Network Video Recorders
User Manual

Thank you for purchasing our product. Contact your local dealer if you have any questions or feedback. No part of this manual may be copied, reproduced, translated, or distributed in any form or by any means without prior consent in writing from our company.

Disclaimer

CAUTION!

The default password is intended only for your first login and should be changed to a strong one with at least eight characters including upper and lower case letters, digits and symbols to ensure account security.

- To the maximum extent permitted by applicable law, the product described, with its hardware, software, firmware and documents, is provided on an "as is" basis.

- Best effort has been made to verify the integrity and correctness of the contents in this manual, but no statement, information, or recommendation in this manual shall constitute formal guarantee of any kind, expressed or implied. We shall not be held responsible for any technical or typographical errors in this manual. The contents of this manual are subject to change without prior notice. Update will be added to the new version of this manual.

- Use of this manual and the product and the subsequent result shall be entirely on the user's own responsibility. In no event shall we be reliable to you for any special, consequential, incidental, or indirect damages, including, among others, damages for loss of business profits, business interruption, or loss of data or documentation, or product malfunction or information leakage caused by cyber attack, hacking or virus in connection with the use of this product.

- Video and audio surveillance can be regulated by laws that vary from country to country. Check the law in your local region before using this product for surveillance purposes. We shall not be held responsible for any consequences resulting from illegal operations of the device.

- The illustrations in this manual are for reference only and may vary depending on the version or model. The screenshots in this manual may have been customized to meet specific requirements and user preferences. As a result, some of the examples and functions featured may differ from those displayed on your monitor.

- This manual is a guide for multiple product models and so it is not intended for any specific product.

- Due to uncertainties such as physical environment, discrepancy may exist between the actual values and reference values provided in this manual. The ultimate right to interpretation resides in our company.

Environmental Protection

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

Symbols

The symbols in the following table may be found in this manual. Carefully follow the instructions indicated by the symbols to avoid hazardous situations and use the product properly.

Symbol	Description
⚠ WARNING!	Indicates a hazardous situation which, if not avoided, could result in bodily injury or death.
ⓘ CAUTION!	Indicates a situation which, if not avoided, could result in damage, data loss or malfunction to product.
📝 NOTE!	Means useful or supplemental information about the use of product.

Contents

Preface

This manual describes how to use your NVR locally or on the Web interface.

In this manual, the terms IP camera and IPC refer to the same thing: network camera, which requires a connection to the network. And the IP device mentioned in this manual refers to an IP camera (also known as network camera) or a Digital Video Server (DVS).

Part I Local Operations

An NVR supports two types of operations: local operations and web-based remote operations. With local operations you connect a monitor and a mouse to the NVR and use the mouse to operate. If your NVR has buttons on the front panel or is delivered with a remote control, you may also control your NVR by pressing the front panel buttons or using the remote control.

The NVR has an embedded web server and allows web-based operations. To do this, you need a client PC that has a network connection to the NVR and is installed with a web browser. You just need to navigate to the NVR's IP address and log in to the Web interface like you log in to the system locally.

This section describes local operations.

1 Before You Begin

Please be aware that the parameters that are grayed out on the system user interface (UI) cannot be modified. The parameters and values displayed may vary with device model, and the figures in this manual are for illustration purpose only.

Login

Use the default username **admin** and password **123456** for your first login.

> (i) **CAUTION!**
>
> The default password is intended only for the first login. Please change it immediately after your first login to ensure security.

1. Right-click anywhere in the preview window and then choose **Menu**. The login dialog box is displayed.
2. Select the username from the drop-down list, enter your password, and then click **Login**.

Local Operations

You can refer to Initial Configuration and complete a quick configuration.

📝 **NOTE!**

Unless otherwise specified, all operations described in this manual are performed with a mouse by the right hand. See Mouse Operations for details.

Mouse Operations

Table 1-1 Mouse Operations
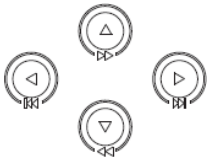
Name	Action	Description
Left button	Click	- Select or confirm an item. - Select to edit digits, symbols, upper-case or lower-case letters in a field.
	Double-click	Enter or exit full screen mode in preview.
	Drag	Draw or move a rectangle on the screen, for example, a motion detection area.
Right button	Click	- Show the shortcut menu. - Exit zoom. - Exit the current window when **Cancel** or **Exit** is displayed.
Wheel	Scroll up or down	Scroll up or down a list or a window; or zoom in or out on a playback progress bar.

Front Panel Buttons

The front panel buttons may vary with NVR model.
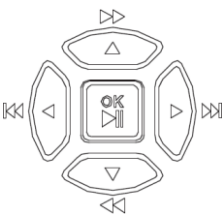
Table 1-2 Front Panel Buttons 1

Button	Description
🔲	Display the main menu.
🔁	Switch to the next tab on the screen or switch the input method.
F1	Auxiliary function button.
🔲	Exit the current window.

Button	Description
	- $\triangle$, $\triangledown$, $\triangleright$, $\triangleleft$: Switch windows or menu items; or control rotation directions of a PTZ camera when the PTZ toolbar is closed. PTZ stands for pan, tilt, and zoom. - $\lhd\!\lhd$, $\rhd\!\rhd$: Rewind or forward 30 seconds in full screen. - $\rhd\!\rhd$, $\lhd\!\lhd$: Variable-speed forward or rewind in full screen.
	Confirm an operation, or start/pause the playback.
	Press this button to start up or shut down the NVR. To shut down, press this button and hold for at least 3 seconds till a message appears on your monitor. Click **Yes**. **Note:** This shutdown operation can be performed only when you have logged in to the system.

Table 1-3 Front Panel Buttons 2

Button	Description
	Press this button to start up or shut down the NVR. To shut down, press this button and hold for at least 3 seconds till a message appears on your monitor. Click **Yes**. **Note:** This shutdown operation can be performed only when you have logged in to the system.
	Enter 1; or display the main menu.
	Enter 2, A, B, or C; or start instant playback.
	Enter 3, D, E, or F; or start manual recording.
	Enter 4, G, H, or I; or enter the PTZ control interface.
	Enter 5, J, K, or L; or switch the screen layout in preview or playback mode.
	Enter 6, M, N, or O; or enable or disable arming.
	Enter 7, P, Q, R, or S; or take a snapshot.

Button	Description
(8 TUV)	Enter 8, T, U, or V.
(9 WXYZ)	Enter 9, W, X, Y, or Z.
(0 _)	Enter 0 or a space.
(🗑)	Delete
(✏A)	Switch the input method.
(F1)	Auxiliary function button.
(⊟)	Exit the current window.
(↻)	Switch to the next tab.
▷▷ △ ◁◁ ◁ OK/▷⫼ ▷ ▷▷⫼ ▽ ◁◁	• $\triangle$, ∇, $\triangleright$, $\triangleleft$: Switch windows or menu items; or control rotation directions of a PTZ camera when the PTZ toolbar is closed • $\triangleleft\triangleleft$, $\triangleright\triangleright\vert$: Rewind or forward 30 seconds in full screen. • $\triangleright\triangleright$, $\triangleleft\triangleleft$: Variable-speed forward or rewind in full screen. • OK/▷⫼ : Confirm an operation; or start or pause playback.

Remote Control

Table 1-4 Functions of the Buttons on the Remote Control

Button	Function
Power	Press this button to start up or shut down the NVR. To shut down, press this button and hold for at least 3 seconds till a message appears on your monitor. Click **Yes**. **Note:** This shutdown operation can be performed only when you have logged in to the system.
DEV	This button is for reserved functions.
Toolbar	• In preview mode, press this button to show the toolbar for the currently selected window. • In playback mode, press this button to display windows according to the

Button	Function
	configured screen layout.
Menu	Press this button to display the main menu.
Iris+/Iris-	
Focus+/Focus-	Adjust the iris, focus and zoom of the PTZ camera in PTZ control mode.
Zoom+/Zoom-	
UP, DOWN, LEFT, RIGHT, ENTER	• Press UP, DOWN, LEFT and RIGHT to navigate between menu items or shift focus. • In PTZ control mode, press UP, DOWN, LEFT, and RIGHT buttons to select the corresponding buttons on the screen, and then press ENTER to activate the selection. • In preview mode, press UP to start sequence in full screen. Pressing UP again starts sequence with three windows on the screen. Press DOWN to open the playback window. • Press ENTER to confirm an operation or to display a selected drop-down list. In playback mode, press ENTER to play or pause in full screen mode. • UP and DOWN: Variable speed forward or rewind in full screen. • LEFT and RIGHT: Rewind or forward 30 seconds in full screen.
Fn	Press to navigate to the next preview window when multiple preview windows are displayed.
Esc	Exit.
Alphanumeric buttons	• Switch to the corresponding channel in live view mode. • Input numbers and characters in edit mode.
Shift	Switch menu items.
Del	Remove characters or spaces on the left of the cursor.

2 Initial Configuration

Preparation

- Make sure that at least one monitor is correctly connected to the VGA or HDMI interface on the rear panel of the NVR.
- Verify that the hard disk(s) are correctly installed. For detailed steps to install a hard disk, please refer to the quick guide shipped with your NVR.

Wizard

The wizard can guide you to complete the most basic setup.

1. Enable or disable the wizard as needed and then click **Next**.

Wizard

Wizard

☐ Start Wizard at startup

Next   Exit

2. Enter the default admin password **123456** and then click **Next**.

Wizard

Change Password

Admin Password	******	
Change Password	☑	
New Password	********	Strong
Confirm	********	

Previous   Next   Exit

3. Complete time information and then click **Next**.

Wizard		
Time		
Time Zone	(GMT+00:00) Dublin, Edinburgh, London	▾
Date Format	YYYY-MM-DD	▾
Time Format	24-hour	▾
System Time	2016 - 04 - 13 ▲▼	00 : 50 : 27 ▲▼

	Previous	Next	Exit

4. Set the IP address, subnet mask, and default gateway. Use the default settings for other parameters unless modification is necessary. Review the settings and then click **Next**.

Wizard	
Basic	
Select NIC	NIC1 ▾
Enable DHCP	☐
IPv4 Address	204 · 4 · 1 · 90
IPv4 Subnet Mask	255 · 255 · 255 · 0
IPv4 Default Gateway	204 · 4 · 1 · 1
MAC Address	48:ea:63:0e:14:06
MTU(Bytes)	1500
Preferred DNS Server	8 · 8 · 8 · 8
Alternate DNS Server	8 · 8 · 4 · 4
Internal NIC IPv4 Addr.	172 · 16 · 0 · 1

	Previous	Next	Exit

📝 **NOTE!**

- If your NVR has more than one Network Interface Card (NIC), you may configure the NICs and choose one for default route.
- An internal IPv4 address can be configured if your NVR has PoE ports or switching ports.

5. Click **Search**. The detected IP devices are listed. Select the device(s) to add and then click **Add**. Click **OK** to complete the setup.

📝 **NOTE!**

You may also edit wizard settings by clicking **Wizard** under **Menu** > **System** > **Basic**.

---

3 **Preview**

Preview Status

The following icons are used to indicate alarms, recording status, and audio status in a preview window.

Table 3-1 Preview Window Icons

Icon	Description
	Tampering alarm
	Motion detection alarm
	Recording
	Two-way audio
	Turn on audio
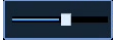
Normally, live video is displayed in a preview window, but other situations are also possible.
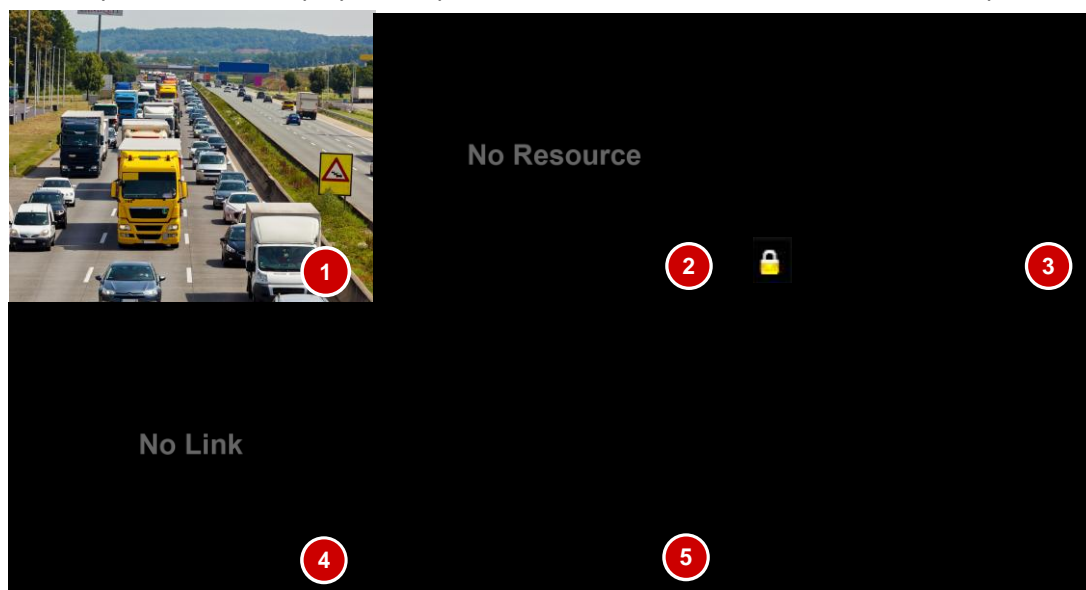
No.	Description
1	The IP device is online, and live video is displayed.
2	The IP device is online, but the NVR has insufficient capacity to decode streams from the IP device.
3	No permission to view live video from the IP device.
4	The IP device is offline.
5	No IP device is linked to the window.

Window Toolbar

Icon	Description
	Available for PTZ cameras only. Click to display the PTZ control window.
	Record live video in the window to the hard disk. Clicking stops recording.
	Click to play video recorded during the past 5 minutes and 30 seconds.
	Zoom in on an area of interest.
	Click to edit image settings.
	Click to take a snapshot. You may view and back up snapshots under **Menu** > **Backup** > **Image**.

Icon	Description
	Rest your mouse pointer on the icon to view live video information. Or click it to view the channel number, camera name, IP address, connection status and recording status.
	Two-way audio with the front-end device. Clicking 🎤 stops two-way audio. The sound volume is adjustable using ▬▬■▬.
	Click to turn on audio. Clicking 🔊 turns off audio. The sound volume is adjustable using ▬▬■▬. **Note**: When you turn on audio in the current window, audio of the previous window is turned off.
	Click to link the window to another IP device.
	Exit

Screen Toolbar

Icon	Description
	Click to access the main menu.
/ / /	Select the screen layout.
/	Previous or next screen.
	Start or stop sequence.
	Playback.
	Click to view camera status and video information such as frame rate, bit rate, resolution.
	Click to view device alarm status and camera status.
	Rest the mouse pointer on it to view NIC card information. Or click this icon to edit basic network settings.
15:35	Rest the mouse pointer on it to view the date. Or click this icon to edit time settings.
	Available only for some models. Click to display the cloud service window. You may scan the QR code and download an app to manage your NVR.

Icon	Description
🔒	Click to automatically hide or lock the toolbar.

Shortcut Menu

A shortcut menu as shown below appears when you right-click in a preview window. Some of the menus are described in <u>Shortcut Menu Description</u>.

Table 3-2 Shortcut Menu

Table 3-3 Shortcut Menu Description

Menu	Description
Menu	Access the main menu.
Corridor	Choose a corridor format. Corridor format can also be set in the Default Layout drop-down list under **Menu** > **System** > **Preview**.
Main/Aux Monitor	Switch live video from different video output.
PTZ Control	Display the PTZ control window for the first PTZ camera in live view.
Playback	Play the current day's recording for the camera linked to the current preview window.
Output Mode	Choose a desired video output mode, including standard, soft, bright, and vivid.

Sequence Operation

The sequence operation requires you to configure the screen layout, windows, linked cameras, and the sequence interval.

This example describes how to configure sequence for five cameras based on a 4-window screen layout.

1. Click **4 Windows** on the screen toolbar.

2. Click **Start Sequence** on the screen toolbar. Sequence starts by displaying four windows on the first screen and then the fifth on the second screen at the set interval.

Zoom

This function allows you to zoom in on an area of images in a preview window for details.

1. Click the desired preview window and then click on the window toolbar.
2. In the small window in the lower right corner, click and drag your mouse to specify the area to zoom in on. The image in the main window zooms in. The following shows an example.

📝 **NOTE!**

The area will be adjusted automatically according to the window size and its aspect ratio. Also, a minimum size is specified for the area to ensure zoom effects.

Image Configuration

Adjust image settings to get optimal images from a camera.

1. Click the desired preview window and then click 🔆 on the window toolbar.
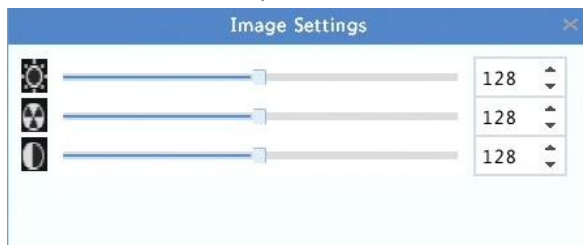
2. Select a mode and adjust contrast, hue, saturation and brightness as needed.
3. Click **OK** to save the settings and exit.

Preview Configuration

Normally, live view (video) is available after you complete the basic setup by following the wizard. You can click **Menu** > **System** > **Preview** and edit preview setting as needed, including video output,

image resolution, default layout, and sequence interval. The video output and the number of windows supported may vary with NVR model.

Preview Configuration

Each preview window links to a camera, and by default, the first window links to camera D1, the second window links to camera D2, and so on (see the figure below).

You may drag a window to the desired position on the screen so the window links to the camera that the previous window links to and then check the link under **System** > **Preview**. You may also refer to the following example, which describes how to link window 1 to D2, and link window 2 to D1.

Step 1: Click window 1 on the right, and then click **D2** under **Camera** on the left. Now **D2** appears in window 1, and **None** appears in window 2. Meanwhile, D1 is grayed out on the left, meaning D1 is not linked to any window.

Step 2: Click window 2 on the right, and then click **D1** under **Camera** on the left. Now **D1** appears in window 2. Click **Apply** to save the settings.

Advanced Configuration

Click the **Advanced** tab and then select **Sub Stream First** so the NVR uses the sub stream to establish live video from multiple cameras simultaneously. This function is disabled by default.

4   Channel Configuration

Channel Management

This chapter describes how to manage IP devices added in your NVR. Before you start, make sure the IP devices are connected to your NVR via network.

> **CAUTION!**
> - The IP devices mentioned in this manual refer to IP camera (also known as network camera) or Digital Video Server (DVS).
> - Make sure each IP device is connected to one NVR only. Otherwise, unwanted issues may arise.

Adding an IP Device

This section provides three options to add an IP device. Some options are only applicable to certain NVR models. Choose one as appropriate.

Option 1

> **NOTE!**
> When live video from a camera is available, ⬤ appears in the **Status** column, and you may click it to view live video. If the status is displayed otherwise, check network connection, and make sure the username and password set in the system can be used to access the camera. Click ✎ to modify if necessary.

1. Click **Menu** > **Camera** > **Camera** > **Camera**. The system searches for IP devices automatically and lists the devices discovered.

Camera	Add/Del	Status	IP Addr.	Cam ID	Edit	Name
☐ D1	🗑	▶	204.4.1.110	1	✎	IP Camera 01
☐ D2	🗑	▶	204.4.1.2	1	✎	IP Camera 02
☐ D3	✚	—	204.4.1.228	1	✎	IP Camera 03

Idle Receive Bandwidth: 143Mbps

| Refresh | Search | Delete | One-click Add | Custom Add | Back |

📝 **NOTE!**

Idle Receive Bandwidth indicates network bandwidth currently available for receiving streams. For more details, see Network Statistics.

---

2. (Optional) To search a specified network segment, click **Search** and then set the address range.
3. Click ✚ for the IP device to add. Or, you may also
- Click **One-click Add** to add all the discovered IP devices allowed by the NVR.
- Click **Custom Add**, select an IP device, modify settings if necessary, and then click **Add**.

Add/Modify

No.	IP Addr.	Status	Qty	Model
1	204.4.1.2	Added	1	IPC1
2	204.4.1.8	Added	1	IPC2
3	204.4.1.10		1	6200
4				
5				
6				
7				
8				

Protocol	ONVIF
Camera IP	204 · 4 · 1 · 10
Port	0
Username	admin
Password	*****
Number of Camera	1

| Search | Add | Back |

Option 2

This option is not applicable to NVRs with PoE ports or switching ports.

1. Click ⊞ in a preview window.
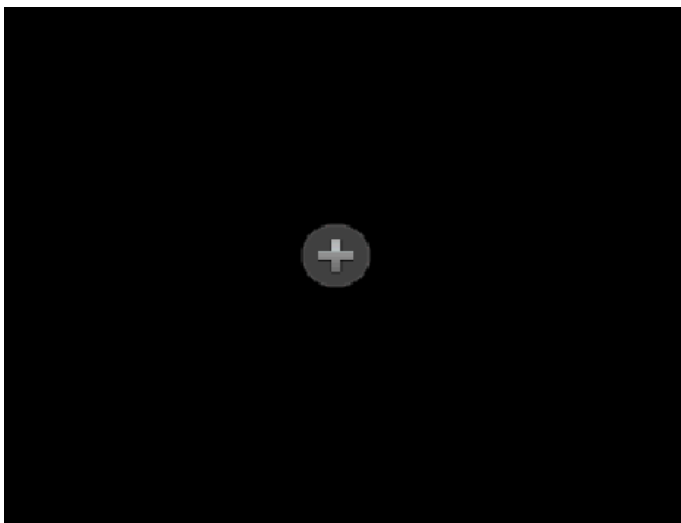
2. Select the desired IP device and then click **Add**.

Option 3

This option is only applicable to NVRs with PoE ports or switching ports. A channel connected to a PoE port or a switching port cannot be deleted.

Connect an IP camera to a PoE port or a switching port on the NVR with a network cable. The connected IP camera will be added automatically. Check connection status under **Menu** > **Camera** > **Camera** > **Camera**. ▶ in the **Status** column means live video from the camera is available. Click ▶ to view live video.

Managing an IP Device

Manage IP devices under **Menu** > **Camera** > **Camera** > **Camera**.

- Click ✏ to edit settings of an IP device, including the access protocol, IP address, port number, username and password. The **Camera IP** field displays the IP address that the current channel links to, and you may change the address so the channel links to another device. The username and password must be consistent with that of the IP camera.

- Click 🗑 to delete an IP device, or select multiple IP devices and then click **Delete**.

- Click ⚙ to change the IP address of an IP camera and the default gateway. − means this function is not available.

Advanced Functions

Upgrade connected IP cameras by cloud (☁) or by disk (⬆), or restore factory default settings for cameras under **Menu** > **Camera** > **Camera** > **Advanced**.

OSD Configuration

On Screen Display (OSD) are characters displayed together with video images, for example, camera name, date and time.

1. Click **Menu** > **Camera** > **OSD**.
2. Select the desired camera and then enter a name for it.
3. Set date and time formats, choose to display time and/or camera name as needed. You may drag the OSD to the desired position in the preview window on the left.

Camera	D10	▾
Name	IP Camera 10	

Date Format	MM/dd/yyyy	▾
Time Format	HH:mm:ss	▾
Show Time	☑	
Show Name	☑	

4. Click **Apply** to save the settings. The current date and time appear on the screen.

Image Configuration

1. Click **Menu** > **Camera** > **Image**.
2. Select the desired camera and scene.

Camera	D10	▾
Image Scene	General	▾

‹ **Image Enhancement**   Exposure   White Balance   Adv ›

Brightness	▬▬▬▬▬▬▯▬▬▬
Saturation	▬▬▬▬▬▬▯▬▬▬
Contrast	▬▬▬▬▬▬▯▬▬▬
Sharpness	▬▬▬▬▬▬▯▬▬▬
Noise Reduction	▬▬▬▬▬▬▬▯▬▬
Image Rotation	Normal ▾

3. Adjust settings on the tabs as needed to achieve optimal images. See the following sections for detailed information.

📝 **NOTE!**

- A scene can be selected only when it is supported by the IP camera.
- To restore default image settings, click **Default** in the lower right corner. This function is available only when the camera is connected to the NVR via the private protocol.
- Image settings apply to both live and recorded videos.

Image enhancement

1. Click the **Image Enhancement** tab.
2. Adjust the settings as needed. Some important parameters are described in the table below.

Parameter	Description
Brightness	The greater the value, the brighter the images appear.
Saturation	The amount of color in a specified hue.
Contrast	The degree of difference between the lightest (white) and darkest (black) parts of an image. Setting a greater value increases contrast.
Hue	Purity of colors in an image.
Sharpness	Contrast of boundaries of objects in an image.
Noise Reduction	Reduce noises in images to improve image quality.
Image Rotation	• Normal: Displays images without rotation. • Flip Vertical: Displays images flipped vertically. • Flip Horizontal: Displays images flipped horizontally. • 180°: Displays images flipped vertically and horizontally. • 90° CW: Displays images rotated 90° clockwise. • 90° CCW: Displays images rotated 90° counterclockwise. **Note:** • The 90° CW and 90° CCW options can be used to achieve corridor mode, depending on the camera installation direction. • In corridor mode, operations to areas of interest (such as zoom and motion detection areas) also work in corridor mode.

Exposure

1. Click the **Exposure** tab.

2. Adjust the settings as needed. Some important parameters are described in the table below.

Parameter	Description
Exposure Mode	Select the correct exposure mode to achieve the desired exposure effect.
Shutter(s)	Shutter is used to control the light that comes into the lens. A fast shutter speed is ideal for scenes in quick motion. A slow shutter speed is ideal for scenes that change slowly.
Gain(dB)	Control image signals so that the camera can output standard video signals in different light conditions.
Iris	Adjust iris opening of the lens to control the amount of incoming light.
Slow Shutter	Improves image brightness in low light conditions.
Slowest Shutter	Set the slowest shutter speed for the camera during exposure.
Compensation	Adjust the compensation value as required to achieve the desired image effects.
Day/Night Mode	• Automatic: In this mode, the camera can automatically switch between night mode and day mode according to the ambient lighting condition to output optimum images. • Night: The camera outputs high-quality black and white images according to the ambient lighting condition. • Day: The camera outputs high-quality color images according to the ambient lighting condition.
Day/Night Sensitivity	Light threshold for switching between day mode and night mode. A higher sensitivity value means that the camera is more sensitive to the change of light and is therefore more easily to switch between day mode and night mode.
Day/Night	Set the length of time before the camera switches between day mode and night

Parameter	Description
Switching(s)	mode after the switching conditions are met.
WDR	Enable WDR to ensure clear images in high contrast conditions.
WDR Level	After enabling WDR, you can improve image quality by adjusting the WDR level.

White balance

1. Click the **White Balance** tab.
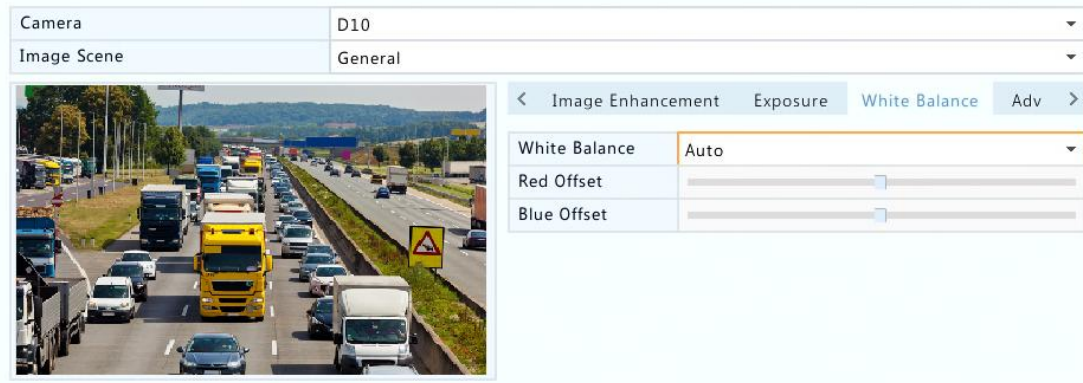
2. Adjust the settings on this tab. Some important parameters are described in the table below.

Parameter	Description
White Balance	Adjust the red or blue offset of the image: • Auto: The camera adjusts the red or blue offset automatically according to the lighting condition (the color tends to be blue). • Finetune: Allow you to adjust the red or blue offset manually.
Red Offset	Adjust the red offset manually.
Blue Offset	Adjust the blue offset manually.

Advanced settings

1. Click the **Advanced** tab.
2. Use defog to improve image quality in foggy days.
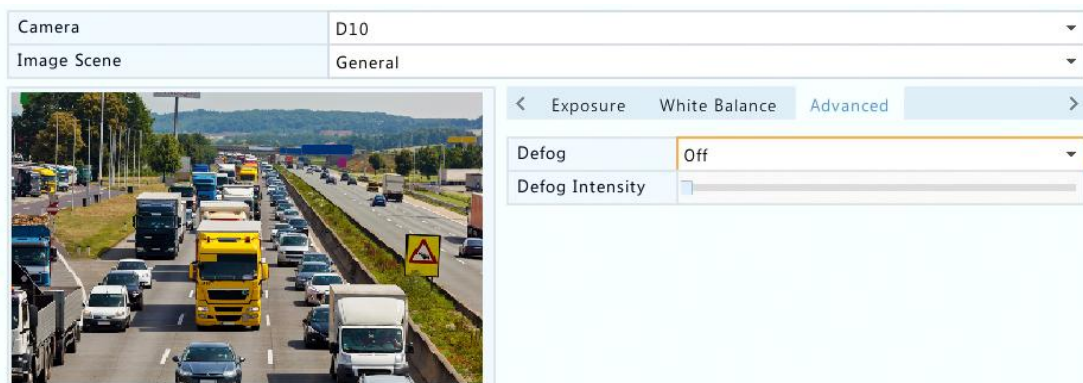
Privacy Mask Configuration

A privacy mask is an area of solid color covering certain parts of the monitored area. Privacy mask protects specified areas of images from being viewed and recorded. Multiple mask areas are allowed.

1. Click **Menu** > **Camera** > **Privacy Mask**.
2. Select the desired camera, select **Enable Privacy Mask**, and then use the mouse to specify areas to mask. Up to four areas are allowed. The areas are differentiated by different colors.

3. (Optional) To clear a mask area, click the corresponding **Clear** button.
4. Click **Apply** to save the settings.

5 PTZ Control

PTZ (pan, tilt, and zoom) control allows you to control the rotation speed, viewing direction, iris, and focus of a connected PTZ camera, turn on/off its illumination, heater, wiper (if applicable), and set preset positions (presets for short) from an NVR.

> **NOTE!**
>
> PTZ control is applicable to PTZ cameras only and depends on the functions and protocols supported by the PTZ cameras. Refer to PTZ camera specifications for more details.

PTZ Control Window and PTZ Management Window

1. Click on the window toolbar. The **PTZ Control** window appears. See the figure below. See PTZ Control Window Buttons for detailed descriptions about how to use these buttons.
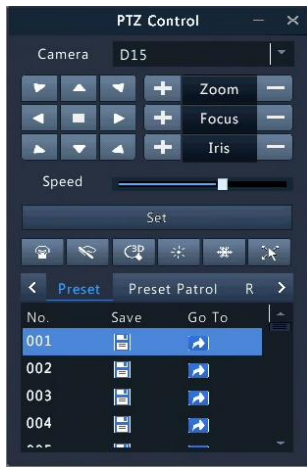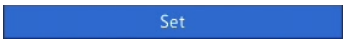
2. Click the **Set** button. The **PTZ Management** window appears. See the figure below. The **PTZ Management** window can also be opened by clicking **Menu** > **Camera** > **PTZ**.
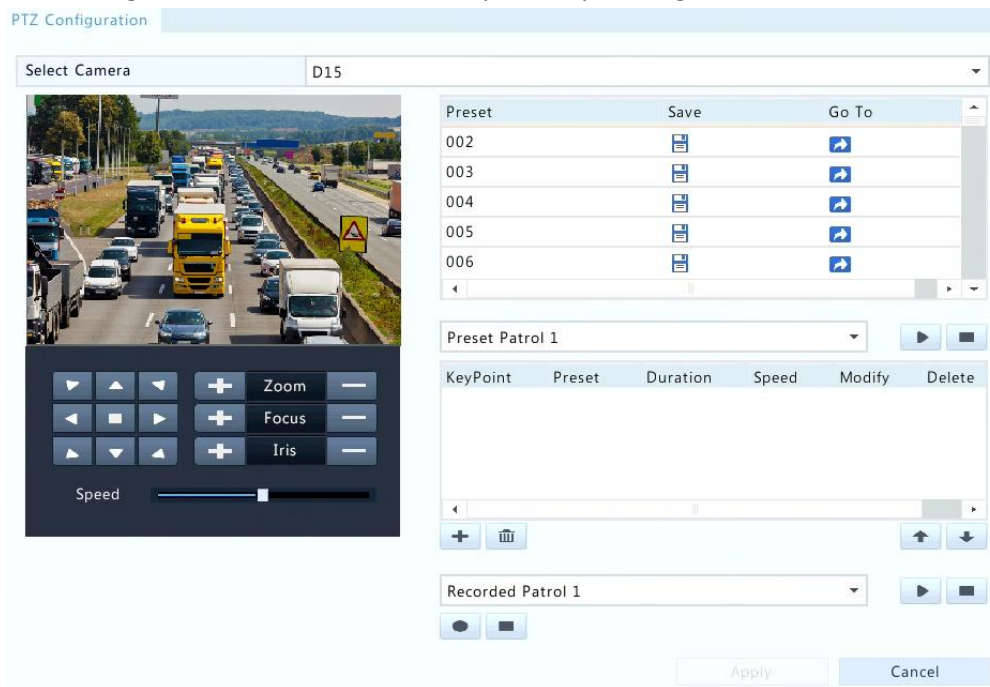
Table 5-1 PTZ Control Window Buttons

Button	Description
	Control the rotation direction of the PTZ camera or stop rotation.
	Adjust the zoom, focus, and iris of the PTZ camera. **Note**: You can also zoom in or out using the scroll wheel on your mouse.

23

Button	Description
Speed ——————■—	Control the rotation speed of the camera. 1 means the slowest, and 9 means the fastest.
Set	Click to display the **PTZ Management** window.
[icons: light, wiper, 3D, heater, snow, PTZ]	- Turn on/off the light. - Turn on/off the wiper. - Use 3D positioning. - Turn on/off the heater. - Turn on/off the function to remove snow. - Turn on/off PTZ shortcut operations. **Note:** - Check that the 3D positioning, heater and snow removal functions are supported by the camera before using. - Use 3D positioning to zoom in or out. Dragging from top down zooms in. Dragging the other way zooms out.
Preset	Preset button.
[save icon][call icon]	- Save the current position and status of the camera as a preset. - Call a preset so the PTZ camera goes to the preset position. **Note:** Before you select a preset number, check whether a preset has been configured for this preset number. Otherwise, the new preset will replace the current one.
Preset Patrol / Recorded Patrol	Preset patrol and recorded patrol. For detailed information, see Setting a Preset Patrol and Setting a Recorded Patrol.
[play][stop]	Start or stop patrol.

Setting and Calling a Preset

A preset position, also known as preset, is a saved view used to quickly steer the PTZ camera to a specific position. A preset position consists of the following settings: pan and tilt positions, zoom, focus, and iris.

1. Access the **PTZ Management** window. For the detailed steps, see PTZ Control Window and PTZ Management Window.

2. Add presets.
   a. Click the directional buttons to steer the PTZ camera to the desired position.
   b. Adjust the zoom, focus, and iris as needed.
   c. Select a preset number not in use, and then click 💾 under **Save**.
   d. Repeat the above steps to add all the presets.

3. To call a preset, click 🔁 for the corresponding number. The camera rotates to the preset position.

📝 **NOTE!**

Presets can also be triggered by alarms. See <u>Alarm-Triggered Actions</u> for details.

Setting a Preset Patrol

Set the PTZ camera to patrol by presets (go from one preset to the next in specified order). You need to set presets first and then select some as keypoints. Up to four patrol routes (Preset Patrol 1, 2, 3 and 4) are allowed for each PTZ camera, and each patrol route can have up to eight presets (keypoints). After setting presets, follow the steps to set a preset patrol. The following takes preset patrol 1 as an example.

1. In the **PTZ Management** window, click ➕. A window is displayed as follows.

Preset	001	▼
Duration	10	
Speed	5	▼

	OK		Cancel	

2. Select a preset from the drop-down list, set the duration (time the camera stays at the preset, unit: second), and then set the rotation speed (1: slowest, 9: fastest). Click **OK** to save the settings. The preset is added as a keypoint, as shown in the figure below.

Preset Patrol 1			▼	▶	■
KeyPoint	Preset	Duration	Speed	Modify	Delete
1	001	10	5	✏	🗑

3. Repeat the above steps to add all presets (keypoints), and adjust the sequence of these presets by clicking ⬆ or ⬇. Modify or delete a preset by clicking ✏ or 🗑. Clicking 🗑 will delete all the added keypoints.

4. After completing the configuration, click **Apply** to save the settings. Now keypoints for preset patrol 1 is complete.

5. Click ▶ right to the drop-down list to start preset patrol 1. To stop, click ■.

📝 **NOTE!**

The duration ranges from 0 to 1800 seconds (default: 10). The rotation speed ranges from 1 to 9 levels (default: 5).

Setting a Recorded Patrol

Record a patrol, including the patrol route, the time that the camera stays at a certain direction, rotation speed, zoom, focus and focus.

1. Select a recorded patrol from the drop-down list, for example, Recorded Patrol 1.

2. Click ● to start recording. Steer the camera to the desired directions, adjust the zoom, focus, iris as needed during the process.

Recorded Patrol 1	▼	▶	■
● ■			

3. Click ![stop] to stop recording. All the patrol actions have been recorded.
4. To start the recorded patrol, click ![play] . Click ![stop] to stop.

> ![note icon] **NOTE!**
>
> This function requires the camera's support. The drop-down list and the buttons on the right are hidden if this function is not supported by the camera.

---

6 Recording and Snapshot

You can record video after finishing the basic configuration as described in Initial Configuration.

Encoding Settings

Recording

1. Click **Menu** > **Camera** > **Encoding**.

Camera	D13		▾
Storage Mode	Main Stream		▾
Stream	Normal ▾	Sub Stream	▾
Video Compression	H264 ▾	H264	▾
Resolution	▾	720*576(D1)	▾
Bitrate Type	VBR ▾	VBR	▾
Bit Rate(Kbps)	2048 ▾ 2048	1024 ▾ 1024	
Range	0~0(Kbps)	128~16384(Kbps)	
Frame Rate(fps)	▾		▾
Image Quality	Higher ▾	Higher	▾
I Frame Interval	25	25	
I Frame Range	10~250	10~250	
Smoothing			
Audio Stream	☐	☐	

2. Select the desired camera and stream type, and then complete other settings.

Table 6-1 Encoding Settings

Parameter	Description
Camera	Select the desired camera from the drop-down list.
Storage Mode	• Main Stream • Sub Stream By default, the main stream is used for storage.
Image Format	Combinations of resolutions and frame rates.

Parameter	Description
	Note: This parameter is effective only when the camera is connected to the NVR via the private protocol.
Stream	• Normal: main stream that is intended for scheduled recording. • Event: main stream that is intended for recording triggered by events such as alarm inputs or motion detection alarms. • Sub Stream: low resolution video that is intended for local or remote real-time monitoring.
Video Compression	Video compression standard, for example, H.264. The listed options depend on the standards supported by the camera.
Resolution	Image resolution.
Bitrate Type	• CBR: Constant Bit Rate (CBR) is used to maintain a specific bit rate by varying the quality of video streams. CBR is preferred when limited bandwidth is available. The disadvantage is that video quality will vary and may decrease significantly with increased motion in the scene. • VBR: When using Variable Bit Rate(VBR), video quality is kept as constant as possible, at the cost of a varying bit rate, and regardless of whether or not there is motion in the image. VBR is ideal when high quality is a requirement, especially when there is motion in the picture.
Bit Rate(Kbps)	Number of bits transferred per second. Select a value or select **Custom** and then set a value as needed.
Range	Bit rate range. Currently the range is fixed.
Frame Rate(fps)	Number of frames per second.
Image Quality	This parameter is effective only when **Bitrate Type** is set to **VBR**. Six levels are provided.
I Frame Interval	Number of frames between two adjacent I frames.
I Frame Range	Range of I frames. Currently the range is fixed.
Smoothing	Use the slider to control the sudden increase of bit rate.
Audio Stream	Enable or disable audio stream.

📝 **NOTE!**

• The parameters and options displayed may vary with camera model and version.
• Some functions may be unavailable if the firmware version of the camera is too low. In this case, you need to upgrade the camera first.

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

Snapshot

1. Click **Menu** > **Camera** > **Snapshot**.
2. Set the parameters as needed.

Camera	D13			
Snapshot Type	Schedule		Event	
Resolution	704*576(4CIF)	▾	704*576(4CIF)	▾
Image Quality	Medium	▾	High	▾
Snapshot Interval	5s	▾	2s	▾

📝 **NOTE!**

- Scheduled snapshot uses the normal type of schedule. Event-triggered snapshot is triggered by an event such as an alarm input and a motion detection alarm. Settings effective to event-triggered snapshot also apply to manual snapshot.
- Snapshot interval is the length of time between two snapshots.

---

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

Scheduled Recording and Snapshot

Scheduled Recording

Scheduled recording records video according to a schedule and it is different from manual recording and alarm-triggered recording. A 24×7 recording schedule is enabled by default and may be edited as needed to record video in specified periods only.

1. Click **Menu** > **Storage** > **Recording**.

Camera	D9	
Enable Schedule	☑	
Pre-Record(sec)	10	▾
Post-Record(sec)	60	▾

2. Select the desired camera from the list and then select **Enable Schedule** (selected by default).
3. Set **Pre-Record** and **Post-Record** as needed.
4. Click **Edit** and then set recording period(s). Select **Normal** from the **Type** drop-down list(s). Click **OK** to save the settings.

📝 **NOTE!**

- **All Day** is selected by default. You may clear the check box and set up to eight different periods for each day.
- Scheduled recording (**Normal**) is the default recording type. To change the recording type, make sure you have enabled the corresponding alarm function and have configured alarm-triggered recording.
- To apply the schedule to other day(s), select the day(s) right to **Copy To**.
- Redundant recording (available to some models only) is used to save a redundant copy of recordings on your NVR. You need to enable this function and configure a redundant hard disk first.

---

5. Click **Apply** to save the settings.
6. (Optional) To apply the same settings to other cameras, click **Copy**, select the desired cameras, and then click **OK**.

Scheduled Snapshot

Configure scheduled snapshot under **Menu** > **Storage** > **Snapshot**. Scheduled snapshot is similar to scheduled recording (see Scheduled Recording for details). Make sure you select **Normal** from the **Type** drop-down list(s).

Motion Detection Recording and Snapshot

When enabled, a motion detection alarm occurs if an object inside the detection area moves to certain extent. Motion detection alarms can trigger actions including recording and snapshot.

Motion Detection Recording

1. Click **Menu** > **Alarm** > **Motion**.
2. Select the desired camera from the list, and then select the check box to enable motion detection.

> 📝 **NOTE!**
>
> - When enabled on the NVR, the default detection area covers the full screen, and recording is triggered only for the current camera by default. If motion detection recording has been configured before, the previously configured motion detection area and motion detection recording are still effective when you enable motion detection in step 2.
> - When a motion detection alarm occurs, highlighted grids appear in the preview window to indicate the motion detected area, and meanwhile, an alarm icon appears in the upper right corner.

3. In the preview window on the left side, click and drag your mouse to specify a motion detection area (red grid). Use the sliders to adjust detection sensitivity, target object size, and duration.

4. Configure motion detection recording: click ⚙ right to **Trigger Actions**, click the **Recording** tab, select the desired camera, and then click **OK**.

5. (Optional) Configure an arming schedule (time when motion detection is enabled): click ⚙ right to **Arming Schedule** and then set time periods as needed.
6. Set a recording schedule under **Menu** > **Storage** > **Recording**. For the detailed steps, see Scheduled Recording. Make sure **Type** is set to **Motion**. The set schedule appears in green, which stands for motion detection recording. The following figure shows an example.
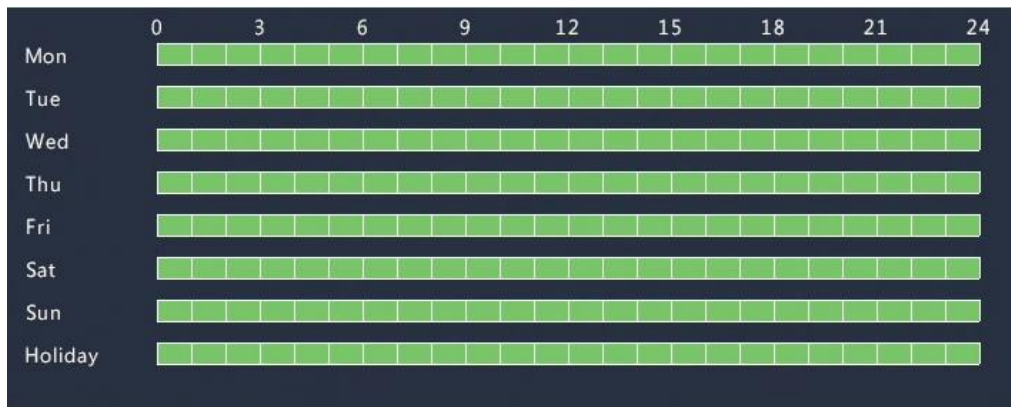
Motion Detection Snapshot

Motion detection snapshot is similar to motion detection recording. You need to enable and configure motion detection alarm first (see steps 1 to 3 in Motion Detection Recording for details), and then proceed with the following steps.

1. Set motion detection snapshot: click ⚙ right to **Trigger Actions**. In the window displayed, click the **Snapshot** tab, select the desired camera, and then click **OK**.

2. Set a snapshot schedule under **Menu** > **Storage** > **Snapshot**. For the detailed steps, see Scheduled Recording. Make sure **Type** is set to **Motion**.

Alarm Triggered Recording and Snapshot

Set input alarms to trigger recording and snapshot.

Alarm Triggered Recording

1. Click **Menu** > **Alarm > Input/Output** > **Alarm Input**.

2. Set alarm input: click ✏ for the desired camera. In the window displayed, select **Enable**, select N.O. (normally open) or N.C. (normally closed) for trigger mode, and then click **OK**.

Alarm Input	
Alarm Input	☑ Enable
Trigger Mode	N.O. ▾

	OK Cancel

NOTE!

To apply the same settings to other camera(s), click **Copy** and then select the desired camera(s).

---

3. Set alarm triggered recording: click ⚙ in the **Trigger Actions** column. In the window displayed, click the **Recording** tab, select the desired camera, and then click **OK**.

Buzzer	☐
Send Email	☐
Pop-up Window	☐

Recording   Preset   Preview   Alarm Output   Snapshot

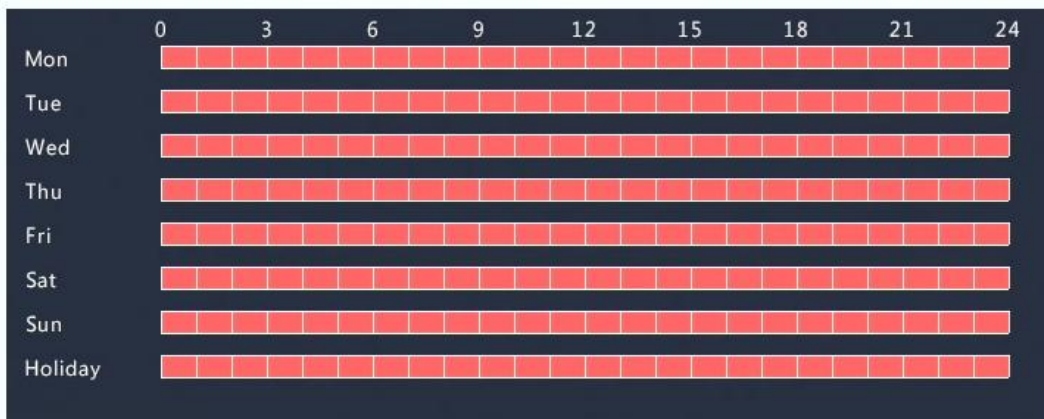| ☐All	☐D1	☐D2	☐D3	☐D4	☐D5	☐D6	☐D7	☐D8
	☐D9	☑D10	☐D11	☐D12	☐D13	☐D14	☐D15	☐D16

4. Set a schedule under **Menu** > **Storage** > **Recording**. For the detailed steps, see Scheduled Recording. Make sure **Type** is set to **Alarm**. The set schedule appears in red, which stands for alarm-triggered recording. The following shows an example.

Alarm Triggered Snapshot

Alarm triggered snapshot is similar to alarm triggered recording. You need to enable and configure alarm input first (see steps 1 to 2 in Alarm Triggered Recording for details) and then proceed with the following steps.

1. Set alarm triggered snapshot: Click ⚙ in the **Trigger Actions** column. In the window displayed, click the **Snapshot** tab, select the desired camera, and then click **OK**.

| Buzzer	☐
Send Email	☐
Pop-up Window	☐

Recording	Preset	Preview	Alarm Output	Snapshot			
☐ All	☐ D1	☐ D2	☐ D3	☐ D4	☐ D5	☐ D6	☐ D7	☐ D8
	☐ D9	☑ D10	☐ D11	☐ D12	☐ D13	☐ D14	☐ D15	☐ D16

2. Set a snapshot schedule under **Menu** > **Storage** > **Snapshot**. For the detailed steps, see Scheduled Recording. Make sure **Type** is set to **Alarm**. The set schedule appears in red, which stands for alarm-triggered snapshot. The following shows an example.
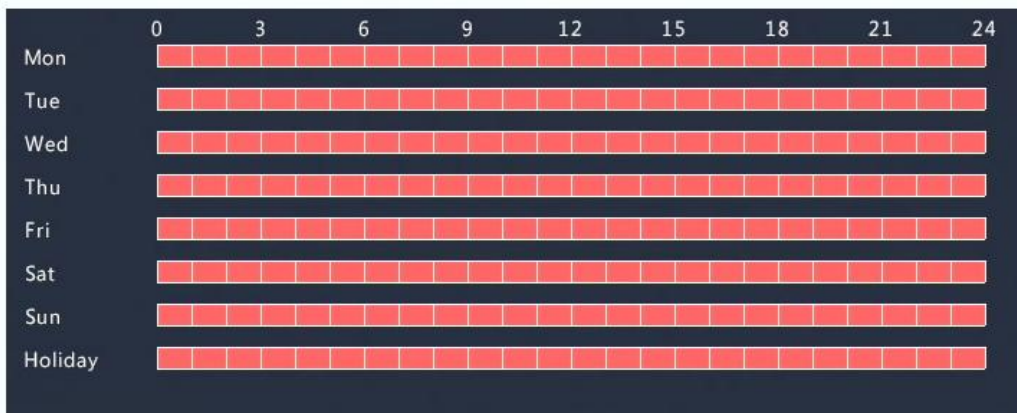
Manual Recording and Snapshot

Manual Recording

Record video manually by clicking 🎬 on the window toolbar. Alternatively, click **Menu** > **Manual** > **Recording**, select the desired camera and then click **Start**. To stop manual recording, click 🎬 on the window toolbar, or select the camera and then click **Stop** under **Menu** > **Manual** > **Recording**.

☐ Select	Camera	Status
☐ D10	IP Camera 10	🟢 Started
☐ D11	IP Camera 11	🔴 Stopped
☐ D13	IP Camera 13	🔴 Stopped
☐ D14	IP Camera 14	🔴 Stopped
☐ D15	IP Camera 15	🔴 Stopped
☐ D16	IP Camera 16	🔴 Stopped

Start	Stop	Back

Manual Snapshot

Manual snapshot is similar to manual recording. Click **Menu** > **Manual** > **Snapshot**, select the desired camera, and then click **Start**. To stop manual snapshot, select the camera and then click **Stop**.

Select	Camera	Status
D10	IP Camera 10	🟢 Started
D11	IP Camera 11	🔴 Stopped
D13	IP Camera 13	🔴 Stopped
D14	IP Camera 14	🔴 Stopped
D15	IP Camera 15	🔴 Stopped
D16	IP Camera 16	🔴 Stopped

Start	Stop	Back

Holiday Recording and Snapshot

Holiday recording and snapshot allows you to specify certain time periods as holidays for scheduled recording and snapshot. First you specify certain date(s) as holidays, and then configure recording or snapshot schedules on these days.

Holiday Recording

1. Click **Menu** > **System** > **Holiday**.

No.	Status	Holiday Name	Start Date	End Date	Re

				Add

Enable	Disable	Back

2. Click the **Add** button in the lower right corner. The **Holiday** window is displayed. Complete the settings including the start and end dates.

Holiday Name	NEW YEARS DAY	
Status	☑ Enable	☐ Disable
Repeat	☐ No	☑ Yes
Mode	☑ By Day	☐ By Week
Start Date	01 ▾	01 ▾
End Date	01 ▾	01 ▾

3. Click **OK**. The holiday appears in the list. The following shows an example.

No.	Status	Holiday Name	Start Date	End Date	Re
1	Enabled	NEW YEARS DAY	01-01	01-01	Ye

4. Click **Menu** > **Storage** > **Recording**, and set a recording schedule as described in Scheduled Recording. Make sure **Holiday** is selected in the **Select Day** drop-down list. In the following example, motion detection recording is enabled on the set holiday.
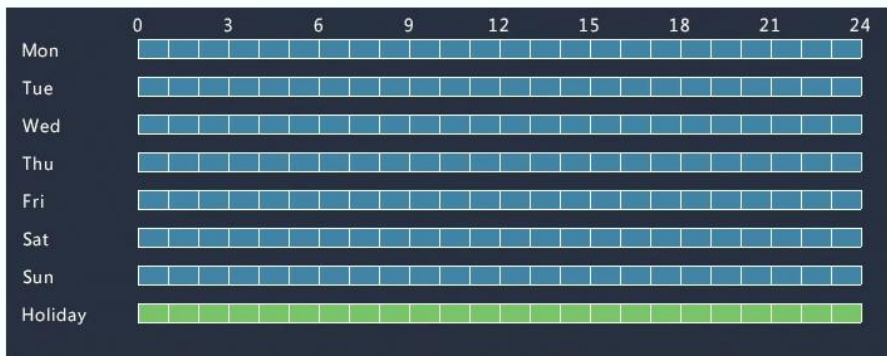
Holiday Snapshot

Holiday snapshot is similar to holiday recording. First you set holidays under **Menu** > **System** > **Holiday**, and then configure a snapshot schedule under **Menu** > **Storage** > **Snapshot**. Set a snapshot schedule as described in Scheduled Recording. Make sure **Holiday** is selected from the **Select Day** drop-down list.

Other Recording and Snapshot Types

Other recording and snapshot types:
- Motion detection AND alarm triggered (M and A for short): recording or snapshot is triggered only when a motion detection alarm AND an input alarm occur simultaneously.
- Motion detection OR alarm triggered (M or A for short): recording or snapshot is triggered when a motion detection alarm OR an input alarm occurs.

For more details, see Motion Detection Recording and Snapshot.

Space Allocation

1. Click **Menu** > **Storage** > **Allocate Space**.

Camera	D1
Used Recording Space(GB)	1
Used Image Space(GB)	0
Select Group	Disk Group 1
Disk Capacity	1863 GB free of 1863 GB
Group Capacity	1863 GB free of 1863 GB
Max Recording Space(GB)	0
Max Image Space(GB)	0

2. Select the desired camera from the drop-down list and then set the maximum recording space and maximum image space. You can select a disk group only when disk group is enabled under **Menu** > **Storage** > **Disk Group**. For more information, see Advanced Configuration.

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

> **NOTE!**
>
> To apply the same settings to other camera(s), click **Copy**, select the desired camera(s) and then click **OK**.

Advanced Configuration

Set whether to overwrite recordings or snapshots when storage is full.

1. Click **Menu** > **Storage** > **Advanced**.

HDD Full	⊙ Overwrite	○ Stop
	Apply	Back

2. Choose an option.

Option	Allocated Space	Description
Overwrite	0	The camera shares unallocated space, and its oldest recordings/snapshots will be overwritten when the space is used up.
	Other values	The camera's oldest recordings/snapshots will be overwritten when its allocated space is used up.
Stop	0	The camera shares unallocated space, and its oldest recordings/snapshots will still be overwritten when the space is used up.
	Other values	The camera's new recordings/snapshots will not be saved when its allocated space is used up.

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

Disk Management

View total and used disk space, edit disk property, and format disks. Make sure the disks are correctly installed before you start. Only admin can edit disk property and format a disk.

1. Click **Menu** > **Storage** > **Hard Disk**.

No.	Total(GB)	Free(GB)	Status	Type	Property	Format
1	0.00	0.00	No Disk	Local	—	—
2	1863.02	0.00	Normal	Local	✏ Read/Write	⊘

	Refresh	Format	Back

2. Set disk properties: Click ✏ and then select **Read/Write**, **Read Only**, or **Redundant** as needed.

3. Format a hard disk to erase all data on it: Click ⊘ for the disk and then confirm to proceed. To format multiple disks at a time, select the disks and then click **Format**.

> **NOTE!**
> - The NVR can automatically format newly installed hard disks.
> - A disk set as redundant cannot be used to configure a disk group.
> - The **Redundant** property is available only to some NVR models.

Disk Group

Group hard disks and save recordings and snapshots in a disk group.

1. Click **Menu** > **Storage** > **Disk Group**.

Enable Disk Group	☑

Disk List

No.	Total(GB)	Free(GB)	Status	Type	Property	Disk Group
1	0.00	0.00	No Disk	Local	—	—
2	1863.02	0.00	Normal	Local	Read/Write	✏ Disk Group 1

2. Select **Enable Disk Group**, click ✏ for the desired disk, and then select a disk group that the disk will belong to.

Disk Group

Disk Group   Disk Group 1   ▾
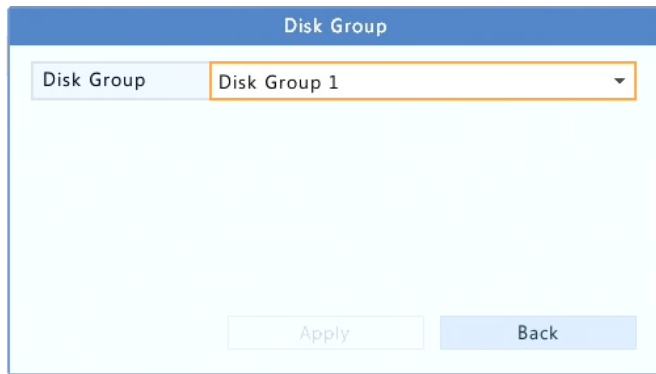
                  Apply   Back

3. Click **Apply**.

7 Playback

Instant Playback

Instant playback plays the video recorded during the last 5 minutes and 30 seconds. If no recording is found, it means there is no recording during this period.

1. Click the desired preview window, and then click on the toolbar to start instant playback.
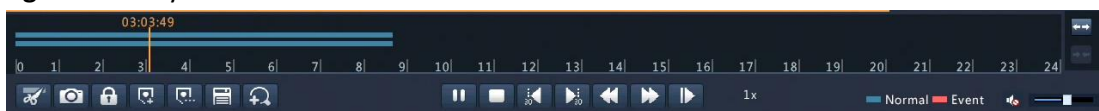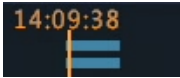2. You may drag the slider to control the progress. Pause and resume as needed.
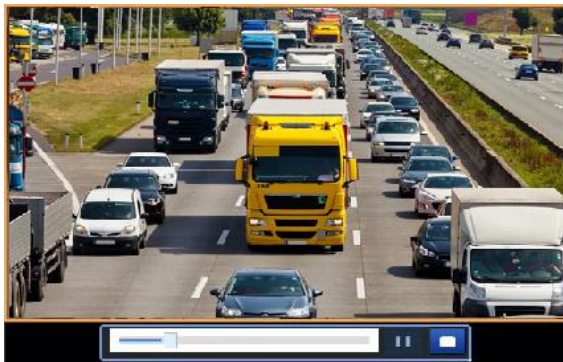
Playback Toolbar

Figure 7-1 Playback Toolbar

Table 7-1 Playback Toolbar

Button	Description
14:09:38	Show playback progress. **Note**: A small window displaying video appears when you drag the slider, helping you locate the part you want to view.
0 1 2	Timeline.
←→/→←	Zoom in or out on the timeline. **Note**: Alternatively, scroll your mouse wheel.
▶/⏸/⏹	Play, pause, stop.
◀30/▶30	Rewind or forward 30 seconds.
◀◀/▶▶	Slow down or speed up. **Note**: Click ▶▶ to restore the normal playback speed after clicking ◀◀, and vice versa.
▶	Forward by frame.
✂/✂ᵢᵢ	Start or stop clipping video.
📷	Take a snapshot.
🔒	Lock.
⊞+/⊞...	Add a default or custom tag.
▤	Manage files.
🔍	Zoom in on images. For more details, see Zoom.
🔊/🔇	Turn off/on audio.
▬▬■▬▬	Adjust sound volume for the current window.

Playback by Camera and Date

Use this method to play recordings found by camera and date.

1. Right-click the mouse and then choose **Playback**.
2. Select the desired camera. By clicking **Max. Cameras** in the upper right corner you will select the maximum number of cameras allowed.

📝 **NOTE!**

You can select multiple cameras for synchronous playback. Clicking **Max. Camera** selects the maximum number of cameras allowed, and clicking **Close All** stops playback for all cameras. The performance varies with NVR model.

3. Select the desired date on the calendar and then click ▶ to start playback. Double-clicking the date will start playback directly.
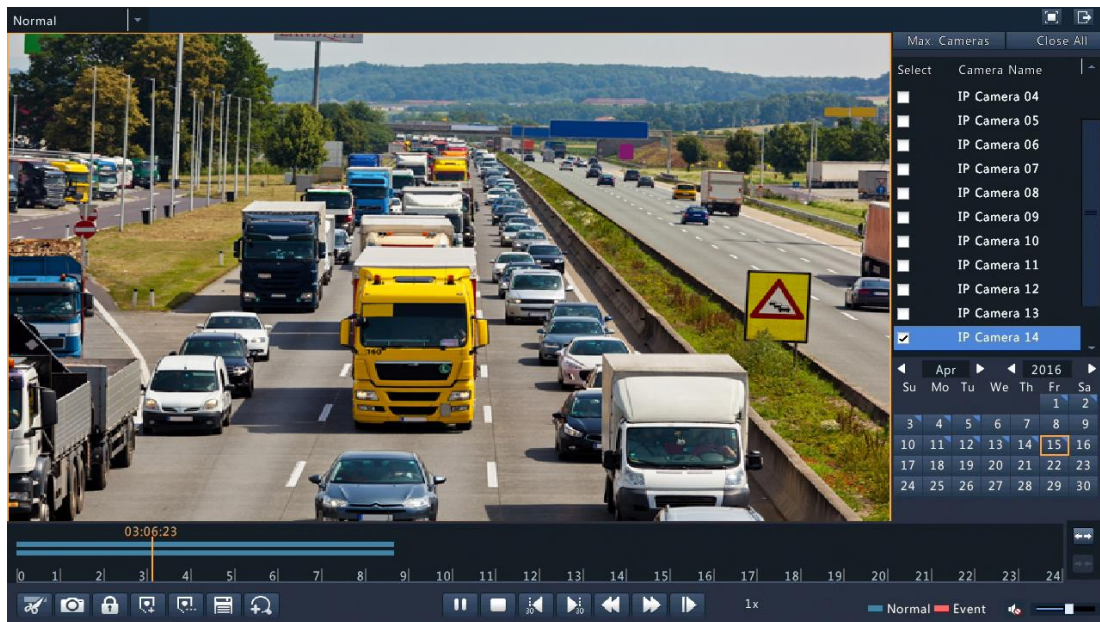
📝 **NOTE!**

- The calendar uses different flags to indicate different recording types. No flag means no recording. The blue flag means normal recording. The red flag means event-triggered recording.
- The first progress bar indicates playback progress of the video playing in the highlighted window. The second indicates the overall playback progress for all the selected cameras.

Playback in Corridor Mode

Play recordings in corridor mode in multiple windows.

1. In the playback window, select **Corridor** from the drop-down list in the upper left corner.

2. Select the desired cameras and then double-click the desired date to start playback.

Playback by Tag

Tags are used to mark time points with useful information such as an event name or a location. With tags you can locate time points quickly and search for the related recordings.

Adding a Tag

1. Right-click and then click choose **Playback**.
2. Click ![icon] to add a default tag named TAG. To add a custom tag, click ![icon] and then set the tag name, for example, tag1.
3. Click ![icon] to edit or delete tags as needed.

Camera	Name	Time	Edit	Delete
D14	TAG	2016-04-15 00:01:16	✏	🗑
D14	TAG	2016-04-15 04:57:29	✏	🗑
D14	Tag1	2016-04-15 05:49:38	✏	🗑

Playback by Tag

1. In the playback window, select **Tag** from the drop-down list in the upper left corner.
2. Select the desired camera, set the time period, and then click **Search**. The search results are displayed in the upper-right corner.
3. Click ![icon] for the desired tag to start playback.
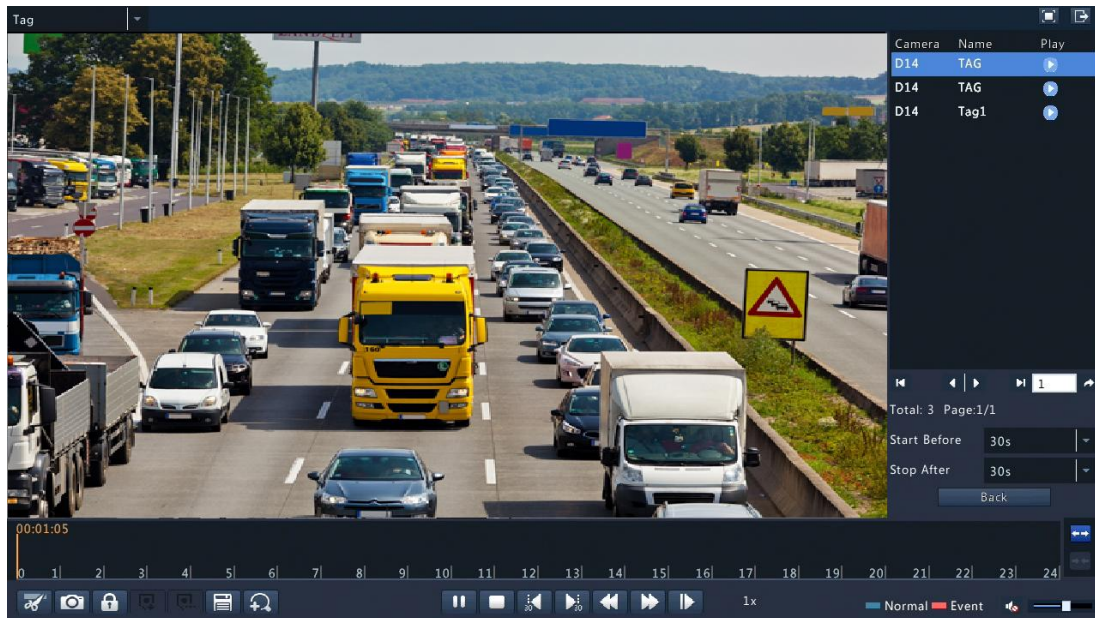
Playback by Event

You can specify an event type to search for and play videos recorded for one or more cameras during a specified time period.

1. In the playback window, select **Event** from the drop-down list in the upper left corner.
2. Select the desired event type, for example, motion. Select the desired camera, set the time period, and then click **Search**.
3. Click ▶ for the desired recording to start playback.
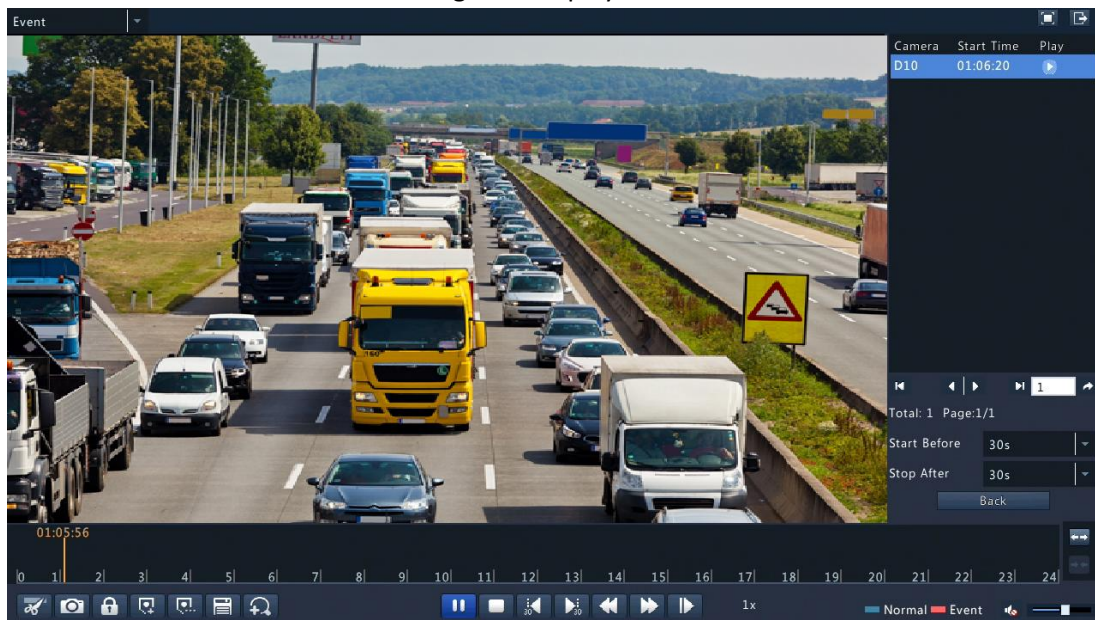
Playback by Smart Search

This function provides an efficient way to review recordings containing smart search results such as detected motions. In smart playback mode, the system analyzes recordings for smart search results. If such results are detected, the progress bar is highlighted in green, and the video plays at the normal speed, allowing you enough time to catch details. The video containing no such results plays at 16x speed to save time.

NOTE!

Motion detection is the default smart search mode.

1. In the playback window, select **Smart** from the drop-down list in the upper left corner.

2. Click ▶ for the desired camera to start smart playback.
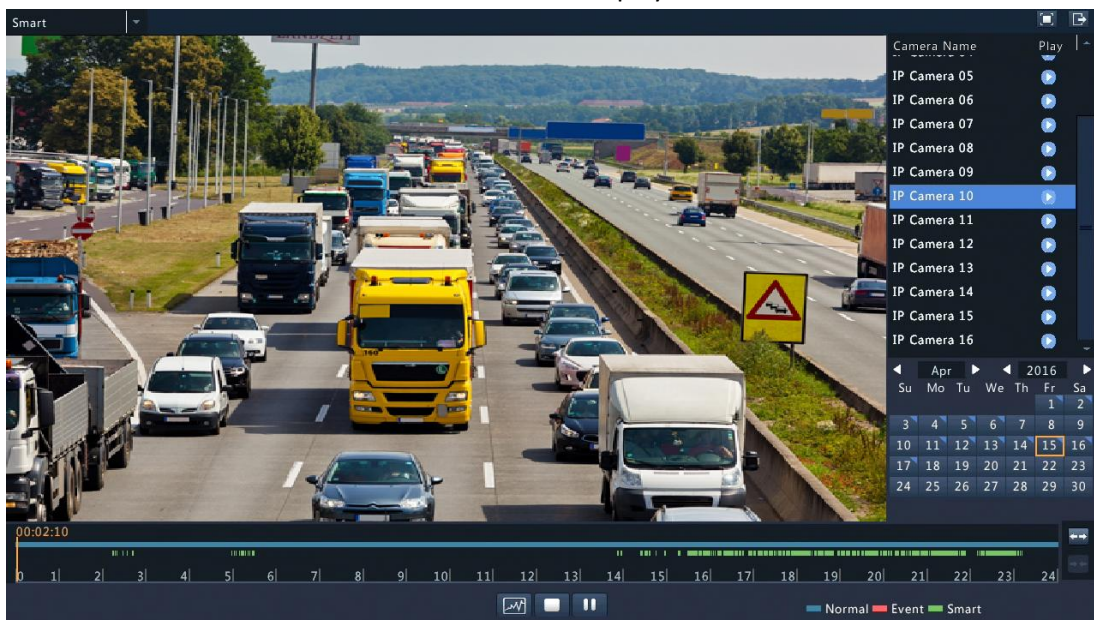
3. Click 🔛. The smart search window is displayed. By default, the full screen is the smart search area.

4. Set smart search rules, including detection region and detection sensitivity, and then click 🔍 to start search.

5. Click 🔍 to start.

NOTE!

Setting smart search rules for motion detection require support from the camera.

Playback by External File

Use this function to play recordings stored in an external storage device, for example, a USB drive or a portable USB hard drive.

1. In the playback window, select **External File** from the drop-down list in the upper left corner.
2. Click **Refresh** and then wait for the NVR to read the external storage device.
3. Select the desired recording file and then click ▶ to start playback.

Playback by Image

Specify an image type (for example, Normal or Motion) to search for and play images from one or more cameras during a specified time period.

1. In the playback window, select **Image** from the drop-down list in the upper left corner.
2. Select a type from the **Type** drop-down list in the upper right corner.
3. Select the desired camera(s), set the desired time period, and then click **Search**.
4. Click the desired file to start playback.
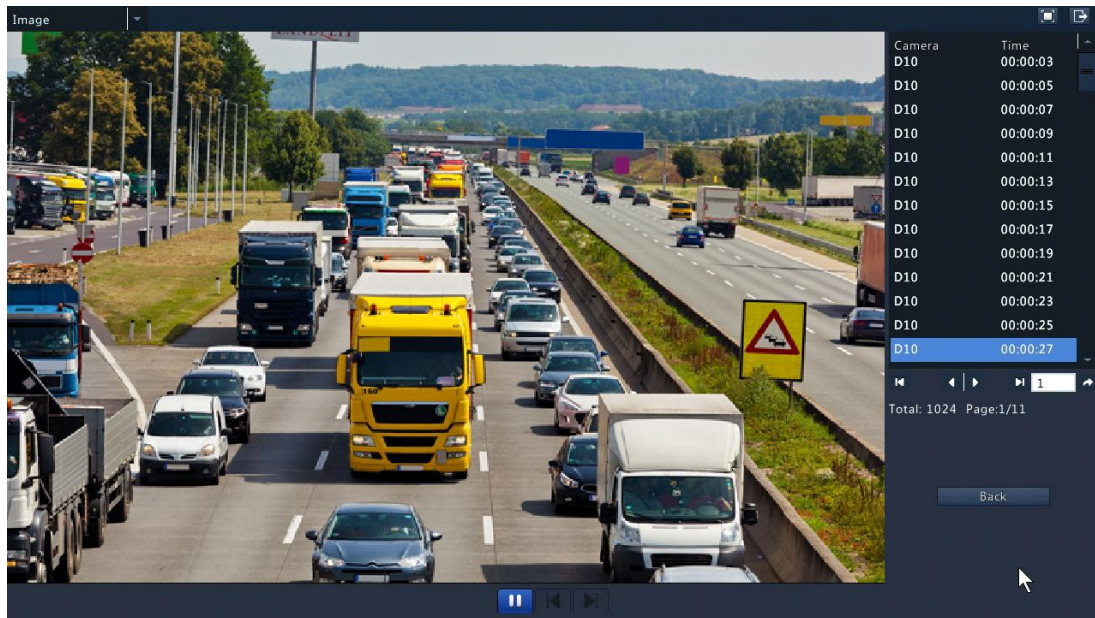
File Management

File management allows you to manage video clips, tags, snapshots taken during playback, and lock or unlock files.

1. Take snapshot during playback.
   a. Click 📷 in the playback window to take a snapshot of the desired image.
   b. Click 💾 and then click the **Playback Image** tab to view the snapshot.
   c. Select the desired image file(s) and then click **Backup** to save them to the storage device.

NOTE!

The image resolution depends on the resolution from the output interface and the number of windows displayed when the snapshot is taken.

---

2. Lock files.

Use this function to lock a recording file so it will not be overwritten.

a. Click ![icon] for the recording you want to lock in the playback window.

b. Click ![icon] and then click the **Locked File** tab to view the locked file. To unlock a file, click ![icon] , and the icon changes to ![icon] . To back up a file, select the file and then click **Backup**.

8 Backup

Recording Backup

Backup, also known a**s reco**rding backup, is the process of querying video stored on a hard disk of the NVR and then saving the recording to a USB storage device as a file.

Recording backup has the following conditions:

- The USB storage device has a FAT32 or an NTFS file system and is correctly connected to the NVR.
- Permission is required.
- The recording to back up is stored on a hard disk of the NVR.

📝 **NOTE!**

By default a recording is backed up as a .mp4 file.

Normal Backup

1. Click **Menu** > **Backup > Recording**.

☑ All	☑ D1	☑ D2	☑ D3	☑ D4	☑ D5	☑ D6	☑ D7	☑ D8
	☑ D9	☑ D10	☑ D11	☑ D12	☑ D13	☑ D14	☑ D15	☑ D16

Recording Type	All	▼
File Type	All	▼
Start Time	2016 - 04 - 17 ▲▼ 00 : 00 : 00 ▲▼
End Time	2016 - 04 - 17 ▲▼ 23 : 59 : 59 ▲▼

Search   Back

📝 **NOTE!**

All cameras are selected by default.

2. Set search conditions and then click **Search**. Search results are displayed.

📝 **NOTE!**

You can lock/unlock and play recording files in this window.

---

3. Select the desired recording(s) and then click **Backup**.
4. Select a destination in the USB storage device and then click **Backup**. The recording(s) will be saved to the specified directory.

📝 **NOTE!**

- You may want to create a new folder for the recording(s) by clicking **New Folder**.
- By clicking **Format** you can format a connected USB device into a FAT32 file system.
- A progress bar (e.g., **Exporting** *X/Y*) is displayed to indicate the progress, where *X* indicates the current number being backed up, and *Y* indicates the total number of recordings. To cancel the operation, click **Cancel**.
- A backup file is named in this format: *camera name-recording start time*.file extension. For example, Ch9-20150630183546.mp4.

Video Clip Backup

A recording can be clipped and saved to a USB storage device.
1. Open the playback window. For the detailed steps, see Playback.
2. After playback starts, click ✂ and ✂‖ on the playback toolbar to clip videos.
3. Click 💾 and then click the **Video Clip** tab to view video clips.
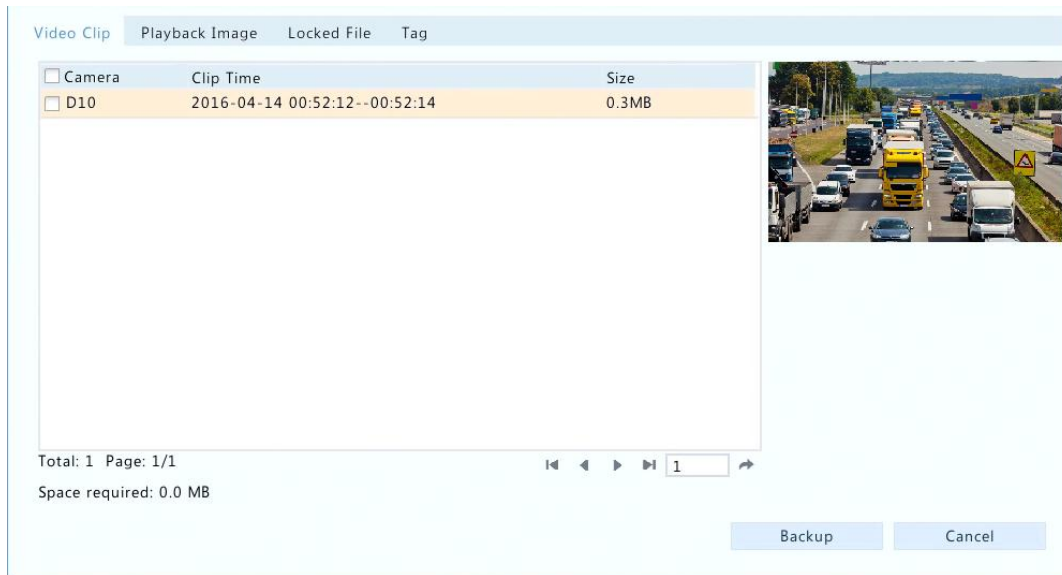
4. Select the desired video clip(s) and then click **Backup**.
5. Select a destination in the USB storage device and then click **Backup**. The selected video clips are saved to the specified directory.

Image Backup

 NOTE!

The default format of image backup is JPEG.

1. Click **Menu** > **Backup** > **Image**.

2. Set search conditions and then click **Search**. Search results are displayed.

49

![NOTE icon] **NOTE!**

The image resolution depends on the resolution from the output interface and the number of windows displayed when the snapshot is taken.

---

3. Select the desired file(s) and then click **Backup**.
4. Select a destination in the USB storage device and then click **Backup**. The selected files are saved to the specified directory.

9 Alarm

Alarm Input and Output

Alarm Input

1. Click **Menu** > **Alarm** > **Input/Output > Alarm Input**.
2. Click ✐ for the desired camera. In the **Alarm Input** window displayed, select **Enable**, select a trigger mode as needed, and then click **OK**.

3. Click ⚙ in the **Trigger Actions** column and then set action(s) to trigger. For more details, see [Alarm-Triggered Actions](#).

Buzzer	☐
Send Email	☐
Pop-up Window	☐

Recording   Preset   Preview   Alarm Output   Snapshot

| ☐All | ☐D1 | ☐D2 | ☐D3 | ☐D4 | ☐D5 | ☐D6 | ☐D7 | ☐D8 |
| | ☐D9 | ☐D10 | ☐D11 | ☐D12 | ☐D13 | ☑D14 | ☐D15 | ☐D16 |

📝 **NOTE!**
- The number of cameras that can be connected may vary with NVR model.
- Actions that can be triggered may vary with alarm type.

4. Click ⚙ in the **Arming Schedule** column and then set time periods during which alarm input is enabled.

Arming Schedule

| Current Camera | D14<-1 |
| Select Day | Monday ▼ |

Start Time				End Time			
00	:	00	▲▼	24	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼

Copy To   ☑All   ☐Mon   ☑Tue   ☑Wed   ☑Thu   ☑Fri   ☑Sat   ☑Sun   ☑Holiday

Apply   OK   Cancel

📝 **NOTE!**
- The default schedule is 24×7. You may change it as needed and set up to eight different periods for each day. Time periods cannot overlap.
- To apply the same arming schedule to other days, select the intended days right to **Copy To**.
- To apply the same settings to other cameras, click **Copy**, select the desired cameras, and then click **OK**.

Alarm Output

1. Click **Menu** > **Alarm** > **Input/Output** > **Alarm Output**.

Serial No.	Default Status	Duration(sec)	Edit
D14->1	N.O.	30	✎
D15->1	N.O.	30	✎
D16->1	N.C.	30	✎

2. Click ✎ for the desired camera, and then set the default status and duration. After you have completed the settings, click **OK**.

📝 **NOTE!**

To apply the same settings to other cameras, click **Copy**, select the desired cameras, and then click **OK**.

Motion Detection

When enabled, a motion detection alarm occurs if an object inside the detection area moves to certain extent.

📝 **NOTE!**

- When enabled on the NVR, the default detection area covers the full screen, and recording is triggered only for the current camera by default. If motion detection recording has been configured before, the previously configured motion detection area and motion detection recording are still effective when you enable motion detection in step 2.
- When a motion detection alarm occurs, highlighted grids appear in the preview window to indicate the motion detected area, and meanwhile, an alarm icon appears in the upper right corner.

1. Click **Menu** > **Alarm** > **Motion**.
2. Select the desired camera and then select **Enable** to enable motion detection.
3. Use the mouse to draw a detection area, and drag the slider to set detection sensitivity, target object size, and duration.

4. Click ⚙ right to **Trigger Actions** and set action(s) to trigger. For more details, see Alarm-Triggered Actions.

Buzzer	☐		
Send Email	☐		
Pop-up Window	☐		

Recording Preset Preview Alarm Output Snapshot

☐All	☐D1	☐D2	☐D3	☐D4	☐D5	☐D6	☐D7	☐D8
	☐D9	☑D10	☐D11	☐D12	☐D13	☐D14	☐D15	☐D16

> 📝 **NOTE!**
> - The number of cameras that can be connected may vary with NVR model.
> - Actions that can be triggered may vary with alarm type.

5. (Optional) Click ⚙ right to **Arming Schedule** and then set the time when motion detection is enabled.

Arming Schedule

Current Camera	D10	
Select Day	Monday	▼

Start Time				End Time			
00	:	00	▲▼	24	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼
00	:	00	▲▼	00	:	00	▲▼

Copy To ☐All ☐Mon ☐Tue ☐Wed ☐Thu ☐Fri ☐Sat ☐Sun ☐Holiday

Apply OK Cancel

> 📝 **NOTE!**
> - The default schedule is 24×7. You may change it as needed and set up to eight different periods for each day. Time periods cannot overlap.
> - To apply the same arming schedule to other days, select the intended days right to **Copy To**.

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

Tampering Detection

A tampering detection alarm occurs when the camera lens is covered.
1. Click **Menu** > **Alarm** > **Tampering**.
2. Select the desired camera and then select **Enable** to enable tampering detection.

(Note: By default, tampering detection is effective to the full screen.)

3. Click ⚙ right to **Trigger Actions** and set action(s) to trigger. For more details, see Alarm-Triggered Actions.

4. (Optional) Click ⚙ right to **Arming Schedule** and then set the time when tampering detection is enabled.

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

Audio Detection

An audio detection alarm occurs when a camera detects a sudden change in sound volume.

1. Click **Menu** > **Alarm** > **Audio Detection**.

2. Select the desired camera and then select **Enable** to enable audio detection.

3. Click ⚙ right to **Trigger Actions** and set action(s) to trigger. For more details, see Alarm-Triggered Actions.

4. (Optional) Click ⚙ right to **Arming Schedule** and set the time when audio detection is enabled.

5. Select a detection type and adjust the settings as needed.

Detection Type	Description
Sudden Rise	An alarm occurs when the rise of volume exceeds the set value.
Sudden Fall	An alarm occurs when the fall of volume exceeds the set value.
Sudden Change	An alarm occurs when the rise or fall of volume exceeds the set value.

Detection Type	Description
Threshold	An alarm occurs when the volume exceeds the set value.

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

Video Loss

A video loss alarm occurs when the NVR loses video signals from a camera.

1. Click **Menu** > **Alarm** > **Video Loss**.

Camera	Status	Trigger Actions	Arming Schedule
D1	Enabled	⚙	⚙
D2	Enabled	⚙	⚙
D3	Enabled	⚙	⚙
D4	Enabled	⚙	⚙
D5	Enabled	⚙	⚙
D6	Enabled	⚙	⚙
D7	Enabled	⚙	⚙
D8	Enabled	⚙	⚙
D9	Enabled	⚙	⚙
D10	Enabled	⚙	⚙
D11	Enabled	⚙	⚙
D12	Enabled	⚙	⚙
D13	Enabled	⚙	⚙
D14	Enabled	⚙	⚙
D15	Enabled	⚙	⚙
D16	Enabled	⚙	⚙

2. Click ⚙ in the **Trigger Actions** column and set action(s) to trigger. For more details, see <u>Alarm-Triggered Actions</u>.

📝 **NOTE!**

- Video loss alarm is enabled by default. To disable this function for a channel, click ●, and then the icon changes to ●.
- The following actions are not supported for the current channel: recording, preset, preview and snapshot.

3. Click ⚙ in the **Arming Schedule** column and set the time when video loss alarm is enabled.

Alert

The NVR reports an alert when an event occurs in the system. The following are some alerts and their definitions in the system.

- **Storage Error**: Recording failed.
- **Disk Offline**: A disk is not properly connected or is damaged.
- **Disk Abnormal**: A disk cannot be accessed.

- **Illegal Access**: The username does not exist or the password is incorrect.
- **Network Disconnected**: Network connection is lost.
- **IP Conflict**: Devices on the network use the same IP address.

Perform the following steps to configure an alert:

1. Click **Menu** > **Alarm** > **Alert**.
2. Select an alert type, select the desired actions, and then select the camera(s) for which you want to enable alarm output.

Alert Type	Storage Error	▾
Buzzer	☐	
Send Email	☐	
Pop-up Window	☐	
Trigger Alarm Output	☐ All	

Select	Alarm Output No.
☐	D14->1
☐	D15->1
☐	D16->1

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

Buzzer

The buzzer can be triggered by alarms to alert the user. Follow the steps to set how long the buzzer will buzz after it is triggered.

1. Click **Menu** > **Alarm** > **Buzzer**.

Alarm Duration	○ Maximum	◉ Custom
Custom Duration(sec)	1	

2. Set the duration as needed. The range is from 1 to 600 seconds.
3. Click **Apply** to save the settings.

Alarm-Triggered Actions

An alarm can trigger actions, for example, buzzer, recording, and preview. The supported actions may vary with NVR model.

Alarm-Triggered Buzzer

The NVR makes a buzzing sound when an alarm occurs.

Alarm-Triggered E-mail

The NVR e-mails an alarm message to a specified email address when an alarm occurs.

Alarm-Triggered Pop-up Window

A window pops up when an alarm occurs.

Alarm-Triggered Recording

The NVR records video from a specified camera when an alarm occurs.

Alarm-Triggered Snapshot

The NVR takes a snapshot when an alarm occurs.

Alarm-Triggered Preset

A PTZ camera rotates to a preset position when an alarm occurs.

Alarm-Triggered Preview

The NVR plays live video in full screen when an alarm occurs.

Alarm-Triggered Alarm Output

The NVR outputs an alarm to trigger actions by a third-party device when an alarm occurs.

Manual Alarm

Manual Alarm Output

Follow the steps to trigger or clear an alarm output manually.

1. Click **Menu** > **Manual** > **Alarm** > **Manual Alarm**.

Select	Trigger
☐ D14->1	🔴 No
☐ D15->1	🔴 No
☐ D16->1	🟢 Yes

| Trigger | Clear | Back |

2. To trigger an alarm output manually, select the desired channel and then click **Trigger**. To clear an alarm output manually, select the desired channel and then click **Clear**.

Manual Buzzer

Follow the steps to stop the buzzer manually.

1. Click **Menu** > **Manual** > **Alarm** > **Buzzer**.

☐ Device Name	Status
☐ Buzzer	🔴 Stopped

| Stop | Back |

2. Select the buzzer (in **Started** status) and then click **Stop**.

10 **Network Configuration**

Network configuration is required if your NVR operates in a network.

📝 **NOTE!**

The default IP address is 192.168.1.30 for NIC 1 and 192.168.2.30 for NIC 2, and likewise.

Basic Configuration

1. Click **Menu** > **System** > **Network > Basic**.
2. Set the network parameters as needed. For some models, DHCP is enabled by default.

You can choose a working mode if your NVR has two NICs:

- Multi-address mode: The two NICs work independently and can be configured separately. Either NIC can be chosen as the default route, and data will be forwarded through this NIC when the NVR connects to the extranet.
- Load balance mode: The two NICs are bound to the same IP address and work together to share network traffic.
- Net fault-tolerance mode: The two NICs are bound to the same IP address. In cases where one NIC fails, the other takes over service seamlessly from the faulty one to ensure network connectivity.

Select NIC	NIC1
Enable DHCP	☐
IPv4 Address	204 · 4 · 1 · 90
IPv4 Subnet Mask	255 · 255 · 255 · 0
IPv4 Default Gateway	204 · 4 · 1 · 1
MAC Address	48:ea:63:0e:14:06
MTU(Bytes)	1500
Preferred DNS Server	8 · 8 · 8 · 8
Alternate DNS Server	8 · 8 · 4 · 4
Internal NIC IPv4 Addr.	172 · 16 · 0 · 1

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

> **NOTE!**
>
> - For an NVR with multiple NICs, you can configure the NICs and choose a default route. If you switch the working mode, the enabled 802.1x and ARP protection will be disabled automatically.
> - If your NVR has a PoE port or a switching port, you can configure an internal NIC IPv4 address.

PPPoE

The NVR allows access through Point-to-Point over Ethernet (PPPoE).

1. Click **Menu** > **System** > **Network** > **PPPoE**.

Connection	
Enable PPPoE	☐
Username	
Password	

IP Info	
Address	
Subnet Mask	
Gateway	

2. Select **PPPoE**, and then enter the username and password provided by your Internet Service Provider (ISP). The network information appears under **IP Info** when dial-up succeeds.

> **NOTE!**
> - You need to disable UNP client first.
> - If your NVR has multiple NICs, PPPoE dial-up will be implemented through the NIC specified as the default route.

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

EZCloud

The NVR allows access through the EZCloud website or from the EZView mobile surveillance app. You need to sign up for an account first before using this function.

1. Click **Menu** > **System** > **Network** > **EZCloud**.
2. EZCloud is enabled by default. If it is disabled, select the check box to enable it.

Enable EZCloud	☑
Domain Name	en.ezcloud.uniview.com
Register Code	012345678901234567 8901234
Device Status	Online
Service Agreement	http://en.ezcloud.uniview.com/doc/termsofservice.html

> **NOTE!**
> - Scan the QR code using your mobile phone to download the app. If the app is already installed on your mobile phone, scan the QR code with the app to obtain the register code.
> - If the device is offline, the possible causes will be displayed for your reference.

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

DDNS

If your NVR is connected to the Internet through PPPoE, the IP address of the network changes every time it connects to the ISP server without your awareness. This is inconvenient when you remotely access your NVR with an IP address. To avoid this issue, you can register with an DDNS server to obtain a domain name for your NVR and then access your NVR by visiting the domain name instead of an IP address (http://*DDNS server address*/*NVR's domain name*) using a web browser.

1. Click **Menu** > **System** > **Network** > **DDNS**.
2. Enable DDNS, select a DDNS type, and then complete other settings.
- If the DDNS type is **DynDNS** or **No-IP**, enter the domain name, username and password. The domain name is the one that you have successfully registered at a domain name registration website (e.g., DynDNS). The username and password are those of the account you have registered at the domain name registration website (e.g., DynDNS).

Enable DDNS	☑
DDNS Type	DynDNS ▾
Server Address	members.dyndns.org
Port	80
Domain Name	NVR.dyndns.com
Username	admin
Password	******
Confirm	******

- If the DDNS type is **EZDDNS**, enter a valid domain name for your NVR and then click **Test** to see if the domain name is available.

Enable DDNS	☑
DDNS Type	EZDDNS ▾
Server Address	en.ezcloud.uniview.com
Port	80
Domain Name	08
Device Status	Online
Device Address	en.ezcloud.uniview.com/08

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

Port

Normally the default port numbers need no modification. This function is mainly used together with the port mapping function. See the next section for more details.
1. Click **Menu** > **System** > **Network** > **Port**.
2. Configure internal ports as planned.

HTTP Port	80
RTSP Port	554
Media Port	7070
SDK Port	6060
HTTPS Port	443

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

Port Mapping

Two port mapping methods are available:
- Universal Plug and Play (UPnP)
- Internal and external mapping

UPnP

UPnP enables the NVR to discover other devices on the network and establish network services such as data sharing and communication.

To use UPnP in your NVR, you must enable UPnP in the router to which your NVR is connected. With UPnP enabled for Network Address Translation (NAT), the ports on the NVR can be mapped automatically to the router, and computers can access your NVR from outside the LAN.

1. Click **Menu** > **System** > **Network** > **Port Mapping**.
2. UPnP is enabled by default. Select the desired mapping type from the drop-down list. To map ports manually, select **Manual** and then set external ports for the router.

Enable UPnP	☑			
Mapping Type	Auto			
HTTP Port	50080			
RTSP Port	50554			
Media Port	57070			
SDK Port	56060			
HTTPS Port	50443			

Port Type	Mapping IP	External Port	Internal Port	UPnP Status
HTTP Port	N/A	50080	80	Inactive
RTSP Port	N/A	50554	554	Inactive
Media Port	N/A	57070	7070	Inactive
SDK Port	N/A	56060	6060	Inactive
HTTPS Port	N/A	50443	443	Inactive

3. Click **Refresh** and check that **Active** is displayed for these ports in the **UPnP Status** column.
4. Click **Apply** to save the settings.

Internal and External Port Mapping

If your router does not support UPnP, then you need to configure internal and external ports manually.

1. Click **Menu** > **System** > **Network** > **Port Mapping**.
2. Disable UPnP by clearing the check box, and then set external ports manually.

Enable UPnP	☐			
Mapping Type	Manual			▼
HTTP Port	50080			
RTSP Port	50554			
Media Port	57070			
SDK Port	56060			
HTTPS Port	50443			

Port Type	Mapping IP	External Port	Internal Port	UPnP Status
HTTP Port	N/A	50080	80	Inactive
RTSP Port	N/A	50554	554	Inactive
Media Port	N/A	57070	7070	Inactive
SDK Port	N/A	56060	6060	Inactive
HTTPS Port	N/A	50443	443	Inactive

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

Email

The NVR can be set to send an email notification to specified email addresses when an alarm occurs. The email contains basic alarm information such as alarm type, alarm time, camera ID, and camera name, etc.

Before using this function, make sure the NVR has a functional connection to an SMTP server with which you have a valid email account. Depending on the intended recipients, a connection to the Internet may be required.

1. Click **Menu** > **System** > **Network** > **Email**.
2. Configure the related parameters.

   If server authentication is required, you need to enter the correct username and password.

Server Authentication	☑
Username	security@outlook.com
Password	********
SMTP Server	smtp.live.ccom
SMTP Port	25
Enable TLS	☑ If TLS is enabled, use 25 first, and 587 as an alternative.
Sender Name	security
Sender Address	security@outlook.com
Select Recipient	Recipient 1 ▾
Recipient Name	securitychief
Recipient Address	securitychief@outlook.com
Attach Image	☑
Snapshot Interval	2s ▾

<div style="text-align:center">

Test   Apply   Back

</div>

📝 **NOTE!**

- Enter a valid SMTP server address and port number, and then select **Enable TLS** if required.
- Select **Attach Image** if you want snapshots to be sent via email. Make sure Email and snapshot have been enabled in the **Trigger Actions** window.
- Only some models support image attachment. You may click Test to check whether the email can be sent successfully.

---

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

UNP Client

Universal Network Passport (UNP) is used to translate IP addresses on a network where gatekeeper and firewall are deployed. UNP enables interconnection between surveillance areas without the necessity of altering network planning or demanding extra public IP addresses. UNP is applicable to almost all network types. To use UNP for surveillance, first you need to configure both the UNP server and clients properly, and then make sure dial-up succeeds on all the clients.

1. Click **Menu** > **System** > **Network**.
2. Enable UNP client by selecting the check box.
3. Enter the IP address and port number of the UNP server. If authentication is required, enter the username and password configured on the UNP server.
4. Click **Apply** to save the settings.

📝 **NOTE!**

To use UNP client, you must disable PPPoE first.

FTP

1. Click **Menu** > **System** > **Network** > **FTP**.

Enable FTP	☐
Server	
IP Address	. . .
Port	21
Anonymous	☐
Username	admin
Password	
Remote Directory	
Upload Interval(s)	30
Range(s)	5~600
Schedule	
Camera	D1
Upload Schedule	⚙
Copy	⚙

2. Select the check box to enable FTP.
3. Enter the IP address of the FTP server, username and password, remote directory, and upload interval.

4. Select the desired camera and then click ⚙ right to **Upload Schedule**. In the **Upload Schedule** window, select the desired image type and time periods.

Upload Schedule					
Select Day	Monday ▾				
		Alarm	Motion	Normal	Video Loss
Period 1	00 : 00 ⇅ 24 : 00 ⇅	☐	☐	☑	☐
Period 2	00 : 00 ⇅ 00 : 00 ⇅	☐	☐	☐	☐
Copy To	☐ All ☑ Mon ☐ Tue ☐ Wed ☐ Thu ☐ Fri ☐ Sat ☐ Sun				
	OK Cancel				

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

11 Array Configuration

Enabling RAID

You need to enable RAID first.

1. Click **Menu** > **Storage** > **Array**.
2. Select the check box to enable RAID. A confirmation message appears. Click **Yes**.

Creating an Array

It is recommended to configure a hot spare disk to ensure reliable system operation and successful rebuilding in case an array fails.

1. Click **Menu** > **Storage** > **Array > Physical Disk**.
2. To create an array automatically, click **One-click Create**.

3. To create an array manually, select the desired disks and then click **Create**. In the window displayed, enter the array name, select the array type, and select local disks. Click **OK** to complete the setup. Note that no hot spare disk will be created automatically.

Rebuilding an Array

By checking array status you can determine whether maintenance is necessary. An array is in one of four statuses: normal, degraded, damaged, rebuild. The status is normal if no physical disk is lost. When the number of physical disks lost reaches the specified value, the array is considered damaged. The status between normal and damaged is degraded. A degraded array can be recovered to normal status if you rebuild it.

> 📝 **NOTE!**
>
> Take RAID 5 that consists of 4 disks as an example. The array is degraded when one disk is lost. And when two disks are lost, the array is damaged.

After an array becomes degraded, it can be rebuilt automatically within ten minutes if a hot spare disk is available, and if the capacity of the hot spare disk is not less than that of any disk in the array. A degraded array without a hot spare disk can only be rebuilt manually under **Menu** > **Storage** > **Array > Array**. By default the first local disk that satisfies requirements is selected.

Deleting an Array

> ⓘ **CAUTION!**
>
> Deleting an array will erase all data on it.

1. Click **Menu** > **Storage** > **Array** > **Array**.

2. Click 🗑 for the array to delete. A prompt message appears. Click **OK**.

12   System Configuration

Basic Configuration

1. Click **Menu** > **System** > **Basic**.
2. Configure the parameters.

Device Name	NVR
Device ID	1
Language	English
Enable Password	✔
Auto Logout(min)	10
Enable Startup Wizard	☐ Wizard

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

📝 **NOTE!**

- Only admin can set **Enable Password**.
- If **Enable Password** is not selected, no password is required for local login at system startup. However, a username and password are still required when you log in after a logout.
- You may also set startup Wizard here by clicking **Wizard**.

Time Configuration

Time

1. Click **Menu** > **System** > **Time > Time**.
2. Select the correct time zone, and then set date and time formats and the system time. The following shows an example.

Time Zone	(GMT+00:00) Dublin, Edinburgh, London
Date Format	YYYY-MM-DD
Time Format	24-hour
System Time	2016 - 04 - 18 02 : 55 : 01
Enable NTP	☐
NTP Server Address	0.0.0.0
NTP Port	123
Update Interval(min)	10

3. To use Network Time Protocol (NTP), enable NTP, set the address and port number of the NTP server, and the update interval.
4. Click **Apply** to save the settings.

DST

1. Click **Menu** > **System** > **Time > DST**.
2. Enable DST by selecting the check box, and then set the start time, end time, and DST bias correctly. The following shows an example.

Enable DST	✔			
From	Mar	2nd	Sun	2
To	Nov	1st	Sun	2
DST Bias	60 Minutes			

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

Time Synchronization

Use this function to synchronize camera time with the NVR. Time sync is enabled by default, and cameras will synchronize time once when they get online, and then synchronize once every 30 minutes.

1. Click **Menu** > **System** > **Time** > **Time Sync**.

2. Select **Sync Camera Time** and then click **Apply**.

Serial Port Configuration

Serial port settings in the NVR should be consistent with those in the connected serial device. Serial port configuration is required for PTZ control.

1. Click **Menu** > **System** > **Serial**.

2. Configure the parameters for the serial port.

NOTE!

You may set **Port Usage** to **Keyboard** to control a PTZ camera with a specialized surveillance keyboard.

---

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

User Configuration

Add, delete users or edit user permissions. Only admin can perform these operations.

A user group is a set of permissions in the system. When a user group is assigned to a user, this user has all the permissions specified for the user group.

There are four user types in the system:

- Admin: Default super administrator in the system, has full system access. Its initial password is **123456**.
- Default: Default user reserved in the system, cannot be created or deleted, and only has access to live view and two-way audio. If the default user is denied access, the corresponding channel is locked when no user is logged in, and 🔒 appears in the window.
- Operator: Has basic permissions and access to cameras.
- Guest: Only has access to cameras by default.

1. Click **Menu** > **System** > **User**.

Username	User Group	Edit	Delete
admin	Administrator	✎	—
default	Reserved User	✎	—
loadmin	Guest	✎	🗑

2. To add a user, click **Add**, and then set the username, user group, password and permissions as needed. Click **OK** to save the settings.

Username	loadmin2	
User Group	Operator	▼
New Password	********	Strong
Confirm	********	

Basic Permissions

☑ Configure ☑ Upgrade ☑ View and Export Logs ☑ Restart

Camera Permissions	Live View and Two-Way Audio	▼

☑ All ☑ D1 ☑ D2 ☑ D3 ☑ D4 ☑ D5 ☑ D6 ☑ D7 ☑ D8
 ☑ D9 ☑ D10 ☑ D11 ☑ D12 ☑ D13 ☑ D14 ☑ D15 ☑ D16

3. To edit or delete a user, click ✏ or 🗑 as needed. If you change the password for a user, the new password takes effect at the user's next login.

Security Configuration

IP Control

Use this function to enhance security by allowing or forbidding access to the NVR from specified IP addresses.
1. Click **Menu** > **System** > **Security** > **IP Control**.
2. Select **Enable IP Control**, select **Blacklist** or **Whitelist** from the drop-down list, set the start and end IP addresses, and then click **Add**.

📝 **NOTE!**

- If **Blacklist** is selected, the NVR denies remote access from the IP address(es) on the list.
- If **Whitelist** is selected, the NVR only allows remote access from the IP address(es) on the list. However, if **Whitelist** is selected with no IP address specified, remote access to the NVR will be denied.

Enable IP Control	☑			
Control Type	Blacklist			▼
Start IP	. . .			
End IP	. . .			Add

No.	Start IP	End IP	Edit	Delete
1	204.4.1.15	204.4.1.15	✏	🗑

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

ONVIF Authentication

Enable ONVIF authentication under **Menu** > **System** > **Security** > **ONVIF Auth** so a username and password will be required for ONVIF-based device access.

Select the check box and then click **Apply**.

Enable Authentication	☑

Note: If enabled, a username and password will be required for access by ONVIF.

ARP Protection

Prevent APR attacks by verifying the gateway's MAC address in access requests. If you switch the NIC working mode, the enabled ARP protection will be disabled automatically.

1. Click **Menu** > **System** > **Security** > **ARP Protection**.

Select NIC	NIC1
Enable ARP Protection	☑
Gateway	204 · 4 · 1 · 1
Gateway MAC Address	Auto ▾

2. Select the desired NIC and then select **Enable ARP Protection**.
3. Obtain the gateway's MAC address automatically, or select **Custom** and input the MAC address.
4. Click **Apply** to save the settings.

802.1x

Only some models support this function. If you switch the NIC working mode, the enabled 802.1x will be disabled automatically.

1. Click **Menu** > **System** > **Security** > **802.1x**.
2. Select the desired NIC and select the check box to enable 802.1x.
3. Select the EAPOL version, and then enter the username and password set in the network switch.
4. Click **Apply**.

13 System Maintenance

System Information

Click **Menu** > **Maintain** > **System Info** to view the basic NVR information for maintenance purpose.

System Info

View the basic information such as the device model, serial number, and firmware version.

Basic Info

Product Model	NVR
Serial Number	210235T0E51234567890
Firmware Version	R2317P15

Camera status

Click the **Camera** tab to view camera status. The **Status** column indicates whether a camera is online or offline and the cause of offline. The On or Off means whether the alarm is enabled or disabled.

Camera	Name	Status	Motion	Tampering
D1	IP Camera 01	Offline(Network Disconnected)	Off	Off
D2	IP Camera 02	Offline(Network Disconnected)	Off	Off
D3	IP Camera 03	Offline(Network Disconnected)	Off	Off
D4	IP Camera 04	Offline(Network Disconnected)	Off	Off
D5	IP Camera 05	Offline(Network Disconnected)	Off	Off
D6	IP Camera 06	Offline(Network Disconnected)	Off	Off

Recording status

Click the **Recording** tab to view recording status and stream settings.

Camera	Name	Type	Status	Diagnosis	Stream Type	fps
D1	IP Camera 01	None	No Recording	Camera Offline	None	0
D2	IP Camera 02	None	No Recording	Camera Offline	None	0
D3	IP Camera 03	None	No Recording	Camera Offline	None	0
D4	IP Camera 04	None	No Recording	Camera Offline	None	0
D5	IP Camera 05	None	No Recording	Camera Offline	None	0
D6	IP Camera 06	None	No Recording	Camera Offline	None	0
D7	IP Camera 07	None	No Recording	Camera Offline	None	0
D8	IP Camera 08	None	No Recording	Camera Offline	None	0
D9	IP Camera 09	None	No Recording	Camera Offline	None	0
D10	IP Camera 10	Normal	Ongoing	Normal	Main Stream	25

Online user

Click the **Online User** tab for information about users who are currently logged in.

No.	Username	IP Address	Login Time
1	admin	127.0.0.1	2016-04-13 23:03:55

Disk status

Click the **Disk** tab to view the hard disk status and disk properties.

Disk No.	Total(GB)	Free(GB)	Status	Vendor	Property
1	0.00	0.00	No Disk		
2	1863.02	0.00	Normal	SEAGATE	Read/Write

Total Capacity(GB)	1863.02
Free Space(GB)	0.00

Decoding card status

Click the **SlotStatus** tab to view the decoding card status. This function is available to some models only.

Network Information

Traffic

Click **Menu** > **Maintain** > **Network Info** > **Traffic** to view network traffic information.
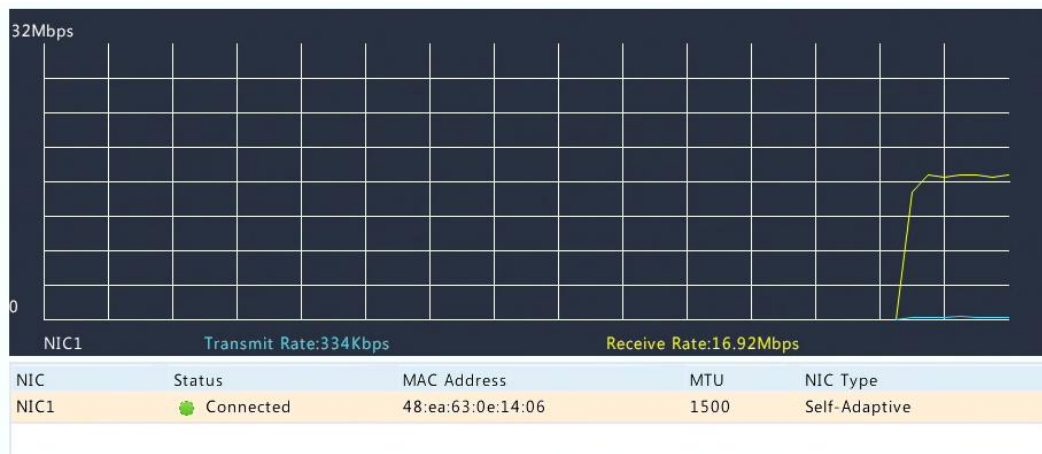
Network Detection

Click **Menu** > **Maintain** > **Network Info** > **Net Detect**.

To test network delay and packet loss rate, enter the test address and then click **Test**.

To capture and save packets, select the USB storage device, specify the port number and IP address, and then click right to the desired NIC.

> **NOTE!**
>
> - The backup file of the captured packets is named in *NIC name_time*.pcap format and is saved in the root directory of the USB storage device. Click **Open** to view the file.
> - Packets cannot be captured if it is already started on the Web interface.
> - If you use the UNP client or PPPoE, a virtual NIC will appear in the list after the dial-up succeeds, and you may capture packets sent to and from this NIC.

Network Settings

Click **Menu** > **Maintain** > **Network Info** > **Network** to view network settings.

IP Obtainment Mode	Static
IPv4 Address	204.4.1.90
IPv4 Subnet Mask	255.255.255.0
IPv4 Default Gateway	204.4.1.1
Preferred DNS Server	8.8.8.8
Alternate DNS Server	8.8.4.4
Internal NIC IPv4 Addr.	172.16.0.1
PPPoE	Off
PPPoE Address	0.0.0.0
PPPoE Subnet Mask	0.0.0.0
PPPoE Default Gateway	0.0.0.0

Network Statistics

Click **Menu** > **Maintain** > **Network Info** > **Network Statistics**. Bandwidth usage statistics are displayed.

Type	Bandwidth
IP Camera	15Mbps
Remote Live View	0bps
Remote Playback	0bps
Idle Receive Bandwidth	145Mbps
Idle Send Bandwidth	96Mbps

> **NOTE!**
> - Insufficient receiving bandwidth (**Idle Receive Bandwidth**) may cause the connected cameras to be offline.
> - When the sending bandwidth (**Idle Send Bandwidth**) is sufficient, remote live view, playback or download may fail on the NVR.

Log Query

Logs contain information about user-performed operations and device status. By analyzing logs, you can keep track of device operation status and view detailed alarm information.

1. Click **Menu** > **Maintain** > **Log**.
2. Set query conditions, including the start and end times, main type and sub type.
3. Click **Query**.

Start Time		2016	-	04	-	13	⬍	00	:	00	:	00	⬍
End Time		2016	-	04	-	13	⬍	23	:	59	:	59	⬍
Main Type		All											▼
Sub Type		All Types											▼

Username	Operation Time	IP	Camera	Play	Main Type	Su
admin	2016-04-13 23:03:55	127.0.0.1		—	Operation	Q
admin	2016-04-13 23:03:55	127.0.0.1		—	Operation	L
admin	2016-04-13 09:57:37	127.0.0.1		—	Operation	L
	2016-04-13 09:45:21		D9	▶	Alarm	V
	2016-04-13 09:45:21	204.4.1.110	D9	▶	Notification	C
admin	2016-04-13 09:45:15	127.0.0.1		—	Operation	Q
	2016-04-13 09:45:06		D9	▶	Alarm	V
admin	2016-04-13 09:32:28	127.0.0.1		—	Operation	S
admin	2016-04-13 09:27:09	127.0.0.1		—	Operation	D
admin	2016-04-13 09:24:38	127.0.0.1		—	Operation	Q

◀   ▶   1 / 17   ➡

4. If ▶ is displayed under **Play**, you may click ▶ to view the recording that started one minute before the alarm time and ended ten minutes after the alarm time. — means this functions is not available.

5. To export logs to an external storage device, click **Export**, set the export destination and format, and then click **Backup**.

Import/Export

Configurations and maintenance information can be exported to a storage device and saved as files for backup. A configuration file can also be imported to the NVR to restore configurations. The configuration file of an NVR can be imported to multiple NVRs of the same model if you want them to have the same settings. If the imported configuration file contains camera information, the related camera will be added to all the NVRs.

Only admin can perform these operations.

1. Click **Menu** > **Maintain** > **Backup**.

2. To export device configurations, specify the destination directory and then click **Export**. A .xml file will be created in the specified directory when export is completed.

3. To export maintenance information, specify the destination directory and then click **Export Maintain Info**. A .tgz file will be created in the specified directory when export is completed.

4. To import device configurations, double-click the target folder containing the .xml file, select the file, and then click **Import**.

ⓘ **CAUTION!**

Delete files with caution. Deleted files cannot be recovered.

System Restoration

Use this function to restore some or all factory default settings. The NVR will restart automatically to complete this operation. Recordings and operation logs will not be deleted.

1. Click **Menu** > **Maintain** > **Restore**.
2. Click **Default** to restore factory default settings except network and user settings, or click **Factory Default** to restore all factory default settings.

Automatic Maintenance

Set the NVR to restart as scheduled and delete files (including recordings and snapshots) as needed. Only admin can perform this operation.

1. Click **Menu** > **Maintain** > **Auto-Function**.
2. Set an auto-restart time, and choose a way to delete files automatically.

Auto-Restart	Tuesday	▼	02:00	▼
Auto-Delete File	Never	▼	1	day(s) ago

ⓘ **CAUTION!**

Files deleted automatically cannot be recovered.

System Upgrade

Upgrade the NVR under **Menu** > **Maintain** > **Upgrade** locally (using an upgrade file saved in a USB storage device) or by cloud (through a cloud server).

To upgrade by cloud, ensure that the NVR is connected to a fully functional DNS server (configured under **Menu** > **System** > **Network** > **Basic**), and click **Check** to see whether a newer version is available. The time that a cloud upgrade takes is affected by network connection status.

ⓘ **CAUTION!**

Make sure power is not interrupted during upgrade. A power failure during system upgrade may cause startup failure. Use an Uninterrupted Power Supply (UPS) if necessary.

Hard Disk Detection

S.M.A.R.T. Test

S.M.A.R.T. checks the head, platter, motor, and circuit of hard disks to evaluate their health status.
Click **Menu** > **Maintain** > **HDD** > **S.M.A.R.T. Test**.

☐ Continue to use the disk when it fails to pass evaluation.

Select Disk	Slot2	▼
Test Type	Short	▼
Test Status	Not tested	
Vendor	SEAGATE	
Model	ST2000VX000-9YW1CV12	
Disk Temperature(℃)	39	
Operation Time(day)	804	
Self-Evaluation	Pass	
Overall Evaluation	Healthy	

ID	Attribute Name	Status	Flag	Threshold	Value	Worst	Raw Value
1	Raw_Read_Error_Rate	Healthy	0x000f	6	115	99	85936664
3	Spin_Up_Time	Healthy	0x0003	0	96	94	0
4	Start_Stop_Count	Healthy	0x0032	20	100	100	354
5	Reallocated_Sector_Count	Healthy	0x0033	36	100	100	0
7	Seek_Error_Rate	Healthy	0x000f	30	85	60	36859343
9	Power_On_Hours	Healthy	0x0032	0	78	78	19310
10	Spin_Retry_Count	Healthy	0x0013	97	100	100	0
12	Power_Cycle_Count	Healthy	0x0032	20	100	100	343

Test   Apply   Back

🖋 **NOTE!**

- Some hard disks only support some of the test items.
- Evaluation status includes **Healthy**, **Failure**, and **Bad Sectors**. It is recommended to replace the disk immediately if the status is **Failure**. For further information about hard disks, contact your local dealer.

Bad Sector Detection

Bad sector detection checks for bad sectors in hard disks.
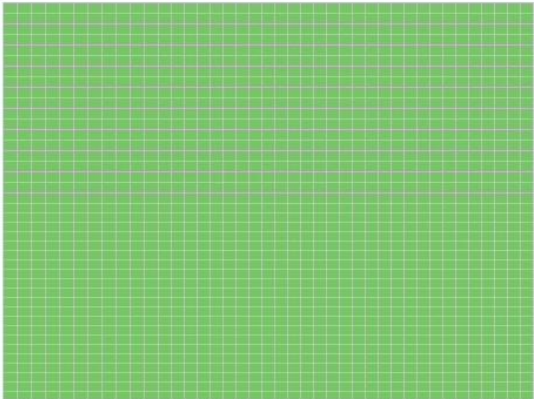
1. Click **Menu** > **Maintain** > **HDD** > **Bad Sector Detect**.

HDD Capacity	1863.02 GB
Block Capacity	1.16 GB
Status	Not detected
Error Count	0

Detect   Stop   Error Info

🟩 Normal   🟥 Damaged

2. Select the desired disk and detection type, and then click **Detect** to start detection. Click **Stop** if you want to stop.

Select Disk	Slot2	▼
Detect Type	Key Area	▼

	HDD Capacity	1863.02 GB
	Block Capacity	1.16 GB
	Status	Detection completed
	Error Count	0

Detect   Stop   Error Info

■ Normal   ■ Damaged

ⓘ **CAUTION!**

The detection stops automatically when the error count reaches 100.

---

14 Shutdown

Click **Menu** > **Shutdown** and then log out, restart or shut down as needed. To shut down the NVR, you may also long-press the power button on the front panel (if available) for around three seconds till an on-screen message appears, and then click **Yes**.

Logout   Restart   Shutdown
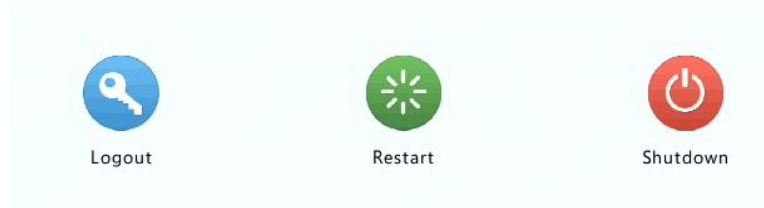
🛈 **CAUTION!**

Unsaved settings will be lost if the NVR is shut down unexpectedly, for example, due to a power failure. An incorrect shutdown during a system upgrade may cause startup failures.

Part II Web-Based Operations

1 Before You Begin

You may access and manage your NVR remotely through the Web interface. Check the following before you begin:
- Access will be authenticated during login, and operation permissions will be required.
- The client PC is operating properly and has a network connection to the NVR.
- The client PC uses the Windows XP, Windows 7 or Windows 8 operating system.
- A Web browser has been installed on the client PC. Microsoft Internet Explorer 8.0 or higher is recommended. Chrome and Opera browsers are also supported.
- A 32-bit Web browser is still required even if you are using a 64-bit operating system.

📝 **NOTE!**
- The parameters that are grayed out on the Web GUI cannot be modified. The parameters and values displayed may vary with NVR model.
- The figures are for illustration purpose only and may vary with NVR model.

2 Login

1. Open a Web browser on your computer and browse to the login page by entering the IP address (**192.168.1.30** by default) of your NVR.
   You may need to install a plug-in as prompted at your first login. Close the Web browser when the installation starts.
2. In the login dialog box, enter the correct username and password (**123456** for admin) and then click **Login**.

🛈 **CAUTION!**

The default password is intended only for the first login. Please change it immediately after your first login to ensure security

3 Live View

The **Live View** page is displayed when you are logged in. The following figure shows an example.
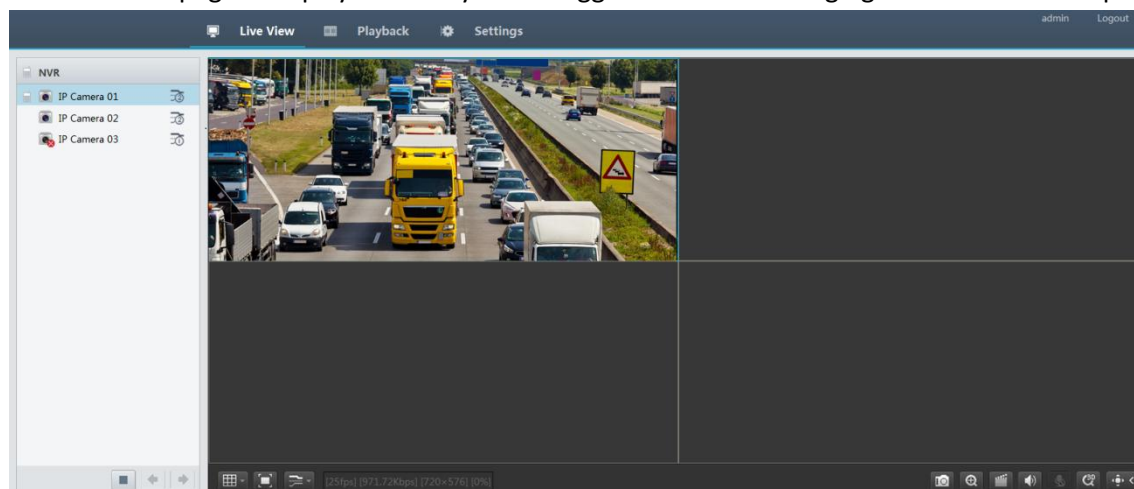
Table 3-1 Live View Window Control Buttons

Button	Description	Button	Description
	Two-way audio	/	Main/Sub stream
/	Start or stop live view in all windows	/	Previous and next screen
	Switch screen layout		Full screen
	Select stream type	[25fps] [3.96Mbps] [1920×1088] [0%]	Shows the current frame rate, bit rate, resolution, and packet loss rate
	Take a snapshot		Start zoom
	Local recording	/	Turn on or off audio; adjust sound volume.
/	Adjust MIC volume		3D positioning
/	Open or close the control panel	–	–

📝 **NOTE!**

- A snapshot file is named in this format: *IP_camera ID_snapshot time*. For example, 192.168.1.30_D1_20150711102123239.jpg. The snapshot time is in *YYYYMMDDHHMMSSMS* format.
- By default, snapshots are saved in this directory: C:\Users*username*\Surveillance\Snap*system date*. The system date is in *yyyy-mm-dd* format*.
- A local recording is named in this format: *IP_camera ID*_S *recording start time* E *recording end time*. The recording start and end times are in *hh-mm-ss* format.
- By default, local recordings are saved in this directory: C:\Users*username*\Surveillance\Record*system date*. The system date is in *yyyy-mm-dd* format.

4 Playback

Click **Playback** on the top to show the **Playback** page. The following figure shows an example.
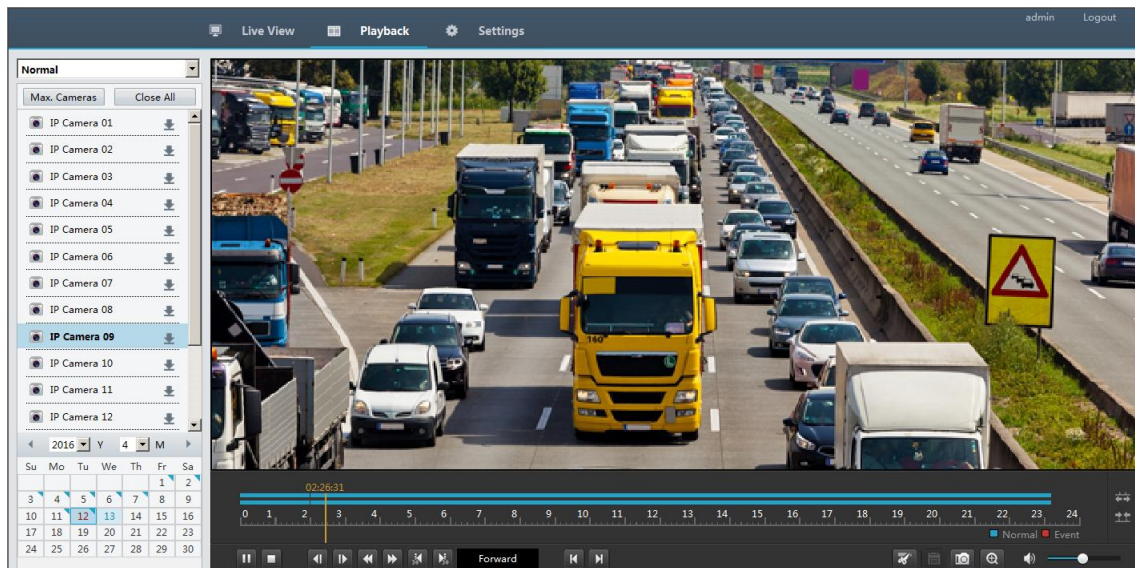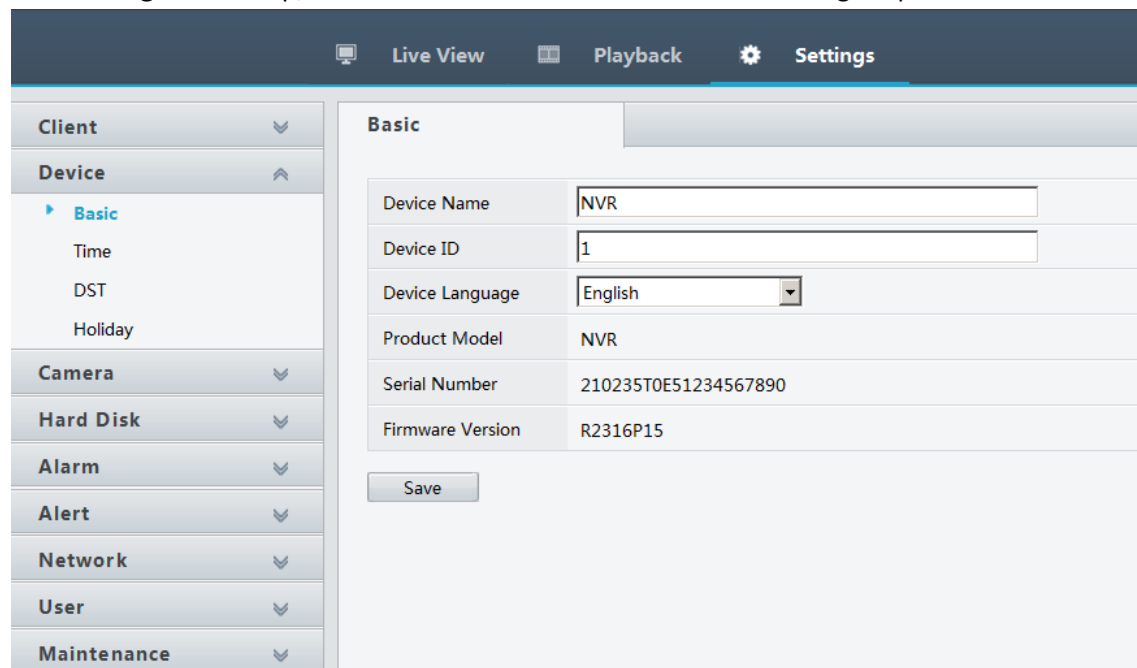
Table 4-1 Playback Control Buttons

Button	Description	Button	Description
▶/⏸/⏹	Play, pause, or stop	◀‖ / ‖▶	Rewind or forward by frame
◀◀ / ▶▶	Slow down or speed up	◀30 / 30▶	Rewind or forward 30 seconds
◀ / ▶	Previous or next period	✂ / ✂	Clip video/pause
💾	Save video clip	📷	Take a snapshot

Button	Description	Button	Description
	Zoom		Adjust sound volume; turn on or off sound

5 Configuration

Click **Settings** on the top, and then click the menus on the left to configure parameters.

Appendix A Typical Applications

Typical Application 1

The NVR, IP cameras, and PC are connected on a private network (or LAN). The IP cameras can be connected to the NVR directly or via a switch. And you manage the NVR and the connected IP cameras through the monitor or using a web browser on the PC.

Typical Application 2
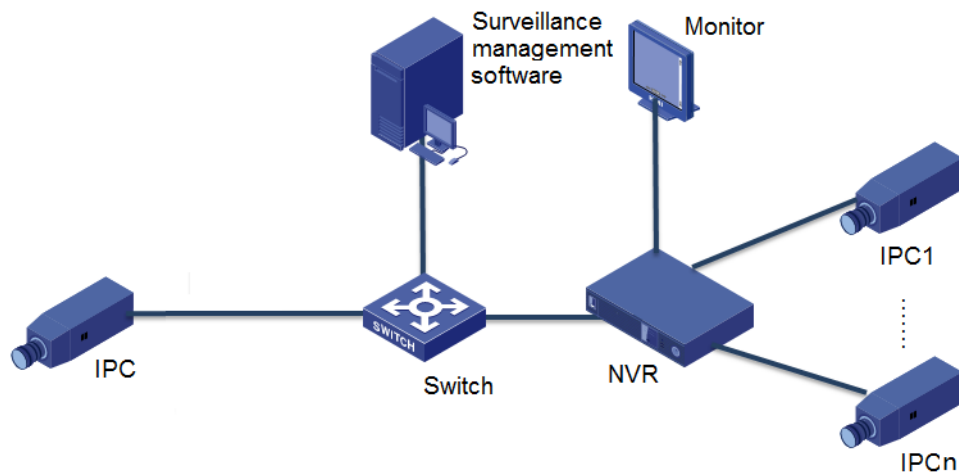
The NVR, IP cameras, and PC are connected on a private network (or LAN). The IP cameras can be connected to the NVR directly or via a switch. The PC is installed with surveillance management

software. You can manage the NVR and the connected IP cameras using the surveillance software or through the monitor.

Typical Application 3

The NVR and the connected IP cameras are located on a private network (or LAN), and you manage these devices through the cloud server, a cloud solution for device management over Internet. After registering a cloud account and properly configuring your network devices (including router), you can manage your NVR and the connected IP cameras from a PC or a mobile phone.
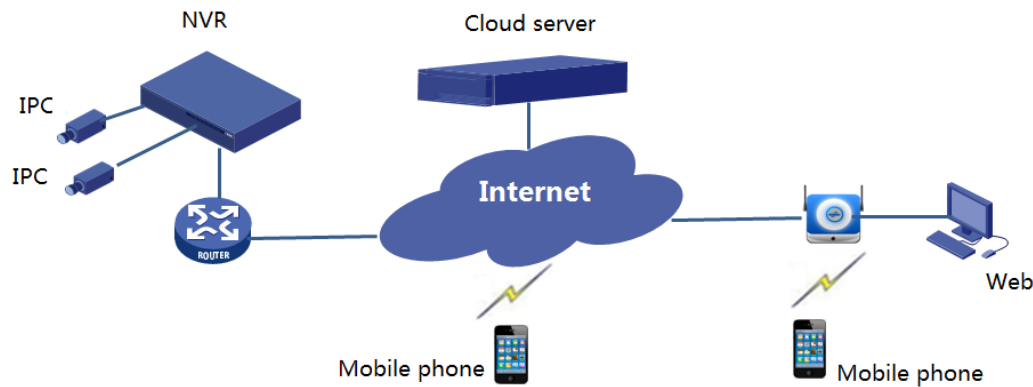
Appendix B Acronyms

Acronym	Description
CBR	Constant Bit Rate
DDNS	Dynamic Domain Name Service
DHCP	Dynamic Host Configuration Protocol
DST	Daylight Saving Time
DVS	Digital Video Server
FTP	File Transfer Protocol
HDMI	High Definition Multimedia Interface
HTTPS	Hypertext Transfer Protocol Over Secure Sockets Layer
IPC	IP Camera
JPEG	Joint Photographic Experts Group
MTU	Maximum Transfer Unit
NAT	Network Address Translation
NIC	Network Interface Card

Acronym	Description
NTP	Network Time Protocol
NVR	Network Video Recorder
ONVIF	Open Network Video Interface Forum
PoE	Power over Ethernet
PPPoE	Point-to-Point Protocol over Ethernet
PTZ	Pan, Tilt, Zoom
RTSP	Real-Time Streaming Protocol
SDK	Software Development Kit
S.M.A.R.T.	Self-Monitoring, Analysis and Reporting Technology
UPnP	Universal Plug-and-Play
USB	Universal Serial Bus
VGA	Video Graphics Array
VBR	Variable Bit Rate

Appendix C FAQs

Problem	Possible Cause and Solution
The Web plugin (ActiveX) cannot be loaded.	- Close your web browser when the installation starts. - Disable the firewall and close the anti-virus program on your computer. - Enable your Internet Explorer(IE) to check for newer versions of the stored pages every time you visit the webpage (**Tools** > **Internet Options** > **General** > **Settings**). - Add your NVR's IP address to the trusted sites in your IE (**Tools** > **Internet Options** > **Security**). - Add your NVR's IP address to the Compatibility View list in your IE (**Tools** > **Compatibility View Settings**). - Clear your IE's cache.
No images are displayed in live view on the Web interface.	Check if the bit rate is 0Mbps in the live view window. - If yes, check if the firewall has been disabled, and the anti-virus program has been stopped on your computer. - If not, maybe it is because the graphics card driver on your computer is not working properly. Try installing the driver again.

Problem	Possible Cause and Solution
A camera is offline, and **No Link** is displayed.	Click **Menu** > **Maintain** > **System Info** > **Camera**. The cause is displayed in the **Status** column. Common causes include disconnected network, incorrect username or password, weak password, insufficient bandwidth. • Check network connection and network configurations. • If it indicates incorrect username or password, check that the camera password set in the NVR is the one used to access the camera's Web interface. • If it indicates denied access for weak password, log in to the camera's Web interface and set a strong password. • If it indicates insufficient bandwidth, delete other online IP devices in the NVR.
The NVR displays live video for some cameras and **No Resource** for others.	• Set the camera to encode the sub stream, and decrease its resolution to D1. • Set the NVR to use the sub stream first for live view.
A camera goes online and offline repeatedly.	• Check if network connection is stable. • Upgrade the firmware for the camera and the NVR. Contact your dealer for the latest versions.
Live view is normal, but the recording cannot be found.	• Check that a recording schedule has been properly configured. • Check if the time and time zone configured in the NVR are correct. • Check if the hard disk storing the recording has been damaged. • Check if the desired recording has been overwritten.
Motion detection is not effective.	• Check that motion detection is enabled, and the motion detection area is properly configured. • Check that triggers, including sensitivity, target size, and duration, are properly configured for motion detection. • Check that the arming schedule is properly configured.
A hard disk cannot be identified by the NVR.	• Use the power adapter delivered with your NVR. • Power down the NVR and then mount the hard disk again. • Try another disk slot. • The disk is not compatible with your NVR. Contact your dealer for a list of compatible disk models.
The mouse does not work.	• Use the mouse delivered with your NVR. • Make sure no cable is extended.