C3212D4-S

4MP OUTDOOR IP DOME CAMERA WITH SMART ANALYTICS

User Manual

HD IP

C3212D4-S 4MP Outdoor IP Dome Camera

Operations Manual

Manual Edition 38316AA – October 2025

The following words and symbols mark special messages throughout this guide:

WARNING: Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

IMPORTANT SAFEGUARDS

1. **Read Instructions**
   Read all of the safety and operating instructions before using the product.
2. **Retain Instructions**
   Save these instructions for future reference.
3. **Attachments / Accessories**
   Do not use attachments or accessories unless recommended by the appliance manufacturer as they may cause hazards, damage product and void warranty.
4. **Installation**
   Do not place or mount this product in or on an unstable or improperly supported location. Improperly installed product may fall, causing serious injury to a child or adult, and damage to the product. Use only with a mounting device recommended by the manufacturer or sold with the product. To ensure proper mounting, follow the manufacturer's instructions and use only mounting accessories recommended by manufacturer.
5. **Power source**
   This product should be operated only from the type of power source indicated on the marking label.

Precautions

Operating

- Before using, make sure power supply and others are properly connected.
- While operating, if any abnormal condition or malfunction is observed, stop using the camera immediately and then contact AvertX Customer Support.

Handling

- Do not disassemble or tamper with parts inside the camera.
- Do not drop or subject the camera to shock and vibration as this can damage camera.
- Care must be taken when you clean the clear lens cover. Scratches and dust will ruin the image quality of your camera. Do not use strong or abrasive detergents when cleaning the camera body. Use a dry cloth to clean the camera when it is dirty. In case the dirt is hard to remove, use a mild detergent and wipe the camera gently.

Installation and Storage

- Do not install the camera in areas of extreme temperatures in excess of the allowable range. -22°F ~ 140°F (-30° ~ 60°C)
- Avoid installing in humid or dusty places. The relative humidity must be below 95%.
- Avoid installing in places where radiation is present.
- Avoid installing in places where there are strong magnetic fields and electric signals.
- Avoid installing in places where the camera would be subject to strong vibrations.
- Never face the camera toward the sun. Do not aim at bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects. Otherwise the camera may be damaged.

REGULATION

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste in accordance with Directive 2002/96/EC. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By proper waste handling of this product you ensure that it has no negative consequences for the environment and human health, which could otherwise be caused if this product is thrown into the garbage bin. The recycling of materials will help to conserve natural resources.

For more details information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Compliance is evidenced by written declaration from our suppliers, assuring that any potential trace contamination levels of restricted substances are below the maximum level set by EU Directive 2002/95/EC, or are exempted due to their application.

WARNING

DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE.

REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

CAUTION

TABLE OF CONTENTS

INTRODUCTION

OVERVIEW

Camera Default Settings

IP Address	192.168.51.2
Username	admin
Password	**This AvertX camera model does not have a default password** **The admin user password can be set using the following methods:** 1. ProConnect recorders running software version 2.1 or newer will automatically set a new unique password by: ➢ Connecting to the built-in PoE switch ➢ Connecting to a network switch through the camera network port and selected then adding the camera in setup 2. Connect to the camera directly through a Web Browser and follow the onscreen prompts. Use the Network Camera Manager (NCM) Utility.

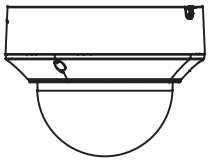
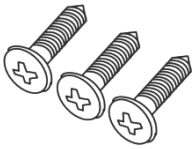
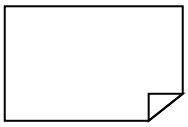
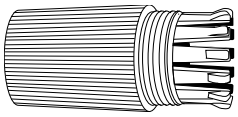
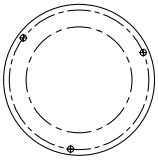
Product Features

- Person & Vehicle Analytics
- True WDR @ 4MP
- Adaptive IR | Up to 131'
- Audio In/Out with Built-in Mic
- IP67 Ingress Protection Rating
- IK10 Impact Protection Rating
- Metal/Polycarbonate Housing

GETTING STARTED

BOX CONTENTS

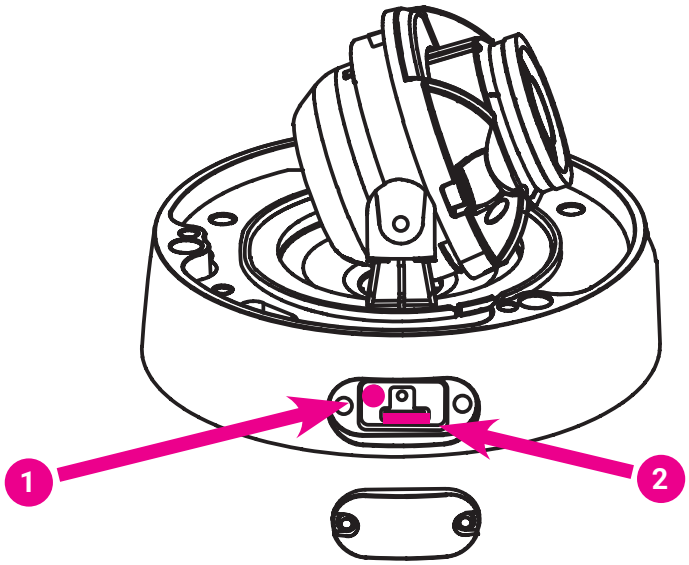
Before proceeding, please check that the box contains the items listed here. If any item is missing or has defects, do not install or operate the product and contact AvertX Support for assistance.

 **C3212D4-S Camera**	 **Self-Tapping Mounting Screws**	 **Plastic Anchors (includes extra)**
 **Quick Start Guide**	 **Waterproof Cable Connector**	 **Mounting Template**
 **T20 Torx Tool**		

CAMERA OVERVIEW

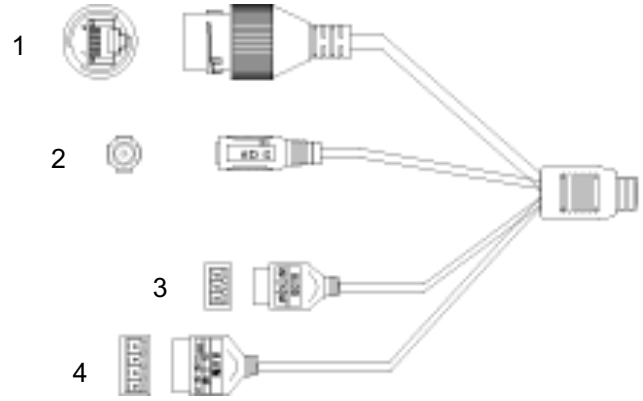
Before installing or connecting the dome camera, please refer to this section and complete preparations for camera setup and all switch settings.

Camera Diagram



1	Reset Button	To restore the camera to factory defaults: 1. Disconnect power for 30 seconds. 2. Reconnect power and wait 30 seconds. 3. Press and hold the reset button for 20 seconds.
2	MicroSD Card Slot	Supports up to 512GB microSD card for Edge storage. **Do not add or remove the microSD card when the camera is powered on.**

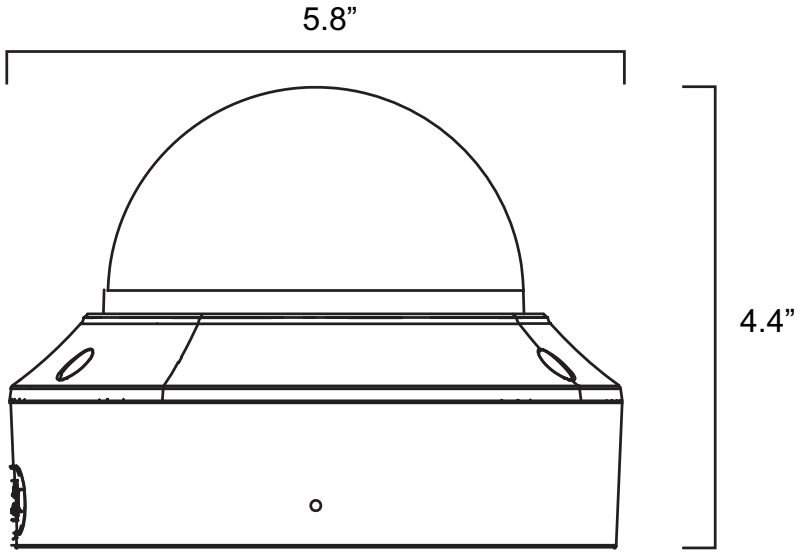
Cable Connection



1	RJ-45	For network and PoE connections
2	Power (12vDC)*	Power Connection
3	Audio I/O	Ground
		Audio In
		Audio Out
4	Alarm I/O	Ground
		Audio In
		Alarm Out -
		Alarm Out +

*12vDC power input port should be plugged when not in use.

Dimensions



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CONNECTING

BENCH TEST

AvertX recommends bench testing your camera(s) before installation. This will confirm that your camera is functioning correctly before it is installed and possibly out of reach.

To bench test your camera, attach the camera network connector to your recorder and test whether the camera is functioning correctly. Once the camera is connected to the recorder, test all functions to ensure proper operation.

If the camera will not connect or is not functioning correctly, do not install, and contact AvertX Support.

NETWORK CAMERA MANAGER

Network Camera Manager **(NCM)** is a software tool that allows you to quickly and easily connect and configure your AvertX IP cameras. This software allows you to assign IP addresses, configure video settings, and update firmware on multiple cameras at once.

NCM is pre-installed on all AvertX ProConnect recorders and is also available for download at **www.avertx.com/support** for installation on your personal computer or laptop.

Launch Network Camera Manager

Open the Settings menu, go to the **Cameras** page and click **Advanced** (located towards to top-middle on the page).

NOTICE: If you cannot connect to the camera you may need to change the camera's IP address to match your network settings.

Finding Network Devices

Click **Refresh** to reload the Device List.

To narrow your search by Camera Model or Network Location, use the Model Filter and Networks dropdowns.

Changing the IP Address

AvertX recorders will automatically apply a DHCP IP address. If you are not connecting the camera to an AvertX recorder or DHCP network, you must set a static IP address. NCM allows you to do this in the bottom left corner:

1. Select the applicable camera.
2. Enter the **IP address**, **Subnet Mask**, and **Gateway**.
3. Click **Apply**.
4. Wait 10 seconds and click **Refresh**.

CONNECTING TO THE CAMERA

Connecting in a Web Browser

1. Type the IP address of the camera in a web browser.
   - OR -
   Use the **Network Camera Manager** software and locate the camera on the list, then click **Load** in the row of the desired camera.
1. Log in to the camera with the appropriate Username and Password.

Username and Password

IMPORTANT:	This AvertX camera model ships without a default password; the admin password is required to gain access or establish a connection.

The admin user password can be set using the following methods:

1. AvertX ProConnect recorders will check the camera for a password once connected.
   i. **If AvertX software does not detect a password, it will set the camera password to a secure text string of 8 to 16 characters** (Including upper-case letters, lower-case letters, digits and special characters (!"#$%&'()*+,-./:;<=>?@[\]^_`{|}~ space)).
2. Network Camera Manager
3. Camera Web Browser

Connecting a Stream

AvertX IP cameras are optimized for use with AvertX ProConnect recorders, but you can also connect to your AvertX IP cameras using third party software like VLC media player (http://www.videolan.org).

All AvertX IP cameras are capable of delivering two RTSP streams over HTTP.

The RTSP stream URL format is as follows:

rtsp://**[USER]**:**[PASSWORD]**@**[IP ADDRESS]**:**[RTSP PORT]**/media/video**[STREAM]**

[USER] – This is the username to access your device

[PASSWORD] – This is the password to the user

[IP ADDRESS] – This is the IP address of your device

[RTSP PORT] – This is the RTSP port of your device; the default RTSP Port is 554

[STREAM] –

- Primary Stream: video1
- Sub-stream: video2

Example:

[USER]	*admin*
[PASSWORD]	*1$S!9#6v$$$1*
[IP ADDRESS]	*192.168.51.51*
[RTSP PORT]	*554*
[STREAM]	*1*

RTSP Stream URL *- rtsp://admin:1$S!9#6v$$$1@192.168.51.51:554/media/video1*

LOGGING INTO THE WEB INTERFACE

The default static IP address of the camera is 192.168.51.2, 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 will be assigned dynamically.

- Browse to the login page by entering the IP address of your camera in the address bar.
- Enter the **username** and **password**, and then click **Login**.
    - Username: admin
    - You will be prompted to change the password the first time you login.

INSTALLING THE CAMERA

Wall and Ceiling Installation

1. Apply template sticker to desired camera location.
2. Drill anchor holes and 7/8” hole for cabling using included mounting template.

Note: The 7/8” cabling hole is not required if a mounting accessory is being used.

3. Remove mounting template.
4. Insert anchors.
5. Connect network cable with included waterproof cable connector.
6. Remove the camera dome cover by removing 3 dome screws and lifting.
7. Attach the camera to the ceiling or wall with the included screws.
8. Adjust the camera to the desired angle.
    - The C3212D4-S features 3-axis camera positioning: Tilt, Camera Rotation, and Lens Rotation.
    - Rotate the lens so the 0 mark is vertical relative to the horizon.

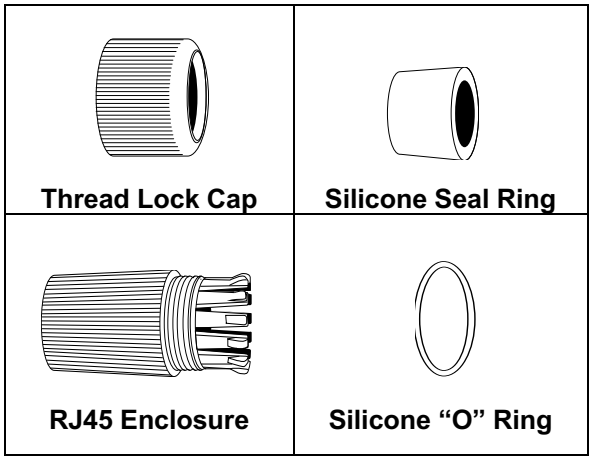
Note: Use the AvertX Connect app to view the camera while adjusting view.

9. Replace the dome cover. To install, align screws to the holes. Tighten dome cover screws just enough for a good seal. Clean the dome with the included cleaning cloth.
10. Mount camera.
11. Install the camera cover and tighten the lock screw.

Waterproof Cable Connector

This camera features an IP66-rated waterproof cable connector. For unprotected outdoor connections, screw the connector on the included ethernet camera cable onto the camera dongle. If your installation location does not require a waterproof connection, loosen and slide the connector back on the cable until it's out of the way.

Included Pieces:



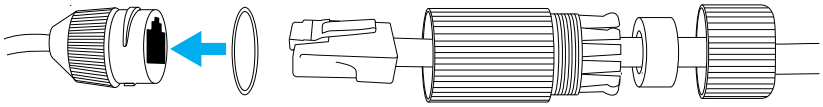
To Install the weather resistant cable connector:

1. Slide all pieces of the waterproof cable connector over the cable plug in this order:

- Thread Lock Cap
- Flexible silicone seal ring. You will need to stretch the silicone seal over the RJ-45 plug.

PRO TIP: Insert the flexible silicone seal ring onto the tip of a pair of needle nose pliers and stretch the seal over the RJ45 plug.

- RJ45 Enclosure



2. Stretch the small silicone "O" ring onto the camera dongle.
3. Connect the camera cable to the plug on the dongle. Screw the RJ45 Enclosure into the dongle.
4. Insert the flexible silicone seal into the "crown" section of the large plastic ring.
5. Screw the small plastic ring into the large plastic ring.

PRO TIP: To remove the RJ45 enclosure from the camera cable, tape down the locking tab on the RJ45 plug with electrical or office tape.

NOTICE: Do not attempt to disconnect the camera connection without loosening the smaller thread lock cap. Forcing the assembly will break the camera dongle and void the camera warranty.

Cleaning the Dome and Lens Cover

The dome and lens cover of the C3212D4-S are extremely durable but can be damaged if cleaned improperly.

To Clean the Dome and Lens Cover:

- To clean dust or loose dirt, use compressed air.
- To clean smudges or stuck on dirt, use warm water with a few drops of dish soap and a clean microfiber cloth.

CAUTION: Do not use solvents, paper towels, newspaper, or other rough materials to clean the dome cover. This can scratch the dome and lens cover and cause IR distortion.

Considerations for Infrared (IR) Lights

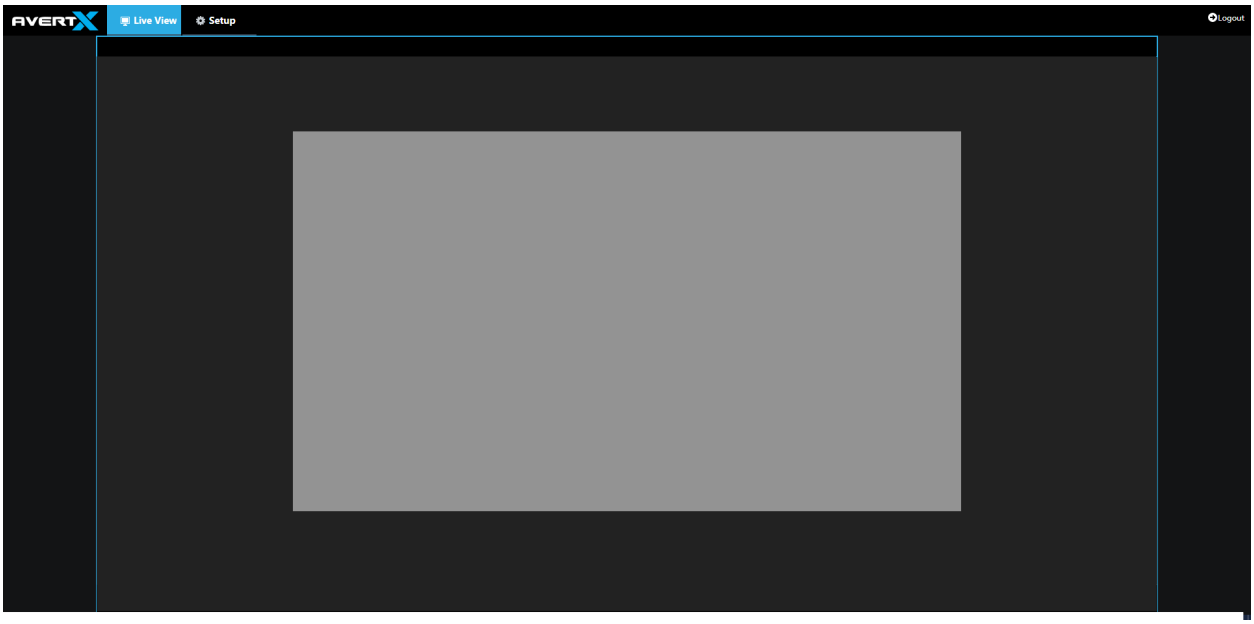
Environmental factors can limit the performance of night vision using IR illuminator lights. Infrared light behaves the same as visible light and will reflect off of bright or shiny objects and overexpose the image. The camera will adjust to properly expose the bright areas of the image, which may leave the dark areas obscured.

For best IR Night Vision performance:

Be aware of surfaces that can cause IR light to reflect into the camera.

- Reflective or light-colored surfaces and objects close to the camera can reflect IR light back into the camera.
    - Remove the reflective or light-colored surfaces.
    - Cover the reflecting surfaces with a non-reflective material (non-reflective tape, dark paint)
    - Mount the camera on a nearby wall using a mounting bracket.

LIVE VIEW



The camera displays a live view using the MJPEG stream for setup purposes.

Setup – Go to the Setup tab to access the camera menus

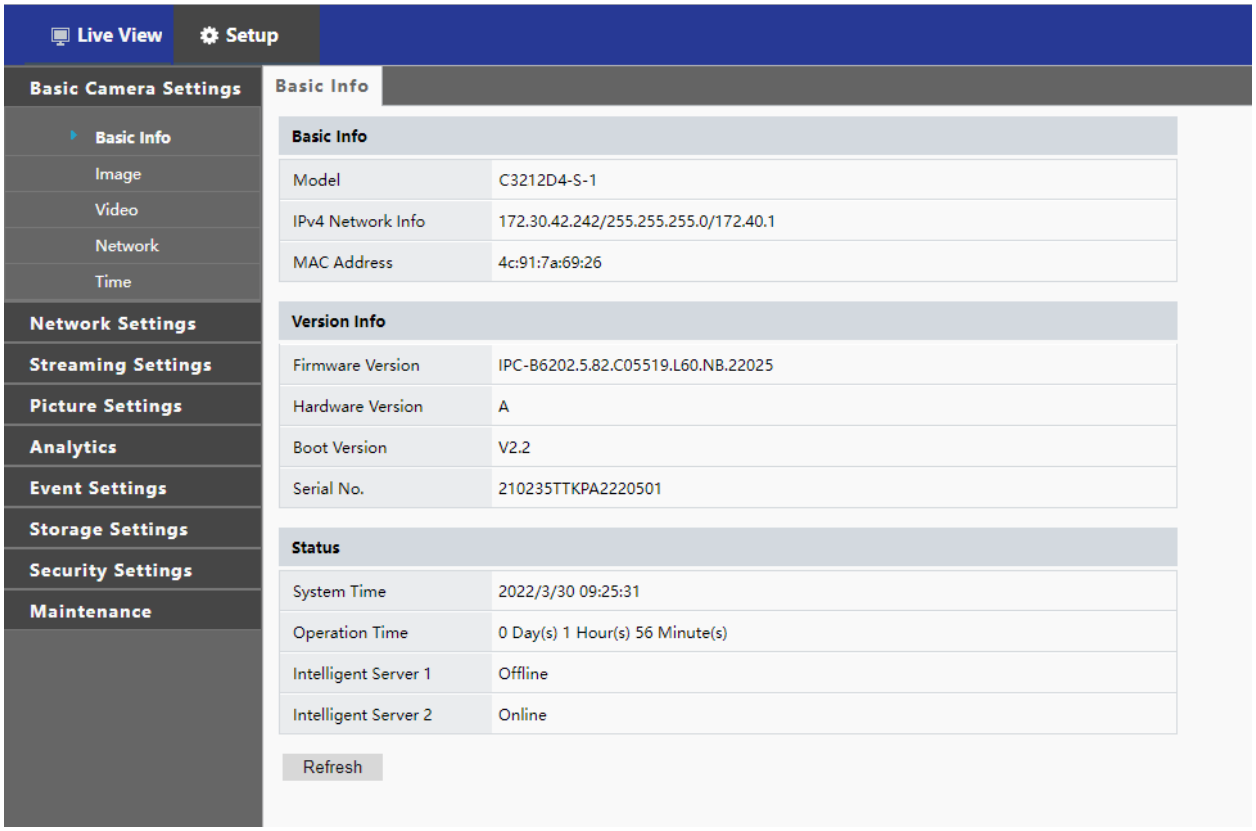
Logout – Log out the current user

SETUP & CONFIGURATION

Basic Camera Settings

Basic Information

The Basic Information tab displays the product model, firmware, network, and MAC address for the connected camera, along with the current camera Status.



The nested Image, Video, Network, and Time tabs are shortcuts to the more advanced menu options further down the Setup list. For more information about these tabs, see the appropriate sections later in the manual.

Network Settings

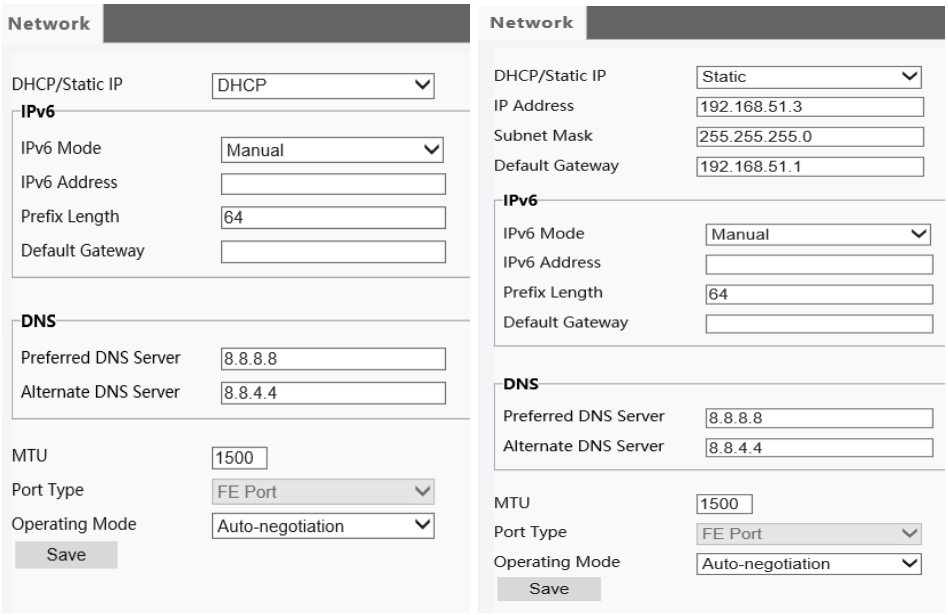
Network

The Network tab allows you to configure the connected camera network settings.

DHCP IP Address

The default static IP address of the camera is 192.168.51.2, 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.



Static IP Address

To set up a new static IP address:

1. Select **Static** from the **DHCP/Static IP** dropdown option.
2. Enter the **IP Address**, **Subnet Mask,** and **Default Gateway.**

   ***Note -** Make sure that the IP address of the camera is unique in the network.
3. **Save**

IPv6 Address Configuration

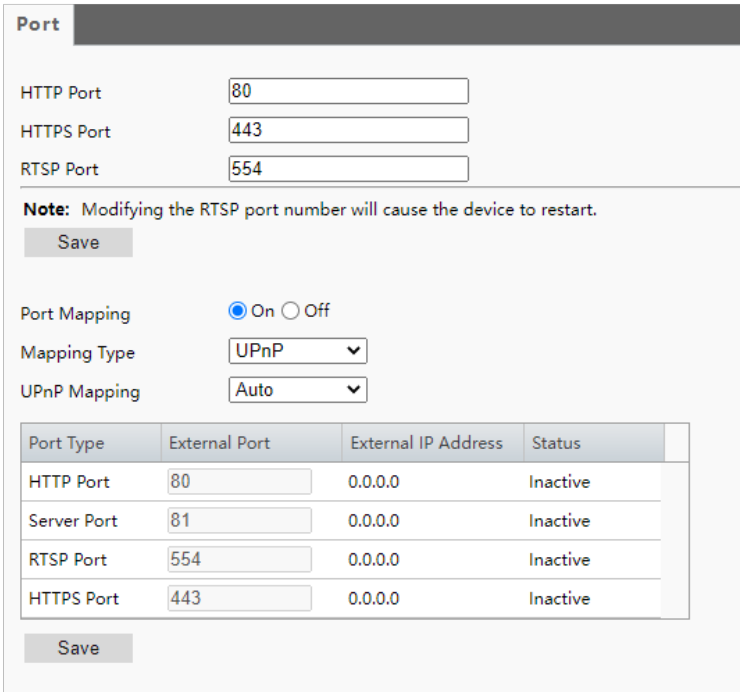
1. Enter the **IPv6 Address**, set the **Prefix Length** and **Default Gateway**.

   ***Note** - Make sure that the IP address of the camera is unique in the network.
2. **Save**

DNS

Set your **Preferred DNS Server** and **Alternate DNS Server**.

Port



HTTP Port – Configure your relevant port number.

> **Note** If the HTTP port number has been occupied already, a "Port conflicts" message will display. Ports 23, 81, 82, 85, 3260, and 49152 are occupied by default.

HTTPS Port – The default HTTPS Port is 443; setting range: 1024 ~65535.

RTSP Port – The default RTSP port is 554; setting range: 1024 ~65535.

> **Note** No port number can be used in duplication on more than one item.

Port Mapping

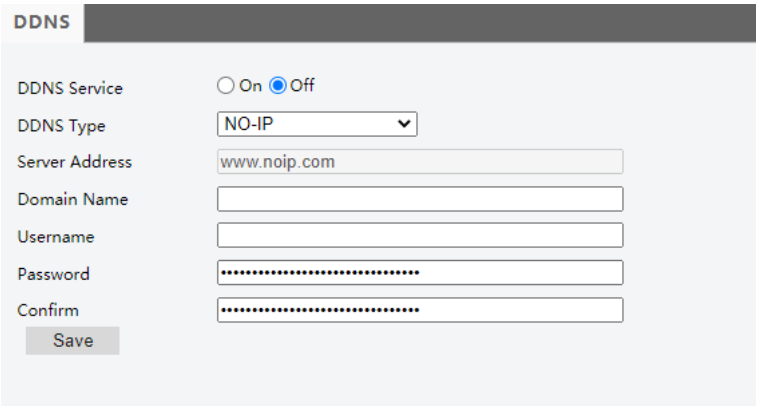
To enable Port Mapping:

1. Toggle **On** for **Port Mapping**.
2. Use the **Mapping Type** dropdown menu to select a type.
3. Use the **UPnP Mapping** dropdown menu to select a type.
4. If selecting **Manual** in either dropdown, the external ports must be configured.

> **Note** If the configured port is already occupied, then the Status will show as inactive and a new port must be selected.

5. **Save**

DDNS

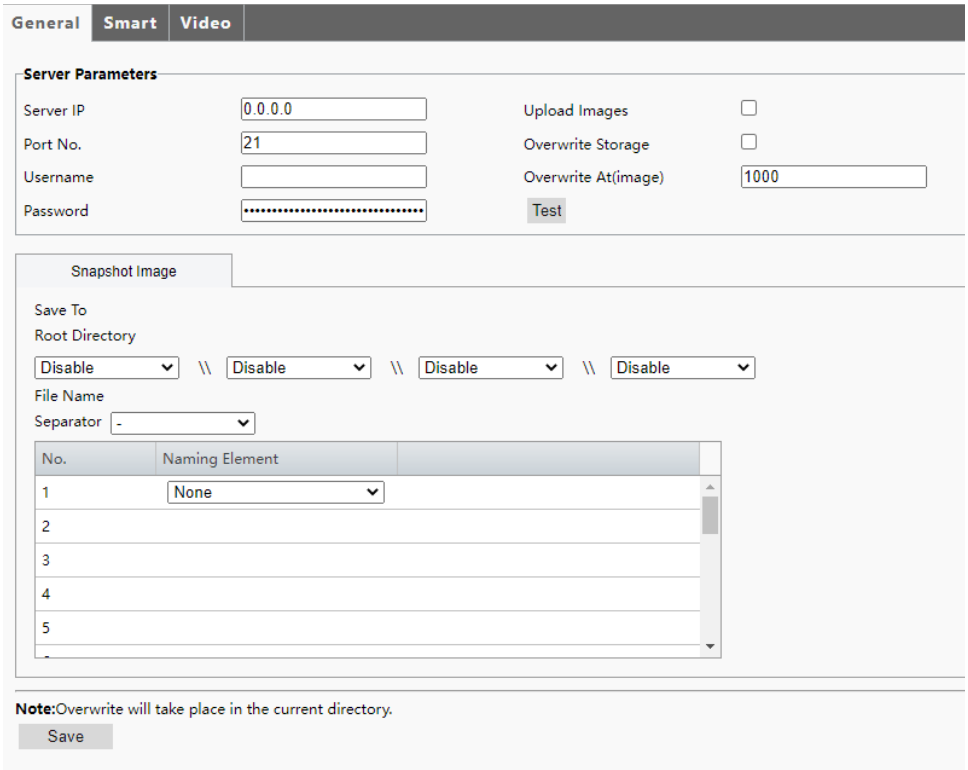


1. **Enable** DDNS Service.
2. Select a **DDNS Type.**
3. Enter **Server Address**, **Domain Name**, **Username**, **Password**, and **Confirm** password.
4. **Save**

FTP

General

Use FTP (**file transfer protocol**) to upload snapshots from network cameras to a specified server.



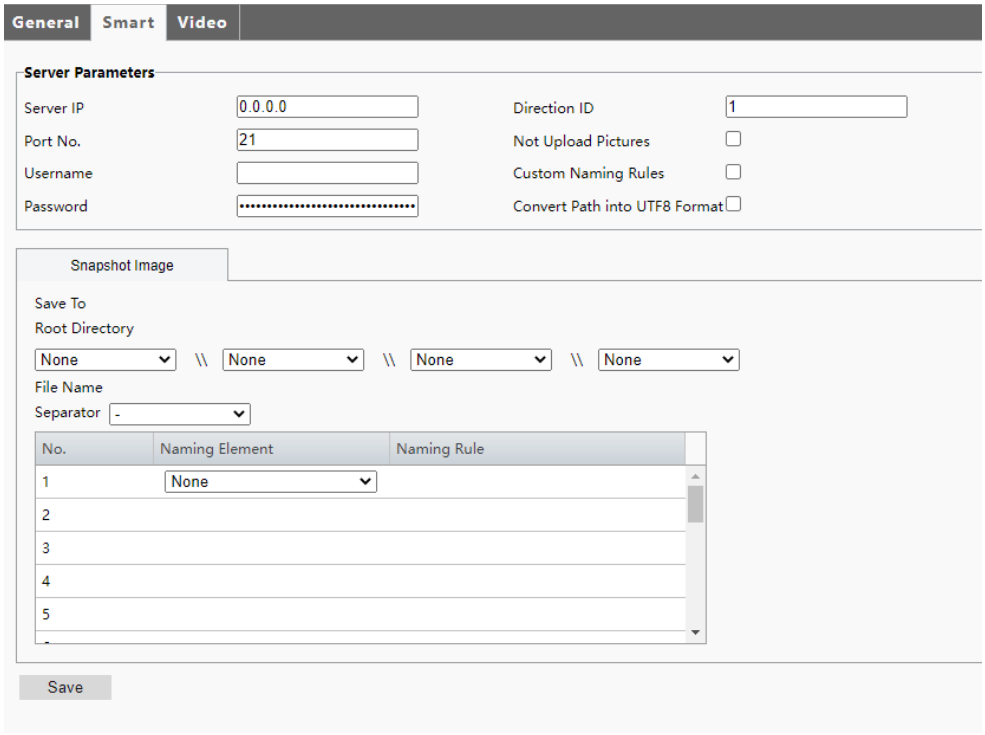
To configure FTP:

1. Set the **Server IP** address and **Port No.** for the FTP server, **Username** and **Password** used to upload images to the FTP server, select **Upload Images**, **Overwrite Storage** and set **Overwrite At** (threshold for overwriting images).
2. Set the path for saving snapshots on the FTP server and the file name format.

   Example: set path as Preset No.\\IP Address\\Date\\Hour(s), and set file name as Preset No.-PTZ Zoom-PTZ Latitude-PTZ Longitude.jpg.
3. **Save**

Smart

Use Smart FTP (**file transfer protocol**) to upload snapshots captured in smart motion events.



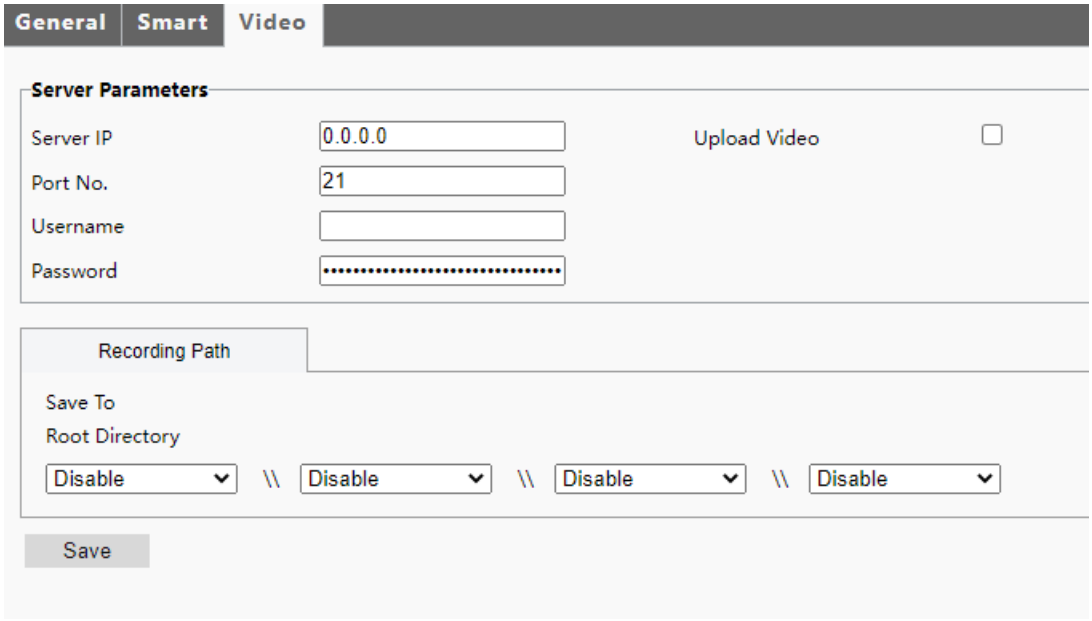
To configure Smart FTP:

1. Set the **Server IP** address and **Port No.** for the FTP server, **Username** and **Password** used to upload images to the FTP server.
2. Set **Direction ID**.
3. Check to enable the following:
    a. **Not Upload Pictures**
    b. **Custom Naming Rules**
    c. **Convert Path into UTF8 Format**
4. Set the path for saving snapshots on the FTP server and the file name format.

    Example: set path as Preset No.\\IP Address\\Date\\Hour(s), and set file name as Preset No.-PTZ Zoom-PTZ Latitude-PTZ Longitude.jpg.
5. **Save**

Video

Use Smart FTP (**file transfer protocol**) to upload video from network cameras to a specified server.



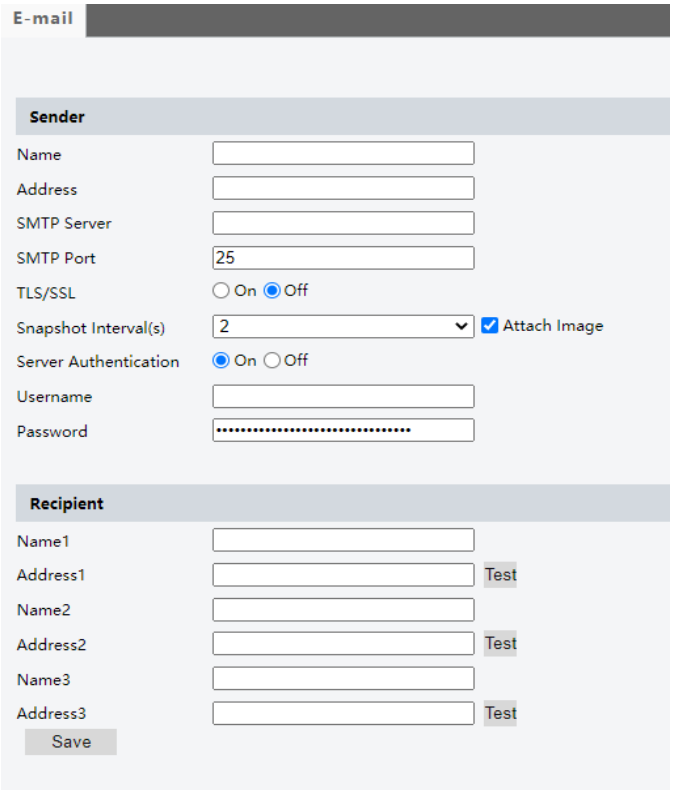
1. Set the **Server IP** address and **Port No.** for the FTP server, **Username** and **Password** used to upload images to the FTP server.
2. Check **Upload Video**.
3. Set the path for saving snapshots on the FTP server and the file name format.

   Example: set path as Preset No.\\IP Address\\Date\\Hour(s), and set file name as Preset No.-PTZ Zoom-PTZ Latitude-PTZ Longitude.jpg.
4. **Save**

Email

The camera can send an e-mail via Simple Mail Transfer Protocol (SMTP) when a variety of events occur.

Two sets of SMTP accounts can be configured. Each set includes SMTP Server, Account Name, Password and E-mail Address settings. For SMTP server, contact your network service provider for more specific information.

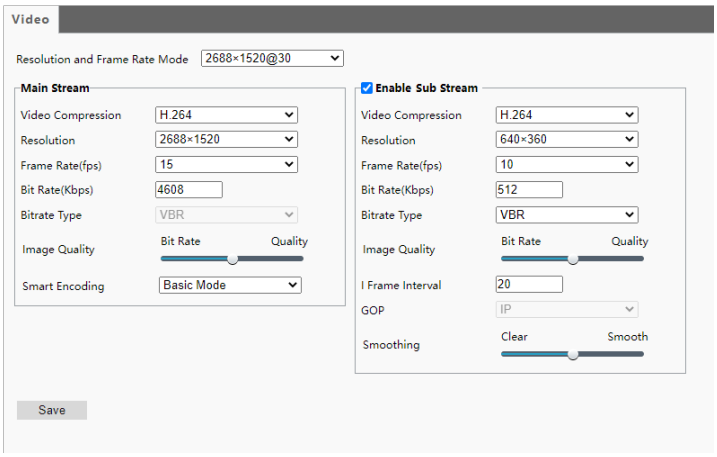


Parameter	Description
TLS/SSL	When enabled, the e-mail will be encrypted using TLS (Transport Layer Security) or Secure Socket Layer (SSL) to protect privacy. First it tries to send through an SSL connection. If the SMTP server supports SSL, the e-mail will be sent through the SSL connection; otherwise, it tries to send using STARTTLS.
Attach Image	When enabled, the e-mail will contain 3 instant snapshots as attachment according to the Capture Interval.
Username/Password	Username and password of the registration email address. The password allows the following special characters \ / : * ? ' " < > | % &

Streaming Settings

Video

The video settings menu configures the camera's video settings, including **Resolution**, **Frame Rate**, **Bit Rate**, and the **Image Quality**.



To configure camera streams:

Use the dropdown menus to configure the **Video Compression, Resolution, Frame Rate, Bitrate Type**, **Smart Encoding,** and **GOP**.

1. Check to **Enable Sub Stream** and configure if desired.
2. **Save**

Smart Encoding – Turn on Smart Encoding to enable H.264+ encoding to reduce bit rate. It is recommended not to set the frame rate below 10FPS when smart compression is enabled.

Resolution and Frame Rate – Use the dropdown menu to select the base resolution and frame rate for the main stream.

> **Note** Higher frame rate will increase video smoothness but will increase file size and bandwidth usage. Lowering the frame rate will conserve file size and bandwidth usage at the expense of video smoothness.

Video Compression – H.264 and MJPEG are available for video compression.

Image Quality – If the Encoding Mode is set to VBR, you can adjust the quality level for images by moving the sliding bar. The Quality side of the bar improves video quality, and the Bit Rate side of the bar reduces Bit rate.

I-Frame Interval / GOP – The Group of Pictures setting allows you to modify the frame structure of the video stream. This setting changes the frequency of the I-frames that occur within the stream of P-frames. Increasing this number increases the number of P-frames between each I-frame, decreasing the file size of the stream, but increasing the risk of video decoding errors. It is recommended setting the GOP to be approximately twice the frame rate.

Smoothing – Configure the amount of video smoothing. Moving the sliding bar toward Smooth increases the level of smoothing but may affect image quality.

> **Note** In a poor network environment, you can increase smoothing to get more fluid video.

Stream URLs / RTSP

It is possible to connect to AvertX IP cameras using third party software like VLC media player.

To connect some types of software will need to know the stream URL. All AvertX IP cameras can deliver two RTSP streams.

The RTSP stream URL format is as follows:

rtsp://**[USER]**:**[PASSWORD]**@**[IP ADDRESS]**:**[RTSP PORT]**/media/video**[STREAM]**

[USER] – This is the username to access your device

[PASSWORD] – This is the password to the user

[IP ADDRESS] – This is the IP address of your device

[RTSP PORT] – This is the RTSP port of your device; the default RTSP Port is 554

[STREAM] –

- Primary Stream: video1
- Sub-stream: video2

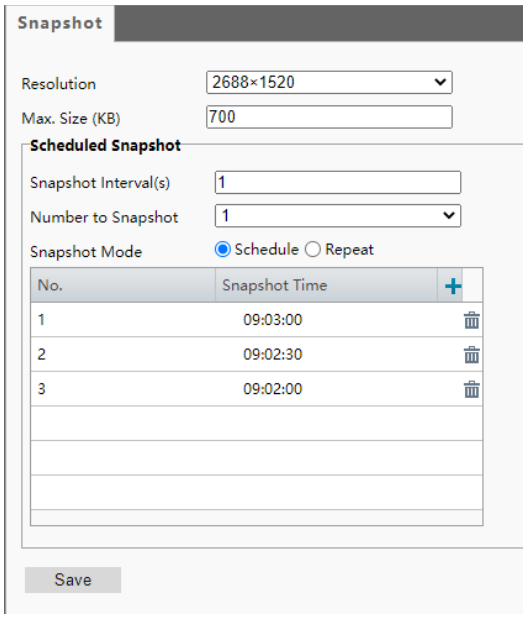
Example:

[USER]	*admin*
[PASSWORD]	*1$S!9#6v$$$1*
[IP ADDRESS]	*192.168.51.51*
[RTSP PORT]	*559*
[STREAM]	*1*

RTSP Stream URL *- rtsp://admin:1$S!9#6v$$$1@192.168.51.51:559/media/video1*

Snapshot

The Snapshot tab is used to configure the settings for timed or continual snapshots.



The Snapshot tab is used to configure the settings for timed or continual snapshots.

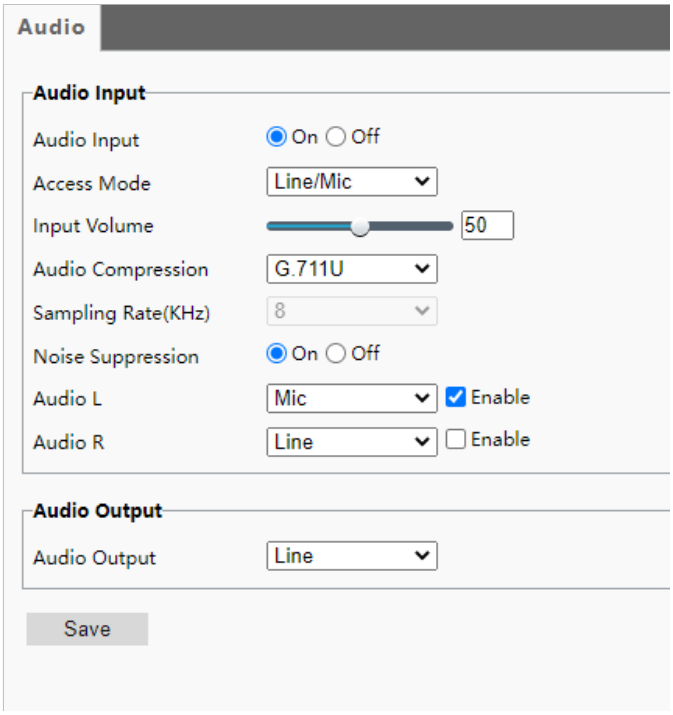
To configure Snapshots:

1. Use the dropdowns to select the desired **Resolution**, **Snapshot Interval**, and the **Number of Snapshots**.
2. If you desire Scheduled Snapshots, select **Schedule** Snapshot Mode, and designate snapshot times.
3. **Save**

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.

Audio

The Audio tab allows you to configure the audio encoding settings for your camera.



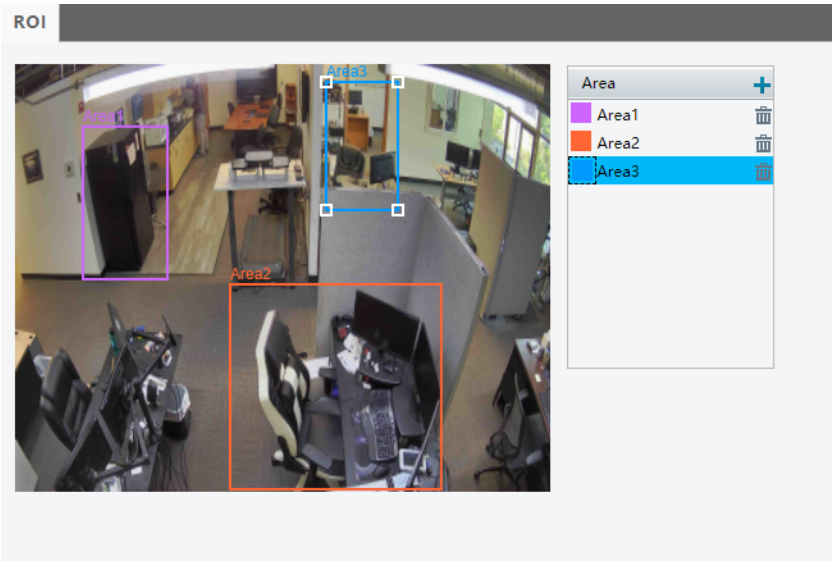
To configure Audio setup:

1. Configure the Audio settings as desired.
2. **Save**

Parameter	Description
Audio Input	No audio data will be encoded when **Off** is selected.
Access Mode	Line/Mic
Input Volume	Audio signal amplification for sampling. The greater the gain, the greater amplification.
Audio Compression	Two options: G.711U, G.711A. G.711U and G.711A support 8K sampling rate only.
Noise Suppression	Reduces background noise to improve clarity of voices. To enable noise suppression, select **On**.
Audio L	To enable left audio input, select **Enable**.
Audio R	To enable right audio input, select **Enable**.
Audio Output	Line only

Region of Interest (ROI)

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



To enable ROI:

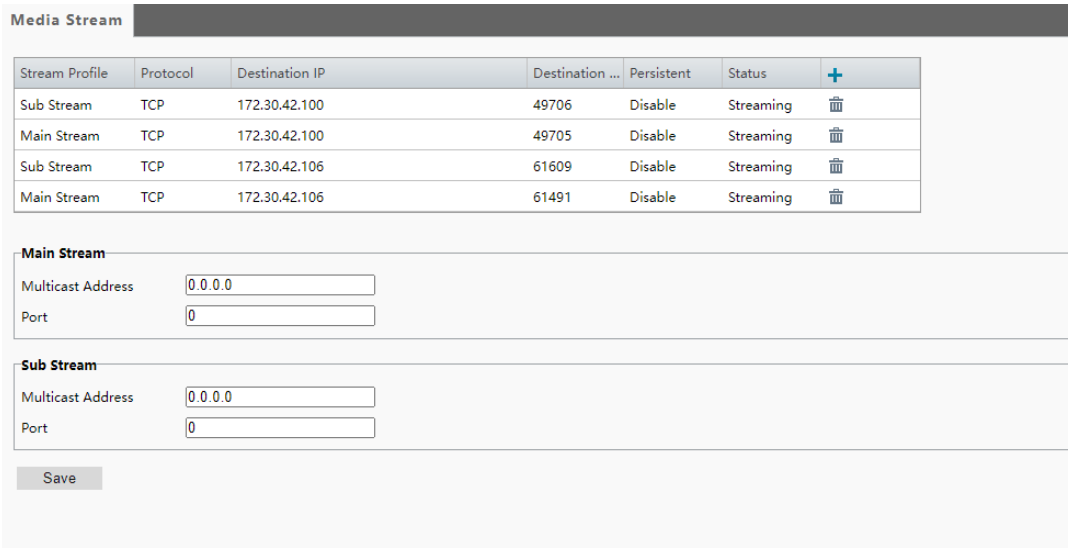
1. Click **+** on the Area box.
2. Arrange the ROI square as desired in the camera image. Click and drag to move the square and use the corner markers to expand the square. The interior of the ROI square will be considered the ROI.
3. Click **+** again to add additional ROIs.
4. Click the trash icon to delete a created ROI.

Changes will be saved automatically.

Media Stream

You can display the established media streams from a camera. You can also set the camera to transmit code streams by the UDP or TCP protocol to a specified IP address and port number.

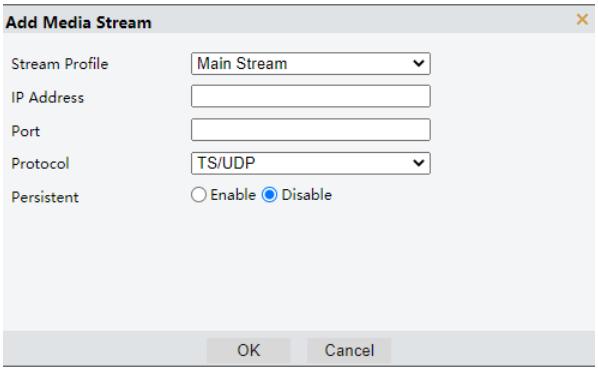
Note	Changes to the media stream will take effect after the camera has been restarted.



To configure media streams:

1. Click the **+** on the right side of the title bar and the Add Media Stream page will appear.

2. 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. Toggle **Persistent** to **Enable** if you want the device to establish the media stream that you have just configured automatically upon each subsequent restart.
4. **Save**
5. Click the trashcan icon to **delete** a created media stream.

Picture Settings

Image

The Image tab allows you to configure the setting for the camera image as seen in Live View. When adjusting your image settings, the changes will be saved automatically and will display in the camera image preview window.

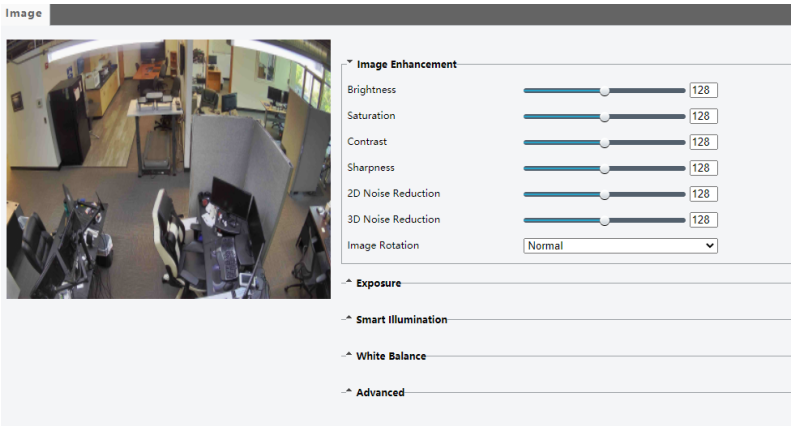


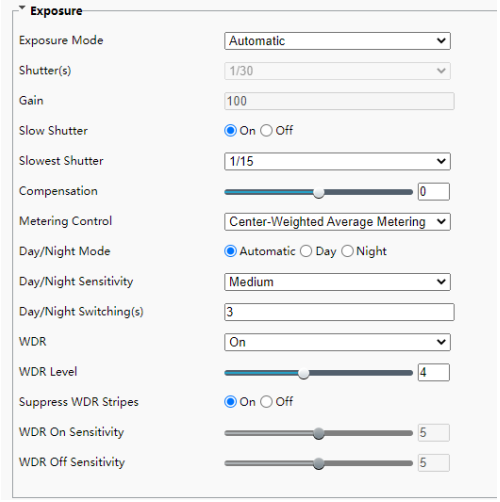
Image Enhancement

Use the sliding scales to adjust the Image settings or set a numeric value in the value box.

The dropdown Image Rotation menu will rotate the camera image.

Exposure

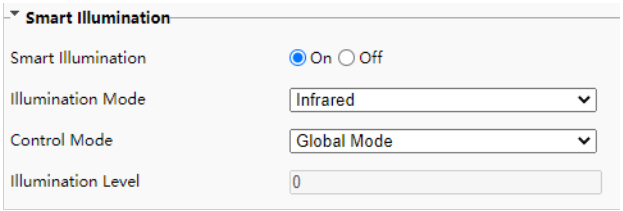
By default, the Exposure Mode is set to Automatic. Other options include Custom, Indoor 50hz, Indoor 60hz, and Manual. Using Custom or Manual allows you to manually configure the shutter and gain control.



Parameter	Description
Exposure Mode	• **Automatic**: The camera automatically adjusts exposure according to the environment. • **Custom**: The user sets exposure as needed. • **Indoor 50Hz**: Reduce stripes by limiting shutter frequency. • **Indoor 60Hz**: Reduce stripes by limiting shutter frequency. • **Manual**: Finetune image quality by setting shutter, gain and iris manually. • **Low Motion Blur**: Control the minimum shutter to reduce motion blur in faces captured in motion.
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 greater than the frame rate.
Gain	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.
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. • **Face Metering**: Adjust image quality in poor lighting conditions by controlling the brightness of captured face in Face scene. • **Spot Metering**: Adjust image quality in high contrast conditions to use a small, selected area as the light source ***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.

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 Switching(s)	Set the length of time before the camera switches between day mode and 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 neither* ***Customize*** *nor* ***Manual*** *and when* ***Image Stabilizer*** *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.
WDR On/Off Sensitivity	When **WDR** is set to **Automatic**, adjust the parameter to change the WDR switching sensitivity.

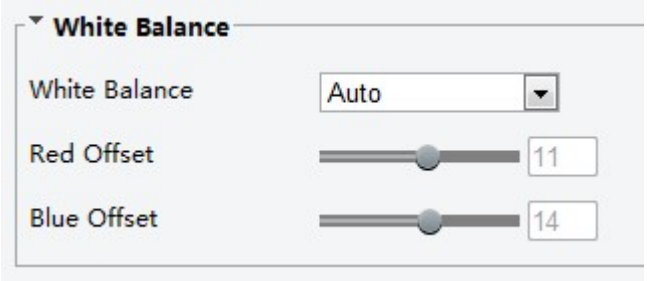
Smart Illumination



Parameter	Description
Illumination Mode	**Infrared:** The camera uses infrared light illumination.
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. • **Custom Level:** 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****.*

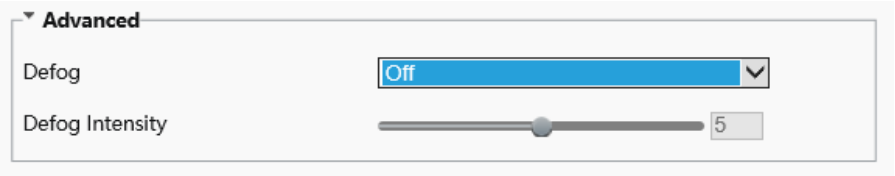
White Balance

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



Parameter	Description
White Balance	Adjust the red or blue offset of the image: **Auto/Auto2**: The camera adjusts the red and blue offset automatically according to the light condition (the color tends to be blue). If the images are still unnaturally red or blue in Auto mode, please try Auto2. **Outdoor**: Suitable for outdoor environment with a relatively greater color temperature range. **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 without change.
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**.*

Advanced



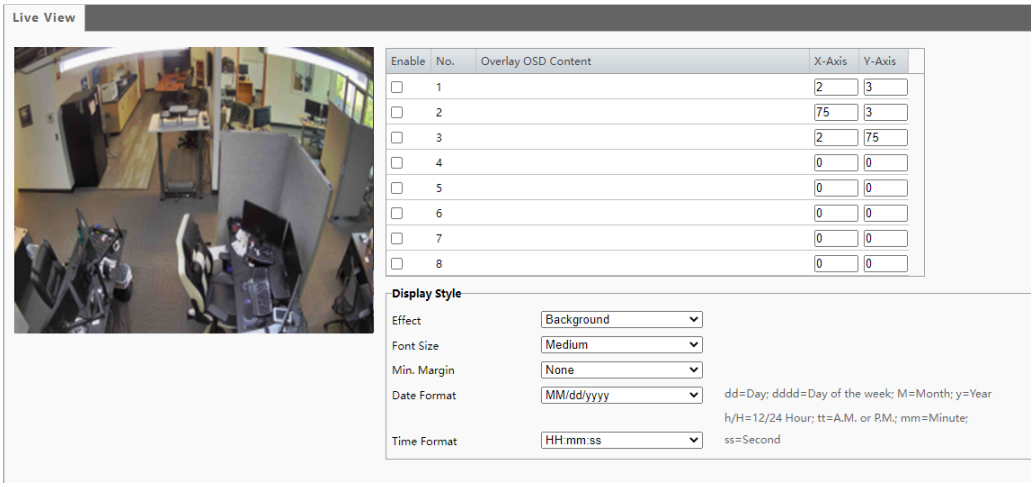
Defog – Adjust the clarity of images captured in fog or haze conditions.

- Use the Defog dropdown menu to turn Defog **On** or **Off**.
- Slide the **Defog Intensity** bar to the desired position (1 is the minimum intensity and 9 is the maximum intensity).

Note	The Defog function is only available when WDR is disabled.

On-Screen Display

Up to 8 on-screen displays (OSD) can be configured for the camera image.



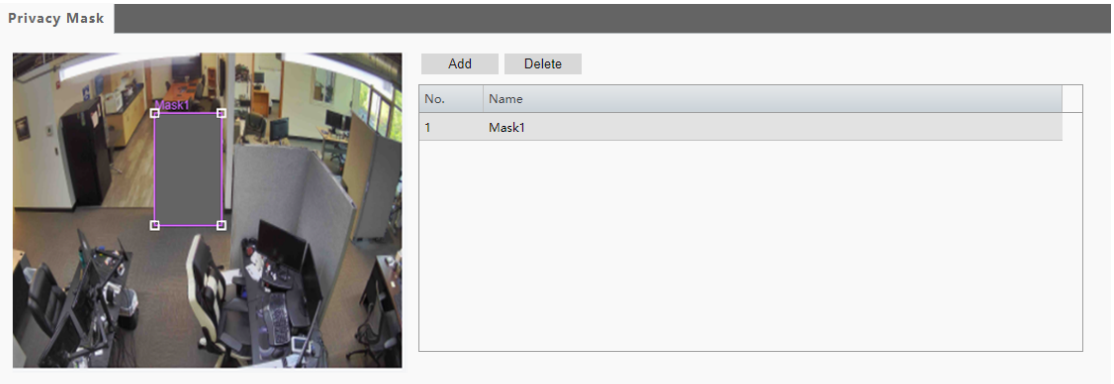
To add an on-screen display:

1. Select the position and content of the OSD.
    a. **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.
    b. **Overlay OSD Content**: The drop-down list provides Time, Preset and Serial Info. You may also select Custom and enter the content you want.
2. After you have completed the settings, a message appears to indicate the successful settings.
3. To cancel OSD for an area, clear the OSD content in the Overlay OSD Content column.

Note	To view the OSD in the web browser Live View, you must refresh the browser after setting the OSD for the changes to take effect.

Privacy Mask

Add a privacy mask to your camera image to hide desired areas from view.



To **add** a privacy mask:

1. Click **Add**.
2. Click and drag the newly generated **mask square** to the desired location on the camera image. Arrange and resize the mask as needed.

To **delete** a privacy mask:

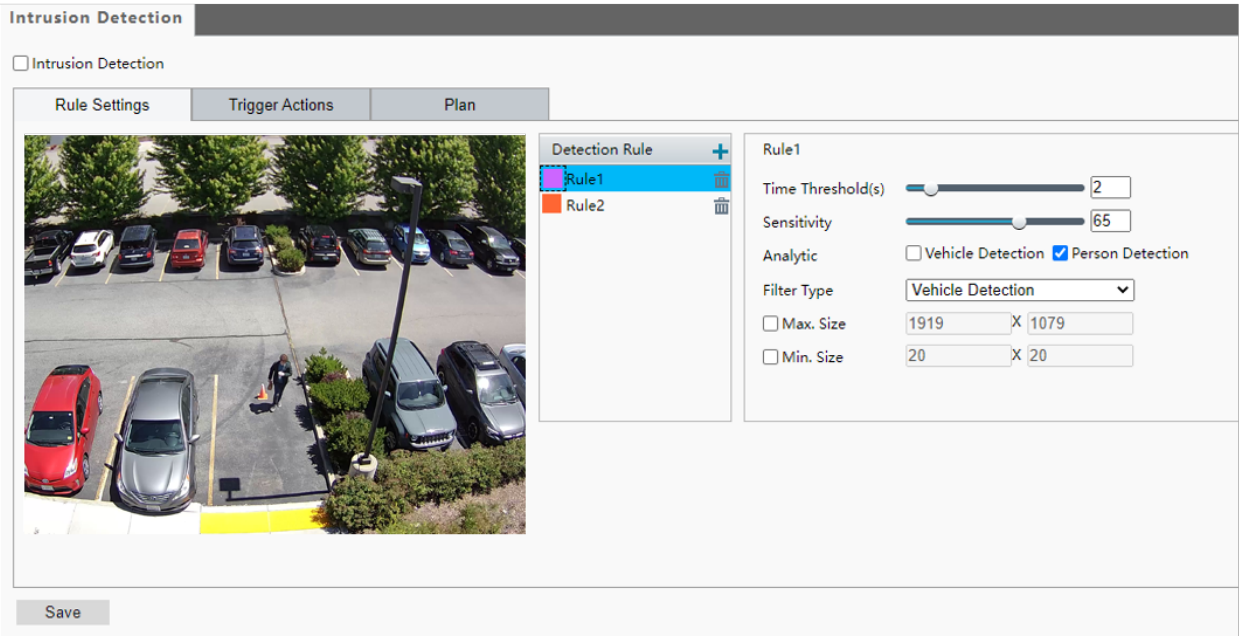
1. Select the desired mask from the Privacy Mask list.
2. Click **Delete**.

Changes will be saved automatically.

Analytics

Intrusion Detection

Rule Settings



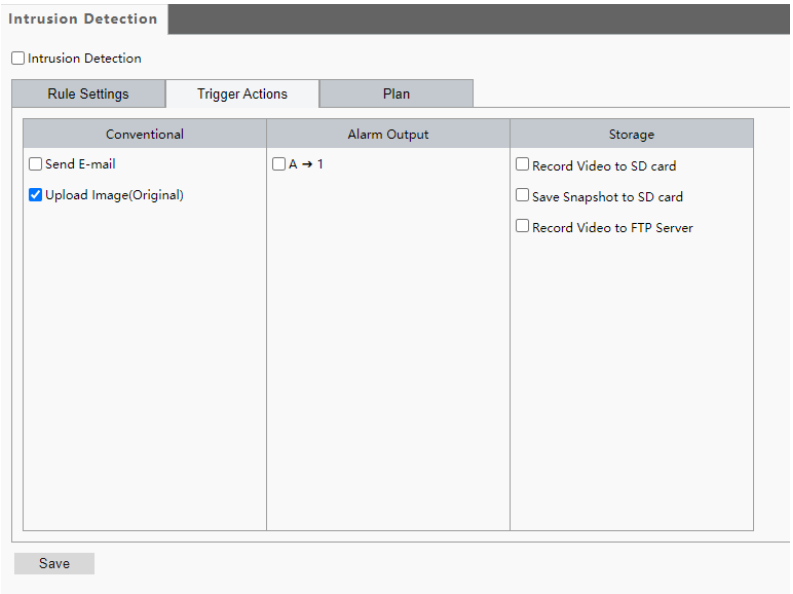
1. Check **Intrusion Detection** to enable.
2. In the **Detection Rule** area, click + to add a new detection area. To delete a detection area, click 🗑.
3. Drag the borders of the box to set the intended position and range.
4. Set **Time Threshold** and **Sensitivity** for the camera to decide whether 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.

Note	Setting sensitivity too high will increase the likelihood of false alerts.

5. Check either **Vehicle Detection** or **Person Detection**.
6. Choose the Vehicle Detection or Person Detection **Filter Type**.
7. Enable **Max. Size** or **Min. Size** to resize the filter detection box to a default size.

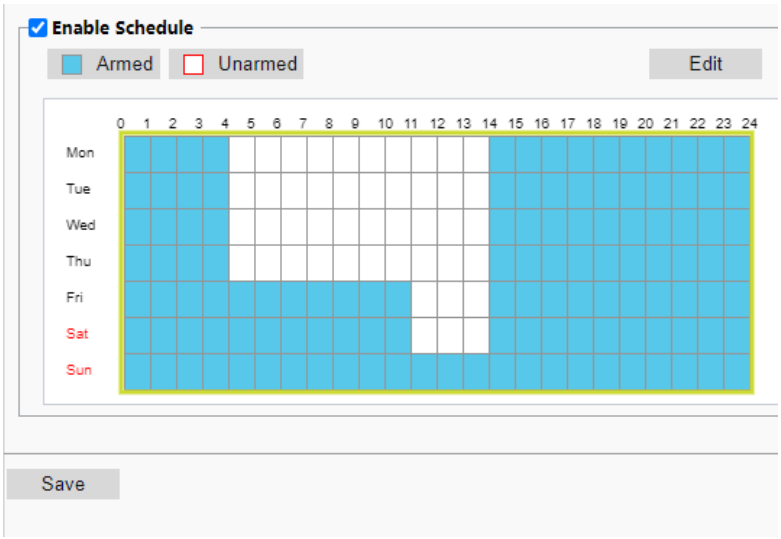
Trigger Actions

1. Check the boxes to choose the actions that are triggered when a person or vehicle is detected.
2. **Save**

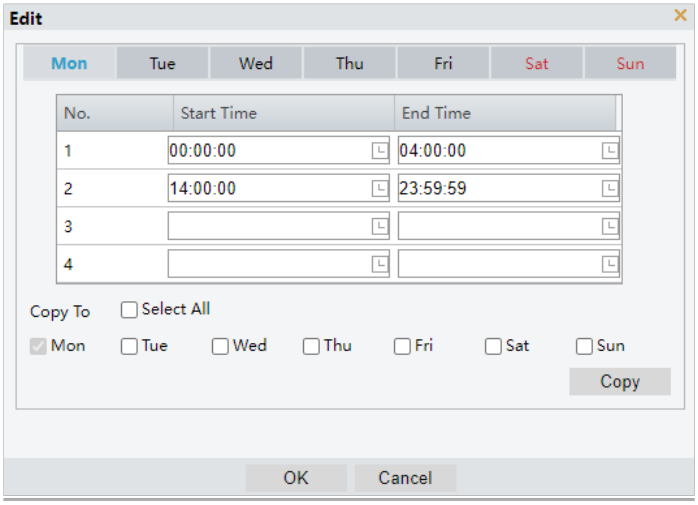


Item	Description
Send Email	With Send E-mail selected, the camera will automatically send snapshots to the specified E-mail addresses when a person or vehicle is detected. **Note:** Make sure you have completed E-Mail Recipient configuration before using this function.
Upload Image (Original):	With Upload Image selected, the camera will automatically upload snapshots to the recorder when a person or vehicle is detected.
Alarm Output	This setting is the alarm output interface linked to motion detection alarm. **Note:** When an alarm is reported, the camera triggers alarm output to trigger actions by a third-party device.
Record Video to SD Card	With Record Video to SD Card selected, the camera will automatically record video to the SD Card when a person or vehicle is detected. **Note:** Make sure you have completed Storage configuration before using this function.
Save Snapshot to SD Card	With Record Snapshot to SD Card selected, the camera will automatically save an image to the SD Card when a person or vehicle is detected. **Note:** Make sure you have completed Storage configuration before using this function.
Record Video to FTP Server	With Record Video to FTP Server selected, the camera will automatically upload video to the specified FTP server when a person or vehicle is detected. **Note:** Make sure you have completed FTP configuration before using this function.

Plan



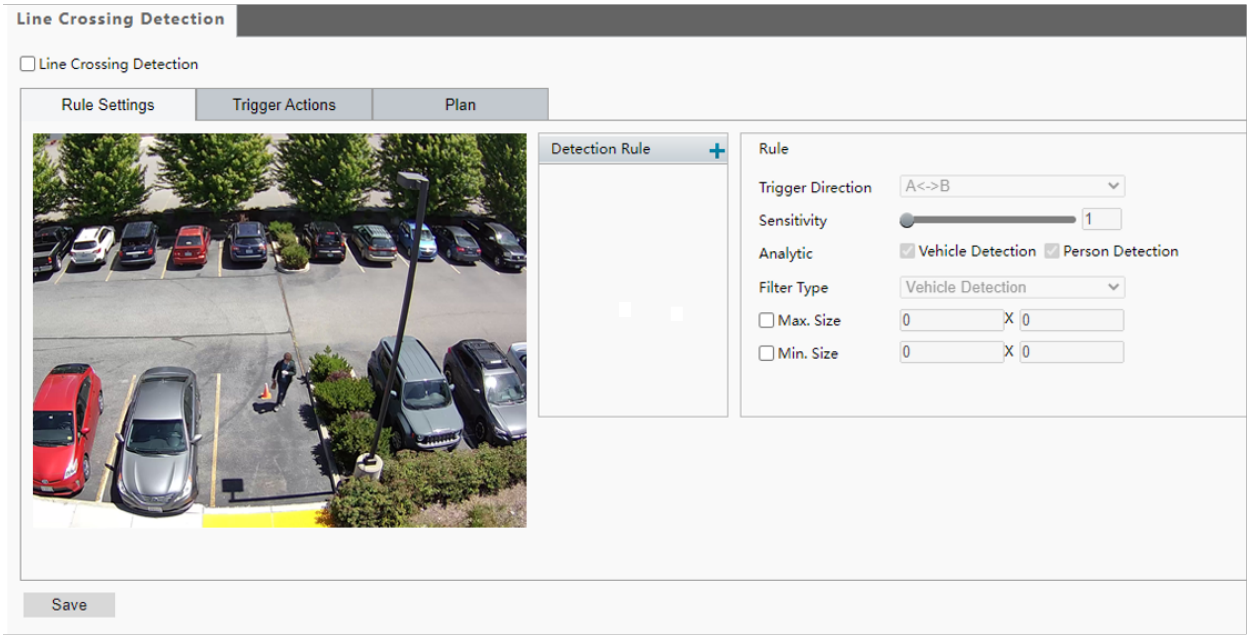
1. Click **Armed** or **Unarmed** and click the schedule to set when enabled Trigger Actions are effective.



2. Click **Edit**.
3. Set the start and end times during which Trigger Actions are effective. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.
4. Select from Monday to Sunday and set up to four periods for each day or check the days and **Copy** to set the same schedule for multiple days.
5. Click **OK**.
6. **Save**

Line Crossing Detection

Rule Settings



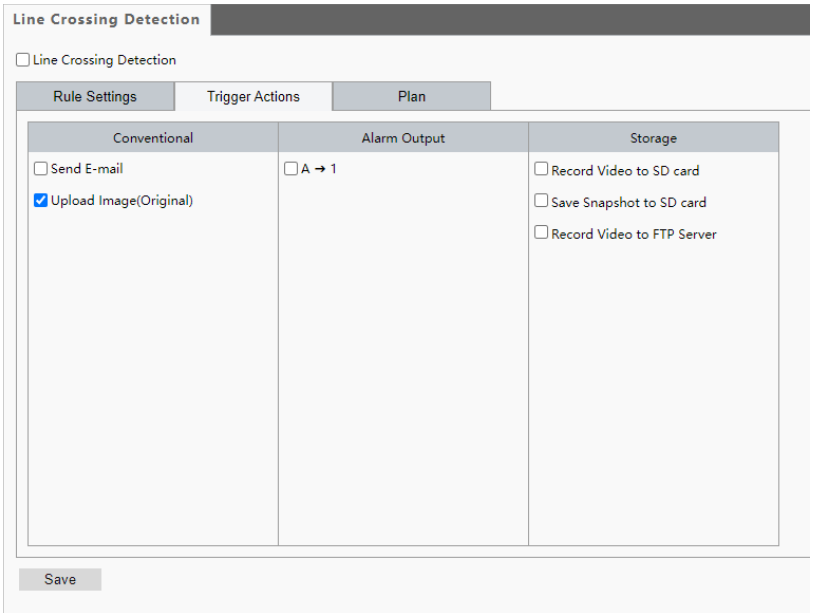
1. Check **Line Crossing Detection** to enable.
2. In the **Detection Rule** area, click + to add a new detection area. To delete a detection area, click 🗑.
3. Drag the line to set the intended position.
4. Drag the ends of the line to set the length and angle.
5. Set **Trigger Direction** and **Sensitivity** for the camera to decide from which direction to report an intrusion detection alarm.
    - **Trigger Direction:** Set from which direction a crossed line will trigger or if it will trigger when crossed from both directions.
    - **Sensitivity:** Sensitivity of detection. A greater value means higher detection sensitivity.

Note	Setting sensitivity too high will increase the likelihood of false alerts.

6. Check either **Vehicle Detection** or **Person Detection**.
7. Choose the Vehicle Detection or Person Detection **Filter Type**.
8. Enable **Max. Size** or **Min. Size** to resize the filter detection box to a default size.
9. **Save**

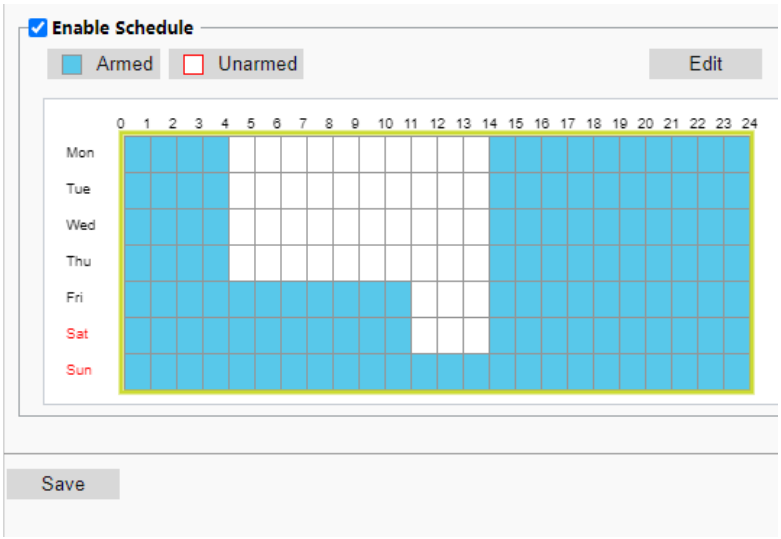
Trigger Actions

1. Check the boxes to choose the actions that are triggered when a person or vehicle is detected.
2. **Save**

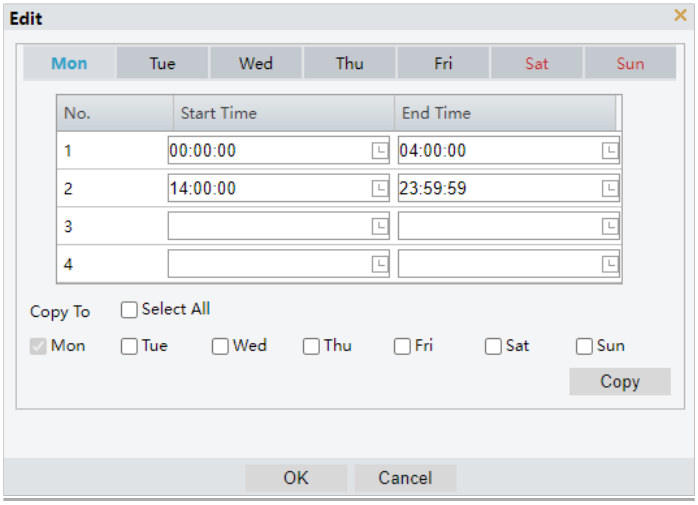


Item	Description
Send Email	With Send E-mail selected, the camera will automatically send snapshots to the specified E-mail addresses when a person or vehicle is detected. **Note:** Make sure you have completed E-Mail Recipient configuration before using this function.
Upload Image (Original):	With Upload Image selected, the camera will automatically upload snapshots to the recorder when a person or vehicle is detected.
Alarm Output	This setting is the alarm output interface linked to motion detection alarm. **Note:** When an alarm is reported, the camera triggers alarm output to trigger actions by a third-party device.
Record Video to SD Card	With Record Video to SD Card selected, the camera will automatically record video to the SD Card when a person or vehicle is detected. **Note:** Make sure you have completed Storage configuration before using this function.
Save Snapshot to SD Card	With Record Snapshot to SD Card selected, the camera will automatically save an image to the SD Card when a person or vehicle is detected. **Note:** Make sure you have completed Storage configuration before using this function.
Record Video to FTP Server	With Record Video to FTP Server selected, the camera will automatically upload video to the specified FTP server when a person or vehicle is detected. **Note:** Make sure you have completed FTP configuration before using this function.

Plan



1. Click **Armed** or **Unarmed** and click the schedule to set when enabled Trigger Actions are effective.



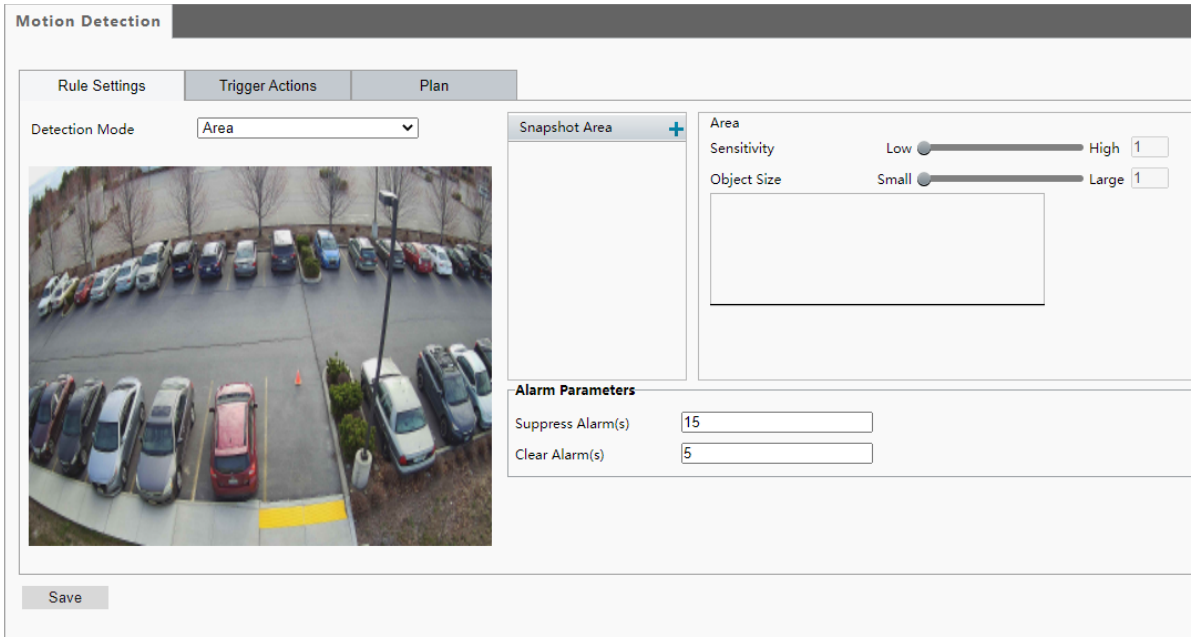
2. Click **Edit**.
3. Set the start and end times during which Trigger Actions are effective. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.
4. Select from Monday to Sunday and set up to four periods for each day or check the days and **Copy** to set the same schedule for multiple days.
5. Click **OK**.
6. **Save**

Event Settings

Alarms

Motion Detection

Motion detection is used to detect motion in a specified area during a period of time. The use of motion detection requires setting a snapshot area, detection sensitivity, object size, and history. When these requirements are met, the motion detection alarm will activate.



To configure Motion Detection:

1. Click **+** in **Snapshot Area** and drag the **detection box** to the desired location on the camera image and use the corner markers to adjust the size of the detection box as desired.
2. Use the **Sensitivity** and **Object Size** slider bars to adjust the motion detection parameters as desired.

   Sensitivity – This determines how many pixels have to change in order for the alarm to consider motion to have occurred.

   Object Size – This determines the area within the camera image that the motion must exceed in order for the alarm to consider motion to have occurred.

   Alarm Parameters

   Suppress Alarm – After an alarm is triggered, the same alarm will not be reported again within the designated time.

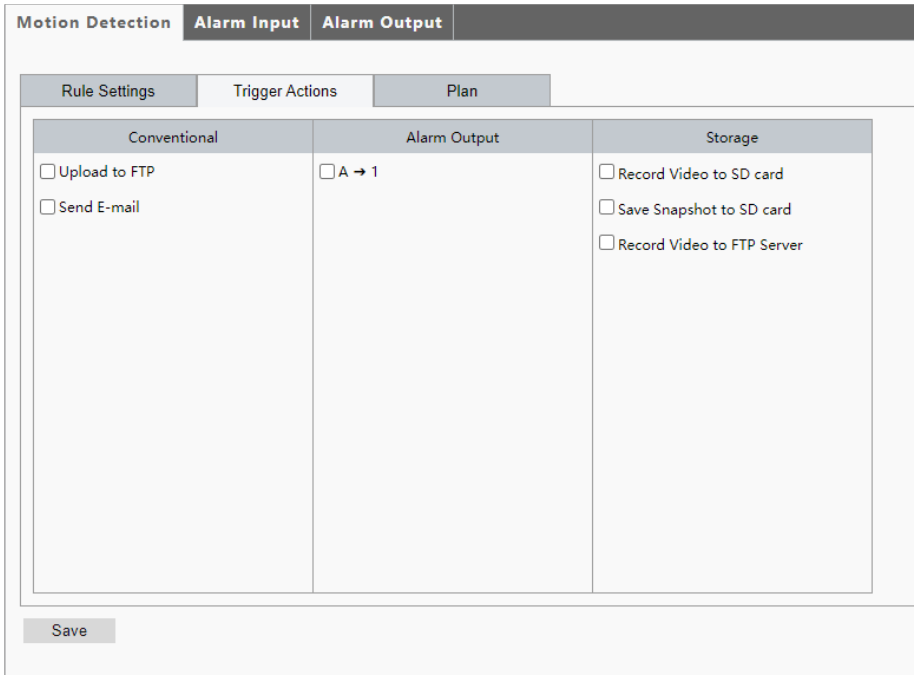
   Clear Alarm – After the alarm is triggered:

   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.

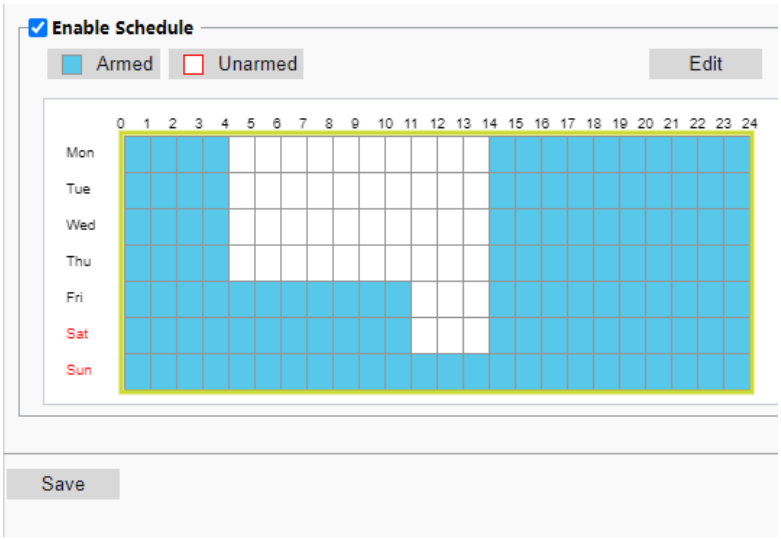
Click **Save** and then select the **Trigger Actions** to occur once the motion detection alarm has been triggered.

Trigger Actions

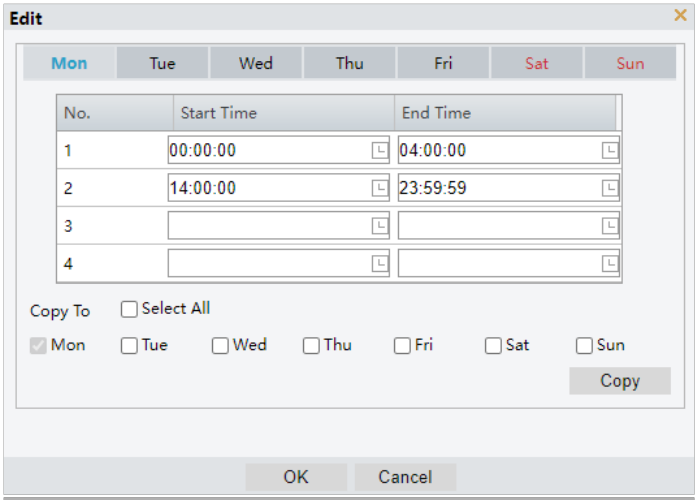


Item	Description
Send Email	With Send E-mail selected, the camera will automatically send snapshots to the specified E-mail addresses when a person or vehicle is detected. **Note:** Make sure you have completed E-Mail Recipient configuration before using this function.
Upload Image (Original):	With Upload Image selected, the camera will automatically upload snapshots to the recorder when a person or vehicle is detected.
Alarm Output	This setting is the alarm output interface linked to motion detection alarm. **Note:** When an alarm is reported, the camera triggers alarm output to trigger actions by a third-party device.
Record Video to SD Card	With Record Video to SD Card selected, the camera will automatically record video to the SD Card when a person or vehicle is detected. **Note:** Make sure you have completed Storage configuration before using this function.
Save Snapshot to SD Card	With Record Snapshot to SD Card selected, the camera will automatically save an image to the SD Card when a person or vehicle is detected. **Note:** Make sure you have completed Storage configuration before using this function.
Record Video to FTP Server	With Record Video to FTP Server selected, the camera will automatically upload video to the specified FTP server when a person or vehicle is detected. **Note:** Make sure you have completed FTP configuration before using this function.

Plan



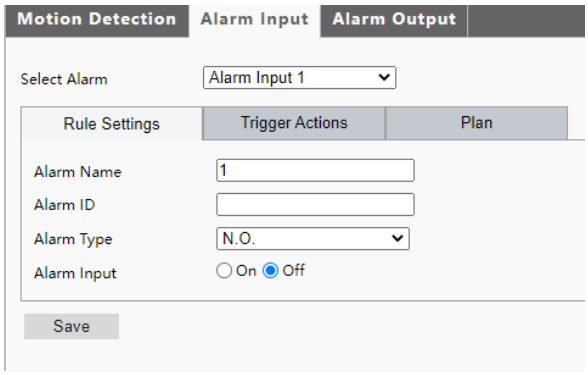
1. Click **Armed** or **Unarmed** and click the schedule to set when enabled Trigger Actions are effective.



2. Click **Edit**.
3. Set the start and end times during which Trigger Actions are effective. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.
4. Select from Monday to Sunday and set up to four periods for each day or check the days and **Copy** to set the same schedule for multiple days.
5. Click **OK**.
6. **Save**

Alarm Input

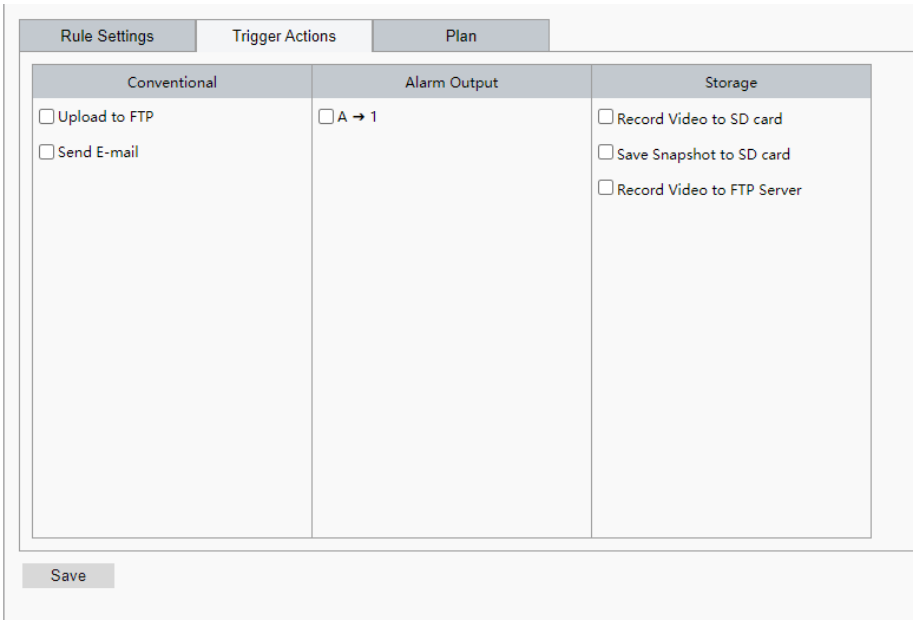
Rule Settings



To configure Alarm Input:

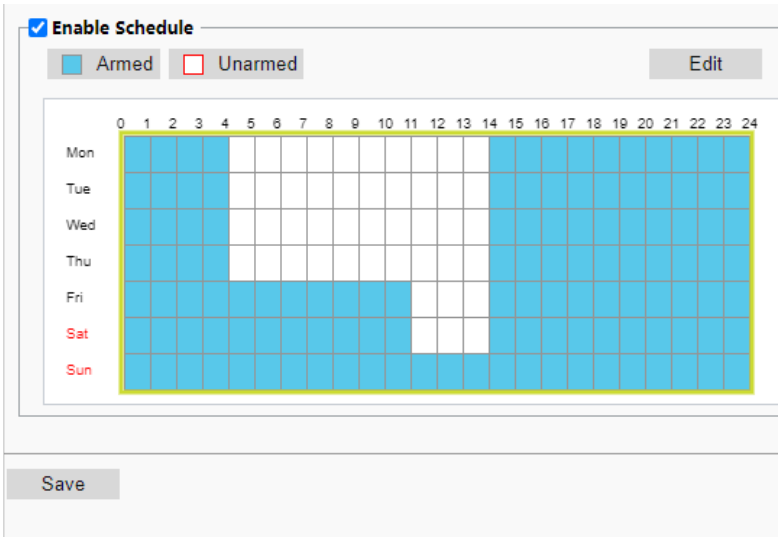
1. **Select Alarm**, **Alarm Name** and **Alarm ID**.
2. Select **N.O.** or **N.C.** according to the type of the third-party alarm input device (For example, if the third-party alarm input device is normally open, you need to select N.O. here) so that the camera can receive alarm information.
3. Set Alarm Input **On** or **Off**.
4. **Save**

Trigger Actions

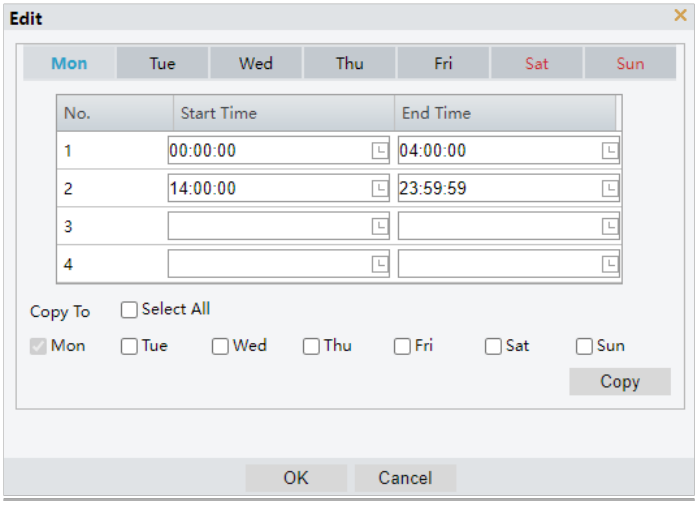


Item	Description
Send Email	With Send E-mail selected, the camera will automatically send snapshots to the specified E-mail addresses when a person or vehicle is detected. **Note:** Make sure you have completed E-Mail Recipient configuration before using this function.
Upload Image (Original):	With Upload Image selected, the camera will automatically upload snapshots to the recorder when a person or vehicle is detected.
Alarm Output	This setting is the alarm output interface linked to motion detection alarm. **Note:** When an alarm is reported, the camera triggers alarm output to trigger actions by a third-party device.
Record Video to SD Card	With Record Video to SD Card selected, the camera will automatically record video to the SD Card when a person or vehicle is detected. **Note:** Make sure you have completed Storage configuration before using this function.
Save Snapshot to SD Card	With Record Snapshot to SD Card selected, the camera will automatically save an image to the SD Card when a person or vehicle is detected. **Note:** Make sure you have completed Storage configuration before using this function.
Record Video to FTP Server	With Record Video to FTP Server selected, the camera will automatically upload video to the specified FTP server when a person or vehicle is detected. **Note:** Make sure you have completed FTP configuration before using this function.

Plan



1. Click **Armed** or **Unarmed** and click the schedule to set when enabled Trigger Actions are effective.

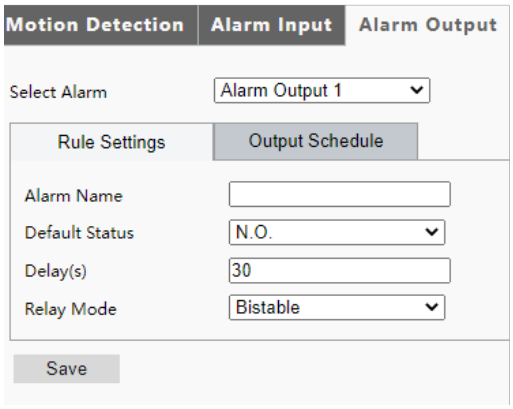


2. Click **Edit**.
3. Set the start and end times during which Trigger Actions are effective. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.
4. Select from Monday to Sunday and set up to four periods for each day or check the days and **Copy** to set the same schedule for multiple days.
5. Click **OK**.
6. **Save**

Alarm Output

Rule Settings

After an alarm output is triggered by a motion detection alarm, audio alarm, or other third-party configured alarm, the camera can trigger an alarm output to a third-party device.



To configure Alarm Output:

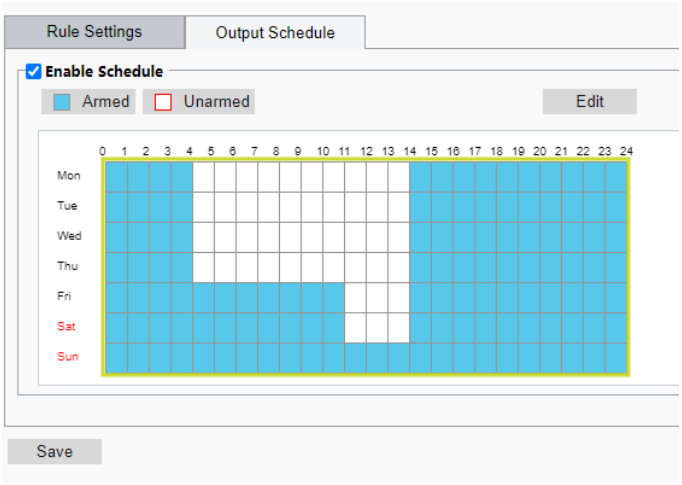
1. **Select Alarm** and the **Alarm Name**.
2. Select **N.O.** as the **Default Status** and set the **Delay**.
3. Choose the **Relay Mode** from the dropdown menu.
4. **Save**

Caution	Follow the power-on sequence for alarm output third-party devices and cameras carefully to avoid damaging camera components.

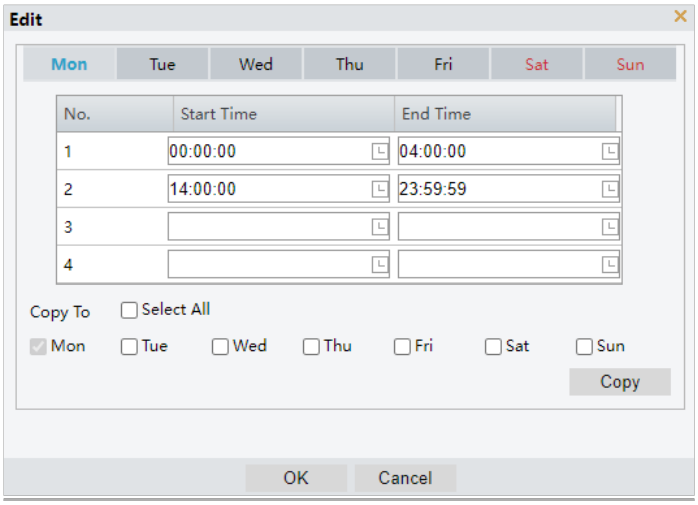
Check that the alarm Status is set to **N.O.** (default setting), and that the camera and the alarm output device are powered off.

After completing the connection, power on the alarm output device first, and then power on the camera.

Output Schedule



1. Click **Armed** or **Unarmed** and click the schedule to set when Alarm Outputs are effective.

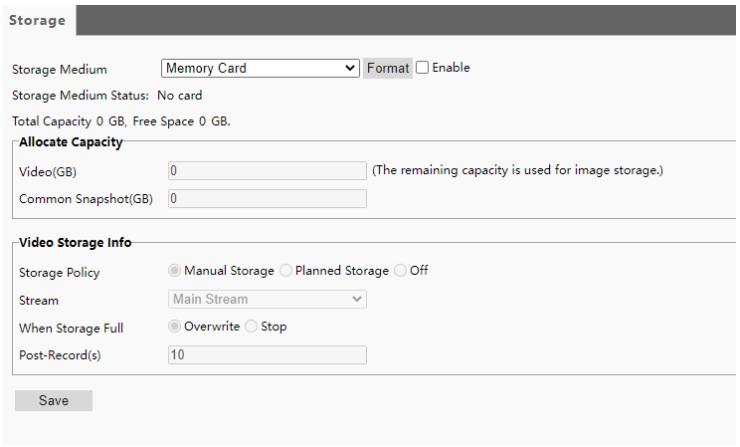


2. Click **Edit**.
3. Set the start and end times during which Alarm Outputs are effective. The time periods cannot overlap. The camera reports alarms during the specified period(s) only.
4. Select from Monday to Sunday and set up to four periods for each day or check the days and **Copy** to set the same schedule for multiple days.
5. Click **OK**.
6. **Save**

Storage Settings

Storage

AvertX IP cameras include an integrated microSD™ card (Memory Card) slot that can be used to record video or images. The card slot is compatible with a microSD™ card up to 512GB.



Note	Formatting the microSD card causes the camera to restart
Note	Camera date and time must be synced with system or server to insure accurate recording timestamps

Format

To format the memory card, check **Enable** and to confirm the operation. The system will restart when the format is completed.

Allocate Capacity

Video (MB) – Enter the amount of storage space to be allocated only to video recordings.

Common Snapshot (MB) – This is the remaining storage after video recordings which will be used to store snapshot images.

Video Storage Info

Storage Policy

Manual Storage – records video to the SD card continuously.

Planned Storage – camera records video to the memory card during the specified periods. (shown below)

Off – No recorded video will be saved to the SD card.

Stream – Choose which stream is saved.

When Storage Full

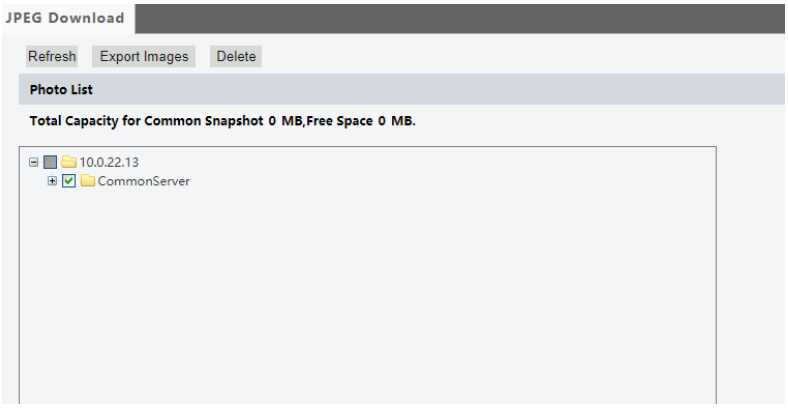
Overwrite – When the SD card is full, new data will begin overwriting oldest data.

Stop – When the SD card is full, video recording will stop writing to the SD card.

Post-Record(s) – For alarm-triggered recording; this is the length of time (seconds) that recording continues after the end of the alarm. Enter an integer range of [30–1800].

Save

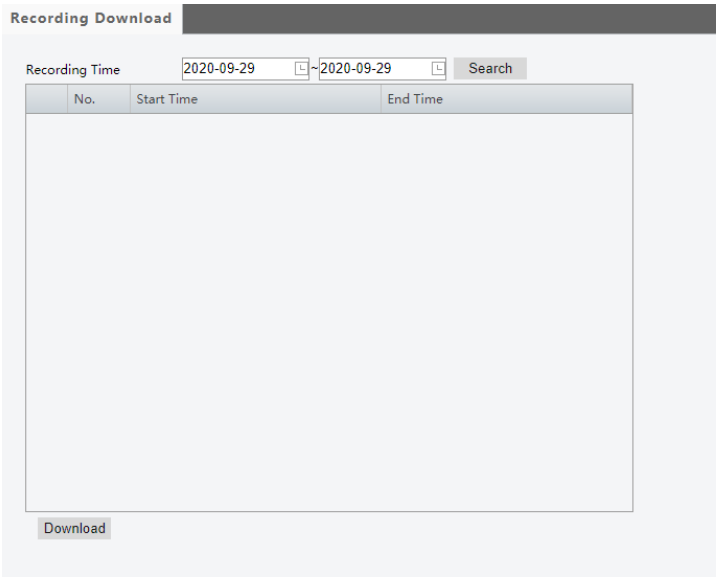
Snapshot Download



Use Export Images to download snapshots taken by the camera. Refresh the list to update Photo List or Delete to delete images from the selected folder.

Recording Download

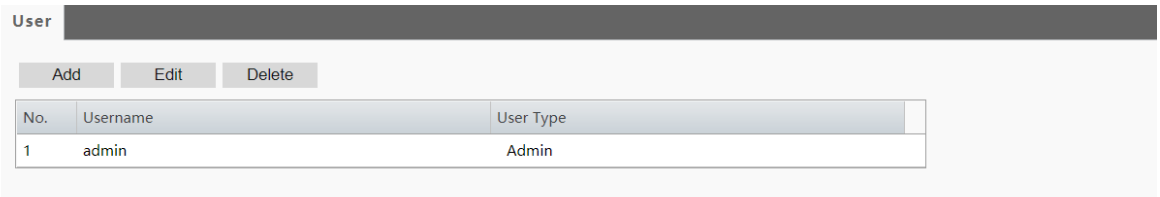
Recording download page allows you to search a selected date range for video and snapshots recorded to the microSD card.



1. Search for video within a specified period. The results will be shown in a list below.
2. Select your video and click **Download**.

Security Settings

User



There are two types of users:

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.

Common User – referred to as “user” in this manual. User only has permission to play live and recorded video.

Up to 20 common users are allowed.

Add

Username and passwords are limited to 32 characters with no spaces permitted. There is a maximum of twenty user accounts.

1. Type the new **Username** and **User Type**.
2. Type a **Password**, and then confirm the password.
3. **Save**

Edit

1. Select the **Username** on the **User list**.
2. Click **Edit.**
3. Modify the password in the resulting window.
4. **Save**

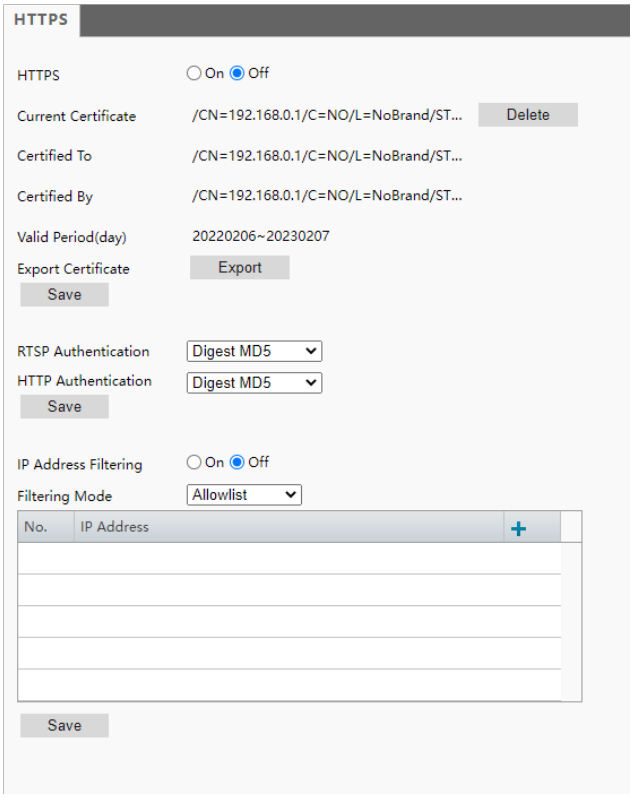
Delete

1. Select the **Username** on the **User list.**
2. Click **Delete** to remove the user.
3. Click **OK** in the confirmation window.

Network Security

HTTPS

You can use the Network Security tab to set a secure channel for data transmission.



To configure Network Security:

1. Enable HTTPS by selecting **On**.
2. **Save**

Export Certificate

Click **Export** to download a .crt file of your security certificate.

RTSP and HTTP Authentication

Use the **Authentication** dropdown menus to select the appropriate mode, and then click **Save**.

IP Address Filtering

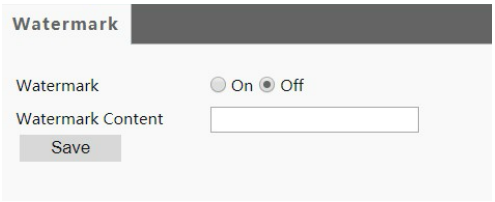
IP Address filtering allows you to forbid access from specified IP addresses to your camera.

1. Select **On**.
2. Select a **Filtering Mode**, and then click the **+** symbol to add the desired IP addresses to the list.
3. **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 access. Up to 32 IP addresses can be added to the list.

Watermark

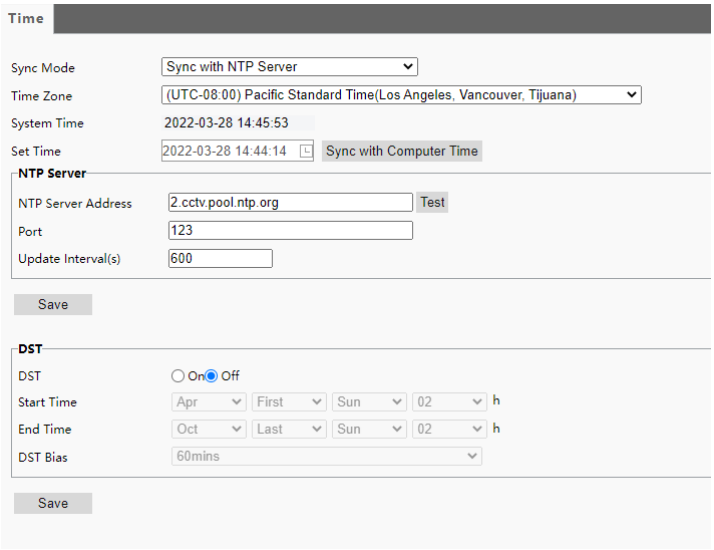
Use the Video Watermark to encrypt the camera image and protect the video from being deleted or modified.



1. Select **On** to enable watermark, and input **Watermark Content**.
2. **Save**

Maintenance

Time



By default, the time setting **Sync Mode** will be set to **Sync with NTP Server**.

Manually Setting or Synchronizing the System Time

1. Select a **Sync Mode**.
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. **Save**

Synchronizing with the NTP Server

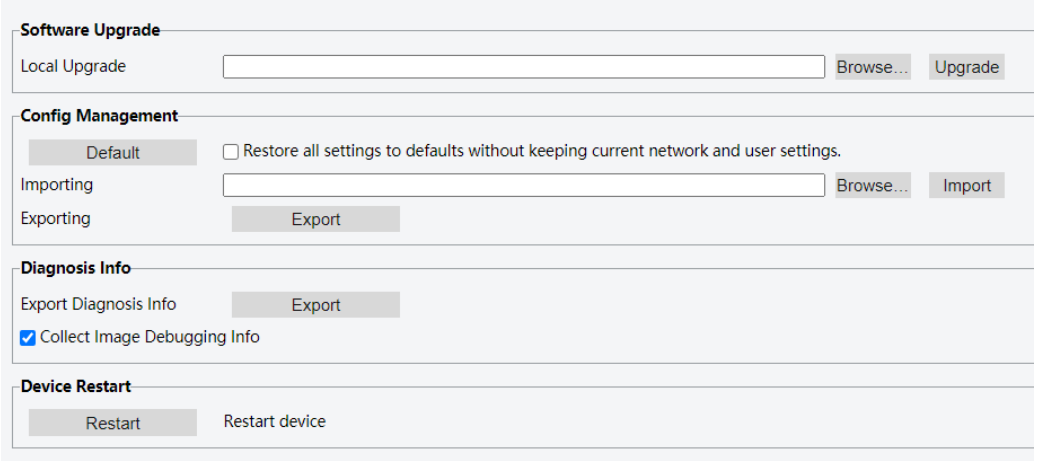
1. Set **Sync Mode** to **Sync with NTP Server**, and then set the **NTP Server Address**, **Port** and **Update Interval(s)**.
2. Click **Save**. The camera will periodically synchronize time with the NTP server.

Setting the DST

Select **On** for **DST**, set the **Start Time, End Time**, and **DST Bias**.

Save

Maintenance



Software Upgrade

To update your camera software, click **Browse**, select the software file, click **Open**, and then click **Upgrade**.

> **Note** The software file must be a .zip file.

Device Restart

This will restart your camera.

Config Management

1. To import configurations that you have backed up, click **Browse**, select the configuration file, and then click **Import**.
2. To export current system configurations, click **Export**.
3. To restore default configurations, click **Default** and then confirm the operation. The device will restart and restore the default configurations. Clicking **Default** with the check box selected will default all camera and camera network settings.

Diagnosis Info

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

> **Note** Diagnostic information is exported to the local folder as a compressed file. You will need to decompress the file, and then open the file using a text editor.

Network Diagnosis

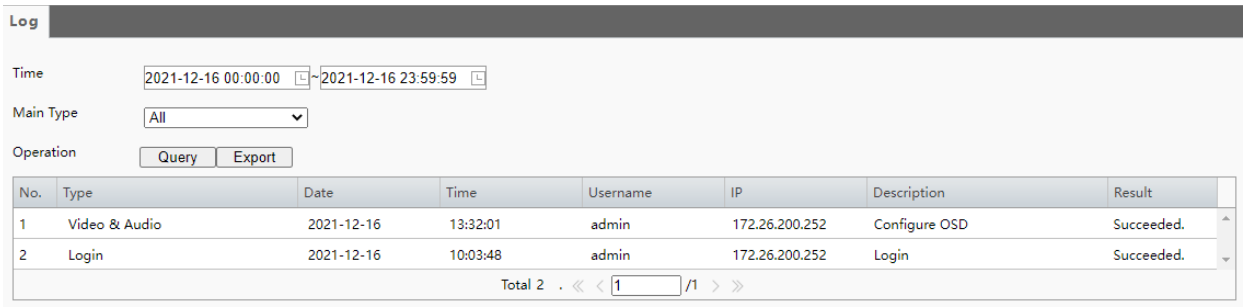
Configure a diagnostic capture of the camera network to export.

1. Select a NIC from the dropdown.
2. Select **All** for all IP Addresses and Ports, Specify to enter a specific **Address** or **Port**, or **Filter** to exclude specific IP Addresses and Ports.
3. Check **Custom Rules** to enter additional rules to the diagnosis.
4. **Start Capture**

> **Note** All custom rules must comply with the pcap filter syntax.
>
> Examples:
>
> **tcp** Capture TCP packets. Other transport layer protocol filter such as UDP, ICMP are also supported.
>
> **host 192.168.1.13** Capture packets whose IP is 192.168.1.13.
>
> **dst host 192.168.1.13** Capture packets whose destination IP is 192.168.1.13.
>
> **src host 192.168.1.13** Capture packets whose source IP is 192.168.1.13.
>
> **port 80** Capture packets whose port is 80.
>
> **dst port 80** Capture packets whose destination port is 80.
>
> **src port 80** Capture packets whose source port is 80.
>
> You can add "not" before an expression to capture all the packets that do not meet the condition. You can also connect expressions with "and" and "or". Example: tcp and dst host 192.168.1.13 and not src port 80 Capture TCP packets whose destination IP is 192.168.1.13 and whose source port is not 80.

Log

The camera's log displays a searchable list of changes made to the system.



Set a **Time** range.

Narrow search by selecting a **Main Type**.

Click **Query**.

Export to download the result.

Are any parts of this manual incomplete or unclear? Please let us know! Contact us at support@avertx.com with your comments.

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