tp-link | VIGI

User Guide

Network Video Recorder

© 2024 TP-Link 1910013885 REV2.0.0

Contents

About This Guide

This User Guide provides information for using and managing NVR. It explains functions of NVR and shows you how to configure them.

Conventions

When using this guide, notice that:

- Features available in NVR may vary due to your region, device model, and firmware version. All images, steps, and descriptions in this guide are only examples and may not reflect your actual experience.
- The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute the warranty of any kind, express or implied. Users must take full responsibility for their application of any products.
- This guide uses the specific formats to highlight special messages. The following table lists the conventions that are used throughout this guide.

Underlined	Indicates hyperlinks. You can click to redirect to a website or a specific section.
Bold	Indicates contents to be emphasized and texts on the web page, including the menus, tabs, buttons and so on.
>	The menu structures to show the path to load the corresponding page.
Caution	Reminds you to be cautious, and Ignoring this type of note might result in device damage or data loss.
Note	Indicates information that helps you make better use of your device.

More Information

- For technical support, the latest version of the User Guide and other information, please visit https://www.tp-link.com/support.
- The Quick Installation Guide can be found where you find this guide or inside the package of the product.
- To ask questions, find answers, and communicate with TP-Link users or engineers, please visit https://community.tp-link.com to join TP-Link Community.

1

Get Started

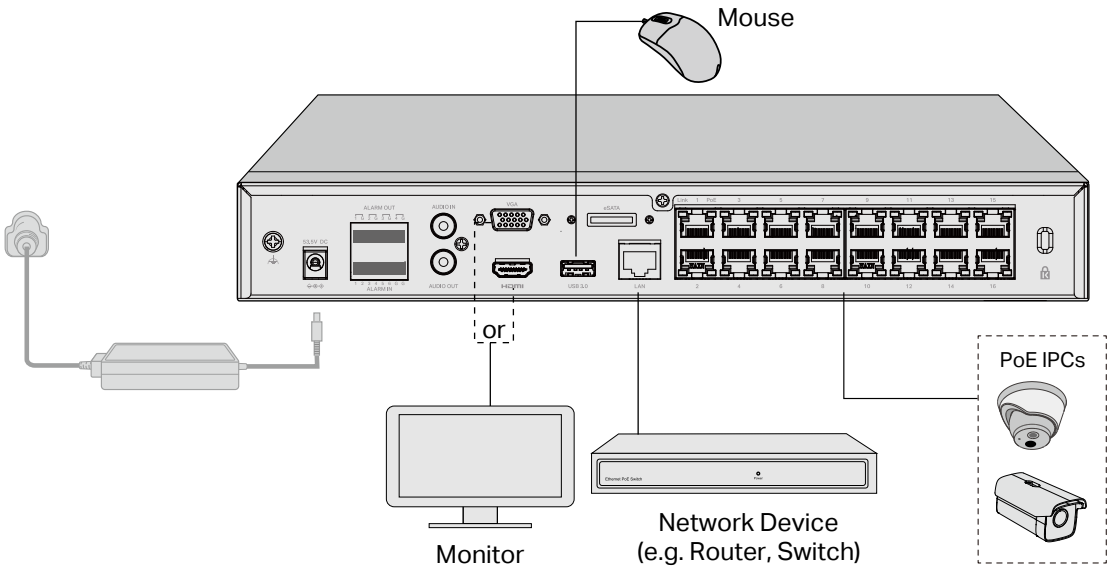
This chapter guides you on how to set up your Wi-Fi NVR for the first time. The quick setup wizard brings you convenience and flexibility to configure VIGI Wi-Fi NVR. This chapter includes the following sections:

The VIGI network video recorder (NVR) coordinates with camera systems to help you view, store, and playback videos. With the support of ONVIF, you can easily add cameras of different brands. Also, it supports detecting events and sending you up-to-date notifications. Moreover, you can manage and monitor the NVR and cameras remotely via the VIGI app. VIGI NVR2016H-16MP (V2) is used as an example in this guide

1. 1 Connect the Hardware

To manage multiple cameras, you should prepare a network device, such as a switch or a router. Connect the NVR and cameras to the network device to ensure they are in the same network. Follow the steps below to connect the devices.

Follow the steps below to complete the hardware connection.



1. Connect your monitor to the HDMI or VGA port according to the connection port it supports.
2. Connect your monitor to a power source.
3. Connect the LAN port of the NVR to a network device with an Ethernet cable.
4. Connect the provided USB Mouse to the USB Interface of the NVR.
5. Connect the power adapter to the NVR.
6. Connect the cameras to the network device.
7. Turn on the monitor and you will enter the NVR's GUI.

1. 2 Set Up NVR

With an user interface displayed on monitor, it is easy to configure and manage the NVR. You will see the following page.

1. Confirm the Basic Information.

Device Name	Displays the name of the device. You can change it as needed.
Device Model	Displays the device model. It cannot be modified.
System Time	Displays the system time of the NVR. You can click the Settings button to configure the time settings. Refer to Modify System Time for detailed instructions.
Hard Drives	Displays the external hard drive details. You can click the Settings button to manage the hard drive. Refer to Manage Hard Drive for detailed instructions.
Language	Set the system language of the NVR.
Power Line Frequency	Set the Power line frequency consistent with local utility settings to eliminate image flickering associated with fluorescent lights.
Network	Displays the network connection status of the NVR. You can click the Settings button to configure the network settings. Refer to Configure WAN for detailed instructions.
Cloud Service	Toggle on to allow the NVR to connect to the cloud service.

2. Configure the account settings.

Username	Displays the name used to log in to the NVR. It is admin by default and cannot changed.
New Password	Set the password of your NVR.
Confirm Password	Confirm the password of your NVR.
Camera's Password	Set a password for cameras added to your NVR. The password will be applied to the cameras without passwords.
NVR Password Recovery	Set an email address or security questions to reset the password of your NVR.
Camera Password Recovery	Set an email address or security questions to reset the password of your NVR.
Same as the NVR	(Optional) Click the checkbox if you want to apply the password and the email address of the NVR to your cameras.

3. Select the device you want to add automatically and click **Next**. You can also click **Setup Wizard** to manually set up the NVR and add cameras.
4. (Optional) Bind the NVR to your TP-Link ID for remote management. Click **Complete**.

5. Set the gesture password for easy login. If you don't want a gesture password, click **Skip**.

6. Done. The set up is complete, and you will enter the Live View page.

2

Configure Your Network Camera

This chapter introduces how to add your cameras to NVR and configure them. You can customize image effects and configure OSD (On Screen Display), Privacy Mask, Stream, and Pan&Tilt. This chapter contains the following sections:

2. 1 Add Cameras to the NVR

VIGI NVR can add cameras singly, in batches or to a certain screen. You can also manually add cameras by entering their IP addresses and passwords. The processes vary depending on whether the camera has a password and whether Plug and Play is enabled. TP-Link security cameras have no passwords in default settings.

Choose one of the methods below and follow the steps to add your cameras:

- Add Cameras Singly or in Batches
- Add a Camera to a Certain Screen
- Add Cameras Manually

Connect cameras to the same network as the NVR. When adding TP-Link security cameras, the NVR will automatically modify the IP addresses to ensure every camera has a unique IP address and they are in the same subnet as your NVR. To add cameras from other brands, it is recommended to refer to their user guides before adding. If the cameras cannot be automatically found by the NVR, refer to Add Cameras Manually.

2. 1. 1 Add Cameras Singly or in Batches

To add cameras without passwords, refer to Add Cameras without Passwords. To add cameras with passwords, refer to Add Cameras with Passwords.

Note: If you forget the camera's password, refer to FAQ to reset the password.

Add Cameras without Passwords

- When Plug and Play Enabled

Note: After you connect the cameras to the network device, stay in the Live View screen and wait for the NVR to add the cameras automatically.

1. Right click on the Live View screen and click **Add Camera** in the pop-up Main Menu. Alternatively, right click on the Live View screen and click **Settings** in the pop-up Main Menu, then go to **Camera** > **Device Access** > **Add Device**.

2. Click to add a single camera. If you want to add cameras in batches, click the checkbox of cameras and click **Add in Batches**.

3. After the cameras are added, you can view the cameras in the Device Added list.

When Plug and Play Disabled

Follow the steps below to add the cameras.

1. Right click on the Live View screen and click Add Camera in the pop-up Main Menu. Alternatively, right click on the Live View screen and click Settings in the pop-up Main Menu, then go to Camera > Device Access > Add Device.

2. Click to add a single camera. If you want to add cameras in batches, click the checkbox of cameras and click **Add in Batches**.

3. Set a password for your cameras. Click **Add**. After the cameras are added, you can view the cameras in the **Device Added** list.

Add Cameras with Passwords

When Plug and Play Enabled

When plug and play is enabled, follow the steps below to add cameras.

1. Right click on the Live View screen and click **Add Camera** in the pop-up Main Menu. Alternatively, right click on the Live View screen and click **Settings** in the pop-up Main Menu, then go to **Device Access** > **Add Device**.

2. Click to add a single camera. If you want to add cameras in batches, click the checkbox of cameras and click **Add in Batches**.

3. Click Edit in the connected device list. Then enter the password in Edit Channel and click Save. After a successful verification, the connected status will change from Not certified to Connected.

When Plug and Play Disabled

When plug and play is disabled, follow the steps below to add cameras.

1. Right click on the Live View screen and click Add Camera in the pop-up Main Menu. Alternatively, right click on the Live View screen and click Settings in the pop-up Main Menu, then go to Camera > Device Access > Add Device.

2. Click to add a single camera. If you want to add cameras in batches, click the checkbox of cameras and click **Add in Batches**.

3. Enter the password manually to verify it. Click **Add**. After the cameras are added, you can view the cameras in the **Device Added** list.

2. 1. 2 Add a Camera to a Certain Screen

You can add a camera to a certain channel in the Live View screen. Follow the steps below to finish the configuration.

1. Click a screen in the Live View screen and click on the bottom left corner.

2. Click .

3. Follow the web instructions to add the camera.

2. 1. 3 Add Cameras Manually

If the devices cannot be automatically found by the NVR, you can add cameras manually using its information. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Add Camera** in the pop-up Main Menu. Alternatively, right click on the screen and click **Settings** in the pop-up Main Menu, then go to **Camera** > **Device Access** > **Add Device**.
2. Click **Add Manually**.

3. Enter the information of the camera to add it. For VIGI security camera, enter the IP address and password. Click **Add**.

IP Address	The IP address of the camera.

Control Protocol	Select a protocol that your camera supports. The global protocol that allows surveillance and security devices from different manufacturers to operate together seamlessly.
Transfer Protocol	TCP(Transfer Control Protocol) that provides reliable, ordered delivery of a stream of bytes from one device to another device.
Management Port	The management port to configure, maintain, and support a network device.
Username	The username of the camera.
Password	The password of the camera.

2. 1. 4 Modify IP Addresses of Cameras

To avoid IP conflict and make sure your cameras are in the same subnet, you can modify the IP addresses manually. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click Add Camera in the pop-up Main Menu. Alternatively, right click on the Live View screen and click Settings in the pop-up Main Menu, then go to Camera > Device Access > Add Device.
2. Click the checkbox of camera(s) and click Modify IP Address. You can select multiple cameras to modify their IP addresses in batches.

3. Set the starting IP address you assigned for the camera(s). Click Yes.

4. Click Apply to confirm the new IP address(es).

   Note: The IP address(es) will be assigned to camera(s) in order.

2. 2 Plug and Play Settings

Plug and Play function enables NVR to automatically find and add cameras. You can enable or disable this function according to your needs. To configure and view the settings, right click on the Live View screen and click Settings in the pop-up Main Menu, then go to Camera > Device Access > Plug and Play.

- Add Without Login

When the cameras and your NVR are in the same network, the cameras will be automatically added without your account logged in.

- Device Access Alert

If a new camera is found when the channels are full, your NVR will receive a notification.

- Devices Limited to Access

After the cameras are added to the NVR, they will be automatically added to the list, which means they cannot be added to the NVR again automatically. If you want to automatically add the cameras for the second time, remove the cameras from the devices limited access list.

2. 3 Configure Image Effects

To adjust the image effect, you can configure the picture mode and image settings.

2. 3. 1 Configure Image Settings

1. Right click on the Live View screen and click Settings in the pop-up Main Menu. Go to Camera > Display > Image.

2. Select a channel and configure the following parameters.

General Settings	**Powerline Frequency:** Tailor the light refresh time to different environments
Image Adjustment	**Brightness:** Adjust the brightness of image. The image gets brighter when the value increases. **Contrast:** Adjust the brightness of image. The image gets brighter when the value increases. **Saturation**: Adjust the saturation of image. The color of image gets richer when the value increases. **Sharpness:** Adjust the sharpness of image. The image gets sharper when the value increases.
Exposure Settings	**Exposure:** Select a exposure mode. **Auto:** The camera adjusts the exposure automatically. If you select Auto, specify the exposure scale. The image gets brighter when the scale increases. **Manual:** The image exposure is fixed. If you select Manual, adjust the slide bar of Gain to specify the exposure gain, and select a shutter speed. The image gets brighter when the gain increases or the shutter speed gets slower. **Anti-flicker:** If you notice flickering or overexposed camera images, check and change the anti-flicker settings to see if that resolves the issue. We recommend that you choose to turn it off when installing the camera outdoors.

Backlight Settings	**BLC Area:** BLC (Backlight Compensation) can clear the dark area of the video. Select a position and the camera adjusts the exposure based on the light intensity in the area. **WDR:** WDR (Wide Dynamic Range) can improve the image effects in backlit scenes. If you select On, the camera balances the light of the brightest and darkest areas automatically. **HLC**: HLC (Highlight Compensation) can senses strong sources of light in video and compensates for exposure on these spots to enhance the overall quality.
White Balance	Select a mode and the camera will adjust the color temperature to display the image approximated to the realistic vision effects. **Auto:** The camera adjusts the color temperature automatically. **Locked:** The camera keeps the current color settings all the time. **Daylight/Natural Light/Incandescent/Warm Light:** The camera adjusts the color temperature to remove the color casts caused by the corresponding light. **Current:** The camera keeps the current color settings all the time. **Custom:** Adjust the slide bar to configure the color temperature, and the camera keeps the settings all the time.
Image Enhancement	**Prevent Overexposure to infrared light:** Select a mode to prevent overexposure to infrared light when objects get close to the camera at night. If you select Manual, adjust the slide bar to specify an exposure scale.

Illuminator Settings	Select a mode to decide the usage of infrared light. The available options vary due to the mode you select in Day/Night Switch. **Auto:** The camera enables the infrared light automatically when it detects the environment turns dark, and disables when the environment is bright enough. **Scheduled On/Off:** Specify the time to enable and disable infrared light. **Always On/Off:** The camera enables/disables the infrared light all the time. **Sensitivity:** Specify Sensitivity to decide the light intensity that can trigger the switch of infrared light. The infrared light is easier to be triggered when the sensitivity decreases. **Delayed Switch:** Decide how long the camera waits to enable or disable the infrared light when the environment reaches the light condition. **Lighting Mode:** Select the fill light mode which affects the anti-overexposure strategy and image. **Infrared Lighting:** The image is black and white. **Human/Vehicle Trigger Full-Color:** The camera turns on the full-color mode once it detects a person or vehicle. **White Light Illumination:** The image is full-color and the white light will be turned on at the same time. It includes three modes, standard, soft, and custom. **White Light Intensity:** Select the white light intensity. **Manual:** You can drag the Level bar below to manually control the brightness of the fill light. **Smart White Light-Standard:** The camera automatically controls the brightness of the fill light. **Smart White Light-Soft:** The camera automatically controls the brightness of the fill light, which is no different from Standard. Soft refers to softening the overexposed area in the image.

2. 4 Configure OSD Settings

You can configure OSD (On Screen Display) to edit the information displayed in Live View and recordings. Follow the steps below to configure OSD.

1. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Camera** > **Display** > **OSD**.

2. Select a channel, click the checkbox to display or hide the information, and select a display effect. Click Save.

Note: If you change **Name** in the OSD setting, you also change the camera name.

2. 5 Configure Privacy Mask

With Privacy Mask, you can set privacy area in the image. The area cannot be recorded and monitored.

Follow the steps below to configure Privacy Mask.

1. Right click on the Live View screen and click Settings in the pop-up Main Menu. Go to Camera > Display > Privacy Mask.
2. Select a channel and enable Privacy Mask. Draw the privacy areas on the preview screen (the blue squares in the picture below), you can select to use a solid type or mosaic type. Use the mouse to

adjust the size and location of areas. To remove a certain privacy area, select it and click **Delete**. To remove all privacy areas, click **Clear**. Click **Apply** to finish the configuration.

2. 6 Configure Stream Settings

In Stream Settings, you can configure video stream levels and ROI (Region of interest) level.

Video stream levels decide the video quality in Live View and recording for each channel, and you can adjust the video quality of certain area by specifying the ROI level.

2. 6. 1 Configure Main Stream and Substream

The NVR supports two stream levels, main stream and substream. In Live View, the NVR decides which stream is applied to the channels automatically based on network bandwidth and device performance. In Recording Controls, you can apply them to the channels to record with different stream settings. After configuring the streams, refer to 4. 2 Recording Controls to apply them to recordings.

Follow the steps below to configure the stream settings.

1. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Camera** > **Stream** > **Videos**.

2. Select a channel and configure the following parameters. Click Apply.

Resolution	Specify the resolution of the video stream. The screen displays images more clearly when the resolution increases.
Video Frame Rate	Specify the frame rate of videos. The video is more fluent when the rate increases.
Bit Rate Type	Select a type of bit rate. VBR: The bit rate changes with the image within Maximum Bit Rate. CBR: The bit rate is Maximum Bit Rate all the time.
Video Quality	When VBR selected as the bit rate type, set the video quality as high, medium, or low.
Maximum Bit Rate	When VBR selected as the bit rate type, specify the upper limit of bit rate. When CBR selected as the bit rate type, specify the bit rate.
Video Encoding	Select the encoding type of the stream. Compared with H.264, H.265 is improved in reducing the file size and saving the bandwidth.

3. (Optional) If you also want to apply the stream settings to other channels, click Copy to Other Channels and select the channels. Click Apply.

2. 6. 2 Configure Audio

In Audio, you can configure the audio output and input settings.

1. Right click on the Live View screen and click Settings in the pop-up Main Menu. Go to Camera > Stream > Audio.

2. Select a channel and configure the settings as needed.

Audio Output Settings	**Mute:** The speaker is muted/not muted. **Output Volume:** Set the Two-Way Audio volume of the speaker. **System Volume:** Set the alarm volume of the speaker.
Audio Input Settings	**Aduio Coding:** Set the audio encoding format of the microphone. **Aduio Input:** Set the audio input device. **Input Volume:** Set the volume of the microphone. **Noise Filtering:** Microphone ambient noise filtering function is enabled/disabled. **Audio Switch:** The microphone is muted/not muted. If it is enabled, the microphone will collect audio data.

2. 6. 3 Configure ROI

In ROI, you can configure the interest level of a specified area in each channel. The level 1–6 is ranked from low to high. The higher the ROI level, the better image quality.

1. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Camera** > **Stream** > **ROI**.

2. Select a channel and enable ROI. Draw an area on the preview screen (the blue square in the picture below). Use the mouse to adjust the size and location of areas. Specify the ROI level and click Apply.

2. 6. 4 Configure SRTP

If you enable SRTP, the video data will be encrypted and you may be unable to play the video using the third-part clients or NVRs. To use this feature, the camera also should support SRTP.

Right click on the Live View screen and click Settings in the pop-up Main Menu. Go to Camera > Stream > Advanced Settings. Select a channel, enable SRTP and click Apply to save the settings.

2. 7 Configure Pan&Tilt (Only for PT Cameras)

In Pan&Tilt, you can preset the positions, paths and pattern for each channel and call a preset to change the status of lens quickly and conveniently. Also, you can enable Park to trigger the preset automatically when there is no operation.

Note: Only the cameras with Pan&Tilt support this feature. Some of the Pan&Tilt features are only supported by some models.

2. 7. 2 Preset and Call Positions

The settings of a position include the direction of lens, the status of zoom and focus, and the rotation speed. Follow the steps below to preset a position.

1. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Pan & Tilt**.
2. Select a channel listed on the left panel, click **Preset**, and select a Preset number from the drop-down list. Click the buttons to adjust the position and adjust the slide bar to specify the Pan&Tilt speed. Click **Set as Preset** to save the Preset settings.

	Use the eight directional buttons to adjust the lens direction. Click the directional button to rotate a certain degree in the corresponding direction. Long press the button to continuously rotate in the corresponding direction.
	Click to rotate horizontally. Click it again to stop rotating when it is in the proper position.

	Click to zoom out. Long press to continuously zoom out.
	Click to zoom in. Long press to continuously zoom in.
	Click to adjust the focus and the near objects get clearer.
	Click to adjust the focus and the distant objects get clearer.
	Lens Initialization. Click to Initialize the lens and focus again for a clear image.
	Auxiliary Focus. Click to focus automatically.

To call the preset, select a Preset number and click **Call**. Then, the camera will adjust to the position.

2. 7. 3 Preset and Call Paths in Patrol Scan

In Patrol Scan, you can configure paths for patrol. A path consists of several preset positions, and your camera stays in each position for a preset duration.

Note: Before configuring Patrol Scan, you need preset the positions that the path involves.

Follow the steps below to preset a path.

1. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Pan&Tilt**.

2. Select a channel listed on the left panel, click Patrol Scan, and select a Patrol Path number from the drop-down list. Click Add Patrol Preset to add the position and enter the seconds that the camera stays. Click Apply to save the Patrol Path settings.

To call the preset, select a Patrol Path number and click Call. Then, the camera patrols following the configured path.

2. 7. 4 Preset and Call Patterns in Pattern Scan

In Pattern Scan, you can record the movement to customize the patterns. Follow the steps below to preset a pattern.

1. Right click on the Live View screen and click Settings in the pop-up Main Menu. Go to Pan&Tilt.

2. Select a channel listed on the left panel, click **Pattern Scan**, and select a Pattern Path number from the drop-down list. Click **Start Recording** and click the buttons to adjust the position. Click **Stop Recording** to save the movements as a pattern.

To call the preset, click **Call**, and the camera moves following the recorded pattern.

2. 7. 5 Enable Park

When Park enabled, the camera will perform the preset position, path, or pattern automatically if there is no operations in specified time. Follow the steps below to enable Park.

1. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Pan&Tilt**.

2. Select a channel listed on the left panel and click Park. Enable Park, select a mode and a preset, and enter the park time. Click Apply.

Park Mode	Select a mode to decide what kind of preset the camera will perform.
Park (Preset)	Select a preset from the drop-down list. The presets in the list vary based on the selected park mode.
Park Time	When there is no operations during this time, the camera will perform the preset.

2. 7. 6 Target Track

When Target Track is enabled, the camera will track athe target person automatically. Follow the steps below to enable Park.

1. Right click on the Live View screen and click Settings in the pop-up Main Menu. Go to Pan&Tilt.

2. Select a channel listed on the left panel and click Target Track. Enable Target Track, enable smart detection. Click Apply.

Target Track	Choose whether to enable or disable Target Track.
Smart Detection	Enable humand detection to allow tracking human.

2. 7. 7 Preview Preset Settings

Follow the steps below to preview all Preset settings and edit the preset name.

1. Right click on the Live View screen and click Settings in the pop-up Main Menu.
2. Go to Pan&Tilt. Select a channel listed on the left panel and click Preview.

3. Select a preset mode to view the presets. Click the icons in the list to adjust the position, preview the preset and edit its name.

	Click to enable 3D positioning. Use the mouse to adjust the position of camera. Click a point on the screen, and the point will be moved to the center of the screen. Hold down the left mouse button and draw a rectangular area from left to right. Then the camera zooms in focusing on the specified area. Hold down the left mouse button and draw a rectangular area from right to left. Then the camera zooms out focusing on the specified area.
	Click to enable Center. Click a point on the screen, and the camera adjusts the position to center on the point.
	Click to enable Park. To configure the park mode and time, click **Pan & Tilt Settings** at the bottom and click the **Park** tab.
	Click the preset in the list and click the icon to edit the name.
	(Only for Preset) Click to move to the preset position.
	(Only for Cruise Scan and Pattern Scan) Click to perform the Cruise or Pattern scan.
	(Only for Cruise Scan and Pattern Scan) Click to stop the scan.

2. 8 Configure PoE Channel (Only for PoE NVRs)

In PoE channel, you can check the port status, rated power, change the port status and configure the port settings to determine whether the port can provide power supply.

1. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Camera** > **PoE Channel**.

Port Status	Click to change port mode. Auto Mode: This mode is suitable for distance between NVR and camera below 100m. Long Distance Mode: This mode is suitable for distance between NVR and camera from 100m to 270m

Port Settings	Click to configure port settings. Select the port, and set its power priority, power status and maximum power.

2. 9 Manage Your Cameras

For an added camera, you can manage its name, network configurations, account, firmware, and restart time, or just remove it.

2. 9. 1 Modify Camera Connection Parameters

Note: The cameras should be in the connected status.

1. Right click on the Live View screen and click Settings in the pop-up Main Menu. Go to Camera > Device Access > Add Device.

2. Click in the table and modify the name, protocols, and management port. Click Save.

Name	Specify the camera name.
Control Protocol	Display the protocol used to control the camera.
Transport Protocol	Displays the protocol used for communication.
Management Port	Specify the management port.

2. 9. 2 Change the Password and Reset Email

You can change the device password and reset email to enhance the security.

1. Right click on the Live View screen and click Settings in the pop-up Main Menu. Go to Camera > Device Management > Password Management.

2. To change the settings of a single camera, click in the table. To change the password of multiple cameras in batches, select the cameras and click **Change Password**. Enter the new settings and Click **Save**.

Note:

- The cameras should be in the connected status.
- If you click **Use Preset Camera Settings**, the camera uses the password and reset email configured in NVR Quick Setup. To view and modify the preset camera settings in NVR, go to **System** > **User Management** in **Settings** and click of the administrator.
- If you have added a camera to the NVR but cannot find it in the table, check the connection to make sure the camera is connected properly. Click **Refresh** to refresh the data.

2. 9. 3 Upgrade the Firmware

Two methods are supported to upgrade the firmware, Local Upgrade and Online Upgrade. Follow the steps below to upgrade the firmware.

1. Get ready to upgrade the firmware.
   - (For Local Upgrade) Place the firmware in an external storage device and plug the external storage device into the NVR.
   - (For Online Upgrade) Connect the NVR and cameras to the internet first.
2. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Camera** > **Device Management** > **Firmware Upgrade**.

3. Select the cameras and click **Local Upgrade** or **Online Upgrade** to upgrade them.

- For Local Upgrade, select the firmware from the external storage device and click **Upgrade**.
- For Online Upgrade, the device detects the new firmware online and upgrade automatically.

Note:

- The cameras should be in the connected status.
- Make sure to use the correct firmware to upgrade the corresponding camera.
- When upgrading, please do not turn off the power of camera and NVR.

2. 9. 4 Configure Scheduled Reboot

When Reboot Schedule is enabled, the camera reboots automatically and regularly at the specified time.

Note: The cameras should be in the connected status.

1. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Camera** > **Device Management** > **Reboot Schedule**.

2. Select a channel, enable **Reboot Schedule**, and select the week day and reboot time. Click **Apply**.

3. (Optional) If you also want to apply the schedule settings to other channels, click **Copy to Other Channels** and select the channels. Click **Save**.

2. 9. 5 Load Default

You can change restore the camera settings (excluding network parameters, cloud settings and user information) to factory defaults.

1. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Camera** > **Device Management** > **Load Default**.

1. Select the desired camera and click **Restore**.

2. 9. 6 Remove Cameras from the NVR

After removing the camera from the NVR, you cannot configure and manage it via NVR.

1. Right click on the Live View screen and click **Settings** in the pop-up Main Menu. Go to **Camera** > **Device Access** > **Add Device**.
2. Select the cameras to be removed. Click **Remove Device**.

Live View

In Live View, you can monitor the channels in real time and respond to abnormal conditions with quick operations, such as viewing instant playback, zooming in the image, and enabling real-time talk. This chapter contains the following sections:

3. 1 Configure the Screen Layout

The NVR displays the videos of each channel via several screens. You can flexibly configure the screen layout in both Live View and Settings.

3. 1. 1 Change the Screen Layout Quickly

The NVR supports multiple layout modes, which display multiple screen(s) in one page separately. To change the screen layout quickly, right click on the Live View screen and click the buttons in Main Menu.

	Click the corresponding buttons to change the number of displayed screens.
	Click to jump to the previous/next page when the channels is more than the screens displayed in one page.
	Click to enable/disable **Switching**. For example, 4 channels are displayed in Live View screen and 8 cameras are added to the NVR. When Switching is enabled, the NVR switch screens in Live View regularly to display the live view of 8 channels. To configure Switching Interval, click **Settings** and go to **System** > **Basic Settings** > **Basic Settings.**

For the layout mode with multiple screens, you can change the location of a channel by clicking and dragging it to another location. To view a channel in the full screen, double click it. Double click it again to go back to multi-screen layout mode.

3. 1. 2 Rearrange Channels in Settings

In Settings, you can rearrange the channels in different layout modes more flexibly. Follow the steps below to rearrange the layout.

1. Right click on the Live View screen and click **Settings** in the Main Menu. Go to **System** > **Screen Layout**.

2. Select a layout mode below and the current layout displays. Each square indicates a region on the screen. Click a square and click the checkbox of a channel to rearrange the channel in Live View. Click Apply.

3. 2 Configure Live View Settings via Toolbar

Select a channel in Live View to reveal the toolbar. Click the following icons to configure Live View settings, such as digital zoom, image settings, OSD, stream, and strategy.

	Click to view the playback of this channel. Click **5-min Playback** to view instant playback and **History** to search and view the recordings in Normal Playback, Tag Playback, and Event Playback. For detailed configuration, refer to Playback.
	Click to zoom in/out the live image.
	(Microphone needed and only for certain cameras) Click the icon and then Start Talk to talk. With this function, your can talk to people in the monitor area in real time.
	(Only for certain cameras) Click and use the slide bar to adjust the volume.
	(Only for the camera with Pan&Tilt) Click to enter the Preview of Pan&Tilt. You can adjust the camera location and call the presets. For details, refer to 2. 7. 5 Preview Preset Settings.

	Click to select the Live View strategy. **Shortest Delay**: Display the latest image with the shortest delay, which may lower the video fluency. **Fluency**: Display each frame to guarantee the fluency. The video may be delayed. **Balanced**: Display the video with a balance between timeliness and fluency.
	Displays the image resolution, HD or SD.
	(Only for certain cameras) Click to manually start the alarm.
	Hover your cursor to view the video information, including its channel, frame rate, bit rate, resolution, and encoding method.
	Click to hide the toolbar.

3. 3 Change Picture Mode

1. Right click on the Live View screen and click **Picture Mode** in the pop-up Main Menu.
2. Select a mode to adjust the image. Click **OK**.

4

Recording and Storage

This chapter guides you on how to view and configure recording and storage settings on your NVR. VIGI NVR allows you to set your own recording schedules and parameters, assign disk quota to connected cameras, manage and detect the installed hard drive, as well as export and back up recordings. This chapter includes the following sections:

4. 1 Configure Recording Schedules

Recording schedule section provides convenience and flexibility for the daily monitoring of your NVR. You can customize the recording schedule for all channels at a time or specify a recording schedule for certain channels. You can set different schedules for each day. In Advanced Settings page, you can set the pre-recorded time and delay time for recording.

4. 1. 1 Customize Recording Schedule

Recording schedule in Storage enables users to customize the everyday recording plan for each channel according to their needs.

You can set all channels to record continuously (24/7), or set two cameras (Channel 1 and 2) to record based on a schedule of motion detection during a specified time and record continuously for the rest of time in weekdays; on weekends.

1. Right click on the Live View screen and click Settings in the pop-up main menu, then go to Storage > Recording Schedule > Basic Configuration.
2. Select the channel from the drop-down list.
3. Enable Schedule. By default, it is enabled.
4. Customize the recording schedule with one of the following methods.

- Method 1: Via Time Bar

  1) Select Motion Detection Recording and drag the cursor on time bar to set the time for motion detection recording from Monday to Friday. The color of these rectangles will change from blue to green.

  2) Select Continuous Recording and drag the cursor to set the time for no recording on Saturday and Sunday. The color of these rectangles will be erased.

3) Click Save in Basic Configuration to save the settings.

- **Method 2: via Edit Schedule**

1) Click Edit Schedule.

2) Click Add Schedule, select the recording type and set the start time and end time.

Note:

- Make sure the periods for different recording types are not overlapped.
- The scheduled time can be accurate to the second.

3) Click Copy Schedule and select the repeating days for this schedule in a week and click Yes.

4) Click Apply on the Edit Detailed Schedule page.

5) Click Apply in Basic Configuration to save the settings.

5. Click Copy to and select the channel to apply the settings, then click Apply.

6. Click Apply in Basic Configuration to save the settings.

4. 1. 2 Configure Advanced Recording Settings

To configure the pre-recorded and delay time for cameras, go to Storage > Recording Schedule > Advanced Settings. Click Save after you finish the configuration.

Pre-recorded Time	The time is set for cameras to record before the scheduled time or event. For example, the schedule for continuous recording starts at 10:00. If you set the pre-recorded time as 5 seconds, the camera starts to record at 9:59:55. **Note:** It is recommended to remain the default setting of 5 seconds.

Delay	The time is set for cameras to record after the scheduled time or event. For example, if you set the post-record time as 5 seconds, it records till 11:00:05 as motion detection ends at 11:00.
Auto-Delete Old Files	Enable this feature and set the maximum storage space. When the space of files reaches the set limit, the old files will be automatically deleted to store new files.

4. 2 Recording Controls

4. 2. 1 Configure Storage Disk Group

In Storage Disk Group, you can manually start and stop recording on certain channels, select the storage stream for recording, and select the hard drive group.

To configure these settings, right click on the Live View screen and click Settings in the pop-up main menu. Then go to Storage > Recording Controls and select Storage Disk Group. Click Save after you finish the configuration.

Channel	Displays the name of camera in this channel.
Recording Switch	Start/stop recording on the selected channel.
Record Audio	Start/stop recording audio on the selected channel.

Storage Stream	Select the stream for recording. **Main (Main Stream):** The size of recording files will be larger when selected. **Substream:** The size of recording files will be smaller when selected.
Storage Disk Group	Select the disk group for the NVR with multiple hard drives.

4. 2. 2 Configure Disk Quota

In Disk Quota, you can manually start and stop recording on certain channels, select the stream for the storage of recordings, check the used capacity of hard drive on certain channels, and assign the disk quota to cameras to store recordings.

To configure these settings, right click on the Live View screen and click Settings in the pop-up main menu. Then go to Storage > Recording Controls and select Disk Quota. Click Save after you finish the configuration.

Channel	Displays the name of camera in this channel.
Recording Switch	Start/stop recording on the selected channel.
Record Audio	Start/stop recording audio on the selected channel.

Storage Stream	Select the stream for recording. **Main (Main Stream):** The size of recording files will be larger when selected. **Substream:** The size of recording files will be smaller when selected.
Used Capacity	Displays the used space of hard drive for this channel.
Recording Quota	Assign the disk quota to your cameras for recording storage.

4. 3 Manage Hard Drive

In Hard Drive Management section, you can view and customize the settings of hard drive, and choose different detection methods to check the bad sectors and the status of the installed hard drive.

4. 3. 1 View and Configure Settings of Hard Drive

In Hard Drive Management, you can view the parameters and configure the properties and disk group of hard drive. You can also enable the NVR to overwrite the earlier recording files when the hard drive is full.

To view and configure the settings of hard drive, right click on the Live View screen, click Settings in the pop-up main menu, then go to Storage > Hard Drive Management > Hard Drive Management. Click Save after you finish the configuration.

Circular Write of Disk	Enable the NVR to overwrite the eariler recording files when the hard drive is full.
Disk No.	Displays the number of hard drive.
Capacity	Displays the total space of hard drive.
Free Space	Displays the remaining storage capacity of hard drive.
Status	Displays the status of hard drive.
Properties	Select the properties of hard drive. **Read-write:** The data can be read and written on the hard drive. **Read-only:** The hard drive can only read data.
Disk Group	Select the disk group for the NVR with multiple hard drives.
Operation	Click **Format** to format the hard drive. The data stored in the hard drive will be lost after you format it. Click the Lock to verify the NVR encryption.

4. 3. 2 Add External Hard Drive to NVR

If you want to store more recordings on your NVR, add an external hard drive to expand its storage space.

Right click on the Live View screen, click **Settings** in the pop-up main menu, then go to **Storage** > **Hard Drive Management** > **Hard Drive Management**. Click and the hard drive will be automatically added to your NVR.

Note: The capacity of the external hard drive should exceed 120G.

4. 3. 3 Bad Sector Detection

Bad sector detection conducts a check on the entire hard drive or its critical area, and display the number of bad sectors of the hard drive. Follow the steps below to finish the bad sector detection.

1. Right click on the **Live View** screen and click **Settings** in the pop-up main menu.
2. Go to **Storage** > **Hard Drive Management** > **Bad Sector Detection**.
3. Select the hard drive and click **Critical Area Detection** or **Full Detection** at the top.

Different colors of the small blocks represent the good, damaged and shielded sectors on your hard drive.

4. 3. 4 S.M.A.R.T Detection

S.M.A.R.T detection detects and reports various indicators of drive reliability and presents an overall assessment of the installed hard drive. Follow the steps below to finish the S.M.A.R.T detection.

1. Right click on the Live View screen and click Settings in the pop-up main menu.
2. Go to Storage > Hard Drive Management > S.M.A.R.T Detection.
3. Select the disk and self-checking type.

   Short: A scan of major components of the hard drive .

   Extended: A complete surface scan of the drive.

   Transmission: A scan of the mechanical parts of the hard drive detecting handling damages.

4. Click **Start Detection** on the right.

Temperature	Displays the operating temperature of the hard drive.
Use Time (day)	Displays the usage time of the hard drive.
Self Assessment **Overall Assessment**	Displays the current status of the hard drive.
Attribute Name	Displays the name of attributes concerning the health of hard drive.
Status	Displays the status of these attributes.
Flags	Displays the code of S.M.A.R.T ID.
Threshold	Displays the threshold value of these attributes. Threshold marks the value at which the hard drive could fail.
Value	Displays the current value of these attributes. When it gets closer to the threshold, the hard drive is less likely to be healthy.
Worst	Displays the minimum values of these attributes. When Worst values are extremely lower than the current value, it indicates the hard drive errors or extreme working environment of the hard drive.
Raw Value	Displays the data used for calculating **Value**.

4. 4 Export Recordings

You can export the recordings stored in the hard drive according to your needs. These recordings can be played on your media devices.

Follow the steps below:

1. Prepare an external storage device and plug it into the USB slot of the NVR.
2. Right click on the Live View screen and click **Settings** in the pop-up main menu.
3. Go to **Storage** > **Export File**.
4. Select the start time and end time for searching recordings.

5. Click Advanced Time Filtering and select the time span and repeated days of the week. Then click Yes.

6. Click Channel to select Channel for recording export. Then click Yes.

7. Select All for the recording type and All for the file type.

Locked	Files will not be overwritten when loop recording is enabled.
Unlocked	Files will be overwritten when loop recording is enabled.
All	Display the locked and unlocked files.

8. Click **Search**.
9. Select the files you need and click **Fast Export**.

   Note: The format of the audio in exported videos may be incompatible with some playback software.
10. Select the folder or create a new folder and click **Start Backup** to export the files to your external storage device.

4. 5 Expansion Storage (Only for some models)

Expansion storage uses key frame storage technology to compress the earlier videos and release a large amount of storage space, and thus increases the recording time. After expansion storage is enabled, select the expansion type based on your needs.

High Expansion	Extend the recording time to 3 times the original.

Moderate Expansion	Extend the recording time to twice the original.

4. 6 Long-term Storage (Only for some models)

Note:

If you have enabled Plug and Play, the long-term storage function cannot be enabled.

Long-term storage can reduce the size of recording files and extend the recording time by automatically changing the settings for recording and storage. To achieve this function, the VIGI NVR will adopt the following methods, including changing the smart coding type and bit rate type of camera, enabling expansion storage, after evaluating the hard drive capacity and the number of channels. After long-term storage is enabled, select the recording time you expect.

4. 7 Backup Recordings

Backup allows you to copy all the recordings stored in your NVR to the external hard drive. You can view these recording files when installing the hard drive on another NVR.

Caution:

The data stored in your external hard drive will be lost if you choose to back up the recordings. It is recommended to back up the data in your external hard drive before you start the backup process.

To back up the recordings, follow the steps below:

1. Right click on the Live View screen and click **Settings** in the pop-up main menu.
2. Go to **Storage** > **Hard Drive Backup**.

3. Click Backup to start the backup process.

Note:

- You should prepare an external hard disk whose total space is larger than the used space of installed hard drive in NVR.
- If the free space of your external hard disk is not big enough for backing up recordings stored in NVR, click Initialize to format your hard drive first. The original data will be erased after initialization.

4. 8 Search

Search allows you to search faces, people and vehicles appeared in the recordings stored.

Follow the steps below to configure the Search feature:

1. Right click on the Live View screen and click Settings in the pop-up Main Menu, then go to Search.

2. Click the desired search type. Select a channel, set the start time and end time, then click **Search**. You will see the search results displayed.

5

Playback

This function allows you to play the history recordings and edit them, such as adding tags and exporting clips. You can easily search the recordings based on the channel, date, tag, and event. This chapter contains the following sections:

NVR supports the following four playback modes:

- **Instant Playback**

Play the video of a single channel recorded in the last five minutes.

- **Normal Playback**

Play the recordings of one day, including the continuous and motion detection recordings.

- **Tag Playback**

Play the recordings with tags added.

- **Event Playback**

Play the recordings with events detected.

5. 1 Instant Playback

You can replay the video recorded in the last five minutes via Instant Playback. Click a channel on Live View to reveal the toolbar. Click  and then 5 min Playback to start instant playback.

5. 2 Play Normal Recordings

Normal Recordings are video files from the continuous and motion detection recordings. Follow the steps below to play normal recordings.

1. Right click on the Live View screen and click **Playback** in the pop-up Main Menu to open the Playback module.

2. On the right panel, select **Normal Playback**, click the checkboxes to select channels, and select a date in the calendar. You can also click the checkboxes below to filter the recordings. Click **Search**.

3. The recording files are listed both on the right panel and the time bar below. Double click a recording in the list or click to play the recordings. You can also click the  to lock the recording. Once locked, the recording cannot not be overridden when Loop Recording is enabled.

For more playback operations, refer to 5. 5 Playback Operations.

Note: When playing multiple channels, some channels may be unavailable due to limited resources. To watch the channels, click **Back** to deselect a few channels on the right panel and try again.

5. 3 Play Recordings with Tags

Tags can be used to mark and search recordings. Follow the steps below to add tags and play recordings with tags.

Step 1: Add Tags to Recording Files

1) Right click on the Live View screen and click Playback in the pop-up Main Menu to open the Playback module. In the Normal Playback mode, specify the channel and date on the right panel. Click Search.

2) Select a time point in the recording listed in the time bar and click in the toolbar. The following window pops up. Enter the tag manually or select one from history tags. Click Yes.

- **Step 2: Search Tags**

  In the same module, select Tag Playback from the drop-down list on the right panel, click the checkboxes to select channels, and select a time range in the calendar. Click Search.

- **Step 3: Play the Recording File with a tag**

  The recording files with tags are listed on the right panel. Specify the time range before and after the tagged time point, then double click a recording in the list to play it.

You can also click ··· in the list and click Edit or Delete to edit the tag or delete it. For more playback operations, refer to 5. 5 Playback Operations.

5. 4 Playback Recordings of Events

With Events configured, the NVR and cameras can detect and react to events. In Event Playback, you can search, play, and edit the videos recorded when certain events are detected, including motion, line crossing and area intrusion.

Note: If you have never configured Events on the NVR, there are no recordings of events. To configure Events, refer to Events and Alerts.

Follow the steps below to search and play the recordings of certain events.

1. Right click on the Live View screen and click **Playback** in the pop-up Main Menu to open the Playback module.
2. On the right panel, select **Event Playback** and select an event type and a filter type from the drop-down list. Click the checkboxes to select channels, and select a time range in the calendar. Click **Search**.

3. The recording files of events are listed on the right panel. Double click a recording in the list to play it.

For more playback operations, refer to 5. 5 Playback Operations.

5. 5 Playback Operations

In the Playback module, you can use the icons and buttons in the toolbar and on the right panel to adjust the display, edit and back up the recordings.

Note: The operations are not available in Instant Playback.

5. 5. 1 Basic Playback Operations

The following icons are supported when playing recordings:

	Select from the drop-down list to change the playing speed.
	Jump forward/backward by 30 seconds.
	(Available when the recording is paused) Play the recordings by frames.
	Click and slide to adjust the volume.

	(Available in Normal Playback and Event Playback) Lock/unlock the recordings. Once locked, the recording cannot not be overridden when Loop Recording is enabled.
	(Available in Normal Playback and Event Playback) Add a tag to the recording.
	Zoom in or out via Digital Zoom.
	Play the recordings in full screen.
	Display/hide the channel number in Playback.

5. 5. 2 Set Smart Playback Rules

In Normal Playback, you can configure Smart Playback rules to adjust the playing speed automatically. When Smart Playback configured, the NVR can intelligently classify the recordings into two types, Event Recordings and Non-event Recordings, and adjusts the speed based on the recording types.

Click the  icon and set the playing speed. You can skip Non-event Recordings by clicking the checkbox. Click Yes.

5. 5. 3 Edit Recordings

Follow the steps below to clip video files.

1. In Playback, specify the playback mode, channels, and time range, then click Search to search recordings.

2. Click the recordings in the time bar to select a start time. Click at the toolbar to set the beginning of the clip. Click the recordings again and drag the mouse to adjust the length of the clip. Click to set the end of the clip.

After editing, you can click to view all clips. To export the clip to an external storage, select the clips and click Export.

Note:

- To export the clips, an external storage is required.
- For the clips that are not exported, they will not be saved as new recordings when you leave the Playback module.

5. 5. 4 Export Recordings

In Playback, you can easily search the desired recordings based on channel, time, recording types, tags, and events, and back up them in batches. Follow the steps below to search and back up recordings.

Note: To back up the recordings, an external storage is required.

1. In Playback, specify the playback mode, channels, and time range, then click **Search** to search recordings. The recording files are listed on the right panel. Click the checkbox to select the recordings to be exported and click **Export Recordings**.

2. Specify the path to export the recordings. Click **Start Backup** and wait until backup is completed.

6

Events and Alerts

This chapter guides you on how to configure the event settings and alarm actions when your cameras detect different types of events. VIGI NVR monitors the user-defined areas and you'll be automatically alerted to any suspicious activity in your home and office. This chapter includes the following sections:

6. 1 Motion Detection

Motion detection allows cameras to detect the moving objects in the monitored area and triggers alarm actions. You can customize the motion detection settings, select the triggered actions and set the alarm schedule for cameras. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Basic Event** > **Motion Detection.**

2. Select the channel you want to detect and enable **Motion Detection**.

3. Draw rectangles for motion detection on the preview screen. The whole region is selected by default. Then configure the motion detection settings.

Sensitivity	Adjust the value of sensitivity. A higher value can trigger alarm actions more easily.
Object Width Filter/ Object Height Filter	Set the minimum object width/height to filter the corresponding events.
Detection	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.
Smart Detection Confidence	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.

4. Set the alarm schedule. Click Apply.

5. Select the triggered actions according to your needs.

Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects the motion.
Screen Prompt	A warning sign  on Live View screen.
Buzzer	The buzzer on the NVR will beep when the motion is detected.
Pop-up Alarm Screen	The channel in Live View will be in full screen when the motion is detected.
Push Notifications	The system will push notifications when the motion is detected.
Send Email	The system will send an email when the motion is detected.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when the motion is detected.
Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when the motion is detected.

6. Click Apply to save the settings.

7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 2 Camera Tampering

Camera tampering triggers alarm actions when an area of camera's lens is purposely blocked, obstructed or vandalized. You can customize the camera tampering settings, select the triggered actions and set the alarm schedule for cameras. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Basic Event** > **Camera Tampering.**

2. Select the channel you want to detect and enable **Camera Tampering**.
3. Set the sensitivity of camera tampering. A higher value can trigger the alarm actions more easily.
4. Select the triggered actions according to your needs.

Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects the camera tampering.
Screen Prompt	A warning sign in the lower right corner of the monitor screen. Click it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when the camera tampering is detected.
Pop-up Alarm Screen	The channel in Live View will be in full screen when the camera tampering is detected.

Push Notifications	The system will push notifications when the camera tampering is detected.
Send Email	The system will send an email when the camera tampering is detected.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when the camera tampering is detected.
Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when the camera tampering is detected.

5. Set the alarm schedule. Click Apply.

6. Click Apply to save the settings.
7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 3 Scene Change Detection

Scene change detection triggers alarm actions when the viewing direction of camera's lens is purposely changed. You can enable this feature, select the triggered actions and set the alarm schedule for cameras. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Basic Event** > **Scene Change Detection.**

2. Select the channel you want to detect and enable **Scene Change Detection**.
3. Set the sensitivity of detection. A higher value can trigger the alarm actions more easily.
4. Select the triggered actions according to your needs.

Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects the camera's viewing direction is changed.
Screen Prompt	A warning sign in the lower right corner of the monitor screen. Click it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when the camera detects the viewing direction is changed.
Pop-up Alarm Screen	The channel in Live View will be in full screen when the camera detects the viewing direction is changed.
Push Notifications	The system will push notifications when the camera detects the viewing direction is changed.
Send Email	The system will send an email when the camera detects the viewing direction is changed.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when the camera detects the viewing direction is changed.

Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when the camera detects the viewing direction is changed.

5. Set the alarm schedule. Click Apply.

6. Click Apply to save the settings.
7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 4 Line Crossing Detection

Line crossing detection triggers alarm actions when cameras detect that moving objects cross a customized virtual line. You can customize the line crossing detection settings, select the triggered actions and set the alarm schedule. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Smart Event** > **Line Crossing Detection.**

2. Select the channel you want to detect and enable **Line Crossing Detections**.

3. Draw lines on the preview screen. Select the line and configure settings of line crossing detection.

   Note: The maximum number of customized lines is 4. If you want to apply the settings for different areas, select **Share line crossing parameters**.

Sensitivity	Set the sensitivity of line crossing detection. A higher value can trigger alarm actions more easily.
Line Crossing Directions	**A->B:** Only the object crossing the configured line from the A side to the B side can be detected. **B->A:** Only the object crossing the configured line from the B side to the A side can be detected. **A<->B:** The object goes across the configured line with both directions can be detected.
Object Width Filter/ Object Height Filter	Set the minimum object width/height to filter the corresponding events.
Detection	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.
Smart Detection Confidence	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.

4. Select the triggered actions according to your needs.

Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when line crossing detection is triggered.
Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects the object crossing the customized line.
Pop-up Alarm Screen	The channel in Live View will be in full screen when line crossing detection is triggered.
Push Notifications	The system will push notifications when the line crossing detection is detected.
Send Email	The system will send an email when the line crossing detection is detected.
White Light Alarm	(Only supports camera models with light alarm) A camera with light alarm flashes when line crossing detection is triggered.
Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when line crossing detection is triggered.

5. Set the alarm schedule. Click **Apply**.

6. Click Apply to save the settings.
7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 5 Intrusion Detection

Area intrusion triggers alarm actions when the NVR detects an intrusion in the specified areas. You can customize the area intrusion settings, select the triggered actions and set the alarm schedule. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click Settings in the pop-up main menu, then go to Event > Smart Event > Intrusion Detection.

2. Select the channel you want to detect and enable Intrusion Detection.
3. Draw intrusion areas on the preview screen. Select the area and configure the settings.

   Note: The maximum number of customized areas is 4. If you want to apply the settings to different areas, select **Share intrusion area parameters**.

Sensitivity	Adjust the value of sensitivity. A higher value can trigger alarm actions more easily.
Area Proportion	Set the proportion of the size of intrusive object to the intrusion area you have drawn.

Intrusion Time	Set the time for detecting the intrusion of objects. The interval should be no more than 10 seconds.
Object Width Filter/ Object Height Filter	Set the minimum object width/height to filter the corresponding events.
Detection	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.
Smart Detection Confidence	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.

4. Select the triggered actions according to your needs.

Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when the area intrusion is detected.
Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects an intrusion in the area.
Pop-up Alarm Screen	The channel in Live View will be in full screen when an intrusion in the area is detected.
Push Notifications	The system will push notifications when an intrusion in the area is detected.
Send Email	The system will send an email when an intrusion in the area is detected.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when an intrusion in the area is detected.
Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when an intrusion in the area is detected.

5. Set the alarm schedule. Click Apply.

6. Click Apply to save the settings.
7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 6 Region Entering Detection

Region entering detection triggers alarm actions when cameras detect moving objects enter the specified regions. You can customize the region settings, select the triggered actions and set the alarm schedule. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Smart Event** > **Region Entering Detection**.

2. Select the channel you want to detect and enable **Region Entering Detection**.
3. Draw protected areas on the preview screen. Select the area and configure the settings.

   Note: The maximum number of customized areas is 4. If you want to apply the settings to different areas, select **Share area parameters**.

Sensitivity	Adjust the value of sensitivity. A higher value can trigger alarm actions more easily.
Object Width Filter/ Object Height Filter	Set the minimum object width/height to filter the corresponding events.
Detection	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.
Smart Detection Confidence	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.

4. Select the triggered actions according to your needs.

Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when a moving object enters the specific regions.

Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects a moving object entering the area.
Pop-up Alarm Screen	The channel in Live View will be in full screen when a moving object enters the specific regions.
Push Notifications	The system will push notifications when a moving object enters the specific regions.
Send Email	The system will send an email when a moving object enters the specific regions.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when a moving object enters the specific regions.
Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when a moving object enters the specific regions.

5. Set the alarm schedule. Click Apply.

6. Click Apply to save the settings.

7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 7 Region Exiting Detection

Region exiting detection triggers alarm actions when cameras detect moving objects exit the specified regions. You can customize the region settings, select the triggered actions and set the alarm schedule. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Smart Event** > **Region Exiting Detection**.

2. Select the channel you want to detect and enable **Region Exiting Detection**.

3. Draw protected areas on the preview screen. Select the area and configure the settings.

   Note: The maximum number of customized areas is 4. If you want to apply the settings to different areas, select **Share area parameters**.

Sensitivity	Adjust the value of sensitivity. A higher value can trigger alarm actions more easily.
Object Width Filter/ Object Height Filter	Set the minimum object width/height to filter the corresponding events.
Detection	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.
Smart Detection Confidence	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.

4. Select the triggered actions according to your needs.

Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when a moving object exits the specific regions.
Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects a moving object exiting the area.
Pop-up Alarm Screen	The channel in Live View will be in full screen when a moving object exits the specific regions.
Push Notifications	The system will push notifications when a moving object exits the specific regions.
Send Email	The system will send an email when a moving object exits the specific regions.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when a moving object exits the specific regions.
Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when a moving object exits the specific regions.

5. Set the alarm schedule. Click **Apply**.

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

7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 8 Loitering Detection

Alarm actions will be triggered when the camera detects a suspicious individual is loitering in an area for some time. You can customize the area settings, select the triggered actions and set the alarm schedule. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click Settings in the pop-up main menu, then go to Event > Smart Event > Loitering Detection.

2. Select the channel you want to detect and enable Loitering Detection.

3. Draw areas on the preview screen. Select the area and configure the settings.

   Note: The maximum number of customized areas is 4. If you want to apply the settings to different areas, select **Share area parameters**.

Sensitivity	Adjust the value of sensitivity. A higher value can trigger alarm actions more easily.
Loitering Time	Set the time a suspicious individual lingers in an area.
Object Width Filter/ Object Height Filter	Set the minimum object width/height to filter the corresponding events.
Detection	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.

Smart Detection Confidence	Select the detection type. It can be configured only for the cameras which support human detection and vehicle detection.

4. Select the triggered actions according to your needs.

Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when the camera detects a suspicious individual is loitering in an area for some time.
Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects a suspicious individual is loitering in an area for some time.
Pop-up Alarm Screen	The channel in Live View will be in full screen when the camera detects a suspicious individual is loitering in an area for some time.
Push Notifications	The system will push notifications when the camera detects a suspicious individual is loitering in an area for some time.
Send Email	The system will send an email when the camera detects a suspicious individual is loitering in an area for some time.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when the camera detects a suspicious individual is loitering in an area for some time.
Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when the camera detects a suspicious individual is loitering in an area for some time.

5. Set the alarm schedule. Click Apply.

6. Click Apply to save the settings.
7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 9 Object Abandoned/Removal Detection

Object abandoned/removal detection triggers alarm actions when cameras detect objects are left behind or taken away in the specified areas. You can customize the area settings, select the triggered actions and set the alarm schedule. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Smart Event** > **Object Abandoned/Removal Detection.**

2. Select the channel you want to detect and enable **Object Abandoned/Removal Detection**.

3. Draw areas on the preview screen. Select the area and configure the settings.

   Note: The maximum number of customized areas is 4. If you want to apply the settings to different areas, select **Share area parameters**.

Sensitivity	Adjust the value of sensitivity. A higher value can trigger alarm actions more easily.
Detection Type	Select the detection type.
Time Threshold	Set how long the object is left behind or taken away to trigger the event.
Object Width Filter/ Object Height Filter	Set the minimum object width/height to filter the corresponding events.

4. Select the triggered actions according to your needs.

Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when the camera detects objects are left behind or taken away in the specified areas.

Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects objects are left behind or taken away in the specified areas.
Pop-up Alarm Screen	The channel in Live View will be in full screen when the camera detects objects are left behind or taken away in the specified areas.
Push Notifications	The system will push notifications when the camera detects objects are left behind or taken away in the specified areas.
Send Email	The system will send an email when the camera detects objects are left behind or taken away in the specified areas.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when the camera detects objects are left behind or taken away in the specified areas.
Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when the camera detects objects are left behind or taken away in the specified areas.

5. Set the alarm schedule. Click Apply.

6. Click Apply to save the settings.

7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Save to save the settings.

6. 10 Vehicle Detection

Vehicle detection triggers alarm actions when cameras detect vehicles are moving in the specified areas. You can customize the area settings, select the triggered actions and set the alarm schedule. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Smart Event** > **Vehicle Detection.**

2. Select the channel you want to detect and enable **Vehicle Detection**.
3. Set the sensitivity of detection. A higher value can trigger the alarm actions more easily.
4. Select the triggered actions according to your needs.

Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects vehicles are moving in the specified areas.
Screen Prompt	A warning sign in the lower right corner of the monitor screen. Click it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when cameras detect vehicles are moving in the specified areas.
Pop-up Alarm Screen	The channel in Live View will be in full screen when cameras detect vehicles are moving in the specified areas.
Push Notifications	The system will push notifications when cameras detect vehicles are moving in the specified areas.

Send Email	The system will send an email when cameras detect vehicles are moving in the specified areas.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when cameras detect vehicles are moving in the specified areas.
Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when cameras detect vehicles are moving in the specified areas.

5. Set the alarm schedule. Click Apply.

6. Click Apply to save the settings.
7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 11 Human Detection

Human detection triggers alarm actions when cameras detect persons are moving in the specified areas. You can customize the area settings, select the triggered actions and set the alarm schedule. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Smart Event** > **Human Detection.**

2. Select the channel you want to detect and enable **Human Detection**.
3. Set the sensitivity of detection. A higher value can trigger the alarm actions more easily.
4. Select the triggered actions according to your needs.

Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects persons are moving in the specified areas.
Screen Prompt	A warning sign in the lower right corner of the monitor screen. Click it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when cameras detect persons are moving in the specified areas.
Pop-up Alarm Screen	The channel in Live View will be in full screen when cameras detect ersons are moving in the specified areas.
Push Notifications	The system will push notifications when cameras detect persons are moving in the specified areas.
Send Email	The system will send an email when cameras detect persons are moving in the specified areas.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when cameras detect persons are moving in the specified areas.

Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when cameras detect persons are moving in the specified areas.

5. Set the alarm schedule. Click Apply.

6. Click Apply to save the settings.
7. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 12 Abnormal Sound Detection

Abnormal sound triggers alarm actions when cameras detect an abnormal sound. You can select the triggered actions and set the alarm schedule. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Smart Event** > **Abnormal Sound Detection.**

2. Select the channel you want to detect and enable **Abnormal Sound Detection**.
3. Set the sensitivity of detection. A higher value can trigger the alarm actions more easily.
4. Set the alert threshold to trigger the action.
5. Select the triggered actions according to your needs.

Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects an abnormal sound.
Screen Prompt	A warning sign in the lower right corner of the monitor screen. Click it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when the camera detects an abnormal sound.
Pop-up Alarm Screen	The channel in Live View will be in full screen when the camera detects an abnormal sound.
Push Notifications	The system will push notifications when the camera detects an abnormal sound.
Send Email	The system will send an email when the camera detects an abnormal sound.
White Light Alarm	(Only supports camera models with light alarm) The camera will trigger light alarm when the camera detects an abnormal sound.

Audible Alarm	(Only supports camera models with audible alarm) The buzzer on the camera will alarm when the camera detects an abnormal sound.

6. Set the alarm schedule. Click Apply.

7. Click Apply to save the settings.
8. (Optional) Click Copy to, and select the channels to which you want to apply the settings. Then click Apply to save the settings.

6. 13 Smart Frame

With Smart Frame, when the camera detects a moving target (motion, vehicle and human figure), it will use a frame to highlight the moving target in the screen. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click Settings in the pop-up main menu, then go to Event > Smart Frame.

2. Click IPC Smart Frame/NVR Smart Frame, select the device you want to enable Smart Frame.
3. Enable Smart Frame for the desired detection.
4. Click Apply to save the settings.

6. 14 VCA

You can go to the VCA module to configure Face Analysis or Object Attribute Analysis. Please note that you can only enable one analysis at a time. Face analysis can be used to analyze the faces appeared in the screen and object attribute analysis can be used to identify human and vehicle attributes. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **VCA** > **Global Configuration**.

2. Enable **Smart Analysis (Beta) on NVR and check I confirm that I have fully read and understood the Privacy Policy, then click Apply**.

3. Go to **Event** > **VCA** > **Smart Analysis**.

4. Select the channel you want to detect and select the analysis type. Click **Apply**.

Face Analysis

1. Go to Event > VCA > Face Analysis.

2. Enable Face Analysis and set the Alarm Schedule.

3. Click Apply to save the settings.

Object Attribute Analysis

1. Go to Event > VCA > Object Attribute Analysis.

2. Enable the attribute types and click Apply to save the settings.

6. 15 Video Signal Loss Detection

Alarm actions will be triggered when the NVR cannot get video signal from the camera and display signal on the Live View screen. You can customize the triggered actions for different cameras. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Exception Detection** > **Video Signal Loss**.

The alarm actions are as follows:

Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Pop Alarm Screen	The channel in Live View will be in full screen when the NVR detects the signal loss.
Buzzer	The buzzer on the NVR will beep when the NVR detects the signal loss.
Send Email	The system will send an email when the NVR detects the signal loss.
Recording Linkage	The channels you select for recording linkage will start recording when the current channel detects the signal loss.

2. Click **Select Camera** to apply the selected alarm actions to certain cameras. Click **OK**.

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

6. 16 Offline and IP Conflict

Alarm actions will be triggered when the NVR is offline or it detects IP conflict between the NVR and other devices in the local network. You can select triggered actions for these two exception types. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Exception Detection** > **Offline and IP Conflict**.

2. Select the alarm actions according to your needs:

Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when NVR is offline or IP conflict is detected.
Send Email	The system will send an email when NVR is offline or IP conflict is detected.

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

6. 17 Disk Exception

Alarm actions will be triggered when the NVR detects disk problems. You can select triggered actions for three exception types. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Exception Detection** > **Disk Exception**.

2. Select the alarm actions according to your needs:

Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when disk problems are detected.
Send Email	The system will send an email when disk problems are detected.

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

6. 18 Login Exception

Login limitation sets the maximum login attempts to protect the security of your NVR. The NVR will be locked for 30 minutes if you enter the wrong password more than the specified attempts. You can set the buzzer to alarm after the maximum login attempts is exceeded. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click Settings in the pop-up main menu, then go to Event > Exception Detection > Login Exception.

2. Enable Login Limitation to limit the login attempts.
3. Set the maximum login attempts. The number should between 3 and 10.
4. (Optional) Enable Buzzer or Send Email if you want the buzzer to alarm or the system sends an email after the maximum login attempts are exceeded.
5. Click Apply to save the settings.

Note: To unlock the NVR and try to log in again, power the NVR off then power it on.

6. 19 Hardware Exception (Only for PoE models)

Alarm actions will be triggered when the NVR detects hardware problems. You can select triggered actions for four exception types. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click Settings in the pop-up main menu, then go to Event > Exception Detection > Hardware Exception.

2. Select the alarm actions according to your needs:

Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when hardware problems are detected.
Send Email	The system will send an email when hardware problems are detected.

3. Click Apply to save the settings.

6. 20 Fan Exception (Only for certain models)

Alarm actions will be triggered when the NVR detects fan problems. You can select triggered actions. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click Settings in the pop-up main menu, then go to Event > Exception Detection > Fan Exception.

2. Select the alarm actions according to your needs:

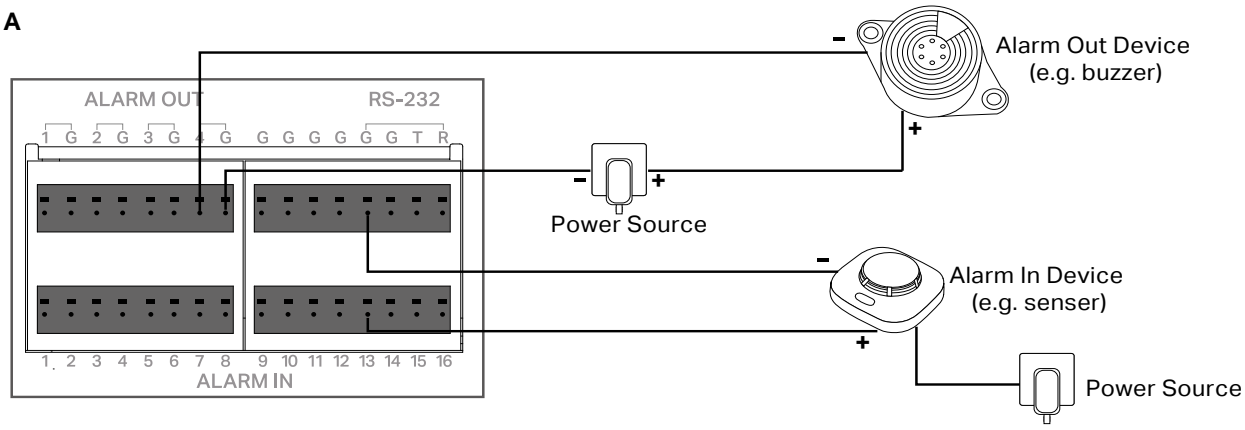
Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Buzzer	The buzzer on the NVR will beep when fan problems are detected.
Send Email	The system will send an email when fan problems are detected.

3. Click Apply to save the settings.

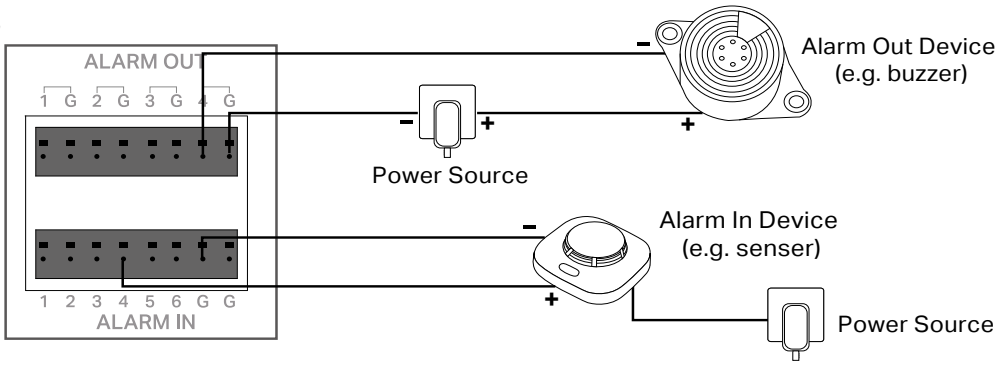
6. 21 Alarm Device (Only for certain models)

Some VIGI NVR supports external alarm devices, which can be used to trigger alarms after NVR events, or to detect environmental abnormalities and provide abnormal signals. Connect your alarm device to the alarm interface.

Type A



Type B



Alarm Input

1. Go to Event > Alarm Device > Alarm Input to load the following page.

2. Select the Alarm Input Number from the drop-down list. You can modify the Alarm Name for the port as needed.
3. Enable this alarm input.
4. Set the alarm Type, Normally Closed or Normally Open. Normally Open means that under normal conditions, the circuit is open and no current passes through the NVR, when the alarm is triggered, the current passes through the NVR and the NVR alarms. Normally Closed means that normally the circuit is closed, and the NVR will alarm in case of a circuit fault or alarm trigger. This depends on the type of alarm input device.

5. Click **Arming Time Settings** to configure the arming time, then the Alarm input will only work during the set time period. Click **Copy Time** to quickly copy time to other days, click **Add Time** to add more time periods.

6. Click **Linkage Method** to configure the linkage method.
   - For **Regular Linkage**, choose **Buzzer** and **Screen Prompt**, the NVR will alarm you. You can also choose **Alarm Linkage** to link with an Alarm Output interface which is already connected to an external alarm out device, then the connected external device can alarm you.
   - For **Recording Linkage**, you can choose to link with any channel. When the alarm input device is triggered, the corresponding channel will start video recording.

Alarm Output.

1. Go to Event > Alarm Device > Alarm Output to load the following page.

2. Select the Alarm Output Number from the drop-down list. You can modify the Alarm Name for the port as needed.
3. Set the Duration to specify how long the alarm will last.

4. Click **Arming Time Settings** to configure the arming time, then the Alarm output will only work during the set time period. Click **Copy Time** to quickly copy time to other days, click **Add Time** to add more time periods.

5. Go to the **Event** settings page configure the alarm linkage. Select an event detection type, locate the **Triggered Action** section, and check **Alarm Linkage**.

6. Click Select Alarm Output to select the configured alarm output interface then click Apply to save the settings.

7. Click Apply to save the settings.

6. 22 Disarming

If you don't want to bother by the linkage actions triggered by events, you can enable the Disarming feature to disable all or specific linkage actions. Follow the steps below to finish the configuration.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Disarming**.

2. Enable Disarming and select the linkage actions you don't want to be notified.

All	All actions will be selected.
Buzzer	The buzzer on the NVR will beep when an event is triggered.
Screen Prompt	A warning sign in the lower right corner of the monitor screen. Enable it to check the event type and time.
Pop-up Alarm Screen	The channel in Live View will be in full screen when an event is triggered.
Push Notifications	The system will push notifications when an event is triggered.
Send Email	The system will send an email when an event is triggered.

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

6. 23 Alarm Server

The Alarm Server feature allows users to customize a server address. The NVR can send alerts to the specific address when a system error occurs or the camera detects an event.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **Event** > **Alarm Server**.

2. Click Add and enter the parameters.

Host IP/Domain	Specify the server address. You can enter the IP address or the domain name of the server.
URL	Enter the server's url address.
Protocol	Select the protocol, HTTP or HTTPS.
Port	Set the server port number.
Attach Image	Whether to attach an image to the alert.

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

7

Network Management

With proper network configurations, you can connect your NVR to the internet, build up mapping between internal and external ports, and manage it remotely via Cloud Services. This chapter contains the following sections:

7. 1 Configure Network Connection

7. 1. 1 Configure Basic Settings.

In Connection, you can view the connection status and configure the NVR to obtain a dynamic or static IP address.

Follow the steps below to configure the basic settings.

1. Right click on the Live View screen and click **Settings** in the Main Menu. Go to **Network** > **Connection**.
2. Select a mode and follow the instructions below.
   - To assign a static IP address to NVR, select **Static IP** as the mode and configure the following parameters.

IP Address	Specify an IP address for the NVR. The IP address should be in the same segment as the gateway; otherwise, the NVR cannot connect to the internet.
Mask	Enter the subnet mask.
Gateway	Enter the IP address of the gateway device to which the data packets will be sent. This IP address should be in the same segment as the NVR's IP address.
Preferred/Alternate DNS	Enter the IP address of the DNS server.

   - To configure the NVR to obtain a dynamic IP address, select **Dynamic IP** as the mode.

Note:

- A DHCP server (usually a router) is needed for the NVR to obtain a dynamic IP address.

- If the topology or subnet is changed, you should assign a new IP address to the NVR to keep the network connection. In Static IP mode, configure the basic settings manually, while in Dynamic IP mode, click **Save**. Then follow step 3 below to change the IP addresses of cameras.

3. (Optional) If the network segment of NVR is changed, click **One-Click Networking**, and then select the channels to change the IP addresses of cameras in batches. Click **Confirm**.

Note: The cameras should be in the same segment with the NVR, so that the NVR can discover and manage them.

4. Click **Apply**.

If you want to reset to factory settings, click **Restore**.

7. 1. 2 Configure Advanced Settings

In Advanced Settings, you can specify MTU (Maximum Transmission Unit) to decide the largest size of data unit that can be transmitted in the network. A larger unit can improve the efficiency with more data in each packets, but it may increase the network delay because it needs more time to transmit. Therefore, if you have no special needs, it is recommended to keep the default value.

To configure MTU, right click on the Live View screen and click **Settings** in the Main Menu. Go to **Network** > **Connection**. Specify MTU and click **Apply**.

7. 2 Configure Ports

In Port, you can configure the HTTPS port, and service port of NVR that can be used to access the NVR through the network. When managing and monitoring the devices via VIGI Security Manager or the VIGI app, the ports configured here are used for communications of corresponding protocols.

To configure ports, right click on the Live View screen and click Settings in the Main Menu. Go to Network > Port. Specify HTTPS port and service port. Click Apply.

HTTPS Port	Specify a port for HTTPS protocol.
Service Port	Specify a port for protocols of video services.

7. 3 Configure DDNS

When you connect the router to a network, it will be assigned with a dynamic IP address and you can use this IP address to access the NVR. However, the IP address can change from time to time and you don't know when it changes. In this case, you might apply the DDNS (Dynamic Domain Name Server) feature on the NVR to allow you to access your NVR using a domain name without checking and remembering the IP address.

Follow the steps below to configure DDNS.

1. Right click on the Live View screen and click Settings in the Main Menu. Go to Network > DDNS.

2. Enable DDNS and specify the service provider, NO-IP or DynDNS. Enter the username, password and domain name of your account.

3. Click Apply.

7. 4 Configure UPnP

UPnP is used to establish the mapping between the internal port and external port.

Note: The NVR and cameras should be connected to the internet, and UPnP should be enabled on the gateway.

Follow the steps below to configure UPnP.

1. Right click on the Live View screen and click Settings in the Main Menu. Go to Network > UPnP.

2. Enable UPnP and specify a mapping type. If you select Auto as the mapping type, the mappings are established automatically. If you select Manually as the mapping type, click to specify the external port.

Port Type	Displays the protocol type.
Internal Port	Displays the port of the NVR to be converted.
External Port	Displays the external port opened by the gateway.
Internal IP	Displays the IP address of the NVR that needs to be converted.
Status	Displays the status of mapping.

3. Click Apply.

7. 5 Configure IP Restriction

You can set the access permissions of NVR to allow or deny the access to the NVR.

Follow the steps below to configure IP Restriction.

1. Right click on the Live View screen and click Settings in the Main Menu. Go to Network > IP Restriction

2. Enable IP Restriction.

Deny List	IP addresses in the list are prohibited from accessing the NVR.
Allow List	Only IP addresses in the list are allowed to access the NVR.

3. Click **Add** to add a rule.
4. Click **Apply**.

7. 6 Configure Platform Access

Configure the NVR to connect to the TP-Link video surveillance management platform, featuring real-time preview, recording playback, alarm service and device management.

Follow the steps below to configure Platform Access.

1. Right click on the Live View screen and click **Settings** in the Main Menu. Go to **Network** > **Platform Access**.

2. Enable Access to VIGI VMS. After this feature is enabled, the connection to TP-Link Cloud will be disconnected.

IP Address	Enter the IP address of the platform server.
Port	Enter the port number of the device that the platform server uses to access the server. Please refer to the port number provided by the platform.

3. Click Apply.

7. 7 Configure Email

Configure the email settings, then the system will send an alarm email to the designated recipient when an alert is triggered.

Follow the steps below to configure Email.

1. Right click on the Live View screen and click Settings in the Main Menu. Go to Network > Email.

Authentication	Whether to enable authentication.
Username	The username of the sending email account.
Password	The password of the sending email account. This password is generally an authorization code. You email needs to enable the IMAP service to obtain the authorization code.
Sender	The name of the sender.
Sender Email	The email of the sender.
Recipient	The name of the recipient.
Recipient Email	The email of the recipient.
SMTP Server	Enter the SMTP server address. The format is smtp.x.com, where x represents the email name, such as smtp.gmail.com.

2. Click Apply.

7. 8 Enable Remote Management via Cloud Services

The NVR supports remote management with the support of TP-Link Cloud Services. With a TP-Link ID bound, you can remotely monitor your areas on multiple platforms, including computers and mobile phones.

Follow the steps below to bind your TP-Link ID to the NVR and download the VIGI Security Manager or VIGI app.

1. Right click on the Live View screen and click **Settings** in the Main Menu. Go to **Cloud Service** > **TP-Link ID**.
2. Click **Bind**. Enter your TP-Link ID and password and click **Bind**. If you do not have a TP-Link ID, click **Sign Up** to register.

3. After binding your TP-Link ID, download VIGI Security Manager on the computer from Download Center, or download the VIGI app on your mobile phone by scanning the QR code below. Log in with your TP-Link ID. Then you can monitor the live view and manage the NVR remotely on your computer or mobile phone.

If you want to unbind the TP-link ID, click **Unbind** on the same page. Enter the password of the NVR in the pop-up window and click **Unbind**.

8

NVR Management

This chapter contains the following sections to introduce how to manage NVR:

8. 1 Upgrade the NVR Firmware

The NVR supports Online Upgrade and Local Upgrade. Follow the steps below to upgrade the firmware.

1. Get ready to upgrade the firmware.
   - (For Online Upgrade) Connect the NVR to the internet first.
   - (For Local Upgrade) Download the NVR firmware from TP-Link Download Center, place the firmware in an external storage device and plug the external storage device into the NVR.
2. Right click on the Live View screen and click **Settings** in the Main Menu. Go to **System** > **Firmware Upgrade**.
3. Click the buttons to upgrade the NVR online or locally.
   - (For Online Upgrade) Click **Check for Update** and the NVR will detect new firmware online and upgrade automatically.
   - (For Local Upgrade) Click **Select upgrade firmware** to select the firmware from the external storage device and click **Upgrade**.

   Note: When upgrading, please do not turn off the power of NVR.

8. 2 Restart/Log Out/Shut Down the NVR

To restart/log out/shut down the NVR, right click on the Live View screen and click . Then, click the corresponding buttons.

	Click to reboot the NVR. Please wait when rebooting the NVR. It may take several seconds.
	Click to log out the account. After logging out, you need to enter the password to configure and manage the device.
	Click to shut down the NVR. To protect your hard disk and data, shut down the NVR before unplugging the disk or turning off the power of NVR.

8. 3 Reset the NVR

To reset the NVR to the factory settings, right click on the Live View screen and click Settings in the Main Menu. Go to System > System Configuration > Settings Management. Then, click Reset.

Note: Please wait without any operations until the NVR is reset successfully. It may take a few minutes.

8. 4 Configure Reboot Schedule for NVR

When Reboot Schedule is enabled, the NVR reboots automatically and regularly at the specified time.

Follow the steps below to configure Reboot Schedule for NVR.

1. Right click on the Live View screen and click Settings in the pop-up Main Menu. Go to System > System Configuration > Reboot Schedule.
2. Enable Reboot Schedule, and specify the week day and reboot time. Click Apply.

8. 5 Diagnose the NVR

The NVR supports two diagnostic tools, Rapid Diagnosis and Custom Diagnosis. You can diagnose the NVR to test the network connection and delay.

Follow the steps below to diagnose the NVR.

1. Right click on the Live View screen and click **Settings** in the Main Menu. Go to **System** > **System Configuration** > **Diagnostic Tools**.
2. Use a diagnostic tools and view the results.
   - To quickly diagnose the network connection, click **Rapid Diagnosis**.

Gateway/Extranet/Cloud Service Connection	Displays the connection status between the NVR and gateway/extranet/TP-Link Cloud.
Delay	Displays the delay in milliseconds of each channel. **Not Connected** means that the NVR cannot communicate with the camera.
Packet Loss Rate	Display the ratio of lost packets.

   - For Custom Diagnosis, select an operation and specify the parameters. Click **Start Diagnosis**.

Operation	Select an operation. Ping: The NVR sends several packets to the specified IP address or domain to test the connection between them. Tracert: The NVR tries to trace the route to the specified IP address or domain within limited hops and record the route.
IP/Domain Name	Specify an IP address or a domain name to diagnose the connection.

Packet Number	(For Ping diagnose) Specify how many packets the NVR sends to the specified IP/domain name.
Packet Size	(For Ping diagnose) Specify the size of packets.
Timeout	(For Ping diagnose) Specify the maximum time that the NVR waits for response of a ping packet. If no response is received after the time, the ping packet will be regarded as lost.
Hop Count	(For Tracert diagnose) Specify the maximum hops when tracing the route.
Diagnostic Results	If you select Ping as the operation, the results show the statistics of ping packets. If you select Tracert as the operation, the results show the route that the NVR traces to the specified IP address or domain name.

9

System Management

This chapter guides you to configure the basic and advanced settings of your NVR, export and import settings, and view system logs and messages on NVR. VIGI NVR allows users to create and modify administrator accounts based on their needs. This chapter includes the following sections:

9. 1 Configure Basic Settings

To configure the settings for your NVR, right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **System** > **Basic Settings** > **Basic Settings.**

Device (NVR) Name	Displays the name of the NVR.
Language	Set the system language.
Power Line Frequency	Set the Power line frequency consistent with local utility settings to eliminate image flickering associated with fluorescent lights.
Menu Timeout	Set the time to control how long the login can be inactive on the NVR. By default, users already logging into the NVR are automatically logged out after 10 minutes.
Switching Interval	Set the interval for displaying the live view screen when switching is enabled. Click in the Main Menu to start switching. The range is from 5s to 120s.
Alarm Full Screen Display Time	Set the dwell time of channels in full screen when events are detected.
Setup Wizard	Click the check box to run setup wizard when the NVR reboots.
Mouse Sensitivity	Determines the speed of a mouse pointer and how fast it moves on the screen.

9. 2 Modify System Time

VIGI NVR provides two methods to modify the system time. You can also select the time zone according to your region. To configure these settings, right click on the Live View screen and click Settings in the pop-up main menu, then go to System > Basic Settings > Date.

NTP

NTP (Network Time Protocol) can automatically get the system time from the Internet. It is recommended to keep the default server address.

Manually

You can set the system time manually.

9. 3 Configure Interface Output

In Interface Output, you can select the display resolution for your monitor and choose to display the channel number on the Live View screen and the images in the original scale. To configure these settings, right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **System** > **Basic Settings** > **Interface Output.**

Main Screen Display Preference	Set the output interface for Main Screen when the device is connected to two monitors, HDMI or VGA. If Both is selected, both HDMI and VGA will be used as the output interface for Main Screen.
Resolution	Select the screen resolution according to your needs. With **Adaptive** selected, the NVR automatically selects the highest resolution supported by the screen.
Display Channel Number	Display the channel number on the Live View Screen.
Display Original Scale Screen	Display the images on the Live View screen in the original scale.

9. 4 Configure Channel-Zero

With Channel-Zero enabled, you can view all cameras connected to the NVR in one live view screen, but only consume the bandwidth of one channel. This function helps ensure smooth video for remote

users. To configure these settings, right click on the Live View screen and click Settings in the pop-up main menu, then go to System > Basic Settings > Channel-Zero.

Video Frame Rate	Specify the frame rate of the videos. The video is smoother when the rate increases.
Maximum Bit Rate	Specify maximum number of bits that are conveyed or processed per unit of time.
Resolution	Specify the resolution of video stream. The screen displays images clearer when the resolution increases.

9. 5 Manage User Accounts

You can modify the default user account (admin) and create user accounts based on your needs. The administrator has the permission to add and delete other user accounts. The Administrator user name is admin and the password is set when you set up your NVR for the first time. To configure these settings, right click on the Live View screen and click Settings in the pop-up main menu, then go to System > User Management.

Modify Administrator Account

For the administrator account, you have all the permissions to manage the NVR. Administrator user name is admin and the password is set when you set up your NVR for the first time. Click to modify the settings.

You can change the gesture password, the login password of NVR, the preset password for cameras and the email address for resetting NVR and cameras.

Add an Account

You can create user accounts with different permissions to manage the NVR. Follow the steps below to add a new user account.

1. Click Add. Enter the username and set the user level to Operator or User. The operator shares the same permissions as the administrator account. The user only watches the live view and playback, add cameras in Live View screen and check the logs of your NVR.

2. Set the password for logging in the account.
3. Click Save.

9. 6 Import and Export Settings

Follow the steps below to import and export the configuration file of your NVR.

Note: Before your operation, prepare an external storage device and plug it into the USB slot on the front panel of your NVR.

1. Right click on the Live View screen and click **Settings** in the pop-up main menu, then go to **System** > **System Configuration** > **Settings Management.**

2. Click **Import Configuration File** or **Export Configuration File**.
3. For configuration file import, select the file and click **Import Configuration**.

4. For configuration file export, select the file and click **Export Configuration**.

9. 7 View System Logs

The NVR uses logs to record, classify, and manage the messages of the system and devices. You can search, view, and export the logs.

Note: To export logs, an USB external storage device is required.

Follow the steps below to search and export the logs.

1. Right click on the Live View screen and click **Information** in the pop-up Main Menu. Go to **System Logs** > **System Logs**.

2. Specify the time range and log types and click Search. The filtered logs appear in the table. To view detailed information, click View Details.

Start/End Time	Specify a time range to filter the logs based on the recording time.
Type	Select a main type from the drop-down list to filter the logs. You can also click Select Subtypes to specify subtypes. All: All types of logs. Alarm: Alarms triggered by events, such as tampering, line crossing, and area intrusion. Exception: Abnormal events that may influence NVR's functions, such as video signal lost and errors of hard drive. Operation: Operations that take place on the NVR, such as login and upgrade. Information: Informational messages, such as local drive information and RTSP progress.

3. Click Export Log and select a file path in the pop-up window. Click Export Log. Note that an external storage device is required to use this feature

9. 8 View System Information

You can view the information about the devices, storage, internet and event in System Messages. Right click on the screen and click Information in the pop-up main menu, then go to System Information.

Basic Information

You can view the basic information about the NVR, internet and storage.

Channel Information

You can view the channel number, channel name, network connection status, the IP address of camera and the status of motion detection.

Stream Information

You can view the recording parameters of a certain camera.

No.	Displays the channel number.
Recording Status	The channel starts or stops recording.
Stream Type	Main Stream: Refer to the high definition quality for your live view and the larger size of recording files. Substream: Refer to the standard definition quality for your live view and the smaller size of recording files.
Video Frame Rate	Specify the frame rate of the videos. The video is smoother when the rate increases.
Resolution	Specify the resolution of video stream. The screen displays images clearer when the resolution increases.
Bite Rate	Specify the number of bits that are conveyed or processed per unit of time.

- **Hard Drive Information**

Disk No.	Displays the number of hard drive.
Disk Capacity	Displays the total space of hard drive.
Free Space	Displays the remaining storage capacity of hard drive.
Status	Displays the status of hard drive.
Type	**Read and write:** The data on the hard drive can be read and written. **Read-only:** The data on the hard drive can be only be read.

Internet Information

You can view the internet information of your NVR and the current network resources statistics.

IP	Displays the IP address of your NVR.
MAC Address	Displays the MAC Address of your NVR.
Connection Status	Displays the network connection status of your NVR.
MTU	Refers to maximum transmission unit measuring the largest data packet that a network-connected device will accept.
Port Mode	Displays the modes of transmission and the data speed of ports. For example, 100M Full Duplex means the Ethernet port of the NVR can send and receive one million bits per second in both directions.
IP Channel Access Bandwidth	Displays the bandwidth used by IP cameras.
Bandwidth of Net Receive Idle	Displays the remaining received bandwidth.

Event Information

You can view the event type, occurred time, and the channel which detects events.