ClareVision Plus Network Video Recorder User Guide

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Manufacturer

Clare Controls, LLC.
7519 Pennsylvania Ave., Suite 104, Sarasota, FL 34243, USA

Contact information

Clare Controls, LLC.
7519 Pennsylvania Ave, Suite 104
Sarasota, FL 34243
Support: 941.404.1072
Fax: 941.870.9646
http://support.clarecontrols.com

www.clarecontrols.com

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Important information

Limitation of liability

To the maximum extent permitted by applicable law, in no event will Clare Controls, LLC. be liable for any lost profits or business opportunities, loss of use, business interruption, loss of data, or any other indirect, special, incidental, or consequential damages under any theory of liability, whether based in contract, tort, negligence, product liability, or otherwise. Because some jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damages the preceding limitation may not apply to you. In any event the total liability of Clare Controls, LLC. shall not exceed the purchase price of the product. The foregoing limitation will apply to the maximum extent permitted by applicable law, regardless of whether Clare Controls, LLC. has been advised of the possibility of such damages and regardless of whether any remedy fails of its essential purpose.

Installation in accordance with this manual, applicable codes, and the instructions of the authority having jurisdiction is mandatory.

While every precaution has been taken during the preparation of this manual to ensure the accuracy of its contents, Clare Controls, LLC. assumes no responsibility for errors or omissions.

Advisory messages

Advisory messages alert you to conditions or practices that can cause unwanted results. The advisory message used in this document is shown and described below.

Note: Note messages advise you of the possible loss of time or effort. They describe how to avoid the loss. Notes are also used to point out important information that you should read.

Warranty information

Clare Controls offers a three (3) year limited warranty on original Clare Controls components, from the date of shipment from Clare Controls. To view complete limited warranty details, including limitations and exclusions, www.clarecontrols.com/warranty.

Scan the code to view product warranty details.

Introduction

Front panel

Figure 1: 64-Channel NVR front panel (Model: CVP-64050-10)

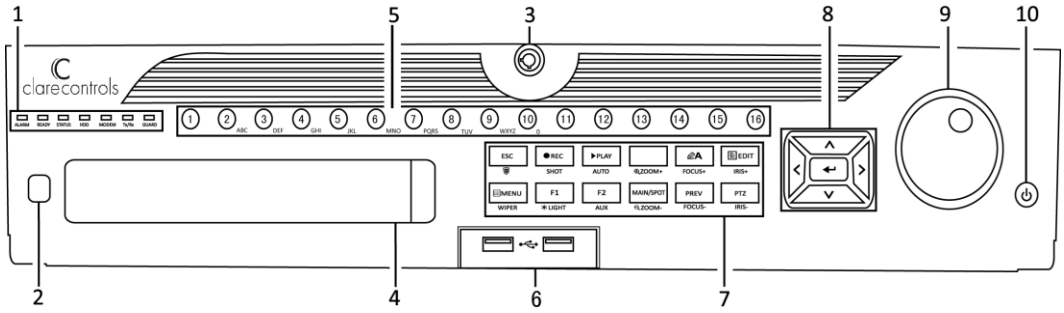


Table 1: 64-Channel NVR control panel buttons

No.	Name		Description
1	Status Indicators	ALARM	Turns red when a sensor alarm is detected
		READY	Blue when the device functions properly
		STATUS	Turns blue when an IR remote controls the device
			Turns red when controlled by a keyboard and purple when the IR remote and keyboard are used at the same time
		HDD	Blinks red when data is being read from or written to HDD
		MODEM	Reserved for future use
		TX/RX	Blinks blue when the network connection is functioning properly
		GUARD	Guard indicator turns blue when the device is in armed status
			The indicator turns off when the device is unarmed. Pressing and holding the ESC button for more than three seconds in Live View mode can change the arm/disarm status.
2	IR Receiver		Receiver for the IR remote
3	Front Panel Lock		Lock or unlock the panel with the key
4	DVD-R/W		Slot for DVD-R/W
5	Alphanumeric Buttons		Switch to the corresponding channel in Live view or PTZ Control mode
			Switch between different channels in Playback mode
			The button is blue when the corresponding channel is recording; red when the channel is in network transmission status; and pink when the channel is recording and transmitting

6	USB Interfaces		Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD)
7	Composite Keys	ESC	Return to the previous menu
			Press for arming or disarming the device in Live View mode
		REC/SHOT	Enter the Manual Record setting menu
			In the PTZ control settings, press REC/SHOT and then press a Numeric button to call a PTZ preset
			Turn audio on and off in Playback mod
		PLAY/AUTO	Use to enter Playback mode
			Use to auto-scan in the PTZ Control menu
		ZOOM Plus	Zoom in the PTZ camera in the PTZ Control setting
		A/FOCUS Plus	Adjust focus in the PTZ Control menu
			Use to switch between input methods (upper and lowercase alphabet, symbols and numeric input)
		EDIT/IRIS Plus	Edit text fields. When editing text fields, it functions as a Backspace button
			On check box fields, pressing the button will check the box
			In PTZ Control mode, the button adjusts the iris of the camera
			Use in Playback mode to generate video clips for backup
			Enter or exit the folder of USB device and eSATA HDD
		MAIN/SPOT/ ZOOM	Switch between main and spot output
			Use in PTZ Control mode to zoom out of the image
		F1/LIGHT	Select all items on the list when used in a list field.
			In PTZ Control mode, it will turn on/off PTZ light (if applicable).
			Use in Playback mode to switch between play and reverse play.
		F2/AUX	Cycle through tab pages.
			In synchronous playback mode, it is used to switch between channels.
		MENU/ WIPER	Press the button to return to the Main menu (after successful login).
			Press and hold the button for 5 seconds will turn off audible key beep.
			In PTZ Control mode, the MENU/WIPER button will start wiper (if applicable).
			In Playback mode, it is used to show/hide the control interface.
		PREV/ FOCUS	Switch between single screen and multi-screen mode.
			In PTZ Control mode, it is used to adjust the focus in conjunction with the A/FOCUS Plus button.

		PTZ/IRIS-	Enter the PTZ Control mode.
			In the PTZ Control mode, it is used to adjust the iris of the PTZ camera.
8	Control Buttons	DIRECTION	The DIRECTION buttons are used to navigate between different fields and items in menus.
			In the Playback mode, use the Up and Down button to speed up and slow down recorded video. The Left and Right button select the next and previous record files.
			In Live View mode, use these buttons to cycle through channels.
			In PTZ control mode, control the movement of the PTZ camera.
		ENTER	The ENTER button is used to confirm selection in any of the menu modes.
			Use to check the check box fields.
			In Playback mode, it is used to play or pause the video.
			In single-frame Playback mode, pressing the button will advance the video by a single frame.
			In Auto-switch mode, use to stop /start auto switch.
9	JOG SHUTTLE controls		Move the active selection in a menu. It will move the selection up and down.
			In Live View mode, use to cycle through different channels.
			In Live View mode, use to cycle through different channels.
			In the Playback mode: For 64-Channel NVRs, the ring is used to jump 30s forward/backward in video files.
			In PTZ control mode, it controls the movement of the PTZ camera.
10	POWER ON/OFF		Power on/off switch

Figure 2: 16-Channel NVR and 32-Channel NVR front panel (Models: CVP-M321650-08 and CVP-M161650-04)

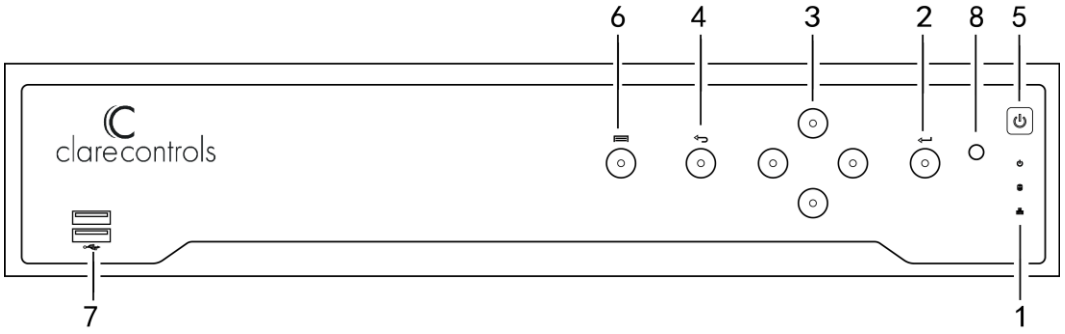


Table 2: 16-Channel NVR and 32-Channel NVR control panel buttons

No.	Name		Description
1	Status Indicators	POWER	Turns green when NVR is powered up.
		HDD	Blinks red when HDD is reading/writing.
		Tr/Tx	Blinks green when network connection is functioning normally.
2	Enter	The enter button confirms meu selection in menu mode.	
		In playback mode, enter is used to play/pause the video.	
		In a single-frame play mode, pressing Enter plays the video by single frames.	
		In auto sequence vide mode, the buttons are used to pause/resume auto sequence.	
3	Direction	In menu mode, the direction buttons navigate between different fields and items.	
		In playback mode, the up/down buttons speed/slow the record playing. The left/right buttons skip forward/backward 30s.	
		In the image setting interface, the up/down buttons adjust the level bar.	
		In live view mode, the buttons switch channels.	
4	Back	Returns to the previous menu.	
5	Power on/off	The power switch.	
6	Menu	Accesses the main menu interface.	
7	USB interface	Connects USB devices – for example, a USB mouse or writer. .	

Figure 3: 8-Channel NVR front panel (Model: CVP-B8860-02)

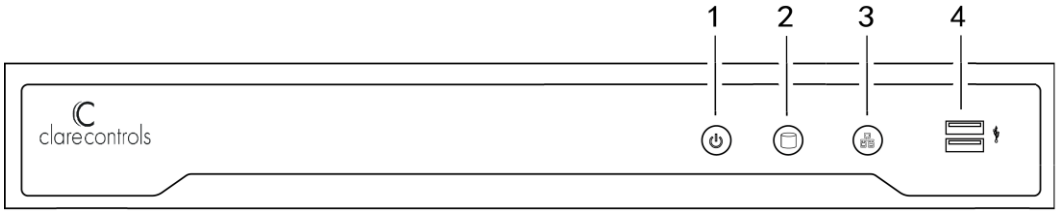


Table 3: 8-Channel NVR control panel buttons

No.	Name	Description
1	Power on/off	The power switch.
2	HDD	The HDD LED turns red when data is being read or written. HDD.
3	Network connection	The Network Connect LED flashes blue when functioning.
4	USB interface	Connects USB devices – for example, a USB mouse or writer. .

Figure 4: 4-Channel mini Wi-Fi NVR top panel (Model: CVP-B4450-01)

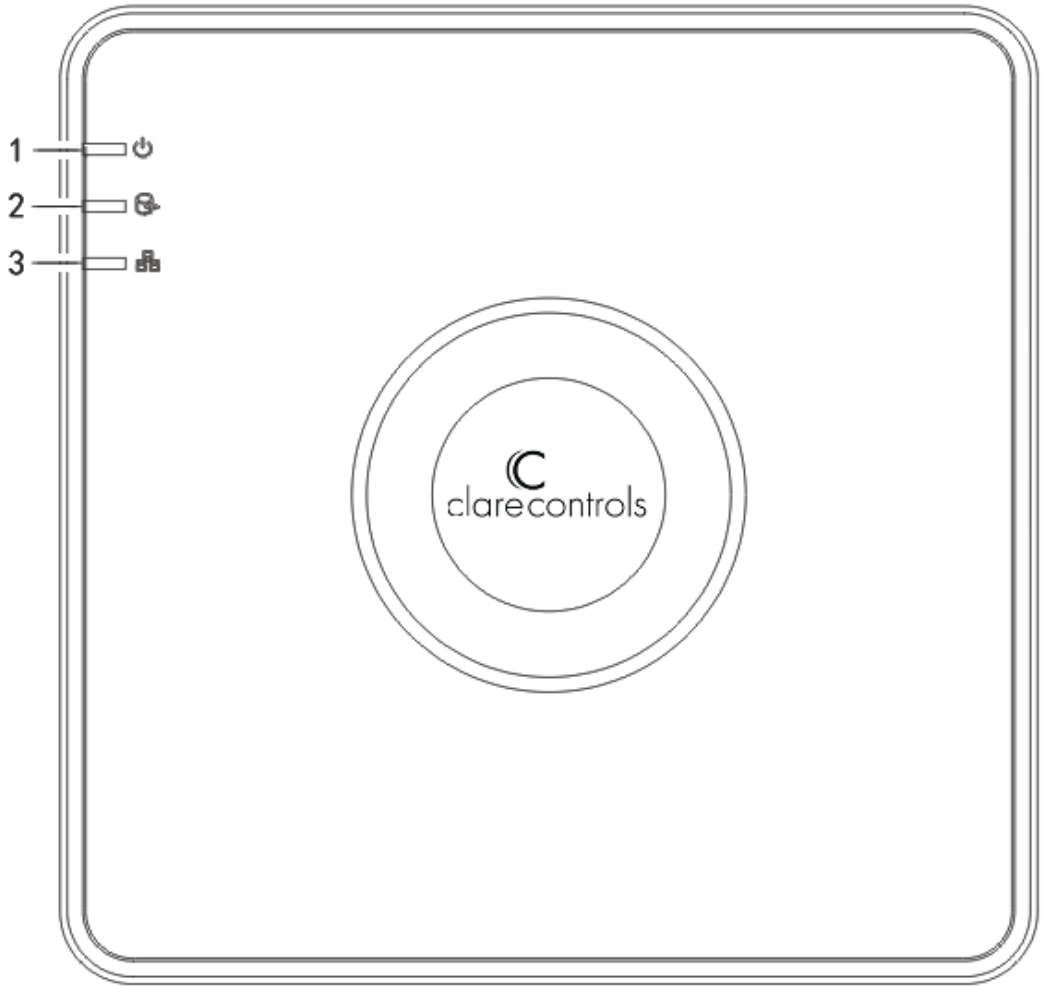


Table 4: 4-Channel CVP-B4450-01 mini NVR panel buttons

No.	Name	Description
1	Power	The POWER LED turns red when NVR is powered up.
2	HDD	The HDD LED turns red when data is being read or written. HDD.
3	Network Connection	The Network Connect LED flashes blue when functioning.

Figure 5: 8-Channel mini NVR top panel (Model: CVP-B8850-02)

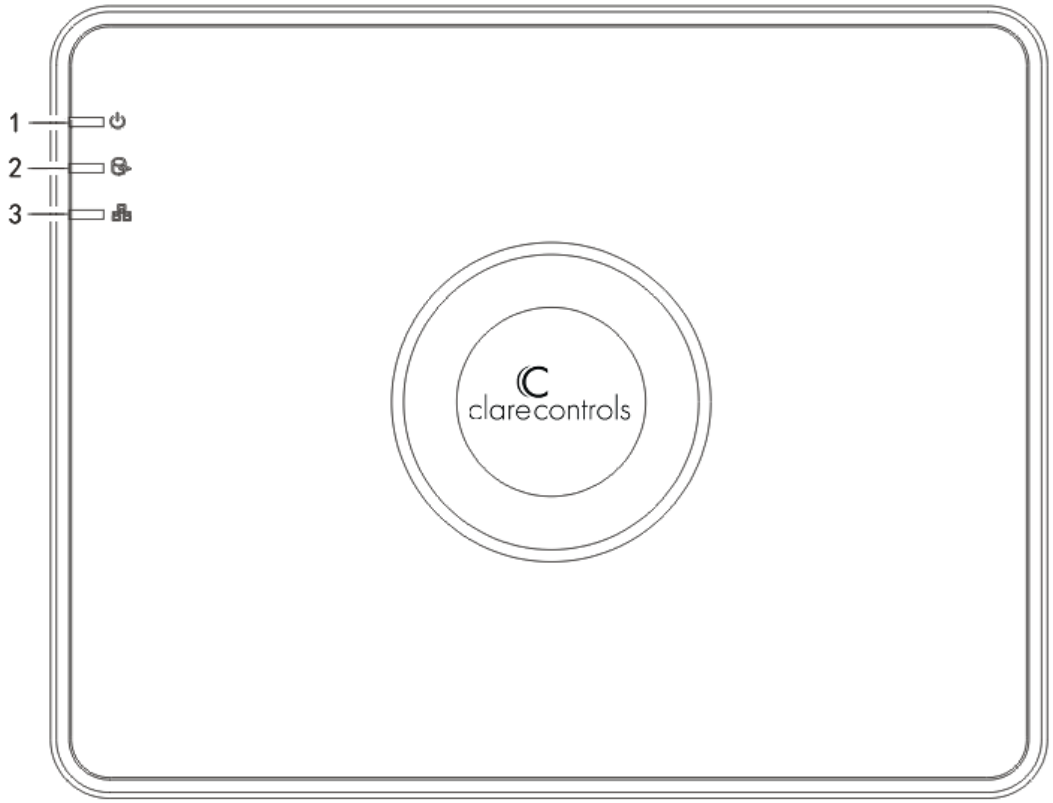


Table 5: 4-Channel mini NVR panel buttons (Model: CVP-B4450-01)

No.	Name	Description
1	Power	The POWER LED turns red when NVR is powered up.
2	HDD	The HDD LED turns red when data is being read or written. HDD.
3	Network Connection	The Network Connect LED flashes blue when functioning.

Rear panel

Figure 6: 64-Channel NVR rear panel (Model: CVP-P64050-10)

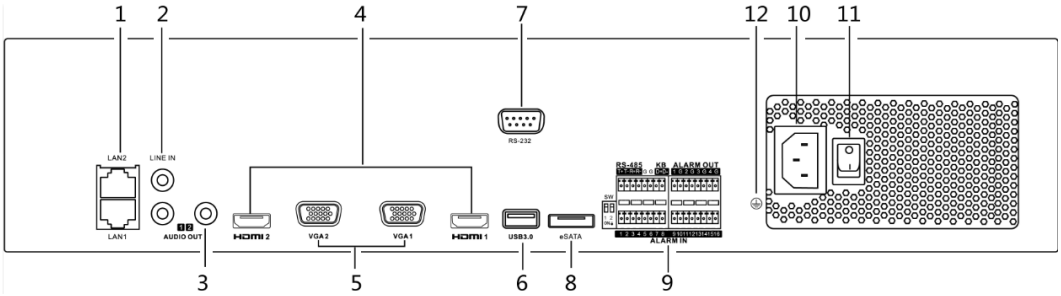


Table 6: 64-Channel NVR rear panel connections

No.	Name	Description
1	LAN Interface	2 network interfaces.
2	LINE IN	RCA connector for the audio input.
3	AUDIO OUT	2 RCA connectors for audio output.
4	HDMI1/HDMI2	HDMI video output connector.
5	VGA1/VGA2	DB9 connector for VGA output. Display local video output and menu.
6	USB interface	Connects USB devices – for example, a USB mouse or writer.
7	RS-232 interface	Connector for RS-232 devices.
8	eSATA (optional)	Connects external SATA HDD, CD/DVD-RM. 2 eSATA interfaces.
9	Controller Port	D Plus/D- pin connects to Ta, Tb pin of controller. For cascading devices, the first NVR's D Plus/D- pin connects with the D Plus/D- pin of the next NVR.
	ALARM IN	Connector for alarm input.
	ALARM OUT	Connector for alarm output.
10	POWER	Switch for turning on/off the device.
11	AC 100 to 240 V	AC 100 to 240 V power supply.
12	GROUND	Ground (connect before starting the NVR).

Figure 7: 16-Channel and 32-Channel rear panel connections (Models: CVP-M321650-08 and CVP-M161650-04)

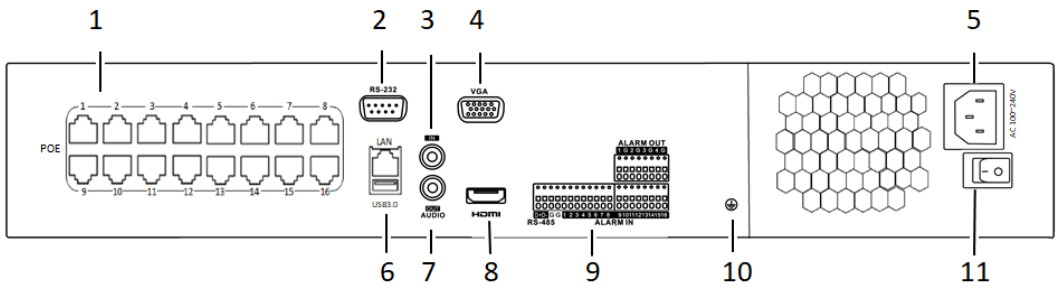


Table 7: 16-Channel and 32 Channel rear panel connections

No.	Item	Description
1	Network interface with PoE	Network interface for cameras and PoE connection.
2	RS-232 interface	Connector for the RS-232 devices
3	AUDIO IN	RCA connector for audio input.
4	VGA	DB9 connector for VGA output.
5	AC 100 V to 240 V	AC 100 V to 240 V power input.
6	USB and LAN interface	Connects USB and LAN devices – for example, a USB mouse or writer.
7	AUDIO OUT	RCA connector for audio output.
8	HDMI	HDMI output connector.
9	ALARM IN	Connector for alarm input
	ALARM OUT	Connector for alarm output.
10	GROUND	Ground (must be connected when the NVR starts.)
11	POWER	Switch for turning the device on/off.

Figure 8: 8-Channel NVR rear panel connections (Model: CVP-B8860-02)

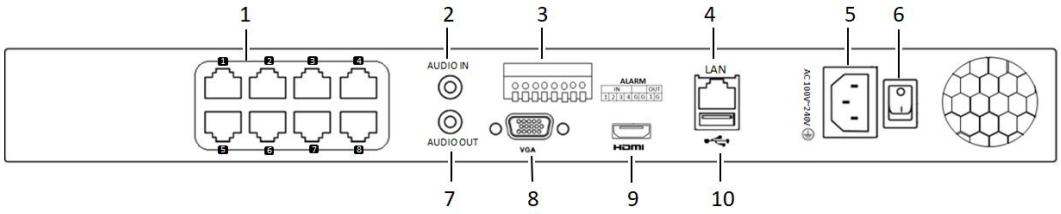


Table 8: 4-Channel CVP-B4450-01 mini Wi-Fi NVR rear panel connections

No.	Item	Description
1	Network Interface with PoE	Network interface for cameras and PoE connection.
2	AUDIO IN	RCA connector for audio input. (Also for two-way audio.)
3	ALARM	Connector for alarm input.
4	Network interface	Connector for LAN.
5	AC 100 V to 240 V	AC 100 V to 240 V power input.
6	POWER	Switch for turning the device on/off.
7	AUDIO OUT	RCA connector for audio output.
8	VGA	DB9 connector for VGA output. Display local video output and menu.
9	HDMI	HDMI video output connector.
10	USB	Connects USB devices – for example, a USB mouse or writer.

Figure 9: 4-Channel mini Wi-Fi NVR rear panel connections (Model: CVP-B4450-01)

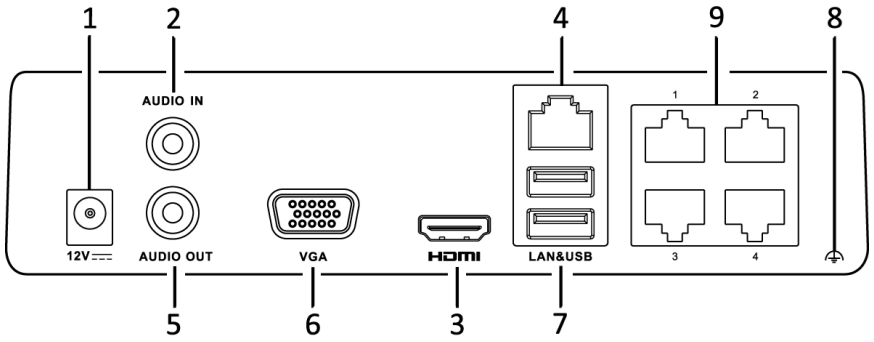


Table 9: 4-Channel CVP-B4450-01 mini Wi-Fi NVR rear panel connections

No.	Item	Description
1	Power supply	12 VDC power supply connection.
2	AUDIO IN	RCA connector for audio input. (Also for two-way audio.)
3	HDMI	HDMI video output connector.
4	Network interface	Connector for LAN.
5	AUDIO OUT	RCA connector for audio output.
6	VGA	DB9 connector for VGA output. Display local video output and menu.
7	USB	Connects USB devices – for example, a USB mouse or writer.
8	Ground	Ground (needs to be connected before the NVR starts up).
9	Network Interface with PoE	Network interface for cameras and PoE connection.

Figure 10: 8-Channel mini Wi-Fi NVR rear panel connections (Model: CVP-B8850-02)

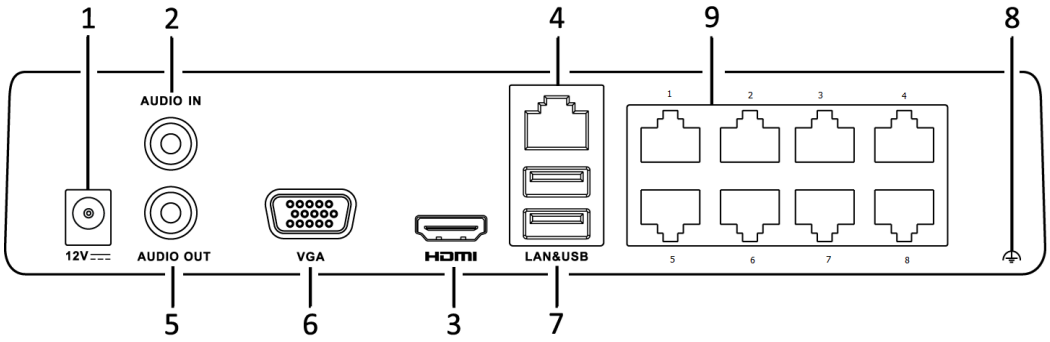


Table 10: 8-Channel CVP-B8850-02 mini Wi-Fi NVR rear panel connections

No.	Item	Description
1	Power supply	12 VDC power supply connection.
2	AUDIO IN	RCA connector for audio input and two-way audio.)
3	HDMI	HDMI video output connector.
4	Network interface	Connector for LAN.
5	AUDIO OUT	RCA connector for audio output.
6	VGA	DB9 connector for VGA output. Display local video output and menu.
7	USB	Connects USB devices – for example, a USB mouse or writer.
8	Ground	Ground (needs to be connected before the NVR starts up).
9	Network Interface with PoE	Network interface for cameras and PoE connection.

IR remote control operations

The included IR remote controls the NVR, shown below. The keys on the remote control closely resemble the ones on the front panel.

Note: Install batteries (2 × AAA) before operation.

Figure 11: Remote control

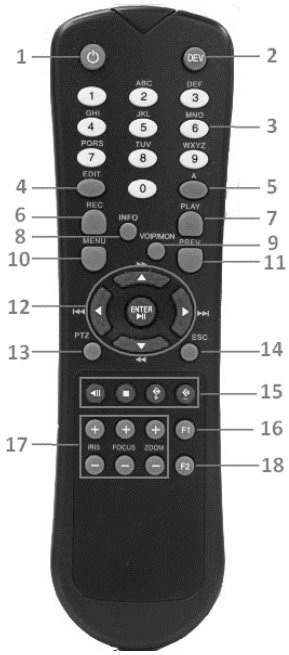


Table 11: Remote control buttons

No.	Name	Description
1	POWER	Power on/off the device.
2	DEV	Enables/Disables Remote Control.
3	Alphanumeric buttons	Same as Alphanumeric buttons on front panel.
4	EDIT button	Same as EDIT/IRIS Plus button on front panel.
5	A button	Same as A/FOCUS Plus button on front panel.
6	REC button	Same as REC/SHOT button on front panel.
7	PLAY button	Same as the PLAY/AUTO button on front panel.
8	INFO button	Reserved.
9	VOIP/MON button	Same as the MAIN/SPOT/ZOOM- button on front panel.
10	MENU button	Same as the MENU/WIPER button on front panel.
11	PREV button	Same as the PREV/FOCUS- button on front panel.
12	DIRECTION/ENTER buttons	Same as the DIRECTION/ENTER buttons on front panel.
13	PTZ button	Same as the PTZ/IRIS- button on front panel.
14	ESC button	Same as the ESC button on front panel.

15	RESERVED	Reserved for future use.
16	F1 button	Same as the F1/LIGHT button on front panel.
17	PTZ Control buttons	Buttons to adjust the iris, focus and zoom of a PTZ camera.
18	F2 button	Same as the F2/AUX button on front panel.

Troubleshooting the remote control

Note: Make sure you have installed the batteries properly in the remote control. Aim the remote control at the IR receiver in the front panel.

If you press a button and do not receive a response, follow the procedures below to troubleshoot.

To troubleshoot the remote control:

1. Go to **Menu** > **Settings** > **General** > **More Settings** using the front control panel or the mouse.
2. Check and remember the NVR ID. The default ID number is 255. This ID number is valid for all the IR remote controls.
3. Press the **DEV** button on the remote control.
4. Enter the NVR ID number from step 2.
5. Press **ENTER** on the remote.

If the Status indicator on the front panel turns blue, the remote control is operating properly. If the Status indicator does not turn blue and there is no response from the remote, check the following:

- Batteries are installed correctly, and the polarities of the batteries are not reversed.
- Batteries are fresh and charged.
- IR receiver is not obstructed.

If the remote still is not functioning properly, change remotes and try again, or contact your dealer.

USB mouse operation

A regular 3-button (Left/Right/Scroll-wheel) USB mouse works with the NVR.

To use a USB mouse:

1. Plug the USB mouse into a USB interface on the NVR's front panel.
2. The mouse is detected automatically. If the mouse is not detected, it is possible that the two devices are not compatible. Refer to the recommended devices list from your provider.

Table 12: Mouse control

Name	Action	Description
Left-click	Single-click	Live view: Select channel and show the quick set menu. Menu: Select and enter.
	Double-click	Live view: Switch between single-screen and multi-screen.
	Click and drag	PTZ control: Pan, tilt and zoom. Video tampering, privacy mask and motion detection: Select target area. Digital zoom-in: Drag and select target area. Live view: Drag channel/time bar.
Right-click	Single-click	Live view: Show menu. Menu: Exit current menu to previous menu.
Wheel- scroll	Scrolling up	Live view: Previous screen. Menu: Previous item.
	Scrolling down	Live view: Next screen. Menu: Next item.

Input method description

Use the soft keyboard to enter text. Click to view the numeric keyboard.

Figure 12: Soft alpha-numeric keyboard

Figure 13: Soft numeric keyboard

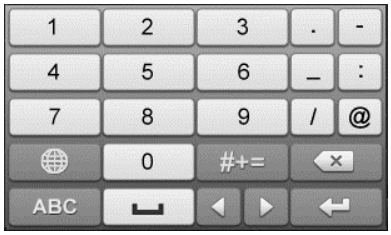


Table 13: Soft keyboard icons

Icon	Description
	Exit
	Space
	Alpha-numeric keyboard
	Symbols
	Backspace
	Numeric keypad
	Lowercase/uppercase
	Reserved

Getting Started

Starting up and shutting down the NVR

Proper startup and shutdown is crucial to expanding the life of the NVR. Before you start, check that the voltage of the extra power supply matches the NVR's requirement, and that the ground connection is working properly.

Starting up the NVR

Start the NVR to access its features.

To start the NVR:

1. Check that the power supply is plugged into an electrical outlet. We recommend that you use an Uninterruptible Power Supply (UPS) with the device. The Power indicator LED on the front panel is red, indicating the device is getting power.
2. Press the power button on the front panel. The power indicator LED turns blue, indicating start up.
3. After startup, the Power indicator LED will remain blue. A splash screen with the status of the HDD appears on the monitor. Click the Live View screen to view the Quick menu. The Quick menu, a row of icons at the bottom of the screen, shows the HDD status. 'X' means that the HDD is not installed or is not detected.
4. On the Live View screen, right click for the Right-click menu to appear, see Figure 14 below. Click **Menu**, on the top of the Right-click menu to display the Top menu, see Figure 15 below. From the Top menu, configure the advanced settings or shutdown the NVR.

Figure 14: Right-click menu

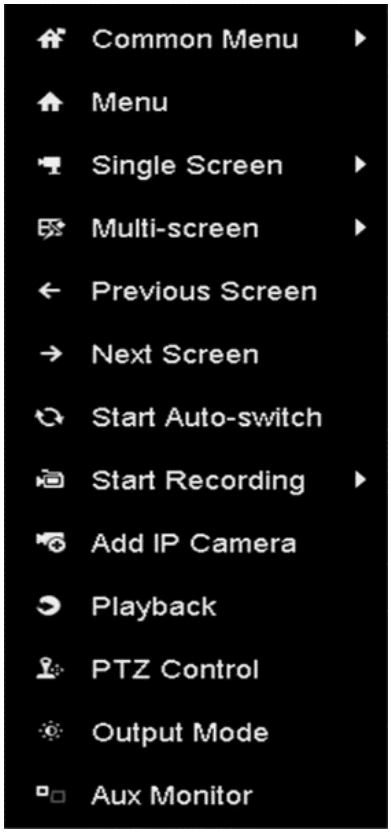
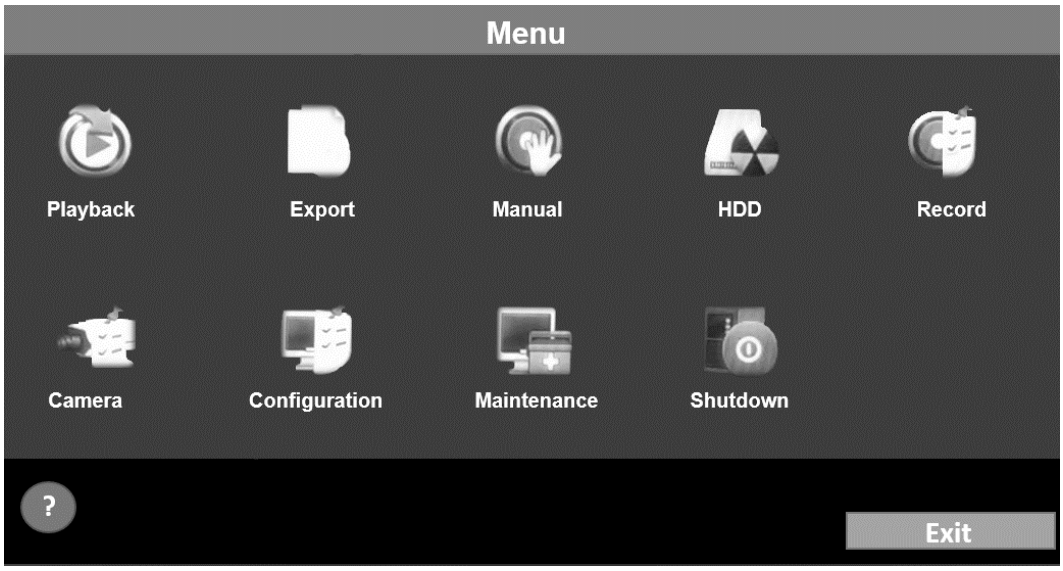


Figure 15: Top menu



Shutting down the NVR

There are two ways to shut down the NVR.

To shut down the NVR (Option 1):

1. Click **Menu** > **Shutdown**. (See Figure 16.)
2. Click **Shutdown**.
3. Click **Yes**.

Figure 16: Shutdown menu

To shut down the NVR from the front panel (Option 2):

1. Press and hold the power button on the front panel for three seconds.
2. Enter the administrator's username and password in the dialog box for authentication.
3. Click **Yes**.

Note: Do not press the power button again when the system is shutting down.

Rebooting the NVR

Reboot the NVR in the Shutdown menu.

To reboot the NVR from the Shutdown menu:

1. Click **Menu** > **Shutdown**.
2. Click **Reboot** to reboot the NVR.

Activating the NVR

The first time you access the NVR, you must set activate it by setting an admin password. The NVR cannot be used until it has been activated.

To activate the NVR:

1. The Activation dialog displays, enter and confirm a password.

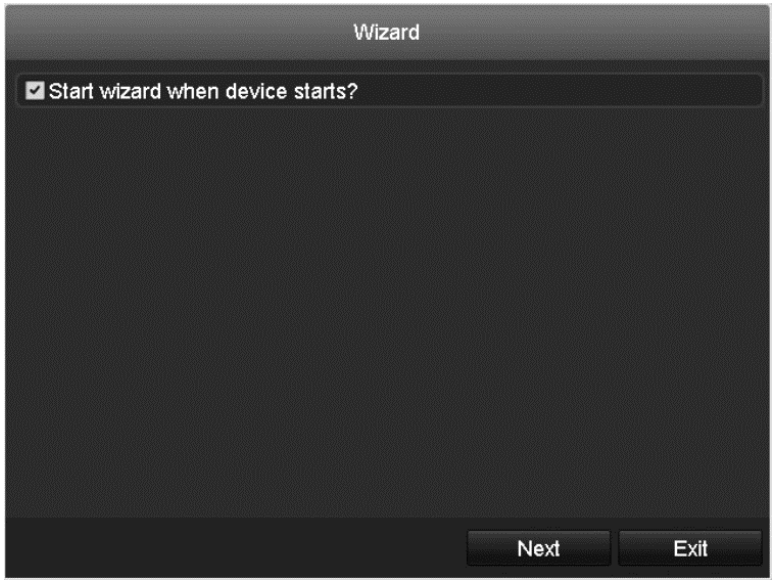
2. Click **OK**.

   Note: When updating the NVR to a newer version, the following dialog displays. Click **YES**, and then follow the wizard to set a password.

Using the wizard for basic configuration

By default, the Wizard starts once the NVR loads, as shown in Figure 17.

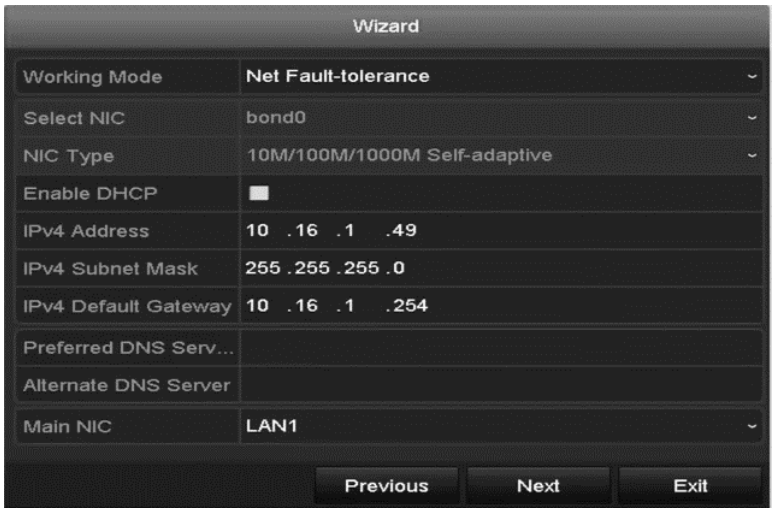
Figure 17: Wizard interface



To use the Wizard:

1. The Wizard walks you through important settings of the NVR.
   If you do not want to use the Wizard, click the **Cancel** button. You can choose to use the Wizard the next time you use the NVR by selecting the “Start wizard when the device starts?” check box.
2. Click **Next** to enter date and time window.

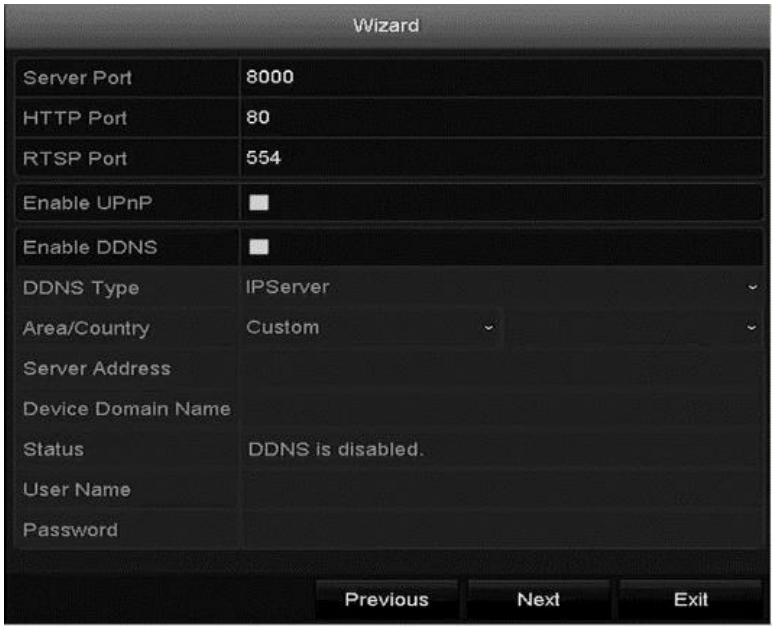
3. After configuring the time settings, click **Next**. You are returned to the Network Setup Wizard window.



Note: Dual-NIC is only available in the 64-Channel NVR device. For all other NVRs, configure the internal NIC IPv4 address for the cameras connecting to the PoE network interface of the NVR.

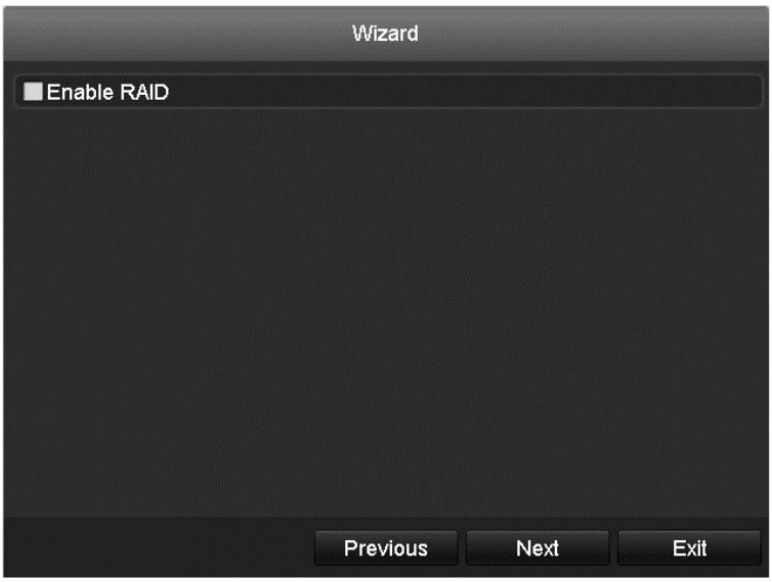
4. Click **Next**, and then configure the Cloud P2P settings.

5. Click **Next**, and then configure the advanced network parameters as desired.



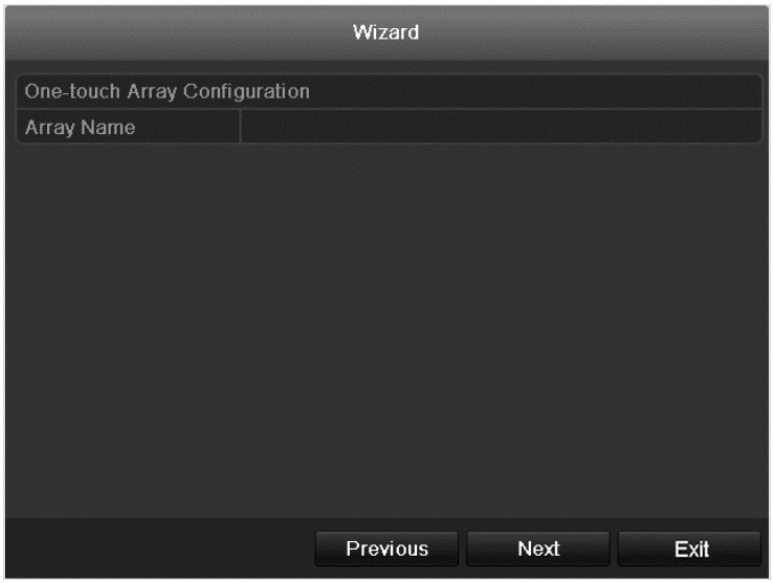
6. Click **Next**, the RAID interface displays.

   Note: RAID is only available on 64-channel NVRs.



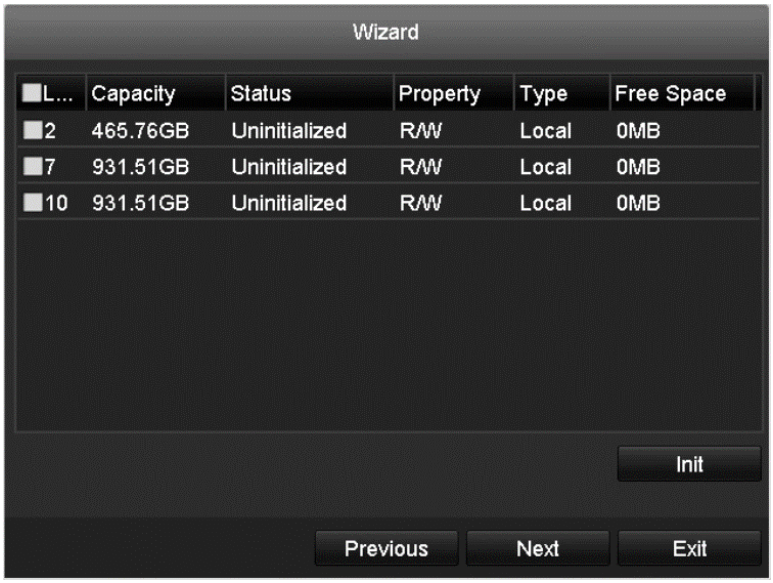
7. Select the **Enable RAID** checkbox if desired, and then click **Next**.

   The Array Management interface displays.



8. Enter the Array name, and then click **Next**.

   The HDD Management interface displays.



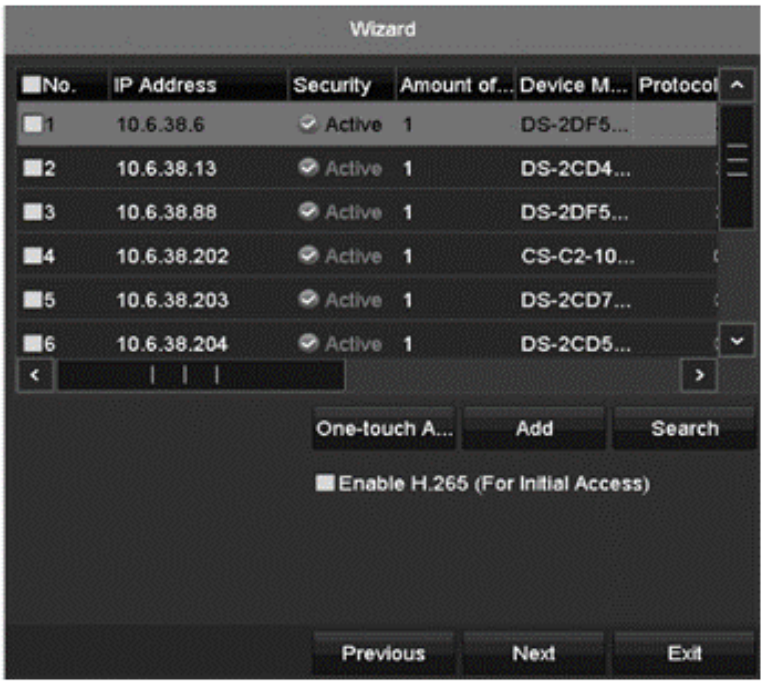
9. Click **Init** to initialize the HDD.

   Note: Initialization removes all data saved in the HDD.

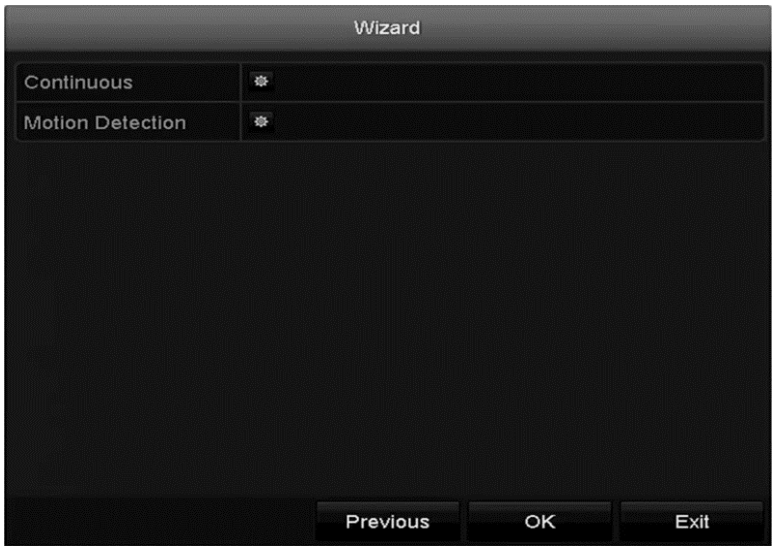
10. Click **Next** to enter the Adding IP Camera interface.
11. Click **Search** to search for the online IP camera.

Note: The scrutiny status indicates whether the camera is active or inactive. Before adding a camera, it must be in the active state.

If the camera is inactive, click the inactive camera icon and set the password. If there is more than one inactive camera, click One-touch Activate, and all inactive cameras are activated.



12. Click **Add** to add a camera.
13. Click **Next**, select the recording settings for the camera, and then click **OK**.

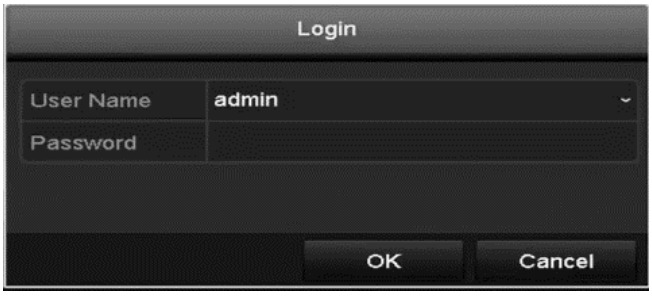


Logging in and out

If the NVR has logged out, you must login the device before you can access the menu or other features.

To log into the NVR:

1. Select the desired user name.



2. Enter the password.
3. Click **OK**.

   Note: If you enter incorrect log in information 7 times, the selected user account is locked for 60 seconds.

To log out of the NVR:

1. Enter the Shutdown menu.

   Menu > **Shutdown**

2. Click **Logout**.
3. Click **OK**.

Adding and connecting the IP cameras

Activating the IP cameras

Before adding an IP camera, verify that the camera status is active.

To activate an IP camera:

1. Right-click to view the menu, and then select Add IP Camera.

2. Click the desired camera's inactive icon, or click **One-touch Activate** to activate multiple cameras.

3. Enter and confirm a password, and then click **OK**.

   Note: Select the **Use Admin Password** checkbox to configure the cameras with the same admin password of the operating NVR.

Adding the online IP cameras

The main function of the NVR is to connect and record the network cameras video stream. Add the network camera to the connection list to get a live view and record of the video.

Before you start, ensure that the network connection is correct. For detailed instructions about checking and configuring the network, see “Configuring Virtual Host," Checking network traffic,” and “Configuring network detection” on page 140.

Directly access the IP camera management interface after enabling virtual host.

To configure virtual host:

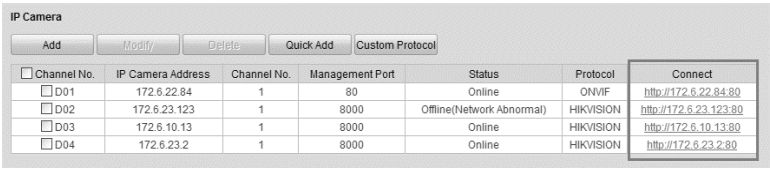
1. Browse to the Advanced Settings interface.

   Configuration > **Remote Configuration** >**Network Settings** > **Advanced**

2. Select the Enable Virtual Host checkbox.
3. Click **Save**.

4. Enter the IP Camera Management interface and observe the Connect column.

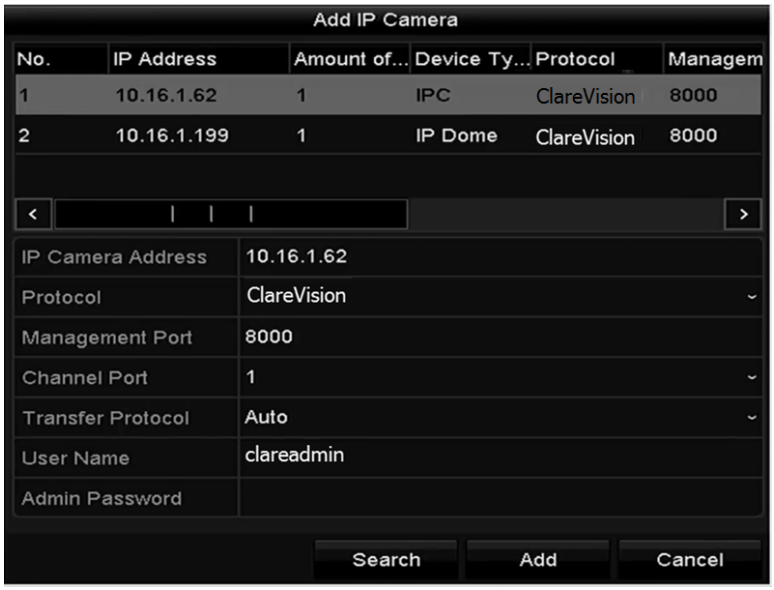
   Configuration > **Remote Configuration** > **Camera Management** > **IP Camera**



5. Click the link and IP Camera Management IP page displays.

To add an online camera:

1. Right-click the mouse in Live View mode to show the dialog window.
2. Click to enter the IP camera interface.



3. Select the detected IP camera, and then click **Add**.

   – or–

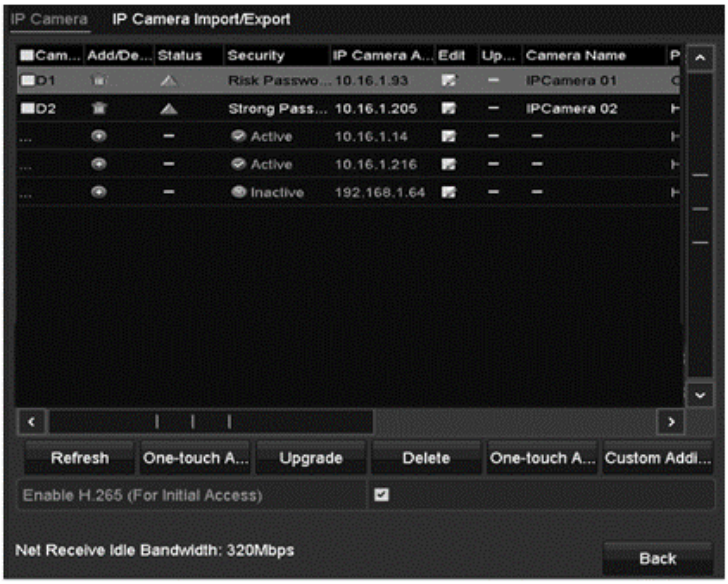
   Custom add an IP camera by editing the parameters in the corresponding text field, and then clicking **Add**.

   Note: Click **Search** to refresh the online IP cameras manually.

To add IP cameras using the Camera Management interface:

1. Browse to Camera.

   Menu > **Camera** > **Camera**.

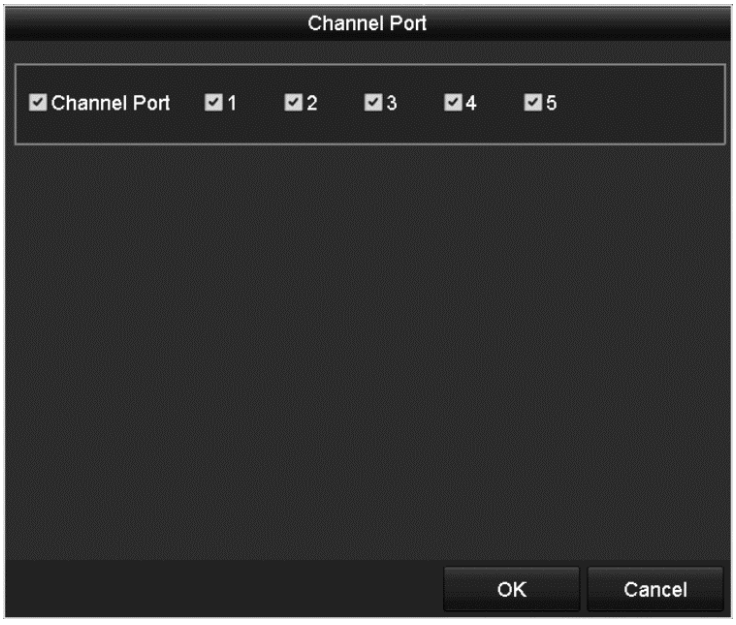


2. Cameras with the same network are detected.
3. Select the camera, and then click .

   – or –

   Click **One-touch Adding** to add all cameras.

4. (For encoders with multiple channels) Select the Channel Port, and then click **OK** to add the channels.

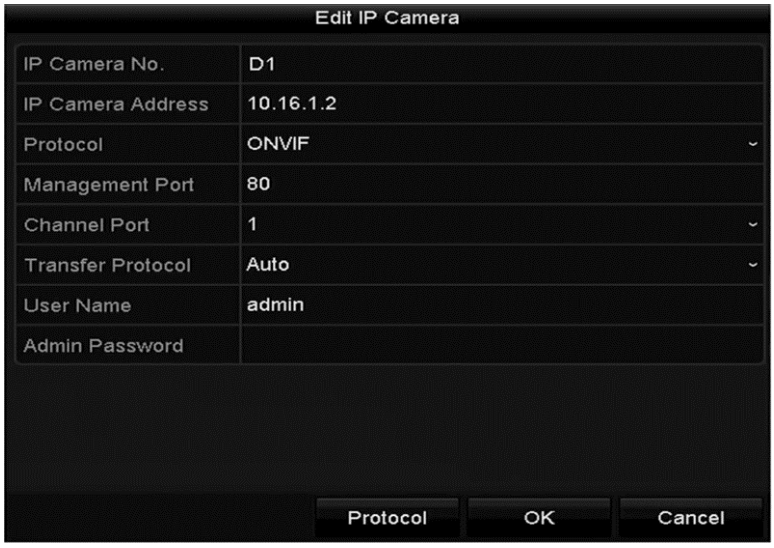


Editing the connected IP cameras and configuring customized protocols

After adding the IP cameras, the basic settings are listed on the page. Configure the basic settings of each IP camera.

To configure the basic settings:

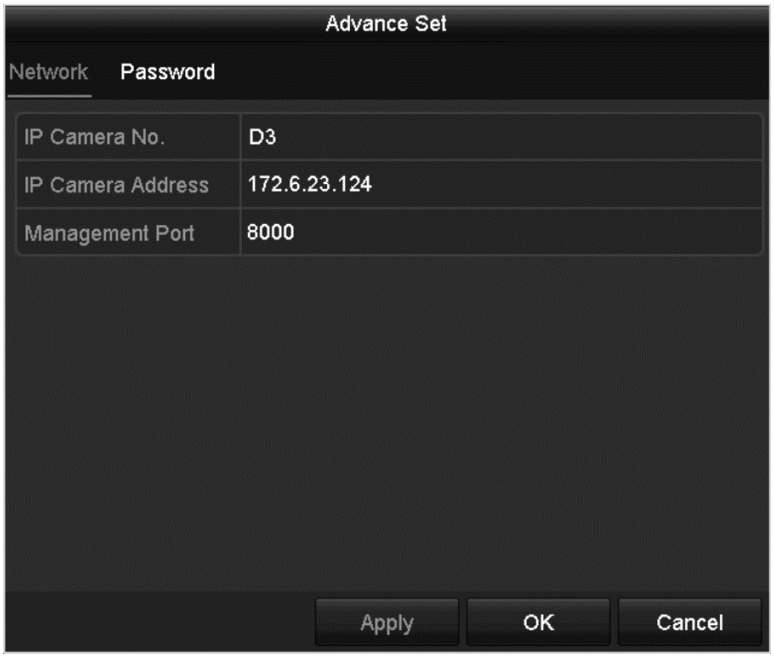
1. Click to edit the parameters.



2. Click **OK** to save the settings and exit the window.

To edit advanced parameters:

1. Drag the horizontal scroll bar to the right side, and then click .



2. Edit the network information and password for the camera.

3. Click **Apply** to save the settings, and then click **OK** to exit the window.

Configuring the customized protocols

When connecting network cameras that are not configured with the standard protocols, configure customized protocols.

To configure customized protocols:

1. Click **Protocol** in the Add IP Camera (Custom) interface to enter the Protocol Management interface.

   There are sixteen customized protocols provided in the system. You can edit the protocol name and choose whether to enable the sub-stream.

2. Choose the protocol type, and then select the transfer protocols.

   Before customizing the camera's protocol, you must contact the camera's manufacturer to consult the URL (uniform resource locator) for the main and sub streams.

   URL format: [Type]://[IP Address of the network camera]:[Port]/[Path].

   Example: rtsp://192.168.1.55:554/ch1/main/av_stream.

   Protocol Name: Edit the name for the custom protocol.

   Enable Substream: If the network camera does not support sub-stream or the sub-stream is not needed leave the checkbox empty.

   Type: The network camera receiving the custom protocol must support stream acceptance through standard RTSP.

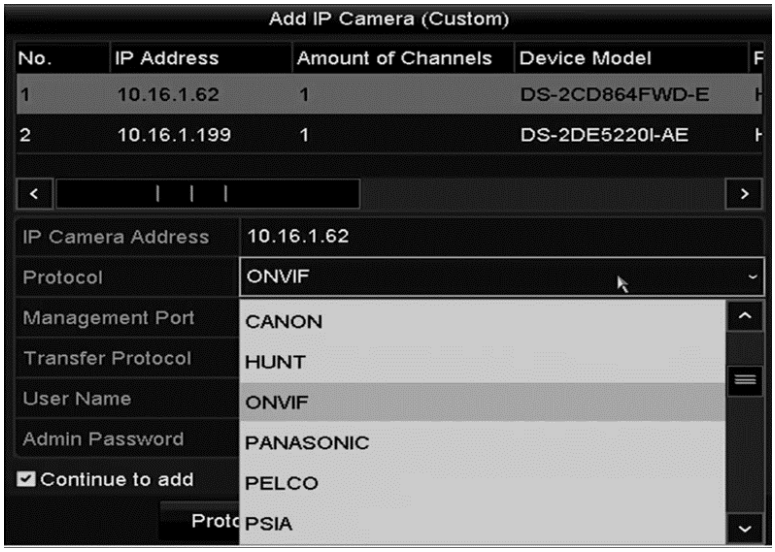
   Transfer Protocol: Select the transfer protocol for the custom protocol.

   Port: Set the port No. for the custom protocol.

Path: Set the resource path for the custom protocol. For example, ch1/main/av_stream

Note: The network camera must support the protocol and transfer protocol types.

After adding the customized protocols, the protocol name displays in the drop-down list.



3. Select the protocol you added to validate connection to the network camera.

Editing IP cameras connected to the PoE interfaces

Note: Not all ClareVision Plus NVRs have PoE, make sure that your NVR supports PoE.

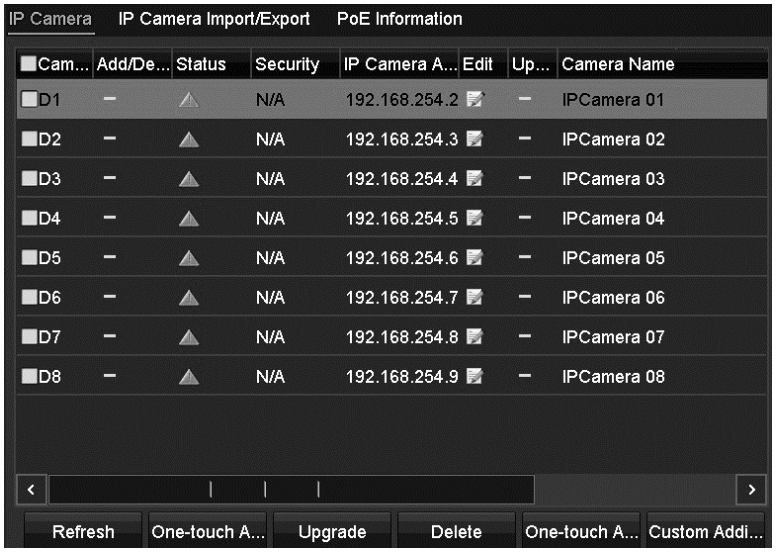
The PoE interface allows the NVR system to pass electrical power and data through Ethernet cables. Up to eight PoE interfaces can connect to the network cameras. To use an online network camera, you must first disable a PoE interface. One PoE interface is disabled for each online network camera. The PoE interface supports the Plug-and-Play function.

To add cameras for NVRs supporting PoE function:

1. Browse to the Camera Management interface.

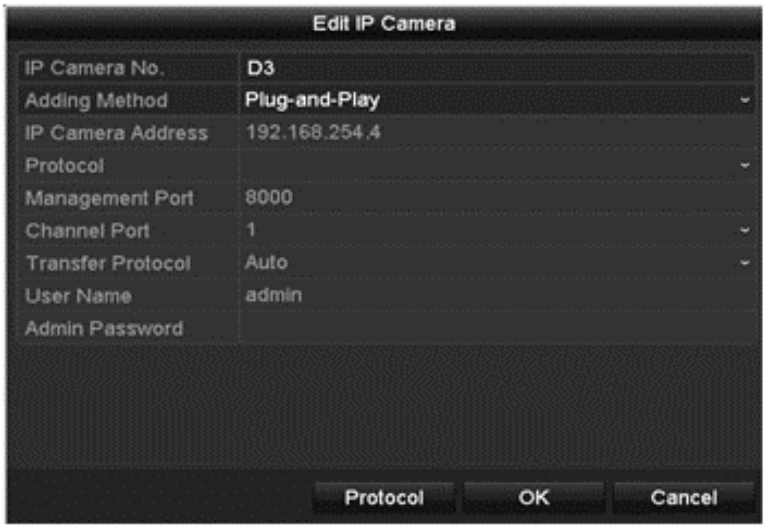
   Menu > **Camera** > **Camera**

   Note: You cannot delete the cameras connecting to the PoE interface in this menu.



2. Click , and then select the Adding Method.
3. Choose one of the following adding methods.

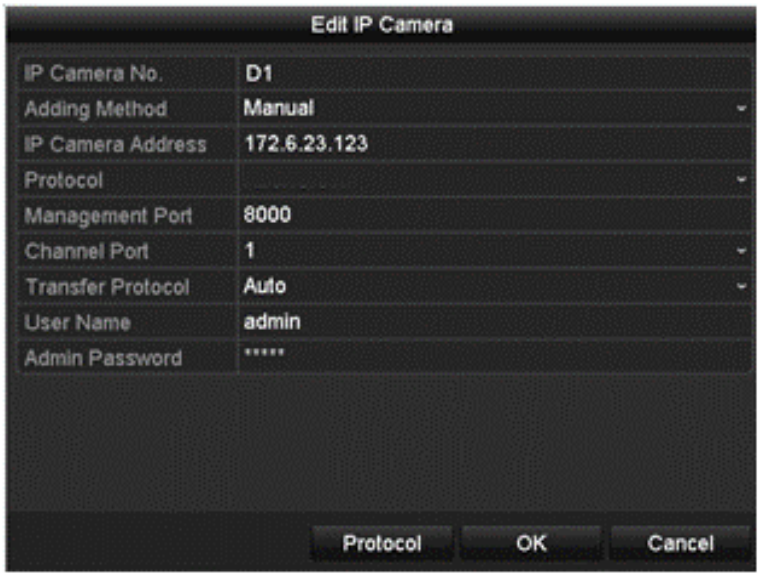
   Plug-and-Play: Connect the camera to the PoE interface. You cannot edit the camera parameters when choosing this option. The camera's IP address can only be edited in the Network Configuration interface. See "Configuring general settings" on page 126 for detailed information.



- or -

Manual: This disables the PoE interface. The current channel is then used as a regular channel with configurable parameters.

Enter the IP address, the user name and password, and then click **OK**.



Live View

Live View displays the video images from the connected camera in real time. When the NVR is powered on, it displays live view.

Live View icons

When in Live view mode, icons display in the upper-right corner. These icons tell the status of the channel, it is being recorded, and if it is connected to any alarms.

Table 14: Mouse operation in Live View

Icon	Description
	Alarm actions set.
	Record actions set.
	Alarm and record actions set.
	Event/exception actions are set. See “ Setting alarm response actions” on page 106. **Note:** This icon appears in the lower-left corner.

Operations in Live View mode

The Live View mode functions are listed below.

- **Single Screen**: Shows only one screen on the monitor.
- **Multi-screen:** Shows multiple screens on the monitor simultaneously.
- **Auto-switch:** The screen is auto switched to the next one. You must set the dwell time for each screen on the configuration menu before enabling auto-switch.

  Menu > **Configuration** > **Live View** > **Dwell Time**
- **Start Recording:** This starts recording, continuous record and motion detection record are supported.
- **Output Mode:** Select the output mode; Standard, Bright, Gentle or Vivid.
- **Playback:** Playback the recorded videos for current day.

- **Aux monitor:** The NVR checks the connection of the output interfaces. The priority level for the main and aux output is HDMI > VGA > CVBS. This means if the HDMI is used, it is the main output. If HDMI is not used, the VGA output is set as the main output. See Table 15.

Table 15: Priorities of interfaces

No.	HDMI	VGA	CVBS	Main output	Auxiliary output
1	√	√	√	HDMI	VGA
2	√	×	√	HDMI	CVBS
3	×	√	√	VGA	CVBS
4	×	×	√	CVBS	n/a

√ - the interface is in use.
× - the interface is not in use, or the connection is invalid.
HDMI, VGA and CVBS is used at the same time.

When the Aux output is enabled, the main output cannot operate. Some basic operations are performed in the Live View mode for the Aux output.

Front panel operation in Live View

Table 16: Front panel operation in Live View mode

Functions	Front Panel Operation
Common menu	Provides quick access to the sub-menus most often visited. Up to 5 sub-menu options are supported.
Menu	When right-clicking the mouse, the menu displays.
Show multi-screen	Press the **PREV/FOCUS**.
Manually switch screens	Next screen: right/down direction button. Previous screen: left/up direction button.
Auto-switch	Press **Enter**.
Playback	Press **Play**.
Switch between main and aux output	Press **Main/Aux**.

Using the mouse in Live View

Table 17: Mouse operation in Live View

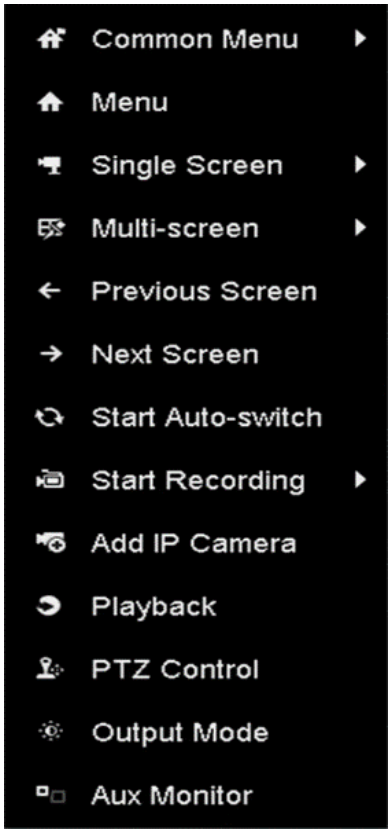
Icon	Description
Common Menu	Provides access to the most frequently visited sub-menus.
Menu	Enters the system menu by clicking the icon.
Single Screen	Switches to the single full screen.
Multi-Screen	Multi-screen layout.
Next/ Previous	Switches to the previous /next screen.
Start Auto-Switch	Starts the auto-switch of the screens.
Start Recording	Starts recording all channels.
Adding IP Cameras	Adds an IP camera.
Playback	Enters the playback interface and start playing back the video of the selected channel immediately.
PTZ	Enters the PTZ interface.
Output Mode	Four modes of output supported, including Standard, Bright, Gentle and Vivid.
Aux Monitor	Switches to the auxiliary output mode and the operation for the main output is disabled.

Notes

- If you enter the Aux monitor mode and the Aux monitor is not connected, the mouse operation is disabled. You must switch back to the Main output with the MAIN/AUX button on the front panel or use the remote.
- If the corresponding camera supports intelligent function, the Reboot Intelligence option is available when accessing the right-click menu.
- The dwell time of the Live View configuration is set before using Start Auto-switch.

  Note: Dwell time is programmable. It is configurable in the Live View Menu.

Figure 18: Right-click menu



Using an auxiliary monitor

Some features of Live View are also available while on an Aux monitor. These features include:

- **Single Screen:** Switch to a full screen display of the selected camera. The camera is selected from a drop-down list.
- **Multi-screen:** Switch between different display layout options. Layout options available in the drop-down list.
- **Next Screen:** When displaying less than the maximum number of cameras in Live View, clicking this feature switches to the next display set.
- **Playback:** Enters Playback mode.
- **PTZ:** Enters the PTZ Control mode.
- **Main Monitor:** Enters the Main operation mode.

Note: In the Live View mode of the main output monitor, the menu operation is not available when Aux output is enabled.

Quick Setting toolbar in Live View mode

Clicking the screen of a channel displays the Quick Settings toolbar.

Figure 19: Quick Settings toolbar

Table 18: Quick Settings toolbar icons

Icon	Description
	Enable/disable instant record
	Instant playback [1]
	Mute/audio on
	Capture
	PTZ control
	Digital zoom [2]
	Image settings [3]
	Face detection [5]
	Live view strategy [4]
	Add channel [6]
	Close

[1] Instant Playback only shows the recording in last five minutes.

[2] Digital Zoom can zoom to make the selected area full screen. Click and draw to select the area to zoom, as shown in Figure 20.

[3] Click the Image Settings icon to enter the Image Settings menu, as shown in Figure 21. You can change the image parameters.

[4] Live View Strategy is selected to set strategy, including Real-time, Balanced, and Fluency, as shown in Figure 22.

[5] Face detection is used to detect human faces in live view mode. The faces are captured and stored in the HDD.

[6] Moving the mouse over this icon displays the real-time stream information, including the frame rate, bitrate, resolution, and stream type. See Figure 23: Information.

Figure 20: Digital zoom

Figure 21: Image settings - preset

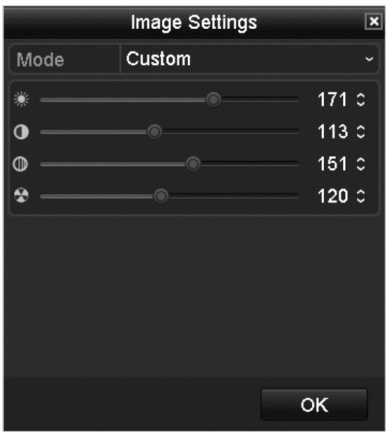


Figure 22: Live View Strategy

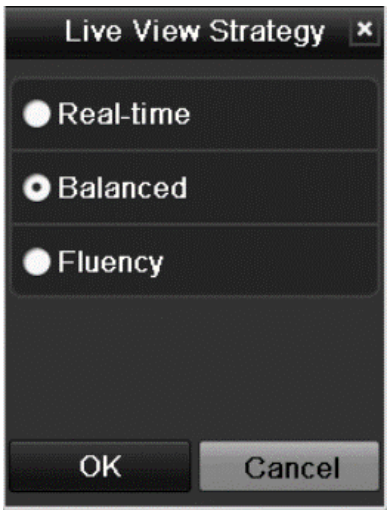


Figure 23: Information

Adjusting Live View settings

You can customize the Live View settings according to your different needs. You can configure the output interface, dwell time, mute or turn on the audio, and view the screen number for each channel, etc.

To adjust Live View settings:

1. Browse to the Live View Settings interface.

   Menu > **Configuration** > **Live View**

Table 19: Live View settings

Video Output Interface	Designates the output for setting configuration. Outputs include HDMI (depends on the model), VGA, Main CVBS, and Spot Output.
Live View Mode	Designates the display mode used for Live View.
Dwell Time	The time (in seconds) to dwell between switching channels when |auto-switch is enabled in Live View.
Enable Audio Output	Enables/disables audio output for the selected video output.
Event Output	Designates the output to show the event video.
Full Screen Monitoring Dwell Time	The time (in seconds) to show the alarm event screen.

Setting cameras order

Figure 24: Live View – camera order

To set the camera order:

1. Select a view mode using the toolbar icons .
2. Select the small window, and then double-click the channel number to display the channel in the window.
3. Click the button to start live view for all the channels, and then click to stop all live viewing.
4. Click the **Apply** button to save the setting.

Channel-zero encoding

Sometimes a remote view of channels in real time from a web browser or CMS (Client Management System) software is necessary. In order to decrease the bandwidth requirement without affecting image quality, channel-zero encoding is supported.

To configure channel-zero encoding:

1. Enter the Live View Settings interface.

   Menu > **Configuration** > **Live View**

2. Select the **Channel-Zero Encoding** tab.

3. Check the check box after Enable Channel-Zero Encoding.
4. Configure the Frame Rate, Max. Bitrate Mode, and Max. Bitrate.
5. Click the **Apply** to save the settings.

After you set the Channel-Zero encoding, you can view 16 channels in one screen using a remote client or web browser.

Configuring PTZ Settings

Configuring PTZ settings

Follow the procedure to set the parameters for PTZ (Pan, Tilt, Zoom). You should configure the PTZ parameters before you control the PTZ camera.

To configure PTZ settings:

1. Enter the PTZ Settings interface.

   Menu > **Camera** > **PTZ**

2. Click **PTZ Parameters**.

3. Select the camera for PTZ use in the Camera drop-down list.
4. Enter the parameters of the PTZ camera.

   Note: All parameters must match the PTZ camera's parameters. For example, if the PTZ camera uses the protocol PRIVATE, select PRIVATE in the PTZ Protocol field.
5. Click **Apply** to save the settings.

Setting PTZ presets, patrols, and patterns

Note: Make sure that the presets, patrols, and patterns are supported by PTZ protocols.

Customizing presets

Follow the steps below to set the preset location for the PTZ camera to point when an event takes place.

To set the preset location:

1. Browse to the PTZ Control interface.

   Menu > **Camera** > **PTZ**

2. Use the direction buttons to move the camera to the desired preset location, and then adjust the focus and zoom.
3. Enter the preset number (1 to 255), and then click **Set**.

   This links the location to the preset.

4. Repeat the steps 2 and 3 for each preset.

   Note: Click **Clear** to reset the location information for the current preset.

   – or –

   Click **Clear All** to reset all locations information from all presets.

Calling presets

This feature allows the camera to point to a specified position, such as a window, when an event takes place.

To call preset in the PTZ setting interface:

1. Browse to the PTZ Control interface.

   Menu > **Camera** > **PTZ**

2. Click the **PTZ Control** icon in the quick setting bar.

   – or –

   Select the PTZ option in the right-click menu.

3. Select the desired camera from the Camera drop-down list.

4. Click to view the general PTZ control settings.

5. Enter the preset number in the **Call Preset** field.

6. Click **Call Preset**.

Customizing patrols

Patrols can be set to move the PTZ to different key points, dwell for a set time, and move to the next key point.

To customize patrols:

1. Browse to the PTZ Control interface.

   Menu > **Camera** > **PTZ**

2. Select the patrol number from the patrol drop-down.
3. Click **Set** to add key points (presets) to the patrol.

4. Configure the key point's parameters, such as the desired preset number, duration (dwell) time, and speed of the patrol.

   The key point No**.** determines the order the PTZ follows while cycling through the patrol.

   The Preset number corresponds with a configured preset.

   The Duration refers to the time span the PTZ stays at the corresponding key point.

   The Speed defines the speed at which the PTZ moves from one key point to the next.

5. Click **Add** to add another key point to the patrol.

   – or –

   Click **OK** to save the key point patrol.

Calling patrols

Calling a patrol makes the PTZ camera move according to the predefined patrol path.

To set calling patrol in the PTZ setting interface:

1. Click the **PTZ Control** icon in the quick setting bar.

   – or –

   Select the PTZ option in the right-click menu.

2. Click to view the general PTZ control settings.

3. Select a patrol in the drop-down list, and then click **Call Patrol**.
4. When you want to stop the patrol, click **Stop Patrol**.

Customizing patterns

Recording the movement of the PTZ can set patterns. You can call the pattern to make the PTZ movement according to the predefined path.

To set customized patterns:

1. Browse to the PTZ Control interface.

   Menu > **Camera** > **PTZ**

2. Select the pattern number in the Pattern drop-down.
3. Click **Start**, and then click the corresponding control panel buttons to move the PTZ camera.
4. When finished, click **Stop**.

   The movement of the PTZ is recorded as the pattern.

Calling patterns

Follow the procedure to move the PTZ camera according to the predefined patterns.

To set a calling pattern in the PTZ setting interface:

1. Click the **PTZ Control** icon in the quick setting bar.

   – or –

   Select the PTZ option in the right-click menu.

2. Click to view the general PTZ control settings.

3. Click **Call Pattern**.
4. When finished, click **Stop Pattern**.

Customizing the linear scan limit

The linear scan limit is enabled to trigger a horizontal scan in a predefined range.

To customize the linear scan limit:

1. Browse to the PTZ Control interface.

   Menu > **Camera** > **PTZ**

2. Use the direction buttons to move the camera to the desired limit location, and then click Left Limit or Right Limit to link the location to the corresponding limit.

   Note: The speed dome starts the linear scan from the left limit position and continues through to the right limit position. The left limit must be set on the left side of the camera, and the right limit on the right side. The angle from the left limit to the right limit should not exceed 180°.

Calling linear scan

Before using this feature, verify that the camera supports linear scan and is using ClareVision Plus protocol.

To call the linear scan:

1. Click the **PTZ Control** icon in the quick setting bar.

   – or –

   Select the PTZ option in the right-click menu.

2. Click to view the general PTZ control settings.

3. Click **Linear Scan** to start the scan, and then click **Linear Scan** to stop the scan.

   – or –

   Click **Restore**, and then reboot the camera to clear the defined limits.

Customizing one-touch park

Before using this feature, verify that the camera supports linear scan and is using ClareVision Plus protocol.

One-touch park configures a predefined park action (scan, preset, patrol, etc.) automatically after a period of inactivity.

To set one-touch park:

1. Click the **PTZ Control** icon in the quick setting bar.

   – or –

   Select the PTZ option in the right-click menu.

2. Click to view the general PTZ control settings.

3. Select the park action.

   Park (quick patrol): The dome starts a patrol from the predefined preset (1 to 32) in order after the park time. An undefined preset is skipped.

   Park (Patrol 1): After the park time, the dome starts moving according to the predefined patrol path.

   Park (Preset 1): After the park time, the dome moves to the predefined preset 1 location.

4. Click the button again to deactivate the one-touch settings.

PTZ control panel

Access the PTZ control panel using an option below.

Option 1: In the PTZ settings interface, click the PTZ button.

Option 2: In the Live View Mode, press the PTZ Control button on the front panel on the remote control.

– or –

Select the **PTZ Control** icon .

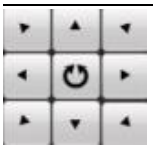
– or –

Select the PTZ option in the right-click menu.

Note: In PTZ control the, the PTZ panel displays when a mouse is connected to the device. If there is no mouse connection, the PTZ icon appears in the lower-left corner indicating that the camera is in PTZ control mode.

Figure 25: PZT panel

Table 20: PZT panel icons

	Direction and auto-cycle buttons
	Zoom Plus, Focus Plus, Iris Plus
	Zoom-, Focus-, Iris-
	PTZ movement speed
	Light on/off
	Wiper on/off
	3D-zoom
	Image centralization
	Menu
	Previous item
	Next item
	Start pattern/patrol
	Stop the patrol/pattern movement
	Minimize windows
	Exit

Record and Capture Settings

Note: The CVP-P64050-10 is the only ClareVision Plus NVR that supports capture.

Configuring parameters

By configuring the encoding parameters, you can define the parameters affecting image quality, such as the transmission stream type, the resolution, and so on.

Note: The HDD must be installed and initialized before configuring the parameters.

To prepare the HDD:

1. Make sure that the HDD is installed. If not, install and initialize it now.

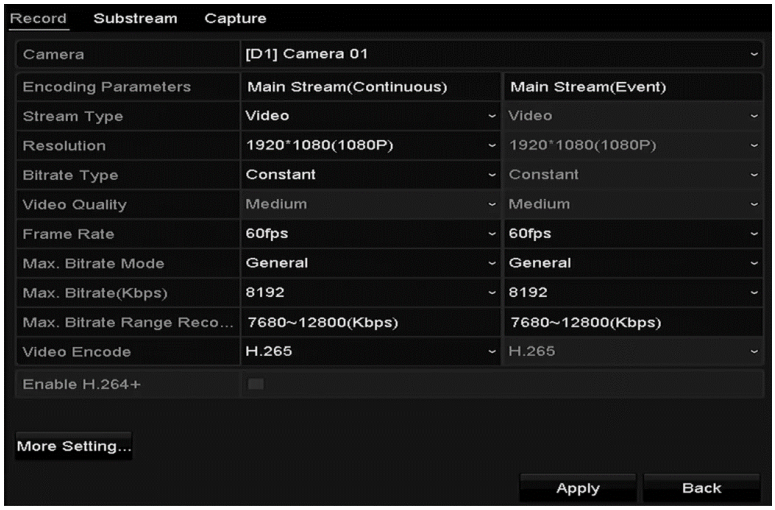
   Menu > **HDD** > **General**

2. Check the storage mode of the HDD.
   a. Click **Advanced** to check the storage mode of the HDD.
   b. If the HDD mode is set to Quota, set the maximum record capacity and maximum picture capacity.
   c. If the HDD mode is set to Group, set the HDD group. For detailed information, see “Configuring HDD groups for recording and capture” on page 71.

To configure the parameters:

1. Browse to the Record settings interface to configure the encoding parameters.

   Menu > **Record** > **Parameters**



2. Select the **Record** tab page to configure. You can configure the stream type, the resolution, and other parameters on demand.

   Pre-record: The time you set to record before the scheduled time or event. For example, when an alarm triggers the NVR to record at 10:00 and you set the pre-record time as 5 seconds, the NVR records it at 9:59:55.

   Post-record: The time you set to record after the event or the scheduled time. For example, when an alarm triggers the recording ends at 11:00, and you set the post-record time as 5 seconds, it records till 11:00:05.

   Expired Time: The expired time (days) is the longest time for the NVR to keep a recorded file in the HDD. When it reaches its deadline, the NVR deletes the file. You can set the expired time to 0 to prevent the file from being deleted. The HDD capacity determines the actual amount of time the file is kept.

   Redundant Record/ Capture: Enabling redundant record or capture means you save the record and captured picture in the redundant HDD. (This is a 64-channel NVR feature only.)

   Record Audio: Check the check box to enable or disable audio recording.

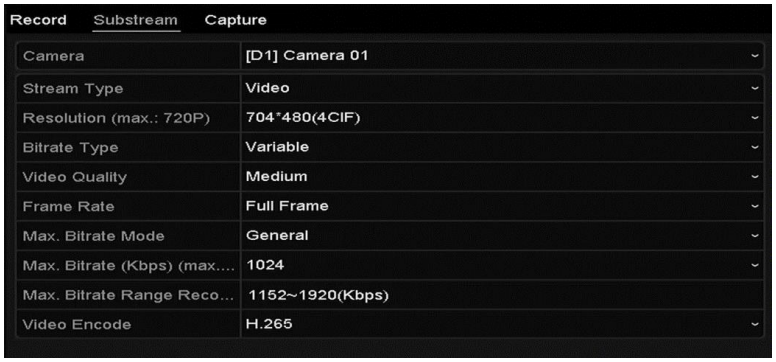
   Video Stream: Select the recorded stream, main or sub-stream. When you select sub-stream, you can record for a longer period of time with the same storage space.

3. Click **Apply** to save the settings.

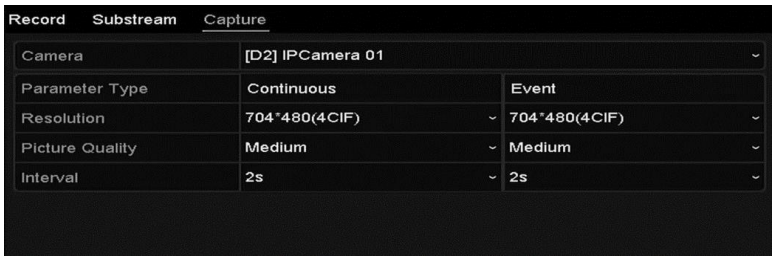
   Notes

   - Use the redundant record/capture feature when you want the camera to save the record files or captured pictures in the redundant HDD. You must configure the redundant HDD in HDD settings.
   - You can enable the ANR (Automatic Network Replenishment) function via the web browser (**Configuration** > **Camera Settings** >**Schedule Settings** > **Advanced**) to save the recording files in the IP camera when the network is disconnected, and then have the files synchronize in the NVR when the network is resumed.

4. Enter the **Sub-stream** tab page.



5. Configure the parameters of the camera.
6. Click **Apply** to save the settings.
7. Select the **Capture** tab, and then configure the settings.



8. Click **Apply** to save the settings.

   Note: The interval is the time between two capturing actions. You can configure all the parameters on this menu.

Configuring record/capture schedule

Set the record schedule to automatically start and stop the recording, based on the configured schedule.

Note: In this section, we use the record schedule method as an example. Apply the same process to configure a schedule for both recording and capture. To schedule the automatic capture, you must use the **Capture** tab in the Schedule interface.

To configure the schedule:

1. Enter the Record Schedule interface.

   Menu > **Record/Capture** > **Schedule**

2. Select Record or Capture Schedule. There are 6 differed recording types.

   Continuous: Scheduled recording

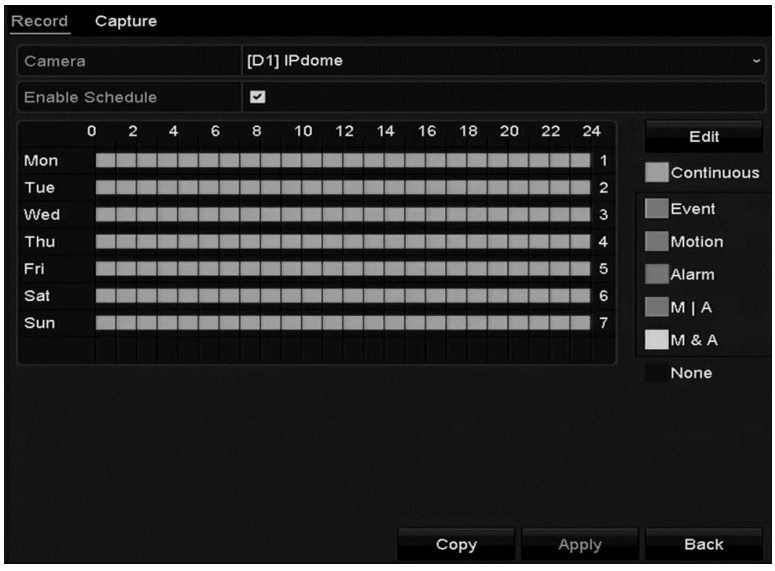
   Event: Event triggered recording

   Motion: Motion detection triggered recording

   Alarm: Alarm triggered recording

   M/A: Motion detection or alarm triggered recording

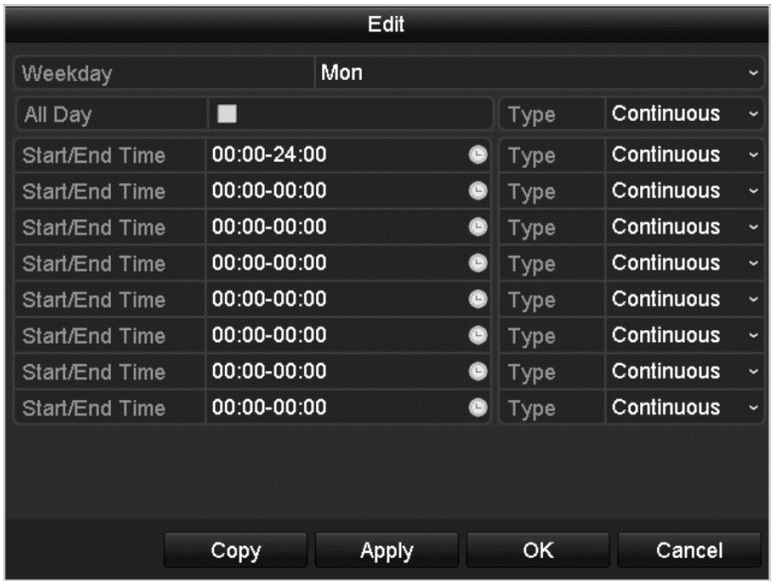
   M&A: Motion detection and alarm triggered recording



3. Choose the camera to configure.
4. Select the **Enable Schedule** checkbox.
5. Click **Edit** or click on the color icon under the edit button and draw the schedule line on the panel.

To edit the schedule:

1. In the dialog, you can choose the day when you want to set a schedule.



2. Click to set the schedule time.
3. To schedule an all-day recording, select the **All Day** checkbox.

4. To arrange another schedule, set the start and end time. (Do not select the **All Day** checkbox.)

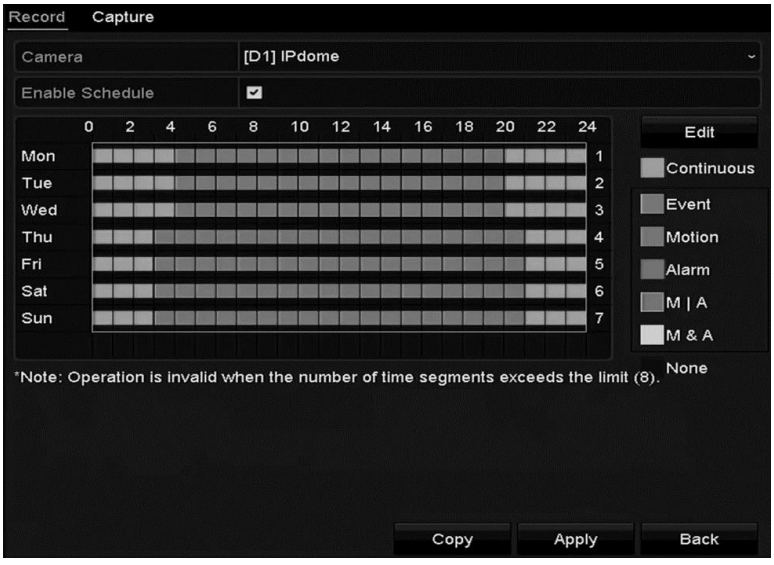
   You can configure up to eight schedules for each day. The schedules cannot overlap each other.

5. Repeat the steps above to schedule recordings or captures for other days in the week. To apply the schedule to other days, click Copy.

6. Click **OK** to save the setting and return to the previous menu.
7. Click **Apply** to save the settings in the Record menu.

To draw the schedule:

1. Click the color icons. Set the schedule type as continuous or event.



2. Click **Apply** to save the settings.

3. To use the same settings in other channels, click **Copy**, and then choose the channel.

Configuring motion detection record and capture

Follow the steps to set the motion detection parameters. In the Live View mode, once a motion detection event takes place, the NVR can analyze it and respond. Enabling the motion detection function can trigger certain channels to start recording, trigger full screen monitoring, audio warning, notify the surveillance center, and so on. In this chapter, you can follow the steps to schedule a recording triggered by detected motion.

To configure motion detection:

1. Browse to the Motion Detection interface.

   Menu > **Camera** > **Motion**

2. Choose the desired camera, and then select the **Enable Motion Detection** checkbox.
3. Using your mouse, drag and draw the motion detection area. To select the camera's entire field of view, click **Full Screen**. To clear the motion detection area, click **Clear**.
4. Click **Settings**.

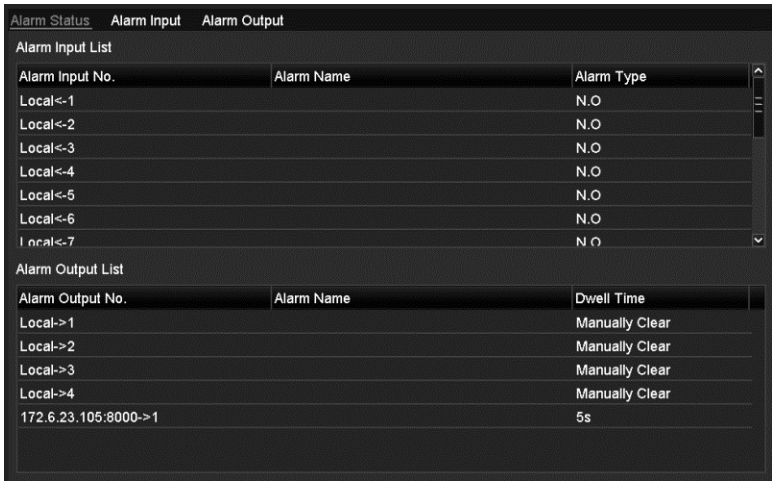
5. Select the channels you want the motion detection events to trigger recording.
6. Click **Apply** to save the settings.
7. Click **OK** to return to the previous menu.
8. Exit the Motion Detection menu, and then edit the Motion Detection Record Schedule. See "Configuring record/capture schedule" on page 60.

Configuring alarm triggered record and capture

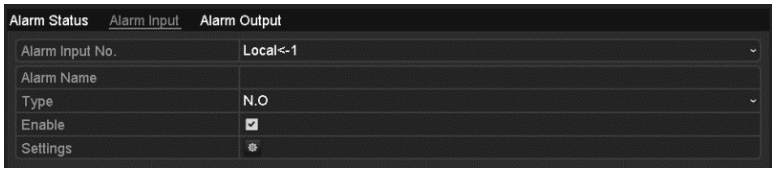
To configure alarm triggered recording or capture:

1. Browse to the Alarm setting interface.

   Menu > **Configuration** > **Alarm**

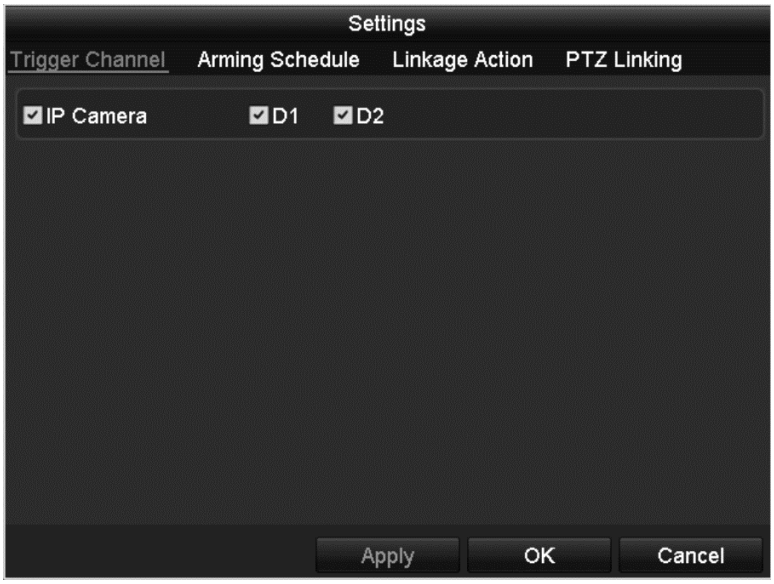


2. Click **Alarm Input**.



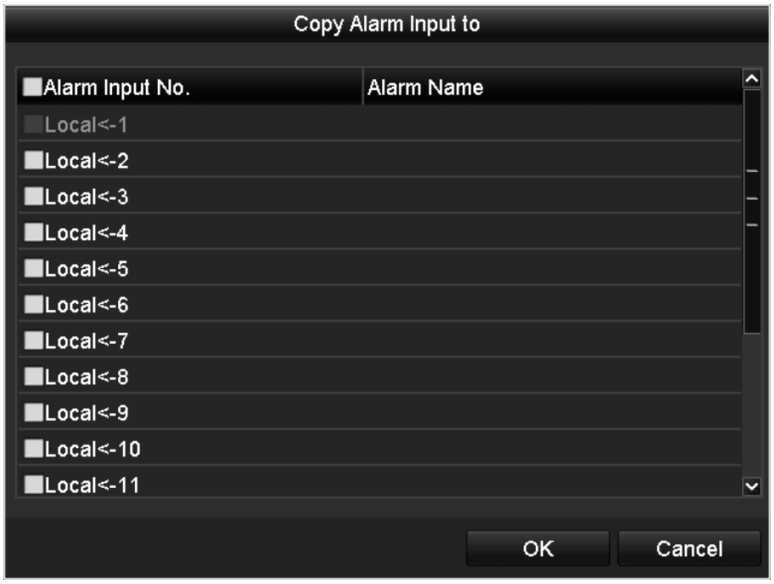
3. Select Alarm Input No., and then configure alarm parameters.
   - Set the Alarm Type: N.O (normally open) or N.C (normally closed)
   - Select the **Enable** checkbox

4. Click **Settings**.



5. Choose the alarm triggered recording channel.
6. Select the desired channel checkbox.
7. Click **Apply** to save settings, and then click **OK** to return to the previous menu.
8. Repeat the above steps to configure other alarm input parameters.

   If you want to apply the settings to other alarm inputs, click **Copy** and choose the alarm input number.



9. Edit the Alarm triggered record in the Record/Capture Schedule setting interface.

Manual record and continuous capture

Follow the steps to set parameters for the manual record and continuous capture. Using manual record and continuous capture, you must manually cancel the record and capture.

To enable manual record:

1. Browse to the Manual settings interface.

   Menu > **Manual**

   - or -

   Press the **REC/SHOT** button on the front panel.

2. To enable manual record, select Record on the left bar.
3. Click the status button before the desired camera number to change from **OFF** to **ON**.

To disable manual record:

1. Click the status button to change **ON** to **OFF**.

   Note: The green ON icon indicates that the channel is configured in the record schedule. After rebooting all the manual records that were enabled are canceled.

To enable continuous capture:

1. Select Continuous Capture on the left bar.

2. Click the status button before camera number to change **OFF** to **ON**.

To disable continuous capture:

1. Click the status button to change **ON** to **OFF**.

   Note: The green ON icon indicates that the channel is configured to a capture schedule. After rebooting, all continuous captures are canceled.

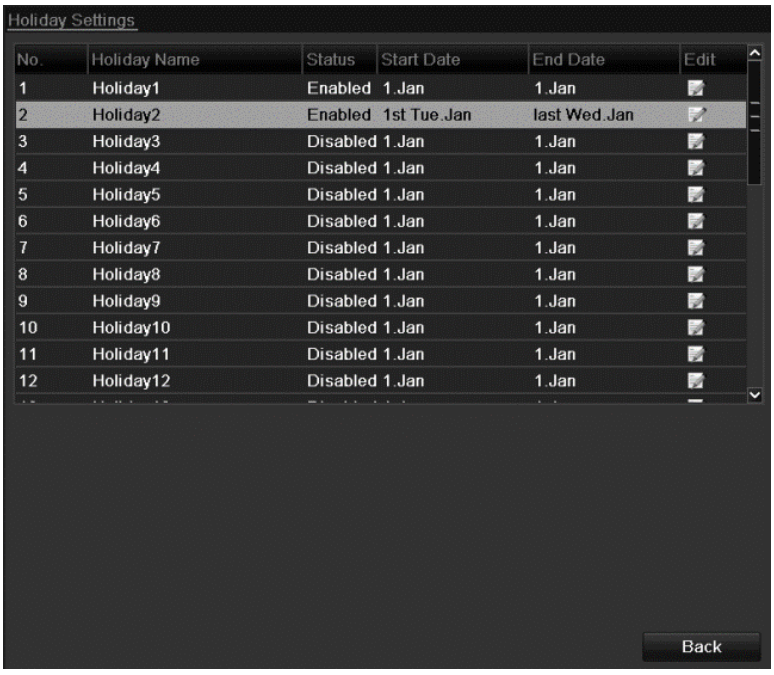
Configuring holiday record and capture

Follow the steps below to configure the record or capture schedule for holidays. You may have different plans for recording and capture on holidays.

To configure holiday record and capture:

1. Browse to the Record setting interface.

   Menu > **Record** > **Holiday**



2. To enable the Edit Holiday schedule, click to enter the Edit interface.

3. Select the **Enable** checkbox.
4. Choose Mode from the drop-down list.

   There are three different modes for the date format to configure holiday schedule.
5. Set the start and end date.
6. Click **Apply** to save your settings.
7. Click **OK** to exit the Edit interface.
8. Enter the Record/Capture Schedule interface and edit the holiday recording schedule.

Configuring redundant recording and capture

Enable redundant recording and capture to save the record files and captured pictures in the R/W HDD and in the redundant HDD, if available. This will enhance the data safety and reliability.

To configure redundant recording and capture:

1. Browse to the HDD Information interface.

   Menu > **HDD**

2. Select the HDD and click to enter the Local HDD Settings interface.
3. Set the HDD property to Redundancy.

4. Click **Apply** to save the settings.
5. Click **OK** to return to the previous menu.

   Note: Prior to setting the HDD property to Redundant, set the Storage mode to Group. There should be another HDD in Read/Write status.
6. Browse to the Record setting interface.

   Menu > **Record** > **Parameters**
7. Click the **Record** tab, and then click **More Settings**.

8. Select the desired camera from the drop-down list, and then select the **Redundant Record/Capture** checkbox.
9. Click **OK** to save settings and return to the previous menu.

   Repeat the above steps to configure other channels.

Configuring HDD groups for recording and capture

You can group the HDDs and save the record files and captured pictures in various HDD groups.

To configure the HDD group:

1. Browse to the HDD setting interface.

   Menu > **HDD**

2. Click **Advanced**.

3. Set the HDD storage mode to **Group**.
4. Select **General** in the left bar.
5. Click to enter editing interface.
6. Choose a group number for the HDD group.
7. Click **Apply**, and then click **Yes** to save your settings.
8. Click **OK** to return to the previous menu.

   Repeat the above steps to configure more HDD groups.

To choose the channels that you want to save:

1. Click **Advanced** on the left bar.
2. Select the group number in the Record on HDD Group drop-down list.
3. Check each desired channel to save to the group.
4. Click **Apply** to save settings.

Note: After configuring the HDD groups, you can configure the Recording and Capture settings. Follow “Configuring parameters” on page 57

File protection

You can lock the recorded files or set the HDD property to Read-only to protect files from being overwritten.

To lock the files:

1. Browse to the Export setting interface.

   Menu > **Export**

2. Select the desired channels, and then double-click on the calendar to select the date.

3. During playback, click to lock the current file.

   Note: In multi-channel playback mode, clicking locks all recorded files related to the selected playback channels.

4. Click to access the file management interface.

5. Click the **Locked File** tab to check and export the locked files.

Note: In the File Management interface, click to set the file to unprotected. Clicking , sets the file to protected.

To protect file by setting HDD property to Read-only:

1. Browse to the HDD setting interface.

   Menu > **HDD**

2. Click to edit the protected HDD.

   Note: To edit HDD property, you must set the storage mode of the HDD to Group. See “Managing the HDD group” on page 158.

3. Set the HDD property to Read-only.
4. Click **OK** to save the settings and return to the previous menu.

Notes

- You cannot save files in a read-only HDD. If you want to save files in the HDD, change the property to R/W.
- If there is only one HDD and it is set to read-only, the NVR cannot record any files. Only live view mode is available.
- If you set the HDD to read-only when the NVR is saving files, the file is saved in next R/W HDD. If there is only one HDD, the recording is stopped.

Playback

Playback interface

The toolbar in the bottom part of Playback interface is used to control play progress, as shown in the figure below.

Click the channel(s) to execute simultaneous playback of multiple channels.

Note: The 09-15-2014 12:54:41 -- 12-09-2014 14:11:21 indicates the start/end time of the record.

Table 21: Playback icons

Icons	Description
/	Audio on/ Mute
/	Start/Stop clipping
	30s forward
	30s backwards
	Capture frame
	Lock video
	Add default tag
	Add customized tag

	File management
	Slow down
	Pause/ Reverse play/ Single-frame reverse play
	Scaling up/down the time line
	Speed up
	Previous day
	Next day
	Full Screen
	Exit
	Stop
	Digital Zoom
	Save the clip
	Process bar

Note: On the Playback progress bar, use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.

Play recorded files

Playing back by channel

Play back the recorded video files of a specific channel in the Live View mode. You have two playback options for play back.

To use instant playback:

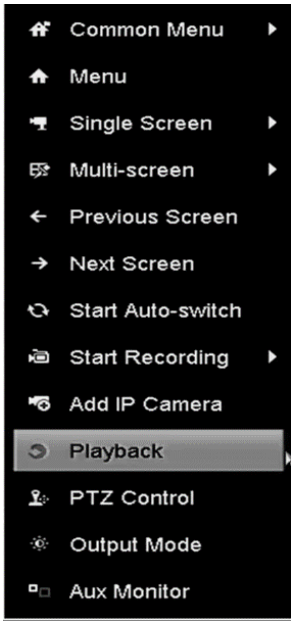
1. Click in the quick setting toolbar, to choose a channel in Live View mode.

   Note: In instant playback mode, only record files recorded during the last five minutes on this channel are played back.

To use channel playback:

1. Enter the Playback interface.

   Click in the right-click menu.



Playing back by event search

Play back record files on one or several channels searched out by restricting event type (e.g., alarm input and motion detection).

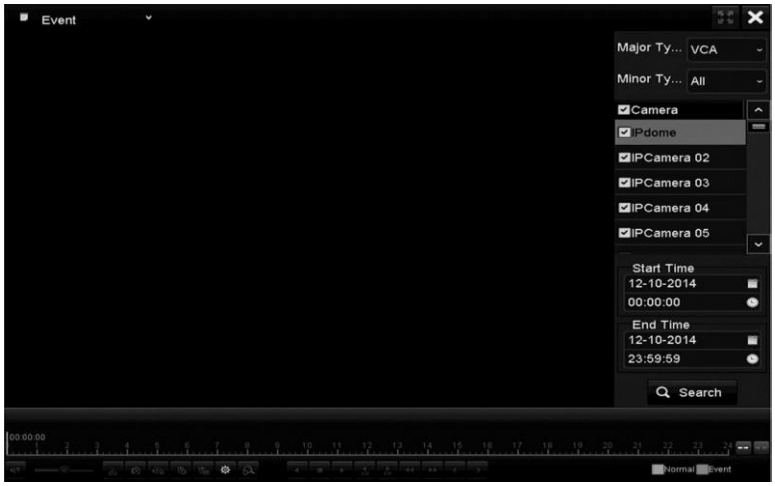
To play back by event search:

1. Browse to the Playback interface.

   Menu > **Playback**

2. Select **Event** in the top-left drop-down list.

3. Set Alarm Input Motion or VCA as the event type, and then edit the Start and End time.



4. Select the VCA minor type from the drop-down.
5. Select the desired cameras, and then set the Start time and End time.
6. Click **Search** for result information. Refer to the right-side bar for the result.
7. Click to play the file.

   Note: You can configure pre and post play.
8. Use the toolbar at the bottom of the Playback interface to control playback.

Playing back by tag

Video tags let you mark specific points in recording. Use tags to search for people, locations, or set custom tags. Use video tags to search for recorded files and position time points.

To play back by tag:

1. Browse to the Playback interface.

   Menu > **Playback**

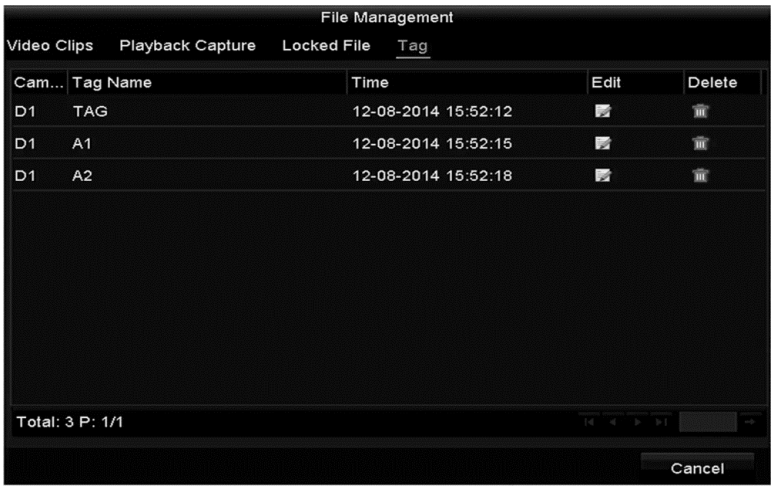
2. Search and play back the record files.

3. Click to add default tag.
4. Click to add customized tag and input tag name.

Note: There is a maximum of 64 tags in a single video file.

To manage tags:

1. Click to check, edit, and delete tags.



2. Select the tag from the drop-down list in the Playback interface.

3. Set the channels, edit the start and end time, and then click **Search** to enter the Search Result interface.

   Note: You can enter a tag in the **Keyword** field to search for that tag.

4. Click to play the tagged file.

   You can click the Back button to return to the search interface.

Playing back with Smart Playback

Smart Playback provides an easy way to get more effective information from your playback files. When selecting Smart Playback mode, the system analyzes the video containing the motion/VCA information, makes it in green, and plays it at normal speed while the video without motion is played at the 16-time speed. Configure the Smart Playback rules and areas.

Note: Before using Smart Playback the corresponding even type must be enabled and configured in the IP camera. For example, to use Smart Playback with Intrusion Detection, Intrusion Detection must be enabled in the camera. Once the event type is enabled, Smart Playback searches for and marks the event type.

Example

1. Log in to the IP camera using a web browser, and then enable intrusion detection.

   Configuration > **Advanced Configuration** > **Events** > **Intrusion Detection**

2. Configure the required parameters including area, arming schedule, and linkage methods.

To use Smart Playback:

1. Browse to the Playback interface.

   Menu > **Playback**

2. In the top-left drop-down, select Smart.
3. Select the desired camera.
4. Select a date in the calendar, and then click .

5. Set the rules and areas for VCA or motion event smart search.

   Line Crossing Detection: Click , and then click the image to set the start and points in the line.

   Intrusion Detection: Click , and hen specify the 4 points, creating a quadrilateral region, for intrusion detection. Only 1 region can be configured.

   Motion Detection: Click , and then click drag the mouse, setting the detection area manually. Click to select the full screen.

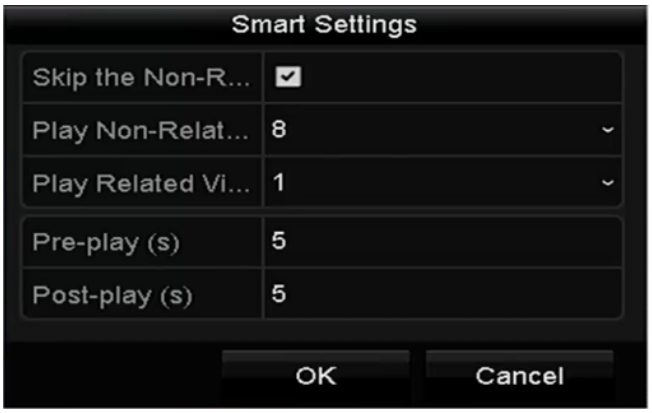
6. Click to configure smart settings.

   Skip the Non-Related Video: Non-related video is not played when this function is enabled.

   Play Non-Related Video at: Set the speed to play the non-related video.

   Play Related Video at: Set the speed of play for related video.

   Note: Pre and post play are not available for motion event types.



7. Click to search for and play matching video files.
8. (Optional) Click to filter the video files by setting target characters, including gender, age, and whether they have glasses.

Playing back by system logs

Play back record files associated with channels after searching the system logs.

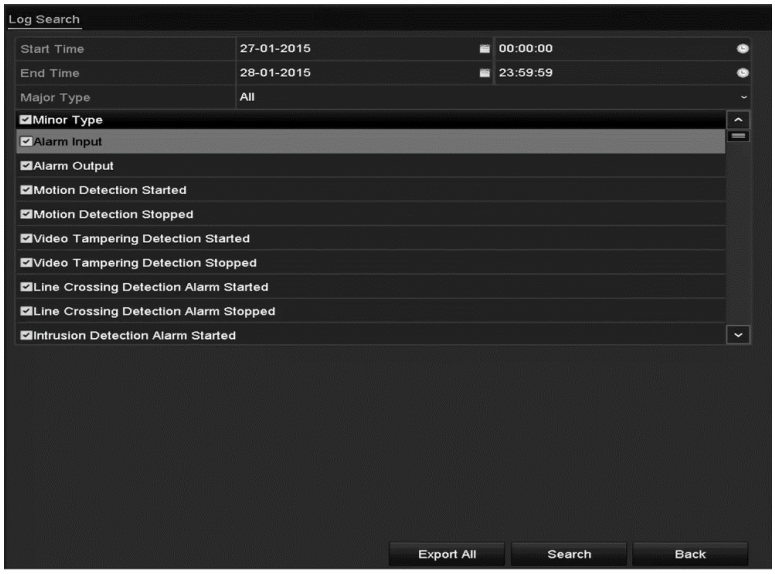
To play back by system logs:

1. Browse to the Log Information interface

Menu > **Maintenance** > **Log Information**

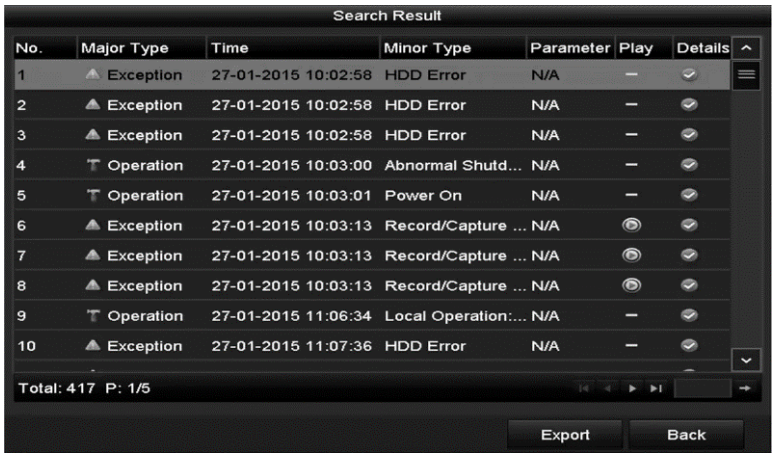
2. Click the **Log Search** tab to enter Playback by System Logs.

3. Set the search time and type, and then click **Search**.



4. Select a log with record files and click to enter the Playback interface.

   Note: If there is no record file at the time point of the log, the No result found dialog box displays.



5. Use the toolbar in the bottom part of the Playback interface to control playing process.

Playing back external file

Follow the steps to search for and play files in an external device.

To play back external files:

1. Browse to the Tag Search interface.

   Menu > **Playback**

2. In the top-left drop-down, select External File.

   The files are listed to the right side of the screen. Click **Refresh**, to refresh the file list.

3. Select a file, and then click to play the file.

Playing back by sub-periods

Play the video files back in multiple sub-periods simultaneously on screen.

To play back sub-periods:

1. Browse to the Playback interface.

   Menu > **Playback**

2. In the upper-left corner drop-down, select **Sub-periods**.
3. Select the date, and then play the video files.

4. Select the desired split screen from the drop-down.

   Note: Configure up to 16 screens. The video files are divided into average length segments for playback depending on the defined number of split-screens. For example, if the video file is between 4am and 8am, and the 4-screen display mode is selected, then 1 hour video files are displayed simultaneously.

Playing back pictures

Search for and view pictures captured and stored in a device's HDD.

To play back pictures:

1. Browse to the Playback interface.

   Menu > **Playback**
2. In the top-left drop-down, select picture.
3. Select the channel/channels and specify the search start and end times.
4. Click **Search**.

   Note: Up to 4,000 images are displayed for each search.

5. Select the picture you want to view, and then click .
   Click **Back** to return to the search interface.

6. Use the toolbar at the bottom of the Playback interface to control and navigate through the images.

Table 22: Picture playback toolbar

Icons	Description
	Revers
	Play
	Previous picture
	Next picture

Auxiliary functions of playback

Playing back frame by frame

Play video files frame by frame to check the image details of the video when abnormal events occur.

To play back frame by frame using a mouse:

1. Browse to the Playback interface.

   Menu > **Playback**

2. When you choose playback of the record file, click until the speed changes to a single frame. One click on the Playback screen represents plays one frame.
3. When you choose reverse playback of the record file, click until the speed changes to a single frame. One click on the Playback screen represents reverse playback of one frame. You can also use the **Pause** button in the toolbar.

To play back frame by frame using the front panel:

1. Hold and rotate the outer ring on the Jog Shuttle counter clockwise (for 16 and 32-Channel only), or click to set the speed to Single frame. One click on **Pause** button, single click on the playback screen, or Enter button on the front panel represents playback or reverse playback of one frame.

Digital zoom

To use digital zoom:

1. Click to enter the Digital Zoom interface.
2. Using the mouse, draw a rectangle. Enlarge the image up to 16 times.

3. Right-click the image to exit the Digital Zoom interface.

Managing files

Manage video clips, captures images, locked files, and tags in playback mode.

To manage the files:

1. Browse to the Playback interface.

   Menu > **Playback**

2. Click to enter the file management interface.

3. View and export saved video clips and captured pictures, lock/unlockfiles, and edit tags added through playback mode.
4. Click **Export All** to export all files to a local storage device.

   – or –

   Click **Export** to export a specific file.

Reverse playback of multi-channel

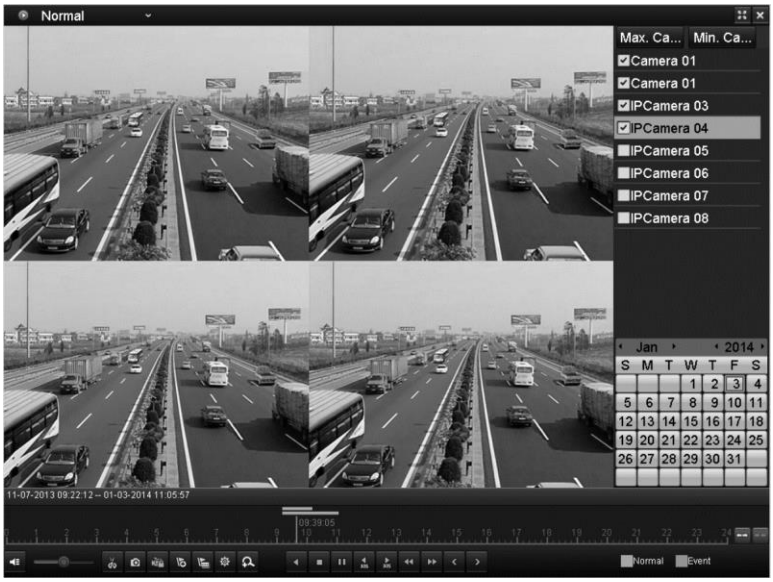
Simultaneous playback is supported for multi-channel. Up to 16-channel (with 1280×720 resolution) simultaneous reverse playback is supported; up to 4-channel (with 1920×1080 resolution) simultaneous reverse playback is supported and up to 1-channel (with 2560×1920 resolution) reverse playback is supported.

To reverse playback of multiple channels:

1. Browse to the Playback interface.

   Menu > **Playback**

2. Select more than one check box to select multiple channels, and then click to select a date on the calendar.



3. Click to play the files in reverse.

Backup

Backing up recorded files

Quick export

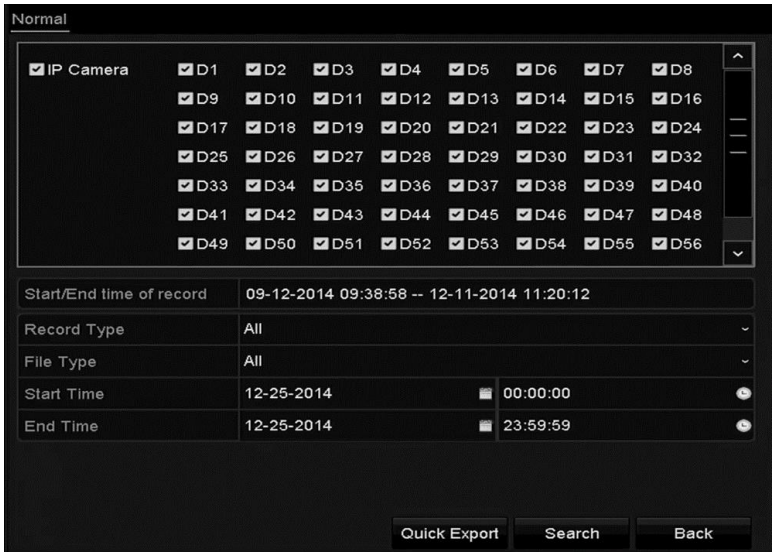
Export recorded files to backup devices quickly.

To use quick export:

1. Browse to the Export interface.

   Menu > **Export** > **Normal**

2. Select the desired channels, and then click **Quick Export**.



3. Select the format that the logs are exported to. Select up to 9 formats.

4. Click **Export**.

Note: Do not leave this menu until all files are successfully exported, there is a finished dialog.

5. Choose the record file in the Export interface, and then click .

Normal video search back up

You can back up record files to various devices, such as USB devices (USB flash drives, USB HDDs, USB writer), SATA writer, and e-SATA HDD.

Note: The CVP-P64050-10 is the only ClareVision Plus model that supports eSATA HDD.

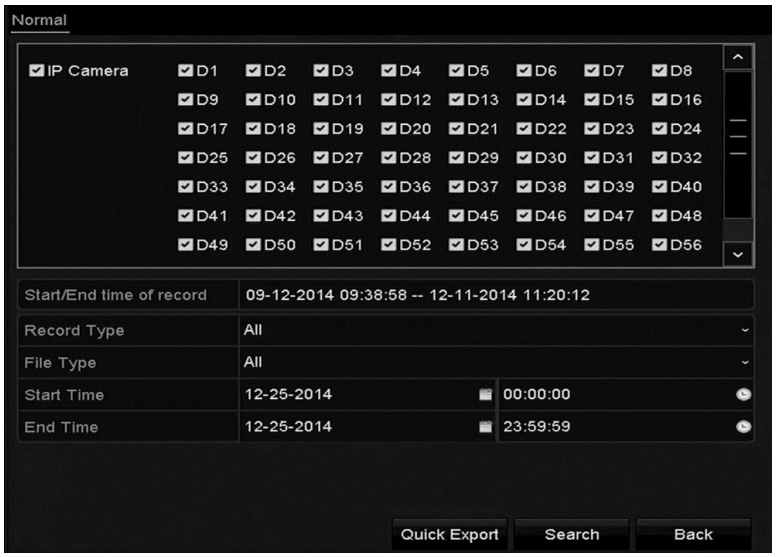
To backup using USB flash drives and USB HDDs:

Note: The following instructions are the same for USB writer and SATA writer. Follow the steps below.

1. Browse to the Export interface.

   Menu > **Export** > **Normal/Picture**

2. Select the cameras.
3. Set the search conditions, and then click **Search**.



4. Select the checkbox next to each desired video/picture file from the displayed chart/list.

   Note: The size of the selected files displays in the lower-left corner of the window.

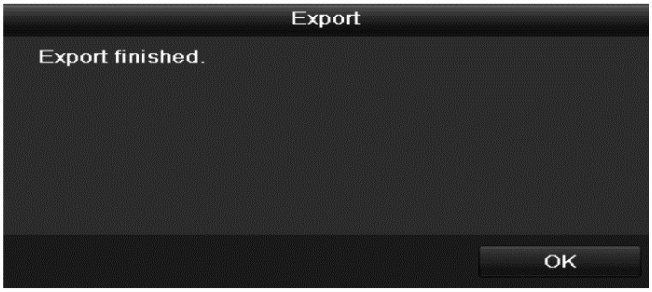
5. Click **Export**/**Export All** and start backup.

   Note: If the inserted USB device is not recognized, do the following.

   - Click the **Refresh** button.
   - Reconnect device.
   - Check the vendor's compatibility.

   You can format USB flash drives or USB HDDs via the device.

6. Stay in the Exporting interface until all record files are exported. When complete, the dialog displays “Export finished.”



Event search back up

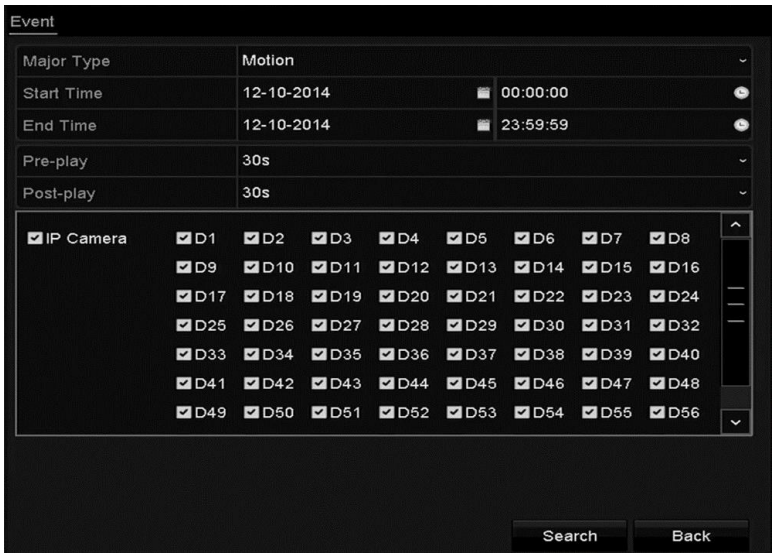
Back up event-related record files using USB devices (USB flash drives, USB HDDs, USB writer), SATA writer or eSATA HDD. Quick Backup and Normal Backup are supported.

To back-up by event search:

1. Browse to the Export interface.

   Menu > **Export** > **Event**

2. Select the cameras.
3. Set the event type to alarm input, motion, or VCA.



4. Configure the search conditions, and then click **Search**. The matching video files are displayed.

5. Select the desired video files, and then click **Export**/**Export All**.

Video clip back up

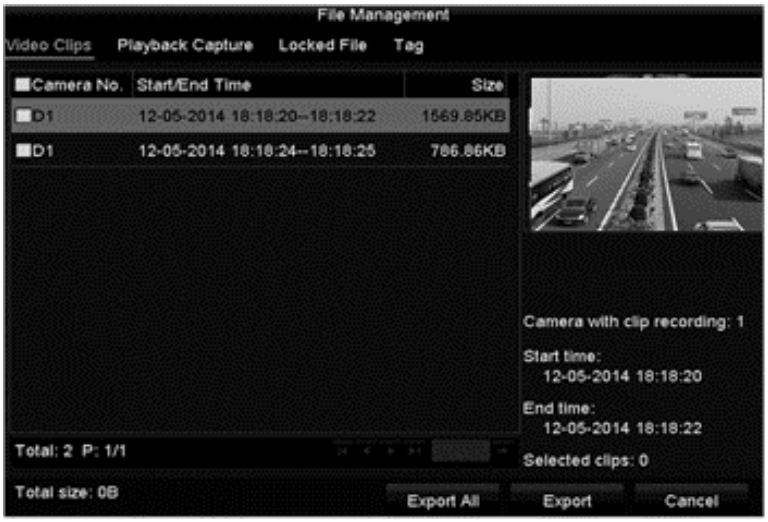
You can also select video clips to export directly during Playback using USB devices (USB flash drives, USB HDDs, USB writer), SATA writer, or eSATA HDD.

To backup video clips:

1. Browse to the Playback interface.

   Menu > **Export** > **Event**

2. During playback, click and to start or stop clipping record files, or click to capture pictures.
3. Click to access the file management interface.



4. Export the video clips/pictures.

Back up device management

To manage USB flash drives, USB HDDs, and eSATA HDDs.

1. Browse to the Export interface.

   Menu > **Export**

2. Manage the device.

   - Click **New Folder**, to create a new folder in the backup device.
   - Select a record file/folder in the device, and then click to delete the file/folder.
   - Click **Erase** to remove the files from a re-writable CD/DVD.
   - Click **Format** to format the backup device.

   Note: If the inserted device is not recognized, do the following.

   - Click the **Refresh** button.
   - Reconnect device.
   - Check the vendor's compatibility.

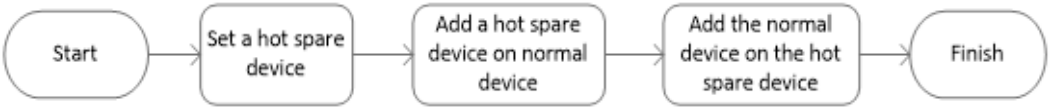
Hot Spare device back up

The device can form an N Plus1 hot spare system. The system consists of several working devices and a hot spare device. When the hot spare device switches into operation, it increases the reliability of the system.

Note: Please contact your dealer for details on models supporting the hot spare function.

Before starting, make sure that at least 2 devices are online. A bi-directional connection is required between the hot spare device and each working device.

Figure 26:Hot spare system build



Notes

- The camera connection is disabled when the device works in hot spare mode.
- It is recommended that you restore the defaults of the hot spare device after each mode switch.

To configure the hot spare device:

1. Browse to the Hot Spare settings interface.

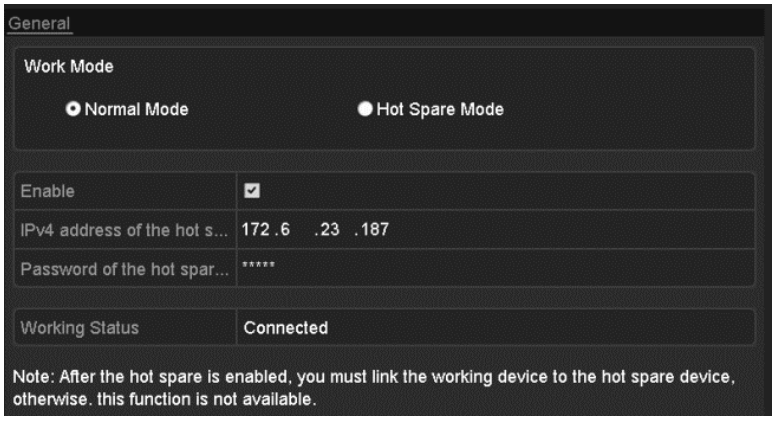
   Menu > **Configuration** > **Hot Spare**
2. Set the Word Mode to Hot Spare Mode, and then click **Apply**.
3. Reboot the device for the changes to take effect.

To set the working device:

1. Browse to the Hot Spare settings interface.

   Menu > **Configuration** > **Hot Spare**
2. Set the Word Mode to Normal Mode (default).
3. Select the **Enable** checkbox to enable the hot spar function.

4. Enter the IP address and admin password for the hot spare device.



5. Click **Apply**.

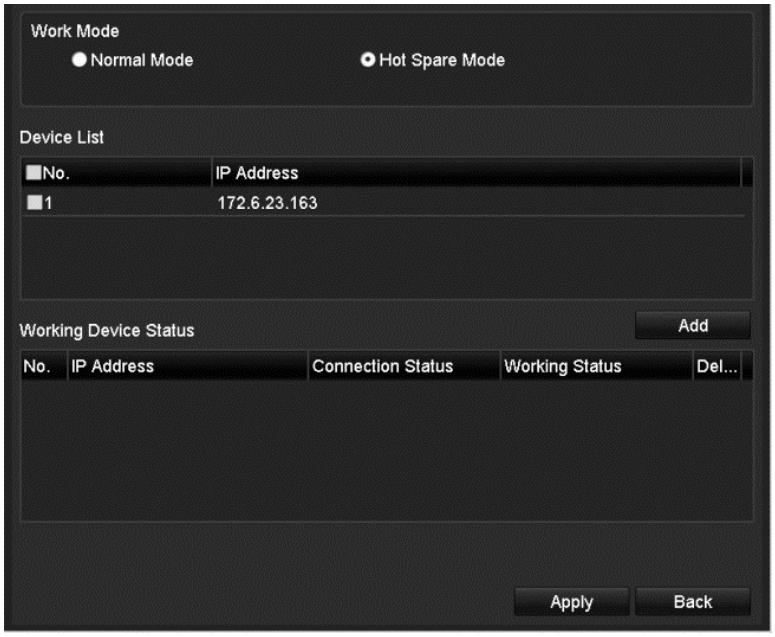
To manage the hot spare system:

1. Browse to the Hot Spare settings interface.

   Menu > **Configuration** > **Hot Spare**

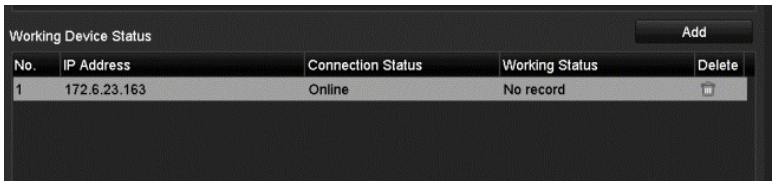
2. Select the desired working device's checkbox, and then click **Add** to link the working device to the hot spare device.

   Note: A hot spare device can connect up to 32 working devices.



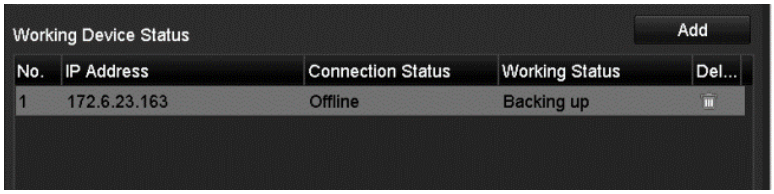
3. View the working status of the hot spare device on the Working Status list.

   When the working device is functioning properly, the working status of the hot spare device displays as No-record.



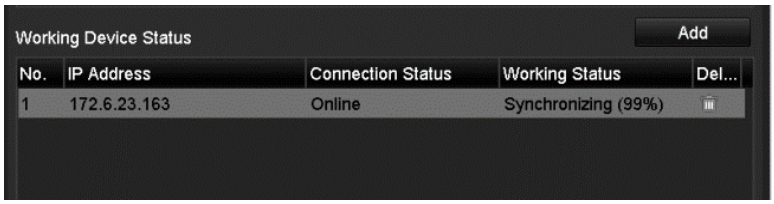
   When the working device goes offline, the hot spare device records the video of the IP camera connected to the working device as backup. The working status of the hot spare device displays as Backing up.

   Note: The record backup functions for 1 working device at a time.



   When the working device comes online, the lost video files are restored through the record synchronization function, and the working status displays Synchronizing.

   Note: Record synchronization functions for 1 working device at a time.



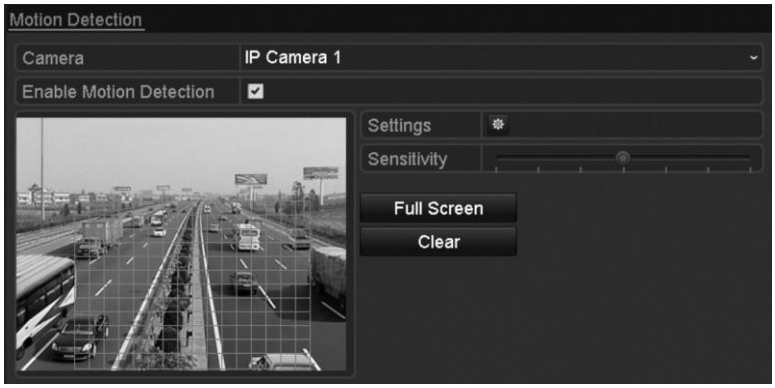
Alarm Settings

Setting motion detection alarms

To set a motion detection alarm:

1. Enter the Motion Detection interface for camera management, and then select a camera for motion detection.

   Menu > **Camera** > **Motion**



2. Select the **Enable Motion Detection** checkbox.
3. Using the mouse, draw a detection area, and then drag the sensitivity bar to adjust the sensitivity.
4. Click , and then set the alarm response actions.
5. Click the Trigger Channel tab, and then select the desired channels to record and capture, or become full-screen monitoring when the motion alarm is triggered.

6. Click **Apply** to save the settings.

7. Click the **Arming Schedule** tab.
8. Choose one day of the week and up to eight time periods on that day.
9. Click **Apply** to save the settings

   Note: Do not repeat or overlap times.

10. Click the **Handling** tab to set up the alarm response actions for the motion alarm.
11. If you want to set motion detection for another channel, repeat the steps above, or simply click Copy in the Motion Detection interface to copy the settings.

Setting sensor alarms

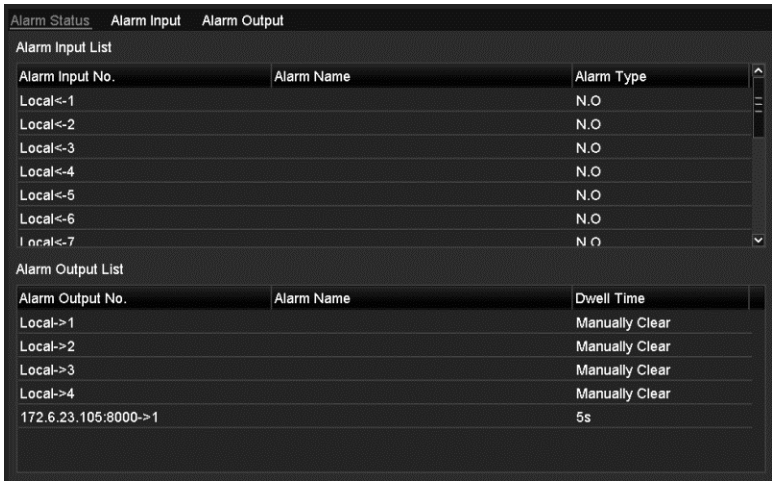
Set the handling action of an external sensor alarm.

To set sensor alarms:

1. Enter the Alarm Settings of System Configuration and select an alarm input.

   Menu > **Configuration** > **Alarm**

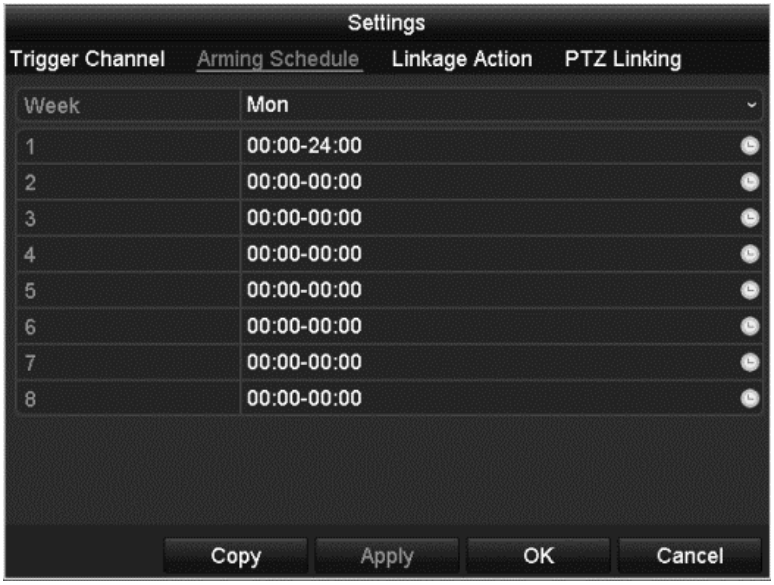
2. Click the **Alarm Input** tab.



3. Select the **Enable** checkbox, and then click **Settings** to set the alarm response actions.

4. Click the **Trigger Channel** tab, and then select one or more channels to record and capture or become full-screen monitoring when an external alarm is detected.
5. Click **Apply** to save the settings.

6. Click the **Arming Schedule** tab to set the arming schedule.



7. Select a day of a week and up to eight time periods for that day, and then click **Apply**.

   Note: Do not repeat or overlap times.

8. Repeat the above steps to configure the arming schedule for other days.

   – or –

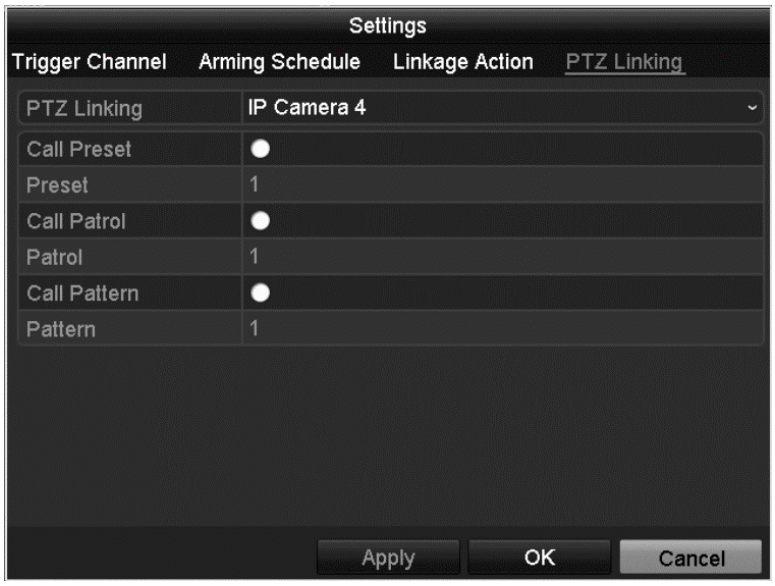
   Click **Copy,** to copy an arming schedule to other days.

9. Select the **Linkage Action** tab to set up alarm response actions of alarm input.

   If necessary, select the **PTZ Linking** tab and set PTZ linking parameters, and then click **OK**.

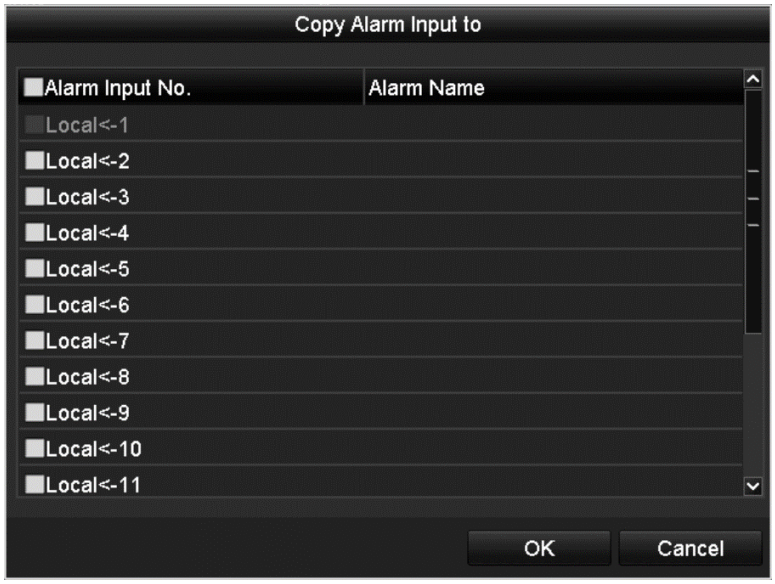
   Note: Ensure the PTZ or speed dome supports PTZ linkage.

   One alarm input can trigger the presets, patrol, or pattern of one or more channels; however, presets, patrols and patterns are exclusive.



10. If you want to set the handling action of another alarm input, repeat the above steps.

    You can also click **Copy**, and then select the checkbox for the desired alarm inputs and copy the settings to them.



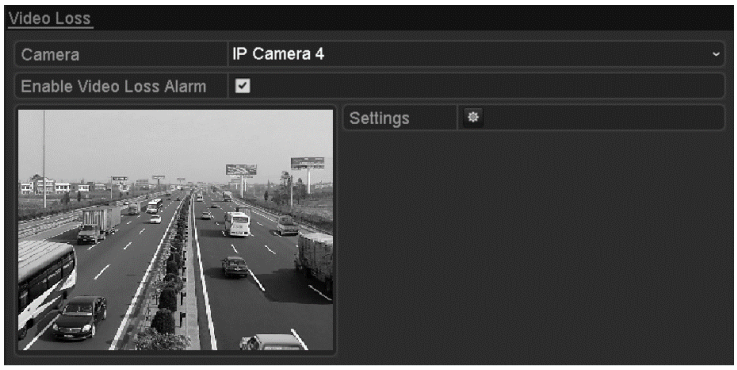
Detecting video loss alarm

Detects the video loss of a channel and take alarm response action(s).

To set detecting for video loss alarms:

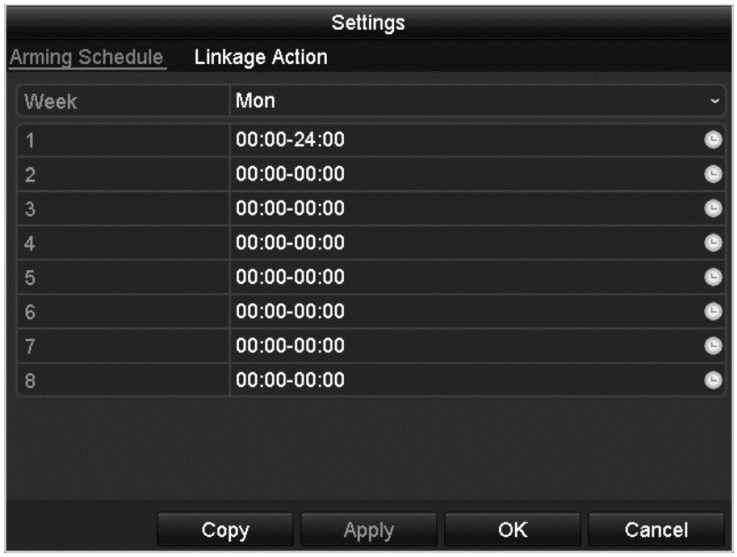
1. Browse to the Video Loss interface of Camera Management and select a channel you want to detect.

   Menu > **Camera** > **Video Loss**



2. Select the **Enable Video Loss Alarm** checkbox, and then click to set up the video loss handling actions.
3. Click the **Arming Schedule** tab to set the channel's arming schedule.
4. Select a day of a week and up to eight times for that day.
5. Click **Apply** to save the settings.

   Note: Do not repeat or overlap times.



6. Click the **Linkage Action** tab to set up alarm response action of video loss.
7. Click **OK** to complete the video loss settings for the channel.

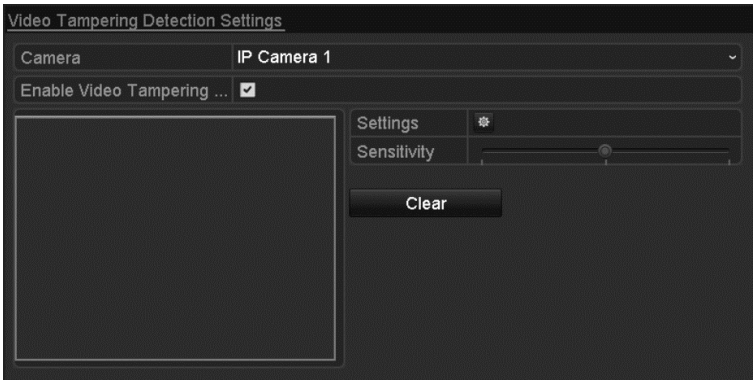
Detecting video tampering alarm

Alarms trigger when the lens is covered and takes alarm response actions.

To detect video tampering:

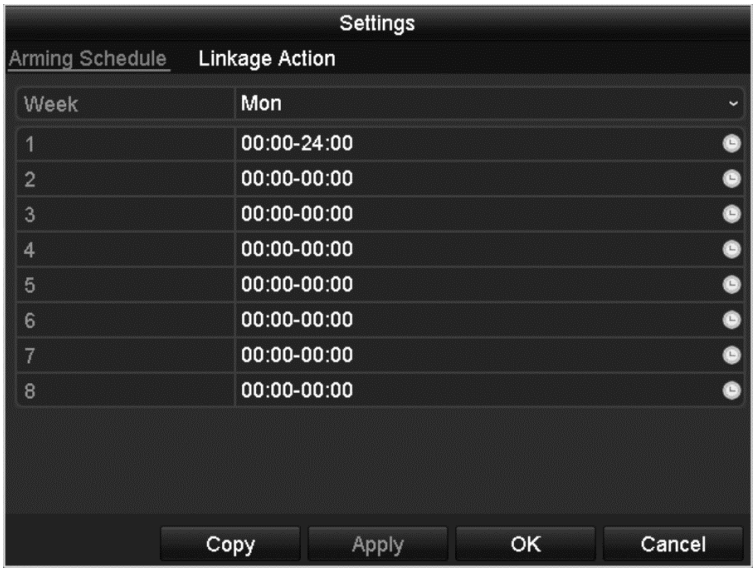
1. Browse to the Video Tampering interface, and then select a channel.

   Menu > **Camera** > **Video Tampering**



2. Check the **Enable Video Tampering** check box.
3. Drag the sensitivity bar to choose a proper sensitivity level.
4. Using the mouse, draw an area to detect video tampering.
5. Click to set the handling action for video tampering.
6. Click the **Arming Schedule** tab to set the arming schedule for handling actions.
7. Select a day of a week and up to eight periods for that day.
8. Click **Apply** to save the settings.

   Note: Do not repeat or overlap times.



9. Click the **Linkage Action** tab to set up alarm response actions for the video tampering alarm.
10. Click **OK** to complete the video tampering settings for the channel.

Handling alarm exceptions

The exception settings refer to handling actions of various exceptions, such as:

- **HDD Full:** The HDD is full.
- **HDD Error:** Writing HDD error or unformatted HDD.
- **Network Disconnected:** Disconnected network cable.
- **IP Conflicted:** Duplicated IP address.
- **Illegal Login:** Incorrect user ID or password.
- **Record/Capture Exception**: No space for saving recorded files or captured images.
- **Hot Spare Exception:** The working device is not connected.

To set alarm exceptions:

1. Browse to the Exception interface of System Configuration and handle various exceptions.

   Menu > **Configuration** > **Exceptions**

Setting alarm response actions

Alarm response actions activate when an alarm or exception occurs, including Event Hint Displays, Full Screen Monitoring, Audible Warning (buzzer), Notify Surveillance Center, Upload Picture to FTP, Trigger Alarm Output, and Send Email.

Event hint display

When an event or exception occurs, if configured, a hint displays in the lower-left corner of the live view image. Click the hint icon to check the details.

To configure an event hint:

1. Browse to the Exception settings interface.

   Menu > **Configuration** > **Exceptions**

2. Select the **Enable Event Hint** checkbox.

3. Click to set the event type displayed on the image.

4. Click **OK**.

Full screen monitoring

When an alarm is triggered, the local monitor (VGA, HDMI, or BNC monitor) displays in full screen.

If alarms are triggered simultaneously in several channels, their full-screen images are switched at a ten second interval (default dwell time). You can set a different dwell time by going to **Menu** > **Configuration** > **Live View** > **General** > **Full Screen Monitoring Dwell Time**.

Auto-switch terminates once the alarm stops. You are then taken back to the Live View interface.

Note: You must select the Trigger Channel settings for the channels you want to make full screen.

Audible warning

This triggers an audible beep when an alarm is detected.

Notify surveillance center

This sends an exception or alarm signal to the remote alarm host when an event occurs. The alarm host refers to the PC installed with Remote Client.

Note: When the remote alarm host is configured, the alarm signal transmits automatically.

Email linkage

Send an email with alarm information to a user or users when an alarm is detected.

Trigger alarm output

Trigger an alarm output when an alarm is tripped.

To configure a trigger alarm:

1. Browse to the Alarm Output interface.

   Menu > **Configuration** > **Alarm** > **Alarm Output**
2. Select an alarm output and set alarm name and dwell time.
3. Click **Schedule** to set the arming schedule of alarm output.

   Note: When you select Manually Clear on the Dwell Time list, you can only clear it on the Manual Alarm interface.

   Menu > **Manual** > **Alarm**.

4. Select a day of a week and up to eight time periods for each day.

   Note: Do not repeat or overlap times.

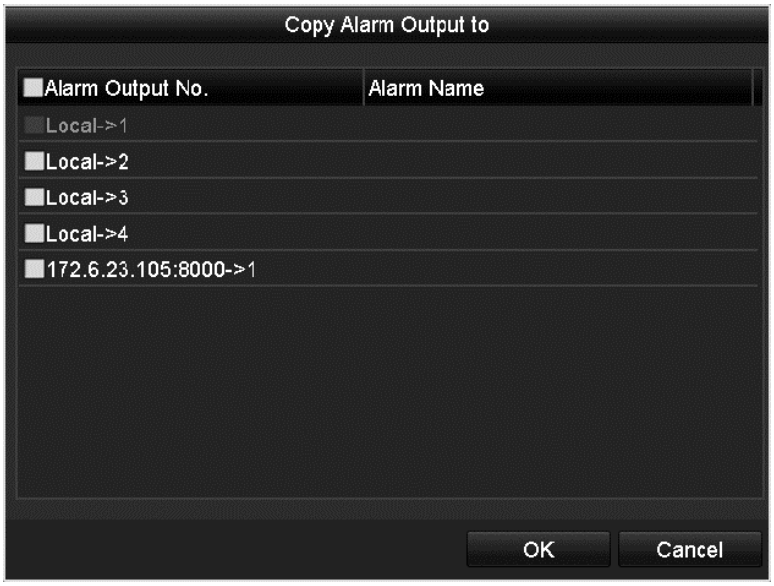
5. Repeat the above steps to set an arming schedule for the other days of a week.

   – or –

   Click **Copy** to copy an arming schedule to other days.

6. Click **OK** to complete the video tampering settings of the alarm output.

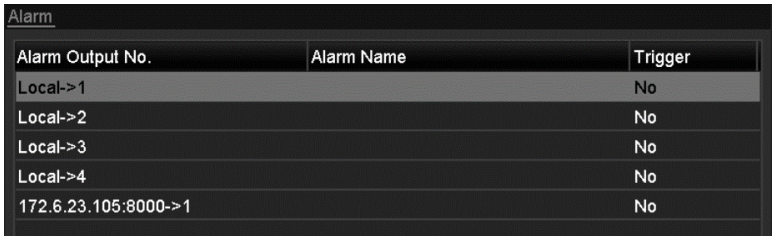
   You can also copy the above settings to another channel.



Triggering or clearing alarm output manually

Sensor alarms are triggered and cleared manually. When you select Manually Clear from the Dwell Time list, you must clear the alarm by clicking Clear in the Manual Alarm interface, **Menu** > **Manual** > **Alarm.**

- Click **Trigger/Clear** to trigger/ clear an alarm output.
- Click **Trigger All** to trigger all alarm outputs.
- Click **Clear All** to clear all alarm output.



VCA Alarm

The ClareVision Plus NVRs support the VCA detection alarms sent from ClareVision Plus cameras. VCA detection must be enabled and configured in the camera for working VCA functions.

Notes

- All VCA detection must be supported in the connection ClareVision Plus camera.
- For in-depth camera configuration, see *ClareVIsion Plus Camera User Manual* (DOC ID 1430).

Face recognition

To configure a face recognition alarm:

1. Browse to the Face Detection interface.

   Menu > **Camera** > **VCA**

2. Select the **Enable Face Detection** checkbox.
3. Click **Save**.

Face detection

The face detection function detects the appearance of a face in the surveillance scene. Configure actions in response to the triggered alarm.

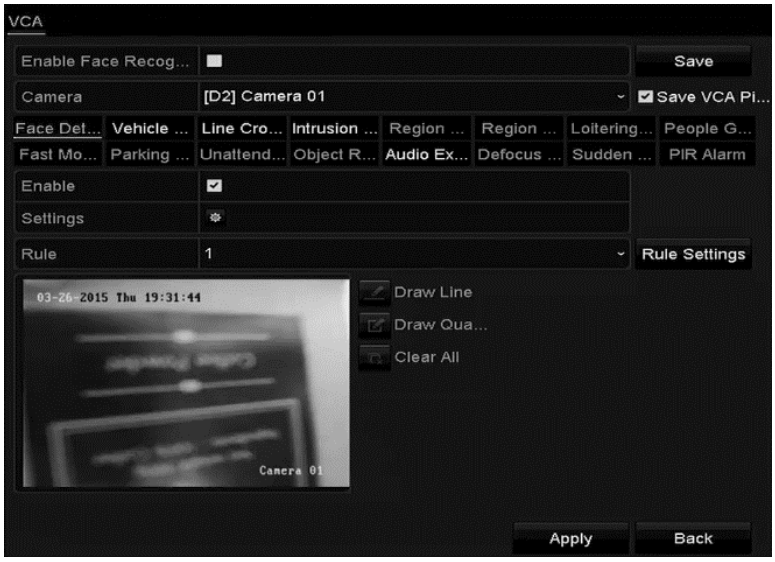
To configure face detection:

1. Browse to the VCA settings interface.

   Menu > **Camera** > **VCA**

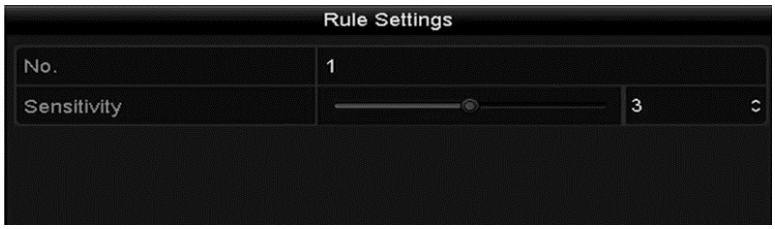
2. Select the desired camera.

   Note: Click the Save VCA Picture to save captures pictures from VCA detection.



3. Set the VCA detection to Face Detection, and then select the **Enable** checkbox.
4. Click to enter the face detection settings interface. Configure the trigger channel, arming schedule, and linkage action. Refer to “Setting motion detection alarms” on page 99.
5. Click **Rule** Settings to set the face detection rules, and then click and drag the slider to set the desired level of sensitivity.

   Sensitivity: The higher the sensitivity value (ranges from 1 to 5), the easier a face is detected in the surveillance area.



6. Click **Apply**.

Vehicle detection

The vehicle detection function monitors road traffic. Passing cars are detected. Configure actions in response to the triggered alarm.

To configure vehicle detection:

1. Browse to the VCA settings interface.

   Menu > **Camera** > **VCA**

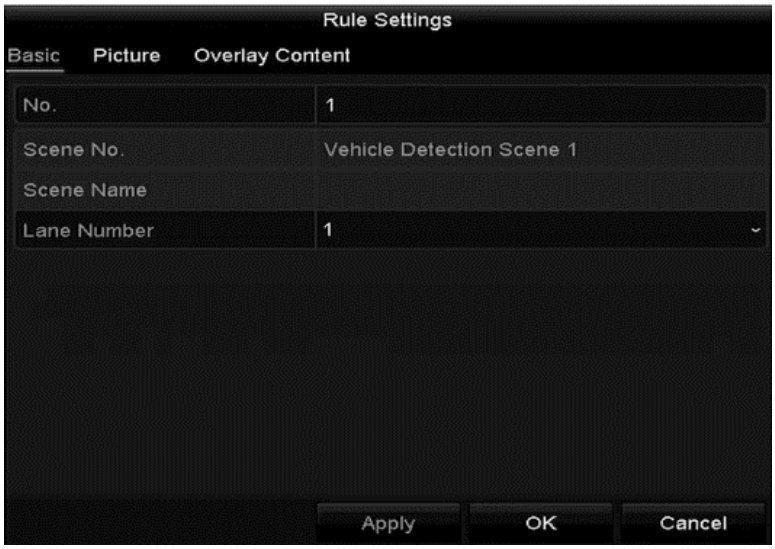
2. Select the desired camera.

   Note: Click the Save VCA Picture to save captures pictures from VCA detection.

3. Set the VCA detection to Vehicle Detection, and then select the **Enable** checkbox.

4. Click to configure the trigger channel, arming schedule, and linkage actions for the blacklist, whitelist the others.

5. Click **Rule** Settings to enter the rule settings interface. Configure the lane, upload picture and overlay content settings. Select up to 4 lanes.



6. Click **Save**.

Line crossing detection

The line crossing function detects when a person or vehicle cross a set virtual line. The line crossing direction can be set as bi-directional. Set the duration for the alarm response actions.

To configure line crossing detection:

1. Browse to the VCA settings interface.

   Menu > **Camera** > **VCA**

2. Select the desired camera.

   Note: Click the Save VCA Picture to save captures pictures from VCA detection.

3. Set the VCA detection to Line Crossing Detection, and then select the **Enable** checkbox.

4. Click to configure the trigger channel, arming schedule, and linkage actions for the blacklist, whitelist the others.

5. Click **Rule Settings** to configure the line crossing detection rules.

   a. Select the direction: **A<->B**, **A->B**, or **A<-B**.

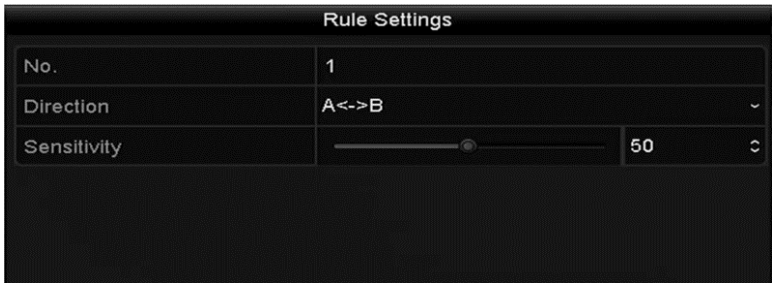
      A<->B: Only the arrow on the B side displays. When an object crosses the line going either direction, it is detected and the set alarms are triggered.

      A->B: Only an object crossing from side A to side B is detected.

      A<-B: Only an object crossing from side B to side A is detected.

   b. Click and drag the slider to adjust the sensitivity.

   c. Click **OK** to save the rule settings.



6. Click and set the two points in the preview window to draw a virtual line. Up to 4 rules can be configured.

7. Click **Apply**.

Intrusion detection

The intrusion detection function detects people, vehicles, or objects entering and loitering in a pre-defined region. Actions are configured in response to these alarms.

To configure intrusion detection:

1. Browse to the VCA settings interface.

   Menu > **Camera** > **VCA**

2. Select the desired camera.

   Note: Click the Save VCA Picture to save captures pictures from VCA detection.

3. Set the VCA detection to Intrusion Detection, and then select the **Enable** checkbox.

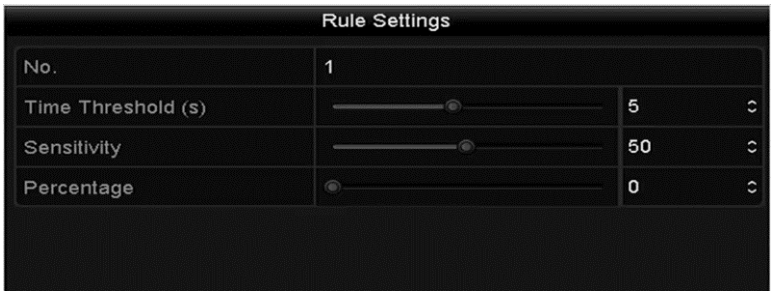
4. Click to configure the trigger channel, arming schedule, and linkage actions.

5. Click **Rule Settings** and configure the following parameters.

   Threshold: Range 1s to 10s. The amount of time that the object is in the set area. When the object is in the region longer than the threshold time, the alarm is triggered.

Sensitivity: Range 1 to 100. The value of the sensitivity defines the size of the object that triggers the alarm. The higher the value, the more easily the alarm is triggered.

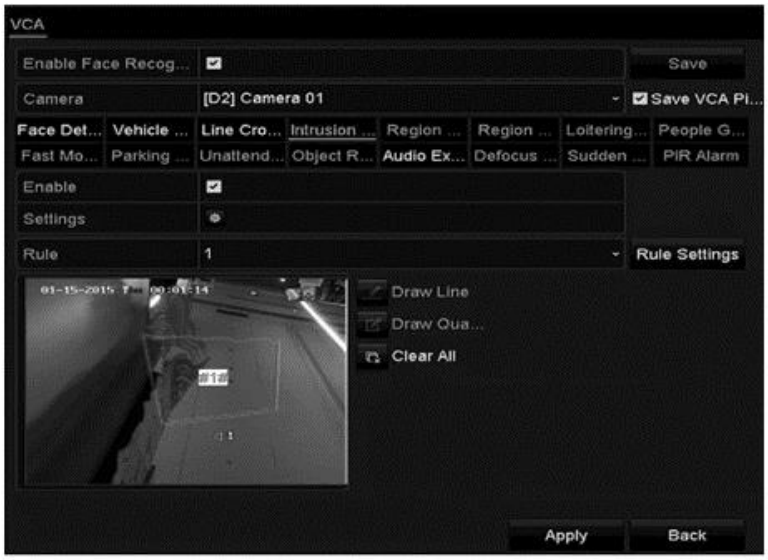
Percentage: Range 1 to 100. The ratio of the in-region part of the object which triggers the alarm. For example, if the percentage is set at 50%, when the object enters the region and occupies half of the entire region, the alarm is triggered.



6. Click , and then draw a quadrilateral by setting the 4 corners. Right-click to complete drawing the region.

   Notes

   - Only 1 region can be configured.
   - Up to 4 rules can be set.



7. Click **Apply**.

Region entrance detection

The region entrance detection function detects people, vehicles, or objects entering a pre-defined region from an outside place. Actions are configured in response to these alarms.

To region entrance detection:

1. Browse to the VCA settings interface.

   Menu > **Camera** > **VCA**

2. Select the desired camera.

   Note: Click the Save VCA Picture to save captures pictures from VCA detection.

3. Set the VCA detection to Region Entrance Detection, and then select the **Enable** checkbox.

4. Click to configure the trigger channel, arming schedule, and linkage actions.

5. Click **Rule Settings** and configure the following parameters.

   Sensitivity: Range 1 to 100. The value of the sensitivity defines the size of the object that triggers the alarm. The higher the value, the more easily the alarm is triggered.

6. Click , and then draw a quadrilateral by setting the 4 corners. Right-click to complete drawing the region.

   Notes

   - Only 1 region can be configured.
   - Up to 4 rules can be set.

7. Click **Apply**.

People gathering detection

The people gathering detection alarm triggers when people gather around a pre-defined virtual region.

Notes

- The Rule Settings percentage defines the gathering density or the people in the region. When the percentage is small, an alarm is triggered when a small number of people gather in the set region.
- Up to 4 rules can be configured.

Parking detection

The parking detection function detects illegal parking on highways, one-way streets, etc., configure actions to respond to detection.

Notes

- The Rule Settings threshold defines the time of the vehicle parking in the region. If the value is set to 10, the alarm is triggered after the vehicle has been in the region for 10s.
- Up to 4 rules can be configured.

Unattended Baggage detection

The unattended baggage detection function detects an object left in a pre-defined region.

Notes

- The Rule Settings threshold defines the time the object is left in the region. If the value is set to 10, an alarm is triggered after 10s.
- The Rule Settings sensitivity defines the similarity degree of the background image. When the sensitivity is high, a small object left in the region triggers the alarm.
- Up to 4 rules can be configured.

Object removal detection

The object removal detection function detects when an object is removed from a pre-defined region.

Notes

- The Rule Settings threshold defines the time the object is absent from the region. If the value is set to 10, an alarm is triggered after 10s.

- The Rule Settings sensitivity defines the similarity degree of the background image. When the sensitivity is high, a small object removed from the region triggers the alarm.
- Up to 4 rules can be configured.

Audio exception detection

The audio exception detection function detects abnormal sounds in a surveillance scene. For example, the sudden increase/decrease of a sounds intensity trigger the alarm.

To configure the audio exception detection:

1. Enter the VCA settings interface.

   Menu > **Camera** > **VCA**

2. Select the desired camera.
3. Set the VCA detection to Audio Exception Detection, and then select the **Enable** checkbox.
4. Click to configure the trigger channel, arming schedule, and linkage actions.
5. Click **Rule Settings** and configure the rules.

   a. Select the **Audio Input Exception** checkbox.

b. Select the Sudden Increase of **Sound Intensity Detection** checkbox, and then set the Sensitivity and Sound Intensity Threshold.

   Sensitivity: Range 1 to 100. The smaller the value, the more sever the change must be to trigger detection.

   Sound Intensity Threshold: Range 1 o 100. The smaller the value, the louder the environment sound, the higher the value should be. Adjust this according to the environment.

c. Select the Sudden Decrease of **Sound Intensity Detection** checkbox, and then set the detection sensitivity.

6. Click **Apply**.

Sudden scene change detection

The sudden scene change detection function detects the change of the surveillance environment. For example, when the camera is rotated.

Note: The Rule Settings sensitivity determines how easily the scene change is triggered.

Defocus detection

The image blur caused by a defocused lens is detected.

Note: The Rule Settings sensitivity determines how easily a defocused image triggers an alarm.

PIR alarm

The PIR (passive infrared) alarm triggers when an intruder moved within the detector's field of view. The heat energy dissipated by a person, or another warm blooded creature (dog, cat, etc.), is detected.

To configure the PIR alarm:

1. Enter the VCA settings interface.

   Menu > **Camera** > **VCA**

2. Select the desired camera.
3. Set the VCA detection to PIR Alarm, and then select the **Enable** checkbox.
4. Click to configure the trigger channel, arming schedule, and linkage actions.
5. Click **Apply**.

VCA Search

With configured VCA detection, the NVR supports VCA search for behavior analysis, face capture, people counting, and heat map results.

Face search

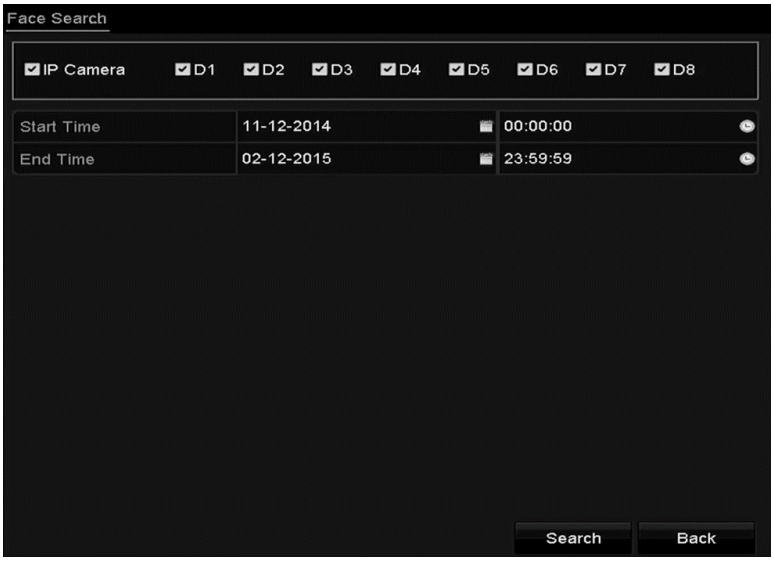
When there are face detected pictures captured and saved in the HDD, enter the Face Search interface to search for the picture and play the related video file according to the specified conditions.

To configure a face search:

1. Browse to the Face Search interface.

   Menu > **VCA Search** > **Face Search**

2. Select the desired cameras.



3. Specify the start and end time for the search files.

4. Click **Search**.

   The results for face detection are displayed in list or chart form.

5. Export the captured face pictures to local storage devices.
   a. Connect the storage device.
   b. Click **Export All** to enter the Export interface.
   c. Click **Export** to export all face pictures.

Behavior search

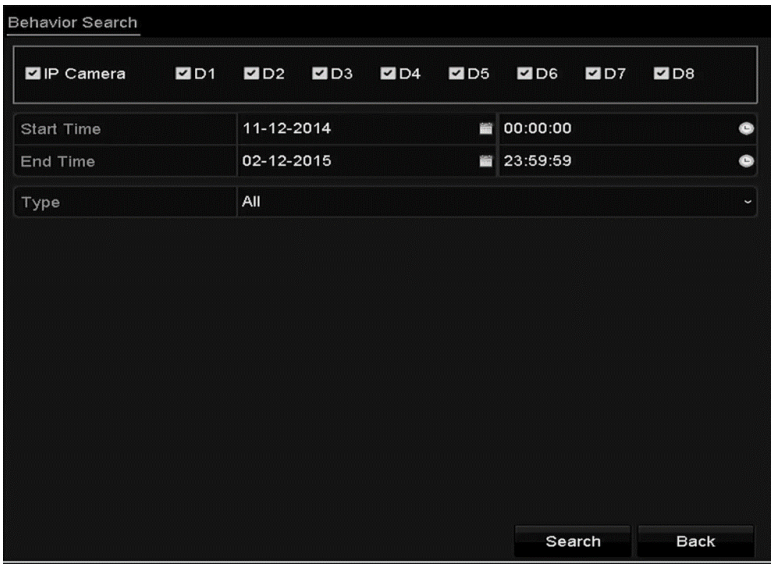
Behavior analysis detects a series of suspicious behavior based on VCA detection.

To configure behavior search:

1. Browse to the Behavior Search interface.

   Menu > **VCA Search** > **Behavior Search**

2. Select the desired cameras.
3. Specify that start and end time for the search.



4. Select the VCA detection type from the drop-down.
5. Click **Search**.

   The results for face detection are displayed in list or chart form.

6. Export the captured face pictures to local storage devices.
    a. Connect the storage device.
    b. Click **Export All** to enter the Export interface.
    c. Click **Export** to export all face pictures.

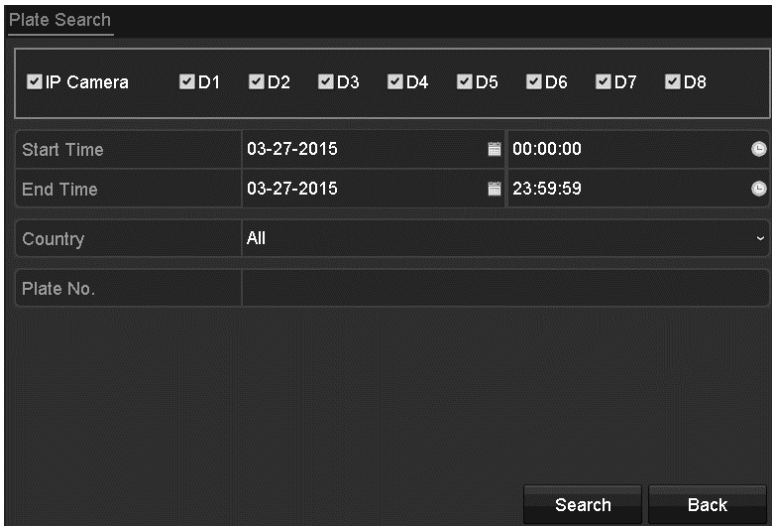
Plate search

Search and view for matching vehicle plate pictures and information according to start/end time, country, and plate number.

To configure plate search:

1. Browse to the Plate Search interface.

    Menu > **VCA Search** > **Plate Search**
2. Select the desired cameras.
3. Specify that start and end time for the search.



4. Select the country, and then enter the plate number in the corresponding field.
5. Click **Search**.

    The results for face detection are displayed in list or chart form.

People counting

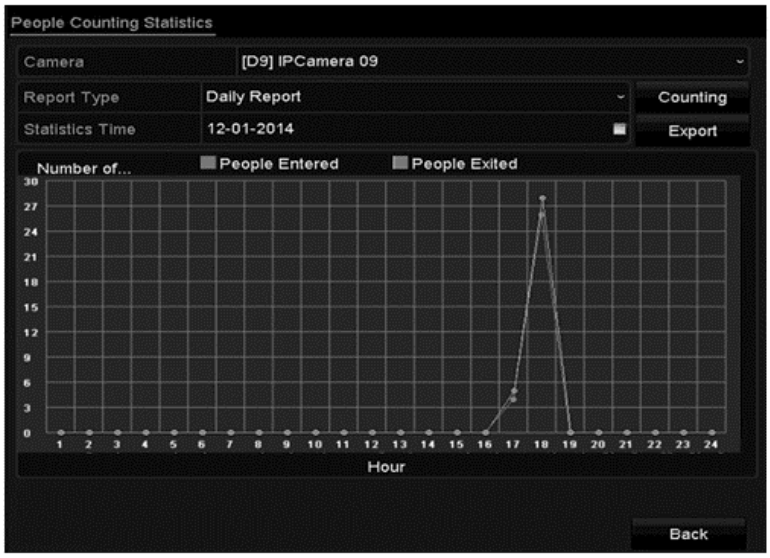
People counting is used to calculate and generate a report on the number of people that entered/left a configured region daily/weekly/monthly/annual.

To configure people counting:

1. Browse to the People Counting interface.

   Menu > **VCA Search** > **People Counting**

2. Select the desired cameras.
3. Select the report type, and then set the statistics time.
4. Click **Counting**.



5. Click **Export** to export the statistics report in an Excel file.

Heat map

The heat map is a graphical representation of data presented by colors. The map function is used to analyze the visit and dwell times of customers in a configured area.

Note: The heat map function bust be supported by the connected IP camera with the following configuration set.

To configure the heat map:

1. Browse to the Heat Map interface.

   Menu > **VCA Search** > **Heap Map**

2. Select the desired cameras.

3. Select the report type, and then set the statistics time.

4. Click Counting
5. Click **Export** to export the statistics report in an Excel file.

Network Settings

Configuring general settings

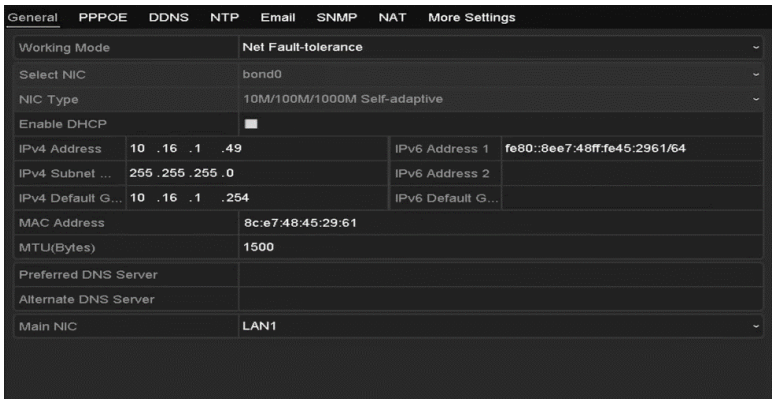
You must properly configure network settings before you can operate an NVR over the network.

To configure general settings:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

2. Click the **General** tab.



3. In the General Settings interface, configure the following settings: Working Mode, NIC Type, IPv4 Address, IPv4 Gateway, MTU and DNS Server.

   Note: MTU range is 500 through 9676.

4. If the DHCP server is available, you can select the **DHCP** checkbox to automatically obtain an IP address and other network settings from that server.

   Note: For the 16 and 32-Channel NVRs, you must configure the internal NIC address so that IP addresses are assigned to the cameras connected to the PoE interfaces.

5. Click **Apply** to save the settings.

Configuring advanced settings

Configuring PPPoE settings

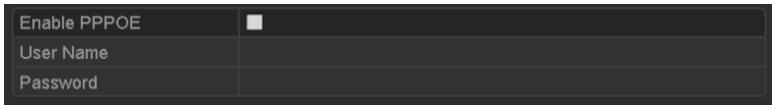
Your NVR allows access by Point-to-Point Protocol over Ethernet (PPPoE).

To configure PPPoE settings:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

2. Click the **PPPoE** tab.



3. Select the Enable **PPPoE** checkbox to enable this feature.
4. Enter the User Name, Password, and the Confirm Password for PPPoE access.

   Note: The User Name and Password is assigned by your ISP.

5. Click **Apply** to save and exit the interface.

   The system prompts you to reboot the device to enable the new settings. After the reboot, the PPPoE dial-up is automatically connected. Browse Network Interface (**Menu** > **Maintenance** > **System Info** > **Network Interface)** to view the PPPoE connection status.

Configuring Cloud P2P

Cloud P2P provides access for mobile device applications, allowing control of the connected NVR. Allowing you remote access to the surveillance system.

To configure Cloud P2P:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

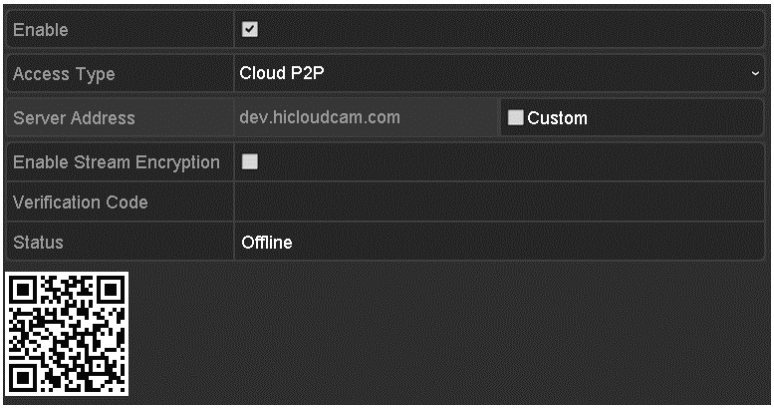
2. Click the **Platform Access** tab.
3. Select the **Enable** checkbox to activate Cloud P2P.

   If required, select the **Custom** checkbox and enter the server address.

4. Select the **Enable Stream Encryption** checkbox, and then enter the device's verification code.

Notes

- The verification code, found on the bottom of the DVR, consist of 6 capital letters.
- The verification code can also be obtained from scanning the device's QR code.



5. Click **Apply** to save the settings and exit the interface.

   After configuring the Cloud P2P settings, you can access and manage the NVR using their mobile phone.

Configuring DDNS

If your NVR is set to use PPPoE as its default network connection, set the Dynamic DNS (DDNS) for network access. You must register with your ISP before configuring the system to use DDNS.

To configure DDNS:

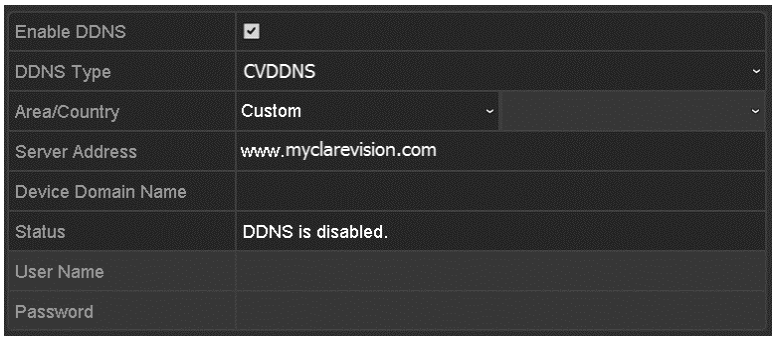
1. Enter the Network Settings interface.

   Menu > **Configuration** > **Network**

2. Click the **DDNS** tab.
3. Select the **DDNS** checkbox to enable it.
4. Choose one of the four DDNS types: ClareVision DDNS, IPServer, PeanutHull, and NO-IP.
5. Configure the DDNS type settings, and then click **Apply**.

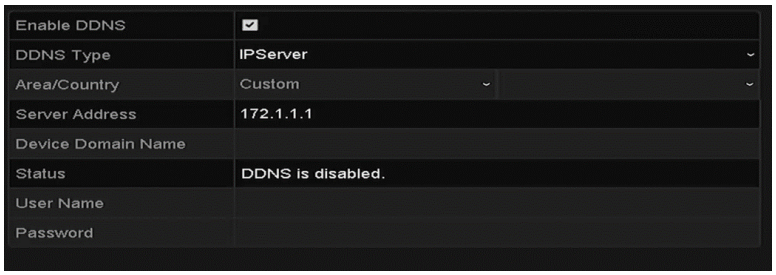
ClareVision DDNS:

1. Enter the server address for the ClareVision DDNS (myclarevision.com).
2. In the **NVR Domain Name** field, enter the domain obtained from the ClareVision DDNS website.
3. Enter the User Name and Password registered in the ClareVision website.



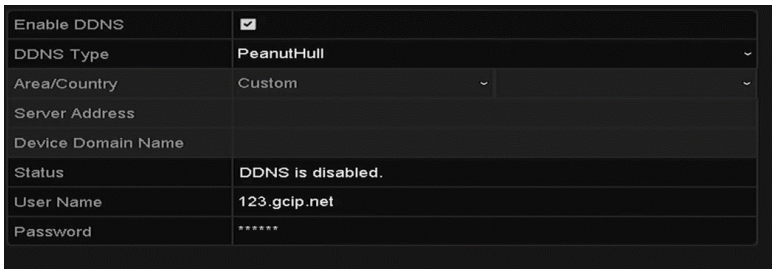
IPServer:

- Enter the server address for IPServer.



PeanutHull:

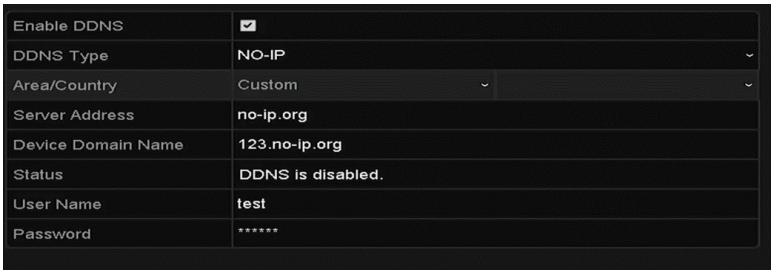
- Enter the User Name and Password obtained from the PeanutHull website.



NO-IP:

1. Enter the account information in the corresponding fields.
2. Enter the NO-IP's server address.
3. In the **NVR Domain Name** field, enter the domain obtained from the NO-IP website (www.no-ip.com).

4. Enter the User Name and Password registered in the NO-IP website.



Configuring an NTP server

Configure a Network Time Protocol (NTP) server on your NVR to ensure the accuracy of the system date and time.

To configure an NTP server:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

2. Click the **NTP** tab.

3. Select the **Enable NTP** check box.
4. Configure the following NTP settings.

   Interval: Time interval between the two synchronizing actions with NTP server. The unit is minute.

   NTP Server: IP address of NTP server.

   NTP Port: Port of NTP server.

5. Click **Apply** to save and exit the interface.

   Note: The time synchronization interval is set from1 to 10080 minutes. The default value is 60 minutes. If the NVR is connected to a public network, you should use an NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the NVR is setup in a customized network, use NTP software to establish an NTP server used for time synchronization.

Configuring SNMP

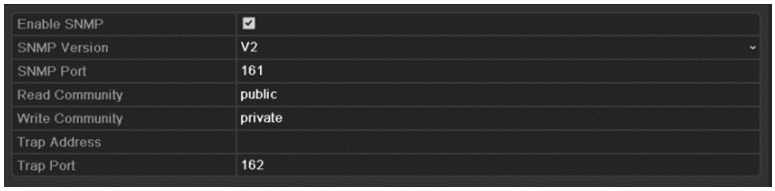
You can use SNMP protocol to get device status and parameters-related information.

To configure SNMP:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

2. Click the **SNMP** tab.



3. Select the **SNMP** checkbox.
4. Configure the following SNMP settings.

   Trap Address: IP Address of SNMP host.

   Trap Port: Port of SNMP host.

5. Click **Apply** to save and exit the interface.

Note: Before setting the SNMP, download the SNMP software and configure it to receive the device information via SNMP port. By setting the trap address, the NVR can send the alarm event and exception message to the surveillance center.

Configuring the More Settings tab

The More Settings tab contains configuration options for the Alarm Host IP/Port, Multicast IP, RTSP Port, and Server and HTTP ports.

Configuring a remote alarm host

With a remote alarm host configured, the NVR will send the alarm event or exception message to the host when an alarm is triggered. The remote alarm host must have the Network Video Surveillance software installed.

To configure the remote alarm host:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

2. Click the **More Settings** tab.

3. Enter **Alarm Host IP** and **Alarm Host Port** in the text fields.

   The Alarm Host IP refers to the IP address of the remote PC on which the Network Video Surveillance Software is installed. The alarm host port must match the alarm monitoring port configured in the software.

4. Click **Apply** to save and exit the interface.

Configuring multicast

You can configure multicast for live view on more than 128 cameras through the network for 64-Channel NVRs. You can connect over 64 cameras using the multicast function for the 4-Channel NVR, 8-Channel NVR, and 32-Channel NVR.

A multicast address spans the Class-D IP range from 224.0.0.0 to 239.255.255.255. We recommend that you use IP addresses ranging from 239.252.0.0 to 239.255.255.255.

To configure multicast:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

2. Click the **More Settings** tab.
3. Set multicast IP, as shown below. When adding a device to the Network Video Surveillance Software, the multicast address must match the NVR's multicast IP.
4. Click **Apply** to save and exit the interface.

Note: The multicast function is supported by the network switch to which the NVR connects.

Configuring RTSP

The RTSP (Real Time Streaming Protocol) is a network control protocol used in communication systems to control streaming media servers.

To configure RTSP:

1. Browse to the Network Settings menu.

   Menu > **Configuration** > **Network**

2. Click the **More Settings** tab.
3. Enter the RTSP port number in the **RTSP Port** field.

   The default RTSP port is 554. Change it according to your requirements.

4. Click **Apply** to save and exit the menu.

Configuring server and HTTP ports

You can change the server and HTTP ports in the Network Settings menu. The default server port is 8000 and the default HTTP port is 80.

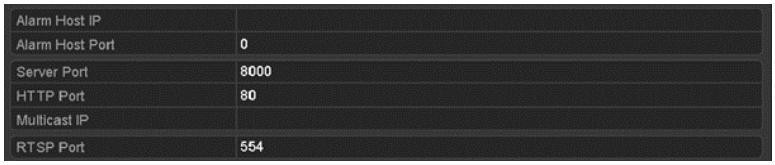
To configure the server and HTTP ports:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

2. Click the **More Settings** tab.
3. Enter the server port and HTTP port in the text fields.
4. The default server port is 8000.

   Note: The server port is set in the range of 2000 to 65535. Use it for remote client software access. The HTTP port is used for remote IE access. The default HTTP Port is 80. You can change them according to your requirements.



5. Click **Apply** to save and exit the interface.

Configuring the HTTPS port

HTTPS provides authentication of the web site and the associated web server.

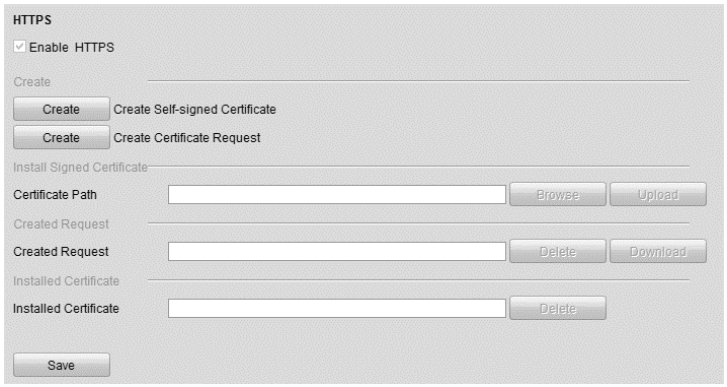
Note: The HTTPS port must be configured using a web-browser.

To configure the HTTPS port:

1. Open your web-browser, and then enter the device's IP address in search bar.
2. Enter the username and password, and then click **Login**.
3. Browse to the HTPPS settings interface.

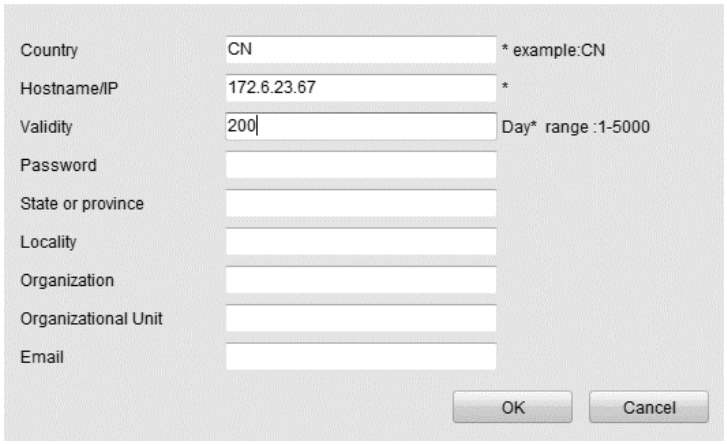
   Configuration > **Remote Configuration** > **Network Settings** > **HTTPS**

4. Create the self-assigned certificate or authorized certificate.



Self-assigned certificate

a. Click **Create**.



b. Enter the country, host name/IP, validity, and other relevant information.

c. Click **OK**.

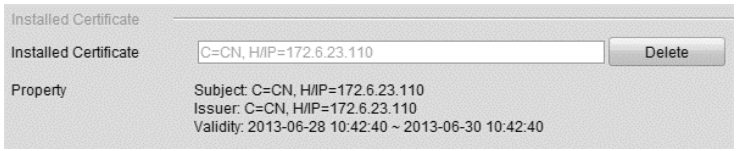
Authorized certificate

a. Click **Create**.

b. Download the certificate request, and then submit it to the trusted certificate authority for signature approval.

c. After receiving the signed valid certificate, import the certificate to the device.

5. Certificate information is displayed after successfully creating and installing the certificate.



6. Select the **HTTPS** checkbox.
7. Click **Save**.

Configuring email

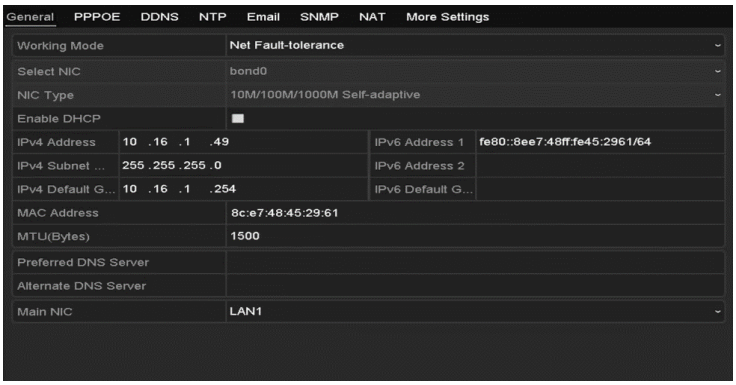
You can configure the system to send an email notification to all designated users when an alarm event is detected, an alarm or motion event is detected, or the administrator password is changed.

Before configuring the email settings, you must connect the NVR to a local area network (LAN) that maintains an SMTP mail server. You must also connect the network to either an intranet or the Internet, depending on the location of the email accounts where you want to send notifications.

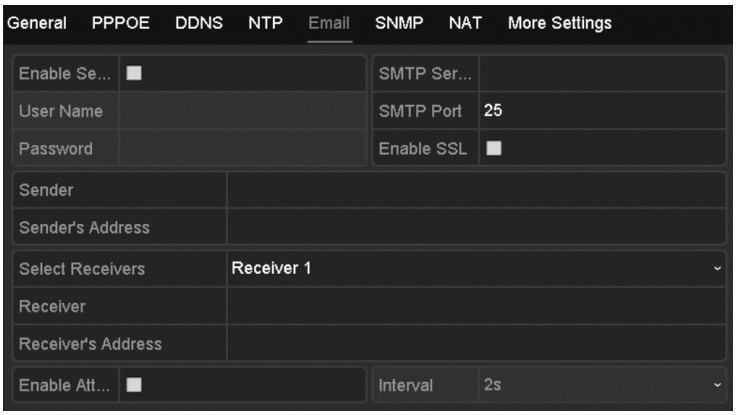
To configure email:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**
2. Set the IPv4 address, IPv4 subnet mask, IPv4 gateway, and the preferred DNS server in the Network Settings menu.



3. Click **Apply** to save the settings.
4. Click the **Email** tab.



5. Configure the following email settings.

   Enable Server Authentication (optional): Select the check box to enable the server authentication feature.

   User Name: The user account of sender's email for SMTP server authentication.

   Password: The password of sender's email for SMTP server authentication.

   SMTP Server: The SMTP server IP address or host name (e.g., smtp.263xmail.com).

   SMTP Port: The SMTP port in use. The default TCP/IP port used for SMTP is 25.

   Enable SSL (optional): Select the check box to enable SSL, if required by the SMTP server.

   Sender: The name of sender.

   Sender's Address: The email address of sender.

   Select Receivers: Select the receiver. You can configure up to three receivers.

   Receiver: The name of user notified.

   Receiver's Address: The email address of user notified.

   Enable Attached Pictures: Select the **Enable Attached Picture** check box to send emails with attached alarm images. The interval is the time of two adjacent alarm images. You can also set SMTP port and enable SSL here.

   Interval: The interval is the time between two actions of sending attached pictures.

6. Click **Apply** to save the email settings.
7. Click **Test** to verify your email setting are working properly.

   The Attention dialog displays the results.

Configuring NAT

Use UPnP (Universal Plug and Play) or manual mapping to port map realizing the remote access vie cross-segment network.

UPnP

Permits the device to seamlessly discover the presence of other devices on the network and establish a functional network service for data sharing, communications, etc. Use the UPnP function to enable a quick connection for the device to the WAN via a router without port mapping.

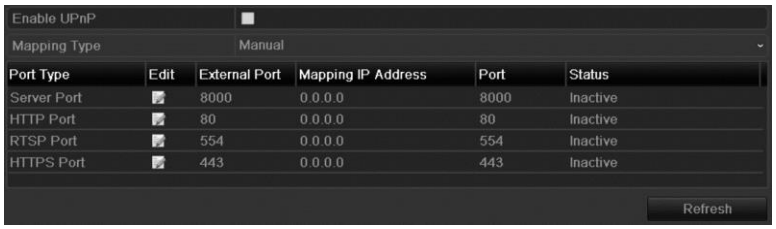
Note: If you want to enable the UPnP function of the device, you must enable the UPnP function of the router. When the network working mode of the device is set as multi-address, the default route of the device is in the same network segment as that of the LAN IP address.

To configure UPnP:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

2. Click the **NAT** tab.

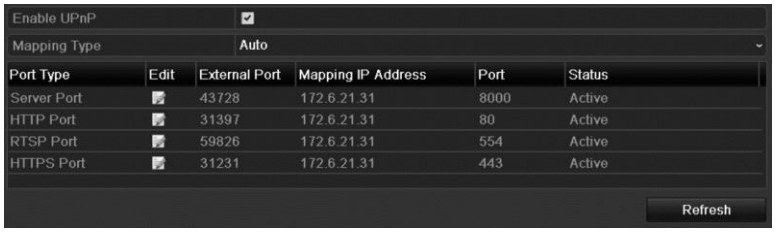


3. Select the **Enable UPnP** checkbox.
4. Set the Mapping Type, either Auto or Manual.

   Auto

   When selecting Auto, the port mapping items are read-only and the external ports are set automatically by the router.

   a. Set the Mapping Type to Auto.
   b. Click **Apply**.
   c. Click **Refresh** to view the latest port mapping status.



Manual

When selecting manual mapping, click to edit the external port.

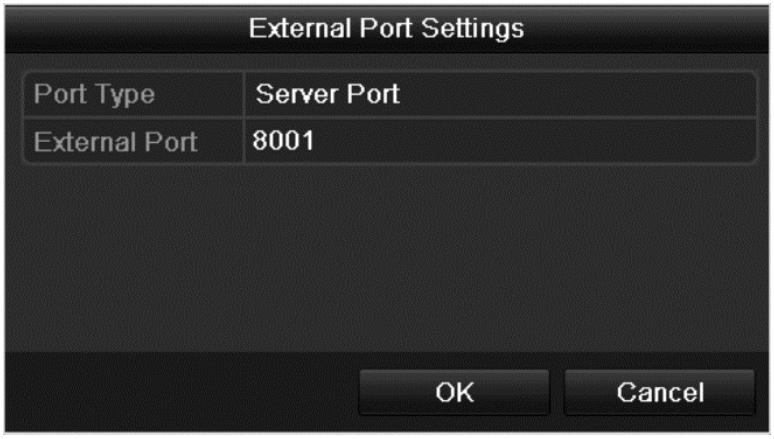
a. Set the Mapping Type to manual.

b. Click to access the External Port Settings dialog.

c. Configure the external port number, http port, RTSP port, and https port.

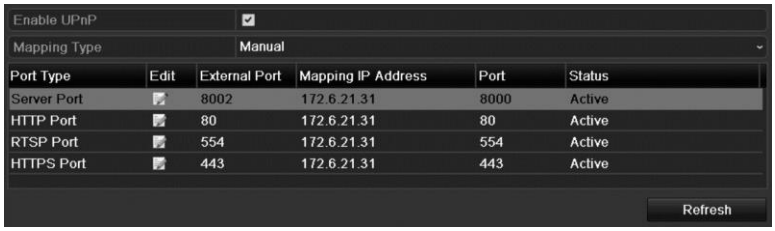
Notes

- You can use the default port number or change it accordingly.
- The external port indicates the port number for router mapping.
- The RTSP port number must be 554 or between 1024 and 65535. Values for other ports must be between 1 and 65535, each port number must be unique.



d. Click **Apply**.

e. Click **Refresh** to view the latest port mapping status.



Manual mapping

If your router does not support UPnP, use manual port mapping.

Note: Verify that router supports internal and external port configuration and forwarding.

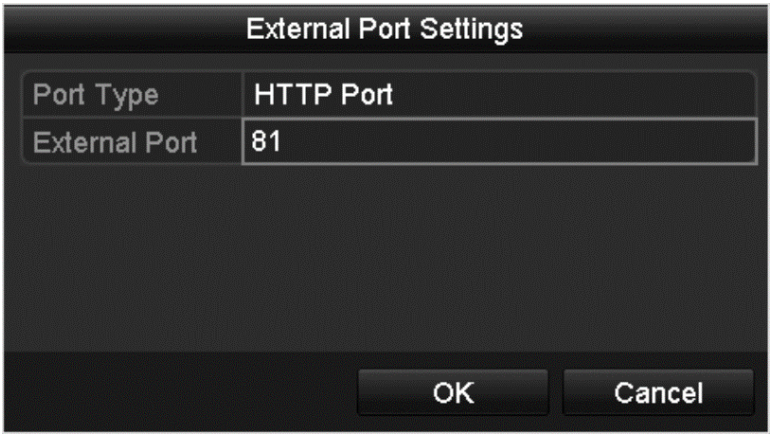
To configure manual mapping:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

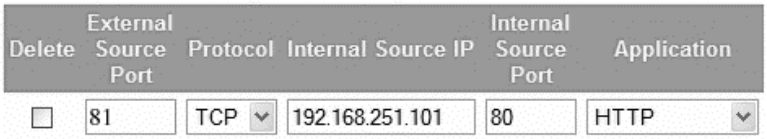
2. Click the **NAT** tab.
3. Do not select the **Enable UPnP** checkbox.
4. Click to access the External Port Settings dialog.
5. Configure the external port's number, http port, and RTSP port.

   Note: The RTSP port number must be 554 or between 1024 and 65535. Values for other ports must be between 1 and 65535, each port number must be unique.



6. Click **OK**, and then click **Apply**.
7. Enter the router's virtual settings page and configure the settings.

   Note: Each item corresponds with device port, including the server port, http port, and RTSP port.



   The above virtual setting interface is an example only and varies by router.

Configuring high-speed downloads

You can enable the High-speed Download function to widen the outgoing bandwidth of the device. Doing this, you can speed the download of record files through a browser, or CMS software.

Note: When you enable the high-speed download function, the local menu operation may become stuck. We recommend that you disable this function after finishing the remote downloading of record files.

To configure high-speed downloads:

1. Browse to the Network Settings interface.

   Menu > **Configuration** > **Network**

2. Click the **More Settings** tab.
3. Select the **Enable High-speed Download** checkbox, and then click **OK**.

Figure 27: High-speed Download settings menu

Figure 28: High-speed Download message dialog

4. Click **Apply** to save and exit the interface.

Configuring Virtual Host

Directly access the IP camera management interface after enabling virtual host.

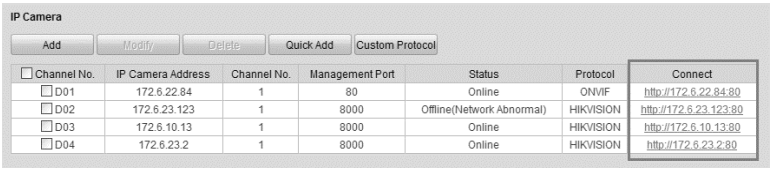
To configure virtual host:

1. Browse to the Advanced Settings interface.

   Configuration > **Remote Configuration** >**Network Settings** > **Advanced**

2. Select the **Enable Virtual Host** checkbox.
3. Click **Save**.
4. Enter the IP Camera Management interface and observe the Connect column.

   Configuration > **Remote Configuration** > **Camera Management** > **IP Camera**



5. Click the link and IP Camera Management IP page displays.

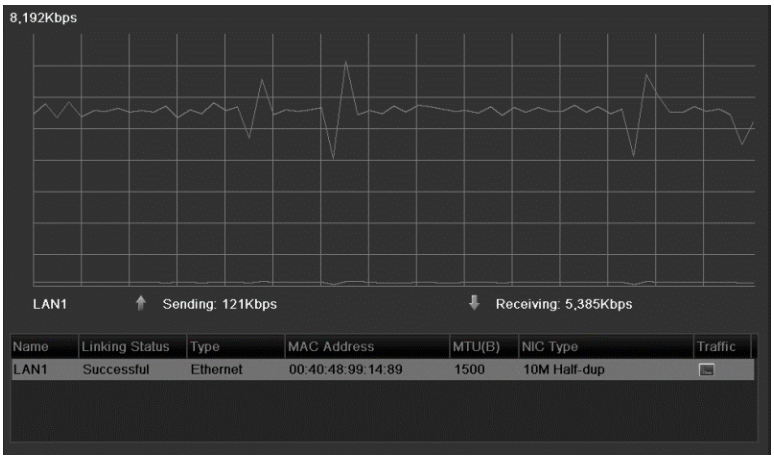
Checking network traffic

You can check the network traffic to obtain real-time information of the NVR such as linking status, MTU, sending/receiving rate, etc.

To configure network traffic:

1. Browse to the Network Traffic interface.

   Menu > **Maintenance** > **Net Detect**



View the sending and receiving rate information on the interface. The traffic data is refreshes every second.

Configuring network detection

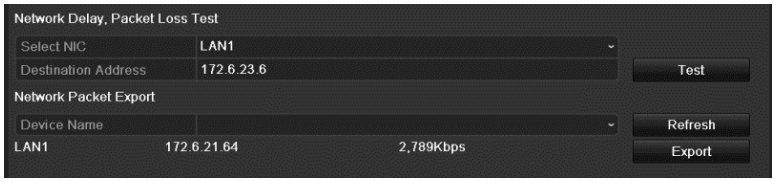
You can obtain the network connection status of the NVR through the network detection function, including network delay and packet loss.

To test network delay and packet loss:

1. Browse to the Network Traffic interface.

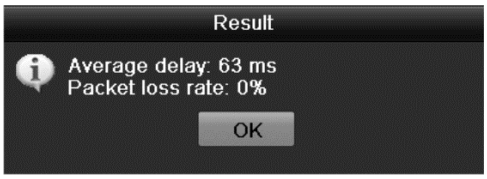
   Menu > **Maintenance** > **Net Detect**

2. Click the **Network Detection** tab.



3. Enter the destination address in the **Destination Address** field.
4. Click **Test** to start testing network delay and packet loss.

   The testing result display in the window. If the test fails, the error message displays.



Exporting network packets

By connecting the NVR to network, the captured network data packet is exported to a USB flash drive, SATA/eSATA, or other devices.

To export network packets:

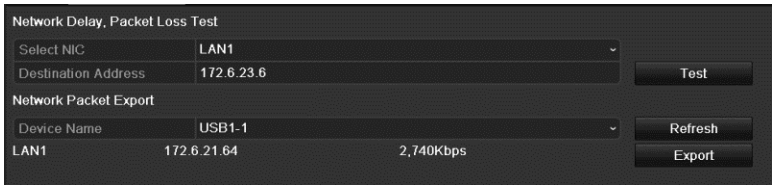
1. Browse to the Network Traffic interface.

   Menu > **Maintenance** > **Net Detect**

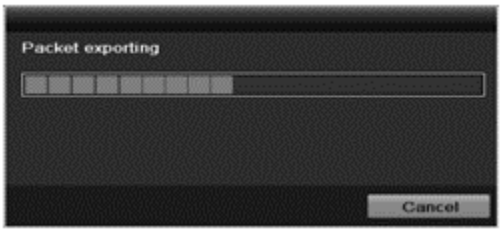
2. Click the **Network Detection** tab.
3. Select the backup device from the list.

4. Click **Refresh** when the connected local backup device cannot display.

   If it fails to detect the backup device, check if it is compatible with the NVR. You can format the backup device when the format is incorrect.



5. Click **Export** to start exporting.
6. Click **OK** to finish the packet export.



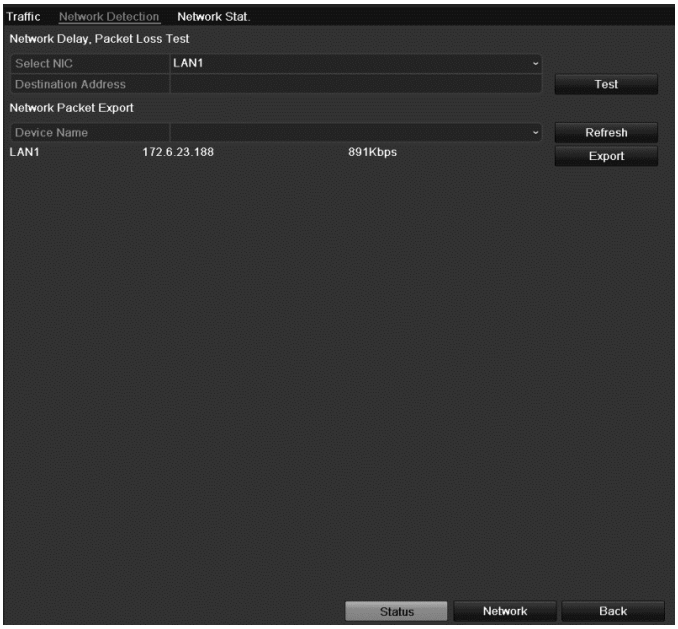
Note: Up to 1M data is exported each time.

Checking the network status

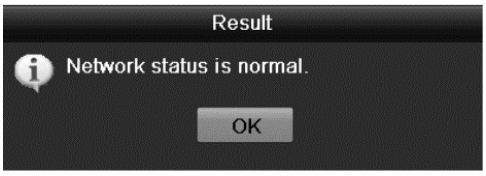
You can also check the network status and quickly set the network parameters in this interface.

To check the network status:

1. Click **Status** on the bottom right corner of the page.



2. If the network is normal, the Result dialog displays.



Note: If the status is not normal, the dialog will indicate the error. Click **Network** to show the Quick Setting interface for the network parameters.

Checking network statistics

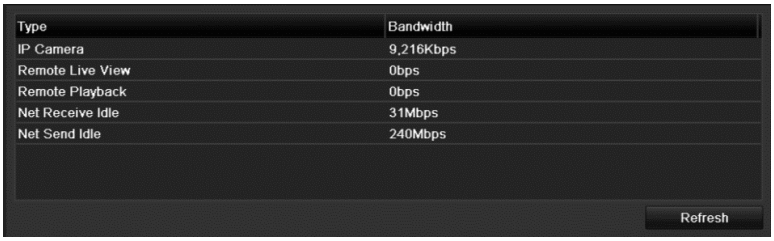
You can check the network statistics to obtain the real-time information of NVR.

To check network statistics:

1. Browse to the Network Detection interface.

   Menu > **Maintenance** > **Net Detect**

2. Click the **Network Stat.** tab.



3. Check the bandwidth of IP camera, remote live view, remote playback, net receive idle, and net send idle.
4. Click **Refresh** to get the newest statistics.

RAID

Note: This chapter is applicable for 64-Channel NVRs only.

Configuring array

RAID (redundant array of independent disks) is a storage technology that combines multiple disk drive components into a logical unit. A RAID setup stores data over multiple hard disk drives to provide enough redundancy to recover data if one disk fails. Data is distributed across the drives in one of several ways called "RAID levels", depending on the redundancy and performance level required. The 64-Channel NVR is capable of realizing Redundant Array of Independent Disk, supporting RAID0, RAID1, RAID5 and RAID10.

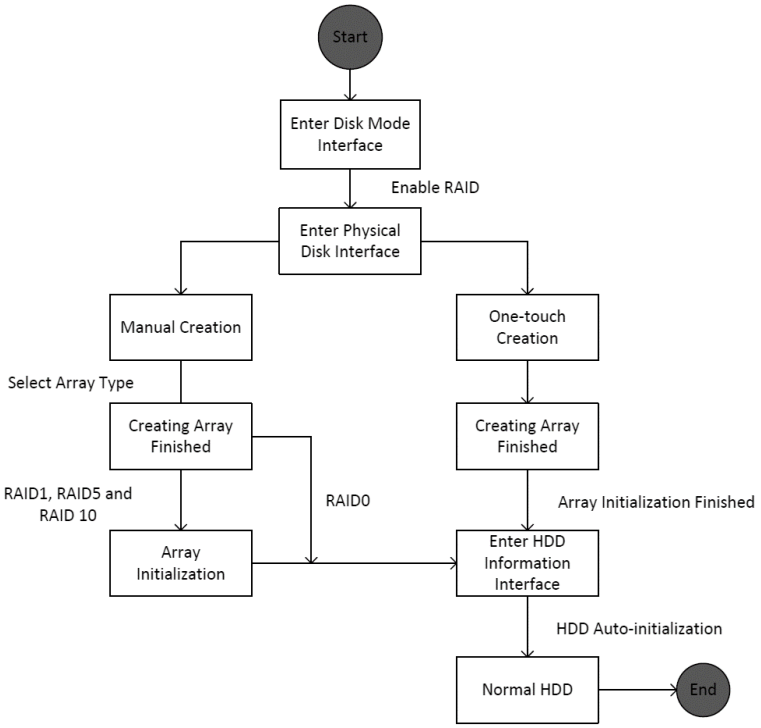
Before you start

Install the HDD(s) using the same enterprise-level HDDs (including model and capacity) for the array creation and configuration maintaining reliable and stable running conditions for the disks.

Introduction

The 64-Channel NVR can store the data (such as record, picture, and log information) in the HDD after you have created the virtual disk or you have configured network HDD, see “Managing Network HDD” on page 155. There are 2 ways to create the virtual disk, one-touch configuration and manual configuration. The following flow chart shows the process of creating array.

Figure 29: RAID workflow



Enable RAID

Enable RAID to allow disk array creation, enable RAID with the startup Wizard, or enable RAID in the HDD Management interface.

To enable RAID in the HDD Management interface:

1. Browse to the disk mode configuration interface.

   Menu > **HDD** > **Advanced**

2. Select the **Enable RAID** checkbox.
3. Click **Apply** to save the settings.

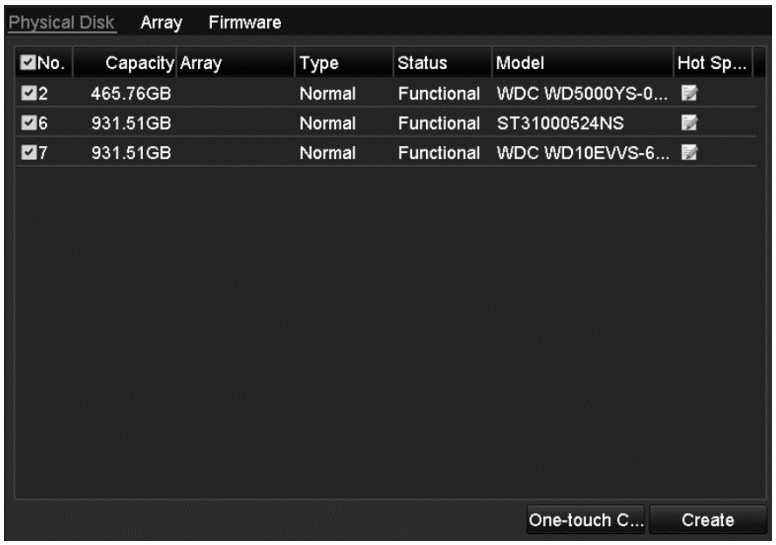
One-touch configuration

Through one-touch configuration, you can quickly create the disk array and virtual disk. By default, the array type is RAID 5.

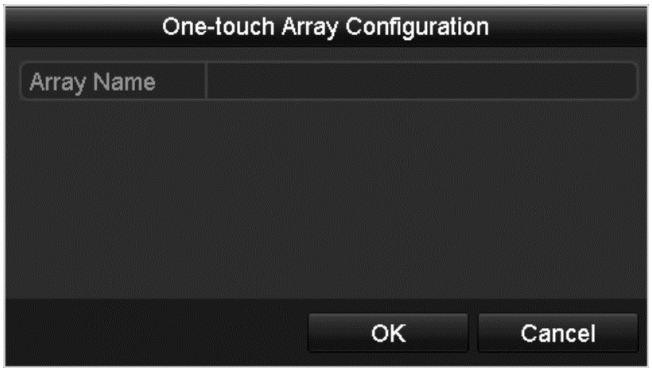
To configure one-touch configuration:

1. Browse to the RAID configuration interface.

   Menu > **HDD** > **RAID**



2. Select the corresponding HDD No. checkbox.
3. Click **One-touch Create** to enter the One-touch Array Configuration interface.



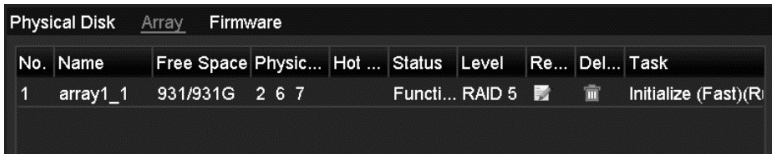
4. Edit the array name in the **Array Name** field, and then click **OK** to start configuring array.

   Note: If you install 4 or more HDDs for one-touch configuration, a hot spare disk is set by default. We recommend that you set the hot spare disk to automatically rebuild the array when the it is abnormal.

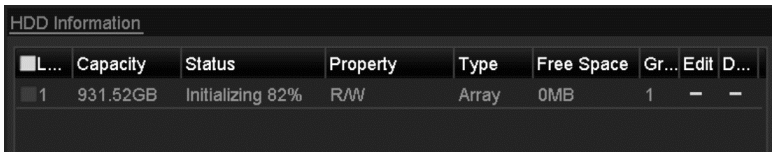
5. When the array configuration is complete, click **OK** to finish the settings.

6. Click the **Array** tab to view the information of the created array.

   Note: By default, one-touch configuration creates an array and a virtual disk.



7. A created array displays as an HDD in the HDD information interface.



Manually creating array

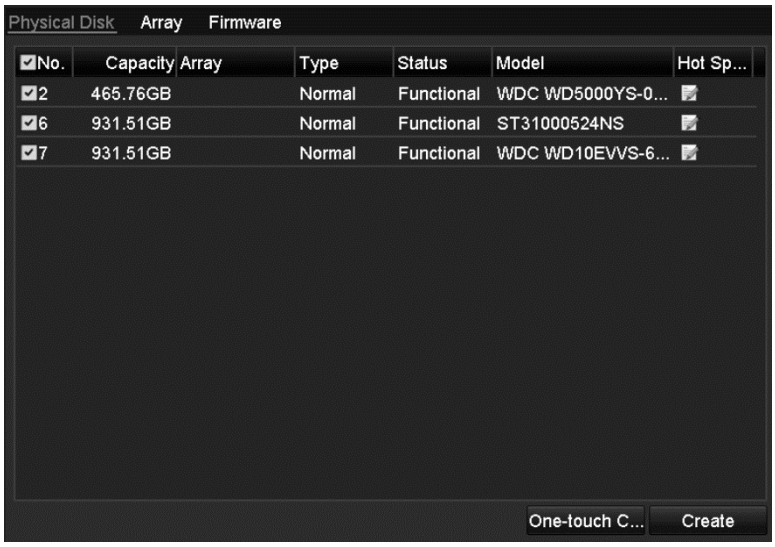
You can manually create the array of RAID 0, RAID 1, RAID 5 and RAID 10.

Note: In this section, we use RAID 5 as an example describing the manual configuration of array and virtual disk.

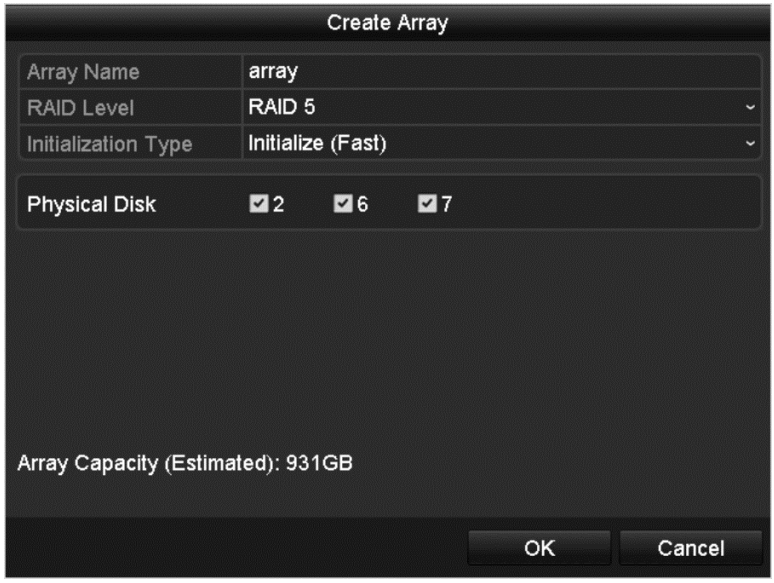
To manually create an array and virtual disk:

1. Browse to the Physical Disk Settings interface.

   Menu > **HDD** > **RAID** > **Physical Disk**



2. Click **Create** to enter the Create Array interface.



3. Edit the Array Name, set the RAID Level (0, 1, 5, 10), and then select the Physical Disk for array configuration.

   Raid levels

   RAID 0: At least two HDDs must be installed.

   RAID 1: 2 HDDs must be configured.

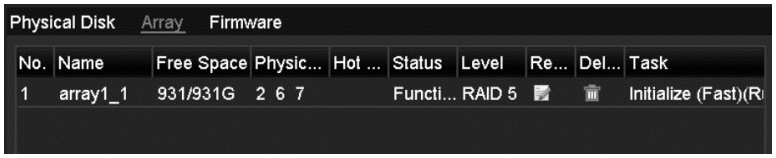
   RAID 5: At least 3 HDDs must be installed.

   RAID 10: 4, 6, or 8 HDDs must be configured.

4. Click **OK** to create an array.

   Note: If the number of HDDs you select is not compatible with the requirement of the RAID level, the error dialog displays.

5. Click the **Array** tab to view the successfully created array.



Rebuilding array

The working status of array includes Functional, Degraded, and Offline. By viewing the array status, you can perform immediate and proper maintenance for the disks to ensure high security and reliability of the data stored in the disk array.

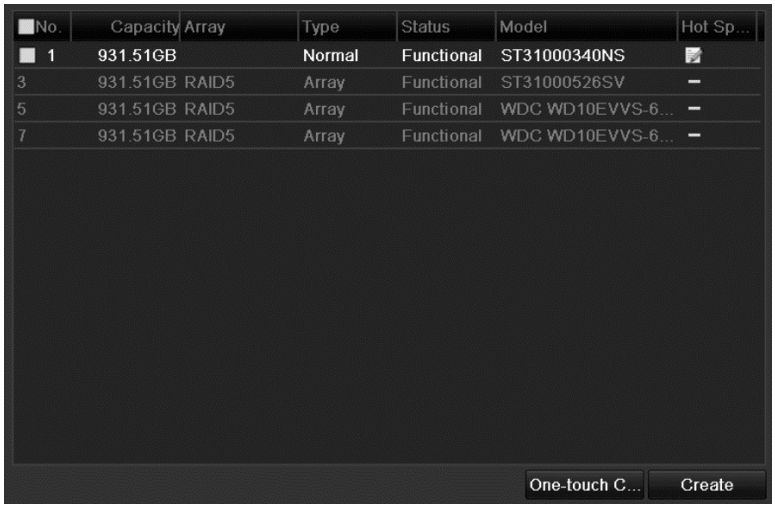
When there is no disk loss in the array, the working status of array changes to Functional. When the number of lost disks exceeds the limit, the working status of array changes to Offline. In other conditions, the working status is Degraded. If the virtual disk is in the Degraded status, restore it to functional by rebuilding the array.

Before you start

Make sure that the hot spare disk is configured.

To configure the hot spare disk:

1. Browse to the Physical Disk Settings interface.



2. Select a disk, and then click .

   Note: Only global host spare mode is supported.

Automatically rebuilding the array

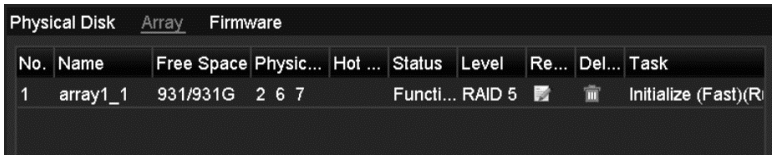
When the virtual disk is in Degraded status, the device can start rebuilding the array automatically with the hot spare disk to ensure the high security and reliability of the data.

To automatically rebuild an array:

1. Browse to the Array Settings interface.

   Menu > **HDD** > **RAID** > **Array**

   The status of the array is Disk Loss. If the hot spare disk is configured and Auto-rebuild function is enabled, the hot spare disk is automatically used for array rebuilding.



Note: If there is no hot spare disk after rebuilding, we recommend installing the HDD into the device and setting it as a hot spare disk. This ensures high security and reliability of the array.

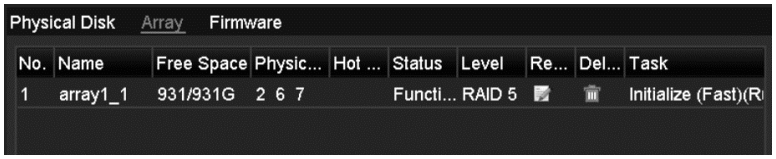
Manually rebuilding array

If you do not enable the auto-rebuild in Firmware Settings interface (Menu > HDD > RAID > Firmware), or if the hot spare disk is not configured, you can rebuild the array manually to restore the array when the virtual disk is in Degraded status.

To manually rebuild an array:

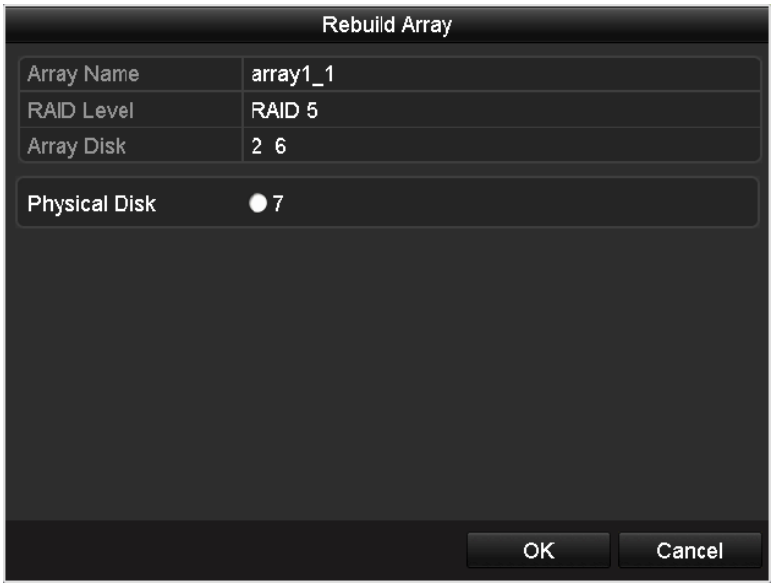
1. Browse to the Array Settings interface.

   Menu > **HDD** > **RAID** > **Array**



2. Click the **Array** tab, and **then click** to configure the array rebuild.

   Note: At least one available physical disk should exist for rebuilding the array.



3. Select the available physical disk, and then click **OK** to confirm rebuilding the array.
4. The “Do not unplug the physical disk when it is under rebuilding” dialog displays. Click **OK** to start the rebuild.

You can enter the Array Settings interface and the Virtual Disk interface to view the rebuilding status.

After rebuilding successfully, the array and virtual disk restore to Functional.

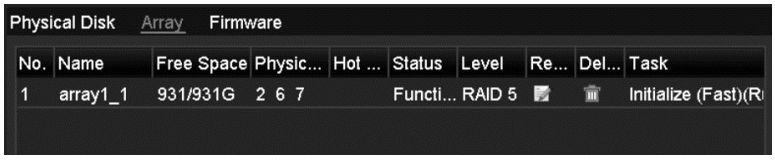
Deleting array

Deleting array deletes all data saved in the disk.

To delete the array:

1. Browse to the Array Settings interface.

   Menu > **HDD** > **RAID** > **Array**



2. Select an array, and then click to delete the array.

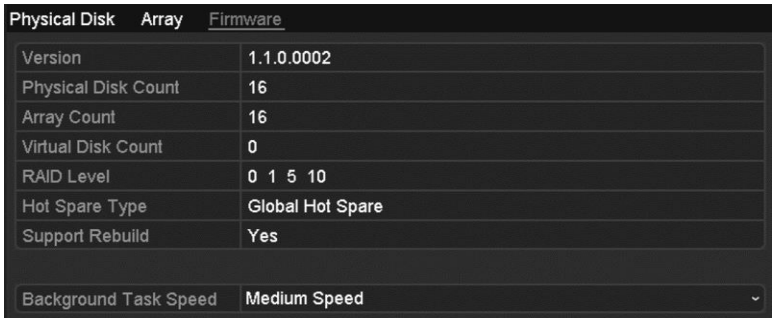
3. Click **Yes** to confirm.

Checking and upgrading the firmware

You can view the information of the firmware and upgrade the firmware by local backup device or remote FTP server.

To upgrade the firmware:

1. Enter the Firmware interface to check the information of the firmware, including the version, maximum physical disk quantity, maximum array quantity, auto-rebuild status, etc.



2. Set the Background Task speed in the drop-down list.

HDD Management

Initializing HDDs

Initialize the hard disk drive (HDD) before using it with your NVR.

Notes

- When the NVR starts, a dialog displays if any uninitialized HDD exists.
- Initializing the HDD will erase all existing data on it.

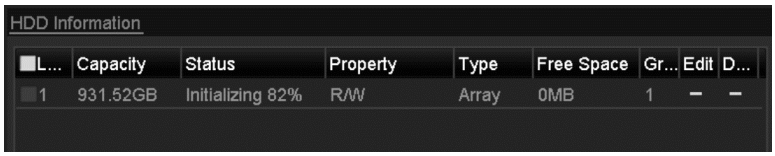
Figure 30: Dialog of uninitialized HDD

Click **Yes** to initialize it immediately, or you can perform the following steps to initialize the HDD.

To initialize HDD:

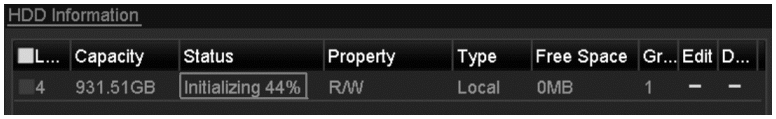
1. Browse to the HDD Information interface.

   Menu > **HDD** > **General**

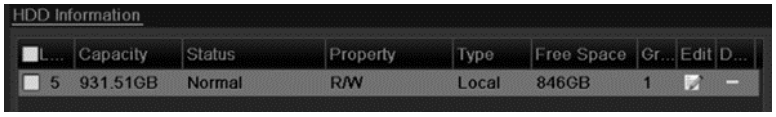


2. Select the HDD to initialize.
3. Click **Init**.

4. Click **OK** to start initialization.



5. After the HDD has initialized, the status is changed from Uninitialized to Normal.



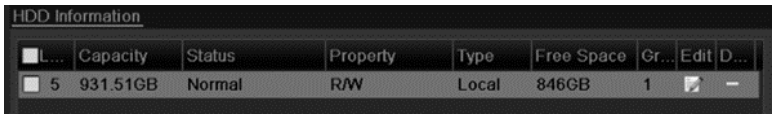
Managing Network HDD

You can add the allocated NAS or disk of the IP SAN to NVR, and use it as a network HDD.

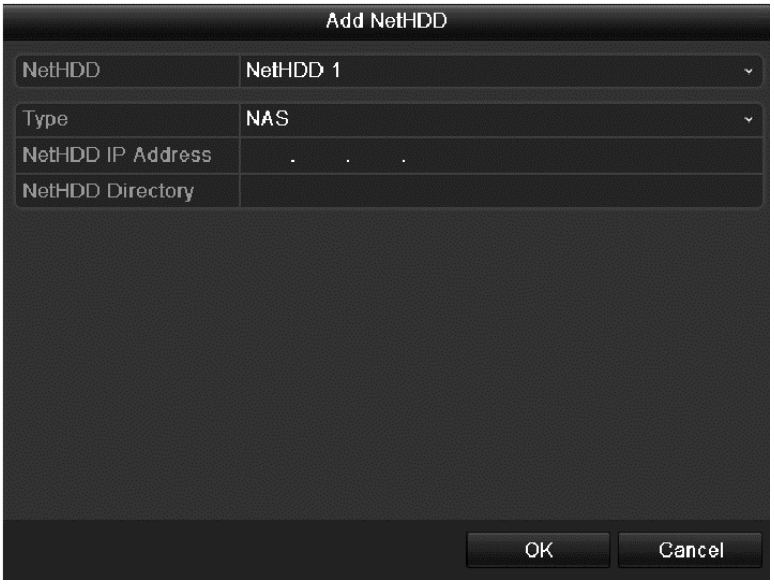
To manage the HDD network:

1. Browse to the HDD Information interface.

   Menu > **HDD** > **General**



2. Click **Add** to enter the Add NetHDD interface.



3. Add the NetHDD.
4. Set the type to NAS or IP SAN.

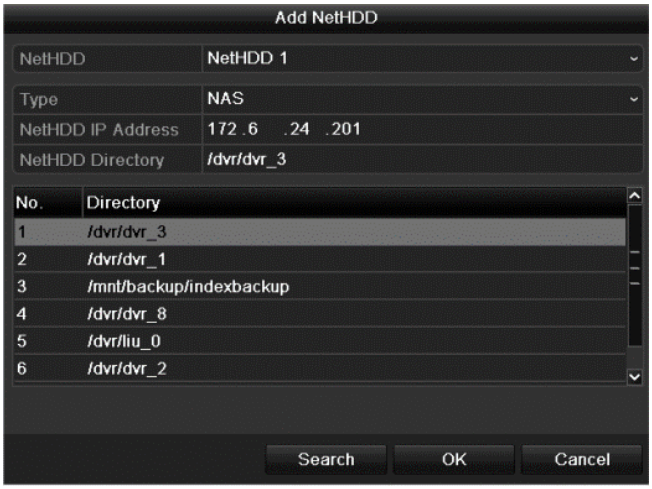
5. Configure the NAS or IP SAN settings.

   NAS disk

   a. Enter the NetHDD IP address in the text field.
   b. Click **Search** to search for the available NAS disks.
   c. Select the NAS disk from the list shown below.

      — or —

      Manually enter the directory in the NetHDD Directory field.
   d. Click **OK** to add the configured NAS disk.



   IP SAN

   a. Enter the NetHDD IP address in the text field.
   b. Click **Search** to search the available IP SAN disks.
   c. Select the IP SAN disk from the list shown below.
   d. Click **OK** to add the selected IP SAN disk.

      Note: One IP SAN disk is added.

6. After successfully adding the NAS or IP SAN disk, return to the HDD Information menu. The added NetHDD displays in the list.

   Note: If the added NetHDD is uninitialized, select it and click **Init** for initialization.

Managing eSATA

When there is an external eSATA device connected to NVR, you can configure eSATA Record/Capture or Export, and you can manage the eSATA in the NVR.

To manage eSATA:

1. Browse to the Advanced Record Settings interface.

   Menu > **Record** > **Advanced**

2. Select the eSATA type to Export or Record/Capture from the drop-down list of eSATA.

   Export: use the eSATA for backup.

   Record/Capture: use the eSATA for record/capture. Refer to the following steps for operating instructions.

3. Select Record/Capture, and then enter the HDD Information interface.

   Menu > **HDD** > **General**

4. Edit the property of the selected eSATA, or initialization is required.

Note: When used for Record/Capture, two storage modes is configured for the eSATA. Refer to “Managing the HDD group” on page 158 and “Configuring Quota mode” on page 160 for details.

Managing the HDD group

Setting HDD groups

Multiple HDDs is managed in groups. Video from specified channels is recorded to a specific HDD group through HDD settings.

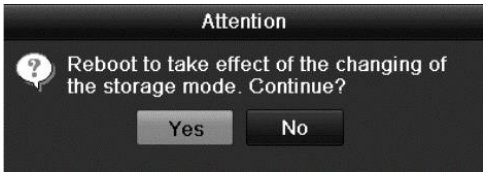
To manage HDD groups:

1. Browse to the Storage Mode interface.

   Menu > **HDD** > **Advanced**

2. Set the Mode to Group.

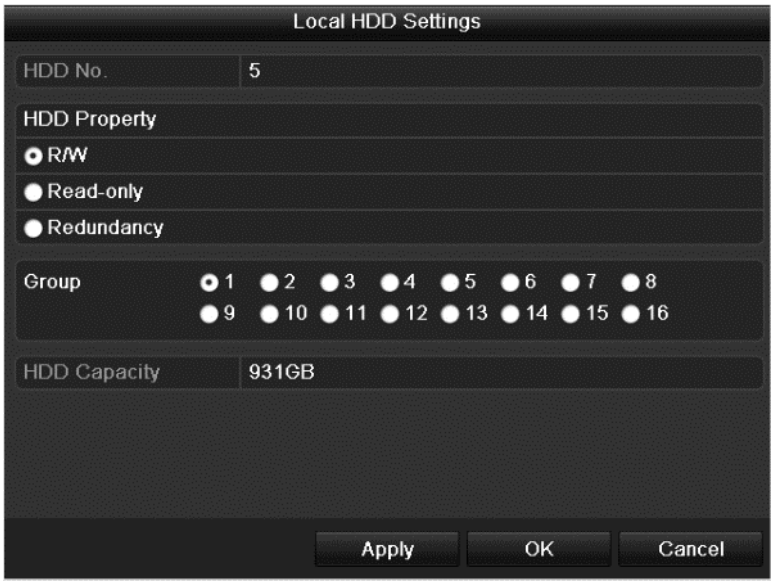
3. Click **Apply.** The Attention dialog displays.



4. Click **Yes** to reboot the device and activate the changes.
5. After the reboot completes, enter the HDD Information interface.

   Menu > **HDD** > **General**

6. Select HDD from the list, and then click to enter the Local HDD Settings interface.



7. Select the Group number for the current HDD.

   Note: The default group number for each HDD is 1.

8. Click **OK** to confirm the settings. The Attention dialog displays.

9. Click **Yes** to finish the settings.

Setting the HDD property

The HDD property is set to redundancy, read-only, or read/write (R/W). Before setting the HDD property, set the storage mode to Group.

An HDD is set to read-only to prevent important recorded files from being overwritten when the HDD becomes full in overwrite recording mode.

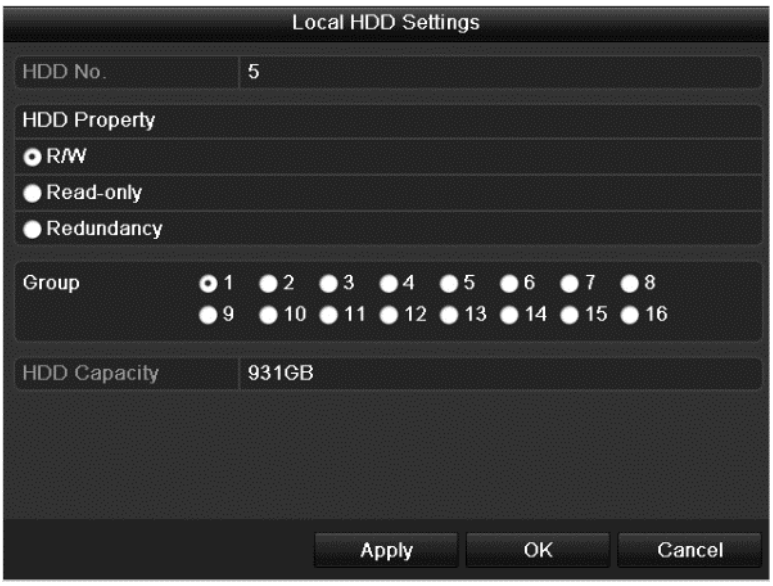
When the HDD property is set for redundancy, the video is recorded on both the redundancy HDD and the R/W HDD simultaneously. This ensures high security and reliable video data.

To set HDD properties:

1. Browse to the HDD Information interface.

   Menu > **HDD** > **General**

2. Select HDD from the list, and then click to enter the Local HDD Settings interface.



3. Set the HDD property to R/W, Read-only, or Redundancy.
4. Click **OK** to save the settings and exit the interface.

In the HDD Information menu, the HDD property displays in the HDD Information menu.

Note: At least two hard disks are installed on your NVR in order to set the HDD to Redundancy, and one HDD with the R/W property.

Configuring Quota mode

Each camera is configured with an allocated quota for the storage of recorded files or captured pictures.

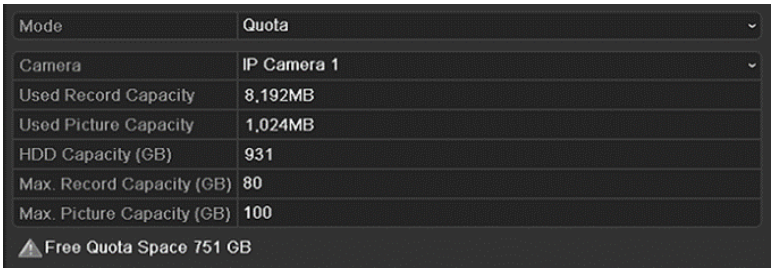
To configure Quota mode:

1. Browse to the Storage Mode interface.

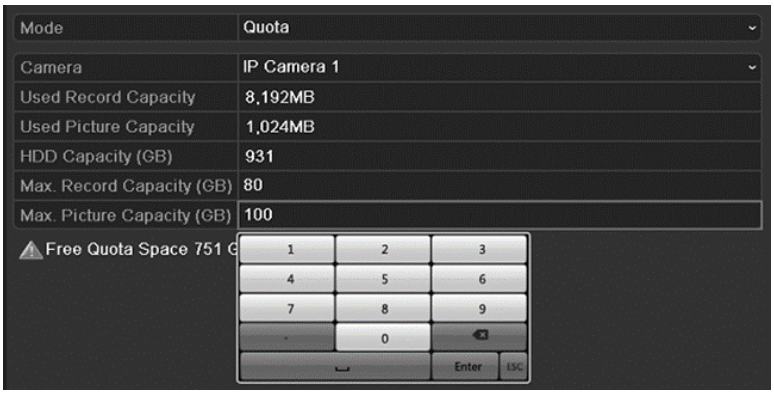
   Menu > **HDD** > **Advanced**

2. Set the mode to Quota.

   Note: Reboot the NVR to enable the changes to take effect.



3. Select a camera to configure quota.
4. Enter the storage capacity in the **Max. Record Capacity (GB)** and **Max. Picture Capacity (GB)** text fields.



5. You can copy the quota settings of the current camera to other cameras if required. Click **Copy**.

6. Select the camera(s) to configure with the same quota settings. You can also check the check box of IP Camera to select all cameras.
7. Click **OK** to finish the Copy settings and return to the Storage Mode interface.
8. Click **Apply** to apply the settings.

Note: If the quota capacity is set to “0,” then all cameras will use the total capacity of HDD for record and picture capture.

Configuring disk clone

If the S.M.A.R.T. detection result declares the HDD is abnormal, you can choose to clone all the data on the HDD to an inserted eSATA disk manually.

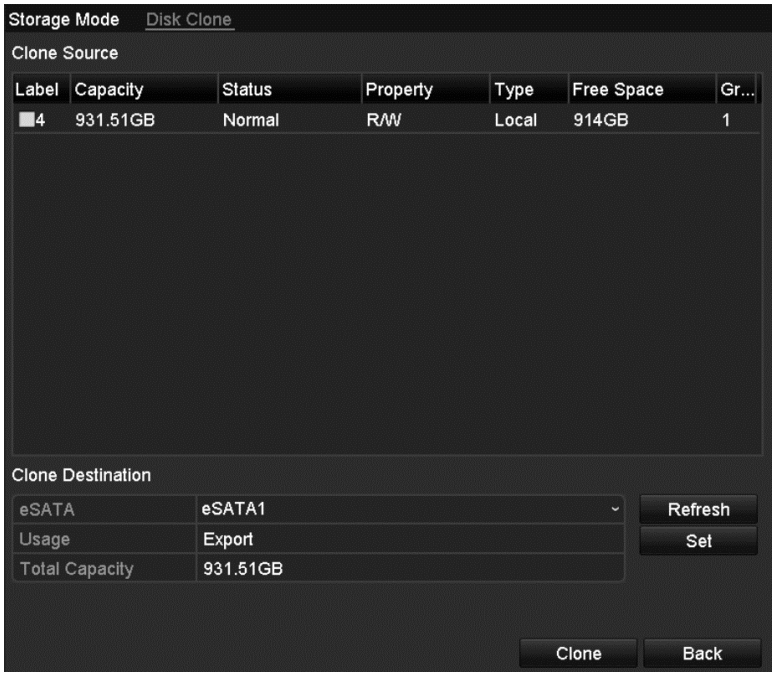
Before you start, an eSATA device should be connected to the device.

To configure Quota mode:

1. Browse to the HDD Advanced Setting interface.

   Menu > **HDD** > **Advanced**

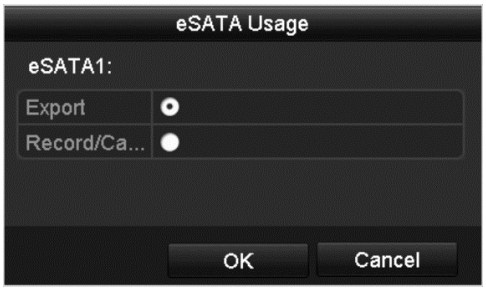
2. Click the **Disk Clone** tab.



3. Make sure the usage of the eSATA disk is set as Export.

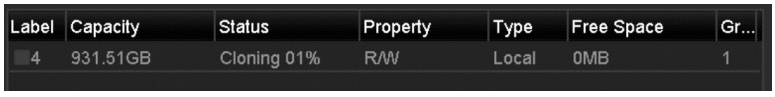
   If not, click **Set**. Choose Export and then click **OK**.

   Note: The capacity of the destination disk must match that of the clone source disk.



4. Select the desired HDD checkbox.
5. Click **Clone**, an attention dialog displays.
6. Click **Yes**.

   You can check the clone progress in the HDD status.



Checking HDD status

You can check the status of the HDDs installed on the NVRs so that you can take immediate action in case of an HDD failure.

To check the status on the General tab:

1. Browse to the HDD Information interface.

   Menu > **HDD** > **General**

2. Check the status of each HDD displayed in the list.

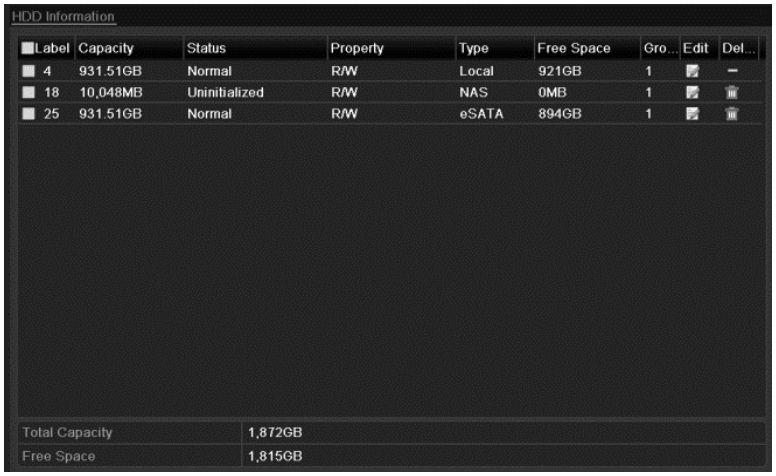
Note: If the status is *Normal* or *Sleeping*, then the HDD is working normally. If the status is *Uninitialized* or *Abnormal*, initialize the HDD before use. If the HDD initialization failed, replace it with a new one.

To check the status on the System Info tab:

1. Browse to the System Information interface.

   Menu > **Maintenance** > **System Info**

2. Click the **HDD** tab to view the status of each listed HDD.



HDD detection

The device provides the HDD detection function such as adopting S.M.A.R.T. and the Bad Sector Detection technique. The S.M.A.R.T. *(*Self-Monitoring, Analysis and Reporting Technology*)* is an HDD monitoring system. It detects and reports on various indicators of reliability in the hopes of anticipating failures.

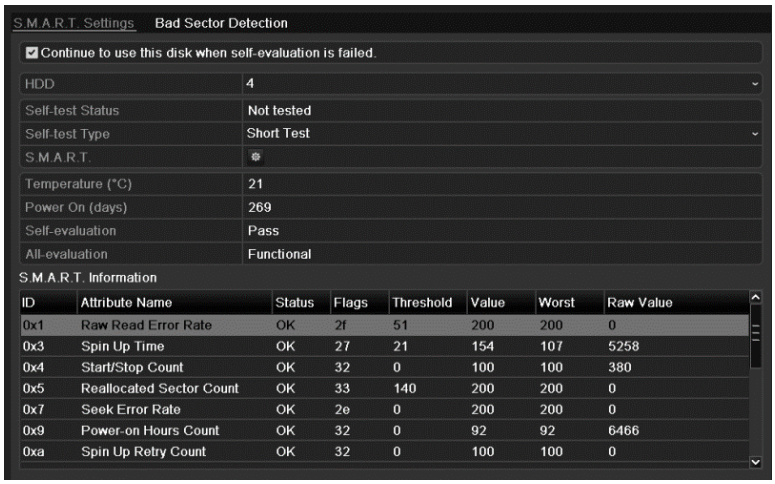
S.M.A.R.T. settings

To set S.M.A.R.T.:

1. Browse to the S.M.A.R.T. Settings interface.

   Menu > **Maintenance** > **HDD Detect**

2. Select the HDD to view its S.M.A.R.T information list.



   S.M.A.R.T. related information is shown on the interface. You can choose the self-test types as Short Test, Expanded Test or the Conveyance Test.

3. Click **Start** to start the S.M.A.R.T. HDD self-evaluation.

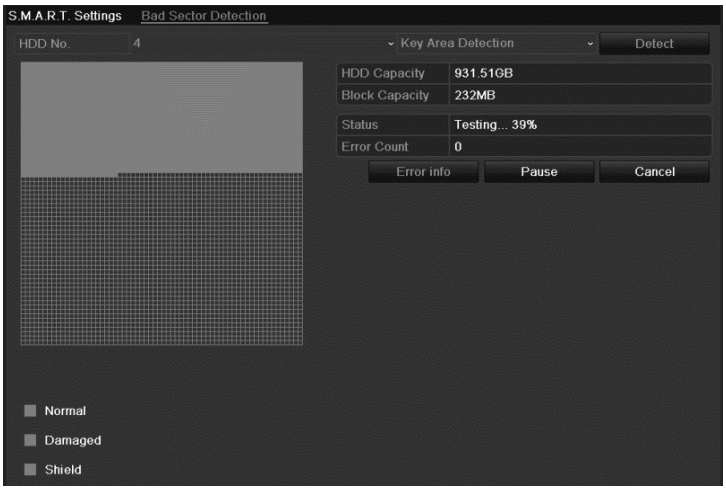
Note: If you want to use the HDD even when S.M.A.R.T. checking failed, you can select the **Continue to use the disk when self-evaluation is failed** checkbox.

Bad sector detection

To detect a bad sector:

1. Click the **Bad Sector Detection** tab.
2. Select the HDD number in the drop-down list you want to configure, and then choose All Detection or Key Area Detection as the detection type.

3. Click **Detect** to start detection.



4. Click **Error** to see the detailed damage information. You can click to pause, resume, or cancel the detection.

Configuring HDD error alarms

You can configure the HDD error alarms when the HDD status is Uninitialized or Abnormal.

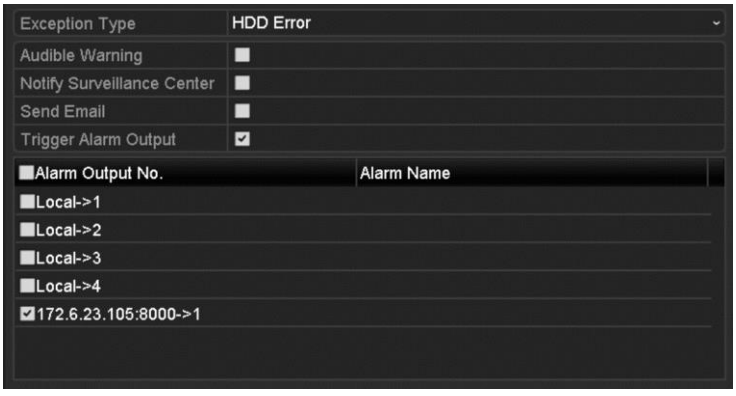
To configure HDD error alarms:

1. Browse to the Exception interface.

   Menu > **Configuration** > **Exceptions**

2. Set the Exception Type to HDD Error.
3. Select the desired checkboxes to select the HDD error alarm types.

   You can choose from Audible Warning, Notify Surveillance Center, Send Email and Trigger Alarm Output.



4. Select the alarm output for the Trigger Alarm Output.
5. Click the **Apply** button to save the settings.

Camera Settings

Configuring OSD settings

You can configure the OSD (On-screen Display) settings for the camera, including date, time, and camera name.

To configure OSD settings:

1. Enter the OSD Configuration interface.

   Menu > **Camera** > **OSD**

2. Select the camera to configure OSD settings.
3. Edit the camera's name in the **Camera Name** field.
4. Select the **Display Name**, **Display Date**, and **Display Week** checkboxes to select those items.
5. Select the date, time, and mode from the Date Format, Time Format, and Display Mode drop-down lists.

6. Use the mouse to click and drag the text frame in the Preview window to adjust the OSD position.
7. Click **Apply**.

Configuring privacy mask

You can configure four-sided privacy mask zones that are not viewed by the operator. The privacy mask prevents the masked surveillance areas from being viewed or recorded.

Note: There are only four configurable privacy mask.

To configure a privacy mask:

1. Browse to the Privacy Mask Settings interface.

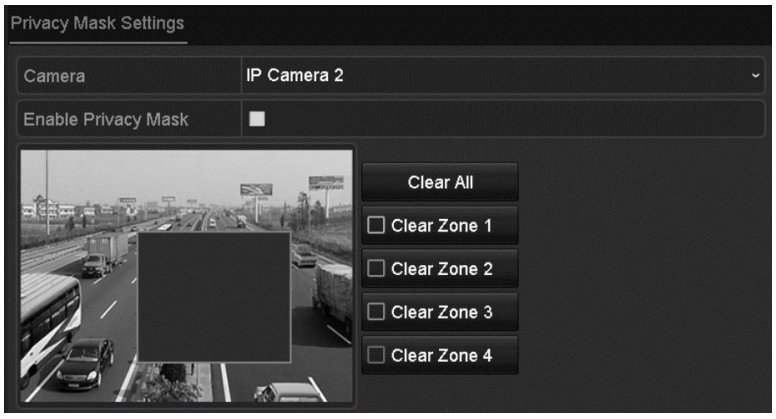
   Menu > **Camera** > **Privacy Mask**
2. Select the camera to set privacy mask.
3. Select the **Enable Privacy Mask** checkbox to enable this feature.

4. Use the mouse to draw a zone on the window. The zones are marked with different frame colors.

   Note: You can clear a privacy mask zone by clicking its corresponding button.

   – or –

   Click **Clear All** to clear all zones.



5. Click **Apply** to save the settings.

Configuring video parameters

To configure video parameters:

1. Browse to the Image Settings interface.

   Menu > **Camera** > **Image**

2. Select the camera to set its image parameters.
3. You can click the arrow to change the value of each parameter.
4. Click **Apply** to save the settings.

NVR Management and Maintenance

Viewing system information

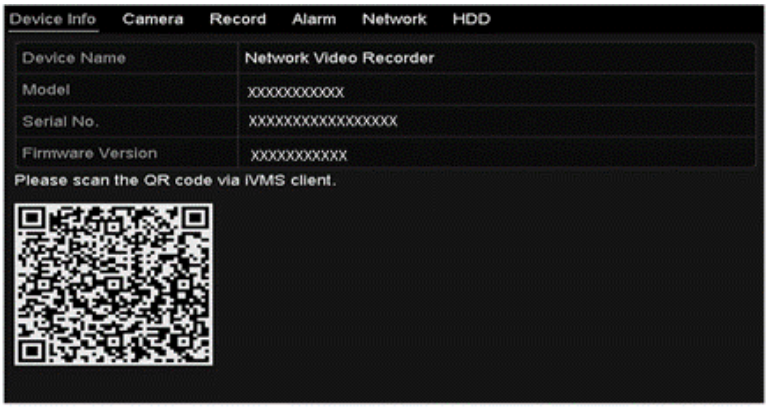
Using the System Information interface, you can view the device, camera, record, alarm, network, and HDD information.

To view device information:

1. Browse to the System Information interface.

   Menu > **Maintenance** > **System Info**

2. Click the **Device Info**, **Camera**, **Record**, **Alarm**, **Network**, and **HDD** tabs to view the device's system information.



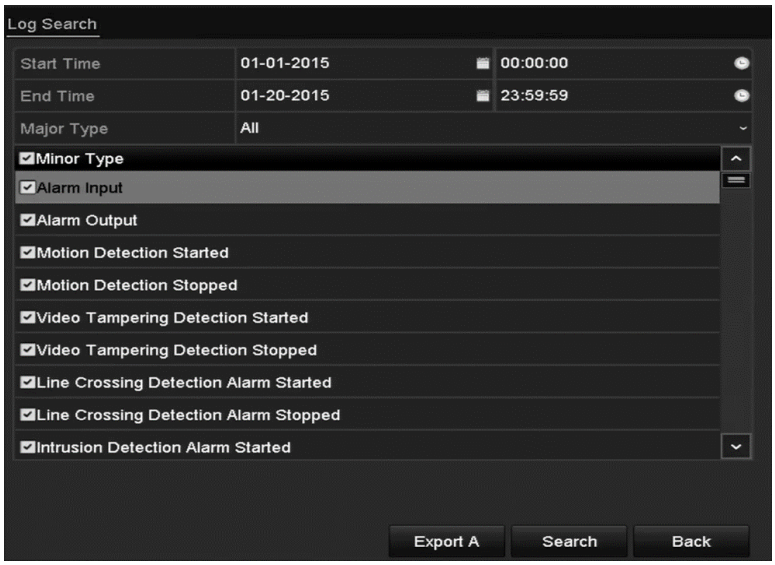
Searching for and exporting log files

The operation, alarm, exception and information of the NVR is stored in log files, which are viewed and exported at any time.

To search and export log files:

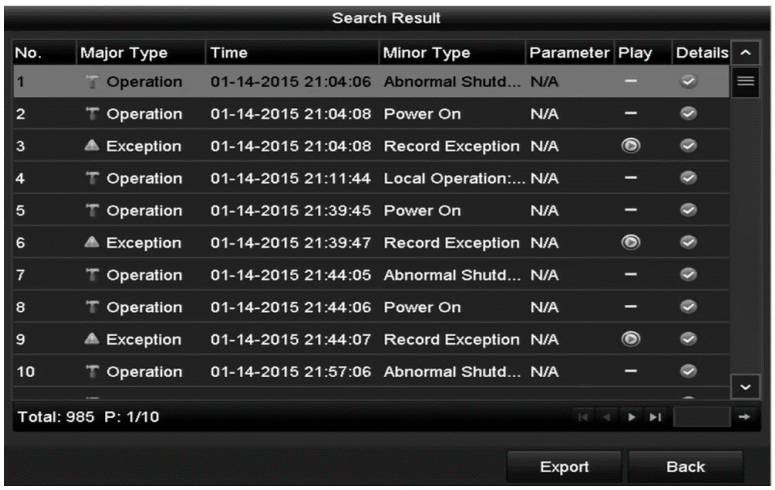
1. Browse to the Log Search interface.

   Menu > **Maintenance** > **Log Information**



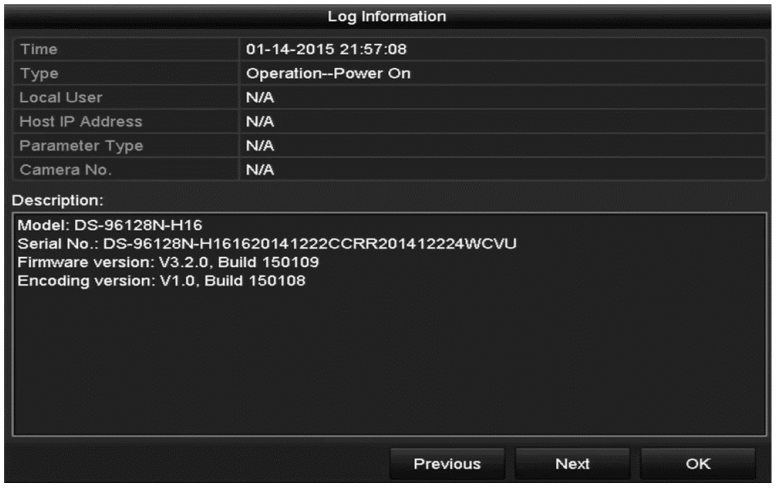
2. Set the log search conditions to refine your search, including the Start Time, End Time, Major Type, and Minor Type.
3. Click **Search** to start searching the log files.

   The matched log files display in a list, as shown below.



   Note: Up to 2,000 log files are displayed.

4. Click or double-click the desired log to view its detailed information.
5. Click to view the related video files if available.



6. To export the log files, click **Export**.

7. Select the backup device from the Device Name drop-down list.
8. Click the **Export** to export the log files to the selected backup device.
9. Click the **New Folder** button to create a new folder in the backup device.

   – or –

   Click **Format** to format the backup device before log export.

Note: Connect the backup device to the NVR before exporting the log files.

Importing and exporting IP camera info

Generate the information of a connected IP camera into an Excel file.

To import and export configuration files:

1. Browse to the camera management interface.

   Menu > **Camera** > **IP Camera Import/Export**

2. Click the **IP Camera Import/Export** tab.
3. Click **Export** to export the files to the selected backup device.
4. To import a configuration file, select the file from the backup device, and then click **Import**.

   You must reboot the camera after importing a file.

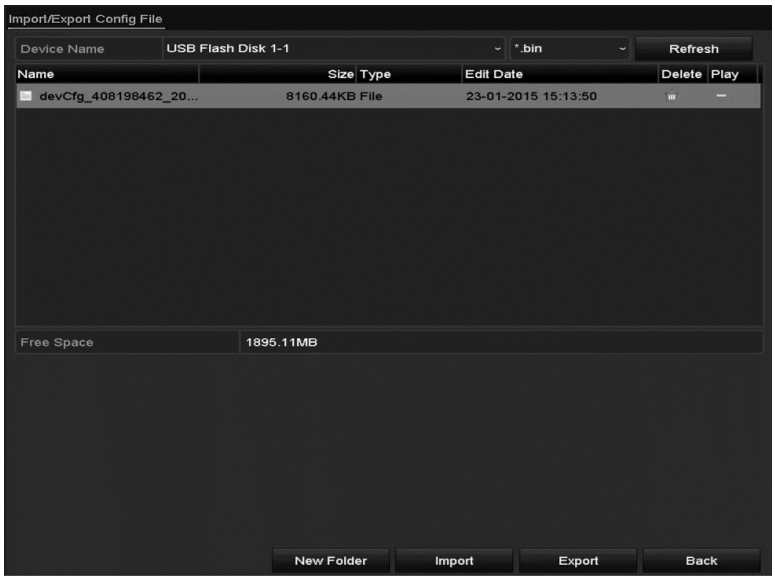
Importing and exporting configuration files

The configuration files of the NVR are exported to a local device for backup; and the configuration files of one NVR is imported to multiple NVR devices if they are configured with the same parameters.

To import and export configuration files:

1. Browse to the Import/Export Configuration File interface.

   Menu > **Maintenance** > **Import/Export**



2. Click **Export** to export the configuration files to the selected local backup device.

3. To import a configuration file, select the file from the selected backup device and click **Import**. After the import process is completed, reboot the NVR.

Note: When the import finishes, the device reboots automatically.

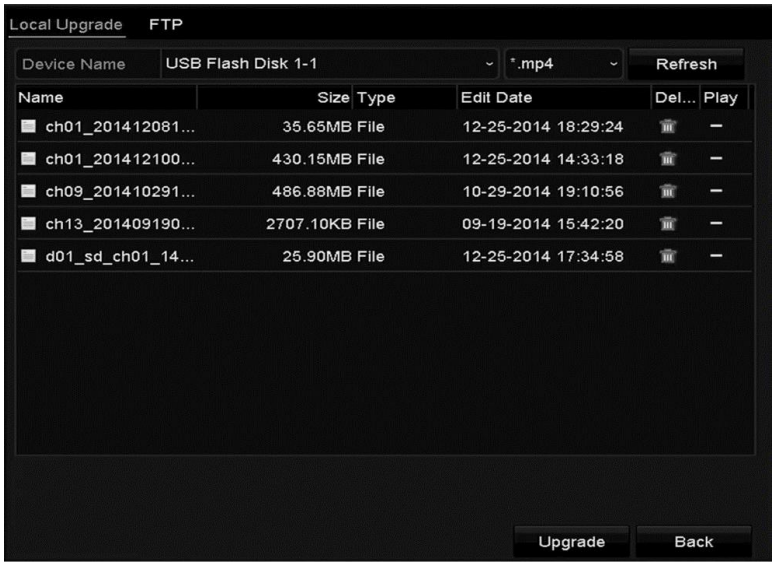
Upgrading the system

You can upgrade the firmware on your NVR from a local backup device, or a remote FTP server.

To upgrade from a local backup device:

1. Connect your NVR to the local backup device where the update firmware file is located.
2. Browse to the Upgrade interface.

   Menu > **Maintenance** > **Upgrade**
3. Click the **Local Upgrade** tab.



4. Select the update file from the backup device.
5. Click **Upgrade** to start upgrading.
6. After upgrading is complete, reboot the NVR to activate the new firmware.

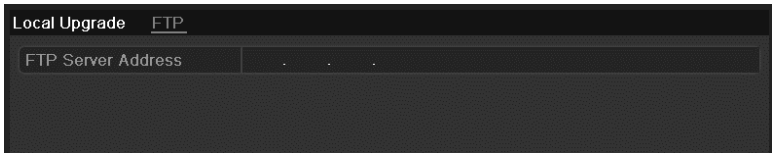
To upgrade via FTP:

Note: Configure the PC (running FTP server) and NVR on the same LAN. Run the third-party TFTP software on the PC and copy the firmware into the root directory of the TFTP.

1. Browse to the Upgrade interface.

   Menu > **Maintenance** > **Upgrade**

2. Click the **FTP** tab to access the local upgrade interface.



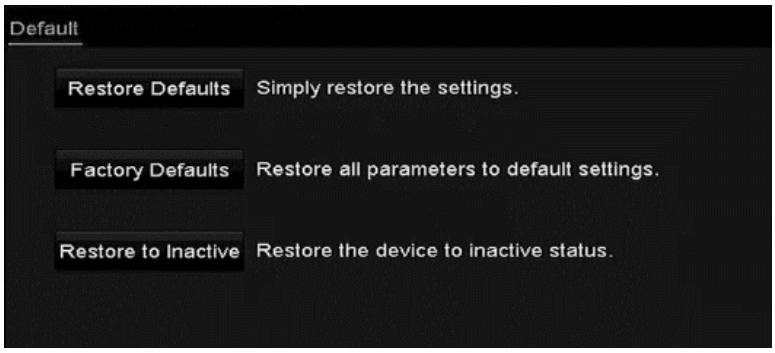
3. Enter the FTP server address in the text field.
4. Click **Upgrade** to start upgrading.
5. After the upgrade completes, reboot the NVR to activate the new firmware.

Restoring default settings

To restore default settings:

1. Browse to the Default interface.

   Menu > **Maintenance** > **Default**



2. Click **OK** to restore the default settings.

The device reboots automatically after restoring the default settings.

Other Settings

Understanding camera capacity in an NVR

When setting up your NVR and cameras, you may notice that some of the camera images may not display in Live View. This most often occurs when you are displaying images in 1 Plus5 mode or 1 Plus7 mode, because the total bit rate for all cameras is exceeding the NVR's capacity. The actual capacity depends on the total bit rate from all the cameras. However, it is good practice to allow some headroom for machine operations, such as remote streaming.

NVR model	Capacity
4-channel	20 Mb
8-channel	40 Mb
16-channel	80 Mb
32-channel	160 Mb
64-channel	160 Mb

To fully understand NVR capacity, it is necessary to understand the concepts of streaming video, resolution, quality, and bit rate. Streaming video is content sent in a compressed form over a network and processed in real time.

Streaming video types

- Main Stream: the high quality video that is recorded and streamed.
- Sub Stream: never recorded; intended for streaming only. Default is 704 × 480, 584 Kbps at 8 fps.
- Is video alone, or video and audio compressed together. Audio requires very little bandwidth.

The combination of the main stream and sub streams makes up the total bit rate of each camera. This is expressed in Kbps (kilobits per second) or Mbps (megabits per second).

Bit rate is determined by the selected resolution (1280 × 720, 1920 × 1080, 2560 × 1920, etc.), frame rate (frames per second), and video quality (the amount of compression being applied to each camera).

Example

32 channels of 720P cameras at 15 fps with good image quality will have 32 x (1536 Plus 512) = 65536 Kbps (about 66Mbps), so the 32-channel NVR can support them.

Each channel can support a different camera, as long as they do not exceed the total bit rate limit. It is entirely possible to mix 5 MP cameras with 4CIF IP cameras, etc. Generally, 5 MP at 30 fps requires around 20 Mbps for best quality. A 4-channel NVR is currently limited to 16 Mbps.

Adjusting settings

Know NVR's capacity and make adjustments, if necessary. Adjust the bit rate by lowering the resolution, frame rate, or video quality setting.

To adjust the setting:

1. Enter the Live View settings interface.
2. Adjust the Resolution, Frame Rate, and Video Quality settings.

Configuring RS-232 serial ports

The RS-232 port is used in two ways:

Parameters Configuration: Connect a PC to the NVR through the PC serial port. Configure device parameters using software such as HyperTerminal. Set the serial port parameters to match the NVR's when connecting with the PC serial port.

Transparent Channel: Connect a serial device directly to the NVR. The PC will control the serial device remotely through the network and the protocol of that serial device.

To configure the RS-232 settings:

1. Browse to the RS-232 Settings interface.

   Menu > **Configuration** > **RS-232**

2. Configure RS-232 parameters, including baud rate, data bit, stop bit, parity, flow control, and usage.
3. Click **Apply** to save the settings.

Configuring general settings

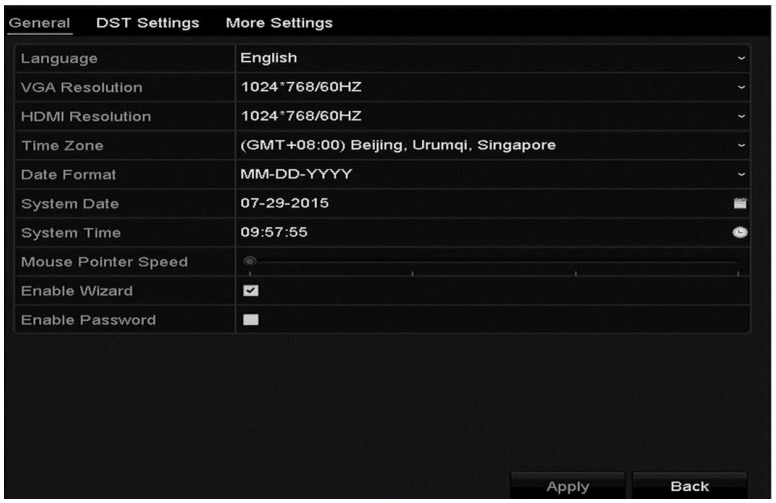
You can configure the BNC output standard, VGA output resolution, mouse pointer speed through the Menu > Configuration > General interface.

To configure general settings:

1. Browse to the General Settings interface.

   Menu > **Configuration** > **General**

2. Click the **General** tab.



3. Configure the following settings:

   Language: The language used is English.

   CVBS Output Standard: Set the CVBS output standard to NTSC or PAL to match the video input standard.

   VGA Resolution: Set the VGA output resolution to match the monitor screen.

   HDMI Resolution: Sett the HDMI resolution to match the monitor screen.

   Time Zone: Set the time zone.

   Date Format: Set the date format.

   System Date: Set the system date.

   System Time: Set the system time.

   Mouse Pointer Speed: Set the speed of mouse pointer; four levels are configurable.

   Enable Wizard: Enable/disable the Wizard when the device starts up.

   Enable Password: Enable/disable the use of the login password.

4. Click **Apply** to save the settings.

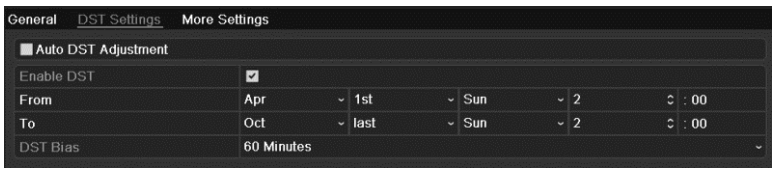
Configuring DST settings

To configure DTS settings:

1. Browse to the General Settings interface.

   Menu > **Configuration** > **General**

2. Click the **DST Settings** tab.



3. Select the **Auto DST Adjustment** checkbox.

   - or -

   Select the **Enable DST** checkbox, and then enter the date for the DST period.

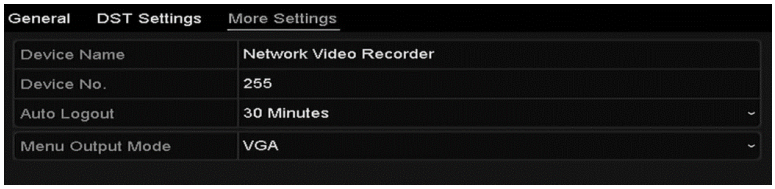
Configuring more settings

To configure more settings:

1. Browse to the General Settings interface.

   Menu > **Configuration** > **General**

2. Click the **More Settings** tab.



3. Configure the following settings:

   Device Name: Edit the name of NVR.

   Device No.: Edit the serial number of NVR. The device number is set in the range from 1 to 255. The default number is 255. It is used for the remote and keyboard control.

   Auto Logout: Set timeout time for menu inactivity. For example, when the timeout time is set to five Minutes, the system will exit from the current operation menu to the Live View screen after 5 minutes of menu inactivity.

   Enable HDMI/VGA Simultaneous Output (64-channel NVRs only): By default, the video outputs form HDMI and VGA interfaces operate separately. Set the simultaneous output for the HDMI and VGA by selecting the checkbox.

   Menu Output Mode: You can choose the menu display on different video output. There are auto, HDMI, VGA and Main CVBS selectable.

   VGA2/HDMI2: Set the menu output mode to VGA, HDMI or Auto. When Auto is selected and both the VGA and HDMI outputs are connected, the device is detected and sets the menu output to HDMI.

4. Click the **Apply** button to save the settings.

Managing user accounts

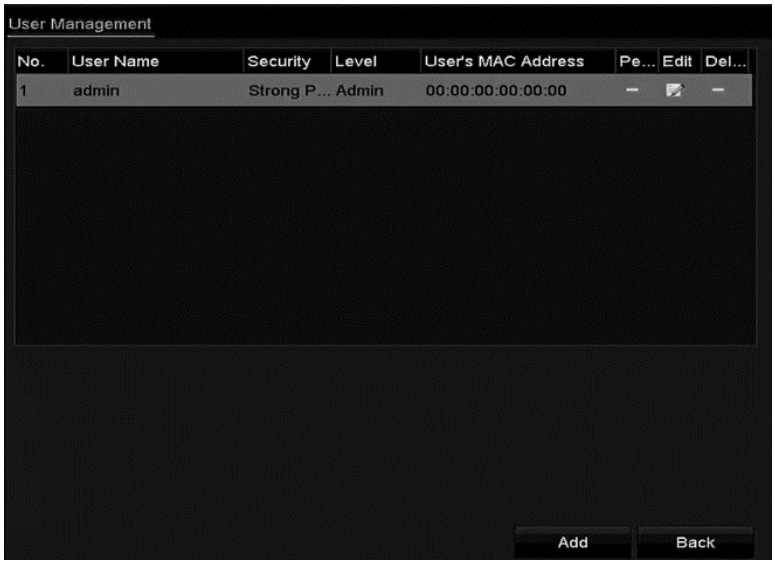
There is a default account in the NVR. The Administrator user name is “clareadmin” and the password is “secure7”. The Administrator has the permission to add and delete users and configure user parameters.

Adding a user

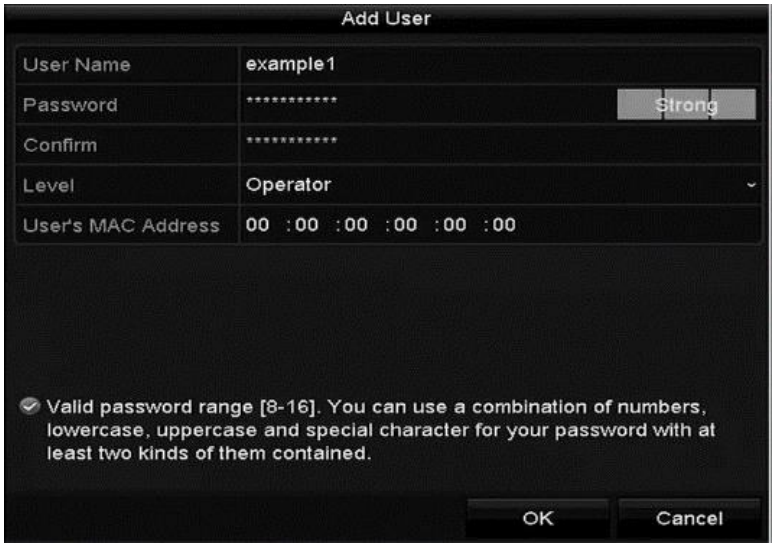
To add a user:

1. Browse to the User Management interface.

   Menu > **Configuration** > **User**



2. Click **Add**.



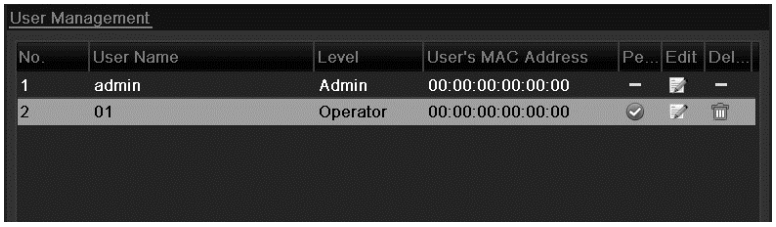
3. Enter the information for the new user, including User Name, Password, Level and User's MAC Address.

   Level: Set the user level to Operator or Guest. Different user levels have different operating permission.

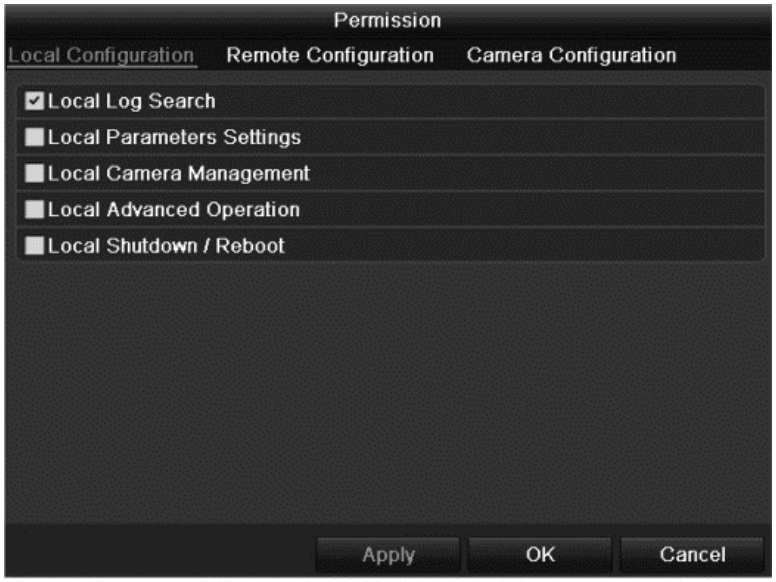
   - **Operator:** The Operator user level has permission for Two-way Audio in Remote Configuration and all operating permission in Camera Configuration by default.
   - **Guest:** The Guest user does not have permission to use Two-way Audio in Remote Configuration and only has the local/remote playback in the Camera Configuration by default.

   User's MAC Address: The MAC address of the remote PC that logs onto the NVR. If it is configured and enabled, it only allows the remote user with this MAC address to access the NVR.

4. Click **OK** to save the settings and go back to the User Management interface. The added new user displays on the list.



5. Select the user from the list and then click to enter the Permission settings interface.



6. Set the operating permission for the Local Configuration, Remote Configuration, and Camera Configuration for the user.

   Local configuration

   - Local Log Search: Searching and viewing logs and system information of NVR.
   - Local Parameters Settings: Configuring parameters, restoring factory default parameters and importing/exporting configuration files.
   - Local Camera Management: The adding, deleting and editing of IP cameras.
   - Local Advanced Operation: Operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
   - Local Shutdown Reboot: Shutting down or rebooting the NVR.

   Remote configuration

   - Remote Log Search: Remotely viewing logs that are saved on the NVR.
   - Remote Parameters Settings: Remotely configuring parameters, restoring factory default parameters and importing/exporting configuration files.
   - Remote Camera Management: Remote adding, deleting and editing of the IP cameras.
   - Remote Serial Port Control: Configuring settings for RS-232 and RS-485 ports.
   - Remote Video Output Control: Sending remote button control signal.
   - Two-Way Audio: Realizing two-way radio between the remote client and the NVR.
   - Remote Alarm Control: Remotely arming (notify alarm and exception message to the remote client) and controlling the alarm output.
   - Remote Advanced Operation: Remotely operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
   - Remote Shutdown/Reboot: Remotely shutting down or rebooting the NVR.

   Camera configuration

   - Remote Live View: Remotely viewing live video of the selected cameras.
   - Local Manual Operation: Locally starting/stopping manual recording, picture capturing and alarm output of the selected cameras.

- Remote Manual Operation: Remotely starting/stopping manual recording, picture capturing and alarm output of the selected cameras.
- Local Playback: Locally playing back recorded files of the selected cameras.
- Remote Playback: Remotely playing back recorded files of the selected cameras.
- Local PTZ Control: Locally controlling PTZ movement of the selected cameras.
- Remote PTZ Control: Remotely controlling PTZ movement of the selected cameras.
- Local Video Export: Locally exporting recorded files of the selected cameras.

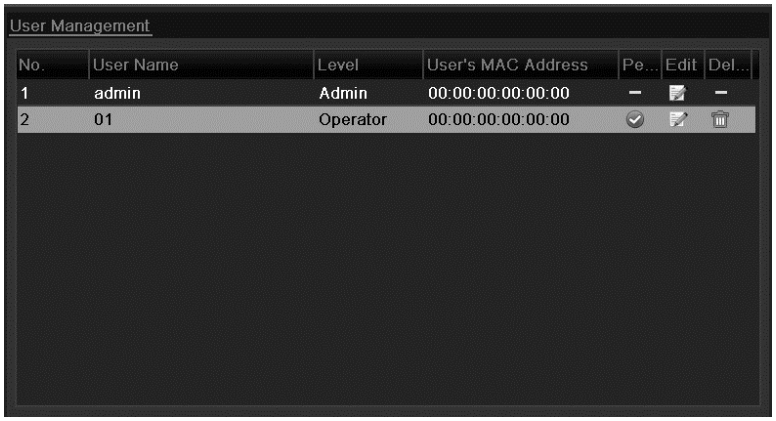
7. Click **OK** to save the settings and exit interface.

Note: Only the *admin* user account has permission of restore the factory default parameters.

Deleting a user

To delete a user:

1. Browse to the User Management interface.
   Menu > **Configuration** > **User**
2. Select the user to delete from the list.



3. Click to delete the selected user.

Editing a user

To edit a user:

1. Browse to the User Management interface.
   Menu > **Configuration** > **User**
2. Select the user edited from the list, as shown below.
3. Click to enter the Edit User interface.

   Note: You can edit the admin user.

Figure 31: Edit User interface for operator and guest

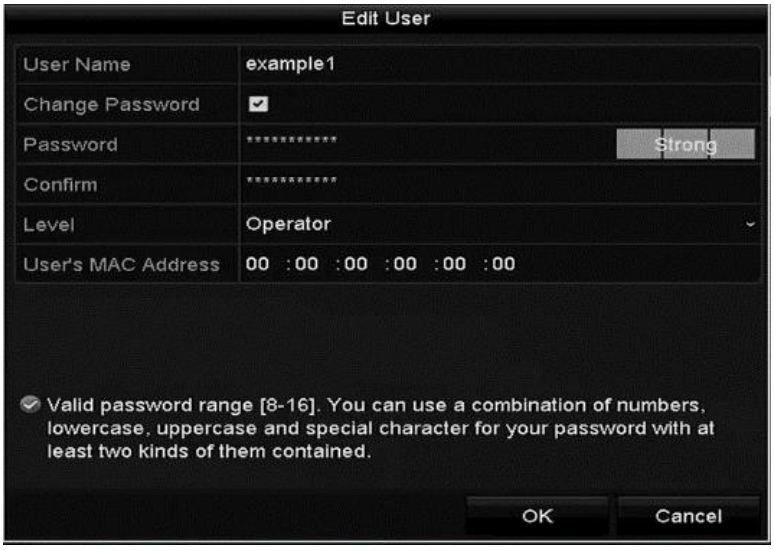
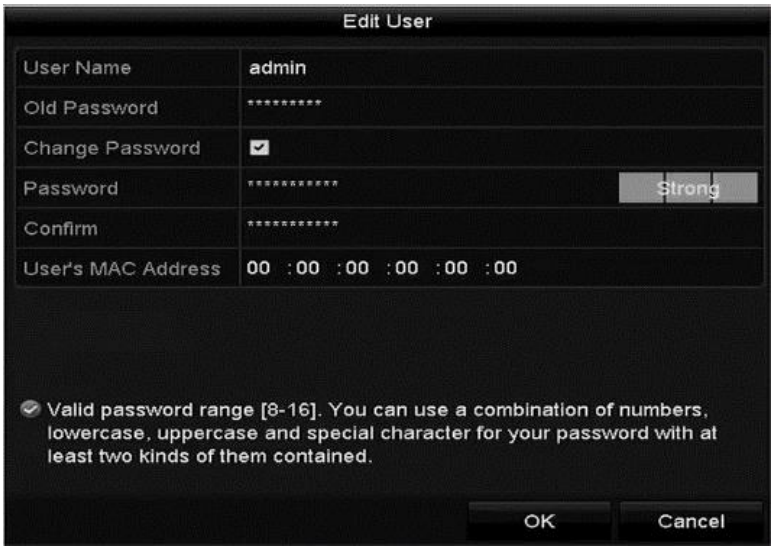


Figure 32: Edit User interface for administrator



4. Edit the following parameters.

   Operator and Guest

   - You can edit the user information, including user name, password, permission level, and MAC address.
   - Check the Change Password check box when you want to change the password, and then enter the new one in the Password and Confirm fields.

   Admin

   - You are only allowed to edit the password and the MAC address.
   - Check the Change Password check box when you want to change the password, and then enter the old and new passwords in the Password and Confirm fields.

5. Click **OK** to save the settings and exit the menu.

Appendix
Troubleshooting

No image displayed on the monitor after starting up normally.

Possible reasons:

- No VGA or HDMI connections
- Connection cable is damaged
- Input mode of the monitor is incorrect

Solution:

1. Verify the device is connected with the monitor via HDMI or VGA cable.

   If not, connect the device with the monitor and reboot.

2. Verify the connection cable is good.

   If there is still no image display on the monitor after rebooting, check the connection cable to ensure that it is good, and change a cable to connect again.

3. Verify that the Input mode of the monitor is correct.

   Check that the input mode of the monitor matches with the output mode of the device. For example, if the output mode of the NVR is HDMI output, then the input mode of monitor is HDMI input. If it is not, modify the input mode of the monitor.

4. Check steps 1 to 3 for resolution.

   If it is solved, finish the process.

   If not, contact the engineer to do further investigation.

There is an audible warning sound “Di-Di-Di-DiDi” after a new NVR boots.

Possible reasons

- No HDD is installed in the device
- The installed HDD has not been initialized
- The installed HDD is not compatible with the NVR or is broken

Solution:

1. Verify at least one HDD is installed in the NVR.

   If not, install the compatible HDD.

   If you do not want to install the HDD, select Menu > Configuration > Exceptions, and then clear the Audible Warning check box for “HDD Error”.

2. Verify the HDD is initialized.

   Select Menu > HDD > General.

   If the status of the HDD is Uninitialized, check the check box of corresponding HDD, and then click the Init button.

3. Verify the HDD is detected or is in good condition.

   Select Menu > HDD > General.

   If the HDD is not detected or the status is Abnormal, replace the dedicated HDD according to the requirement.

4. Check steps 1 to 3 for resolution.

   If it is solved, finish the process.

   If not, contact the engineer to do further investigation.

The status of the added CAMERA displays as “Disconnected” when it is connected through Private Protocol. Select Menu >Camera > Camera>IP Camera to get the camera status.

Possible reasons:

- Network failure, and the NVR and camera lost connections
- The configured parameters are incorrect when adding the camera
- Insufficient bandwidth

Solution:

1. Verify the network is connected.

   Connect the NVR and PC with the RS-232 cable.

   Open the Super Terminal software, and execute the ping command. Input “ping IP” (e.g., ping 172.6.22.131).

   Note: Press Ctrl Plus C to exit the ping command.

   If there exists return information and the time value is little, the network is normal.

2. Verify the configuration parameters are correct.

   Select Menu > Camera > Camera > IP Camera.

   Verify the following parameters are the same with those of the connected IP devices, including IP address, protocol, management port, user name and password.

3. Verify that there is enough bandwidth.

   Select Menu > Maintenance > Net Detect > Network Stat..

   Check if the access bandwidth has reached its limit.

4. Check steps 1 to 3 for resolution.

   If it is solved, finish the process.

   If not, contact the engineer to do the further process.

The CAMERA frequently goes online and offline and the status of it displays as "Disconnected".

Possible reasons:

- The camera and the NVR versions are not compatible
- Unstable power supply
- Unstable network between camera and NVR
- Limited flow by the switch connected with camera and NVR

Solution:

1. Verify the camera and the NVR versions are compatible.

   Enter the CAMERA Management interface (Menu > Camera > Camera > IP Camera), and view the firmware version of connected CAMERA.

   Enter the System Info interface (Menu > Maintenance > System Info > Device Info), and view the firmware version of NVR.

2. Verify power supply of CAMERA is stable.

   Verify the power indicator is normal.

   When the camera is offline, try the ping command on the PC to check if the PC connects with the camera.

3. Verify that the network between camera and NVR is stable.

   When the CAMERA is offline, connect PC and NVR with the RS-232 cable.

   Open the Super Terminal, use the ping command, and keep sending large data packages to the connected CAMERA. Check if there is a packet loss.

   Note: Press Ctrl Plus C to exit the ping command.

   Example: Input **ping 172.6.22.131 –l 1472 –f.**

4. Verify that the switch is not flow control.

   Check the brand, model of the switch connecting camera and NVR, and contact the switch manufacturer to check if it has the function of flow control. If so, turn it down.

5. Check steps 1 to 4 for resolution.

   If it is solved, finish the process.

   If not, contact the engineer to do the further process.

Using the camera to connect a device remotely, with no NVR monitor connection, is successful. Using a monitor (VGA or HDMI) to connect devices is unsuccessful, resulting in a blank screen with a mouse cursor.

Prior to startup, connect the NVR to the monitor using VGA or HDMI. Connect the device, locally or remotely, using CAMERA. The result displays it is connected, but there is a blank screen with a mouse cursor

Possible reasons:

- After connecting the CAMERA to the NVR, the image output is the main spot interface by default.

Solution:

1. Enable the output channel.
2. Select Menu > Configuration > Live View > View, select video output interface in the drop-down list, and configure the window you want to view.

   Note: The view settings are only configurable by local NVR operation.

   Different camera orders and window-division modes is set for different output interfaces. Digit “D1”and “D2” stands for the channel number, and “X” means the selected window has no image output.
3. Verify that the steps used above solved the problem.

   If it is solved, finish the process.

   If not, contact the engineer to do further investigation.

Live view stuck when video output locally.

Possible reasons*:*

- Poor network between the NVR and the camera, with packet loss during the transmission.
- The frame rate has not reached the real-time frame rate.

Solution:

1. Verify the network between NVR and camera is connected.

   When image is stuck, connect the RS-232 ports on PC and the rear panel of NVR with the RS-232 cable.

   Open the Super Terminal, and execute the command “ping 192.168.0.0 –l 1472 –f” (the IP address may change according to the real condition), and verify if there is packet loss.

   Note: Press Ctrl Plus C to exit the ping command.

2. Verify the frame rate is a real-time frame rate.

   Select Menu > Record > Parameters > Record, and then set the frame rate to full frame.

3. Verify that the steps used above solved the problem.

   If it is solved, finish the process.

   If not, contact the engineer to do further investigation.

Live view stuck when video output remotely via the Internet Explorer or platform software.

Possible reasons:

- Poor network between the NVR and the camera, with packet loss during the transmission
- Poor network between the NVR and the PC, with packet loss during the transmission
- The performances of hardware are not sufficient, including CPU, memory, etc.

Solution:

1. Verify the network between NVR and camera is connected.

   When image is stuck, connect the RS-232 ports on the PC and the rear panel of NVR with an RS-232 cable.

   Open the Super Terminal, and execute the command “ping 192.168.0.0 –l 1472 –f” (the IP address may change according to the real condition), and check for packet loss.

   Note: Press Ctrl Plus C to exit the ping command.

2. Verify the network between the NVR and the PC is connected.

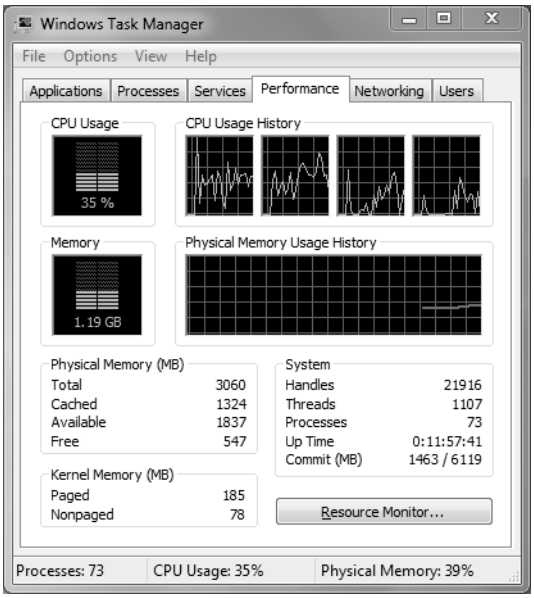
   Open the cmd window in the Start menu, or you can press “windows PlusR” shortcut key to open it.

   Use the ping command to send large packets to the NVR, enter the command “ping 192.168.0.0 –l 1472 –f” (the IP address may change according to the real condition), and check for packet loss.

   Note: Press Ctrl Plus C to exit the ping command.

3. Verify the hardware of the PC is sufficient.

   Press Ctrl/Alt/ Delete to enter the windows task management interface, as shown in the following figure.



   Select the Performance tab, and then check the status of the CPU and memory.

   If the resource is not enough, end any unnecessary processes.

4. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, contact the engineer to do the further process.

When using the NVR to get the live view audio, there is no sound or there is too much noise, or the volume is too low.

Possible reasons*:*

- Cable between the pickup and camera is not connected well; impedance mismatches or incompatible
- The stream type is not set as Video & Audio
- The encoding standard is not supported with NVR

Solution*:*

1. Verify the cable between the pickup and camera is connected well; impedance matches, and is compatible.

   Log in the camera directly, turn the audio on, and check that the sound is normal. If not, contact the manufacturer of the camera.

2. Verify the setting parameters are correct.

   Select Menu > Record > Parameters > Record, and set the Stream Type as Audio & Video.

3. Verify the audio encoding standard of the camera is supported by the NVR.

   NVR supports G722.1 and G711 standards, and if the encoding parameter of the input audio is not one of the previous two standards, you can log in the CAMERA to configure it to the supported standard.

4. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, contact the engineer to do the further process.

The image gets stuck when NVR is playing back by single or multi-channel.

Possible Reasons:

- Poor network between NVR and camera, and there is packet loss during the transmission
- The frame rate is not the real-time frame rate
- The NVR supports up to 16-channel synchronize playback at the resolution of 4CIF. If you want a 16-channel synchronize playback at the resolution of 720p, frame extracting may occur.

Solution:

1. Verify the network between NVR and camera is connected.

   When the image is stuck, connect the RS-232 ports on PC and the rear panel of NVR with the RS-232 cable.

   Open the Super Terminal, and execute the command of “ping 192.168.0.0 –l 1472 –f” (the IP address may change according to the real condition), and check for packet loss.

   Note: Press the Ctrl Plus C to exit the ping command.

2. Verify that the frame rate is the real-time frame rate.

   Select Menu > Record > Parameters > Record, and set the frame rate to full frame.

3. Verify that the hardware can handle playback.

   Reduce the channel number of playback.

   Select Menu > Record > Encoding > Record, and then set the resolution and bitrate to a lower level.

4. Reduce the number of local playback channels.

   Select Menu > Playback, and clear the check box of unnecessary channels.

5. Check if the fault is solved by the above steps.

   If it is solved, finish the process.

   If not, contact the engineer to do the further process.

No record file found in the NVR local HDD, and prompt “No record file found”.

Possible reasons:

- Incorrect system time setting
- The search condition is incorrect
- HDD is in error or is not detected

Solution:

1. Verify the system time setting is correct.

   Select Menu > Configuration > General > General, and verify the device time is correct.

2. Verify the search condition is correct.

   Select Playback, and verify the channel and time are correct.

3. Verify the HDD status is normal.

   Select Menu > HDD > General to view the HDD status, and verify the HDD is detected and is read and written normally.

4. Check if the fault is resolved.

   If it is resolved, finish the process. If not, contact the engineer to do the further process.

Glossary

Dual Stream	Dual stream is a technology used to record high-resolution video locally while transmitting a lower resolution stream over the network. The two streams are generated by the DVR, with the main stream having a maximum resolution of 4CIF and the sub-stream having a maximum resolution of CIF.
HDD	Hard Disk Drive. A storage medium that stores digitally encoded data on platters with magnetic surfaces.
DHCP	Dynamic Host Configuration Protocol (DHCP) is a network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network.
HTTP	Acronym for Hypertext Transfer Protocol. A protocol to transfer hypertext request and information between servers and browsers over a network
PPPoE	PPPoE, Point-to-Point Protocol over Ethernet, is a network protocol for encapsulating Point-to-Point Protocol (PPP) frames inside Ethernet frames. It is used mainly with ADSL services where individual users connect to the ADSL transceiver (modem) over Ethernet and in plain Metro Ethernet networks.
DDNS	Dynamic DNS is a method, protocol, or network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a domain name server to change, in real time (ad-hoc) the active DNS configuration of its configured hostnames, addresses or other information stored in DNS.
Hybrid DVR	A hybrid DVR is a combination of a DVR and NVR.
NTP	Acronym for Network Time Protocol. A protocol designed to synchronize the clocks of computers over a network.
NTSC	Acronym for National Television System Committee. NTSC is an analog television standard used in such countries as the United States and Japan. Each frame of anNTSC signal contains 525 scan lines at 60 Hz.
NVR	Acronym for Network Video Recorder. An NVR is a PC-based or embedded system used for centralized management and storage for IP cameras, IP Domes and other DVRs.
PAL	Acronym for Phase Alternating Line. PAL is also another video standard used in broadcast televisions systems in large parts of the world. PAL signal contains 625 scan lines at 50 Hz.
PTZ	Acronym for Pan, Tilt, Zoom. PTZ cameras are motor driven systems that allow the camera to pan left and right, tilt up and down and zoom in and out.
USB	Acronym for Universal Serial Bus. USB is a plug-and-play serial bus standard to interface devices to a host computer.