Firmware User's Manual

Z-Series Camera

Z38, Z39, Z315, Z48, Z49, Z72, Z73, Z75, Z715, Z85, Z86, Z87, Z97, Z98

2023/08/30

ACTi
Connecting Vision

Copyright

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Disclaimer

CAUTION: The default password is used for your first login. To ensure account security, please change the password after your first login. You are recommended to set a strong password.

- To the maximum extent permitted by applicable law, the product described, with its hardware, software, firmware and documents, is provided on an "as is" basis.
- Best effort has been made to verify the integrity and correctness of the contents in this manual, but no statement, information, or recommendation in this manual shall constitute formal guarantee of any kind, expressed or implied. We shall not be held responsible for any technical or typographical errors in this manual. The contents of this manual are subject to change without prior notice. Update will be added to the new version of this manual.
- Use of this manual and the subsequent result shall be entirely on the user's own responsibility. In no event shall we be liable to you for any special, consequential, incidental, or indirect damages, including, among others, damages for loss of business profits, business interruption, or loss of data or documentation in connection with the use of this product.
- Video and audio surveillance can be regulated by laws that vary from country to country. Check the law in your local region before using this product for surveillance purposes. We shall not be held responsible for any consequences resulting from illegal operations of the device.
- The illustrations in this manual are for reference only and may vary depending on the version or model. The screenshots in this manual may have been customized to meet

specific requirements and user preferences. As a result, some of the examples and functions featured may differ from those displayed on your monitor.

- This manual is a guide for multiple product models and so it is not intended for any specific product.
- Due to uncertainties such as physical environment, discrepancy may exist between the actual values and reference values provided in this manual. The ultimate right to interpretation resides in our company.

Environmental Protection

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

Symbols

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

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

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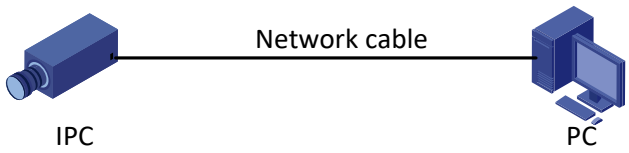
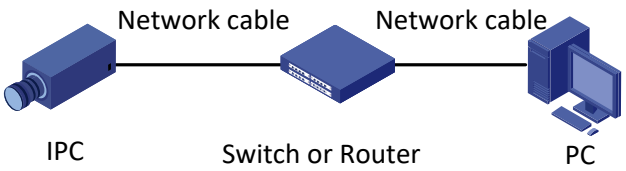
Network Connection

Before accessing a network camera from a PC, you need to connect the network camera to the PC directly with a network cable or via a switch or router.



Use a Shielded Twisted Pair (STP) cable to connect the network interfaces of the network camera and the PC.



Use Shielded Twisted Pair (STP) cables to connect the network interfaces of the camera and the switch or router.

Login

Preparation

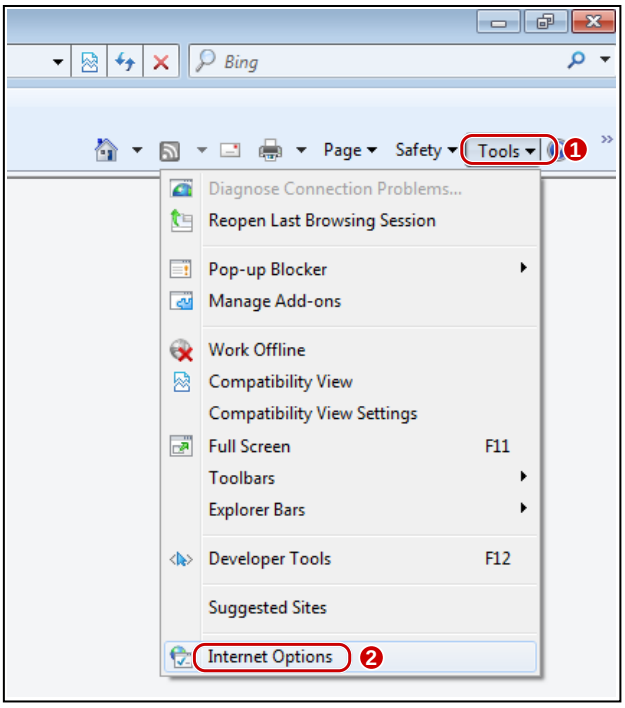
After you have completed the installation in accordance with the quick guide, connect the camera to power to start it. After the camera is started, you can access the camera from a PC client installed with a web browser or the video management software. Internet Explorer (IE) is a recommended web browser. Please contact your dealer to get the video management software. Please refer to the user manual of video management software for detailed information.

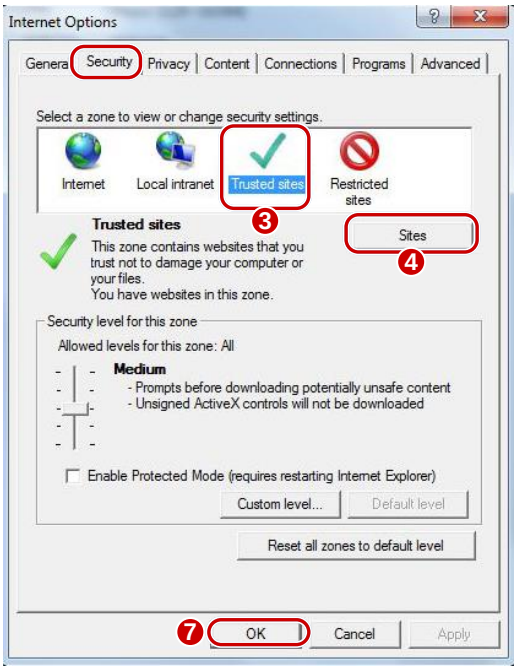
The following takes IE on a Microsoft Windows 7.0 operating system as an example.

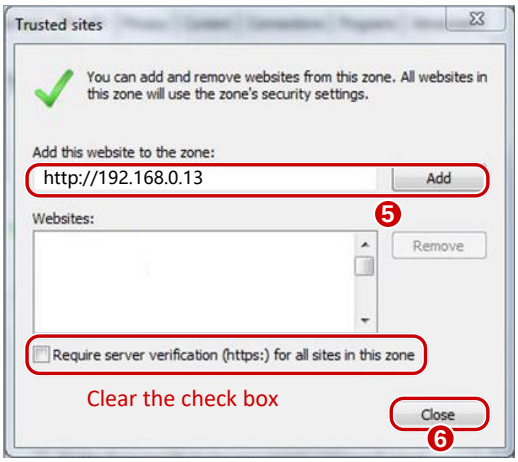
Check before **login**

- The camera is operating correctly.
- The network connection between the PC and the camera is normal.
- The PC is installed with Internet Explorer 10 or higher.
- (Optional) The resolution is set to 1440 x 900.

Add the IP address as a trusted site



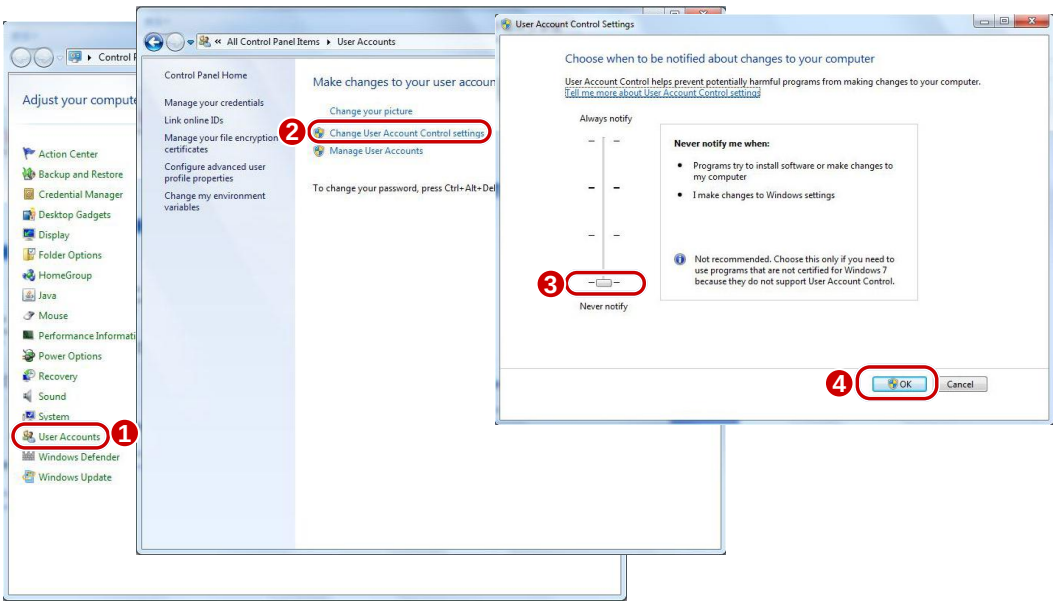




NOTE: The IP address 192.168.0.13 is the example IP address. Please replace it with the actual address of your camera.

Modify user access control settings (Optional)

Before you access the camera, follow the steps to set **User Account Control Settings** to **Never notify**.



Logging In to the Web Interface

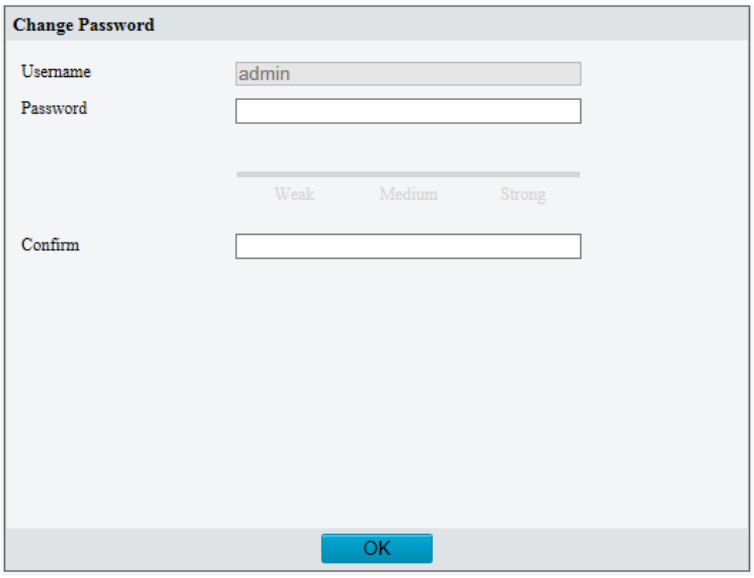
The default static IP address of the camera is **192.168.0.100**, and the default subnet mask is 255.255.255.0.

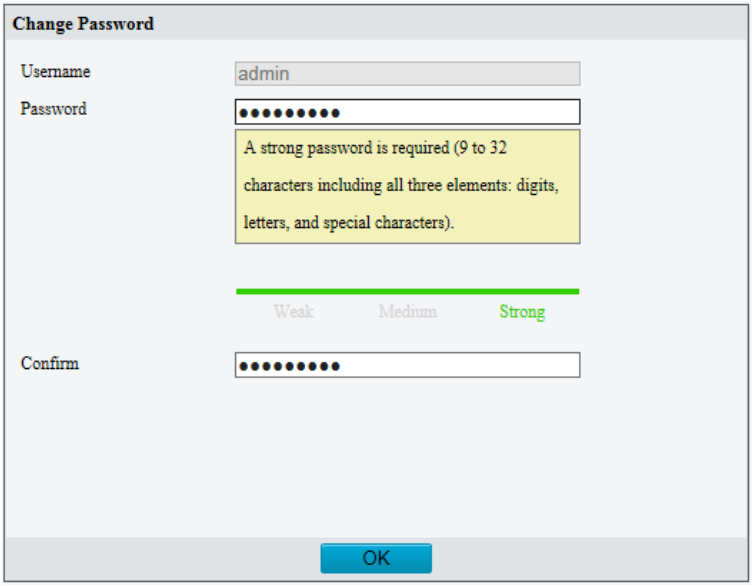
DHCP is turned on by default. If a DHCP server is used in the network, the IP address of your camera may be assigned dynamically, and you need to use the correct IP address to log in. Use the video management software to view the dynamic IP address of your camera.

The following takes IE as an example to describe the login procedure.

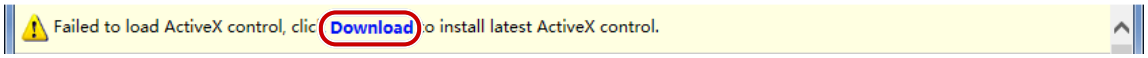
1. Browse to the login page by entering the correct IP address of your camera in the address bar.
2. If you login for the first time, you will be prompted to configure the administrator **Password**. Follow the onscreen instructions to do so.

   NOTE: The password must have a length of 9 ~ 32 characters, and should include letters, numbers and special characters (like underscore, dash, etc.)





3. Follow system prompts and install the ActiveX. You need to close your browser to complete the installation.



NOTE:

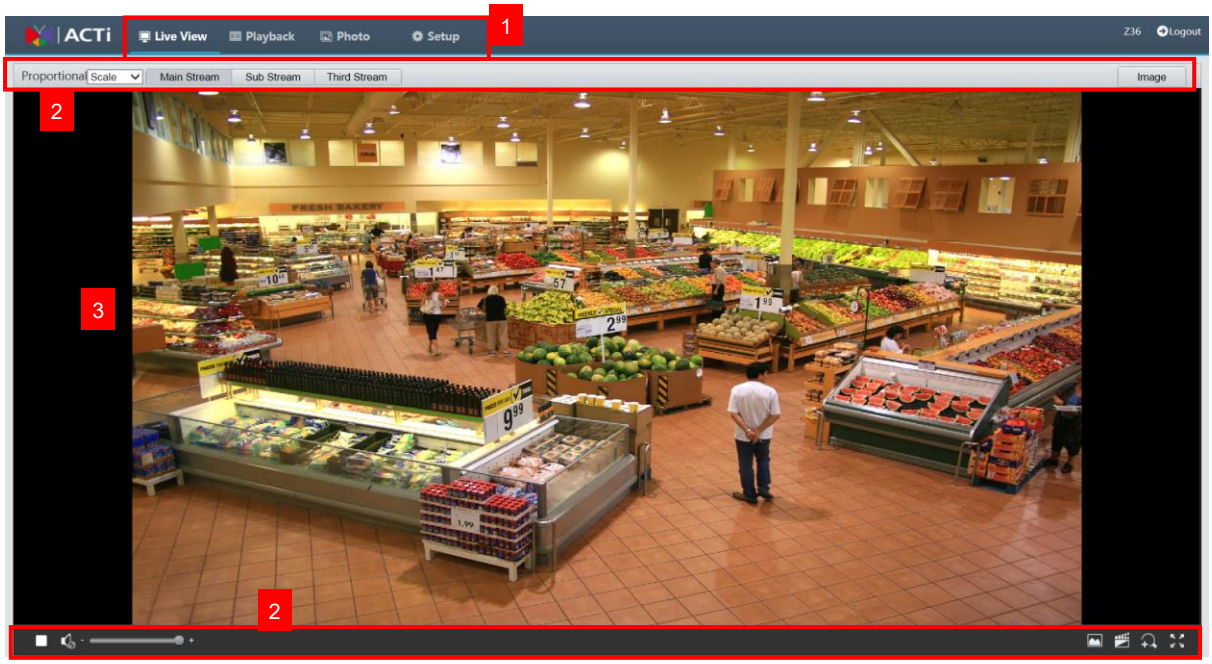
- To manually load the ActiveX, type http:///*IP address*/ActiveX/Setup.exe in the address bar and press **Enter**.
- The default password is used for your first login. To ensure account security, please change the password after your first login. You are recommended to set a strong password (no less than eight characters).
- The camera protects itself from illegal access by limiting the number of failed login attempts. If login fails six times consecutively, the camera locks automatically for ten minutes.

4. When the login page appears, enter the username and password you have earlier configured, and then click **Login**.

NOTE: If you log in with **Live View** selected, live video will be displayed when you are logged in. Otherwise, you need to start live video manually in the live view window.

Introduction to the Web Interface

By default the live view window is displayed when you are logged in to the Web interface. Below is an example.



No.	Description
1	Menu
2	Live View Toolbars
3	Live View Window

NOTE:

- The displayed live view interface, parameters displayed and value ranges may vary with models. Please see the actual Web interface for details.
- The parameters that are grayed out cannot be modified. For the actual settings, see the Web interface.
- It is recommended that you change the password when you are logged in the first time. For details about how to change a password, see ***Security***.

Initial Configuration

After you log in to the device, please perform the following initial configuration.

1	Ethernet.	Reconfigure the device IP and network parameters based on the actual networking.
2	Log out and log in again to the Web using the new IP address.	-
3	Set the system time.	Set the system time based on the actual situation.
4	(Optional) Set the management server.	Set the management server based on the actual networking.
5	(Optional) Set the server for storing photos.	Set the server for storing photos based on the actual networking.
6	Set OSD.	Set the information displayed on the screen as needed, for example, time.
7	(Optional) Manage users.	Change the default password and add common users as needed.

You can watch the live video after finishing the initial configuration. Please configure other parameters as needed.

Configuring Parameters

Common Settings

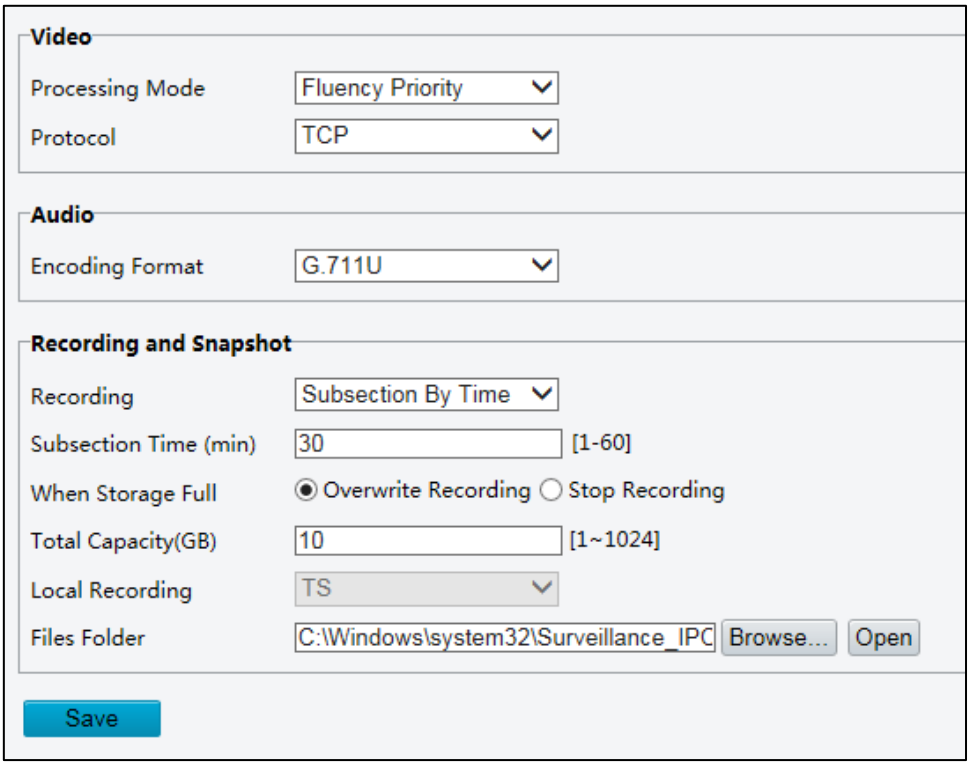
The **Common** menu provides the most basic settings that can be configured on the camera. The submenu options under **Common** can also be accessed through their corresponding category menu.

NOTE: The available submenu options may vary depending on models, please see the actual Web interface for details.

To access the most common settings of the camera, click **Setup** > **Common**. Here, you can quickly access the following:

- **Basic Info**: Shows the device information such as model, firmware version, etc. Click **Refresh** for the latest status information.
- **Local Parameters**: Allows users to configure local settings for the PC.
  NOTE: This submenu is not available in all models.

1. Select Setup > Common > Local Parameters.



2. Modify the settings as required. The following table describes some major parameters.

Parameter		Description
Video	Processing Mode	• Real-Time Priority: Recommended if the network is in good condition. • Fluency Priority: Recommended if you want short time lag for live video. • Ultra-low Latency: Recommended if you want the minimum time lag for live video.
	Protocol	Set the protocol used to transmit media streams to be decoded by the PC.
Audio	Encoding Format	Select the audio format. **NOTE:** This option is available only for cameras with audio input function.
Recording and Snapshot	Recording	• Subsection By Time: Duration of recorded video for each recording file on the computer. For example, 2 minutes. • Subsection By Size: Size of each recording file stored on the computer. For example, 5M.
	When Storage Full	• Overwrite Recording: When the assigned storage space on the computer is used up, the camera deletes the existing recording files to make room for the new recording file. • Stop Recording: When the assigned storage space on the computer is full, recording stops automatically.
	Files Folder	The save path of snapshots and recordings. The max. path length is 260 bytes. If the limit is exceeded, recording or snapshot during live view will fail, and messages will appear on the screen.

3. Click **Save**.

- **Network**: Allows users to configure the network settings of the camera. See ***Network***

Configuration on page 12.

- **Time**: Allows users to configure the camera time settings. See *Setting the System Time* on page 68.
- **OSD**: Allows users to configure the on-screen display of the camera. See *OSD Settings* on page 34.
- **User**: Allows users to add and manage users. See *User Management* on page 64.

Network Configuration

Ethernet

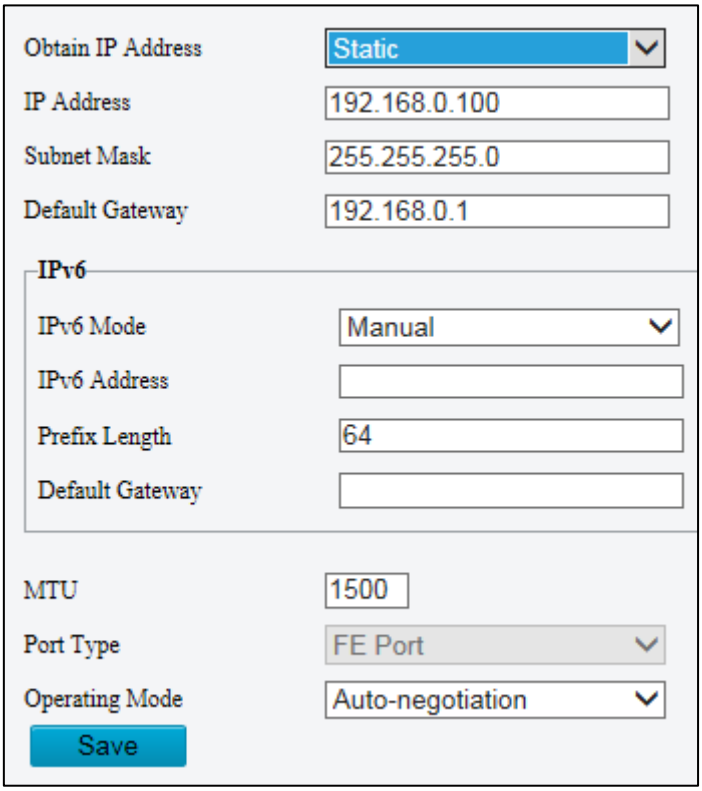
Modify communication settings such as the IP address for the camera so that the camera can communicate with other devices.

NOTE:

- After you have changed the IP address, you need to use the new IP address to log in.
- The configurations of DNS (Domain Name System) server are applicable when the device is accessed by domain name.

Static Address

1. Click Setup > Network > Network.



2. Select **Static** from the **Obtain IP Address** drop-down list.

4. Enter the IP address, subnet mask, and default gateway address. Make sure that the IP address of the camera is unique in the network.

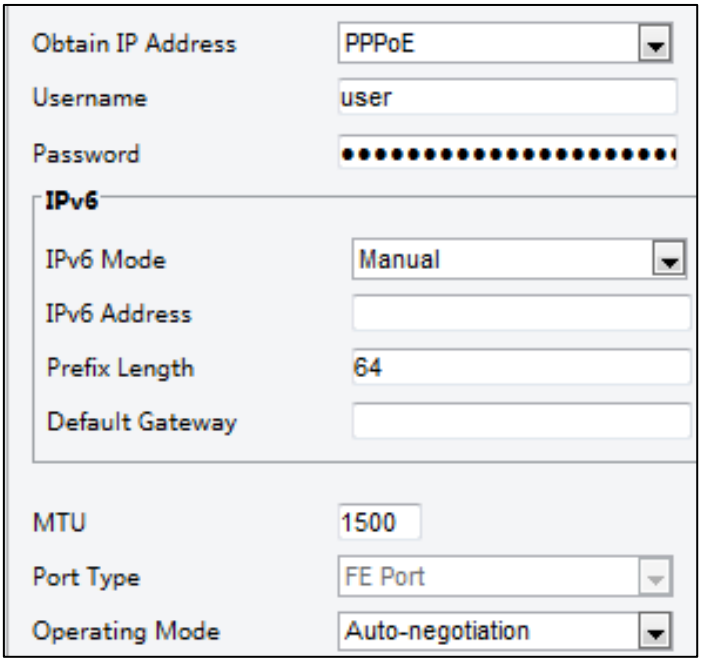
3. Click **Save**.

PPPoE

NOTE: This function is available only in some models. Please see the actual model for details.

If the camera is connected to the network through Point to Point over Ethernet (PPPoE), you need to select PPPoE as the IP obtainment mode.

1. Click Setup > Network > Network.



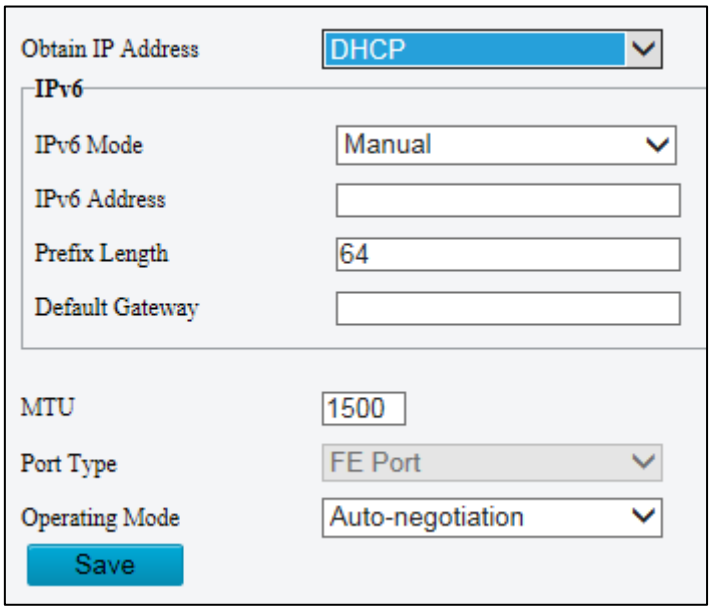
2. Select **PPPoE** from the Obtain IP Address drop-down list.
3. Enter the username and password provided by your Internet Service Provider (ISP).
4. Click **Save**.

DHCP

The Dynamic Host Configuration Protocol (DHCP) is enabled by default when the camera is delivered. If a DHCP server is deployed in the network, the camera can automatically obtain an IP address from the DHCP server.

To manually configure DHCP, follow the steps below:

1. Click Setup > Network > Network.

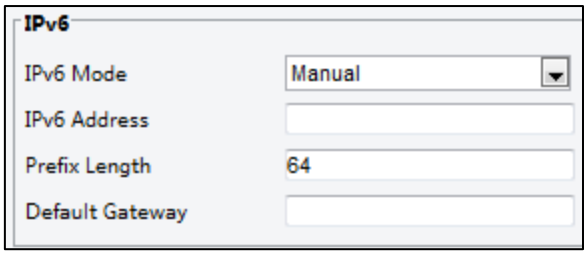


2. Select **DHCP** from the **IP Obtain Mode** drop-down list.

3. Click **Save**.

IPV6

1. Click Setup > Network > Network.



2. By default, IPV6 Mode is set to Manual.

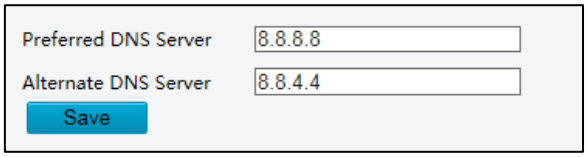
3. Enter the IPV6 address, set the prefix length and default gateway. The IP address must be unique in the network.

4. Click **Save**.

DNS

NOTE: This function is not supported by some models, please see the actual model for details.

1. Click Setup > Network > DNS.



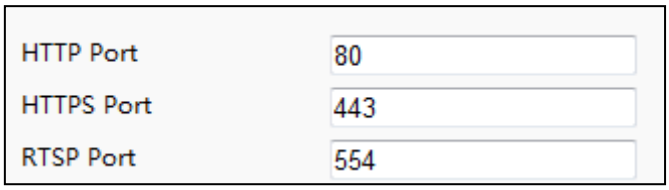
2. Configure relevant port numbers.

3. Click **Save**.

Port

NOTE: This function is not supported by some models, please see the actual model for details.

1. Click Setup > Network > Port.



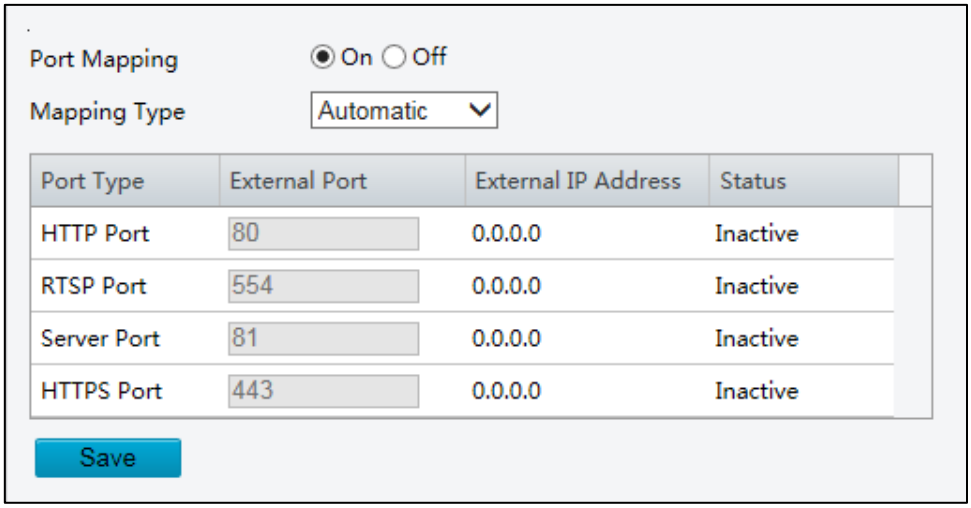
2. Configure relevant port numbers.

3. Click **Save**.

NOTE: If the entered HTTP port number has been occupied, a prompt message will be displayed as **Port conflicts. Please try again.** 23, 81, 82, 85, 3260 and 49152 are occupied by default. And other occupied ports will be detected automatically.

Port Mapping

1. Click Setup > Network > Port > Port Mapping.



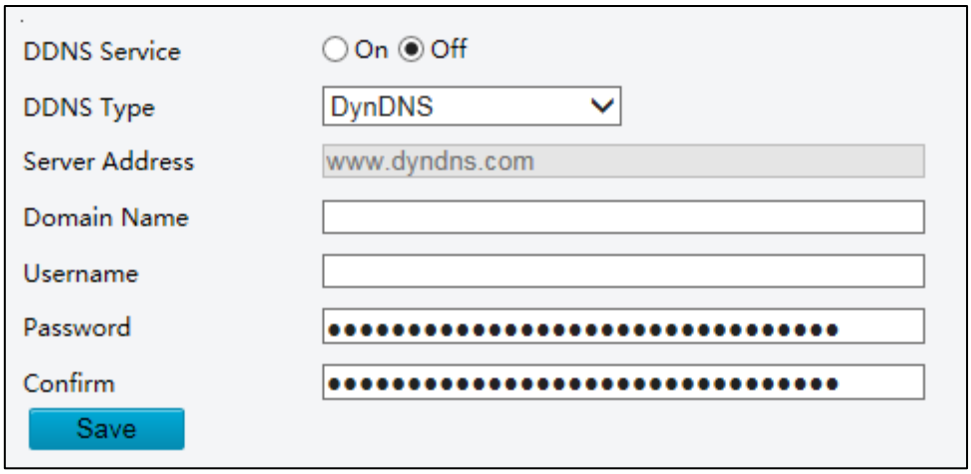
2. Enable **Port Mapping** and select mapping type. If **Manual** is selected, then external ports must be configured (external IP is obtained automatically by the camera). If the configured port is occupied, then the **Status** will show Inactive.

3. Click **Save**.

DDNS

NOTE: This function is not supported by some models, please see the actual model for details.

1. Click Setup > Network > DDNS.



2. Select **On** to enable **DDNS Service**.

3. Select the **DDNS Type**.

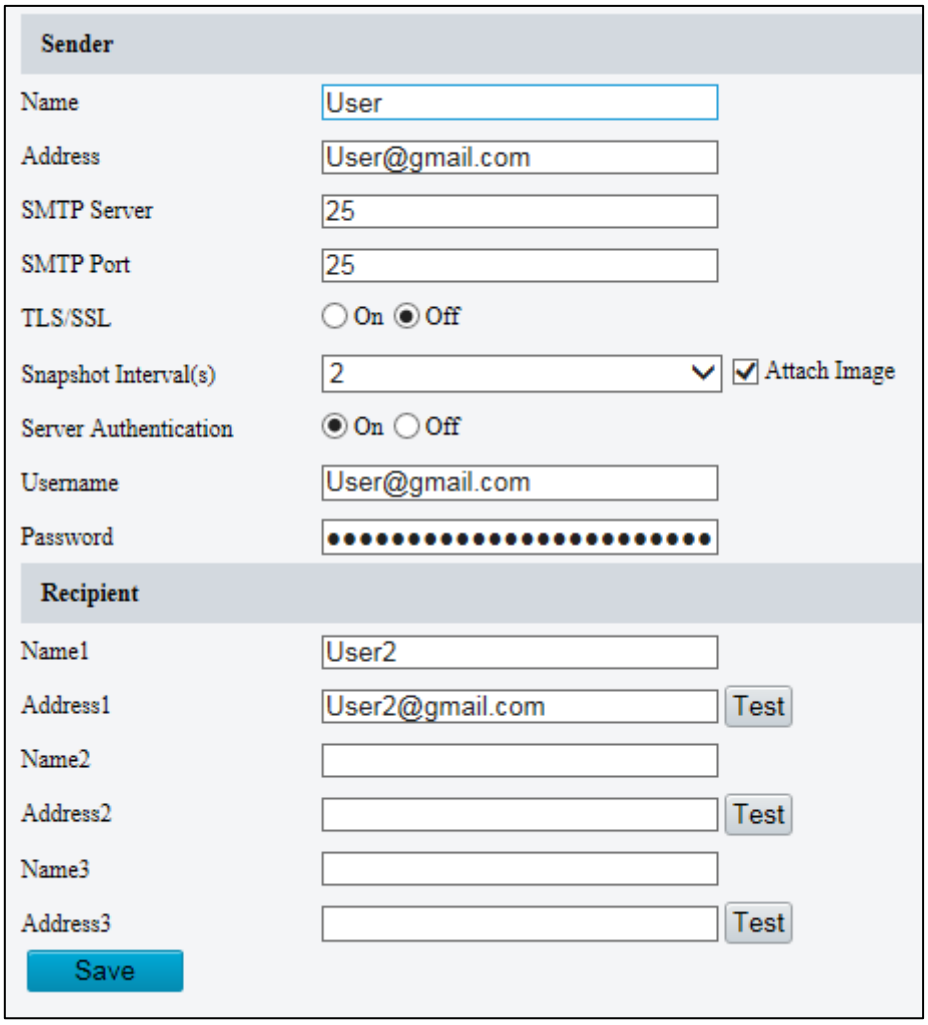
4. Complete the other settings including server address, domain name, username and password.

5. Click **Save**.

E-Mail

After the configuration of E-mail, when alarms are triggered, you will be able to send messages to the specified E-mail address.

1. Click Setup > Network > E-mail.



2. Configure relevant parameters of the sender and the recipient

The following table describes some major parameters.

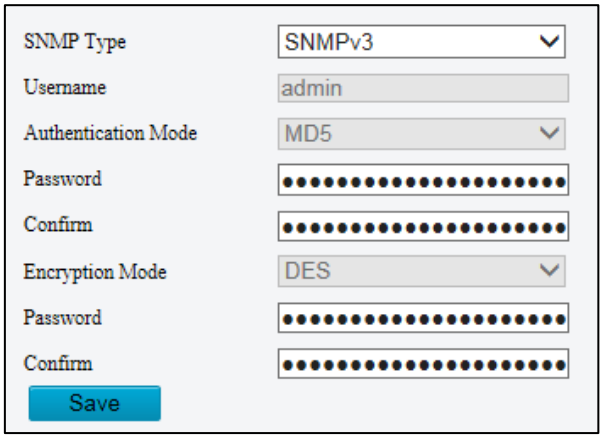
Parameter	Description
SSL	When enabled, the e-mail will be sent through SSL encryption.
Attach Image	When enabled, the e-mail will contain 3 instant snapshots as attachment according to the Snapshot Interval(s).

3. Click **Save**.

SNMP

The camera SNMP has two options: SNMPv3 (default) and SNMPv2. SNMPv3 is recommended when a camera needs to transfer configuration with the central server. Both the camera and the central server should support SNMPv3. If you choose SNMPv2, an onscreen image will remind you of potential risks and will ask if you want to continue.

1. Click **Setup > Network > SNMP**.

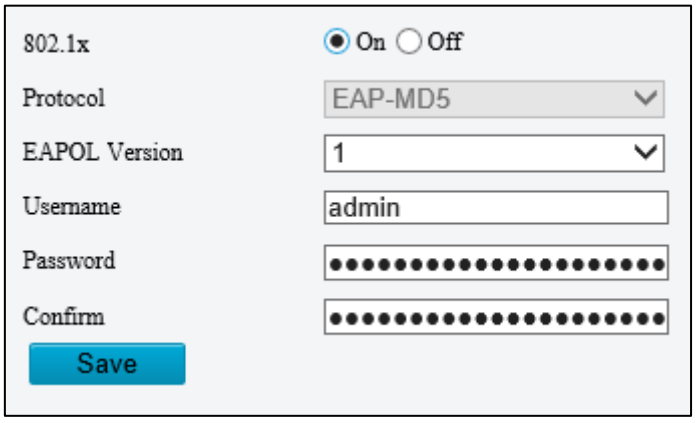


2. Select **SNMPv3** and complete the settings.
3. Click **Save**.

802.1x

802.1x provides authentication to devices (e.g. cameras) trying to connect to a network. Only authenticated devices can connect to the network. This enhances security.

1. Click Setup > Netwokr > 802.1x.

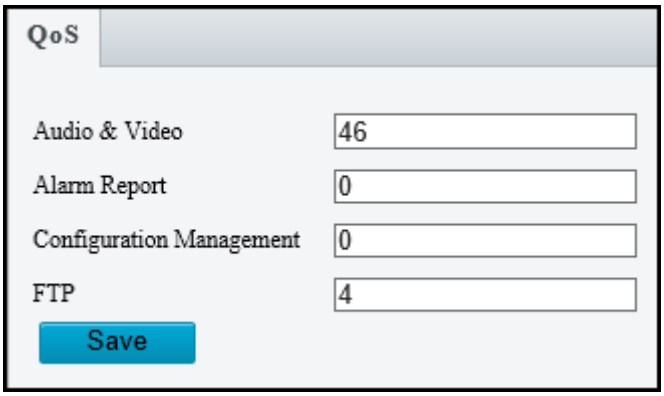


2. Select **On** and then complete the other settings.

QoS

QoS (Quality of Service) is the ability to provide better service for specified network communication. As a network security mechanism, QoS is used to address problems like network delay and blocking. When the network is overloaded or congested, QoS ensures that critical services are not delayed or discarded and that the network runs efficiently.

1. Click Setup > Network > QoS.



2. Set a priority level (0~63) for each service. At present, QoS allows you to assign different priority to audio and video, alarm report, configuration management and FTP transmission. The greater the value, the higher the priority. For example, if the value of audio and video is set to 60, alarm report and configuration management is set to 0, and FTP is set to 4, when network congestion occurs, the priority is to ensure the smooth running of audio and video.

3. Click **Save**.

NOTE: Make sure that the network switch also supports QoS mode to use this function.

Image Configuration

Image Adjustment

NOTE:

- The image parameters displayed and value ranges allowed may vary with camera model. For the actual parameters and value ranges of your camera, see the Web interface. You may move the sliders to adjust settings or enter values in the text boxes directly.
- Clicking **Default** will restore all the default image settings.

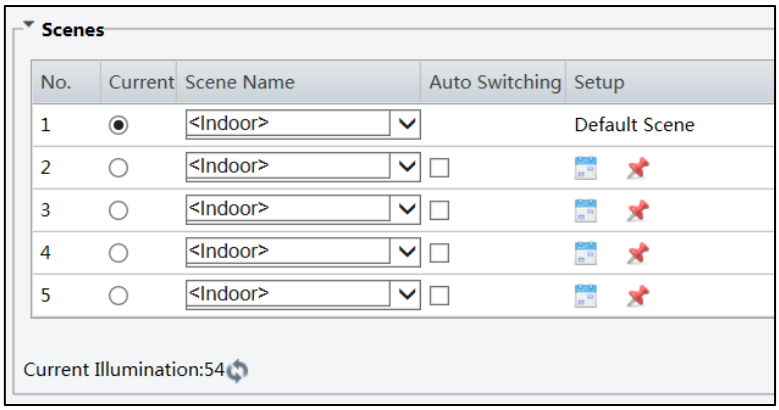
Setting the Scene

Set image parameters to achieve the desired image effects based on live video in different scenes.

1. Click Setup > Image > Image.
2. Click **Scenes**.

   The scene management page for some models is displayed as follows, you can select the desired scene in the drop-down list.

   The scene management page of some models is displayed as follows, you can take the following steps to configure the scene.



3. Select a scene, and then set scene switching parameters. The following table describes some major parameters.

Column	Description
Current	Indicates the scene that is being used. **NOTE:** Select an option button to switch to the scene and display the

Column	Description
	corresponding image parameters for the scene. The camera switches the current scene automatically when **Enable Auto Switching** is selected.
Scene Name	Name of the current scene. The device provides several preset scene modes. When you select a scene, the corresponding image parameters are displayed. You can adjust image settings according to actual needs. • Starlight: recommended for low light conditions. This option is available on select cameras only. • Indoor: recommended for indoor scenes • Road Highlight Compensation: recommended for plate snapshot on roads • WDR: set WDR default values as the image priority settings, this will turn WDR on automatically • Custom or Manual: set a scene name as needed
Auto Switching	Indicates whether to add a scene to the auto-switching list. **NOTE:** If **Auto Switching** is selected, the system switches to a scene automatically when the condition for switching to the scene is met. By default the auto-switching list includes the default scene.
Setup	Click to set conditions for auto-switching, including schedule, illumination, and current elevation (angle between the PTZ and the horizontal direction). It means that auto-switching is triggered only when illumination and the current elevation during the set time period meet the set conditions. A condition is invalid if both the start and end values are set to 0.

4. Select a scene and then click to set it as the default scene.
5. If auto-switching is enabled, the camera can switch to the scene automatically when the condition for switching to a non-default scene is met. Otherwise, the camera remains in the default scene. When auto-switching is not enabled, the camera remains in the current scene.

NOTE:

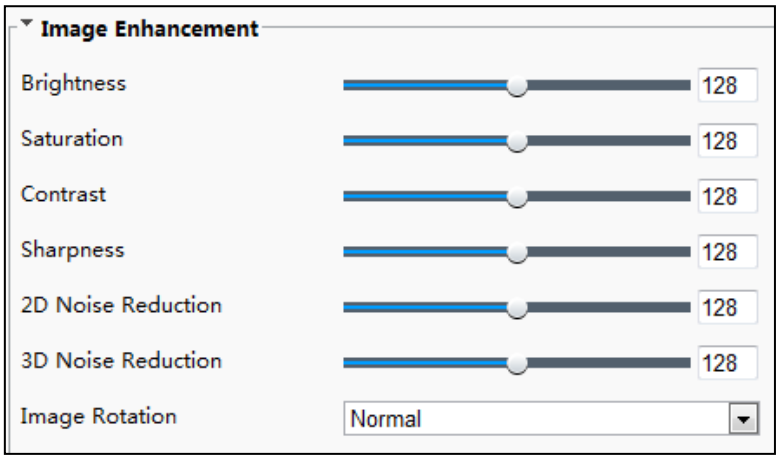
- If Auto Switching is enabled (scene settings will be unavailable), the device will switch between the set scenes. If not, the device will stay at the current scene. The device will stay at default scenes unless the non-default scenes are triggered.

- If multiple non-default scenes are triggered, then the device will switch to the scene with the minimum number (starts from 1 to 5).

Image Enhancement

NOTE: This function may vary with models, please see actual Web interface for details.

1. Click Setup > Image > Image and then click Image Enhancement.



2. Use the sliders to change the settings. You may also enter values directly. The following table describes some major parameters.

Item	Description
Brightness	Set the degree of brightness of images. Low brightness High brightness

Item	Description
Saturation	The amount of a hue contained in a color. Low saturation High saturation
Contrast	Set the degree of difference between the blackest pixel and the whitest pixel. Low contrast High contrast
Sharpness	Contrast of boundaries of objects in an image. Low sharpness High sharpness
2D Noise Reduction	Reduce the noise of images. The function may cause image blurring.
3D Noise Reduction	Reduce the noise of images. The function may cause motion blur (or ghosting in some applications).
Image Rotation	Rotation of the image.

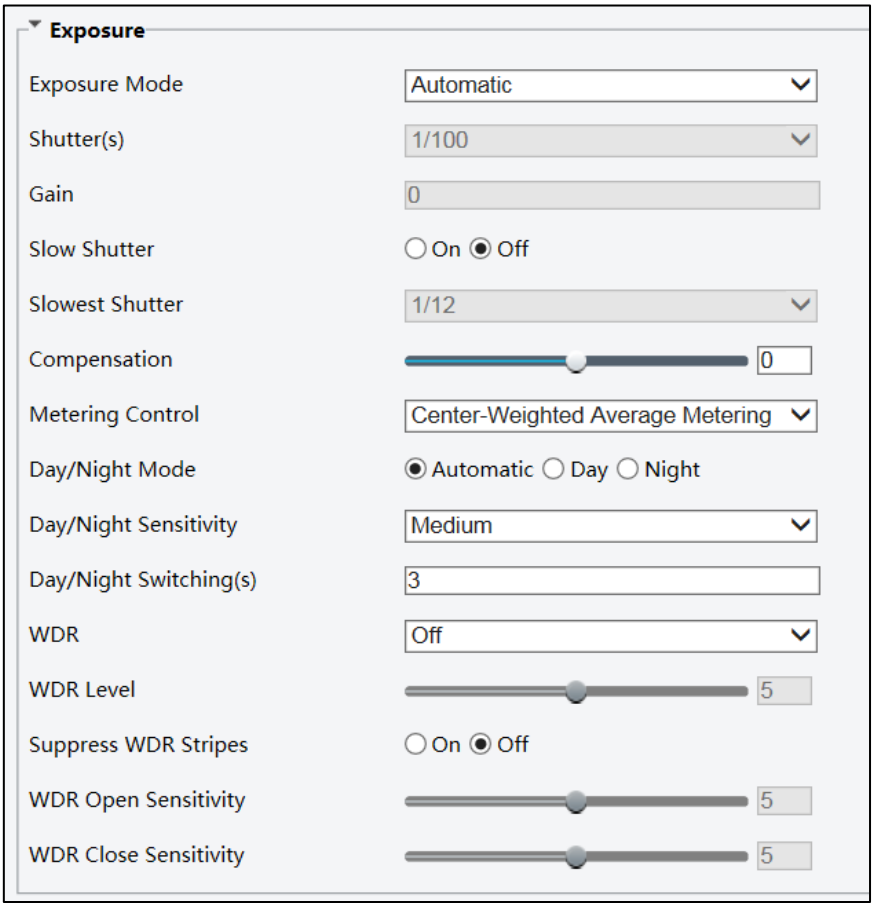
Item	Description
	Normal Flip Vertical Flip Horizontal 90° Clockwise 180° 90° Anti-clockwise

3. To restore default settings in this area, click **Default**.

Exposure

NOTE: This function may vary with models, please see actual Web interface for details. The default settings are used for common scenes. Keep the default settings unless a particular scene is required.

1. Click **Setup** > **Image** > **Image** and then click **Exposure**.



2. Set the parameters as required. The following table describes some major parameters.

Parameter	Description
Exposure Mode	Select the correct exposure mode to achieve the desired exposure effect.
Shutter (s)	Shutter is used to control the light that comes into the lens. A fast shutter speed is ideal for scenes in quick motion. A slow shutter speed is ideal for scenes that change slowly. **NOTE:** • You can set a shutter speed when **Exposure Mode** is set to **Manual** or **Shutter Priority**. • If **Slow Shutter** is set to **Off**, the reciprocal of the shutter speed must be

Parameter	Description
	greater than the frame rate.
Gain (dB)	Control image signals so that the camera outputs standard video signals according to the light condition. **NOTE:** You can set this parameter only when Exposure Mode is set to Manual or Gain Priority.
Slow Shutter	Improves image brightness in low light conditions. **NOTE:** You can set this parameter only when Exposure Mode is not set to Shutter Priority and when Image Stabilizer is disabled.
Slowest Shutter	Set the slowest shutter speed that the camera can use during exposure. **NOTE:** You can set this parameter only when **Slow Shutter** is set to **On**.
Compensation	Adjust the compensation value as required to achieve the desired effects. **NOTE:** You can set this parameter only when Exposure Mode is not set to Manual.
Metering Control	Set the way the camera measures the intensity of light. Center-Weighted Average Metering: Measure light mainly in the central part of images. Evaluative Metering: Measure light in the customized area of images. Highlight compensation: Ignore the brightness of the overexposed area of images. But selecting this setting will decrease the overall brightness of the image. **NOTE:** You can set this parameter only when Exposure Mode is not set to Manual.
Day/Night Mode	Automatic: The camera outputs the optimum images according to the light condition. In this mode, the camera can switch between night mode and day mode automatically. Night: The camera provides high-quality black and white images using the existing light Day: The camera provides high-quality color images using the existing light. Input Boolean: The camera switches between day mode and night mode based on the alarm input.
Day/Night Sensitivity	Light threshold for switching between day mode and night mode. A higher sensitivity means that the camera is more sensitive to the change of light and becomes more easily to switch between day mode and night mode. **NOTE: You can set this parameter only when** Day/Night Mode **is set to** Automatic.
Day/Night	Set the length of time before the camera switches between day mode and

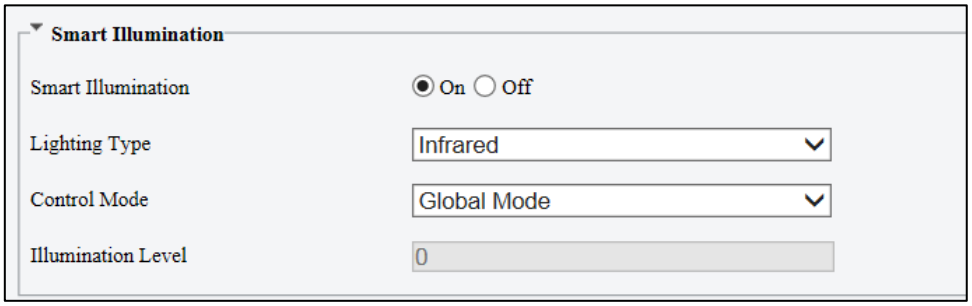
Parameter	Description
Switching(s)	night mode after the conditions for switching are met. **NOTE**: **You can set this parameter only when** Day/Night Mode **is set to** Automatic.
WDR	Enable WDR to distinguish the bright and dark areas in the same image. **NOTE: You can set this parameter only when** Exposure Mode **is set to** Automatic**,** Indoor 50Hz**,** Indoor 60Hz **and when** Image Stabilizer **and** Defog **is disabled**.
WDR Level	After enabling the WDR function, you can improve the image by adjusting the WDR level. **NOTE: Use level 7 or higher when there is a high contrast between the bright and dark areas of the scene. In the case of low contrast, it is recommended to disable WDR or use level 1-6.**
Suppress WDR Stripes	When enabled, the camera can automatically adjust slow shutter frequency according to the frequency of light to minimize stripes that may appear in images.

3. Settings will automatically be saved. To restore the default settings, click **Default**.

Smart Illumination

NOTE: This function may vary with models, please see actual Web interface for details.

1. Click **Setup > Image > Image** and then click **Smart Illumination**.



2. Select the correct IR control mode and set the parameters. The following table describes some major parameters.

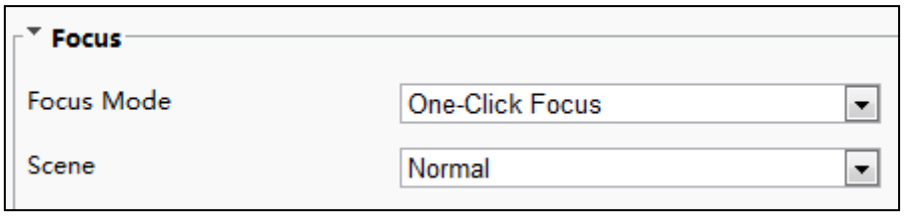
Parameter	Description
Lighting Type	• **Infrared**: The camera uses infrared light illumination. • **White Light**: The camera uses white light illumination. Not available in all cameras. **NOTE:** When Control Mode is set to Manual, camera can set illumination level from 0~1000.
Control Mode	• **Global Mode**: The camera adjusts IR illumination and exposure to achieve balanced image effects. Some areas might be overexposed if you select this option. This option is recommended if monitored range and image brightness are your first priority. • **Overexposure Restrain**: The camera adjusts IR illumination and exposure to avoid regional overexposure. Some areas might be dark if you select this option. This option is recommended if clarity of the central part of the image and overexposure control are your first priority. • **Manual**: This mode allows you to manually control the intensity of IR illumination.
Illumination Level	Set the intensity level of the IR light. The greater the value, the higher the intensity. 0 means that the IR light is turned off. **NOTE:** You can set this parameter only when **Control Mode** is set to **Manual**.

3. To restore the default settings, click **Default**.

Focus

NOTE: This function may vary with models, please see actual models for details.

1. Click **Setup** > **Image** > **Image** and then click **Focus**.



2. Select the focus mode as required.

Parameter	Description
Focus Mode	• Auto Focus: The camera focuses automatically according to the current light condition. • Manual Focus: Manually adjust camera focus as required. • One-Click Trigger: The camera is triggered to focus once when rotating, zooming or going to a preset. • One-Click Trigger (IR): In a low light condition such as during night hours or in a dark house, this focus mode achieves better effects with the IR light turned on.
Scene	• Normal: Used for common scenes, such as road and industrial park. • Long Distance: Used for long-distance monitoring on a road. For example, when the camera is installed over 30 meters high to monitor a distant road intersection.

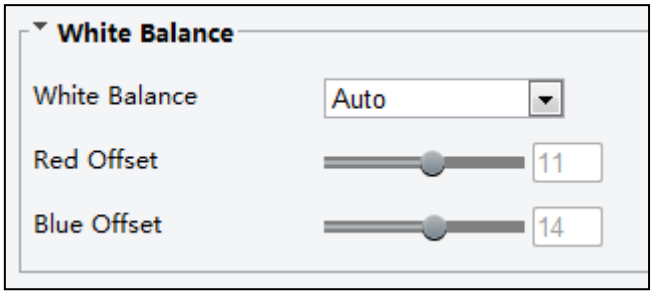
3. To restore the default settings, click **Default**.

White Balance

White balance is the process of offsetting unnatural color cast in images under different color temperatures so as to output images that best suit human eyes.

NOTE: This function may vary with models, please see the actual Web interface for details.

1. Click **Setup** > **Image** > **Image** and then click **White Balance**.



2. Select a white balance mode as required. The following table describes some major parameters.

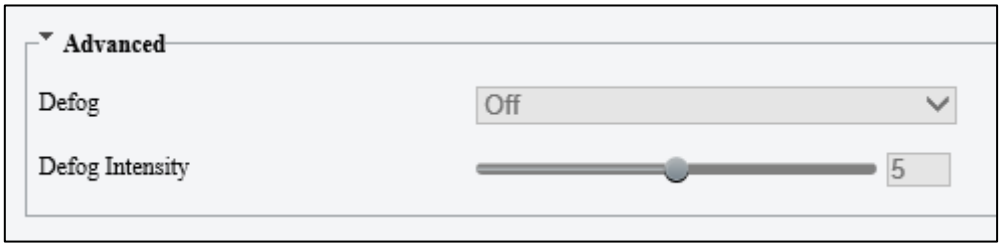
Parameter	Description
White Balance	Adjust the red or blue offset of the image: • **Auto**: The camera adjusts the red and blue offset automatically according to the light condition (the color tends to be blue). • **Outdoor**: It is recommended for the outdoor scenes with a wide range of the color temperature variation • **Fine Tune**: Allow you to adjust the red and blue offset manually. • **Sodium Lamp**: The camera adjusts red and blue offset automatically according to the light condition (the color tends to be red). • **Locked**: Lock the current color temperature settings without adjustment. • **Auto 2**: The camera adjusts the red and blue offset automatically according to the light condition (the color tends to be blue).
Red Offset	Adjust the red offset manually. **NOTE:** You can set this parameter only when **White Balance** is set to **Fine Tune**.
Blue Offset	Adjust the blue offset manually. **NOTE:** You can set this parameter only when **White Balance** is set to **Fine Tune**.

3. To restore the default settings, click **Default**.

Advanced > Defog

Use the Advanced > Defog function to adjust the clarity of images captured in fog or haze conditions. Parameters may vary depending on camera model.

1. Click **Setup** > **Image** > **Image** and then click **Advanced**.



NOTE:

- This function can be configured only when WDR is disabled.
- Only some camera models support optical defog. When **Defog** is set to **On**, defog intensity level 6-9 represent optical defog, and images change from color to black/white when defog intensity is set from level 5 to 6; if **Defog** is set to **Auto** and defog intensity level is somewhere between 6-9, images do not automatically change to black/white in light fog conditions; the camera automatically switches to optical defog only in heavy fog conditions.

2. Enable the defog function and then select a level for the scene. Level 9 achieves the maximum defog effects, and level 1 achieves the minimum.

Digital Defog Off

Digital Defog On

Optical Defog Off

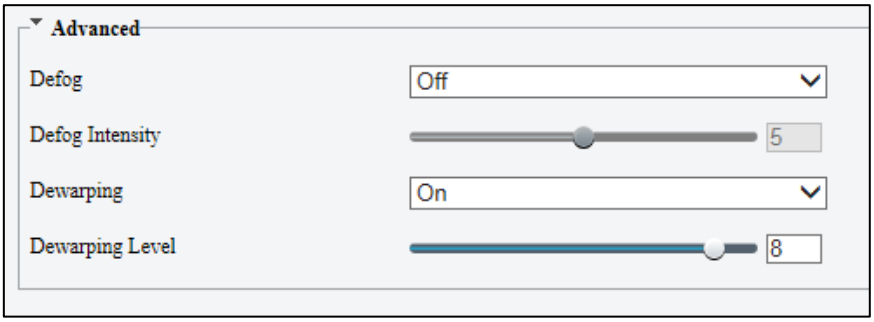
Optical Defog On

3. To restore the default settings, click **Default**.

Advanced > Dewarping

Use the Advanced > Dewarping function to enable or disable image dewarping. Availability varies depending on model.

1. Click **Setup** > **Image** > **Image** and then click **Advanced**.



2. Enable the dewarping function and then select a level. Level 9 achieves the maximum dewarp effects, and level 1 achieves the minimum.

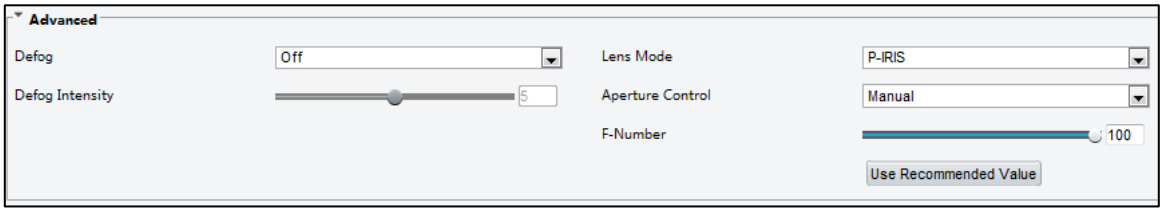
3. To restore the default settings, click **Default**.

Advanced > Iris and Lens

NOTE:

- This function is only supported by certain network box camera types, please see the actual model for details.
- When using the lens with P-Iris control mode that supports Z/F function, connect the iris control cable to the Z/F port of the camera. When using the lens with DC-Iris control mode that does not support Z/F function, connect the iris control cable to the IRIS port of the camera.

1. Click **Setup** > **Image** > **Image** and then click **Advanced**.



2. Modify the settings as required. The following table describes some major parameters.

Parameter	Description
Lens Mode	• Z/F: to modify focus and zoom. • P-Iris: to modify iris value. • DC-IRIS: the maximum iris value by default.
Aperture Control	Automatically or manually adjust iris. **NOTE:** You can set this parameter only when **Lens Mode** is set to **P-Iris**.
F-Number	Change aperture manually.

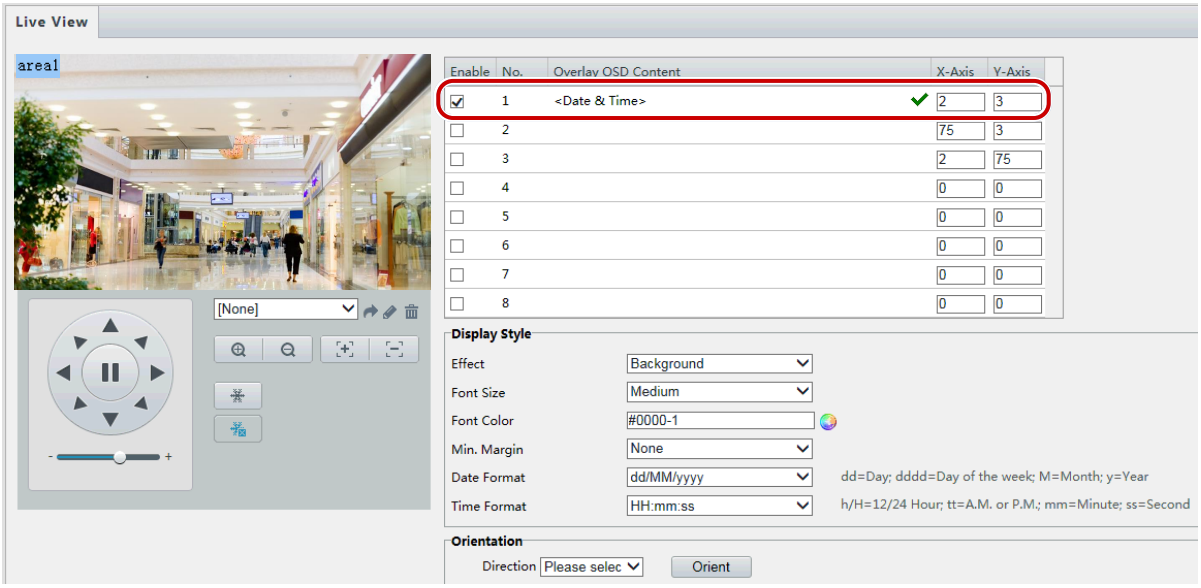
3. To restore the default settings, click **Default**.

OSD Settings

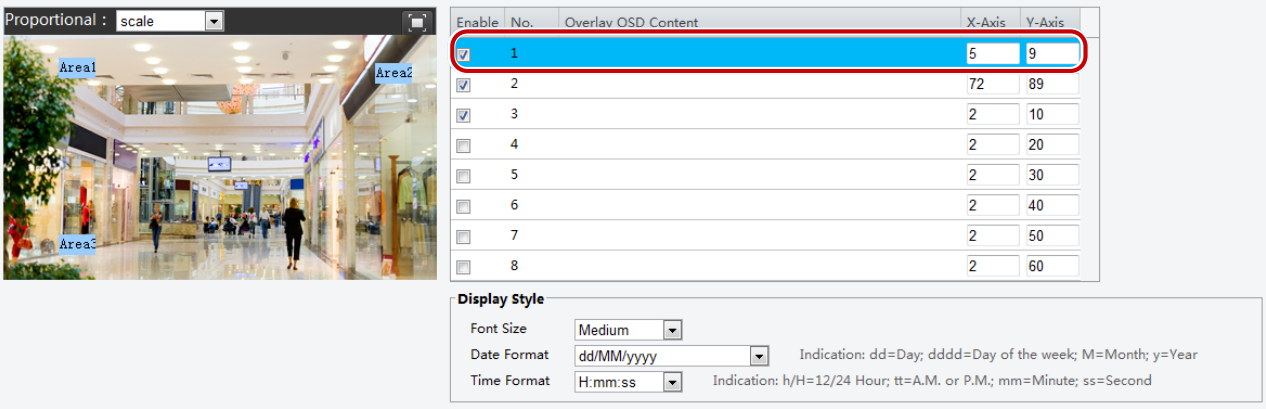
On Screen Display (OSD) is the text or image displayed on the screen with video images. OSD contents may include time and other customized contents.

NOTE: This function may vary with models, please see the actual Web interface for details.

1. Click **Setup** > **Image** > **OSD**.



The OSD interface of some models is displayed as follows.



2. Select the check box, the content of the OSD and then set the position to display it.

   - Position: Click the desired box in the **Live View** area. After the cursor shape is changed, click and hold the button to move the box to the desired position. To set the position precisely, use the X and Y coordinates under **Overlay Area**.
   - Overlay OSD Content: The drop-down list provides **Time**, **Preset** and **Serial Info**. You may also select **Custom** and enter the content you want.

- After you have set the position and OSD content, the ✔ symbol appears in the **Status** column, which means that the OSD is set successfully. You may set multiple lines of contents for each area and use ∧ and ∨ to adjust the sequence of display.

3. After you have completed the settings, a message appears to indicate the successful settings.

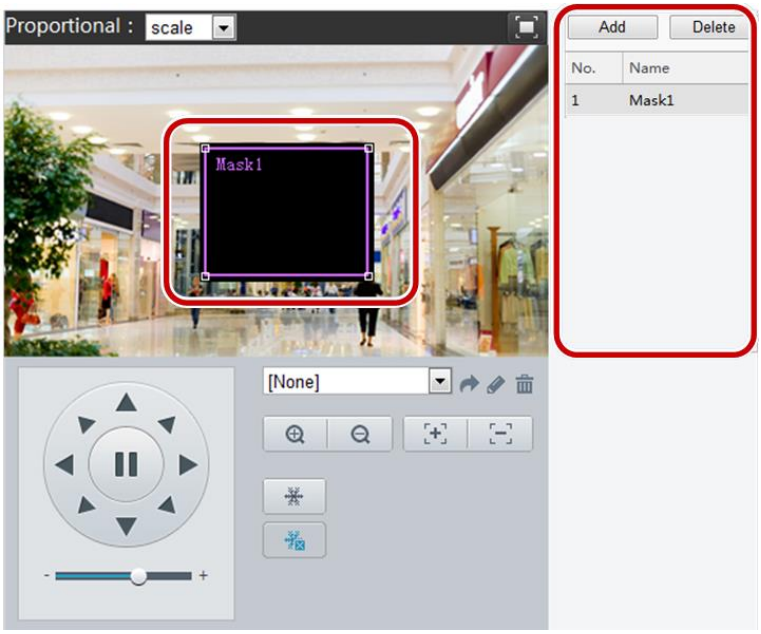
You may right-click in the preview window and then choose to view in full screen mode or at an aspect ratio. You may also double-click the preview window to enter or exit full screen mode.
To cancel OSD for an area, clear the OSD content in the **Overlay OSD Content** column or select **None** in the **Position** column.
The following shows an example time OSD.

Privacy Mask

On certain occasions, you may need to set a mask area on the camera image to protect privacy, for example, the keyboard of an ATM machine. When PTZ changes its position or zooms, the Privacy Mask will be adjusted accordingly to protect the area all along.

NOTE: This function may vary with models, please see the actual Web interface for details.

1. Click Setup > Image > Privacy Mask.



2. Click Add to add a privacy mask, and click Delete to delete a mask.

- To mask a position: Click the box (with **Mask** displayed on it) to activate the mask. After the cursor shape has changed, drag the box to the intended position.
- To mask an area: Use the mouse to draw a box on the area you want to mask.
- When privacy mask is configured, the intended area is blocked. The following shows an example.

Video and Audio Configuration

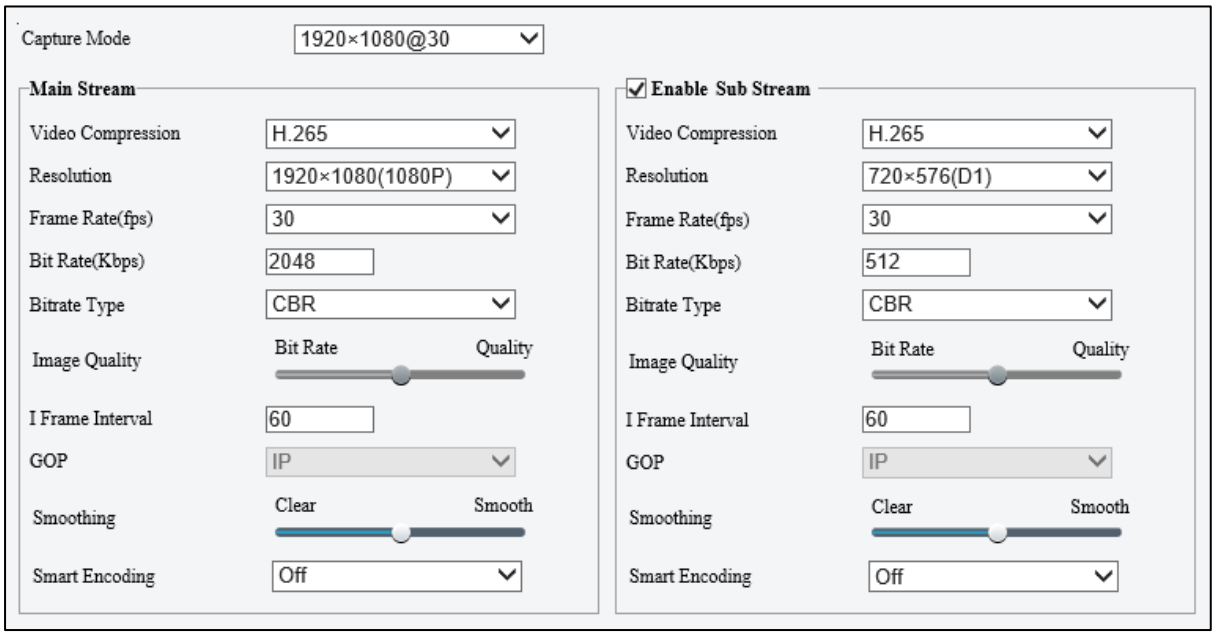
Video Configuration

You can set video parameters that your camera supports and view the current status of BNC output. If available, you may also enable sub-stream and third stream as required.

NOTE:

- This function may vary with models. Only some camera models support the third stream. To determine if your camera supports this function, see the Web interface.
- After enabling the sub or third stream, modify the parameters as required. The parameters for the sub and third stream have the same meanings as that for the main stream.

1. Click **Setup > Video or Video & Audio > Video**.



2. Modify the settings as required. The following table describes some major parameters.

Parameter	Description
Video Compression	Three options: H.265, H.264 and MJPEG. **NOTE:** • Image Quality cannot be set when Video Compression is set to H.265 or H.264. When set to MJPEG, only three frame rates are available: 1, 3 and 5; and Bit Rate, I Frame Interval, Smoothing and U-Code cannot be set. • The bit rate changes to the default when you change the setting

Parameter	Description
	between H.264 and H.265. The default bit rate for H.265 is half of that for H.264.
Bitrate Type	• CBR: Constant Bit Rate, which means that the camera transmits data at a constant data rate. • VBR: Variable Bit Rate, which means that the camera adjusts the bit rate dynamically according to image quality.
Frame Rate	Frame rate for encoding images. Unit: FPS (frame per second). **NOTE:** To ensure image quality, note that the frame rate should not be greater than the reciprocal of shutter speed.
Image Quality	When **Encoding Mode** is **VBR**, you can move the slider to adjust quality level for images. Moving the slider toward **Bit Rate** decreases the bit rate and may affect image quality. Moving the slider toward **Quality** increases the bit rate and improves image quality.
I Frame Interval	Interval at which an I frame is encoded.Normally, a shorter I frame interval offers better image quality but consumes more bandwidth.
GOP	Group Of Pictures in MPEG video encoding. This parameter specifies the order in which intra-frames (I frame) and inter-frames are arranged.
Smoothing	Set the extent of smoothing. Choosing **Clear** means disabling **Smoothing**. Moving the slider toward **Smooth** increases the level of smoothing but will affect image quality. **NOTE:** In a poor network environment, you can enable smoothing to get more fluent video.
BNC Output	BNC output supports NTSC and PAL.

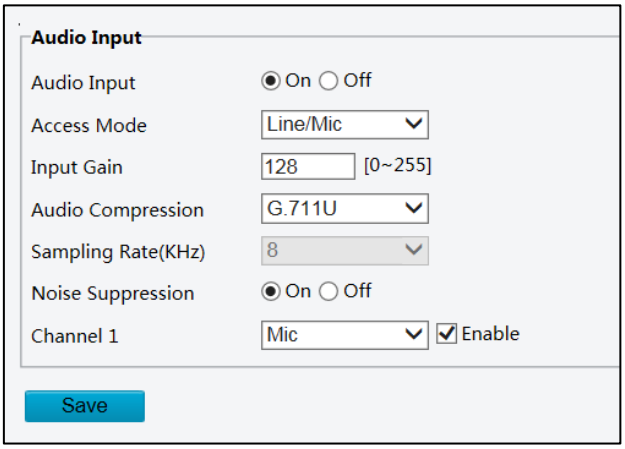
3. Click **Save**.

Audio Configuration

Audio configuration means setting audio encoding parameters for your camera.

NOTE: This function is not supported by some models, please see the actual model for details.

1. Click **Setup > Video & Audio > Audio**.



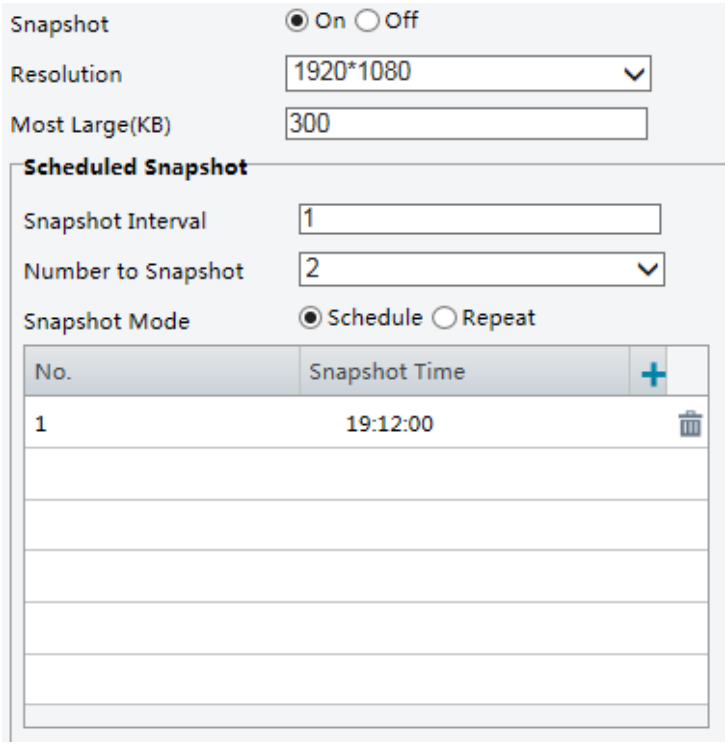
2. Modify the settings as required. The following table describes some major parameters.

Parameter	Description
Audio Input	No audio data will be encoded when **Off** is selected. **NOTE:** It is recommended to select **Off** if you do not need audio. This can improve device performance to some extent.
Access Mode	Currently only Line/Mic. **NOTE**: This function is not available to devices with two audio output channels.
Input Gain	Audio signal amplification for sampling. The greater the gain, the greater amplification.
Audio Compression	Three options: G.711U, G.711A and ACC-LC. G.711U and G.711A support 8K sampling rate only, and ACC-LC supports 8K, 16K and 48K sampling rates.
Noise Suppression	Used to reduce noise in images. To enable noise suppression, select **On**.
Channel	Audio output channel. To enable audio output, select **Enable**. **NOTE**: Only some camera models support two channels.

3. Click **Save**.

Snapshot

1. Click **Setup > Video or Video & Audio > Snapshot**.



2. Select **On**, and then set resolution, most large and schedule as needed. Some parameters are described in the table below.

Parameter	Description
Snapshot Interval	Interval between two snapshots. For example, with Snapshot Interval set to 1 and Number of Snapshot set to 2, the camera will take 2 snapshots (take one first and then take another after 1 second).
Number to Snapshot	Currently 1, 2, and 3 snapshots are allowed.
Snapshot Mode	**Schedule**: You need to set a snapshot time, e.g., 19:12:00, which means the camera takes a snapshot at 19:12:00. **Repeat**: Allows you to set an interval(unit: sec). For example, according to the settings shown in the figure above, 60 seconds must elapse before the camera takes another two snapshots.

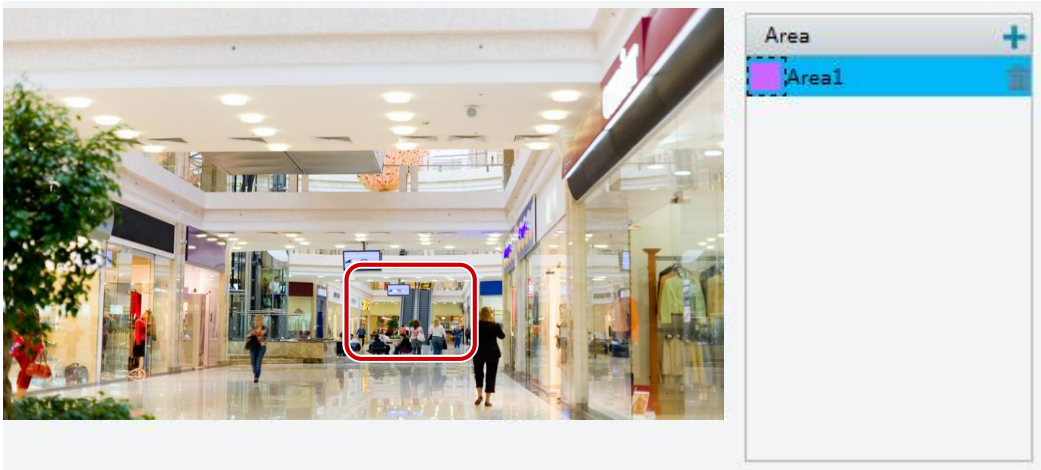
3. Click **Save**.

ROI

When Region of Interest (ROI) is enabled, the system ensures image quality for ROI first if the bit rate is insufficient.

NOTE: This function is not supported by some models; please see the actual model for details.

1. Click **Setup > Video or Video & Audio > ROI**.



2. Click , and then drag the mouse to cover the intended part of the image. To delete, select the area and then click .

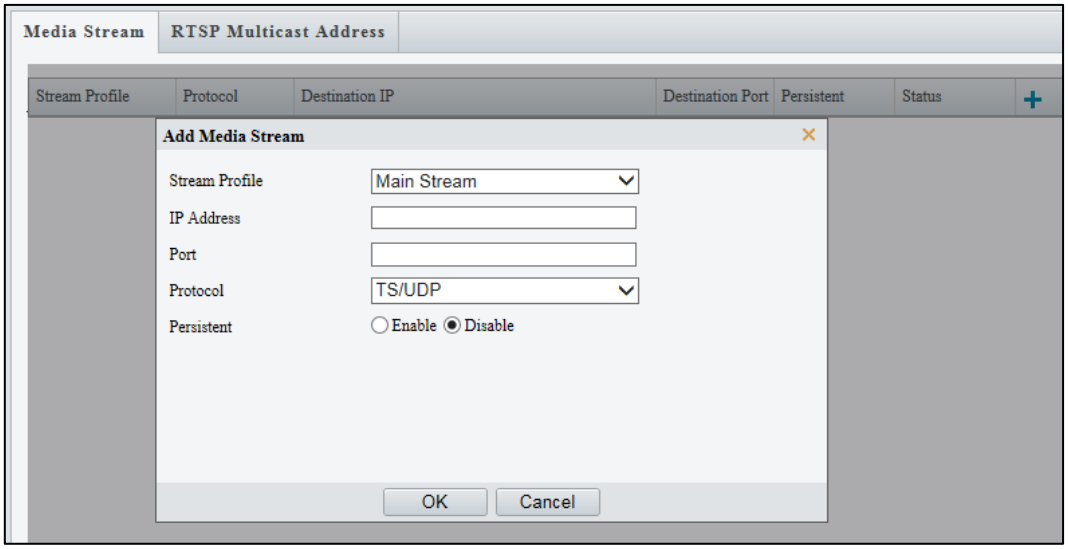
Media Stream Configuration

NOTE: This function is only supported by certain models, please see the actual model for details.

Media Stream

You can display the established media streams from a camera. You may also set the camera so it transmits code streams by the UDP or TCP protocol to a specified IP address and port number. The settings can be saved and take effect after the camera is restarted.

1. Click **Setup > Video or Video & Audio > Media Stream**.
2. Click , select a stream type, and then set the IP address and port number of the unicast or multicast group for the decoding device that receives audio and video streams from the camera.

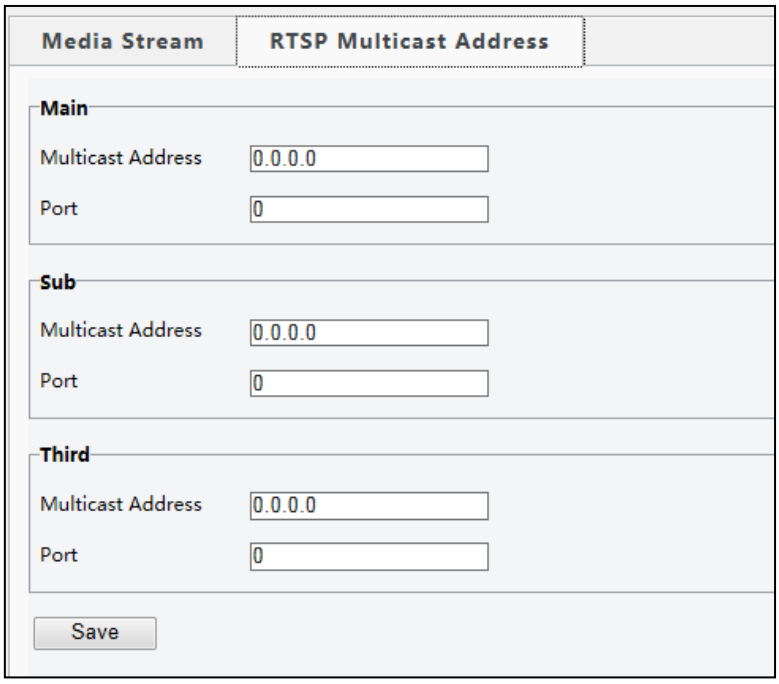


3. If you want the device to establish the media stream that has been configured before automatically after the restart, select **Enable** for **Persistent**.
4. To delete a stream, click .
5. Click **Submit** to complete the operations.

RTSP Multicast Address

After an RTSP multicast address is configured, the third-party player can request the RTSP multicast media stream from the camera through the RTP protocol.

1. Click **Setup > Video & Audio > Media Stream > RTSP Multicast Address**.



2. Set the multicast address (224.0.0.0 to 239.255.255.255) and port number (0 to 65535).
3. Click **Save**.

Intelligent Monitoring

Use intelligent monitoring to monitor people, roads and moving objects. Intelligent monitoring includes forbidden area (intrusion) detection and line crossing (cross line) detection. The supported functions may vary with device model.

Cross Line Detection

Cross Line detection is used to detect objects that cross a virtual line in the live video and triggers the alarm when such event is detected.

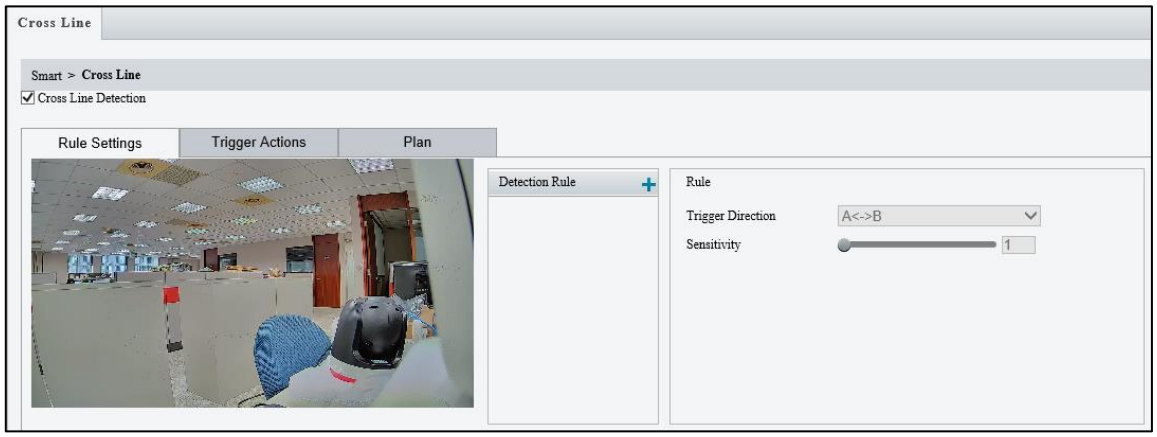
1. Click **Setup > Intelligent > Smart**.

2. Check to enable **Cross Line** detection.

NOTE:

- Only some camera models support this function.
- The supported alarm triggering and arming schedule may vary with camera model.
- Please see the actual Web interface for details.
- The camera takes the snapshot and sends the snapshot to the back end.

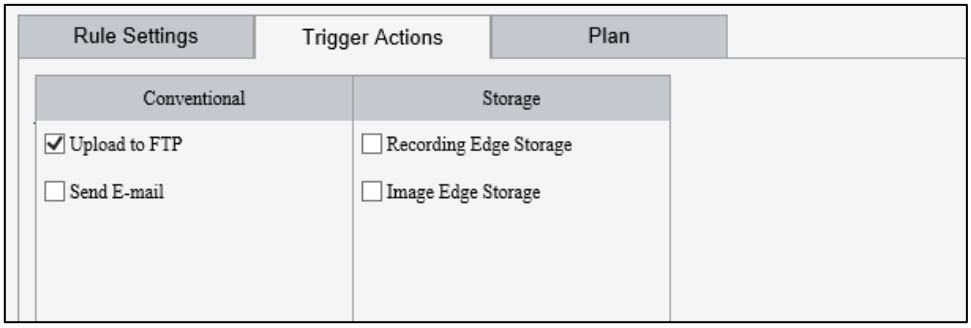
3. Then click .



4. In the detection area, click , a add a new detection area. Drag the box to reposition it or drag the end points to resize the region of interest. To delete a detection area, click .

5. On the small preview window, drag the line to the intended position and set the detection range.

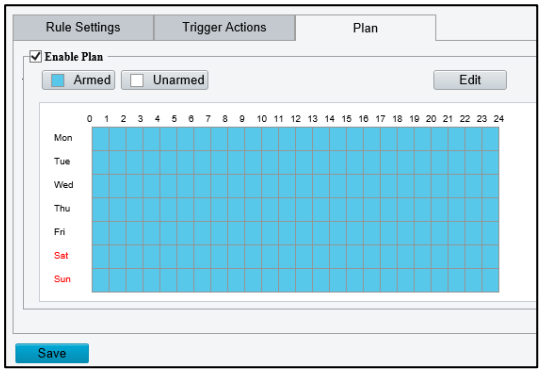
6. Set the direction and sensitivity for the camera to decide whether to report a cross line detection alarm.
7. Set the priority of detection to judge the trigger sequence when detection rules are triggered at the same time.
8. Set snapshot object type to judge whether to snap small pictures.
9. Set object filter type and size, alarm-triggered actions and arming schedule as required.
10. Set the alarm trigger in **Trigger Actions** page and the plan or schedule of detection in the **Plan** page.



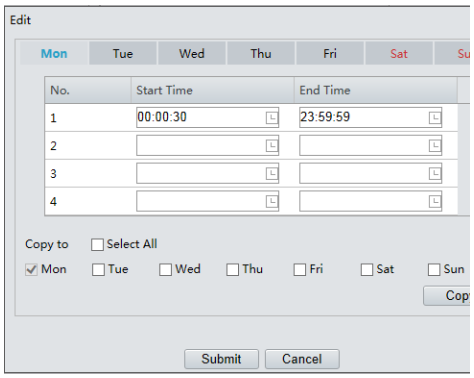
The following table describes the major alarm-triggered actions and how to set a plan.

Item	Description
Upload to FTP	With **Upload to FTP** selected, the camera will automatically upload snapshots to the specified FTP server when an alarm is triggered. **NOTE:** Make sure you have completed ***SNMP*** and ***Snapshot*** before using this function.
Send E-mail	With **Send E-mail** selected, the camera will automatically send snapshots to the specified E-mail address when an alarm is triggered. **NOTE:** Make sure you have completed ***E-Mail*** and ***Snapshot*** before using this function.
Storage	With **Storage** enabled, the camera automatically starts recording after an alarm is triggered. Check the desired storage option. **NOTE:** Make sure you have completed the post-recording time settings before using this function.

11. Click **Plan** page tab to set the alarm schedule. Select the check box and set the start and end times during which motion detection alarm is effective. You can directly drag the mouse to draw a plan and click **Edit** to edit time periods in the table. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.
12. You can select from Monday to Sunday and set four periods for each day.



Drag the mouse to draw a plan



Edit time period on this table

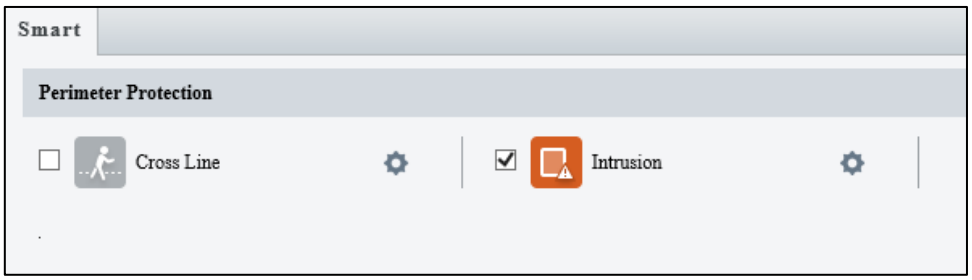
5. **NOTE:** Plan drawing using a mouse is only supported by IE versions later than 8.0. After setting the plan for one day, you can apply the same settings to other days by clicking **Copy** and **Paste**

13. Click **Save**.

Intrusion Detection

Intrusion detection is used to detect objects that enter a specified area in the live video and triggers the alarm when such event is detected.

1. Click **Setup > Intelligent > Smart**.

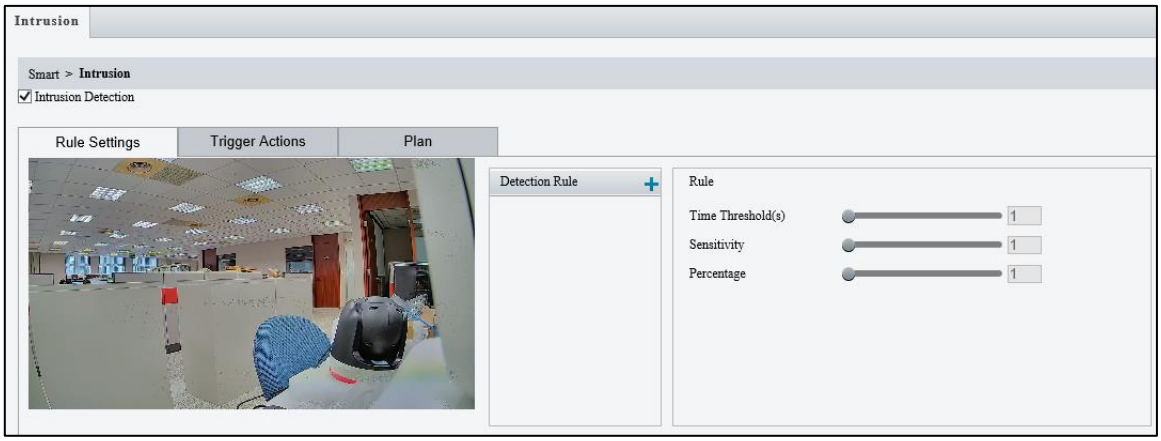


2. Check to enable **Intrusion** detection.

NOTE:

- This function is available on select camera models only.
- The supported alarm triggering and arming schedule may vary with camera model.
- Please see the actual Web interface for details.
- The camera takes the snapshot and sends the snapshot to the back end.

3. Then click .

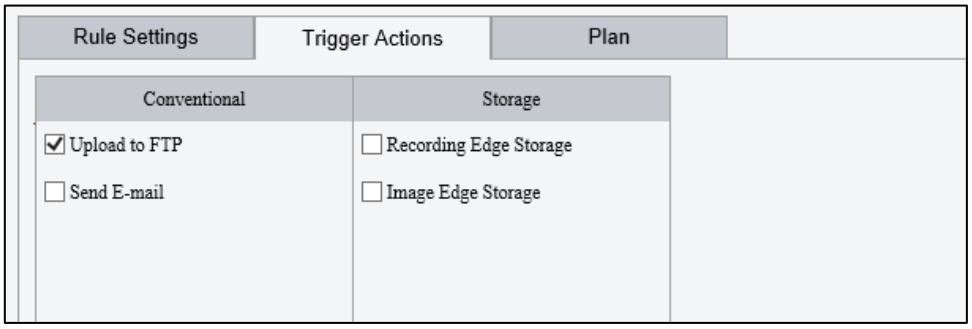


4. In the **Detection Rule** area, click to add a new detection area. To delete a detection area, click .
5. Drag the borders of the box to set the intended position and range.
6. Set time threshold, sensitivity for the camera to decide whether to report an intrusion detection alarm.

   - Time Threshold: The minimum length of time that the intruder stays in the detection area before an alarm will be reported.

- Sensitivity: Sensitivity of detection. A greater value means higher detection sensitivity.

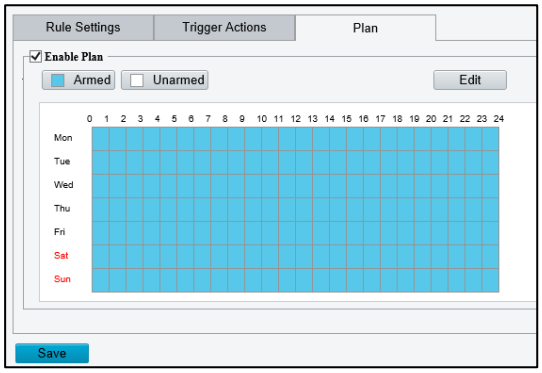
7. Set the priority of detection to judge the trigger sequence when detection rules are triggered at the same time.
8. Set snapshot object type to judge whether to take small pictures.
9. Set object filter type and size, alarm-triggered actions and arming schedule as required.
10. Set the alarm trigger in **Trigger Actions** page and the plan or schedule of detection in the **Plan** page.



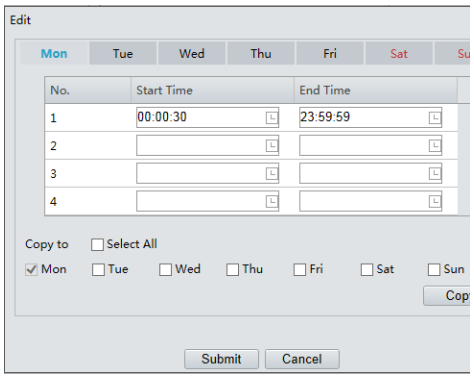
The following table describes the major alarm-triggered actions and how to set a plan.

Item	Description
Upload to FTP	With **Upload to FTP** selected, the camera will automatically upload snapshots to the specified FTP server when an alarm is triggered. **NOTE:** Make sure you have completed ***SNMP*** and ***Snapshot*** before using this function.
Send E-mail	With **Send E-mail** selected, the camera will automatically send snapshots to the specified E-mail address when an alarm is triggered. **NOTE:** Make sure you have completed ***E-Mail*** and ***Snapshot*** before using this function.
Storage	With **Storage** enabled, the camera automatically starts recording after an alarm is triggered. Check the desired storage option. **NOTE:** Make sure you have completed the post-recording time settings before using this function.

11. Click **Plan** page tab to set the alarm schedule. Select the check box and set the start and end times during which motion detection alarm is effective. You can directly drag the mouse to draw a plan and click **Edit** to edit time periods in the table. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.
12. You can select from Monday to Sunday and set four periods for each day.



Drag the mouse to draw a plan



Edit time period on this table

6. **NOTE:** Plan drawing using a mouse is only supported by IE versions later than 8.0. After setting the plan for one day, you can apply the same settings to other days by clicking **Copy** and **Paste**

13. Click **Save**.

Alarm Configuration

You can schedule alarm reporting and set actions that can be triggered by other devices so that alarms and the triggered actions can be handled in time.
Alarm reporting can be scheduled for motion detection alarm, alarm input, alarm output, tampering detection alarm, and audio detection alarm. The supported alarms may vary with device model. For the alarm types that your camera supports, see the Web interface.

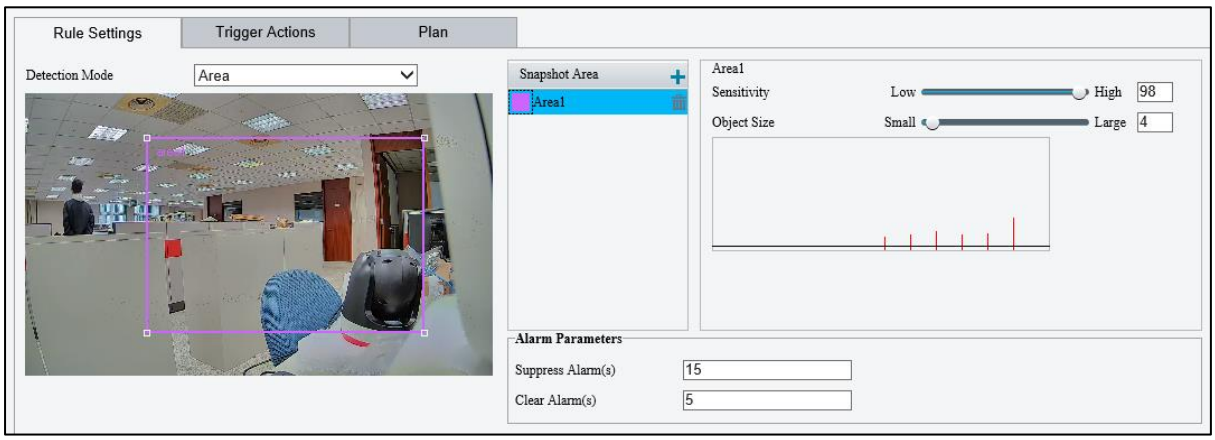
Configuring Motion Detection Alarm

NOTE:

- This function is only supported by certain models, please see the actual model for details.
- The alarm triggered actions supported by the camera may vary with models, please see the actual Web interface for details.

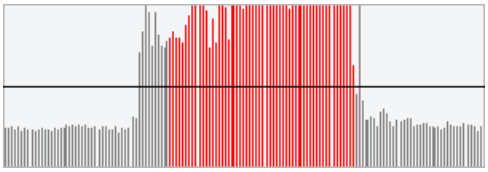
Motion detection detects the object motion in a specified rectangular area or on specified grids during a period. You need to set a detection area or grids, sensitivity of detection, object size, and history for the camera to decide whether to report a motion detection alarm when it detects motion.

1. Click Setup > Events > Common Alarm > Motion Detection > Detection Mode > Area.

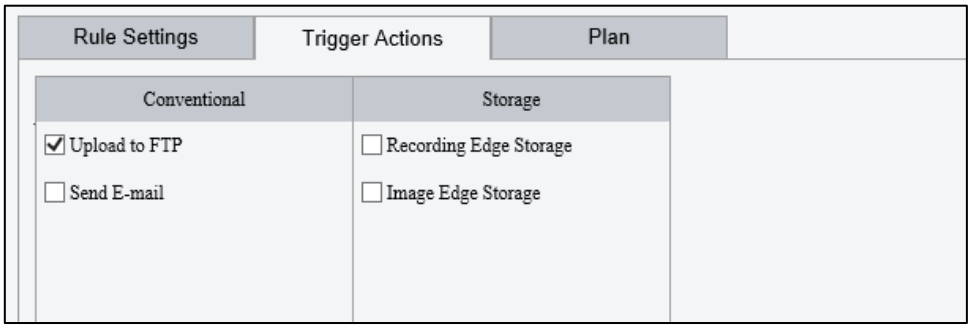


2. In the **Detection Area** area, click + to add a new detection area. To delete a detection area, click 🗑.
3. Click and drag the mouse to set a detection area.
4. Set the detection sensitivity, object size, and history for the camera to decide whether to report a motion detection alarm.

- Moving the slider to the right increases detection sensitivity. When the extent of motion within the detection area exceeds the set object size, and if the duration of motion exceeds the set duration, the camera reports an alarm.
- Object size means the ratio of the size of the moving object to the size of the whole detection area. So, if it is the small objects that you want to detect, it is recommended to draw separate detection area(s) according to the actual motion area.
- Motion detection results are shown in real time. The red lines represent the raised motion detection alarms. The longer a line, the greater the extent of motion. The denser the lines, the greater the frequency of motion.



5. Set the alarm parameters.
   - **Suppress Alarm(s)**: After an alarm is triggered, the same alarm will not be reported within the set time.
   - **Clear Alarm(s)**: After an alarm is triggered,
     A. If the same alarm is not triggered within the set time, the alarm will be cleared and the same alarm can be reported again.
     B. If the same alarm is triggered within the set time, the alarm will not be cleared until the suppress alarm time expires. Then the same alarm can be reported again.
6. Set the alarm trigger in **Trigger Actions** page and the plan or schedule of detection in the **Plan** page.

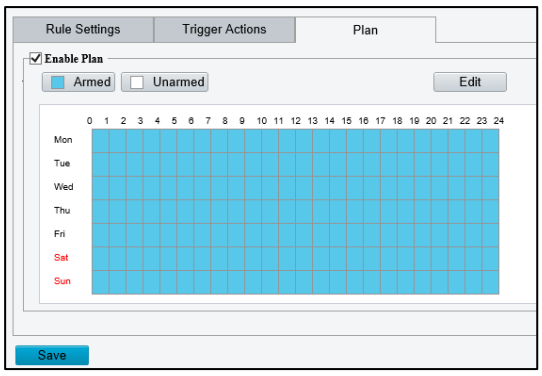


The following table describes the major alarm-triggered actions and how to set a plan.

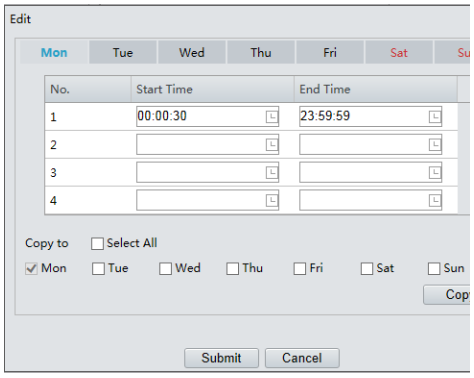
Item	Description
Upload to FTP	With **Upload to FTP** selected, the camera will automatically upload snapshots to the specified FTP server when an alarm is triggered. **NOTE:** Make sure you have completed ***SNMP*** and ***Snapshot*** before using this function.
Send E-mail	With **Send E-mail** selected, the camera will automatically send snapshots to the specified E-mail address when an alarm is triggered. **NOTE:** Make sure you have completed ***E-Mail*** and ***Snapshot*** before using this function.
Storage	With **Storage** enabled, the camera automatically starts recording after an alarm is triggered. Select the available target storage for recording. Storage options may vary depending on model. **NOTE:** Make sure you have completed the post-recording time settings before using this function.

7. Click **Plan** page tab to set the alarm schedule. Select the check box and set the start and end times during which motion detection alarm is effective. You can directly drag the mouse to draw a plan and click **Edit** to edit time periods in the table. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.

8. You can select from Monday to Sunday and set four periods for each day.



Drag the mouse to draw a plan

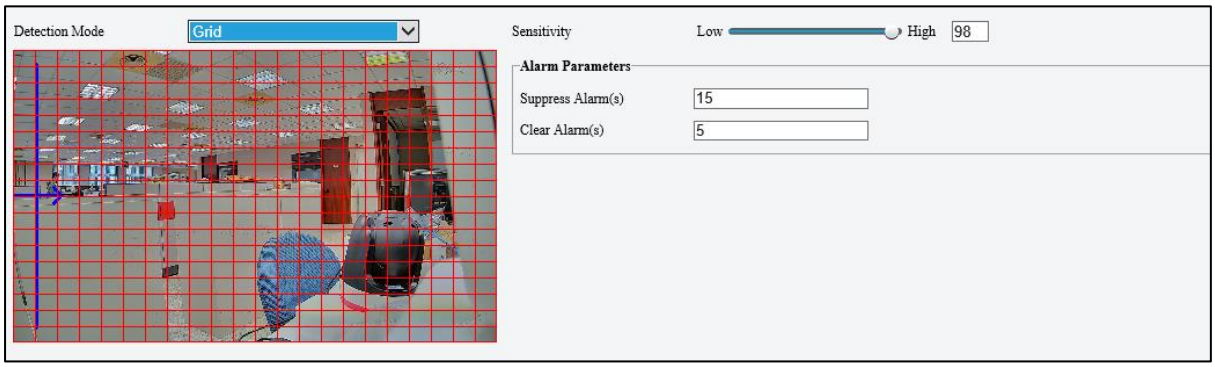


Edit time period on this table

7. **NOTE:** Plan drawing using a mouse is only supported by IE versions later than 8.0. After setting the plan for one day, you can apply the same settings to other days by clicking **Copy** and **Paste**

9. Click **Save**.

10. Click Setup > Events > Common Alarm > Motion Detection > Detection Mode > Grid.



11. Set desired detection area(s) on the grids. Irregular detection areas are allowed.

12. Set detection **Sensitivity**.

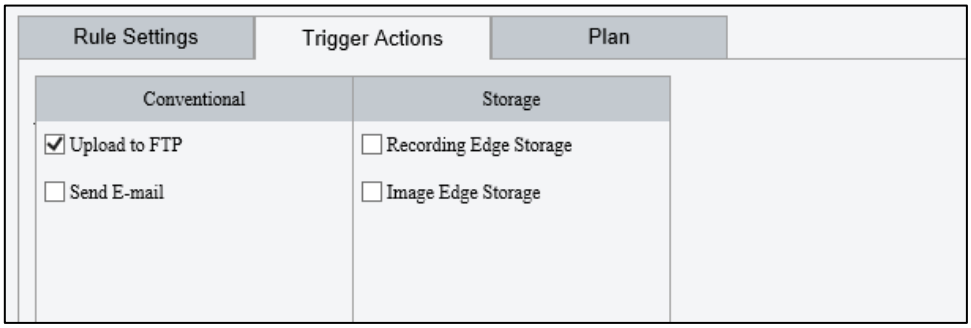
13. Set the alarm parameters.

- **Suppress Alarm(s):** After an alarm is triggered, the same alarm will not be reported within the set time.
- **Clear Alarm(s)**: After an alarm is triggered,

A. If the same alarm is not triggered within the set time, the alarm will be cleared and the same alarm can be reported again.

B. If the same alarm is triggered within the set time, the alarm will not be cleared until the suppress alarm time expires. Then the same alarm can be reported again.

14. Set the alarm trigger in **Trigger Actions** page and the plan or schedule of detection in the **Plan** page.

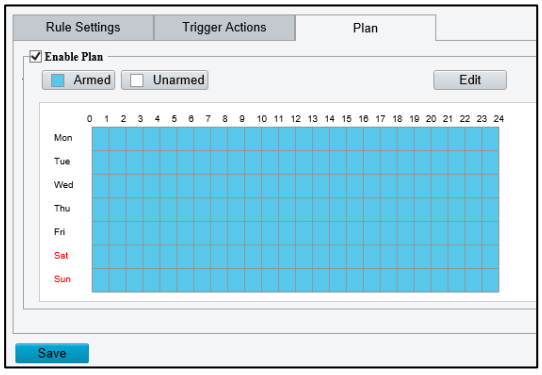


The following table describes the major alarm-triggered actions and how to set a plan.

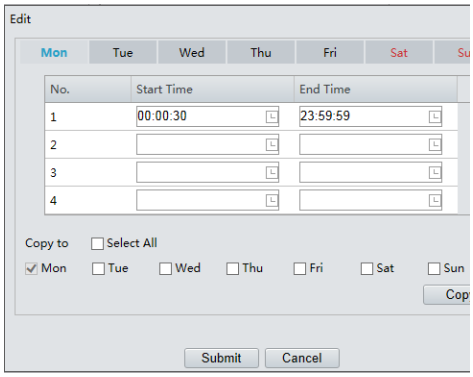
Item	Description
Upload to FTP	With **Upload to FTP** selected, the camera will automatically upload snapshots to the specified FTP server when an alarm is triggered. **NOTE:** Make sure you have completed ***SNMP*** and ***Snapshot*** before using this function.
Send E-mail	With **Send E-mail** selected, the camera will automatically send snapshots to the specified E-mail address when an alarm is triggered. **NOTE:** Make sure you have completed ***E-Mail*** and ***Snapshot*** before using this function.
Storage	With **Storage** enabled, the camera automatically starts recording after an alarm is triggered. Select the available target storage for recording. Storage options may vary depending on model. **NOTE:** Make sure you have completed the post-recording time settings before using this function.

15. Click **Plan** page tab to set the alarm schedule. Select the check box and set the start and end times during which motion detection alarm is effective. You can directly drag the mouse to draw a plan and click **Edit** to edit time periods in the table. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.

16. You can select from Monday to Sunday and set four periods for each day.



Drag the mouse to draw a plan



Edit time period on this table

17. **NOTE:** Plan drawing using a mouse is only supported by IE versions later than 8.0. After setting the plan for one day, you can apply the same settings to other days by clicking **Copy** and **Paste**

18. Set actions to be triggered by tampering alarms and the plan. For the detailed steps, see the descriptions of alarm-triggered actions in ***Configuring Motion Detection Alarm***.

19. Click **Save**.

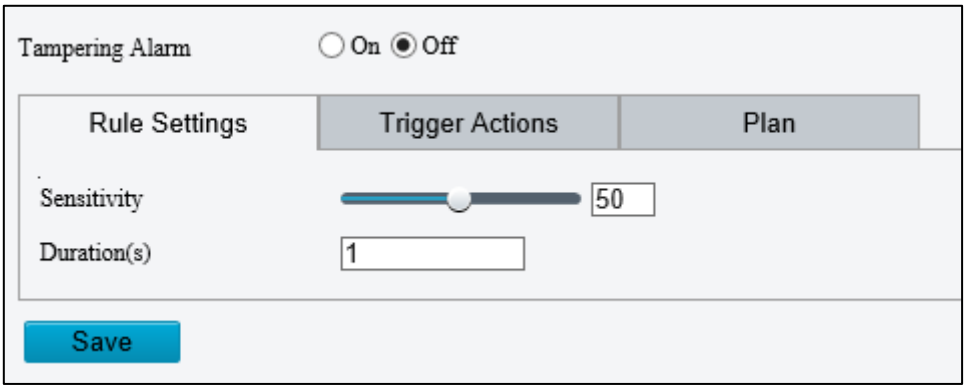
Configuring Tampering Alarm

Configure tampering alarm so that the camera reports a tampering alarm when the lens is blocked for a certain length of time.

NOTE:

- This function is not supported by some models, please see the actual model for details.
- The alarm triggered actions may vary with models, please see the actual Web interface for details.

1. Click **Setup > Events > Tampering Alarm**.

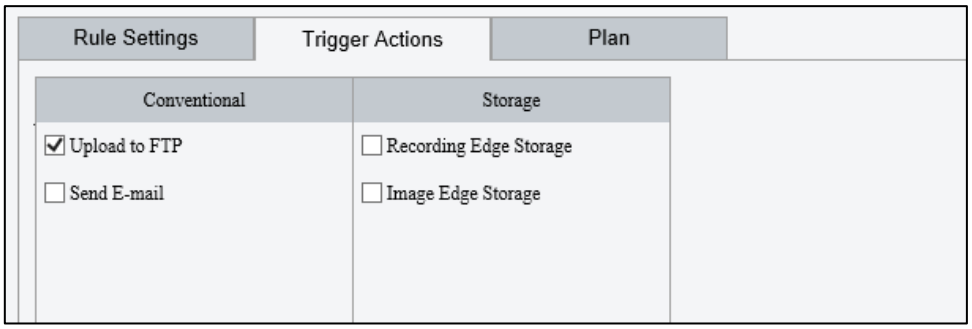


2. Turn on Tampering Alarm.
3. Set detection sensitivity and duration for the camera to decide whether to report a tampering alarm.

   The camera can be more sensitive to the blocking even it only blocks the camera lens slightly from a farther location when sensitivity is set to high. The camera reports an alarm when the lens is blocked for a specified length of time.

   Tampering alarm is effective to the whole screen. To disable tampering alarm, clear the **Tampering Alarm** check box.

4. Set the alarm trigger in **Trigger Actions** page and the plan or schedule of detection in the **Plan** page.

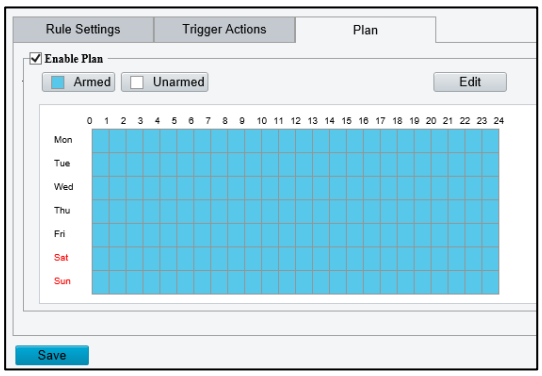


The following table describes the major alarm-triggered actions and how to set a plan.

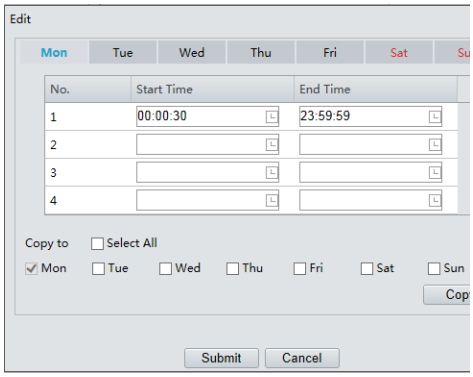
Item	Description
Upload to FTP	With **Upload to FTP** selected, the camera will automatically upload snapshots to the specified FTP server when an alarm is triggered. **NOTE:** Make sure you have completed ***SNMP*** and ***Snapshot*** before using this function.
Send E-mail	With **Send E-mail** selected, the camera will automatically send snapshots to the specified E-mail address when an alarm is triggered. **NOTE:** Make sure you have completed ***E-Mail*** and ***Snapshot*** before using this function.
Storage	With **Storage** enabled, the camera automatically starts recording after an alarm is triggered. Select the available target storage for recording. Storage options may vary depending on model. **NOTE:** Make sure you have completed the post-recording time settings before using this function.

5. Click **Plan** page tab to set the alarm schedule. Select the check box and set the start and end times during which motion detection alarm is effective. You can directly drag the mouse to draw a plan and click **Edit** to edit time periods in the table. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.

6. You can select from Monday to Sunday and set four periods for each day.



Drag the mouse to draw a plan



Edit time period on this table

NOTE: Plan drawing using a mouse is only supported by IE versions later than 8.0. After setting the plan for one day, you can apply the same settings to other days by clicking **Copy** and **Paste**

7. Click **Save**.

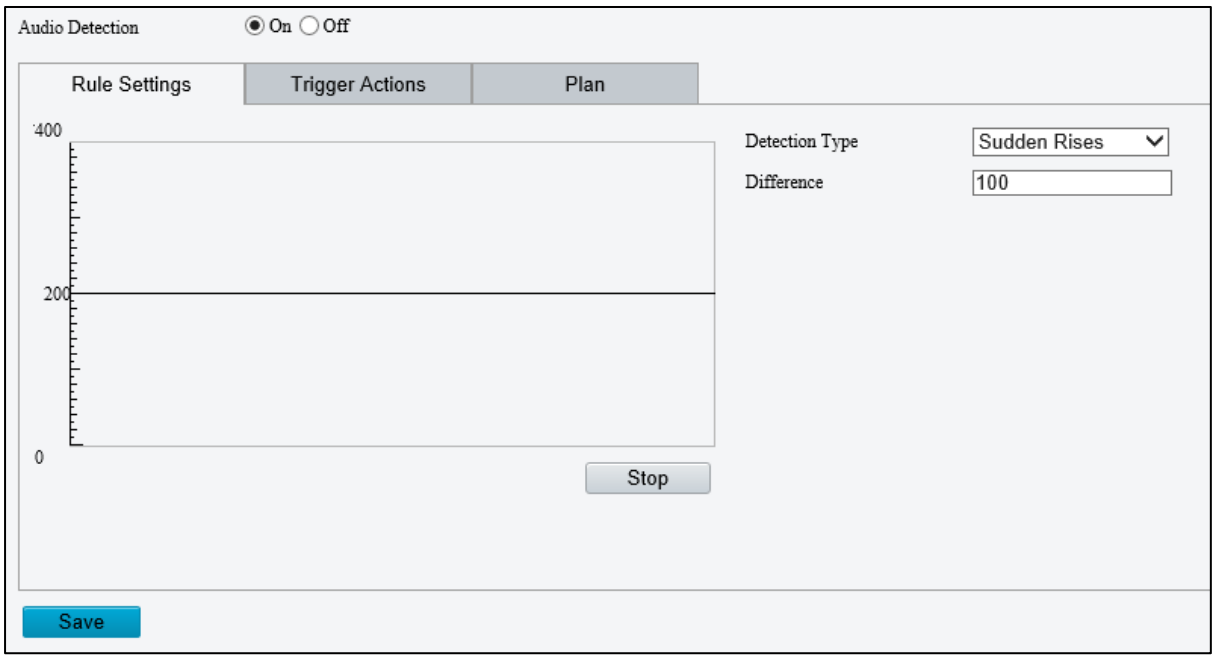
Configuring Audio Detection Alarm

The camera can detect input audio signals for exceptions. When the rise or fall of volume exceeds the set limit, or when the input volume reaches the threshold, the camera reports an alarm and triggers the set actions. Make sure that an audio input device is correctly connected to the camera and audio input is turned on to use this feature.

NOTE:

- This function is not supported by some models, please see the actual web interface for details.
- The alarm triggered actions may vary with models, please see the actual Web interface for details.

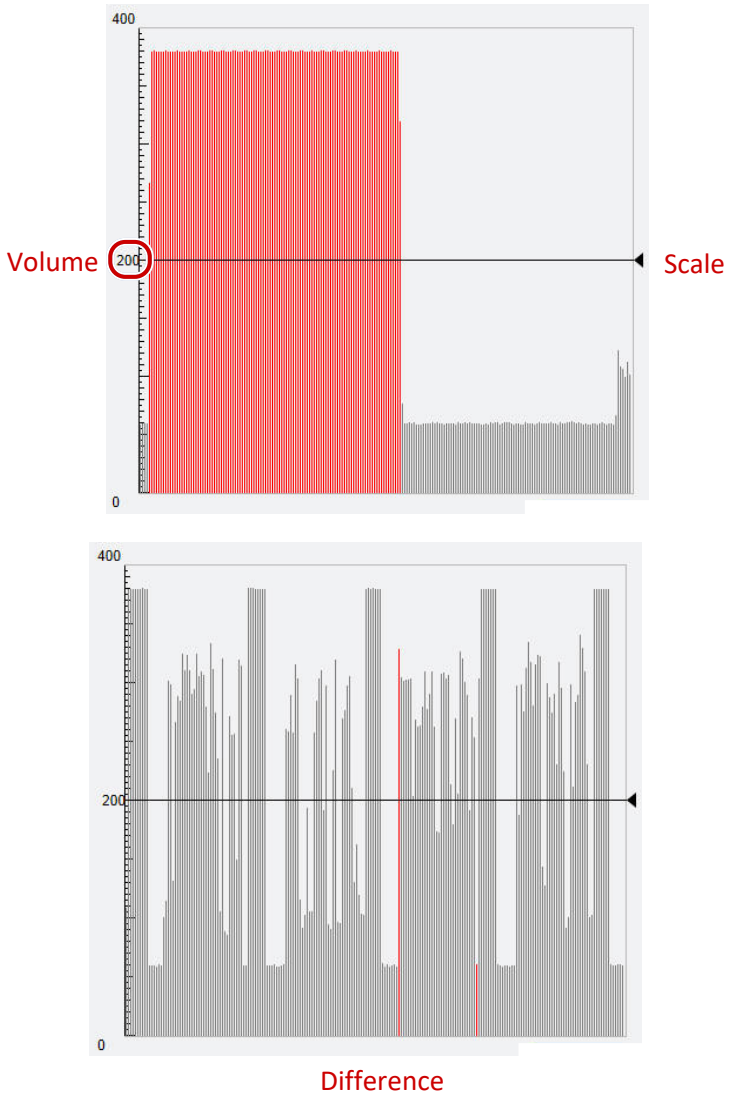
1. Click **Setup > Events > Common Alarm > Audio Detection**.



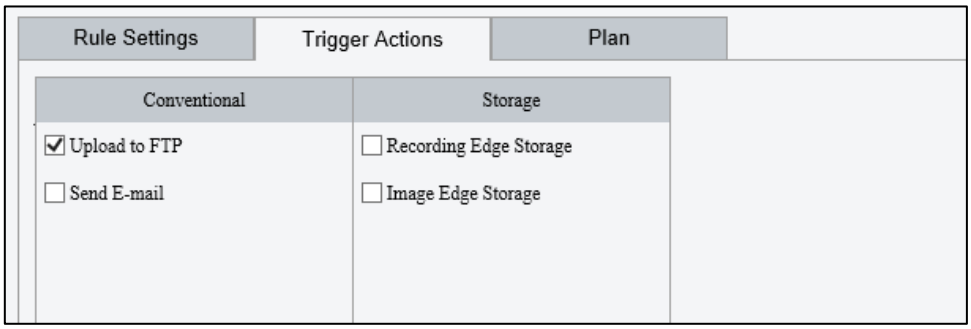
2. Turn **Audio Detection** "On", select a detection type and set the difference or threshold. To disable audio detection, select **Off**.

   The following table describes some major parameters.

Parameter	Description
Detection Type	Sudden Rises: An alarm is reported when the rise of volume exceeds the difference. Sudden Fall: An alarm is reported when the fall of volume exceeds the difference. Sudden Change: An alarm is reported when the rise or fall of volume exceeds

Parameter	Description
	the difference. Threshold: An alarm is reported when the volume exceeds a threshold.
Threshold/ Difference	Threshold: After a volume is set as the threshold, an alarm is reported when the threshold is exceeded. Difference: the difference between two volumes. When the rise or fall of volume exceeds the difference, an alarm is reported. **NOTE:** The scale in the audio detection area is used to measure sound volume. Audio detection results are shown in real time. The red part indicates that the volume of the audio alarm has reached the threshold and the alarm does not necessarily reports. 

3. Set the alarm trigger in **Trigger Actions** page and the plan or schedule of detection in the **Plan** page.

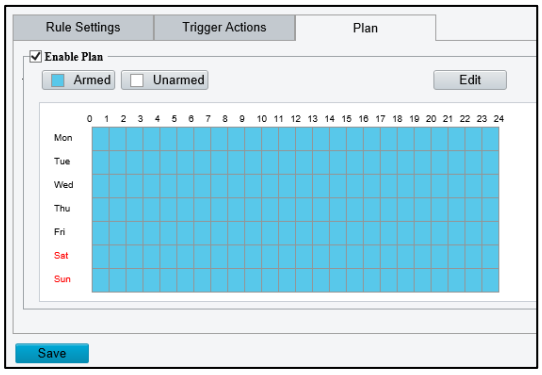


The following table describes the major alarm-triggered actions and how to set a plan.

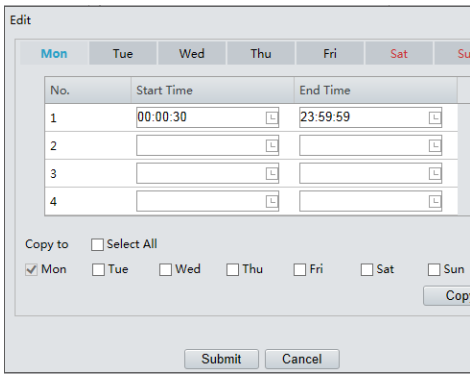
Item	Description
Upload to FTP	With **Upload to FTP** selected, the camera will automatically upload snapshots to the specified FTP server when an alarm is triggered. **NOTE:** Make sure you have completed ***SNMP*** and ***Snapshot*** before using this function.
Send E-mail	With **Send E-mail** selected, the camera will automatically send snapshots to the specified E-mail address when an alarm is triggered. **NOTE:** Make sure you have completed ***E-Mail*** and ***Snapshot*** before using this function.
Storage	With **Storage** enabled, the camera automatically starts recording after an alarm is triggered. Check the desired storage option. **NOTE:** Make sure you have completed the post-recording time settings before using this function.

4. Click **Plan** page tab to set the alarm schedule. Select the check box and set the start and end times during which motion detection alarm is effective. You can directly drag the mouse to draw a plan and click **Edit** to edit time periods in the table. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.

5. You can select from Monday to Sunday and set four periods for each day.



Drag the mouse to draw a plan



Edit time period on this table

NOTE: Plan drawing using a mouse is only supported by IE versions later than 8.0. After setting the plan for one day, you can apply the same settings to other days by clicking **Copy** and **Paste**

6. Click **Save**.

Storage

NOTE: This function is not supported by some models, and may vary with models, please see the actual model for details. Memory storage is recommended when the camera operates in stand-alone mode.

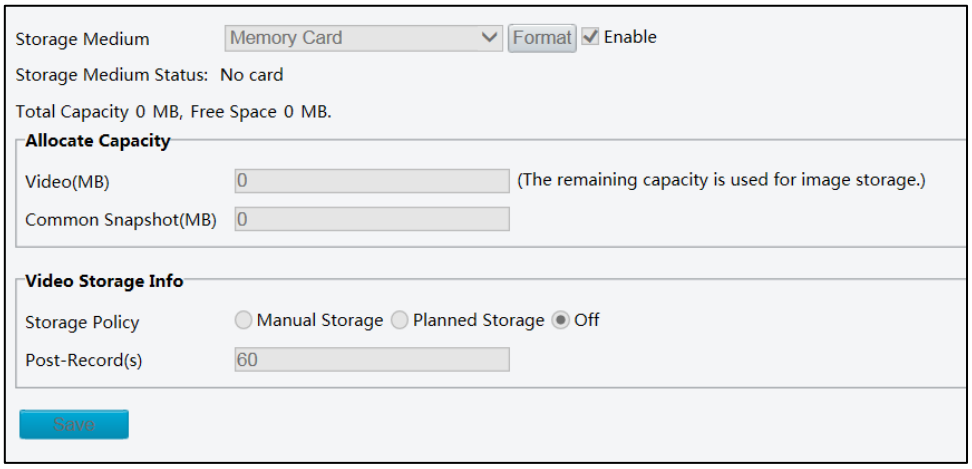
Storage Medium

Memory cards or Network Access Storage (NAS) can be used to save videos and snapshots directly.

Manual storage

The camera records live video repeatedly if manual storage is enabled.

1. Click **Setup > Storage > Storage**.



2. Select the storage medium and modify the settings as required. The following table describes some major parameters.

Parameter	Description
Storage Medium	Storage resource type: • Memory Card: To format the memory card, disable the storage function for the card first. Then Click **Format** and then click **OK** to confirm the operation. The system will restart when the format is completed. Information about the total and free space is displayed. • **NAS**: To use NAS, type its IP address, storage path, and then test it.
Video (MB)	Type the allotted storage space for recording videos. The remaining capacity will be used to save images and will be shown in **Common Snapshot (MB)** field.
Storage Policy	Select whether to do enable: Manual storage, Planned storage or schedule storage (see succeeding pages for description) or disable video storage. Then select the **Stream** to record.
When Storage Full	Select whether to **Overwrite** the existing recordings or **Stop** recording when the storage card is full.

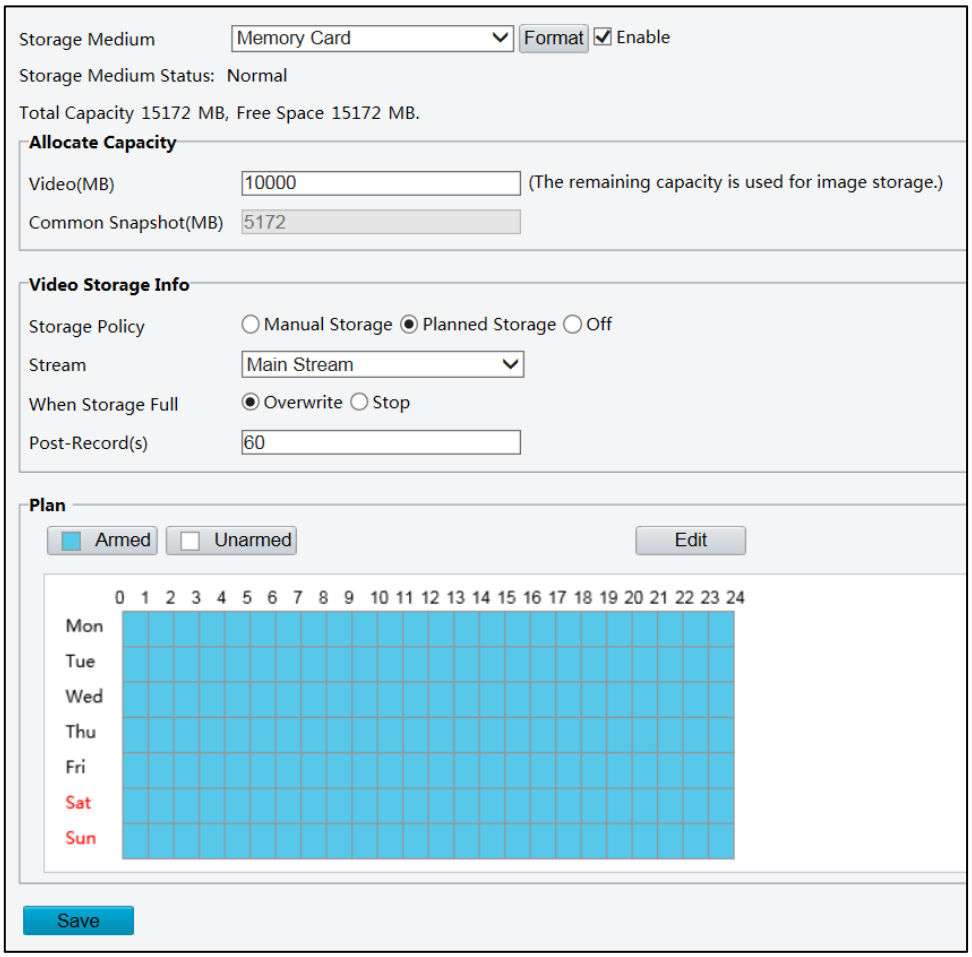
Parameter	Description
Post-Record(s)	When an alarm is raised, the camera is triggered to record live video and continues recording for a set post-record time after the alarm is cleared.

3. Click **Save**.

Planned Storage

If planned storage is enabled, the camera records video to the memory card during a specified period.

1. Click **Setup > Storage > Storage**.



2. Select Planned Storage.

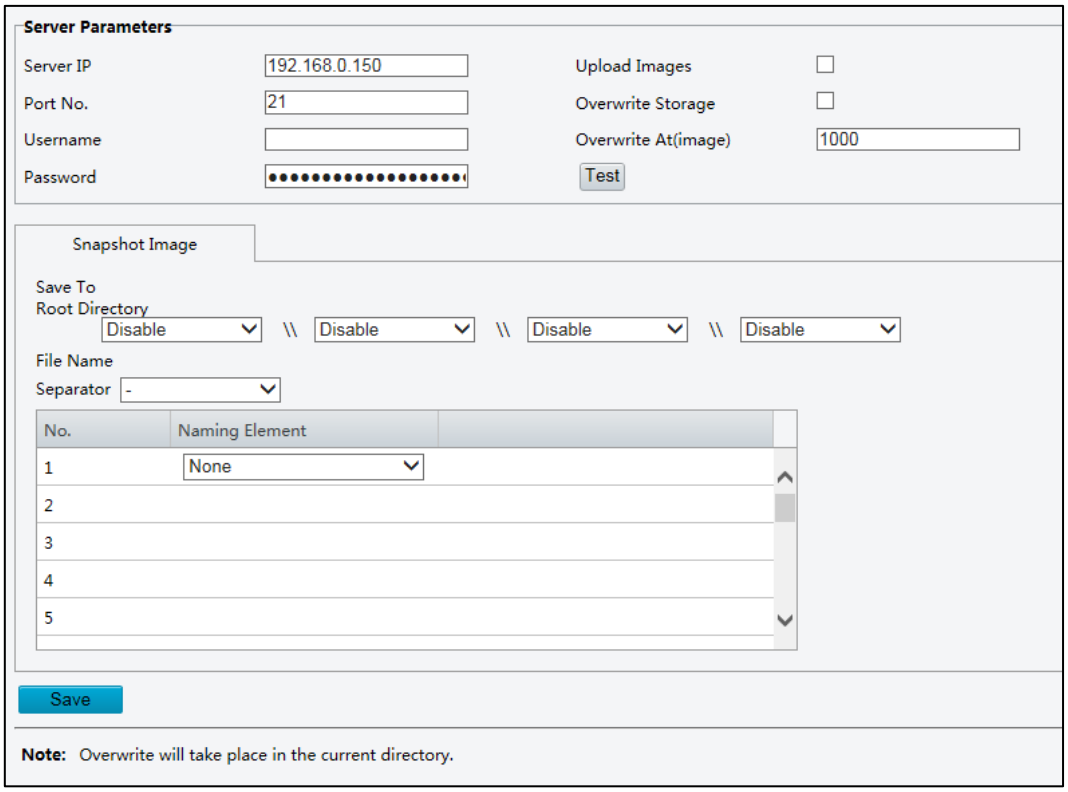
3. Set the period during which the camera records video to the memory card. Click **Armed** then click and drag on the table to mark the day and time of recording. Click **Unarmed** and click and drag to remove the markings on the table. Or, click **Edit** to enter the schedule manually; a pop-up screen will appear.

4. Click **Save**.

FTP

In order to upload snapshots from the network camera to a specified FTP Server, you must configure the FTP server.

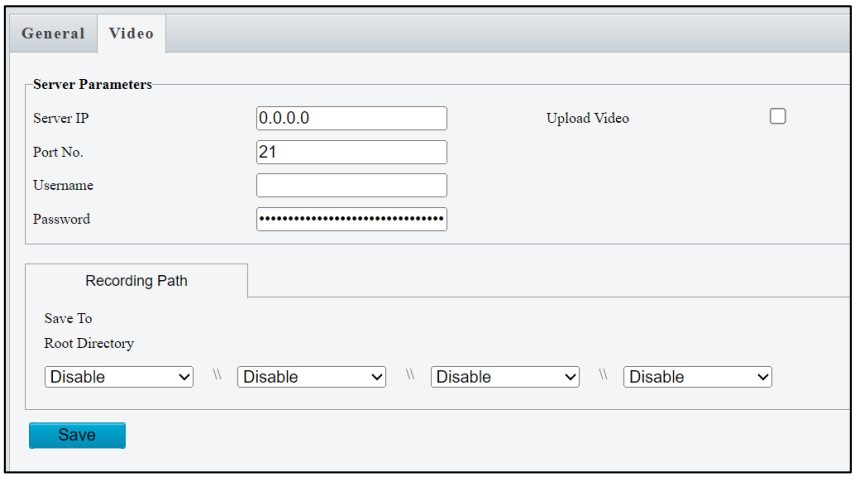
1. Click Setup > Storage > FTP > General.



2. Configure the IP address, port number of the FTP server, the username and password of the upload account, enable **Upload Images** and **Overwrite Storage**, and then set the overwrite image threshold. You may also configure the file naming convention when saving snapshots.

3. Click **Save**.

For select camera models, an option to upload video is available under **Setup > Storage > FTP > Video**.



Security Settings

NOTE: This function is not supported by some models; please see the actual model for details.

Security

User Management

There are two types of users in the system:

- Administrator: referred to as "admin" in this manual. The default name of the administrator is admin, which cannot be modified. Admin has full permission and can manage all users and devices. Only one admin user is allowed in the system.
- Common user: referred to as "user" in this manual. User only has permission to play live and recorded video. Up to 31 common users are allowed in the system.

You can add a user on the user management interface (under **Setup** > **Security** > **User**).
After the user is added successfully, you can change the password by entering the new password or delete the user by clearing the username.

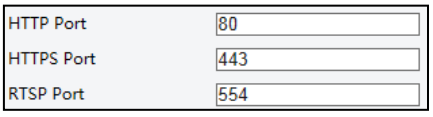
NOTE:

- Only admin can change passwords. Changing the username or password for a user when the user is still logged in will force the user to log out. The user must use the new username or password to log in.
- Only admin can add and delete users. Deleting a user when the user is still logged in will force the user to log out. A deleted user cannot log in.

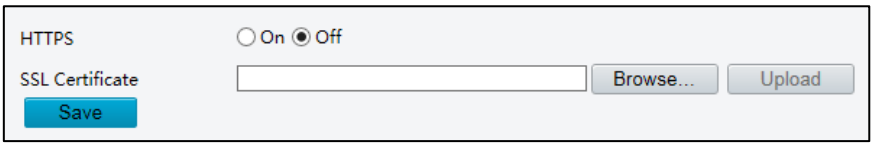
Setting Secure Data Transmission

Set a secure channel for data transmission to ensure security.
NOTE: This function is not supported by some models, please see the actual model for details.

1. Click **Setup > Network > Port**.



2. Enter the port number in the **HTTPS Port** text box and then click **Save**.
3. Click **Setup > Security > Network Security > HTTPS**.



4. Under **HTTPS**, select **On**. Uploading a custom SSL certificate is also supported to ensure security.

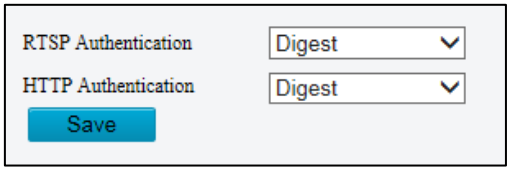
5. Click **Save**.

Next time you log in, enter the address in *https://IP:HTTPS port number* format, for example, https://192.168.0.13:443, to enter secure channel mode. If HTTPS uses a default port number, enter the address in *https://IP* directly.

Authentication

RTSP (Real Time Streaming Protocol) is an application layer protocol. To transmit and control the audio and video, set RTSP authentication on the Web interface.

1. Click Setup > Security > Network Security > Authentication.



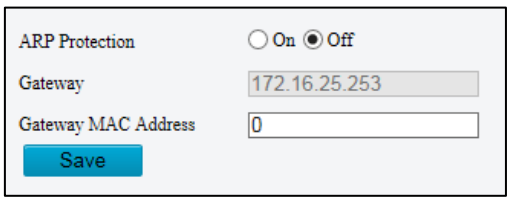
2. Select authentication.

3. Click **Save**.

APR Protection

This function can protect the camera from ARP attacks. When the camera visits an IP of another network segment via a gateway, it can communicate only with the MAC address binding to the gateway address in the same segment.

1. Click Setup > Security > Network Security > ARP Binding.



2. Select the check box to enable the ARP binding function and set the MAC address.

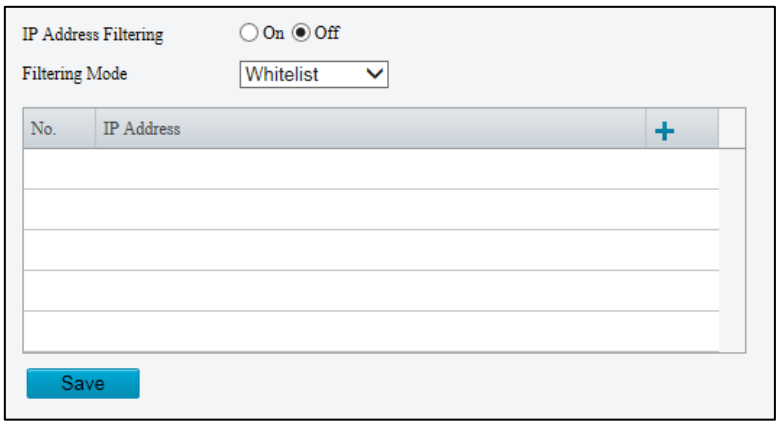
3. Click **Save**.

IP Address Filtering

You can allow or deny the access from the specified IP address to you camera.

NOTE: This function is only supported by certain models, please see the actual model for details.

1. Click Setup > Security > Network Security > IP Address Filtering.



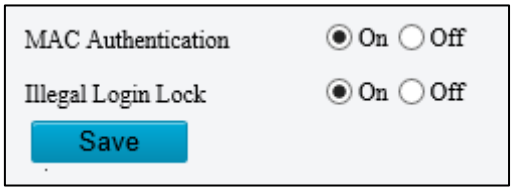
2. Select **On** to enable IP address filtering.
3. Select the filtering mode and then enter the desired IP address(es).
4. Click **Save**.

NOTE:

- If the filtering mode is set to **Whitelist**, only the specified IP addresses are allowed to access the camera. If the filtering mode is set to **Deny Access**, the specified IP addresses are denied for the access.
- Up to 32 IP addresses are allowed. And the added IP addresses cannot duplicate.
- The first byte of the IP address can only be a number ranging from 1 to 223 and the fourth byte cannot be 0. For example, 0.0.0.0, 127.0.0.1, 255.255.255.255 and 224.0.0.1 all are invalid IP addresses.

Access Policy

1. Click Setup > Security > Network Security > Access Policy.



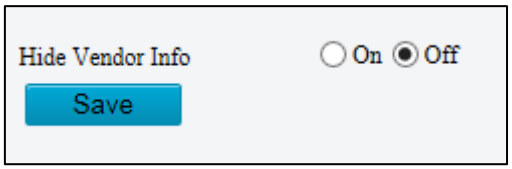
2. Select **On** to enable Illegal Login and MAC Authentication.

3. Click **Save**.

Hide Vendor Information

You can set to hide the vendor information of the network camera on the Web interface.

1. Click Setup > Security > Registration Info.



2. Select **On**.

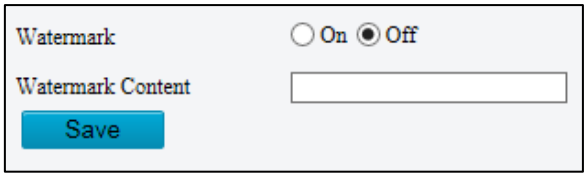
3. Click **Save**.

Watermark

Use the watermark to encrypt custom information with video to prevent unauthorized deletion or alteration.

NOTE: This function is only supported by certain models, please see the actual model for details.

1. Click Setup > Security > Watermark.



2. Select **On** and set the watermark content.

3. Click **Save**.

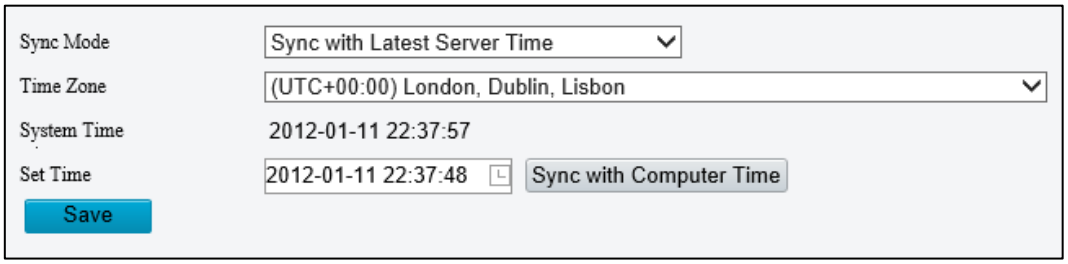
Common System Settings

Setting the System Time

You can use the following methods to adjust the system time of your device.

Manually Setting or Synchronizing the System Time

1. Click **Setup** > **System** > **Time**, and then click the **Time** tab.



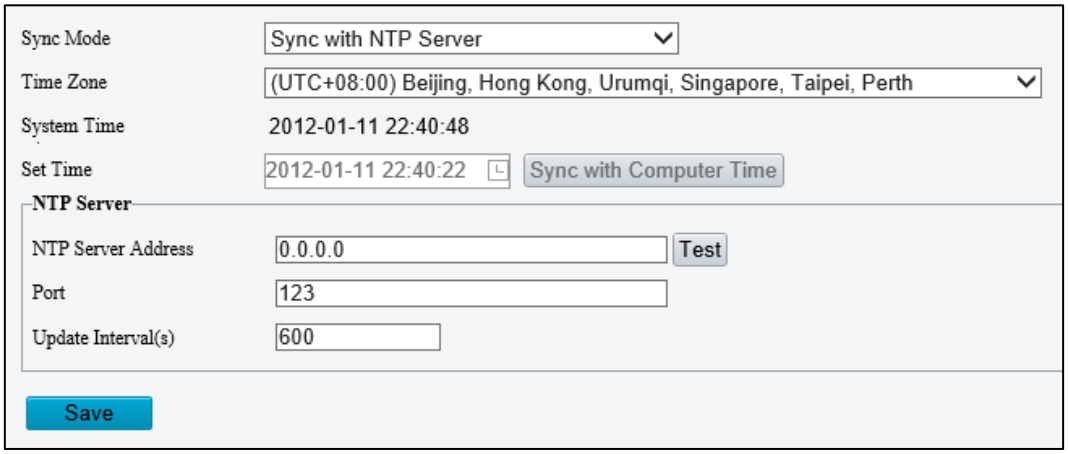
2. Set the correct time zone and system time. You may also click **Sync with Computer Time** to synchronize the time settings of your camera with that of your PC.

3. Click **Save**.

Synchronizing with the NTP Server

1. Click **Setup** > **System** > **Time**, and then click the **Time** tab.

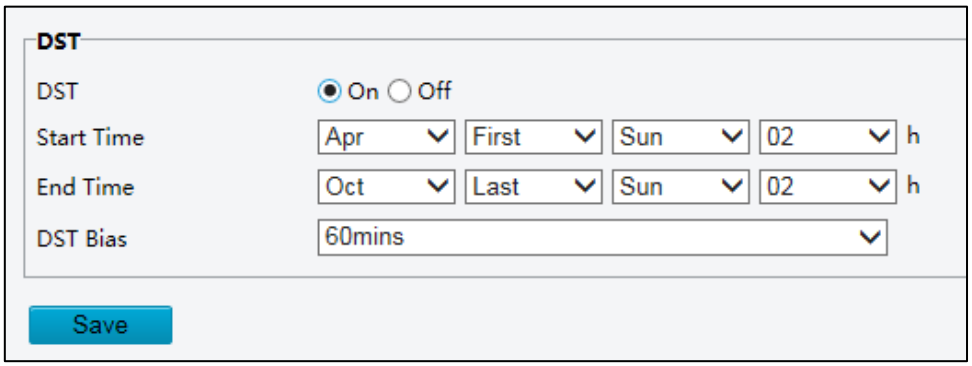
2. Select **Sync Mode** to **Sync with NTP Server**, and then set the IP address and port of the NTP server update interval.



3. Click **Save**.

Setting the DST

1. Click **Setup** > **System** > **Time**, and then click the **DST** tab.



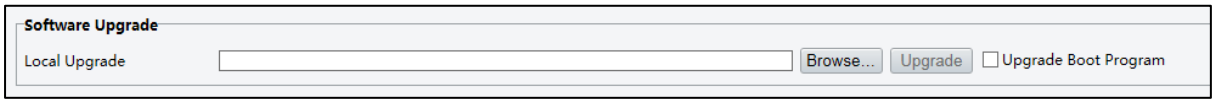
2. Select **On** for **DST**, set the start time, end time, and DST bias.

3. Click **Save**.

Upgrading the Device

If the device is managed by the central management server and you want to upgrade the devices in batch mode, it is recommended to perform the upgrade operation on the central server. For detailed steps, see the user manual for the central management server.

1. Click Setup > System > Maintenance.



2. Under **Software Upgrade**, click **Browse** and select the correct upgrade file.

3. (Optional) Select the check box to enable **Upgrade Boot Program**.

4. Click **Upgrade** and then confirm to start. The camera will restart automatically after the upgrade is completed.

NOTE:

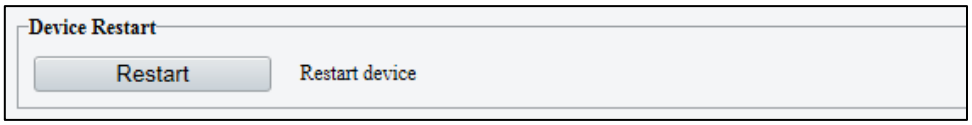
- You must use the correct upgrade file for you camera. Otherwise, unexpected results may occur.
- The upgrade file is a ZIP file and must include all the necessary files.
- The boot program loads the operating system and then the system starts running. The upgrade boot program function is disabled by default, and only the camera will be upgraded to the latest version. If enabled, both the camera and the boot program are upgraded, and

the operating system of the following new versions can be booted properly and the camera can be upgraded conveniently.

- Ensure that the power supply is normal during upgrade. The device will restart after the upgrade is completed.

Restarting the System

1. Click Setup > System > Maintenance.



2. Under **Device Restart**, click **Restart**. The device will restart after you confirm the operation.

CAUTION: Perform this operation with caution because restarting the system interrupts the ongoing service.

Importing and Exporting System Configuration File

Export the current configurations of the camera and save them to the PC or an external storage medium. You can also quickly restore configurations by importing backup configurations stored on the PC or an external storage medium back to the camera.

CAUTION:

- After you perform the Default operation, all settings are restored to factory defaults, except the following: login password of the system administrator, network settings, and system time.
- Make sure you import the correct configuration file for your camera. Otherwise, unexpected results may occur.
- The camera will restart when the configuration file is imported successfully.

1. Click Setup > System > Maintenance.
2. To import configurations that you have backed up, click **Browse** next to the **Import** button and select the configurations you want to import, and then click **Import**. The result will be displayed.
3. To export configurations, click **Browse** next to the **Export** button, select the destination folder, and

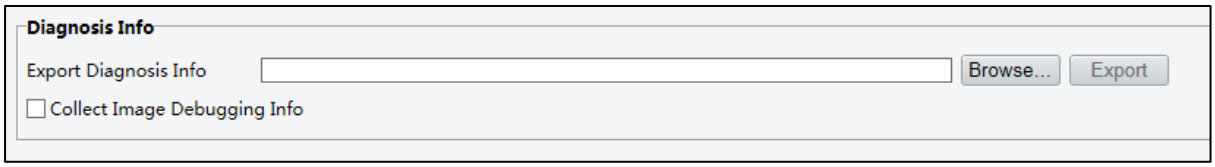
then click **Export**.

4. To restore default configurations, click **Default** and then confirm the operation. The device will restart and restore the default configurations.

Collecting Diagnostic Information

Diagnostic information includes logs and system configurations. You can export diagnostic information to your PC.

1. Click Setup > System > Maintenance.
2. Under **Diagnosis Info**, click **Browse** to select the destination folder, and then click **Download** to save the diagnostic information to the specified folder.



NOTE:

- Diagnostic information is exported to the local folder in form of a compressed file. You need to decompress the file using a tool such as WinRAR and then open the file using a text editor.
- Select Collect Image Debugging Info. Then the recording and the debugging information can be displayed synchronously for convenient troubleshooting.

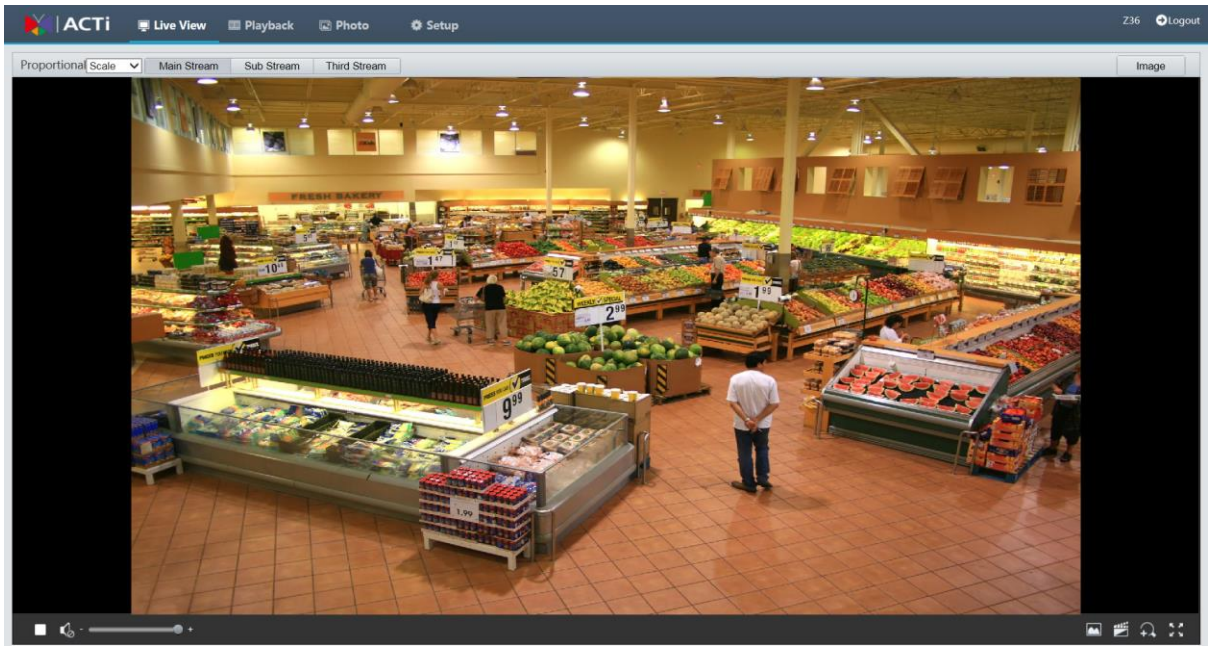
Restart Device

To restart the device, click **Setup > System > Maintenance** > **Restart**.

Live View

Live view means playing live video (real-time audio and video) received from a camera in a window through the Web interface.

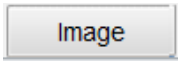
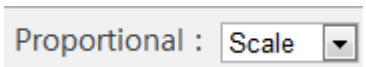
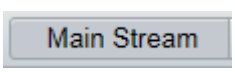
If you log in with the **Live View** check box selected, live video appears by default when you are logged in. You may double-click the window to enter or exit full screen mode.



Live View Toolbar

NOTE: The supported live view operations may vary with camera model. For the operations that your camera supports, see the Web interface.

Button	Description
/	Play/stop live video.
	Adjust the output volume for the media player on the PC.
	Adjust the microphone volume on the PC during audio communication between the PC and the camera.
	Take a snapshot of the current image displayed on the PC. **NOTE: The path for saving snapshots is set in** Local Settings**.**

Button	Description
	Start/stop local recording. **NOTE: The path for saving local recordings is set in** Local Settings**.**
	Start/stop audio communication between the PC and the camera.
	Start/stop digital zoom. For more details, see ***Using Digital Zoom***.
	Start/stop area focus.
	Start/stop 3D positioning.
	Show/hide the PTZ control panel.
	Reset the packet loss rate to zero. **NOTE: After you move the mouse cursor on a live view window, this button appears on the floating toolbar.**
	Display packet loss rate and bit rate information in the bottom. **NOTE:** After you move the mouse cursor on a live view window, this button appears on the floating toolbar. Click this icon to display the bottom information. Click this icon again, the bottom information is displayed if the mouse cursor is moved on a live view window or on the bottom information, and it hides automatically if the mouse cursor remains on a live view window for 3 seconds or leaves the window.
	Click this button to open the image setting page.
	Display in full screen mode.
	Set the display ratio of the image. Scale: display images by 16:9 Stretch**:** display images by window size Original: display images in its original size
	Select a live video stream that the camera supports: main stream, sub stream or third stream.

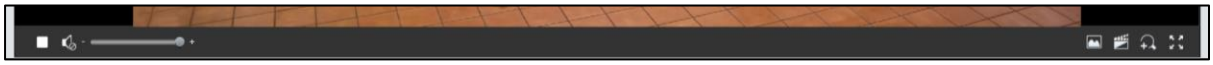
Button	Description
Sub Stream Third Stream	

Viewing Certain Area of Images

Digital zoom and 3D positioning allow you to get more details of certain part of images. Digital zoom enlarges an image with loss in image quality, while 3D positioning enlarges an image without.

Using Digital Zoom

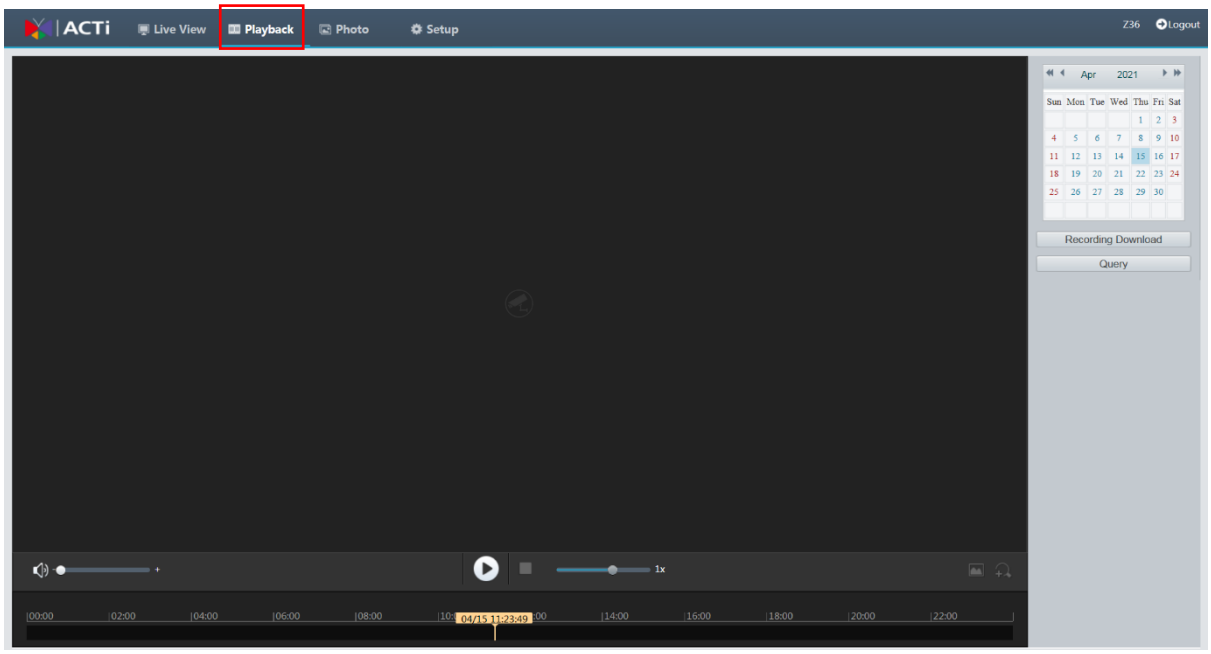
1. On the **Live View** page, click on the toolbar.



2. Click and hold the mouse button, and then drag from the top down to specify an area.
3. To restore the original image size, click in the enlarged area, or drag from the bottom top.
4. To exit, click .

Playback

The **Playback** menu is only available when you login as administrator. This menu allows you to view the camera playback through its user interface. Click **Playback** on the menu.

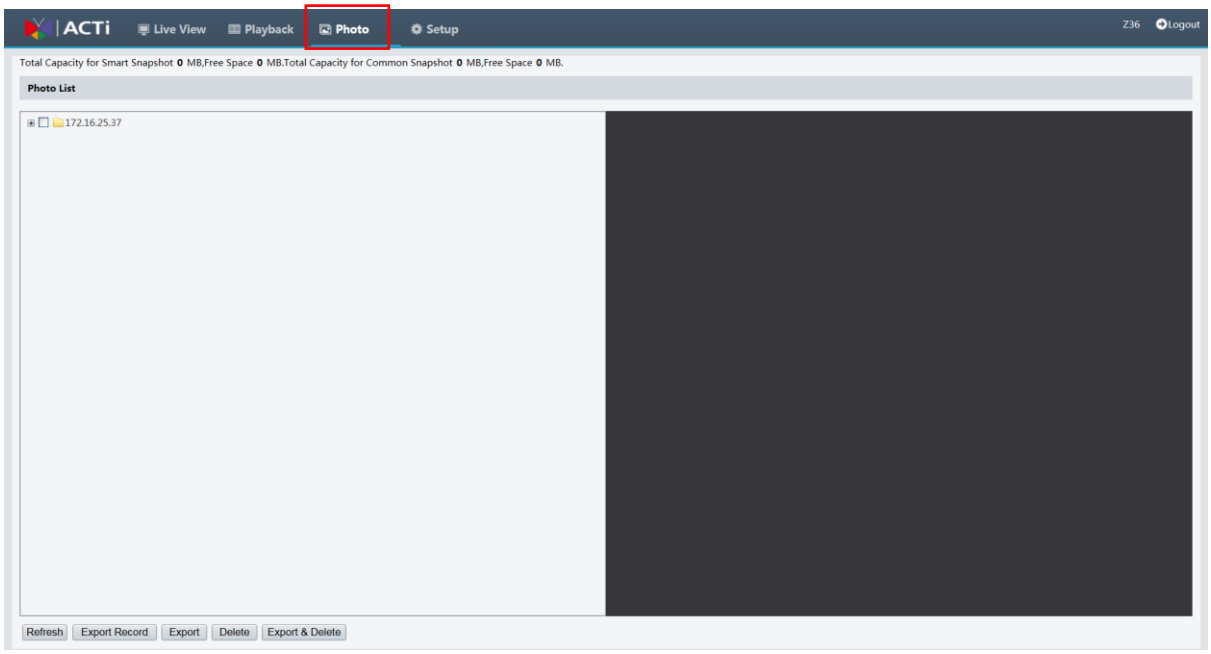


NOTE: The supported playback operations may vary with camera model. For the operations that your camera supports, see the Web interface.

Item	Description
Calendar	Select the date through the calendar to check for recorded videos.
Recording Download	Click to manually select a date range to check for recorded videos.
Query	Click to search for recorded videos based on selected date on the calendar.
	Play/stop video playback.
	Adjust the output volume for the media player on the PC.
	Slide the slider to adjust playback speed.
	Take a snapshot of the current image displayed on the PC. **NOTE: The path for saving snapshots is set in** Local Settings**.**
Timeline bar	Slide the cursor to scroll through the playback using the video timeline.
	Start/stop digital zoom. For more details, see ***Using Digital Zoom***.

Photo

The **Photo** menu is only available when you login as administrator. This menu allows you to view the snapshots taken from the user interface. Click **Photo** on the menu.



NOTE: The Photo operations may vary with camera model. For the operations that your camera supports, see the Web interface.

On the left panel, select the path where snapshots are saved. The photos will be shown on the right panel. Use the buttons below to manage the photos and export them.

Appendix: Glossary

Acronym	Description
ARP	Address Resolution Protocol
CBR	Constant Bit Rate
DNS	Domain Name Service
DDNS	Dynamic Domain Name Service
DHCP	Dynamic Host Configuration Protocol
DST	Daylight Saving Time
FTP	File Transfer Protocol
GOP	Group Of Pictures
GUI	Graphical User Interface
HTTPS	Hyper Text Transfer Protocol over SSL
IE	Internet Explorer
IMOS	IP Multimedia Operation System
IP	Internet Protocol
IPC	IP Camera
MTU	Maximum Transmission Unit
NTP	Network Time Protocol
OSD	On Screen Display
PoE	Power over Ethernet
PPPoE	Point-to-Point Protocol over Ethernet
PTZ	Pan, Tilt, Zoom
ROI	Region of Interest
SMTP	Simple Mail Transfer Protocol
SSL	Secure Socket Layer
UNP	Universal Network Passport
USB	Universal Serial Bus
VBR	Variable Bit Rate

Acronym	Description
WDR	Wide Dynamic Range

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