User Manual
X Series
XC 4K 32 Channel NVR
RNU01P-C8B-AB1

User Manual
X Series
XC 4K 16 Channel NVR
RNU01P-64B-AB1

Thank you for purchasing this product. Lorex Technology Inc. / Lorex Corporation is committed to providing our customers with a high quality, reliable security solution.

RNU01P-C8B-AB1

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www.lorex.com

WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF THE PLUG TO THE WIDE SLOT AND FULLY INSERT.

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1 Important Safeguards

Read and follow all instructions before installing or operating this recorder. Failure to follow these safeguards may result in product damage, loss of data, or personal injury.

Keep this manual for future reference.

1.1 Safety Instructions

- Use this product only with the power adapter supplied by Lorex.
- Do not use this recorder in wet or humid environments unless it is properly protected.
- Do not expose the recorder to dripping or splashing liquids.
- Do not place objects filled with liquids (such as vases) on top of the recorder.
- Do not block ventilation openings. Install in accordance with the instructions in this manual.
- Do not install near heat sources such as radiators, heat registers, stoves, or other devices that produce heat.
- Protect the power cord from being walked on or pinched.
- Unplug the recorder during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the unit has been damaged in any way.

1.2 Installation & Ventilation Requirements

- Proper installation ensures reliable performance and prevents overheating.
- Install the recorder on a stable, level surface.
- Leave at least 2 inches (5 cm) of space around all sides of the recorder for ventilation.
- Do not place the recorder inside a sealed enclosure unless proper airflow is provided.
- Avoid installing in dusty, dirty, or high-vibration environments.
- Operate within the operating temperature range specified in the technical specifications.

NOTE
Overheating may cause system instability or hard drive failure.

1.3 Electrical & Battery Safety Notices

- Use only the type of power source indicated on the marking label.
- Ensure the power outlet is easily accessible.
- Do not overload electrical outlets or extension cords.
- Do not attempt to open or modify the power adapter.
- If the power adapter or cord becomes damaged, discontinue use immediately.

Internal Battery Notice

- The battery is not user-serviceable.
- Replacement should only be performed by qualified personnel.
- Incorrect replacement may result in risk of explosion.

1.4 Hard Drive Safety

This recorder supports internal hard drives for video storage.

- Always power off and unplug the recorder before installing or replacing a hard drive.
- Use surveillance-grade SATA hard drives recommended for continuous recording.
- After installing a new hard drive, it must be formatted using the recorder before use.

2 What's Included

Your NVR package includes the following accessories:

XC 4K Channel NVR

Power Adapter

HDMI Cable

USB Mouse

8 × HDD Screws

2 × Alarm I/O Terminal Block Connectors

4 × Adhesive Foam Feet Pads

2 × Mounting Brackets

6 × Mounting Bracket Screws

NOTE

- Hard drives may be pre-installed depending on your model. Please refer to 11.2.1 *Install and replace the Hard Drive*, page 68.
- Cameras and additional accessories may be sold separately.
- For mounting bracket installation and recorder connection instructions, see 4 *NVR Setup*, page 5.

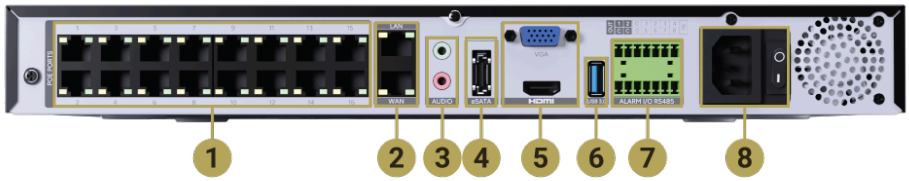
3 Recorder Overview

This chapter provides an overview of the recorder's front panel indicators and back panel connections. Review these components before installation so you can identify each port and connect the system correctly.

3.1 Front Panel

1. **Status Indicators:**
   - **PWR Indicator:** Illuminates when the recorder is powered on. Turns off when the recorder is shut down.
   - **HDD 1 / HDD 2 Indicator:** Flashes when the recorder is reading from or writing to the installed hard drives. This recorder supports up to two internal SATA hard drives. See 11.2.1 *Install and replace the Hard Drive*, page 68 for installation and replacement instructions.
2. **USB Ports:** Two front USB ports are available:
   - **KB/MOUSE:** Used to connect a USB mouse for system operation.
   - **BACKUP:** Used to connect a USB storage device for exporting recorded video files.

3.2 Back Panel



1. **16 PoE Camera Ports:** Used to connect compatible IP cameras directly to the recorder. Each port provides both power and data over a single Ethernet cable.
2. **Network Ports:**
   - **LAN Port:** Connects the recorder to your local network for system access, remote viewing, and network services.
   - **WAN Port:** Used in supported network configurations where a separate external network connection is required.
3. **Audio I/O:** Used to connect compatible audio input and output devices, depending on your recorder and camera configuration. See 9 *Audio Setup*, page 57 for details.
4. **eSATA Port:** Used to connect compatible external storage devices.
5. **Video Output Ports:**
   - **HDMI Port:** Connects the recorder to a monitor or TV.
   - **VGA Port:** Provides an alternative monitor connection.

6. **USB 3.0 Port**: Used to connect a USB storage device for backup or firmware updates, or a USB mouse if needed.
7. **Alarm I/O RS485:** Terminal connections for compatible external alarm devices and RS485 devices. See 12 *Events & Alarm*, page 85 for alarm configuration instructions.
8. **Power Connection:**

   - **Power Port**: Connect the included power cable.
   - **Power Switch**: Used to turn the recorder on or off.

   NOTE
   Always use the power cable supplied with the recorder.

4 NVR Setup

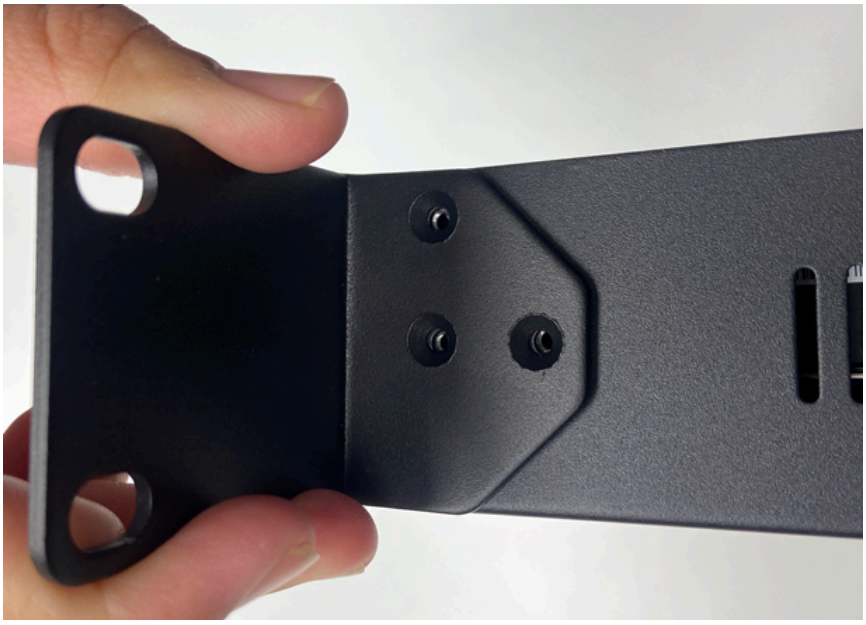
This chapter explains how to connect the recorder and complete the initial system setup. For first-time configuration, connect the recorder to a monitor and use a USB mouse to navigate the interface.

4.1 Install the Mounting Brackets

This recorder includes two mounting brackets for optional installation. Each bracket attaches to one side of the recorder using three included mounting bracket screws.

To install the mounting brackets

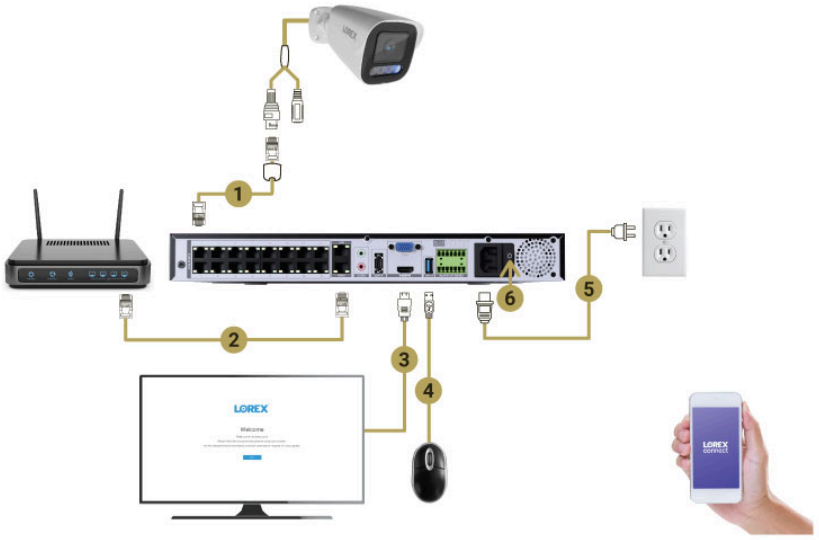
1. Place the recorder on a stable, flat surface and locate the **2 mounting brackets** and **6 mounting bracket screws** included with the recorder.
2. Position one mounting bracket on one side of the recorder near the front panel and align the three bracket holes with the three mounting holes on the recorder.



3. Use **3 mounting bracket screws** to secure the bracket.

4. Repeat the same steps on the opposite side using the second mounting bracket and the remaining **3 screws**.

4.2 Connecting the Recorder



1. **Connect Cameras:** Connect compatible IP cameras to the recorder. Cameras can be connected directly to the built-in PoE ports on the back panel or through your local network using a router or external PoE switch, depending on your installation. For detailed instructions, refer to 5.1 *Connect Cameras to the NVR*, page 21.
2. **Connect to the Network:** Connect an Ethernet cable from your router to the **LAN** port on the back panel.

   This enables:

   - Lorex Connect app access
   - Remote viewing
   - Text notifications
   - Firmware updates

3. **Connect a Monitor:** Connect a monitor using **HDMI** or VGA. Power on the monitor and select the corresponding input source.
4. **Plug in the Mouse:** Connect a USB mouse to the **KB/MOUSE** port on the front panel.
5. **Connect Power:** Connect the included power cable to the power port on the back panel and plug the power cable into a surge-protected outlet.
6. **Turn On the NVR:** Turn on the **power switch** on the back panel.
7. **Complete Setup**: Follow the on-screen steps to complete the **Lorex Setup Wizard**, see 4.5 *Running the Lorex Setup Wizard*, page 9 for full details.

4.3 Using the Mouse

The mouse allows you to easily navigate and interact with your NVR system. Here is how to use each function:

1. **Left Button**

1.1. **Click** to select options from any menu.
1.2. **Double-click** a channel in split-screen view to switch to full-screen. Double-click again to return to split-screen.
1.3. **Click** a channel during live view to open the Camera Quick Toolbar. For detailed instructions, refer to 6.4 *Quick Camera Toolbar*, page 29.
1.4. In **Live View**, **hover** over the bottom of the screen to display the Navigation Bar. For detailed instructions, refer to 6.5 *Navigation Bar*, page 30.
1.5. **Click** and hold to adjust sliders and scales in the menus.

2. **Right Button**

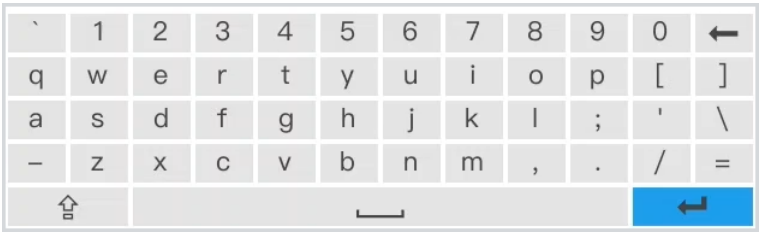
2.1. **Click** to go back or close any open menus.
2.2. **Right-click twice** during live view to open the **Main Menu**. Right-click again to close the menu.

3. **Scroll Wheel**

3.1. **Scroll** to navigate up or down through menu options.
3.2. **Scroll** over the volume control to increase or decrease system volume.
3.3. **Scroll** while in zoom mode to zoom in or out.

4.4 Using the On-Screen Keyboard

The on-screen keyboard allows you to enter text when using the recorder interface, such as when entering passwords, usernames, or network information.

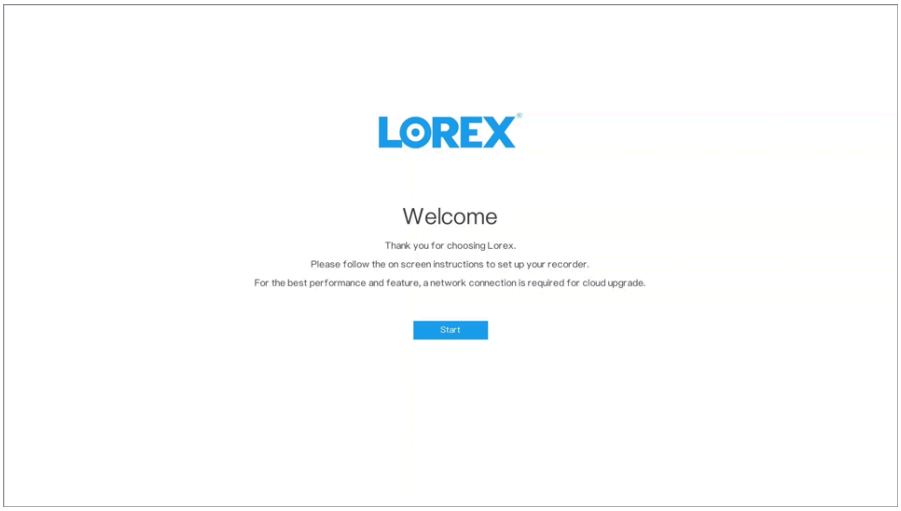


1. **Open the keyboard:** Click inside a text box to open the keyboard.
2. **Enter text:** Click the keys on the keyboard to type characters.
3. **Use Shift:** Click **Shift** to enter capital letters or additional symbols.
4. **Finish typing:** Click **Enter** to confirm the text or click outside the text box to close the keyboard.

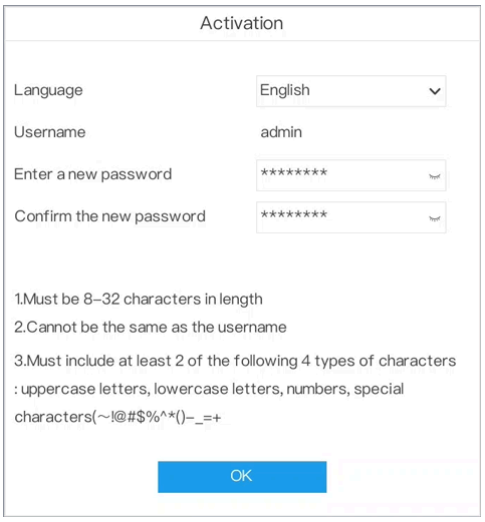
4.5 Running the Lorex Setup Wizard

Once the recorder powers on, follow the Lorex Setup Wizard to configure core system settings such as the administrator password, security questions, network settings, date and time, cameras, storage, and remote access.

1. **Welcome:** The welcome screen explains that connecting the recorder to a network allows cloud upgrades and remote viewing; click **Start** to begin setup.



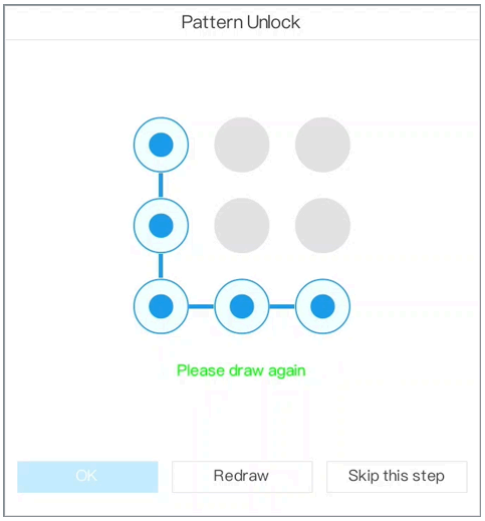
2. **Activation:** Select your preferred language, then create and confirm a secure administrator password that meets the listed requirements before clicking **OK**.



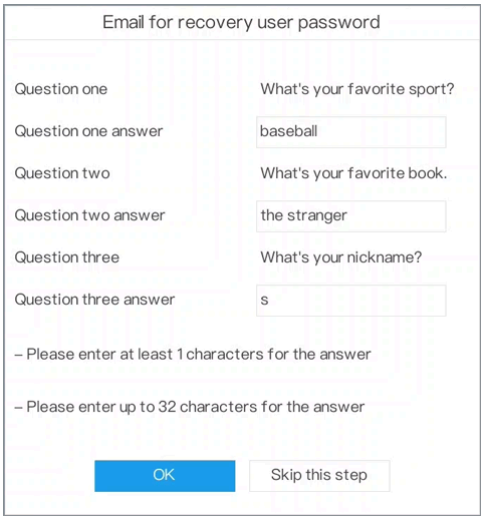
NOTE

The password you set for the NVR will be automatically applied to all connected cameras.

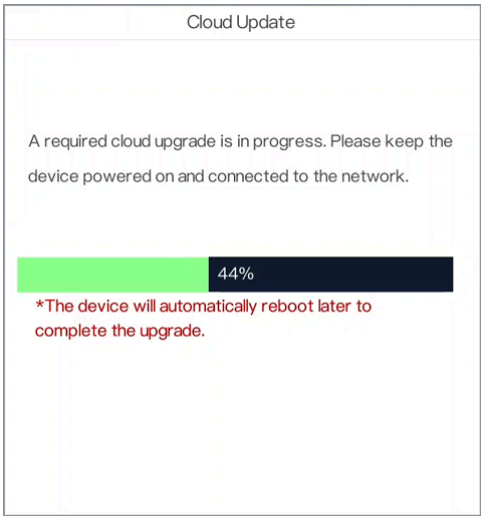
3. **Pattern Unlock:** Draw a pattern across the circles to create an optional unlock pattern for logging into the recorder, then redraw the pattern to confirm or click **Skip this step** to continue without one.



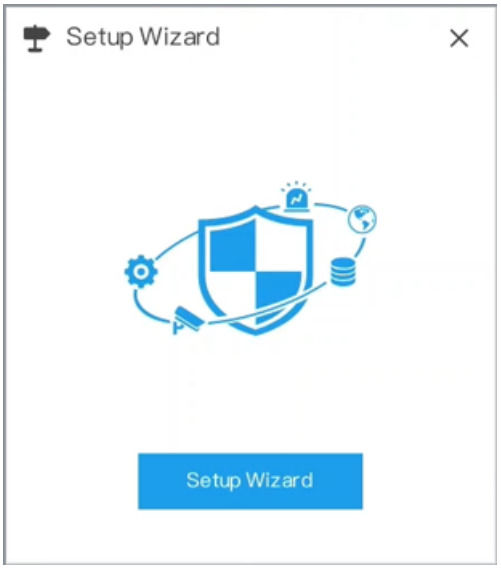
4. **Password Recovery:** Answer the three security questions to enable password recovery, then click **OK** or **Skip this step** to continue.



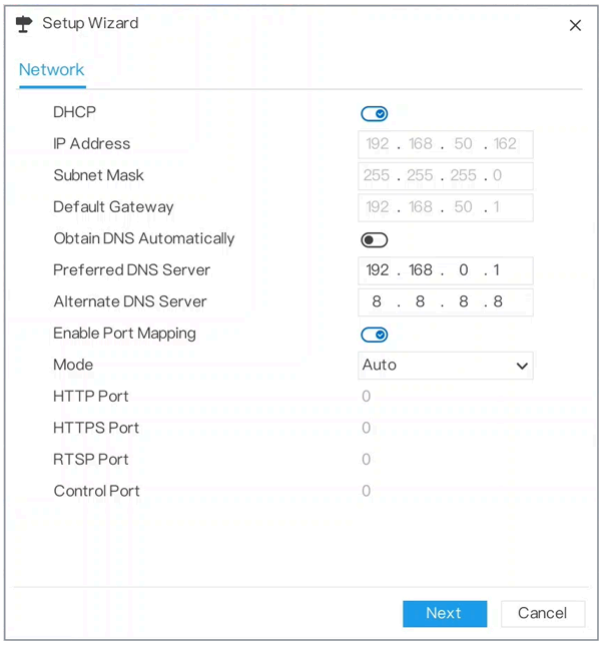
5. **Cloud Update:** If the recorder is connected to a router or network, it will automatically check for and install the latest firmware update.



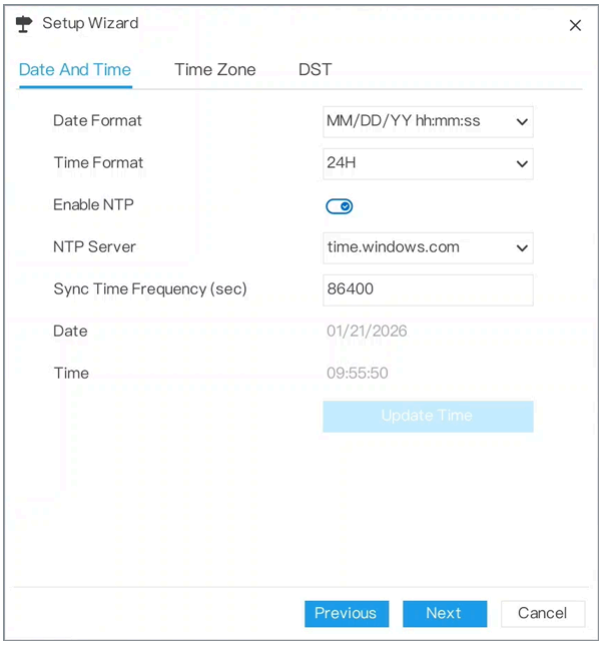
6. **Setup Wizard:** Click **Setup Wizard** to begin configuring system settings.



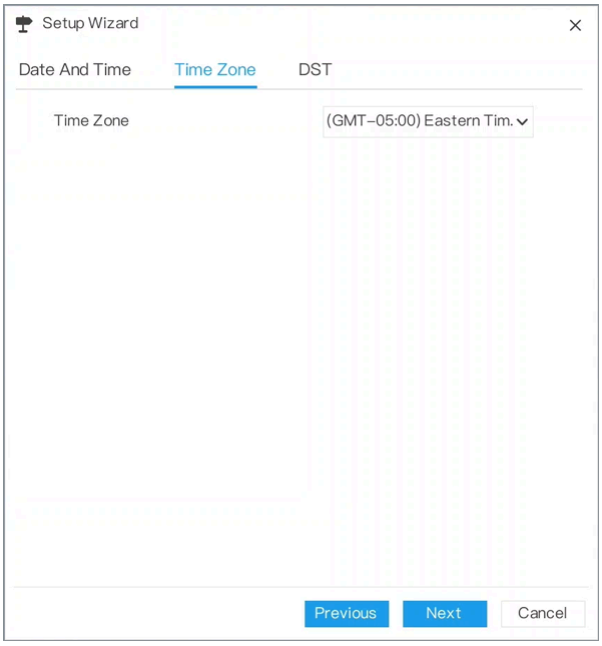
7. **Network:** Review or modify the network settings such as DHCP, IP address, DNS configuration, and port mapping, then click **Next**.



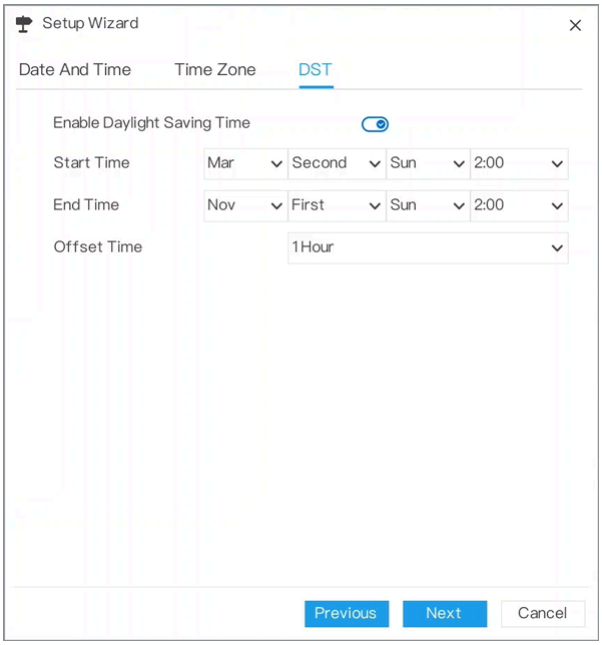
8. **Date and Time:** Select your preferred date format, time format, and NTP settings, then verify the system date and time before clicking **Next**.



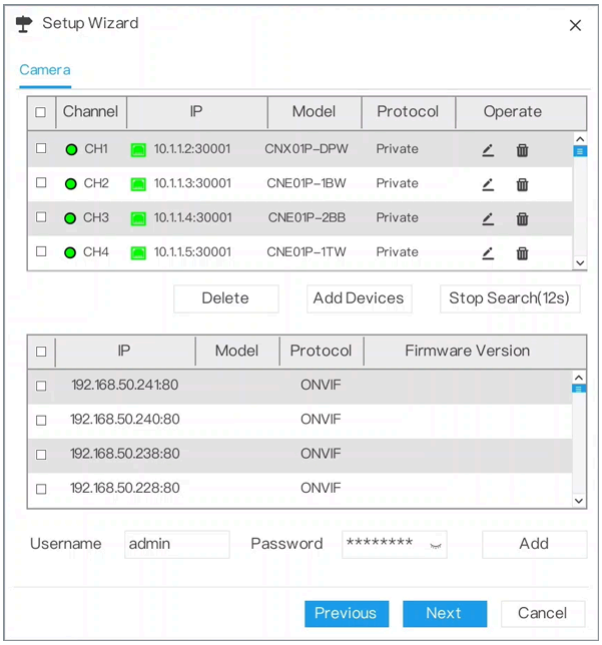
9. **Time Zone:** Select your local time zone from the drop-down list, then click **Next**.



10. **DST:** Enable or disable daylight saving time and review the start time, end time, and offset settings before clicking **Next**.

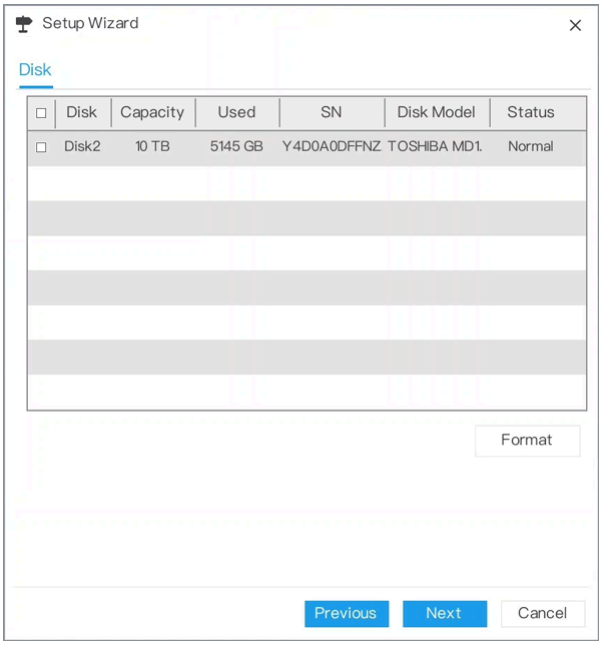


11. **Camera:** Review the list of camera channels and their connection status. Cameras connected directly to the recorder's built-in PoE ports appear automatically. Cameras connected through the same local network using a router or external PoE switch can be found using **Start Search** or added manually.

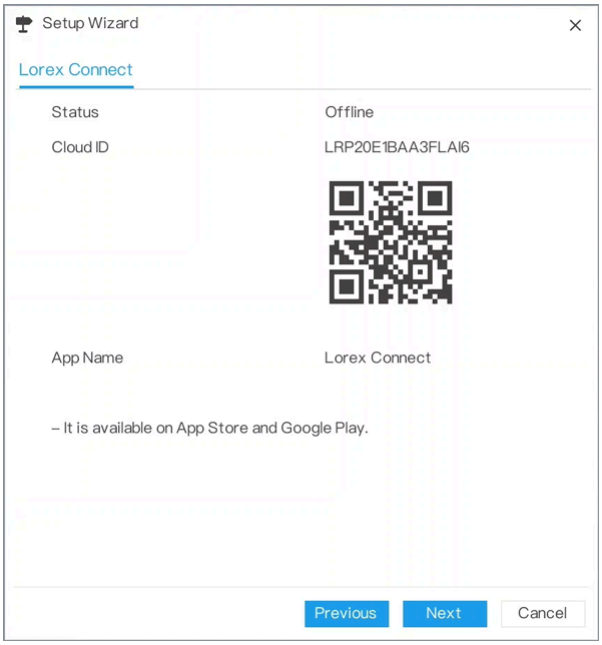


- **Start Search:** Scans the network for cameras connected to the same router or switch. Select a device from the results, enter the camera password, then click **Add**.
- **Add (+):** Manually add a camera by entering its IP address, protocol, port, username, and password.
- **Modify:** Change connection settings for an existing camera.
- **Delete:** Remove a camera from the selected channel.

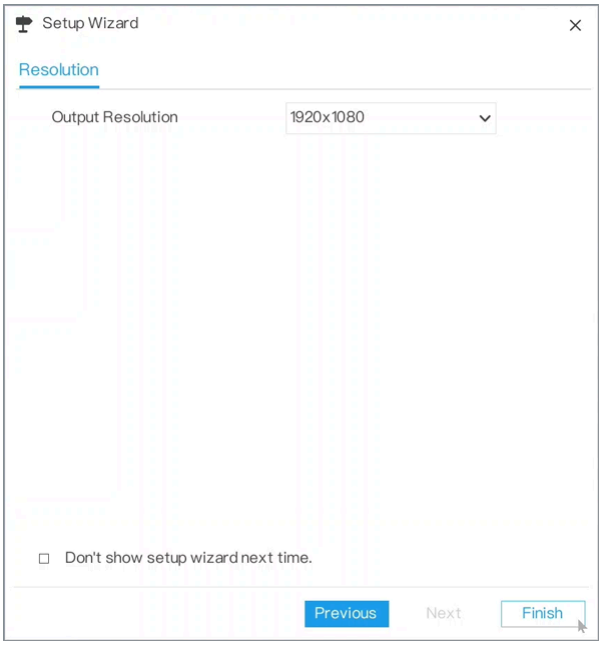
12. **Disk:** Review the installed hard drive information. If a newly installed hard drive has not yet been formatted, select the drive and click **Format** to prepare it for recording, then click **Next**.



13. **Lorex Connect App:** Download the **Lorex Connect** app from the App Store or Google Play and tap **+ Add device > Recorder**, then click **Next**.



14. **Resolution:** Select the display output resolution and optionally enable **Don't show setup wizard next time**, then click **Finish** to complete setup and enter Live View.



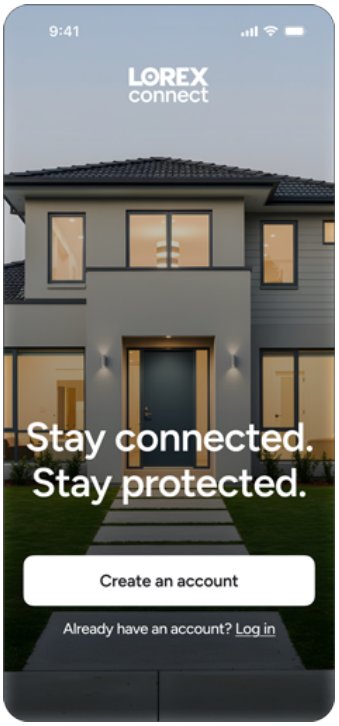
4.6 Download the Lorex Connect App for Remote Viewing

NOTE

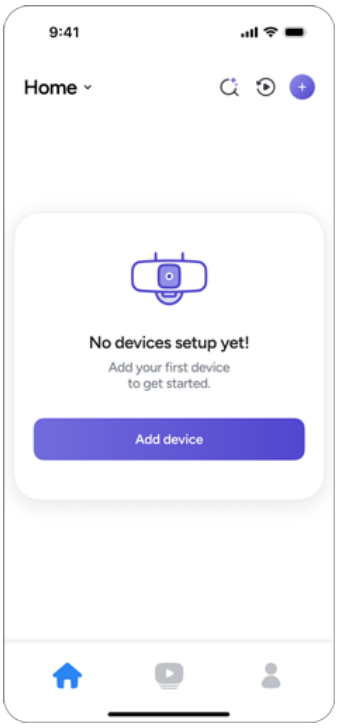
Ensure a high-speed Internet connection with at least 6 Mbps upload speed per 4K channel and 24 Mbps for the entire system.

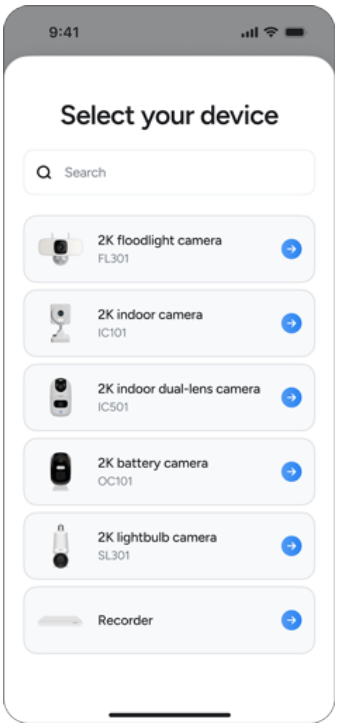
1. Download the **Lorex Connect** app from the App Store or Play Store.

2. Open the app, then **Create an account** or **Log in**.

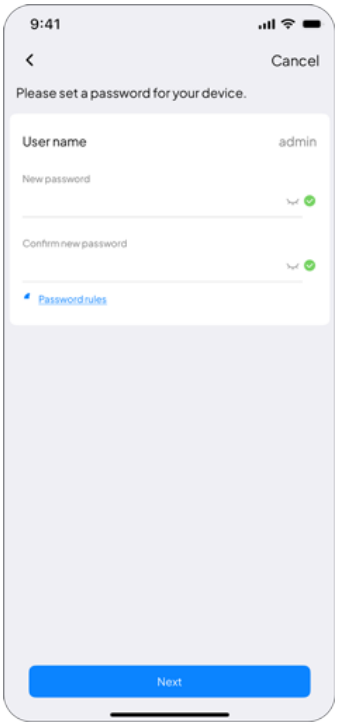


3. Tap + **Add device** and select **Recorder**. Your phone and NVR should be connected to the same network.





4. Enter your NVR's password.



For up-to-date guides on using the Lorex Connect app, visit our Support site: www.lorex.com/pages/help.

5 Camera Setup

This chapter explains how to connect, add, and configure cameras on your NVR. Depending on your recorder model, cameras can be connected directly to the built-in PoE ports or through your local network using a router or PoE switch. These instructions also explain how to add cameras manually, manage connected devices, and confirm that each camera is operating correctly.

NOTE

This recorder supports both built-in PoE camera connections and additional IP camera connections over the local network. To use channels beyond the built-in PoE ports, connect cameras through a router or external PoE switch and add them manually.

5.1 Connect Cameras to the NVR

This section explains how to connect cameras directly to the recorder or through your local network.

Cameras connected directly to the recorder's **PoE ports** are automatically detected and added to the system.

5.1.1 Connect Cameras to Built-In PoE Ports

For the simplest setup, connect cameras directly to the PoE (Power over Ethernet) ports on the back panel of the NVR. These ports provide both power and data transmission through a single Ethernet cable.

1. Connect one end of an Ethernet cable to the camera.
2. Connect the other end to one of the PoE ports on the back panel of the NVR.
3. Wait approximately **30–60 seconds** for the camera to power on and initialize.

Once detected, the camera will automatically appear in **Live View** (see 6 *Live View*, page 28).

For additional camera image options, refer to **Camera Settings** (see 7 *Camera Settings*, page 33).

For recording schedule, refer to **Recording & Storage** (see 11 *Recording & Storage*, page 67).

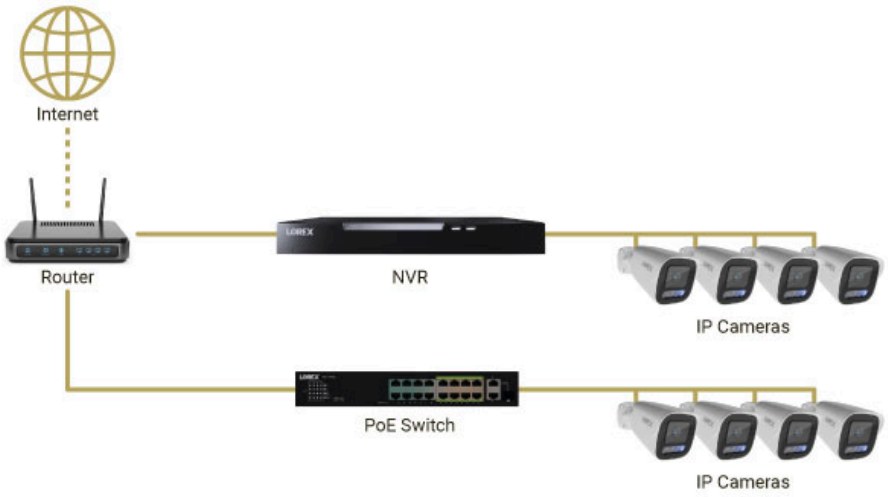
5.1.2 Connect Cameras Through the Local Network

For larger installations, cameras can also be connected to the same **Local Area Network (LAN)** as the NVR using a router or an external PoE switch.

Cameras connected through the network must be **added manually** to the recorder.

Option 1: Using a PoE Switch

A PoE switch allows multiple cameras to be connected to the same network while supplying power through the Ethernet cables.

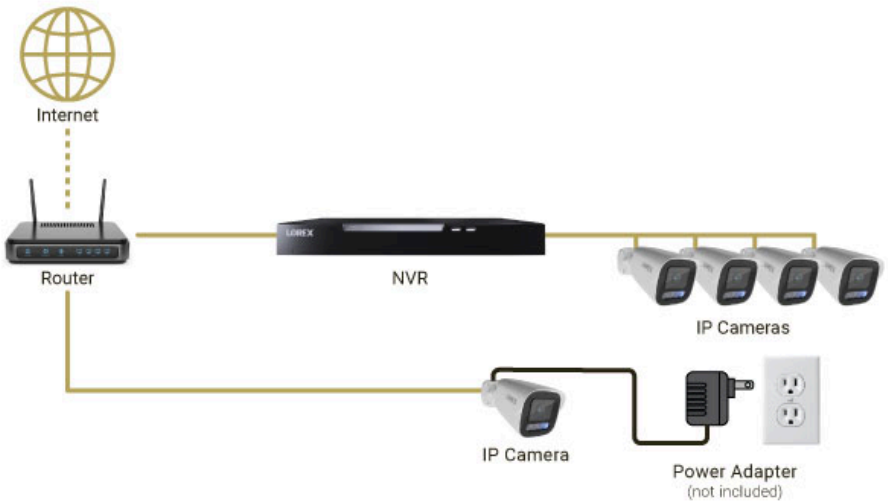


1. Connect the PoE switch to your router using an Ethernet cable.
2. Connect the PoE switch to a power source.
3. Connect each camera to the PoE switch using Ethernet cables.
4. Add the cameras to the NVR (refer to 5.2 *Adding and Managing Cameras*, page 23).

The PoE switch provides both power and network communication to each camera.

Option 2: Using a Router with Power Adapters

If your switch does not support PoE, cameras can still be connected through the router using individual power adapters.



1. Connect each camera to a compatible power adapter (You can purchase these adapters at lorex.com by searching for model numbers ACCPWR12V2A, ACCPWR12V2AH4B, or ACCPWR12V1).

2. Connect each camera to the router using an Ethernet cable.
3. Add the cameras to the NVR manually, refer to 5.2 *Adding and Managing Cameras*, page 23.

5.2 Adding and Managing Cameras

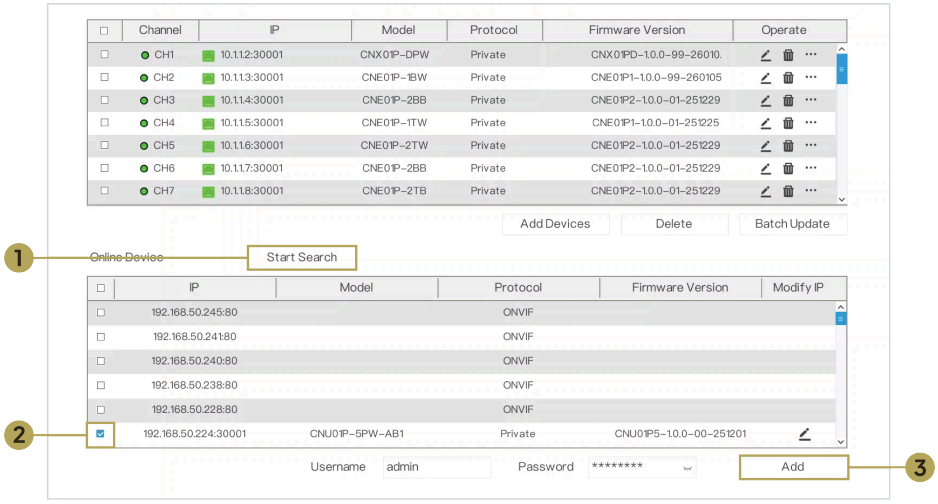
The **Camera** menu allows you to manage all connected IP cameras. From this menu, you can search for devices on the network, manually add cameras, edit connection settings, or remove cameras from the system.

Open Camera List

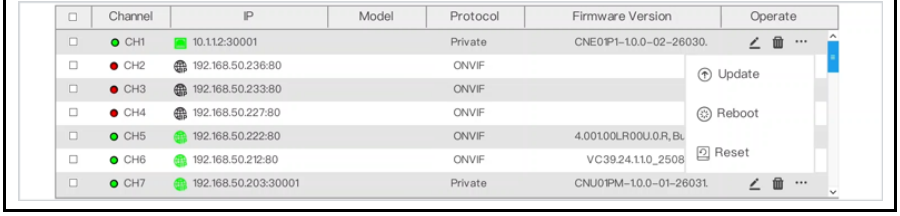
1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Camera** from the left-side menu.

Adding Cameras

The recorder can search the network for compatible cameras to add.



1. Click **Start Search** to scan the network for available cameras.
   The detected cameras will appear in the **Online Device** list below.
2. Select the camera using the checkbox.
3. Click **Add**.

> **NOTE**
>
> A **red** channel status after camera connection can indicate an authentication mismatch. This can occur when a camera is added to the recorder **after** the recorder password has been changed, because the camera may still be using its previous password. To resolve this, click **Modify** under **Operate**, update the camera password to **admin**, and save the settings. Then click the **More options menu** under **Operate** and select **Reset**. This allows the recorder to reapply its current password to the camera. The channel status changes to **green** once the camera connects successfully.
>
> 
>

The selected camera will be added to the recorder and will appear in **Live View** (see 6 *Live View*, page 28).

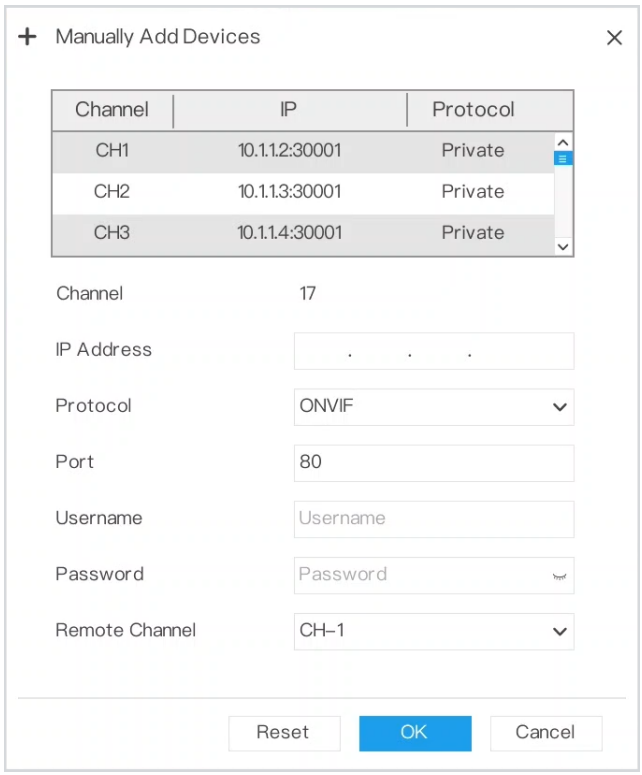
For additional camera image options, refer to **Camera Settings** (see 7 *Camera Settings*, page 33).

For recording schedule, refer to **Recording & Storage** (see 11 *Recording & Storage*, page 67).

Adding a Camera Manually

If a camera does not appear during the search, it can be added manually.

1. Click the + (**Add**) under **Operate**.
2. The **Manually Add Devices** settings will open. Enter the required connection details for the camera.



- **Channel**: Select a channel.
- **IP Address:** Enter the camera's IP address.
- **Protocol:** Select the communication protocol (for example **Private**, **ONVIF**, or **Custom**).
- **Port:** Enter the camera communication port.
- **Username:** Enter the camera login username.
- **Password:** Enter the camera password.
- **Remote Channel:** Select the channel if the camera device supports multiple channels (for example, CH1 or CH2).
  - For dual-lens cameras in **Multi Channels** mode, set the second channel to CH–2 when adding the additional lens.

3. Click **OK** to add the camera.

If the connection is successful, the camera will appear in **Live View** (see 6 *Live View*, page 28).

For additional camera image options, refer to **Camera Settings** (see 7 *Camera Settings*, page 33).

For recording schedule, refer to **Recording & Storage** (see 11 *Recording & Storage*, page 67).

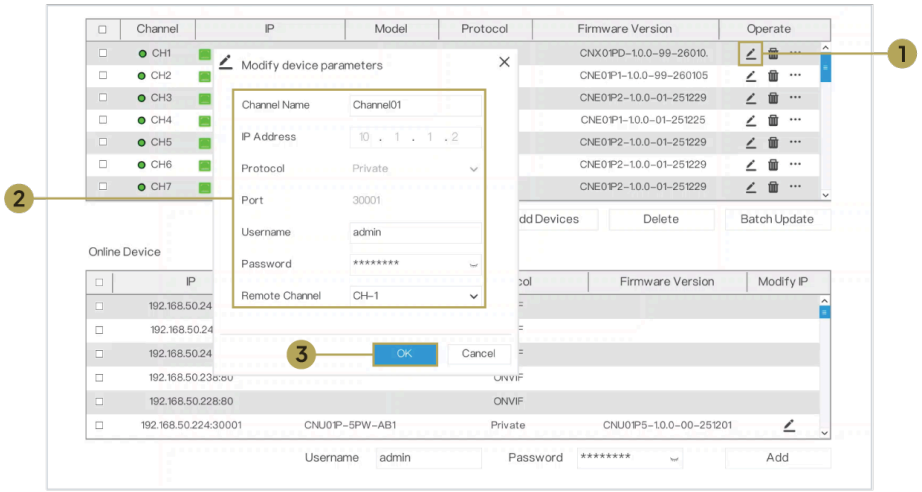
Camera Status Indicators

The **Channel** list displays the connection status for each camera. These indicators help quickly identify cameras that require attention.

- **Green icon:** Camera is connected and operating normally.
- **Black icon:** No camera is connected to the channel.
- **Red icon:** Connection issue detected. Hover over the icon to view the error message.

Modifying Cameras

You can modify camera connection settings if login credentials or network details change.



1. Locate the camera in the list and click **Modify** under **Operate**.
2. Modify the following:
   - **Channel Name:** Change the camera name displayed in Live View.
   - **IP Address**: Displays the camera IP address.
   - **Protocol**: Displays the selected protocol.
   - **Port**: Displays the communication port.
   - **Username**: Enter the updated camera username.
   - **Password:** Enter the updated camera password.
   - **Remote Channel:** Select the appropriate camera channel if applicable.
3. Click **OK** to save the changes.

Removing Cameras

To remove a camera from the recorder:

1. Select the camera using the checkbox.
2. Click **Delete** under **Operate**.

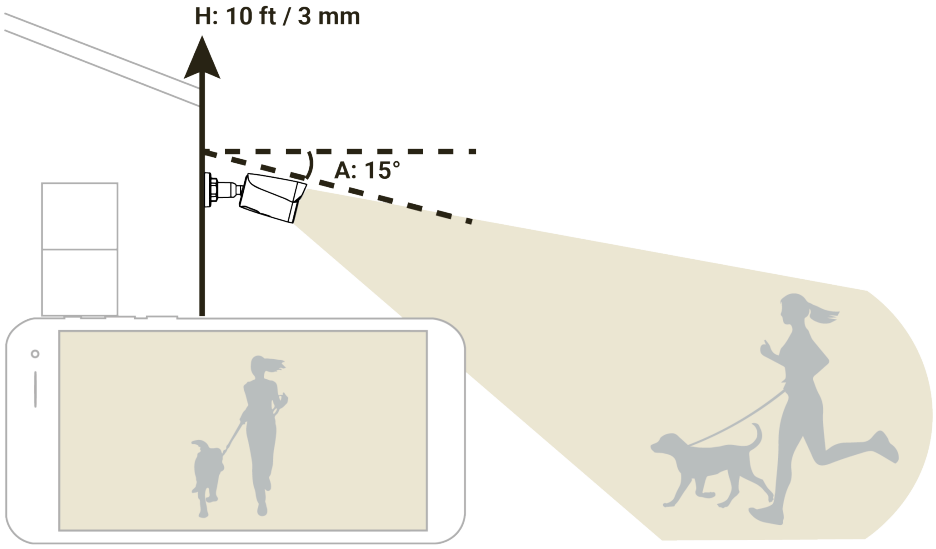
The camera will be removed from the recorder and the channel will become available.

5.3 Camera Installation

This section provides general guidance for installing cameras. For detailed installation instructions, refer to the camera's **Installation Guide** or search your camera's model at: www.lorex.com/help.

5.3.1 Camera Placement Tips

To ensure optimal camera performance, follow these guidelines:



- **Test first**: Connect the camera to the NVR before permanently installing it.
- **Avoid obstacles**: Place the camera away from obstacles like walls or trees. If installed too close, infrared (IR) light used for night vision can reflect off these surfaces, reducing visibility at night.
- **Install in a sheltered location**: For outdoor cameras, install them in a sheltered area to avoid rain or debris blocking the lens. The ideal position is about 10 ft/3 m above ground, angled 15° downward.
- **Avoid direct sunlight**: Install the camera in a location that avoids direct sunlight to prevent glare and lens damage.
- **Secure cabling**: Hide or secure cables to prevent tampering and avoid interference with power lines.
- **Install out of reach**: Keep cameras high enough to prevent tampering but visible as a deterrent.
- **Do not aim through glass**: Avoid pointing cameras through windows, infrared illumination can reflect off glass and affect night vision performance.
- **Use multiple cameras in key areas**: In critical areas, consider installing more than one camera to ensure coverage if one is tampered with.

5.3.2 Installing the Cameras

1. Mount the camera to a sturdy surface using the included mounting hardware.
2. Adjust the camera angle to capture the desired area.

Depending on the installation location, the camera may be mounted on a **wall** or **ceiling**. Adjust the viewing angle accordingly to ensure proper coverage.

Wall Mount	**Ceiling Mount**

6 Live View

After completing the setup wizard and logging in, the recorder opens to **Live View**.

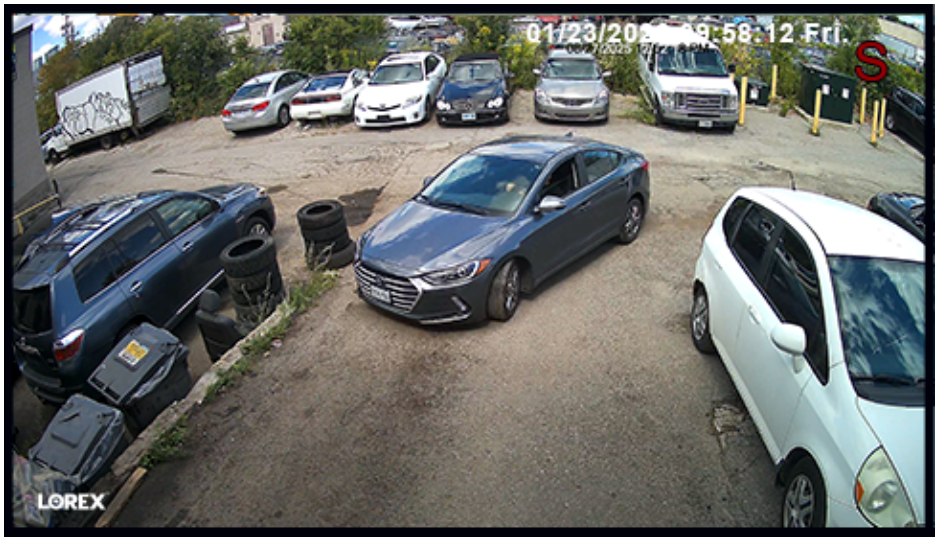
Live View displays the **real-time video from all connected cameras**.

- A **32-channel recorder** can display up to **32 cameras**

If cameras are connected directly to the recorder's **PoE ports**, they will **automatically connect and appear in Live View**.

6.1 Understanding Camera Channels

Each camera appears in its own **channel**.



The following information may appear in the camera image:

- **Date and Time:** Displays the current system time. To change the time, see 10 *Date & Time*, page 63.
- **Channel Name:** Shows the name assigned to the camera. To change the name, see 7.3 *Configure Video Overlays*, page 41
- **Lorex Logo:** A Lorex logo may appear depending on the current display and overlay settings.
- **Recording Status:** When motion is detected, the **C icon changes to S**.

Status	Meaning
C	Continuous recording
S	Smart motion recording

- **Other Overlays:** Additional on-screen information, such as camera **OSD** or **local OSD** elements, may also appear depending on the overlay configuration. To adjust overlay settings, see 7.3 *Configure Video Overlays*, page 41.

6.2 Full Screen View

To enlarge a camera:

1. Double-click the camera channel.
2. The camera opens in **full screen view**.

While in full screen:

- Audio from that camera can be heard (if supported).

To exit full screen:

1. Double-click the camera channel again.

6.3 Adding a Camera Manually

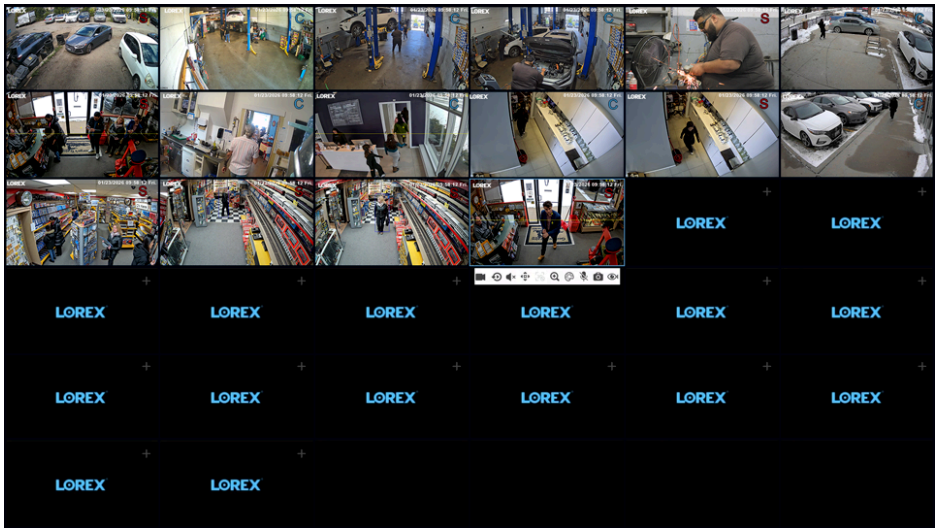
If you want to add a camera that is connected to the network instead of the PoE ports:

1. Click + (**Add**) on an empty channel.
2. The **Manually Add Devices** window opens.
   For full instructions on manually adding a camera, including the required connection details, see *Adding a Camera Manually*, page 24.

6.4 Quick Camera Toolbar

Click **once** on a camera channel to open the **Quick Camera Toolbar**.

The toolbar appears **below the camera image**.



Available options:

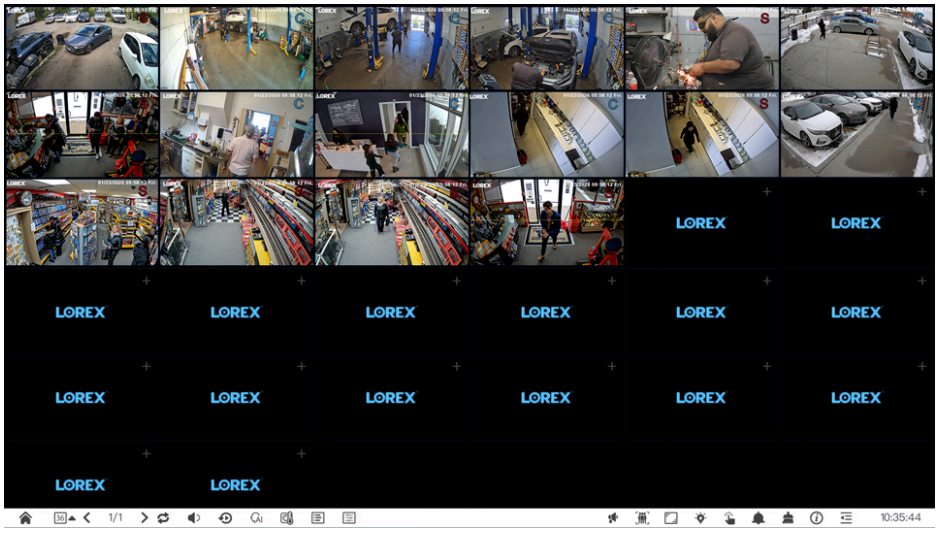
Quick Camera Toolbar	Function
Record	Start manual recording
Instant Playback	Play the most recent recording

/ **Audio**	Mute or unmute camera audio
PTZ	Open PTZ controls (PTZ cameras only) — refer to 8 *Pan/Tilt/Zoom (PTZ) Camera Setup*, page 49
3D	Currently not supported
Zoom In	Digital zoom (use mouse wheel to zoom)
Image	Adjust camera image settings Available controls: • Scene: Indoor/Outdoor • Brightness: Adjust image brightness • Sharpness: Adjust image sharpness • Contrast: Adjust image contrast • Saturation: Adjust image intensity For the full image settings, refer to 7.2 *Adjust Camera Image Settings*, page 34
/ **Two-Way Audio**	Start two-way communication
Snapshot	Save an image to USB
Fisheye	Currently not supported

6.5 Navigation Bar

The **Navigation Bar** appears at the **bottom of the Live View screen**.

If it is not visible, move the mouse to the **bottom of the screen**.



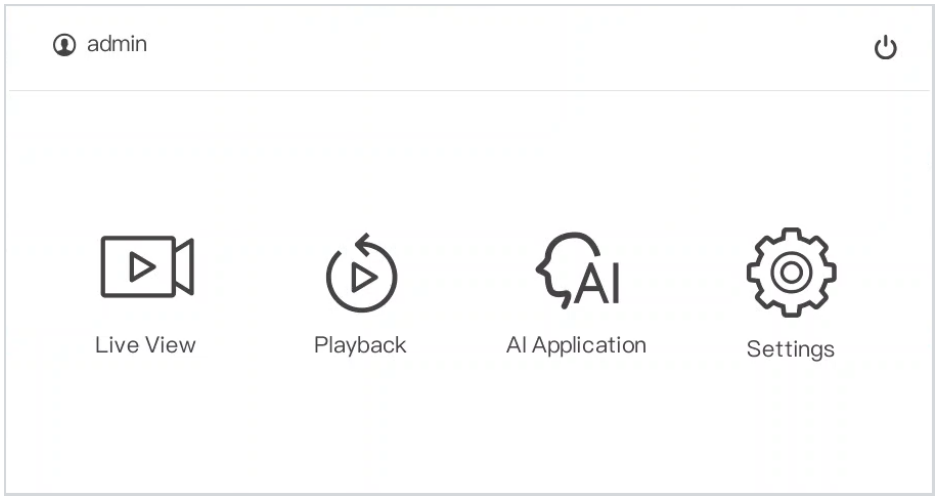
Available options:

Navigation Bar	Function
Main Menu	Opens the **Main Menu**. At the top right of the Main Menu, click (**Power**) to instantly access: • **Shutdown** • **Reboot** • **Logout**

Split Screen	Change the camera layout. *Available layouts depend on your recorder model.* Click + to create a custom layout. Refer to 20.2.2 *Configure Display Layouts*, page 170 for full details.
/ **Previous / Next Page**	Move between pages when more cameras exist than the current layout can display.
Auto Sequence	Automatically rotates through camera channels.
/ **Audio**	Mute or unmute system audio and adjust the volume.
Playback	Opens the **Playback** menu.
AI Application	Opens the **AI Application / Smart Search** menu.
Thermal	Opens thermal camera controls. *This feature is not currently supported.*
Channel Information	Displays camera information such as **Channel No.** or **Stream Info.**
Live View Strategy	Adjusts the display priority: • Fluency • Balanced • Real-time
Broadcast	Opens the **Broadcast** window to play audio files through connected cameras.
People Counting Display	Displays people counting statistics from supported cameras: • Number of people entering • Number leaving • Current occupancy • Alarm threshold
Open / Close Original Scale	Displays the camera image at its original resolution.
Manual Siren Control	Allows manual activation of a camera's alarm siren. Options include: • Flash siren • Red and blue siren • White siren
Manual Alarm	Manually activate a camera's alarm.
Event List	Displays a list of recent system events.
Clear Alarm	Clears active alarm notifications.
Information	Displays recorder information including **Network, System, Channel, Disk, and Alarm** status.
Enable Snapshot List / Disable Snapshot List	Shows or hides the **event snapshot panel** on the Live View screen. This panel displays AI detection snapshots. Selecting a snapshot allows you to quickly open **Playback** or **Search**.
10:35:44 **Time**	Displays the current system time.

6.6 Opening the Main Menu

To open the Main Menu:



- Click **Main Menu** on the navigation bar, or
- **Right-click twice** anywhere on the screen.

7 Camera Settings

Camera Settings lets you configure how each connected camera records, displays, and processes video. From this chapter, you can adjust video encoding, image quality, overlays, privacy masking, ROI, and supported advanced camera features. Some options vary depending on the connected camera model.

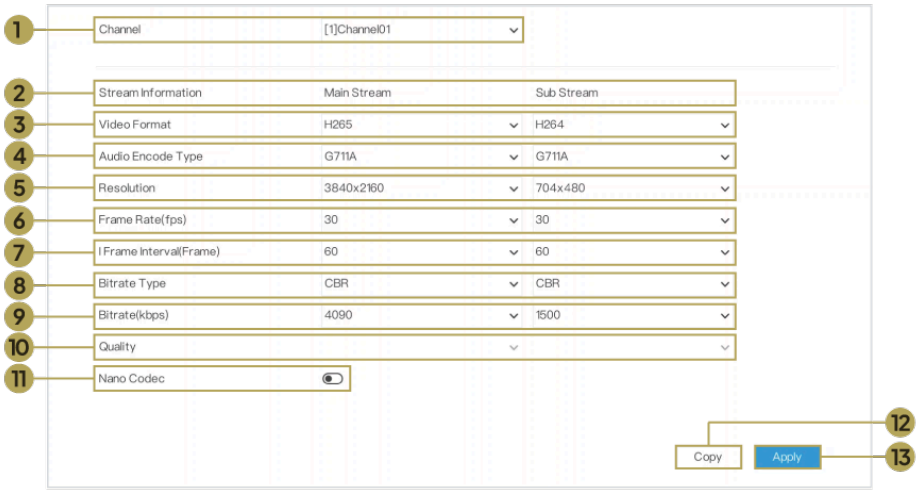
7.1 Configure Video Encoding

Encode allows you to configure video and audio encoding for each camera channel. Available settings may differ for the **Main Stream** and **Sub Stream**. Available settings include:

Open Encode Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Encode** from the left-side menu.

Encode Settings



1. **Channel:** Select the camera channel you want to configure.
2. **Stream Information:** Displays the available stream types:
   - **Main Stream**
   - **Sub Stream**
3. **Video Format:** Select the video compression format used for recording and streaming.
4. **Audio Encode Type:** Select the audio compression format used by the camera.
5. **Resolution:** Select the video resolution used for recording. Higher resolutions provide more detail but require more storage space and bandwidth.
6. **Frame Rate (fps):** Select the number of frames recorded per second. Higher frame rates produce smoother video but increase storage usage.
7. **IFrame Interval (Frame):** Defines how often a full reference frame is recorded. Shorter intervals can improve playback performance but may increase bandwidth usage.
8. **Bitrate Type:** Select the bitrate control method:
   - **CBR (Constant Bitrate):** Maintains a fixed bitrate for stable network usage.
   - **VBR (Variable Bitrate):** Adjusts bitrate dynamically depending on scene complexity to improve image quality.
9. **Bitrate (kbps):** Select the bitrate used for the video stream. Higher bitrates improve video quality but increase storage and bandwidth requirements.
10. **Quality:** Adjusts the overall image quality level for the selected stream.
11. **Nano Codec:** Enable or disable **Nano Codec** to optimize bandwidth usage for remote viewing.

12. **Copy:** Copy the current encoding settings to other camera channels.
13. **Apply:** Click **Apply** to save the settings.

7.2 Adjust Camera Image Settings

The **Image** settings allow you to adjust how video from each camera appears. These settings control brightness, color balance, exposure, day/night behavior, noise reduction, and other image enhancements.

A live preview shows how your changes affect the selected camera in real time.

> **NOTE**
>
> The available options may vary depending on the **camera model connected to the recorder**. Some cameras support additional features such as deterrence lighting or advanced image controls. The settings displayed in the NVR reflect the capabilities of the connected camera.

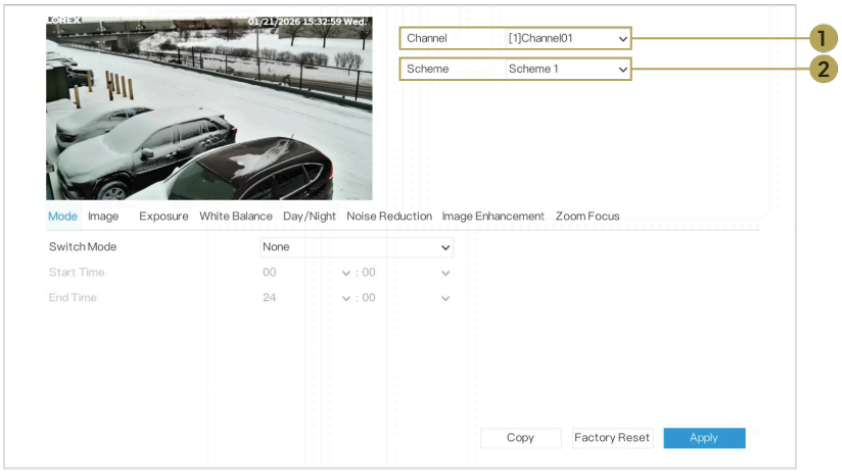
Open Image Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Image** from the left-side menu.

Image Settings

At the top of the screen you can configure the following:

1. **Channel:** Select the camera channel you want to configure.
2. **Scheme:** Select an image configuration profile (**Scheme 1–4**). These profiles allow different image settings to be saved and switched when needed.

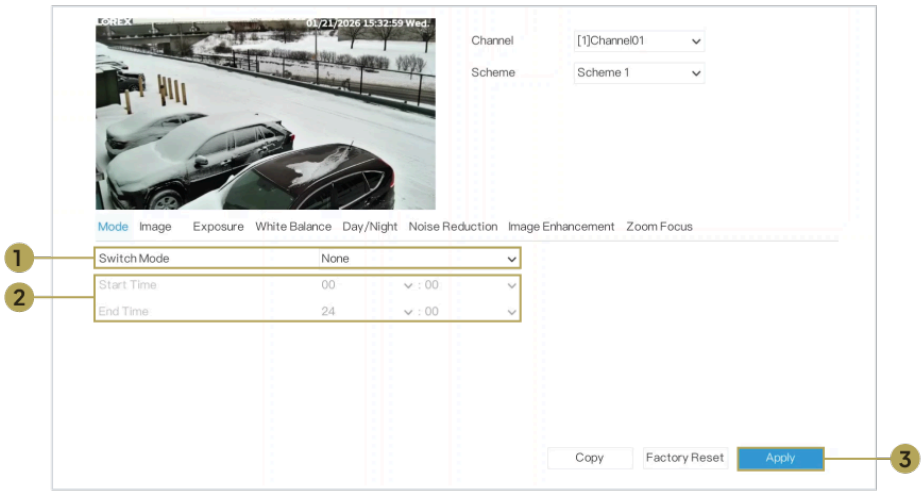


Below these options are several configuration tabs.

7.2.1 Set Day/Night Mode

The **Mode** tab controls how the camera switches between day and night operation.

Mode Settings



1. **Switch Mode:**
   - **None:** No automatic switching is used.
   - **Time Mode:** Switches between day and night settings based on a schedule.
   - **D/N Linkage Mode**: Automatically switches based on lighting conditions.
2. **Start Time / End Time:** Set the start and end time for **Time Mode**.
3. **Apply:** Click **Apply** to save the settings.

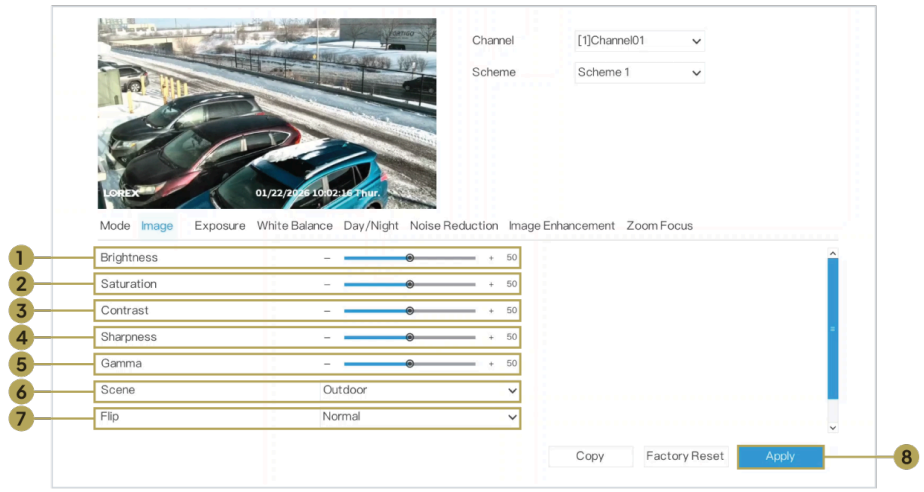
Additional Options

- **Copy:** Click **Copy** to apply the current settings to other camera channels.
- **Factory Reset:** Click **Factory Reset** to restore the default image settings for the selected channel.

7.2.2 Adjust Image Settings

The **Image** tab controls the basic picture adjustments.

Image Settings



1. **Brightness:** Adjust the overall brightness of the image.

2. **Saturation:** Controls the intensity of colors in the image.
3. **Contrast:** Adjust the difference between light and dark areas of the image.
4. **Sharpness:** Adjust the clarity of edges and fine details.
5. **Gamma:** Adjusts the balance between dark and bright areas in the image.
6. **Scene:** Select the environment where the camera is installed.
   - **Outdoor:** Optimized for outdoor environments with changing natural light.
   - **Indoor:** Optimized for indoor environments with controlled lighting.
7. **Flip:** Rotates the camera image to match the installation orientation.
   - **Normal:** Standard orientation.
   - **90°:** Rotates the image 90 degrees.
   - **180°**: Rotates the image upside down.
   - **270°**: Rotates the image 270 degrees.
8. **Apply:** Click **Apply** to save the settings.

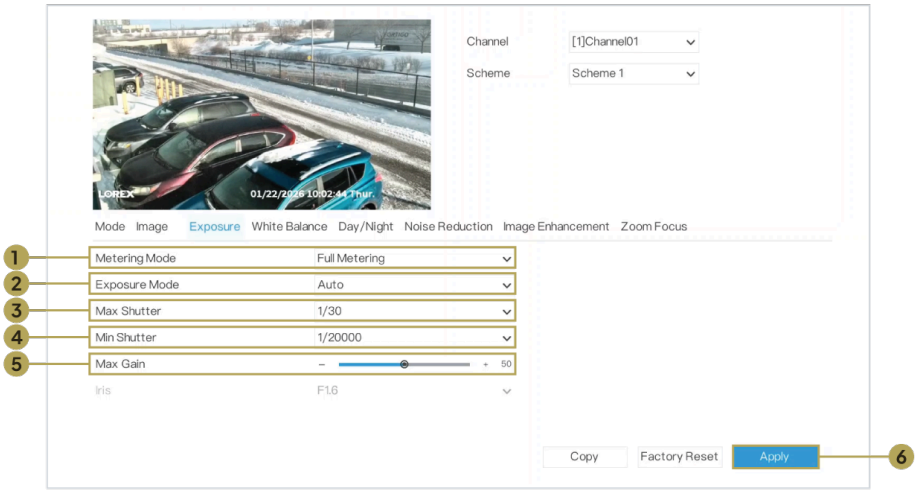
Additional Options

- **Copy:** Click **Copy** to apply the current settings to other camera channels.
- **Factory Reset:** Click **Factory Reset** to restore the default image settings for the selected channel.

7.2.3 Adjust Exposure

The **Exposure** tab controls how the camera adjusts to different lighting conditions.

Exposure Settings



1. **Metering Mode:** Determines how the camera measures brightness in the scene.
   - **Full Metering:** Measures brightness across the entire image.
   - **Spot Metering:** Measures brightness from a small central area.
   - **Partial Metering:** Measures brightness from a larger central portion of the image.
2. **Exposure Mode:** Controls how exposure is adjusted.
   - **Auto:** The camera automatically adjusts exposure.
   - **Manual:** Exposure values are manually configured.
   - **Shutter Priority:** Allows control of shutter speed while other exposure settings adjust automatically.
3. **Max Shutter:** Sets the maximum shutter speed used by the camera.
4. **Min Shutter:** Sets the minimum shutter speed used by the camera.
5. **Max Gain:** Adjusts the maximum image gain used in low-light conditions.

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

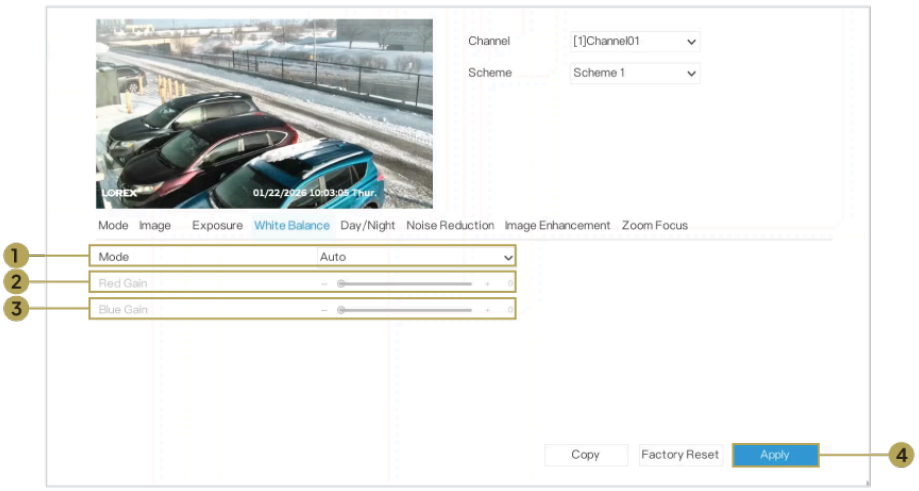
Additional Options

- **Copy:** Click **Copy** to apply the current settings to other camera channels.
- **Factory Reset:** Click **Factory Reset** to restore the default image settings for the selected channel.

7.2.4 Adjust White Balance

The **White Balance** tab adjusts how the camera handles color under different lighting conditions.

White Balance Settings



1. **Mode:** Select how the camera adjusts color balance.
   - **Auto:** The camera automatically adjusts color balance based on the lighting environment.
   - **Tungsten:** Optimized for indoor lighting such as incandescent bulbs, which produce a warm orange tone.
   - **Fluorescent:** Adjusts color balance for fluorescent lighting commonly used in offices and commercial buildings.
   - **Daylight:** Optimized for natural outdoor daylight conditions.
   - **Shadow:** Adjusts color balance for shaded outdoor areas where lighting may appear cooler or slightly blue.
   - **Manual:** Allows manual adjustment of color balance using the **Red Gain** and **Blue Gain** controls.
2. **Red Gain:** When **Manual** mode is selected, adjust the red color balance.
3. **Blue Gain**: When **Manual** mode is selected, adjust the blue color balance.
4. **Apply:** Click **Apply** to save the settings.

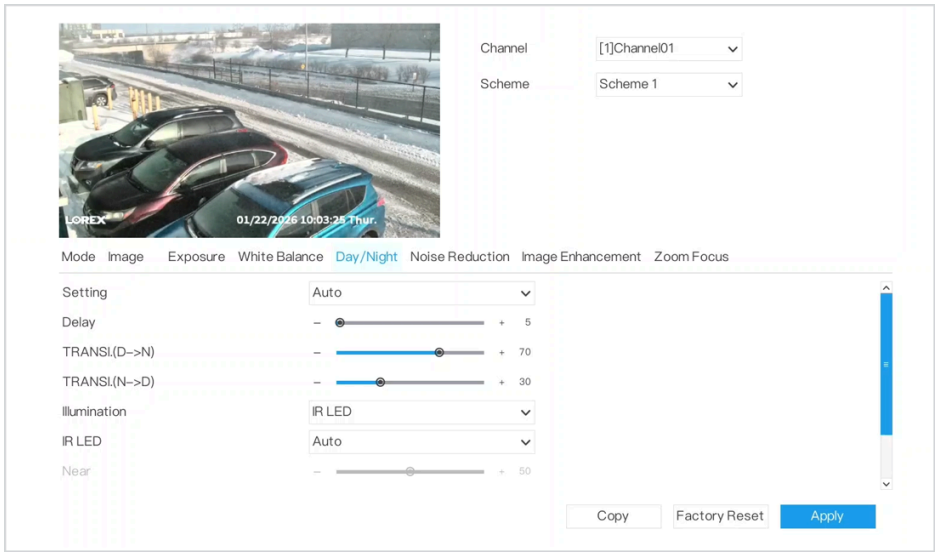
Additional Options

- **Copy:** Click **Copy** to apply the current settings to other camera channels.
- **Factory Reset:** Click **Factory Reset** to restore the default image settings for the selected channel.

7.2.5 Configure Night Vision

The **Day/Night** tab controls how the camera switches between daytime color video and nighttime illumination.

Day/Night Settings



1. **Setting:** Select how the camera switches between day and night modes.
   - **Auto**: Automatically switches based on lighting conditions.
   - **Day Mode:** Forces the camera to remain in daytime color mode.
   - **Night Mode:** Forces the camera to remain in night vision mode.
   - **Timer:** Switches between modes based on a scheduled time.

   Depending on the selected mode, additional settings may appear.

   Auto mode options:

   - **Delay:** Adjust how long the camera waits before switching modes when lighting conditions change.
   - **Sensitivity:** Adjust how sensitive the camera is to changes in lighting.

   Timer mode options:

   - **DTN Time:** Defines when the camera switches from **Day to Night**.
   - **NTD Time:** Defines when the camera switches from **Night to Day**.
2. **Illumination:** Select the camera lighting method used in low-light conditions.
   - **IR LED**: Uses infrared LEDs to provide black-and-white night vision.
   - **White LED:** Uses visible white light to capture color video at night.
   - **Intelligent Mode:** Automatically activates lighting when motion or activity is detected.
   - **None:** Disables camera illumination.

   When **None** is selected, illumination settings below are hidden.
3. **IR LED:** Select how infrared illumination operates.
   - **Auto:** The camera automatically adjusts infrared brightness.
   - **Manual**: Allows manual control of illumination intensity.
4. **Strength:** Adjust the infrared illumination level (0–100).
   - This option is available only when **Manual** is selected.
5. **Apply:** Click **Apply** to save the settings.

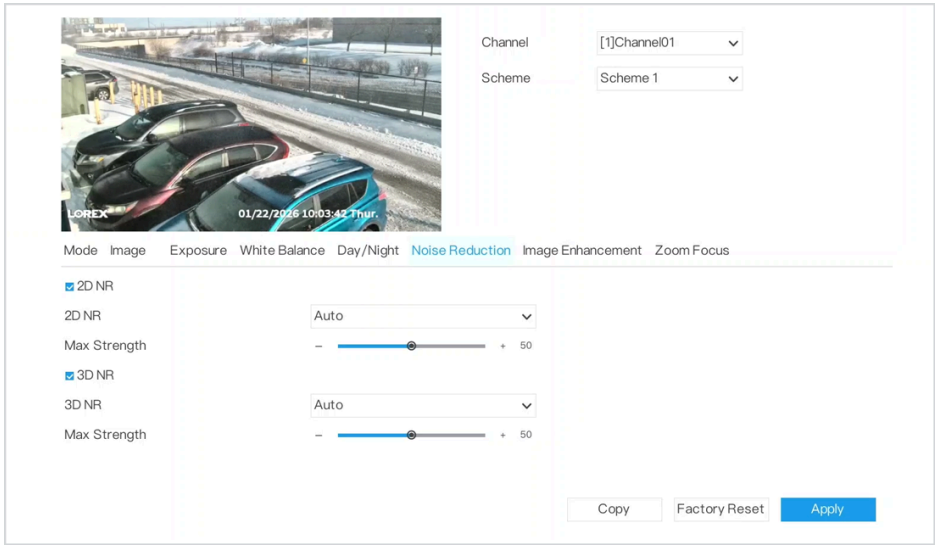
   Additional Options

   - **Copy:** Click **Copy** to apply the current settings to other camera channels.
   - **Factory Reset:** Click **Factory Reset** to restore the default image settings for the selected channel.

7.2.6 Reduce Image Noise

The **Noise Reduction** tab reduces visual noise in low-light environments to improve image clarity.

Noise Reduction Settings



1. **2D NR:** Enable or disable **2D Noise Reduction**, which reduces noise within individual video frames.
2. **2D NR Mode:** Select how the noise reduction level is controlled.
   - **Auto:** The camera automatically adjusts the noise reduction level.
   - **Manual**: Allows manual adjustment of the noise reduction level.
3. **Max Strength / Fixed Strength:** Adjust the level of noise reduction (0–100).
   - When **Auto** is selected, this setting appears as **Max Strength**, which defines the maximum level of automatic noise reduction.
   - When **Manual** is selected, this setting appears as **Fixed Strength**, allowing you to set a constant noise reduction level.
4. **3D NR:** Enable or disable **3D Noise Reduction**, which reduces noise by analyzing multiple video frames to improve image clarity.
5. **3D NR Mode:** Select how the noise reduction level is controlled.
   - **Auto:** The camera automatically adjusts the noise reduction level.
   - **Manual:** Allows manual adjustment of the noise reduction level.
6. **Max Strength / Fixed Strength** Adjust the level of noise reduction (0–100).
   - When **Auto** is selected, this setting appears as **Max Strength**.
   - When **Manual** is selected, this setting appears as **Fixed Strength**.
7. **Apply:** Click **Apply** to save the settings.

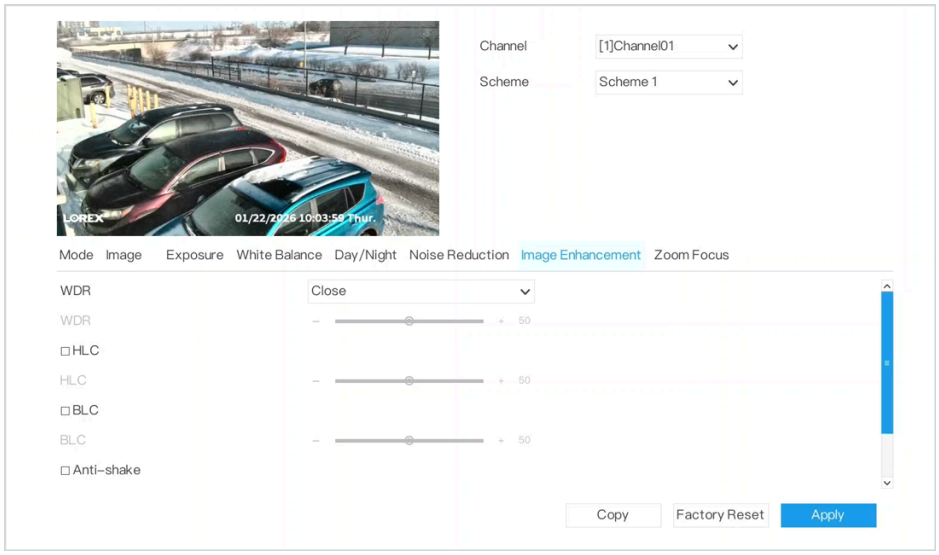
Additional Options

- **Copy:** Click **Copy** to apply the current settings to other camera channels.
- **Factory Reset:** Click **Factory Reset** to restore the default image settings for the selected channel.

7.2.7 Improve Image Clarity in Difficult Lighting

The **Image Enhancement** tab improves visibility in difficult lighting conditions.

Image Enhancement Settings



1. **WDR (Wide Dynamic Range):** Improves image visibility when there are both bright and dark areas in the scene.
   - Enable the checkbox to activate WDR.
   - Adjust the WDR level using the slider (0–100).
2. **HLC (Highlight Compensation):** Reduces glare from strong light sources such as vehicle headlights.
   - Enable the checkbox to activate HLC.
   - Adjust the HLC level using the slider (0–100).
3. **BLC (Backlight Compensation):** Improves visibility of subjects positioned in front of bright backgrounds.
   - Enable the checkbox to activate BLC.
   - Adjust the BLC level using the slider (0–100).
4. **Defog:** Enable or disable **Defog** to improve image clarity in foggy or hazy conditions.
5. **Apply:** Click **Apply** to save the settings.

Additional Options

- **Copy:** Click **Copy** to apply the current settings to other camera channels.
- **Factory Reset:** Click **Factory Reset** to restore the default image settings for the selected channel.

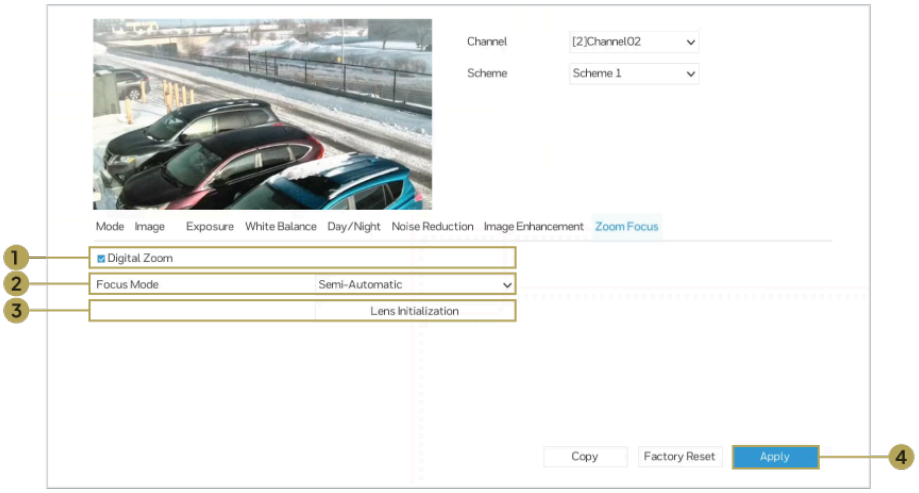
7.2.8 Configure Zoom and Focus

The **Zoom Focus** tab allows you to control digital zoom and adjust the camera's focus settings. These options help optimize image clarity depending on the viewing distance and scene.

NOTE

Zoom and focus controls are only available on supported camera models, such as PTZ (Pan-Tilt-Zoom) or motorized varifocal lens cameras. These options may not appear for fixed-lens cameras.

Zoom Focus Settings



1. **Digital Zoom:** Enable or disable digital zoom for the selected camera channel. When enabled, you can zoom in on the image during live view.
2. **Focus Mode:** Select how the camera handles focus adjustments:
   - **Auto:** The camera automatically adjusts focus based on scene changes.
     When **Auto** is selected:
     - **Auto Focus Sensitivity:** Adjust how quickly the camera responds to changes in focus.
     - **Shortest Focus Distance:** Select the minimum focusing distance: 10 m / 6 m / 3 m / 2 m / 1.5 m
   - **Manual:** Focus is adjusted manually using on-screen controls.
     When **Manual** is selected:
     - **Zoom Out:** Decrease the zoom level.
     - **Zoom In:** Increase the zoom level.
     - **Near Focus:** Adjust focus for closer objects.
     - **Far Focus:** Adjust focus for distant objects.
     - **Auto Focus Once:** Perform a one-time automatic focus adjustment.
   - **Semi-Automatic:** Allows manual focus adjustments with optional automatic assistance.
3. **Lens Initialization:** Click **Lens Initialization** to reset the lens position. This may help resolve focus issues or recalibrate the camera.
4. **Apply:** Click **Apply** to save the settings.

Additional Options

- **Copy:** Click **Copy** to apply the current settings to other camera channels.
- **Factory Reset:** Click **Factory Reset** to restore the default image settings for the selected channel.

7.3 Configure Video Overlays

7.3.1 Configure Camera OSD

The **OSD (On-Screen Display)** settings allow you to display information such as the time, channel name, and logo directly on the camera video. These overlays appear on both live video and recorded footage.

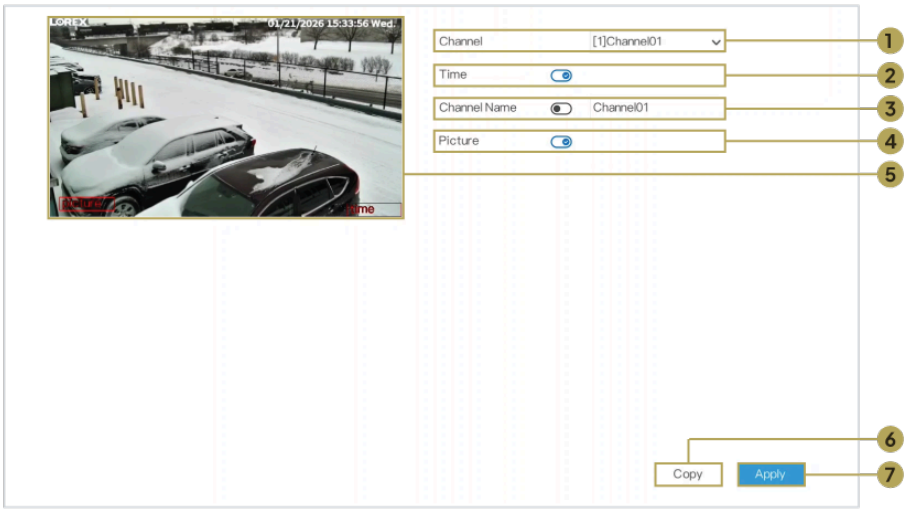
Open OSD Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.

3. Select the **Channel** tab at the top of the menu.
4. Click **OSD** from the left-side menu.

OSD Settings

The **OSD** controls which information appears on the camera video overlay.



1. **Channel:** Select the camera channel you want to configure.
2. **Time:** Enable or disable displaying the current time on the video.

> **NOTE**
>
> Accurate timestamps are important for recorded footage, especially when video may be used as evidence in an investigation.

3. **Channel Name:** Enable or disable displaying the camera channel name. You can also edit the channel name from this field.
4. **Picture**: Enable or disable the **Lorex logo** on the video display.
5. **Position Adjustment:** When an item is enabled, it appears as **red text with a red box** in the camera preview. Click and drag the red box to reposition the overlay on the screen.
6. **Copy:** Copy the current OSD settings to other camera channels.
7. **Apply:** Click **Apply** to save the settings.

7.3.2 Configure Local OSD

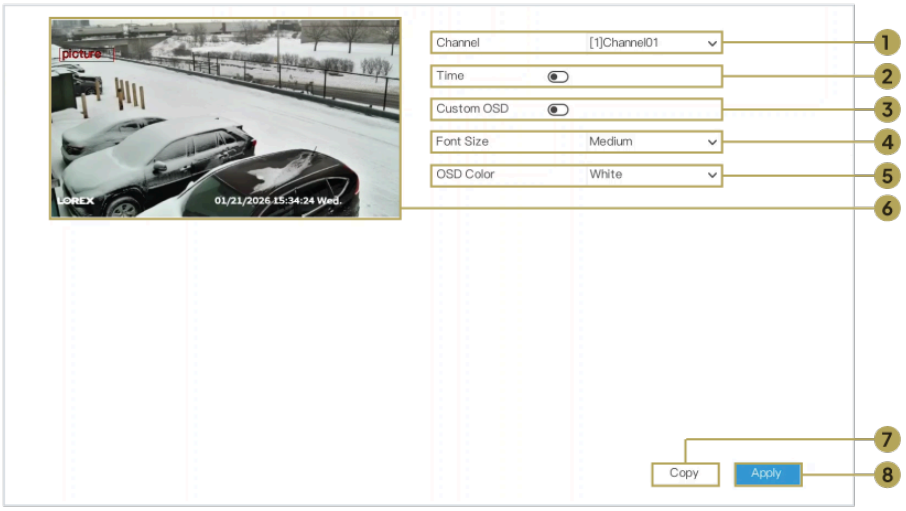
The **Local OSD** settings allow you to display information such as the time, channel name, and logo directly on the camera video. These overlays appear on both live video and recorded footage.

Open Local OSD Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **OSD** from the left-side menu.
5. Click the **Local OSD** tab.

Local OSD Settings

The **Local OSD** allows you to configure additional on-screen text that appears in the local display.



1. **Channel:** Select the camera channel you want to configure.
2. **Time:** Enable or disable displaying the current time.
3. **Custom OSD:** Enable or disable a custom text overlay. Click inside the text field to enter or edit the displayed message.
4. **Font Size:** Select the text size for the custom OSD.
   - **Small**
   - **Medium**
   - **Extra Large**
5. **OSD Color:** Select the color used for the custom OSD text. This helps differentiate it from the standard OSD overlays.
6. **Position Adjustment:** When an item is enabled, it appears as **red text with a red box** in the camera preview. Click and drag the red box to reposition the overlay on the screen.
7. **Copy:** Copy the Local OSD settings to other camera channels.
8. **Apply:** Click **Apply** to save the settings.

7.4 Mask Private Areas

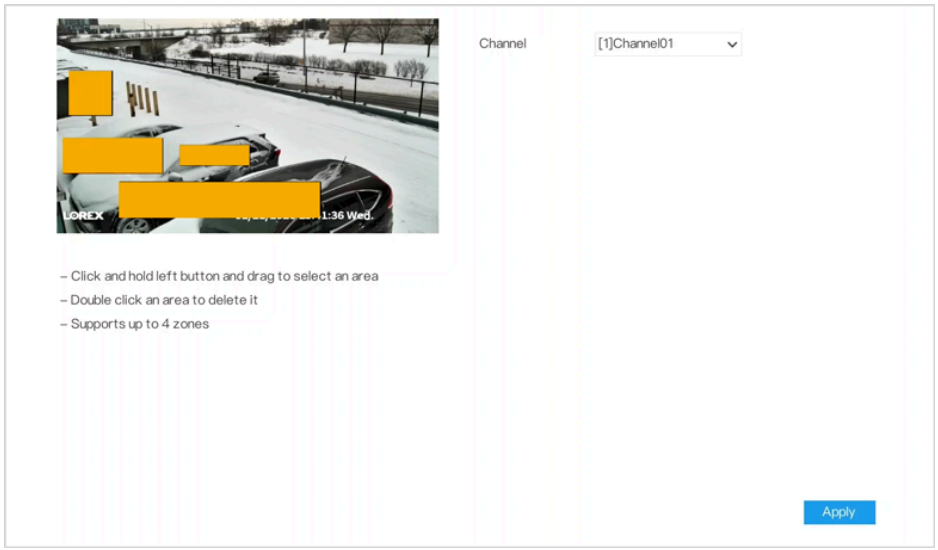
The **Privacy Masking** settings allow you to block specific areas of the camera view from being recorded or displayed. This feature is useful when cameras cover areas that should remain private, such as neighboring properties, windows, or sensitive locations.

When a privacy zone is enabled, the selected area appears as a **solid block** on the video and will not be visible in live view or recordings.

Open Privacy Masking Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Privacy Zone** from the left-side menu.

Privacy Masking Settings



1. **Channel:** Select the camera channel you want to configure.
2. **Create a Privacy Zone:** Click and drag the **left mouse button** over the camera image to create a privacy zone.
3. **Delete a Privacy Zone: Double-click** a privacy zone to remove it.
4. **Maximum Zones:** Each camera supports up to **4 privacy zones**.
5. **Apply:** Click **Apply** to save the settings.

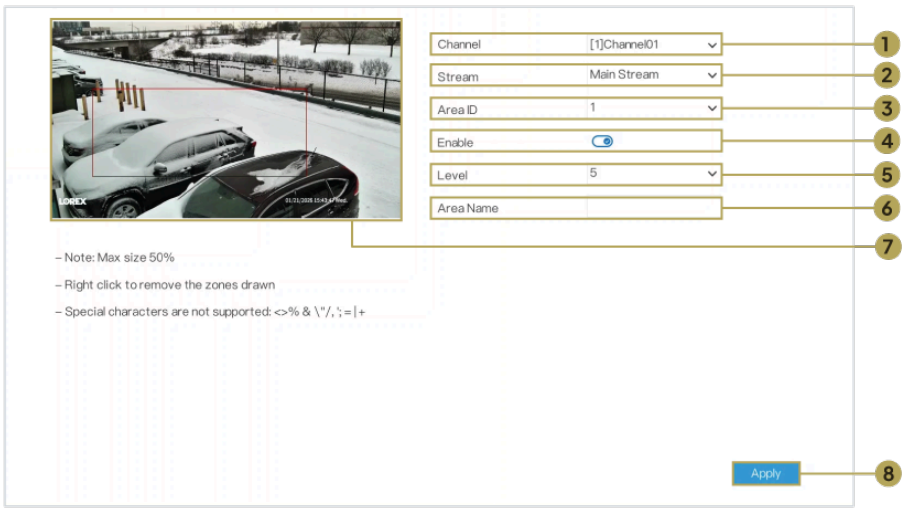
7.5 Prioritize Important Areas with ROI

The **ROI (Region of Interest)** settings allow you to prioritize specific areas of the camera image for higher video quality. This helps preserve detail in important areas while reducing bandwidth and storage usage for less important areas.

Open ROI Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **ROI** from the left-side menu.

ROI Settings



1. **Channel:** Select the camera channel you want to configure.
2. **Stream:** Select the video stream to configure.
   - **Main Stream:** Primary recording stream with the highest video quality.
   - **Sub Stream:** Secondary stream typically used for remote viewing.
3. **Area ID:** Select the ROI zone number to configure. Each channel supports **up to 8 ROI areas**.
4. **Enable:** Enable or disable the selected ROI area.
5. **Level**: Select how strongly the selected ROI area is prioritized for image quality. Levels range from **1 to 5**, with higher levels applying stronger prioritization to that region.
6. **Area Name**: Enter a name for the ROI area.
7. **Draw the ROI Area:** Click and drag on the camera preview to draw the region of interest.
   - **To delete: Right-click** a drawn area to remove it.
8. **Apply:** Click **Apply** to save the settings.

7.6 Configure Advanced Camera Features

7.6.1 Configure Auto Tracking

The **Auto Tracking** settings allow a compatible **PTZ camera** to automatically follow a detected object within its field of view.

NOTE

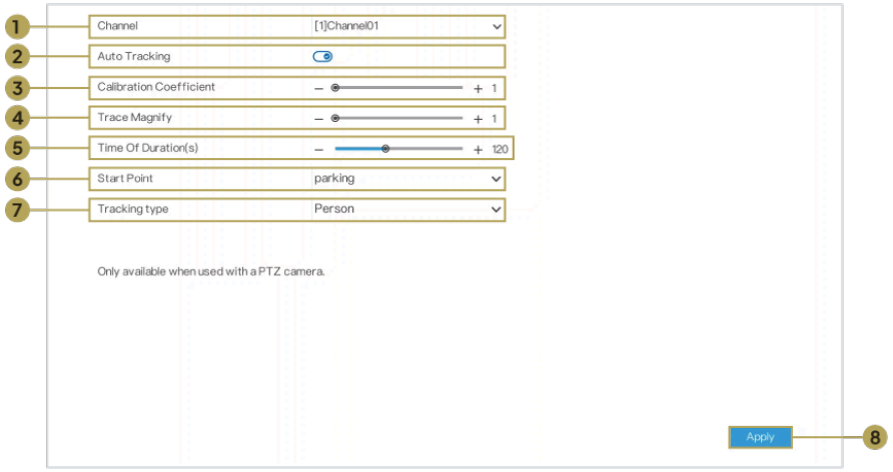
This feature is **only available when a PTZ camera is connected**.

Auto Tracking is disabled when Presets, Scan, or Tour functions are active.

Open Auto Tracking Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Auto Tracking** from the left-side menu.

Auto Tracking Settings



1. **Channel:** Select the channel where a PTZ camera is connected.
2. **Auto Tracking:** Enable or disable automatic tracking for the selected camera.
3. **Calibration Coefficient:** Adjust the tracking sensitivity using the slider. This setting helps the system determine how accurately the camera follows a moving object.
4. **Trace Magnify:** Adjust the zoom level used while tracking a target.

5. **Time of Duration (s):** Set how long the camera continues tracking a detected target before returning to its original position.
6. **Start Point:** Select the preset position where the PTZ camera will return after tracking is completed. This preset must be created in the **PTZ settings**.
7. **Tracking Type:** Select the type of object the camera should track, such as **Person**.
8. **Apply:** Click **Apply** to save the settings.

7.6.2 Configure Dual-Lens

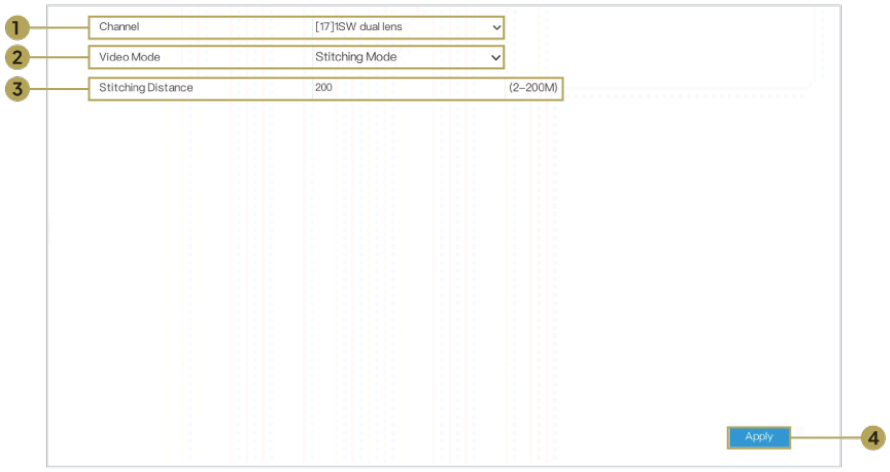
The **Dual-Lens** settings allow you to configure cameras that use **two lenses to create a single combined image**. These cameras can stitch both views together to provide a wider field of view.

This feature is **only available when a Dual-Lens camera is connected**.

Open Dual-Lens Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Dual-Lens** from the left-side menu.

Dual-Lens Settings



1. **Channel:** Select the channel where a **dual-lens camera** is connected.
2. **Video Mode:** Select how the camera image is displayed.
   - **Stitching Mode:** Combines both camera lenses into a single panoramic image.
   - **Multi Channel:** Splits the dual-lens camera into two separate channels, with one lens assigned to each channel.

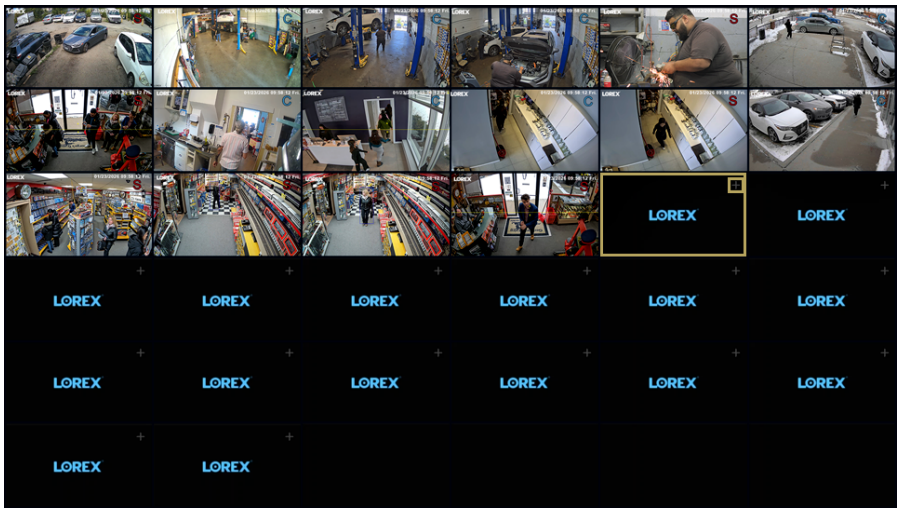
> **NOTE**
>
> Multi Channels mode requires one additional available channel on the recorder. If no free channel is available, the second lens cannot be added.

3. **Stitching Distance:** If **Stitching Mode** is selected, enter the approximate distance between the camera and the monitored area. The adjustable range is **2–200 meters**. This setting helps align the stitched image from both lenses.
4. **Apply:** Click **Apply** to save the settings.

> **NOTE**
>
> Changing the **Video Mode** setting reboots the camera. The reboot process can take several minutes to complete.

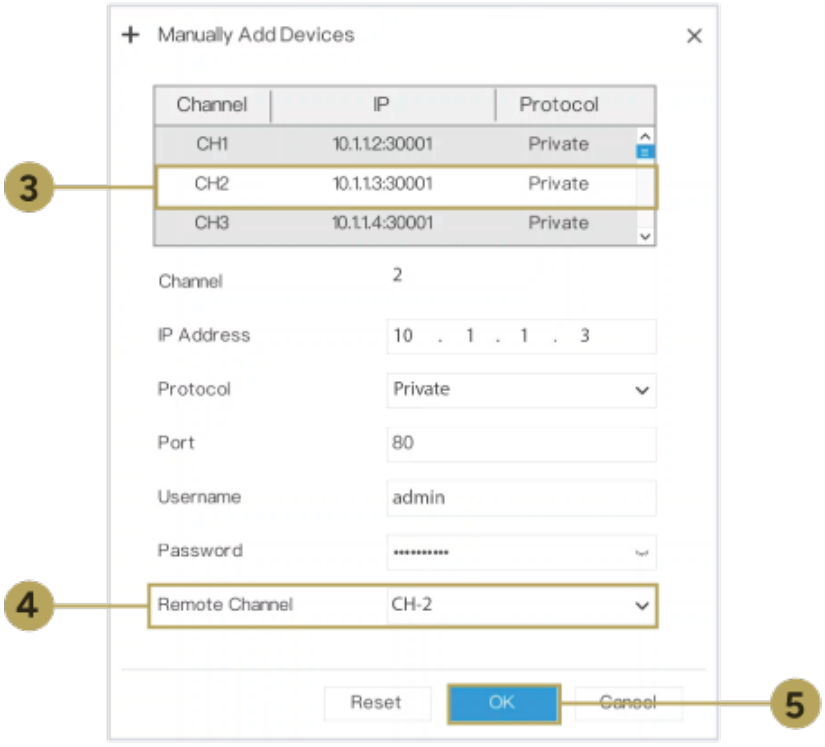
If **Multi Channels** is selected, the second lens must be added to an available channel in Live View after the camera reboots:

1. Open **Live View** and confirm that an empty channel is available.



For instructions on removing cameras from channels, refer to 5.2 *Adding and Managing Cameras*, page 23.

2. Click + on the empty channel.
3. In the + **Manually Add Devices** window, select the dual-lens camera from the camera channel list to automatically populate the device fields.



4. Change **Remote Channel** to **CH–2**.
5. Click **OK** to add the second lens to the available channel.

7.7 Configure Advanced Camera Protocols

The **Protocol Management** settings allow you to configure custom communication protocols used when connecting certain IP cameras to the recorder. These settings are typically used when manually adding cameras that require custom streaming parameters.

Most Lorex cameras connect automatically using the default protocol and do not require these settings to be modified.

Open Protocol Management

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Camera** from the left-side menu.
5. Click the **Protocol Management** tab.

Protocol Management Settings

The Protocol Management settings allow you to create or modify custom camera protocols.

Available settings include:

1. **Custom Protocol:** Select the custom protocol profile you want to configure.
2. **Protocol Name:** Click inside the field to enter or modify the name of the protocol.
3. **Stream Type:** Select the video stream used by the camera.
   - **Main Stream**: Uses the primary video stream, typically the highest resolution and quality.
   - **Sub Stream:** Uses the secondary stream, which is usually lower resolution and optimized for remote viewing.
4. **Protocol Type:** Displays the communication protocol used by the camera (for example **RTSP**).
5. **Port:** Enter the network port used by the camera for streaming.
6. **Path:** Enter the RTSP streaming path used by the camera.
   Example format: **[Type]://[IP Address]:[Port]/[Path]**
7. **Apply:** Click **Apply** to save the protocol configuration.

8 Pan/Tilt/Zoom (PTZ) Camera Setup

PTZ (Pan/Tilt/Zoom) cameras are specialty cameras that can move and adjust their viewing angle based on commands from the recorder. You can control PTZ cameras manually in Live View, or configure automatic movements using presets, scans, and tours.

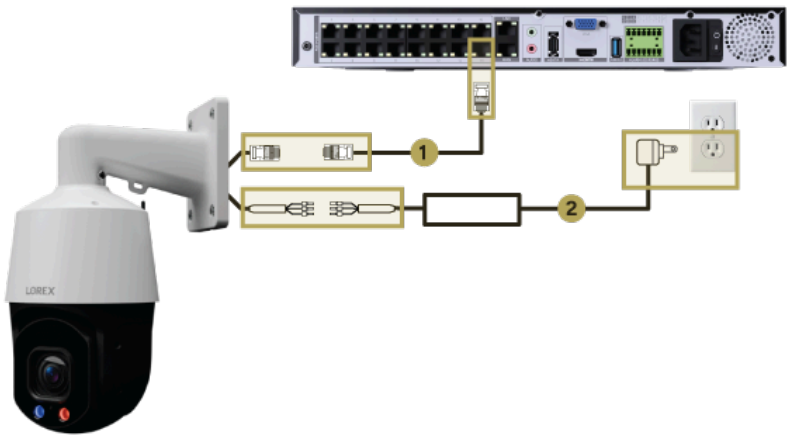
PTZ cameras allow you to **pan, tilt, and zoom** remotely, making them ideal for monitoring large or dynamic areas.

NOTE

- PTZ controls are only available for **compatible PTZ cameras**.
- Available features may vary depending on the camera model.
- If no PTZ camera is connected, the PTZ option will not appear.

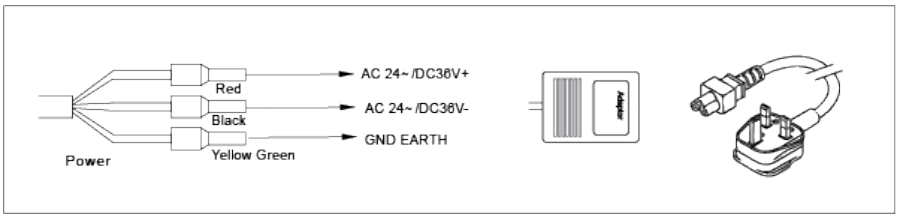
8.1 Connect a PTZ Camera

Lorex PTZ cameras connect to the recorder in the same way as standard IP cameras using an Ethernet cable. PTZ control signals are transmitted through the network connection, so no additional control wiring is required.

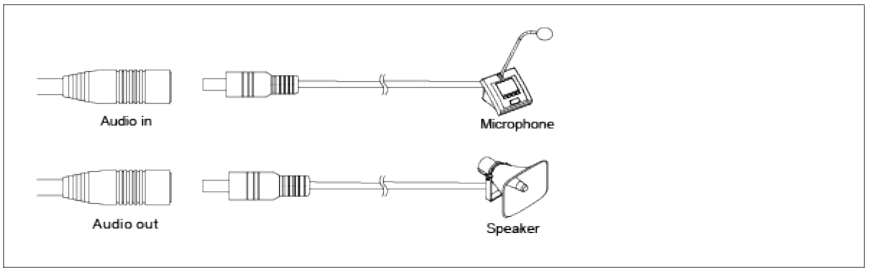


To connect a PTZ camera

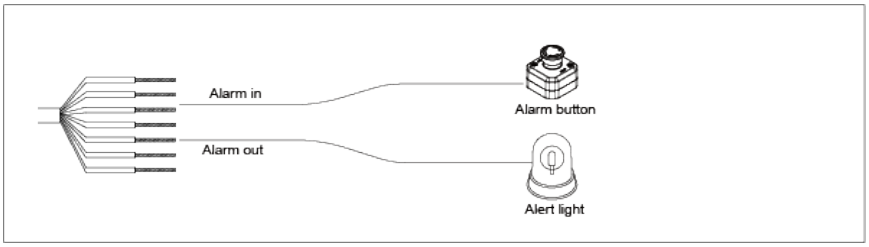
1. Connect an Ethernet cable from the PTZ camera to an available PoE port on the recorder.
2. (Optional) Connect the PTZ camera to an external power source (when PoE is not used). Depending on the camera model and installation, this may be done using the included power adapter and the camera's power wires for a supported AC/DC power connection.



3. (Optional) Connect additional cables as needed:
   - **Audio In / Audio Out:** Connect a microphone or speaker for audio input and output.



   - **Alarm I/O wires:** Connect external alarm devices such as sensors or sirens.



When the PTZ camera powers on, it will perform a self-test and may move automatically. Ensure the camera has sufficient clearance during startup.

NOTE

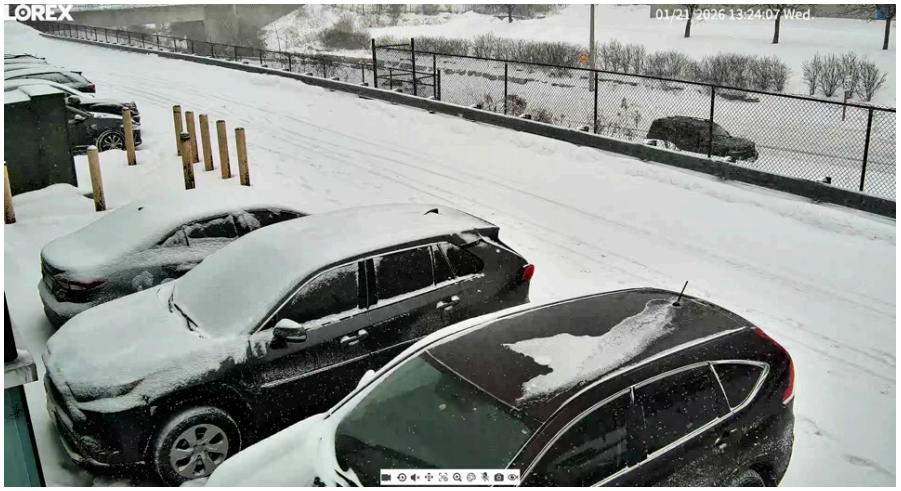
- PTZ cameras typically require more power than fixed cameras.
- If connecting multiple PTZ cameras, ensure the total power draw does not exceed the recorder's PoE budget.
- Using the included power adapter will power the camera from the outlet instead of the recorder.
- Additional cable leads (audio, alarm, and power) are optional and may not be used in standard PoE installations.

8.2 Open PTZ Controls

PTZ controls are available directly from **Live View** (see 6 *Live View*, page 28).

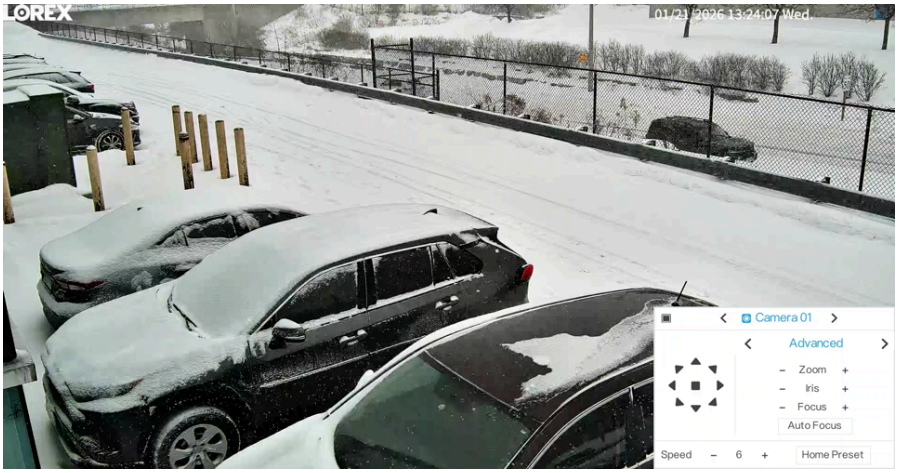
Open PTZ Controls

1. In **Live View**, select a channel with a connected PTZ camera.



2. Click **PTZ** in the **Quick Camera Toolbar**.

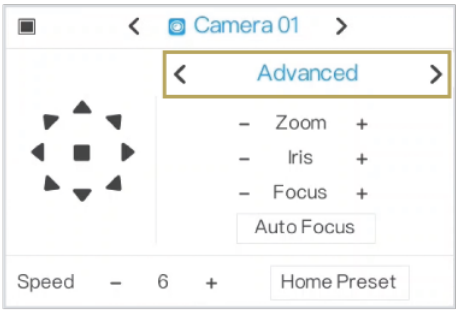
3. The PTZ control panel appears in the bottom-right corner of the screen.



By default, the PTZ panel opens to the **Advanced** menu.

8.3 Switch Between PTZ Menus

To move between PTZ menus

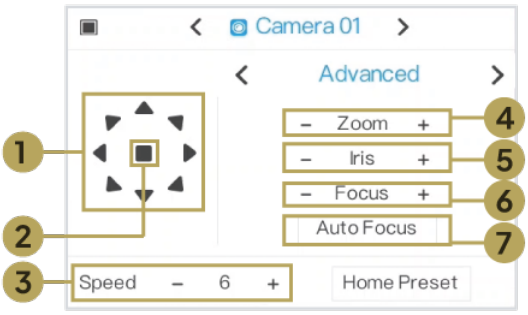


- Click the **arrow button next to the menu name** to cycle through:
  - **Advanced**
  - **Preset**
  - **Scan**
  - **Tour**

8.4 Use Advanced PTZ Controls

The **Advanced** menu provides manual control of the PTZ camera.

Available Controls



1. **Direction Arrows:** Move the camera up, down, left, right or diagonally to adjust the viewing position
2. **Stop:** The button located at the center of the directional arrows is used to **manually stop all PTZ movement**.
3. **Speed:** Adjust the speed of **manual camera movement** when using the directional arrows
4. **Zoom:** Zoom in or out
5. **Iris:** Adjust image brightness (light entering the lens)
6. **Focus:** Adjust image sharpness
7. **Auto Focus:** Automatically adjust focus

NOTE

If the PTZ camera is configured with **AI motion detection or smart tracking**, the camera may move automatically when events are triggered. Manual controls may not override this behavior.

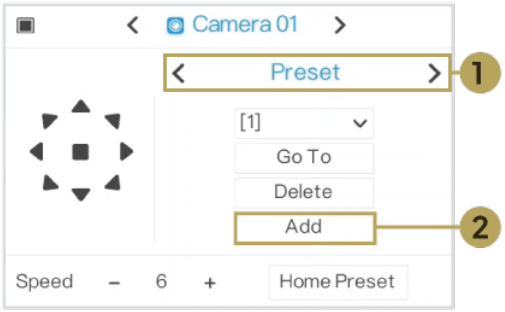
For additional zoom and focus adjustments, refer to 7.2.8 *Configure Zoom and Focus*, page 40. These settings provide more detailed control for supported PTZ cameras.

8.5 Create and Use Presets

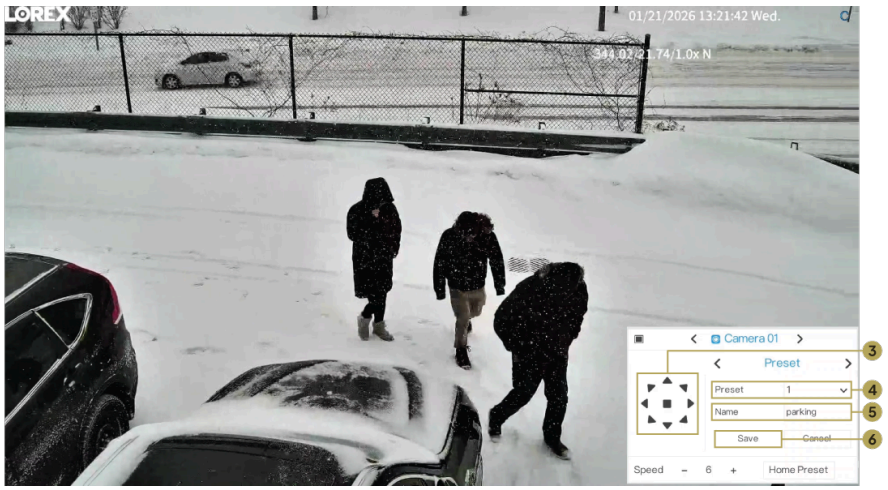
A **Preset** saves a specific camera position for quick access.

To create a preset

1. Open the **Preset** menu.



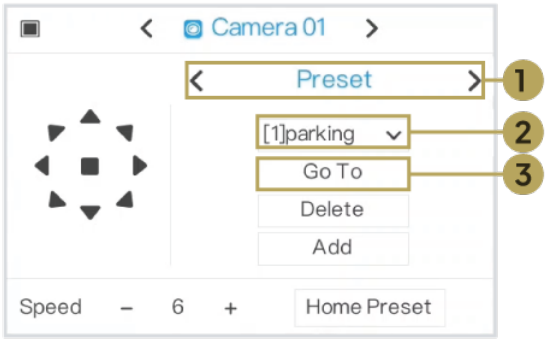
2. Click **Add**.



3. Use the directional controls to move the camera to the desired position.
4. Select a **Preset** number.
5. Enter a **Name**.
6. Click **Save**.

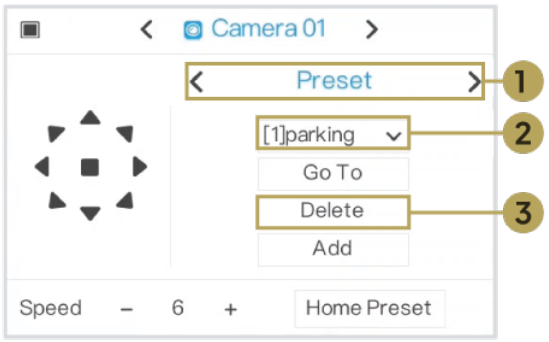
PTZ presets can also be linked to AI detection events. Refer to 14 *IVS & AI Analytics*, page 97.

To go to a preset



1. Open the **Preset** menu.
2. Select a preset from the list.
3. Click **Go To**.

To delete a preset



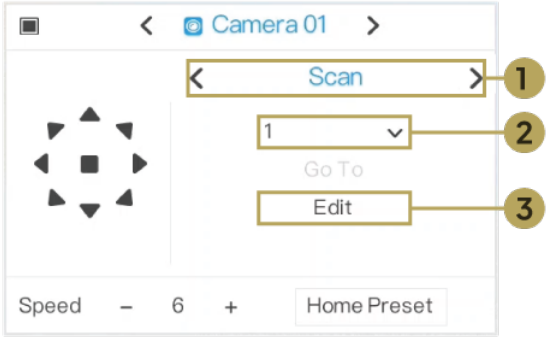
1. Open the **Preset** menu.
2. Select a preset.
3. Click **Delete**.

8.6 Create and Run a Scan

A **Scan** moves the camera automatically between two positions.

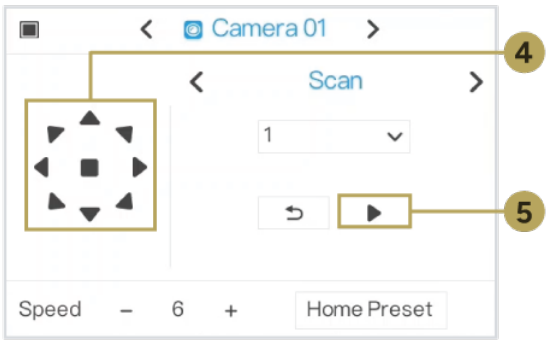
This is useful for scanning wide areas such as parking lots, driveways, hallways, or perimeters.

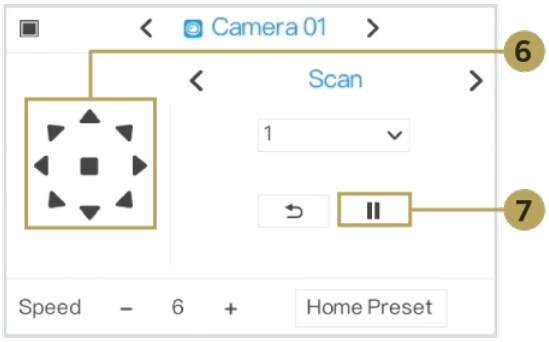
To create a scan



1. Open the **Scan** menu.
2. Select a **Scan** number.

3. Click **Edit**.
4. Use the directional arrows to move the camera to the first scan position.
5. Click **Start** to set the first position.





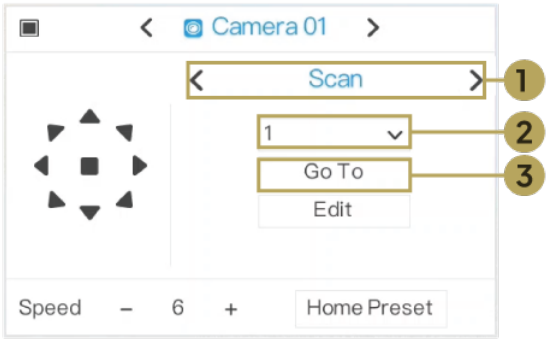
6. Use the directional arrows to move the camera to the next position.
7. Click **Pause** to set the second position and save the scan.

The camera will save the scan between the two defined positions.

NOTE

Scans cannot be deleted from the Scan menu. To change a scan, edit the same scan number and overwrite it with new start and end positions.

To start a scan



1. Open the **Scan** menu.
2. Select the desired **Scan** number.
3. Click **Go To**.

The camera will begin moving between the defined positions.

NOTE

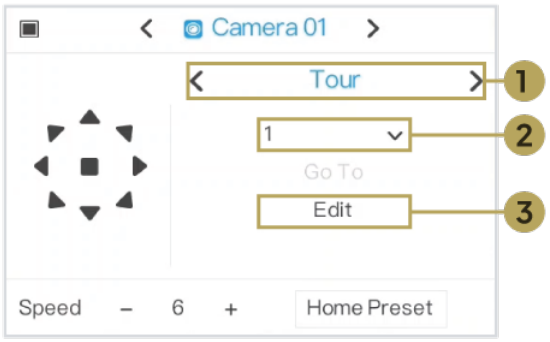
Go To is only available if a scan has already been created for the selected scan number.

8.7 Create and Run a Tour

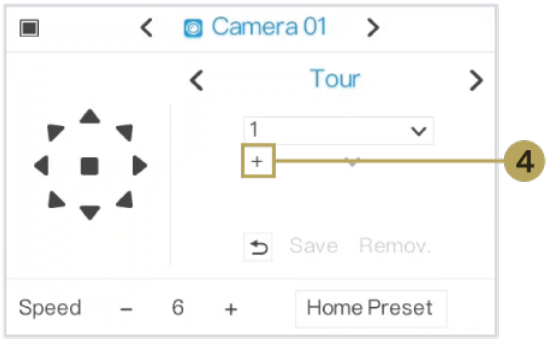
A **Tour** cycles the camera through multiple preset positions automatically.

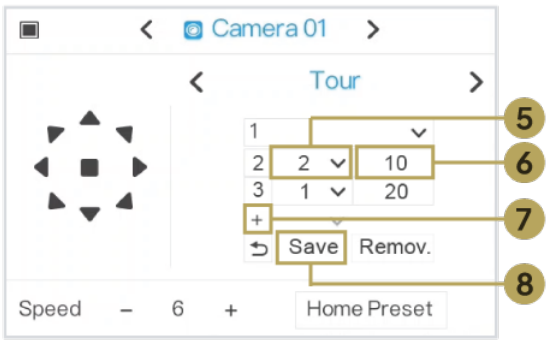
This allows the camera to monitor several areas in sequence.

To create or edit a tour



1. Open the **Tour** menu.
2. Select a **Tour** number.
3. Click **Edit**.
4. Click + to add a preset to the tour.





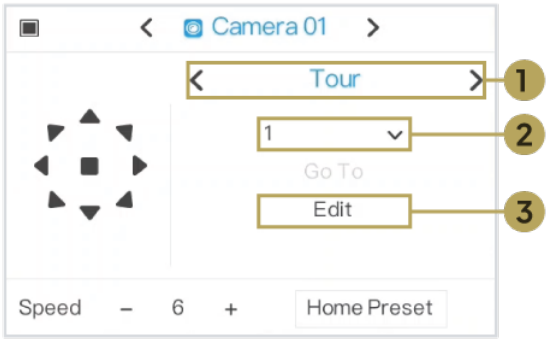
5. Select a **Preset** from the list.
6. Set the **dwell time (in seconds)** for how long the camera will remain at that preset.
7. Repeat steps 4–6 to add additional presets to the tour.
8. Click **Save**.

To start a tour

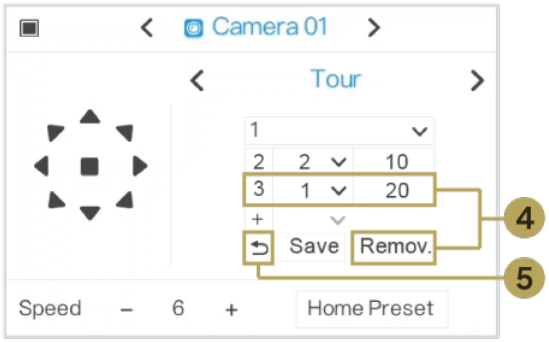
1. Open the **Tour** menu.
2. Select the desired **Tour**.
3. Click **Go To**.

The camera will begin cycling through the saved presets.

To remove all presets from a tour



1. Open the **Tour** menu.
2. Select a **Tour** number.
3. Click **Edit**.



4. **To remove all presets:** Click **Remove All**, then **Save**.
5. Click **Return** to go back.

9 Audio Setup

The system supports audio-enabled cameras, allowing you to record and monitor sound along with video. Audio is transmitted through the same network cable used for video and power.

You can configure **microphone input**, **speaker output**, and **audio warning files** for compatible cameras.

NOTE

- Audio features are only available for **compatible cameras**.
- Available options may vary depending on the connected camera model.

WARNING

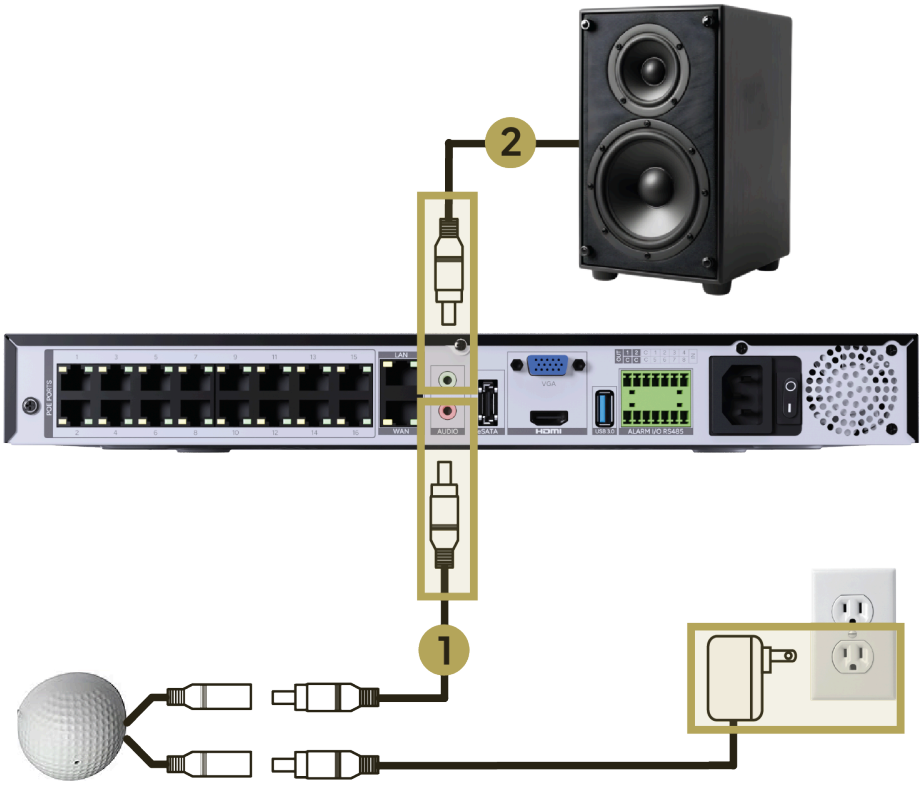
Audio recording is disabled by default because it is restricted or prohibited by law in some jurisdictions. You must enable audio recording manually before the system can record audio. Ensure that your use of audio recording complies with all applicable local laws and regulations.

9.1 Connect Audio Devices

Audio can be captured and played back using supported cameras or external audio devices.

- Cameras with **built-in microphones** can record audio directly through the network connection.
- Cameras with **built-in speakers** support audio playback and two-way talk features.

The recorder also includes **RCA audio ports** on the rear panel:



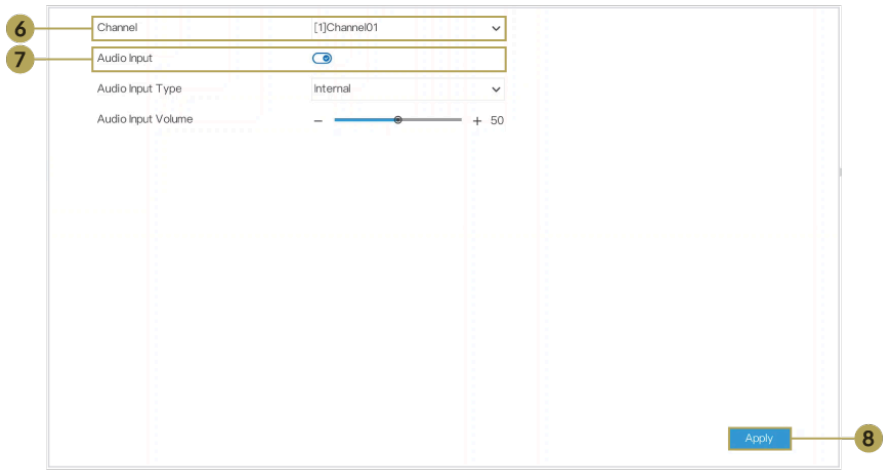
1. **AUDIO IN:** Connect a **self-powered microphone** or audio-enabled device to record audio on a selected channel.
2. **AUDIO OUT:** Connect a **self-powered speaker** to output audio from the system.

9.2 Enable Audio Input

Audio recording must be enabled for each camera channel.

To enable audio Input

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Audio** from the left-side menu.
5. Click the **Audio Input** tab.



6. Select the desired channel.
7. Enable **Audio Input**.
8. Click **Apply** to save the settings.

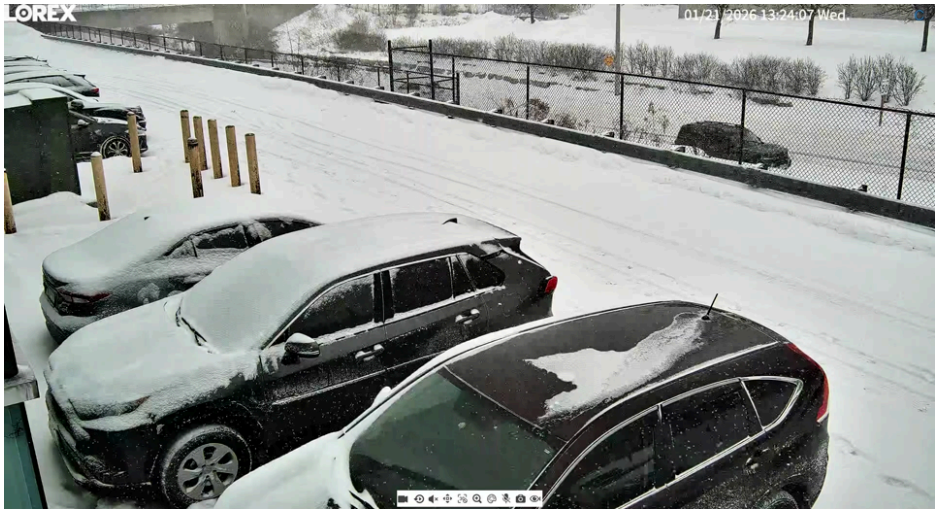
To record audio, **Record Audio** must also be enabled for that channel. Refer to *Recording Schedule Settings*, page 67.

For playback of recorded audio, refer to 15 *Playback & Backup*, page 120.

9.3 Listen to Audio in Live View

You can listen to audio from a camera directly in **Live View** (see 6 *Live View*, page 28).

To listen to audio



1. In **Live View**, double-click a camera channel to open it in full screen.
2. Click the channel once to display the **Quick Camera Toolbar**.

3. Click / **Audio** to enable audio playbackl.

NOTE

- Audio playback is only available for cameras with a **microphone enabled**.
- If no audio is heard, ensure **Audio Input** is enabled for the channel and the volume is adjusted appropriately.

9.4 Use Two-Way Talk

Two-way talk allows you to communicate through a connected camera.

Using the Lorex Connect App

1. Requires a camera with a **built-in microphone and speaker.**
2. You can speak through the camera using your **mobile device's microphone.**

To use Two-Way Talk in the app, first connect the recorder to the Lorex Connect app. Refer to 4.6 *Download the Lorex Connect App for Remote Viewing*, page 17.

Using the Recorder

1. Requires a camera with a **built-in microphone and speaker.**
2. Requires a **microphone connected to the recorder's AUDIO IN port.**

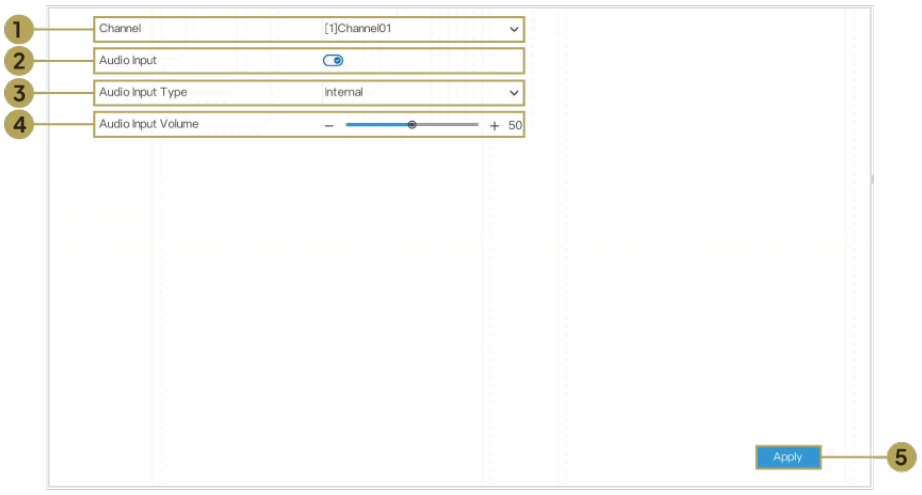
9.5 Configure Audio Input

The **Audio Input** tab controls microphone audio received from the camera.

Open Audio Input

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Audio** from the left-side menu.
5. Click the **Audio Input** tab.

Audio Input



1. **Channel:** Select the camera channel to configure.
2. **Audio Input:** Enable or disable Enable or disable microphone audio.
3. **Audio Input Type:** Displays the microphone input type. This is typically set to **Internal** for cameras with built-in microphones.
4. **Audio Input Volume:** Adjust the microphone volume level using the slider (1–100).
5. **Apply:** Click **Apply** to save the settings.

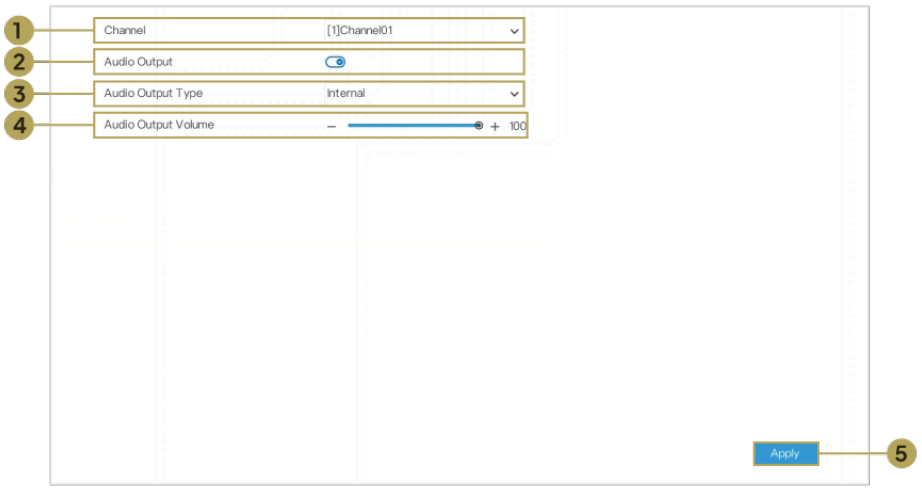
9.6 Configure Audio Output

The **Audio Output** tab controls speaker output for cameras that support audio playback.

Open Audio Output

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Audio** from the left-side menu.
5. Click the **Audio Output** tab.

Audio Output



1. **Channel:** Select the camera channel to configure.
2. **Audio Output:** Enable or disable speaker output for the selected camera.
3. **Audio Output Type:** Displays the speaker type. This is typically set to **Internal** for cameras with built-in speakers.
4. **Audio Output Volume:** Adjust the speaker volume level using the slider.
5. **Apply:** Click **Apply** to save the changes.

9.7 Manage Audio Files

The **Audio Files** tab allows you to manage warning messages or siren sounds used by compatible cameras.

For event-triggered audio warnings, refer to 12.2 *Configure Motion Detection*, page 86 and 14 *IVS & AI Analytics*, page 97.

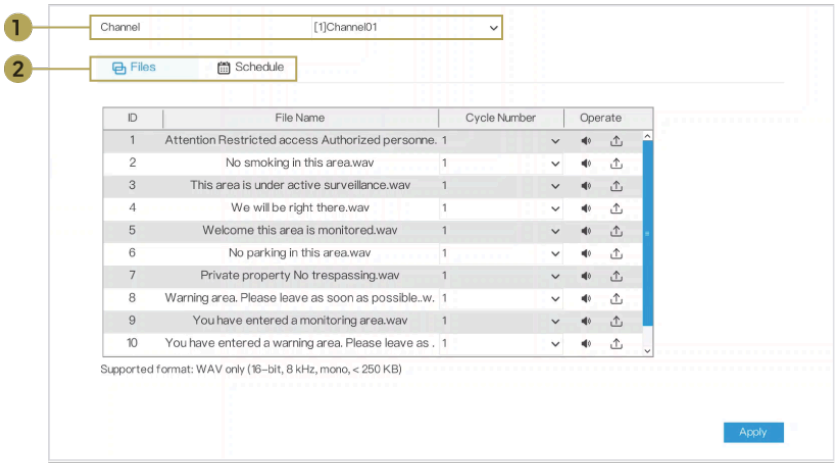
Open Audio Files

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Channel** tab at the top of the menu.
4. Click **Audio** from the left-side menu.
5. Click the **Audio Files** tab.

Audio Files

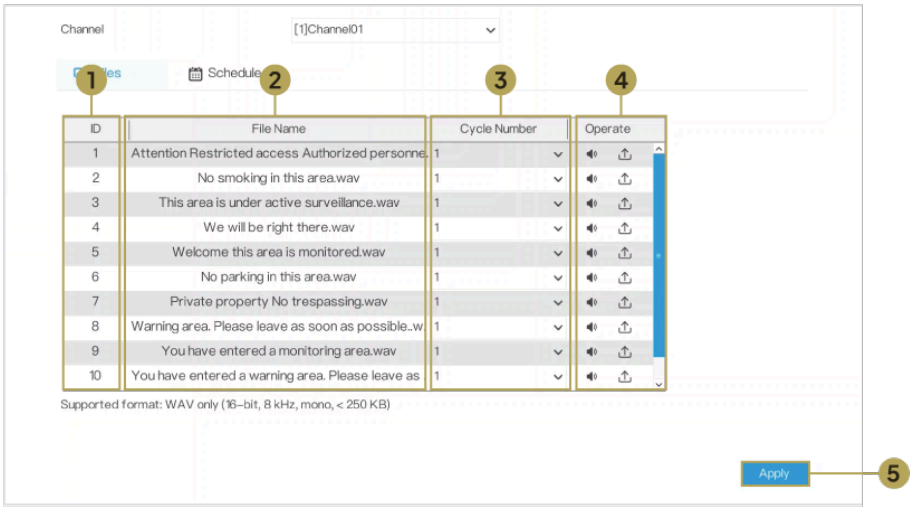
1. **Channel:** Select the camera channel you want to configure.

2. Select the tab you want to configure: **Files** or **Schedule**.



Configure Audio Files

The **Files** tab lists available audio warning messages.

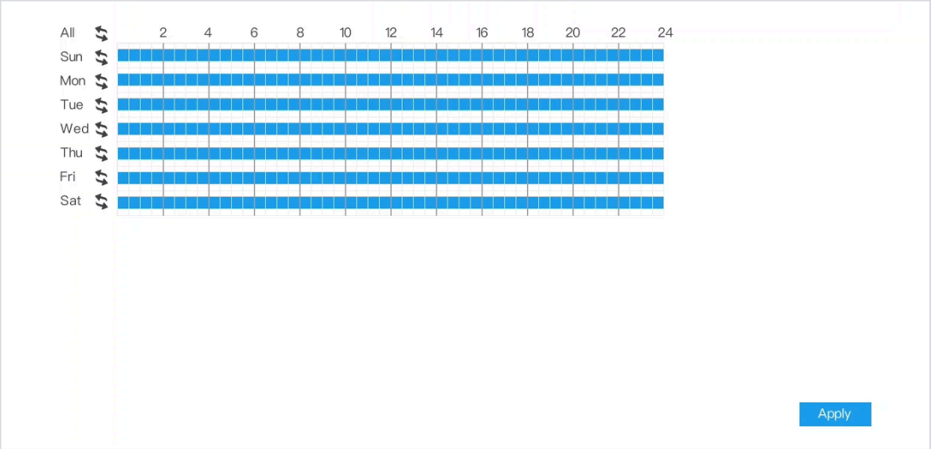


1. **ID:** Displays the audio file slot number. The system supports up to **10 audio files**.
2. **File Name:** Displays the name of the audio file. The file name usually reflects the message or sound played.
3. **Cycle Number:** Select how many times the warning message or siren will repeat when triggered.
4. **Operate:**
   - **Play:** Click audio to listen to the warning message or siren.
   - **Download:** Click download to upload a custom audio file from a connected USB device. Slots **9 and 10** are available for uploading custom audio files.
5. **Apply:** Click **Apply** to save the settings.

Schedule

The **Schedule** tab allows you to control when audio warnings are active.

The schedule grid shows **days of the week** on the left and **time of day** along the top. Each square in the grid represents **30 minutes**. 4 squares represent **1 hour**.



To configure the schedule:

1. Click and drag across the grid to select active time periods.
2. Drag across existing selections to remove them.
3. **Apply:** Click **Apply** to save the schedule.

10 Date & Time

The **Date & Time** settings menu lets you configure the recorder's date, time, time zone, and synchronization settings. Correct configuration ensures accurate timestamps for recordings, playback, event logs, and smart search results.

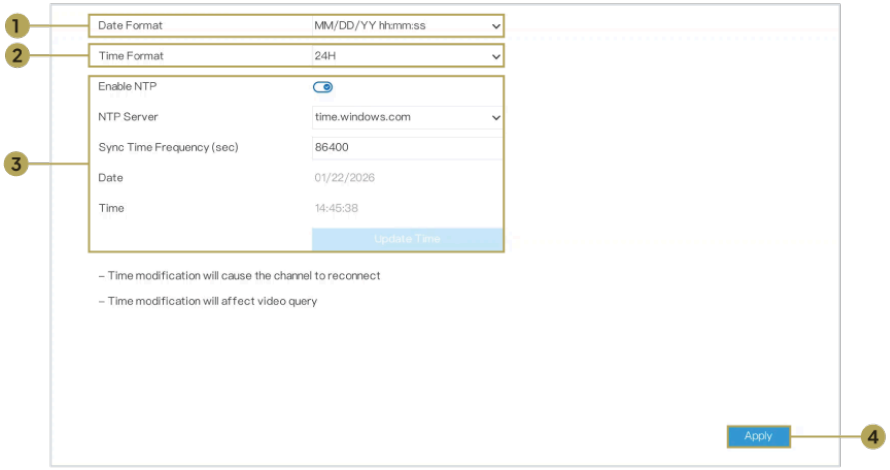
10.1 Set the System Date and Time

The **Date & Time** settings allow you to configure how the system displays and maintains time. You can set the time manually or enable automatic synchronization using an NTP server.

Open Date & Time Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **General** from the left-side menu.
5. Select the **Date & Time** tab.

Configure Date & Time Settings



The following options are available:

1. **Date Format:** Select how the date is displayed.
2. **Time Format:** Select **12H** or **24H** format.
3. **Enable NTP:** Enable or disable automatic time synchronization.

> **NOTE**
>
> It is recommended to enable **NTP** to keep the system time accurate automatically.

If **Enable NTP** is turned on, you must configure:

- **NTP Server:** Enter the time server address.
- **Sync Time Frequency (sec):** Enter how often the system synchronizes time.

If **Enable NTP** is turned off, you must manually set the system time:

- **Date:** Enter the current date.
- **Time:** Enter the current time.
- **Update Time:** Click to apply the entered date and time.

> **NOTE**
>
> - Changing the system time may cause channels to reconnect.
> - Time changes may temporarily affect video quality.

4. **Apply:** Click **Apply** to save the settings.

After setting the system date and time, select the correct time zone to ensure timestamps are accurate for your location.

10.2 Time Zone

The Time Zone settings allow you to select the correct time zone for the recorder's location.

Open Time Zone Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **General** from the left-side menu.
5. Select the **Time Zone** tab.

Time Zone Settings

1. **Time Zone:** Select the appropriate time zone for your location.
2. **Apply:** Click **Apply** to save the settings.

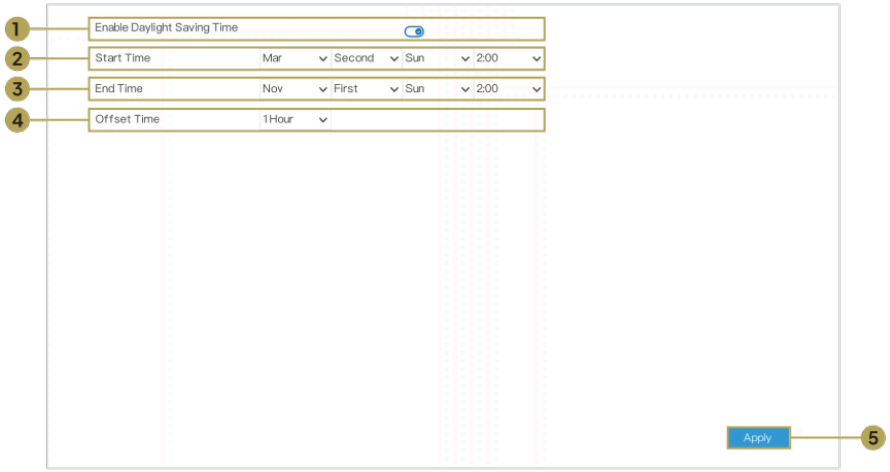
10.3 Daylight Saving Time (DST)

Use the **DST** settings if your region observes daylight saving time. When enabled, the recorder automatically adjusts the system clock during the selected DST period.

Open DST Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **General** from the left-side menu.
5. Select the **DST** tab.

DST Settings



1. **Enable Daylight Saving Time:** Enable or disable DST.
   If enabled, the following options appear:
2. **Start Time:** Select when daylight saving time begins.
3. **End Time:** Select when daylight saving time ends.
4. **Offset Time:** Select the adjustment amount:
   - **1 Hour**
   - **30 Minutes**
5. **Apply:** Click **Apply** to save the settings.

10.4 Sync Camera Time

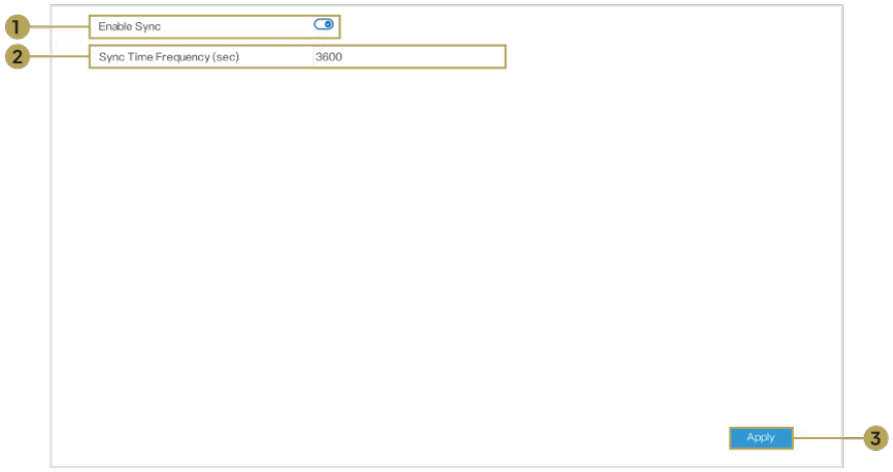
The **Sync Camera Time** settings allow the recorder to synchronize the time on all connected cameras.

NOTE
It is recommended to enable this feature to ensure consistent timestamps across all cameras.

Open Sync Camera Time Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **General** from the left-side menu.
5. Select the **Sync Camera Time** tab.

Sync Camera Time Settings



1. **Enable Sync:** Enable or disable time synchronization with connected cameras.
2. **Sync Time Frequency (sec):** Enter how often the cameras are synchronized.
3. **Apply:** Click **Apply** to save the settings.

11 Recording & Storage

11.1 Configure Recording Schedules

The **Record Schedule** allows you to define when the recorder captures video from each camera channel. Recording can be scheduled based on continuous recording, motion detection, alarm events, or combinations of these triggers.

Open Recording Schedule

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Record** tab at the top of the menu.
4. Click **Record Schedule** from the left-side menu.

Recording Schedule Settings

1. **Channel:** Select the camera channel you want to configure.
2. **Enable Record:** Enable or disable recording for the selected camera channel.
3. **Enable Record Audio:** Enable or disable audio recording for cameras that support audio input.
4. **Enable ANR:** Enable or disable **ANR (Automatic Network Replenishment)**. When enabled, cameras temporarily store recordings locally if the network connection to the recorder is interrupted and automatically transfer the missing footage once the connection is restored.
5. **Stream Type:** Select the video stream used for recording.
   - **Main Stream:** Uses the primary high-quality video stream for recording.

Use the Record Schedule Grid

The schedule grid shows **days of the week** on the left and **time of day** along the top. Each square in the grid represents **30 minutes**. 4 squares represent **1 hour**.

To configure the schedule:

1. Select a **recording type** from the options on the right side of the schedule.
2. Click and drag across the schedule grid to apply that recording type to the selected time periods.
   - You can combine different recording types throughout the day and week.
3. **Copy:** Copy the recording schedule to other camera channels.
4. **Apply:** Click **Apply** to save the schedule.

Recording Types

The following recording types are available:

- **Continuous (Blue):** The camera records continuously during the selected time period.
- **Alarm (Red):** Recording begins when an alarm event is triggered.
- **Motion (Green):** Recording begins when motion is detected.
- **I/O (Yellow):** Recording begins when an external alarm input is triggered.
- **M | I/O (Light Blue):** Recording begins when **motion detection or an alarm input** is triggered.
- **M & I/O (Orange):** Recording begins only when **both motion detection and an alarm input** are triggered.

11.2 Manage Local Disks and NAS Storage

The **Disk** settings allow you to view connected hard drives and manage storage settings for the recorder. From here, you can format installed hard drives and configure recording storage options.

11.2.1 Install and replace the Hard Drive

The recorder includes two internal hard drive bays. You can install a hard drive up to 12 TB per disk (24 TB total max) at any time. Use this procedure to install, replace, or remove a hard drive.

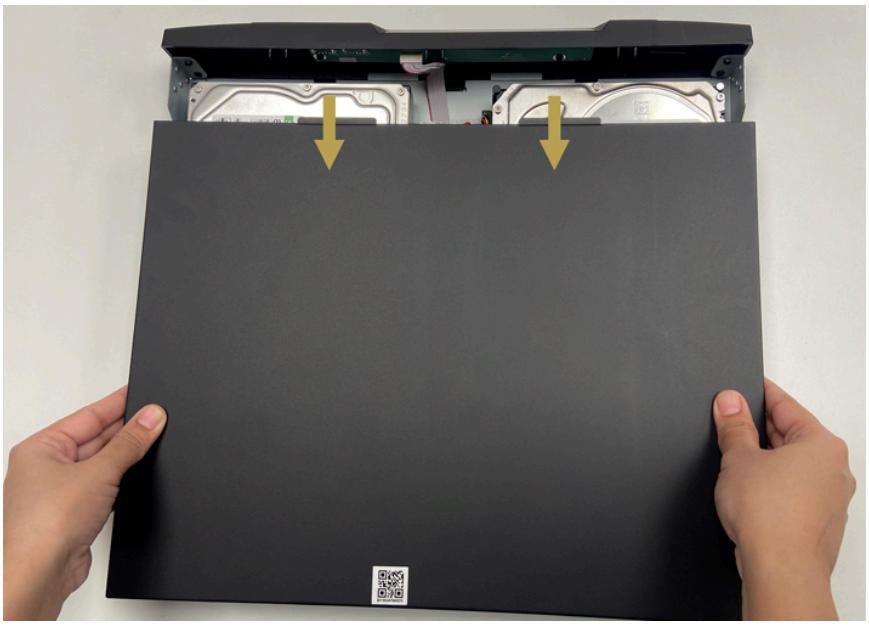
11.2.1.1 Removing the Hard Drive

> **CAUTION**
>
> Ensure the NVR is turned off and the power adapter is disconnected from the power source before proceeding with any hardware adjustments.

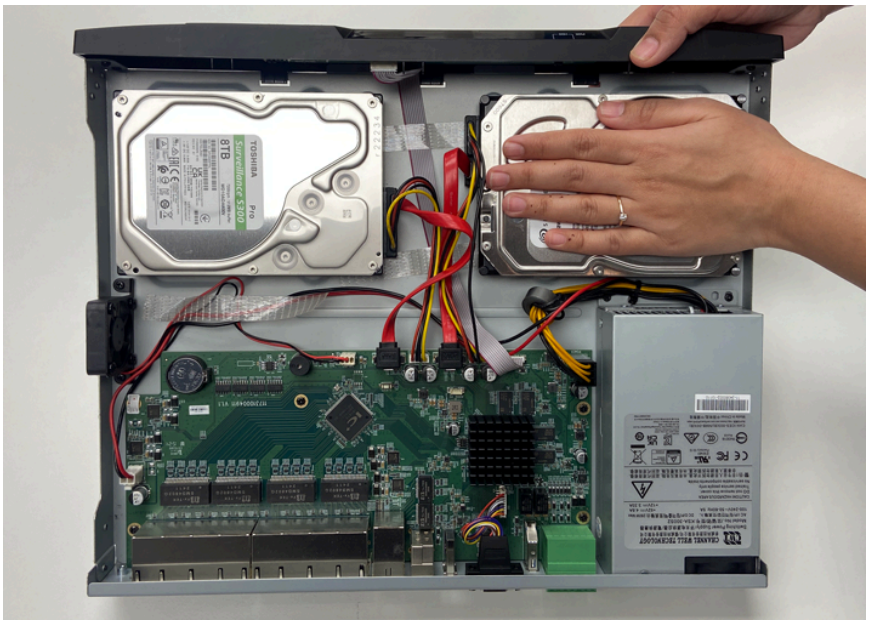
Steps to Remove the Hard Drive:

1. **Power off and disconnect the system:**
   - Unplug the power adapter and disconnect all other cables from the NVR.
2. **Open the NVR case:**
   - Use a Phillips screwdriver to remove the four side screws, two on each side, and the single rear screw.

   - Slide the top cover away from the NVR and lift it off to expose the internal components.

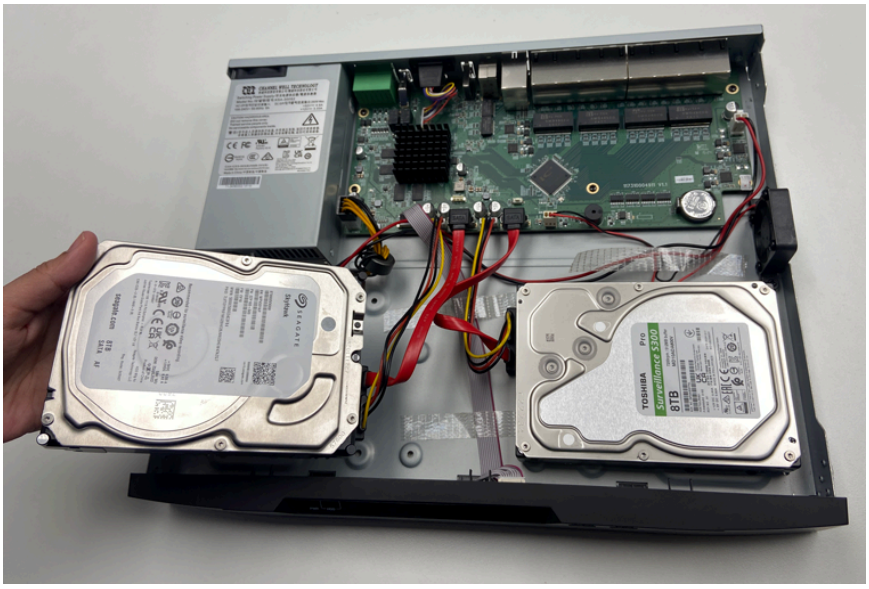


3. **Flip the NVR and hold the drive:**
   - Hold the hard drive in place with one hand and carefully flip the NVR over to access the bottom panel.



4. **Unscrew the hard drive:**
   - Use a Phillips screwdriver to remove the four screws securing the hard drive to the NVR chassis.

5. **Flip the NVR back and remove the drive:**
   - Hold the hard drive in place, flip the NVR upright, and carefully slide the drive partway out.



6. **Disconnect the cables:**
   - Gently unplug the SATA cable and the power cable from the hard drive by pulling the connectors straight out.

   - Fully remove the hard drive from the NVR.
   - Proceed to the next section to install a new hard drive.

11.2.1.2 Installing a New Hard Drive

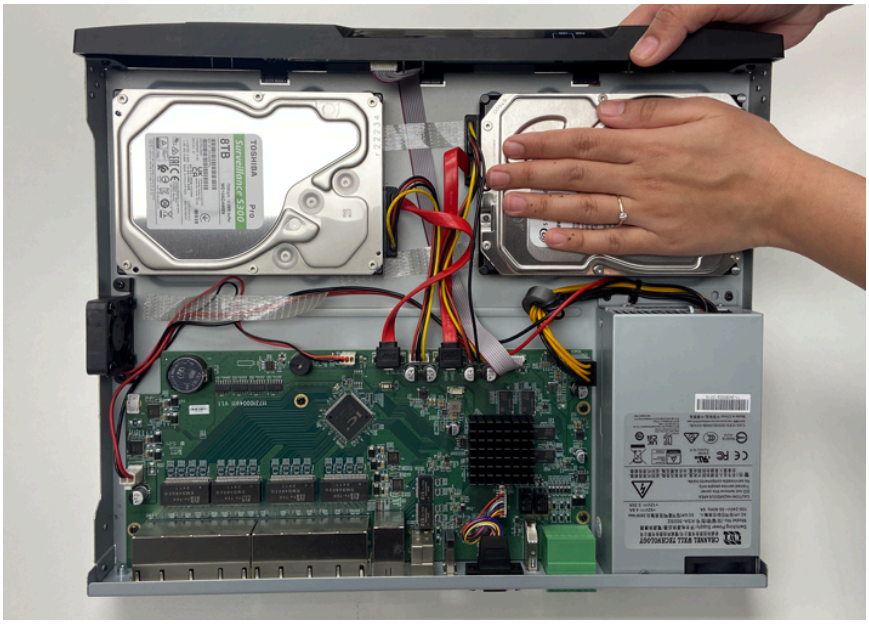
To install a new hard drive, follow these steps carefully:

1. **Prepare the new hard drive:**
   - Make sure the drive is a compatible 3.5" SATA hard drive, up to 12 TB per disk (24 TB total max) maximum capacity.

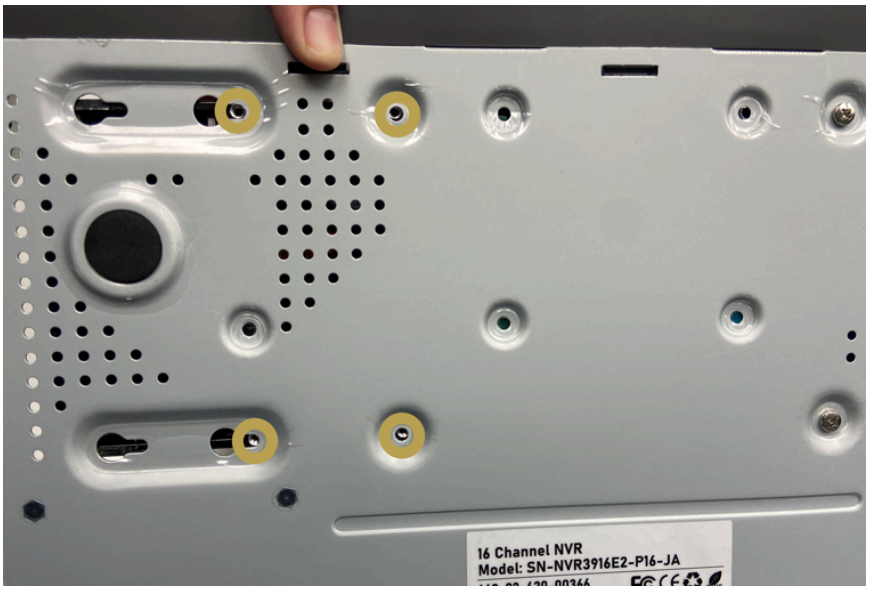
2. **Insert the hard drive:**
   - Slide the hard drive into the NVR's drive bay. Hold it in place with one hand.

3. **Connect the cables:**
   - Plug the NVR's SATA and power cable into the corresponding port on the new hard drive.

4. **Flip the NVR and align the drive:**
   - Carefully flip the NVR over while holding the hard drive.



5. **Secure the hard drive:**
   - Align the screw holes on the bottom of the drive with the holes on the NVR's bottom panel.



   - Use a Phillips screwdriver to fasten the four installation screws through the bottom panel to secure the hard drive.

6. **Flip the NVR back and close the case:**
   - Flip the NVR upright. Slide the top cover back into place.

   - Secure the cover using the two side screws and three rear screws with the Phillips screwdriver.

7. **Reconnect and power on:**
   - Reconnect the power adapter and all other cables to the NVR.
8. **Format the new hard drive:**
   - After installation, the drive needs to be formatted before use. Refer to the next section 11.2.2 *Format a Hard Drive*, page 74 for detailed steps on how to format the new hard drive.

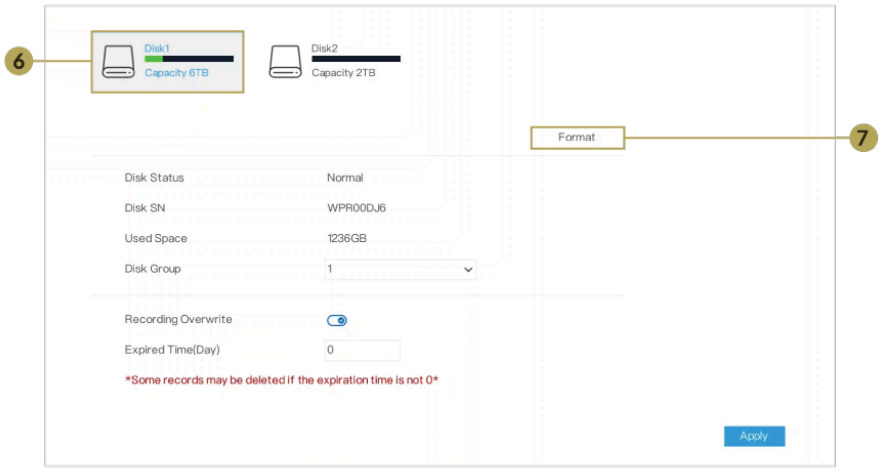
11.2.2 Format a Hard Drive

A newly installed hard drive must be formatted before the recorder can use it for recording. Formatting prepares the drive for use with the recorder and permanently deletes any existing data on the drive.

To format a hard drive

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Record** tab at the top of the menu.
4. Click **Disk** from the left-side menu.

5. Click the **Disk** tab.



6. Select the hard drive you want to format.
7. Click **Format**. Confirm the formatting prompt.

> **NOTE**
>
> Formatting a hard drive permanently deletes all data stored on that drive.

Enable **Recording Overwrite** if you want the recorder to keep recording after the hard drive becomes full. When enabled, the recorder overwrites the oldest recordings automatically.

11.2.3 View and Configure Local Disks

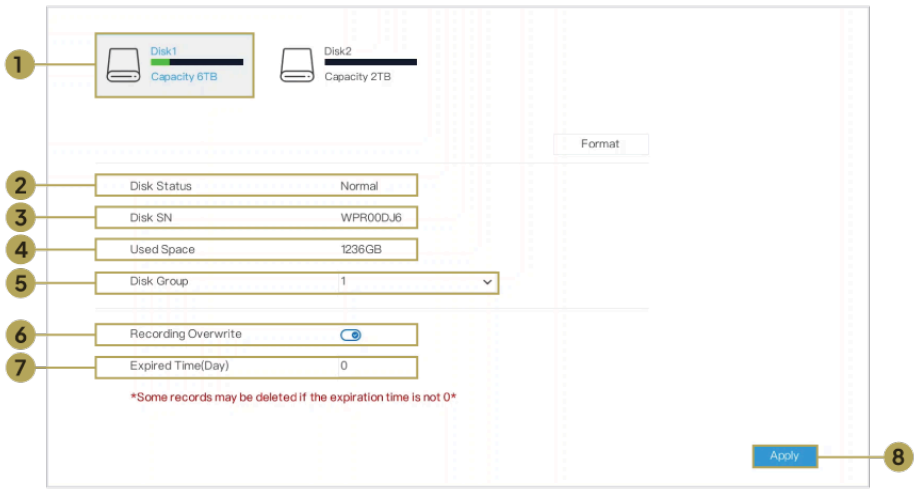
The **Disk** tab lets you view the status of installed hard drives and manage how the recorder uses local storage. From this tab, you can check disk status, assign disk groups, and configure overwrite and retention settings.

Open Disk

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Record** tab at the top of the menu.
4. Click **Disk** from the left-side menu.
5. Click the **Disk** tab.

Disk Settings

When a disk is selected, the following information and options are displayed:



1. **Select a Disk:** Select the hard drive you want to configure.
2. **Disk Status:** Displays the current status of the hard drive.
   Under normal operation, the status should display **Normal**.
3. **Disk SN:** Displays the serial number of the hard drive.
4. **Used Space:** Displays how much storage space is currently used on the disk.
5. **Disk Group:** Select a disk group number from **1–4**. Disk groups can be used to organize recording storage across multiple drives.
6. **Recording Overwrite:** Enable or disable automatic overwrite.
   - When **enabled**, the recorder automatically overwrites the oldest recordings when the disk becomes full.
   - When **disabled**, recording stops once the disk reaches full capacity.
7. **Expired Time (Day):** Enter the number of days recordings will be stored before they are automatically deleted.
8. **Apply:** Click **Apply** to save the settings.

11.2.4 Add and Manage NAS Devices

The **NAS** tab lets you add and manage network-attached storage devices for the recorder. Use this tab to connect a supported NAS device for additional storage capacity or centralized recording storage.

Open NAS

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Record** tab at the top of the menu.
4. Click **Disk** from the left-side menu.
5. Click the **NAS** tab.

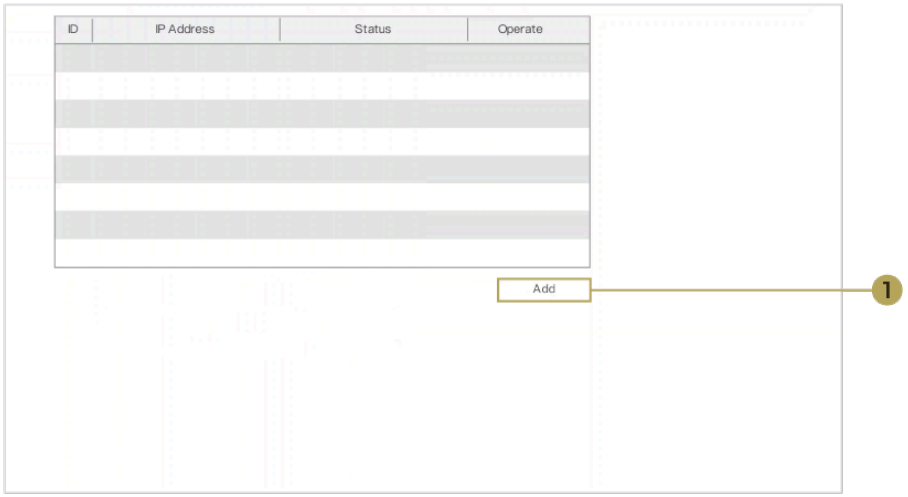
NAS Device List

The **NAS** tab displays a table of configured network storage devices.

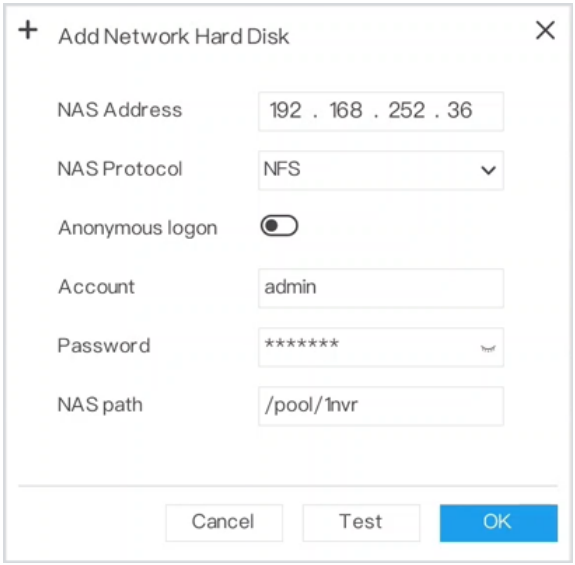
1. **ID:** Displays the NAS device identification number.
2. **IP Address:** Displays the network address of the NAS device.
3. **Status:** Displays the connection status of the NAS device.
4. **Operate:** Provides options to manage the configured NAS device.

Adding a NAS Device

To add a network storage device:



1. Click **Add**.



2. **NAS Address:** Enter the IP address of the NAS device.
3. **NAS Protocol:** Select the NAS protocol. The supported protocol is **NFS**.
4. **Anonymous Logon:** Enable or disable anonymous login.
5. **Account:** Enter the NAS account username.
6. **Password:** Enter the NAS account password.
7. **NAS Path:** Enter the shared folder path on the NAS device.
8. **Test:** Test the connection to the NAS device to verify that the settings are correct.
9. **OK:** Save the NAS configuration and add the device to the storage list.

11.3 Assign Cameras to Disk Groups

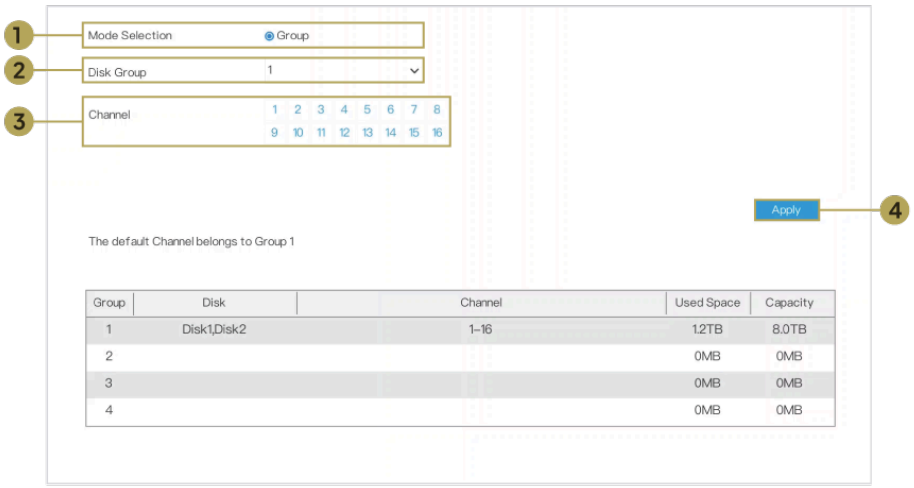
The **Storage Mode** allows you to assign specific camera channels to different hard disk groups. This can be useful when multiple hard drives are installed and you want certain cameras to record to specific disks.

By default, all camera channels belong to **Disk Group 1** unless they are manually assigned to a different group.

Open Storage Mode

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Record** tab at the top of the menu.
4. Click **Storage Mode** from the left-side menu.

Storage Mode Settings



1. **Mode Selection:** Select the storage mode used by the recorder. The default option is **Group**, which allows channels to be assigned to different disk groups.
2. **Disk Group:** Select the disk group number (**1–4**) you want to configure.
3. **Channel:** Select the camera channels that will record to the selected disk group.
4. **Apply:** Click **Apply** to save the settings.
   The table below shows each disk group (1–4), the assigned hard drive, the camera channels recording to that group, the used storage space, and the total disk capacity.

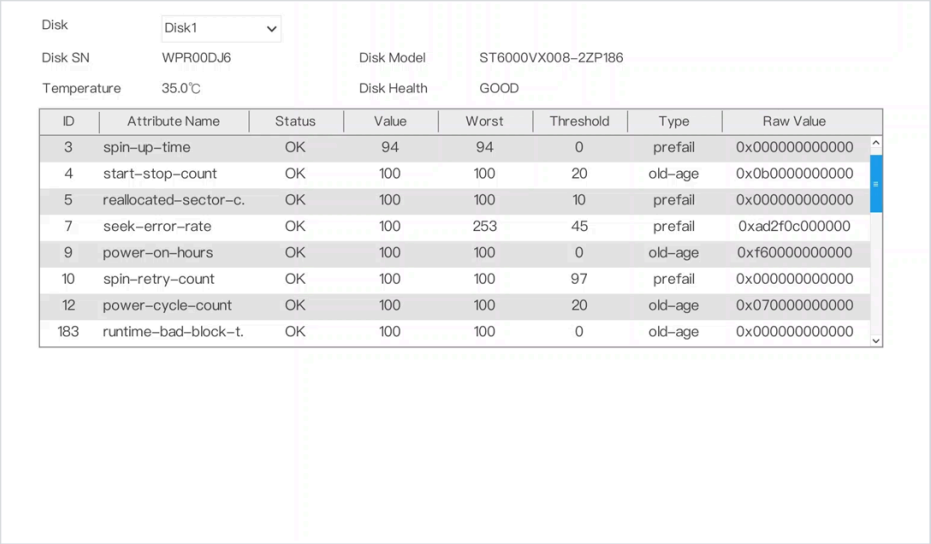
11.4 Monitor Disk Health

The **S.M.A.R.T (Self-Monitoring, Analysis, and Reporting Technology)** settings allow you to monitor the health and status of installed hard drives. This feature helps identify potential disk issues before they affect recording.

Open S.M.A.R.T Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Record** tab at the top of the menu.
4. Click **S.M.A.R.T** from the left-side menu.

Disk Information



1. **Disk:** Select the disk you want to view (**Disk1** or **Disk2**).
2. **Disk SN:** Displays the serial number of the selected hard drive.
3. **Disk Model:** Displays the model number of the hard drive.
4. **Temperature:** Displays the current temperature of the disk.
5. **Disk Health:** Displays the overall health status of the disk, such as **GOOD**.

Disk Health

Below the disk information is a table that displays detailed S.M.A.R.T diagnostic attributes for the selected hard drive.

- **ID:** Identifier for the S.M.A.R.T attribute.
- **Attribute Name:** Name of the monitored disk parameter.
- **Status:** Indicates whether the attribute is functioning normally.
- **Value:** Current measured value of the attribute.
- **Worst:** Lowest recorded value of the attribute.
- **Threshold:** Minimum acceptable value before a warning is triggered.
- **Type:** Attribute classification.
- **Raw Value:** The raw measurement data reported by the disk.

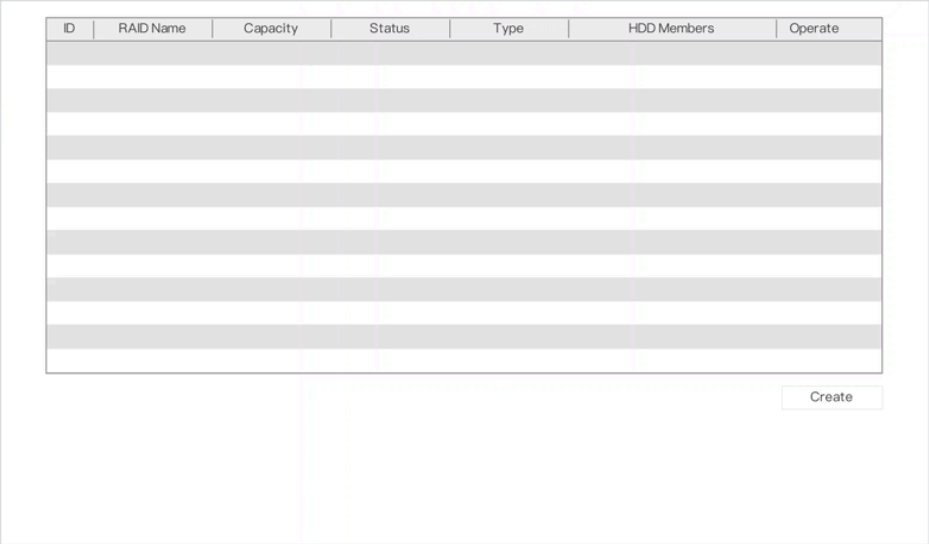
11.5 Configure RAID Storage

The **RAID** settings allow you to configure RAID storage for the recorder when multiple hard drives are installed. RAID can improve storage reliability or performance depending on the configuration used.

Open RAID Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Record** tab at the top of the menu.
4. Click **RAID** from the left-side menu.

RAID Information

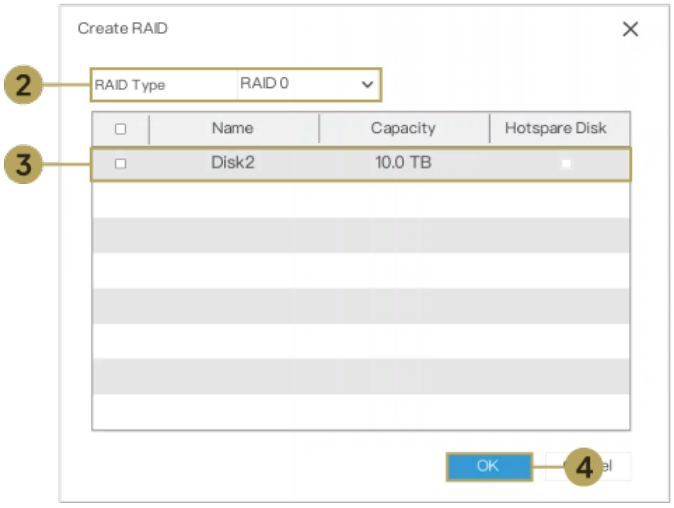


The RAID page displays the current RAID configuration.

- **ID:** Displays the RAID identification number.
- **RAID Name:** Displays the name of the RAID volume.
- **Capacity:** Displays the total storage capacity of the RAID volume.
- **Status:** Displays the RAID status. Under normal operation this should display **Normal**.
- **Type:** Displays the RAID type (for example **RAID 1**).
- **HDD Members:** Displays the hard drives included in the RAID array.
- **Operate:** Provides options to manage the RAID configuration.
  - **Modify:** Opens the RAID configuration window.
  - **Delete:** Removes the RAID configuration.

Creating a RAID Configuration

1. Click **Create**.



2. **RAID Type:** Select the RAID configuration type.
   - **RAID 0:** Combines multiple disks to increase storage performance and capacity.
   - **RAID 1:** Mirrors data across disks to provide redundancy and protect recordings if one disk fails.
3. **Disk Selection:** Select the disk to include in the RAID array.
4. Click **OK** to create the RAID configuration.

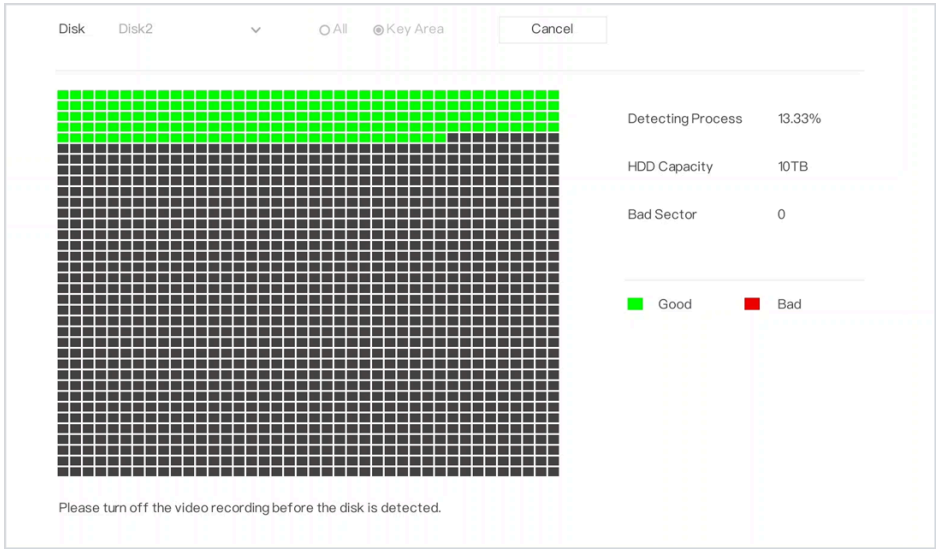
11.6 Test Hard Drives for Errors

The **Disk Detection** settings allow you to scan installed hard drives for potential disk errors or bad sectors. This process helps verify that the disk is functioning properly and ensures reliable recording performance.

Open Disk Detection Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Record** tab at the top of the menu.
4. Click **Disk Detection** from the left-side menu.

Detection Status



1. **Disk:** Select the hard drive you want to test.
2. **All:** Runs a full scan of the entire hard drive to check for errors.
3. **Key Area:** Runs a faster scan that checks only critical areas of the hard drive.
4. **Cancel:** Stops the disk detection process.

A graphical display shows the progress of the disk scan.

- The graph contains blocks that gradually change color as the scan progresses.
- **Green blocks** indicate sectors that are functioning normally.
- **Red blocks** indicate sectors that may be damaged.

Additional information displayed during the scan includes:

- **Detecting Process**: Shows the progress of the disk scan.
- **HDD Capacity:** Displays the total capacity of the selected hard drive.
- **Bad Sector:** Displays the number of detected bad sectors on the disk.

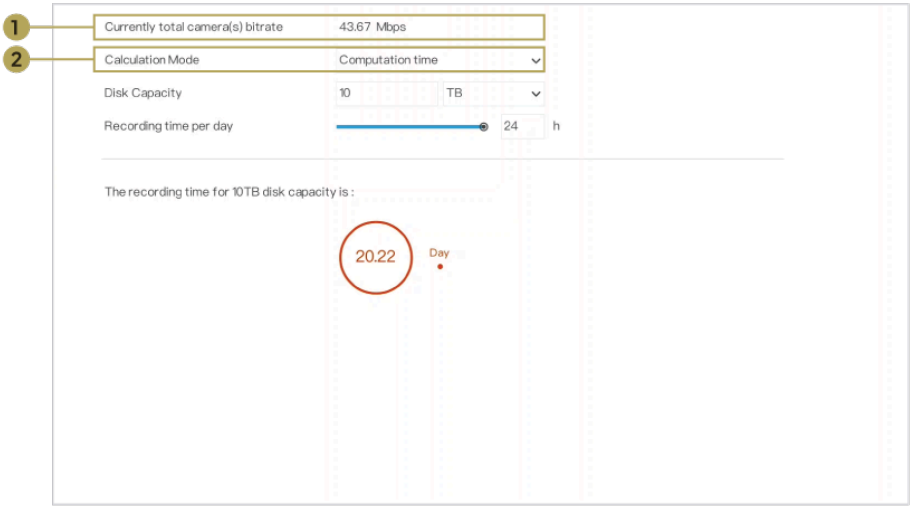
11.7 Estimate Storage Capacity

The **Disk Calculation** settings allow you to estimate how much storage space is required for recordings or how long recordings can be stored based on the available disk capacity.

Open Disk Calculation Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Record** tab at the top of the menu.
4. Click **Disk Calculation** from the left-side menu.

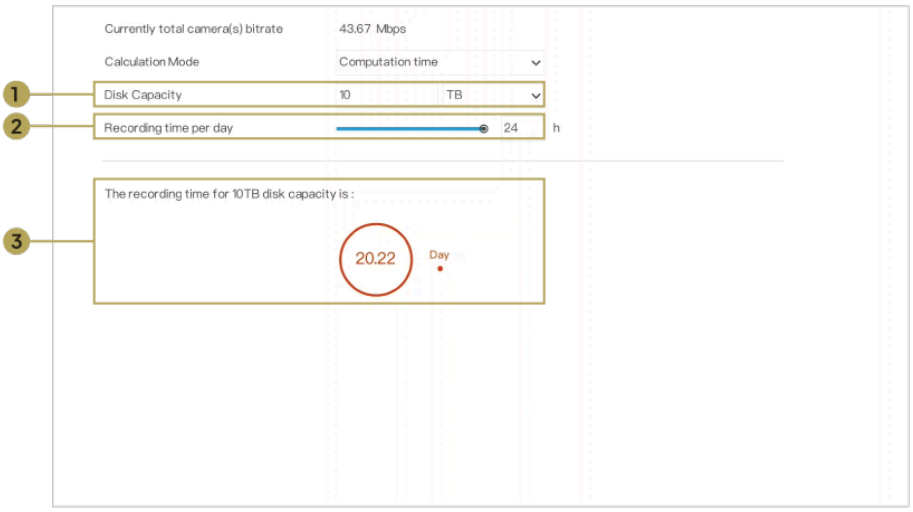
Disk Calculation Settings



1. **Currently Total Camera(s) Bitrate:** Displays the combined bitrate of all connected cameras (for example, **87.34 Mbps**). This value is used to estimate storage requirements.
2. **Calculation Mode:** Select the type of calculation to perform.
   - **Computation Time:** Estimates how long recordings can be stored based on available disk capacity.
   - **Computing Capacity:** Estimates how much disk space is required for a specified recording period.

Estimate Computation Time

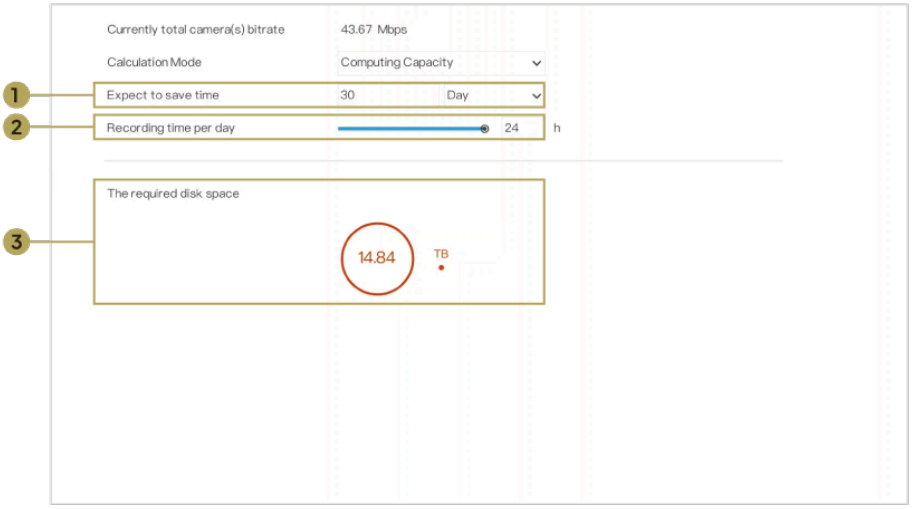
When **Computation Time** is selected, the recorder calculates how many days of recordings can be stored based on the disk capacity.



1. **Disk Capacity:** Enter the storage capacity available for recording. The value can be set in **GB** or **TB**.
2. **Recording Time per Day:** Adjust the number of hours recorded per day using the slider (up to **24 hours**).
3. **Estimated Recording Time:** The system displays an estimated number of **days of storage** based on the selected settings. This value appears inside the circular indicator labeled **Day**.

Estimate Computing Capacity

When **Computing Capacity** is selected, the recorder calculates how much disk space is required to store recordings for a specified period.



1. **Expect to Save Time:** Enter the amount of time recordings should be stored. You can select the unit as **Day**, **Week**, or **Month**.
2. **Recording Time per Day:** Adjust the number of hours recorded per day using the slider (up to **24 hours**).
3. **Required Disk Space:** The system displays the estimated storage space required for the selected settings. This value appears inside the circular indicator labeled **GB**.

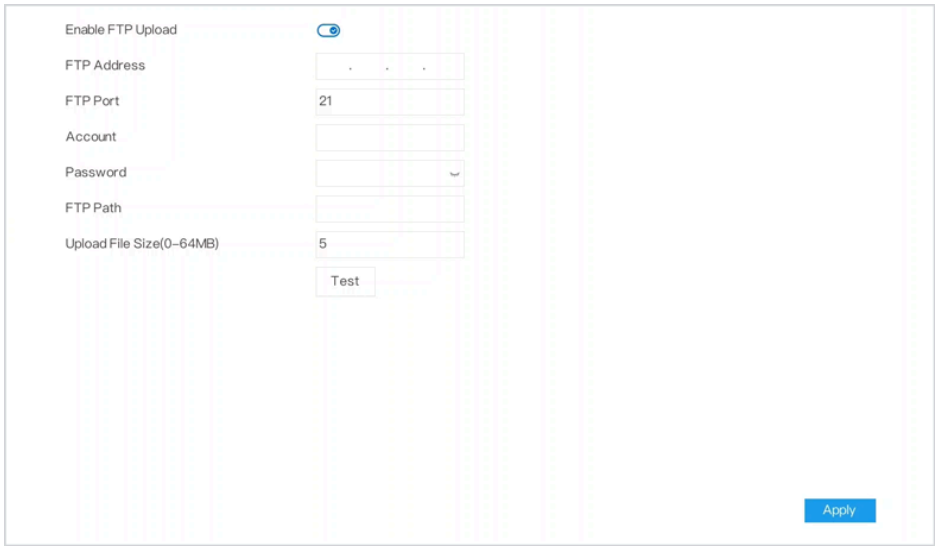
11.8 Configure FTP Uploads for Remote Storage

The **FTP** settings allow the recorder to automatically upload recorded files or snapshots to an FTP server for remote storage or backup.

Open FTP Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Record** tab at the top of the menu.
4. Click **FTP** from the left-side menu.

FTP Settings



1. **Enable FTP Upload:** Enable or disable automatic uploading of files to the FTP server.
2. **FTP Address:** Enter the IP address or domain name of the FTP server.
3. **FTP Port:** Enter the port number used by the FTP server.
4. **Account:** Enter the username used to access the FTP server.
5. **Password:** Enter the password associated with the FTP account.
6. **FTP Path:** Enter the destination folder path on the FTP server where files will be uploaded.
7. **Upload File Size (0–64MB):** Set the maximum size for uploaded files. The default value is **5 MB**.
8. **Test:** Click **Test** to verify that the recorder can successfully connect to the FTP server using the entered settings.
9. **Apply:** Click **Apply** to save the FTP configuration settings.

12 Events & Alarm

This chapter explains how to configure motion detection, alarm inputs/outputs, video loss alerts, and abnormal system alarms that trigger notifications or recordings.

12.1 Configure General Alarm Settings

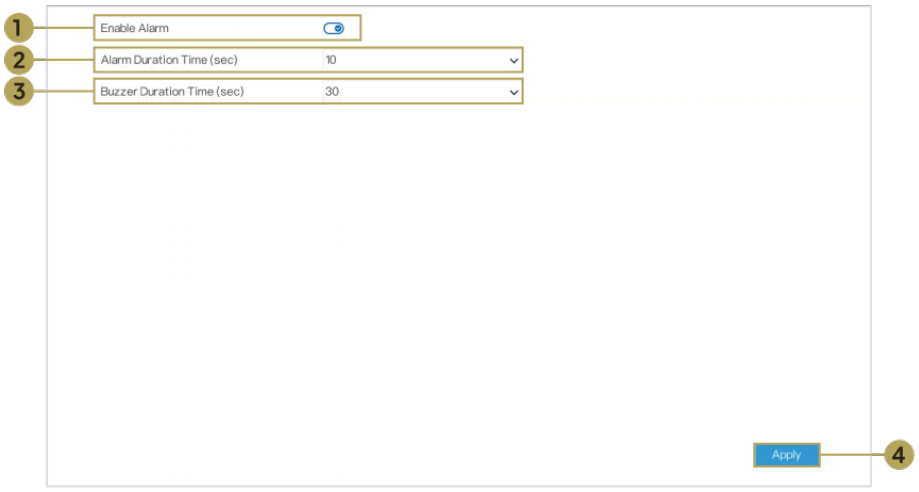
The **General** settings control how the recorder handles alarm notifications, including how long alarm outputs remain active and how long the system buzzer sounds when an event occurs.

12.1.1 General Alarm Settings

Open General Alarm Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **General** from the left-side menu.

General Alarm Settings



1. **Enable Alarm:** Enable or disable system alarm notifications.
2. **Alarm Duration Time (sec):** Set how long the alarm output remains active. Options range from **5 to 60 seconds**.
3. **Buzzer Duration Time (sec):** Set how long the recorder's buzzer remains active. Options range from **5 to 60 seconds**.
4. **Apply:** Click **Apply** to save the settings.

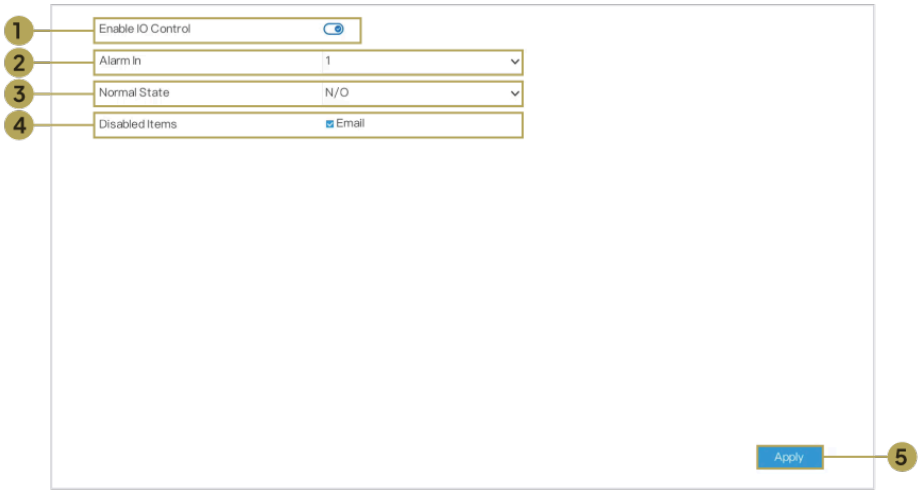
12.1.2 IO Control Push Notifications

Open General Alarm Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **General** from the left-side menu.
5. Click the **IO Control Push** tab.

IO Control Push Settings

The **IO Control Push** settings allow the recorder to send notifications when an alarm input device (such as a sensor or external trigger) is activated.



1. **Enable IO Control:** Enable or disable notifications for alarm input events.
   When enabled, the following options appear:
2. **Alarm In:** Select the alarm input port (**1–6**).
3. **Normal State:** Select the default state of the alarm input:
   - **N/O:** Normally Open
   - **N/C:** Normally Closed
4. **Disabled Items:** Check **Email** to prevent email notifications for this alarm input.
5. **Apply:** Click **Apply** to save the settings.

12.2 Configure Motion Detection

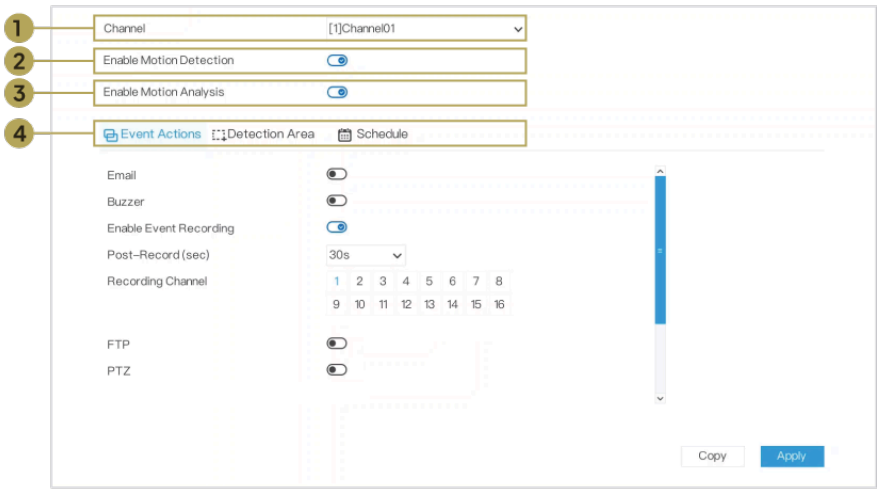
The **Motion Detection** settings allow the recorder to monitor camera video for movement and trigger actions such as recording, alarms, notifications, or deterrence features.

For AI-based detection features such as intrusion, line crossing, or people counting, refer to 14 *IVS & AI Analytics*, page 97.

Open Motion Detection Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **Motion Detection** from the left-side menu.

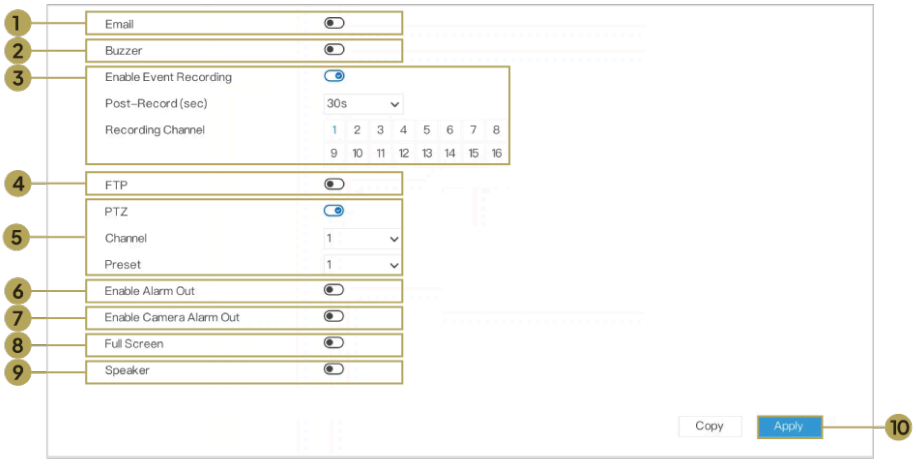
Motion Detection Settings



1. **Channel:** Select the camera channel you want to configure.
2. **Enable Motion Detection:** Enable or disable motion detection.
3. **Enable Motion Analysis:** Enable advanced motion analysis.
4. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

Motion Detection — Event Actions

These settings define what happens when motion is detected.

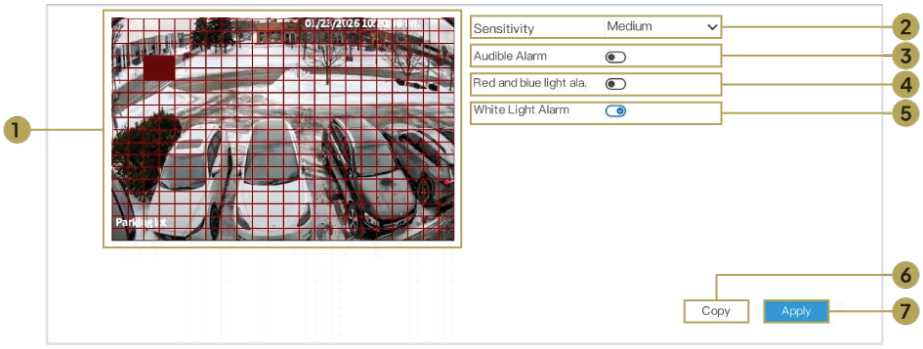


1. **Email:** Send an email notification when motion is detected.
2. **Buzzer:** Sound the recorder's internal buzzer.
3. **Enable Event Recording:** Enable recording when motion is detected. When enabled:
   - **Post-Record (sec):** Select how long recording continues after motion stops (**30–60 seconds**).
   - **Recording Channel:** Select which channels should record during the event.
4. **FTP:** Upload event files to the configured FTP server.
5. **PTZ:** Trigger a PTZ action when motion occurs. When enabled:
   - **Channel**: Select the PTZ camera.
   - **Preset:** Select the preset position to move to.
     Preset positions must be configured first. Refer to 8.5 *Create and Use Presets*, page 52.

6. **Enable Alarm Out:** Activate an external alarm device. When enabled:
   - **Alarm Time (sec):** Set the alarm duration.
   - **Port Number:** Select **1** or **2**.
7. **Enable Camera Alarm Out:** Trigger alarm output devices connected to the camera.
8. **Full Screen:** Automatically display the camera in full screen when motion occurs. When enabled:
   - **Full Screen Time (sec):** Set how long the camera remains full screen.
9. **Speaker:** Trigger an audio message or siren. When enabled:
   - **Broadcast Point**: Select the audio output device.
   - **Audio Files**: Select a prerecorded warning message.
     For instructions on adding or managing warning audio files, refer to 9.7 *Manage Audio Files*, page 60.
10. **Apply:** Click **Apply** to save the settings.

Motion Detection — Detection Area

This tab allows you to define the areas where motion detection is active.



1. The left side displays the **camera image with a grid overlay**.
   Click and drag across the grid to **enable or disable motion detection areas**.
   - **Grid visible** = Motion detection enabled
   - **Grid removed** = Motion detection disabled

   When motion occurs, the triggered grid squares turn **red**, showing where motion was detected.
2. **Sensitivity:** Select the detection sensitivity: **Low**, **Medium**, **High**, **Highest**.
3. **Audible Alarm:** Enable or disable audible alarms from the camera. When enabled:
   - **Audible Alarm File**: Select an alarm sound.
4. **Red and Blue Light Alarm:** Enable or disable red/blue deterrence lights (camera dependent).

NOTE
Available options may vary depending on the capabilities of the connected camera.

5. **White Light Alarm:** Enable or disable white spotlight deterrence.
6. **Copy:** Click **Copy** to apply these settings to other channels.
7. **Apply:** Click **Apply** to save the settings.

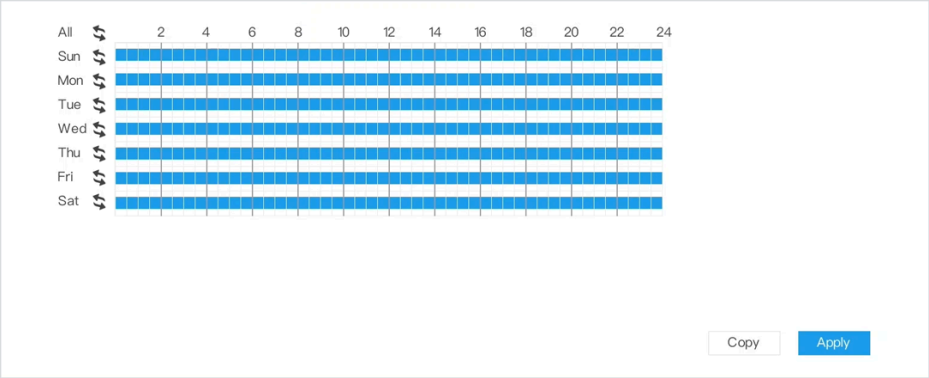
Motion Detection — Schedule

The **Schedule** tab defines when motion detection is active.

The schedule grid displays:

- Days of the week on the left
- **Time of day** across the top

Each square represents **30 minutes**.



To configure the schedule:

1. Click and drag across the grid to **enable or disable time periods**.
2. Use the **All / Sun / Mon / Tue / Wed / Thu / Fri / Sat** buttons to quickly apply or **Clear** schedules.
3. **Copy:** Click **Copy** to apply the schedule to other channels.
4. **Apply:** Click **Apply** to save the settings.

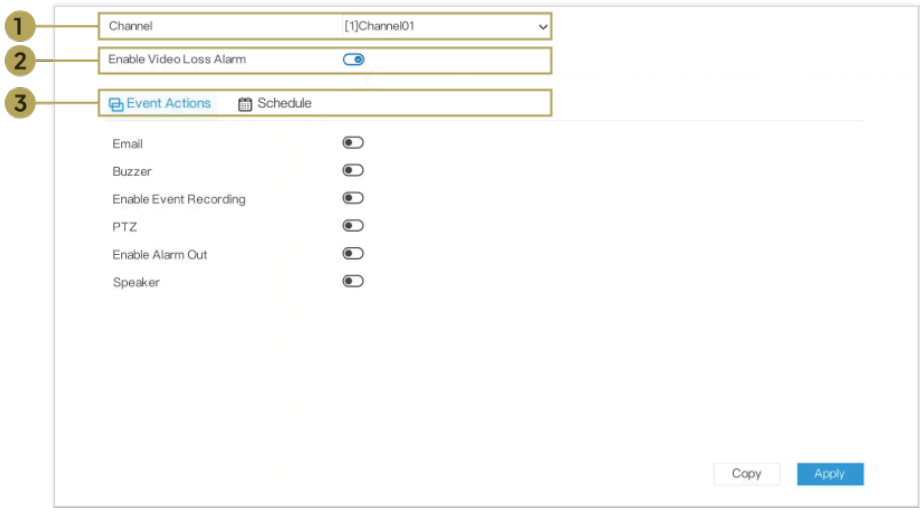
12.3 Configure Video Loss Alerts

The **Video Loss** settings trigger alerts when the recorder loses video from a camera. This can occur if a camera is disconnected, loses power, or experiences a network failure.

Open Video Loss Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **Video Loss** from the left-side menu.

Video Loss Settings



1. **Channel**: Select the camera channel to monitor.
2. **Enable Video Loss Alarm:** Enable or disable alerts when video signal is lost from the selected camera.
3. Select the tab you want to configure: **Event Actions** or **Schedule**.

Video Loss — Event Actions

The **Event Actions** tab defines what happens when video loss is detected. For instructions on configuring the event actions, refer to *Motion Detection — Event Actions*, page 87.

Video Loss — Schedule

The **Schedule** tab defines when video loss monitoring is active. For instructions on configuring the schedule, refer to *Motion Detection — Schedule*, page 89.

12.4 Configure Alarm Inputs

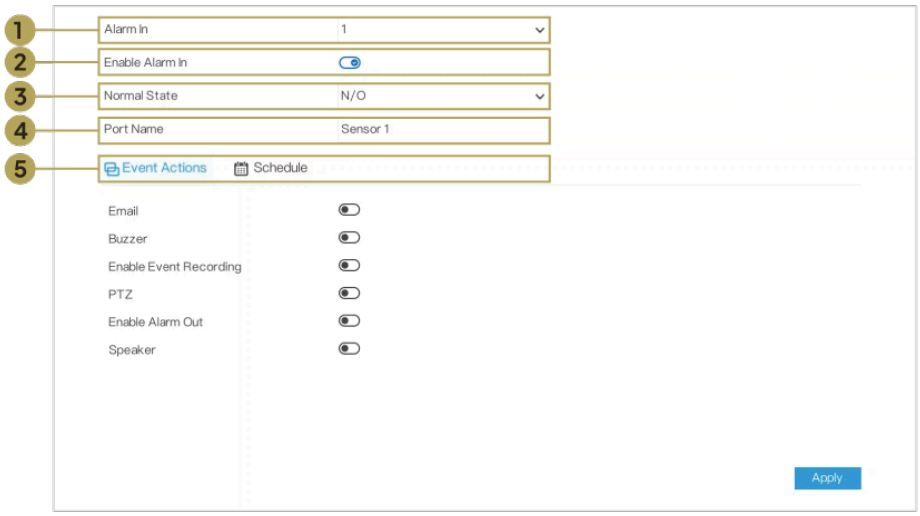
The **Alarm In** settings allow the recorder to respond to signals from external alarm devices connected to the recorder's alarm input ports, such as door sensors, motion sensors, panic buttons, or other security triggers.

12.4.1 External Alarm Inputs

Open Alarm In Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **Alarm In** from the left-side menu.

Alarm In Settings



1. **Alarm In:** Select the alarm input port (**1–6**).
2. **Enable Alarm In:** Enable or disable the selected alarm input.
3. **Normal State:** Select the default signal state (**N/O** or **N/C**).
4. **Port Name:** Enter a descriptive name for the alarm input (for example Door Sensor or Motion Sensor).
5. Select the tab you want to configure: **Event Actions** or **Schedule**.

Alarm In — Event Actions

The **Event Actions** tab defines what happens when the alarm input is triggered. For instructions on configuring the event actions, refer to *Motion Detection — Event Actions*, page 87.

Alarm In — Schedule

The **Schedule** tab defines when the alarm input monitoring is active. For instructions on configuring the schedule, refer to *Motion Detection — Schedule*, page 89.

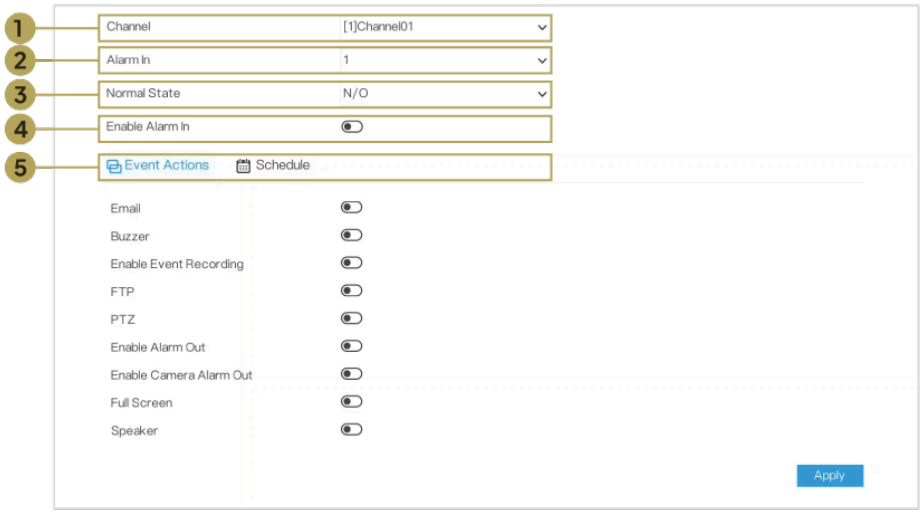
12.4.2 Camera Alarm Inputs

The **Camera Alarm In** settings configure alarm input signals that originate from compatible IP cameras rather than external alarm devices connected directly to the recorder.

Open Camera Alarm In Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **Alarm In** from the left-side menu.
5. Click the **Camera Alarm In** tab.

Camera Alarm In Settings



1. **Channel:** Select the camera channel.
2. **Alarm In:** Select the camera alarm input (**1–6**).
3. **Normal State:** Select the default signal state (**N/O** or **N/C**).
4. **Enable Alarm In:** Enable or disable the camera alarm input.
5. Select the tab you want to configure: **Event Actions** or **Schedule**.

Camera Alarm In — Event Actions

The **Event Actions** tab defines what happens when the camera alarm input is triggered. For instructions on configuring the event actions, refer to *Motion Detection — Event Actions*, page 87.

Alarm In — Schedule

The **Schedule** tab defines when the camera alarm input monitoring is active. For instructions on configuring the schedule, refer to *Motion Detection — Schedule*, page 89.

12.5 Configure Alarm Outputs

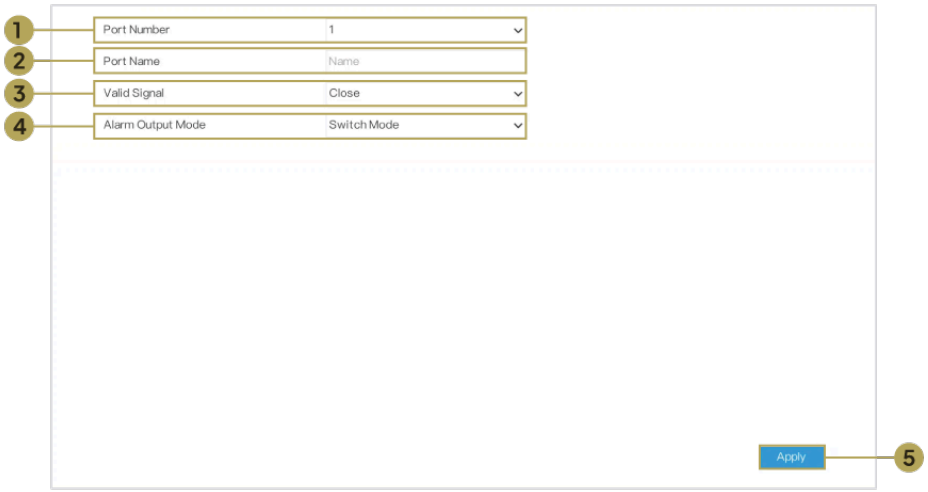
12.5.1 Recorder Alarm Outputs

The **Alarm Out** settings control the recorder's physical alarm output ports that can trigger external devices such as sirens, lights, or other alarm systems.

Open Alarm Out Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **Alarm Out** from the left-side menu.

Alarm Out Settings



1. **Port Number:** Select alarm output **1** or **2**.
2. **Port Name:** Enter a name for the alarm output.
3. **Valid Signal:** Select the active signal state (**Open** or **Close**).
4. **Alarm Output Mode:** Select the operating mode (**Switch Mode**).
5. **Apply:** Click **Apply** to save the settings.

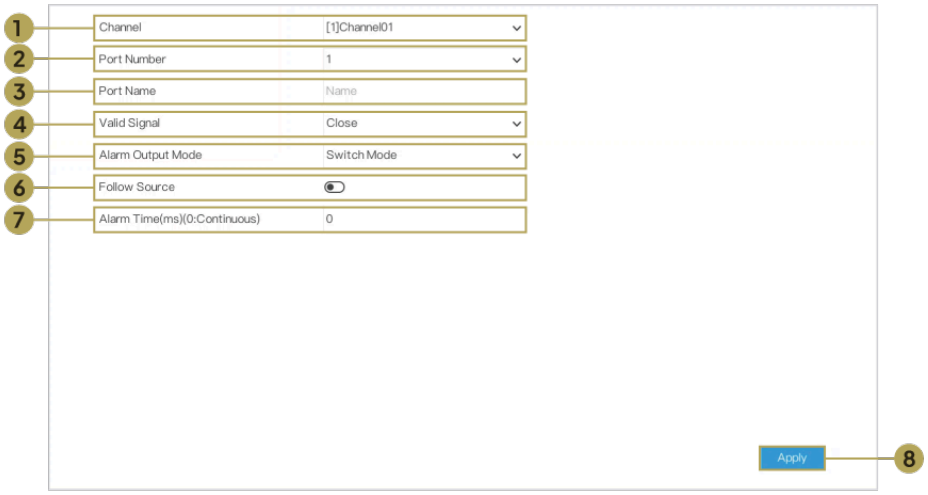
12.5.2 Camera Alarm Outputs

The **Camera Alarm Out** settings configure alarm output signals that are controlled directly by compatible cameras.

Open Camera Alarm Out Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **Alarm Out** from the left-side menu.
5. Click the **Camera Alarm Out** tab.

Camera Alarm Out Settings



1. **Channel:** Select the camera channel.

2. **Port Number:** Select the alarm output port.
3. **Port Name:** Enter a name for the port.
4. **Valid Signal:** Select the signal state (**Open** or **Close**).
5. **Alarm Output Mode:** Select the output operating mode.
6. **Follow Source:** Enable or disable linking the alarm output to the triggering source.
7. **Alarm Time (ms):** Set how long the alarm output remains active. Setting **0** keeps the alarm active continuously.
8. **Apply:** Click **Apply** to save the settings.

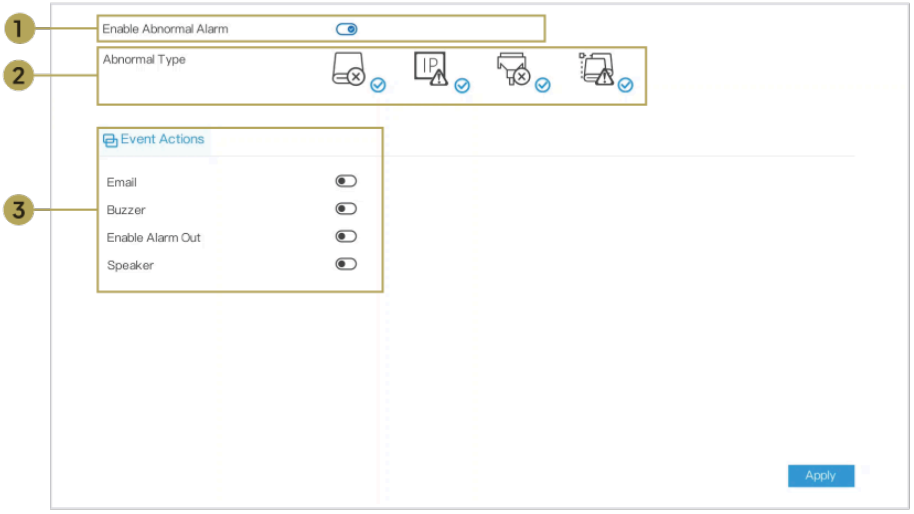
12.6 Configure Abnormal Alarms

The **Abnormal Alarm** settings allow the recorder to generate alerts when system issues are detected, such as disk problems, network failures, or IP address conflicts.

Open Abnormal Alarm Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **Abnormal Alarm** from the left-side menu.

Abnormal Alarm Settings



1. **Enable Abnormal Alarm:** Enable or disable abnormal system alerts.
2. **Abnormal Type:** Select which system issues will trigger an alert:
   - **Disk Alarm**
   - **IP Address Conflict**
   - **Network Disconnect**
   - **Failover Alarm**
3. The **Event Actions** defines what happens when an abnormal event is detected. For instructions on configuring the **Event Actions** tab, refer to *Motion Detection — Event Actions*, page 87.

13 Active Deterrence

Active Deterrence settings control how the compatible cameras respond to events using deterrence features. Use these settings to trigger built-in camera lights and configure how long these responses remain active.

13.1 Red and Blue Light Alarm Output

The **Red and Blue Light Alarm Out** settings control deterrence lights on compatible cameras.

Open Red and Blue Light Alarm Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **Alarm Out** from the left-side menu.
5. Click the **Red And Blue Light Alarm Out** tab.

Red and Blue Light Alarm Settings

1. **Channel:** Select the camera channel.
2. **Alarm Duration (10–60s):** Set how long the lights remain active.
3. **Scintillation Frequency (ms):** Set the flashing frequency.
4. **Manual Control Duration:** Set how long manual activation lasts.
5. **Schedule:** The schedule defines when the red and blue alarm light is active. For instructions on configuring the schedule, refer to *Motion Detection — Schedule*, page 89.
6. **Apply:** Click **Apply** to save the settings.

13.2 White Light Alarm Output

The **White Light Alarm Out** settings control the spotlight deterrence features on compatible cameras.

Open White Light Alarm Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Event** tab at the top of the menu.
4. Click **Alarm Out** from the left-side menu.
5. Click the **White Light Alarm Out** tab.

White Light Alarm Settings

1. **Channel:** Select the camera channel.
2. **Alarm Duration (10–60s):** Set how long the light remains active.
3. **Manual Control Duration:** Set how long manual activation lasts.
4. **Flicker Mode:** Select the lighting behavior:
   - **Steady-on Mode**
   - **Flicker Mode**
5. **Schedule:** The schedule defines when the white light is active. For instructions on configuring the schedule, refer to *Motion Detection — Schedule*, page 89.
6. **Apply:** Click **Apply** to save the settings.

14 IVS & AI Analytics

IVS features analyze video from connected cameras to detect specific objects, behaviors, or events. Most IVS functions require defining a **detection area or line** within the camera view and selecting the **actions that occur when an event is triggered**. For best detection accuracy, position the camera so that targets move **across the detection area** rather than directly toward the camera.

The IVS system includes the following analytics:

- **AI Multi-Target Detection** (See 14.1 *Configure AI Multi-Target Detection*, page 97)
- **Intrusion Detection** (See 14.2.3 *Intrusion*, page 101)
- **Smart Motion Detection** (See 14.2.4 *Smart Motion Detection*, page 102)
- **Line-Crossing Detection** (See 14.2.5 *Line-Crossing*, page 104)
- **Dual-Line Crossing Detection** (See 14.2.6 *Dual-Line Crossing*, page 105)
- **Loitering Detection** (See 14.2.7 *Loitering Detection*, page 107)
- **Wrong-Way Detection** (See 14.2.8 *Wrong-Way Detection*, page 108)
- **Unauthorized Parking Detection** (See 14.2.9 *Unauthorized Parking Detection*, page 110)
- **People Counting** (See 14.2.10 *Configure People Counting*, page 111)
- **Heat Map** (See 14.3.2 *Configure Heat Map Areas*, page 114)
- **Smoke and Fire Detection** (See 14.4.1 *Smoke and Fire Detection*, page 116)

NOTE

Some IVS features require compatible camera models. If the connected camera does not support a feature, that option may appear in the menu but will not function.

For best detection performance, camera image settings may also need adjustment. Refer to 7.2 *Adjust Camera Image Settings*, page 34.

For basic motion detection, refer to 12.2 *Configure Motion Detection*, page 86.

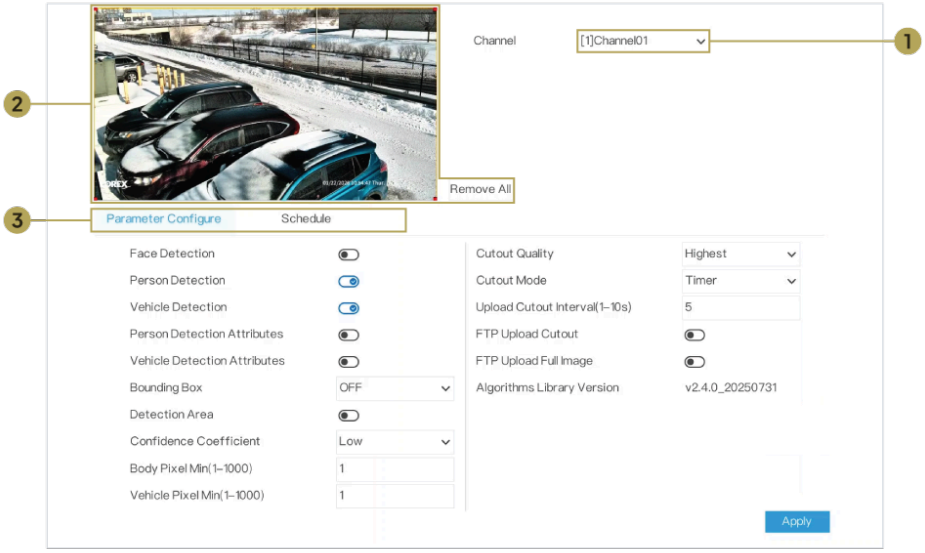
14.1 Configure AI Multi-Target Detection

The **AI Multi-Target** settings allow the recorder to detect and classify multiple target types within the camera image, including faces, people, and vehicles. These settings are used to define the detection area and control how captured targets are analyzed and uploaded.

Open AI Multi-Target Settings

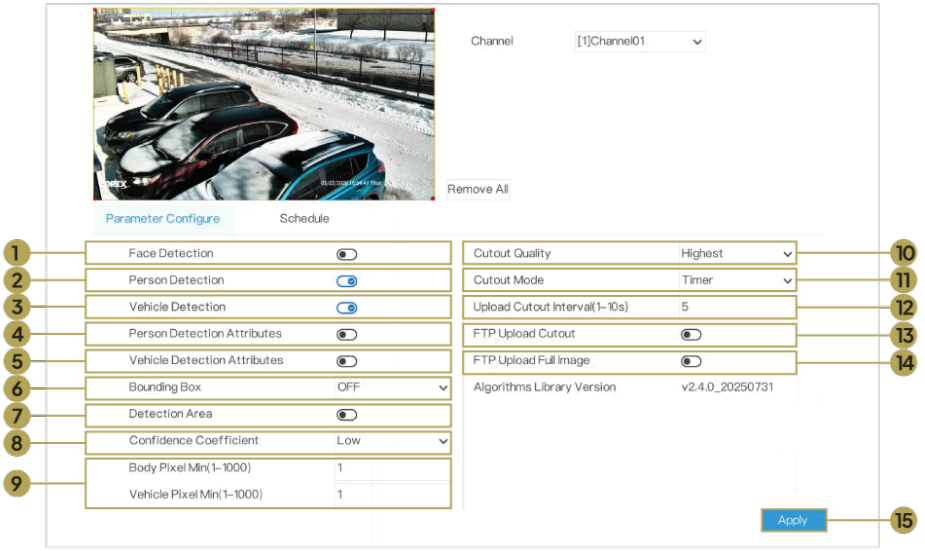
1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **AI Multi-Target** from the left-side menu.

AI Multi-Target Settings



1. **Channel:** Select the camera channel.
2. **Draw Detection Frame:**
   - Click inside the image to begin drawing a detection frame.
   - Drag to create the frame and right-click to finish drawing.
   - Right-click again to remove the frame or click **Remove All** to delete all frames.
3. Select the tab you want to configure: **Parameter Configure** or **Schedule**.

AI Multi-Target — Parameter Configure



1. **Face Detection:** Enable or disable face capture.
2. **Person Detection:** Enable or disable person detection.
3. **Vehicle Detection:** Enable or disable vehicle detection.
4. **Person Detection Attributes:** Enable or disable person attribute analysis.
5. **Vehicle Detection Attributes:** Enable or disable vehicle attribute analysis.
6. **Bounding Box:** Select how detected objects are displayed: **OFF** or **Full Frame**.
7. **Detection Area:** Enable or disable the drawn detection area.

8. **Confidence Coefficient:** Select the detection confidence level required for detection: **Low**, **Medium**, or **High**.
9. **Pixel Min (1–1000):** Enter the minimum pixel size required for detected targets. Depending on which detection types are enabled, this setting may appear as **Face Pixel Min** for faces, **Body Pixel Min** for people, or **Vehicle Pixel Min** for vehicles.
10. **Cutout Quality:** Select the image quality used for captured target images: **Low**, **Medium**, **High**, or **Highest**.
11. **Cutout Mode:** Select how target images are captured: **Timer** or **Optimal**.
12. **Upload Cutout Interval (1–10s):** Set the upload interval when **Cutout Mode** is set to **Timer**.
13. **FTP Upload Cutout:** Enable or disable uploading cropped target images to the FTP server.
14. **FTP Upload Full Image:** Enable or disable uploading the full image to the FTP server.
15. **Apply:** Click **Apply** to save the settings.

AI Multi–Target Schedule

The **Schedule** tab defines when AI Multi-Target detection is active.

For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100.

14.2 Configure Smart Analysis Events

The **Smart Analysis** settings provide event-based AI detection features that identify specific behaviors or movements within the camera view, such as intrusion, smart motion, line crossing, loitering, wrong-way travel, unauthorized parking, and people counting.

> **NOTE**
>
> Available IVS options may vary depending on the connected camera and its supported analytics and deterrence features.

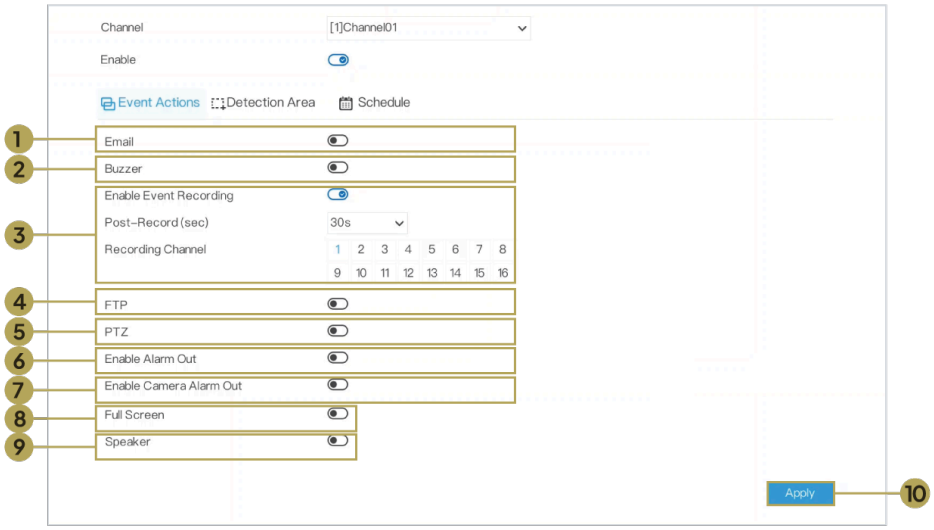
Each Smart Analysis type includes three tabs:

- **Event Actions**
- **Detection Area**
- **Schedule**

The **Event Actions** and **Schedule** tabs use the same types of controls across all supported Smart Analysis features. The **Detection Area** tab changes depending on the selected detection type.

14.2.1 Smart Analysis — Event Actions

The **Event Actions** tab defines what happens when the selected Smart Analysis event is detected.



1. **Email:** Send an email notification when the event is triggered. Refer to 19.2.2 *Configure Email Notifications*, page 155.
2. **Buzzer:** Sound the recorder's internal buzzer.
3. **Enable Event Recording:** Record video when the event occurs. When enabled:
   - **Post-Record (sec):** Select how long recording continues after the event (**30–60 seconds**).
   - **Recording Channel:** Select which channels should record during the event.
4. **FTP:** Upload event files to the configured FTP server.
5. **PTZ:** Trigger a PTZ action when the event occurs. When enabled:
   - **Channel:** Select the PTZ camera channel.
   - **Preset:** Select the preset position.
     Preset positions must be configured first. Refer to 8.5 *Create and Use Presets*, page 52.
6. **Enable Alarm Out:** Trigger an external alarm device. When enabled:
   - **Alarm Time (sec) (0: Always Alarm):** Set the alarm duration.
   - **Port Number:** Select **1** or **2**.
7. **Enable Camera Alarm Out:** Trigger alarm output devices connected to the camera.
8. **Full Screen:** Automatically display the camera in full screen when the event occurs. When enabled:
   - **Full Screen Time (sec):** Set how long the camera remains full screen.
9. **Speaker:** Trigger an audio message or siren. When enabled:
   - **Broadcast Point:** Select the audio output device.
   - **Audio Files:** Select a prerecorded warning message.
     For instructions on adding or managing warning audio files, refer to 9.7 *Manage Audio Files*, page 60.
10. **Apply:** Click **Apply** to save the settings.

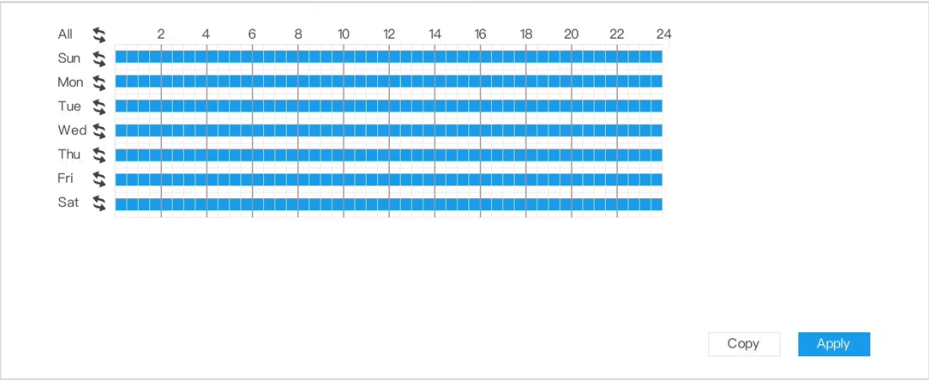
14.2.2 Smart Analysis — Schedule

The **Schedule** tab defines when the selected Smart Analysis feature is active.

The schedule grid displays:

- **Days of the week** on the left
- **Time of day** across the top

Each square represents **30 minutes**.



To configure the schedule:

1. Click and drag across the grid to **enable or disable time periods**.
2. Use the **All** / **Sun** / **Mon** / **Tue** / **Wed** / **Thu** / **Fri** / **Sat** buttons to quickly apply or **Clear** schedules.
3. **Copy:** Click **Copy** to apply the schedule to other channels.

4. **Apply:** Click **Apply** to save the settings.

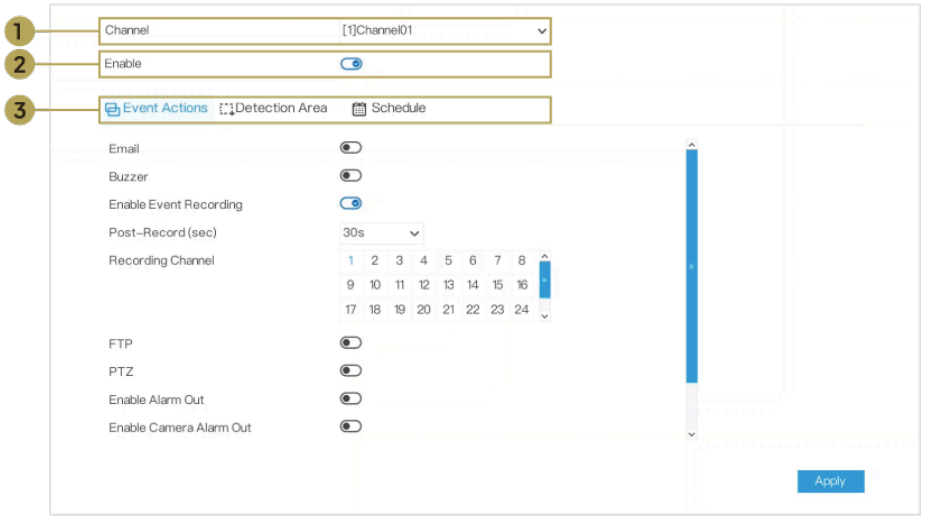
14.2.3 Intrusion

The **Intrusion** feature detects when a person or vehicle enters a defined area in the camera view.

Open Intrusion Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Smart Analysis** from the left-side menu.
5. Click the **Intrusion** tab.

Intrusion Settings



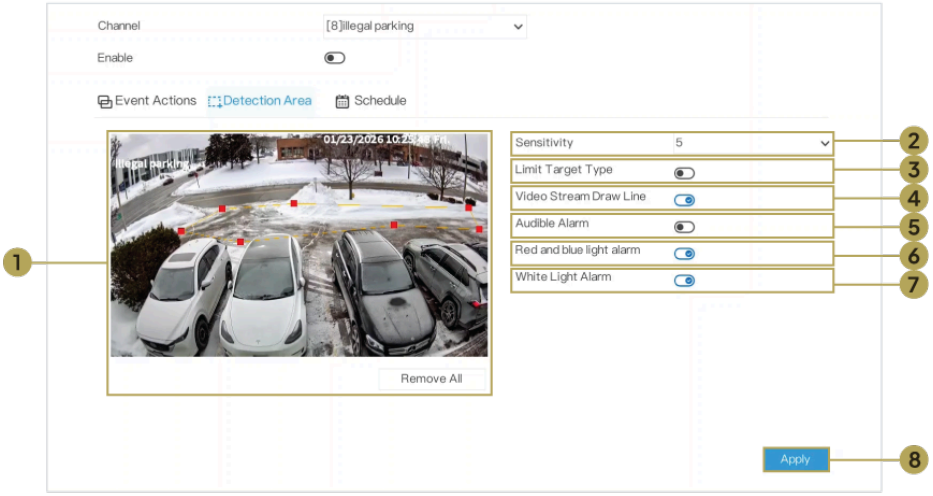
1. **Channel:** Select the camera channel.
2. **Enable:** Enable or disable intrusion detection.
3. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

For instructions on configuring **Event Actions**, see 14.2.1 *Smart Analysis — Event Actions*, page 99; available options may vary by detection type. For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100 .

Intrusion — Detection Area

This tab defines the area where intrusion events are detected.

The detection event is triggered when the selected target enters one of these areas.



1. **Draw Detection Area:**
   - Drag the **red anchor points** to resize the frame or click **Remove All** to remove the current detection frame.
   - Click inside the image to begin drawing a detection frame. Right-click when you are finished drawing.
   - You can draw up to **8 detection areas**.
   - Right-click on the image to remove all areas and start over.
2. **Sensitivity:** Select the detection sensitivity from **1–5**.
3. **Limit Target Type:** Enable or disable target type filtering. When enabled:
   - **Type:** Select between **Person or Vehicle**, **Person**, or **Vehicle**.
4. **Video Stream Draw Line:** Enable or disable displaying the detection boundary on the video stream.
5. **Audible Alarm:** Enable or disable an audible alarm. When enabled:
   - **Audible Alarm File:** Select an audio sound from the audio files.
6. **Red and Blue Light Alarm:** Enable or disable red and blue deterrence lighting.
7. **White Light Alarm:** Enable or disable white light deterrence.
8. **Apply**: Click **Apply** to save the settings.

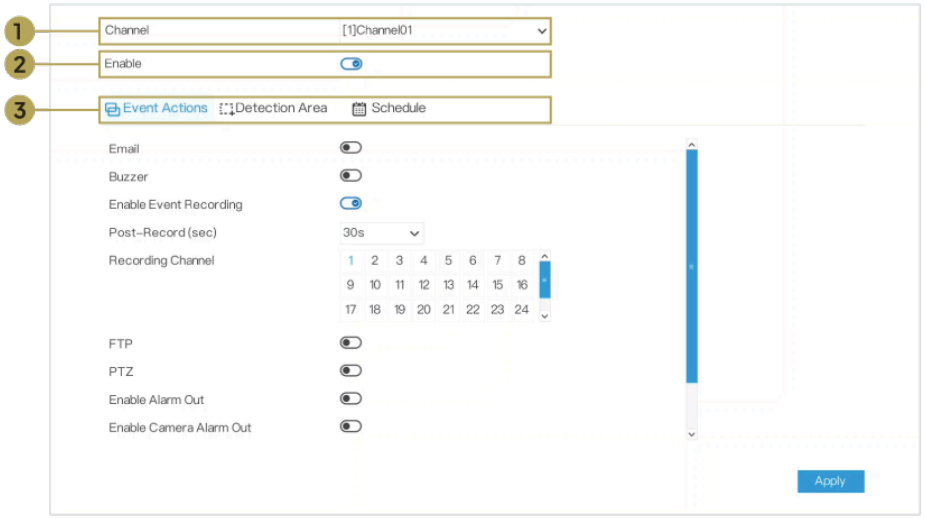
14.2.4 Smart Motion Detection

The **Smart Motion** feature uses AI filtering to detect relevant motion events, such as people or vehicles, while reducing false alerts caused by general movement in the scene.

Open Smart Motion Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Smart Analysis** from the left-side menu.
5. Click the **Smart Motion** tab.

Smart Motion Settings



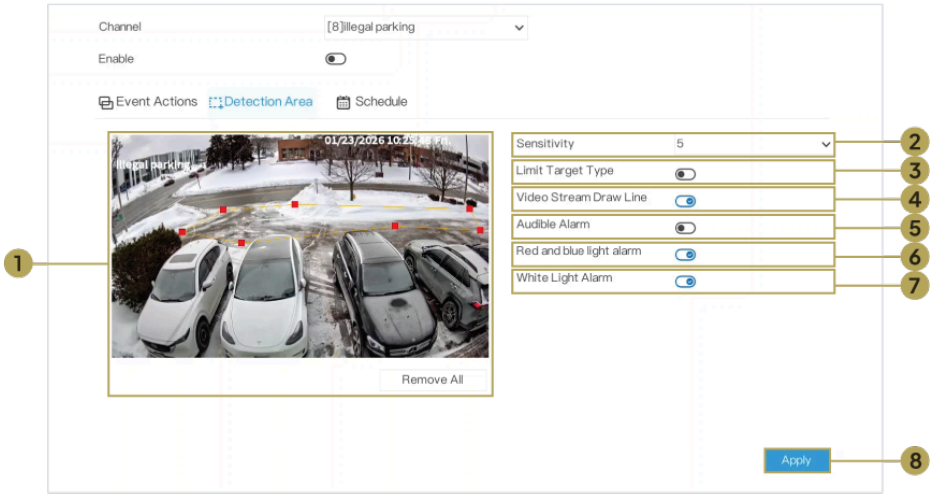
1. **Channel:** Select the camera channel.
2. **Enable:** Enable or disable Smart Motion detection.
3. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

For instructions on configuring **Event Actions**, see 14.2.1 *Smart Analysis — Event Actions*, page 99; available options may vary by detection type. For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100 .

Smart Motion — Detection Area

This tab defines the area where Smart Motion events are detected.

The detection event is triggered when the selected target enters one of these areas.



1. **Draw Detection Area(s):**
   - Drag the **red anchor points** to resize the frame or click **Remove All** to remove the current detection frame.
   - Click inside the image to begin drawing a detection frame. Right-click when you are finished drawing.
   - You can draw up to **8 detection areas**.
   - Right-click on the image to remove all areas and start over.

2. **Sensitivity:** Select the detection sensitivity from **1–5**.
3. **Limit Target Type:** Enable or disable target type filtering. When enabled:
   - **Type:** Select between **Person or Vehicle**, **Person**, or **Vehicle**.
4. **Video Stream Draw Line:** Enable or disable displaying the detection boundary on the video stream.
5. **Audible Alarm:** Enable or disable an audible alarm. When enabled:
   - **Audible Alarm File:** Select an audio sound from the audio files.
6. **Red and Blue Light Alarm:** Enable or disable red and blue deterrence lighting.
7. **White Light Alarm:** Enable or disable white light deterrence.
8. **Apply**: Click **Apply** to save the settings.

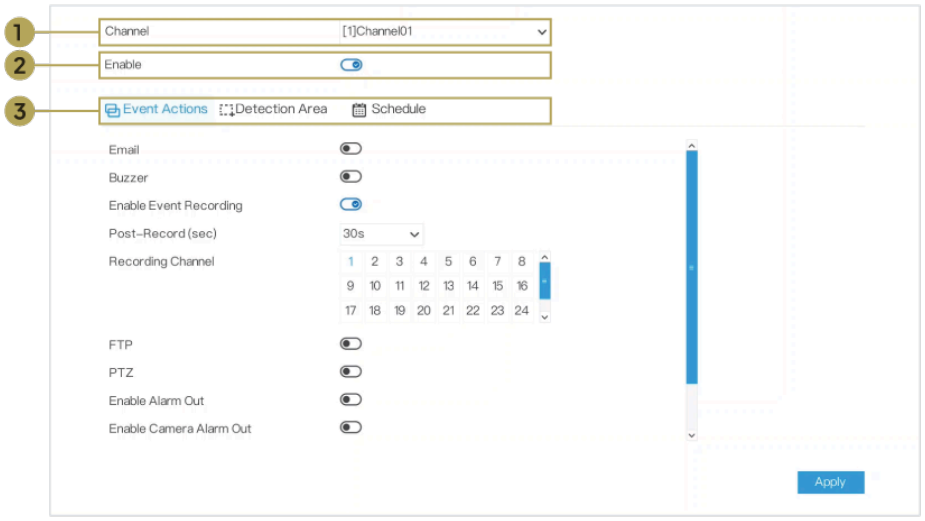
14.2.5 Line-Crossing

The **Line-Crossing** feature detects when a person or vehicle crosses a defined line in the selected direction.

Open Line-Crossing Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Smart Analysis** from the left-side menu.
5. Click the **Single Line Crossing** tab.

Line-Crossing Settings



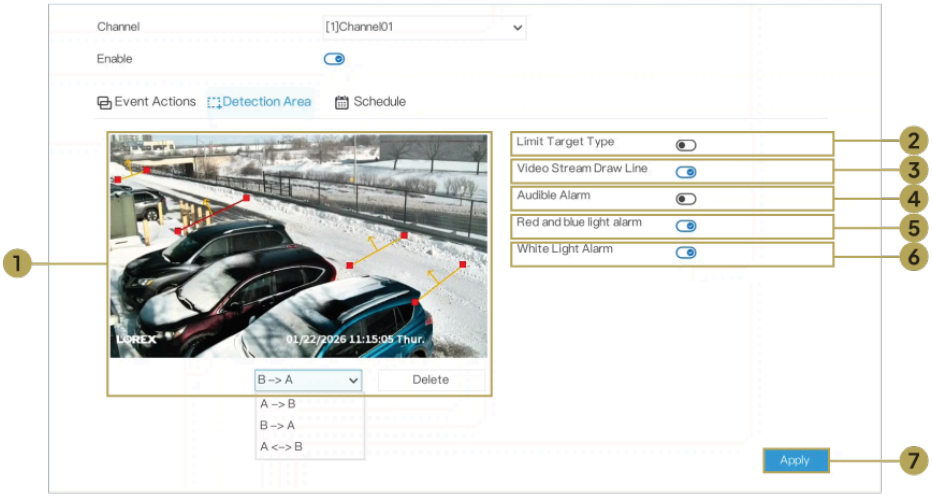
1. **Channel:** Select the camera channel.
2. **Enable:** Enable or disable single line crossing detection.
3. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

For instructions on configuring **Event Actions**, see 14.2.1 *Smart Analysis — Event Actions*, page 99; available options may vary by detection type. For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100 .

Line-Crossing — Detection Area

This tab defines the area where single Line-Crossing events are detected.

The detection event is triggered when the selected target crosses one of these lines.



1. **Draw Detection Line:**
   - Click and drag across the image to draw a line.
   - After drawing a line, use the drop-down below the preview to select the detection direction:
     - **B -> A**
     - **A -> B**
     - **A <-> B**
   - You can create up to **8 lines**.
   - Click **Delete** to remove the selected line.
2. **Limit Target Type:** Enable or disable target type filtering. When enabled:
   - **Type:** Select between **Person or Vehicle**, **Person**, or **Vehicle**.
3. **Video Stream Draw Line:** Enable or disable displaying the detection boundary on the video stream.
4. **Audible Alarm:** Enable or disable an audible alarm. When enabled:
   - **Audible Alarm File:** Select an audio sound from the audio files.
5. **Red and Blue Light Alarm:** Enable or disable red and blue deterrence lighting.
6. **White Light Alarm:** Enable or disable white light deterrence.
7. **Apply**: Click **Apply** to save the settings.

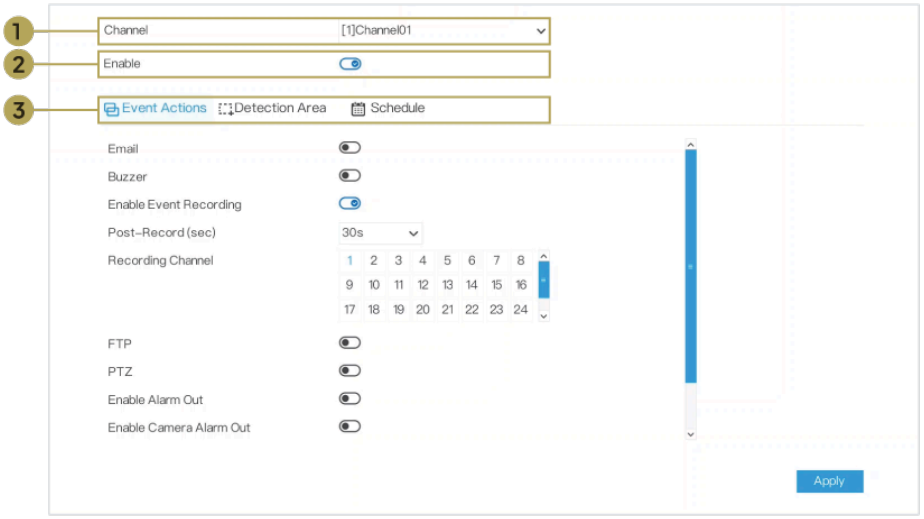
14.2.6 Dual-Line Crossing

The **Dual-Line Crossing** feature detects when a target moves through a dual-line boundary.

Open Dual-Line Crossing Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Smart Analysis** from the left-side menu.
5. Click the **Double Line Crossing** tab.

Dual-Line Crossing Settings



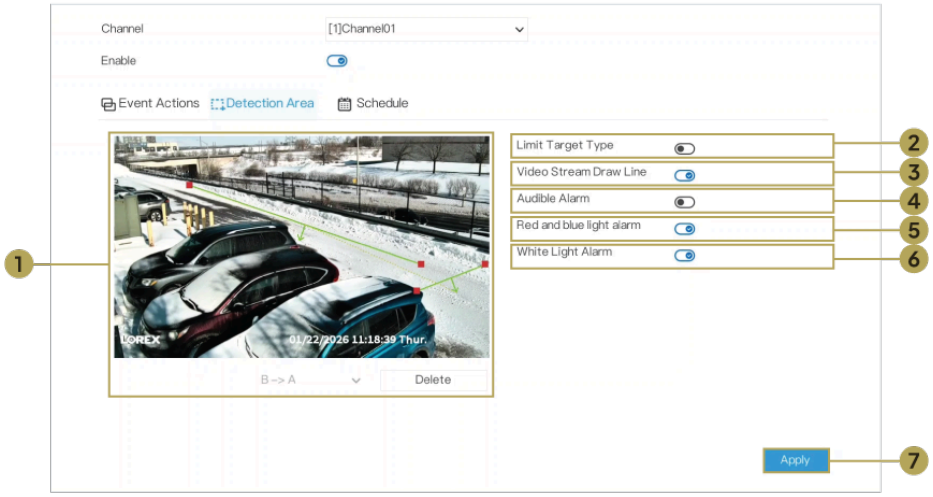
1. **Channel:** Select the camera channel.
2. **Enable:** Enable or disable double line crossing detection.
3. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

For instructions on configuring **Event Actions**, see 14.2.1 *Smart Analysis — Event Actions*, page 99; available options may vary by detection type. For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100 .

Dual-Line Crossing — Detection Area

This tab defines the area where Dual-Line Crossing events are detected.

The detection event is triggered when the selected target crosses the dual-line.



1. **Draw Detection Line:**
   - Click and drag across the image to draw the double line.
   - Select and drag an anchor point on the double line to move or adjust the detection line.
   - Direction selection is **not available**.
   - Only **one double line** can be created.
   - Click **Delete** to remove the double line.

2. **Limit Target Type:** Enable or disable target type filtering. When enabled:
   - **Type:** Select between **Person or Vehicle**, **Person**, or **Vehicle**.
3. **Video Stream Draw Line:** Enable or disable displaying the detection boundary on the video stream.
4. **Audible Alarm:** Enable or disable an audible alarm. When enabled:
   - **Audible Alarm File:** Select an audio sound from the audio files.
5. **Red and Blue Light Alarm:** Enable or disable red and blue deterrence lighting.
6. **White Light Alarm:** Enable or disable white light deterrence.
7. **Apply**: Click **Apply** to save the settings.

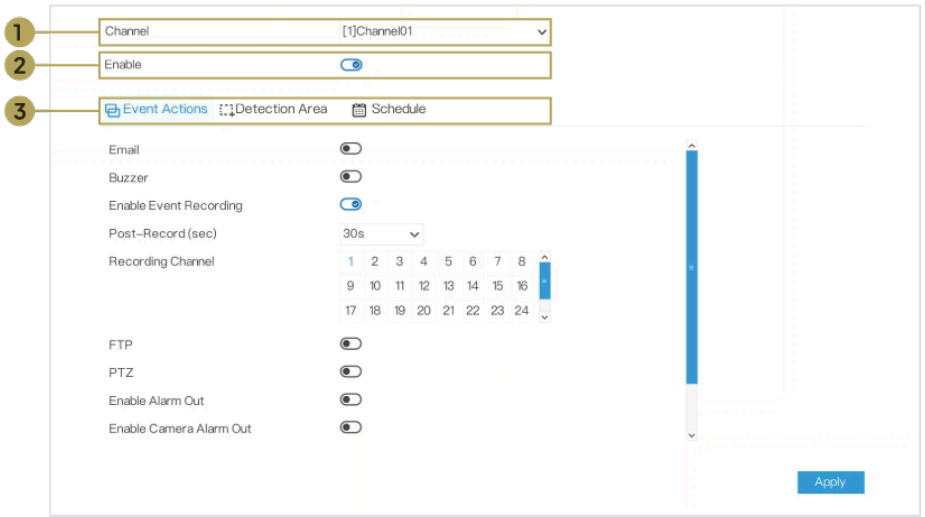
14.2.7 Loitering Detection

The **Loitering** feature detects when a target remains inside a defined area for longer than the permitted time.

Open Loitering Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Smart Analysis** from the left-side menu.
5. Click the **Loitering** tab.

Loitering Settings



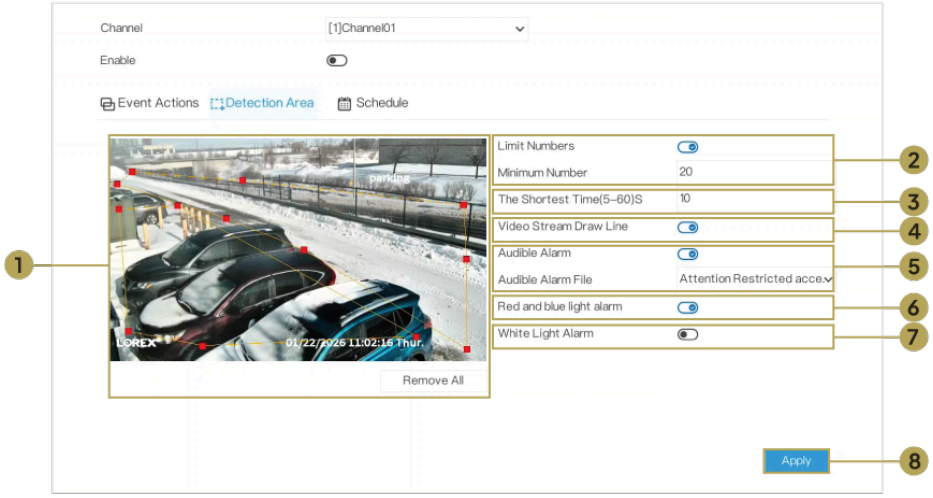
1. **Channel:** Select the camera channel.
2. **Enable:** Enable or disable loitering detection.
3. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

For instructions on configuring **Event Actions**, see 14.2.1 *Smart Analysis — Event Actions*, page 99; available options may vary by detection type. For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100 .

Loitering — Detection Area

This tab defines the area where loitering events are detected.

The detection event is triggered when the selected target enters one of these areas for longer than the permitted time.



1. **Draw Detection Area:**
   - Drag the **red anchor points** to resize the frame or click **Remove All** to remove the current detection frame.
   - Click inside the image to begin drawing a detection frame. Right-click when you are finished drawing.
   - You can draw up to **8 detection areas**.
   - Right-click on the image to remove all areas and start over.
2. **Limit Numbers:** Enable or disable the minimum target count condition. When enabled:
   - **Minimum Number:** Enter the minimum number of targets required.
3. **The Shortest Time (5–60s):** Set how long the target must remain in the area before the event is triggered.
4. **Video Stream Draw Line:** Enable or disable displaying the detection boundary on the video stream.
5. **Audible Alarm:** Enable or disable an audible alarm. When enabled:
   - **Audible Alarm File:** Select an audio sound from the audio files.
6. **Red and Blue Light Alarm:** Enable or disable red and blue deterrence lighting.
7. **White Light Alarm:** Enable or disable white light deterrence.
8. **Apply**: Click **Apply** to save the settings.

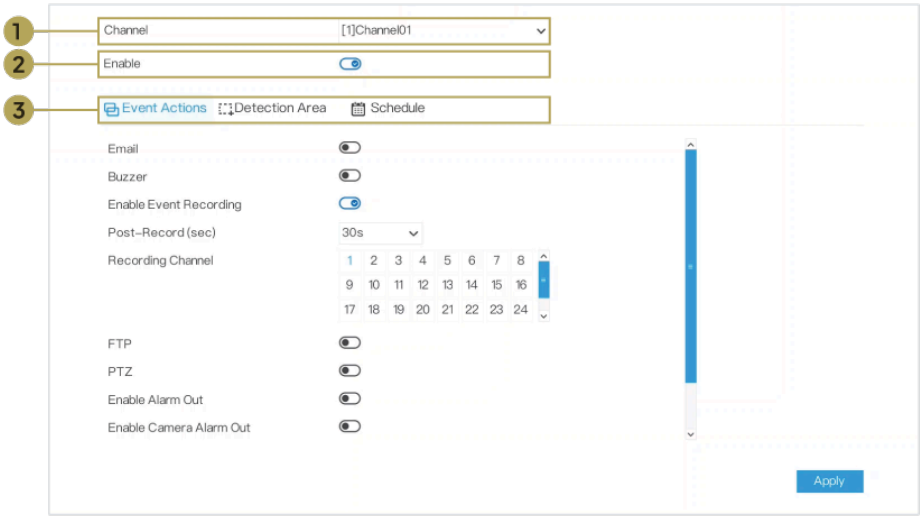
14.2.8 Wrong-Way Detection

The **Wrong-Way** feature detects when a person or vehicle moves in the wrong direction through the defined area.

Open Wrong-Way Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Smart Analysis** from the left-side menu.
5. Click the **Wrong Way** tab.

Wrong-Way Settings



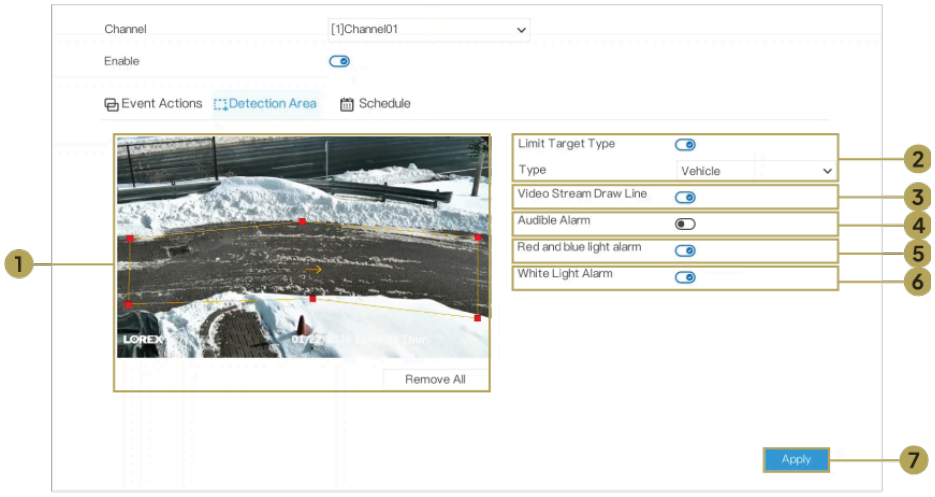
1. **Channel:** Select the camera channel.
2. **Enable:** Enable or disable wrong way detection.
3. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

For instructions on configuring **Event Actions**, see 14.2.1 *Smart Analysis — Event Actions*, page 99; available options may vary by detection type. For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100 .

Wrong-Way — Detection Area

This tab defines the area where wrong-way events are detected.

The detection event is triggered when the selected target moves through the defined area in the wrong direction.



1. **Draw Detection Area:**
   - Drag the **red anchor points** to resize the frame or click **Remove All** to remove the current detection frame.
   - Click inside the image to begin drawing a detection frame. Right-click when you are finished drawing.
   - You can draw up to **8 detection areas**.
   - Right-click on the image to remove all areas and start over.

2. **Limit Target Type:** Enable or disable target type filtering. When enabled:
   - **Type:** Select between **Person or Vehicle**, **Person**, or **Vehicle**.
3. **Video Stream Draw Line:** Enable or disable displaying the detection boundary on the video stream.
4. **Audible Alarm:** Enable or disable an audible alarm. When enabled:
   - **Audible Alarm File:** Select an audio sound from the audio files.
5. **Red and Blue Light Alarm:** Enable or disable red and blue deterrence lighting.
6. **White Light Alarm:** Enable or disable white light deterrence.
7. **Apply**: Click **Apply** to save the settings.

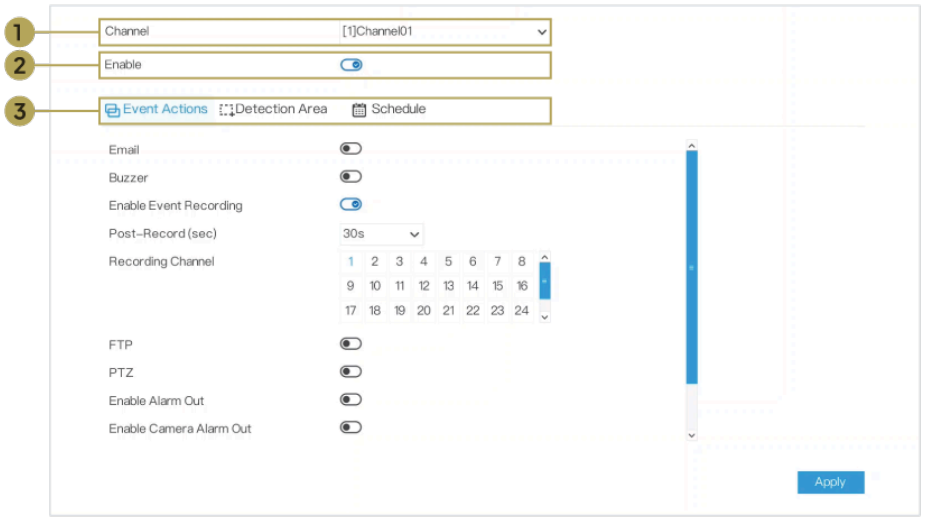
14.2.9 Unauthorized Parking Detection

The **Unauthorized Parking** feature detects when a vehicle remains in a defined area longer than the allowed time.

Open Unauthorized Parking Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Smart Analysis** from the left-side menu.
5. Click the **Illegal Parking** tab.

Unauthorized Parking Settings



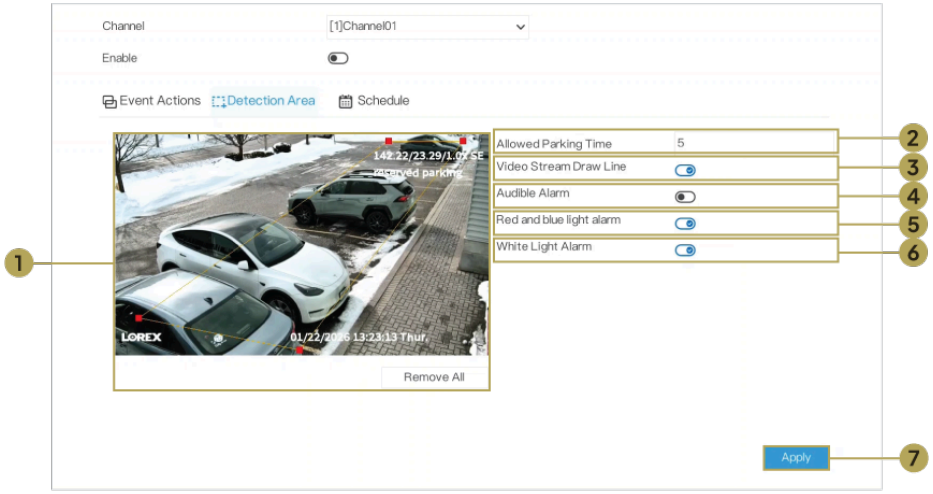
1. **Channel:** Select the camera channel.
2. **Enable:** Enable or disable unauthorized parking detection.
3. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

Below these options are three tabs: **Event Actions**, **Detection Area**, and **Schedule**.

Unauthorized Parking — Detection Area

This tab defines the area where unauthorized parking events are detected.

The detection event is triggered when the selected target enters one of these areas for longer than the permitted time.



1. **Draw Detection Area:**
   - Drag the **red anchor points** to resize the frame or click **Remove All** to remove the current detection frame.
   - Click inside the image to begin drawing a detection frame. Right-click when you are finished drawing.
   - You can draw up to **8 detection areas**.
   - Right-click on the image to remove all areas and start over.
2. **Allowed Parking Time:** Enter how long a vehicle may remain in the area before an alarm is triggered.
3. **Video Stream Draw Line:** Enable or disable displaying the detection boundary on the video stream.
4. **Audible Alarm:** Enable or disable an audible alarm. When enabled:
   - **Audible Alarm File:** Select an audio sound from the audio files.
5. **Red and Blue Light Alarm:** Enable or disable red and blue deterrence lighting.
6. **White Light Alarm:** Enable or disable white light deterrence.
7. **Apply**: Click **Apply** to save the settings.

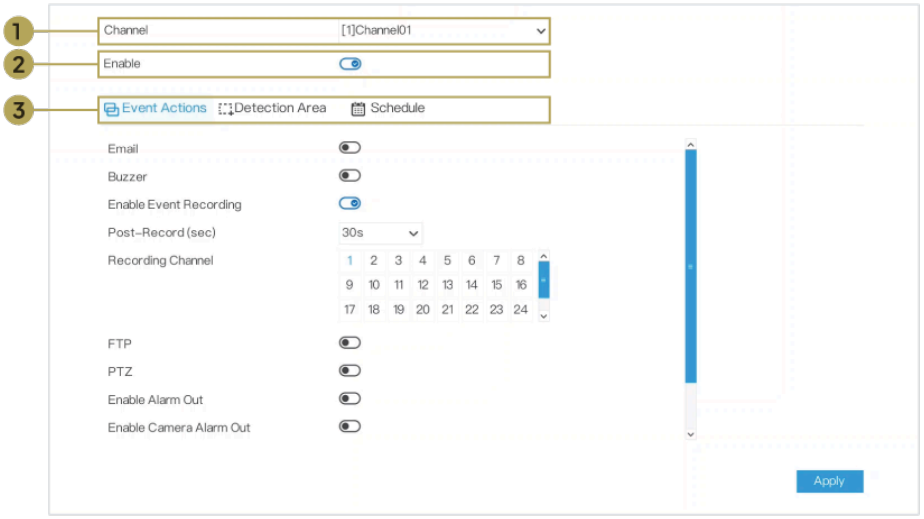
14.2.10 Configure People Counting

The **People Counting** feature counts how many people cross a defined line and tracks entries and exits.

Open People Counting Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Smart Analysis** from the left-side menu.
5. Click the **People Counting** tab.

People Counting Settings



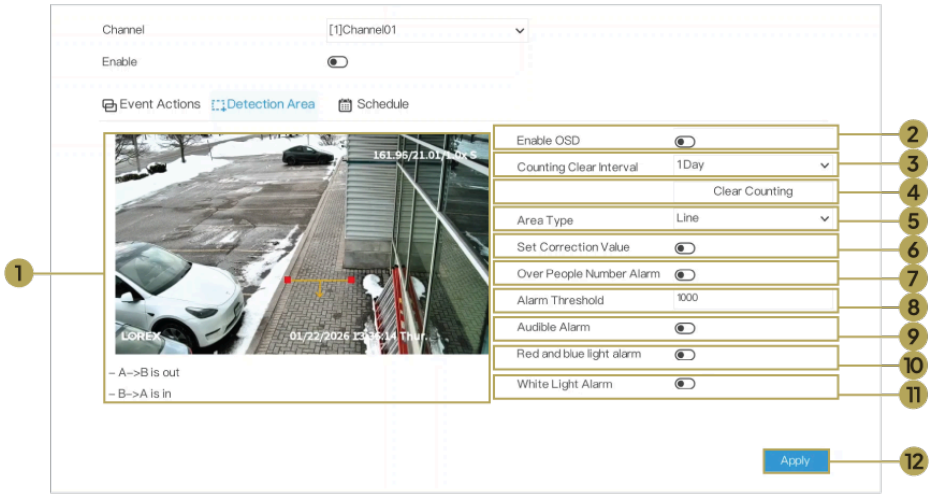
1. **Channel:** Select the camera channel.
2. **Enable:** Enable or disable people counting.
3. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

For instructions on configuring **Event Actions**, see 14.2.1 *Smart Analysis — Event Actions*, page 99; available options may vary by detection type. For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100 .

People Counting — Detection Area

This tab defines the area where people counting events are detected.

The counting event is triggered when a person crosses the defined line.



1. **Draw Detection Line:**
   - Click and drag to draw the line.
   - Only **one line** can be created.
   - Click again to delete the line and redraw it.
   - Counting directions are fixed as follows:
     - **A -> B = Out**
     - **B -> A = In**

2. **Enable OSD:** Enable or disable displaying counting data on the video.
3. **Counting Clear Interval:** Select when the count resets: **10 min**, **Half-Hour**, **1 Hour**, **12 Hours**, **1 Day**, **Custom Time (hh:mm)**.
   - When **Custom Time** is selected:
     - **Custom Time (hh:mm):** Enter the custom reset time.
4. **Clear Counting:** Reset the current count immediately.
5. **Area Type:** Displays **Line**.
6. **Set Correction Value:** Enable or disable manual count adjustment. When enabled:
   - **Count Correction Value:** Enter the adjustment value.
7. **Over People Number Alarm:** Enable or disable an alarm when the count exceeds the threshold.
8. **Alarm Threshold:** Enter the people count threshold.
9. **Audible Alarm:** Enable or disable an audible alarm. When enabled:
   - **Audible Alarm File:** Select an audio sound from the audio files.
10. **Red and Blue Light Alarm:** Enable or disable red and blue deterrence lighting.
11. **White Light Alarm:** Enable or disable white light deterrence.
12. **Apply**: Click **Apply** to save the settings.

To review people counting results collected from the configured channel, see 16.4 *Review People Counting Data*, page 133.

14.3 Configure Behavior Analysis

Behavior Analysis focuses on statistical and occupancy-style analytics, such as advanced people counting and heat map data, rather than single event detection.

14.3.1 People Counting with OSD Statistics

The **Behavior Analysis > People Counting** settings provide advanced people counting functions with configurable OSD statistics.

Open Behavior Analysis — People Counting

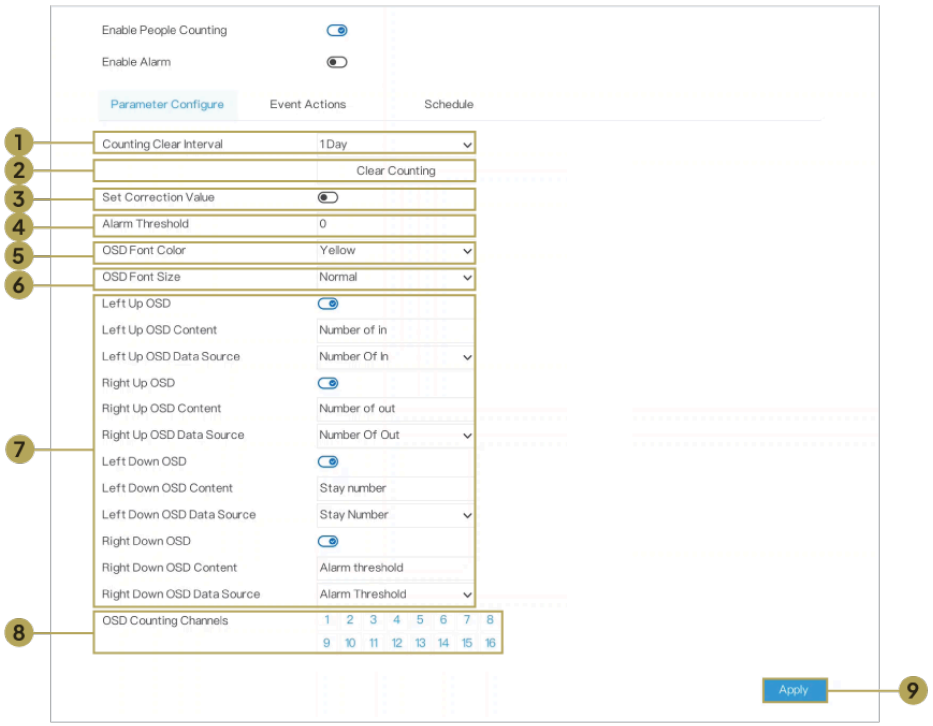
1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Behavior Analysis** from the left-side menu.
5. Click the **People Counting** tab.

People Counting Settings

1. **Enable People Counting:** Enable or disable people counting.
2. **Enable Alarm:** Enable or disable threshold-based alarms.
3. Select the tab you want to configure: **Parameter Configure**, **Detection Area**, or **Schedule**.

For instructions on configuring **Event Actions**, see 14.2.1 *Smart Analysis — Event Actions*, page 99; available options may vary by detection type. For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100 .

People Counting — Parameter Configure



1. **Counting Clear Interval:** Select when the count resets: **10 min**, **Half-Hour**, **1 Hour**, **12 Hours**, **1 Day**, **Custom Time (hh:mm)**.
   - When **Custom Time** is selected:
     - **Custom Time (hh:mm)**: Enter the custom reset time.
2. **Clear Counting:** Reset the current count immediately.
3. **Set Correction Value:** Enable or disable manual count adjustment. When enabled:
   - **Count Correction Value:** Enter the adjustment value.
4. **Alarm Threshold:** Enter the maximum allowed count before an alarm is triggered.
5. **OSD Font Color:** Select the color used for on-screen counting data.
6. **OSD Font Size:** Select the display size: **Small**, **Normal**, or **Big**.
7. **Left Up OSD / Right Up OSD / Left Down OSD / Right Down OSD:** Enable or disable OSD data in each screen corner. For each position, configure:
   - **OSD Content:** Enter the text or number display.
   - **OSD Data Source:** Select **Number Of In**, **Number Of Out**, **Stay Number**, or **Alarm Threshold**.
8. **OSD Counting Channels:** Select the channels where the OSD information is displayed.
9. **Apply:** Click **Apply** to save the settings.

To review people counting results collected from the configured channel, see 16.4 *Review People Counting Data*, page 133.

14.3.2 Configure Heat Map Areas

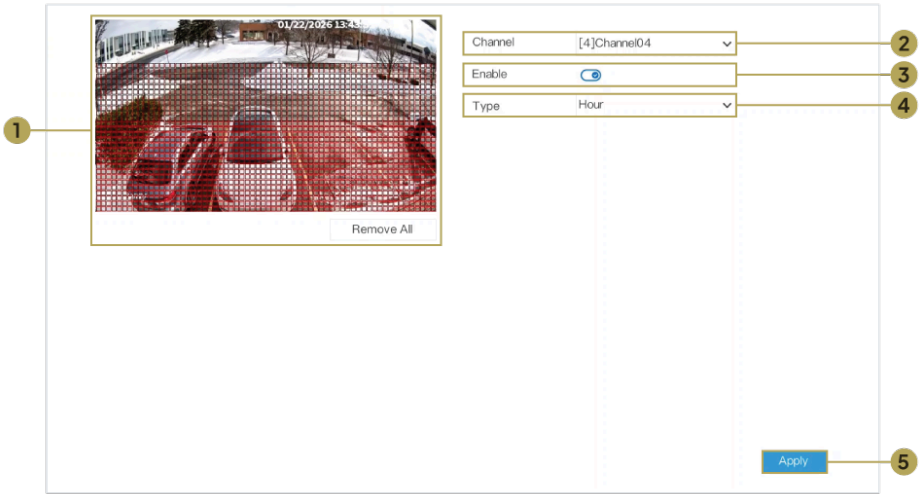
The **Heat Map Set** settings define which areas of the camera image are included in heat map analysis. Use this menu to select the zones where activity data will be collected.

Open Heat Map Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.

3. Select the **IVS** tab at the top of the menu.
4. Click **Behavior Analysis** from the left-side menu.
5. Click the **Heat Map Set** tab.

Heat Map Settings



1. **Draw Detection Area:**
   - Click and drag to enable or disable grid areas.
   - Areas without the red grid are excluded from analysis.
   - Click **Remove All** to clear all selected areas.
2. **Channel:** Select a compatible camera channel.
3. **Enable:** Enable or disable heat map analysis.
4. **Type:** Select the analysis period: **Hour** or **Day**.
5. **Apply:** Click **Apply** to save the settings.

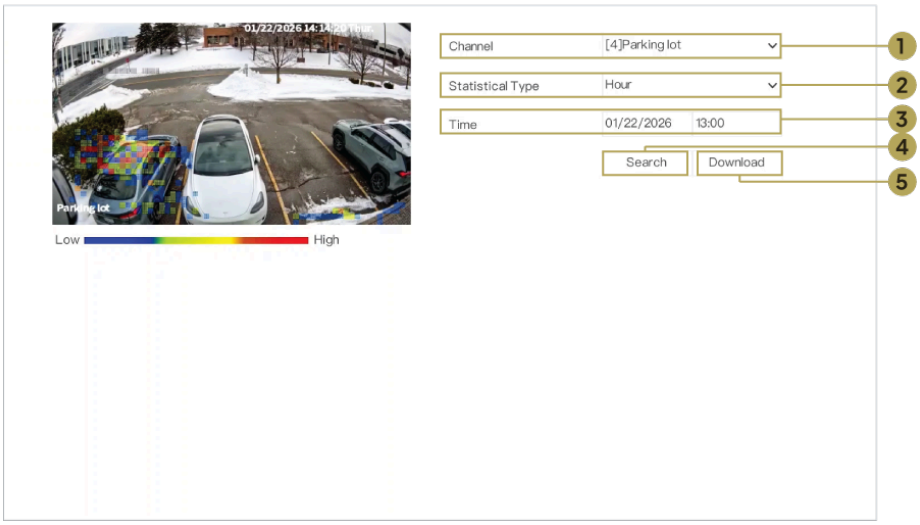
14.3.3 View Heat Map Data

The **Heat Map** settings allow you to view recorded activity levels as a color-based overlay, helping identify high-traffic or frequently occupied areas over a selected time period.

Open Heat Map

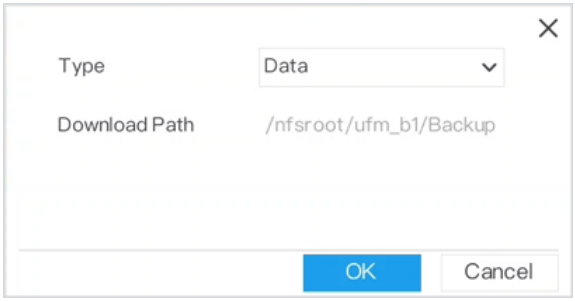
1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Behavior Analysis** from the left-side menu.
5. Click the **Heat Map** tab.

Heat Map Settings



1. **Channel:** Select a channel that already has heat map configured.
2. **Statistical Type:** Select the reporting period: **Hour**, **Day**, **Month**, or **Year**.
3. **Time:** Enter the date and time for the report.
4. **Search:** Display the heat map on the camera image.
5. **Download:** Save the data to a USB device.

When **Download** is clicked:



- **Type:** Select **Data** to export the heat map statistics.
- **Download Path:** Shows the download path on the USB.
- Click **OK** to complete the export.

The color bar below the image shows activity intensity from **blue (low)** to **red (high)**.

14.4 Configure Environmental Safety Analysis

The **ES Analysis** settings provide AI-based event detection features for specialized environmental and safety applications, such as smoke and flame detection, when used with a compatible camera.

14.4.1 Smoke and Fire Detection

The **Smoke and Fire Detection** feature detects smoke or fire events within a defined area of the camera view when used with a compatible camera.

⚠ CAUTION
• Fire detection may produce false positives or miss actual fire events and should not be relied upon as a sole or fully accurate life-safety solution.

Open Smoke and Fire Detection Settings

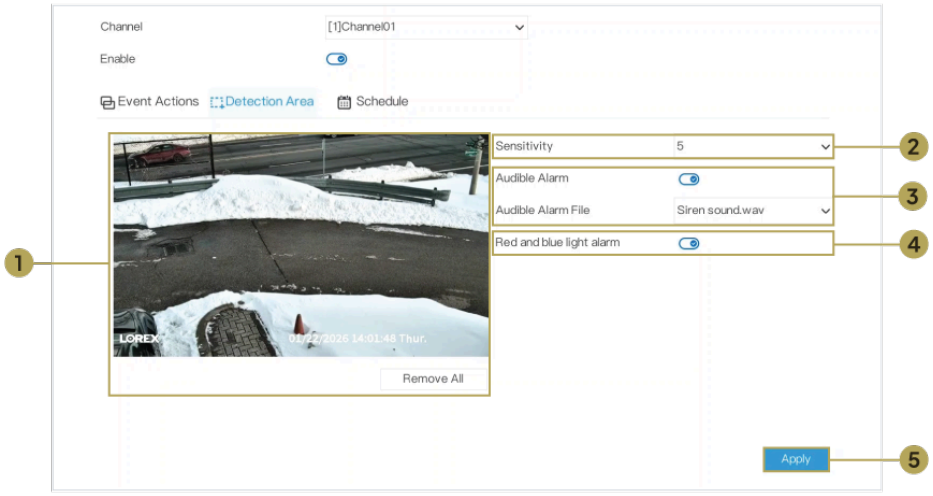
1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **ES Analysis** from the left-side menu.
5. Click the **Smoke and Flame Detection** tab.
6. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

For instructions on configuring **Event Actions**, see 14.2.1 *Smart Analysis — Event Actions*, page 99; available options may vary by detection type. For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100 .

Smoke and Fire Detection — Detection Area

This tab defines the area where smoke and fire events are detected.

An event is triggered when smoke or fire is detected within the defined area.



1. **Draw Detection Area:**
   - Drag the **red anchor points** to resize the frame or click **Remove All** to remove the current detection frame.
   - Click inside the image to begin drawing a detection frame. Right-click when you are finished drawing.
   - You can draw up to **8 detection areas**.
   - Right-click on the image to remove all areas and start over.
2. **Sensitivity:** Select the detection sensitivity from **1–5**.
3. **Audible Alarm:** Enable or disable an audible alarm. When enabled:
   - **Audible Alarm File:** Select an audio sound from the audio files.
4. **Red and Blue Light Alarm:** Enable or disable red and blue deterrence lighting.
5. **Apply**: Click **Apply** to save the settings.

14.5 Configure Recorder-Based Smart Analysis

Local Smart Analysis processes AI detection locally on the recorder. This feature is typically used when connected cameras do not support built-in AI analytics. When cameras include their own AI detection features, it is recommended to use those instead.

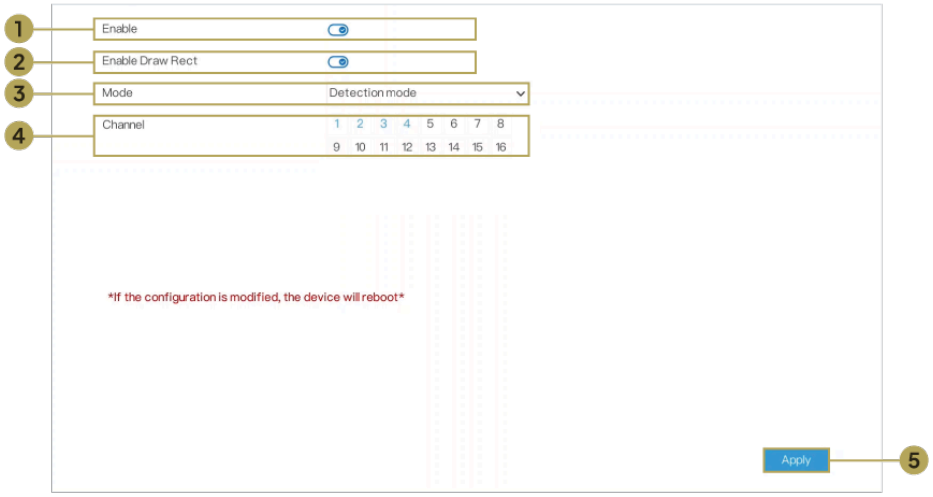
14.5.1 Recorder-Based Smart Analysis — General Settings

The **Local Smart Analysis – General** settings control whether local AI detection features are enabled on the recorder and define how detection areas are displayed and processed.

Open Local Smart Analysis — General Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Local Smart Analysis** from the left-side menu.
5. Click the **General** tab.

Local Smart Analysis — General Settings



1. **Enable:** Enable or disable Local Smart Analysis features.
2. **Enable Draw Rect:** Enable or disable the display of detection rectangles on the video preview.
3. **Mode:** Select the operating mode:
   - **Detection Mode:** Detects objects or behavior within the defined areas.
   - **Recognize Mode:** Uses recognition-based analysis where supported.
4. **Channel:** Select the camera channels where Local Smart Analysis will be active.

> **NOTE**
>
> If the configuration is modified, the device will automatically reboot for the changes to take effect.

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

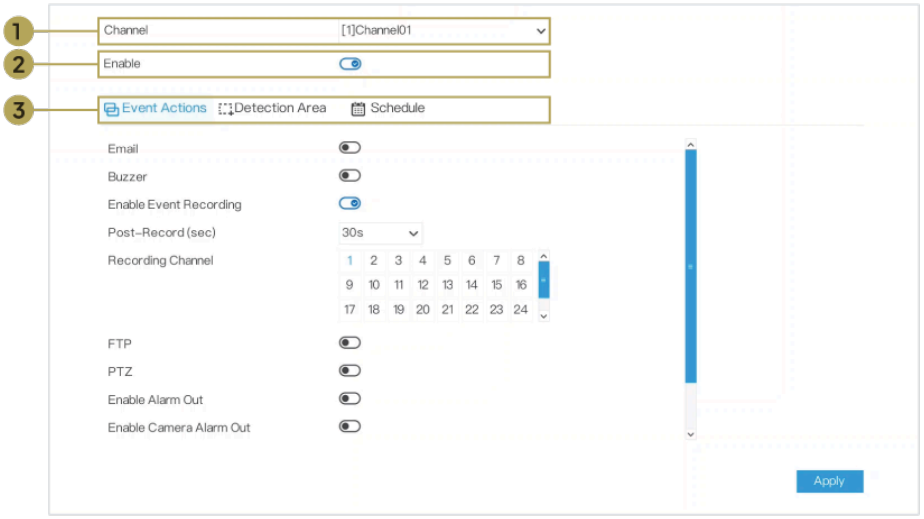
14.5.2 Local Intrusion Detection

The **Local Smart Analysis – Intrusion** feature detects when a person or vehicle enters a defined detection area within the camera view.

Open Local Smart Analysis — Intrusion Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **IVS** tab at the top of the menu.
4. Click **Local Smart Analysis** from the left-side menu.
5. Click the **Intrusion** tab.

Local Smart Analysis — Intrusion Settings

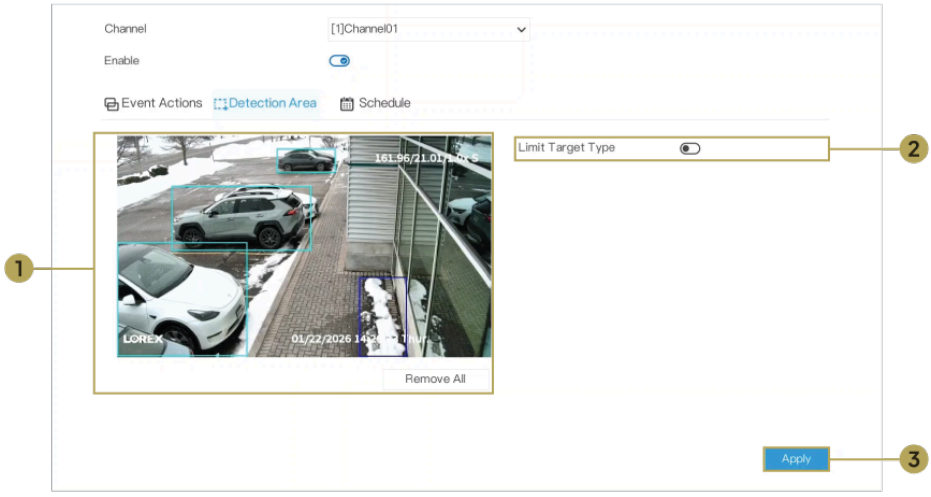


1. **Channel:** Select the camera channel.
2. **Enable:** Enable or disable local smart analysis — intrusion.
3. Select the tab you want to configure: **Event Actions**, **Detection Area**, or **Schedule**.

For instructions on configuring **Event Actions**, see 14.2.1 *Smart Analysis — Event Actions*, page 99; available options may vary by detection type. For instructions on using the **Schedule**, see 14.2.2 *Smart Analysis — Schedule*, page 100 .

Intrusion — Detection Area

The **Detection Area** tab defines where intrusion detection is active within the camera image.



1. **Draw Detection Area:**
   - Click **Remove All** to remove the existing detection areas.
   - Click and drag inside the camera image to create the detection area.
   - Detection events will occur only within the defined areas.
2. **Limit Target Type:** Enable or disable target type filtering. When enabled:
   - **Type:** Select between **Person or Vehicle**, **Person**, or **Vehicle**.
3. **Apply:** Click **Apply** to save the settings.

15 Playback & Backup

The **Playback** menu allows you to search, review, tag, and back up recorded video. You can search footage by time, browse recordings in a grid view, filter event-based recordings, find tagged recordings, and review the status of backup tasks.

The **Playback** menu includes the following tabs:

- **Time Search:** Search and play back recordings by channel, date, time, and recording type.
- **Recording Grid:** Review recordings in an image preview grid format for a selected channel and date.
- **Event Recording:** Search recordings triggered by alarms, motion, smart analysis, and other events.
- **Tag Recording:** Search recordings that were previously saved with tags.
- **Backup List:** Review the status of backup tasks created from the Playback menu.

NOTE

A USB storage device must be connected to save snapshots or export video clips.

If no recordings are found, check that the recorder date and time are correct and that a recording schedule is configured for the selected channel and time period. See 10 *Date & Time*, page 63, and *Recording Schedule Settings*, page 67.

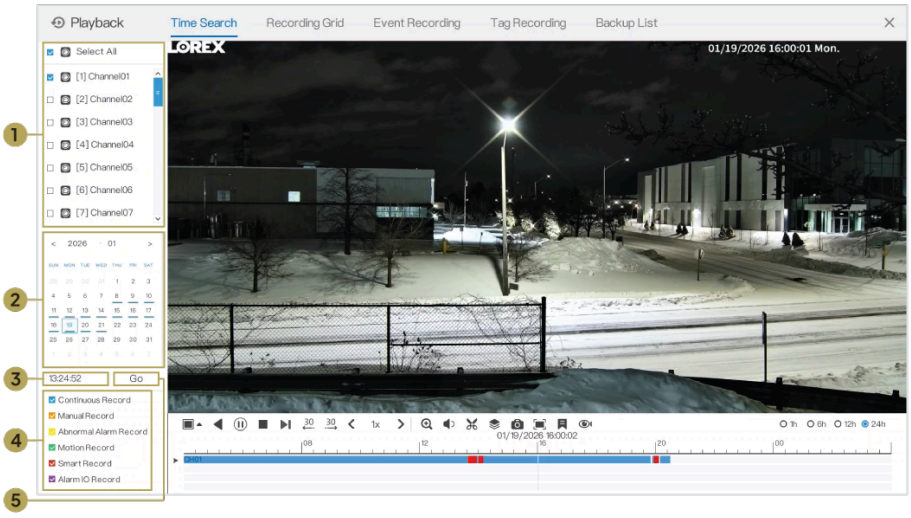
15.1 Search Recordings by Time

Time Search allows you to search and play back recordings by channel, date, time, and recording type.

Open Time Search

1. **Right-click** twice to open the **Main Menu**.
2. Click **Playback**.
3. Select the **Time Search** tab at the top of the menu.

Time Search Criteria

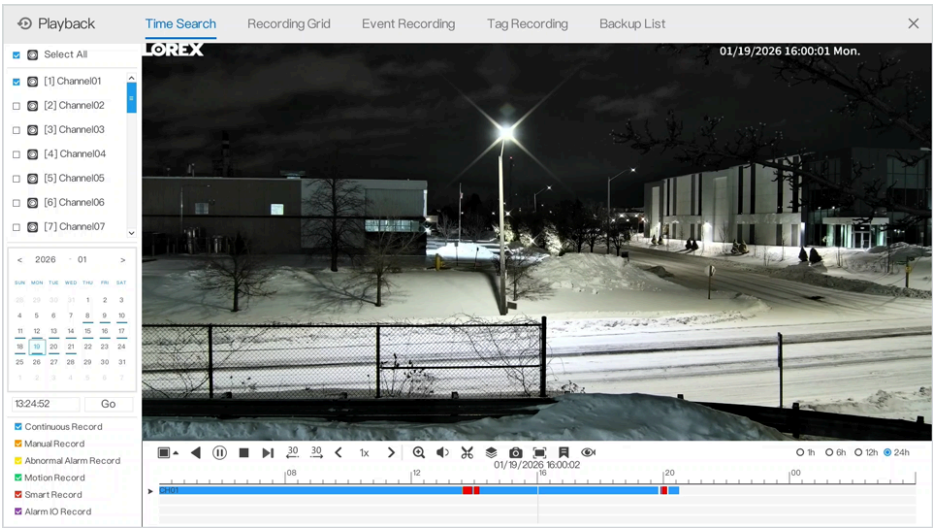


On the left side of the screen, select the playback search criteria:

1. **Channel Selection:** Select the camera channels you want to play back, or click **Select All**.
2. **Calendar:** Select the date you want to search.
3. **Time:** Enter the time you want playback to begin.

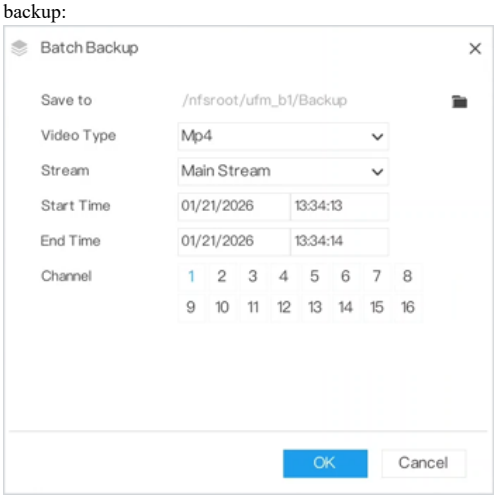
4. **Recording Type Filter:** Filter playback results by recording type:
   - **Continuous Record:** Video recorded according to the regular recording schedule.
   - **Manual Record:** Video recorded when recording was started manually.
   - **Abnormal Alarm Record:** Video recorded when an abnormal system event occurred.
   - **Motion Record:** Video recorded when motion detection was triggered.
   - **Smart Record:** Video recorded when a smart analysis event was triggered.
   - **Alarm IO Record:** Video recorded when an alarm input or output event was triggered.
5. Click **Go** to load the playback results.

Playback Controls

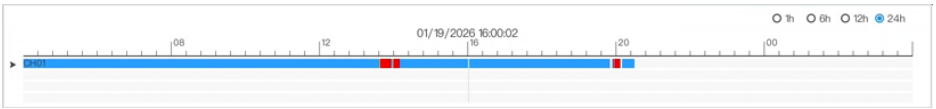


Directly below the playback video is the **playback controls**. It includes the following options:

Playback Control	Function
Split Screen	Select the split-screen layout for playback.
Reversed	Play video in reverse. Click again to stop reverse playback.
/ **Play / Pause**	Start or pause playback.
Stop	Stop playback.
Next Frame	Advance the video by one frame.
30s Backward	Move playback back by 30 seconds.
30s Forward	Move playback forward by 30 seconds.
Twice Speed -	Reduce playback speed.
Twice Speed +	Increase playback speed. The current playback speed is displayed between the speed controls.
Zoom In	Use the mouse scroll wheel to zoom in or out on the playback image.
Audio (Volume 0–100)	Adjust the playback audio volume. Audio playback is available only for recordings from cameras and channels that support audio. Refer to 9 *Audio Setup*, page 57for configuration details.

Start Backup	Start saving a section of video during playback. • Click **Start Backup** to begin. • Click it again to end the backup. When the backup ends, the **Batch Backup** window (see instructions below).
Batch Backup	Open the **Batch Backup** window to manually configure a backup:  • **Save to:** Click the folder button to open the USB flash drive directory. Select an existing folder or create a new one, then click **OK**. • **Video Type:** Select the backup format, such as **MP4**, **AVI**, or **Private**. • **Stream:** Select **Main Stream** or **Sub Stream**. • **Start Time:** Enter the start date and time. • **End Time:** Enter the end date and time. • **Channel:** Select the channels to back up. • Click **OK** to complete backup.
Snapshot	Save a snapshot of the current playback image. A USB storage device must be connected to save snapshots.
Full Screen	View playback in full screen without the search panel on the left.
Add Tag	Click to add a tag to the current playback time: • **Channel:** Displays the selected channel. • **Time:** Displays the current date and time. • **Type:** Select the tag type: **Normal**, **Person**, or **Vehicle**. • **Name:** Enter the tag name. • Click **OK** to save the tag.
Fisheye	Currently not supported.

Use the Timeline



Below the playback controls is the **timeline**, which shows recorded video across the selected time period.

- The numbers above the timeline show the **time of day**.
- The colored sections represent different recording types.
- You can click along the timeline to jump to a different point in the recording.

On the right side of the timeline, you can select the display scale:

- **1h**

- **6h**
- **12h**
- **24h**

These options control how much time is displayed across the timeline.

The timeline colors correspond to the recording types. For example:

- **Blue** = Continuous recording
- **Red** = Smart recording
- **Yellow** = Abnormal alarm recording

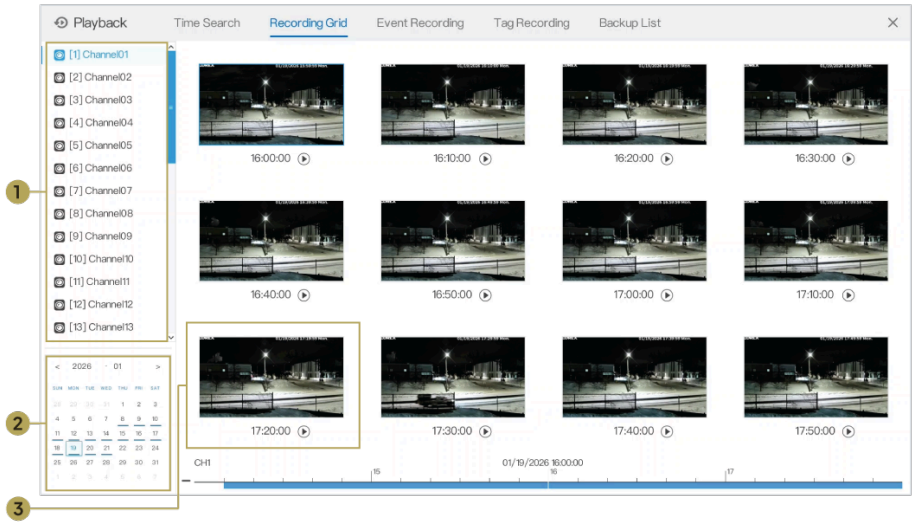
15.2 Review Recordings in a Grid View

The **Recording Grid** displays recordings for a selected channel in a grid format, making it easier to quickly scan footage from different times of day.

Open Recording Grid

1. **Right-click** twice to open the **Main Menu**.
2. Click **Playback**.
3. Select the **Recording Grid** tab at the top of the menu.

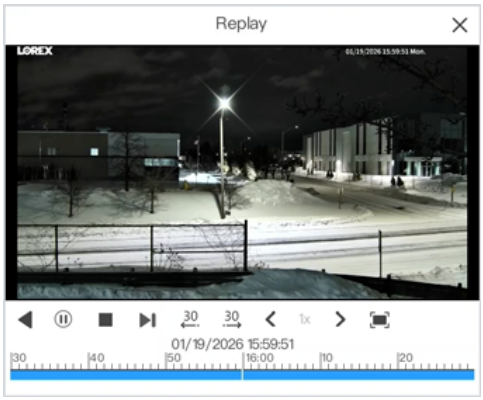
Recording Grid Search Options



You can search by:

1. **Channel:** Select one camera channel at a time.
2. **Calendar:** Select the date you want to review.

3. **Recording Grid Results:** Each result shows a recording thumbnail with a timestamp and a **Play** button. Click **Full Screen** to open the recording in **Playback — Time Search** with access to the full playback controls (see *Playback Controls*, page 121).



Timeline Grid

At the bottom of the screen is a timeline that allows you to browse recording snapshots throughout the day.

The grid appears to divide the day into **two-hour sections**, allowing you to click through recordings captured during those time periods.

Some sections will be empty if no recording is available.

15.3 Search Event Recordings

Event Recording allows you to search for recordings triggered by specific events, such as motion detection, alarm inputs, or smart analysis events.

Open Event Recording

1. **Right-click** twice to open the **Main Menu**.
2. Click **Playback**.
3. Select the **Event Recording** tab at the top of the menu.

Event Recording Search Options

You can search by:

1. **Channels:** Select **All** channels or individual camera channels.

2. **Start Time:** Enter the start date and time.
3. **End Time:** Enter the end date and time.
4. **Event Type Filters:** Select one or more event types:

   - **Alarm In**
   - **Camera Alarm In**
   - **Motion Detection**
   - **Video Tampering**
   - **Video Loss**
   - **Smart Analysis**
   - **Abnormal Analysis**

   If you click the + button next to **Smart Analysis**, you can select individual smart analysis event types such as intrusion or loitering.

   If you click the + button next to **Abnormal Analysis**, you can select individual abnormal event types such as **Disk Error** or **Network Disconnect**.

5. **Search:** Click **Search** to display matching results.

Event Recording Results

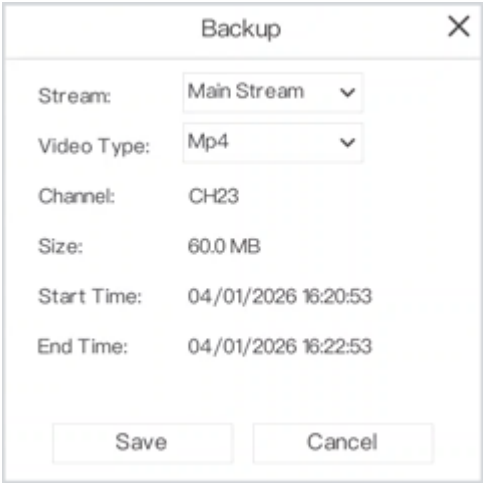
The event recording results display the following:

- **ID:** The numbered search result.
- **Start Time:** The date and time when the event recording began.
- **Channel:** The channel where the event occurred.
- **Type:** The type of event recording.
- **Information:** Additional event details, such as the related channel or event source.
- **Operate:** Buttons for **Playback** or **Backup**.

Under **Operate**, the following buttons are available:

1. **Playback:** Click **Playback** to review the selected recording. Click **Full Screen** to open the recording in **Playback — Time Search** with access to the full playback controls (see *Playback Controls*, page 121).

2. **Backup:** Click **Backup** to open the **Backup** window:



   - **Stream:** Select **Main Stream** or **Sub Stream**.
   - **Video Type:** Select the backup format, such as **MP4**.
   - **Channel:** Displays the channel the event recording occurred on.
   - **Start Time:** Displays the start date and time.
   - **End Time:** Displays the end date and time.
   - **Save:** If you click **Save**, the USB flash drive directory opens so you can select or create a folder and click **OK** to begin the backup.

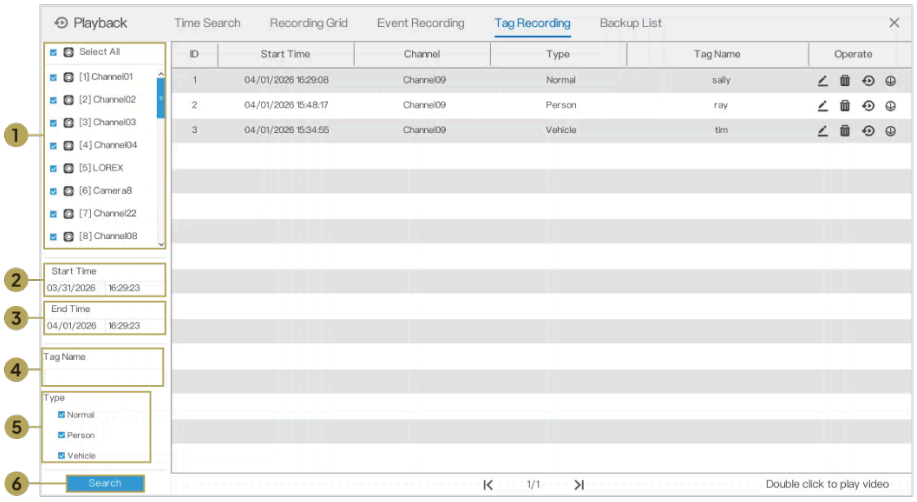
15.4 Search Tagged Recordings

Tag Recording allows you to search for recordings that were previously saved with tags.

Open Tag Recording

1. **Right-click** twice to open the **Main Menu**.
2. Click **Playback**.
3. Select the **Tag Recording** tab at the top of the menu.

Tag Recording Search Options



You can search by:

1. **Channels:** Select **All** channels or individual camera channels.
2. **Start Time:** Enter the start date and time.
3. **End Time:** Enter the end date and time.
4. **Tag Name:** Enter the name of the tag you want to search for.
5. **Type:** Filter by tag type:
   - **Normal**
   - **Person**
   - **Vehicle**
6. **Search:** Click **Search** to display matching results.

Tag Recording Results

The tag recording results display the following:

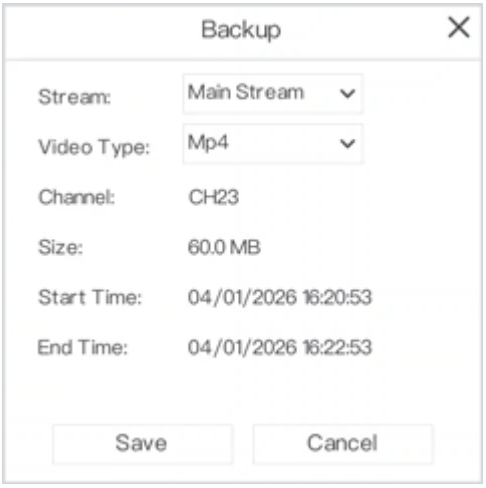
- **ID:** The numbered search result.
- **Start Time:** The date and time linked to the tag.
- **Channel:** The channel where the tag was created.
- **Type:** The tag type.
- **Tag Name:** The name assigned to the tag.
- **Operate:** Buttons for **Playback** or **Backup**.

Under **Operate**, the following buttons are available:

1. **Modify:** Click **Modify** to update the tag settings.
2. **Delete:** Click **Delete** to remove the tag.

3. **Playback:** Click **Playback** to review the selected recording. Click **Full Screen** to open the recording in **Playback — Time Search** with access to the full playback controls (see *Playback Controls*, page 121).

4. **Backup:** Click **Backup** to open the **Backup** window:



- **Stream:** Select **Main Stream** or **Sub Stream**.
- **Video Type:** Select the backup format, such as **MP4**.
- **Channel:** Displays the channel the event recording occurred on.
- **Start Time:** Displays the start date and time.
- **End Time:** Displays the end date and time.
- **Save:** If you click **Save**, the USB flash drive directory opens so you can select or create a folder and click **OK** to begin the backup.

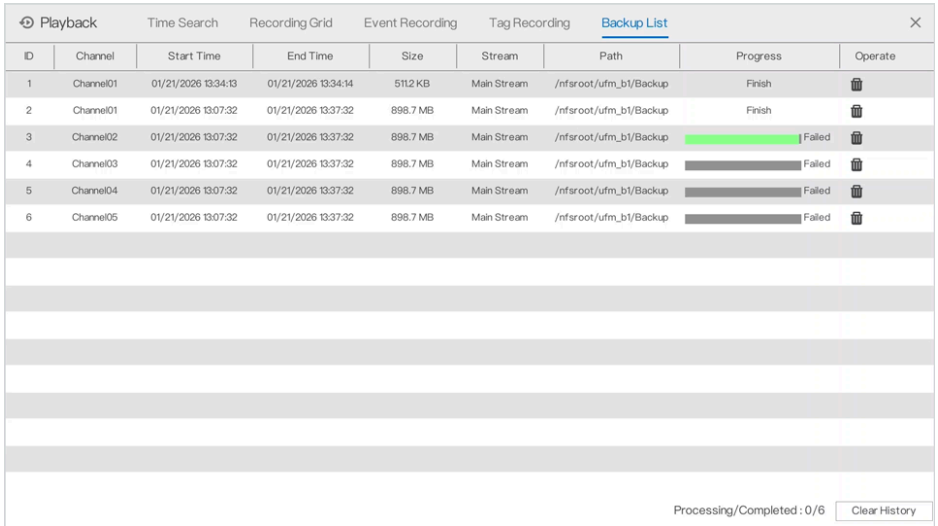
15.5 Review Backup Tasks

The **Backup List** displays the status of backup tasks created from the Playback menu.

Open Backup List

1. **Right-click** twice to open the **Main Menu**.
2. Click **Playback**.
3. Select the **Backup List** tab at the top of the menu.

Backup List



The **Backup List** displays the following:

- **ID:** The numbered backup task.
- **Channel:** The channel included in the backup.
- **Start Time:** The start date and time of the backup clip.
- **End Time:** The end date and time of the backup clip.
- **Size:** The file size of the backup.
- **Stream:** The selected stream type, such as **Main Stream** or **Sub Stream**.
- **Path:** The USB storage path where the backup is saved.
- **Progress:** Displays the backup status, such as **Finished**, **In Progress**, or **Failed**.
- **Operate:** Includes the **Delete** button to remove the task from the list.

16 Smart Search

Smart Search allows you to search AI detection results such as faces, people, vehicles, and people counting data.

When you open **Smart Search**, you must first select a search type. The available options are:

- **Face Search:** Search face snapshots or face-related events.
- **People Search:** Search person detection results using time, channel, and person attributes.
- **Vehicle Search:** Search vehicle detection results using time, channel, and vehicle attributes.
- **People Counting:** Review people counting data collected over a selected time period.

When a search type is selected, it is highlighted in **blue** and the other options appear **gray**.

NOTE
License Plate Search and **Archives Library** are not currently supported.

Search results depend on supported AI features being enabled on the recorder or connected camera. Refer to 14 *IVS & AI Analytics*, page 97.

If search results do not match the expected time range, verify the recorder's date and time settings. Refer to 10 *Date & Time*, page 63.

16.1 Search Faces

The **Face Search** feature allows you to search face snapshots or face-related events by time, channel, event type, and facial attributes.

Open Face Search

1. **Right-click** twice to open the **Main Menu**.
2. Click **AI Application**.
3. Select **Face Search**.

Face Search Options

When **Face Search** is selected, the following search options are available:

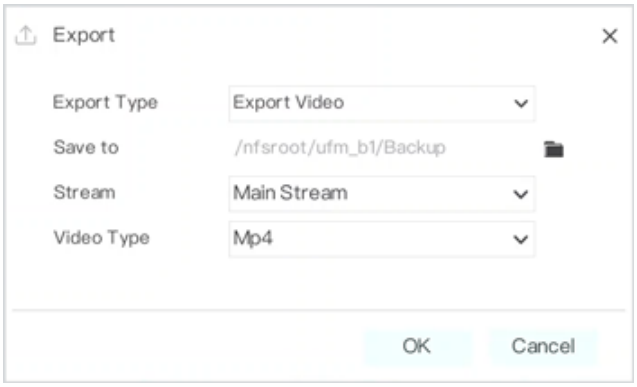
1. **Snaps or Events:** Select whether to search **snapshots** or **event recordings**.
   - **Event Type:** This option appears only when **Events** is selected. Available options include **Select All**, **Register**, or **Stranger**.

2. **Time:** Select the time range for the search:
   - **Day:** Defaults to **Today**. Click **Today** to open the calendar and select another day.
   - **Week:** Defaults to **This Week**. Click the left arrow to move to **Last Week**.
   - **Custom:** Enter the start and end date and time.
3. **Channels:** Select **All** channels or select individual channels.
4. **Attributes:** Click to enter search details such as **Name**, **ID**, **Gender**.
5. **Search / Reset:**
   - Click **Search** to display results.
   - Click **Reset** to clear the selected filters.
6. **Face Search Results:** Each result shows:
   - the face image
   - the date and time
   - the channel

   Use the arrow buttons at the bottom of the page to move between result pages.
7. **Face Search Information Panel:** The **information panel** displays details for the selected result.
8. **Video Preview:** Below the information section is a video preview. Click **Play** to review the recording linked to the selected result.

Export Face Search Results

1. Click **Export** to open the **Export** window.



2. **Export Type:** Select whether to **Export Video** or **Export Pictures**.
3. **Save To:** Click the folder button to open the USB flash drive directory. Select the save location, then click **OK**.
4. **Stream:** This option appears only when **Export Video** is selected. Select **Main Stream** or **Sub Stream**.
5. **Video Type:** This option appears only when **Export Video** is selected. Select the file format, such as **MP4**.
6. Click **OK** to complete the export.

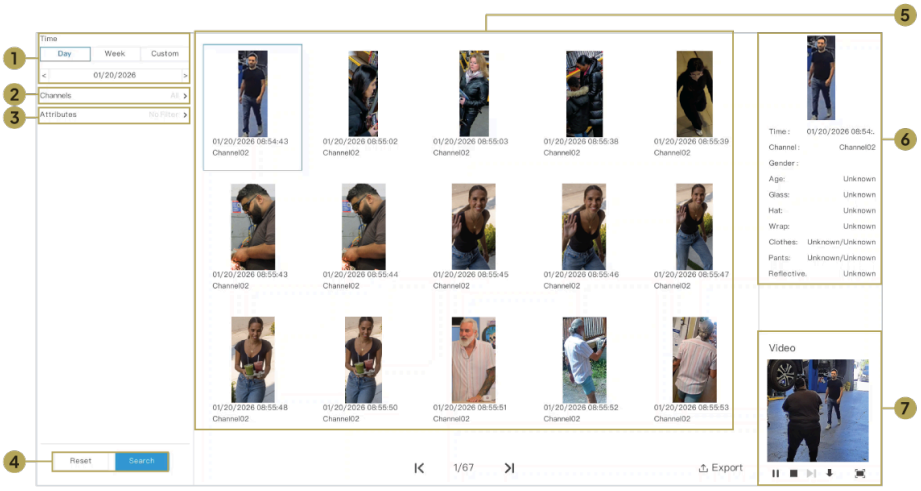
16.2 Search People

The **Person Search** feature allows you to search person detection results by time, channel, and selected person attributes.

Open Person Search

1. **Right-click** twice to open the **Main Menu**.
2. Click **AI Application**.
3. Select **Person Search**.

Person Search Options



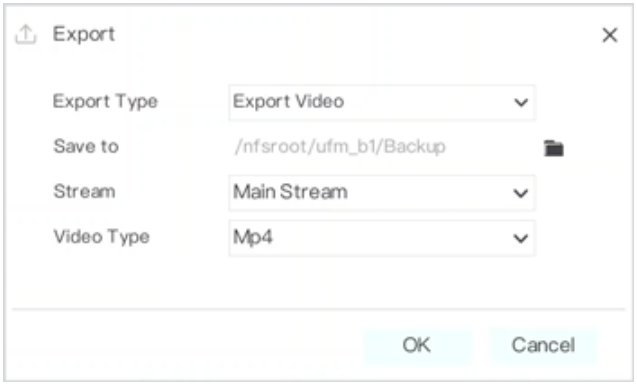
When **Person Search** is selected, the following search options are available:

1. **Time:** Select the time range for the search:
   - **Day:** Defaults to **Today**. Click **Today** to open the calendar and select another day.
   - **Week:** Defaults to **This Week**. Click the left arrow to move to **Last Week**.
   - **Custom:** Enter the start and end date and time.
2. **Channels:** Select **All** channels or select individual channels.
3. **Attributes:** Click to enter search details such as **Glasses**, **Hat**, **Clothes Color**.
4. **Search / Reset:**
   - Click **Search** to display results.
   - Click **Reset** to clear the selected filters.
5. **Person Search Results:** Each result shows:
   - the snapshot
   - the date and time
   - the channel

   Use the arrow buttons at the bottom of the page to move between result pages.
6. **Person Search Information Panel:** The **information panel** displays details for the selected result.
7. **Video Preview:** Below the information section is a video preview. Click **Play** to review the recording linked to the selected result.

Export Person Search Results

1. Click **Export** to open the **Export** window.



2. **Export Type:** Select whether to **Export Video** or **Export Pictures**.
3. **Save To:** Click the folder button to open the USB flash drive directory. Select the save location, then click **OK**.
4. **Stream:** This option appears only when **Export Video** is selected. Select **Main Stream** or **Sub Stream**.
5. **Video Type:** This option appears only when **Export Video** is selected. Select the file format, such as **MP4**.
6. Click **OK** to complete the export.

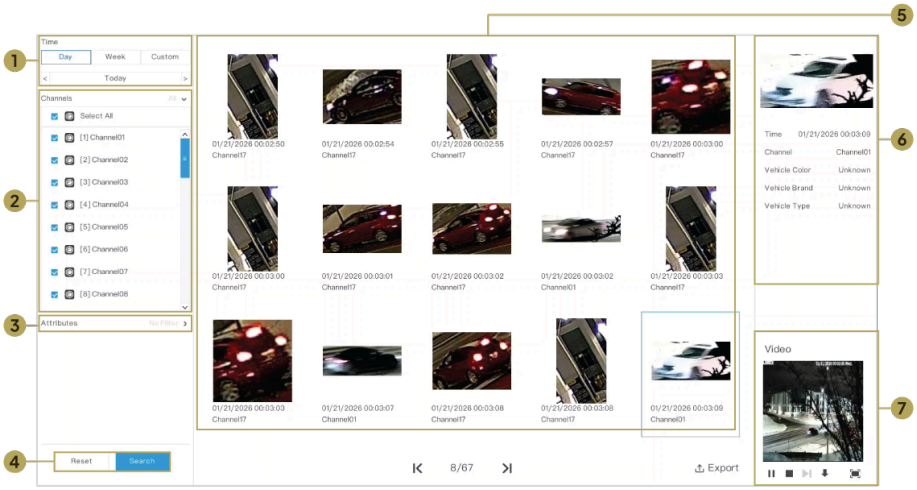
16.3 Search Vehicles

The **Vehicle Search** feature allows you to search vehicle detection results by time, channel, and selected vehicle attributes.

Open Vehicle Search

1. **Right-click** twice to open the **Main Menu**.
2. Click **AI Application**.
3. Select **Vehicle Search**.

Vehicle Search Options



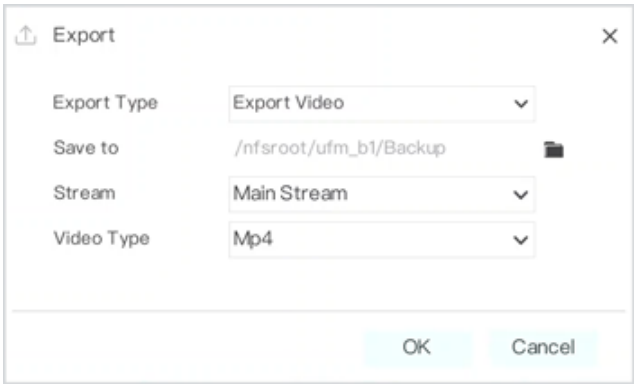
When **Vehicle Search** is selected, the following search options are available:

1. **Time:** Select the time range for the search:
   - **Day:** Defaults to **Today**. Click **Today** to open the calendar and select another day.
   - **Week:** Defaults to **This Week**. Click the left arrow to move to **Last Week**.
   - **Custom:** Enter the start and end date and time.
2. **Channels:** Select **All** channels or select individual channels.
3. **Attributes:** Click to enter search details such as **Vehicle Color** and **Vehicle Type**.
4. **Search / Reset:**
   - Click **Search** to display results.
   - Click **Reset** to clear the selected filters.
5. **Vehicle Search Results:** Each result shows:
   - the snapshot
   - the date and time
   - the channel

   Use the arrow buttons at the bottom of the page to move between result pages.
6. **Vehicle Search Information Panel:** The **information panel** displays details for the selected result.
7. **Video Preview:** Below the information section is a video preview. Click **Play** to review the recording linked to the selected result.

Export Vehicle Search Results

1. Click **Export** to open the **Export** window.



2. **Export Type:** Select whether to **Export Video** or **Export Pictures**.
3. **Save To:** Click the folder button to open the USB flash drive directory. Select the save location, then click **OK**.
4. **Stream:** This option appears only when **Export Video** is selected. Select **Main Stream** or **Sub Stream**.
5. **Video Type:** This option appears only when **Export Video** is selected. Select the file format, such as **MP4**.
6. Click **OK** to complete the export.

16.4 Review People Counting Data

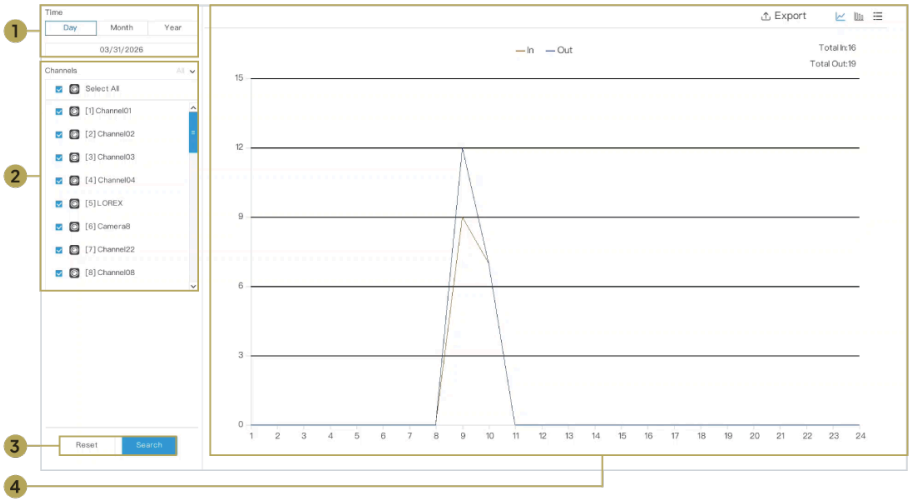
The **People Counting** search allows you to review people counting data collected by supported cameras over a selected time period.

If no people counting data appears, verify that people counting is enabled and properly configured for the selected channel. See 14 *IVS & AI Analytics*, page 97.

Open People Counting

1. **Right-click** twice to open the **Main Menu**.
2. Click **AI Application**.
3. Select **People Counting**.

People Counting Search Options



When **People Counting** is selected, the following search options are available:

1. **Time:** Select the time range for the search:
   - **Day:** Defaults to **Today**. Click **Today** to open the calendar and select another day.
   - **Week:** Defaults to **This Week**. Click the left arrow to move to **Last Week**.
   - **Custom:** Enter the start and end date and time.
2. **Channels:** Select **All** channels or select individual channels.
3. **Search / Reset:**
   - Click **Search** to display results.
   - Click **Reset** to clear the selected filters.
4. **People Counting Results:** You can view the results in three formats:
   - **Line Graph:** Shows trends over time.
   - **Bar Chart:** Compares counts by time period.
   - **Table:** Lists the data in rows.

   The results show the time and the number of people counted:
   - **In**
   - **Out**

Export People Counting Results

1. Click **Export** to open the USB flash drive directory.
2. Select the save location on the USB flash drive and click **OK**.

17 Password Recovery & Security

The Password Recovery & Security settings allow you to recover a forgotten password, change your password, and configure additional security features such as pattern unlock and security questions.

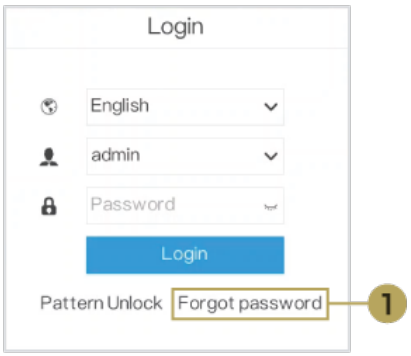
For instructions on adding or managing user accounts, refer to 18 *User Management*, page 141.

17.1 Recover a Forgotten Password

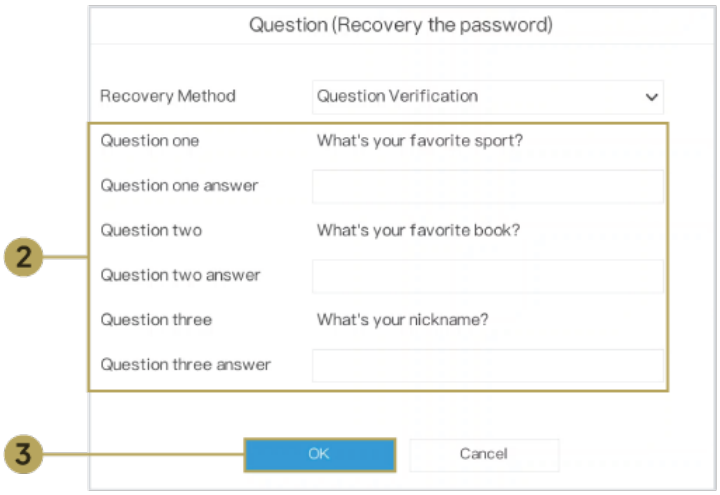
Password recovery is available only if security questions were set up in advance.

Recovering a Forgotten Password

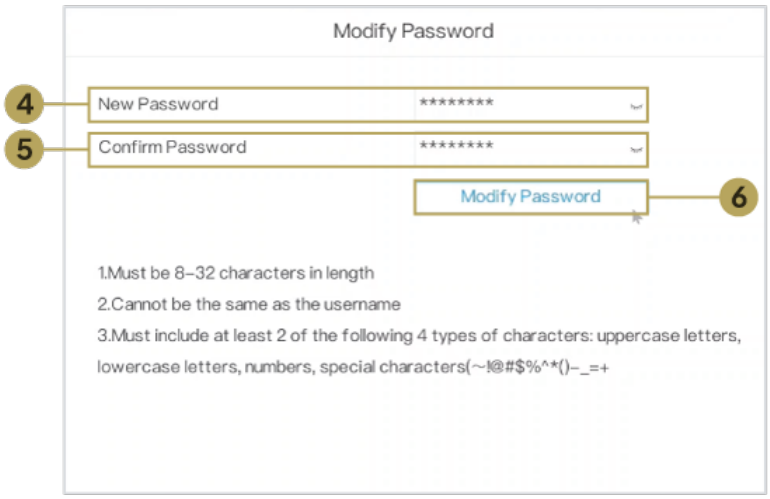
If you forget your password:



1. Click the mouse to open the login option, then click **Forgot Password**.
2. Answer the three security questions.



3. Click **OK**.
   If the answers are correct, you will be prompted to reset the password:



4. **New Password:** Enter a new password.
5. **Confirm Password:** Re-enter the new password.
6. Click **Modify Password**.
7. When returned to the login window, click **Password** and log in using the new password.

17.2 Set Up Security Questions

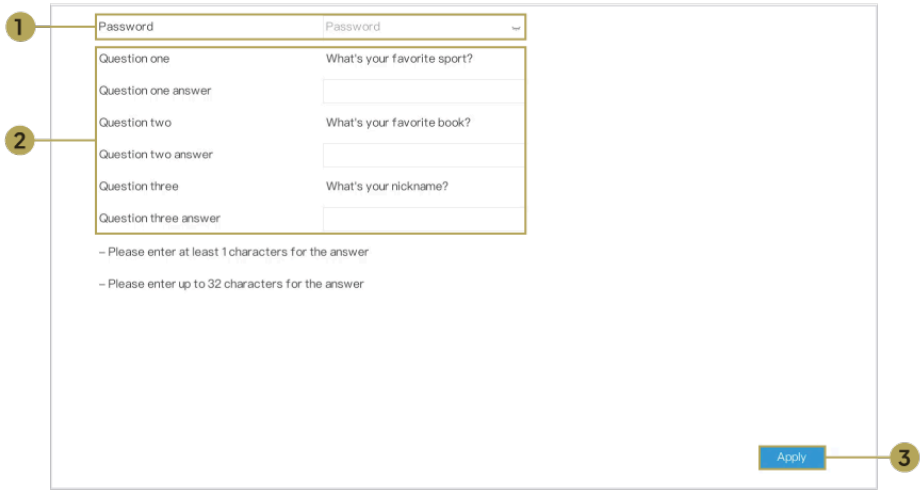
Security questions let you recover your password if you forget it.

Open Security Questions

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Security Center** from the left-side menu.
5. Select the **Secure Question** tab.

Security Question Settings

The following options are available:



1. **Password:** Enter your account password to make changes.

2. **Question One / Two / Three:** Select and answer the security questions.
3. **Apply:** Click **Apply** to save the settings.

17.3 Change Your Password

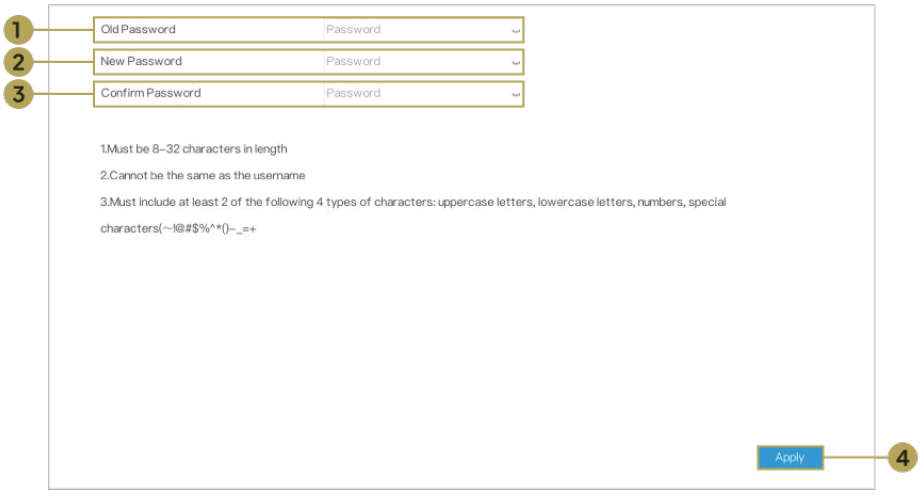
The **Password** settings allow you to manually change your account password. You must know the current password to change it.

Open Password Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Security Center** from the left-side menu.
5. Select the **Password** tab.

Password Settings

The following options are available:



1. **Old Password:** Enter your current password.
2. **New Password:** Enter a new password.

> **NOTE**
>
> **Password requirements:**
>
> - Must be **8–20 characters** in length.
> - Cannot be the same as the username.
> - Must include at least **two** of the following:
>   - uppercase letters
>   - lowercase letters
>   - numbers
>   - special characters (~!@#$%^*()-_+)

3. **Confirm Password:** Re-enter the new password.
4. **Apply:** Click **Apply** to save the new password.

17.4 Use Pattern Unlock

The **Pattern Unlock** feature allows you to unlock the system using a gesture pattern instead of entering a password.

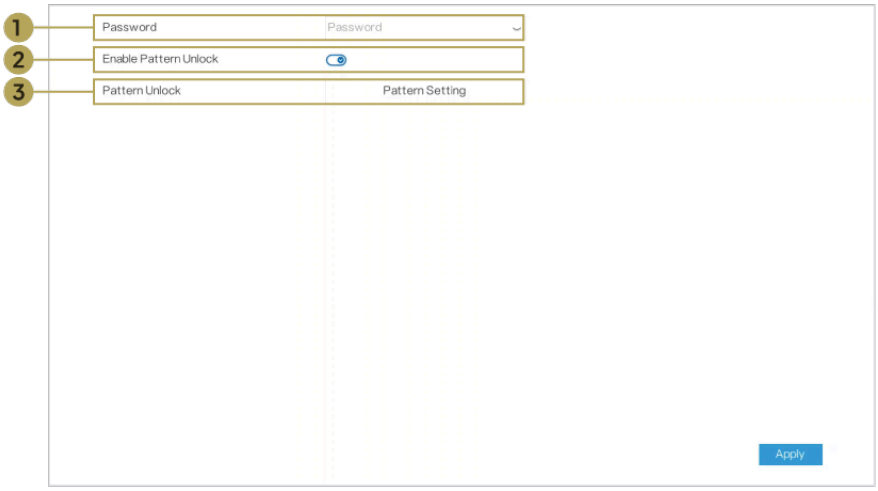
> **NOTE**
>
> Pattern unlock is optional and must be set before it can be used.

Open Pattern Unlock

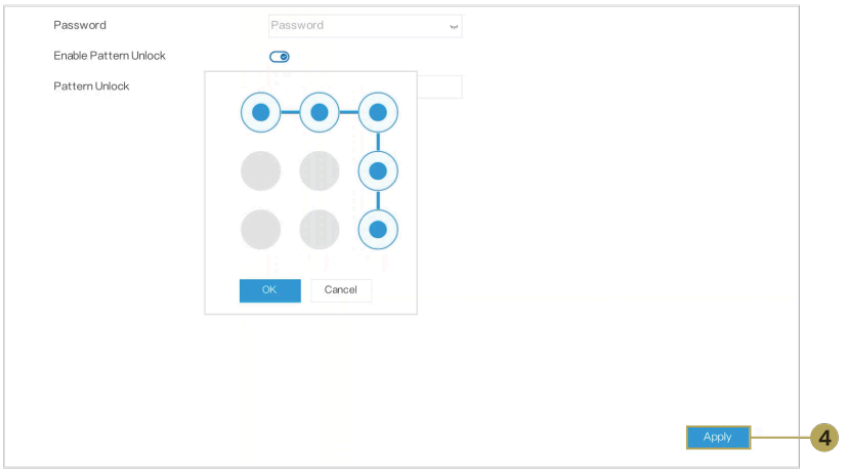
1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Security Center** from the left-side menu.
5. Select the **Pattern Unlock** tab.

Pattern Unlock Settings

The following options are available:



1. **Password:** Enter your account password to make changes.
2. **Enable Pattern Unlock:** Enable or disable the feature.
3. **Pattern Setting:** Click to create or update the unlock pattern.
   To set a pattern:



   - Click **Pattern Setting**.
   - Click and drag across the circles to create a pattern.
   - Confirm the pattern when prompted.

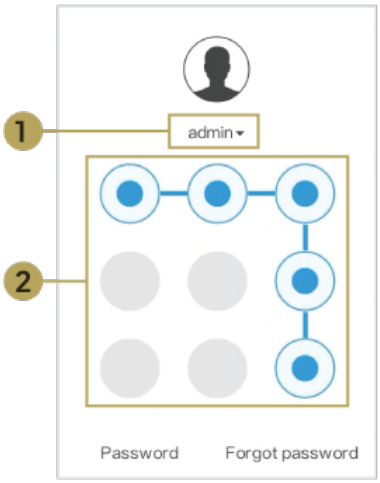
4. **Apply:** Click **Apply** to save settings.

17.5 Log In & Log Out

Click the screen to open the login window.

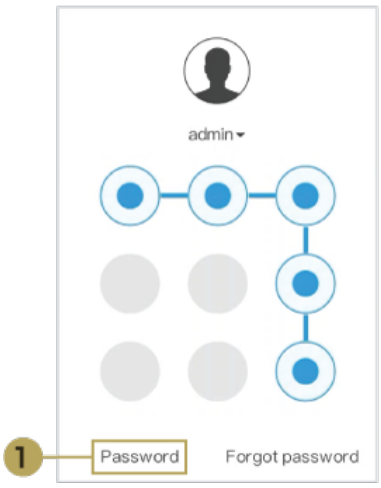
You can select the user account and choose a login method.

Logging In with Pattern Unlock

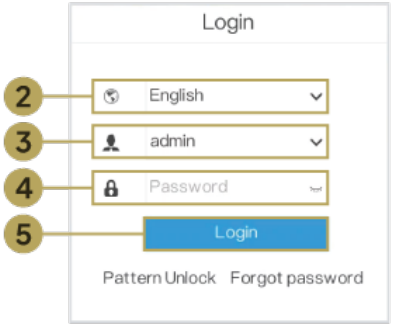


1. Select the user account.
2. Click and drag across the pattern to unlock the system.

Logging In with a Password



1. Click **Password**.

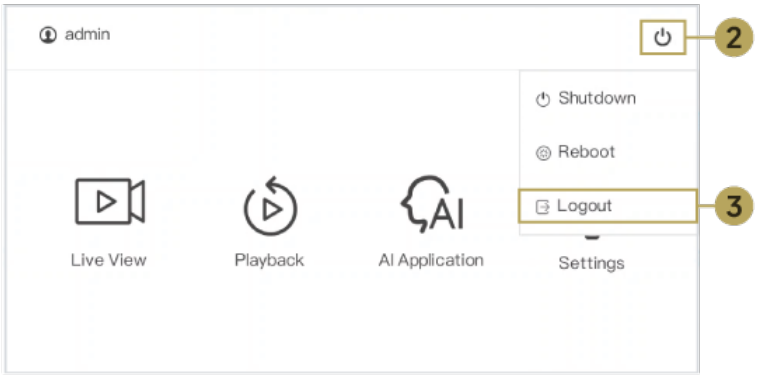


2. Select your preferred language from the list.
3. Select the user account.
4. Enter your password.
5. Click **Login** to access the system.

Logging Out

The system automatically logs out after the configured idle time.

To manually log out:



1. **Right-click** twice to open the **Main Menu**.
2. Open the **Shutdown menu**.
3. Select **Logout**.

18 User Management

The **User Management** settings allow you to add, modify, and manage user accounts for the recorder. Use these settings to assign user groups, control password policies, and define which permissions and channels each user can access.

For password changes and account security settings, refer to 17 *Password Recovery & Security*, page 135.

18.1 Manage User Accounts

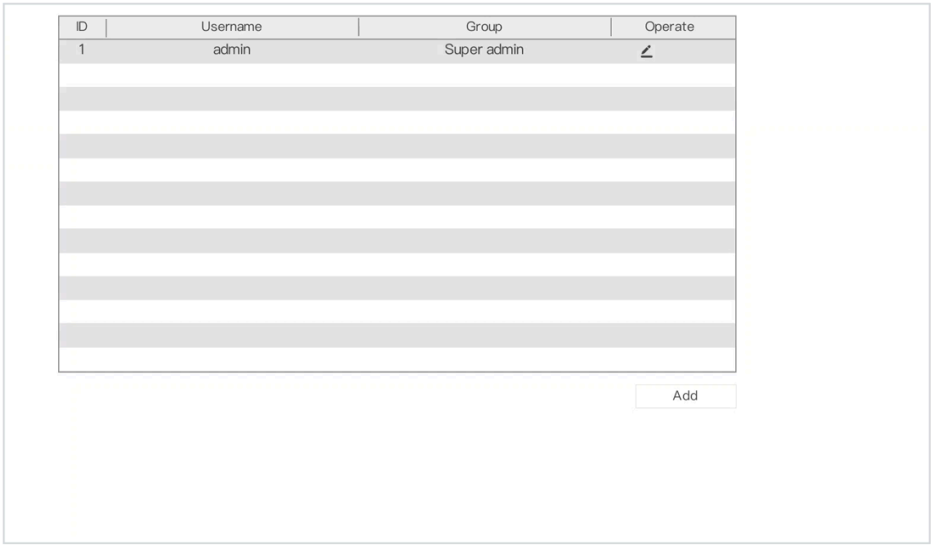
The **User** tab allows you to view existing users, add new users, assign permissions, and modify or delete user accounts.

Open User Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **User Account** from the left-side menu.
5. Select the **User** tab.

User List

The **User** list displays all existing user accounts.

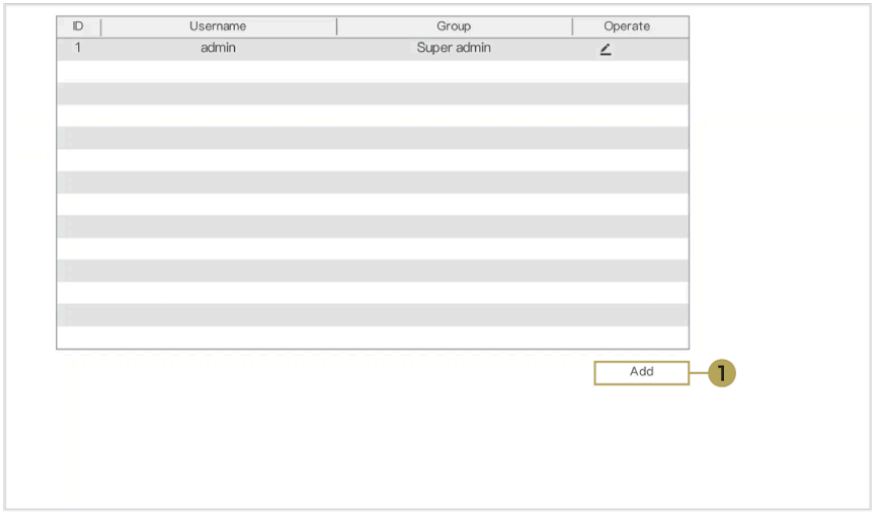


- **ID:** Displays the user number.
- **Username:** Displays the account name.
- **Group:** Displays the assigned user group.
- **Operate:** Displays available actions, such as **Modify** or **Delete**.

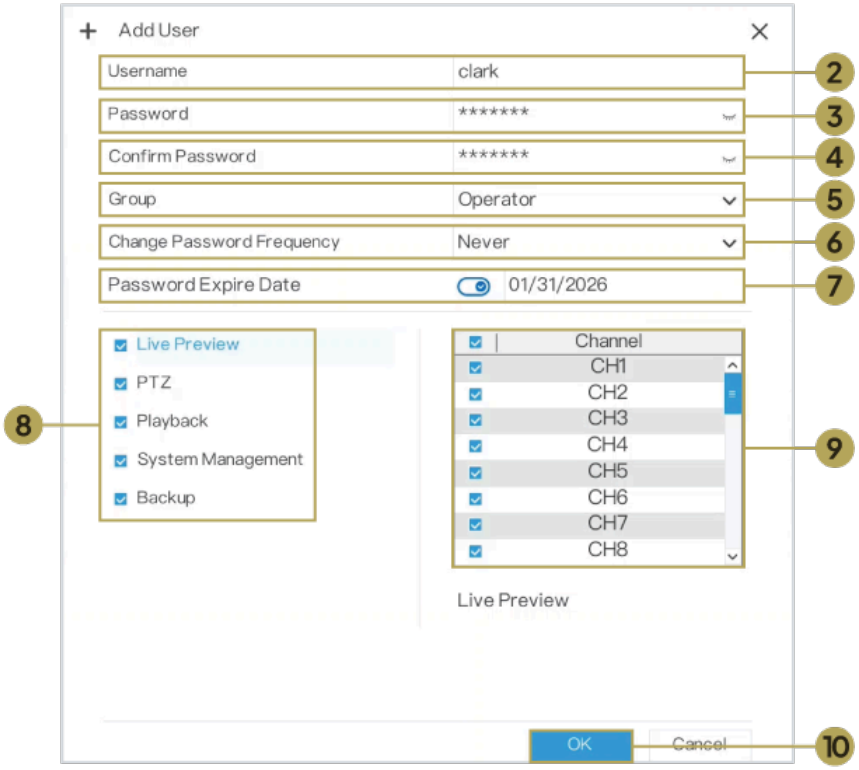
Add a User & Assign Permissions

To add a new user:

1. Click **Add**.



The **Add User** window opens.



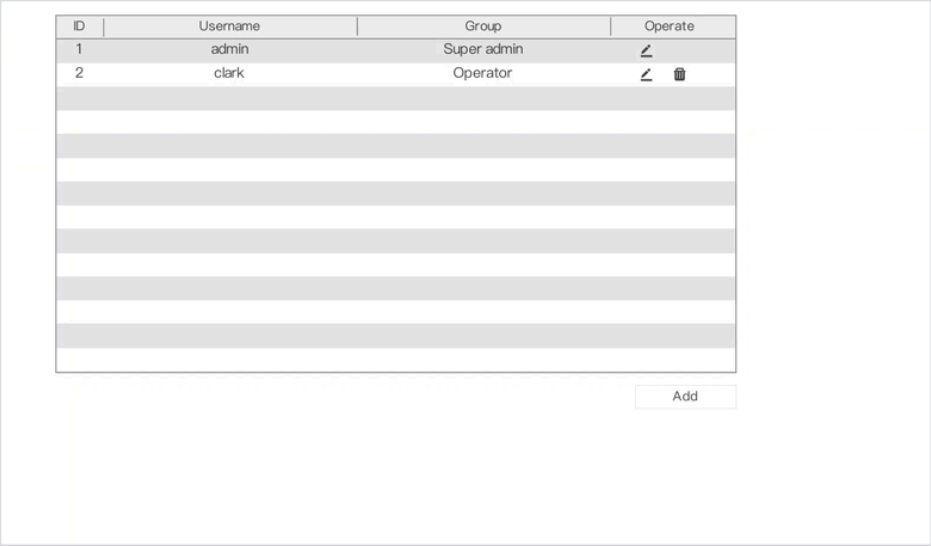
2. **Username:** Enter the new user name.
3. **Password:** Enter the user password.
4. **Confirm Password:** Enter the password again to confirm it.

5. **Group:** Select the user group:
   - **Administrators**
   - **Operator**
   - **Media User**
6. **Change Password Frequency:** Select how often the password must be changed:
   - **Never**
   - **1 Day**
   - **2 Days**
   - **3 Days**
   - **1 Week**
   - **2 Weeks**
7. **Password Expire Date:** Enable or disable password expiration by date. When enabled, enter the expiration date.
8. **Assign Permissions:** The list of permissions that can be enabled or disabled for the selected user:
   - **Live Preview**
   - **PTZ**
   - **Playback**
   - **Channel Management**
   - **Device Management**
   - **System Management**
   - **AI Recognition**
   - **Thermal**
   - **Backup**
9. **Assign Channel Access:** List of channels that can be selected for that user.
10. Click **OK** to save the user.

Once added, the user will appear in the user list. User access changes may also appear in the system log.

Edit or Delete a User

After a user is added, you can manage the account from **Operate**.



- Click **Modify** to update the user settings.
- Click **Delete** to remove the user.

NOTE

The **admin** account cannot be deleted. Only the password change frequency can be modified for this account.

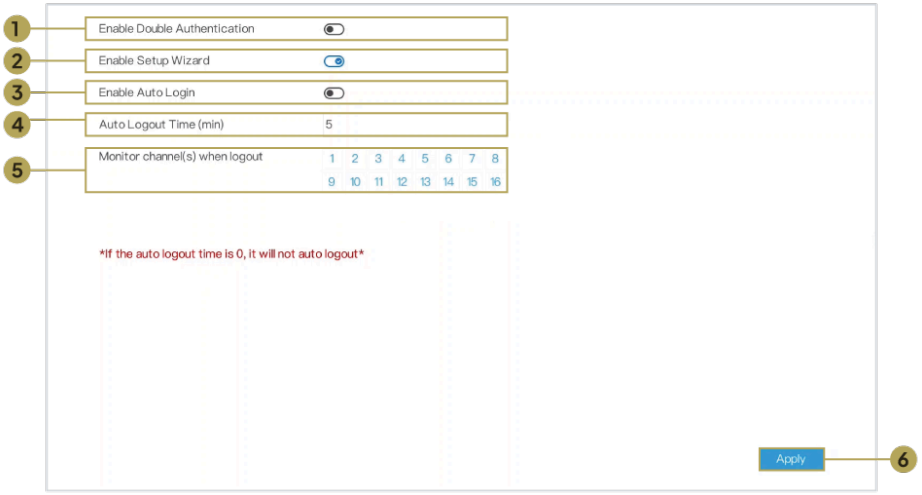
18.2 Configure Advanced Login Settings

The **Adv. Setting** tab allows you to configure additional account and login options, such as double authentication, the Setup Wizard, and automatic login or logout behavior.

Open Advanced Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **User Account** from the left-side menu.
5. Select the **Adv. Setting** tab.

Advanced Settings



1. **Enable Double Authentication:** Enable or disable an additional authentication step during login.
2. **Enable Setup Wizard:** Enable or disable the setup wizard when the recorder starts.
3. **Enable Auto Login:** Enable or disable automatic login to the default account.
   If **Enable Auto Login** is disabled, the following options appear:
4. **Auto Logout Time (min):** Enter how long the system remains idle before logging out automatically.
5. **Monitor channel(s) when logout:** Select which channels remain visible after logout.

   NOTE

   If **Auto Logout Time** is set to **0**, the system will not log out automatically.

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

19 Network & Remote Access

The **Network & Remote Access** chapter explains how to connect the recorder to your local network and configure features used for remote communication. This chapter includes IP addressing, PoE network settings, port configuration, network security, remote access services, email notifications, and failover options. These settings are typically used during initial installation, when enabling remote access, or when troubleshooting network and connectivity issues.

19.1 Configure Network Settings

The **Network** settings allow you to configure how the recorder connects to your local network and the internet. These settings control IP addressing, ports, remote access, email notifications, and network security.

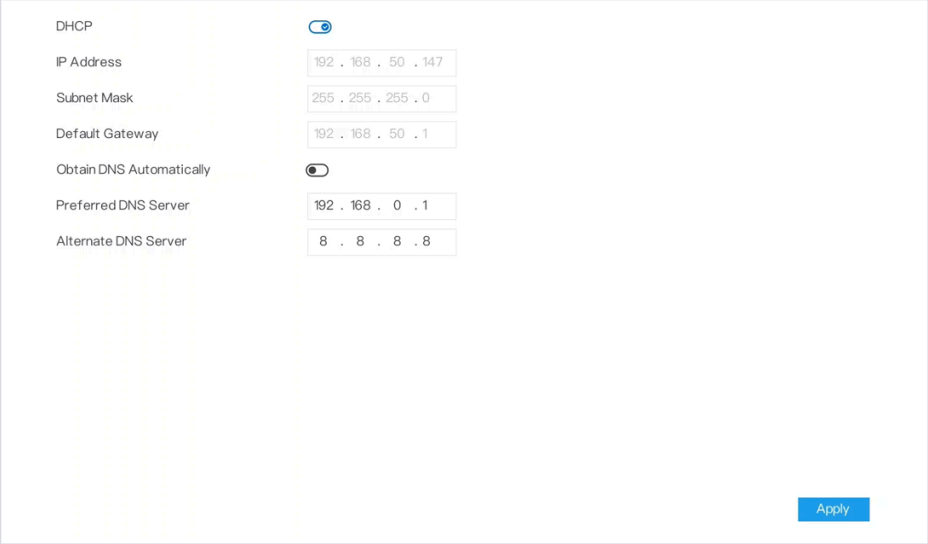
19.1.1 Configure IPv4 Settings

The **IPv4** settings allow you to configure the recorder's network address.

Open IPv4 Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **Network** from the left-side menu.
5. Select the **IPV4** tab.

IPv4 Settings



1. **DHCP:** Automatically assigns network settings from the router.
   - When enabled, IP settings are assigned automatically.
   - When disabled, you must manually enter network settings.
     If **DHCP is disabled**, the following options can be configured:
2. **IP Address:** Enter the device IP address.
3. **Subnet Mask:** Enter the subnet mask.
4. **Default Gateway:** Enter the router gateway address.
5. **Obtain DNS Automatically:** Enable or disable automatic DNS assignment. If disabled:
   - Preferred DNS Server: Enter primary DNS.
   - Alternate DNS Server: Enter secondary DNS.
6. **Apply:** Click **Apply** to save the settings.

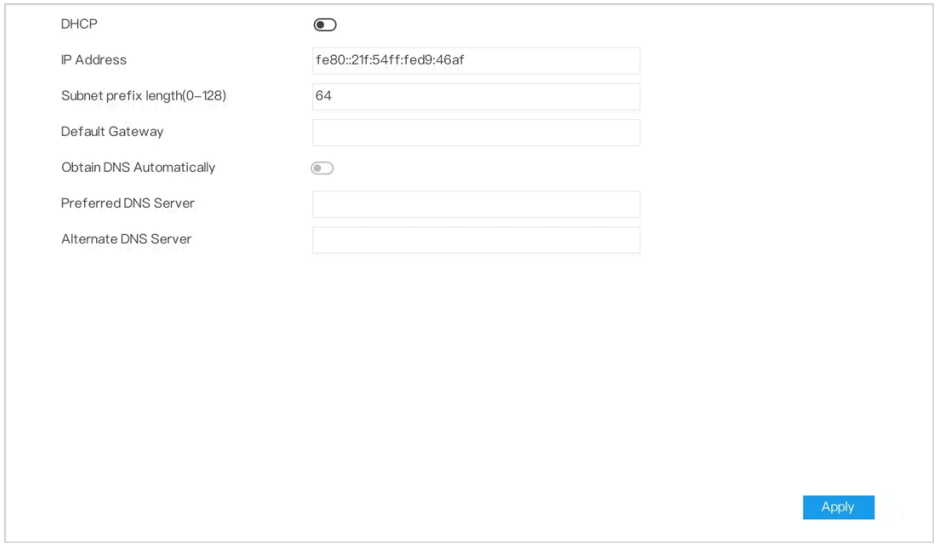
19.1.2 Configure IPv6 Settings

The **IPv6** settings allow configuration of IPv6 network addressing.

Open IPv6 Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **Network** from the left-side menu.
5. Select the **IPV6** tab.

IPv6 Settings



1. **DHCP:** Enable or disable automatic configuration.
2. **IP Address:** Enter IPv6 address.
3. **Subnet Prefix Length (0–128):** Define network size.
4. **Default Gateway:** Enter gateway address.
5. **Obtain DNS Automatically:** Enable or disable DNS assignment.
6. **Preferred / Alternate DNS Server:** Enter DNS addresses.
7. **Apply:** Click **Apply** to save the settings.

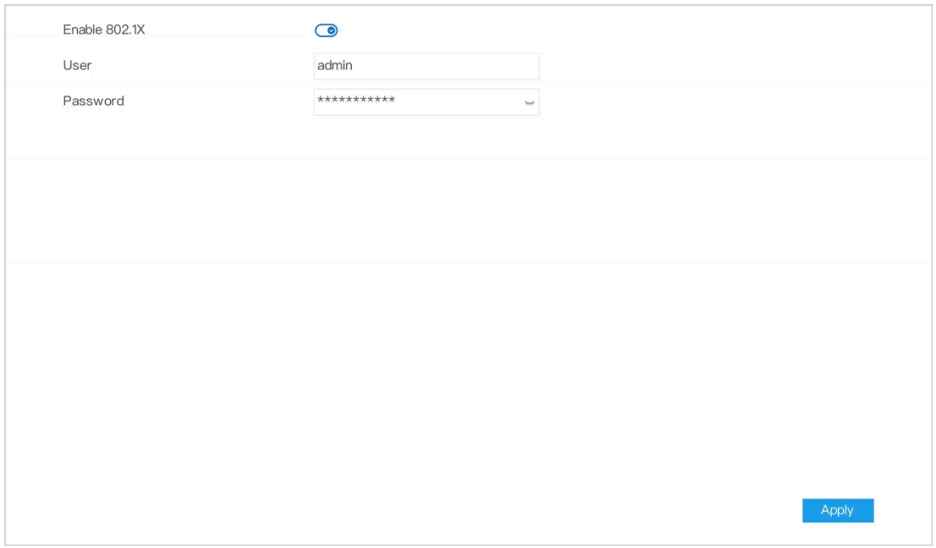
19.1.3 Configure 802.1X Authentication

The **802.1X** settings allow secure network authentication.

Open 802.1X Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **802.1X** from the left-side menu.

802.1X Settings



1. **Enable 802.1X:** Enable or disable authentication.
   If enabled:
2. **User:** Enter username.
3. **Password:** Enter password.
4. **Apply:** Click **Apply** to save the settings.

19.1.4 Configure PoE Network Settings

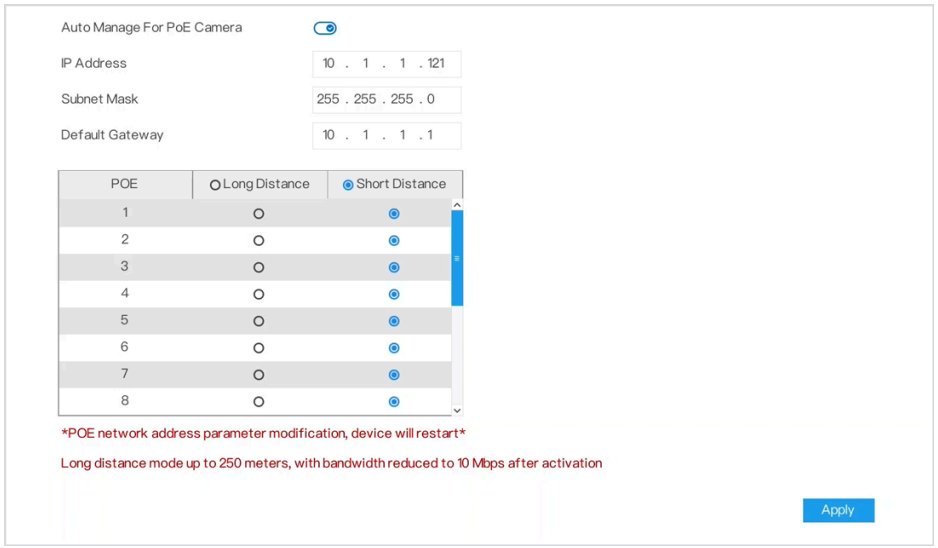
The **PoE** settings configure network parameters for cameras connected through PoE ports.

NOTE
Changing PoE network settings will reboot the device.

Open PoE Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **Network** from the left-side menu.
5. Select the **PoE** tab.

PoE Settings



1. **Auto Manage For PoE Camera:** Automatically manages connected cameras.
2. **IP Address:** The IP address used for the PoE camera network.
3. **Subnet Mask:** Defines the network range for the PoE camera network.
4. **Default Gateway:** Specifies the gateway for the PoE network.
5. **Long Distance / Short Distance:** Configure the transmission mode for each PoE port:
   - **Long Distance:** Extends cable range up to 250 meters, with reduced bandwidth (10 Mbps).
   - **Short Distance:** Standard mode with full bandwidth.
6. **Apply:** Click **Apply** to save the settings.

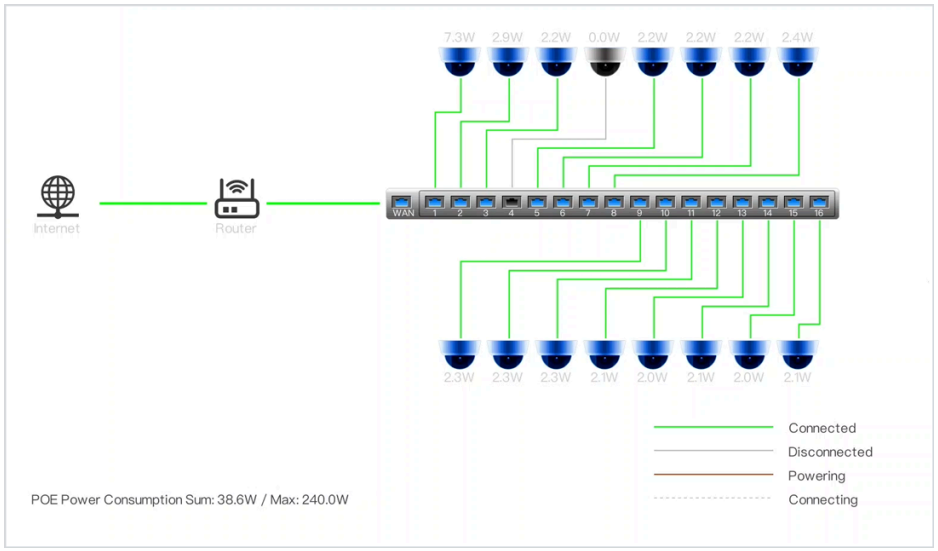
19.1.5 View PoE Status

The **PoE Status** screen provides a visual overview of the network connections and power usage for all cameras connected to the recorder's PoE ports.

Open PoE Status

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **PoE Status** from the left-side menu.

PoE Status



- The screen displays a connection diagram from left to right:
  - **Internet → Router → WAN → NVR PoE Ports → Cameras**

Each PoE port on the recorder is shown with a corresponding camera connection. The ports are numbered to match the physical ports on the back of the recorder.

- Each connected camera displays its **current power consumption (wattage)** above the camera icon.
- A legend below the diagram explains the connection status:
  - **Green line** = Connected
  - **Black line** = Disconnected
  - **Red line** = Powering
  - **Dotted line** = Connecting

This allows you to quickly identify connection or power issues.

Power Consumption

- **PoE Power Consumption Sum:** Displays the total power being used by all connected cameras.
- The **maximum available power** is also shown for reference.

19.1.6 Configure Network Ports

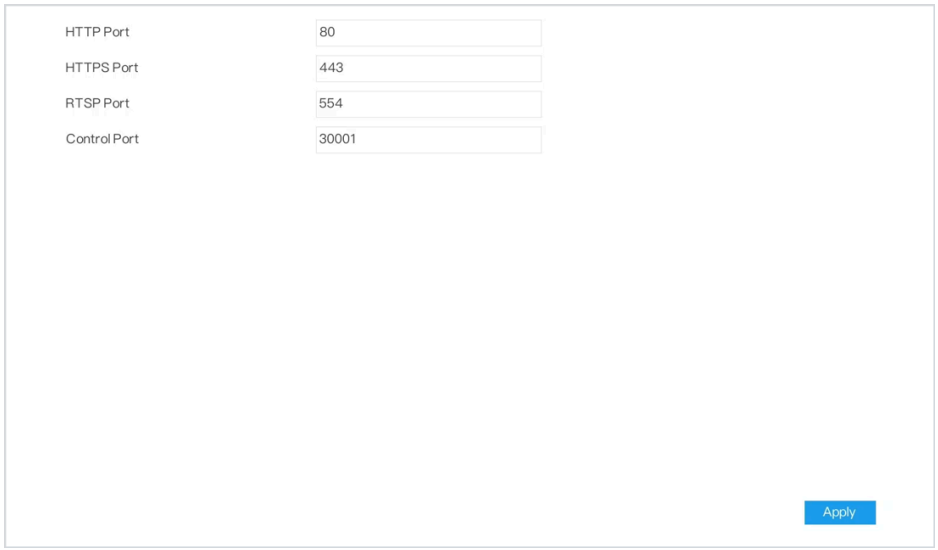
19.1.6.1 Port Settings

The **Port** settings define the communication ports used for network access.

Open Port Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **Network** from the left-side menu.
5. Select the **Port** tab.

Port Settings



1. **HTTP Port:** Used for web access.
2. **HTTPS Port:** Secure web access.
3. **RTSP Port:** Used for video streaming.
4. **Control Port:** Used for device communication.
5. **Apply:** Click **Apply** to save the settings.

19.1.6.2 Port Mapping

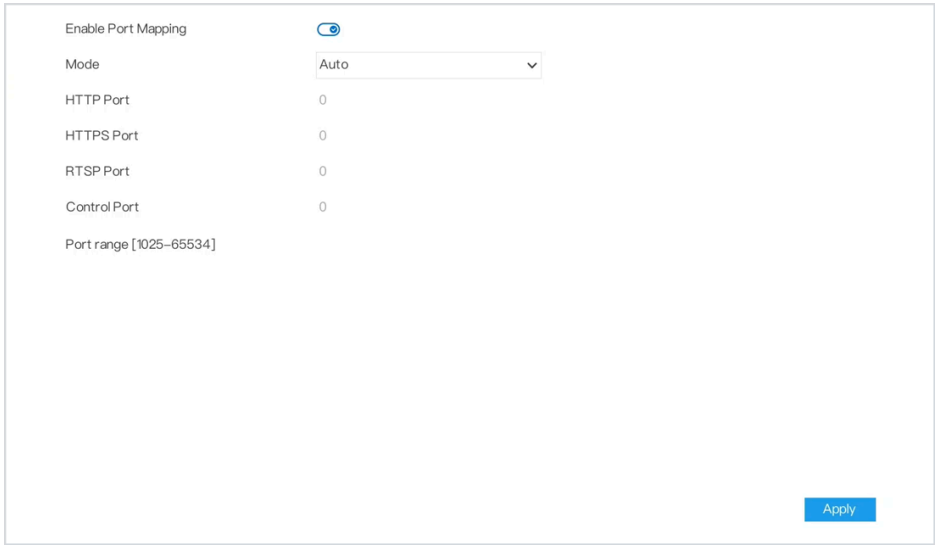
The **Port Mapping** settings allow external access through router port forwarding.

Open Port Mapping Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **Port Mapping** from the left-side menu.

Port Mapping

Port range: 1025–65534



1. **Enable Port Mapping:** Enable or disable.
2. **Mode:** Select **Auto** or **Manual**.
   If **Manual** is selected, configure:
3. **HTTP Port:** Used for web access.
4. **HTTPS Port:** Secure web access.
5. **RTSP Port:** Used for video streaming.
6. **Control Port:** Used for device communication.
7. **Apply:** Click **Apply** to save the settings.

19.1.6.3 NAT Port Range

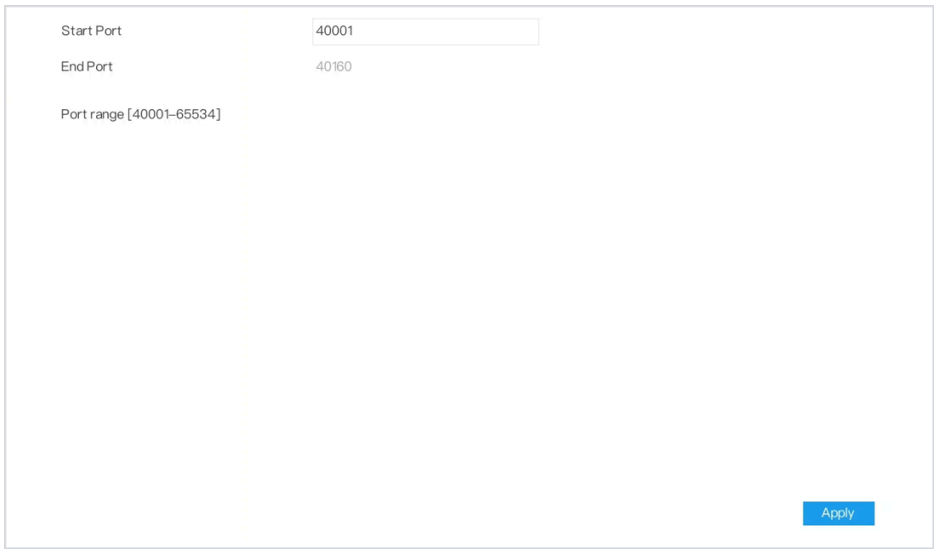
The **NAT Port** settings define the port range used for NAT mapping.

Open NAT Port Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **Port Mapping** from the left-side menu.
5. Click the **NAT Port** tab.

NAT Port

Port range: 1025–65534



1. **Start Port:** Enter start value.
2. **End Port:** Enter end value.
3. **Apply:** Click **Apply** to save the settings.

19.1.7 Configuring IP Filter

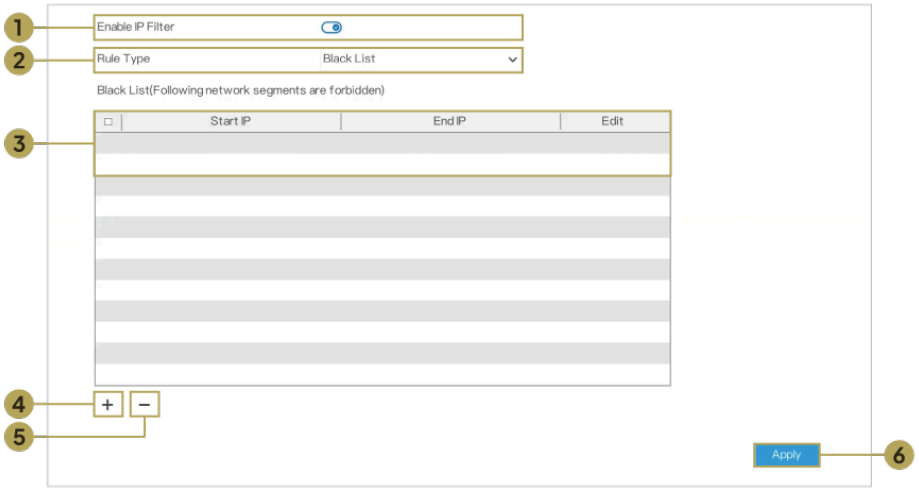
The **IP Filter** settings allow you to control which IP addresses are allowed or blocked from accessing the recorder.

NOTE
Use IP filtering carefully. Incorrect settings may prevent authorized users from accessing the system.

Open IP Filter Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **IP Filter** from the left-side menu.

IP Filter Settings



1. **Enable IP Filter:** Enable or disable IP filtering.
   If **Enable IP Filter** is enabled, the following options appear:
2. **Rule Type:** Select how IP addresses are filtered:
   - **Black List:** The listed IP addresses or ranges are **blocked** from accessing the recorder.
   - **White List:** Only the listed IP addresses or ranges are **allowed** to access the recorder.
3. **IP Address:** Displays configured IP ranges with the following options:
   - **Select:** Check to select an entry.
   - **Start IP / End IP:** The beginning and end of the IP address range.
   - **Edit:** Modify the selected IP range.
4. **Add (+):** Click + to add a new IP range:
   - Enter the **Start IP** and **End IP**.
   - Click **OK** to save.
5. **Delete (–):** Select an entry from the table, then click – to remove it.
6. **Apply:** Click **Apply** to save the settings.

19.1.8 Monitor Network Traffic

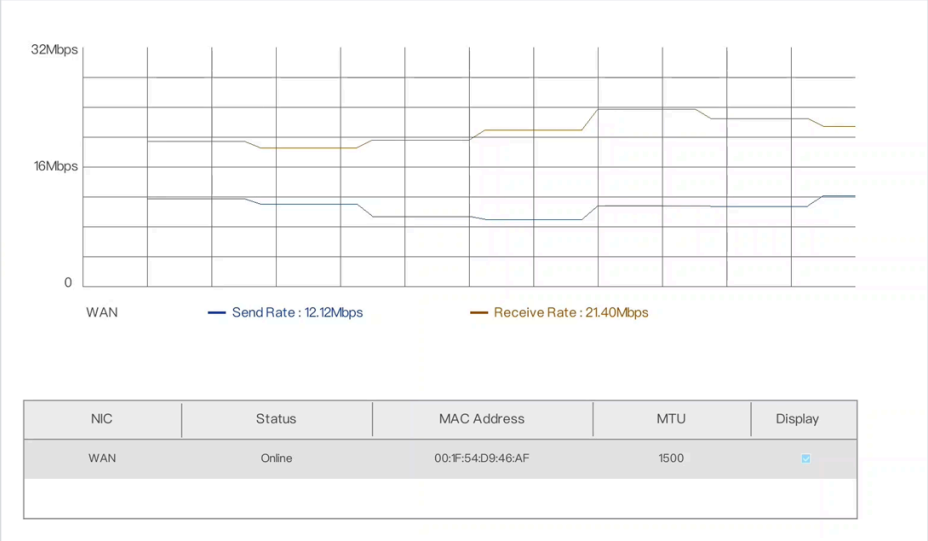
The **Network Traffic** screen allows you to monitor real-time network activity for the recorder, including data being sent and received.

Open Network Traffic

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **Network Traffic** from the left-side menu.

Network Traffic Overview

The screen displays a live graph showing network usage over time:



- The vertical axis shows data rates (for example, **0, 1 bps, 2 bps**).
- Two lines are displayed:
  - **Send Rate (blue):** Data being sent from the recorder (Mbps).
  - **Receive Rate (red):** Data being received by the recorder (Mbps).

This graph helps you monitor bandwidth usage and identify unusual network activity.

Network Information

- **NIC:** Displays the network interface (for example, **WAN**).
- **Status:** Shows whether the connection is **Online** or **Offline**.
- **MAC Address:** Displays the device's MAC address.
- **MTU:** Displays the Maximum Transmission Unit value.
- **Display:** Check or uncheck to show or hide the selected network interface on the graph.

This is useful for troubleshooting network performance and verifying that the recorder is properly connected.

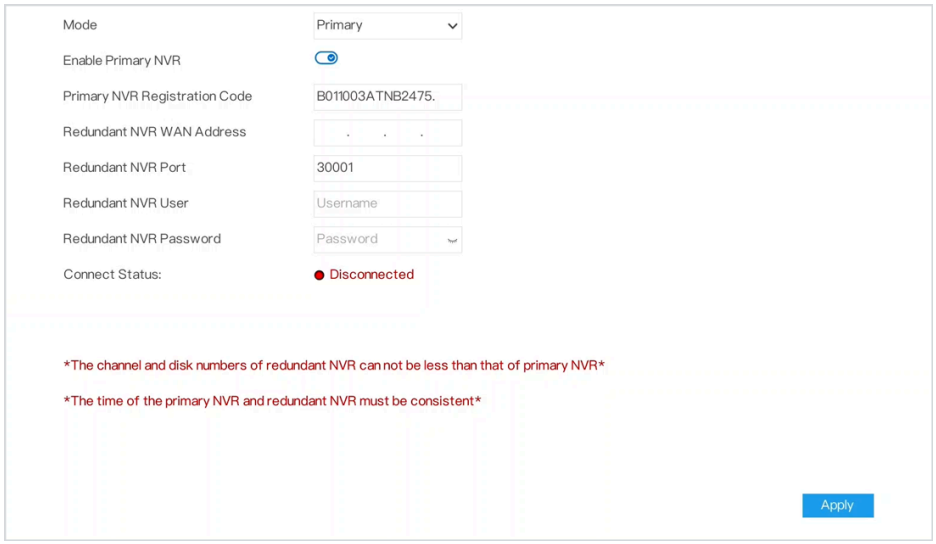
19.1.9 Configure Failover

The **Failover** settings allow you to configure a backup (redundant) recorder to take over recording if the primary recorder fails.

Open Failover Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **Failover** from the left-side menu.

Failover Settings



1. **Mode:** Select the operating mode:
   - **Primary:** This recorder acts as the main device.
   - **Redundant:** This recorder acts as a backup device.
2. **Enable Primary NVR:** Enable or disable failover on the primary recorder.
   If **Enable Primary NVR** is enabled, the following options appear:
3. **Primary NVR Registration Code:** Displays the unique code used to link with the redundant NVR.
4. **Redundant NVR WAN Address:** Enter the IP address of the backup (redundant) NVR.
5. **Redundant NVR Port:** Enter the connection port for the redundant NVR.
6. **Redundant NVR User:** Enter the username for the redundant NVR.
7. **Redundant NVR Password:** Enter the password for the redundant NVR.
8. **Connect Status:** Displays the redundant NVR as **Connected** or **Disconnected**.
9. **Apply:** Click **Apply** to save the settings.

NOTE

- The redundant NVR must support **at least the same number of channels and disks** as the primary NVR.
- The system time on both NVRs must be **synchronized** for failover to function correctly.

19.2 Configure Remote Access and Notifications

19.2.1 View Lorex Connect Status

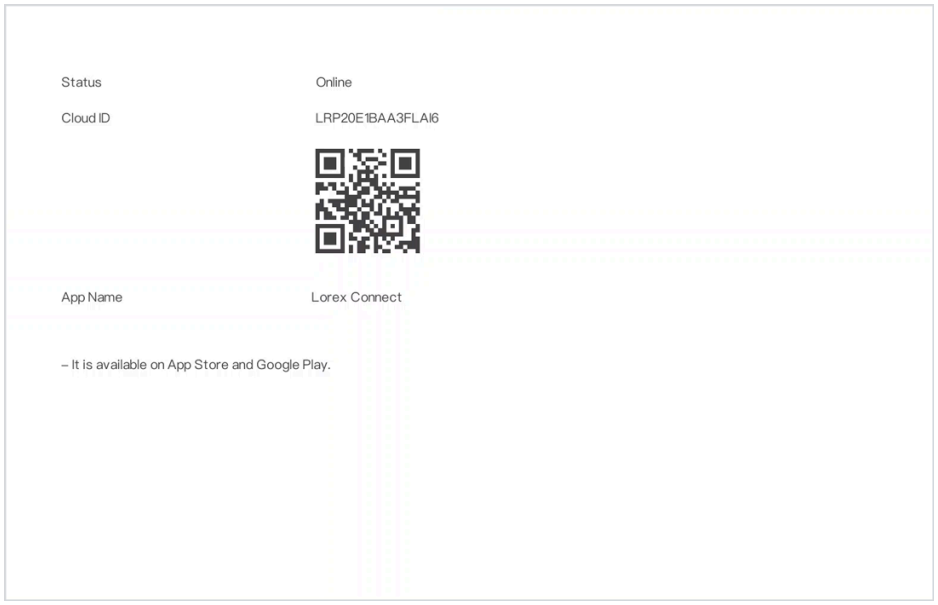
The **Lorex Connect** screen displays device connection status for mobile access.

For remote viewing setup, refer to 4.6 *Download the Lorex Connect App for Remote Viewing*, page 17.

Open Lorex Connect Status

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **Lorex Connect** from the left-side menu.

Lorex Connect Status



- **Status:** Displays **Online** or **Offline**
- **Cloud ID:** Device identifier
- **App Name:** Lorex Connect

19.2.2 Configure Email Notifications

The **Email** settings allow the recorder to send notifications when events occur, such as motion detection, alarms, or system alerts.

The **Email** menu contains two tabs:

- **Email Server 1**
- **Email Server 2**

You can configure one or both email servers if you want to use multiple email accounts for notifications.

Open Email Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **Network** tab at the top of the menu.
4. Click **Email** from the left-side menu.
5. Click the **Email Server 1** or **Email Server 2** tab.

Email Settings

1. **SMTP Server:** Enter the outgoing mail server address (for example, smtp.gmail.com).
2. **SMTP Server Port:** Enter the port number required by the email provider.
3. **Username:** Enter the email account username (typically the full email address).
4. **Password:** Enter the email account password.
5. **Email Sender:** Enter the email address that will send notifications.
6. **Alarm Receiver 1 / 2 / 3:** Enter up to three email addresses that will receive event notifications.
7. **SSL Encryption:** Select the encryption type required by the email provider:
   - **OFF**
   - **SSL**
   - **StartTLS**
8. **Sending Interval (0–600s):** Set the minimum time between email notifications to prevent excessive alerts.

9. **Test:** Click **Test** to verify that the email settings are configured correctly.
10. **Apply:** Click **Apply** to save the settings.

Using Two Email Servers

If needed, repeat the same steps in the **Email Server 2** tab to configure a second email account for notifications. This allows the recorder to support multiple email notification accounts.

19.2.3 Configure DDNS Remote Access

By setting up DDNS, you can view your NVR remotely from any computer or compatible mobile device with internet access. DDNS setup requires both account configuration on Lorex's website and matching settings on the recorder.

NOTE

The easiest way to access your NVR is through the Lorex Connect App, which provides remote access without needing port forwarding or DDNS.

19.2.3.1 Step 1: Forward Required Ports

If you are using DDNS, you will need to port forward the **HTTP** and **Client** ports on your router to your NVR's IP address.

- Default HTTP Port: **80**
- Default Client Port: **35000**

Follow your router manufacturer's instructions to manually port forward these ports.

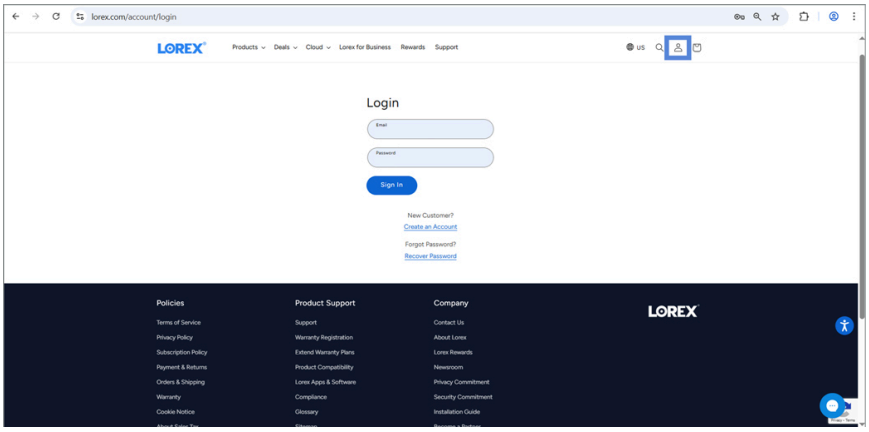
19.2.3.2 Step 2: Create a Lorex Account

You can create an account from either a computer or mobile browser.

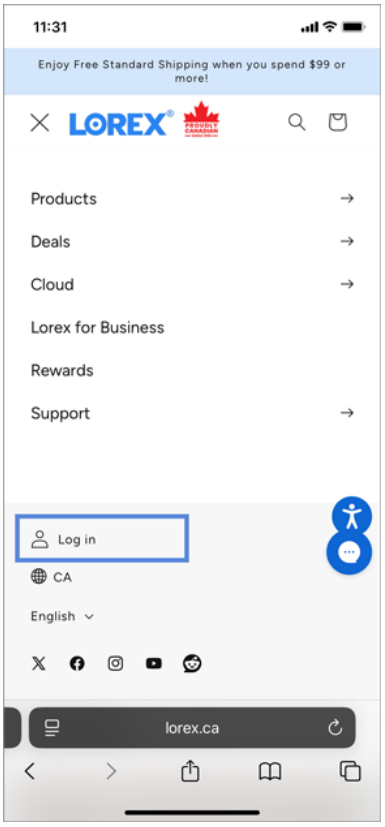
1. Go to lorex.com.

2. **Log in** or tap **Create An Account** to register.

   - On computer: Click the **(My Account)** button in the top-right corner.



   - On mobile: Tap the **(Menu)**, then tap **Login**.

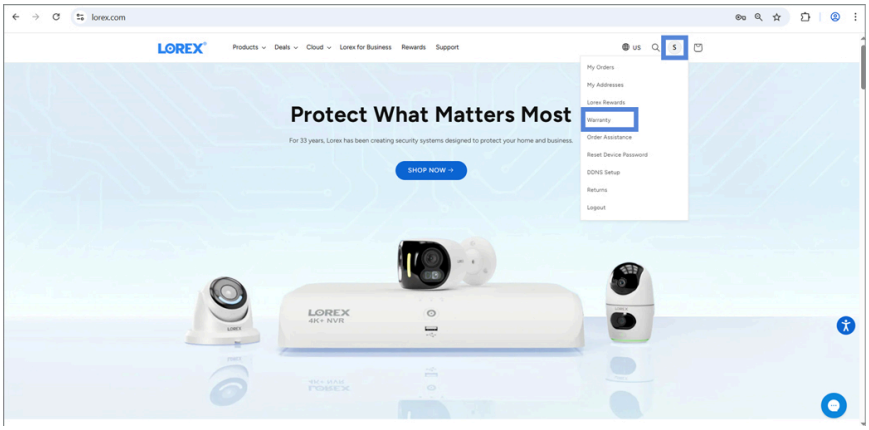


19.2.3.3 Step 3: Activate the Recorder Warranty

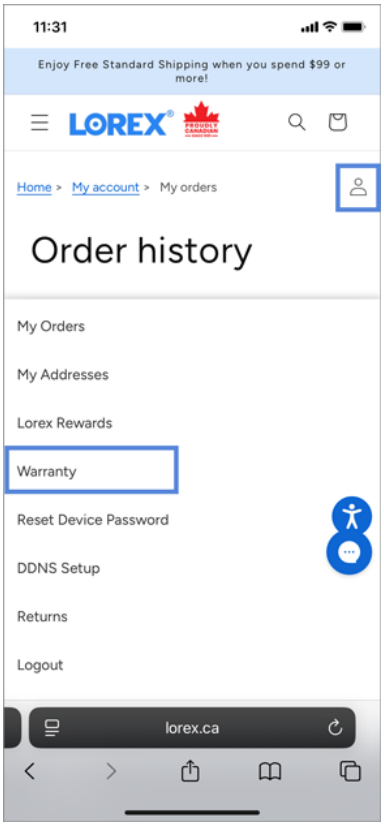
Before setting up DDNS, you must activate your NVR's warranty.

1. After logging in, access **My Account**.

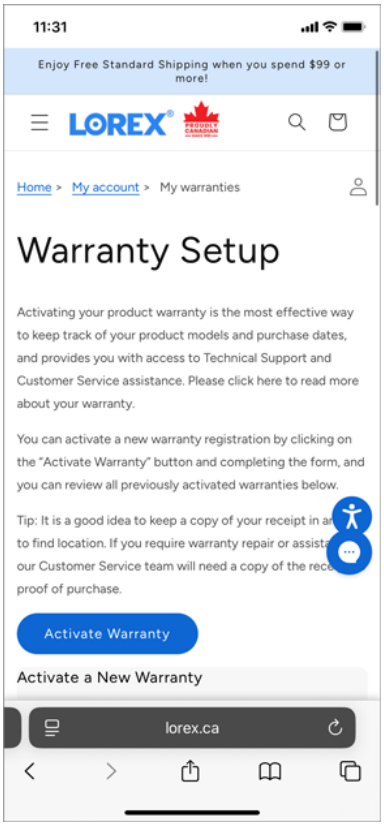
   - **On computer:** Click the **(My Account)** button, then choose **Warranty** from the menu.



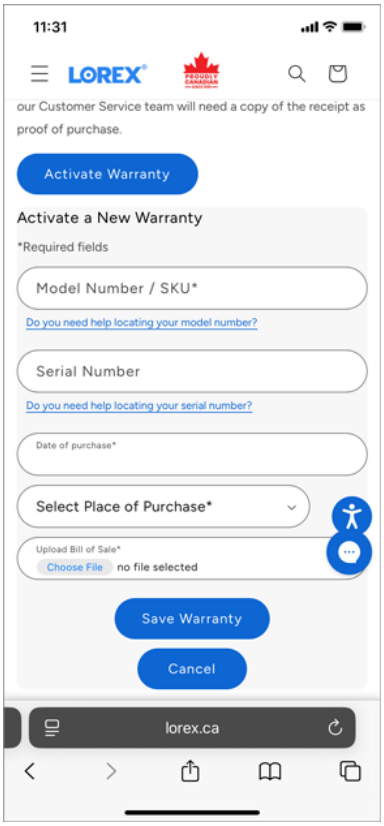
   - **On mobile:** Tap the **menu**, then **My Account**, then tap **Warranty**.



2. Click **Activate Warranty**.



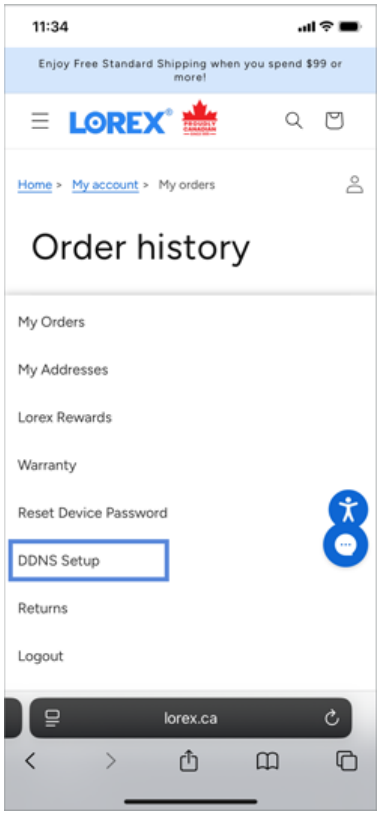
3. Fill in your NVR's product details and click **Save Warranty**.



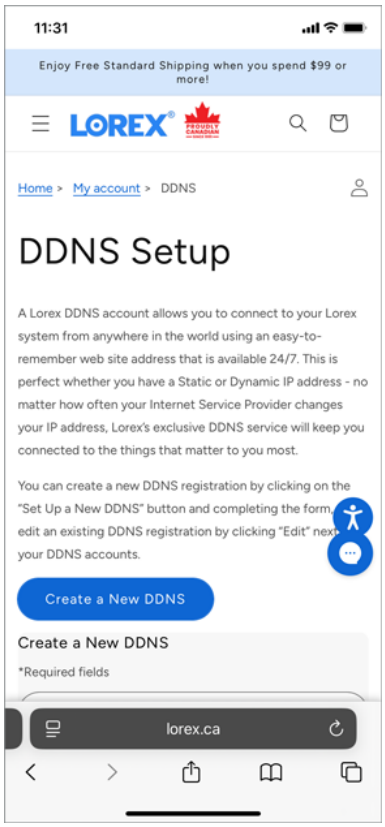
Your device will now be listed under **Existing Warranties**.

19.2.3.4 Step 4: Create a DDNS Address

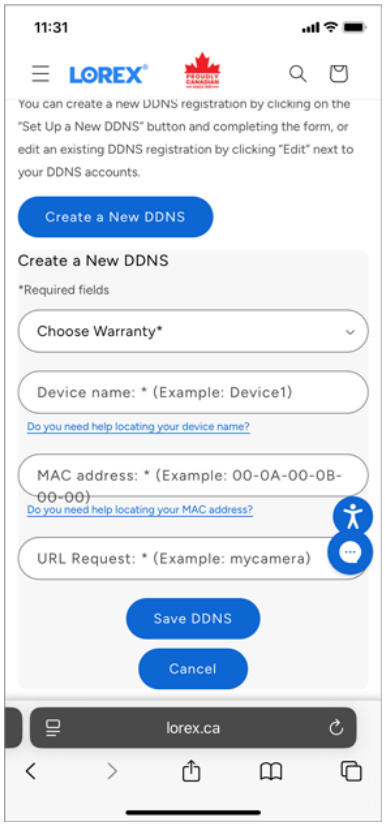
1. In your **My Account** dashboard, click **DDNS Setup**.



2. Click **Create a New DDNS**.



3. Fill in your product details:



- **Choose Warranty:** Select your NVR from the **Warranty** dropdown.
- **Device Name:** Enter a name for your system (For example, *HomeDVR*).
- **MAC Address:** Enter your NVR's **MAC Address**, found under **Navigation Bar > Device Info** on the NVR, refer to 6.5 *Navigation Bar*, page 30.
- **URL Request:** Choose a unique name for your DDNS address (for example, *myhome*). Your full Host URL will be automatically generated as: myhome.lorexddns.net.

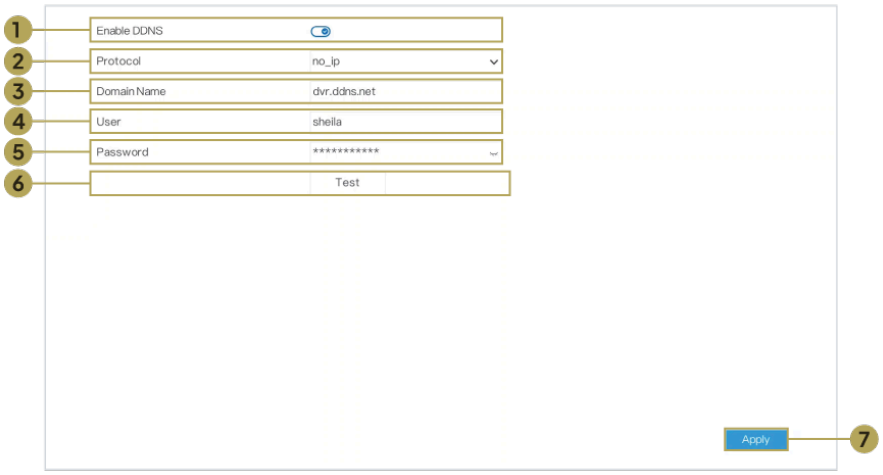
4. Click **Save DDNS**.
   Once saved, your new DDNS settings will appear under **My DDNS Devices**. Make note of your **Host URL**, **username**, and **password** — you'll need them when configuring remote access on your NVR or app.

19.2.3.5 Step 5: Enable DDNS on the Recorder

Now that your DDNS account is set up, you'll need to enter the details into your NVR's settings.

Configuring DDNS in the NVR

1. **Enable DDNS:** Enable or disable DDNS.
   If enabled:



2. **Protocol:** Choose your DDNS service provider.
3. **Domain Name:** Enter the domain name for your NVR (for example, yourhostname.lorexddns.net).
4. **User:** Enter your DDNS account username.
5. **Password:** Enter your DDNS account password.
6. **Test:** Verify connection.
7. **Apply:** Click **Apply** to save the settings.

You can now access the recorder remotely using your DDNS address. Enter the full domain name in a web browser and log in using your recorder credentials.

NOTE

If your system uses an HTTP port other than 80, you will need to add a colon to the end of your DDNS domain name and enter the port number (e.g., http://www.tomsmithsecurity.lorexddns.net:81)

20 System Information & Maintenance

The **System Information & Maintenance** chapter covers system status, display configuration, operational logs, and maintenance functions. It includes information screens, system display settings, layout management, firmware updates, configuration import and export, and scheduled reboot options. These settings are typically used for administration, diagnostics, and ongoing system maintenance.

20.1 View System Information

20.1.1 View System Information

The **System Information** provides details about the recorder, including device specifications, firmware versions, and supported features. This information is useful for troubleshooting, maintenance, and support.

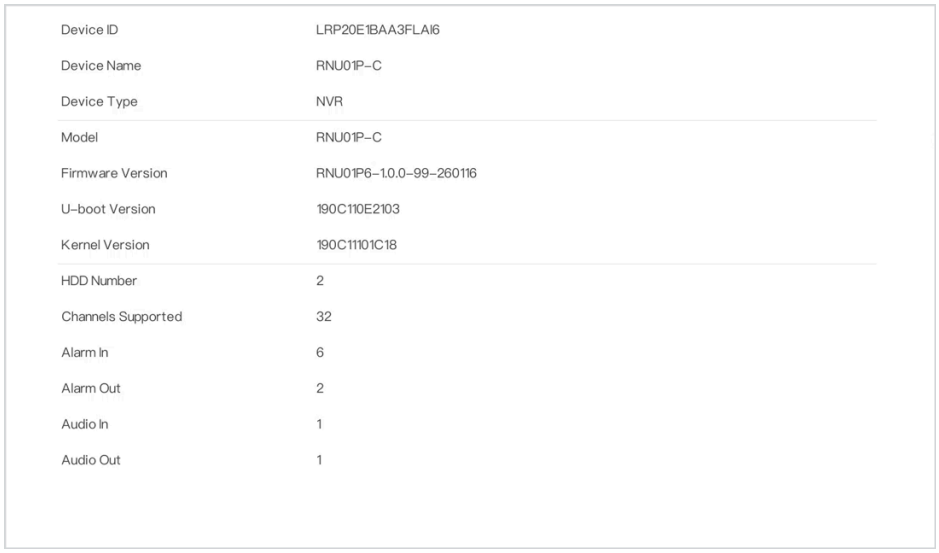
Open System Information

1. In **Live View**, hover over the **Navigation Bar** and click **Information > System**.

or:

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Information** from the left-side menu.
5. Click the **System** tab.

System Information Details



- **Device ID:** The unique identifier for the recorder.
- **Device Name:** The name of the device.
- **Device Type:** The device type (for example, NVR).
- **Model:** The model number of the recorder.
- **Firmware Version:** The current firmware version installed.
- **U-boot Version:** The bootloader version.
- **Kernel Version:** The system kernel version.
- **HDD Number:** The number of installed hard drives.
- **Channels Supported:** The total number of supported camera channels.
- **Alarm In:** The number of alarm input ports.
- **Alarm Out:** The number of alarm output ports.
- **Audio In:** The number of audio input channels.
- **Audio Out:** The number of audio output channels.

This screen is read-only and is intended for reference only.

20.1.2 View Network Information

The **Network Information** provides a summary of the recorder's current network status and configuration. This information is useful for verifying connectivity and troubleshooting network issues.

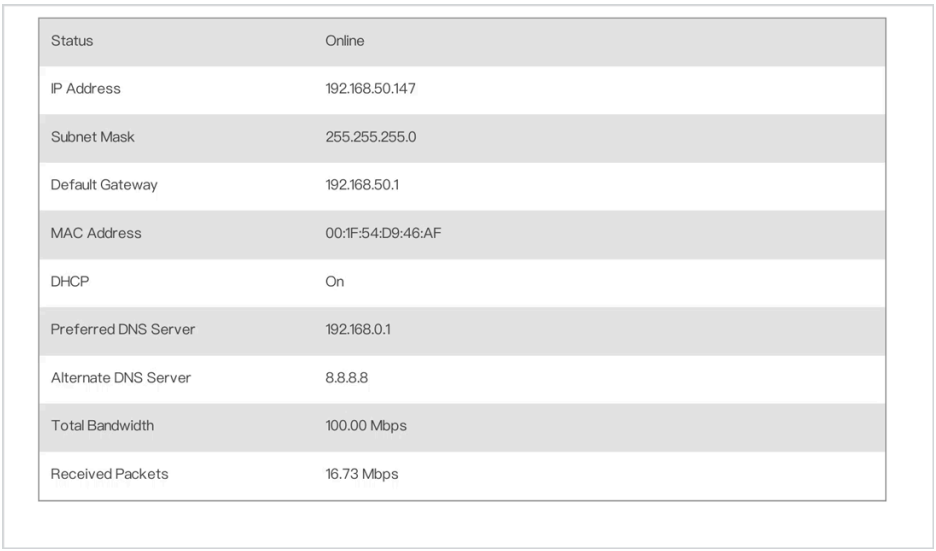
Open Network Information

1. In **Live View**, hover over the **Navigation Bar** and click **Information > Network**.

or:

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Information** from the left-side menu.
5. Click the **Network** tab.

Network Information Details



Status	Online
IP Address	192.168.50.147
Subnet Mask	255.255.255.0
Default Gateway	192.168.50.1
MAC Address	00:1F:54:D9:46:AF
DHCP	On
Preferred DNS Server	192.168.0.1
Alternate DNS Server	8.8.8.8
Total Bandwidth	100.00 Mbps
Received Packets	16.73 Mbps

- **Status:** Displays whether the network connection is active.
- **IP Address:** The current IP address of the recorder.
- **Subnet Mask:** The subnet mask.
- **Default Gateway:** The network gateway address.
- **MAC Address:** The unique hardware address of the device.
- **DHCP:** Indicates whether DHCP is enabled or disabled.
- **Preferred DNS Server:** The primary DNS server address.
- **Alternate DNS Server:** The secondary DNS server address.
- **Total Bandwidth:** The total available network bandwidth.
- **Received Packets:** The number of data packets received by the recorder.

This screen is read-only and is intended for reference only.

20.1.3 View Channel Information

The **Channel Information** screen provides details about each connected camera channel, including its status, video settings, and performance.

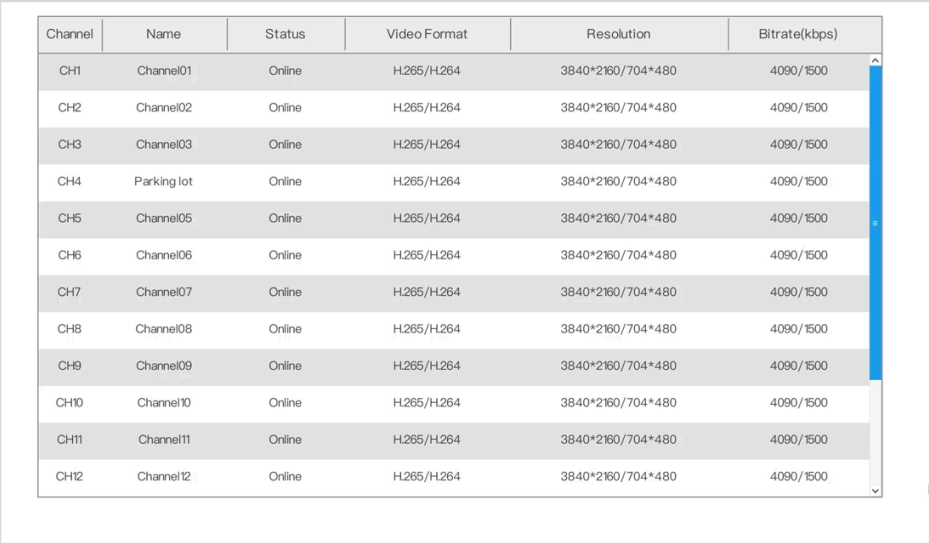
Open Channel Information

1. In **Live View**, hover over the **Navigation Bar** and click **Information > Channel**.

or:

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Information** from the left-side menu.
5. Click the **Channel** tab.

Channel Information Details



Channel	Name	Status	Video Format	Resolution	Bitrate(kbps)
CH1	Channel01	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH2	Channel02	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH3	Channel03	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH4	Parking lot	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH5	Channel05	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH6	Channel06	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH7	Channel07	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH8	Channel08	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH9	Channel09	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH10	Channel10	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH11	Channel11	Online	H.265/H.264	3840*2160/704*480	4090/1500
CH12	Channel12	Online	H.265/H.264	3840*2160/704*480	4090/1500

- **Channel:** The channel number (for example, **CH1**, **CH2**).
- **Name:** The assigned name of the camera.
- **Status:** The channel is **Online** or **Offline**.
- **Video Format:** Video compression format (for example, **H.265** or **H.264**).
- **Resolution:** The current video resolution.
- **Bitrate (kbps):** The current bitrate for the channel.

This screen is read-only and is intended for reference only.

20.1.4 View Disk Information

The **Disk Information** screen provides details about the installed hard drives, including storage capacity, usage, and status.

Open Disk Information

1. In **Live View**, hover over the **Navigation Bar** and click **Information > Disk**.

or:

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Information** from the left-side menu.
5. Click the **Disk** tab.

Disk Information Details

Disk	Capacity	Used	SN	Disk Model	Status
Disk2	10 TB	5708 GB	Y4D0A0DFFNZL	TOSHIBA MD10ADA10.	Normal

- **Disk:** The disk identifier (for example, **md0**).
- **Capacity:** The total storage capacity of the disk.
- **Used:** The amount of storage currently in use.
- **SN:** The disk serial number.
- **Disk Model:** The model of the installed hard drive.
- **Status:** The current status of the disk (for example, **Normal**).

This screen is read-only and is intended for reference only.

20.1.5 View Alarm Information

The **Alarm Information** screen provides details about configured alarm inputs and their current status.

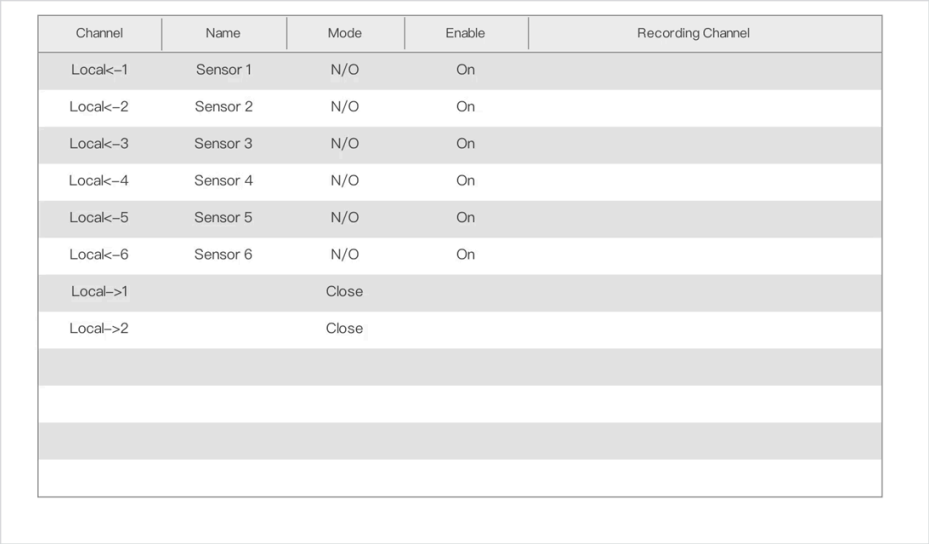
Open Alarm Information

1. In **Live View**, hover over the **Navigation Bar** and click **Information > Alarm**.

or:

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Information** from the left-side menu.
5. Click the **Alarm** tab.

Alarm Information Details



Channel	Name	Mode	Enable	Recording Channel
Local<–1	Sensor 1	N/O	On	
Local<–2	Sensor 2	N/O	On	
Local<–3	Sensor 3	N/O	On	
Local<–4	Sensor 4	N/O	On	
Local<–5	Sensor 5	N/O	On	
Local<–6	Sensor 6	N/O	On	
Local–>1		Close		
Local–>2		Close		

- **Channel:** The alarm input channel (for example, **Local <–1**).
- **Name:** The name assigned to the alarm input (for example, **Sensor1**).
- **Mode:** The alarm mode:
  - **N/O (Normally Open)**
  - **Close (Normally Closed)**
- **Enable:** Indicates whether the alarm input is enabled (**On** or **Off**).
- **Recording Channel:** Displays which camera channels are linked to the alarm event for recording.

This screen is read-only and is intended for reference only.

20.2 Configure System & Display Settings

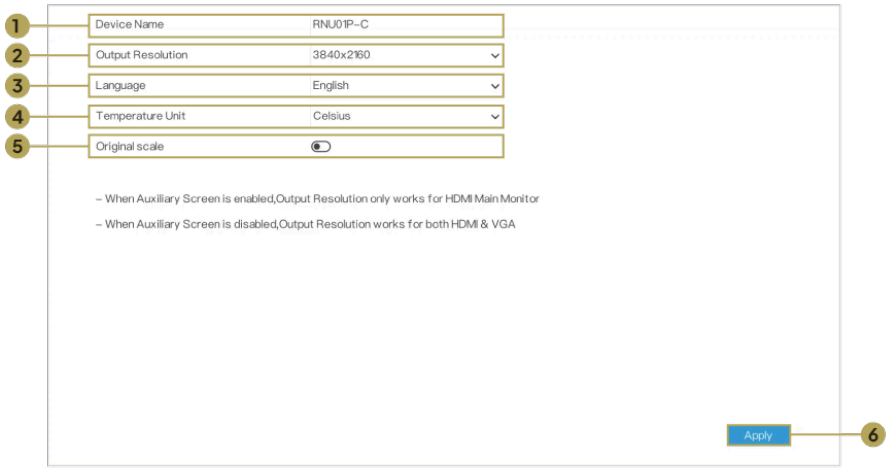
20.2.1 General System and Display Resolution Settings

The **System** settings allow you to configure general device preferences such as display resolution, language, and system naming.

Open System Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **General** from the left-side menu.
5. Click the **System** tab.

Configure General System Settings



1. **Device Name:** Enter a name to identify the recorder.
2. **Output Resolution:** Select the display resolution for the connected monitor.
3. **Language:** Select the system language.
4. **Temperature Unit:** Select the temperature unit:
   - **Celsius**
   - **Fahrenheit**
5. **Original Scale:** Enable or disable original image scaling.
6. **Apply:** Click **Apply** to save the settings.

NOTE

- When **Auxiliary Screen** is enabled, the output resolution applies only to the **HDMI main monitor**.
- When **Auxiliary Screen** is disabled, the output resolution applies to both **HDMI and VGA outputs**.

20.2.2 Configure Display Layouts

The **Layout** settings allow you to customize how camera channels are displayed on the screen, including creating custom split-screen views and sequencing layouts.

Open Layout Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Layout** from the left-side menu.

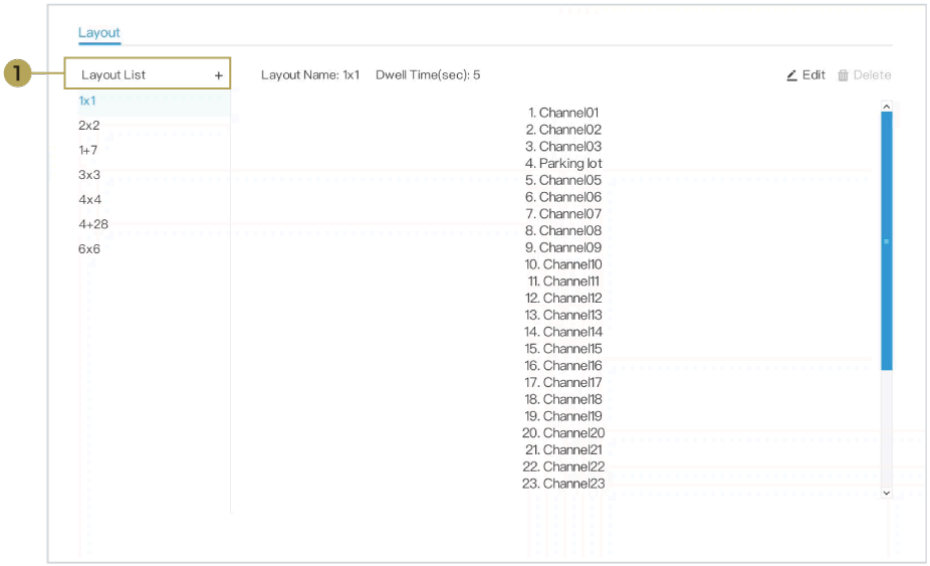
Layout List

The **Layout List** displays available screen layouts, such as:

- **1×1**
- **2×2**
- **1+7**
- **3×3**
- **4×4**
- **4+28**
- **6×6**

These layouts determine how many camera channels are displayed at once.

Creating a Custom Layout



1. Click the + button next to **Layout List**.

2. **Display:** Select a layout icon, then choose each display window and assign channels.
3. **Channel:** Select which cameras appear in each window.
4. **Layout Name:** Enter a name for the layout.
5. **Dwell Time (sec):** Set how long the layout is displayed during auto-sequencing.
6. Click **OK** to save the layout.

The new layout will appear in the **Layout List**.

Managing Layouts

- Select a layout from the list to preview it in the center of the screen.
- The **Layout Name** and **Dwell Time** are displayed above the preview.
- **Edit:** Modify a custom layout.
- **Delete:** Remove a custom layout.

NOTE

- Pre-configured layouts cannot be edited or deleted.
- Only user-created layouts can be modified or removed.

20.2.3 Configure the Auxiliary Screen

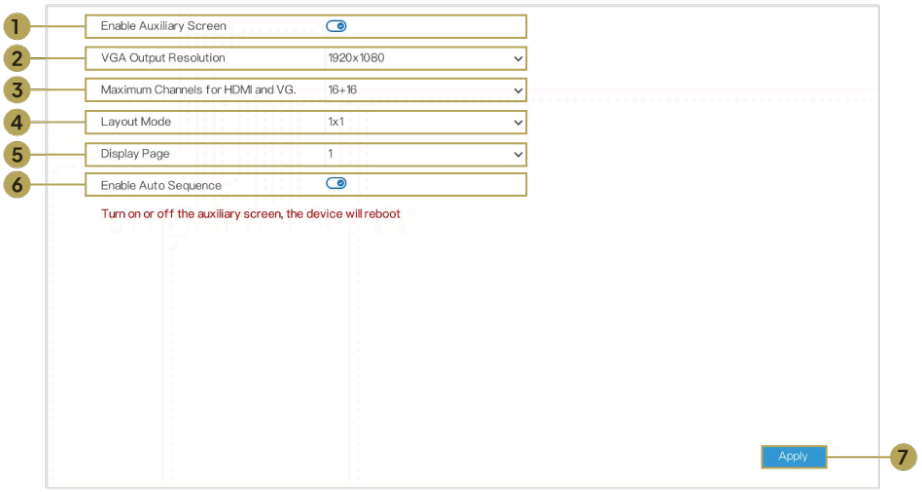
The **Auxiliary Screen** settings allow you to enable a secondary display using the VGA output and configure how camera channels appear on that monitor.

The auxiliary screen is for **Live View only**. It displays camera video only and does not support menu access or mouse control.

Open Layout Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Auxiliary Screen** from the left-side menu.

Auxiliary Screen Settings



1. **Enable Auxiliary Screen:** Enable or disable the secondary display.
   If enabled, the following options appear:
2. **VGA Output Resolution:** Select the display resolution for the auxiliary (VGA) monitor.
3. **Maximum Channels for HDMI and VGA:** Displays how channels are distributed between the main and auxiliary screens.
4. **Layout Mode:** Select a layout for the auxiliary screen.
5. **Display Page:** Select which page of channels is displayed.
6. **Enable Auto Sequence:** Enable or disable automatic switching between layouts based on dwell time.
7. **Apply:** Click **Apply** to save the settings.

NOTE

Enabling or disabling the auxiliary screen will cause the device to **reboot**.

20.2.4 Configure Auxiliary Screen Layouts

The **Auxiliary Screen Layout** settings allow you to create and manage custom layouts specifically for the auxiliary display.

Open Auxiliary Screen Layout

1. **Right-click** twice to open the **Main Menu**.

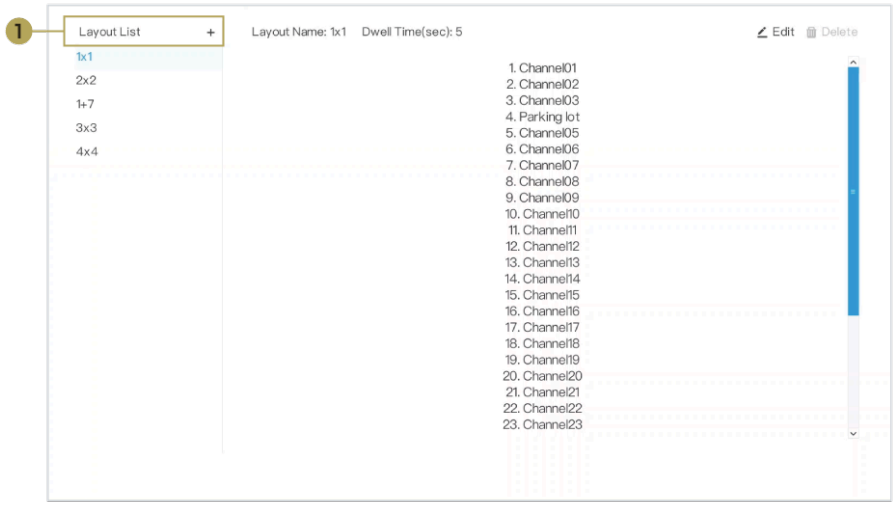
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Auxiliary Screen** from the left-side menu.
5. Click the **Layout** tab.

Layout Overview

The **Layout List** includes preset layouts such as:

- 1×1
- 2×2
- 1+7
- 3×3
- 4×4

1. Click the + button next to **Layout List**.



2. **Display:** Select a layout icon, then assign channels to each display window.
3. **Channel:** Select which cameras appear in the layout.
4. **Layout Name:** Enter a name for the layout.
5. **Dwell Time (sec):** Set how long the layout is displayed during auto-sequencing.
6. Click **OK** to save.

The new layout will appear in the **Layout List**.

Managing Layouts

- Select a layout to preview it in the center of the screen.
- The **Layout Name** and **Dwell Time** are displayed above the preview.
- **Edit:** Modify a custom layout.
- **Delete:** Remove a custom layout.

NOTE

- Pre-configured layouts cannot be edited or deleted.
- Only user-created layouts can be modified or removed.

20.3 Manage System Maintenance and Logs

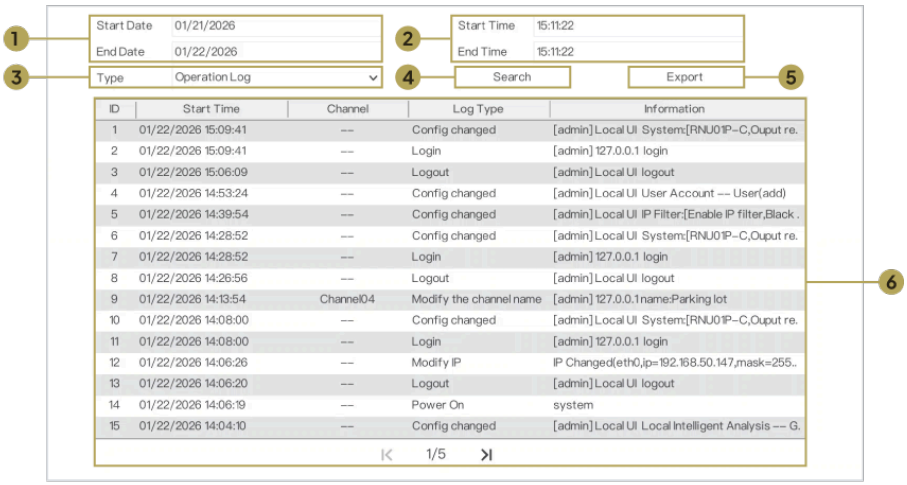
20.3.1 Review System Logs

The **System Log** allows you to review system activity such as logins, configuration changes, and system events.

Open System Log

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Logs** from the left-side menu.
5. Click the **System Log** tab.

System Log Search & Export



1. **Start Date / End Date:** Select the date range.
2. **Start Time / End Time:** Enter the time range.
3. **Type:** Select the log type:
   - **Operation Log**
   - **System Log**
4. **Search:** Click **Search** to display results based on the selected criteria.
5. **Export:** Click **Export** to save the results to a USB device:
   - Select a folder on the USB drive.
   - Click **OK** to export.

6. **System Log Results:** The results are displayed in a table with the following

   - **ID:** Numbered list of log entries.
   - **Start Time:** Date and time of the event.
   - **Channel:** Associated channel (if applicable).
   - **Log Type:** Type of event (for example, **Power On**, **Login**, **Modify Password**, **Logout**, **Config Changed**).
   - **Information:** Additional details about the event.

Use the navigation arrows at the bottom of the screen to move between pages of results.

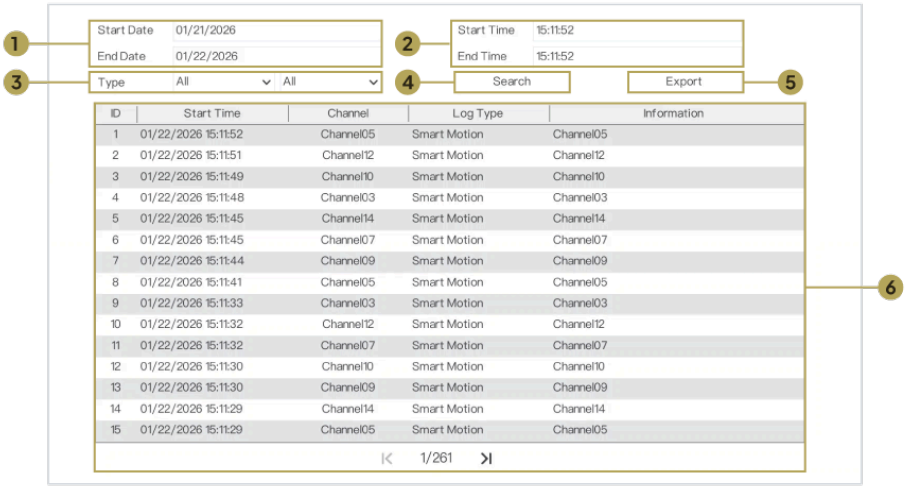
20.3.2 Review Event Logs

The **Event Log** allows you to review event-based activity such as motion detection, alarms, and smart events.

Open Event Log

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Logs** from the left-side menu.
5. Click the **Event Log** tab.

Event Log Search & Export



1. **Start Date / End Date:** Select the date range.
2. **Start Time / End Time:** Enter the time range.
3. **Type:** Select the log type:

   - **All**
   - **Alarm In**
   - **Motion Detection**
   - **Video Tampering**
   - **Video Loss**
   - **Smart Analysis**
   - **Abnormal Alarm**
   - **Camera Alarm In**

4. **Search:** Click **Search** to display results based on the selected criteria.
5. **Export:** Click **Export** to save the results to a USB device:

   - Select a folder on the USB drive.
   - Click **OK** to export.

6. **Event Log Results:** The results are displayed in a table with the following

   - **ID:** Numbered list of log entries.
   - **Start Time:** Date and time of the event.
   - **Channel:** Associated channel (if applicable).
   - **Log Type:** Type of event.
   - **Information:** Additional details about the event.

Use the navigation arrows at the bottom of the screen to move between pages of results.

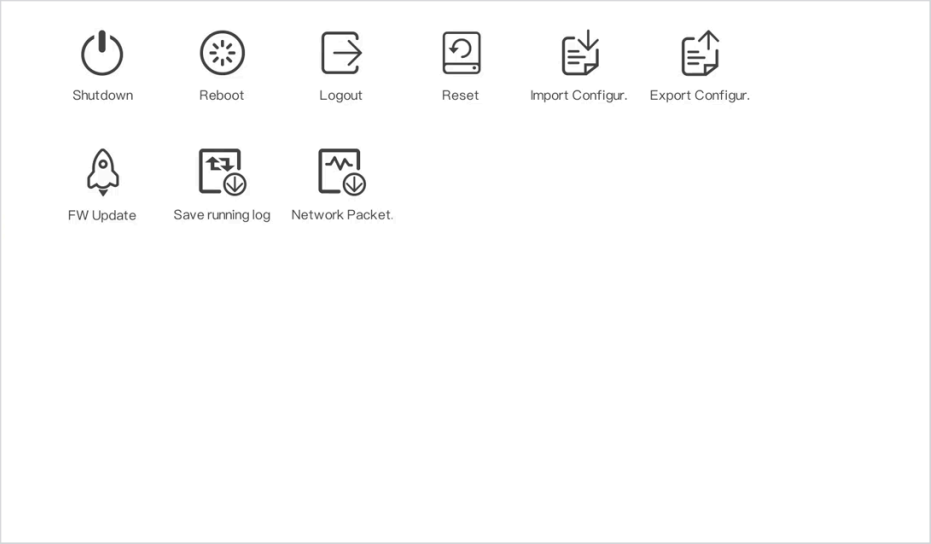
20.3.3 Perform System Maintenance

The **Maintenance** settings allow you to manage system operations, perform updates, reset the device, and export or import system data.

Open Maintenance Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Maintenance** from the left-side menu.
5. Click the **Maintenance** tab.

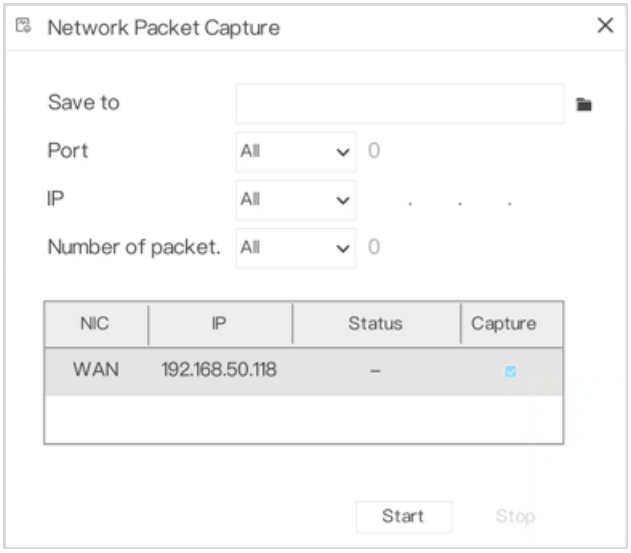
Maintenance Options



- **Shutdown:** Click to safely power off the device.
- **Reboot:** Click to restart the device.
- **Logout:** Click to log out of the current user account.
- **Reset:** Click to reset system settings. You can select:
  - **Reserve IP Setting**
  - **Reserve Logs**
  - **Restore to Factory Default**
  - Click **OK** to proceed or **Cancel** to exit.
- **Import Configuration:**
  - Click to import a saved configuration file from a USB device.
  - A USB device must be connected.
  - The system will automatically reboot after import.
- **Export Configuration:**
  - Click to export the current configuration to a USB device.
  - The export starts immediately.
  - A USB device must be connected.

- **FW Update:**
  - Click to open the USB directory.
  - Select the firmware file and click **OK** to begin the update.
- **Save Running Log:**
  - Click to save system logs to a USB device.
  - The export starts immediately.
  - A USB device must be connected.
- **Network Packet:** Click to open the **Network Packet Capture** window.

Network Packet Capture



This section is typically used for advanced troubleshooting and diagnostics.

1. **Save To:** Select a folder on the USB device to save captured data.
2. **Port:** Select **All** or specify a custom port.
3. **IP:** Select **All** or specify a custom IP address.
4. **Number of Packet:** Select **All** or define a specific number of packets to capture.
5. **Capture Table:** Displays network interfaces with:
   - **NIC:** Network interface (for example, WAN)
   - **IP:** IP address
   - **Status:** Connection status
   - **Capture:** Enable or disable capture for the interface
6. **Start / Stop:**
   - Click **Start** to begin capturing network packets.
   - Click **Stop** to end the capture.

20.3.4 Update Firmware from the Cloud

The **Cloud Update** settings allow you to check for and update the recorder's firmware using an internet connection.

Open Cloud Update

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Maintenance** from the left-side menu.
5. Click the **Cloud Update** tab.

Cloud Update Options

- **Current Version:** Displays the firmware version currently installed on the recorder.
- **Latest Version:**
  - Click **Check Latest Version** to check for available firmware updates online.
  - If a newer version is available, you will be prompted to proceed with the update.

NOTE

- The recorder must be connected to the **internet** to check for updates.
- Do not power off the device during a firmware update, as this may cause system issues.

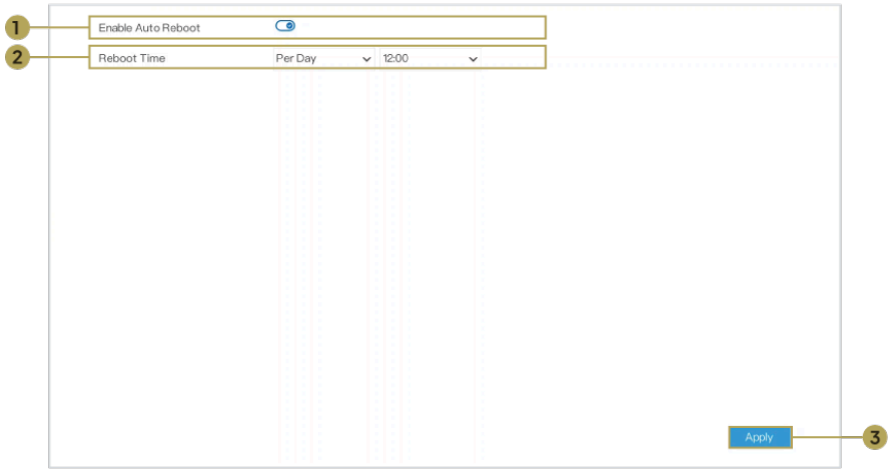
20.3.5 Schedule Automatic Reboots

The **Auto Reboot** settings allow you to schedule automatic system restarts to maintain optimal performance and stability.

Open Auto Reboot Settings

1. **Right-click** twice to open the **Main Menu**.
2. Click **Settings**.
3. Select the **System** tab at the top of the menu.
4. Click **Auto Reboot** from the left-side menu.

Auto Reboot Settings



1. **Enable Auto Reboot:** Enable or disable automatic reboot scheduling.
   If enabled, the following options appear:
2. **Reboot Time:** Select how often the system reboots:
   - **Per Day**
   - **Per Week**
   - **Per Month**
   - Set the specific time for the reboot.
3. **Apply:** Click **Apply** to save the settings.

NOTE
Schedule reboots during off-peak hours to avoid interrupting live viewing or recordings.

21 Troubleshooting

This section provides solutions to common issues you may encounter when using the recorder. Follow the steps below to resolve problems related to login, playback, network connectivity, cameras, and system performance.

Issue Topic	Problem	Possible Causes	Solution
Login	**Unable to log in**	• Incorrect password • Wrong user selected • Pattern unlock not recognized	• Verify that the correct **user account** is selected. • Click **Password** and re-enter the correct password. • Ensure the correct **language and keyboard input** are selected. If the password is forgotten: 1. Click **Forgot Password**. 2. Answer the secure questions. 3. Set a new password. See 17 *Password Recovery & Security*, page 135 for full steps.
	Pattern unlock not working		1. Click Password instead of using the pattern. 2. Log in using your password. 3. Reconfigure the pattern if needed. See 17.4 *Use Pattern Unlock*, page 137.
Camera	**Camera not showing (Offline)**	• Camera not powered • Network connection issue • Incorrect channel configuration	1. Check the **PoE Status** screen to confirm: • The camera is connected (green line). • Power is being supplied. See **Network > PoE Status**. 2. Verify the camera status: • Go to **System > Information > Channel**. • Confirm the channel status is **Online**. 3. Check cables and connections: • Ensure the Ethernet cable is securely connected. • Try a different PoE port if needed. 4. Reboot the recorder: • Go to **System > Maintenance > Reboot**.
	Camera shows a red channel status after being added	• Authentication mismatch between the camera and recorder • The camera was added after the recorder password was changed • The updated recorder password was not pushed to cameras added later	1. Open the camera list: Go to **Settings > Channel > Camera**. 2. Locate the affected camera in the channel list. 3. Click **Modify** under **Operate**. 4. Update the camera password to **admin**. 5. Click **OK** to save the settings. 6. Click the **More options menu** under **Operate**. 7. Click **Reset**. 8. Wait for the camera to restart and reconnect.

	Camera image is poor quality	• Low bitrate or resolution • Network bandwidth limitations • Incorrect display settings	1. Check channel settings: • Go to **System > Information > Channel**. • Verify **resolution** and **bitrate**. 2. Check network performance: • Go to **Network > Network Traffic**. • Ensure bandwidth is not overloaded. 3. Verify display settings: • Go to **System > General > System**. • Adjust **Output Resolution** if needed.
Playback	**No recordings found**	• Incorrect date/time • Wrong channel selected • No recordings available	1. Verify date and time: • Go to **System > General > Date & Time**. 2. Check search filters: • Open **Playback > Time Search**. • Confirm: ◦ Correct **channel** selected ◦ Correct **date/time range** ◦ Correct **recording type filter** 3. Try a different time range or channel. See 15 *Playback & Backup*, page 120.
	Playback is choppy or slow	• High playback speed • Network limitations • System load	1. Reduce playback speed: • Use the **Twice Speed -** control. 2. Pause and resume playback. 3. Check network usage: • Go to **Network > Network Traffic**. 4. Reboot the system if needed: • Go to **System > Maintenance > Reboot**.
Network	**Cannot access system remotely**	• Incorrect network settings • Ports not configured • No internet connection	1. Verify IP settings: • Go to **Network > IPv4**. • Ensure: ◦ IP address is correct ◦ Gateway and DNS are set 2. Check port settings: • Go to **Network > Port**. 3. Confirm device is online: • Go to **Network > Lorex Connect**. 4. Check router and internet connection.
	Email notifications not working	• Incorrect SMTP settings • Wrong credentials • Encryption mismatch	1. Go to **Network > Email**. 2. Verify: • SMTP server and port • Username and password • Encryption type (SSL / StartTLS) 3. Click **Test** to confirm settings. 4. Ensure a valid **receiver email** is entered. See 19.2.2 *Configure Email Notifications*, page 155.

Recording & Storage	**Recording & Storage Issues**	• HDD not installed correctly • HDD failure	1. Go to **System > Information > Disk**. 2. Check disk status: • Should display **Normal**. 3. Power off the system and check HDD connections. 4. Replace the hard drive if needed.
	Storage full / not recording	• Disk full • Recording settings issue	1. Check disk usage: • Go to **System > Information > Disk**. 2. Verify recording is occurring: • Check 15 *Playback & Backup*, page 120. 3. Ensure overwrite or recording settings are configured (if applicable).
AI / Smart Search	**No smart search results**	• No AI-supported camera • Wrong filters selected • No events recorded	1. Confirm camera supports AI features. 2. Check filters: • Go to **AI Application > Time Search**. • Select correct: ◦ Time range ◦ Channel ◦ Attributes 3. Try removing filters and searching again.
System	**System running slow or freezing**	• High system load • Long uptime • Network congestion	1. Reboot the system: • Go to **System > Maintenance > Reboot**. 2. Check network usage: • Go to **Network > Network Traffic**. 3. Reduce number of active channels or playback streams.
	Settings not saving	• Apply not selected • Permission restrictions	1. After making changes, click **Apply**. 2. Ensure you are logged in with sufficient permissions: • See 18 *User Management*, page 141.
	Setup wizard opens every time the recorder starts	• Setup wizard is enabled at startup • The startup wizard was not disabled during initial setup	1. Open **Settings**. 2. Select the **System** tab. 3. Click **User Account** from the left-side menu. 4. Select the **Adv. Setting** tab. 5. Disable **Enable Setup Wizard**. 6. Click **Apply** to save the setting.

22 Technical Specifications

The **Technical Specifications** outlines your NVR system's key performance and hardware details.

22.1 General

Video Transmission Technology	IP
Channels	32 Channels

22.2 Inputs & Outputs

Video Inputs	16 × PoE / 16 × IP
Video Outputs	1 × HDMI / 1 × VGA
Network Interface	2 × RJ45 (10/100/1000 Mbps)
USB Ports	Front: 2 × USB 2.0 / Rear: 1 × USB 3.0
Audio I/O	1 Input / 1 Output
Alarm I/O	6 Inputs / 2 Outputs
eSATA	1 × eSATA
RS-485	1

22.3 Display

Max Display Resolution	4K (3840 × 2160)
HDMI Output Resolutions	3840 × 2160, 1920 × 1080, 1280 × 1024, 1024 × 768
VGA Output Resolutions	1920 × 1080, 1280 × 1024, 1024 × 768
Different Source Output	Supported
Dual Stream	Supported
Live Display Modes	Default (Mirrored): 1/4/8/9/16 Auxiliary Mode: Main 1/4/8/9/16 Auxiliary: 1/4/8/9/16

22.4 Recording

Recording Resolutions	12MP, 8MP, 6MP, 5MP, 4MP, 3MP, 1080P, 720P
Video Compression	Nano Codec (Enhanced H.265 Compression), H.265, H.264, MJPEG
Recording Modes	Continuous, Motion Detection, and AI Motion Detection (per channel)

22.5 Playback

Synchronized Playback	1/4, 1/2, 1, 2, 4, 8, 16, 32
Search Options	By Time/Date, All Motion Events, or AI Motion Detection (Person and Vehicle)

22.6 Storage & Backup

HDD Bay	2 × SATA
Maximum HDD Capacity	Up to 12TB per disk (24TB total max internal)
ANR	Supported
Disk Group	Supported
Backup Media	USB Device, Network, eSATA

22.7 AI Smart Features

Detection	Person, Vehicle, Intrusion, Loitering, Wrong-Way, Unauthorized Parking, Smoke and Fire
Perimeter Protection	Line-Crossing, Dual-Line Crossing
Tracking & Monitoring	Smart Motion
Crowd Analytics	Heat Map, People Counting
Active Deterrence	Yes
Smart Search	Yes

22.8 Network & Connectivity

Mobile Viewing	Lorex Connect App (iOS and Android)
Event Notifications	Video Loss, Beep, Email, Push Notifications
Email Notifications	Text and Snapshot Alerts
Firmware Upgrade	Network or USB
Interoperability	ONVIF, RTSP
DDNS	Yes

22.9 Security

Password Reset	Yes

22.10 Power

Power Supply	100–240VAC
Max PoE Power Output	240W
Power Consumption (Excluding HDD)	< 15W

22.11 Physical & Environmental

Color	Black
Product Dimensions (W × D × H)	14.64 x 12.25 x 1.82 in (372 × 311.2 × 46.4 mm)
Product Weight (Excluding HDD)	2.75 kg (6.06 lb)
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Operating Humidity	<90% RH (Non-condensing)

Disclaimers:

1. 4K (8MP) IP cameras are required to take advantage of 4K recording.
2. Recording time may vary based on recording resolution and quality, lighting conditions and movement in the scene.
3. Accessing your security system remotely requires a high-speed Internet connection. Ensure your NVR has a wired connection to a router (not included). A minimum upload speed of 6Mbps is recommended for reasonable video performance.
4. HDMI output supports 4K HD for high definition multi-channel live or recorded video viewing. Image quality and resolution is dependent on the type of camera connected to the NVR, as well as TV/monitor resolution.
5. Fire detection may produce false positives or miss actual fire events and should not be relied upon as a sole or fully accurate life-safety solution.

Lorex products are designed for consumer and business use only and not for US federal governments, federally-funded projects or contractors subject to NDAA.

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right to change models, configurations or specifications without notice or liability. Product may not be exactly as shown.

23 Notices

This product has been certified and found to comply with the limits regulated by FCC and ICES-003. It is designated to provide reasonable protection against interference and will not cause interference with other appliance usage. However, it is imperative that the user follows the guidelines in this manual to avoid improper usage, which may result in damage to the product, electrical shock, or fire hazard injury.

23.1 FCC/ICES

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules and Canadian standard ICES-003. These limits are designed to provide reasonable protection against harmful interference in a residential or commercial installation.

This equipment does not contain any wireless transmitters. All data communication is performed via wired connections (e.g., Ethernet).

This device generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. If this equipment does cause harmful interference, the user is encouraged to try to correct it by:

- Reorienting or relocating the receiving antenna.
- Increasing the distance between the equipment and the receiver.
- Connecting the equipment to an outlet on a different circuit.
- Consulting the dealer or an experienced radio/TV technician.

23.2 ICES-003 (Canada)

This device meets CAN ICES-3 (B) / NMB-3 (B) requirements for Class B digital apparatus.

Note: Cet appareil est conforme à la norme canadienne NMB-3 (B). Cet équipement ne comprend pas de modules sans fil. Toutes les communications s’effectuent par connexions câblées.

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www.lorextechnology.com

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