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.

Area	Parameter	Description
Dxxxx-10-LI-PV camera s. Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU camera s. An external audio device needs to be connected to play the alarm sound.	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-36 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-37 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30 seconds by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.3.5 Heat Map

Function

Allows users to enable or disable the heat map function.

GUI Layout

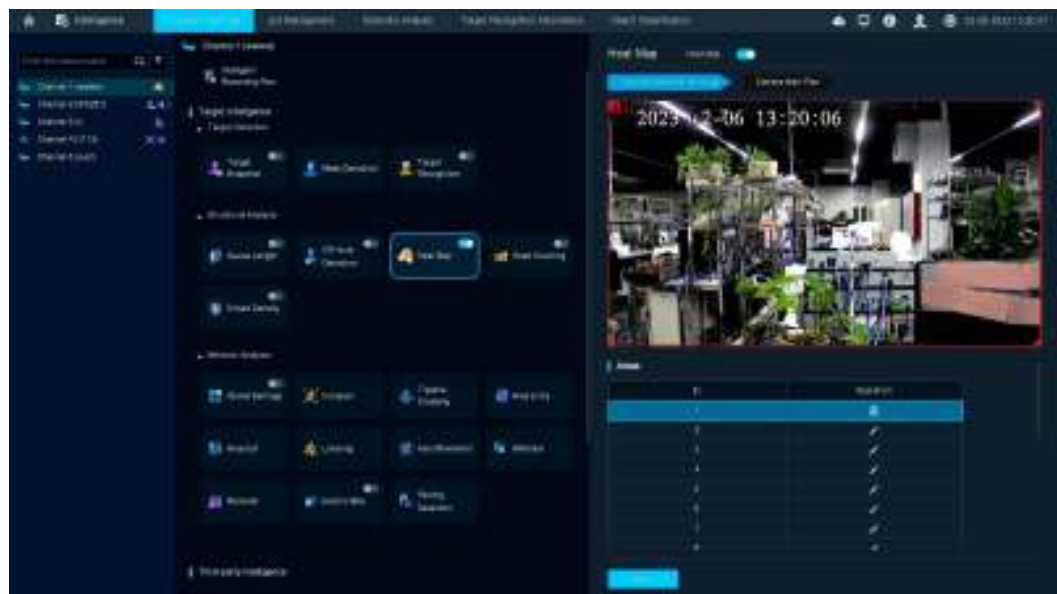


Table 5-38 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-39 describes related parameters.
Camera Alert Plan	Table 5-40 describes related parameters.

Parameter	Description
Apply	Applies the parameter settings.

Table 5-39 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
-	Heat Map	Indicates whether to enable the heat map function.
Areas	ID	ID of a detection area. A maximum of eight detection areas can be drawn.
	Operation	Draws or deletes a detection area on the video image.
Settings	Send Metadata	Indicates whether to send metadata when the HWT-NVR800 is connected to the upper-level platform. If this function is enabled, the camera will send metadata such as snapshots and structured data to the upper-level platform. Then the platform can perform search by criteria based on the received metadata.

Table 5-40 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	
	Operation	Deletes an alert plan.
	Delete All	Deletes all alert plans.

5.1.1.5.1.4 Behavior Analysis

5.1.1.5.1.4.1 Global Behavior Analysis Configuration

Function

Allows users to enable or disable the global behavior analysis configuration for behavior analysis functions.

GUI Layout

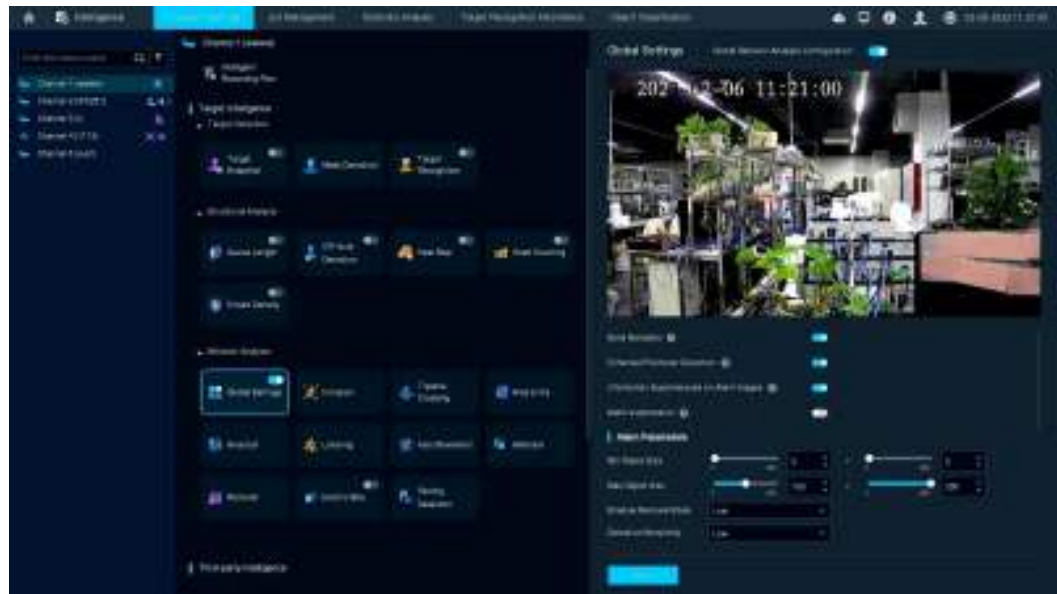


Table 5-41 Parameter description

Parameter	Description
Channel No.	Channel ID.
Global Behavior Analysis Configuration	After this function is enabled, you can use the global configuration function for behavior analysis.
Send Metadata	Indicates whether to send metadata when the HWT-NVR800 is connected to the upper-level platform. If this function is enabled, the camera will send metadata such as snapshots and structured data to the upper-level platform. Then the platform can perform search by criteria based on the received metadata.
Enhanced Perimeter Detection	Indicates whether to send a full image as TLV metadata.
Information Superimposed on Alarm Images	Indicates whether to superimpose the target frame and rule frame that trigger alarms on full images sent as metadata.
Alarm suppression	Indicates whether to send only the alarm that is triggered for the first time.
Min Object Size	Minimum size (in pixels) of an object that can be detected on video images in the CIF (352 x 288) video resolution. No alarm is generated when the size of an object is less than the value of this parameter. NOTE The minimum object size supported by behavior analysis is 5 x 5 pixels (at the video resolution of 352 x 288 pixels).

Parameter	Description
Max Object Size	Maximum size (in pixels) of an object that can be detected on video images in the CIF (352 x 288) video resolution. No alarm is generated when the size of an object is greater than the value of this parameter. NOTE The maximum object size supported by behavior analysis is 200 x 200 pixels (at the video resolution of 352 x 288 pixels).
Shadow Removal Mode	Mode in which the shadow is removed. The shadow generated when objects are moving affects the detection size. • In a scenario with no shadow or small shadows, Low is recommended to ensure complete detection of objects. • In a scenario with large shadows, High is recommended to cut objects from shadows so that the detection frame can accurately cover the objects or separate objects overlapped with shadows.
Detection Sensitivity	Sensitivity in which an object can be detected. A higher sensitivity indicates a higher detection rate but also a higher false positive rate and more device performance consumption. • If there is any interference such as lamplight and rustling leaves, Low is recommended to prevent false alarms. • If the foreground and background are of similar colors, High is recommended.
Background Update Rate	Speed of integrating an object into the background. A larger value indicates quicker object integration.
Apply	Applies the parameter settings.

5.1.1.5.1.4.2 Intrusion Detection

Function

Allows users to enable or disable intrusion detection.

GUI Layout

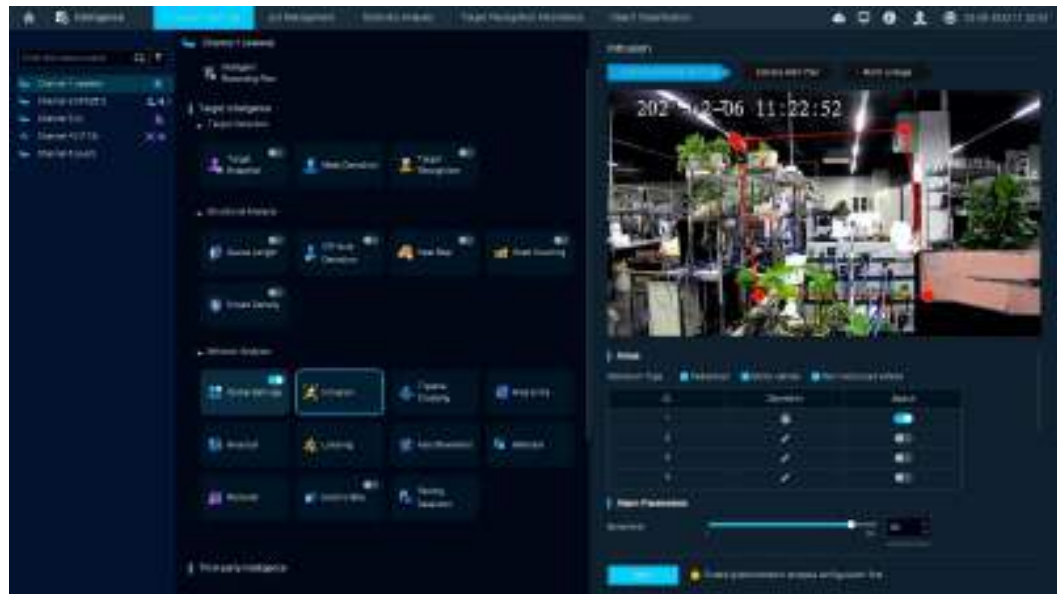


Table 5-42 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-43 describes related parameters.
Camera Alert Plan	Table 5-44 describes related parameters.
Alarm Linkage	Table 5-45 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-43 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
Areas	Detection Type	Type of objects that can be detected. • Pedestrian • Motor vehicle • Non-motorized vehicle
	ID	ID of a detection area. A maximum of four detection areas can be drawn.

Area	Parameter	Description
	Operation	Draws or deletes a detection area on the video image.
	Switch	Indicates whether to enable a detection area.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Object Position	Mode in which an object is detected. • Center: An object can be detected only when its central part enters the detection area. • tops: An object can be detected only when its top part enters the detection area. • Bottom: An object can be detected only when its bottom part enters the detection area.
Audible and visual alarm NOTE • Audible and visual alarms are supported by the HWT-	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.

Area	Parameter	Description
Dxxxx-10-LI-PV camera s. Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU camera s. An external audio device needs to be connected to play the alarm sound.	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-44 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day. NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-45 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable.
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s.
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.4.3 Tripwire Crossing Detection

Function

Allows users to enable or disable tripwire crossing detection.

GUI Layout

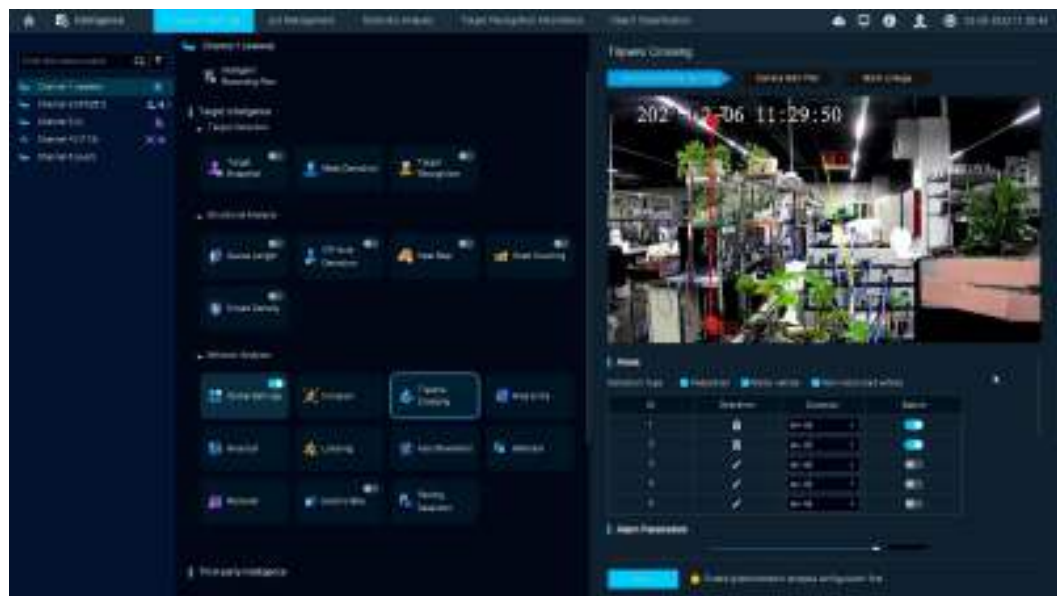


Table 5-46 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-47 describes related parameters.
Camera Alert Plan	Table 5-48 describes related parameters.

Parameter	Description
Alarm Linkage	Table 5-49 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-47 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
Areas	Detection Type	Type of objects that can be detected. • Pedestrian • Motor vehicle • Non-motorized vehicle
	ID	ID of a detection area. A maximum of four detection areas can be drawn.
	Operation	Draws or deletes a detection area on the video image.
	Rule Type	Rule type. • A<->B: from A to B or from B to A • A->B: from A to B • B->A: from B to A
	Switch	Indicates whether to enable a detection area.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Object Position	Mode in which an object is detected. • Center: An object can be detected only when its central part enters the detection area. • Top: An object can be detected only when its top part enters the detection area. • Bottom: An object can be detected only when its bottom part enters the detection area.
Audible and visual alarm	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.

Area	Parameter	Description
NOTE - Audible and visual alarms are supported by the HWT-Dxxxx-10-LI-PV cameras. - Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU cameras. An external audio device needs to be connected to play the alarm sound.	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.
	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-48 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.

Area	Parameter	Description
	End Time	
	Day	Day in a week for alert plan execution. The default value is Every Day. NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. - Weekly - One-off
	Operation	Deletes an alert plan.

Table 5-49 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable.
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. Local->1: I/O device connected to the rear panel of the HWT-NVR800 Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s.
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.4.4 Area Entry Detection

Function

Allows users to enable or disable area entry detection.

GUI Layout

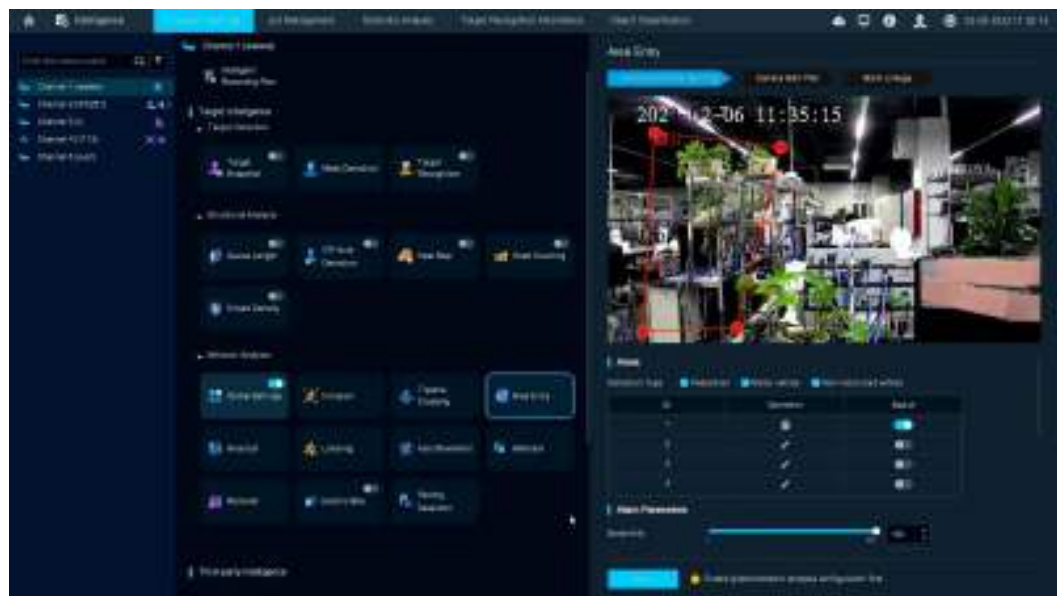


Table 5-50 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-51 describes related parameters.
Camera Alert Plan	Table 5-52 describes related parameters.

Parameter	Description
Alarm Linkage	Table 5-53 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-51 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
Areas	Detection Type	Type of objects that can be detected. • Pedestrian • Motor vehicle • Non-motorized vehicle
	ID	ID of a detection area. A maximum of four detection areas can be drawn.
	Operation	Draws or deletes a detection area on the video image.
	Switch	Indicates whether to enable a detection area.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Object Position	Mode in which an object is detected. • Center: An object can be detected only when its central part enters the detection area. • Top: An object can be detected only when its top part enters the detection area. • Bottom: An object can be detected only when its bottom part enters the detection area.
Audible and visual alarm NOTE • Audible and visual alarms are	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.

Area	Parameter	Description
supported by the HWT-Dxxxx-10-LI-PV cameras. • Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU cameras. An external audio device needs to be connected to play the alarm sound.	Flash duration(s)	Light flashing duration.
	Flash frequency	Frequency at which the light flashes. • High • Medium • Low • Steady on

Table 5-52 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day. NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. - Weekly - One-off
	Operation	Deletes an alert plan.

Table 5-53 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable.
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. Local->1: I/O device connected to the rear panel of the HWT-NVR800 Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s.
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.4.5 Area Exit Detection

Function

Allows users to enable or disable area exit detection.

GUI Layout

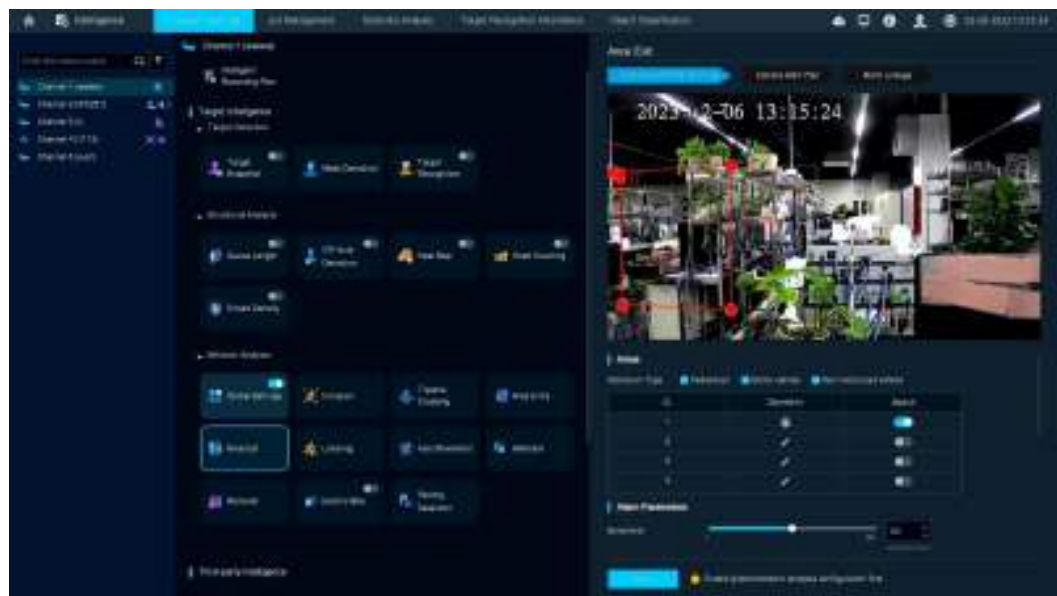


Table 5-54 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-55 describes related parameters.
Camera Alert Plan	Table 5-56 describes related parameters.

Parameter	Description
Alarm Linkage	Table 5-57 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-55 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
Areas	Detection Type	Type of objects that can be detected. • Pedestrian • Motor vehicle • Non-motorized vehicle
	ID	ID of a detection area. A maximum of four detection areas can be drawn.
	Operation	Draws or deletes a detection area on the video image.
	Switch	Indicates whether to enable a detection area.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Object Position	Mode in which an object is detected. • Center: An object can be detected only when its central part enters the detection area. • Top: An object can be detected only when its top part enters the detection area. • Bottom: An object can be detected only when its bottom part enters the detection area.
Audible and visual alarm NOTE • Audible and visual alarms are	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.

Area	Parameter	Description
supported by the HWT-Dxxxx-10-LI-PV cameras. • Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU cameras. An external audio device needs to be connected to play the alarm sound.	Flash duration(s)	Light flashing duration.
	Flash frequency	Frequency at which the light flashes. • High • Medium • Low • Steady on

Table 5-56 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-57 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.4.6 Loitering Detection

Function

Allows users to enable or disable loitering detection.

GUI Layout

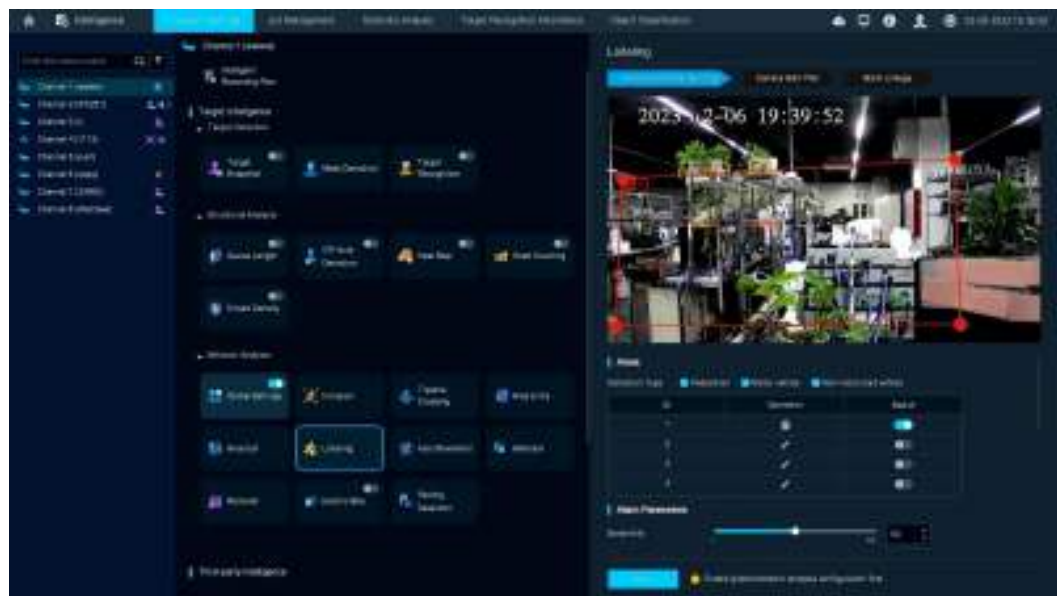


Table 5-58 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-59 describes related parameters.
Camera Alert Plan	Table 5-60 describes related parameters.

Parameter	Description
Alarm Linkage	Table 5-61 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-59 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
Areas	Detection Type	Type of objects that can be detected. • Pedestrian • Motor vehicle • Non-motorized vehicle
	ID	ID of a detection area. A maximum of four detection areas can be drawn.
	Operation	Draws or deletes a detection area on the video image.
	Switch	Indicates whether to enable a detection area.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Object Position	Mode in which an object is detected. • Center: An object can be detected only when its central part enters the detection area. • Top: An object can be detected only when its top part enters the detection area. • Bottom: An object can be detected only when its bottom part enters the detection area.
	Alarm Tolerance Time (s)	Loitering alarm threshold.
Audible and visual alarm	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.

Area	Parameter	Description
NOTE - Audible and visual alarms are supported by the HWT-Dxxxx-10-LI-PV cameras. - Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU cameras. An external audio device needs to be connected to play the alarm sound.	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.
	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-60 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.

Area	Parameter	Description
	End Time	
	Day	Day in a week for alert plan execution. The default value is Every Day. NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. - Weekly - One-off
	Operation	Deletes an alert plan.

Table 5-61 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable.
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. Local->1: I/O device connected to the rear panel of the HWT-NVR800 Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s.
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.4.7 Fast Movement Detection

Function

Allows users to enable or disable fast movement detection.

GUI Layout

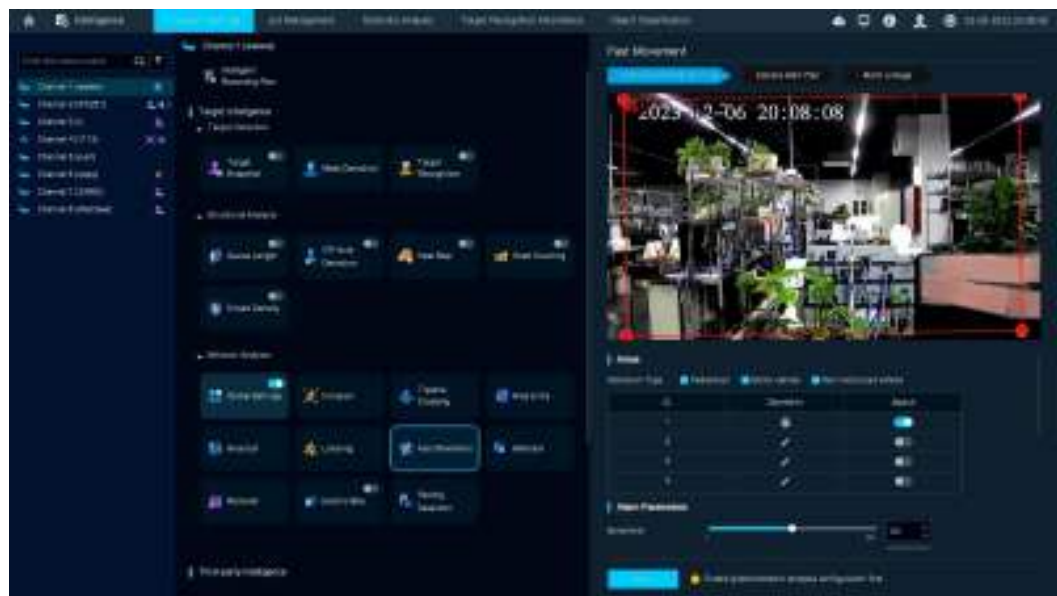


Table 5-62 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-63 describes related parameters.
Camera Alert Plan	Table 5-64 describes related parameters.

Parameter	Description
Alarm Linkage	Table 5-65 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-63 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
Areas	Detection Type	Type of objects that can be detected. • Pedestrian • Motor vehicle • Non-motorized vehicle
	ID	ID of a detection area. A maximum of four detection areas can be drawn.
	Operation	Draws or deletes a detection area on the video image.
	Switch	Indicates whether to enable a detection area.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Object Position	Mode in which an object is detected. • Center: An object can be detected only when its central part enters the detection area. • Top: An object can be detected only when its top part enters the detection area. • Bottom: An object can be detected only when its bottom part enters the detection area.
Audible and visual alarm NOTE • Audible and visual alarms are	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.

Area	Parameter	Description
supported by the HWT-Dxxxx-10-LI-PV cameras. • Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU cameras. An external audio device needs to be connected to play the alarm sound.	Flash duration(s)	Light flashing duration.
	Flash frequency	Frequency at which the light flashes. • High • Medium • Low • Steady on

Table 5-64 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. - Weekly - One-off
	Operation	Deletes an alert plan.

Table 5-65 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. Local->1: I/O device connected to the rear panel of the HWT-NVR800 Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.4.8 Abandoned Object Detection

Function

Allows users to enable or disable abandoned object detection.

GUI Layout

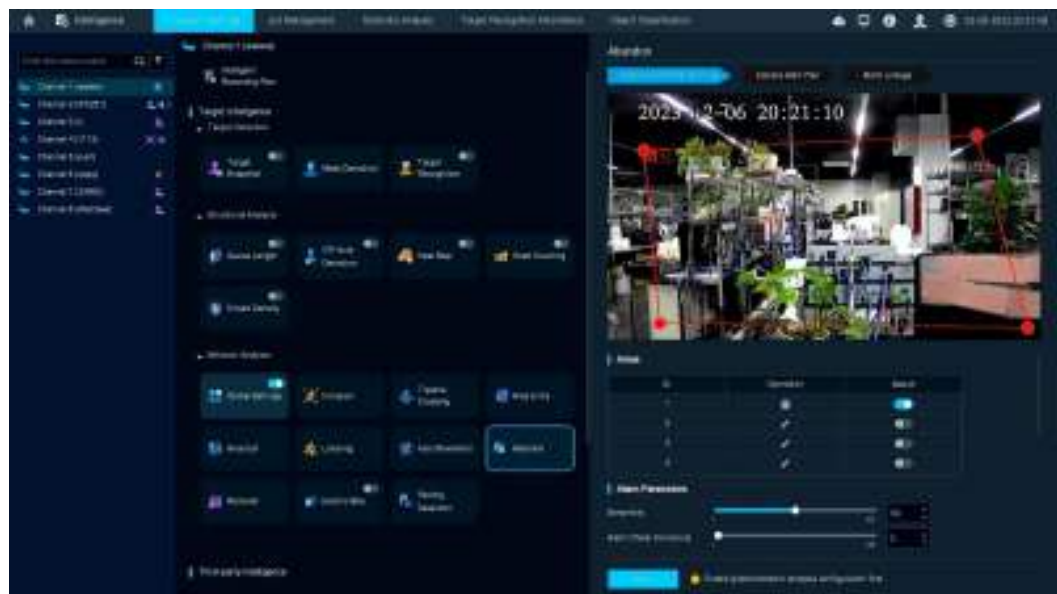


Table 5-66 Parameter description

Parameter	Parameter description
Channel No.	Channel ID.
Camera Parameter Settings	Table 5-67 describes related parameters.
Camera Alert Plan	Table 5-68 describes related parameters.

Parameter	Parameter description
Alarm Linkage	Table 5-69 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-67 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
Areas	ID	ID of a detection area. A maximum of four detection areas can be drawn.
	Operation	Draws or deletes a detection area on the video image.
	Switch	Indicates whether to enable a detection area.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Object Position	Mode in which an object is detected. • Center: An object can be detected only when its central part enters the detection area. • Top: An object can be detected only when its top part enters the detection area. • Bottom: An object can be detected only when its bottom part enters the detection area.
	Alarm Tolerance Time (s)	Alarm threshold.
Audible and visual alarm NOTE • Audible and visual alarms are	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.

Area	Parameter	Description
supported by the HWT-Dxxxx-10-LI-PV cameras. • Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU cameras. An external audio device needs to be connected to play the alarm sound.	Flash duration(s)	Light flashing duration.
	Flash frequency	Frequency at which the light flashes. • High • Medium • Low • Steady on

Table 5-68 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day. NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-69 Alarm Linkage

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable.
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s.
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.4.9 Removed Object Detection

Function

Allows users to enable or disable removed object detection.

GUI Layout

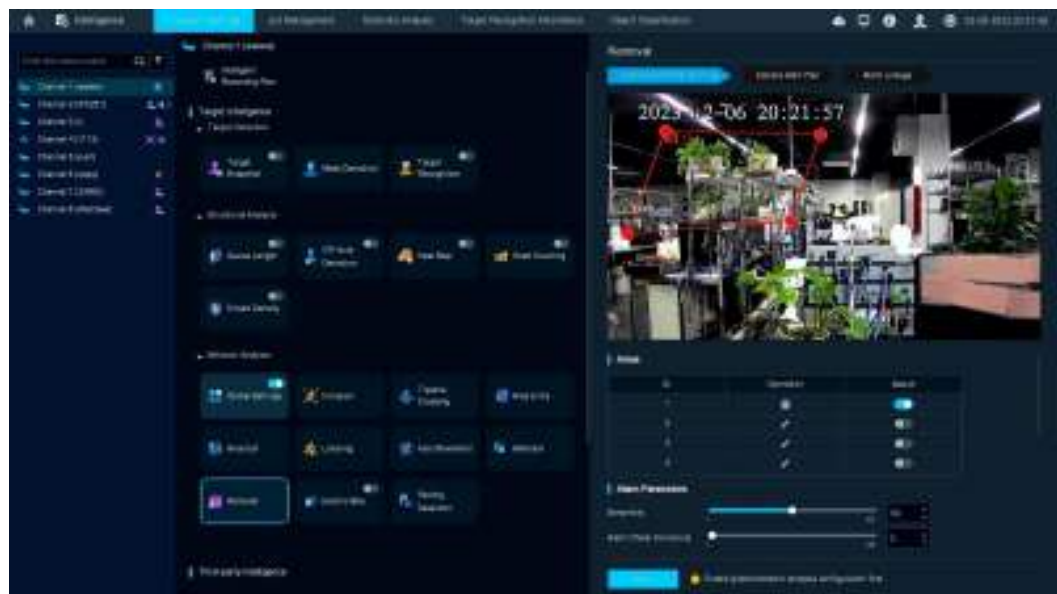


Table 5-70 Parameter description

Parameter	Description
Channel No.	Channel ID.
Camera Parameter Settings	Table 5-71 describes related parameters.
Camera Alert Plan	Table 5-72 describes related parameters.

Parameter	Description
Alarm Linkage	Table 5-73 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-71 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
Areas	ID	ID of a detection area. A maximum of four detection areas can be drawn.
	Operation	Draws or deletes a detection area on the video image.
	Switch	Indicates whether to enable a detection area.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Object Position	Mode in which an object is detected. • Center: An object can be detected only when its central part enters the detection area. • Top: An object can be detected only when its top part enters the detection area. • Bottom: An object can be detected only when its bottom part enters the detection area.
Audible and visual alarm NOTE • Audible and visual alarms are supported by the HWT-	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.

Area	Parameter	Description
Dxxxx-10-LI-PV camera s. Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU camera s. An external audio device needs to be connected to play the alarm sound.	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-72 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day. NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-73 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable.
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s.
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.4.10 Electric Bike Detection

Function

Allows users to enable or disable electric bike detection.

GUI Layout

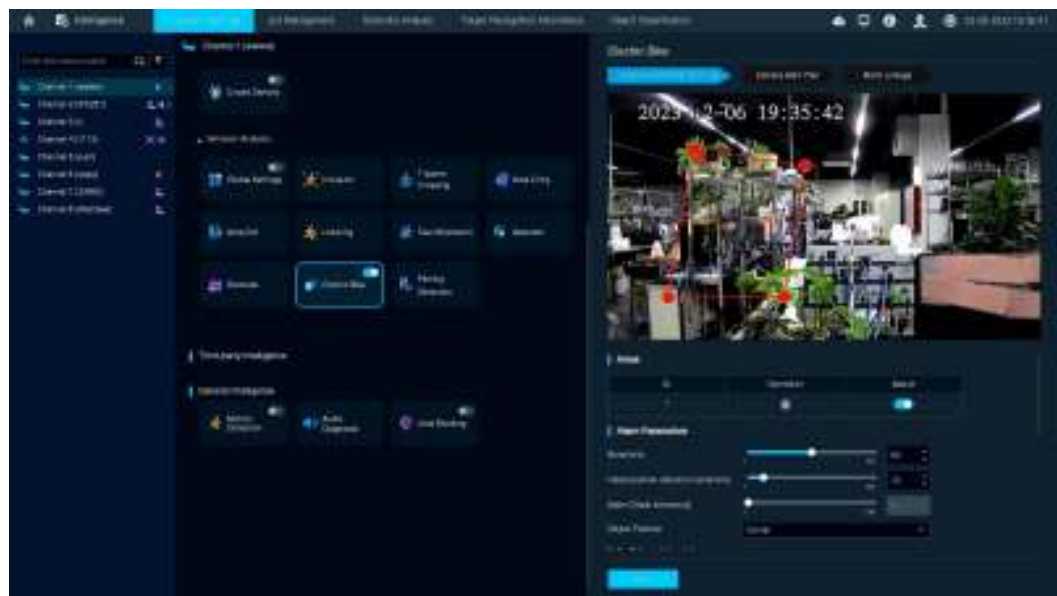


Table 5-74 Parameter description

Parameter	Description
Channel No.	Channel ID.
Camera Parameter Settings	Table 5-75 describes related parameters.
Camera Alert Plan	Table 5-76 describes related parameters.

Parameter	Description
Alarm Linkage	Table 5-77 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-75 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
Areas	ID	ID of a detection area. A maximum of one detection area can be drawn.
	Operation	Draws or deletes a detection area on the video image.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	False positive reduction sensitivity	Sensitivity for reducing false positives. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
	Object Position	Mode in which an object is detected. • Center: An object can be detected only when its central part enters the detection area. • Top: An object can be detected only when its top part enters the detection area. • Bottom: An object can be detected only when its bottom part enters the detection area.
Audible and visual alarm NOTE • Audible and visual alarms are supported by the HWT-	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.

Area	Parameter	Description
Dxxxx-10-LI-PV camera s. Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU camera s. An external audio device needs to be connected to play the alarm sound.	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-76 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-77 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.4.11 Parking Detection

Function

Allows users to enable or disable parking detection.

GUI Layout

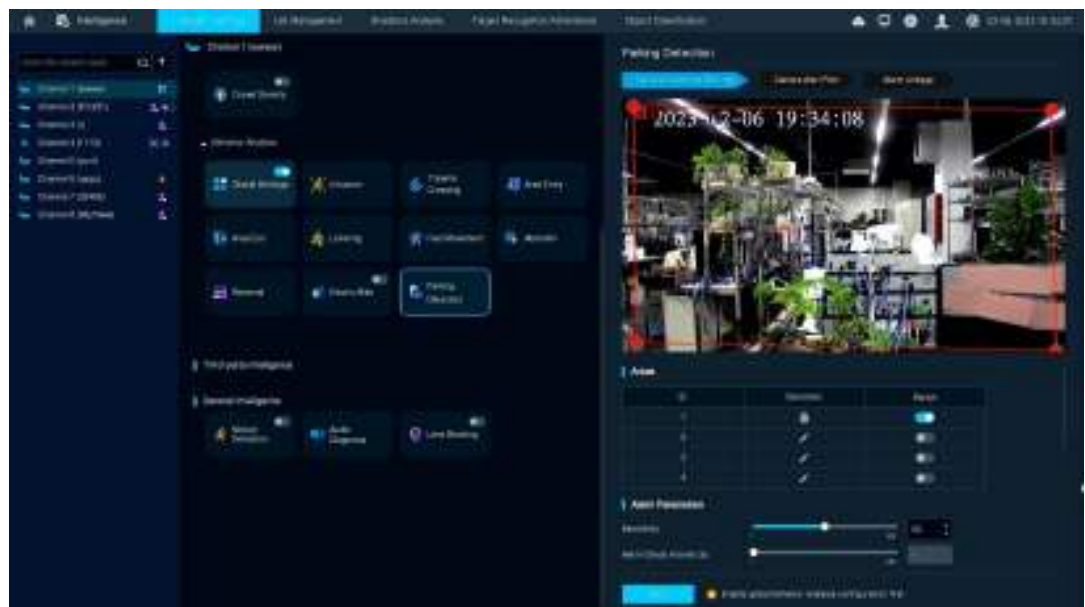


Table 5-78 Parameter description

Parameter	Description
Channel No.	Channel ID.
Camera Parameter Settings	Table 5-79 describes related parameters.
Camera Alert Plan	Table 5-80 describes related parameters.

Parameter	Description
Alarm Linkage	Table 5-81 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-79 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
Areas	ID	ID of a detection area. Only one detection area can be drawn.
	Operation	Draws or deletes a detection area on the video image.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked. The value ranges from 1 to 256, in seconds.
	Parking Violation Threshold (s)	Vehicle stay duration threshold. An alarm is generated only when the vehicle stay duration exceeds the value of this parameter.
Audible and visual alarm NOTE - Audible and visual alarms are supported by the HWT-Dxxxx-10-LI-PV cameras. - Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU cameras. An external audio device needs to be connected to play the alarm sound.	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes light based on the preset frequency and duration.
	Flash duration (s)	Light flashing duration.

Area	Parameter	Description
	Flash frequency	Frequency at which the light flashes. The options are as follows: • High • Medium • Low • Steady on

Table 5-80 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	
	Date	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or Every Day . If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is displayed as Every Day . However, the actual execution day is the same as the settings in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-81 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.

Area	Parameter	Description
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O device connected to the selected camera
	Output Delay	Output delay, in seconds. The default value is 10s .
Video and Snapshot Linkage	Recording Channel	Recording channel.
	Recording Delay	Recording duration. The default value is 30s . NOTE • If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30s by default. • If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.5 Vehicle Intelligence

5.1.1.5.1.5.1 Object Settings

Function

Allows users to enable or disable object classification.

GUI Layout

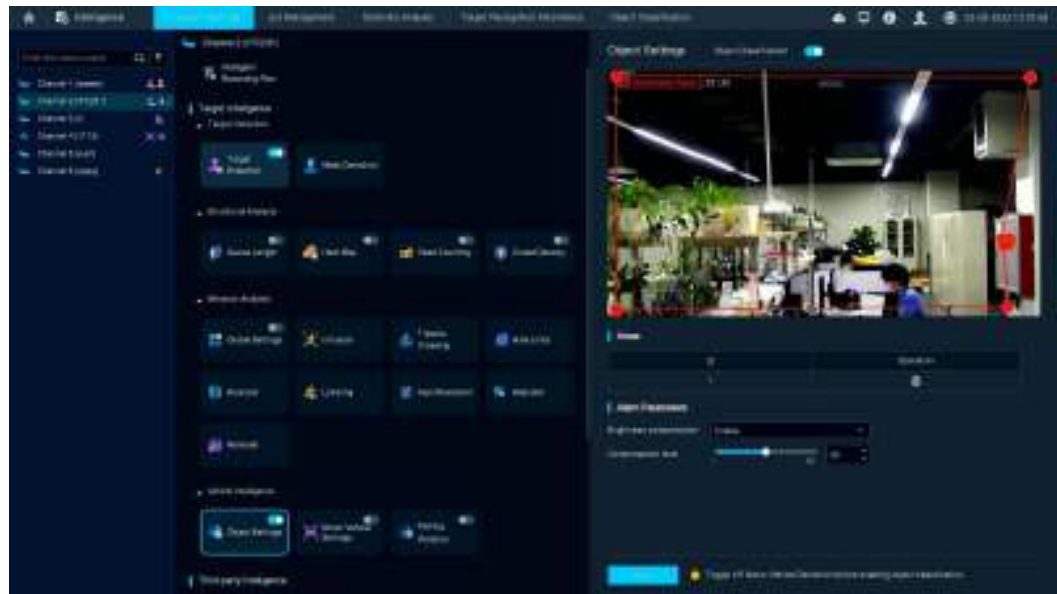


Table 5-82 Parameter description

Area	Parameter	Description
-	Channel No.	Channel ID.
-	Object Classification	Indicates whether to enable object classification.
Areas	ID	ID of a detection area. Only one detection area can be drawn.
	Operation	Draws or deletes a detection area on the video image.
Settings	Brightness compensation	If the brightness of the license plate is too high or too low, you can enable this function to compensate brightness for captured license plate images.
	Compensation level	This parameter is available only when Brightness compensation is set to Enable . You can increase the value of this parameter when the environment is dark.
	Priority province or city	Province (or city) name abbreviation used when the first character of a license plate cannot be recognized. Only one province (or city) name abbreviation can be configured.
-	Apply	Applies the parameter settings.

5.1.1.5.1.5.2 Motor Vehicle Settings

Function

Allows users to enable or disable motor vehicle detection.

GUI Layout

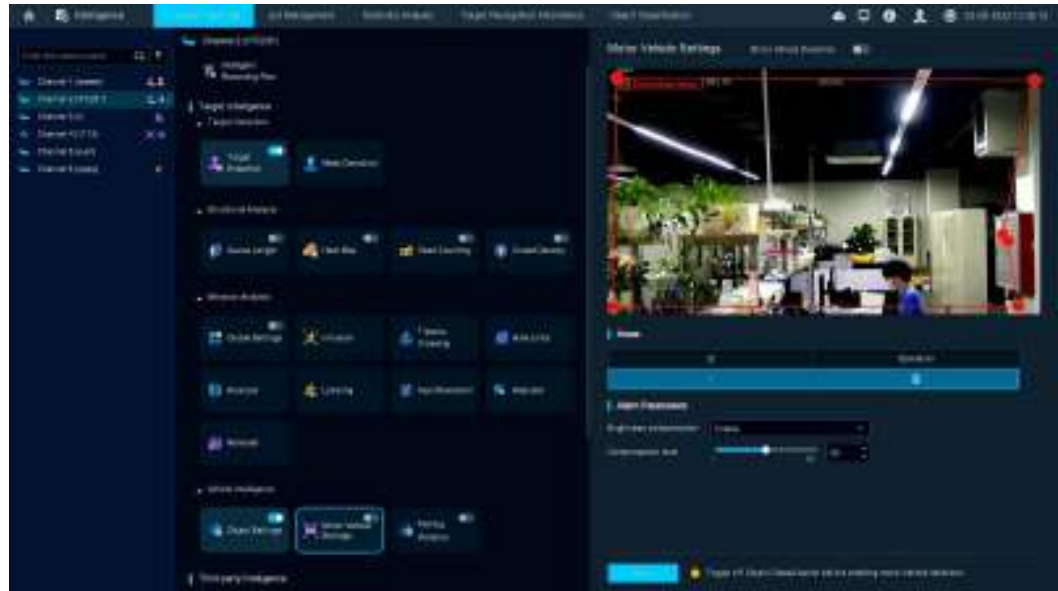


Table 5-83 Parameter description

Area	Parameter	Description
-	Channel No.	Channel ID.
-	Motor Vehicle Detection	Indicates whether to enable motor vehicle detection.
Areas	ID	ID of a detection area. A maximum of one detection area can be drawn.
	Operation	Draws or deletes a detection area on the video image.
Settings	Brightness compensation	If the brightness of the license plate is too high or too low, you can enable this function to compensate brightness for captured license plate images.
	Compensation level	This parameter is available only when Brightness compensation is set to Enable . You can increase the value of this parameter when the environment is dark.
	Priority province or city	Province (or city) name abbreviation used when the first character of a license plate cannot be recognized. Only one province (or city) name abbreviation can be configured.

Table 5-85 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
-	Parking Violation Detection	Indicates whether to enable parking violation detection.
Areas	ID	ID of a detection area. A maximum of four detection areas can be drawn.
	Operation	Draws or deletes a detection area on the video image.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Parking Violation Threshold (s)	Vehicle stay duration threshold. An alarm is generated only when the vehicle stay duration exceeds the value of this parameter.
	Alarm Check Interval (s)	Interval at which alarms are checked.

Table 5-86 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	
	Day	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.

Area	Parameter	Description
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-87 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O alarm output device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O alarm output device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot Linkage	Recording Channel	Recording channel.
	Recording Delay	Recording duration. The default value is 30s . NOTE • If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30 seconds by default. • If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.6 Third-Party Algorithms

5.1.1.5.1.6.1 Third-Party Algorithm

Function

Allows users to enable or disable third-party algorithms.

GUI Layout

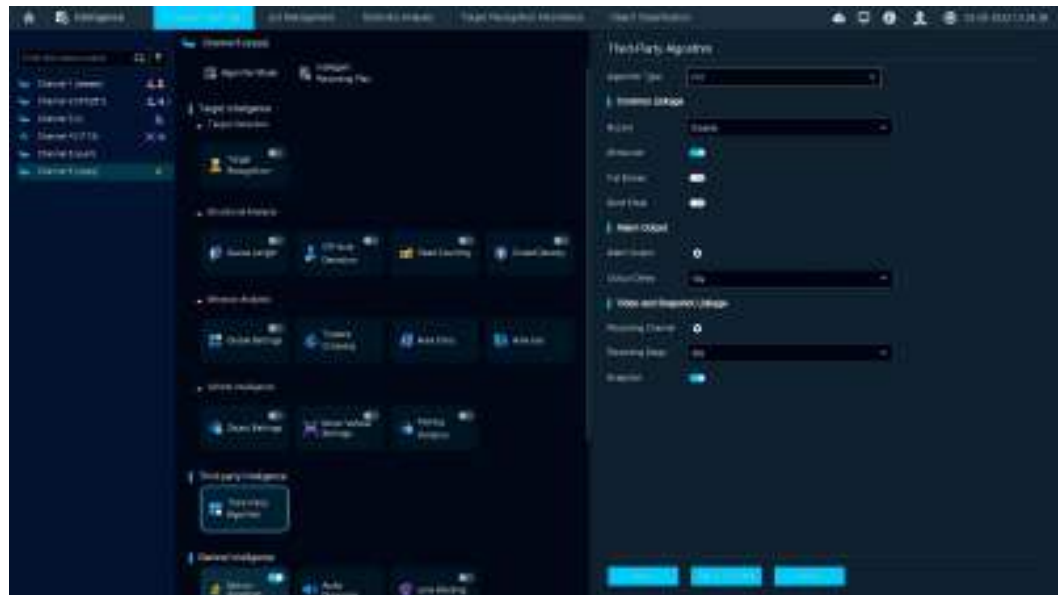


Table 5-88 Parameter description

Area	Parameter	Description
-	Channel No.	Channel ID.
-	Algorithm Type	Third-party algorithm to be used.
-	Enable	Indicates whether this function is enabled on a camera.
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.

Area	Parameter	Description
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O alarm output device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O alarm output device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot Linkage	Recording Channel	Recording channel.
	Recording Delay	Recording duration. The default value is 30s . NOTE • If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30 seconds by default. • If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.
-	Apply	Applies the parameter settings.
-	Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
-	Apply to Others	Applies the alarm linkage policy of a channel to other channels.

5.1.1.5.1.7 Common Intelligence

5.1.1.5.1.7.1 Audio Diagnosis

Function

- Allows users to enable or disable audio diagnosis. When the ambient sound of a camera is abnormal, the camera generates an alarm, and the HWT-NVR800 links the buzzer to generate an alarm sound, records video, or sends alarm information by email.
- Allows users to set audio diagnosis sensitivity.

GUI Layout

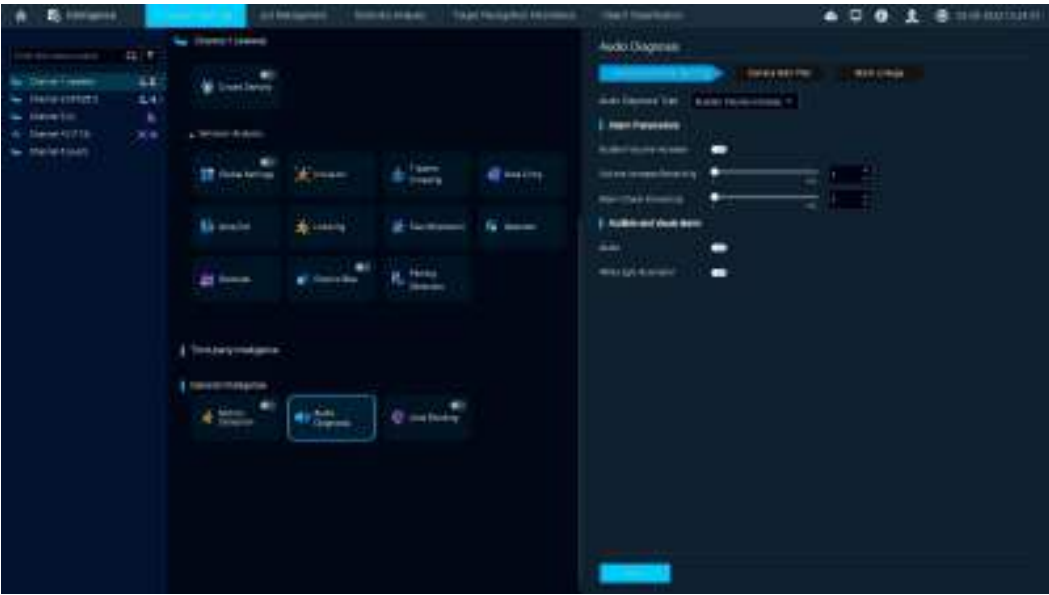


Table 5-89 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-90 describes related parameters.
Camera Alert Plan	Table 5-91 describes related parameters.
Alarm Linkage	Table 5-92 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-90 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
-	Sound Diagnosis Type	Audio diagnosis type. • Audio Exception Detection • Sudden Volume Increase • Sudden Volume Decrease
Settings	Audio Exception Detection	Indicates whether to enable audio exception detection. After this function is enabled, an alarm is generated if sound is produced in the ambient environment of a camera.

Area	Parameter	Description
	Audio Exception Detection Sensitivity	Audio exception detection sensitivity. • Low: corresponds to sound intensity 5. • Middle: corresponds to sound intensity 10. • High: corresponds to sound intensity 20.
	Sudden Volume Increase	Indicates whether to enable sudden volume increase detection. After this function is enabled, an alarm is generated if the volume of ambient sound suddenly increases.
	Volume Increase Sensitivity	Sensitivity for sudden volume increase detection. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Sudden Volume Decrease	Indicates whether to enable sudden volume decrease detection. After this function is enabled, an alarm is generated if the volume of ambient sound suddenly decreases.
	Volume Decrease Sensitivity	Sensitivity for sudden volume decrease detection. The value ranges from 1 to 100. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
Audible and visual alarm NOTE • Audible and visual alarms are supported by the HWT-	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.

Area	Parameter	Description
Dxxxx-10-LI-PV camera s. Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU camera s. An external audio device needs to be connected to play the alarm sound.	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-91 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Audio Diagnosis Type	Audio diagnosis type. - Audio Exception Detection - Sudden Volume Increase - Sudden Volume Decrease
	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-92 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O alarm output device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O alarm output device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30 seconds by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.7.2 Lens Blocking Detection

Function

- Allows users to enable or disable the lens blocking detection function. When the lens of a camera is blocked, the camera generates an alarm, and the HWT-NVR800 links the buzzer to generate an alarm sound, records video, or sends alarm information by email.
- Allows users to set the alarm check interval and detection sensitivity.

GUI Layout

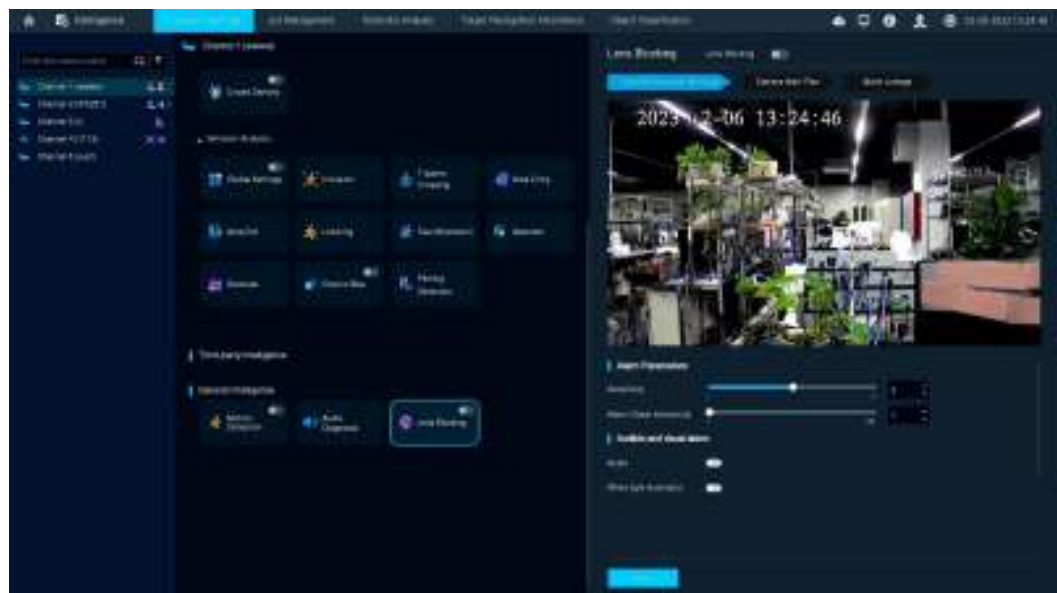


Table 5-93 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-94 describes related parameters.

Parameter	Description
Camera Alert Plan	Table 5-95 describes related parameters.
Alarm Linkage	Table 5-96 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-94 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
-	Lens Blocking	Indicates whether to enable the lens blocking detection function.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 5. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
Audible and visual alarm NOTE Audible and visual alarms are supported by the HWT-	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.

Area	Parameter	Description
Dxxxx-10-LI-PV cameras. Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU cameras. An external audio device needs to be connected to play the alarm sound.	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-95 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-96 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O alarm output device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O alarm output device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30 seconds by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.1.7.3 Motion Detection

Function

Allows users to enable or disable motion detection. An alarm is generated when a moving object is detected in a specified area in the image view of a camera.

GUI Layout

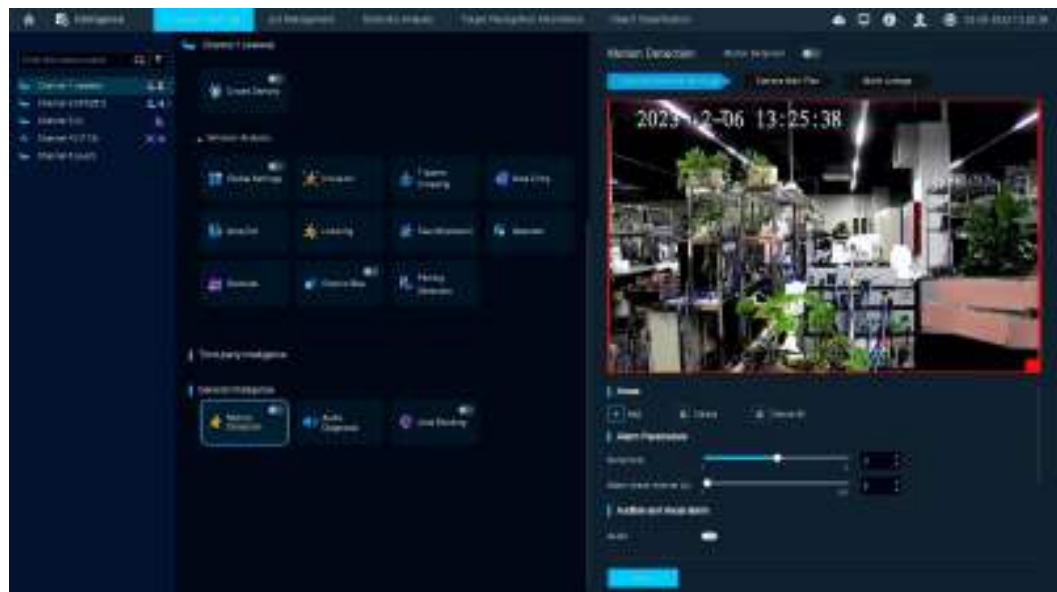


Table 5-97 Parameter description

Parameter	Description
Channel	Channel ID.
Camera Parameter Settings	Table 5-98 describes related parameters.
Camera Alert Plan	Table 5-99 describes related parameters.

Parameter	Description
Alarm Linkage	Table 5-100 describes related parameters.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm linkage policy of a channel to other channels.

Table 5-98 Parameters on the Camera Parameter Settings tab page

Area	Parameter	Description
-	Motion Detection	Indicates whether to enable motion detection.
Areas	Add	Adds a motion detection area. A maximum of four motion detection areas can be added.
	Delete	Deletes a detection area.
	Delete All	Deletes all detection areas.
Settings	Sensitivity	Detection sensitivity. The value ranges from 1 to 5. A larger value indicates a higher sensitivity.
	Alarm Check Interval (s)	Interval at which alarms are checked.
Audible and visual alarm NOTE Audible and visual alarms are supported by the HWT-	Audio	Indicates whether the camera plays the preset audio file based on the preset number of times when an alarm is generated.
	Audio file	Audio file to be played.
	Playback times	Number of audio file playback times.
	White light illuminator	Indicates whether the camera flashes the light based on the preset frequency and duration.
	Flash duration(s)	Light flashing duration.

Area	Parameter	Description
Dxxxx-10-LI-PV camera s. Audible alarms are supported by the HWT-D2181-10 and HWT-Dxxxx-SIU camera s. An external audio device needs to be connected to play the alarm sound.	Flash frequency	Frequency at which the light flashes. - High - Medium - Low - Steady on

Table 5-99 Parameters on the Camera Alert Plan tab page

Area	Parameter	Description
Camera Alert Plan	Add	Adds an alert plan. A maximum of eight alert plans can be added.
	Delete All	Deletes all alert plans.
	ID	ID of an alert plan.
	Start Date	Start date of an alert plan.
	Start Time	Time segment during which an alert plan is executed.
	End Time	

Area	Parameter	Description
	Day	Day in a week for alert plan execution. The default value is Every Day . NOTE In the HWT-NVR800, the execution day of a single alert plan can be set only to a single day or daily. If the alert plan configured in the camera web system of the 9.0.0 version contains multiple days, the execution day setting displayed in the HWT-NVR800 is daily. However, the actual execution setting is the same as that in the camera web system.
	Mode	Mode in which an alert plan is executed. • Weekly • One-off
	Operation	Deletes an alert plan.

Table 5-100 Parameters on the Alarm Linkage tab page

Area	Parameter	Description
Common Linkage	Buzzer	Work status and alarm duration of the buzzer. The default value is Disable .
	Show Icon	Indicates whether to display the status icon of the camera that generates an alarm.
	Full Screen	Indicates whether to play live video from the camera that generates an alarm in full screen mode.
	Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Alarm Output	Alarm Output	I/O alarm output device. • Local->1: I/O alarm output device connected to the rear panel of the HWT-NVR800 • Channel->1: I/O alarm output device connected to the selected camera
	Output Delay	Output delay. The default value is 10s .
Video and Snapshot	Recording Channel	Recording channel.

Area	Parameter	Description
Linkage	Recording Delay	Recording duration. The default value is 30s . NOTE - If both the common recording plan and the intelligent recording plan are enabled and the recording duration is less than 30s, the event duration is 30 seconds by default. - If only an intelligent recording plan is enabled, the minimum event duration is 5s.
	Snapshot	Indicates whether to take snapshots when an alarm is generated.

5.1.1.5.2 List Management

5.1.1.5.2.1 List Management

Function

- Allows users to add a target list.
- Allows users to import target images.
- Allows users to back up target list data to a USB flash drive.

GUI Layout

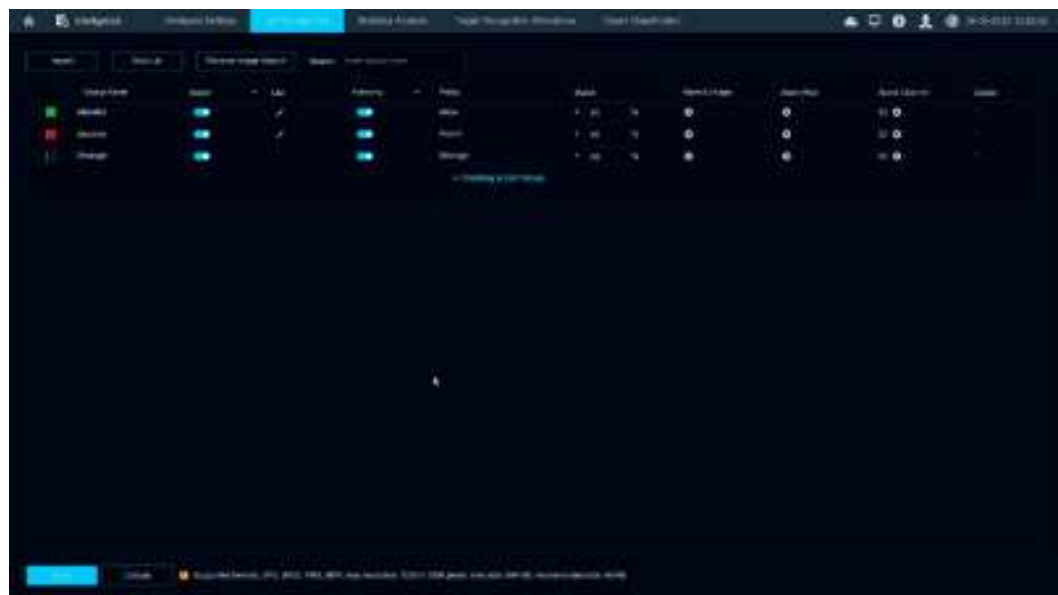


Table 5-101 Parameter description

Parameter	Description
Import	Imports the backup list data file and list-based alarm configurations to the HWT-NVR800. CAUTION The imported list data will overwrite the current list information. Exercise caution when performing this operation.
Back Up	Exports all list information and list-based alarm configurations to a USB flash drive.
Reverse Image Search	Selects an image and checks whether it is in the specified list.
Group Name	Name of a list. The options are Allowlist , Blocklist , and Stranger . You can also customize a list name.
Switch	Indicates whether to enable a list.
List	Imports targets to or deletes targets from a list.
Delete	Deletes a list.
Apply	Applies the parameter settings.

5.1.1.5.2.2 List-based Alarm

Function

Allows users to enable or disable list-based alert.

GUI Layout

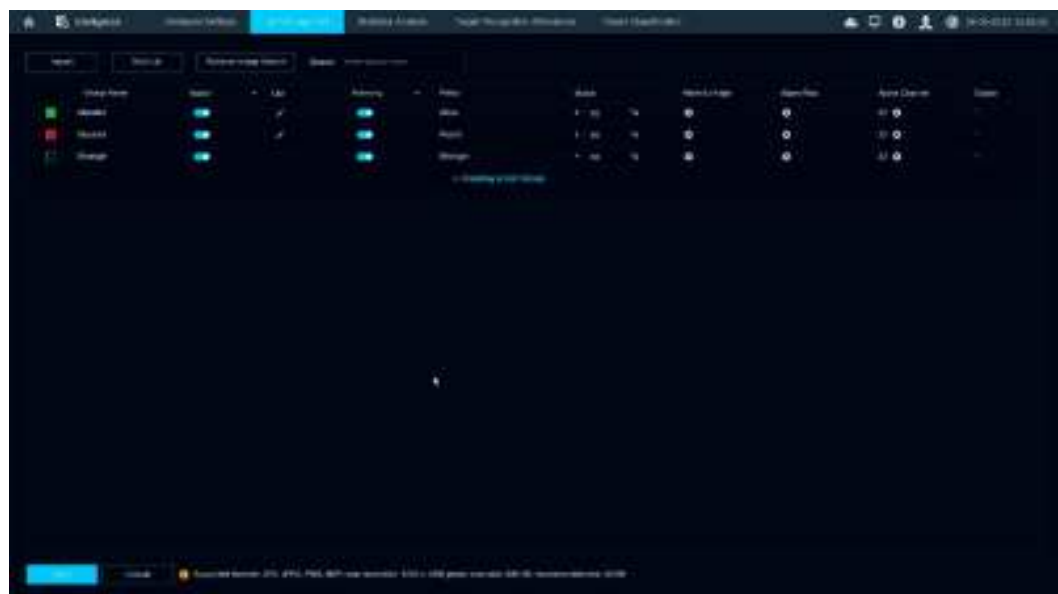


Table 5-102 Parameter description

Parameter	Description
Group Name	Name of a list.
Alarming	Indicates whether to enable list-based alert. After this function is enabled, an alarm is generated when the camera identifies a target in a target list.
Policy	List type. • Allow: trustlist • Reject: blocklist
Match	Similarity threshold. If the similarity is greater than or equal to the threshold, the target in the list is matched.
Alarm Linkage	Alarm linkage policy.
Alarm Plan	Alarm plan.
Alarm Channel	Alarm channel.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.5.3 Statistics Analysis

5.1.1.5.3.1 Target Statistics

Function

- Allows users to collect statistics on the number of times that a target in a list appears in a specified period. You can create a statistical chart based on a specified time segment (day, week, or month).
- Allows users to export a statistical chart to a USB flash drive.

GUI Layout



Table 5-103 Parameter description

Parameter	Description
Channel	Camera for which statistics are collected.
List	List for which statistics are collected.
Report Type	Statistics collection mode. • Day • Week • Month • Quarter • Year
Export	Exports statistics to a USB flash drive.

5.1.1.5.3.2 Target Statistics Report

Function

- Allows users to collect statistics on the age and gender of targets that are recognized in a specified period. You can create a statistical chart based on a specified time segment (day, week, or month).
- Allows users to export a statistical chart to a USB flash drive.

GUI Layout



Table 5-104 Parameter description

Parameter	Description
Channel No.	Camera for which statistics are collected.
Report Type	Statistics collection mode. • Daily • Weekly • Monthly • Quarterly • Annual
Export	Exports statistics to a USB flash drive.

5.1.1.5.3.3 Head Counting

Function

- Allows users to collect statistics on the number of persons entering and exiting an area in a specified period. The statistics can be displayed in a bar chart or line chart.
- Allows users to export a statistical chart to a USB flash drive.

GUI Layout

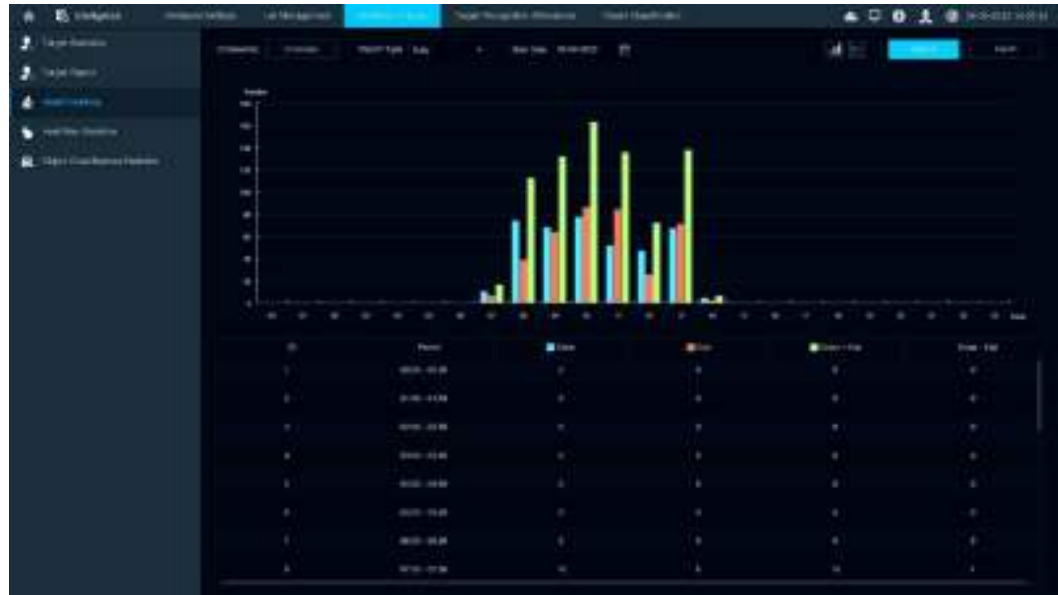


Table 5-105 Parameter description

Parameter	Description
Channel No.	Channel ID.
Report Type	Statistics collection mode. - Daily - Weekly - Monthly - Annual
Start Date	Start date for statistics collection.
	Statistical chart type. - Bar chart - Line chart
Search	Searches for statistics that meet the criteria.
Export	Exports the statistical chart to a USB flash drive in .csv format.

5.1.1.5.3.4 Heat Map Statistics

Function

- Allows users to collect statistics on the crowd density in a specified area in a specified period and view the crowd density chart by space or time.
- Allows users to export a heat map to a USB flash drive.

GUI Layout

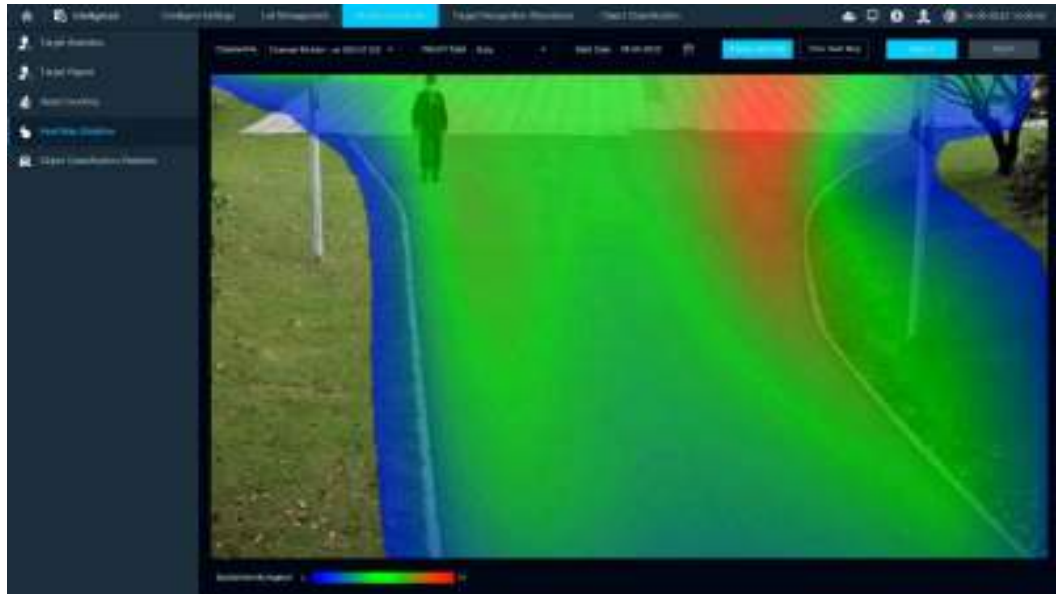


Table 5-106 Parameter description

Parameter	Description
Channel	Channel ID.
Report Type	Statistics collection mode. • Daily • Weekly • Monthly
Start Date	Start date for statistics collection.
Space Heat Map/Time Heat Map	Displays the heat map by space or time. • Space Heat Map • Time Heat Map
Search	Searches for statistics that meet the criteria.
Export	Exports the time heat map to a USB flash drive in .csv format. Currently, the space heat map cannot be exported.

5.1.1.5.3.5 Object Classification Statistics

Function

- Allows users to collect statistics on motor vehicles, non-motorized vehicles, and pedestrians that are captured in a specified time segment and generate daily, weekly, or monthly statistical charts.
- Allows users to export a statistical chart to a USB flash drive.

GUI Layout

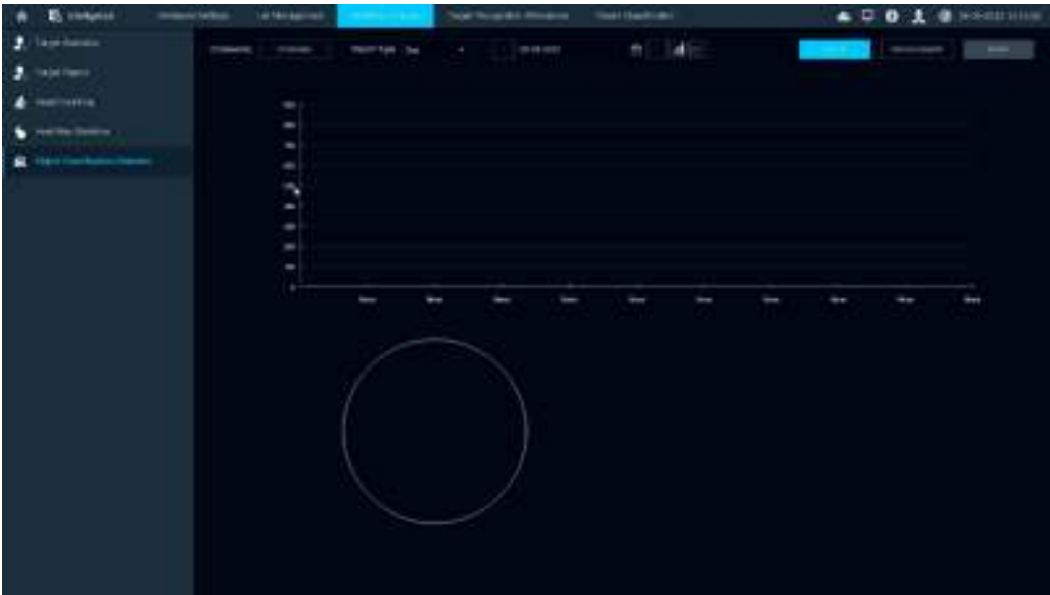


Table 5-107 Parameter description

Parameter	Description
Channel No.	Camera for which statistics are collected.
Report Type	Statistics collection mode. • Day • Week • Month • Quarter • Year
Vehicle Search	Redirects to the vehicle search page which displays the details.
Export	Exports statistics to a USB flash drive.

5.1.1.5.4 Target Recognition-based Attendance

Function

Allows users to collect attendance statistics based on the time when a camera detects an employee.

GUI Layout

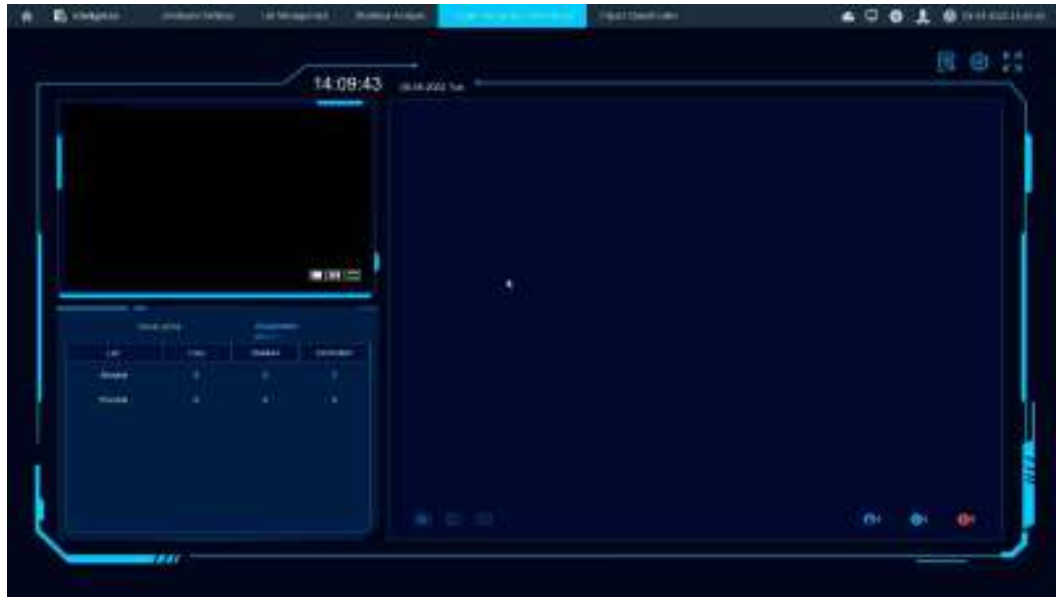


Table 5-108 Icon description

Icon	Description
	Goes to the target recognition-based attendance search page and displays the target attendance details.
	Configures target recognition-based attendance. For details, see Table 5-109.
	Displays the target recognition-based attendance page in full screen mode.
	Number of persons whose attendance statistics need to be collected.
	Number of persons with attendance statistics.
	Number of persons without attendance statistics.

Table 5-109 Parameter description

Parameter	Description
Channel No.	Channel ID used for target recognition-based attendance.
List	List used for target recognition-based attendance.
GUI Theme	Allows you to set the theme of the target recognition-based attendance page.
Show Strangers	Indicates whether to display snapshots of strangers.

Parameter	Description
Stranger Title	Title of a stranger.
Send Email Periodically	Indicates whether to periodically send attendance records.
Daily Sending Time	Time when records are sent.
Recipient	Email address for receiving messages.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Cancel	Exits the page.

5.1.1.5.5 Object Classification

Function

Displays snapshots of motor vehicles, non-motorized vehicles, and pedestrians as well as target recognition alarms in real time.

NOTE

For the HWT-NVR800 with one disk tray, you are advised to reduce the bit rate or the number of connected cameras to ensure smooth video on the video wall.

GUI Layout



Table 5-110 Icon description

Icon	Description
	Number of captured targets.

Icon	Description
	Total number of captured persons.
	Number of captured motor vehicles.
	Number of captured non-motorized vehicles.
	Configures object classification. For details, see Table 5-111.
	Displays the object classification page in full screen mode.

Table 5-111 Parameter description

Area	Parameter	Description
Basic Settings	Channel No.	Channel ID.
	Statistic Method	Statistics collection mode. 1/2/3/4/5/6/7-day: collects statistics on the detection results of the last X days. - Week: collects statistics on the detection result in the current week. Results generated from Monday to Friday are collected. - Month: collects statistics on the detection results in the current month. - Year: collects statistics on the detection results in the current year.
	GUI Theme	Theme of the object classification page.
	Content on Left	Content to be displayed on the left. - Target recognition - Frequent person - Target Snapshot
	Content in Bottom First Line	Content to be displayed in the first line at the bottom. - Person - Motor vehicle - Non-motorized vehicle
	Content in Bottom Second Line	Content to be displayed in the second line at the bottom. - Person - Motor vehicle - Non-motorized vehicle
	Apply	Applies the parameter settings.

Area	Parameter	Description
	Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
	Cancel	Exits the page.
Snapshot Settings	Target Attribute	Indicates whether target attributes are displayed in the snapshot information. • Gender • Age group • Hairstyle • Glasses • Hat • Mask
	Motor Vehicle Attributes	Indicates whether motor vehicle attributes are displayed in the snapshot information. • License Plate • Make • Model • Year • Vehicle Type • Vehicle Color • Plate Type

5.1.1.6 Configuration

5.1.1.6.1 Channel

5.1.1.6.1.1 Channel Settings

5.1.1.6.1.1.1 Digital Channels

Function

Allows users to add cameras.

The GUI varies depending on the HWT-NVR800 model. The following uses the HWT-NVR800-A02-16P as an example.

The first 16 channels of the HWT-NVR800-A02-16P can automatically connect to cameras that support PoE power supply. You can also set **Switch Mode** to **Manual** to manually connect these channels to network cameras. The rest 16 channels can connect only to network cameras, and you cannot modify **Switch Mode** for these channels.

GUI Layout

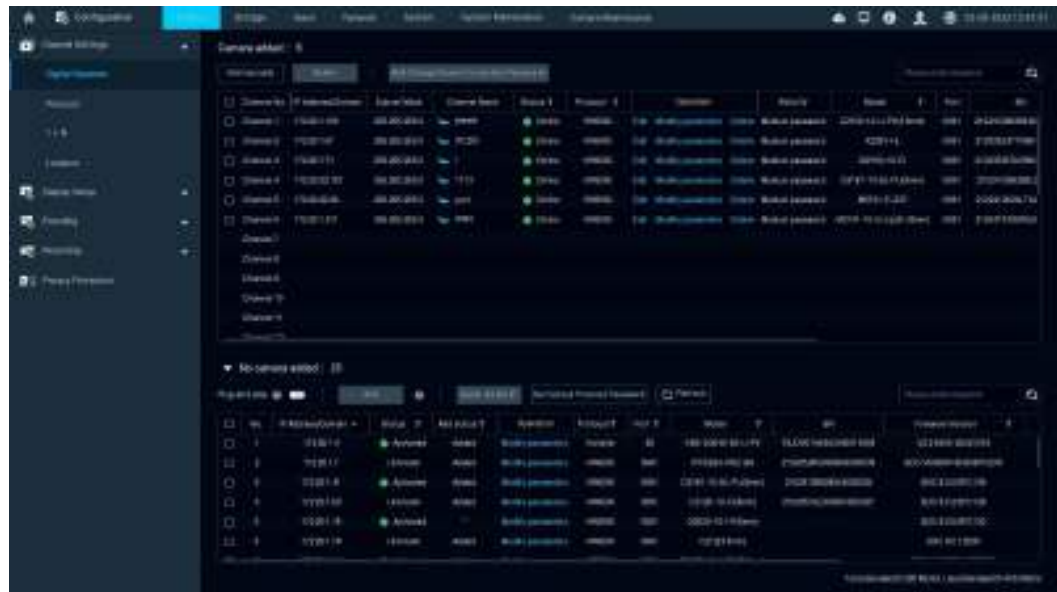


Table 5-112 Button description

Button	Parameter	Description
Refresh	-	Searches for cameras.
Delete	--	Deletes a camera.
Bulk Change Device Connection Passwords	--	Changes passwords of selected cameras in batches.
Plug-and-play	--	After this function is enabled, cameras in the LAN will be automatically added in the background. This function is available only for cameras that are not activated.
Add manually	IP Address/Domain	IP address of a camera to be added.
	Alias	Alias of a channel.
	Alias Position	Location where an alias is displayed.
	Port	Port to which a camera is connected.
	Protocol	Protocol used for connection.
	Use default protocol user name/password	Indicates whether to use the default user name and password.

Button	Parameter	Description
	Camera User Name	User name and password for connecting a camera. If the default password is not configured, customize a user name and password.
	Camera Password	
	Channel	Channel to which a camera is bound.
	Search	Searches for cameras.
	Set Default Protocol Password	Sets the default protocol password.
	Add	Adds a camera.
	Cancel	Exits the page.
Quick Add	Use default protocol user name/pass word	Indicates whether to use the default user name and password.
	Camera User Name	User name and password for connecting a camera. If the default password is not configured, customize a user name and password. NOTE Cameras can be connected only through HWSDK.
	Camera Password	
Batch modify IP	--	Changes IP addresses of selected cameras based on the customized configuration.
Set Default Protocol Password	Change Password	Changes the default protocol password.
	Protocol	Protocol for connecting a camera.
	Camera User Name	Default user name for connecting a camera.
	Camera Password	Default password for connecting a camera.
	Clear	Clears all protocol passwords.
	Save	Saves the settings.
	Cancel	Exits the page.

Table 5-113 Parameter description

Parameter	Description
Security status	• Initial: You can double-click cameras in unactivated status on the HWT-NVR800 to activate and add them. • Activated: You can double-click cameras in activated status on the HWT-NVR800 to directly add them. • None: For cameras of versions earlier than 8.2.0, this parameter is not involved.
Channel No.	Camera channel ID.
Switch Mode	• Auto: By default, the first <i>N</i> channels (with the PoE identifier) are in automatic mode. When a camera that supports PoE power supply is connected to the corresponding PoE network port, the HWT-NVR800 automatically connects to the camera. • Manual: In this mode, cameras can be connected to the channel through the network.
PoE Mode	• Auto: The HWT-NVR800 automatically provides PoE power supply for cameras and determines the power based on the network cable length. • EPoE: This mode is used to connect to cameras that support PoE power supply at a distance of more than 100 m. The maximum distance is 200 m, and the PoE power is fixed at 10 W.
Operation	Adds a camera to or deletes a camera from a channel.
Edit	Sets connection parameters. Table 5-114 describes related parameters.
Status	•  Online: indicates that a camera is online. •  Offline: indicates that a camera is offline.
Camera Settings	Sets camera parameters. Table 5-115 describes related parameters.
Security	Camera connection security.
Change Camera Password	Changes the camera password. Table 5-116 describes related parameters.
IP Address/Domain	IP address or domain name of a camera.
Subnet Mask	Subnet mask of a camera.
Port	Port number of a camera.
SN	Serial number of a camera.
Manufacturer	Camera manufacturer.
Model	Camera model.

Parameter	Description
Protocol	Camera connection protocol.
MAC address	Camera MAC address.
Firmware Version	Firmware version of a camera.

Table 5-114 Parameters for editing connection information

Parameter	Description
Channel	ID of a channel to be edited.
Switch Mode	• Auto: By default, the first N channels (with the PoE identifier) are in automatic mode. When a camera that supports PoE power supply is connected to the corresponding PoE network port, the HWT-NVR800 automatically connects to the camera. • Manual: In this mode, cameras can be connected to the channel through the network.
PoE Mode	• Auto: The HWT-NVR800 automatically provides PoE power supply for cameras and determines the power based on the network cable length. • EPoE: This mode is used to connect to cameras that support PoE power supply at a distance of more than 100 m. The maximum distance is 200 m, and the PoE power is fixed at 10 W.
Alias	Alias of a channel.
Alias Position	Location where an alias is displayed.
IP Address/Domain	IP address or domain name of a camera to be connected.
Subnet Mask	Subnet mask of a camera to be connected.
Port	Port for connecting to a camera.
Protocol	Protocol for connecting a camera.
Camera User Name	User name and password for connecting a camera.
Camera Password	
Re-register	Registers the camera again.
Camera style	Camera type. • Box camera • Bullet camera • PTZ dome camera • Fixed dome camera
OK	Saves the parameter settings.

Parameter	Description
Cancel	Exits the page for setting connection parameters.

Table 5-115 Parameters for modifying camera information

Parameter	Description
Channel	Channel ID of a camera.
Type	Connection type. By default, this parameter is set to Manual .
IP Address	IP address of a camera.
Subnet Mask	Subnet mask of a camera.
Gateway	Gateway of a camera.
Port	Port for connecting to a camera.
Camera User Name	User name and password of the camera for verification. When the camera is successfully connected, the verification is successful by default.
Camera Password	
OK	Saves the parameter settings.
Cancel	Exits the page for modifying camera parameters.

Table 5-116 Parameters for changing the camera password

Parameter	Description
Use Default Camera Password	Indicates whether to use the default password of a camera.
Change all account passwords	Indicates whether to synchronously change the camera web system login password, ONVIF/RTSP password, and northbound RESTful password.
Synchronize password to camera connected through HWSDK	Indicates whether to synchronize the password to the cameras that are connected through HWSDK.
Camera User Name	Camera user name.
Camera Password	New camera password. NOTE You can customize the password. For details about the requirements on the password complexity, see 6.1.4.3 Password Maintenance Suggestions.
Confirm Password	Confirm password. Enter the new password again for confirmation.

5.1.1.6.1.1.3 PoE Power

Function

Allows users to check the real-time power and remaining power of each PoE port on this page.

This page is available only for HWT-NVR800 models that support PoE power supply. The GUI varies depending on the HWT-NVR800 model. The following uses the HWT-NVR800-A02-16P as an example.

GUI Layout



5.1.1.6.1.1.4 1 + N

Function

If some required intelligent analysis functions, such as target capture, cannot be implemented on the live network where a video-based detection system and several HWT-Dxx-00-I cameras have been deployed, you can use the 1 + N function to upgrade the existing system.

For example, a HWT-Dxx-00-I camera that does not support snapshot taking has been installed in a scenario that requires target capture.

In this case, you can install a primary camera that supports 1 + N under the same switch as the existing generic camera (secondary camera). Assuming the network transmission between the two cameras is normal, the primary camera obtains video streams from the secondary camera, performs intelligent analysis, and outputs two channels of video streams with analysis results.

GUI Layout

The primary camera must be HWT-D2150-10-SIU, HWT-D2150-10-SIU-Up, HWT-D3250-10-SIU, or HWT-D2150-10-LI-SV.

The secondary camera must be a HWT-Dxx-00-I. The resolution of the secondary camera must not be higher than that of the primary camera or lower than 720p (1280 x 720). If the secondary camera resolution is 720p, it is considered 2 megapixels in total resolution calculation.

The following table lists the resolution combinations and service combinations that can be implemented.

Table 5-118 Combinations

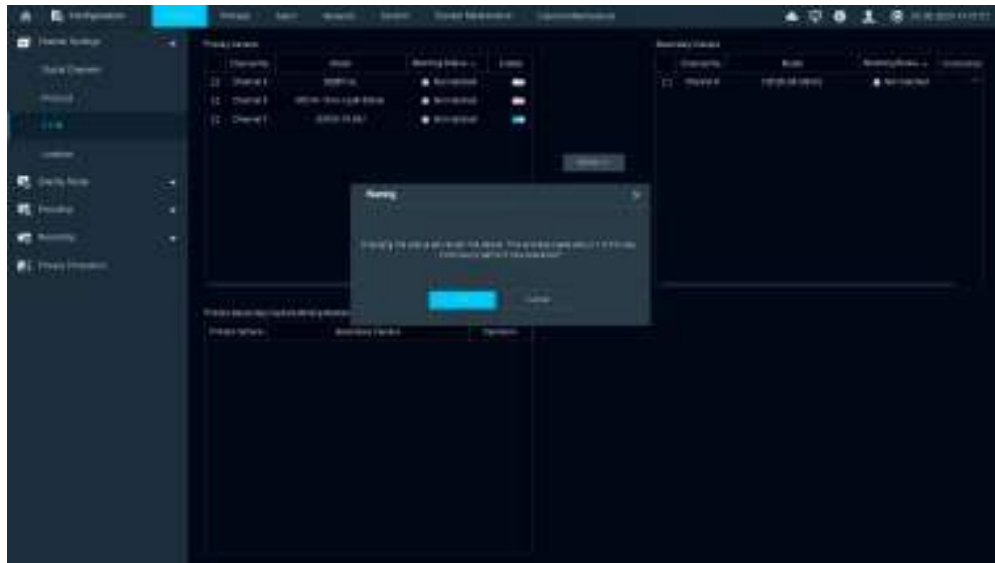
1 + N Mode	Resolution Combination (Primary Camera + Secondary Camera 1)	Intelligent Service Combination
1 + 1	5-megapixel + 2-megapixel (720p)	Target checkpoint + Target checkpoint

The following table lists requirements on secondary camera configurations.

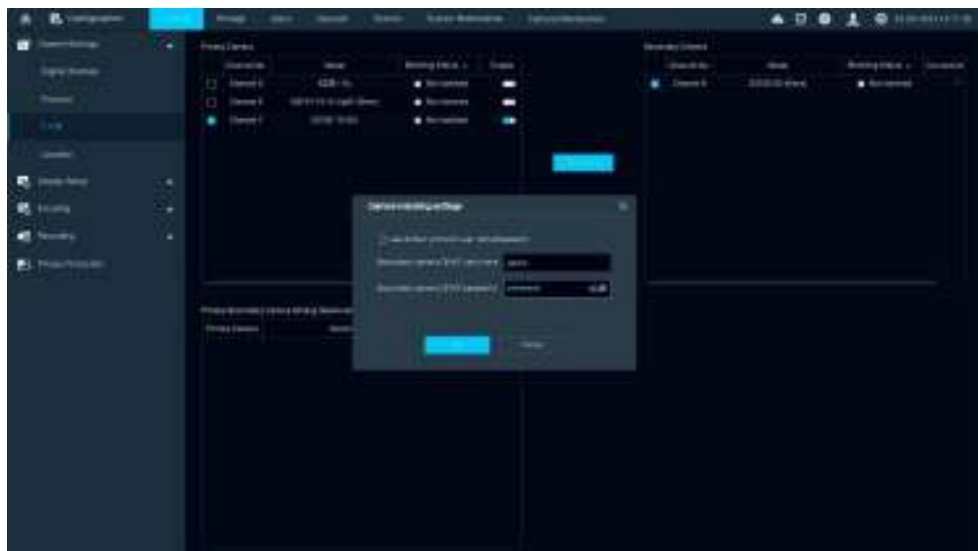
Table 5-119 Secondary camera configurations

Item	Requirement
Connection protocol	The secondary camera must support the RTSP and ONVIF protocols and enable the ONVIF protocol.
Encoding protocol	The secondary camera must use the H.264 encoding protocol.
Aspect ratio	The aspect ratio is 16:9.
Live video resolution	The live video resolution should be less than the resolution of the primary camera, and 1920 x 1080 is recommended.
Stream frame rate	The frame rate is less than or equal to 30 fps.
Stream bit rate	The bit rate is less than or equal to 4 Mbit/s.

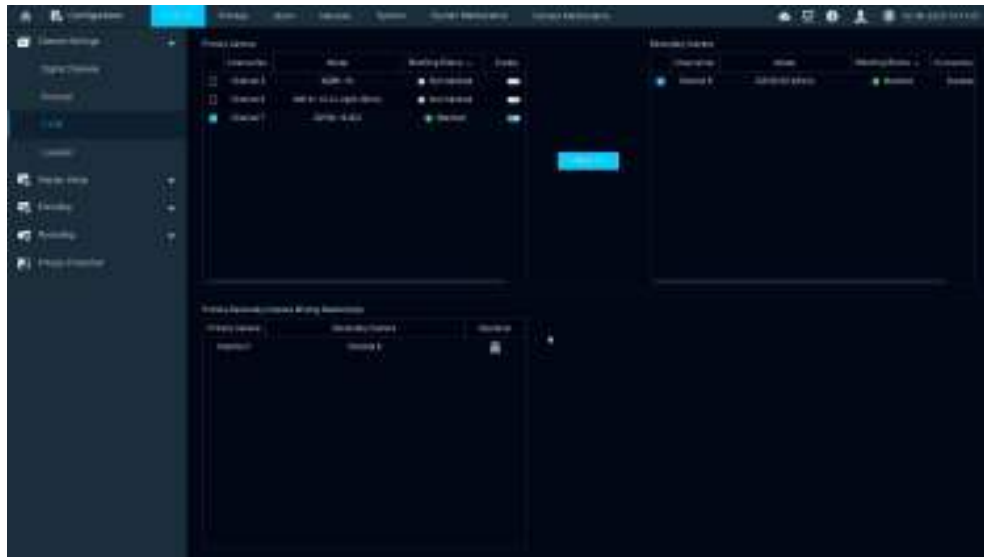
Step 1 Enable the 1 + N mode for the primary camera.



Step 2 Select the primary and secondary cameras, and enter the ONVIF user name and password of the secondary camera for matching the primary camera.



Step 3 Check whether the selected cameras match successfully. For details about how to configure target detection, see Target-related Intelligence.



----End

5.1.1.6.1.1.5 Location Information

Function

Allows you to set the location where the camera is installed.

GUI Layout

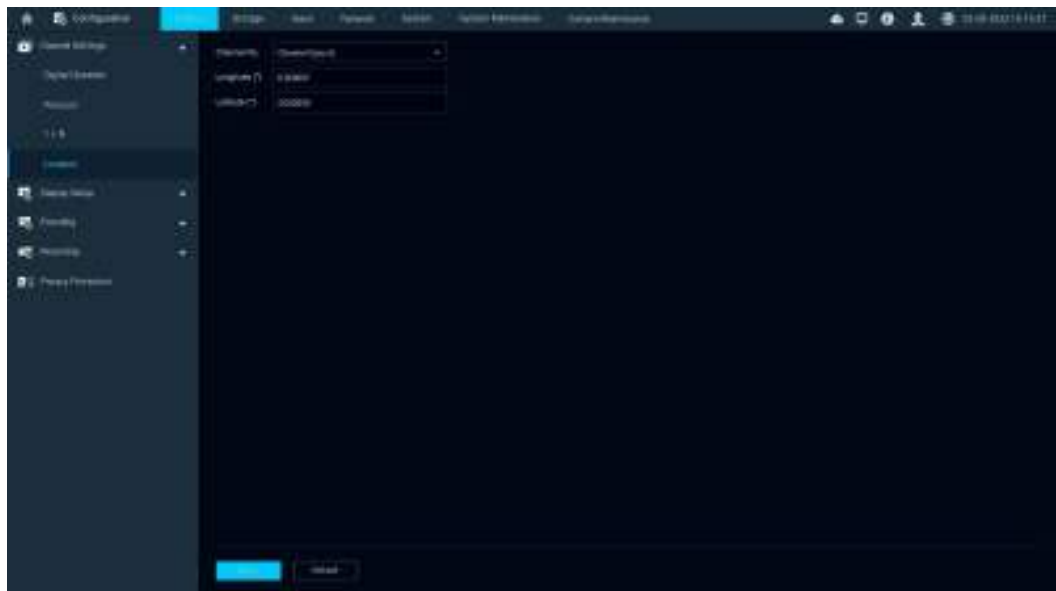


Table 5-120 Parameter/Button description

Parameter	Description
Channel No.	Channel ID.
Longitude(°)	Longitude of the location where the camera is installed.

Parameter	Description
Latitude(°)	Latitude of the location where the camera is installed.

5.1.1.6.1.2 Display Setup

5.1.1.6.1.2.1 Preview Configuration

Functions

- Allows users to set OSDs on the live video image, such as the channel name and date format.
- Allows users to set image parameters of the live video, such as the brightness and contrast.
- Allows users to hide the live video image of a camera.

GUI Layout

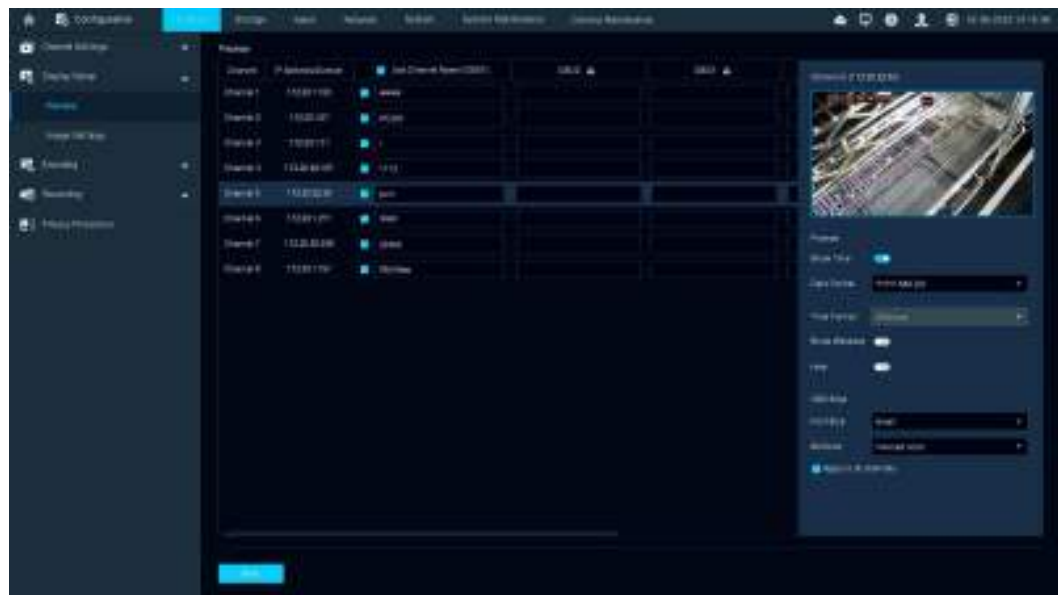


Table 5-121 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
IP Address/Domain	Channel IP address.

Parameter/Button	Description
Use Channel Name (OSD1)	Indicates whether to display the channel name on the video image of a camera. The channel name can be customized.
OSD2-OSD5	OSD text displayed on the video image. A maximum of four more OSDs can be added.
Date Format	Date format. The options are as follows: • MM-DD-YYYY • YYYY-MM-DD • DD-MM-YYYY
Time Format	Time format. Currently, only the 24-hour format is supported.
Show Channel Name	Indicates whether to display the channel name on the video image of a camera.
Show Time	Indicates whether to display the real time on the video image of a camera.
Hide	Indicates whether to display the image from the camera on the HWT-NVR800 LDU.
Show Weekday	Indicates whether to display the weekday information on the video image of a camera.
Font Size	Font size. • Small • Medium • Large
Attribute	Font attribute. • Not inverted • Inverted color
Hue	Hue.
Brightness	Brightness.
Contrast	Contrast.
Saturation	Saturation.
Sharpness	Sharpness.
Apply	Saves the parameter settings.

5.1.1.6.1.2.2 Image Control

Function

Allows users to set the image parameters of a camera, such as exposure mode and white balance. This function can only be used to set image parameters of cameras connected through the HWSDK protocol.

GUI Layout



Table 5-122 Parameter/Button description

Type	Parameter /Button	Description
-	Channel No.	Channel ID.
Image adjustment	Hue	Hue.
	Brightness	Brightness.
	Contrast	Contrast.
	Saturation	Saturation.
	Sharpness	Sharpness.
-	Mirroring	Mirroring mode. The default value is Disable . The following options are supported: • Horizontal • Vertical • All • Disable

Type	Parameter /Button	Description
-	Corridor Mode	Corridor mode. Enable this function only in scenes like corridors.
Day/Night conversion	Mode	Day/Night conversion mode. The Auto mode is used by default. The Color and B/W modes are used in specific scenarios.
	Day/Night Mode	Day/Night trigger mode. The default value is By image . If the value of Mode is Color or B/W , this parameter is not displayed.
	Sensitivity	Sensitivity. The options are High , Middle , and Low . The default value is High .
Exposure	Exposure	Exposure mode. If Exposure Mode is set to Manual , you need to set the Shutter Speed and Gain parameters. For common users, use the default value. For professional users, set the parameter based on the site requirements.
	Exposure Compensation	Exposure compensation coefficient. For common users, use the default value. For professional users, set the parameter based on the site requirements.
	Background Frequency	Refresh rate of the monitor background. The system automatically identifies the refresh rate. Users do not need to set this parameter.
	Auto Slow Shutter	Slow shutter. Users can manually set the shutter speed. The default value is Disable . For common users, use the default value. For professional users, set the parameter based on the site requirements.
	Shutter Limit (s)	Shutter limit, in seconds. Set the shutter exposure time to control the light transmittance. For common users, use the default value. For professional users, set the parameter based on the site requirements.
Backlight	Backlight	Backlight compensation. There are three backlight compensation modes: wide dynamic range (WDR), highlight compensation (HLC), and backlight compensation (BLC). The default mode is WDR. Users can disable this function or set the backlight compensation mode based on the site requirements.
	WDR	WDR coefficient. For common users, use the default value. For professional users, set the parameter based on the site requirements.
White Balance	White Balance	White balance. For common users, use the default value. For professional users, set the parameter based on the site requirements.
	Red Fine-Tuning	Red strength adjustment.

Type	Parameter /Button	Description
	Blue Fine-Tuning	Blue strength adjustment.
Image control	Defogging	Defogging mode. After this function is enabled, the system automatically removes blurs on the video image.
	Defog level	Defogging level. Manually adjust the value to increase the image clarity.
	Electronic Image Stabilization	Electronic image stabilization. The default value is Disable . Users can enable it based on the site requirements.
	Denoise	Denoise switch. Common users can disable this function or select Common . Professional users can select Expert .
	Denoising Level	Denoising level. Professional users can manually adjust the value based on the site requirements.
-	Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified. Common users can use the default parameters.

5.1.1.6.1.3 Encoding

5.1.1.6.1.3.1 Primary

Function

Allows users to set the video quality of live and recorded video.

The differences between primary and secondary streams are as follows:

- **Primary:** Primary streams feature high bit rate, definition, and bandwidth usage. They are applicable to local storage.
- **Secondary:** Secondary streams provide smooth video and occupy small bandwidth. They are applicable to data transmission over low-bandwidth networks.

GUI Layout

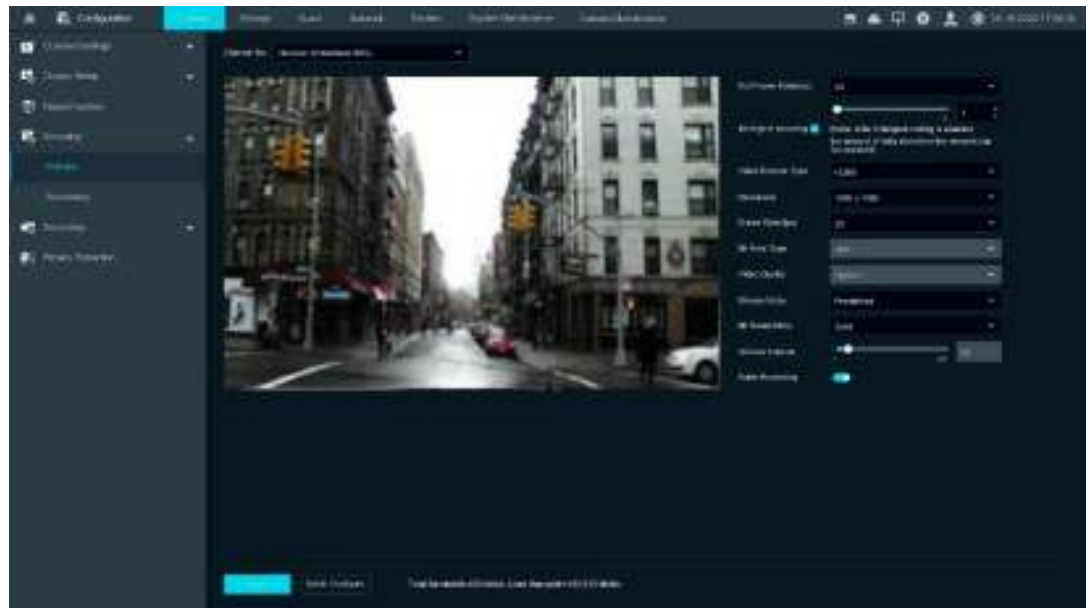


Table 5-123 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
Full Frame Rate(fps)	Frame rate of video collected through a sensor, representing the maximum capability of a camera.
Intelligent encoding	After intelligent encoding is enabled, a camera can automatically adapt to scenarios to reduce the bit rate and save storage space. A higher intelligent encoding level indicates more significant reduction of the bit rate, which may lead to image quality deterioration. NOTE - After intelligent encoding is enabled, settings of Bit Rate Type and Video Quality do not take effect. - After intelligent encoding is enabled, it takes about 20 seconds before the live video image is displayed on the HWT-NVR800.
Resolution	Size of the recorded image.
Frame Rate(fps)	Frame rate. Set the frame rate based on actual requirements and bandwidth. A higher frame rate indicates clearer and more vivid images. The maximum frame rate cannot exceed the full frame rate.

Parameter/Button	Description
Video Encode Type	Video encoding type. The HWT-NVR800 supports two video encoding types: H.264 and H.265. Set this parameter based on the video encoding type supported by the camera. Ensure that the video encoding types configured on the HWT-NVR800 and camera are the same. Otherwise, HWT-NVR800 recording will fail.
Bit Rate Type	Bit rate type. • In common scenarios, select CBR. • In complex scenarios (such as busy streets), select VBR.
Video Quality	Video quality. Six video quality levels are supported: Lowest, Lower, Low, Medium, Higher, and Highest. Better video quality indicates more occupied resources and larger storage space. Set this parameter based on the site requirements.
Stream Mode	Stream mode. The default value is Predefined. If users need to customize the stream mode configuration, select Custom and set related parameters.
Bit Rate(kbit/s)	Data transmission speed of HWT-NVR800 recordings. A larger bit rate indicates better video quality.
I-Frame Interval	I-frame interval. Set the I-frame interval to the number of frames multiplied by 2. For example, if the frame rate is set to 20, the I-frame interval of 40 (20 x 2) is recommended. If this parameter is set to a value far greater or less than the recommended value, images may be abnormal.
Audio Recording	Indicates whether to enable audio recording. This function is enabled by default. After this function is enabled, the system records the ambient sound of the camera during video recording. This function depends on whether the camera supports the audio function and whether the audio function is enabled.
Apply	Applies the parameter settings.
Batch Configure	Applies the primary stream parameter settings to other channels in batches.

5.1.1.6.1.3.2 Secondary

Function

Allows users to set the video quality of live and recorded video.

The differences between primary and secondary streams are as follows:

- **Primary:** Primary streams feature high bit rate, definition, and bandwidth usage. They are applicable to local storage.
- **Secondary:** Secondary streams provide smooth video and occupy small bandwidth. They are applicable to data transmission over low-bandwidth networks.

GUI Layout

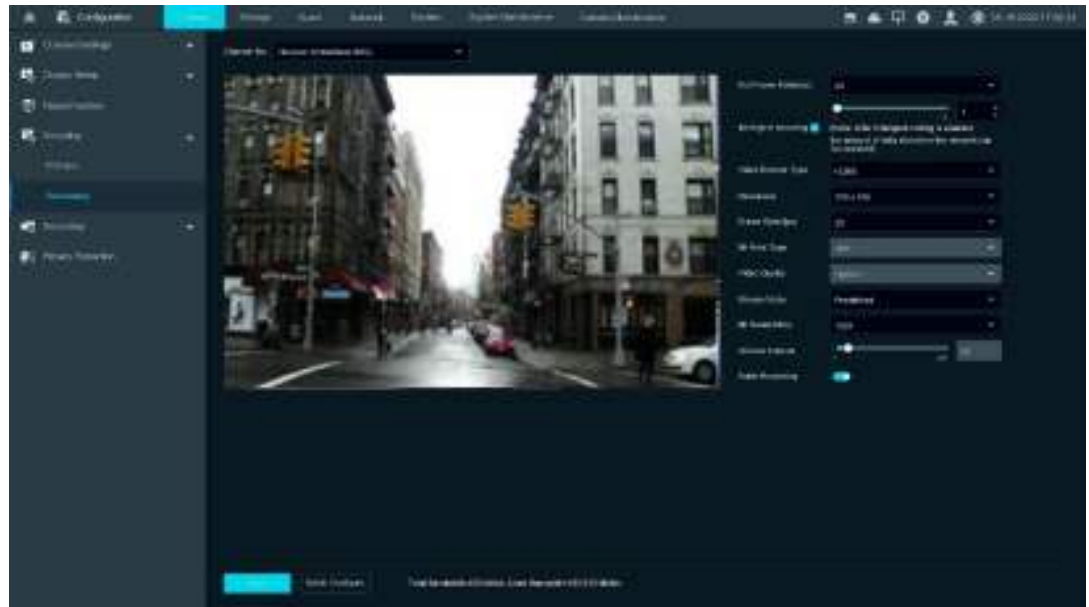


Table 5-124 Parameter description

Parameter	Description
Channel No.	Channel ID.
Full Frame Rate(fps)	Frame rate of video collected through a sensor, representing the maximum capability of a camera.
Intelligent encoding	After intelligent encoding is enabled, a camera can automatically adapt to scenarios to reduce the bit rate and save storage space. A higher intelligent encoding level indicates more significant reduction of the bit rate, which may lead to image quality deterioration. NOTE • After intelligent encoding is enabled, settings of Bit Rate Type and Video Quality do not take effect. • After intelligent encoding is enabled, it takes about 20 seconds before the live video image is displayed on the HWT-NVR800.
Resolution	Size of the recorded image.
Frame Rate(fps)	Frame rate. Set the frame rate based on actual requirements and bandwidth. A higher frame rate indicates clearer and more vivid images. The maximum frame rate cannot exceed the full frame rate.

Parameter	Description
Video Encode Type	Video encoding type. The HWT-NVR800 supports two video encoding types: H.264 and H.265. Set this parameter based on the video encoding type supported by the camera. Ensure that the video encoding types configured on the HWT-NVR800 and camera are the same. Otherwise, HWT-NVR800 recording will fail.
Bit Rate Type	Bit rate type. • In common scenarios, select CBR. • In complex scenarios (such as busy streets), select VBR.
Video Quality	Video quality. Six video quality levels are supported: Lowest, Lower, Low, Medium, Higher, and Highest. Better video quality indicates more occupied resources and larger storage space. Set this parameter based on the site requirements.
Stream Mode	Stream mode. The default value is Predefined. If users need to customize the stream mode configuration, select Custom and set related parameters.
Bit Rate(kbit/s)	Data transmission speed of HWT-NVR800 recordings. A larger bit rate indicates better video quality.
I-Frame Interval	I-frame interval. Set the I-frame interval to the number of frames multiplied by 2. For example, if the frame rate is set to 20, the I-frame interval of 40 (20 x 2) is recommended. If this parameter is set to a value far greater or less than the recommended value, images may be abnormal.
Audio Recording	Indicates whether to enable audio recording. This function is enabled by default. After this function is enabled, the system records the ambient sound of the camera during video recording. This function depends on whether the camera supports the audio function and whether the audio function is enabled.
Apply	Applies the parameter settings.
Batch Configure	Applies the secondary stream parameter settings to other channels in batches.

5.1.1.6.1.4 Recording

5.1.1.6.1.4.1 Video Parameter Configuration

Function

- Allows users to enable or disable video recording.

- Allows users to set the stream parameters of video recording Primary streams feature high image quality and occupy large disk capacity. Users can also use both the primary and secondary streams for recording at the same time.

GUI Layout

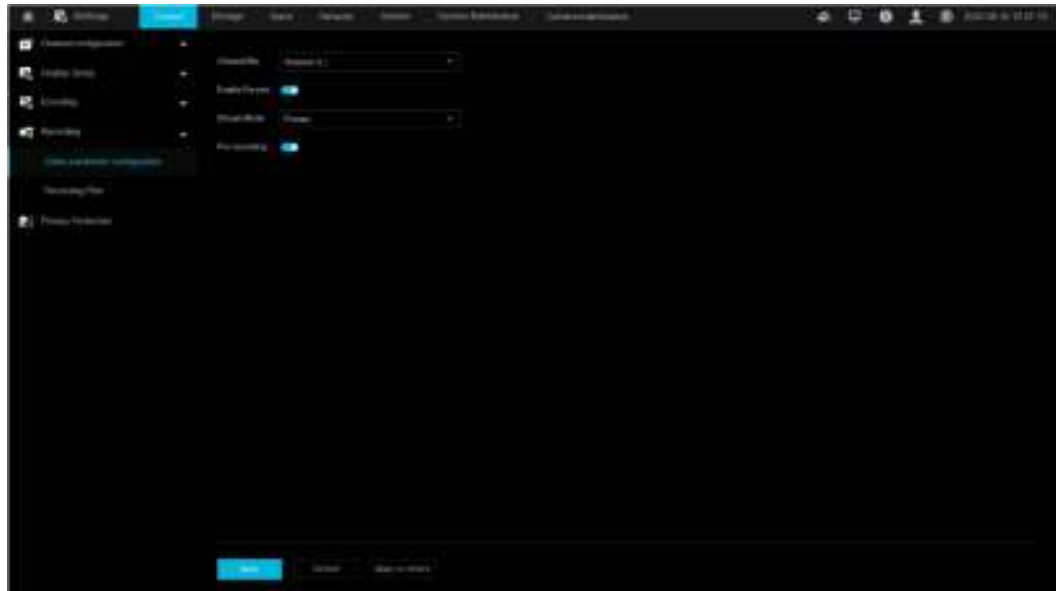


Table 5-125 Parameter description

Parameter	Description
Channel No.	Channel ID.
Enable Record	Indicates whether to record video.
Stream Mode	Stream mode, which determines the quality of recordings. • Primary: Only video from primary streams is recorded. • Dual stream: Both the video from primary and secondary streams is recorded.
Pre-recording	Indicates whether to record video several seconds before an alarm event occurs. If you need to record video mainly for motion detection or I/O alarms, enable this function.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the recording settings of the channel to other channels.

5.1.1.6.1.4.2 Recording Plan

Function

Allows users to set recording plans for cameras. After recording plans are set, the camera records video only in time segments specified in the plans.

GUI Layout

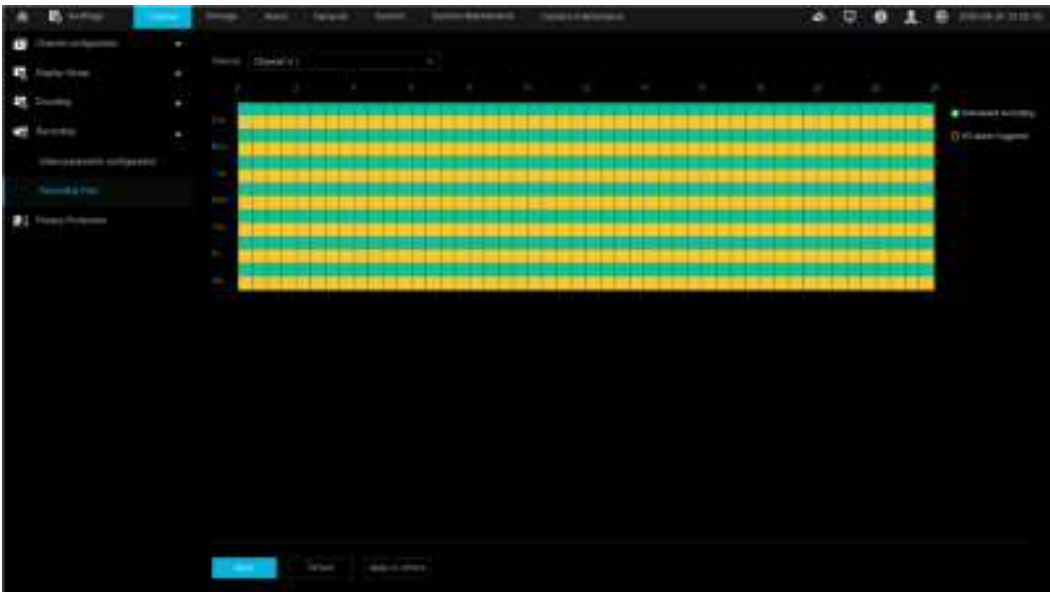


Table 5-126 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to others	Applies the recording plan of the channel to other channels.

Select an alarm type on the right and set recording plans.

- Green/Yellow: indicates that a recording plan of the corresponding type is available in the time segment.
- No color: indicates that no recording plan is available in the time segment.

5.1.1.6.1.5 Privacy Protection

Function

Allows users to mask some areas on the live video image for privacy protection. Images in the privacy areas are not displayed on both the live video and recordings.

GUI Layout



Table 5-127 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
Privacy Protection	Indicates whether to enable privacy protection.
New privacy area	Used to draw new privacy areas. Users can drag the mouse on the video image to draw privacy areas. A maximum of eight privacy areas can be added.
ID	ID of the privacy areas to be added.
Image Color	Image color of the privacy area.
Operation	Users can click  to delete selected privacy areas.
Apply	Applies the parameter settings.

5.1.1.6.2 Storage

5.1.1.6.2.1 Disk

Function

Allows users to check the number, model, and disk group of hard disks.

If hard disks are installed for the first time, format the hard disks first.

GUI Layout

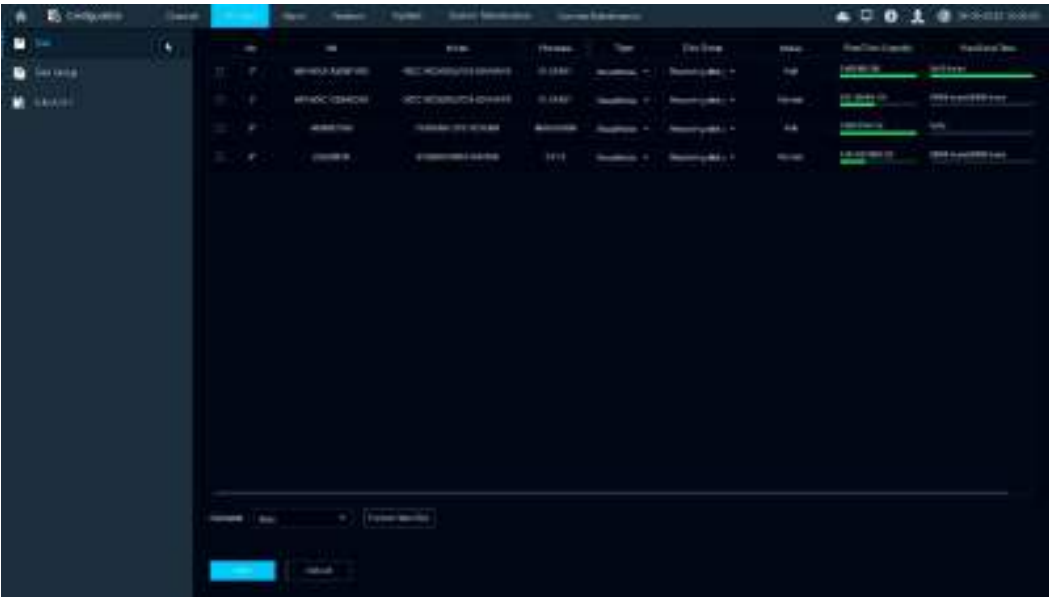


Table 5-128 Parameter description

Parameter	Description
No.	Slot ID of the data cables connected to hard disks. For example, if a hard disk is connected to the HDD1 data cable, information about the hard disk is displayed in the No.1 row. 
SN	Serial number of a hard disk.
Model	Hard disk model.
Firmware	Basic information about a hard disk.
Type	
Disk Group	
Status	

Parameter	Description
Free/Total Capacity	Remaining capacity and total capacity of hard disks.
Free/Total Time	Remaining duration and total duration of recordings that can be stored in the hard disks.
Overwrite	Indicates whether to overwrite the earlier records on hard disks when the hard disks are full. • Auto: The system automatically deletes the earliest recording files and continues to record new video. • X days: The system stores only recordings generated in the latest X days. • Off: The system does not delete recording files from or write new recording files to the hard disks. In this mode, you need to periodically check the hard disk status to ensure that the hard disks have sufficient space for storing recordings.
Format Hard Disk	Users need to format hard disks when the hard disks are installed on the HWT-NVR800 for the first time. 1. Select hard disks to be formatted. 2. Click Format Hard Disk.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.2.2 Disk Group

Function

Allows users to set a hard disk for storing recording files of the camera.

This menu bar is displayed only when at least two disks are installed on the HWT-NVR800.

- HWT-NVR800 with two disk trays:
You are advised to set the disks connected to trays 1 and 2 as recording disk group 1, and set recording channels of the disk group to channels 1 to 16.
- HWT-NVR800 with four disk trays:
 - You are advised to set the disks connected to trays 1 and 3 as recording disk group 1, and set recording channels of the disk group to channels 1 to 16.
 - You are advised to set the disks connected to trays 2 and 4 as recording disk group 2, and set recording channels of the disk group to channels 17 to 32.

NOTE

If the HWT-NVR800 has 2, 4 disk trays, you are advised to configure disk groups and recording channels based on the preceding allocation mechanism to improve device performance.

GUI Layout

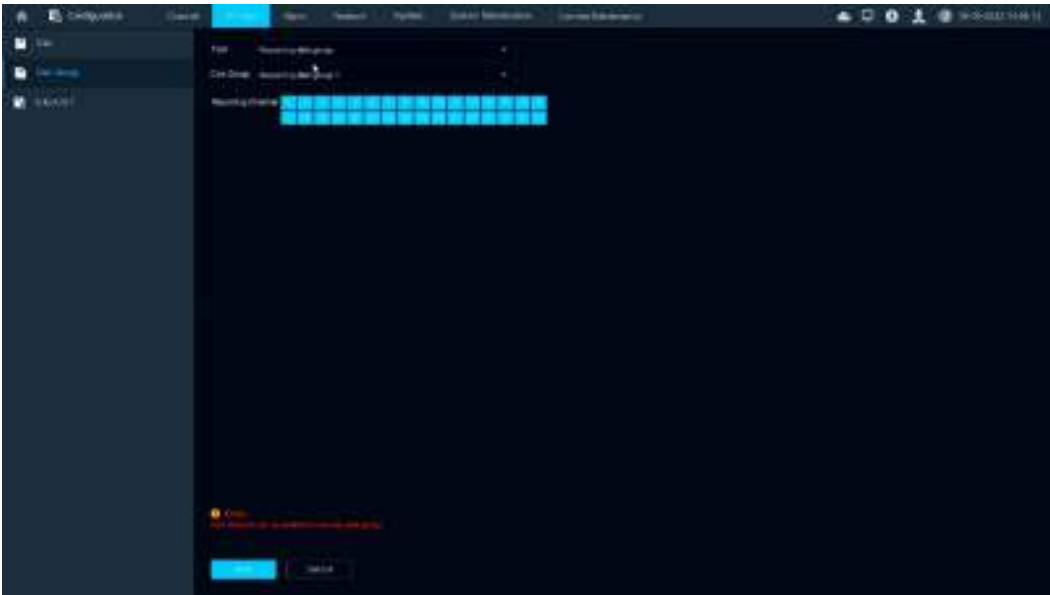


Table 5-129 Parameter/Button description

Parameter/Button	Description
Type	Disk group type. Only the Recording disk group option is available.
Disk Group	Disk group. If you select a camera channel and add it to a specified disk group, recording files of the channel will be stored in the specified disk group. A channel can be added to only one disk group.
Recording Channel	
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.2.3 S.M.A.R.T.

Function

Allows users to check the technical specifications of each hard disk in the HWT-NVR800 to evaluate potential risks of hard disk faults.

GUI Layout

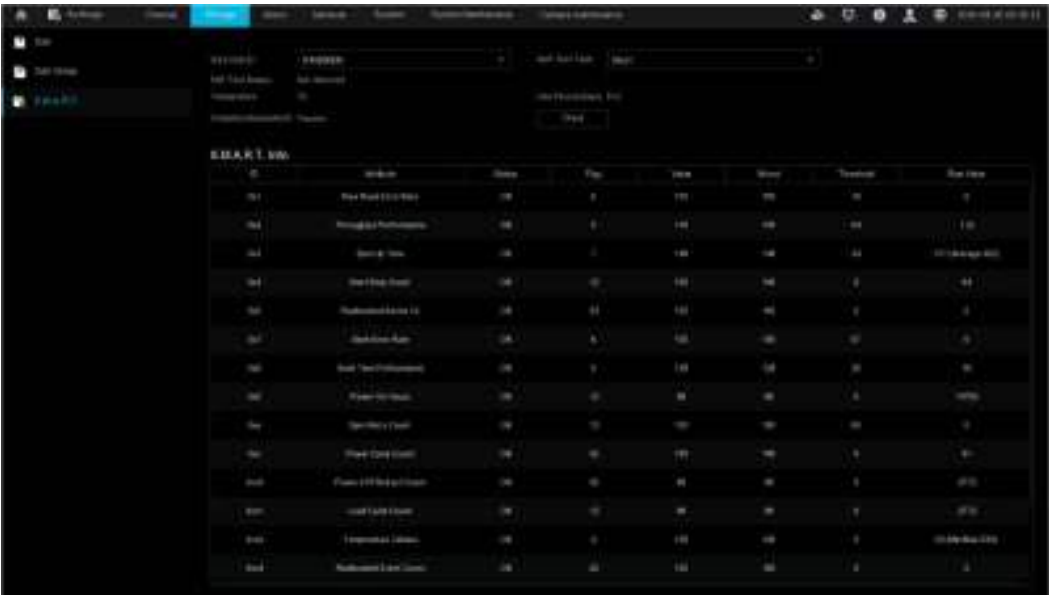


Table 5-130 Parameter/Button description

Parameter/Button	Description
Hard Disk ID	Hard disk ID.
Self-Test Type	Self-check type. The options are Conveyance, Short and Expanded. • Conveyance: Check whether the mechanical part of the hard disk works properly. This check takes a short period of time. • Short: Check the main components of a hard disk drive, such as the read/write head, electrical performance, and internal memory. This check takes a medium-length period of time. • Expanded: Check the main components of a hard disk drive, perform a surface scan to find the area where the problem may exist, and forcibly re-mark the bad sector. This check takes a long period of time. During the check, the HWT-NVR800 continues to work properly. If hard disk faults are detected, the hard disk can still be used, but data may be lost. Users are advised to replace the hard disk timely.
Self-Test Status	Hard disk check progress. • Short check: The check takes about 2 minutes. • Long check: The long check takes more than 10 hours. You are advised to view the result on the next day.
Temperature	Disk temperature.

Parameter/Button	Description
Use Period(days)	Disk usage time.
Complete Assessment	Hard disk check results.
Check/Stop	Indicates whether to start or stop the hard disk check.

5.1.1.6.3 Alarm

5.1.1.6.3.1 I/O Alarm

Function

You can customize the mode in which an I/O alarm is reported.

NOTE

The local IDs (specified by **Local <-X**) in the column of **Alarm Input** correspond to the channel IDs (specified by **Channel No.**).

For example, **Local <-1** corresponds to **Channel 1**.

GUI Layout

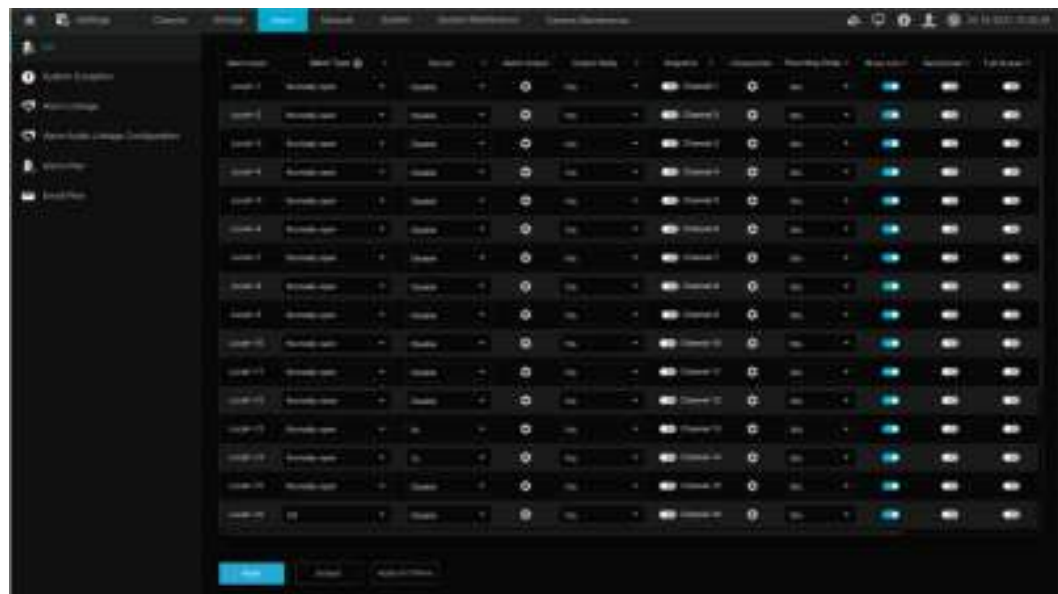


Table 5-131 Parameter description

Parameter	Description
Alarm Input	ID of the channel for I/O alarm input. Local->1: I/O device connected to the rear panel of the HWT-NVR800s. Only HWT-NVR800s with 4 disk trays support this function. Channel->1: I/O device connected to the selected camera

Parameter	Description
Alarm Type	Alarm input type of the I/O device. The options are as follows: • Normally open (one contact terminal connected and the other disconnected): default status of the I/O device. Upon detecting an alarm-triggering event, the I/O device automatically switches to normally close (both contact terminals connected) and the HWT-NVR800 generates an alarm and performs predefined alarm linkage actions. • Normally close (both contact terminals connected): default status of the I/O device. Upon detecting an alarm-triggering event, the I/O device automatically switches to normally open and the HWT-NVR800 generates an alarm and performs predefined alarm linkage actions. • Off: This I/O function is disabled.
Buzzer	Alarm duration of the buzzer. The default value is Disable.
Alarm Output	I/O alarm output device.
Output Delay	Output delay. The default value is 10s.
Channel No.	Channel ID. When an alarm is generated, the system links one or more cameras to record video.
Recording Delay	Recording delay. The default value is 30s.
Snapshot	Indicates whether to enable the camera to take snapshots when an alarm is generated.
Show Icon	Indicates whether to display the status icon for the camera when an alarm is generated. •  indicates that an I/O alarm is triggered but no video is recorded. •  indicates that an I/O alarm is triggered and video recording is in progress.
Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Full Screen	Indicates whether to display video images from the camera in full screen mode when an alarm is generated.
Alarm Check Interval (s)	Interval between two alarms.
Alert Plan	Alert period.
Apply	Applies the parameter settings.

Parameter	Description
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the I/O alarm settings of the channel to other channels.

Table 5-132 Parameter description

Parameter	Description
Event Type	Event type. The following alarm events are supported: • Insufficient Disk Space: An alarm is generated when disk space is used up. • Disk Error: An alarm is generated when disks are faulty or not detected. • Video Loss: An alarm is generated when cameras are not connected or no video is displayed due to camera connection failure. • High temperature alarm: An alarm is generated when the disk temperature does not match the fan speed (supported only by devices with 16 disk trays). • Fan exception alarm: An alarm is generated when the fan speed is abnormal (supported only by devices with 16 disk trays).
Buzzer	Alarm duration of the buzzer. The default value is Disable .
Alarm Output	I/O alarm output device.
Output Delay	Output delay. The default value is 10s .
Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.3.3 Alarm Linkage

Function

Allows users to link PTZ cameras with motion detection alarms and external I/O alarms. After the PTZ alarm linkage is configured, when a motion detection alarm or an I/O alarm is generated, the PTZ camera automatically focuses on the preset position for detection and recording.

GUI Layout

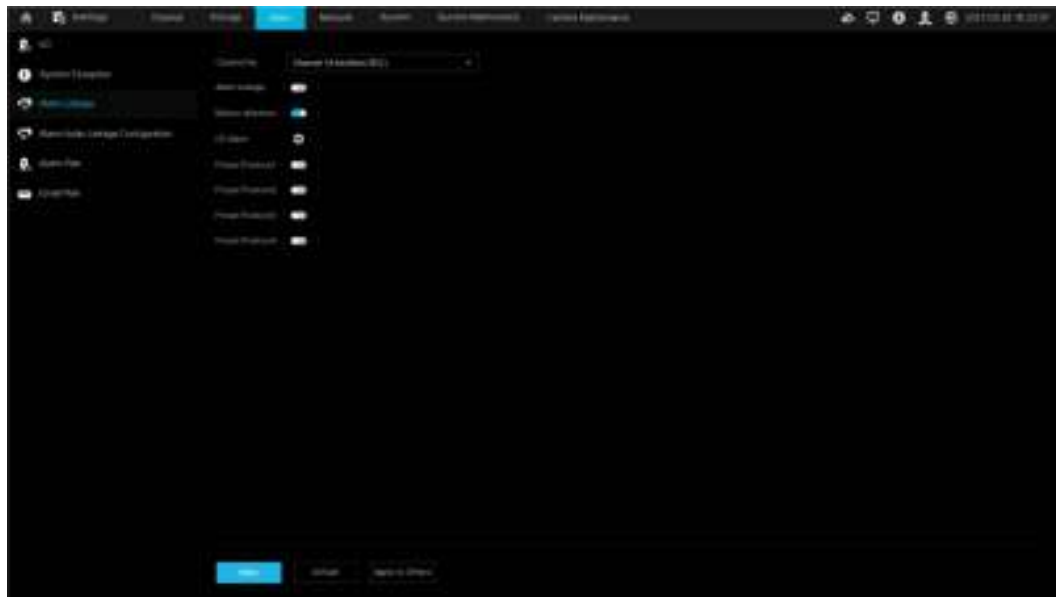


Table 5-133 Parameter description

Parameter	Description
Channel No.	Channel ID.
Enable alarm linkage	Indicates whether to enable PTZ alarm linkage.
Motion detection	Indicates whether to trigger PTZ alarm linkage when a motion detection alarm is generated.
I/O Alarm	I/O alarm output device. When the I/O device reports an alarm, the PTZ alarm linkage function is triggered.
PTZ Device 1	After the check box is selected, you need to set the PTZ camera to be linked and its preset position. A maximum of four PTZ cameras can be linked.
PTZ Device 2	
PTZ Device 3	
PTZ Device 4	
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the settings of the channel to other channels.

5.1.1.6.3.4 Alarm-Audio Linkage Configuration

Function

Allows you to configure alarm-linked audio for a camera.

GUI Layout



Table 5-134 Parameter description

Parameter	Description
Channel	Channel ID.
Add	Adds an audio file. NOTE The number of audio channels that can be added varies depending on the camera version. - A maximum of 25 audio clips can be stored on each camera when the camera version is 9.0.0. The system supports WAV audio clips in the PCM encoding format. The size of an audio clip cannot exceed 75 KB. The 19 preset audio clips cannot be deleted. - A maximum of 12 audio clips can be stored on each camera when the camera version is 8.2.0. The system supports WAV audio clips in the PCM encoding format. The size of an audio clip cannot exceed 75 KB. The six preset audio clips cannot be deleted.
Delete All	Delete all non-preset audio clips.

5.1.1.6.3.5 Alarm Plan

Function

Allows users to configure alarm plans for a camera. After alarm plans are configured, the camera reports alarms according to the plans, regardless of whether the alarm function is enabled for the camera.

GUI Layout

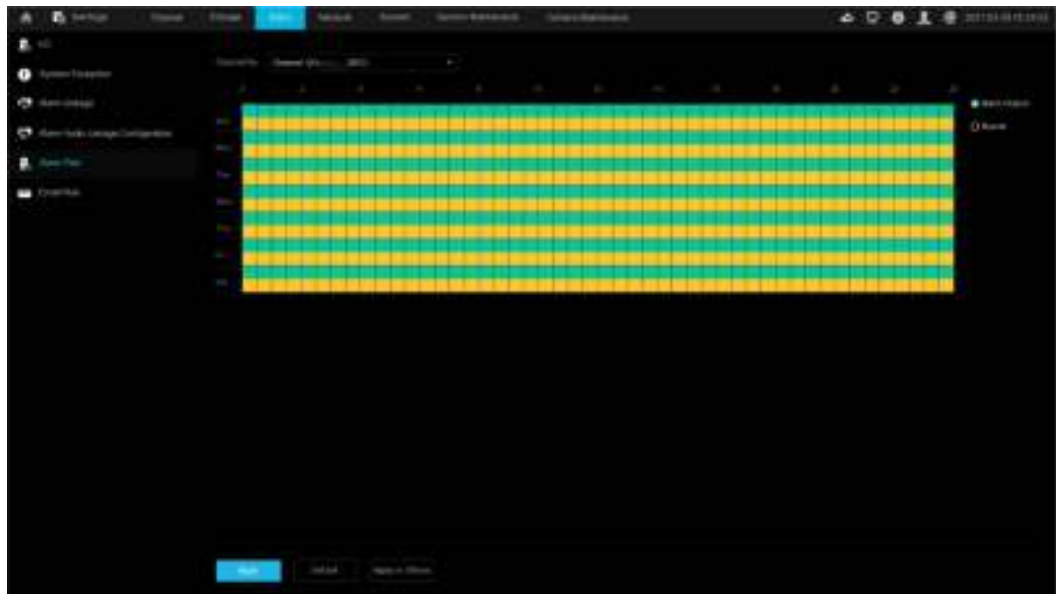


Table 5-135 Parameter description

Parameter	Description
Channel No.	Channel ID.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to Others	Applies the alarm plan of the channel to other channels.

Select an alarm type on the right and set alarm plans.

- Green/Yellow: indicates that alarm signals generated in the time segment are reported to the specified alarm device.
- No color: indicates that the alarm signals generated in the time segment are not reported.

5.1.1.6.3.6 Email Plan

Function

Allows users to set email sending plans for a camera based on alarm types. After email plans are configured for a camera, when an alarm is generated by the camera, the HWT-NVR800 sends an email to the specified address.

GUI Layout

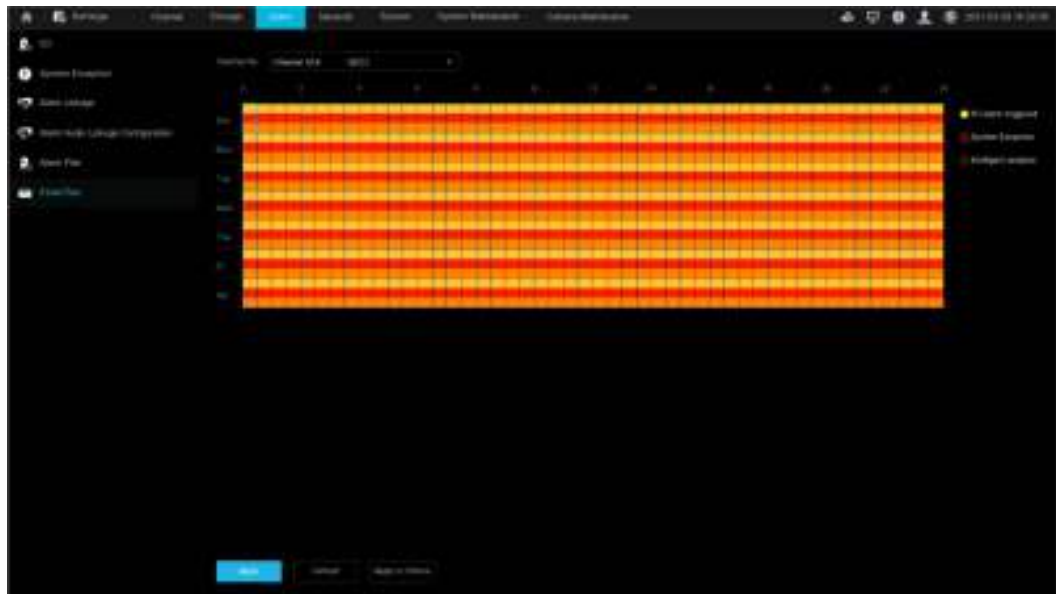


Table 5-136 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Apply to others	Applies the email plan of the channel to other channels.

Select an alarm type on the right and set email plans.

- Yellow/Red/Orange: indicates that an email plan for the corresponding alarm type is available in the time segment.
- No color: indicates that no email plan is available in the time segment.

5.1.1.6.4 Network

5.1.1.6.4.1 Cloud Service

Function

Allows users to connect the HWT-NVR800 device to the cloud service. Users can manage the HWT-NVR800 through the mobile app after it is connected to the cloud service, including view live and recorded video.

For details about operations related to the mobile app, see Cloud Service.

GUI Layout



Table 5-137 Parameter/Button description

Parameter/Button	Description
Cloud Service	Indicates whether to automatically connect the HWT-NVR800 to the cloud service. Ensure that the router where the HWT-NVR800 is located is connected to the Internet.
Area	Area where the cloud service can be connected.
Status	Shows whether the HWT-NVR800 is connected to the cloud service.
Server Address	IP address of the connected server. Use the default value.
Synchronize System Time Through Cloud Service	After this function is enabled, the HWT-NVR800 automatically synchronizes time through cloud service. If the NTP server information is configured on the Date/Time, after this function is enabled, the HWT-NVR800 synchronizes time through cloud service rather than the NTP server.
Privacy Statement	Privacy statement.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
QR code	QR code of the HWT-NVR800. You can scan the QR code through the mobile app to identify the HWT-NVR800 and manage cameras connected to the HWT-NVR800.

Parameter/Button	Description
Bound	Binding status of the HWT-NVR800.
User Name	Bound user name.
Phone Number	Bound phone number.
Email	Bound email address.
Unbind	Forcibly unbinds a user from an HWT-NVR800.

5.1.1.6.4.2 General Settings

5.1.1.6.4.2.1 Basic Settings

Function

Allows you to set the IP address of the HWT-NVR800 and the domain name server (DNS) connected to the HWT-NVR800.

GUI Layout

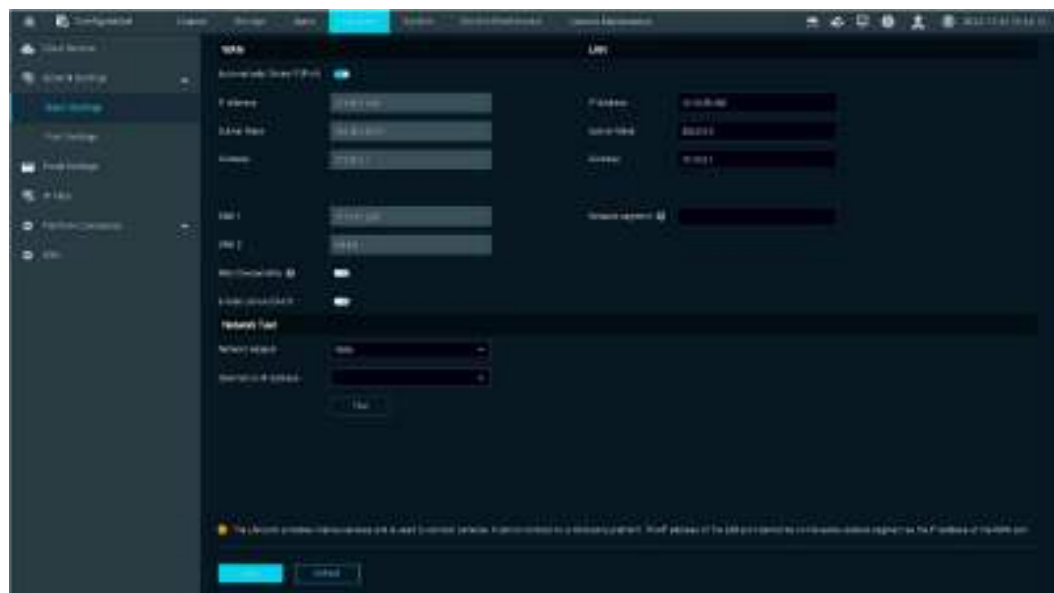


Table 5-138 Parameter description

Areas	Parameter	Description
WLAN	DHCP	Indicates whether to enable DHCP. If the router connected to the HWT-NVR800 supports automatic IP address assignment, enable this option. After this option is enabled, the router automatically assigns all network parameters to the HWT-NVR800. You do not need to manually set other network parameters (such as the IP address and subnet mask) under WLAN .
	IP Address	Unique ID of the HWT-NVR800 on the network. Example: 192.168.0.100 NOTE For the HWT-NVR800-B04D, the value is the IP address of the WAN port on the rear panel.
	Subnet Mask	Subnet mask of a LAN. Example: 255.255.255.0
	Gateway	IP address for communication between two LANs. Example: 192.168.1.1
	DNS1	IP address of the primary DNS. Set this parameter based on the site requirements. If this parameter is not involved, leave it empty.
	DNS2	IP address of the secondary DNS. Set this parameter based on the site requirements. If this parameter is not involved, leave it empty.
	Web Compatibility	Indicates whether to enable the web compatibility mode. If the selected browser does not support access to the web client of HWT-NVR800, enable this option. NOTE The compatible mode will select an insecure encryption algorithm. Exercise caution when performing this operation.
	Enable camera DHCP	Indicates whether to retain the DHCP networking mode.
LAN	IP Address	Internal IP address of the HWT-NVR800. This parameter is available only for the HWT-NVR800 of the PoE model, the HWT-NVR800 D models with 4 disk trays, or the HWT-NVR800-B04D. The default value is 10.10.25.100 . NOTE For the HWT-NVR800 D models with 4 disk trays or the HWT-NVR800-B04D, the value is the IP address of the LAN port on the rear panel.
	Subnet Mask	Set this parameter only for the PoE model. Available internal network segment of the HWT-NVR800.

Areas	Parameter	Description
	Gateway	IP address for communication between two LANs. Example: 192.168.1.1
	Routing Network Segment	Network segment to which the southbound device belongs. If there are multiple network segments, separate them with semicolons (;). If the iClient S100 is connected over the southbound network, you also need to add the network segments to which the iClient S100 belongs.
Network Test	Network adapter	Network adapter used for network tests.
	Destination IP address	Destination IP address or domain name.
	Test	Used to test the destination IP address.
-	Apply	Applies the parameter settings.
-	Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.4.2.2 Port Settings

Function

Allows users to set the port information corresponding to different protocols of the HWT-NVR800.

GUI Layout

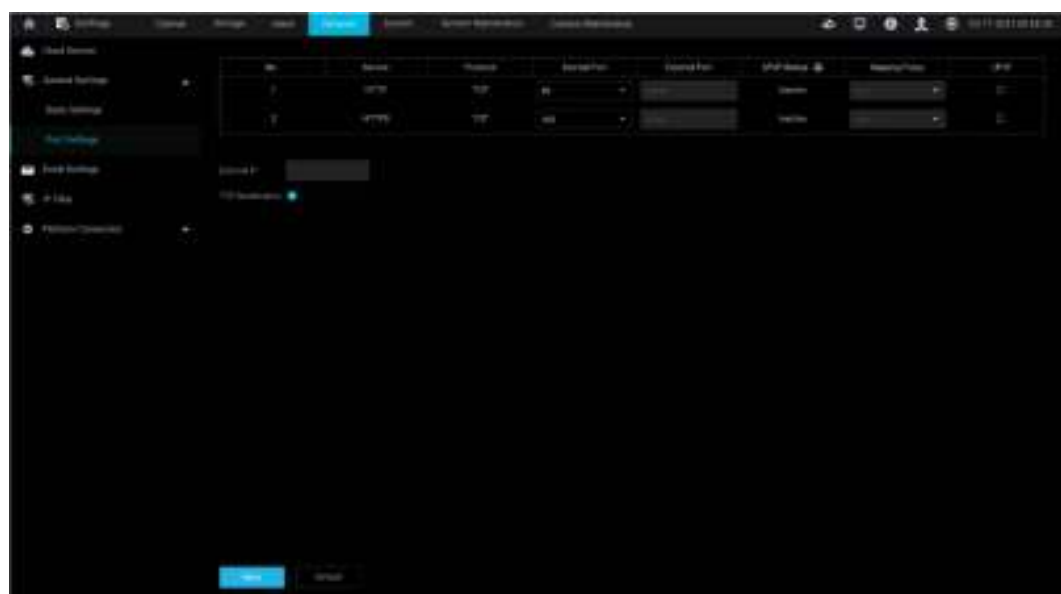


Table 5-139 Parameter/Button description

Parameter/Button	Description
Service	• HTTP Port: Select this option if you want to log in to the HWT-NVR800 remotely, for example, through the web client. The default port number is 80. If the default port is occupied by another application, change it to an available port. • HTTPS port: Select this option if you want to log in to the HWT-NVR800 remotely, for example, through the web client. The default port number is 443. If the default port is occupied by another application, change it to an available port.
Protocol	TCP
Internal Port	Port of the HWT-NVR800.
External Port	Router port.
UPnP Status	UPnP status. • Inactive: UPnP is not activated. • Active: UPnP is activated.
Mapping Policy	Mapping policy. The options are as follows: • Auto: External ports are automatically allocated. • Manual: External ports are manually set.
UPnP	• The UPnP function requires the support of routers. • Before configuring UPnP, set the router first and then set parameters such as internal connection IP address, subnet mask, and gateway that match the router in basic settings.
External IP	External IP address. When the UPnP function is activated on an HWT-NVR800, the HWT-NVR800 automatically obtains an external IP address that is in the same network segment as the router. This IP address is used for users to access the HWT-NVR800.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.4.3 Email Settings

Function

Allows users to enable the email function. After this function is enabled, the system can send alarm information to specified email address.

GUI Layout

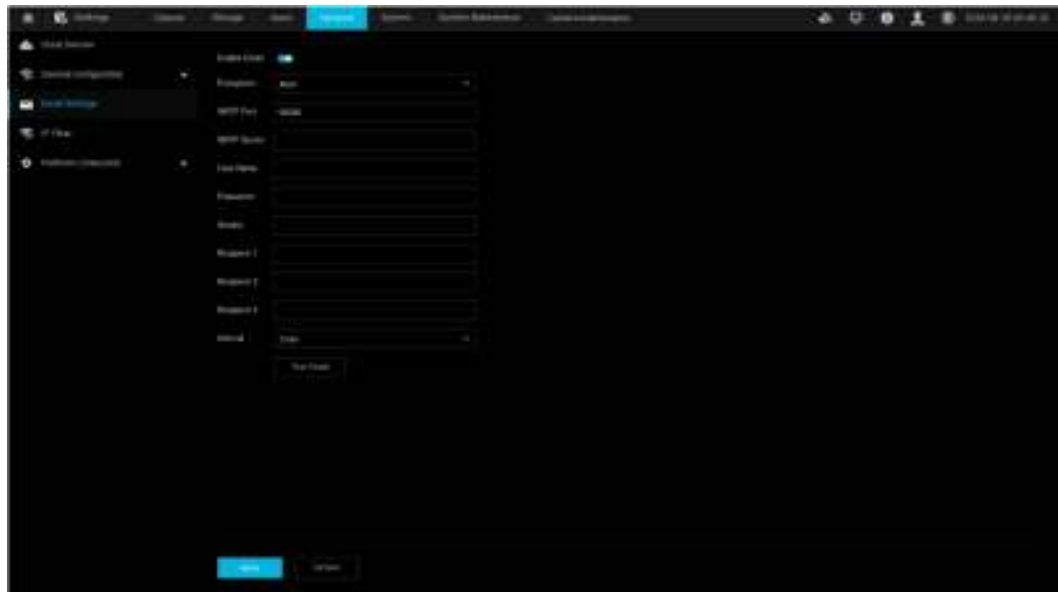


Table 5-140 Parameter/Button description

Parameter/Button	Description
Enable Email	Indicates whether to enable the email function.
Encryption	Encryption type. Enables this function if the mail server where your registered mailbox is located requires SSL or TLS encryption verification. If it is to be determined, set this parameter to Auto or Disable .
SMTP Port	Port number of the mail server.
SMTP Server	IP address or domain name of the SMTP server. The domain name of the SMTP server varies depending on the mailbox. For details, contact the mailbox provider.
User Name	User name and password for logging in to the mailbox for sending service alarms. The method for obtaining the password varies depending on the mailbox. For details, contact the mailbox provider.
Password	
Sender	Email addresses for sending alarm emails.
Recipient 1	Email addresses for receiving alarm emails.
Recipient 2	

Parameter/Button	Description
Recipient 3	
Interval	Interval for the HWT-NVR800 to send emails.
Test Email	Email test, which is used to check whether the preceding parameters are correctly configured. If so, the recipients can receive the test email sent by the sender.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.4.4 IP Filter

Function

Allows users to set the permission for the computer to access the HWT-NVR800 web client. Allowlist and blocklist mechanisms are available, and users are advised to use the allowlist mechanism.

For details about operations on the web client, see 5.1.2 Web Client.

The differences between allowlist and blocklist mechanisms are as follows:

- When the allowlist mechanism is used, only IP addresses in the allowlist can access the web client.
- When the blocklist mechanism is used, IP addresses in the blocklist cannot access the web client.
- The allowlist and blocklist cannot be used at the same time.

GUI Layout

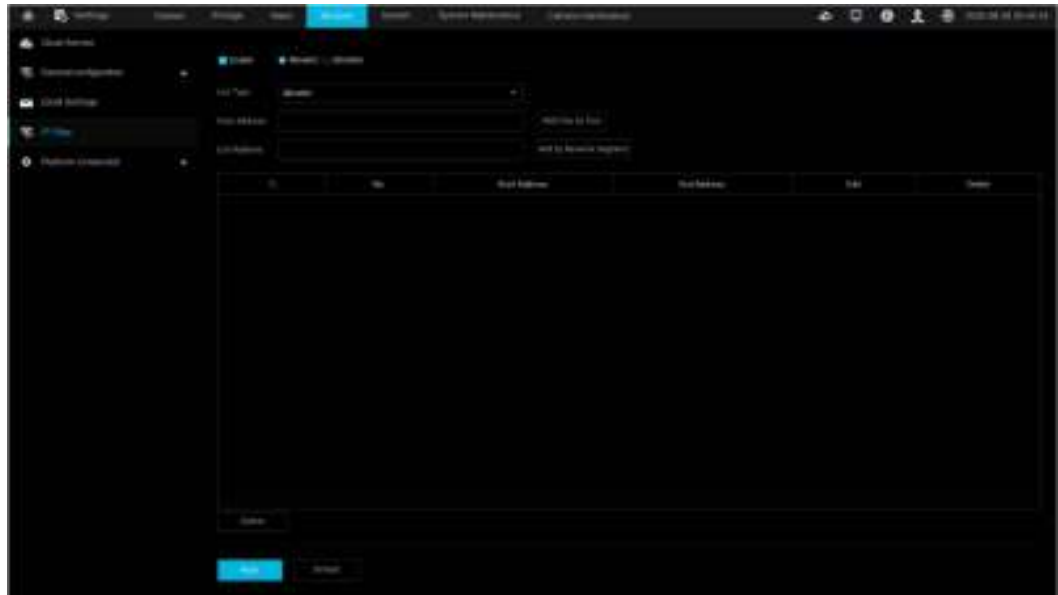


Table 5-141 Parameter/Button description

Parameter/Button	Description
Enable	Indicates whether to enable the blocklist or allowlist.
List Type	List type. The options are as follows: • Allowlist • Blocklist
Start Address	• To add a single IP address, enter the IP address in the Start Address text box and click Add One by One. • To add IP addresses in batches, set Start Address and End Address and click Add by Network Segment.
End Address	
Add One by One	
Add by Network Segment	
Delete	Used to delete an IP address with a specified sequence number.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.4.5 Platform Connection

5.1.1.6.4.5.1 ONVIF Server

Function

Allows users to connect the HWT-NVR800 to an upper-level video platform through ONVIF.

GUI Layout

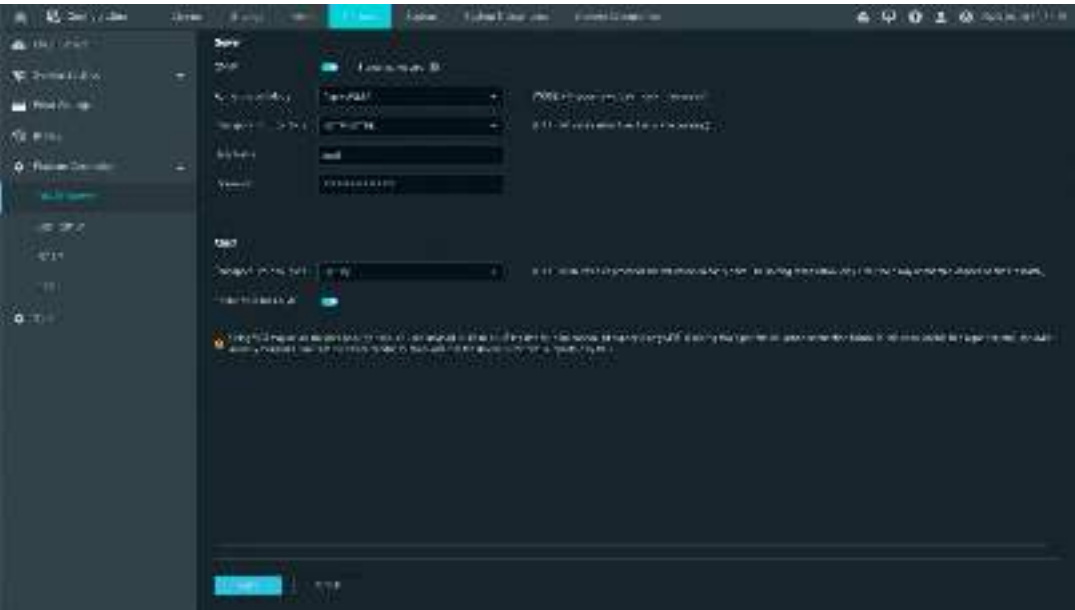


Table 5-142 Parameter description

Area	Parameter	Description
Server	ONVIF	Indicates whether to enable the ONVIF server. If the HWT-NVR800 is successfully connected to the upper-level video platform, the platform's IP address and connection status will be displayed.

Area	Parameter	Description
	Authentication Mode	ONVIF authentication mode. The default value is Digest_sha256. The options are as follows: • Digest_sha256 • Digest • Digest/WSSE • WSSE • None: No authentication is performed, which poses security risks. Exercise caution when selecting this mode. Authentication mode used by the device to connect to the upper-level video platform must be the same as that of the upper-level video platform. To obtain the authentication mode supported by the upper-level video platform, contact the provider of the upper-level video platform.
	Transport Protocol Type	Transmission protocol for connecting the device to the upper-level video platform. The value must be the same as the transmission protocol configured for the upper-level video platform. The options are as follows: • HTTP/HTTPS • HTTPS • HTTP HTTP has security risks. If you select this option, the system displays a message indicating that the system is prone to attacks. HTTP/HTTPS is recommended.
	User Name	User name and password for connecting the HWT-NVR800 to the ONVIF server. NOTE You can customize the password. For details about the requirements on the password complexity, see 6.1.4.3 Password Maintenance Suggestions.
	Password	
Client	Transport Protocol Type	Transmission protocol for connecting the device to the lower-level device. The value must be the same as the transmission protocol configured for the lower-level device. The options are as follows: • HTTPS • HTTP
	Enable MD5 for ONVIF	• Using the MD5 algorithm will cause cyber security risks. You are advised to disable it. If the device to be connected supports only the MD5 algorithm, disabling this algorithm will cause connection failure. In this case, you need to perform cyber security controls after enabling this algorithm. • Contact the device vendor to check whether the device to be connected supports only the MD5 algorithm.

Parameter	Description
Enable MD5 for T28181	- Using the MD5 algorithm will cause cyber security risks. You are advised to disable it. If the device to be connected supports only the MD5 algorithm, disabling this algorithm will cause connection failure. In this case, you need to perform cyber security controls after enabling this algorithm. - Contact the device vendor to check whether the device to be connected supports only the MD5 algorithm.
Device	Customized name of a GB/T 28181-compliant device.
Platform IP	Floating gateway for connecting to the upper-level video platform.
Server Port	Server port number. The default value is 5060 .
Device ID	Device ID consisting of 20 digits. The eleventh to thirteenth digits must be 118. The value must meet the requirements illustrated in 5.3.1 GB/T 28181 Connection Code Formats.
Server Code	Connection code for connecting to the upper-level video platform. Enter a string of 20 digits. The eleventh to thirteenth digits must be 200. The value must meet the requirements illustrated in 5.3.1 GB/T 28181 Connection Code Formats.
Server Domain	Server domain of the upper-level video platform. The default value is the first 10 digits of the server code.
Stream Port	Code stream port. The default value is 55550 .
Registration Validity(s)	Registration validity. If the device is not successfully registered within this specified period, the registration fails. The default value 3600 is recommended.
Heartbeat Interval(s)	Time interval for the camera to send heartbeat messages. The default value 60 is recommended. The HWT-NVR800 and the camera must have the same heartbeat interval.
Max Timeouts	Maximum timeouts. If the number of consecutive heartbeat timeouts reaches the value specified by this parameter, the HWT-NVR800 cannot connect to the platform. The default value 3 is recommended. The value of Max Timeouts for the camera and platform must be the same.
Stream Type	Stream type. The options are as follows: - Primary - Secondary

Parameter	Description
Local Port	Local port number. The default value is 5060 .
Password	Customized password for connecting to the GB/T 28181-compliant platform. NOTE You can customize the password. For details about the requirements on the password complexity, see 6.1.4.3 Password Maintenance Suggestions.
Channel ID	Unique channel ID consisting of 20 digits. The eleventh to thirteenth digits must be 131 . The value must meet the requirements illustrated in 5.3.1 GB/T 28181 Connection Code Formats.
Enable intercom	Indicates whether to enable voice intercom. To enable this function, ensure that both the camera and the platform support voice intercom.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.4.5.3 SIRA authentication

Function

Allows users to configure SIRA connection for authentication.

GUI Layout

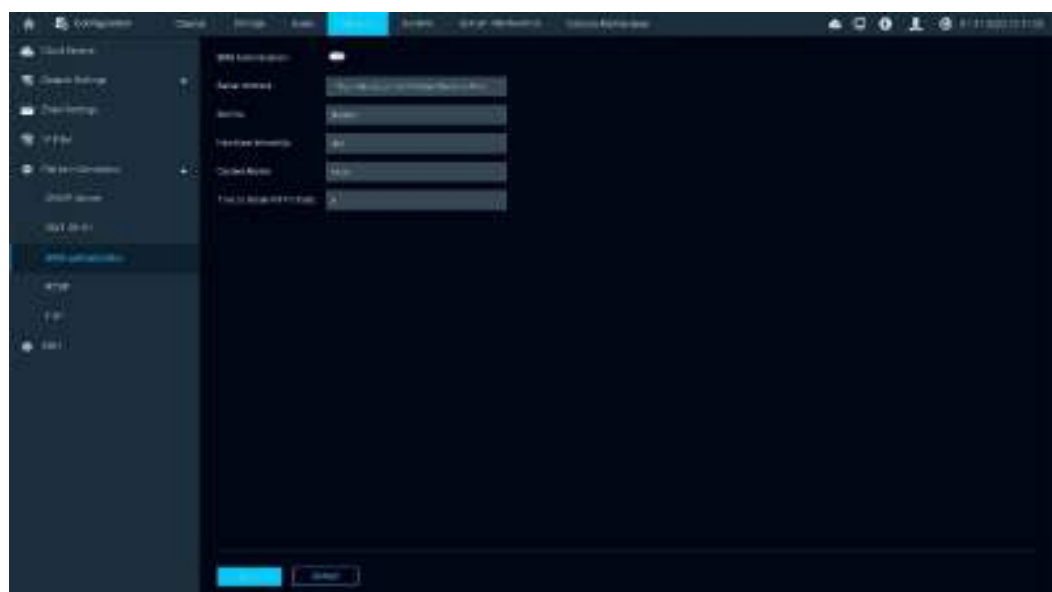


Table 5-144 Parameter description

Parameter	Description
SIRA authentication	Indicates whether to enable SIRA authentication.
Server Address	SIRA server IP address, which can contain a maximum of 127 characters.
Site No.	SN, which can be a 6-digit number.
Heartbeat Interval(s)	Heartbeat interval, in seconds. The value ranges from 10 to 1800.
Cached Alarms	Number of cached alarms. The value ranges from 0 to 1024.
Time to Obtain NTP Info(h)	Time to obtain NTP time. The value ranges from 0 to 23.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.4.5.4 RTSP

Function

Supports connection to other devices through RTSP.

GUI Layout

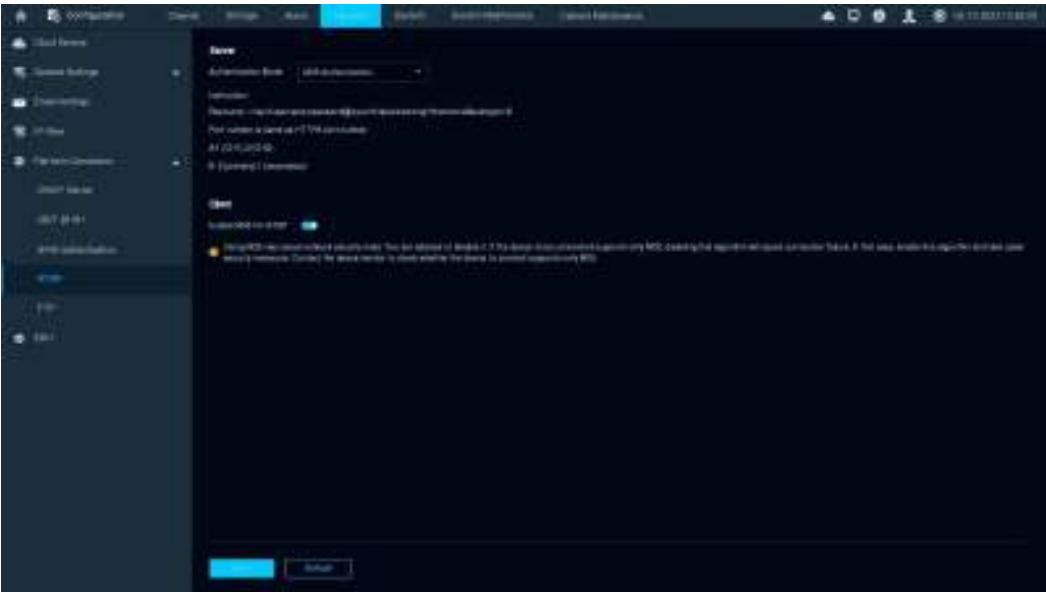


Table 5-145 Parameter description

Parameter	Description
Authentication Mode	Encryption mode. • SHA-256 Authentication • MD5 Authentication
Enable MD5 for RTSP	• Using MD5 algorithm will cause network security risks. You are advised to disable it. If the device to be connected supports only the MD5 algorithm, disabling this algorithm will cause connection failures. In this case, enable this algorithm and perform cyber security controls. • Contact the device vendor to check whether the device to be connected supports only the MD5 algorithm.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.4.5.5 FTP

Function

Supports server FTP connection.

GUI Layout

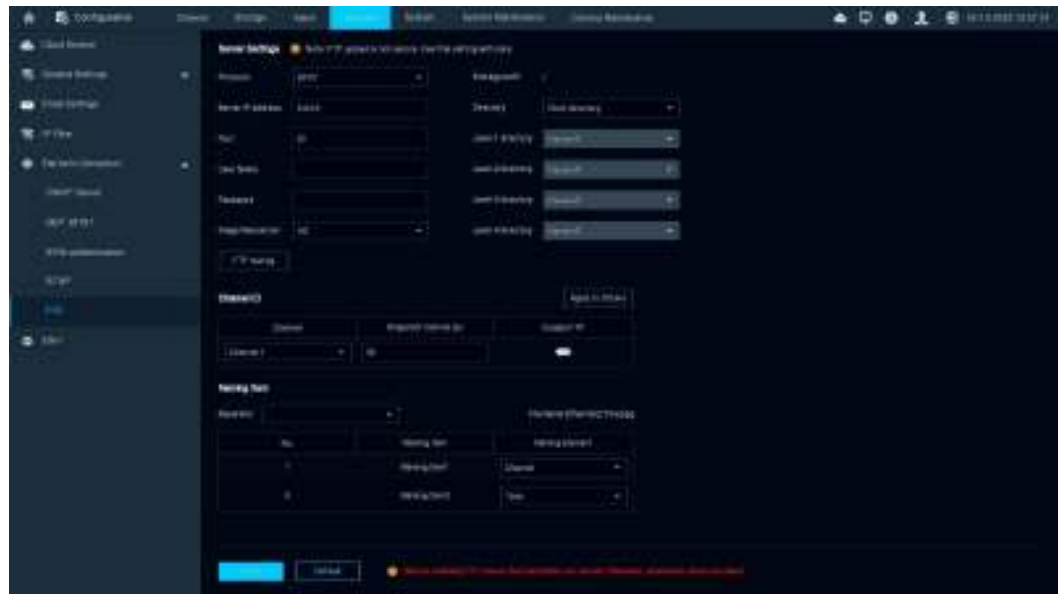


Table 5-146 Parameter description

Area	Parameter	Description
Server Settings	Protocol	Transmission protocol. The default value is SFTP . • SFTP • FTP NOTE FTP is an insecure protocol and has security risks. SFTP is recommended.
	Server IP Address	IP address of the target server.
	Port	Port number corresponding the selected protocol.
	User Name	user name and password for connecting to the target server.
	Password	
	Image Resolution	Image resolution. • HD • SD
	Storage path	Server directories for saving data. These directories will be automatically generated on the server.
	Directory	

Area	Parameter	Description
	Level-1 directory/L evel-2 directory/L evel-3 directory/L evel-4 directory	
	FTP testing	Tests the configured FTP server.
Channel ID	Channel	Channel ID.
	Snapshot Interval (s)	Interval at which snapshots are taken.
	Enable FTP	Indicates whether to enable FTP.
	Apply to Others	Applies the FTP settings of the channel to other channels.
Naming Item	Separator	Image naming format on the server.
	Naming Element	For example, if Separator to . and Naming Element set to Channel and Time , the name of the image displayed on the server is in <i>Channel ID.Time.jpg</i> format.
-	Apply	Applies the parameter settings.
-	Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.4.5.6 SSH

You can configure the SSH service to prevent information leakage during remote HWT-NVR800 management.

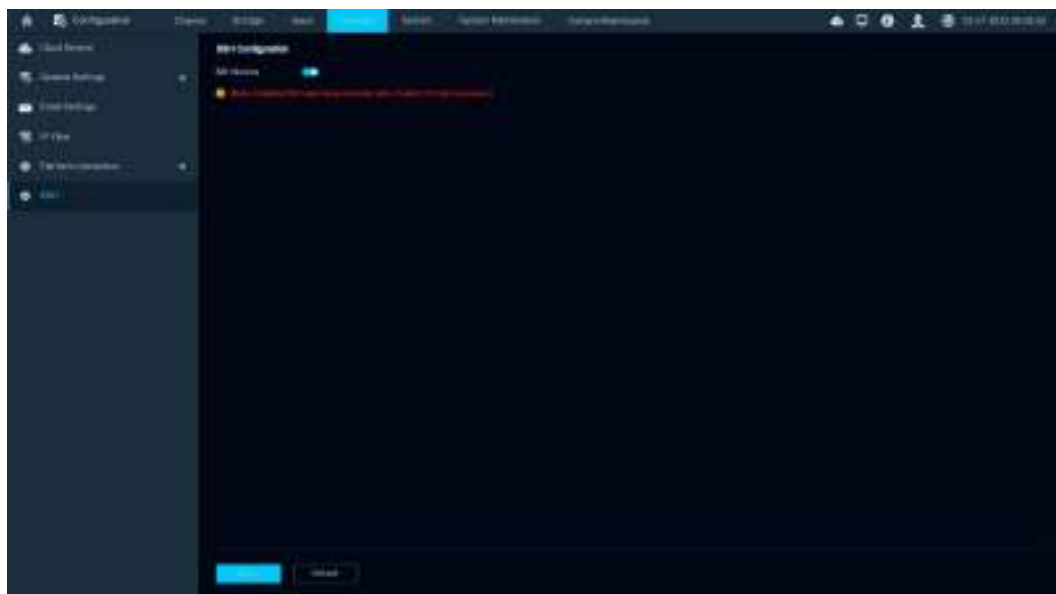
Procedure

Step 1 Choose **Configuration > Network > SSH**. The following page is displayed.



Step 2 Toggle on **SSH Service**.

Step 3 Click **Apply**.



NOTE

After the SSH service is enabled, if you need to access the HWT-NVR800 through the SSH service, use port 22.

----End

5.1.1.6.4.5.5 SNMP

Function

Supports server SNMP connection and managed by the NMS server.

GUI Layout



Table 5-147 Parameter description

Parameter	Description
Enable SNMP	Enable or disable the SNMP connection.
SNMP Version	Select the version to be used. V1, V2, and V3 are supported. V3 is recommended.
SNMP Port	The port of the NMS server.
Read Community	Indicates the user group or user ID of the read operation.
Write Community	Indicates the user group or user ID of the write operation.
Trap IP Address	The IP Address of the server that receives the Trap messages.
Trap Port	The port for receiving the Trap messages.

5.1.1.6.5 System

5.1.1.6.5.1 General Settings

5.1.1.6.5.1.1 Basic Settings

Functions

- Allows users to define the name of an HWT-NVR800.
- Allows users to change the GUI language of an HWT-NVR800.

GUI Layout

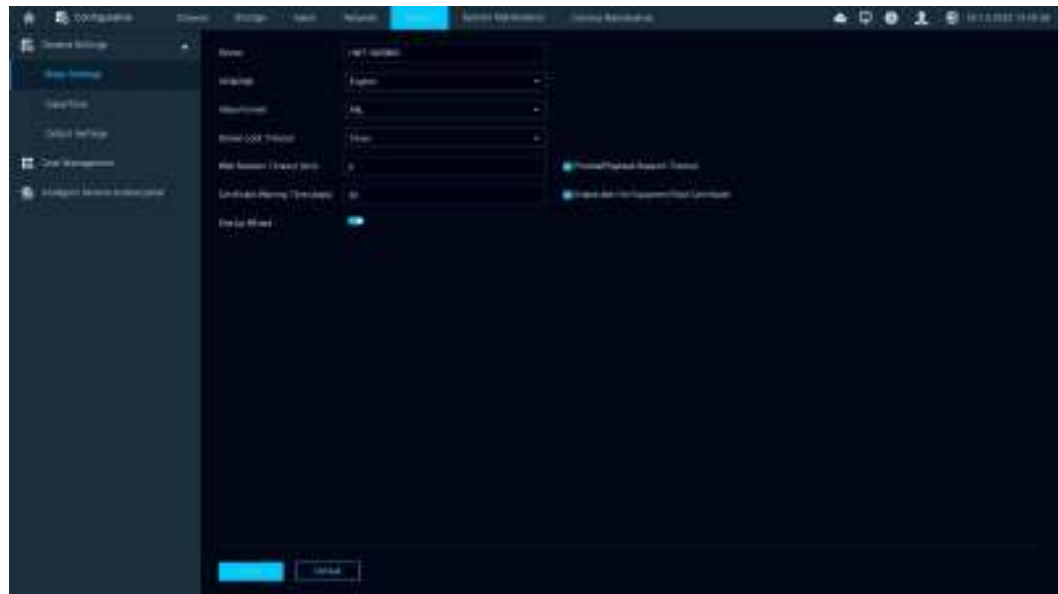


Table 5-148 Parameter/Button description

Parameter/Button	Description
Device	Unique name of an HWT-NVR800. The value can contain letters and digits.
Language	System language. - Simplified Chinese - English
Video Format	Video format. - PAL - NTSC
Screen Lock Timeout	Menu timeout interval. The default value is 10min .
Web Session Timeout (min)	Timeout duration of a session. The default value is 5 .
Preview/Playback Session Timeout	Indicates whether to enable the session timeout function on the preview or playback page.
Certificate Warning Time (days)	Number of days in advance a warning is generated for certificate expiration.
Enable Alert for Equipment Root Certificate	Indicates whether to enable the warning function when the root certificate of the device is about to expire.
Startup Wizard	Indicates whether to display the startup wizard every time you log in to the NVR.

Parameter/Button	Description
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.5.1.2 Date/Time

Function

Allows users to set the time on HWT-NVR800 devices. Users can manually set the time or synchronize the time with the NTP server. The daylight saving time (DST) can be set.

GUI Layout

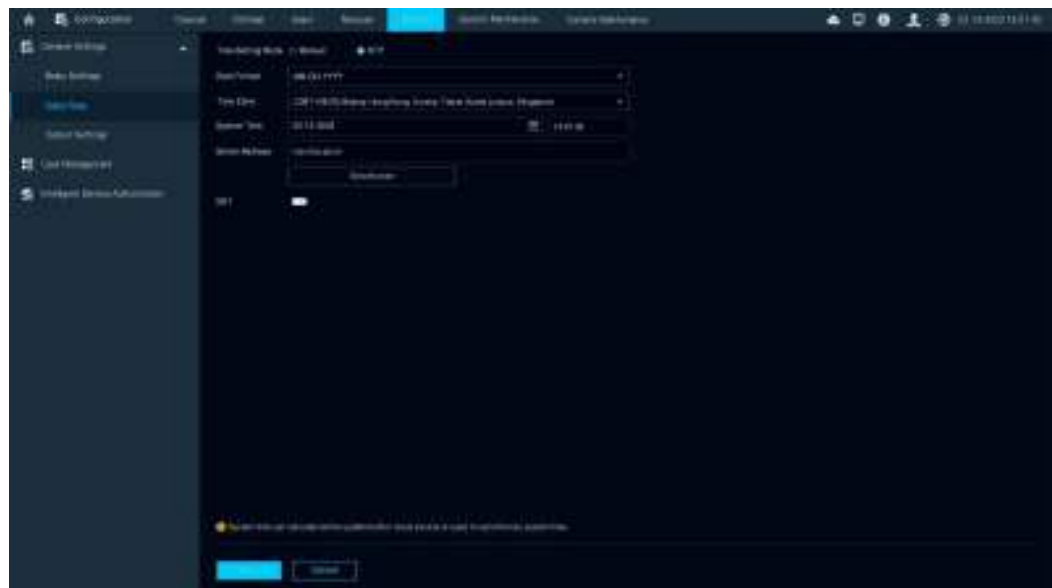


Table 5-149 Parameter/Button description

Parameter/Button	Description
Time Setting Mode	HWT-NVR800 time setting mode. Manual: You need to manually set date format, time zone, and system time. NTP: The time of an HWT-NVR800 is synchronized with that of an NTP server. In this scenario, the HWT-NVR800 must be able to intercommunicate with the NTP server. If you select this option, enter the IP address of the NTP server and click Update Now.

Parameter/Button	Description
DST	Indicates whether to enable DST. If the local area observes the DST, switch on this toggle. The DST can be set in the following modes: • By week • By date NOTE You need disable DST when using the HOLOWITS APP.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.5.1.3 Output Settings

Functions

- Allows users to set the camera cycling layout and time.
- Allows users to set the video resolution.
- Allows users to set the mouse cursor speed.
- Allows users to set the transparency of the menu.

GUI Layout

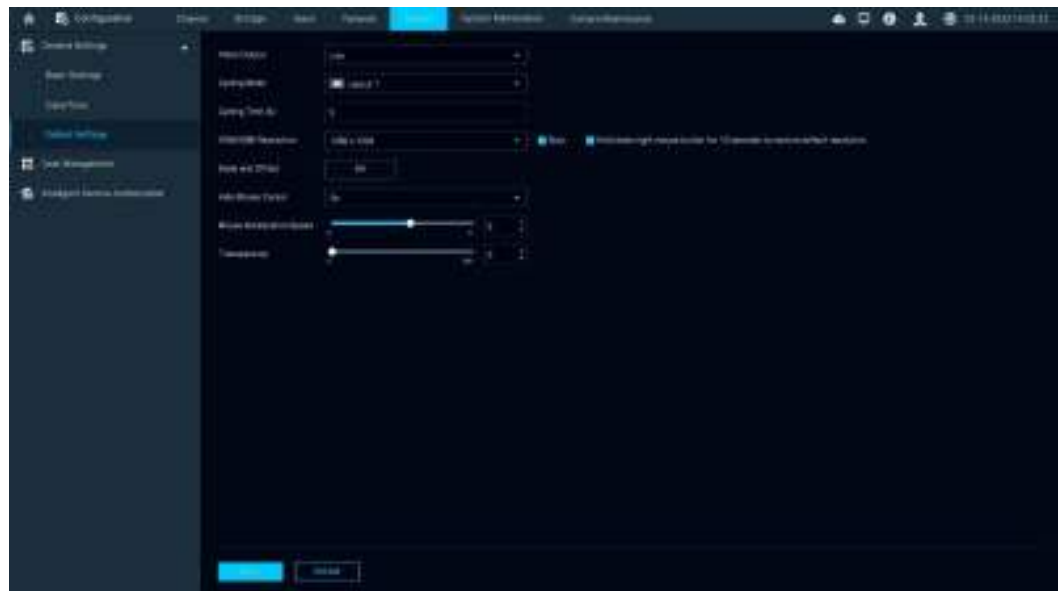


Table 5-150 Parameter/Button description

Parameter/Button	Description
Video Output	Video output mode.

Parameter/Button	Description
Cycling Mode	Camera cycling layout.
Cycling Time	Image display duration of each channel in cycling mode.
VGA/HDMI Resolution	Video output resolution of the HWT-NVR800. The resolution must be supported by the monitor. - For common monitors, set the resolution to 1080p (1920 x 1080). - For 4K monitors, set the resolution to 2K (2560 x 1440) or 4K (3840 x 2160).
Auto	Indicates whether to automatically adjust the resolution based on the monitor specifications. This function can be enabled only when the HWT-NVR800 is connected to the monitor through the HDMI port. If the HWT-NVR800 is connected to the monitor through the VGA port, users need to manually adjust the resolution.
Hold down right mouse button for 10 seconds to restore default resolution	After you select the check box and hold down the right mouse button on the login page or preview page for 10 seconds, the system restores to the default resolution. After the restoration is successful, the login page is displayed.
Scale and Offset	Used to adjust the size and position of the GUI displayed on the screen. Click Set and adjust related parameters. Scale: Adjust the size of the GUI based on a certain ratio. Horizontal Offset: Move the GUI leftwards or rightwards. Vertical Offset: Move the GUI upwards or downwards.
Hide Mouse Cursor	No-operation duration, after which the mouse cursor automatically hides. <i>n</i> seconds: If the no-operation duration lasts for <i>n</i> seconds, the cursor automatically hides. Off: The cursor will never hide.
Mouse Acceleration Speed	Mouse cursor speed.
Transparency	Transparency of the menu bar and main menu.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.5.2 User Management

Function

- Allows users to change the password of the **admin** user.
- Allows users to add a common user account and set permissions for the account. A maximum of six common user accounts can be added.

GUI Layout



Table 5-151 Parameter description

Parameter	Description
User Name	• admin: default administrator account provided upon delivery, which can be used to log in to the LDU and web client. This account has all permissions at the application layer. • apiadmin: account used to connect the iClient S100 to the HWT-NVR800. • user1/2/3/4/5/6: account used to log in to the LDU and web client. Permissions of the accounts are configured by the administrator.
Role	
User	• admin: User rights are enabled by default. • apiadmin: User rights are disabled by default. • For common users, user rights are disabled by default.
Edit	Users can click  to edit user settings, as shown in Table 5-152.

Parameter	Description
Permission	User permission. - Administrators have all permissions of the system and can change the passwords of administrators and common users. - Common users only have the permission of video viewing, backup, and playback. New common users do not have any rights. The administrator can set related permissions for them based on the site requirements.
Remote Login Status	Whether the user has logged in to the web client.
GUID File	Used to export the GUID file for resetting passwords. For details about how to reset the password, see 5.2.1.1 Passwords Are Forgotten.
Default Login User	Default login user. NOTE After this user is set, the last page can be restored upon system restart if the last page is the live video, target recognition-based clock-in, or object classification. A password is required for entering other pages.
Historical Passwords Different from New One	Number of historical passwords from which the new one differs. The value can be 1 or 2 (default).
Min Password Length	Minimum length of a password. The value ranges from 8 to 15.
Min Password Age (days)	Minimum validity period of a password. NOTE This parameter determines the period of time that a password must be used before users can change it. You can set a value between 1 and 997 days, or you can allow password changes immediately by setting the number of days to 0 .
Recommended Password Age (days)	Recommended password validity period. NOTE This parameter determines the period of time that a password can be used before the system prompts you to change it. You can set a value between 1 and 998 days, or you can specify that the system never prompts you to change the password by setting the number of days to 0 .
Max Password Age (days)	Maximum validity period of a password. NOTE This parameter determines the period of time that a password can be used before the system requires you to change the password. You can set passwords to expire after a number of days between 1 and 999 , or you can specify that passwords never expire by setting the number of days to 0 .
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

Table 5-152 Parameters for setting user information

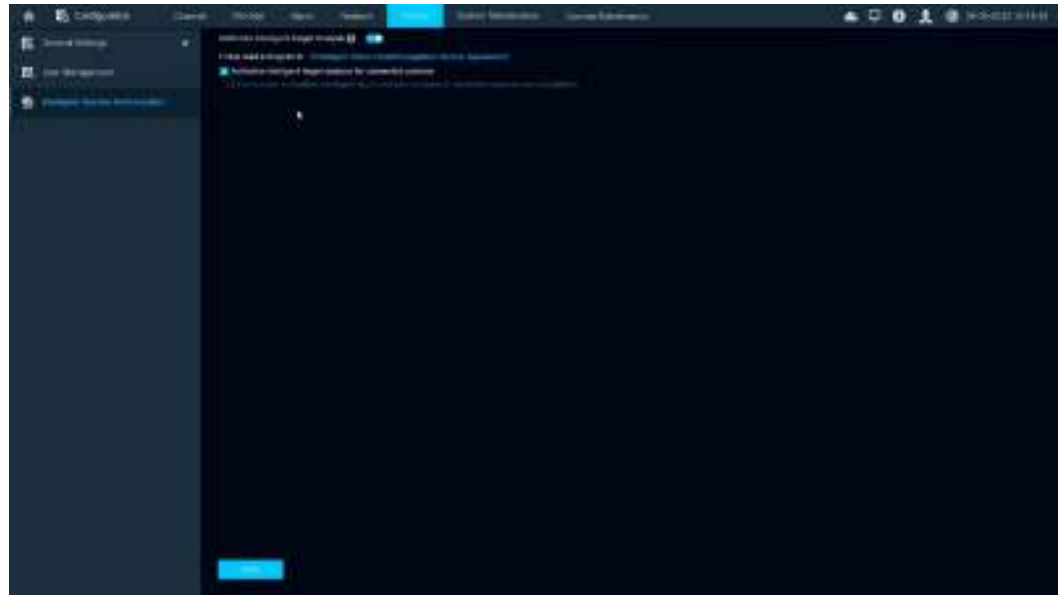
Parameter	Description
Role	User level.
User	User status.
User Name	User name.
Password	User password. NOTE You can customize the password. For details about the requirements on the password complexity, see 6.1.4.3 Password Maintenance Suggestions.
Confirm Password	Confirm password. Enter the new password again for confirmation.
Modified	Date on which the password was changed.
Unlock Pattern	Indicates whether to enable the unlock pattern. After this function is enabled, you can click  to draw a pattern password.
Password recovery through security questions	Configure password recovery through security questions.
Password recovery through GUID file import	Export the GUID file to a USB flash drive. Keep it properly.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.
Save	Saves the settings.
Cancel	Exits from the user settings.

5.1.1.6.5.3 Intelligent Service Authorization

Function

- Allows users to enable intelligent target analysis authorization.
- Allows users to authorize intelligent target analysis for connected cameras in batches.

GUI Layout



NOTE

- Before enabling this function, read and agree to the *Intelligent Vision Target Recognition Service Agreement*. Otherwise, the function cannot be enabled.
- If you select **Authorize intelligent target analysis for connected cameras**, this function will be enabled for all cameras of 10.0.0 or later versions connected to the device.

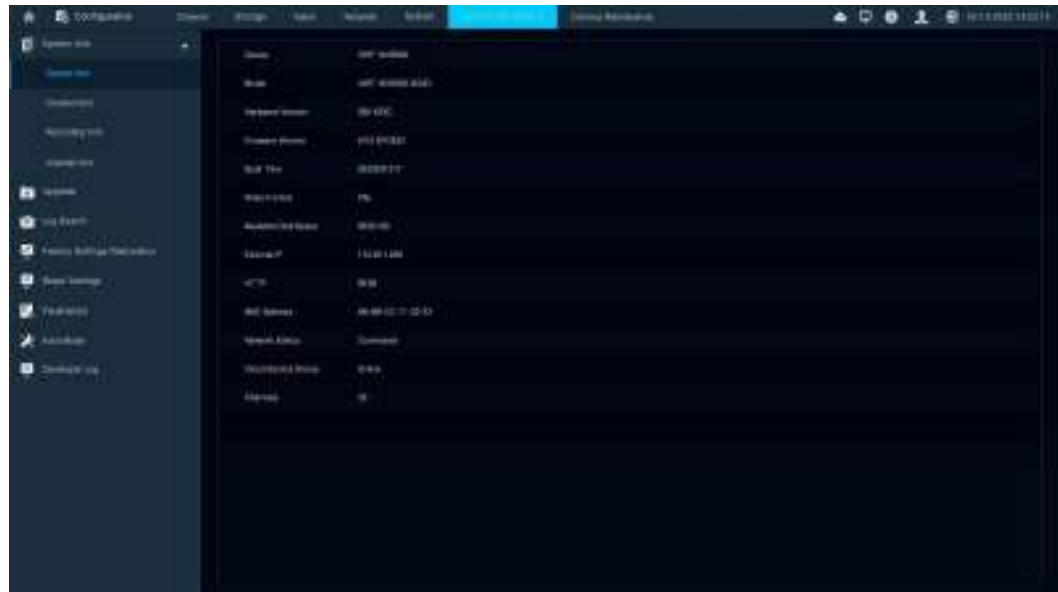
5.1.1.6.6 System Maintenance

5.1.1.6.6.1 System Info

5.1.1.6.6.1.1 Device Info

Function

Allows users to view the device type, IP address, MAC address, and firmware version.

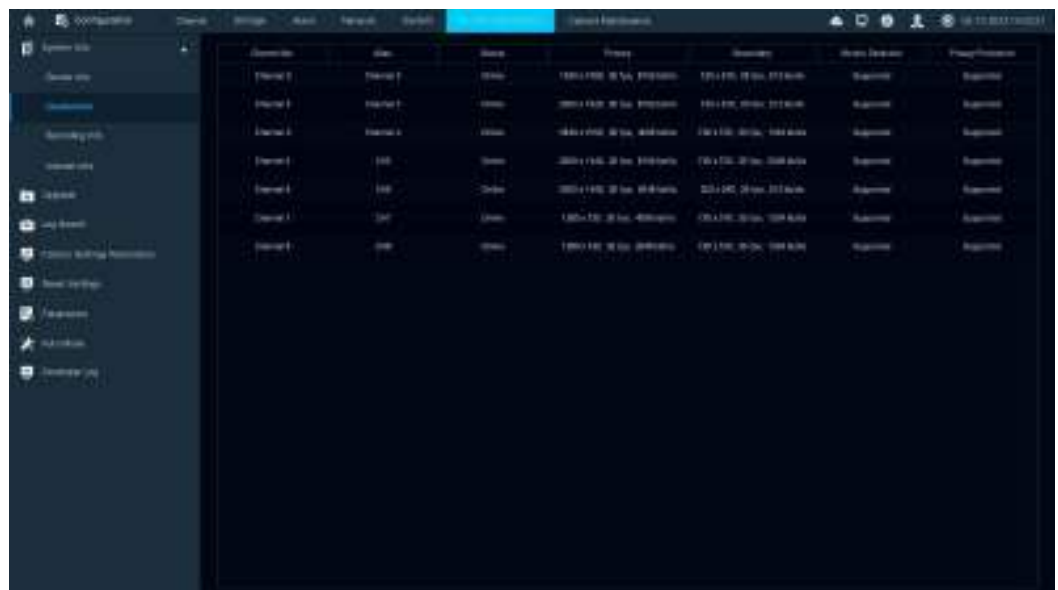


- For details about how to change the device name, see Basic Settings.
- For details about how to upgrade the firmware version, see Upgrade.
- For details about how to change the IP address, see Basic Settings.
- For details about how to modify the port information, see Port Settings.
- For details about how to access the cloud service, see Cloud Service.

5.1.1.6.6.1.2 Channel Info

Function

Allows users to view information about all camera channels, such as the alias, primary and secondary stream specifications, and whether to enable motion detection or privacy mask.



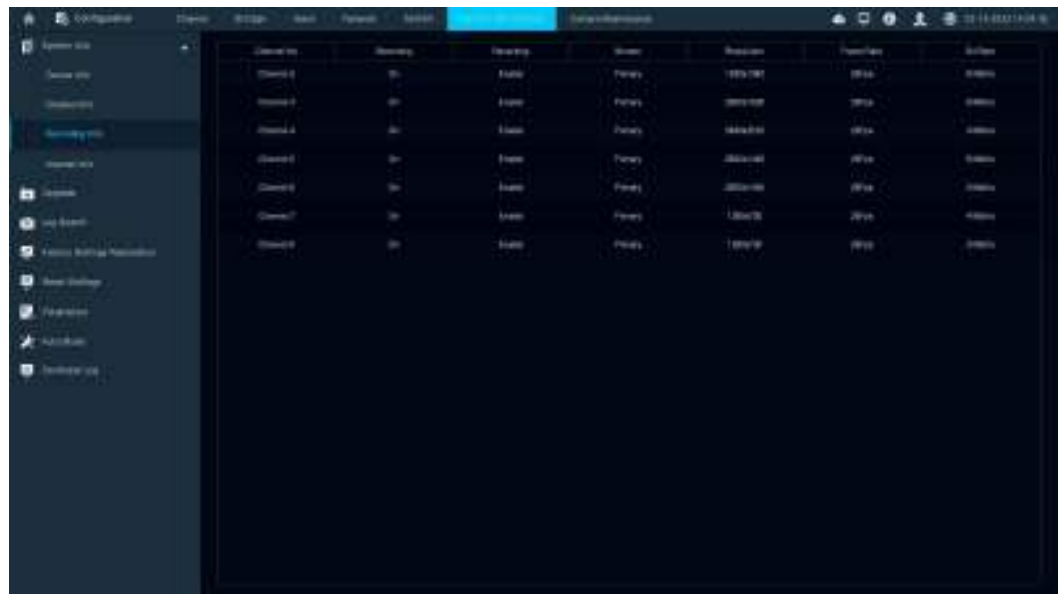
- For details about how to modify the camera channel information, see Digital Channels.

- For details about how to modify the primary or secondary stream information, see Encoding.
- For details about how to enable the motion detection, see Motion Detection.
- For details about how to enable the privacy protection, see Privacy Protection.

5.1.1.6.6.1.3 Recording Info

Function

Allows users to view recording information of all camera channels, such as whether recording is enabled, stream type, and stream resolution.



Channel No.	Recording	Encoding	Stream	Resolution	Frame Rate	Action
Channel 1	On	H.264	Primary	1080P/30	30fps	Settings
Channel 2	On	H.264	Primary	1080P/30	30fps	Settings
Channel 3	On	H.264	Primary	1080P/30	30fps	Settings
Channel 4	On	H.264	Primary	1080P/30	30fps	Settings
Channel 5	On	H.264	Primary	1080P/30	30fps	Settings
Channel 6	On	H.264	Primary	1080P/30	30fps	Settings
Channel 7	On	H.264	Primary	1080P/30	30fps	Settings
Channel 8	On	H.264	Primary	1080P/30	30fps	Settings

- For details about how to enable or disable the recording function or change the recording stream type, see Recording.
- For details about how to modify the resolution, frame rate, and stream settings, see Encoding.

5.1.1.6.6.1.4 Internet Info

Function

Allows users to view the network status of the HWT-NVR800, such as the IP address, subnet mask, and gateway.

Parameter	Description
Total Bandwidth	Total input bandwidth of the HWT-NVR800.
Used Bandwidth	Used bandwidth of connected cameras.

Table 5-153 Parameter description

Parameter	Description
Total Bandwidth	Total input bandwidth of the HWT-NVR800.
Used Bandwidth	Used bandwidth of connected cameras.

- For details about how to enable or disable the recording function or change the recording stream type, see Recording.
- For details about how to modify the resolution, frame rate, and stream settings, see Encoding.

5.1.1.6.2 Upgrade

Function

Allows users to upgrade the HWT-NVR800 firmware version. After the HWT-NVR800 firmware version is upgraded, software functions are optimized and enhanced.

GUI Layout

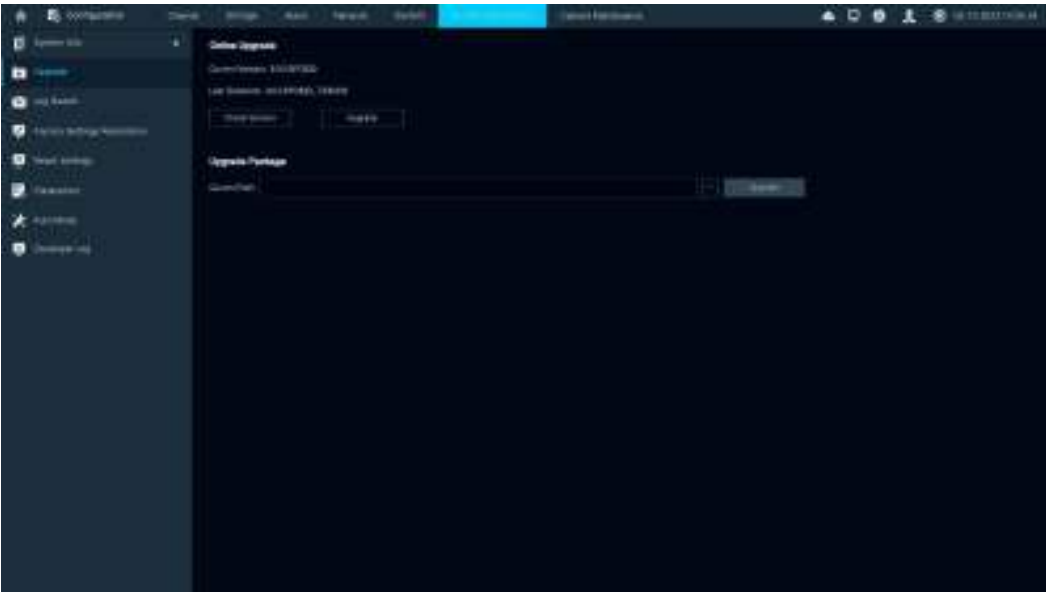


Table 5-154 Upgrade methods

Upgrade Method	Parameter /Button	Description
Online upgrade	Current Version	Before the upgrade, ensure that the cloud service has been enabled on the HWT-NVR800 and the HWT-NVR800 has been connected to the cloud service. For details about how to enable the cloud service, see Cloud Service. • The HWT-NVR800 automatically detects the latest firmware version on the cloud service. • If a later HWT-NVR800 version is detected, the Upgrade button under the Online Upgrade becomes available. Click Upgrade to perform the upgrade.
	Last Detection	
	Your software is up to date.	
	Check Version	
Package upgrade	Upgrade	Obtain the HWT-NVR800 upgrade packages from device vendors. 1. Decompress the upgrade package to obtain the HWT-NVR800 upgrade file. 2. Save the HWT-NVR800 upgrade file to a USB flash drive. 3. Insert the USB flash drive into the USB port on the HWT-NVR800. 4. Click , select the upgrade file from the USB flash drive, and click OK. When selecting the upgrade file, you need to enter the password of the admin user. 5. Click Upgrade under Upgrade Package. The upgrade takes about 2 to 3 minutes.
	Current Path	



During the upgrade, do not power off the HWT-NVR800 or remove the USB flash drive from the HWT-NVR800. Otherwise, the HWT-NVR800 program will be damaged and the system cannot be restarted.

5.1.1.6.6.3 Log Search

Function

Allows users to search for event logs generated in a specified period and back up important log information to a USB flash drive.

GUI Layout

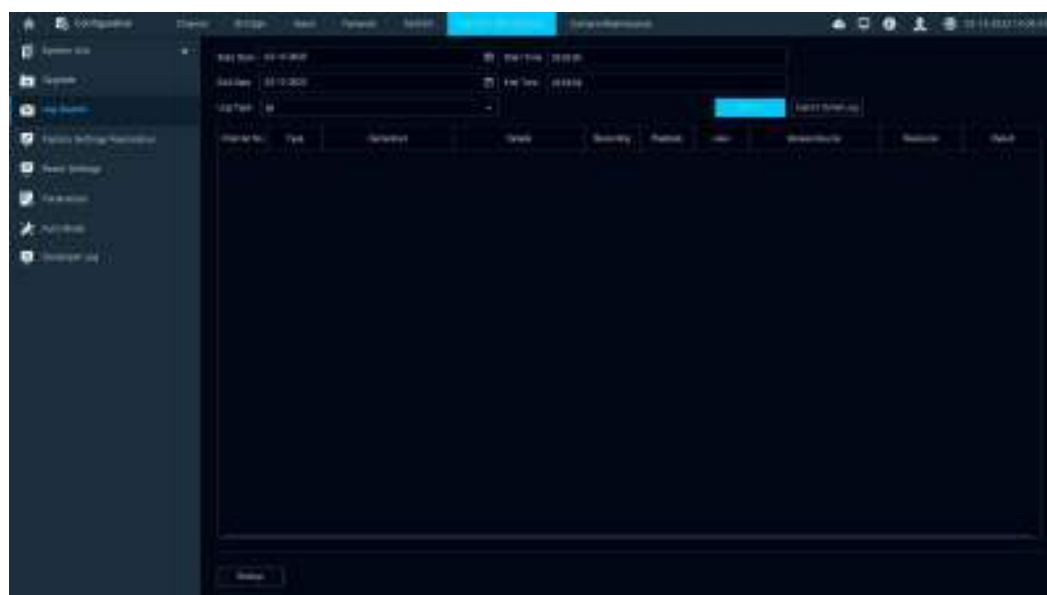


Table 5-155 Parameter/Button/Icon description

Parameter/Button/Icon	Description
Start Date	Search period (specified start date to end date) during which logs are generated.
End Date	
Start Time	Search period (specified start time to end time in a day) during which logs are generated.
End Time	
Log Type	Type of logs to be searched for.
Search	Searches for logs that meet the specified conditions.
Export Detail Log	Exports details about the selected logs to a USB flash drive.

Parameter/Button/Icon	Description
Backup	Selects logs as required and backs up them to a USB flash drive.

5.1.1.6.6.4 Factory Settings Restoration

Function

Allows users to restore the HWT-NVR800 to factory settings. If only some functions of the HWT-NVR800 are abnormal, users can restore these functions or all functions to factory settings.

NOTE

After the HWT-NVR800 is restored to factory settings, lost data cannot be restored. Exercise caution when performing this operation.

GUI Layout

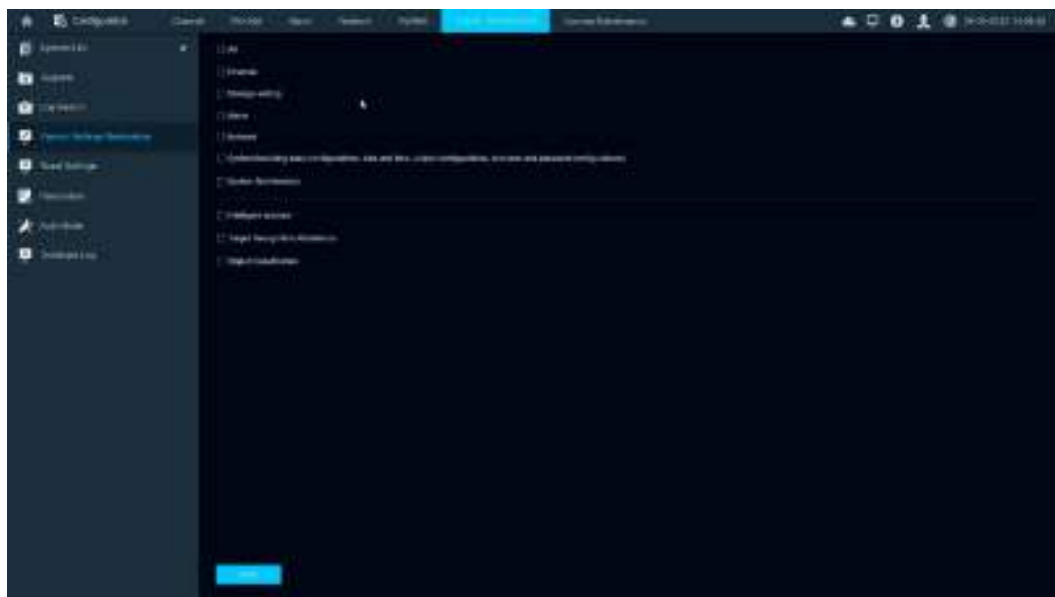


Table 5-156 Parameter description

Parameter	Description
All	- Select the function items to be restored to factory settings. All: All functions are restored to factory settings. Other options: Only selected functions are restored to factory settings. - Click Apply. It takes about 10 to 15 minutes to restore to factory settings. After the HWT-NVR800 is restored to factory settings, the HWT-NVR800 automatically restarts.
Channel	
Storage setting	
Alarm	
Network	
System	

Parameter	Description
System Maintenance	
Intelligent analysis	
Target Recognition Attendance	
Object Classification	
Apply	

5.1.1.6.6.5 Reset Settings

Function

Allows users to press and hold down the reset button on the rear panel for 10 seconds for the HWT-NVR800 to automatically restore to factory settings.

GUI Layout

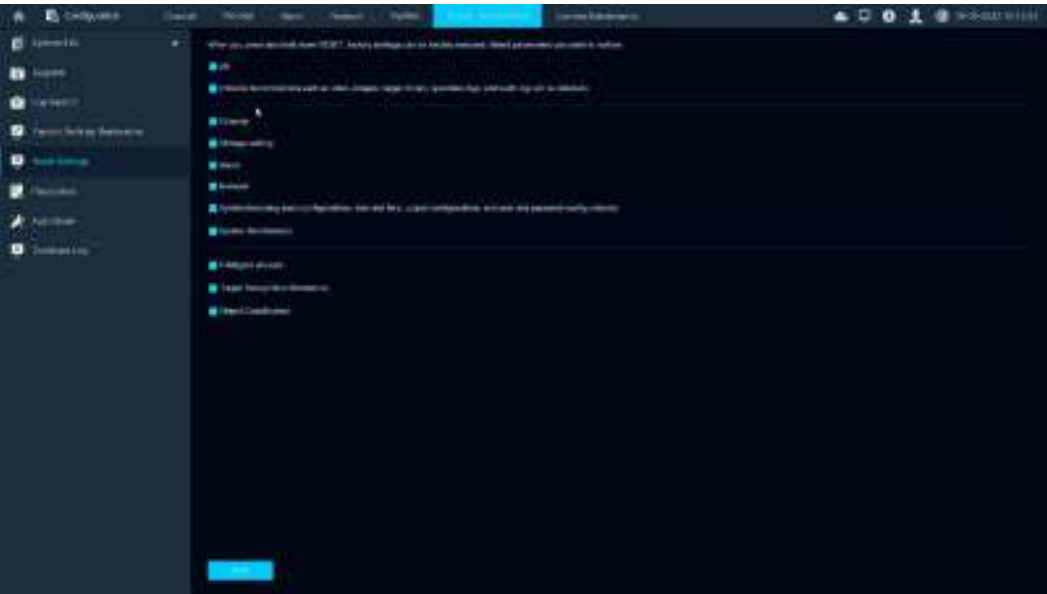


Table 5-157 Parameter description

Parameter	Description
All	If you select this item, when you hold down the reset button on the device, the device will automatically clear all the system parameter settings. This item is selected by default.

Parameter	Description
Initialize hard disk	Indicates whether to initialize the hard disk during factory setting restoration. If this item is selected, when you hold down the reset button, the device automatically deletes all data such as recordings, images, target lists, and logs from the hard disk. Deleted data cannot be restored. Exercise caution when performing this operation. This item is selected by default.
Channel	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Channel page.
Storage setting	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Storage page.
Alarm	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Alarm page.
Network	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Network page.
System (Including basic configurations, date and time, output configurations, and user and password configurations)	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the System page.
System Maintenance	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the System Maintenance page.
Intelligent analysis	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Intelligent Settings page.
Target Recognition Attendance	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Target Recognition Attendance page.
Object Classification	If you select this item, when you hold down the reset button on the device, the device automatically clears settings of parameters on the Object Classification page.
Apply	Applies the parameter settings.

5.1.1.6.6 Parameters

Function

Allows users to export or import HWT-NVR800 parameter settings. Users can export parameter settings of an HWT-NVR800 that has been commissioned and import the parameter settings to other HWT-NVR800s to quickly set parameters of the HWT-NVR800s.

NOTE

The exported HWT-NVR800 parameter setting file can be imported only to HWT-NVR800s of the same model. For example, the exported parameter setting file of the HWT-NVR800-A01 can be imported only to HWT-NVR800-A01s.

GUI Layout

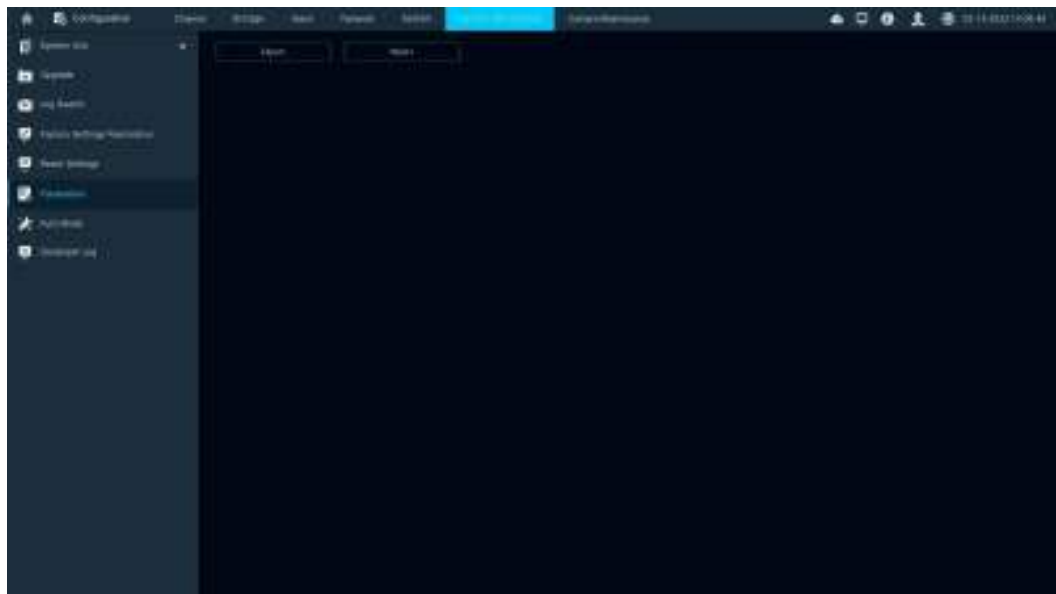


Table 5-158 Button description

Button	Description
Export	Exports the system configuration parameters of the HWT-NVR800 to a USB flash drive. System configuration parameters include parameters for channel management, storage management, alarm configuration, network configuration, system configuration, system maintenance, target recognition-based attendance, or object classification.
Import	Imports system configuration parameters to the HWT-NVR800. • The exported parameter setting file can be imported only to HWT-NVR800s of the same model. • It takes about 5 minutes to import the parameter setting file. After the parameter setting file is imported, the HWT-NVR800 automatically restarts.

5.1.1.6.6.7 Auto Mode

Function

Allows you to configure the automatic restart time for the HWT-NVR800. After the HWT-NVR800 runs for a long time, the system performance deteriorates. You are advised to configure the HWT-NVR800 to automatically restart during off-peak hours.

GUI Layout

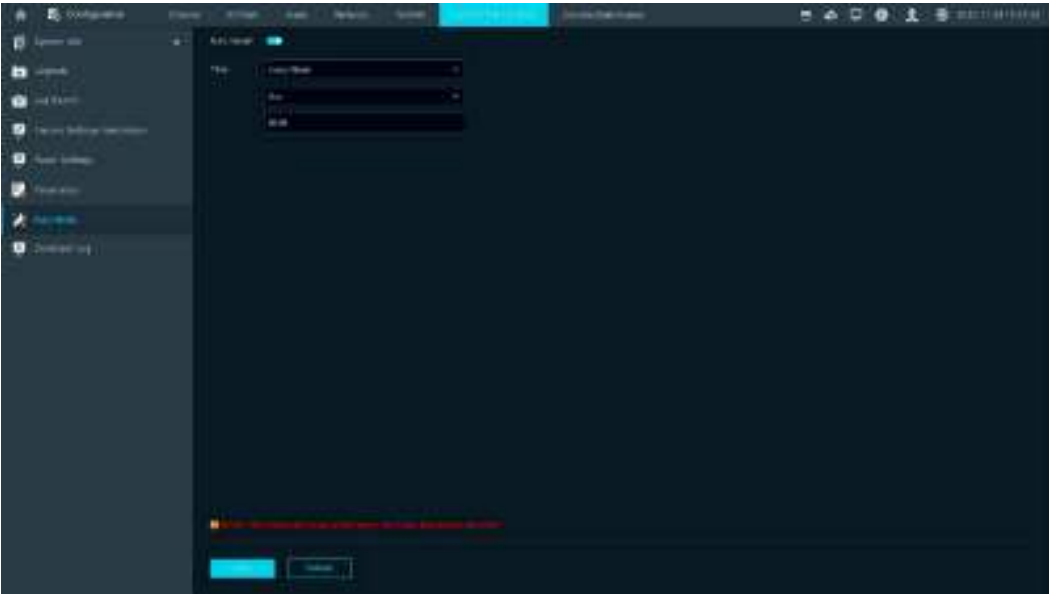


Table 5-159 Parameter/Button description

Parameter/Button	Description
Auto restart	Indicates whether to enable the HWT-NVR800 to automatically restart at a random time within two hours after the preset time. The restart takes 3 to 5 minutes. During the restart, all services are interrupted and video recording stops.
Time	Automatic restart time. You can configure a monthly, weekly, or daily restart rule for the HWT-NVR800.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

5.1.1.6.6.8 Developer Log

Function

Allows users to export HWT-NVR800 operation logs. You are advised to use this function only when you need to collect diagnosis information during testing and fault locating.

GUI Layout

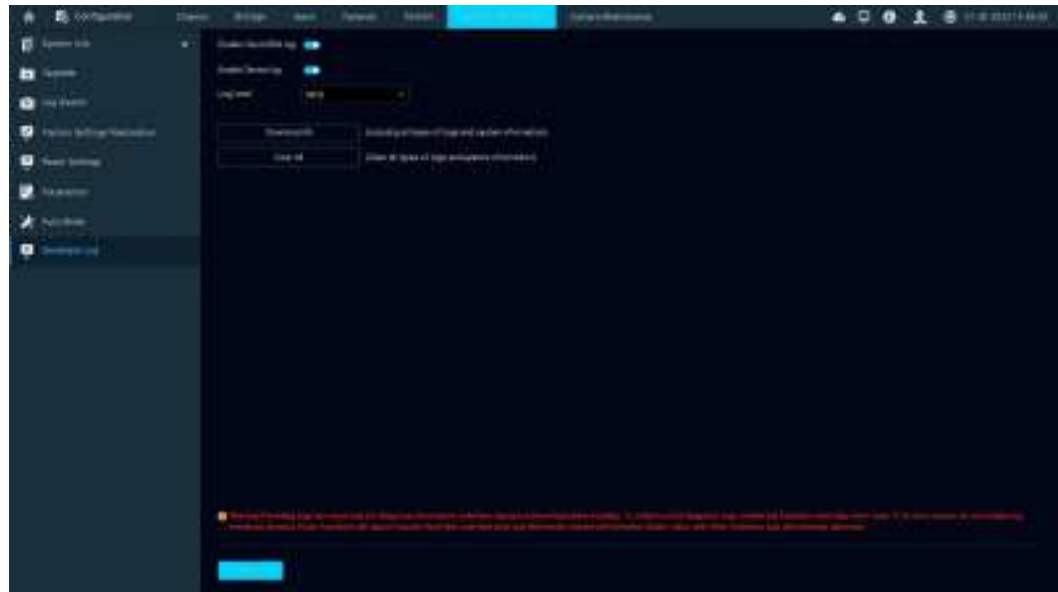


Table 5-160 Parameter description

Parameter	Description
Enable Cloud SDK log	Indicates whether to use Cloud SDK logs.
Enable Device log	Indicates whether to use device logs.
Log Level	Default log level. INFO logs can be used to locate common faults. If some faults cannot be located through INFO logs, you can collect DEBUG logs.
Download All	Downloads all types of logs and system information. Logs can be collected only after the NVR800 is connected to the USB flash drive.
Clear All	Clears all types of logs and system information.
Apply	Applies the parameter settings.

5.1.1.6.7 Camera Maintenance

5.1.1.6.7.1 Upgrade

Function

Allows users to upgrade cameras one by one or in batches.

After the camera version is upgraded, software functions are optimized and enhanced.

GUI Layout

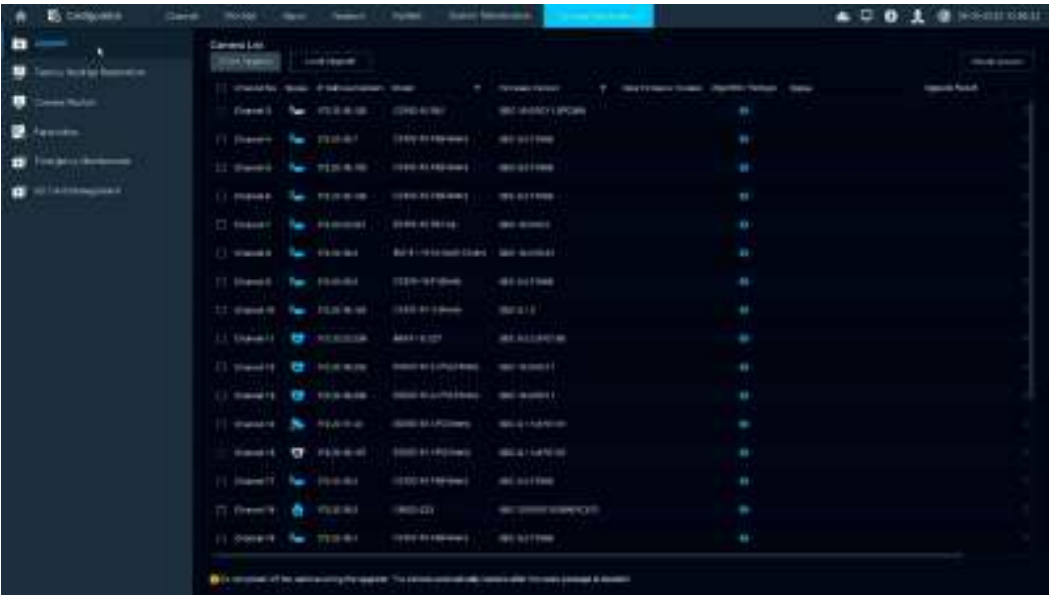


Table 5-161 Parameter description

Parameter	Description
Channel No.	ID of the channel to which the camera belongs.
IP Address	Camera IP address.
Status	Camera connection status.
Model	Camera model.

Table 5-162 Upgrade methods

Upgrade Method	Parameter /Button	Description
Online Upgrade	Firmware Version	Before the upgrade, ensure that the cloud service has been enabled on the HWT-NVR800 and the HWT-NVR800 has been connected to the cloud service. For details about how to enable the cloud service, see Cloud Service.
	Version Details	

Upgrade Method	Parameter /Button	Description
	New Firmware Version	- You can view the current firmware version of the camera and the version details of each firmware. - The HWT-NVR800 automatically detects the latest firmware version on the cloud service. - If a later camera firmware version is detected, the Update and Batch Update buttons become available. Users can click the buttons to perform the upgrade. - You can view the result of the online upgrade and the cause of the upgrade failure. - The basic package and the corresponding algorithm package are automatically upgraded during the cloud-based camera upgrade.
	Upgrade Result	
	Upgrade Step/Failure Cause	
	Check Version	
	Update	
	Batch Update	
Local Upgrade	Upgrade Package	Download the camera upgrade package from the official website of related products.
	Package Type	1. Decompress the upgrade package to obtain the camera upgrade file.
	Camera Upgrade	2. Save the camera upgrade file to a USB flash drive. 3. Insert the USB flash drive into the USB port on the HWT-NVR800. 4. Click  , select the upgrade file from the USB flash drive, and click OK . When selecting the upgrade file, you need to enter the password of the admin user. 5. Click Camera Upgrade to start the upgrade. It takes about 5 to 10 minutes for the upgrade.

CAUTION

During the upgrade, do not power off the HWT-NVR800 or remove the USB flash drive from the HWT-NVR800. Otherwise, the camera software program will be corrupted and the HWT-NVR800 cannot be connected.

5.1.1.6.7.2 Factory Settings

Function

Allows users to restore a camera to factory settings. If camera functions are abnormal and cannot recover, users can restore the camera to factory settings.

NOTE

After the camera is restored to factory settings, all the current configurations will be lost. Exercise caution when performing this operation.

GUI Layout

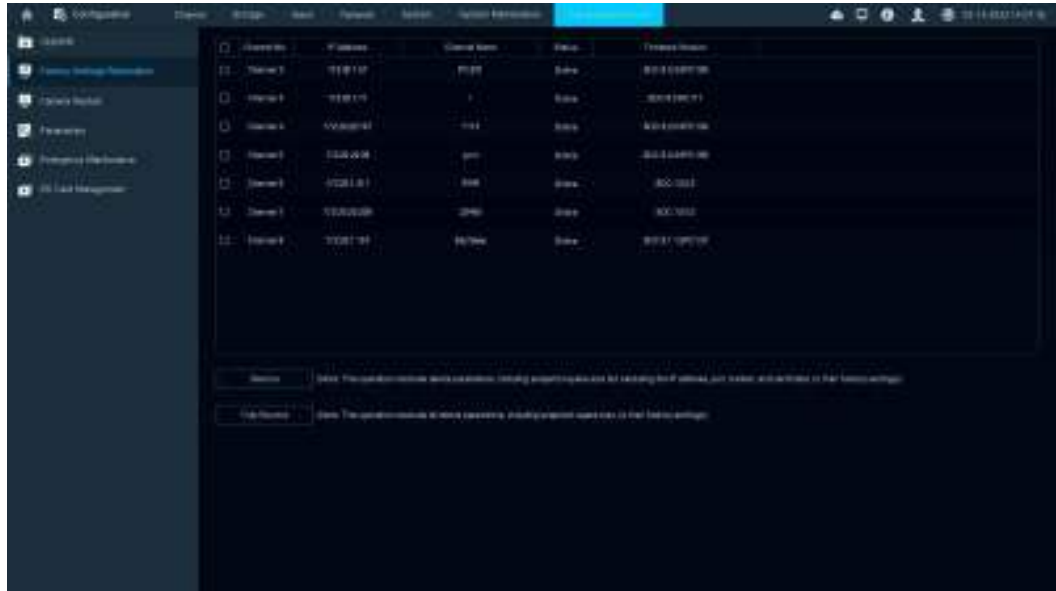


Table 5-163 Parameter/Button description

Parameter/Button	Description
Channel No.	ID of the channel to which the camera belongs.
IP Address	Camera IP address.
Status	Camera connection status.
Firmware Version	Camera firmware version.
Restore	Restores a camera to factory settings. Before the camera is restored to factory settings, users need to enter the password of the admin user. Note: This operation restores all parameters except for the IP address, port number, and certificate, to their factory settings.
Fully Restore	Fully restores a camera to factory settings. After the restoration, the camera is deleted and needs to be re-added manually next time users need it.

5.1.1.6.7.3 Camera Restart

Function

Allows users to remotely restart a camera. Frame freezing may occur during video playback of a camera because resource usage is high after the camera runs for a long time. In this case, users can restart the camera.

GUI Layout

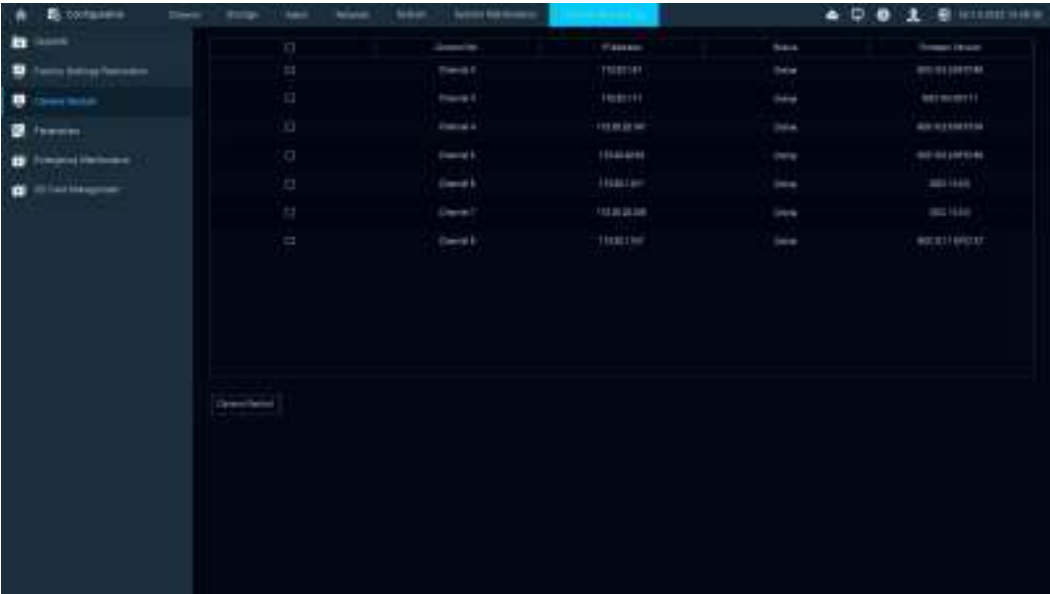


Table 5-164 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID of a camera.
IP Address	Camera IP address.
Status	Camera connection status.
Firmware Version	Camera firmware version.
Camera Restart	Restarts the camera.

5.1.1.6.7.4 Parameters

Function

Allows users to export or import camera parameter settings. Users can export parameter settings of a camera that has been commissioned and import the parameter settings to other cameras to quickly set parameters of cameras in batch.

NOTE

The exported camera parameter setting file can be imported only to cameras of the same model.

GUI Layout

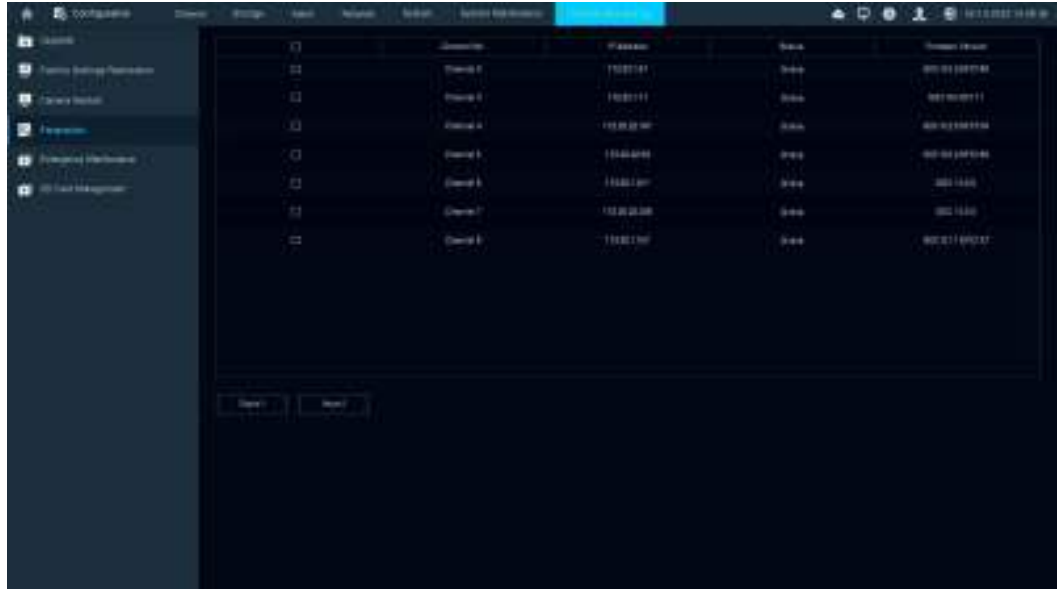


Table 5-165 Parameter/Button description

Parameter/Button	Description
Channel No.	ID of the channel to which the camera belongs.
IP Address	Camera IP address.
Status	Camera connection status.
Firmware Version	Camera firmware version.
Export	1. Insert a USB flash drive into the HWT-NVR800. 2. Enable a camera and click Export. 3. Select the directory on the USB flash drive where the parameter setting file is stored, and click OK. 4. Configure a protection password for the parameter setting file and click OK. The password is used for importing the parameter settings. Keep the password secure. The system generates the <i>Camera IP address.cfg</i> file (for example, 10.10.10.100.cfg) and saves it to a specified directory on the USB flash drive.

Parameter/Button	Description
Import	1. Insert the USB flash drive where the parameter setting file is stored into the HWT-NVR800. 2. Enable the camera to which the exported parameter setting file is imported and click Import. • The exported camera parameter setting file can be imported only to cameras of the same model. • The exported parameter setting file can be imported to multiple cameras of the same model at the same time. 3. Go to the directory on the USB flash drive where the parameter setting file is stored, select the Camera IP address.cfg file, and click OK. 4. Enter the protection password for the parameter setting file and click OK. It takes about 5 minutes to import the parameter setting file. After the parameter setting file is imported, the camera automatically restarts.

5.1.1.6.7.5 Emergency Maintenance

Function

Allows users to search for HOLOWITS cameras that are not connected to the HWT-NVR800, remotely restart and upgrade the cameras, and restore the cameras to factory settings.

GUI Layout

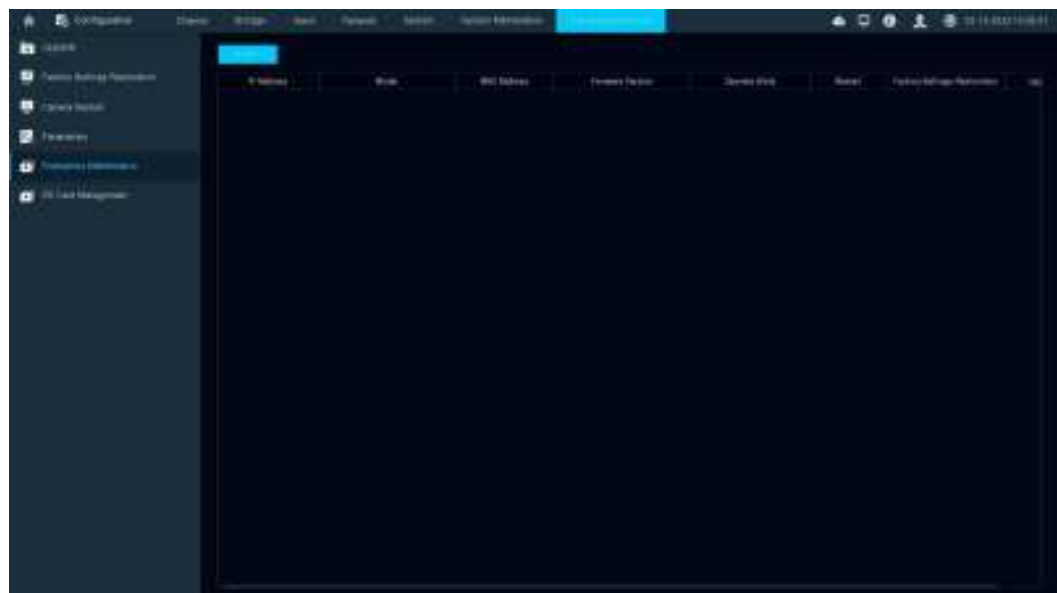


Table 5-166 Parameter description

Parameter	Description
IP Address	Camera IP address.
Model	Camera type.
MAC Address	Camera MAC address.
Firmware Version	Firmware version of a camera.
Operate State	Operating status of a camera.
Restart	Restarts the camera.
Factory Settings	Restores the camera to factory settings.
Upgrade	Upgrades the camera version.

5.1.1.6.7.6 SD Card Management

Function

Allows users to format SD cards of cameras in batches and check the SD card status.

GUI Layout

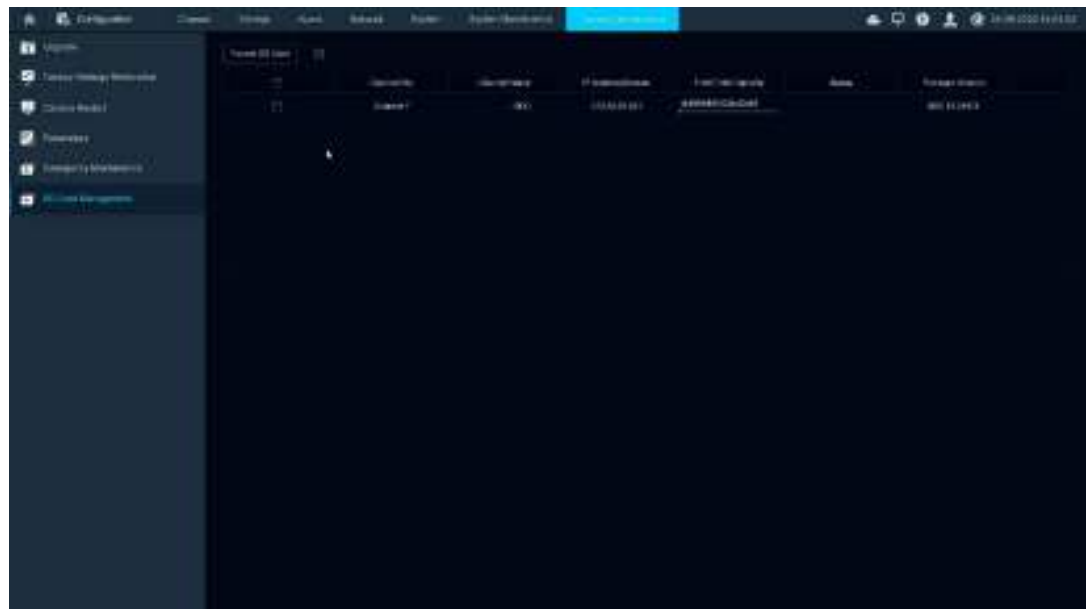


Table 5-167 Parameter description

Parameter	Description
Format SD Card	Formats the SD card of a selected camera.
Channel No.	Camera channel ID.

Parameter	Description
Channel Name	Camera channel name.
IP Address	Camera IP address.
Free/Total Capacity	Remaining/total capacity of the SD card.
Status	SD card status.
Firmware Version	Firmware version of a camera.

NOTE

- Before using an SD card, format it.
- Back up data before formatting an SD card.
- All data will be lost after an SD card is formatted. Exercise caution when performing this operation.
- Do not remove an SD card when it is being formatted or data is being written into it.
- Format an SD card during off-peak hours.
- If an SD card has no storage capacity change after it is formatted, the SD card may be faulty. You are advised to replace the SD card and format the new SD card again.
- If the HWT-NVR800 is powered off and then powered on again during SD card formatting, an error message indicating SD card exception may be displayed.
- During SD card formatting, if the camera is powered off and then powered on again, restart the app in the camera web system.

5.1.1.7 Backup

5.1.1.7.1 Common Backup

Function

Allows users to back up recording files of a camera to a USB flash drive by time.

GUI Layout

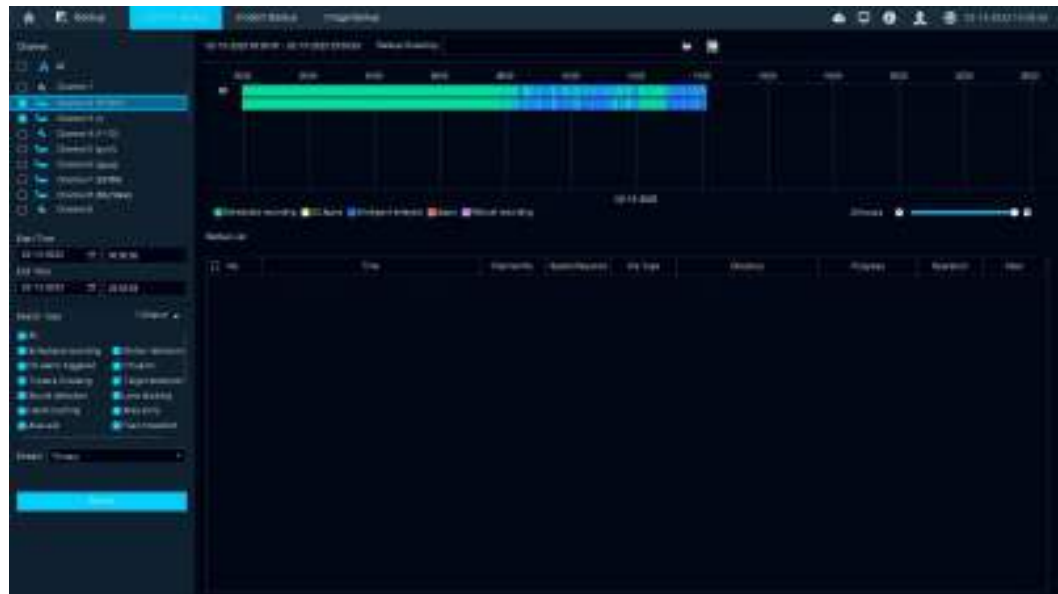
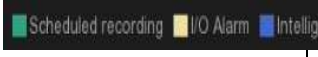


Table 5-168 Parameter description

Parameter	Description
Channel	All: enables all online cameras. - Other options: enables selected online cameras.
Start Time	Backup time range during which recording files are generated. Users can select the start and end time from the calendar.
End Time	
Search Type	All: searches for all recordings. - Other options: searches for recordings of selected types.
Stream	Stream type. The options are Primary and Secondary . For details about stream recording information and whether the camera recording function is enabled, see Recording.
Search	Searches for recordings that meet the criteria.
Backup Directory	Click  and select a recording backup directory.
	Saves a recording.
	Recording types, which are displayed in different colors on the timeline.
	Timeline, which is displayed based on the selected time.

5.1.1.7.2 Incident Backup

Functions

Allows users to back up recording files of a camera to a USB flash drive by event.

GUI Layout

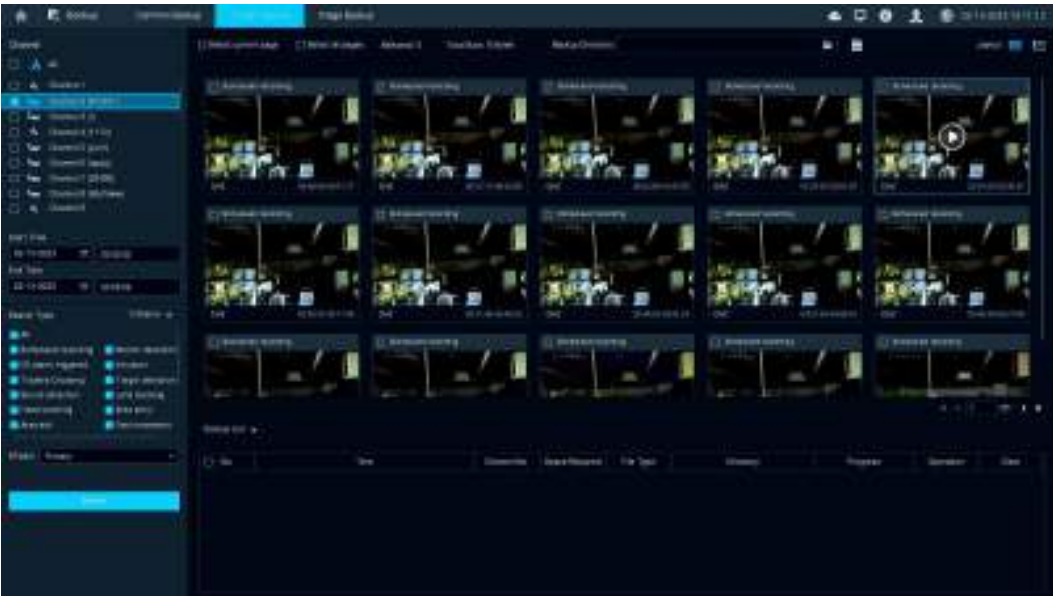


Table 5-169 Parameter/Button/Icon description

Parameter/Button/Icon	Description
Channel	• All: enables all online cameras. • Other options: enables selected online cameras.
Start Time	Time range during which recording files are generated.
End Time	
Search Type	• All: searches for all recordings. • Other options: searches for recordings of selected types.
Stream	Stream type. The options include Primary and Secondary . For details about stream recording information and whether the camera recording function is enabled, see Recording.
Search	Searches for recordings that meet the specified conditions.
Select current page	Indicates whether to select all recordings on the current page.
Select all pages	Indicates whether to select all recordings.
	Displays recordings as thumbnails.
	Displays recordings in a detailed list.

Parameter/Button/Icon	Description
Backup Directory	Click  and select a recording backup directory.
	Saves a recording.

5.1.1.7.3 Image Backup

Function

Allows users to back up manual snapshots of a camera to a USB flash drive.

GUI Layout

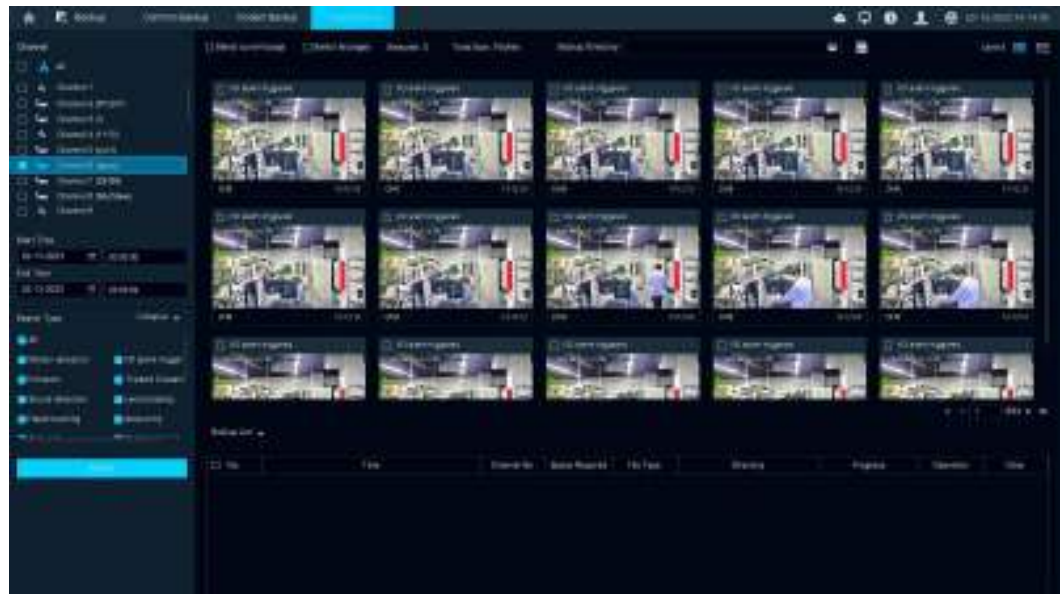


Table 5-170 Parameter/Button/Icon description

Parameter/Button/Icon	Description
Channel	All: enables all online cameras. - Other options: enables selected online cameras.
Start Time	Backup time range during which images are generated. Users can select the start and end time from the calendar.
End Time	
Search Type	All: searches for all images. - Other options: searches for images of selected types.
Search	Searches for images that meet the specified conditions.

Parameter/Button/Icon	Description
Select current page	Indicates whether to select all images on the current page.
Select all pages	Indicates whether to select all images.
	Displays images as thumbnails.
	Displays images in a detailed list.
Backup Directory	Click  and select a recording backup directory.
	Saves a recording.

5.1.2 Web Client

5.1.2.1 Basic System Environment Requirements

Classification	Minimum Configuration	Recommended Configuration
CPU	Intel® Core™ i5 CPU	Intel® Core™ i5 CPU or higher
Memory	4 GB or above	8 GB or above
Disk space	500 GB or above	1000 GB or above
GPU	2 GB or above	4 GB or above
Screen resolution	1920 x 1080	
Operating system	Windows 7 or later and macOS Monterey 12.5	
DirectX	DirectX 11	
Direct3D	Acceleration function	
Network adapter	10/100/1000 Mbit/s network adapter	

Classification	Minimum Configuration	Recommended Configuration
Browser	- Internet Explorer: Microsoft Internet Explorer 9/10/11 On the Windows 7 operating system, Internet Explorer 11 supports the following: - Internet Explorer versions that support the connection to the NVR: - IE11.0.9600.16428 - IE11.0.9600.18449 - IE11.0.9600.18449 - Internet Explorer versions that do not support the connection to the NVR: - IE11.0.9600.17843 - IE11.0.9600.17843 - IE11.0.9600.19230 - On the Windows 10 operating system, the following browsers are supported: - Google Chrome: 81.0 or later - Mozilla Firefox: 83.0 or later - Microsoft Edge: 87.0 or later - macOS Monterey: 12.5 - Mac Safari: 13.1 or later NOTE - No plug-in needs to be installed for browsers other than Internet Explorer. One-channel of 1080p or 4-channel of D1 live video viewing or recording playback is supported. - Browsers other than Internet Explorer do not support recording download, video recording, simultaneous recording playback, or save path configuration. Up to four channels of D1 live video viewing and four channels of recording playback (secondary streams) are supported. Recording playback can be conducted only on a browser other than Internet Explorer. - If the video encoding format is H.265, it takes a longer time to load live video on browsers other than Internet Explorer. - You can log in to the same HWT-NVR800 using multiple browsers (maximum: 7) at the same time. However, you cannot log in to the same HWT-NVR800 on multiple tab pages of the same browser at the same time. - If a browser other than Internet Explorer is used, video from some cameras connected to devices with two disk trays cannot be viewed under Channel > Live. - The live video display delays for 2s if the Firefox browser is used.	

5.1.2.2 Logging In to the Web Client

Procedure

Step 1 Enter the IP address of the HWT-NVR800 in the address box of a browser.

The default IP address is 192.168.0.100, the default subnet mask is 255.255.255.0, and the default gateway is 192.168.0.1.

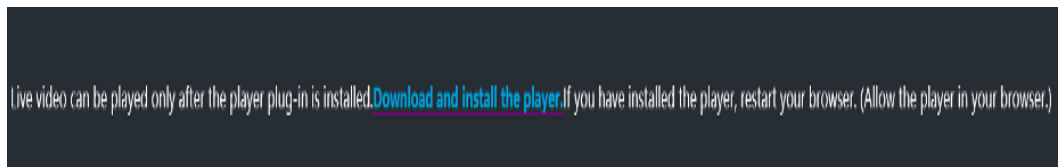
Step 2 Log in to the HWT-NVR800 web client, as shown in Figure 5-3.

Figure 5-3 Logging in to the web client



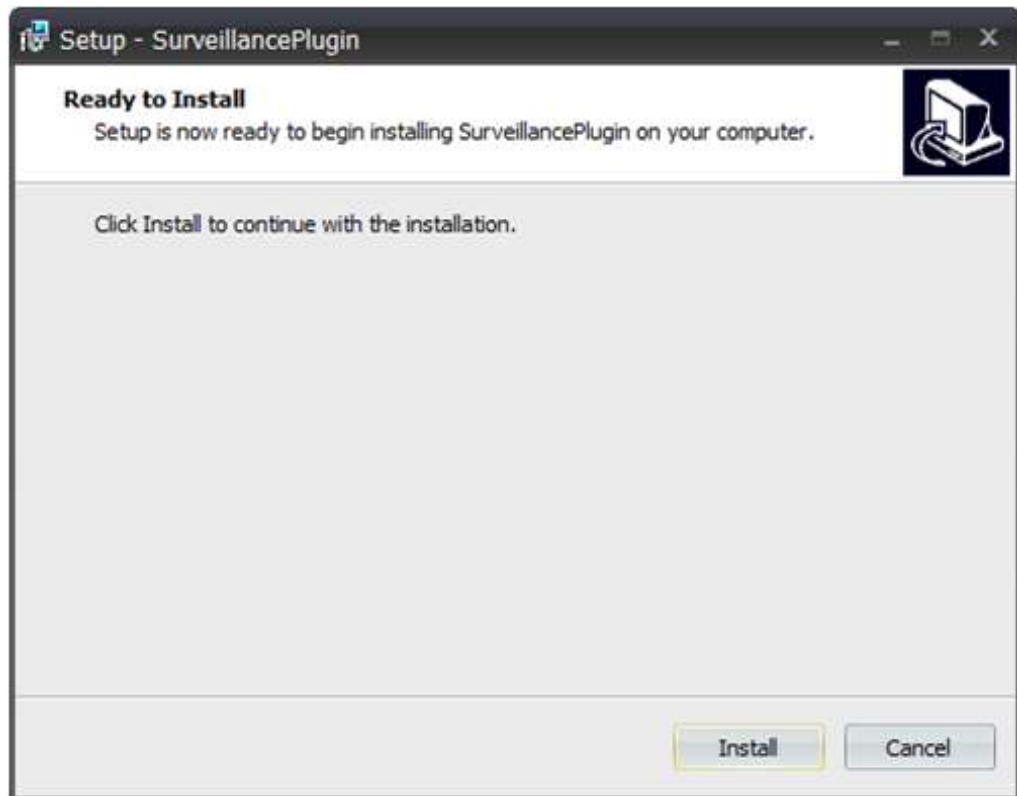
Step 3 Download a player plug-in upon the first login, as shown in Figure 5-4.

Figure 5-4 Downloading a player plug-in



Step 4 Install the plug-in. For details about how to install the plug-in, see Figure 5-5.

Figure 5-5 Installing the plug-in



Step 5 Open the browser, enter the NVR IP address in the address box of the browser, and press **Enter**.

The NVR login page is displayed, as shown in Figure 5-6.

Figure 5-6 Logging in to the web client



NOTE

A maximum of seven IP addresses can be used to remotely log in to the device.

----End

5.1.2.3 Live



System Configuration Icons

Table 5-171 Descriptions of system configuration icons

Icon	Description
	Views information about the current login user, system information, and network status.
	Logs out of the web client.

Live Video Control Bar

Table 5-172 Descriptions of icons on the live video control bar

Icon	Description
	Enables or disables live video from the selected channel. When the icon turns blue, live video is enabled.



Enables or disables manual recording. When the icon turns blue, manual recording is enabled.

Select a channel and click  to enable manual recording.
Click  to disable manual recording.

5.1.2.3.4 Manual recordings are stored on the local host. For details about how to set the path, see 5.1.2.6.3 Adding a Custom Target List

Function

Allows users to add a custom target list.

GUI Layout



Table 5-173 Parameter description

Parameter	Description
Group Name	Name of a list. The options include customize the
Switch	Indicates whether
Edit	Imports target rec
Delete	Deletes a list.
Save	Saves the settings

5.1.2.3.5 List-based Alarm

Icon	Description																		
	Function Allows users to enable or disable list-based alert. UI Layout  Table 5-174 Parameter description <table><tr><th>Parameter</th><th>Description</th></tr><tr><td>Group Name</td><td>Name of a list</td></tr><tr><td>Alarming</td><td>Indicates whether the alarm is enabled, and the target in a target</td></tr><tr><td>Policy</td><td>List type. • Allow: true • Reject: false </td></tr><tr><td>Match</td><td>Similarity threshold</td></tr><tr><td>Alarm Linkage</td><td>Alarm linkage</td></tr><tr><td>Alarm Plan</td><td>Alarm plan.</td></tr><tr><td>Alarm Channel</td><td>Alarm channel</td></tr><tr><td>Save</td><td>Saves the settings</td></tr></table> Local Settings.	Parameter	Description	Group Name	Name of a list	Alarming	Indicates whether the alarm is enabled, and the target in a target	Policy	List type. • Allow: true • Reject: false	Match	Similarity threshold	Alarm Linkage	Alarm linkage	Alarm Plan	Alarm plan.	Alarm Channel	Alarm channel	Save	Saves the settings
Parameter	Description																		
Group Name	Name of a list																		
Alarming	Indicates whether the alarm is enabled, and the target in a target																		
Policy	List type. • Allow: true • Reject: false																		
Match	Similarity threshold																		
Alarm Linkage	Alarm linkage																		
Alarm Plan	Alarm plan.																		
Alarm Channel	Alarm channel																		
Save	Saves the settings																		

Icon	Description
	Takes snapshots in live video from the selected channel. Snapshots are stored on the local host.
	Switches the type of the stream from the selected channel. HD: displays primary streams. SD: displays secondary streams.
	Enables or disables the zoom-in function on the video image. Click  and drag a box on the video image from the selected channel. The area in the box is zoomed in until the area is clear. Click  to disable the zoom-in function and restore the size of the image from the selected channel.
	Controls the channel volume. - Click . In , users can play the video sound and adjust the volume of the video from the selected channel. - Click . In , users can adjust the volume of the video from the selected channel and close the video sound.
	Switches streams from all cameras. HD: displays primary streams. SD: displays secondary streams.
	Disables live video from all channels.
	Enables live video from all channels.
	Plays live video from all channels in full-pane mode. When the icon turns blue, the live video is played in full-pane mode.
	Displays in one pane.
	Displays in four panes.
	Displays in nine panes.
	Displays in 12 panes.
	Displays in 16 panes.
	Press Esc to exit the full-screen display.

PTZ Control Operation Bar

- In the **PTZ Controls** area, click the triangle icon next to **Expand** to show the PTZ control menus, and click the icon again to hide the menus.
- In the **PTZ Controls** area, click the triangle icon next to **Advanced** to show the preset position setting, and click the icon again to hide the setting.

Figure 5-7 PTZ control operation bar

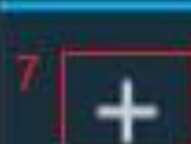
PTZ Controls

Collapse ▼

1
Channel 913
OnePush Focus6
Rotation Speed

Advanced ▼

Preset position

8
Tour12
Set as Home Position

No.	Name	Home	Operation
1	1	9 	10
2	2		

Table 5-175 PTZ control operation bar

No.	Function Item	Description
1	Camera name	Camera channel ID.
2	Zoom in/out	Zooms in or out on the video image.
3	Aperture adjustment	Adjusts the aperture size.
4	Focus adjustment	Adjusts the camera focus.
5	Direction control	- Central key: starts/stops automatic tour. - Arrow keys: selects the rotation direction or angle of the PTZ camera.
6	Speed adjustment	Adjusts the PTZ rotation speed. Drag the slider towards  to speed up PTZ rotation, and drag the slider towards  to slow down PTZ rotation.
7	Adding a preset position	Adds a preset position.
8	Tour	Accesses the tour control page.
9	Deleting a preset position	Deletes a preset position.
10	Invoking a preset position	Steers the camera to a preset position.
11	Editing a preset position	Edits the preset position name.
12	Set as Home Position	Sets a preset position as the home position.
13	OnePush Focus	Enables zoom cameras connected through HWSDK to automatically focus when the image is unclear.

5.1.2.4 Playback

Recording



Table 5-176 Parameter description

Parameter	Description
Date	Date on which recordings to be searched are generated.
Stream	Stream type. The options are as follows: • Primary • Secondary
Search Criteria	Recording type. The options are as follows: • Scheduled recording • Motion detection • I/O • Intelligent analysis • Manual recording • Sound detection • Lens blocking
Channel List	Camera channel.

Table 5-177 Icon description

Icon	Description
	Starts or pauses playback of the recording from the selected channel.
	Stops playback of the recording from the selected channel.

Icon	Description
	Plays the recording from the selected channel frame by frame.
	Plays recordings from at least two channels from the same time point.
	Manually records the recording from the selected channel.
	Takes snapshots of the selected channel.
	Selects a time segment and downloads the recording generated during the time segment. Downloaded MP4 video files can be played using Storm Player, Thunder Player, VLC, or iQIYI but cannot be played using Windows Media Player.
	Plays recordings at 1/8x, 1/4x, 1/2x, 1x, 2x, 4x, or 8x speed.
	Click  and drag a box on the video image from the selected channel. The area in the box is zoomed in until the area is clear. Click  to disable the zoom-in function and restore the size of the image from the selected channel.
	Closes the recordings that are being played in all channels.
	Plays the found recordings from all channels.
	Plays back recordings from all channels in full-pane mode. When the button turns blue, the recording is played back in full-pane mode.
	Displays in full screen. Press Esc to exit the full-screen display.

Image

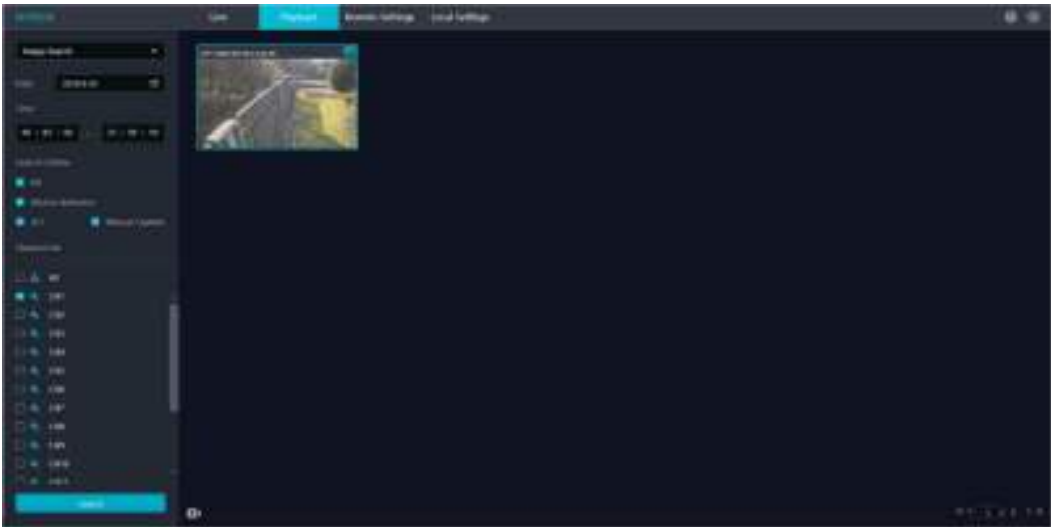


Table 5-178 Parameter description

Parameter	Description
Date	Date on which images to be searched are generated.
Search Criteria	Snapshot types for searching for images. The options are as follows: • All • Motion detection • I/O • Manual capture
Channel List	Camera channel.

Table 5-179 Icon description

Icon	Description
	Downloads snapshots.
	Plays back the recording generated before and after the snapshot is taken.
	Exits the playback of the recording generated before and after the snapshot is taken.
	Pauses or starts the playback of a recording.
	Stops recording playback.
	Plays a recording frame by frame.

Icon	Description
	Manually records the recording that is being played.
	Manually takes a snapshot.
	Selects a time segment and downloads the recording generated during the time segment.
	Plays recordings at 1/8x, 1/4x, 1/2x, 1x, 2x, 4x, or 8x speed.
	Enables or disables the zoom-in function on the video image. Click  and drag a box on the video image from the selected channel. The area in the box is zoomed in until the area is clear. Click  to disable the zoom-in function and restore the size of the image from the selected channel.
	Plays back a recording in full-pane mode. When the button turns blue, the recording is played back in full-pane mode.
	Displays in full screen. Press Esc to exit the full-screen display.

5.1.2.5 Configuration

5.1.2.5.1 Channel Configuration

5.1.2.5.1.1 Channel Configuration

Digital Channel

The GUI varies depending on the HWT-NVR800 model. The following uses the HWT-NVR800-A02-08P as an example.

The first eight channels of the HWT-NVR800-A02-08P model can automatically connect to cameras that support PoE power supply. Users can set **Switch Mode** to **Manual** on the LDU and manually connect the HWT-NVR800-A02-08P to network cameras. The last eight channels can connect only to network cameras, and **Switch Mode** cannot be changed.

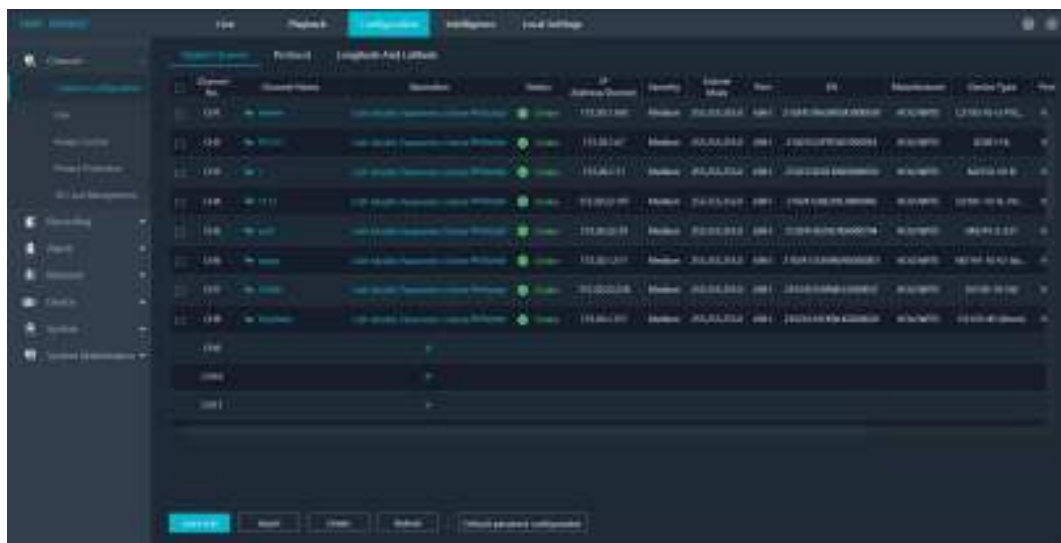


Table 5-180 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID of a camera.
Channel Name	Channel name of a camera.
Edit	Sets connection parameters. Table 5-181 describes related parameters.
Modify Parameters	Sets camera parameters. Table 5-182 describes related parameters.
Delete	Deletes a camera.
Webpage	Redirects to the camera web page. NOTE - You can directly log in to cameras that support password-free redirection. To log in to a camera that does not support password-free redirection or an ONVIF-compliant camera, you need to enter the password. If the network is disconnected, camera redirection will fail. - If the login page is not displayed after you attempt to redirect to the ONVIF-compliant camera, you can enter the ONVIF-compliant camera IP address in the address box to log in the camera web system. - You are advised to configure only functions that the HWT-NVR800 does not support on the camera web page. If you configure functions that the HWT-NVR800 support on the camera web page, the configurations will not be synchronized to the HWT-NVR800. To synchronize the configurations, you need to delete the camera and add it again on the HWT-NVR800.
Status	 Online: indicates that a camera is online.  Offline: indicates that a camera is offline.

Parameter/Button	Description
IP Address/Domain	IP address or domain name of a camera.
Security	Camera connection security.
Camera Password	Changes the camera password. Table 5-183 describes related parameters.
Subnet Mask	Subnet mask of a camera.
Port	Camera port number.
Manufacturer	Camera manufacturer.
Device Type	Camera model.
Protocol	Camera connection protocol.
MAC Address	Camera MAC address.
Firmware Version	Firmware version of a camera.
Delete	Deletes the selected camera.
Quick Add	Adds a camera. A maximum of 100 cameras can be displayed.
Refresh	Restores to the last saved parameter values.

Table 5-181 Parameters/Buttons for editing connection information

Parameter/Button	Description
Channel No.	ID of a channel to be edited.
Switch Mode	Auto: By default, the first <i>N</i> channels (with the PoE identifier) are in automatic mode. When a camera that supports PoE power supply is connected to the corresponding PoE network port, the HWT-NVR800 automatically connects to the camera. Manual: In this mode, cameras can be connected to the channel through the network.
Alias	Alias of a channel.
Alias Position	Location where an alias is displayed.
IP Address/Domain	IP address or domain name of a camera to be connected.
Subnet Mask	Subnet mask of a camera to be connected.
Port	Port for connecting a camera.
Protocol	Protocol for connecting a camera.
User Name	User name and password for connecting a camera.

Parameter/Button	Description
Password	
Re-register	Registers the camera again.
Camera Style	Camera type. • Box camera • Bullet camera • Fixed dome camera • PTZ dome camera
OK	Saves the parameter settings.
Cancel	Exits the Connection page.

Table 5-182 Edit

Parameter/Button	Description
Channel No.	Channel ID of a camera.
Type	Camera IP address. The default value is Static .
IP Address	IP address of a camera.
Subnet Mask	Subnet mask of a camera.
Gateway	Gateway of a camera.
Port	Port for connecting to a camera.
OK	Saves the parameter settings.
Cancel	Exits the Edit page.

Table 5-183 Parameters for changing the camera password

Parameter/Button	Description
User Name	Camera user name.
New Password	New camera password. NOTE You can customize the password. For details about the requirements on the password complexity, see 6.1.4.3 Password Maintenance Suggestions.
Password Strength	Strength of the new password.
Confirm Password	Confirm password. Enter the new password again for confirmation.

Parameter/Button	Description
Use camera default password	Indicates whether to use the default password of a camera.
Change all account passwords	Indicates whether to synchronously change the camera web system login password, ONVIF/RTSP password, and northbound RESTful password.
Synchronize password to HWSDK-compliant camera	Indicates whether to synchronize the password to the cameras that are connected through HWSDK.
OK	Saves the changed password.
Cancel	Exits the Camera Password page.

Batch Connection by Importing a Template File on the HWT-NVR800 Web Client

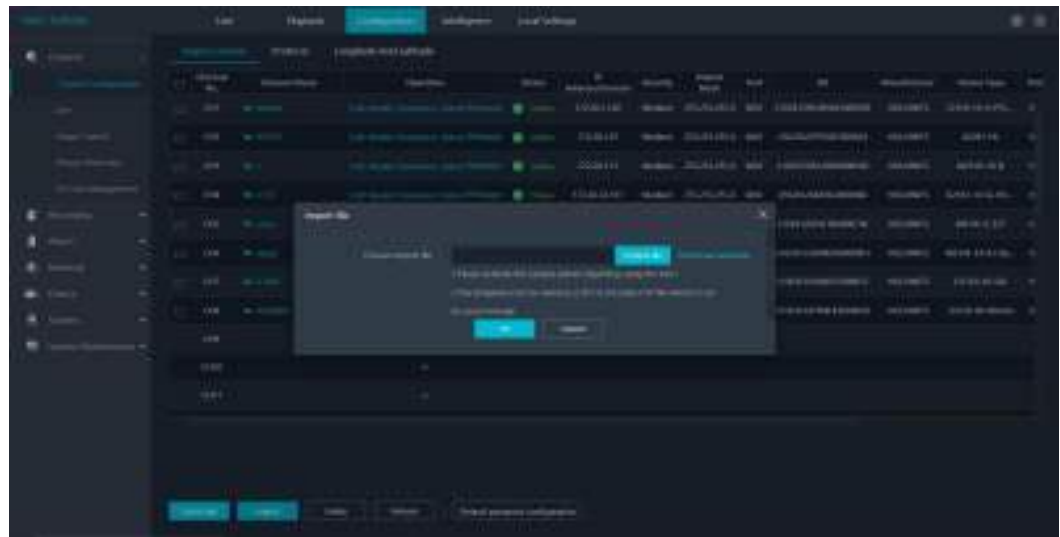
Log in to the HWT-NVR800 web client, choose **Configuration > Channel > Channel Configuration**, click **Import**, and import a template file containing information about cameras to be connected in batches, as shown in Figure 5-8.

- Only activated cameras can be connected in batches by importing a template file.
- The downloaded template file must be saved as a CSV file and then encoded in UTF-8 before being used.
- The procedure for saving a template file of Excel 2012 or later versions to a CSV file is as follows: Open the file, click **Save As**, select the path for storing the file, enter the file name, set the file type to **CSV-UTF8**, and click **Save**.

NOTE

- The system will take a long time to respond after batch configuration of ONVIF-compliant camera parameters. You can log in to the system again after refreshing the page.
- Activate cameras first and then add these cameras by table import.

Figure 5-8 Connecting cameras by importing a template file on the HWT-NVR800 web client



Protocol

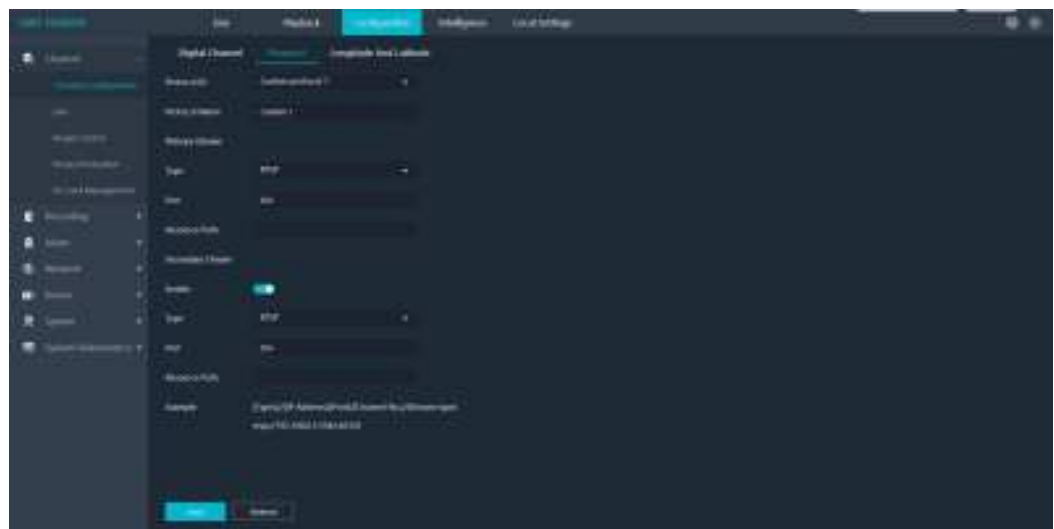


Table 5-184 Parameter description

Parameter	Description
Protocol ID	Protocol ID. A maximum of 16 user-defined protocol IDs are supported.
Protocol Name	Name of a user-defined protocol.
Type	Protocol type. Only the RTSP protocol is supported.
Port	RTSP port number of a camera. The default value is 554 .
Resource Path	Camera RTSP IP address.

Table 5-186 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
IP Address/Domain	Channel IP address.
Use Channel Name (OSD1)	Indicates whether to display the channel name on the video image of a camera. The channel name can be customized.
OSD2-OSD5	OSD text displayed on the video image. A maximum of four more OSDs can be added.
Date Format	Date format. The options are as follows: • MM-DD-YYYY • YYYY-MM-DD • DD-MM-YYYY
Time Format	Time format. Currently, only the 24-hour format is supported.
Show Channel Name	Indicates whether to display the channel name on the video image of a camera.
Show Time	Indicates whether to display the real time on the video image of a camera.
Hide	Indicates whether to display the image from the camera on the HWT-NVR800 LDU.
Show Weekday	Indicates whether to display the weekday information on the video image of a camera.
Font Size	Font size. • Small • Medium • Large
Attribute	Font attribute. • Not inverted • Inverted color
Hue	Hue.
Brightness	Brightness.
Contrast	Contrast.
Saturation	Saturation.
Sharpness	Sharpness.
Default	Restores the default settings of Image adjustment for cameras in the current channel.
Save	Saves the parameter settings.

Parameter/Button	Description
Refresh	Restores to the last saved parameter values.

5.1.2.5.1.3 Image Control

Allows you to set the image parameters of a camera, such as the exposure mode and white balance. The configuration effect can be previewed on the page.

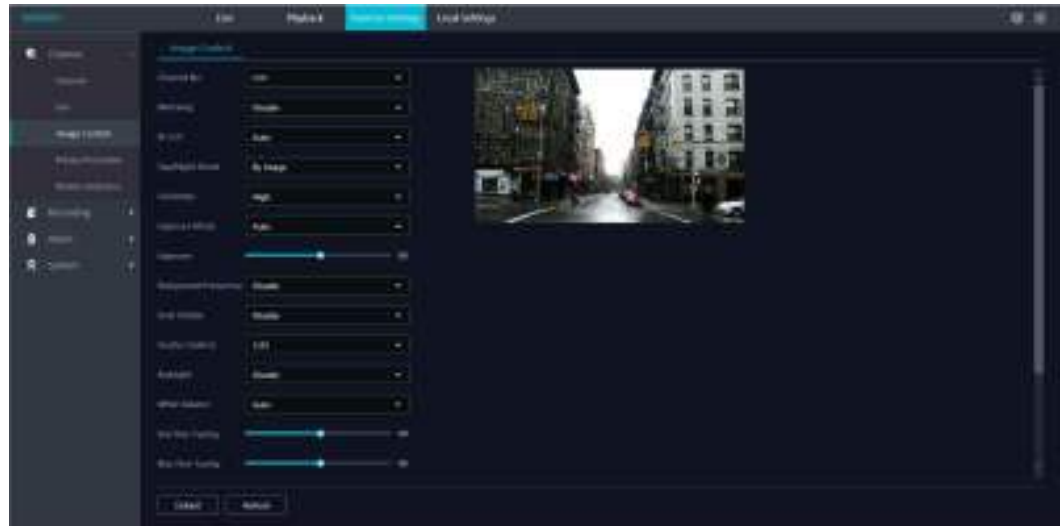


Table 5-187 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
Mirroring	Mirroring mode. By default, this mode is disabled. The options are as follows: • Disable • Horizontal • Vertical • All
IR-CUT	IR-CUT mode. The default value is Auto . The Color mode and B/W mode are used in special scenarios.
Day/Night Mode	Day/Night mode. The default value is By image . If the value of IR-CUT is Color or B/W , this parameter is not displayed.
Sensitivity	Sensitivity. The options are High , Middle , and Low . The default value is High .
Exposure Mode	Exposure mode. If Exposure Mode is set to Manual , you need to set the Shutter Speed and Gain parameters. Common users can use the default settings. Professional users can set this parameter based on the site requirements.

Parameter/Button	Description
Exposure	Common users can use the default settings. Professional users can set this parameter based on the site requirements.
Background Frequency	Refresh rate of the monitor background. The system automatically identifies the refresh rate. Users do not need to set this parameter.
Slow Shutter	Slow shutter. Users can manually set the shutter time. The default value is Disable . Common users can use the default settings. Professional users can set this parameter based on the site requirements.
Shutter Limit (s)	Shutter limit, in seconds. Set the shutter exposure time to control the light transmittance. Common users can use the default settings. Professional users can set this parameter based on the site requirements.
Backlight	Backlight compensation. The options are WDR (wide dynamic range), HLC (highlight compensation), BLC (backlight compensation), and Disable . By default, this parameter is set to WDR . Users can set this parameter based on the site requirements or use the default value.
White Balance	White balance. Common users can use the default settings. Professional users can set this parameter based on the site requirements.
Red Fine-Tuning	Red strength adjustment.
Blue Fine-Tuning	Blue strength adjustment.
Defogging	Defogging mode. Set this parameter to manually adjust the defogging effect if the image is blurred.
Defog level	Defogging level. Manually adjust the value to increase the image clarity.
Electronic Image Stabilization	Electronic image stabilization. The default value is Disable .
Denoise	Denoise switch. Common users can select the Disable or Common mode. Professional users can select the Expert mode.
Denoising Level	Denoising level.
Default	Restores the default image settings of the camera of the current channel.
Refresh	Restores to the last saved parameter values.

5.1.2.5.1.4 Privacy Protection

Allows you to cover areas in the video image where you do not want the camera to shoot. The size and shape of the covered areas can be customized. A maximum of eight covered areas can be added.

The area covered for privacy protection is invisible during live video viewing and video recording.

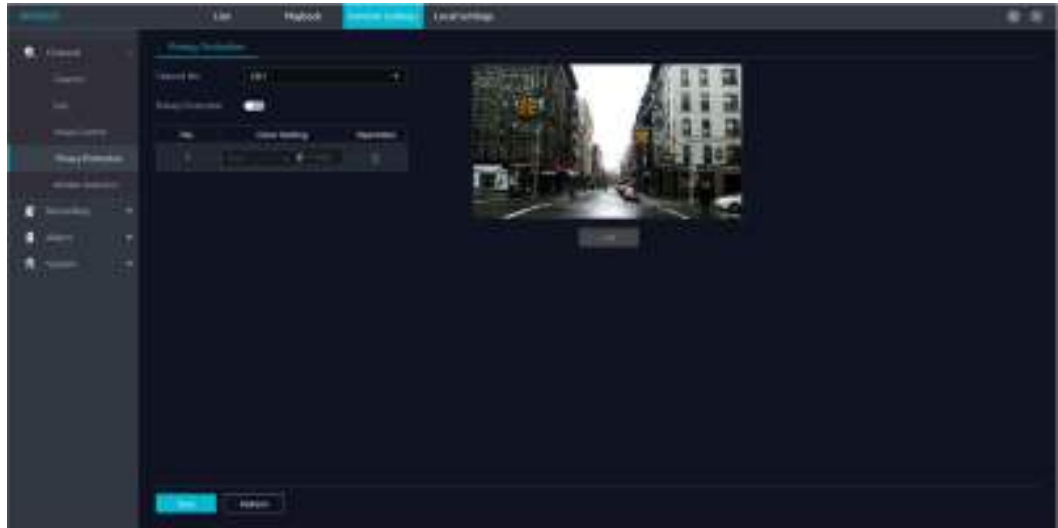


Table 5-188 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
Privacy Protection	Indicates whether to enable privacy protection.
Add	Used to draw new privacy areas. You can drag the mouse on the video image to draw privacy areas. A maximum of eight privacy areas can be added.
No.	ID of the privacy area to be added.
Color Setting	Image color. Select an image color for the privacy area based on the site requirements.
Operation	Operation column. Click  to delete the selected privacy area.
Save	Saves the parameter settings.
Refresh	Restores to the last saved parameter values.

5.1.2.5.1.5 SD Card Management

Allows users to format SD cards of cameras in batches and check the SD card status.

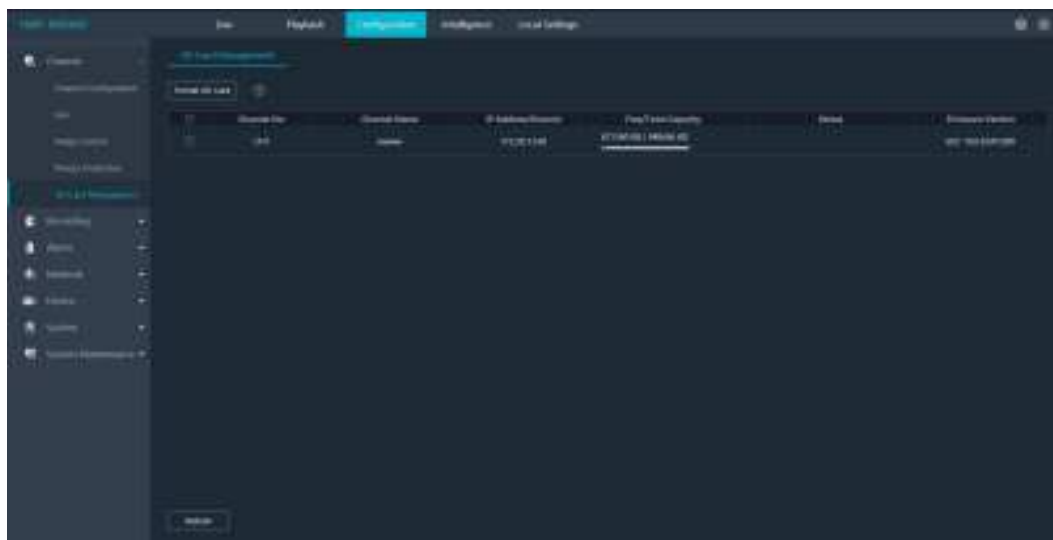


Table 5-189 Parameter description

Parameter	Description
Format SD Card	Formats the SD card of a selected camera.
Channel No.	Camera channel ID.
Channel Name	Camera channel name.
IP Address	Camera IP address.
Free/Total Capacity	Remaining/total capacity of the SD card.
Status	SD card status.
Firmware Version	Firmware version of a camera.

NOTE

- Before using an SD card, format it.
- Back up data before formatting an SD card.
- All data will be lost after an SD card is formatted. Exercise caution when performing this operation.
- Do not remove an SD card when it is being formatted or data is being written into it.
- Format an SD card during off-peak hours.
- If an SD card has no storage capacity change after it is formatted, the SD card may be faulty. You are advised to replace the SD card and format the new SD card again.
- If the HWT-NVR800 is powered off and then powered on again during SD card formatting, an error message indicating SD card exception may be displayed.
- During SD card formatting, if the camera is powered off and then powered on again, restart the app in the camera web system.

5.1.2.5.2 Encode

Allows you to customize the quality of video recordings or images transmitted over the network.

- **Primary Stream:** Primary streams feature high bit rate, definition, and bandwidth usage. They are applicable to local storage.
- **Secondary Stream:** Secondary streams provide smooth video and occupy small bandwidth. They are applicable to data transmission over low-bandwidth networks.

Primary Stream

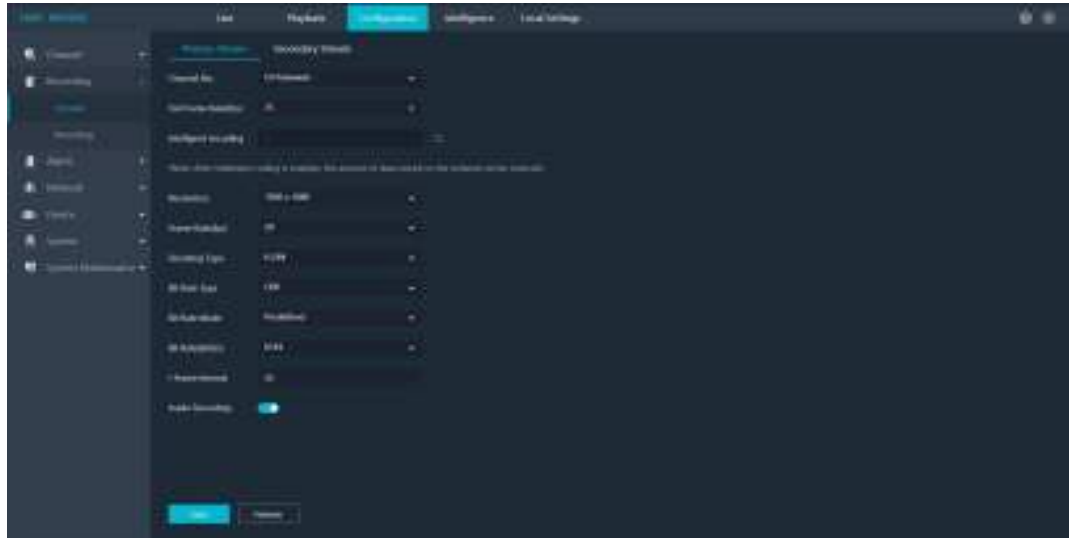


Table 5-190 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
Full Frame Rate(fps)	Frame rate collected by a camera through the sensor.
Intelligent encoding	After intelligent encoding is enabled, a camera can automatically adapt to scenarios to reduce the bit rate and save storage space. A higher intelligent encoding level indicates more significant reduction of the bit rate, which may lead to image quality deterioration. NOTE • After intelligent encoding is enabled, settings of Bit Rate Type and Video Quality do not take effect. • After intelligent encoding is enabled, it takes about 20 seconds before the live video image is displayed on the HWT-NVR800.
Resolution	Size of the recorded image.
Frame Rate(fps)	Number of frames recorded by the HWT-NVR800 per second. A higher frame rate indicates clearer and more vivid images. The maximum frame rate cannot exceed the full frame rate.

Parameter/Button	Description
Encoding Type	Video encoding type. The HWT-NVR800 supports two video encoding types: H.264 and H.265. Set this parameter to H.264 or H.265. Ensure that the video encoding types configured on the HWT-NVR800 and camera are the same. If the video encoding types on the two sides are different, HWT-NVR800 recording will fail.
Bit Rate Type	• Bit rate type. In common scenarios, select CBR. • In complex scenarios (such as busy streets), select VBR.
Video Quality	Video quality level. The options are Lowest, Lower, Low, Medium, Higher, and Highest. Better video quality indicates higher resource usage and storage space usage. Users can set this parameter based on the site requirements.
Bit Rate Mode	Bit rate mode. The parameter is set to Predefined by default. Users can set Bit Rate Mode to Customer for customizing the bit rate configuration.
Bit Rate(kbit/s)	Data transmission speed of HWT-NVR800 recordings. A larger bit rate indicates better video quality.
I-Frame Interval	I-frame interval. Set the I-frame interval to the number of frames multiplied by 2. For example, if the frame rate is set to 20, users are advised to set the I-frame interval to 40 (20 x 2). If this parameter is set to a value far greater or less than the recommended, images may be abnormal.
Audio Recording	Indicates whether to enable audio recording. This function is enabled by default. After this function is enabled, the system records the ambient sound of the camera during video recording. This function depends on whether the camera supports the audio function and whether the audio function is enabled.
Save	Saves the parameter settings.
Refresh	Restores to the last saved parameter values.
Batch Configure	Applies the primary stream parameter settings to other channels in batches.

Secondary Stream

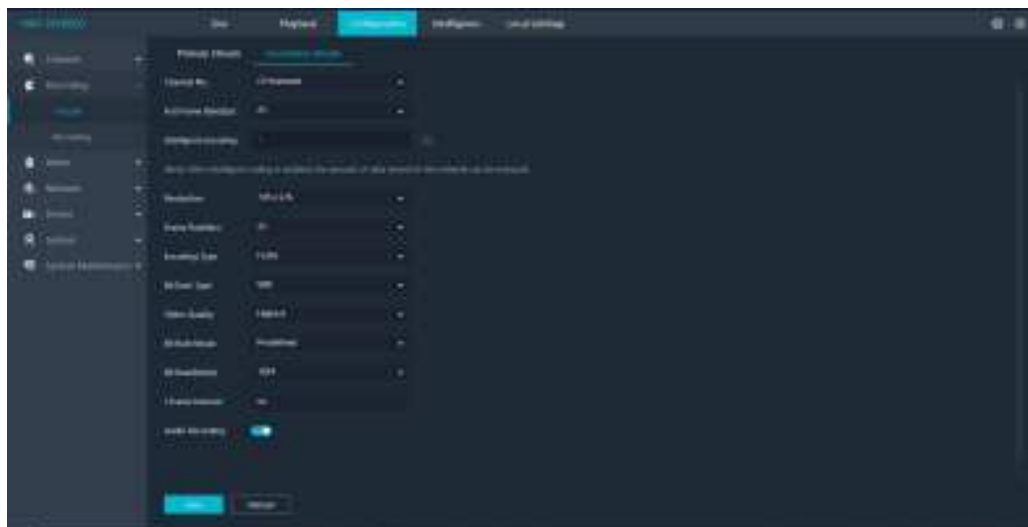


Table 5-191 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
Full Frame Rate(fps)	Frame rate collected by a camera through the sensor.
Intelligent encoding	After intelligent encoding is enabled, a camera can automatically adapt to scenarios to reduce the bit rate and save storage space. A higher intelligent encoding level indicates more significant reduction of the bit rate, which may lead to image quality deterioration. NOTE - After intelligent encoding is enabled, settings of Bit Rate Type and Video Quality do not take effect. - After intelligent encoding is enabled, it takes about 20 seconds before the live video image is displayed on the HWT-NVR800.
Resolution	Size of the recorded image.
Frame Rate(fps)	Number of frames recorded by the HWT-NVR800 per second. A higher frame rate indicates clearer and more vivid images. The maximum frame rate cannot exceed the full frame rate.
Encoding Type	Video encoding type. The options supported by the HWT-NVR800 are H.264 and H.265. Set this parameter to H.264 or H.265. Ensure that the video encoding types configured on the HWT-NVR800 and camera are the same. If the video encoding types on the two sides are different, HWT-NVR800 recording will fail.
Bit Rate Type	- Bit rate type. In common scenarios, select CBR. - In complex scenarios (such as busy streets), select VBR.

Parameter/Button	Description
Video Quality	Video quality level. The options are Lowest, Lower, Low, Medium, Higher, and Highest. Better video quality indicates higher resource usage and storage space usage. Users can set this parameter based on the site requirements.
Bit Rate Mode	Bit rate mode. The parameter is set to Predefined by default. Users can set Bit Rate Mode to Customer for customizing the bit rate configuration.
Bit Rate(kbit/s)	Data transmission speed of HWT-NVR800 recordings. A larger bit rate indicates better video quality.
I-Frame Interval	I-frame interval. Set the I-frame interval to the number of frames multiplied by 2. For example, if the frame rate is set to 20, users are advised to set the I-frame interval to 40 (20 x 2). If this parameter is set to a value far greater or less than the recommended, images may be abnormal.
Audio Recording	Indicates whether to enable audio recording. This function is enabled by default. After this function is enabled, the system records the ambient sound of the camera during video recording. This function depends on whether the camera supports the audio function and whether the audio function is enabled.
Save	Saves the parameter settings.
Refresh	Restores to the last saved parameter values.
Batch Configure	Applies the secondary stream parameter settings to other channels in batches.

5.1.2.5.3 Recording

Settings

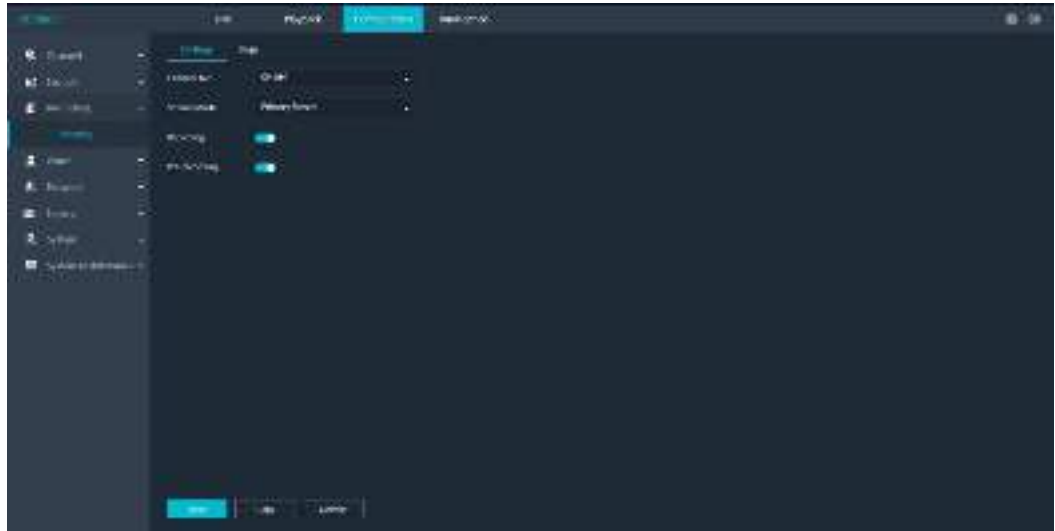


Table 5-192 Parameter description

Parameter	Description
Channel No.	Channel ID.
Stream Mode	Stream mode that determines the video quality. The options are as follows: • Primary: Only video from primary streams is recorded. • Dual stream: Both the video from primary streams and secondary streams is recorded.
Recording	Indicates whether to record video.
Pre-recording	Indicates whether to record video several seconds before an alarm event occurs. If you need to record video mainly for motion detection or I/O alarms, enable this function.
Save	Saves the settings.
Copy	Applies the recording settings of the channel to other channels.
Refresh	Restores to the last saved parameter values.

Plan

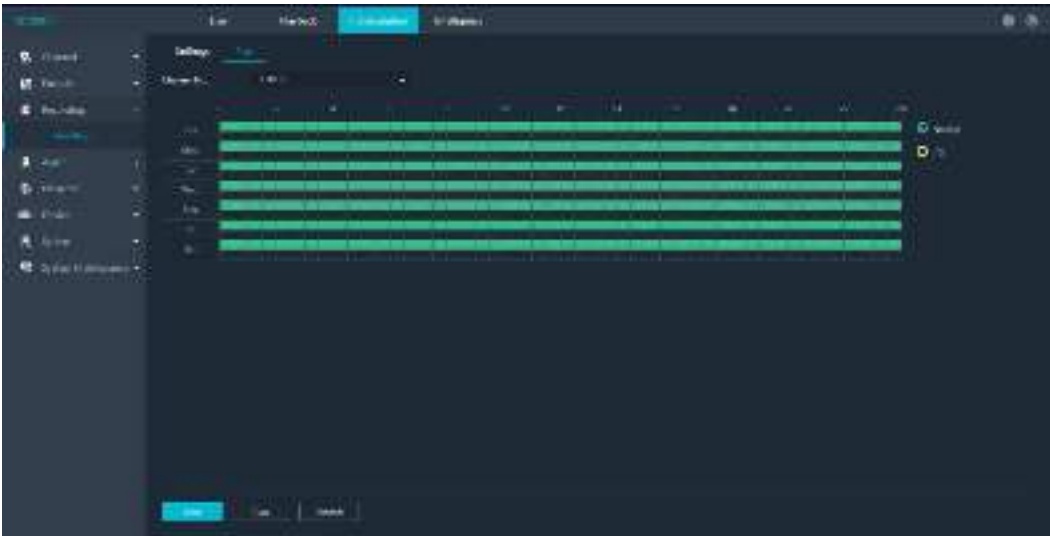


Table 5-193 Parameter description

Parameter	Description
Channel No.	Channel ID.
Save	Saves the settings.
Copy	Applies the recording plan of the channel to other channels.
Refresh	Restores to the last saved parameter values.

Select a recording plan on the right.

- Green/Yellow: indicates that a recording plan of the corresponding type is available in the time segment.
- No color: indicates that no recording plan is available in the time segment.

5.1.2.5.4 Alarm

5.1.2.5.4.1 I/O Alarm

You can customize the mode in which an I/O device generates an alarm. This function is supported only by the HWT-NVR800 with 4, 8, and 16 disk trays.

NOTE

The local IDs (specified by **Local <-X**) in the column of **Alarm Input** correspond to the channel IDs (specified by **Channel No.**).

For example, **Local <-1** corresponds to **Channel 1**.

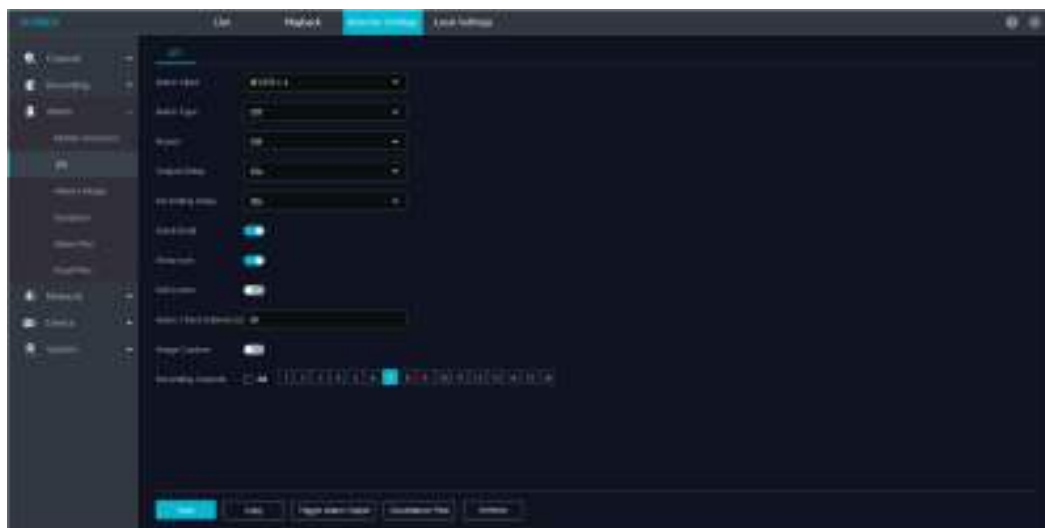


Table 5-194 Parameter description

Parameter	Description
Alarm Input	Device that generates the alarm signal.
Alarm Type	Alarm input type of the I/O device. The options are as follows: • Normally open (one contact terminal connected and the other disconnected): default status of the I/O device. Upon detecting an alarm-triggering event, the I/O device automatically switches to normally close (both contact terminals connected) and the HWT-NVR800 generates an alarm and performs predefined alarm linkage actions. • Normally close (both contact terminals connected): default status of the I/O device. Upon detecting an alarm-triggering event, the I/O device automatically switches to normally open and the HWT-NVR800 generates an alarm and performs predefined alarm linkage actions. • Off: This I/O function is disabled.
Buzzer	Alarm duration of the buzzer. The default value is Off.
Output Delay	Duration from the time when an alarm is generated to the time when the I/O device receives the alarm.
Recording Delay	Recording duration after an alarm is generated.
Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Show Icon	Indicates whether to display the status icon of the camera that triggers an alarm.
Full Screen	Indicates whether to play live video from the camera that triggers an alarm in full screen mode.

Parameter	Description
Alarm Check Interval (s)	Interval at which the camera checks for any object entering an observation area. If an object enters a detection area multiple times within the check interval, only one alarm is reported.
Snapshot	Indicates whether to take snapshots when an alarm is generated.
Recording Channel	Camera for video recording when an alarm is generated.
Save	Saves the settings.
Copy	Applies the I/O alarm policy of the channel to other channels.
Trigger Alarm Output	Selects the alarm output device.
Alert Plan	For details, see Table 5-195.
Refresh	Restores to the last saved parameter values.

Table 5-195 Alert planning parameters/buttons

Parameter/Button	Description
Add	Adds an alert plan. A maximum of eight alert plans can be added.
Delete All	Deletes all alert plans.
No.	ID of an alert plan.
Start Date	Start date of an alert plan.
Start Time	Time segment during which an alert plan is executed.
End Time	
Date	Day in a week for alert plan execution. The default value is Every Day .
Mode	Mode in which an alert plan is executed. • Weekly • One-off
Operation	Deletes an alert plan.

5.1.2.5.4.2 Alarm Linkage

If a PTZ camera is connected, you can link motion detection alarms and external I/O alarms to the PTZ camera. Then, when a motion detection alarm or an external I/O alarm is generated, the PTZ camera can rotate to the preset position for detection and recording.

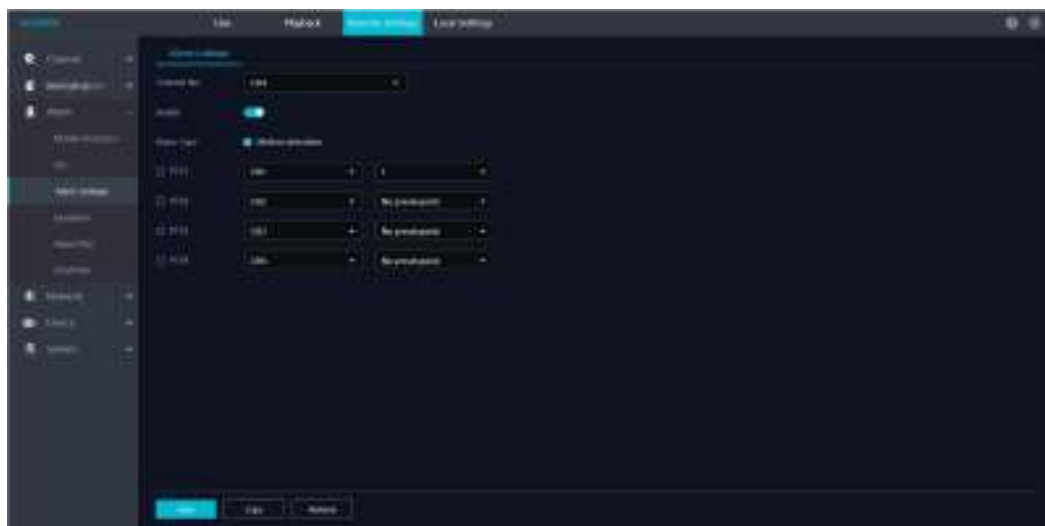


Table 5-196 Parameter description

Parameter	Description
Channel No.	Channel ID.
Enable	Indicates whether to enable PTZ alarm linkage.
Alarm Type	Indicates whether to trigger PTZ alarm linkage when a motion detection alarm is generated.
PTZ1	After the check box is selected, you need to set the PTZ camera to be linked and its preset position. A maximum of four PTZ cameras can be linked.
PTZ2	
PTZ3	
PTZ4	
Save	Saves the settings.
Copy	Applies the alarm linkage policy of the channel to other channels.
Refresh	Restores to the last saved parameter values.

5.1.2.5.4.3 Exception

Allows users to customize the alarm mode in the case of hard disk exception or video loss, including buzzer alarm, I/O device alarm, and email sending.

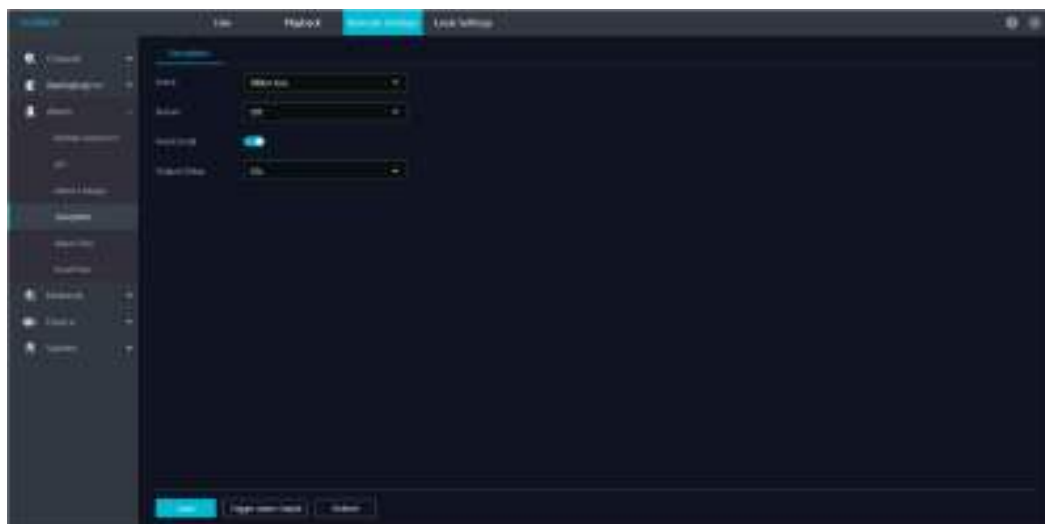


Table 5-197 Parameter description

Parameter	Description
Event	• Insufficient space: An alarm is generated when the disk space is used up. • Disk Error: An alarm is generated when disks are faulty or not detected. • Video loss: An alarm is generated when a camera is not connected or no video can be viewed due to camera connection failure. • High temperature alarm: An alarm is generated when the disk temperature does not match the fan speed (supported only by devices with 16 disk trays). • Fan exception alarm: An alarm is generated when the fan speed is abnormal (supported only by devices with 16 disk trays).
Buzzer	Alarm duration of the buzzer. The default value is Off .
Send Email	Indicates whether to send an email to a specified email address when an alarm is generated.
Output Delay	Duration from the time when an alarm is generated to the time when the I/O device receives the alarm.
Save	Saves the settings.
Trigger Alarm Output	Selects the alarm output device.
Refresh	Restores to the last saved parameter values.

5.1.2.5.4.4 Alarm Plan

You can customize an alarm plan for the HWT-NVR800, such as alarm output to a buzzer or an I/O device.



Table 5-198 Parameter description

Parameter	Description
Channel No.	Channel ID.
Save	Saves the settings.
Copy	Applies the alarm plan of the channel to other channels.
Refresh	Restores to the last saved parameter values.

Select an alarm type on the right and set alarm plans.

- Green/Yellow: indicates that alarm signals generated in the time segment are reported to the specified alarm device.
- No color: indicates that the alarm signals generated in the time segment are not reported.

5.1.2.5.4.5 Email Plan

You can set the plan of sending emails base on the site requirements.

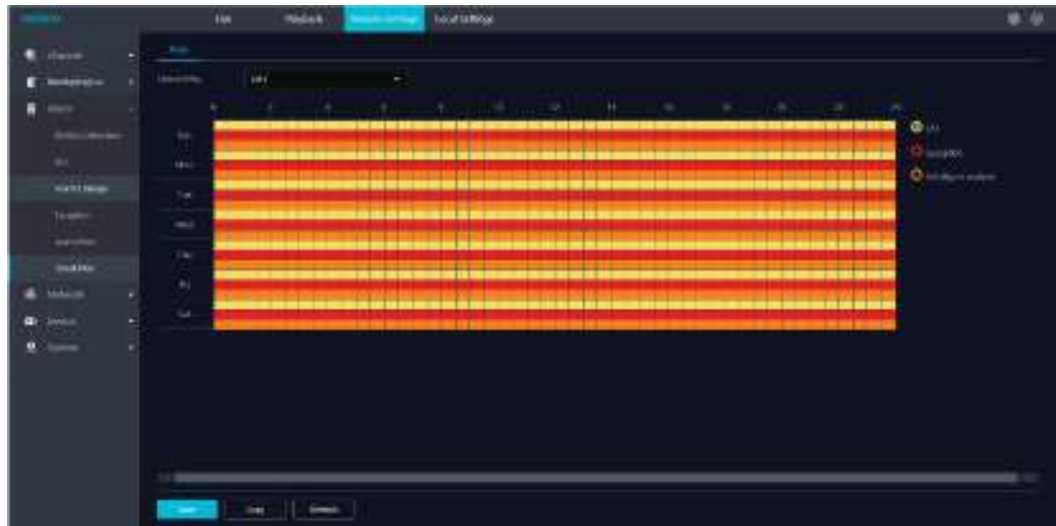


Table 5-199 Parameter/Button description

Parameter/Button	Description
Channel No.	Channel ID.
Save	Saves the settings.
Copy	Applies the email plan of the channel to other channels.
Refresh	Restores to the last saved parameter values.

Select email plans of the required type on the right of the page.

- Yellow/Red/Orange: indicates that an email plan for the corresponding alarm type is available in the time segment.
- No color: indicates that no email plan is available in the time segment.

5.1.2.5.5 Network

5.1.2.5.5.1 General Configuration

Basic Settings

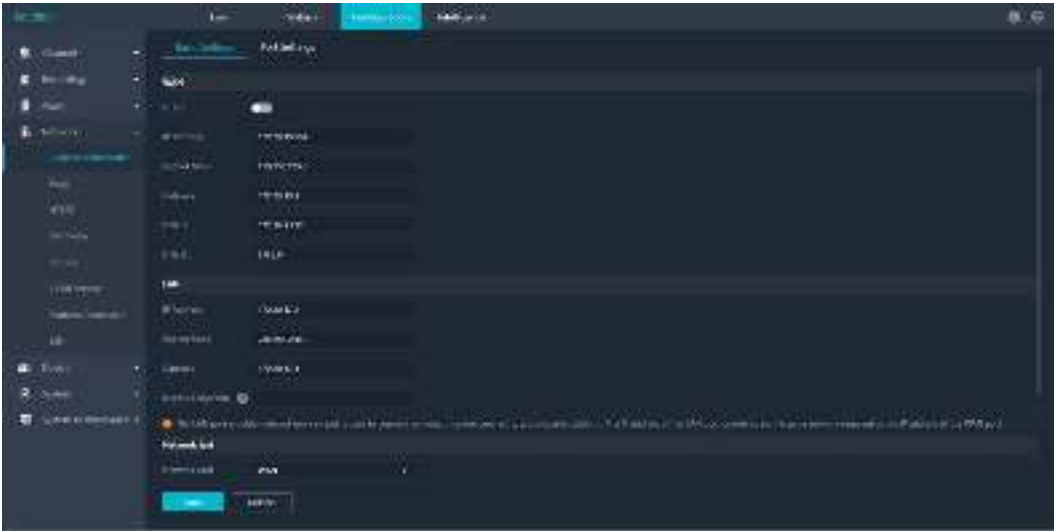


Table 5-200 Parameter/Button description

Parameter/Button		Description
WAN	DHCP	Indicates whether to enable DHCP. If the router connected to the HWT-NVR800 supports automatic IP address assignment, enable this option. After this option is enabled, the router automatically assigns all network parameters to the HWT-NVR800. You do not need to manually set other network parameters (such as the IP address and subnet mask) under WLAN .
	IP Address	Unique ID of the HWT-NVR800 on the network. Example: 192.168.1.168
	Subnet Mask	Subnet mask of a LAN. Example: 255.255.255.0
	Gateway	IP address for communication between two LANs. Example: 192.168.1.1

Parameter/Button		Description
	DNS 1	IP address of the primary DNS. Set this parameter based on the site requirements. If this parameter is not involved, leave it empty.
	DNS 2	IP address of the secondary DNS. Set this parameter based on the site requirements. If this parameter is not involved, leave it empty.
LAN	IP Address	Internal IP address of the HWT-NVR800. This parameter is available only for the HWT-NVR800 of the PoE model, the HWT-NVR800 D models with 4 disk trays, or the HWT-NVR800-B04D. The default value is 10.10.25.100 . NOTE For the HWT-NVR800 D models with 4 disk trays or the HWT-NVR800-B04D, the value is the IP address of the LAN port on the rear panel.
	Subnet Mask	Subnet mask of a LAN.
	Gateway	IP address for communication between two LANs. Example: 192.168.1.1

Parameter/Button		Description
	Routing Network Segment	Network segment to which the southbound device belongs. If there are multiple network segments, separate them with semicolons (;) and do not use semicolons (;) in the end. The value contains a maximum of 20 bytes. If the iClient S100 is connected over the southbound network, you also need to add the network segments to which the iClient S100 belongs. NOTE For the HWT-NVR800 D models with 4 disk trays or the HWT-NVR800-B04D, the value is the IP address of the LAN port on the rear panel.
Network test	Network card	Network adapter used for network tests.
	Destination Address	Destination IP address or domain name.
	Test	Used to test the destination IP address.
Save		Saves the settings.
Refresh		Restores to the last saved parameter values.

Port Settings

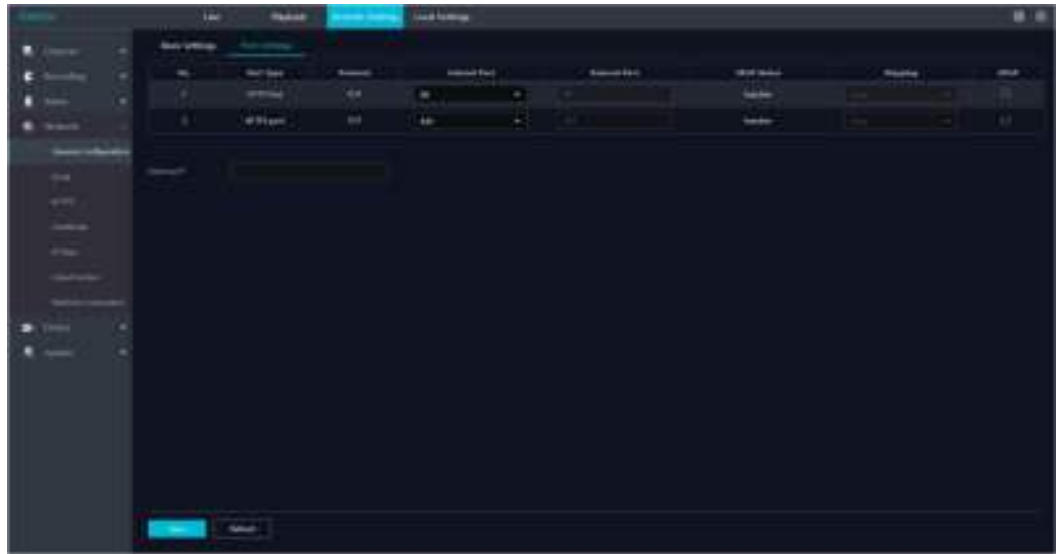


Table 5-201 Parameter/Button description

Parameter/Button	Description
Port Type	• HTTP Port: Select this option if you want to log in to the HWT-NVR800 remotely, for example, through the web client. The default port number is 80. If the default port is occupied by another application, change it to an available port. • HTTPS port: Select this option if you want to log in to the HWT-NVR800 remotely, for example, through the web client. The default port number is 443. If the default port is occupied by another application, change it to an available port.
Protocol	Protocol used by a port. The default value is TCP .
Internal Port	Port of the HWT-NVR800.
External Port	Router port.
UPnP Status	UPnP status. • Inactive: UPnP is not activated. • Active: UPnP is activated.
Mapping	Mapping policy. • Auto: External ports are automatically allocated. • Manual: External ports are manually allocated.

Parameter/Button	Description
UPnP	- The UPnP function requires the support of routers. - Before configuring UPnP, set the router first and then parameters such as internal IP address, subnet mask, and gateway that match the router in basic settings.
External IP	External IP address. When the UPnP function is activated on an HWT-NVR800, the HWT-NVR800 automatically obtains an external IP address that is in the same network segment as the router. This IP address is used to access the HWT-NVR800.
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.

5.1.2.5.2 Email

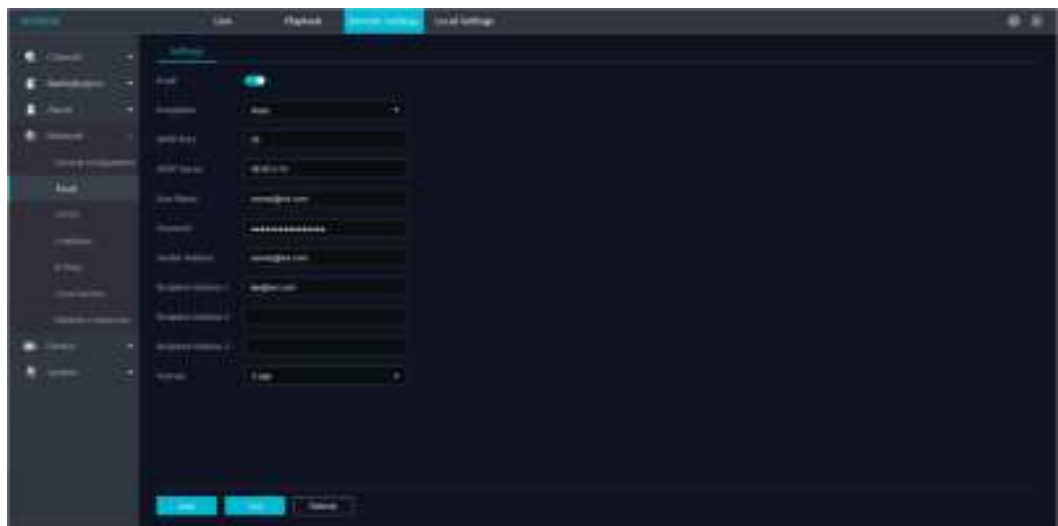


Table 5-202 Parameter/Button description

Parameter/Button	Description
Email	Indicates whether to enable the function of sending emails.
Encryption	Encryption verification. Enables this function if the mail server where your registered mailbox is located requires SSL or TLS encryption verification. If it is to be determined, set Encryption to Auto or Disable.
SMTP Port	Port number of the mail server.
SMTP Server	IP address or domain name of the SMTP server. The domain name of the SMTP server varies depending on the mailbox. For details, contact the mailbox provider.
User Name	User name and password for logging in to the mailbox for

Parameter/Button	Description
Password	sending service alarms. The method for obtaining the password varies depending on the mailbox. For details, contact the mailbox provider.
Sender Address	Address of the mailbox for sending alarm emails.
Recipient Address 1	Address of the mailbox for receiving alarm emails.
Recipient Address 2	
Recipient Address 3	
Interval	Interval for the HWT-NVR800 to send emails.
Save	Saves the settings.
Test	Email test, which is to check whether the preceding parameters are correctly configured. If so, the recipient's mailbox can receive the test email.
Refresh	Restores to the last saved parameter values.

5.1.2.5.3 HTTPS

You can set the type of an HTTPS certificate to be uploaded based on the site requirements.

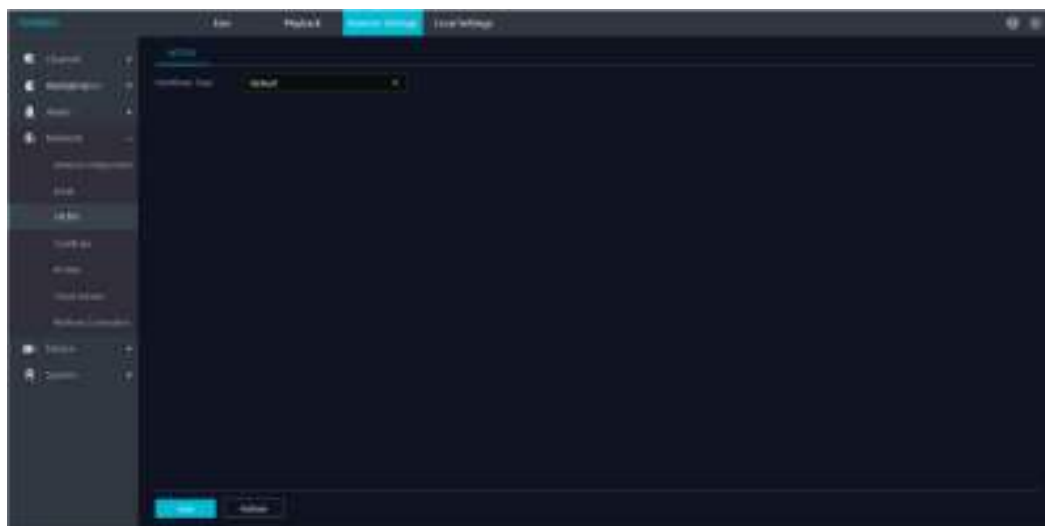


Table 5-203 Parameter/Button description

Parameter/Button	Description
Certificate Type	• Default: The HWT-NVR800 uses the built-in certificate for authentication. • Custom: The HWT-NVR800 uses a third-party certificate for authentication. For security purposes, you are advised to purchase third-party certificates from authoritative CAs.
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.

5.1.2.5.5.4 Certificate

Cloud Certificate

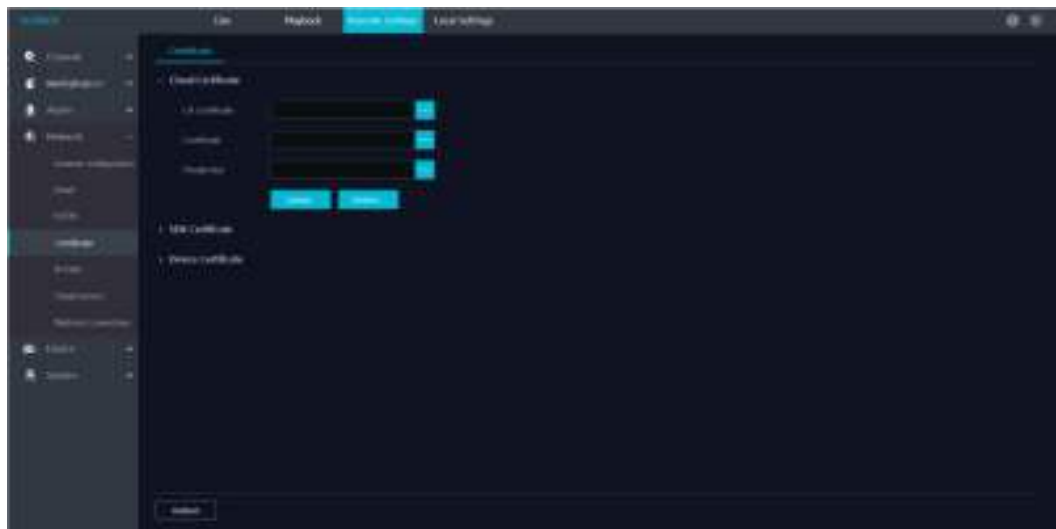


Table 5-204 Parameter/Button description

Parameter/Button	Description
CA Certificate	Trusted root certificate. Certificate provided and issued by HOLOWITS, which is used to verify whether the peer certificate is trustworthy.
Certificate	Client certificate of the cloud service.
Private Key	Client private key file of the cloud service.
Upload	Selects a file to upload from the local computer.
Restore	The certificate will take effect after the restoration.
Refresh	Restores to the last saved parameter values.

SDK Certificate

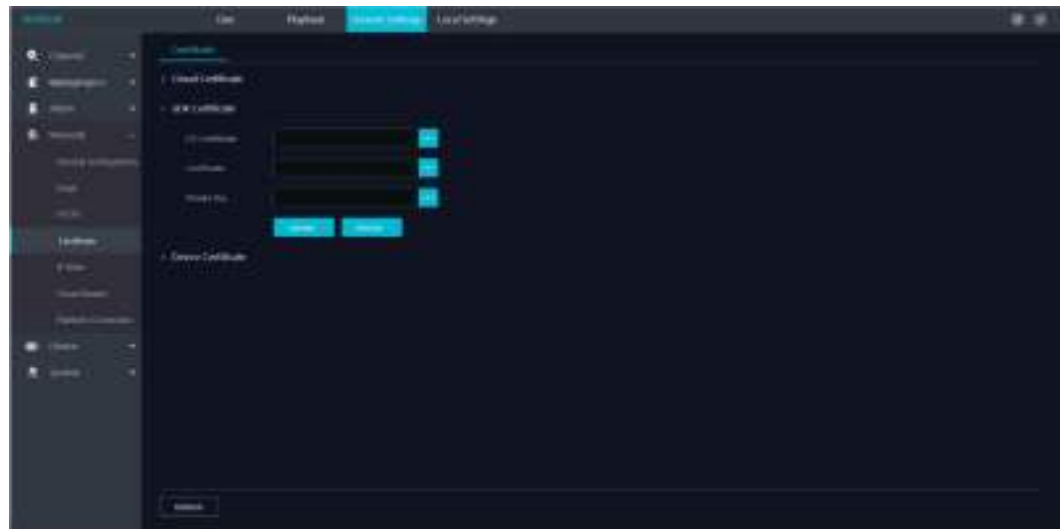


Table 5-205 Parameter/Button description

Parameter/Button	Description
CA Certificate	Trusted root certificate. Certificate provided and issued by HOLOWITS, which is used to verify whether the peer certificate is trustworthy.
Certificate	Client certificate of the HWSDK.
Private Key	Client private key file of the HWSDK.
Upload	Selects a file to upload from the local computer.
Restore	The certificate will take effect after the restoration.
Refresh	Restores to the last saved parameter values.

Device Certificate

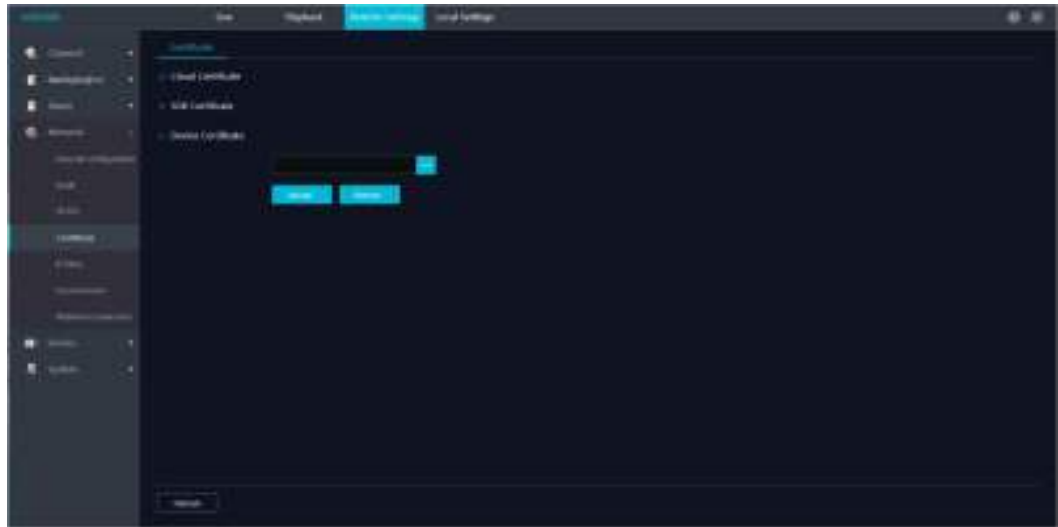


Table 5-206 Button description

Button	Description
Upload	Selects a file to upload from the local computer.
Restore	The certificate will take effect after the restoration.
Refresh	Restores to the last saved parameter values.

5.1.2.5.5.5 IP Filter

The HWT-NVR800 provides the allowlist and blocklist mechanisms. You are advised to use the allowlist mechanism preferentially.

- When the allowlist mechanism is used, only IP addresses in the allowlist can access the web client.
- When the blocklist mechanism is used, IP addresses in the blocklist cannot access the web client.
- The allowlist and blocklist cannot be used at the same time.

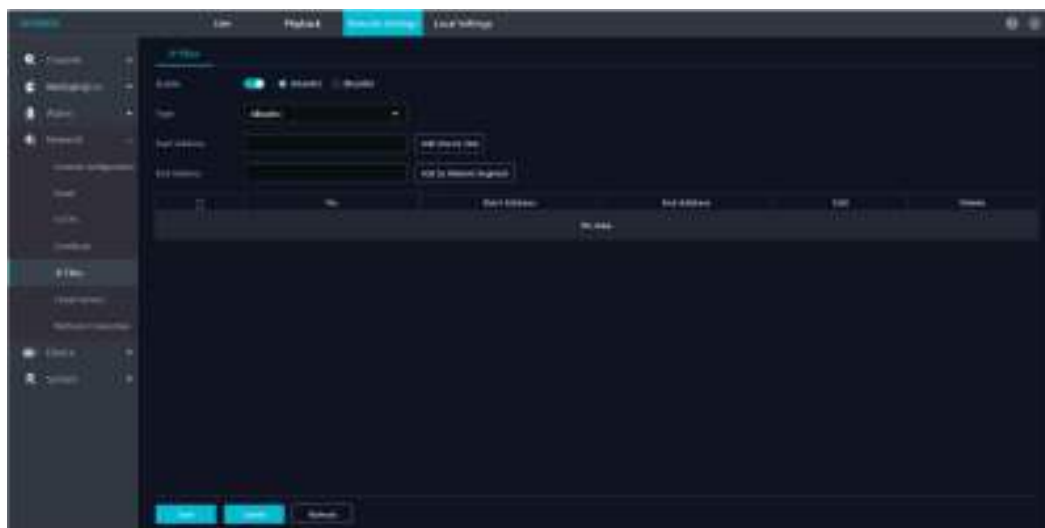


Table 5-207 Parameter/Button description

Parameter/Button	Description
Enable	Indicates whether to enable IP filter. If Enable is enabled, you can set the IP filter to Allowlist or Blocklist .
Type	List type. • Allowlist • Blocklist
Start Address	• To add a single IP address to the allowlist, set Start Address and click Add One by One. • To add IP addresses to the allowlist in batches, set Start Address and End Address and click Add by Network Segment.
End Address	
Save	Saves the settings.
Delete	Removes the selected IP address.
Refresh	Restores to the last saved parameter values.

5.1.2.5.5.6 Cloud Service

After the cloud service is enabled, you can view live video and play back recordings through the HOLOWITS app.

For details about operations related to the mobile app, see Cloud Service.



Table 5-208 Parameter/Button description

Parameter/Button	Description
Cloud Service	Indicates whether to automatically connect the HWT-NVR800 to the cloud service. Ensure that the router where the HWT-NVR800 is located is connected to the Internet.
Status	Shows whether the HWT-NVR800 is connected to the cloud service.
Server Address	IP address of the connected server. Use the default value.
Area	Area where the cloud service can be connected.
Use cloud service to synchronize system time	After this function is enabled, the HWT-NVR800 automatically synchronizes time through cloud service. If the NTP server information is configured on the Date/Time , after this function is enabled, the HWT-NVR800 synchronizes time through cloud service rather than the NTP server.
Privacy Statement	Privacy statement.
Save	Saves the settings.
QR code	QR code of the HWT-NVR800. You can scan the QR code through the mobile app to identify the HWT-NVR800 and manage cameras connected to the HWT-NVR800.
Bind State	Binding status of the HWT-NVR800.
User Name	Bound user name.
Phone	Bound phone number.
Email	Bound email address.

Parameter/Button	Description
Unbind	Forcibly unbinds a user from an HWT-NVR800.
Refresh	Restores to the last saved parameter values.

5.1.2.5.5.7 Platform Connection

Onvif Server

You can connect to an upper-level video platform through ONVIF.



Table 5-209 Parameter/Button description

Parameter/Button	Description
ONVIF server	
Enable	Indicates whether to enable the ONVIF server. If the HWT-NVR800 is successfully connected to the upper-level video platform, the platform's IP address and connection status will be displayed.

Parameter/Button	Description
Authentication Mode	ONVIF authentication mode. The default value is Digest_sha256. • Digest_sha256 • Digest_md5_and_sha256 • Digest • Digest/WSSE • WSSE • None: No authentication is performed, which poses security risks. Exercise caution when selecting this mode. The WSSE authentication mode has security risks. If you select this mode, the system displays a message indicating that the system is prone to attacks. For security purposes, you are advised to enable the Digest/WSSE authentication mode.
Transport Protocol Type	Transmission protocol for connecting the device to the upper-level video platform. The value must be the same as the transmission protocol configured for the upper-level video platform. The options are as follows: • HTTP/HTTPS • HTTPS • HTTP HTTP has security risks. If you select this option, the system displays a message indicating that the system is prone to attacks. HTTP/HTTPS is recommended.
User Name	User name and password for connecting to the ONVIF server. NOTE You can customize the password. For details about the requirements on the password complexity, see 6.1.4.3 Password Maintenance Suggestions.
Password	
Password Strength	Strength of the new password, which is displayed on the page based on a user-defined password.
ONVIF client	
Transport Protocol Type	Transmission protocol for connecting the device to the lower-level device. The value must be the same as the transmission protocol configured for the lower-level device. • HTTPS • HTTP

Parameter/Button	Description
Enable MD5 for ONVIF	- Using the MD5 algorithm will cause cyber security risks. You are advised to disable it. - If the device to be connected supports only the MD5 algorithm, disabling this algorithm will cause connection failure. In this case, you need to perform cyber security controls after enabling this algorithm. Contact the device vendor to check whether the device to be connected supports only the MD5 algorithm.
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.

GB/T 28181

Allows users to connect the HWT-NVR800 to an upper-level video platform through GB/T 28181.

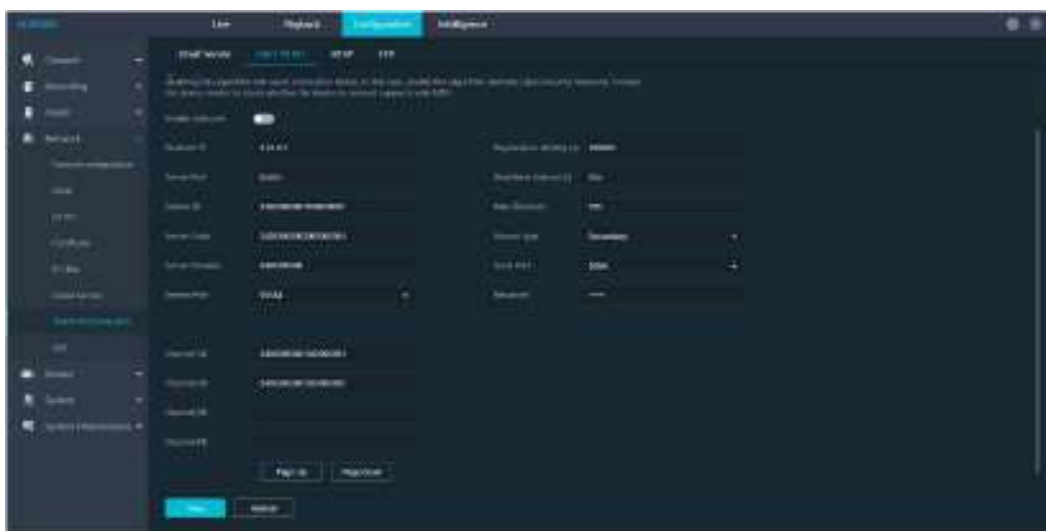


Table 5-210 Parameter/Button description

Parameter/Button	Description
GB/T 28181	Indicates whether to connect the HWT-NVR800 to an upper-level video platform through GB/T 28181. After the HWT-NVR800 is successfully connected to the upper-level video platform, the connection status is displayed.
Device Name	Customized name of a GB/T 28181-compliant device.
Platform IP	Floating gateway for connecting to the upper-level video platform.
Server Port	The default value is 5060 .

Parameter/Button	Description
Device ID	Customized ID of a GB/T 28181-compliant device. The value must meet the requirements illustrated in 5.3.1 GB/T 28181 Connection Code Formats.
Server Code	Connection code for connecting to the upper-level video platform. Enter a string of 20 digits. The eleventh to thirteenth digits must be 200 . The value must meet the requirements illustrated in 5.3.1 GB/T 28181 Connection Code Formats.
Server Domain	Server domain of the upper-level video platform.
Stream Port	The default value is 55554 .
Registration Validity (s)	Registration validity. If the device is not successfully registered within this specified period, the registration fails. The default value 3600 is recommended.
Heartbeat Interval (s)	Time interval for the camera to send heartbeat messages. The default value 60 is recommended. The camera and the HWT-NVR800 must have the same heartbeat interval.
Max Timeouts	If the number of consecutive heartbeat timeouts reaches the value specified by this parameter, the HWT-NVR800 cannot connect to the upper-level platform. The default value 3 is recommended. The value of Max Timeouts for the camera and HWT-NVR800 must be the same.
Stream Type	Stream type. • Primary • Secondary
Local Port	The default value is 5060 .
Password	Customized password for connecting to the platform through the GB/T 28181 protocol. NOTE You can customize the password. For details about the requirements on the password complexity, see 6.1.4.3 Password Maintenance Suggestions.
Channel ID	Unique device ID consisting of 20 digits. The eleventh to thirteenth digits must be 132. The value must meet the requirements illustrated in 5.3.1 GB/T 28181 Connection Code Formats.
Enable intercom	Indicates whether to enable voice intercom. To enable this function, ensure that both the camera and the platform support voice intercom.

Parameter/Button	Description
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.

RTSP

Supports connection to other devices through RTSP.

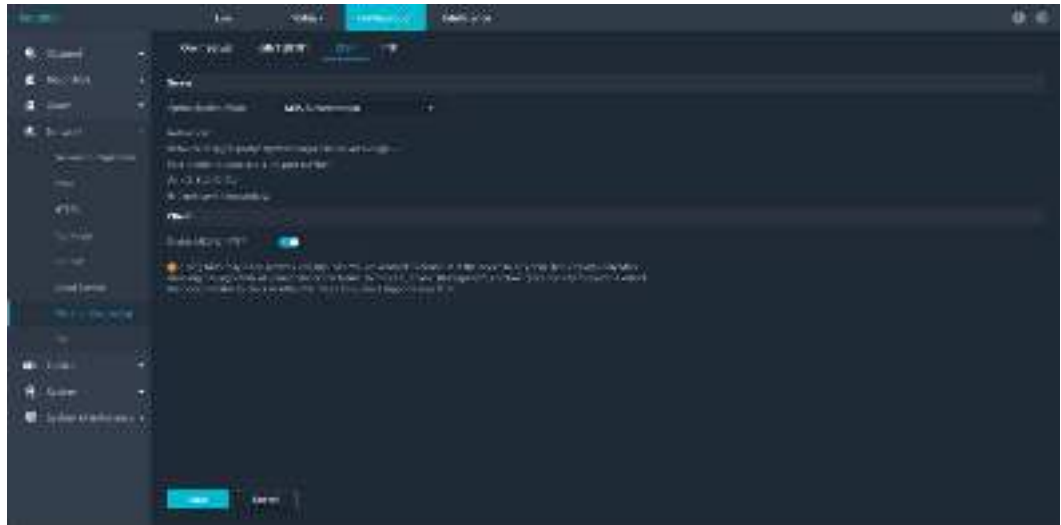


Table 5-211 Parameter/Button description

Parameter/Button	Description
Authentication Mode	Encryption mode. - SHA-256 Authentication - MD5 Authentication
Enable MD5 for RTSP	- Using the MD5 algorithm will cause cyber security risks. You are advised to disable it. - If the device to be connected supports only the MD5 algorithm, disabling this algorithm will cause connection failure. In this case, you need to perform cyber security controls after enabling this algorithm. - Contact the device vendor to check whether the device to be connected supports only the MD5 algorithm.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

FTP

Supports server connection through FTP.

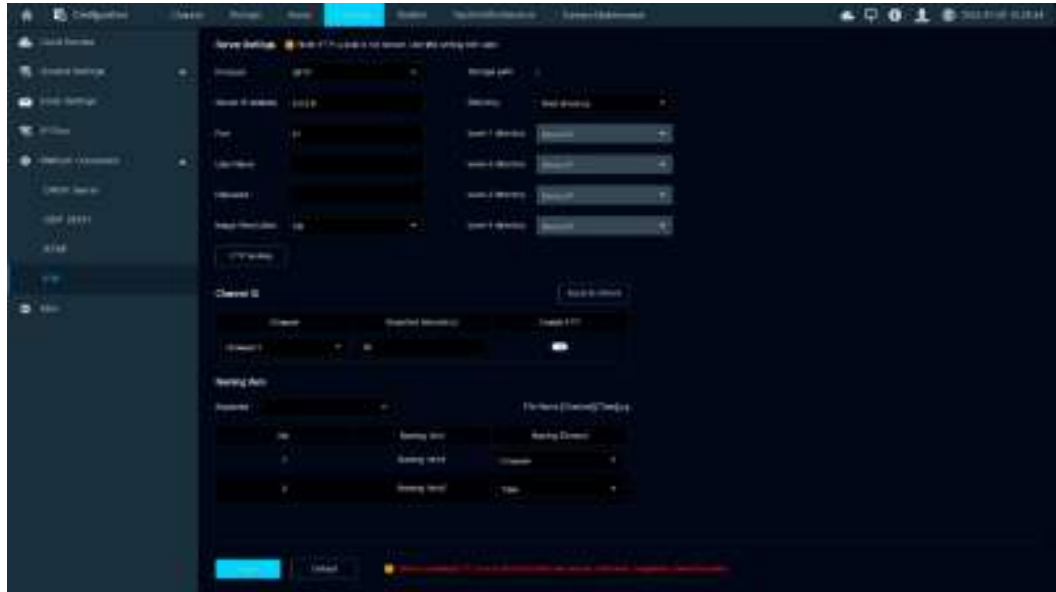


Table 5-212 Parameter/Button description

Area	Parameter /Button	Description
Server Settings	Protocol	Transmission protocol. The default value is SFTP . - SFTP - FTP NOTE FTP is an insecure protocol and has security risks. SFTP is recommended.
	Server IP Address	IP address of the server.
	Port	Port number corresponding the selected protocol.
	User Name	User name and password for connecting to the server.
	Password	
	Image Resolution	Image resolution. - HD - SD
	Storage path	Customized path for saving data on the server. The path will be automatically generated by the server.
	Directory	

Area	Parameter /Button	Description
	Level-1 directory/L evel-2 directory/L evel-3 directory/L evel-4 directory	
	FTP testing	Tests the configured FTP server.
Channel parameters	Channel ID	Channel ID.
	Snapshot Interval (s)	Interval at which snapshots are taken.
	Enable FTP	Indicates whether to enable FTP.
	Apply to Others	Applies the FTP settings of the channel to other channels.
Naming Item	Separator	Customize the format for naming images displayed on the server.
	Naming Element	For example, if Separator is set to . and Naming Element set to Channel and Time , the name of an image displayed on the server is in <i>Channel ID.Time.jpg</i> format.
-	Apply	Applies the parameter settings.
-	Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

SIRA authentication

Function

Allows users to configure SIRA connection for authentication.

GUI Layout

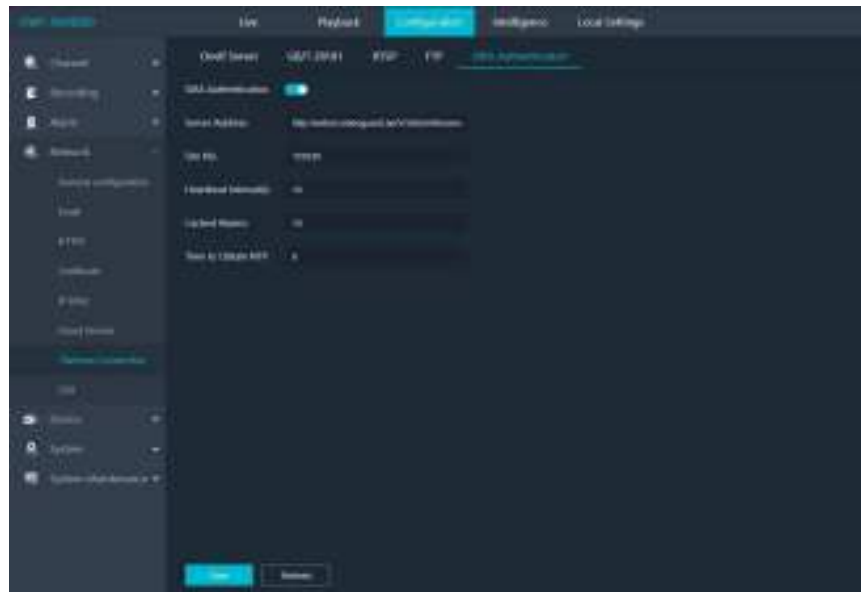


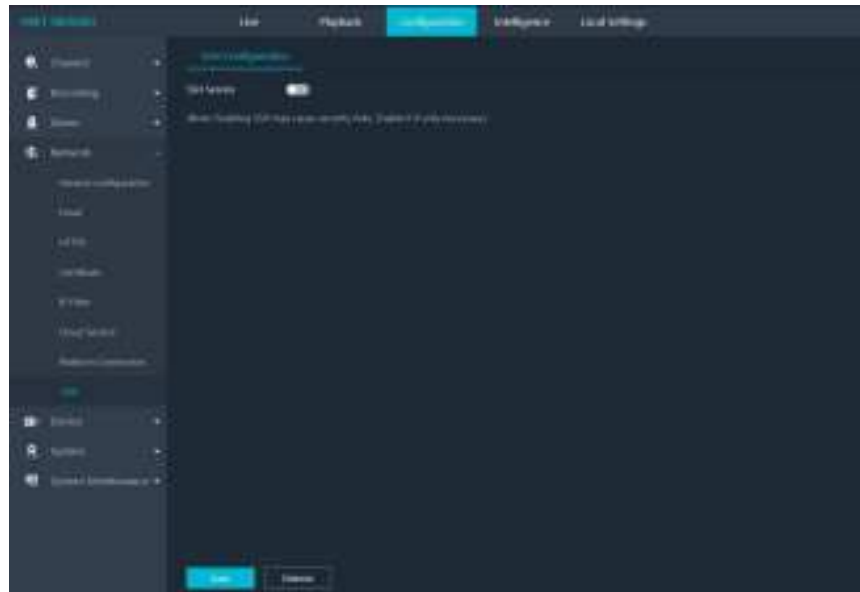
Table 5-213 Parameter description

Parameter	Description
SIRA authentication	Indicates whether to enable SIRA authentication.
Server Address	SIRA server IP address, which can contain a maximum of 127 characters.
Site No.	SN, which can be a 6-digit number.
Heartbeat Interval(s)	Heartbeat interval, in seconds. The value ranges from 10 to 1800.
Cached Alarms	Number of cached alarms. The value ranges from 0 to 1024.
Time to Obtain NTP Info(h)	Time to obtain NTP time. The value ranges from 0 to 23.
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

SSH

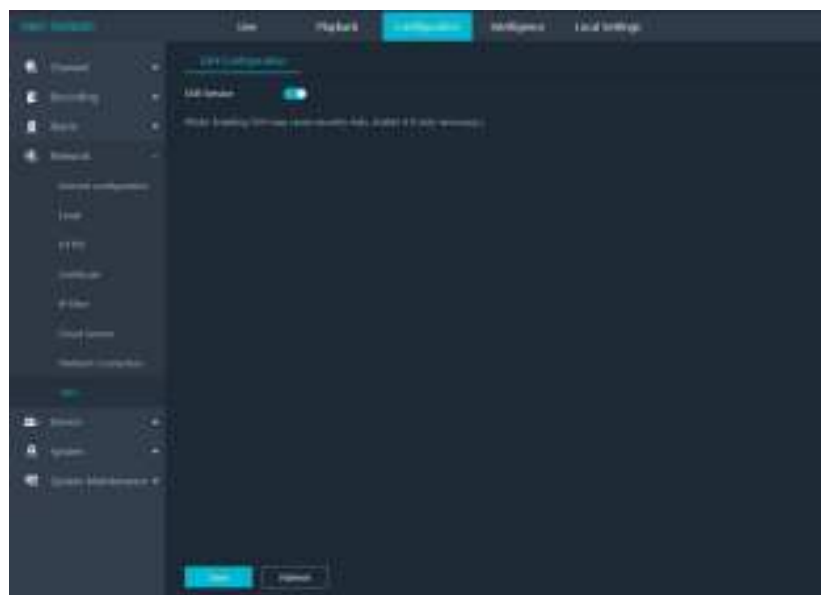
You can configure the SSH service to prevent information leakage during remote HWT-NVR800 management.

Step 1 Choose **Configuration > Network > SSH**. The following page is displayed.



Step 2 Toggle on **SSH Service**.

Step 3 Click **Apply**.



NOTE

After the SSH service is enabled, if you need to access the HWT-NVR800 through the SSH service, use port 22.

----End

SNMP

Supports server SNMP connection and managed by the NMS server.

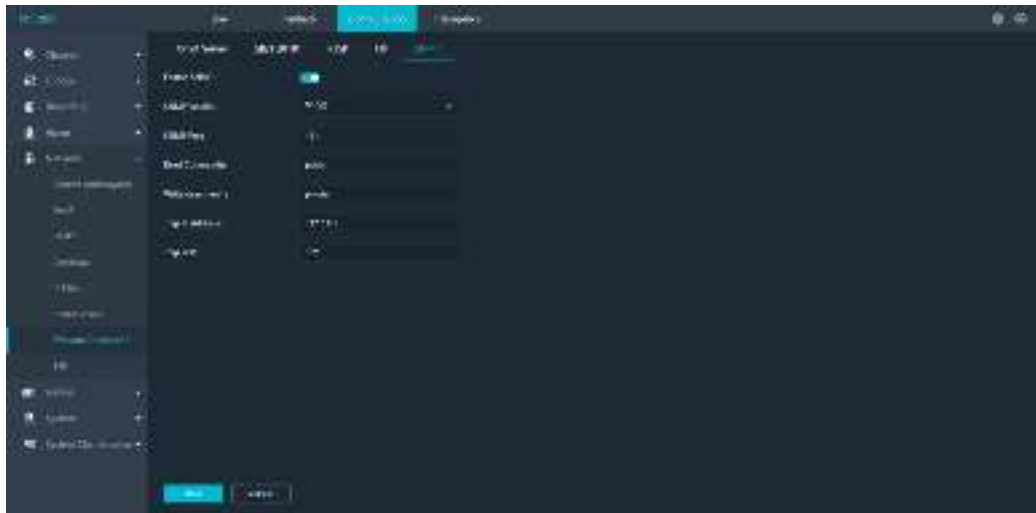


Table 5-214 Parameter description

Parameter	Description
Enable SNMP	Enable or disable the SNMP connection.
SNMP Version	Select the version to be used. V1, V2, and V3 are supported. V3 is recommended.
SNMP Port	The port of the NMS server.
Read Community	Indicates the user group or user ID of the read operation.
Write Community	Indicates the user group or user ID of the write operation.
Trap IP Address	The IP Address of the server that receives the Trap messages.
Trap Port	The port for receiving the Trap messages.

5.1.2.5.6 Device

5.1.2.5.6.1 Disk

Disk Management

Allow users to check and configure disk drives and to format a new disk.

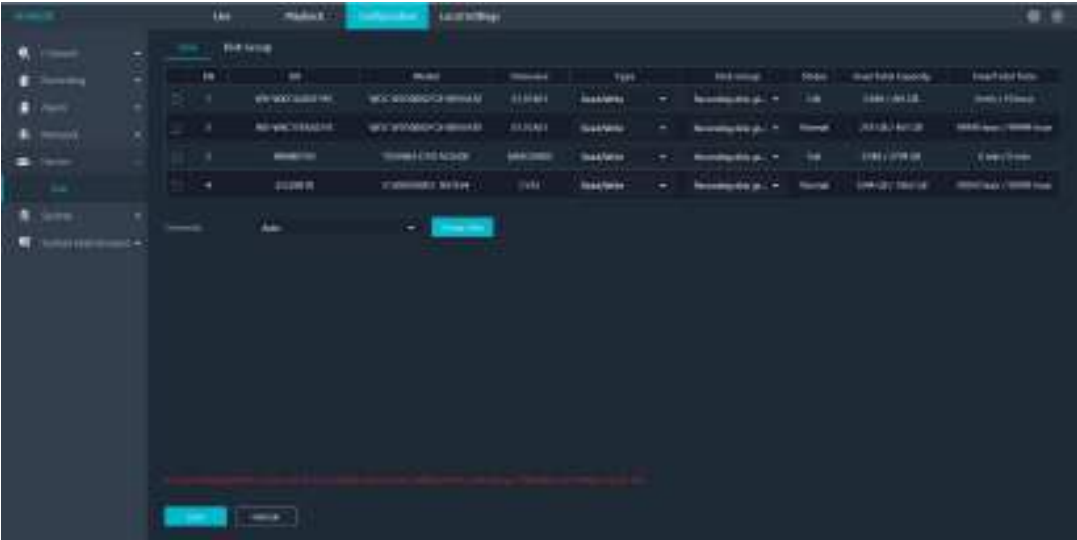
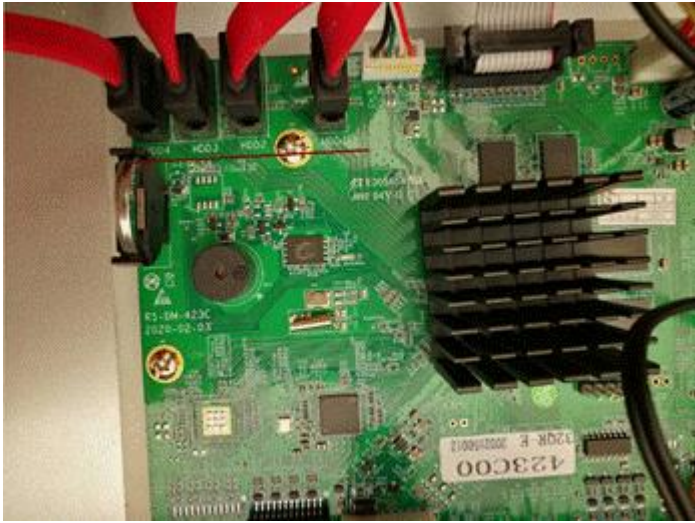


Table 5-215 Parameter/Button description

Parameter/Button	Description
SN	Slot ID of the data cables connected to hard disks. For example, if a hard disk is connected to the HDD1 data cable, information about the hard disk is displayed in the No.1 row. 
SN	Serial number of a hard disk.
	Edits disk information. Table 5-216 describes related parameters.
Model	Basic information about a hard disk.
Firmware	
Type	
Disk Group	
Status	

Parameter/Button	Description
Free/Total Capacity	Remaining capacity and total capacity of a hard disk.
Free/Total Time	Remaining duration and total duration of recordings that can be stored in a hard disk.
Overwrite	Policy of overwriting data on hard disks when the hard disks are full. • Auto: The system automatically deletes the earliest recording files and continues to record new video. • X days: The system stores only recording files generated in the latest X days. • Off: The system does not delete recording files from or write new recording files to the hard disks. • In this mode, you need to periodically check the hard disk status to ensure that the hard disks have sufficient space for storing recording files.
Format Disk	Button for formatting a hard disk. When a hard disk is used on the HWT-NVR800 for the first time, you need to format this hard disk in the following way: 1. Select the hard disk to be formatted. 2. Click Format Disk.
Save	Saves the settings.

Table 5-216 Disk management parameters

Parameter	Description
Hard Disk ID	Hard disk ID.
Type	Disk type. • Read/Write: Data (such as recordings) can be read from and written into the hard disk. • Read-Only: Data (such as recordings) can only be read from the hard disk.
Disk Group	Disk group.
OK	Saves the settings.
Exit	Exits the hard disk management page.

Disk Group

Allows users to set a hard disk for storing recording files of the camera.

This menu bar is displayed only when at least two disks are installed on the HWT-NVR800.



Table 5-217 Parameter description

Parameter	Description
Type	Disk group type. Only the Recording disk group option is available.
Disk Group	Disk group. If you select a camera channel and add it to a specified disk group, recording files of the channel will be stored in the specified disk group. - A disk group is associated with 16 recording channels by default and can be associated with a maximum of 32 recording channels. - A channel can be added to only one disk group.
Recording Channel	
Apply	Applies the parameter settings.
Default	Restores the parameters to factory defaults when they are incorrectly set or fail to be verified.

- HWT-NVR800 with two disk trays:
 - a. You are advised to set the disks connected to trays as recording disk group 1, and set recording channels of the disk group to channels 1 to 16.
- HWT-NVR800 with four disk trays:
 - You are advised to set the disks connected to trays 1 and 3 as recording disk group 1, and set recording channels of the disk group to channels 1 to 16.
 - You are advised to set the disks connected to trays 2 and 4 as recording disk group 2, and set recording channels of the disk group to channels 17 to 32.

NOTE

If the HWT-NVR800 has 2, 4 disk trays, you are advised to configure disk groups and recording channels based on the preceding allocation mechanism to improve device performance.

5.1.2.5.7 System

5.1.2.5.7.1 General Configuration

Basic Settings

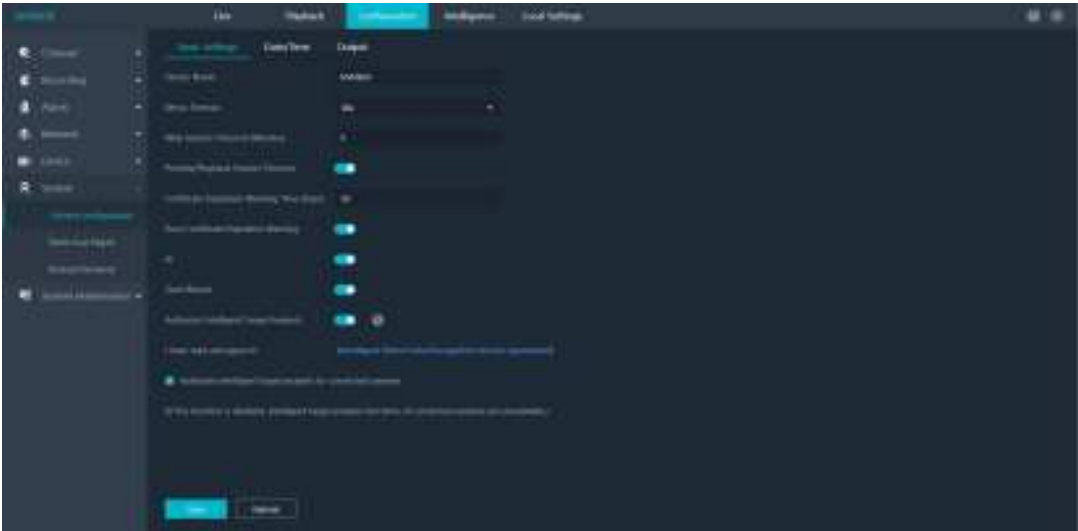


Table 5-218 Parameter/Button description

Parameter/Button	Description
Device Name	Unique name for identifying an HWT-NVR800. The value can contain letters and digits.
Menu Timeout	Automatic screen lock duration.
Web Session Timeout (min)	Timeout duration of a session.
Preview/Playback	Indicates whether to enable the session timeout function on the preview or playback page.
Certificate Expiration (days)	Number of days before certificate expiration.
Root Certificate	Indicates whether to receive warning of device root certificate expiration.
AI	This toggle is available only for HWT-NVR800s with 1/2 disk trays. If AI is enabled, the decoding specifications of the HWT-NVR800 are halved.
Start Wizard	After this function is enabled, the startup wizard is displayed when the HWT-NVR800 restarts or is powered on.
Authorize Intelligent Target Analysis	Target-related intelligent functions are available only after being authorized.
Save	Saves the settings.

Parameter/Button	Description
Refresh	Restores to the last saved parameter values.

Date/Time



Table 5-219 Parameter/Button description

Parameter/Button	Description
Time Setting Method	Method for setting the HWT-NVR800 time. Manual: You need to manually set date format, time zone, and system time. NTP: The HWT-NVR800 synchronizes its time with a connected NTP server. If you select this option, enter the IP address of the NTP server and click Update Now.
DST	Indicates whether to enable DST. If the local area observes the DST, switch on this toggle. The DST can be set in the following modes: - Weekly - Date
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.

Output

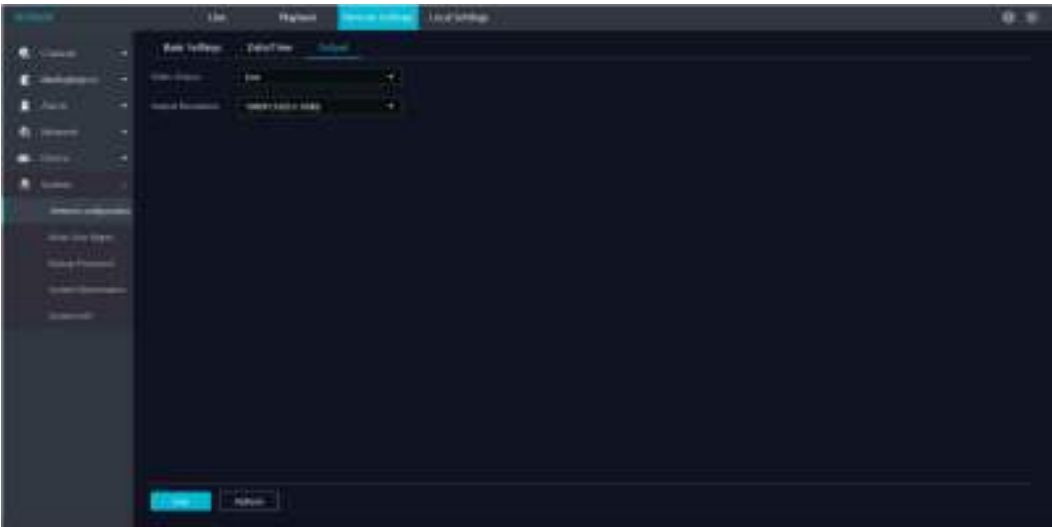


Table 5-220 Parameter/Button description

Parameter/Button	Description
Video Output	Currently, only live video output is supported.
Output Resolution	HWT-NVR800 video output resolution, which must be the same as the resolution supported by a monitor. - For most monitors, set the resolution to 1920 x 1080. - For a 4K monitor, select 2K (2560 x 1440) or 4K (3840 x 2160).
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.

5.1.2.5.7.2 Multi-User Management



Table 5-221 Parameter/Button description

Parameter/Button	Description
User Name	• admin: default administrator account provided upon delivery, which can be used to log in to the LDU and web client. This account has all permissions at the application layer. • user1/2/3/4/5/6: used to log in to the LDU and web client. Permissions of the accounts are configured by the administrator.
Role	
Status	• Admin: enabled by default. • User: disabled by default
Password	Click  and edit the user password, as shown in Table 5-222.
Permission	• Admin: An administrator has all permissions of the HWT-NVR800 and can maintain the passwords of administrators and users. • User: Users have only restricted permissions such as preview, backup, and playback. New users do not have any permissions. The administrator sets permissions of operating cameras and managing camera channels for the users based on the site requirements.
Historical Passwords Different from New One	Number of historical passwords from which the new one differs. This parameter can be set to 1 or 2 (default).
Minimum Password Length	Minimum length of a password. The value ranges from 8 to 15.
Min Password Age (days)	Minimum validity period of a password. NOTE This parameter determines the minimum period of time that you must use a password before changing it. You can set this parameter to a value ranging from 1 and 997, or set the value to 0 to allow user to change passwords at any time.
Recommended Password Age (days)	Recommended validity period of a password. NOTE This parameter determines the recommended period of time that the system prompts you to change a password again after the password is changed. You can set this parameter to a value ranging from 1 to 998, or set it to 0, indicating that the system will not prompt you to change the password.
Max Password Age (days)	Maximum validity period of a password. NOTE This parameter determines the maximum period of time that a password can be used before the system requires a user to change the password. You can set this parameter to a value ranging from 1 to 999, or set it to 0 to allow the password to be valid permanently.

Parameter/Button	Description
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.

Table 5-222 Editing user information

Parameter/Button	Description
User Name	Customized user name.
Password	Customized user password. NOTE You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.
Password Strength	Strength of the new password, which is displayed on the page based on a user-defined password.
Confirm Password	Enter the value of Password .
Modified At	Date on which the password was changed.
Password recovery through security questions	Configure password recovery through security questions.
Password recovery through GUID file import	Export the GUID file to a USB flash drive. Keep it properly.
OK	Saves the settings.
Cancel	Exits the editing mode.

5.1.2.5.7.3 Backup Password

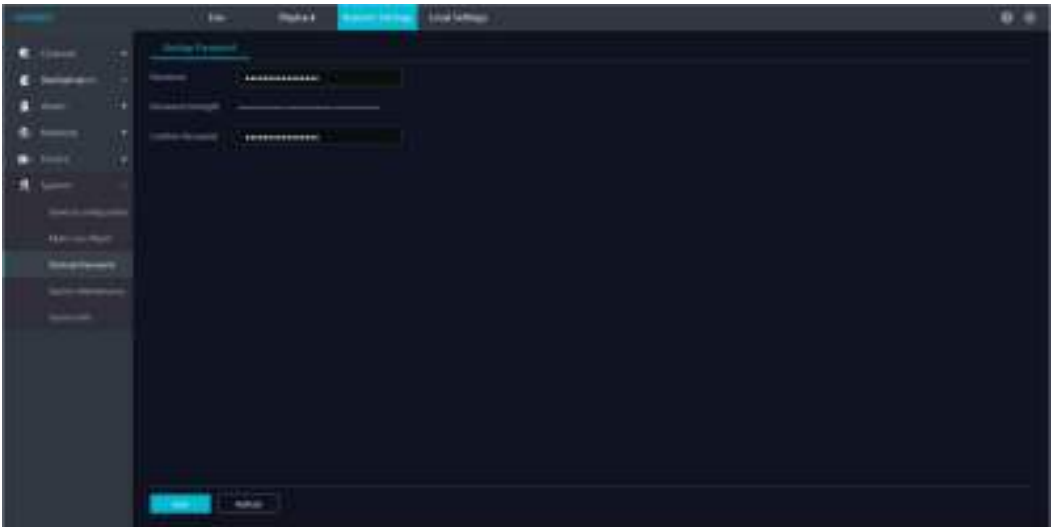


Table 5-223 Parameter/Button description

Parameter/Button	Description
Password	Backup password. NOTE You can customize the password. For details about the password complexity, see Password Maintenance Suggestions.
Password Strength	Strength of the new password, which is displayed on the page based on a user-defined password.
Confirm Password	Enter the value of Password .
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.

5.1.2.5.7.4 System Maintenance

Factory Settings

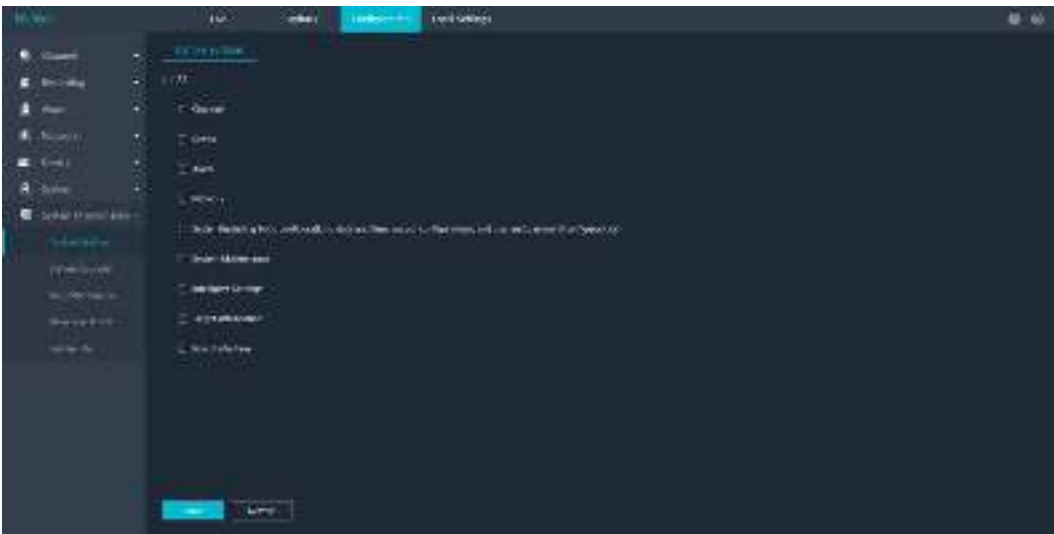


Table 5-224 Parameter/Button description

Parameter/Button	Description
All	1. Select the function items to be restored to factory settings. • All: All functions are restored to factory settings. • Other options: Only selected functions are restored to factory settings. 2. Click Apply. It takes about 10 to 15 minutes to restore factory settings. After being restored to factory settings, the HWT-NVR800 automatically restarts.
Channel	
Device	
Alarm	
Network	
System	
System Maintenance	
Intelligent Settings	
Target Attendance	
Road Detection	
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.

System Upgrade



Table 5-225 Parameter/Button description

Upgrade Method	Parameter /Button	Description
Online Upgrade	Current Version	Before the upgrade, ensure that the cloud service has been enabled on and connected to the HWT-NVR800. For details about how to enable the cloud service, see 3.10 Cloud Service. • The HWT-NVR800 automatically detects the latest firmware version on the cloud service. • If a later HWT-NVR800 version is detected, the Upgrade button becomes available. Click Upgrade to upgrade the HWT-NVR800.
	Last check result	
	Check Version	
	Upgrade	
Upgrade Package	Path	Obtain the HWT-NVR800 upgrade packages from the device vendor. 1. Decompress the upgrade package to obtain the HWT-NVR800 upgrade file. 2. Save the HWT-NVR800 upgrade file to a USB flash drive. 3. Insert the USB flash drive into the USB port on the HWT-NVR800. 4. Click , select the upgrade file from the USB flash drive, and click OK. When selecting the upgrade file, you need to enter the password of the admin user. 5. Click Upgrade. The system upgrade takes about 2 to 3 minutes.

Automatic Maintenance

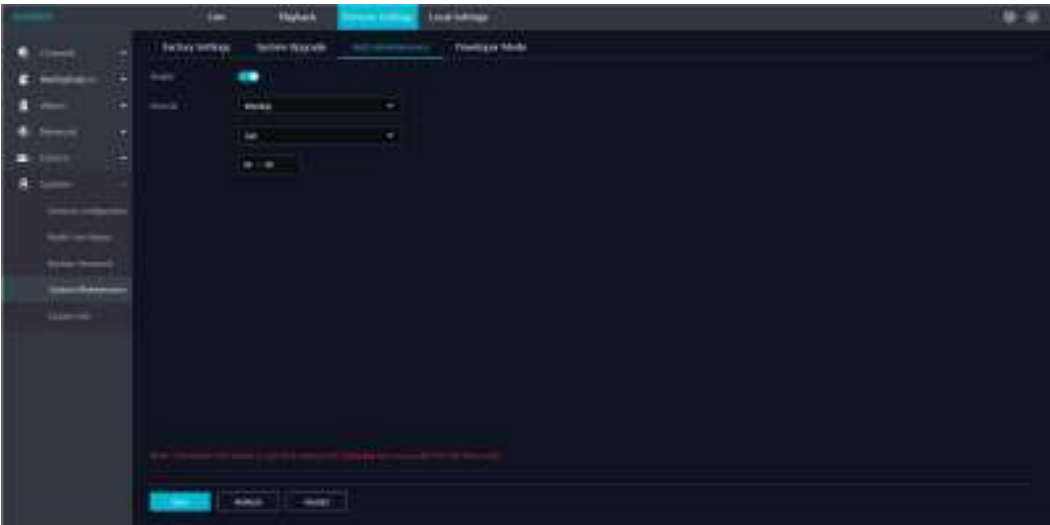


Table 5-226 Parameter/Button description

Parameter/Button	Description
Enable	Indicates whether the HWT-NVR800 automatically restarts at a time point within two hours after the preset time.
Interval	Automatic restart time. You can configure a monthly, weekly, or daily restart rule for the HWT-NVR800.
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.
Restart	Restarts the HWT-NVR800.

Developer Mode

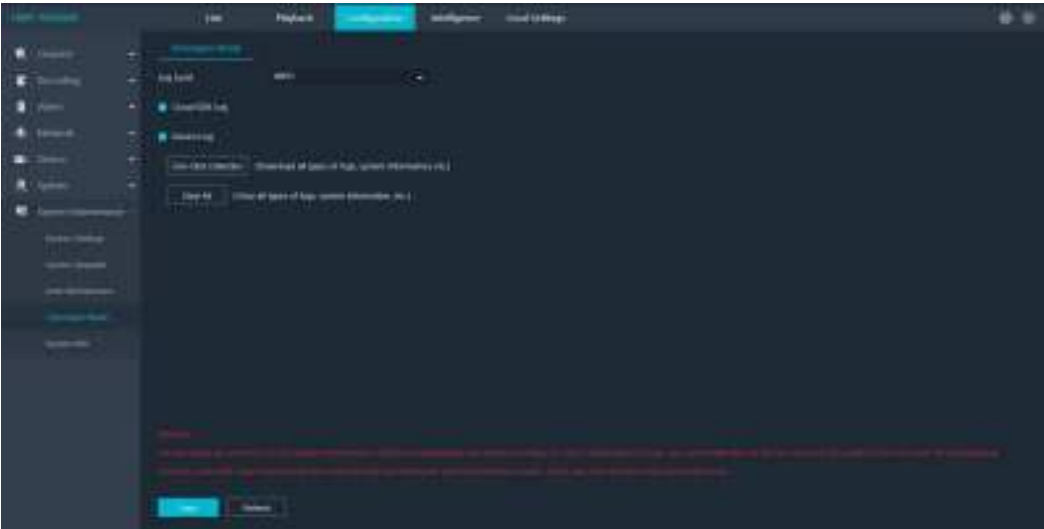


Table 5-227 Parameter/Button description

Parameter/Button	Description
Cloud SDK Log	Indicates whether to use cloud SDK logs.
Device Log	Indicates whether to use device logs.
Log Level	Default log level. INFO logs can be used to locate common faults. If some faults cannot be located through INFO logs, you can collect DEBUG logs.
One-Click Collection	Downloads all types of logs and system information.
Clear All	Clears all types of logs and system information.
Apply	Applies the parameter settings.

5.1.2.5.7.4.1 Auto Maintenance

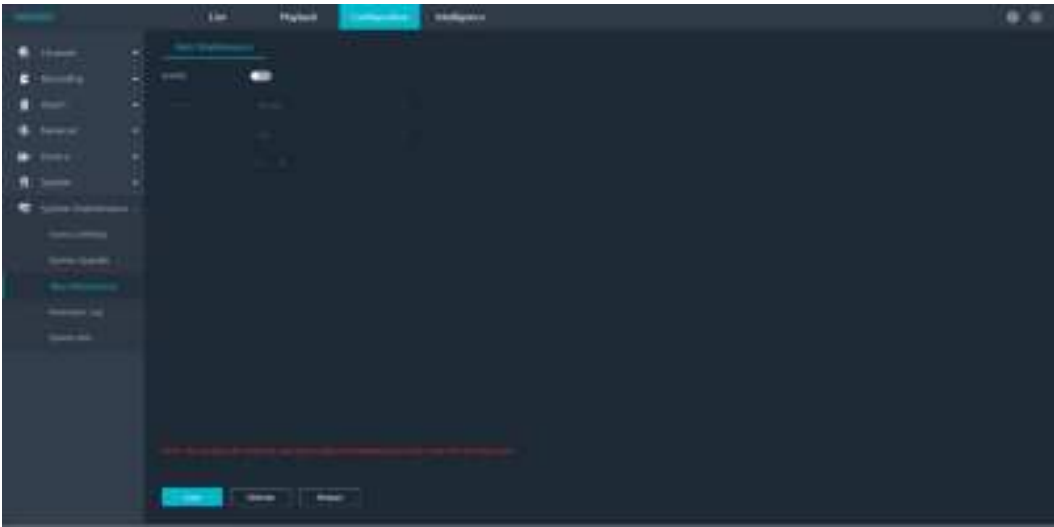


Table 5-228 Parameter/Button description

Parameter/Button	Description
Enable	Indicates whether to enable the HWT-NVR800 to automatically restart at a random time within two hours after the preset time. The restart takes 3 to 5 minutes. During the restart, all services are interrupted and video recording stops.
Time	Automatic restart time. You can configure a monthly, weekly, or daily restart rule for the HWT-NVR800.
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.
Restart	Restarts the HWT-NVR800.

5.1.2.5.7.4.2 Developer Log



Table 5-229 Parameter/Button description

Parameter/Button	Description
Cloud SDK Log	Indicates whether to use cloud SDK logs.
Device Log	Indicates whether to use device logs.
Log Level	Default log level. INFO logs can be used to locate common faults. If some faults cannot be located through INFO logs, you can collect DEBUG logs.
One-Click Collection	Downloads all types of logs and system information.
Clear All	Clears all types of logs and system information.
Apply	Applies the parameter settings.

5.1.2.5.7.4.3 Factory Settings



Table 5-230 Parameter/Button description

Parameter/Button	Description
All	1. Select the function items to be restored to factory settings. • All: All functions are restored to factory settings. • Other options: Only selected functions are restored to factory settings. 2. Click Apply. 3. It takes about 15 minutes to restore factory settings. After being restored to factory settings, the HWT-NVR800 automatically restarts.
Channel	
Device	
Alarm	
Network	
System(Including basic configurations, date and time, output configurations, and user and password configurations)	
System Maintenance	
Intelligent Settings	
Target Attendance	
Object Classification	
Save	Saves the settings.
Refresh	Restores to the last saved parameter values.

5.1.2.5.7.4.4 System Upgrade

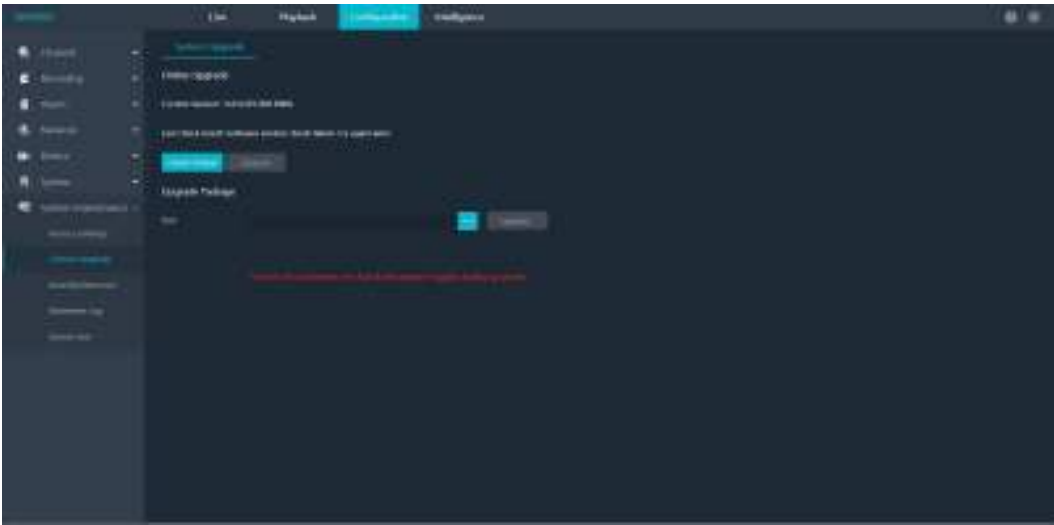


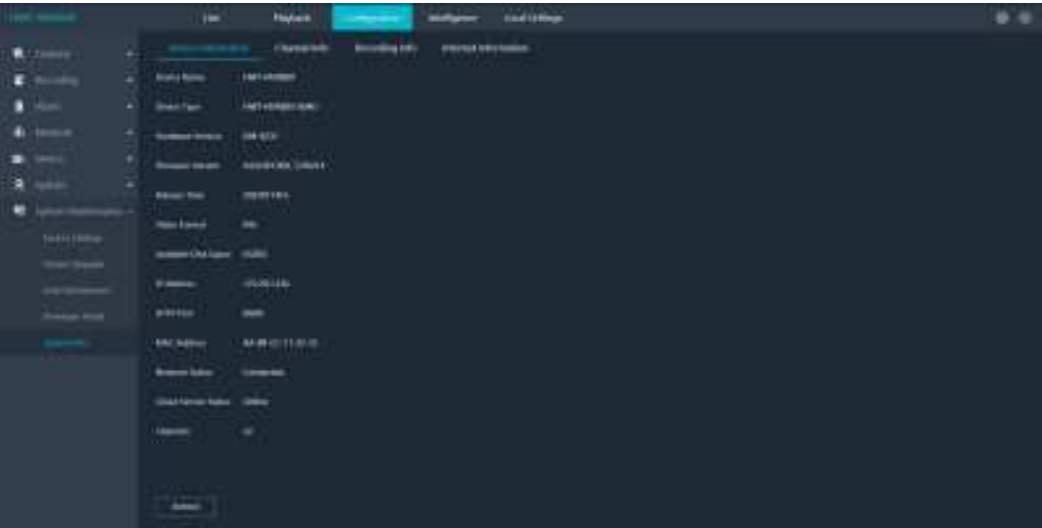
Table 5-231 Parameter description

Upgrade Method	Parameter /Button	Description
Online Upgrade	Current Version	Before the upgrade, ensure that the cloud service has been enabled on and connected to the HWT-NVR800. For details about how to enable the cloud service, see Section 3.10 <i>Cloud Service</i> . - The HWT-NVR800 automatically detects the latest firmware version on the cloud service. - If a later HWT-NVR800 version is detected, the Upgrade button becomes available. Click Upgrade to upgrade the HWT-NVR800.
	Last check result	
	Check Version	
	Upgrade	
Upgrade Package	Path	Obtain the HWT-NVR800 upgrade packages from the device vendor. - Decompress the upgrade package to obtain the HWT-NVR800 upgrade file. - Click , select the HWT-NVR800 upgrade file, and click OK. - When selecting the upgrade file, you need to enter the password of the admin user. - Click Upgrade under Upgrade Package. - The system upgrade takes about 3 minutes.

5.1.2.5.7.5 System Information

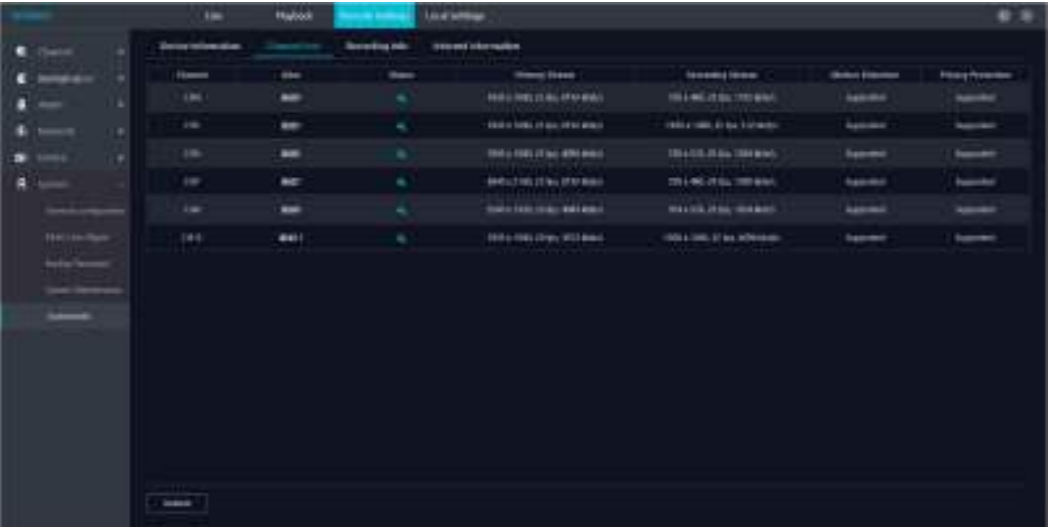
Device Information

Allows you to view the device information including the device type, IP address, MAC address, and firmware version.



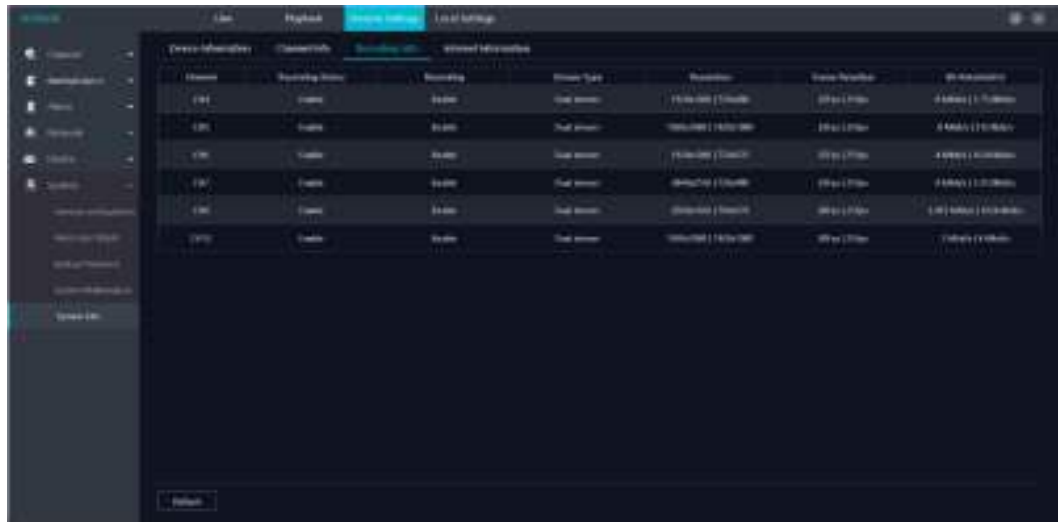
Channel Information

Allows you to view information about all camera channels, such as the alias, primary and secondary stream specifications, and whether to enable motion detection or privacy mask.



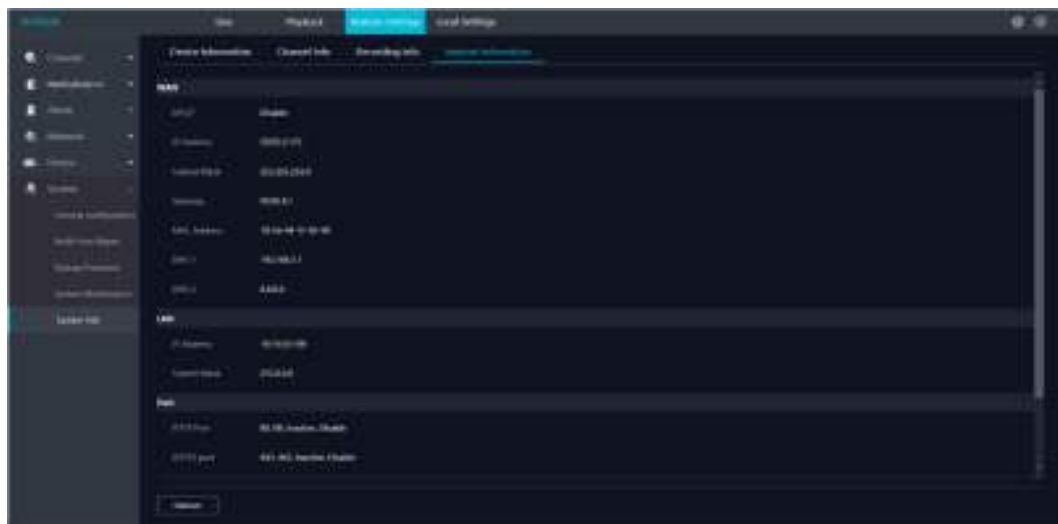
Recording Information

Allows you to view recording information of all camera channels, such as whether recording is enabled, stream type, and stream resolution.



Internet Information

Allows you to view the network status of the HWT-NVR800, such as the IP address, subnet mask, and gateway.



5.1.2.6 Intelligent Services

5.1.2.6.1 Intelligent Service Configuration

For details about intelligent service configuration on the web client, see 5.1.1.5.1 Intelligent Settings.

5.1.2.6.2 List Management

Scenario

You can add different targets to different target lists as required, and set recognition policies by list.

- Configure a VIP list to provide services for high-quality customers in a timely manner.

- Configure an attendance list to check employees' daily attendance.
- Configure an alert list so that the system will notify you of alerted persons promptly.

The following describes how to configure a VIP list.

Procedure

Step 1 Log in to the HWT-NVVR800 web client.

Step 2 Choose **Intelligence > List Management**.

Step 3 Configure a VIP list, as shown in Figure 5-9.

Figure 5-9 Configuring a VIP list



Step 4 Import target images.

Table 5-232 describes the target image import methods.

Table 5-232 Import methods

Import Method	Image Source	Procedure
Remote data import	Target snapshot list on the HWT-NVR800.	Import data remotely
Local data import	Select images from the local computer. Target images to be imported must meet the following requirements: • The image format must be JPG, JPEG, PNG, or BMP. • The maximum resolution	Import local data



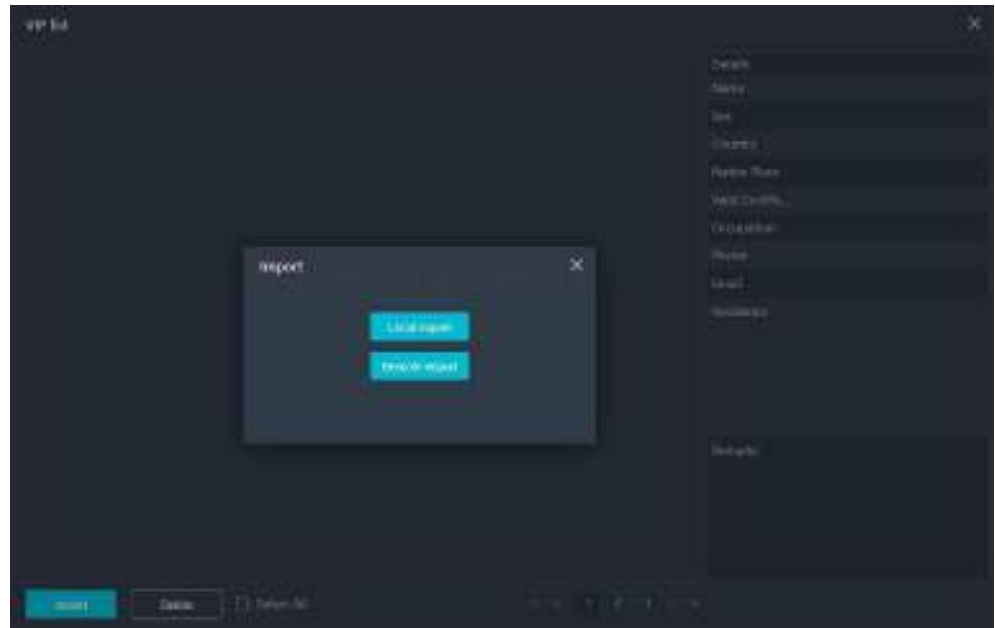
NOTE

Only records on the current page can be selected for import on the HWT-NVR800 web client. After page switchover, you need to select records again.

- Import local data, as shown in Figure 5-11.

Figure 5-11 Local data import

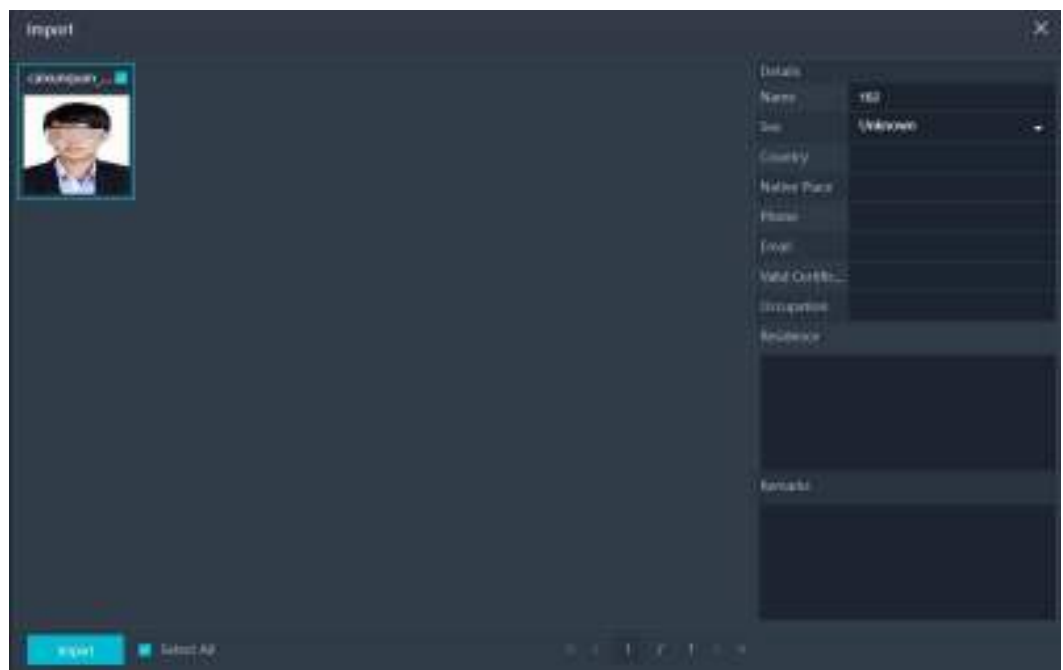




Step 5 Configure target image details, as shown in Figure 5-12.

- When adding multiple target images, you need to configure details for each image.
- You are advised to enter the name, gender, and age of the target in a target image. Enter other information based on the site requirements.
- If you add the same target image for multiple times, only one image can be successfully added.

Figure 5-12 Configuring target image details



NOTE

Selected records to be imported on the HWT-NVR800 web client at a time can contain a maximum of 100 images. Only records on the current page can be selected for import. After page switchover, you need to select records again.

----End

5.1.2.6.3 Adding a Custom Target List

Function

Allows users to add a custom target list.

GUI Layout



Table 5-233 Parameter description

Parameter	Description
Group Name	Name of a list. The options include Allowlist , Blocklist , and Stranger . You can also customize the list name.
Switch	Indicates whether to enable a list.
Edit	Imports target records to or deletes target records from a list.
Delete	Deletes a list.
Save	Saves the settings.

5.1.2.6.4 List-based Alarm

Function

Allows users to enable or disable list-based alert.

UI Layout



Table 5-234 Parameter description

Parameter	Description
Group Name	Name of a list.
Alarming	Indicates whether to enable list-based alert. After this function is enabled, an alarm is generated when the camera identifies a target in a target list.
Policy	List type. • Allow: trustlist • Reject: blocklist
Match	Similarity threshold. If the similarity is greater than or equal to the threshold, the target in the list is matched.
Alarm Linkage	Alarm linkage policy.
Alarm Plan	Alarm plan.
Alarm Channel	Alarm channel.
Save	Saves the settings.

5.1.2.7 Local Settings

You can set paths for storing recordings, downloaded files, and snapshots.



Table 5-235 Parameter/Button description

Parameter/Button	Description
Recording Path	Local path for storing recording files. Use the default path D:\Device\Record or customize the path.
Path for Download File	Local path for storing downloaded recording files. Use the default path D:\Device\Record\Download or customize the path.
Snapshot Path	Local path for storing snapshots. Use the default path D:\Device\Capture or customize the path.
Video Format	Format of a recording file. Only the MP4 format is supported.
Snapshot Format	Snapshot format. • JPG • PNG • BMP
Max Recording Size	Maximum size for a recording file. • 500M • 1GB • 2GB
Local Backup Encryption	Indicates whether to encrypt backup files.

5.2 FAQ

5.2.1 Password and Login Faults

5.2.1.1 Passwords Are Forgotten

Context

- The LDU and web camera system share accounts.
- If you forget the password of the **admin** user, you can recover the password by importing a GUID file, verifying security questions, or scanning the QR code using the HOLOWITS app.
- If you forget the password of a common user such as **user1** or **user2**, you can log in as the **admin** user and change the password.

Resetting the Password of a Common User such as user1 or user2

1. Log in to the LDU or camera web system as the **admin** user.
2. Choose **Configuration > System > User Management**.
3. Reset the common user's password.

The password must:

- Consist of 8 to 16 characters.
- Contain at least two types of the following characters: uppercase letters, lowercase letters, digits, special characters, and spaces.
- Differ from the user name spelled forward and backward.

4. Enter the password of the **admin** user for verification.

Resetting the Password of the admin User

- By importing a GUID File
 - a. Export the GUID file.
 - When you log in as the **admin** user for the first time, the device is automatically activated. In this case, you need to set the password. You can export the GUID file (only to USB flash drives) for password resetting.
 - If you do not export the GUID file after first-time login or the exported GUID file is lost, choose **Configuration > System > User Management** and click **Export**. After each export, you need to click **OK** to authenticate the **admin** user. Then the previously exported GUID file becomes invalid.
 - b. Import the GUID file.
 - On the login page, enter the administrator account, select the GUID file as the verification method to reset the password, select the exported GUID file from the USB flash drive, and click **Import**. After the GUID file-based verification is successful, the page for resetting the password is displayed.
- The password must:
- Consist of 8 to 16 characters.
 - Contain at least two types of the following characters: uppercase letters, lowercase letters, digits, special characters, and spaces.
 - Differ from the user name spelled forward and backward.

- After the password is reset, the GUID file becomes invalid.
 - By verifying security questions
 - a. Set security questions and their answers.
 - When you log in as the **admin** user for the first time, the device is automatically activated. In this case, you need to set the password. You can set security questions and their answers for password resetting.
 - If you do not set security questions (as shown in Figure 5-13), forget answers to the security questions, or want to change the answers after first-time login, choose **Configuration > System > User Management** and click  in the row numbered 1 (as shown in Figure 5-14) to access the password resetting page.
 - b. Verify security questions.
 - On the login page, enter the administrator account, select security questions as the verification method to reset the password, enter the answers to the preset three questions, and click **OK**. After the verification is successful, the page for resetting the password is displayed.
- The password must:
- Consist of 8 to 16 characters.
 - Contain at least two types of the following characters: uppercase letters, lowercase letters, digits, special characters, and spaces.
 - Differ from the user name spelled forward and backward.
- After the password is reset, the GUID file becomes invalid.

NOTE

- The GUID file-based password recovery is supported only on the LDU.
- If the GUID file-based password recovery is disabled, no message is displayed indicating that the GUID file is invalid after the password is reset.
- If you enable none of the preceding methods or forget the path storing the GUID file, answers to security questions, or the mobile number, you can restore the device to factory settings for password recovery. For details, see Restoring Factory Settings.

Figure 5-13 Password recovery configuration page upon first-time login

Password Recovery

Select an authentication method for password recovery.

☒ Security question

Question 1 : What is the name of your first manager at ▼

Answer :

Question 2 : What is the name of the colleague you are ▼

Answer :

Question 3 : What was the name of your high school p ▼

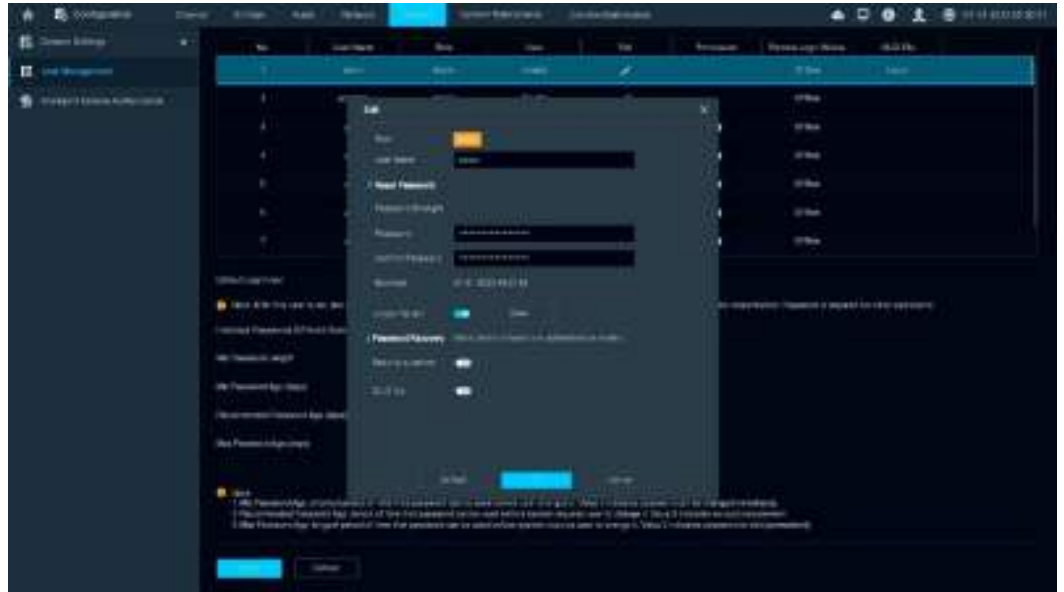
Answer :

☐ GUID file

Finish

[Skip](#)

Figure 5-14 Password recovery configuration page under Configuration > System > User Management



5.2.1.2 Failure to Connect to the NVR Through the Web Client

Possible Causes

- The NVR IP address is incorrect.
- The network between the NVR and the router or switch is abnormal.
- The network between the computer and the router or switch is abnormal.

Procedure

Step 1 Check whether the entered NVR IP address is correct.

1. Log in to the LDU as the **admin** user.
2. Choose **Configuration > System Maintenance > System Info > Internet Info**.
3. View the NVR IP address.

If the IP address is correct, record the gateway address.

Step 2 Check whether the network between the computer and the router or switch is normal.

Check the status of the network port indicator on the computer.

- If the network port indicator blinks, the network connection is normal.
- If the network port indicator is off, the computer is disconnected from the network.

Check whether the network cable and RJ45 connector are damaged and whether the router and switch are correctly configured.

Step 3 Check whether the network between the NVR and the router or switch is normal.

Check the status of the network port indicator on the rear panel of the NVR.

- If the network port indicator blinks, the network connection is normal.

- If the network port indicator is off, the NVR is disconnected from the network.
Check whether the network cable and RJ45 connector are damaged and whether the router and switch are correctly configured.

----End

5.2.1.3 Camera Protocol Password Is Forgotten

Symptom

After you attempt to add a camera to the HWT-NVR800 for multiple times, the camera is always displayed as offline and a message is displayed, indicating that the user name or password is incorrect.

Possible Causes

The camera protocol password is forgotten.

Solution

Step 1 In the address box of the browser, enter **https://Camera IP address**, and press **Enter** to access the camera web system.

- If the password for logging in to the camera web system is forgotten, restore the camera to factory settings. For details, see the camera product documentation.
 - After the camera is restored to factory settings, set the user password for logging in to the camera web system upon the first login.
- If the password for logging in to the camera web system is not forgotten, perform the following steps:

Step 2 Choose **Settings > Network > Platform Connection > Password Management**.

Step 3 In the **SDK Password** area, set the **Current password**, **New password**, and **Confirm password** parameters.

Step 4 Click **Save**.

----End

5.2.1.4 Failed to Log In to the Web Client After the HWT-NVR800 Software Upgrade

Symptom

After the HWT-NVR800 software is upgraded to 9.0.0, you fail to access the HWT-NVR800 login page after entering the HWT-NVR800 IP address in the address box of the browser.

Possible Causes

The root certificate file imported to the browser before the HWT-NVR800 upgrade to 9.0.0 is still in the system after the upgrade.

Solution

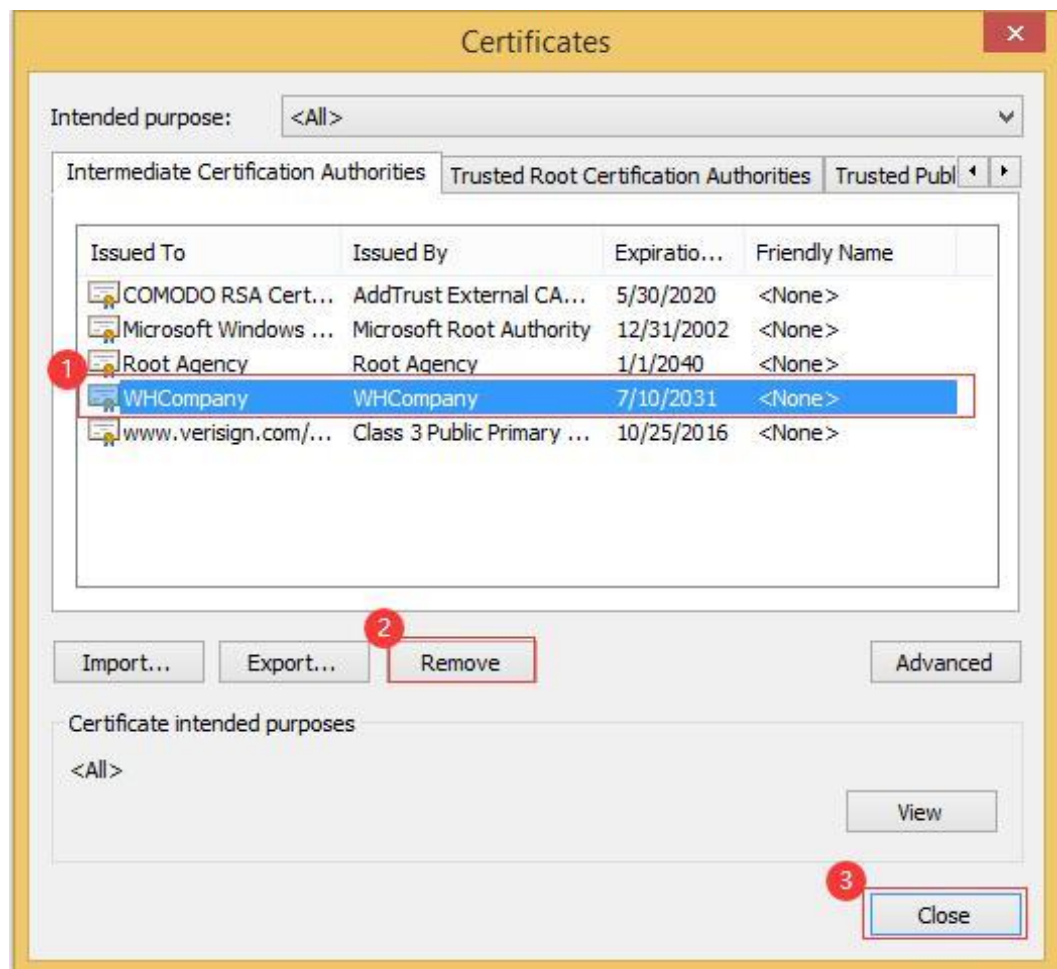
Step 1 Right-click Internet Explorer.

Step 2 Choose **Run as administrator**.

Step 3 Choose  > **Internet Options** > **Content** > **Certificates** > **Trusted Root Certification Authorities**.

Step 4 Delete the root certificate, as shown in Figure 5-15.

Figure 5-15 Deleting the root certificate



Step 5 Close Internet Explorer.

Step 6 Log in to the HWT-NVR800 web client again.

For details about how to log in to the web client, see 5.1.2.2 Logging In to the Web Client.

----End

5.2.1.5 Certificate Error Occurs When You Attempt to Log In to the Web Client

Symptom

The browser displays a security certificate error during the first login to the HWT-NVR800, as shown in Figure 5-16.

Figure 5-16 Certificate error



Possible Causes

The HWT-NVR800 root certificate file is not imported to the browser.

Procedure

- Step 1** In the upper right corner of the HWT-NVR800 login page, click **Download Root Certificate**, as shown in Figure 5-17.

Figure 5-17 Root certificate download



Step 2 Close all windows of the browser.

Step 3 Install the root certificate.

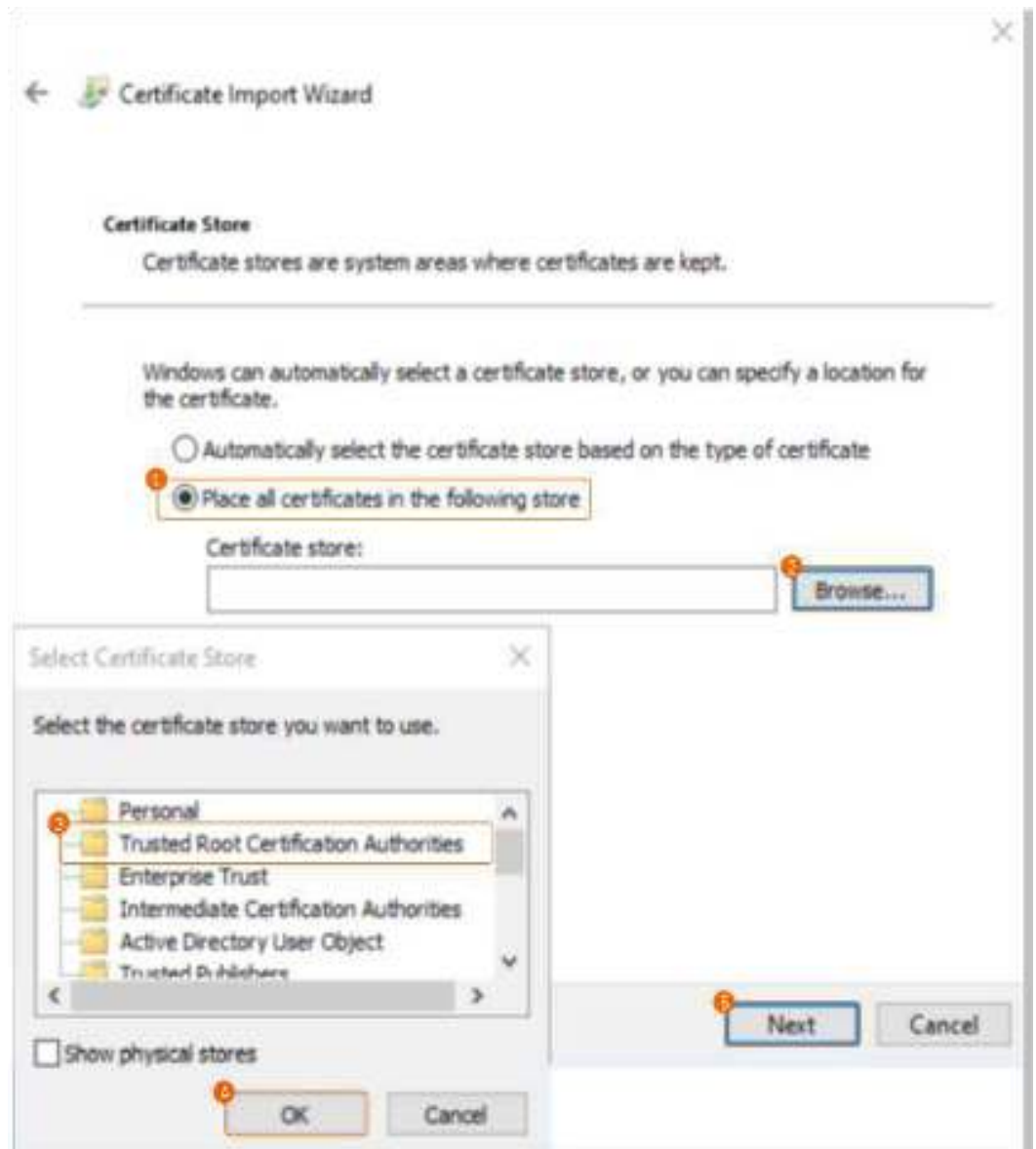
1. Double-click the **root_cert.cer** file.
2. Click **Install Certificate (I)**.
3. Select **Current User** and click **Next**, as shown in Figure 5-18.

Figure 5-18 Certificate Import Wizard page



4. Specify the path for storing the certificate, as shown in Figure 5-19.

Figure 5-19 Specifying a storage path



5. Click **Finish**.

Step 4 Open a web browser, enter the IP address of the HWT-NVR800 in the address box, and press **Enter**.

----End

Verification

After the certificate is imported, the browser does not display the certificate error message when you re-log in to the HWT-NVR800, as shown in Figure 5-20.

Figure 5-20 Login page



5.2.1.6 When a User Logs In to the Web Client, Message Indicating Connection in Progress Is Displayed and the Login Fails

Symptom

When a user attempts to log in to the HWT-NVR800 web client, the message indicating connection in progress is displayed and the login fails.

Possible Causes

The browser uses the HTTP authentication digest cached last time. As a result, the authentication fails.

Solution

Close all browser pages and open the browser again to log in.

5.2.1.7 Message Indicating Refresh Failure Is Displayed on the Cloud Service Configuration Page of the Web Client

Symptom

After login to the HWT-NVR800 web client from the computer and access to the cloud service configuration page, a message indicating refresh failure is displayed.

Possible Causes

The configured HWT-NVR800 network is inaccessible to the cloud service network, incurring timeout during access to the cloud service configuration page.

Solution

Configure the HWT-NVR800 network to one that is accessible to the cloud service network based on the application environment.

5.2.1.8 Message Indicating That this Page Cannot Be Displayed Pops Up During Login to the Web Client

Symptom

A message indicating that this page cannot be displayed pops up during login to the web client.

Possible Causes

The operating system in use is of an earlier version and does not support connection protocols with higher security.

Solution

- Upgrade the operating system to the latest version.
- Open the control panel, choose **Network and Internet > Internet Options > Advanced > Security**, and select Use TLS 1.2.
- Choose **Network > General Settings > Basic Settings** and enable the web compatible mode.

5.2.1.9 When Google Chrome or Microsoft Edge is Used to Log in to the HWT-NVR800 Web Client of a Version Earlier than 9.0.0.SPC920, a Message Is Displayed, Indicating that the Login User Name or Password Is Incorrect

Symptom

When Google Chrome or Microsoft Edge is used to log in to the HWT-NVR800 web client of a version earlier than 9.0.0.SPC920, a message is displayed, indicating that the login user name or password is incorrect.

Possible Causes

Google Chrome or Microsoft Edge is incompatible with the HWT-NVR800 after being upgraded.

Solution

Upgrade the HWT-NVR800 to 9.0.0.SPC920 or use Internet Explorer to log in to the HWT-NVR800.

5.2.1.10 When I Log In to the HWT-NVR800 Web Client Using Internet Explorer and Attempt to Go to the SDC's Web System, the System Displays a Message Indicating that Another Browser Is Recommended for Login

Symptom

When I log in to the HWT-NVR800 web client using Internet Explorer and attempt to go to the SDC's web system, the system displays a message indicating that another browser is recommended for login.

Possible Causes

Internet Explorer cannot be used to log in to the SDC's web system.

Solution

Use another browser to log in to the HWT-NVR800 web client.

5.2.1.11 When I Log In to the HWT-NVR800 Web Client, Menus Are Disordered

Symptom

When I log in to the HWT-NVR800 web client, menus are disordered.

Possible Causes

The browser cache is abnormal.

Solution

Clear the browser cache and log in to the HWT-NVR800 web client again.

Use Microsoft Edge as an example. Open Microsoft Edge, choose **Settings > Privacy, search, and services > Clear browsing data > Choose what to clear** and click **Clear now**.

5.2.2 Access-related Faults

5.2.2.12 Incorrect Type Displayed for a Camera Connected to the HWT-NVR800 Through ONVIF

Symptom

After a bullet camera is connected to the HWT-NVR800 through ONVIF, the camera type is displayed as PTZ dome camera on the live video viewing and recording playback pages.

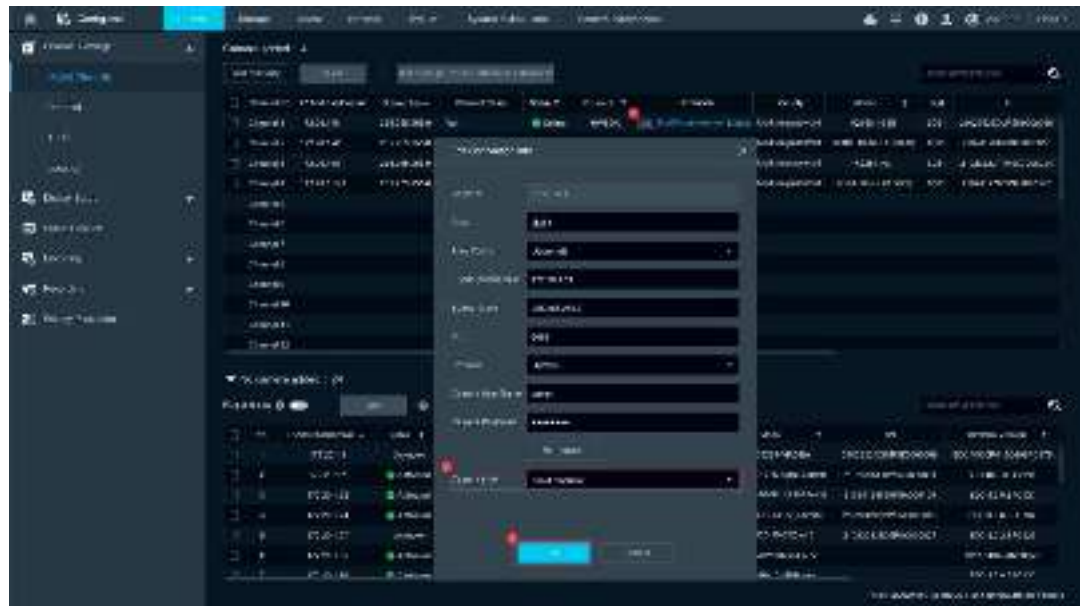
Possible Causes

After a camera is connected to the HWT-NVR800 through ONVIF, the camera type is displayed based on the camera capability obtained by the HWT-NVR800, which may be different from the actual camera type.

Solution

- Step 1** Right-click the screen.
- Step 2** Choose **Configuration > Channel > Channel Settings > Digital Channels**.
- Step 3** Change the camera type, as shown in Figure 5-21.

Figure 5-21 Changing the camera type



----End

5.2.2.13 ONVIF-compliant Cameras Cannot Be Found During Camera Adding

Symptom

When you add cameras, some ONVIF-compliant cameras cannot be found.

Possible Causes

If more than 64 cameras are deployed on the LAN, the buffer is full. As a result, some ONVIF-compliant cameras cannot be found.

Solution

Try to search for cameras for several times.

5.2.2.14 When a Camera Connected to the HWT-NVR800 in PoE Mode Fails to Go Online Due to an Incorrect Password, If I Press the Reset Button to Restore the Camera to Factory Settings, the Camera Still Fails to Go Online

Symptom

When a camera connected to the HWT-NVR800 in PoE mode fails to go online due to an incorrect password, if I press the Reset button to restore the camera to factory settings, the camera still fails to go online.

Possible Causes

The HWT-NVR800 does not detect that the camera is reconnected to the HWT-NVR800.

Solution

After the camera is restored to factory settings by pressing the Reset button, remove the network cable connected to the camera from the PoE port on the HWT-NVR800 and insert it again.

5.2.3 Recording Faults

5.2.3.1 Time in the OSD Is Different from That on the Timeline During Recording Playback

Symptom

When a user plays back a recording on the LDU, the time displayed in the OSD is different from that displayed on the timeline.

Possible Causes

The time zone of the camera is different from that of the HWT-NVR800.

Procedure

Check whether the time zone of the camera is the same as that of the HWT-NVR800.

1. Log in to the LDU as the **admin** user.
2. Choose **Configuration > System > General Settings > Date/Time**.
3. View the time zone of the HWT-NVR800, as shown in Figure 5-22.

Figure 5-22 Time zone information

The screenshot shows a 'Time Setting Mode' window with two radio buttons: 'Manual' and 'NTP'. The 'NTP' button is selected. Below the radio buttons, there is a 'Data Format' dropdown menu set to 'YYYY-MM-DD'. The 'Time Zone' dropdown menu is highlighted with a red box and shows '(GMT+08:00) Beijing, Hong Kong, Urumqi, Taipei, Kuala Lumpur, Singapore'. The 'System Time' field displays '2020-08-31' and '11:07:11'. The 'Server Address' field contains 'ntp.ntsc.ac.cn'. Below the server address is an 'Update Now' button. At the bottom, there is a 'DST' toggle switch which is currently turned off. At the very bottom are 'Apply' and 'Default' buttons.

4. Log in to the camera web system.
5. Choose **Settings > System > Time**.
6. Change the time zone of the camera to be the same as that of the HWT-NVR800, as shown in Figure 5-23.

Figure 5-23 Changing the time zone

The screenshot shows a 'Time zone' settings page. The 'Time zone' dropdown menu is highlighted with a red box and shows '(UTC+08:00) Beijing, Hong Kong (v)'. Below it, the 'Calibration mode' has two radio buttons: 'Manual' and 'NTP', with 'NTP' selected. The 'NTP server' field contains 'ntp.ntsc.ac.cn' and has a magnifying glass icon and the text 'Detect NTP server' next to it. The 'Synchronization interval (min)' field contains '60'. The 'Device time' field displays '2020-08-31 11:07:11'. At the bottom is a 'Save' button.

5.2.3.2 Failure to Find Recordings to Be Played Back

Symptom

A channel is selected as the search criterion on the video search and playback page, but no video is found.

Possible Causes

- Hard disks are disconnected or faulty.
- The system time is adjusted incorrectly.

Procedure

Step 1 Check whether the hard disks are normal.

1. Log in to the LDU as the **admin** user.
2. Choose **Configuration > Storage > Disk**.
3. Check whether the hard disks are normal.
 - If the hard disks are normal, restart the NVR and view recording information again.
 - If the hard disks are faulty, check their data cable connections.
Power off the NVR.
Check whether the data cables are properly connected, or replace them with new ones.
Power on the NVR again.
Check the hard disk status and recording information again.
If the hard disks are not faulty but recordings are still not found, the hard disks may be damaged. You are advised to replace them.

Step 2 Check whether the system time is changed without authorization.

1. Log in to the LDU as the **admin** user.
2. Choose **Configuration > System > General Settings > Date/Time**.
3. Check whether the device time is normal.

----End

5.2.3.3 Failure to Play Downloaded Video on Windows Media Player

Symptom

Downloaded video fails to be played on Windows Media Player.

Possible Causes

Windows Media Player does not support recordings downloaded from the HWT-NVR800.

Procedure

You are advised to use VLC or Potplayer to play the recording file.

5.2.3.4 Abnormal Recording Playback

Symptom

- The hard disks of a faulty HWT-NVR800 are installed to another HWT-NVR800. When recordings in these hard disks are played back, the video images are switched frequently.

- After one of the hard disks from a faulty HWT-NVR800 with four disk trays is inserted into the HWT-NVR800 with only one disk tray for recording playback, recordings of some channels cannot be played back.

Possible Causes

- The hard disks of faulty HWT-NVR800 A are installed on HWT-NVR800 B. However, HWT-NVR800 B already has some hard disks and different disks store recordings of the same time segment from a same channel.
- The HWT-NVR800 with four disk trays supports 32-channel recordings, while the HWT-NVR800 with one disk tray supports only 8-channel recordings. Therefore, only recordings from channels 1 to 8 can be played back when a hard disk from the HWT-NVR800 with four disk trays is installed in the HWT-NVR800 with one disk tray.

Solution

Step 1 Prepare an HWT-NVR800.

- This HWT-NVR800 is in the same model as the faulty one. For example, both HWT-NVR800s have one disk tray.
- This HWT-NVR800 has the same software version, for example, V100R019C50SPC306, as the faulty HWT-NVR800.
To view the software version, log in to the LDU and choose **Configuration > System Maintenance > System Info > Device Info**.
- No hard disk has been installed in this HWT-NVR800.

Step 2 Insert a hard disk of the faulty HWT-NVR800 to the new HWT-NVR800.

Step 3 Set the IP address and time of the new HWT-NVR800 to be the same as those of the faulty HWT-NVR800.

1. Right-click the screen.
2. Choose **Configuration > Network > General Settings > Basic Settings** and configure the IP address.
3. Choose **Configuration > System > General Settings > Date/Time** and configure the time.

Step 4 Play back recordings.

1. Right-click the screen.
2. Choose **Playback > Common Playback**.
3. Select a channel to play back recordings.

----End

5.2.3.5 Recordings Cannot Be Downloaded After Login Using Microsoft Edge

Symptom

When you open the NVR web page in Internet Explorer, the system automatically jumps to Microsoft Edge. After you log in to the NVR web system, recordings cannot be downloaded.

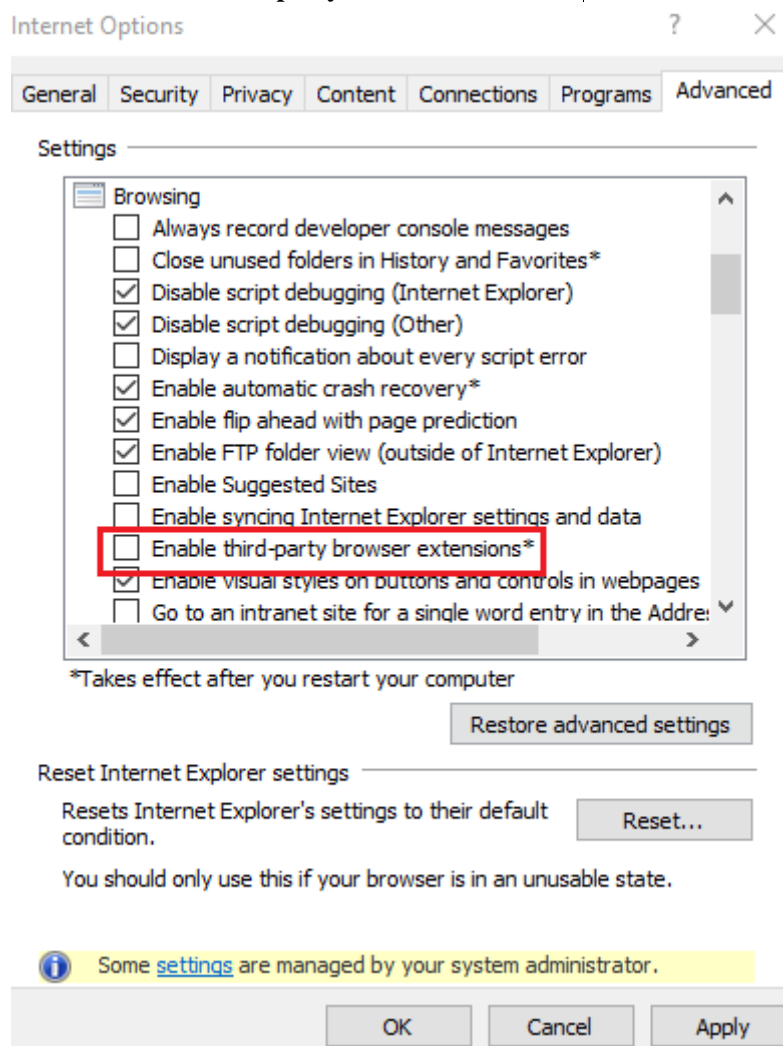
Possible Causes

The NVR does not support recording download using Microsoft Edge. Internet Explorer 11 will no longer be accessible after February 14, 2023. If a website needs to be accessed through Internet Explorer 11, you can reload the website in Internet Explorer mode in Microsoft Edge.

Solution

- **Method 1: Prevent Internet Explorer from jumping to Microsoft Edge.**

1. Open Internet Explorer, and choose **Internet Options** > **Advanced**.
2. Deselect **Enable third-party browser extensions**.



3. Click **OK**. Open the camera web page again in Internet Explorer.

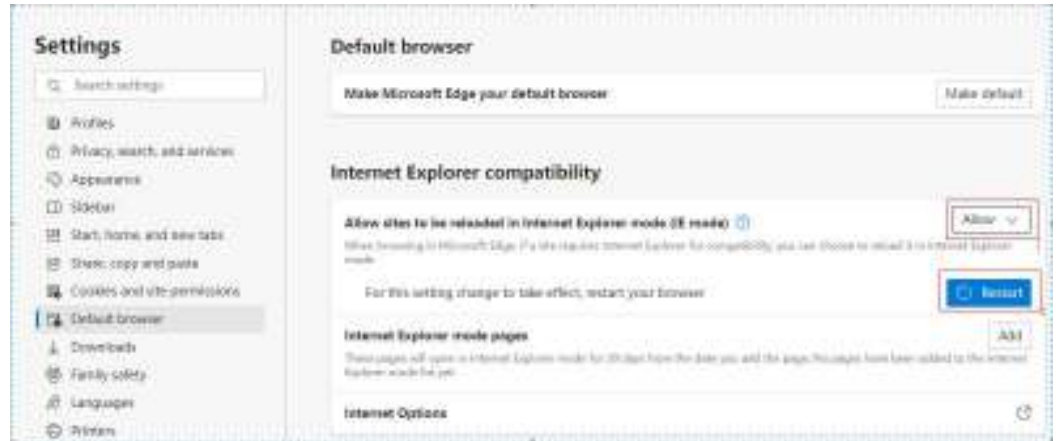
- **Method 2: Enable the Internet Explorer compatibility mode in Microsoft Edge.**

NOTE

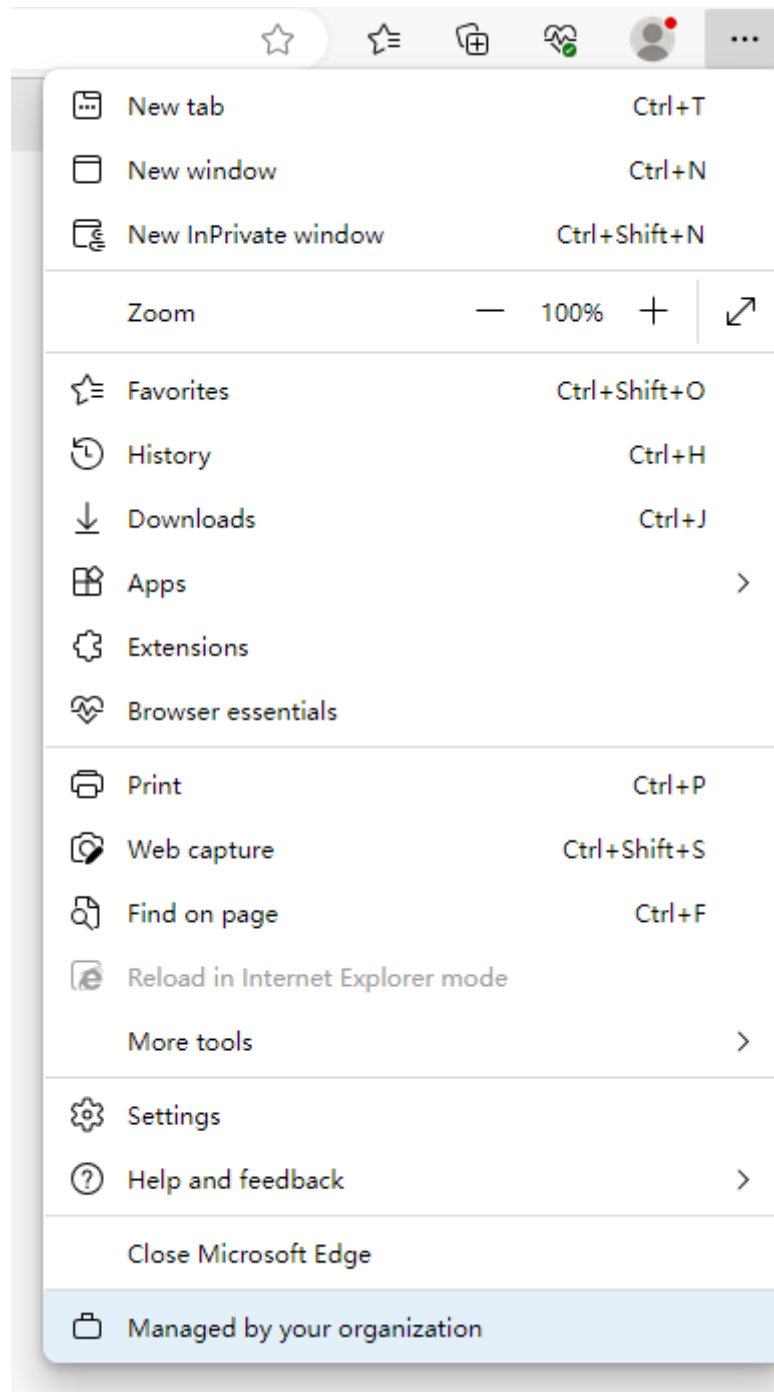
- If the page responds slowly, wait patiently.
- If **This page is open in Internet Explorer mode** is not displayed but a message indicating that you are using Internet Explorer mode is displayed in the upper part of the browser, the setting is successful.

- If you close the page and open the web page of any camera in Microsoft Edge again, you still need to repeat steps 2 and 3.

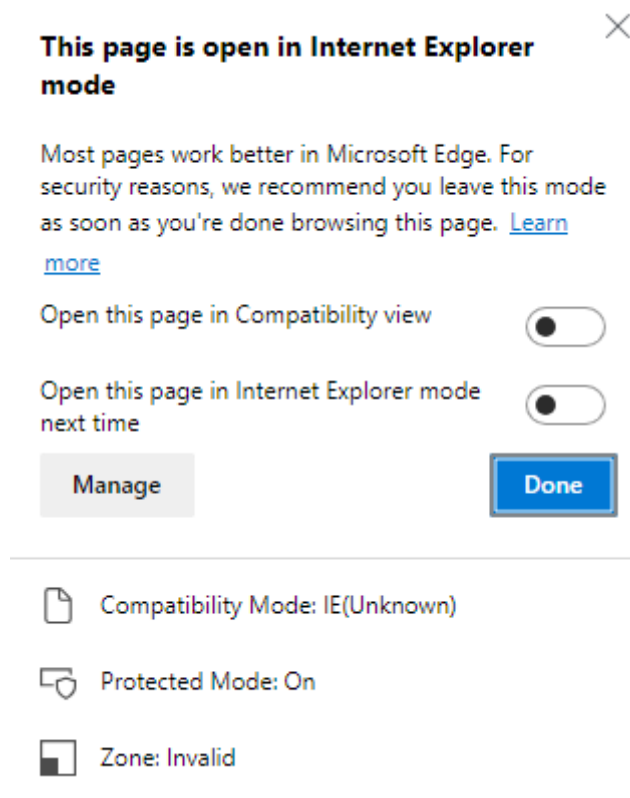
1. Click **...** in the upper right corner of Microsoft Edge, choose **Settings > Default browser**, and set **Allow sites to be reloaded in Internet Explorer mode (IE mode)** to **Allow**. Click **Restart** for the settings to take effect.



2. Open the camera web page again in Microsoft Edge, click **...** in the upper right corner, and select **Reload in Internet Explorer mode**.



3. When **This page is open in Internet Explorer mode** is displayed, click **Done**.



5.2.4 Device Management Faults

5.2.4.1 Failure to Add a Camera Even After Multiple Tries

Symptom

You attempt to add a camera multiple times through the startup wizard, but the operation still fails.

Possible Causes

The user name and password for logging in to the camera web system are different from those entered in NVR startup wizard.

If you enter incorrect passwords for five consecutive times, the user account is locked. Within the subsequent 5 minutes, the camera cannot be added.

Procedure

Wait for 5 minutes and add the camera again.

If the camera still fails to be added, the user name or password may be incorrect. You can log in to the camera web system and correct it.

Step 1 In the address box of the browser, enter **https://Camera IP address**, and press **Enter** to access the camera web system.

- If the password for logging in to the camera web system is forgotten, restore the camera to factory settings. For details, see the camera product documentation.

- If the password for logging in to the camera web system is not forgotten, perform the following steps:

Step 2 Choose **Settings > Network > Platform Connection > Password Management**.

Step 3 In the **SDK Password** area, set the **Current password**, **New password**, and **Confirm password** parameters.

Step 4 Click **Save**.

----End

5.2.4.2 Cameras Go Online or Offline Repeatedly

Symptom

Cameras that are added using the startup wizard or channel management function repeatedly go online or offline.

Possible Causes

Multiple connected cameras have the same IP address.

Procedure

Step 1 Log in to the LDU as the **admin** user.

Step 2 Choose **Configuration > Channel > Channel Settings > Digital Channels**.

Step 3 Change the IP address of involved cameras to a unique value.

----End

5.2.5 Hardware Faults

5.2.5.1 Failure to Start the NVR

Symptom

After the NVR is powered on, no information is displayed on the screen, and the power indicator and hard disk indicator on the front panel of the NVR are off.

Possible Causes

The NVR is faulty.

Procedure

Replace the device and send the faulty part to the vendor for repair.

5.2.5.2 System Hangs at System Initialization After Startup

Symptom

After an HWT-NVR800 is powered on, the system hangs at the initialization phase for more than 5 minutes. The fault persists after the HWT-NVR800 is restarted for multiple times.

Possible Causes

The system program of the HWT-NVR800 is damaged.

Solution

Step 1 Power off the HWT-NVR800.

Step 2 Insert a USB flash drive into the computer and create the first-level **uboot_upgrade** directory on the USB flash drive.

NOTE

The file on the USB flash drive must be of the FAT32 type. Otherwise, the upgrade will fail.

Step 3 Copy the HWT-NVR800 software upgrade package to the **uboot_upgrade** directory.

The HWT-NVR800 software upgrade package can be obtained from the local distributor.

NOTE

Suffix **_W** to the upgrade package name, for example, **uboot_HWT-NVR800-A01XX_XX_W.sw**.

Step 4 Insert the USB flash drive into the HWT-NVR800 and power on the HWT-NVR800.

After the HWT-NVR800 is powered on, it automatically detects the software information in **uboot_upgrade** and upgrades the software. The upgrade takes about 5 to 10 minutes.

After the upgrade is complete, the startup screen is displayed. Check whether the fault is rectified.

- If so, no further action is required.
- If not, replace the HWT-NVR800 and send the faulty part to the vendor for repair.

----End

5.2.5.3 Power Indicator Is Off and No Startup Screen Is Displayed After the Device Is Powered On

Symptom

After the device is powered on, the power indicator is off and no startup screen is displayed. The fault persists after the device is restarted for multiple times.

Possible Causes

- The power adapter has no power supply or is damaged.
- The NVR is damaged.

Procedure

Check whether the indicator of the power adapter is on.

- If the indicator is off, check whether the socket supplies power properly.
 - If the power supply is normal, the power adapter may be damaged. In this case, replace the power adapter.
 - If the power supply is abnormal, replace the socket.
- If the indicator is on, check whether the power adapter is properly connected to the NVR.
 - If the connection is normal, the NVR may be damaged. In this case, replace the device and send the faulty part to the vendor for repair.
 - If the connection is abnormal, reconnect the device.

5.2.5.4 HWT-NVR800 Restarts Repeatedly After Being Powered On or During Service Running

Symptom

- An HWT-NVR800 restarts repeatedly after being powered on.
- The HWT-NVR800 restarts repeatedly during service running.

Possible Causes

- The HWT-NVR800 has at least one faulty disk.
- The system program of the HWT-NVR800 is damaged.

Solution

Step 1 Power off the HWT-NVR800.

Step 2 Remove all disks from the HWT-NVR800. Check whether the fault is rectified.

- If so, at least one hard disk is faulty. Check the hard disks one by one.
- If not, go to the next step.

Step 3 Insert a USB flash drive into the computer and create the first-level **uboot_upgrade** directory on the USB flash drive.

NOTE

The file on the USB flash drive must be of the FAT32 type. Otherwise, the upgrade will fail.

Step 4 Copy the HWT-NVR800 software upgrade package to the **uboot_upgrade** directory.

The HWT-NVR800 software upgrade package can be obtained from the local distributor.

NOTE

Suffix **_W** to the upgrade package name, for example, **uboot_HWT-NVR800-A01XX_XX_W.sw**.

Step 5 Insert the USB flash drive into the HWT-NVR800 and power on the HWT-NVR800.

After the HWT-NVR800 is powered on, it automatically detects the software information in **uboot_upgrade** and upgrades the software. The upgrade takes about 5 to 10 minutes.

After the upgrade is complete, the startup screen is displayed. Check whether the fault is rectified.

- If so, no further action is required.
- If not, replace the HWT-NVR800 and send the faulty part to the vendor for repair.

----End

5.2.5.5 HWT-NVR800 Crashes After Being Powered On or During Service Running

Symptom

- An HWT-NVR800 crashes after being powered on.
- The HWT-NVR800 crashes during service running.

Possible Causes

The system program of the HWT-NVR800 is damaged.

Solution

Step 1 Power off the HWT-NVR800.

Step 2 Insert a USB flash drive into the computer and create the first-level **uboot_upgrade** directory on the USB flash drive.

NOTE

The file on the USB flash drive must be of the FAT32 type. Otherwise, the upgrade will fail.

Step 3 Copy the HWT-NVR800 software upgrade package to the **uboot_upgrade** directory.

The HWT-NVR800 software upgrade package can be obtained from the local distributor.

NOTE

Suffix **_W** to the upgrade package name, for example, **uboot_HWT-NVR800-A01XX_XX_W.sw**.

Step 4 Insert the USB flash drive into the HWT-NVR800 and power on the HWT-NVR800.

After the HWT-NVR800 is powered on, it automatically detects the software information in **uboot_upgrade** and upgrades the software. The upgrade takes about 5 to 10 minutes.

After the upgrade is complete, the startup screen is displayed. Check whether the fault is rectified.

- If so, no further action is required.
- If not, replace the HWT-NVR800 and send the faulty part to the vendor for repair.

----End

5.2.5.6 Other Faults

Symptom	Possible Causes	Solution
The power button is unavailable.	The power button is damaged.	Replace the device and send the faulty part to the vendor for repair.
The reset button is unavailable.	The reset button is damaged.	
The USB flash drive or mouse cannot be identified.	• The USB port is damaged. • The USB flash drive or mouse is damaged.	Insert a normal device into the port. For example, insert a normal mouse into the USB port. • If the fault persists, the NVR port is damaged. In this case, replace the device and send the faulty part to the vendor for repair. • If the fault is rectified, the port device (such as the mouse) is damaged. Replace the port device.
The indicator of a network port is off, and online devices cannot be identified after network cables are connected.	• The network port is damaged. • The network cable is damaged.	
The display port has no output, and no image is displayed.	• The VGA or HDMI port is damaged. • The VGA or HDMI cable is damaged.	
No hard disk is detected.	• The hard disk port is damaged. • The data or power cable of the hard disk is damaged. • The hard disk is damaged.	
The audio port has no audio.	• The audio port is damaged. • The earphone or microphone is damaged.	

5.2.6 Upgrade-related Faults

5.2.6.1 Appearance Frequency Analysis, Customer Flow Analysis, and Person Frequency Search Are Unavailable After the Upgrade

Symptom

Appearance frequency analysis, customer flow analysis, and person frequency search are unavailable after the upgrade.

Possible Causes

These functions involve privacy and are removed based on privacy protection laws and regulations.

Solution

Do not upgrade the software.

5.2.6.2 Failure to Display the Entire Intelligent Service Menu of the HWT-NVR800 After Cameras Mounted to the HWT-NVR800 Are Upgraded on the iClient SDC

Symptom

After cameras connected to the HWT-NVR800 are upgraded on the iClient SDC, the intelligent service menu of the HWT-NVR800 is not completely displayed.

Possible Causes

The HWT-NVR800 fails to obtain the intelligent capability of the camera.

Solution

You need to manually restart the camera on the iClient SDC or HWT-NVR800's portal.

5.2.7 Other Faults

5.2.7.1 Does the HWT-NVR800 Support Hot Swapping?

No.

Hot swapping may cause data loss in the target library. Exercise caution when performing this operation.

5.2.7.2 Failure to Start the NVR from a USB Flash Drive

Symptom

The HWT-NVR800 cannot be started from a USB flash drive or after the HWT-NVR800 is upgraded in uboot mode.

Possible Causes

The HWT-NVR800 cannot identify some USB flash drives.

Solution

- Starting from a USB flash drive
Remove the USB flash drive from the device and restart the device.
- Upgrading the device in uboot mode
Replace the USB flash drive.

5.2.7.3 No Hard Disk Is Available When the HWT-NVR800 Is Upgraded Through the Cloud Service

Symptom

When the HWT-NVR800 is upgraded through the cloud service, a message is displayed, indicating that there is no hard disk.

Possible Causes

No hard disk is installed or hard disks are not formatted.

Solution

Step 1 Verify that the hard disks are installed.

Step 2 Check whether they have been formatted.

1. Right-click the screen.
2. Choose **Configuration > Storage > Disk**.
3. Check whether the hard disks are in **Normal** state.
 - If a hard disk is in **Unformatted** state, select it and click **Format Hard Disk**.
 - If a hard disk is from another device, you are advised to format it first.

----End

5.2.7.4 Collecting Fault Logs

Scenario

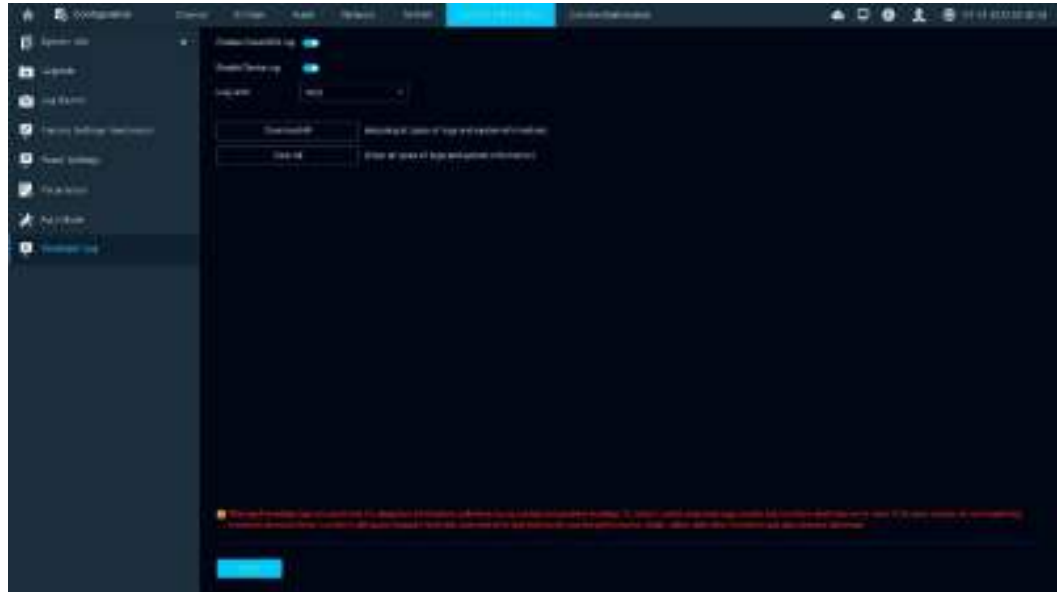
You need to collect logs about a configuration or an operation failure on the HWT-NVR800.

Procedure on the LDU

Step 1 Enable the log function.

4. Right-click the screen.
5. Choose **Configuration > System Maintenance > Developer Log**.
6. Select **Enable HWSDK log**, **Enable Cloud SDK log**, or **Enable Device log** to enable the log function, as shown in Figure 5-24.

Figure 5-24 Enabling the log function



- **Enable Cloud SDK log:** Select this option if the fault is about cloud service access.
- **Enable Device log:** Select this option if the fault is about the HWT-NVR800.

Step 2 Reproduce the fault.

Perform the configuration or operation again to trigger the fault.

Step 3 Collect log information.

1. Insert a USB flash drive into the HWT-NVR800.
2. Right-click the screen.
3. Choose **Configuration > System Maintenance > Developer Log**.
4. Click **One-Click Collection** to collect logs to the USB flash drive.

Step 4 Deselect the enabled log collection item to disable the log function.

NOTE

After the log function is enabled, the system needs to frequently read data from and write data into the hard disk, which deteriorates system performance and may cause function exceptions.

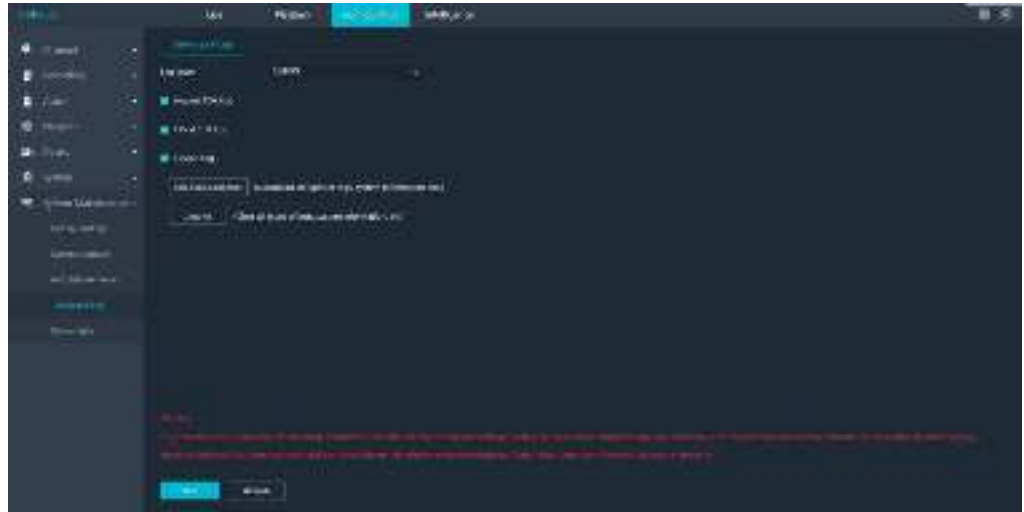
----End

Procedure on the Web Client

Step 1 Enable the log function.

1. Log in to the NVR800 web client. For details, see section [Logging In to the Web Client](#).
2. Choose **Configuration > System Maintenance > Developer Log**.
1. Select required log collection options, as shown in Figure 5-25.

Figure 5-25 Enabling log function



- **Enable Cloud SDK log:** Select this option if the fault is about cloud service access.
- **Enable Device log:** Select this option if the fault is about the HWT-NVR800.

Step 2 Reproduce the fault.

Perform the configuration or operation again to trigger the fault.

Step 3 Collect log information.

1. Log in to the NVR800 web client. For details, see section [Logging In to the Web Client](#).
2. Choose **Configuration > System Maintenance > Developer Log**.
3. Click **One-Click Collection** to download logs to the required directory on the computer.

Step 4 Deselect the enabled log collection item to disable the log function.

NOTE

Before collecting logs on the web client, you need to set **Web Session Timeout (Minutes)** to at least 30 under **Configuration > System > General Configuration > Basic Settings**.

----End

5.2.7.5 Failed to Play Back a Recording by Bookmark

Symptom

When a user plays back a recording by bookmark, a message is displayed, indicating that the event has been overwritten.

Possible Causes

The hard disk is full, and the recording where the bookmark is located is overwritten.

Solution

Step 1 Right-click the screen.

Step 2 Choose **Configuration > Storage > Disk**.

Step 3 Select the hard disk in use and disable the hard disk rewriting function.

 NOTE

In this mode, you need to periodically check the hard disk status to ensure that the hard disk has sufficient space for storing recordings.

----End

5.2.7.6 What Can I Do If the IP Address of a Connected Camera Changes from One Allocated by the DHCP Server to a Static One?

Symptom

The IP address of a camera connected to the HWT-NVR800 changes from one allocated by the DHCP server to a static one.

Possible Causes

If a camera using a DHCP IP address (initial IP status) is connected to the HWT-NVR800 on the network where another device has already occupied this DHCP IP address, the camera turns to use a static IP address and goes offline in the HWT-NVR800.

Solution

You can change the camera IP address in the HWT-NVR800 or camera web system.

5.2.7.7 What Can I Do When No Configuration Items Are Available for Enabling Target Intelligence for the Secondary Camera in 1 + N Mode?

Symptom

No configuration items are available for enabling target intelligence for the secondary camera in 1 + N mode.

Possible Causes

The *Intelligent Vision Target Recognition Service Agreement* is not agreed to for the primary camera in 1 + N mode.

Solution

Agree to the *Intelligent Vision Target Recognition Service Agreement* for the primary camera in 1 +N mode.

5.2.7.8 What Can I Do When the Time Offset Occurs Between the Camera Time and NVR Time?

Symptom

The offset of 1 or 2 hours occurs between the camera time and NVR time.

Possible Causes

The DST is enabled for both the camera and NVR.

Solution

Disable DST for the camera.

5.2.7.9 Evaluation of Minimum Restricted Network Environment Settings

According to the test result in the lab environment, you are advised to set the minimum packet loss rate to 20%, the latency to 200 ms, and the network jitter to 1%.

5.2.7.10 Failed to Find Third-Party Cameras Through the LAN Port of the HWT-NVR800-B04D

Symptom

You fail to find third-party cameras whose IP addresses are in different network segments on the same VLAN through the LAN port of the HWT-NVR800-B04D.

Possible Causes

The LAN port of the HWT-NVR800-B04D does not support search for third-party cameras whose IP addresses are in different network segments.

Solution

Search for third-party cameras through the WAN port of the HWT-NVR800. Activate the cameras that are found, and change their IP addresses to those in the network segment of the LAN port. Then these third-party cameras can be found through the LAN port of the HWT-NVR800.

5.2.7.11 Why Are the Intelligent Service Parameters and Settings Displayed in the Camera Web System Different from Those Displayed on the HWT-NVR800's Portal?

Symptom

Some parameters are not displayed on the intelligent service page of the HWT-NVR800's portal, or the parameter settings displayed on the intelligent service page of the HWT-NVR800's portal are inconsistent with those in the camera web system.

Possible Causes

1. The HWT-NVR800 fails to obtain the intelligent capability of the camera.
2. Camera parameters are set on portals other than the HWT-NVR800, for example, the iClient SDC or the camera web system.

Solution

You need to manually restart the camera on the HWT-NVR800's portal.

5.2.7.12 Failure to Configure Alert Plans for Cameras on the HWT-NVR800 After Perimeter Enhancement Is Enabled

Symptom

Failure to Configure Alert Plans for Cameras on the HWT-NVR800 After Perimeter Enhancement Is Enabled.

Possible Causes

Cameras of versions earlier than 10.0.0.SPC200 are used.

Solution

- Upgrade cameras to 10.0.0.SPC200 and later versions.
- Choose **Intelligence > Intelligent Settings > Target Intelligence > Behavior Analysis > Global Settings** and disable perimeter enhancement.

5.2.7.13 V6 How Can I Roll Back the Target Recognition Algorithm package from the V6 Version to the V3 Version?

Symptom

A message is displayed, indicating that target recognition cannot be enabled because the features from the list do not match those from the camera when you attempt to enable target recognition.

Possible Causes

The target recognition of the V6 version has been enabled for the HWT-NVR800.

Solution

1. Refer to [List Management](#) and back up the database.
2. Refer to [Exporting System Parameters](#).
3. Choose **Intelligence > Intelligence Settings**, select the camera of the V6 version, and disable target recognition in the **Target Recognition** area.
4. Choose **Configuration > System Maintenance > Factory Settings Restoration**, select **All**, and click **Apply** to restore the HWT-NVR800 to the factory defaults.
5. Restart the HWT-NVR800 and activate it.
6. Choose **Configuration > System > Intelligent Service Authorization** and toggle on Authorize Intelligent Target Analysis.
7. Enable target recognition of the V3 version rather than that of the V6 version.
8. Choose **Intelligence > List Management** and click Update target features. In this case, no target alarms are generated during target feature update.
9. After target features are updated, target recognition of the V3 version is automatically enabled.

5.2.7.14 NVR Recording Playback Is Discontinuous (Blank Screen or Image Overlapping) on the HWT-NVR800 When the DST Starts or Ends

Symptom

On the Common Playback page of the HWT-NVR800, 1–2 hours of recording overlapping or blank screen occurs during recording playback.

Possible Causes

- If the DST function is enabled for the HWT-NVR800, the HWT-NVR800 system time changes when the DST starts, causing 1–2 hours of blank screen.
- If the DST function is enabled for the HWT-NVR800, the HWT-NVR800 system time changes when the DST ends, causing 1–2 hours of recording overlapping.

Solution

- When the DST starts, the HWT-NVR800 system time offsets forward. However, recordings in the normal time period are not lost.
- If recordings recorded by the HWT-NVR800 overlap when the DST ends, you can choose Search > Event Search to find overlapped recordings and play back or back them up.

5.2.7.15 A Maximum of 100 Records Can Be Imported to the List on the Web Client at a Time (Starting only from the Current Page in Multi-Page Display Mode)

Symptom

Record import can start only from the current page in multi-page display mode.

Possible Causes

The web client has such limitations.

Solution

You can import a few records through the web client and multiple records through LDU.

5.2.7.16 Alarm-Triggered Snapshots Are at 2 Megapixels After the HWT-NVR800 Is Connected to 5-Megapixel Cameras

Symptom

Alarm-triggered snapshots are at 2 megapixels.

Possible Causes

Due to system resource limitations of the HWT-NVR800, the maximum resolution of snapshots can only be 2 megapixels.

Solution

Due to system resource limitations of the HWT-NVR800, the maximum resolution of snapshots can only be 2 megapixels.

5.2.7.17 No Person Is Captured When an Intrusion Detection Alarm Is Triggered

Symptom

After an intrusion detection alarm is triggered, the snapshot does not contain the person who triggers the alarm.

Possible Causes

The enhanced perimeter detection function is not enabled for the camera. In this case, alarm-triggered snapshot taking is delayed.

Solution

Choose **Behavior Analysis > Global Behavior Analysis Configuration > Enhanced Perimeter Detection**. Then the alarm image is directly pushed by the camera.

5.2.7.18 An Exception Occurs on the HWT-NVR800 When a Large Number of Target Images Are Imported to the HWT-NVR800 at a Time Through the USB Flash Drive

Symptom

An exception occurs on the HWT-NVR800 or the HWT-NVR800 does not respond when a large number of target images are imported to the HWT-NVR800 at a time through the USB flash drive.

Possible Causes

A large amount of data is imported at a time, causing data blocking.

Solution

You are advised to import a maximum of 2000 target images at a time.

5.3 Appendix

5.3.1 GB/T 28181 Connection Code Formats

This section describes the formats and meanings of connection codes in external domain interconnection. Both the local domain code and external domain code are connection codes.

Connection Code Formats

The code must consist of 20 digits. Figure 5-26 describes the coding rules.

Figure 5-26 Coding rules

Segment	Code Bit	Meaning	Value	Description
Center code	1 and 2	Provincial code	Determined by the administrative code of the region where the surveillance center resides and compliant with the GB/T 2260–2007 requirements.	
	3 and 4	Municipal code		
	5 and 6	District-level code		
	7 and 8	Grassroots access unit code		
Industry code	9 and 10	Industry code		
Type code	11, 12, and 13	111–130: main device	111	DVR code
			112	Video server code
			113	Encoder code
			114	Decoder code
			115	Video switch matrix code
			116	Audio switch matrix code
			117	Alarm controller code
			118	NVR code
			119–130	Extended main device types
		131–199: peripheral device	131	Camera code
			132	IPC code
			133	Display code
			134	Alarm input device code (for example, infrared alarm device, smoke sensor, and access control device)
			135	Alarm output device code (for example, alarm lamp and alarm bell)
			136	Audio input device code
			137	Audio output device code
			138	Mobile transmission device code
			139	Other peripheral device code
			140–199	Extended peripheral device types
		200–299: platform device	200	Central signaling control server code
			201	Web application server code
			202	Media distribution server code
			203	Proxy server code
			204	Security server code
			205	Alarm server code
			206	Database server code
			207	GIS server code
			208	Management server code
			209	Access gateway code
			210	Media storage server code
			211	Signaling security route gateway code
			212–299	Extended platform device types
		300–399: center users	300	Center user
			301–343	Industry role user
			344–399	Extended center user types
		400–443: terminal users	400	Terminal user
			401–443	Industry role user
			444–499	Extended terminal user types
		500–599: extended types	500–999	Extended types
Network identifier	14	Network identifier code	0, 1, 2, 3, and 4 are surveillance alarm networks. 5 is the public security network. 6 is the government.	
SN	15–20	Device and user SN		

Figure 5-27 describes the industry codes.

Figure 5-27 Industry codes

Access Type Code	Name	Construction Body	Remarks
0	Social security road access	Government agency	Include the urban roads, business streets, public areas, and key regions.
1	Social security community access		Include communities, buildings, and Internet codes.
2	Internal social security access		Include public security buildings and retention rooms.
3	Other social security access		-
4	Traffic road access		Include main trunk roads, national roads, and highways.
5	Traffic checkpoint access		Include intersection roads, i.e. Police, checkpoints, and toll stations.
6	Internal traffic access		Include traffic management buildings.
7	Other traffic access		-
8	Traffic management access		-
9	Health and environment protection access		-
10	Commodity inspection and customs access		-
11	Educational department access		-
12-39	-		Reserved 1
40	Agriculture, forestry, animal husbandry and fishery industry access	Enterprises and public institutions	-
41	Mining enterprise access		-
42	Manufacturing enterprise access		-
43	Metalurgy enterprise access		-
44	Power enterprise access		-
45	Gas enterprise access		-
46	Construction enterprise access		-
47	Logistics enterprise access		-
48	Postal enterprise access		-
49	Information enterprise access		-
50	Accommodation and catering industry access		-
51	Financial enterprise access		-
52	Real estate industry access		-
53	Commercial service industry access		-
54	Water conservancy enterprise access		-
55	Entertainment enterprise access		-
56-79	-		Reserved 2
80-89	-	Self built by residents	Reserved 3
90-99	-	Other bodies	Reserved 4

Code Examples

Table 5-236 and Table 5-237 respectively list the local domain code and camera connection code examples.

Table 5-236 Local domain code examples

Level -1 Dom ain XX Code		Level -2 Dom ain XX Code		Level -3 Dom ain XX Code		Level -4 Dom ain XX Code		Com muni ty Secur ity Road Acces s		Device Type: Platform			P r i v a t e N e t w o r k	Platform ID						
1	7	5	0	0	0	0	0	0	0	2	0	0		0	0	0	0	0	0	0

Table 5-237 Camera connection code examples

Level -1 Dom ain XX Code		Level -2 Dom ain XX Code		Level -3 Dom ain XX Code		Level -4 Dom ain XX Code		Com muni ty Secur ity Road Acces s		Device Type: Platform			P ri v at e N et w o r k	Camera Code					
1	7	5	0	0	0	0	0	0	0	2	0	1	0	0	1	2	0	0	1

5.3.2 Drawing a Detection Area for Behavior Analysis

Detection Area

- The detection area should not be too close to the edge of the video image. Otherwise, the detection may not be triggered when objects pass the detection area.
- The detection area should not be too narrow or too small. Otherwise, the detection may not be triggered when objects pass or stay in the detection area.



Detection Line

- The detection line should not be too close to the edge of the video image. Otherwise, the detection may not be triggered when objects cross the detection line.
- The detection line should not be too short. Otherwise, the detection may not be triggered when objects cross the detection line.



5.3.3 Drawing a Detection Area for Situation Analysis

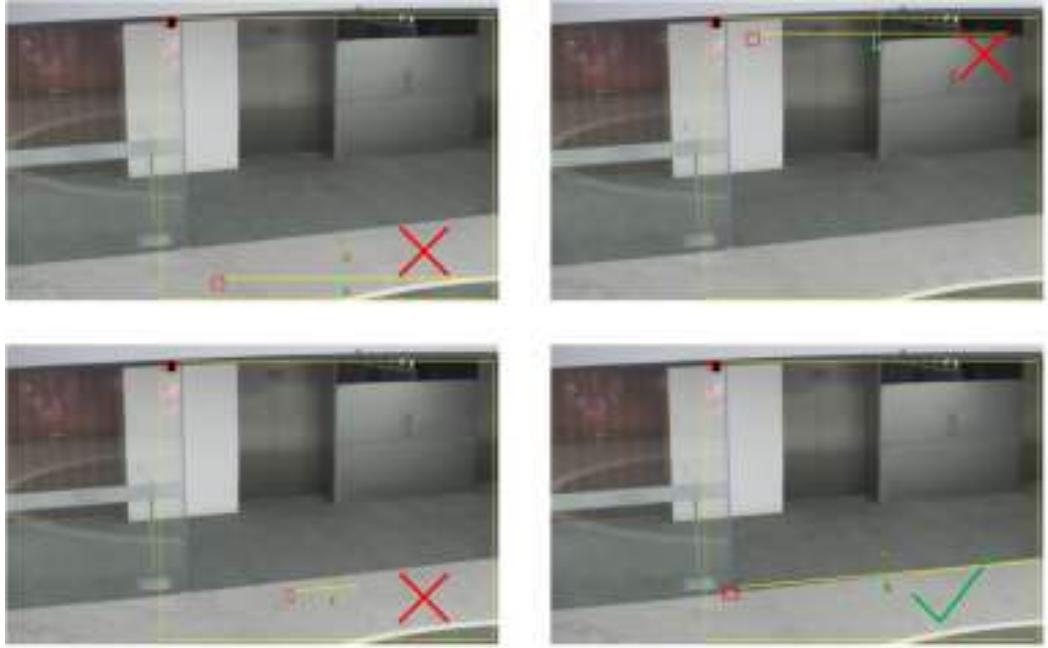
Detection Area

- The detection area should not be too small. Otherwise, the detection may not be triggered when objects pass or stay in the detection area.
- The detection area should not be too large. Otherwise, the detection result may be inaccurate.
- Do not draw a detection area on the place where the object cannot reach.



Detection Line

- The detection line should not be too close to the edge of the video image. Otherwise, the detection may not be triggered when objects cross the detection line.
- Do not draw a detection line on the place where the object cannot reach.
- The detection line should not be too short. Otherwise, the detection may not be triggered when objects cross the detection line.



5.3.4 Drawing a Detection Area for Object Capture

Detection Area

- Do not draw a detection area on the place where objects will not appear.
- The detection area should not be too narrow or too small. Otherwise, objects may fail to be captured.



Exclude Area

Some areas in the detection area, such as the front desk in the lobby, do not need to be included in the object capture area. In this case, you can draw an exclude area in the detection area.



6 Maintenance Guide

6.1 Security Maintenance

6.1.1 Overview

6.1.1.1 Security Maintenance Objectives

Security maintenance is essential to the secure and proper running of application systems.

Nowadays, application systems are facing increasingly serious security threats. Problems in application systems may interrupt or damage services or even break down systems. Therefore, customers are requiring a comprehensive and layered security protection system that can help them detect potential security problems in application systems and rectify these problems in advance.

In addition, as new security threats emerge continuously, technical methods are insufficient to ensure application security. Therefore, customers must develop a security management system based on problems found in routine security maintenance and suggestions to resolve these problems.

6.1.1.2 Layered Security Maintenance

Maintenance personnel need to conduct layered security maintenance for different security maintenance objects to achieve different security maintenance purposes.

- Application layer

Maintenance objects at the application layer of the HWT-NVR800 include platform core applications, platform capability components, service modules and subsystems, and services provided by the modules and subsystems. At the application layer, security maintenance is conducted using the clients or maintenance tools dedicated to the modules and subsystems.

Security maintenance at this layer ensures that the HWT-NVR800 runs and provides services for external systems properly.

- Network layer

Maintenance objects at the network layer include switches, routers, and firewalls.

Security maintenance at the network layer is implemented using maintenance terminals or tools dedicated to the maintenance objects.

Security maintenance at this layer ensures that network devices including switches, routers, and firewalls run properly and that network security policies for the network layer are executed.

- Management layer

Maintenance and management objects at the management layer include platform core applications, platform capability components, service modules, and network devices at each of the preceding layers.

Security maintenance at this layer enhances manual management and maintenance to prevent potential risks.

6.1.2 Application Layer Security

6.1.2.1 Account Security

6.1.2.1.1 User List

Table 6-1 User list

User Name	Default Password	Function	Remarks
admin	Set upon initial using	Default administrator account provided upon delivery, which can be used to log in to the LDU and web client. This account has all permissions at the application layer.	• The password is set upon initial login. • This account cannot be deleted.
apiadmin	Set by the administrator	This account is used to connect the iClient S100 to the HWT-NVR800.	The password must be changed upon initial login.

User Name	Default Password	Function	Remarks
• user1 • user2 • user3 • user4 • user5 • user6	Set by the administrator	The accounts can be used to log in to the LDU and web client. Permissions of the accounts are configured by the administrator.	The password must be changed upon initial login.

6.1.2.1.2 Account Management

HWT-NVR800 accounts are isolated from service permissions. The **admin** user can configure different permissions for common accounts.

Account management operations on the LDU and web client are similar. The following describes account management operations on the LDU as an example.

Enabling a User

The **admin** user is enabled by default. Common users such as **user1** and **user2** are disabled by default. The following describes how to enable the common user **user1** as an example:

Step 1 Log in to the LDU as the **admin** user.

Step 2 Choose **Configuration > System > User Management**.

Step 3 Click  under **Edit** corresponding to the **user1** user.

Step 4 Set **User** to **Enable** and set the user password.

The password must meet the following requirements:

- Consists of 8 to 16 characters.
- Contains at least two types of the following characters: uppercase letters, lowercase letters, digits, special characters, and spaces.
- Differs from the user name spelled forward and backward.

Step 5 Click **Save**.

In this step, you need to enter the password of the **admin** user.

Step 6 Click  under **Permission** corresponding to the **user1** user.

Step 7 Configure permissions of the **user1** user.

You need to enter the password of the **admin** user before configuring the permissions.

Step 8 Change the password as prompted upon initial login to the LDU as the **user1** user.

----End

Disabling a User

- Step 1** Log in to the LDU as the **admin** user.
- Step 2** Choose **Configuration > System > User Management**.
- Step 3** Click  under **Edit** corresponding to the **user1** user.
- Step 4** Set **User** to **Disable**.
- Step 5** Click **Save**.

In this step, you need to enter the password of the **admin** user.

----End

Changing a User Password

- Step 1** Log in to the LDU.
- You can log in to the LDU as the **admin** user or a common user such as **user1**.
- Step 2** Choose **Configuration > System > User Management**.
- Step 3** Change the password of a user.
- For the **admin** user:
Click  under **Edit**. Change the password of the **admin** user or that of a common user.
 - For a common user such as **user1**:
Change the password as prompted.

----End

6.1.2.2 Access Control

6.1.2.2.1 Login Security

Login security policies are configured to prevent unauthorized users from logging in to the system.

LDU Security Policies

Table 6-2 LDU security policies

Security Policy	Description	Default Setting	Operations
User identity authentication	A user must enter the correct account and password. The user can log in to the system only after the account and password pass authentication.	Enable	N/A
Account locking policy	If a user fails to log in for five times consecutively, the system automatically locks the account for 3 minutes.	Enable	N/A
Changing the password at the first login	The system prompts you to change the password at the first login. If you do not change the password, you cannot log in to the system with the initial password again.	Enable	N/A

Web Client Security Policies

Table 6-3 Web client security policies

Security Policy	Description	Default Setting	Operations
User identity authentication	A user must enter the correct account and password. The user can log in to the system only after the account and password pass authentication.	Enable	N/A
Account locking policy	If a user fails to log in for five times consecutively, the system automatically locks the account for 3 minutes.	Enable	N/A

Security Policy	Description	Default Setting	Operations
Changing the password at the first login	The system prompts you to change the password at the first login. If you do not change the password, you cannot log in to the system with the initial password again.	Enable	N/A

6.1.2.2.2 Configuring the Allowlist and Blocklist for Accessing the Web Client

The allowlist and blocklist for accessing the web client can prevent unauthorized access and operations on HWT-NVR800 services from unknown sources and prevent common web attacks such as injection attacks, CSRF, and XSS.

Context

The HWT-NVR800 provides both the allowlist and blocklist. You are advised to use the allowlist preferentially.

- If the allowlist is used, only IP addresses in the allowlist can access the web client.
- If the blocklist is used, IP addresses in the blocklist cannot access the web client.
- The allowlist and blocklist cannot be used at the same time.

The allowlist and blocklist configuration methods are similar. The following describes how to configure an allowlist.

Procedure

Step 1 Log in to the LDU as the **admin** user.

Step 2 Choose **Configuration > Network > IP Filter**.

Step 3 Select **Enable**.

Step 4 Set **List Type** to **Allowlist**, and configure the allowed IP addresses.

- To add a single IP address to the allowlist, set **Start Address** and click **Add One by One**.
- To add IP addresses to the allowlist in batches, set **Start Address** and **End Address** and click **Add by Network Segment**.

----End

6.1.2.3 Log Check and Audit

6.1.2.3.1 Log Query

Procedure

- Step 1** Log in to the LDU as the **admin** user.
- Step 2** Choose **Configuration > System Maintenance > Log Search**.
- Step 3** Enter the period, select the log type, and click **Search**.
- Step 4** View log details.
- Step 5** Click **Export Detail Log** to collect logs.

----End

Log Processing Mechanism

- The log capacity is fixed and irrelevant to the hard disk space. A maximum of 262,144 logs can be recorded.
- After the log capacity is used up, 256 records are overwritten at a time if new logs are written.

For example, if 30 new logs are generated, they will overwrite the earliest 256 logs.

6.1.2.3.2 Developer Mode

Procedure

- Step 1** Log in to the LDU as the **admin** user.
- Step 2** Choose **Configuration > System Maintenance > Developer Log**.
- Step 3** Select the required log type and click **Apply**.
- Step 4** Click **Download All** to download all types of logs and system information.

NOTE

Logs mentioned above are used only for information collection during testing and problem locating.

Enable the log function only if necessary because it causes frequent hard disk read and write, deteriorates system performance, and even may cause exceptions of audio, video, and other functions.

----End

Log Processing Mechanism

- The exported device and cloud SDK log files are stored in the **/log/0/audit** directory. The maximum size of a log file is 256 KB, and the maximum number of log files is 100. If the number of log files exceeds 100, the earliest log files will be overwritten and the overwritten log files will not be backed up.

6.1.2.4 Security Supervision

6.1.2.4.1 User Management

In routine operation and maintenance, the system administrator can manage users on the LDU or web client to detect abnormal login information (based on logs) in a timely manner. For example, an account is frequently used for logging in to or out of the system, an account is used on multiple terminals with different IP addresses, or an account is frequently used for risky operations. After detecting a suspicious account, the system administrator can analyze and forcibly suspend the account if it may threaten the system security.

User management of the LDU or web client consists of user information query and forcible account suspension.

- User information query: The system administrator can query the information about all users in the system, including:
 - User name
 - Permission
- Forcible account suspension: When detecting an abnormal account, the **admin** user can forcibly suspend the account.

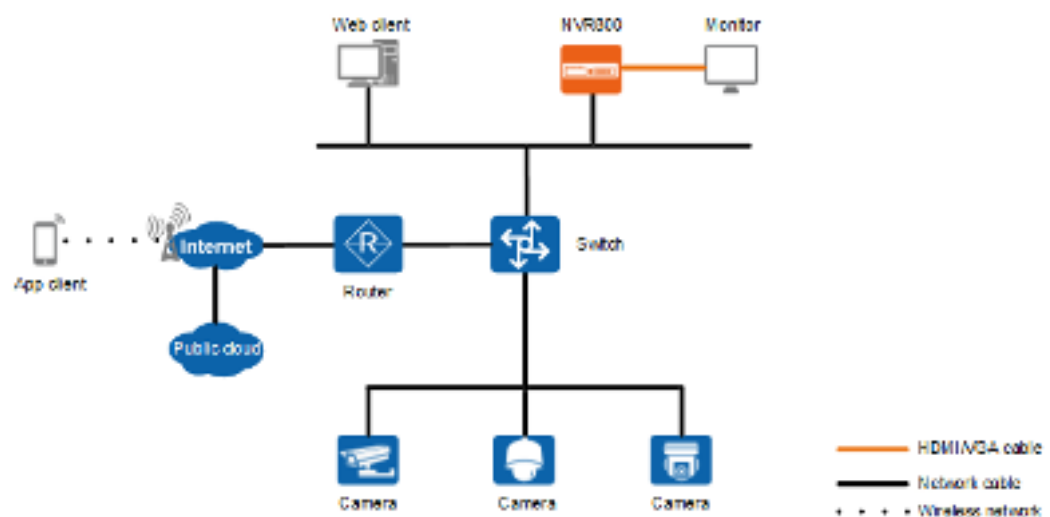
6.1.3 Network Layer Security

6.1.3.1 Security Network

The HWT-NVR800 is deployed on a trusted network and works with a router to filter IP addresses to prevent attacks from external networks.

Figure 6-1 shows the typical network of the HWT-NVR800.

Figure 6-1 Typical network



6.1.3.2 Network Device Security Maintenance

This section describes reference documents for network device security maintenance.

Security maintenance tasks for network devices include:

- Enable security management protocols for network devices.
- Enable the recommended security configuration on network devices.
- Change the default passwords of network devices and change passwords periodically.
- Install patches on network devices in a timely manner.

6.1.3.3 Remote Access Control

It is recommended that system maintenance personnel remotely maintain network security in the planned network maintenance area, use secure maintenance protocols, and perform security management on the accounts for remotely accessing servers and remotely maintained machines.

6.1.3.3.1 Account Maintenance

Transport Layer Security (TLS) authentication is used in user login. The policy for managing the accounts for remotely accessing servers is as follows:

- These accounts must be used and maintained by dedicated personnel.

6.1.3.3.2 Remote Connection Management

The remote connection management policies are as follows:

- Only the specified IP addresses can be used for remote connections.
- Specified IP addresses cannot be used for remote connections.

6.1.4 Management Layer Security

6.1.4.1 System Maintenance Security Principles

Minimum Accounts

- Manage accounts strictly according to account policies.
- Strictly control the adding, modification, and deletion of accounts and user groups.
- Delete all useless accounts and user groups from the system.

Minimum Permissions

- Assign minimum rights to system services, groups, and accounts.
- Strictly control permission assignment on the operating system.
- Prevent accounts from accessing resources beyond their rights.

Dedication Principles

- Do not allow a host to run multiple types of services.
- Isolate partitions where the system, applications, and data are located.

Audit Principles

- Audit operations on a host using logs and other feasible methods.
- Audit failure to access important system resources.

- Audit successful accesses to key system resources.
- Audit successful and failed modifications of access control policies.

6.1.4.2 Suggestions on Account Maintenance

Periodically check the accounts as the system administrator as follows:

- Check whether the current account is necessary and whether the temporary account has been deleted.
- Verify that proper permissions are assigned to accounts.
- Check and audit account login and operation logs.

6.1.4.3 Password Maintenance Suggestions

Only users who can be authenticated can log in to the application system. The account and password complexity and validity period need to be configured based on security requirements.

The password maintenance suggestions are as follows:

- A dedicated person is assigned to keep the password of the **admin** user.
- Passwords are encrypted for transmission and are not transferred by email.
- Passwords must be encrypted for storage.
- Passwords must be changed for system handover.
- You are advised to lock the screen or log out to prevent unauthorized operations when you leave the operation console.
- You are advised to change the password periodically, for example, every three months.
- You need to change the initial password upon initial login.

The password must meet the following requirements:

- Consists of 8 to 16 characters.
- Contains at least two types of the following characters: uppercase letters, lowercase letters, digits, special characters (`~!@#\$%^&*()-_+=\|[{ }];:","<.>/?), and spaces.
- Differs from the user name spelled forward and backward.
- Contains at least two different characters from the old password.
- Differs from the previous *N* (two by default) passwords.
- The values of **Activation Password** and **Default Password** are different.

6.1.4.4 Suggestions on Log Maintenance

You can audit logs to detect potential problems. The system records important operations in logs. You can protect log files by access control.

Periodically Checking Logs

Periodically check system logs, program logs, and security logs. If any exception log is found and the cause cannot be located or the fault cannot be rectified, contact HOLOWITS technical support.

Periodically Backing Up Logs

Periodically back up log files to external storage media such as disks, tapes, and CD-ROMs.

6.1.4.5 Suggestions on Security Evaluation

It is recommended that administrators periodically evaluate the HWT-NVR800 security, especially after system upgrade, network migration, and capacity expansion.

6.1.4.6 Suggestions on Backup

Back up data in the following scenarios:

- Before and after routine security maintenance and troubleshooting
- Before patch installation and upgrade

6.1.4.7 Suggestions on Network Connection Changes

Perform the following operations when a network connection is changed:

- Update the network diagram.
- Update the firewall configuration.
- Update the switching and routing configuration.

6.1.4.8 Suggestions on Defect Reports

After system maintenance personnel report defects, HOLOWITS technical support use either of the following methods to resolve the problems:

- If a security accident occurs, HOLOWITS technical support provides remote or onsite support to reduce the attack impact with the assistance of system maintenance personnel and generate an accident handling report.
- If no security accident occurs, HOLOWITS technical support records the problem information in the database and forwards it to the R&D team. After the R&D team works out a solution, technical support analyzes the solution impact on services and provides a feasible solution.

6.1.4.9 Suggestions on Secure Data Destruction

Before a device is repaired or discarded, user data stored on the device must be destructed securely.

Procedure

Step 1 Press and hold down the reset button on the rear panel for more than 10 seconds using a needle-type object.

- The buzzer beeps four times.
- The system starts to restore factory settings.

When the system is restored, all system configurations and disk data are deleted.

Step 2 Format hard disks.

Restoring factory settings does not wipe data on hard disks. You are advised to wipe data by referring to the guide provided by the hard disk vendor.

----End

6.1.4.10 Suggestions on Patch Management

Formulate application patch management regulations and designate specified personnel to semi-annually check the patches released by HOLOWITS.

NOTE

If patch installation is required, contact the equipment vendor. Do not perform upgrade by yourself.

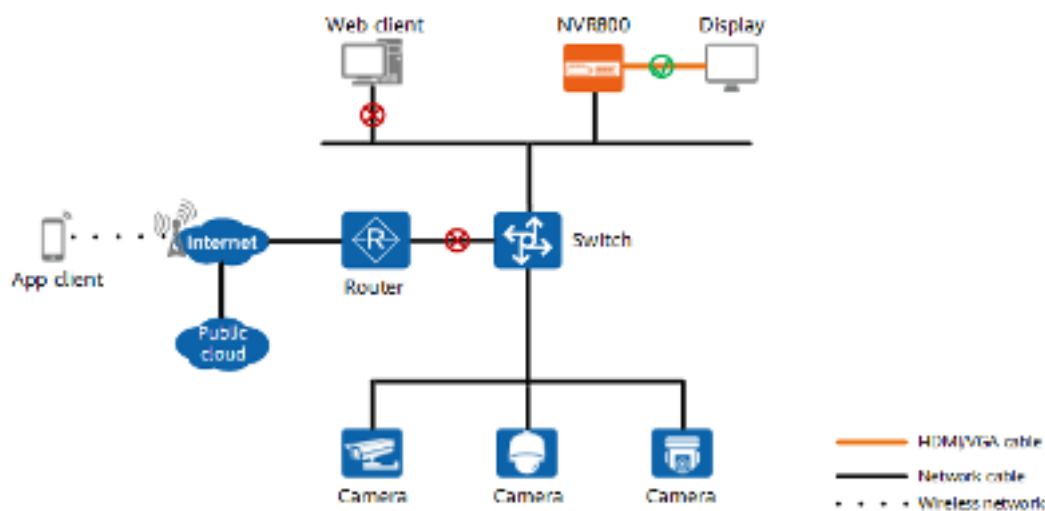
6.1.4.11 Security Emergency Response Mechanism

System maintenance personnel must formulate emergency response mechanisms to deal with emergencies, recover the system, and minimize losses.

6.1.4.12 Local Survival Mechanism

When you cannot access the NVR through the client due to abnormal network connections between the local computer and the NVR, you can access the NVR locally through the LDU and perform operations such as function configuration on the NVR to ensure proper running of services.

Figure 6-2 Local survival mechanism



6.1.5 Appendix

6.1.5.1 Weak Password List

Weak passwords may cause security risks. Do not use the weak passwords when changing passwords.

Table 6-4 lists the weak passwords.

Table 6-4 Weak password list

No.	Weak Password
1	0

No.	Weak Password
2	123
3	1234
4	12345
5	000000
6	111111
7	123123
8	123456
9	654321
10	1234567
11	00000000
12	12345678
13	1qaz
14	1qaz!QAZ
15	aaa
16	aab
17	aac
18	aas
19	abc
20	abc123
21	abcd
22	acs
23	ad2000
24	admin
25	admin123
26	admin123!
27	Admin123!
28	administrator
29	Administrator
30	anonymous
31	apa
32	apache

No.	Weak Password
33	appaudit
34	as
35	asdf
36	axis
37	axis2
38	backup
39	bakftp
40	bcnvt
41	betazone
42	betazoneuoa
43	betazoneportal
44	betazoneuoa
45	bfmdb1
46	bill
47	billdb
48	bit
49	bmeB400
50	bmeB500
51	bmp
52	bmpftp
53	buzhidaao
54	bugaosuni
55	cabtimer
56	cabserver
57	cbe
58	cbedb1
59	cbp
60	cbpftp
61	CC
62	cdr
63	cdrdb

No.	Weak Password
64	char
65	charlie
66	comein
67	coming
68	cool
69	coolcool14
70	clw
71	CMI
72	cmsdb
73	datacache1
74	datacache2
75	datacache3
76	datacache4
77	datacache5
78	db
79	db1
80	devptlftp
81	devptlportal
82	devptluoa
83	df
84	direct
85	dls
86	DLSC
87	dlsdb
88	dlsDb001
89	dlsDls01
90	dlsuoa
91	DNA
92	dnacore
93	dnauoa
94	dnadb

No.	Weak Password
95	do
96	done
97	dont
98	DRM
99	drm1
100	drmuoa
101	ea
102	eds
103	epg
104	enip
105	ftp
106	ftpuser
107	ftp1
108	ftp12
109	ftp123
110	goa
111	go
112	goa
113	goto
114	gmdb
115	guest
116	guest123
117	high
118	hight
119	HWbss123
120	HMS
121	hmspasswd
122	hmsftp
123	HOLOWITS
124	HOLOWITS123
125	HOLOWITSroot

No.	Weak Password
126	HOLOWITS
127	HOLOWITS!@#
128	hwadmin
129	hwapp
130	hwconn
131	hwroot
132	ib
133	IB
134	ibcm
135	ibdb
136	ibuoa
137	icheck
138	imapuser
139	imhts
140	imgroup
141	imsmsg
142	imsps
143	install
144	into
145	join
146	joining
147	jiubugaosuni
148	jump
149	king
150	king123
151	kernel
152	lca
153	lcap
154	LCAP
155	LcaP2010
156	lcap_oracle

No.	Weak Password
157	lcap_uoa
158	lcpp
159	lcstore
160	letmein
161	license
162	life
163	live
164	liverpool
165	manager
166	MC
167	med
168	medcdr
169	meditation
170	mdb
171	mdbconn
172	mdbread
173	mds
174	MDSP
175	mdspapa
176	mdmc
177	mima
178	mgmt
179	MM
180	monkey
181	MQMC
182	MRF
183	mts
184	myspacel
185	nag
186	NAG
187	nagdb

No.	Weak Password
188	naguo
189	ndmc
190	nmsguest
191	nothing
192	north
193	null
194	oh
195	ongoing
196	omc
197	oracle
198	opftp
199	oracle
200	ose
201	pass
202	password
203	password1
204	password123
205	passwd
206	PCF
207	portal
208	PortalONE
209	ppsa
210	prestat
211	prompt
212	ptlportal
213	ptlsso
214	ptluo
215	ptlblog
216	ptlforum
217	ptlisap
218	prmt1

No.	Weak Password
219	prmt_iddeploy
220	Promotion
221	qazpl
222	qwerty
223	rangwojinlai
224	rangwojinqu
225	rdbagent
226	report
227	root
228	rootHOLOWITS
229	rptuoa
230	RRS
231	sag
232	SAG
233	sagcm
234	sagdb
235	sagdr
236	saguo
237	scc
238	scp
239	sdp
240	sdprpt
241	sdpscsee
242	sdproot
243	SDP Report
244	see
245	SEE
246	sepg
247	sis
248	slcc
249	smallstore

No.	Weak Password
250	smdb
251	smp
252	sms
253	smsa
254	spftp
255	sqa
256	sshsr
257	sys
258	sysadmin
259	sysdb
260	sysomc
261	test
262	temp
263	templc
264	tempuser
265	thomas
266	tvms
267	uoa
268	upc
269	upgrade
270	UM
271	user
272	userdb
273	userdb1
274	u+versioncode
275	vtp
276	vtpuser
277	vtpiacs
278	vtpieds
279	vtpiepg
280	vtpimgmt

No.	Weak Password
281	vtpisepg
282	vtpiupgrade
283	wda
284	wep
285	wpa
286	wobuzhidao
287	wodemima
288	woyaojinlai
289	woyaoponi
290	Change_Me

6.2 Personal Data Protection

Usag e Scena rio	Data Type	Data Sourc e and Colle ction Meth od	Purpose and Security Protection Measure	Storage Duration and Policy	Destr uctio n Meth od	Expor t Meth od (Inter face/ Com mand) Data Proce ssing Meth od for Expor t (Ano nym izatio n/Pse udon ymiz ation)	Expor t Guid e
---------------------------	--------------	--	--	-----------------------------------	-----------------------------------	--	-------------------------

1. List-based alert and alarm reporting, LDU, and mobile app-based list query and management 2. Data uploaded to the cloud service	Name, gender, age, country, birthplace, ID card number, occupation, phone number, email address, residence address, remarks, certificate photo, and features	1. Users manually enter data on the target list management page. 2. Users manually upload target images for cameras to extract features. After successful feature extraction, cameras send the features to the HWT-NVR800. 3. Users use mobile apps to upload data.	1. Collected personal data is used to identify target subjects to be displayed as target recognition and target search results. 2. Collected data is encrypted using AES-256-CBC before being stored in the database and hard disk. Only authorized users can access collected data displayed on the UI after being authenticated. 3. The database cannot be directly accessed in the background.	1. The storage duration and policy can be configured. Users can manually delete the data on the UI. 2. Collected data is deleted when the hard disk is formatted. 3. Collected data is deleted when the hard disk is overwritten.	1. Users can control the deletion of personal data. 2. The database can be accessed only by service programs on the local host.	The entire database data can be encrypted and exported to a USB flash drive on the LDU.	On the LDU, choose Intelligence > Intelligent Setting > Object Recognition > List Management and click Back Up.
Alert	1.	Users	1. Collected data is	1. After	1.	Collec	On

Usag e Scena rio	Data Type	Data Sourc e and Colle ction Meth od	Purpose and Security Protection Measure	Storage Duration and Policy	Destr uctio n Meth od	Expor t Meth od (Inter face/ Com mand) Data Proce ssing Meth od for Expor t (Ano nymi zatio n/Pse udon ymiz ation)	Expor t Guid e
data sendin g by email	Send er and recipi ent email addres ses 2. Send er email passw ord	manua lly enter the data on the LDU or web page.	used by email services, including sending of images on which alarms are generated and hard disk alarms. 2. Collected data is encrypted using AES-256-GCM before being stored in the flash memory. 3. Only authorized users can collect data and display and configure the data on the UI after being authenticated. 4. The web system accesses the device using HTTPS to collect data, but cannot collect user passwords. 5. The password is not displayed.	restoration to factory settings, email data recorded in the flash memory will be cleared. 2. Users manually modify and delete the email data recorded in the flash disk on the UI.	Users manua lly delete the data. 2. Releas e the memo ry (and image s used for alarm push will be delete d).	ted data is ency pted using AES- 256- GCM before being export ed to a USB Flash Drive.	the LDU, choos e Settin gs > Syste m Maint enanc e > Para meter s and click Expor t.

Camera adding to the HWT-NVR800	Camera IP address and domain name, port number, password, MAC address, and firmware version	Users manually enter the information on the camera configuration page. Cameras connected to the PoE network port are automatically searched and added.	1. Collected data is used to connect cameras. After cameras are connected, users can preview camera images and set camera parameters. 2. Collected data is encrypted using AES-256-GCM before being stored in the flash memory. 3. Only authorized users can collect data and display and configure the data on the UI after being authenticated. 4. The web system accesses the device using HTTPS to collect data, but cannot collect user passwords. 5. Passwords cannot be displayed in plaintext.	1. After restoration to factory settings, the data is deleted. 2. Users can manually delete the data on the UI. 3. Camera data on the PoE network port is deleted when the camera is removed.	The data is manually deleted or the PoE is removed.	Collected data is encrypted using AES-256-GCM before being exported to a USB Flash Drive.	On the LDU, choose Settings > System Maintenance > Parameters and click Export .
HWT-NVR800 network configuration	1. HWT-NVR800 network information (including the IP address and subnet mask) 2. External IP address	Users configure data on the network page.	1. The data is used to configure network services. 2. Data can be collected from the HWT-NVR800 web system through HTTPS. 3. Collected data is encrypted using AES-256-GCM before being stored in the flash memory. 4. Only authorized users can access collected data displayed on the UI after being	1. After restoration to factory settings, the data is deleted. 2. Users can manually delete the data on the UI.	Users manually delete the data.	Collected data is encrypted using AES-256-GCM before being exported to a USB Flash Drive.	On the LDU, choose Settings > System Maintenance > Parameters and click Export .

Usag e Scena rio	Data Type	Data Sourc e and Colle ction Meth od	Purpose and Security Protection Measure	Storage Duration and Policy	Destr uctio n Meth od	Expor t Meth od (Inter face/ Com mand) Data Proce ssing Meth od for Expor t (Ano nymi zatio n/Pse udon ymiz ation)	Expor t Guid e
	s 3. HTTP and HTTP S port and extern al port		authenticated.				

1. User authentication for logging in to the system 2. North bound ONVIF authentication 3. User backup data compression and encryption	1. HWT-NVR800 user name and password 2. North bound ONVIF user name and password 3. Backup password	Users configure data on the UI.	1. The data is used to configure identity authentication for the local host. 2. The backup password is encrypted using the public key when transferred, and only authorized users can access the backup data after being authenticated. 3. Collected data is encrypted using AES-256-GCM before being stored in the flash memory. 4. Only authorized users can access collected data displayed on the UI after being authenticated. 5. Passwords cannot be displayed in plaintext.	1. After restoration to factory settings, the data is deleted. 2. Users manually modify the data.	1. After restoration to factory settings, the data is deleted. 2. Users manually delete the data.	Collected data is encrypted using AES-256-GCM before being exported to a USB Flash Drive.	On the LDU, choose Settings > System Maintenance > Parameters and click Export .
1. Alarm-triggered snapshot, scheduled snapshot, and manual snapshot 2. Data uploaded to the	Image captured by camera or manually captured and the feature of image	1. Users enable the snapshot function on the snapshot page and snapshot taking is triggered based on the config	1. Manual, scheduled and alarm-triggered snapshots are used to save key data in a timely manner for the IVS system to query. 2. Manual, scheduled and alarm-triggered snapshots are stored in the hard disk. 3. The images used for pushing alarms are stored in the memory. 4. Data can be collected from the HWT-NVR800	1. Collected data is deleted when the hard disk is formatted. 2. Collected data is overwritten when the hard disk is overwritten. 3. The image used for alarm push is stored in the memory for a maximum of 10 seconds and is cleared immediately after being	1. Users manually format the hard disk or the hard disk is automatically overwritten. 2. Release the memory (and	LDU: 1. Enter the password to compress and export the data to the USB flash drive. 2. Images used for alarm	LDU: search, backup, and playback For example: On the LDU, choose Search > Image Search . On

Usag e Scena rio	Data Type	Data Sourc e and Colle ction Meth od	Purpose and Security Protection Measure	Storage Duration and Policy	Destr uctio n Meth od	Expor t Meth od (Inter face/ Com mand) Data Proce ssing Meth od for Expor t (Ano nymi zatio n/Pse udon ymiz ation)	Expor t Guid e
cloud servic e 3. Sna pshot on ON VIF- compl iant clients		uratio n. 2. Use rs man ually take snaps hots.	web system through HTTPS. Only authorized users can access collected data displayed on the UI after being authenticated. 5. Features are compared with those in the list for recognition.	obtained.	image s used for alarm push will be delete d).	push cannot be export ed. Web syste m: The data is encry pted using the HTTP S for trans missio n.	the LDU, choos e Back up > Image Back up. In the web syste m, choos e Playb ack > Image Searc h.

1. Preview, playback, and backup on the LDU 2. Preview, playback, and download in the web system 3. Preview and playback on the mobile app 4. Preview and playback on the ONVIF or RTSP client 5. Preview and playback on the GB/T 28181 client	Camera video data (live stream and recording data)	Users enable the recording function on the recording page. And video recording is triggered based on the configuration.	1. Recording data is stored on the hard disk for query by the IVS system. 2. Video data is stored on the hard disk of the HWT-NVR800. 3. Only authorized users can access collected data displayed on the UI after being authenticated. 4. Users can choose whether to use AES-256-GCM to encrypt data for transmission on a web system and choose whether to use AES-256-CBC to encrypt data for transmission using a mobile app.	1. Collected data is deleted when the hard disk is formatted. 2. Collected data is overwritten when the hard disk is overwritten.	Users manually format the hard disk or the hard disk is automatically overwritten.	LDU: Enter the password to compress and export the data to the USB flash drive. Web system: You can choose whether to encrypt data for transmission.	LDU: search and backup For example: On the LDU, choose Search > Event Search . On the LDU, choose Backup > General Backup . On the web system, choose Playback > Recording Search .
HWT-NVR800 connection	Device serial number	1. Device serial	1. Collected data is encrypted using AES-256-GCM before being stored	Device names can be deleted using the following	Users manually delete	Only device names can be	On the LDU, choose

cting to the cloud service	er, device name, and MAC addresses	numbers and MAC addresses are obtained from the default settings. 2. Device names are obtained from the default settings or entered by users.	in the flash memory. 2. The mobile app collects and displays the data after authentication.	methods: 1. After restoration to factory settings, the data is deleted. 2. Users manually modify the data. Other parameters cannot be configured.	the data.	exported.	e Settings > System Configuration > System Maintenance > Parameters , and click Export .
Exporting globally unique identifier (GUID) for future use	GUID of the administrator account	GUID is generated when you click Export .	The password is encrypted using PBKDF2 algorithm and stored in the flash memory.	1. After restoration to factory settings, the data is deleted. 2. Export the GUID again to overwrite the data in the flash memory.	1. After restoration to factory settings, the data is deleted. 2. Export the GUID again to overwrite the data in the	Collected data is encrypted using AES-256-GCM before being exported to a USB Flash Drive.	LDU: 1. Export the GUID when the administrator account is created on the device for the first time. 2. Choose

Usag e Scena rio	Data Type	Data Sourc e and Colle ction Meth od	Purpose and Security Protection Measure	Storage Duration and Policy	Destr uctio n Meth od	Expor t Meth od (Inter face/ Com mand) Data Proce ssing Meth od for Expor t (Ano nymi zatio n/Pse udon ymiz ation)	Expor t Guid e
					flash memo ry.		Settin gs > Syste m > Multi -user Mana geme nt.
Sched uled snaps hots sendin g throug h FTP or SFTP	IP addres s, port numb er, accoun t, and passw ord of the FTP server	Manu ally entere d the FTP config uratio n page of the LDU or web syste m.	1. The system sends scheduled snapshots. 2. Collected data is encrypted using AES-256-GCM before being stored in the flash memory. 3. Only authenticated and authorized users can collect data and display and configure the data on the GUI. 4. The password is not displayed.	1. Restoring factory settings will clear the FTP data in the flash memory. 2. A user manually modifies and deletes the FTP data in the flash disk on the GUI.	1. A user manua lly delete s the data. 2. A user restor es the factor y setting s.	Expor t data to a USB flash drive using AES- 256- GCM encryp tion.	On the param eter manag ement page on the LDU, export param eter setting s.

To view the personal data protection description of the public cloud, choose **Configuration > Network > Cloud Service** and click **Privacy Statement**.

6.3 Communication Matrix

Click Communication Matrix to download the document.