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United Technologies

TruVision Stainless Steel PTZ Camera Configuration Manual

Content

Introduction

This is the configuration manual for the following TruVision® IP camera models:

IP stainless steel PTZ camera:

- TVP-5201

Default settings to access the camera

Default credentials

The camera comes with a user account with administrative rights for configuring all options on the camera. The user name is "admin" and the password is "1234." For enhanced security, we highly recommend changing the default password during initial setup.

Default network settings

The network settings are:

- IP address (in a network without a DHCP server): 192.168.1.70

- Subnet mask: 255.255.255.0

- Gateway address: 192.168.1.1

Ports used:

Browser	TruVision Navigator
RTSP: 554	RTSP: 554
HTTP: 80	Server/client control port: 8000

Network access

This manual explains how to configure the camera over the network with a web browser.

TruVision IP cameras can be configured and controlled using Microsoft® Internet Explorer® (IE) and other browsers. The procedures described use the Microsoft Internet Explorer (IE) web browser.

Checking web browser security level

When using the web browser interface, ActiveX controls can be installed to connect and view video using Internet Explorer. However, data such as video and images cannot be downloaded due to the increased security measure. Check the security level of the PC to enable interaction with the cameras over the web and, if necessary, modify the Active X settings.

Configuring IE ActiveX controls

Confirm the ActiveX settings of the web browser.

To change the web browser's security level:

1. In Internet Explorer, click **Internet Options** on the **Tools** menu.

2. On the **Security** tab, click the zone to be assigned to a website under "Select a web content zone to specify its security settings."

3. Click **Custom Level**.

4. Change the **ActiveX controls and plug-ins** options that are signed or marked as safe to **Enable**. Change the **ActiveX controls and plug-ins** options that are unsigned to **Prompt** or **Disable**. Click **OK**.

   —or—

   Under **Reset Custom Settings**, click the security level for the whole zone in the Reset To box, and then select **Medium**. Click **Reset**, and then click **OK** in the Internet Options **Security** tab window.

5. Click **Apply** in the Internet Options **Security** tab window.

Windows users

Internet Explorer for Windows® operating systems have increased security measures to protect a PC from malicious software.

To ensure complete functionality of the Windows web browser interface, do the following:

• Run IE as an administrator in the workstation

• Add the camera's IP address to the IE's list of trusted sites

To add the camera's IP address to Internet Explorer's list of trusted sites:

1. Open Internet Explorer.

2. Click **Tools**, and then click **Internet Options**.

3. Click the **Security** tab, and then select the Trusted sites icon.

4. Click the **Sites** button.

5. Deselect the **Require server verification (https:) for all sites in this zone** check box.

6. Type the IP address in the **Add this website to the zone** box.

7. Click **Add**, and then click **Close**.

8. Click **OK** in the Internet Options dialog window.

9. Connect to the camera for full browser functionality.

Activating the camera

When you first start up the camera, the Activation window appears. You must define a high-security admin password before you can access the camera. There is no default password provided.

You can activate a password via a web browser and via TruVision Device Manager (included on the CD to find the IP address of the camera).

Activation via the web browser:

1. Power on the camera and connect the camera to the network.

2. Type the IP address into the address bar of the web browser, and press Enter to enter the activation interface.

Note:

- The default IP address of the camera is 192.168.1.70.

- For the camera to enable DHCP by default, you must activate the camera via TruVision Device Manager. Please refer to the following section, "Activation via TruVision Device Manager".

3. Type the password in the **Password** field.

   Note: A valid password range must be between 8 and 16 characters. You can use a combination of numbers, lower and upper case letters, and special characters : _ - , . * & @ / $? Space. The password must contain characters from at least two of these groups. We also recommend that you reset your password regularly. For high security systems, it is particularly recommended to reset the password monthly or weekly for better protection.

4. Confirm the password.

5. Click **OK** to save the password and enter the live view interface.

Activation via TruVision Device Manager:

For instructions on how to activate the camera using TruVision Device Manager, refer to the *TruVision Device Manager User Manual*.

Go to www.interlogix.com/video/product/truvision-device-manager and click **Downloads**.

Overview of the camera web browser

Use the camera web browser to view, record, and play back recorded videos as well as manage the camera from any PC with access to the same network as the camera. The browser's easy-to-use controls provide quick access to all camera functions.

If there is more than one camera connected over the network, open a separate web browser window for each individual camera.

Name		Description
1.	Live view tab	Click to view live video.
2.	Playback tab	Click to play back video.
3.	Picture tab	Click to search for snapshots.
4.	Configuration tab	Click to display the configuration window for setting up the camera.
5.	Viewer	View live video. Time, date, and camera name are displayed here.
6.	Current user	Displays current user logged on.
7.	Help	Click to see user instructions.
8.	Logout	Click to log out from the system. This can be done at any time.
9.	Aspect ratio	Click this drop-down list to select an aspect ratio (4:3, 16:9, Original, or Auto) and adjust the layout of the live view.
10.	Stream type	Click this drop-down list to select main stream or sub stream.
11.	Plug-in switch	Click this drop-down list to select the plug-in. For IE users, web components and QuickTime are selectable. For non-IE users, web components, QuickTime, VLC, or MJPEG are selectable if they are supported by the web browser.
12.	Bi-directional audio	Turn the microphone on or off.
13.	Start/stop live view	Click to start/stop live view.
14.	Snapshot	Click to take a snapshot of the video. The snapshot will be saved to the default folder in JPEG or BMP format.
15.	Start/stop recording	Click to record live video.
16.	Digital zoom	Click to enable digital zoom.
17.	Enable Regional Exposure	Click this button and drag the cursor in the Viewer to adjust the exposure settings for live video.
18.	Enable Regional Focus	Click this button and drag the cursor in the Viewer to adjust the focus settings for live video.
19.	Audio	Adjust the volume.
20.	PTZ controls	Direction actions, zoom, focus, iris, light, and wiper control.

Camera configuration

This chapter explains how to configure the cameras using a web browser.

After the camera hardware has been installed, configure the camera's settings using the web browser. Administrator rights are required to configure the cameras over the internet.

The camera web browser permits configuration of the camera remotely using a PC. Web browser options may vary depending on camera model.

Configuration panel overview

Use the Configuration panel to configure the server, network, camera settings, alarms, users, transactions, and other parameters such as upgrading the firmware.

This section contains images and descriptions of each of the configuration panel windows.

Local

Use the Local window to manage the protocol type, live view performance, and local storage paths. In the Configuration panel, click **Local** to display the local configuration window.
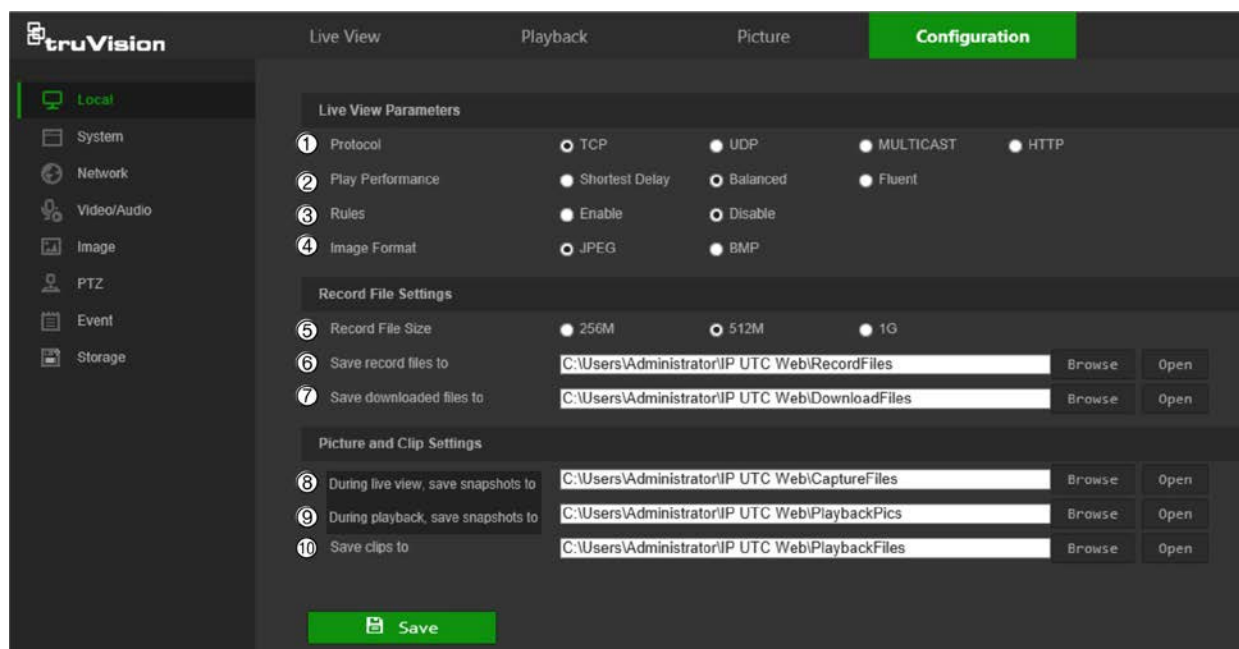
Parameters	Description
Live View Parameters	
1. Protocol	Specifies the network protocol used. Options include: **TCP**, **UDP**, **MULTICAST**, and **HTTP**.
2. Live View Performance	Specifies the transmission speed. Options include: **Shortest Delay** or **Auto**.

| Parameters		Description
3.	Rules	Specifies Live View display rules. Select **Enable** to tag a moving object with green rectangles.
4.	Image Format	Choose the image format for a snapshot: **JPEG** or **BMP**.
Record File Settings		
5.	Record File Size	Specifies the maximum file size. Options include: **256M**, **512M,** and **1G**.
6.	Save Record Files to	Specifies the directory for recorded files.
7.	Save Downloaded Files to	Specifies the directory for downloaded files.
Picture and Clip Settings		
8.	During live view, save snapshots to	Specifies the directory for saving snapshots in live view mode.
9.	During playback, save snapshots to	Specifies the directory for saving snapshots in playback mode.
10.	Save Clips To	Specifies the directory for saving video clips in playback mode.

System

Use the System window to configure basic device information, system time, users, security settings, and other parameters such as upgrading the firmware.
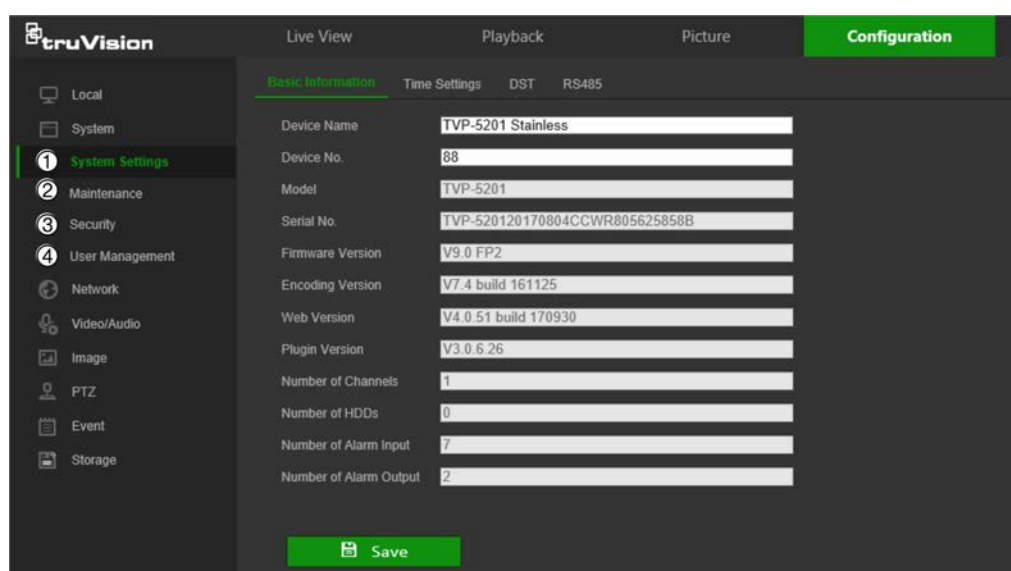
System submenus		Description
1.	System settings	Defines device basic information including SN and the current firmware version and time settings (see "System time" on page 11). Also contains camera hardware options (see "RS485" on page 12).
2.	Maintenance	Perform functions such as device reboot, set to default, export and import configuration files, and firmware upgrade. Also contains an exportable event log list. See "Maintenance" on page 61.
3.	Security	Defines who can use the camera, their passwords and access privileges, RTSP authentication, IP address filter, and login lock. See "Security" on page 59.
4.	User management	Add or delete users and see which users are currently online. See "User management" on page 56.

Network

Use the Network window to define basic and advanced network settings.
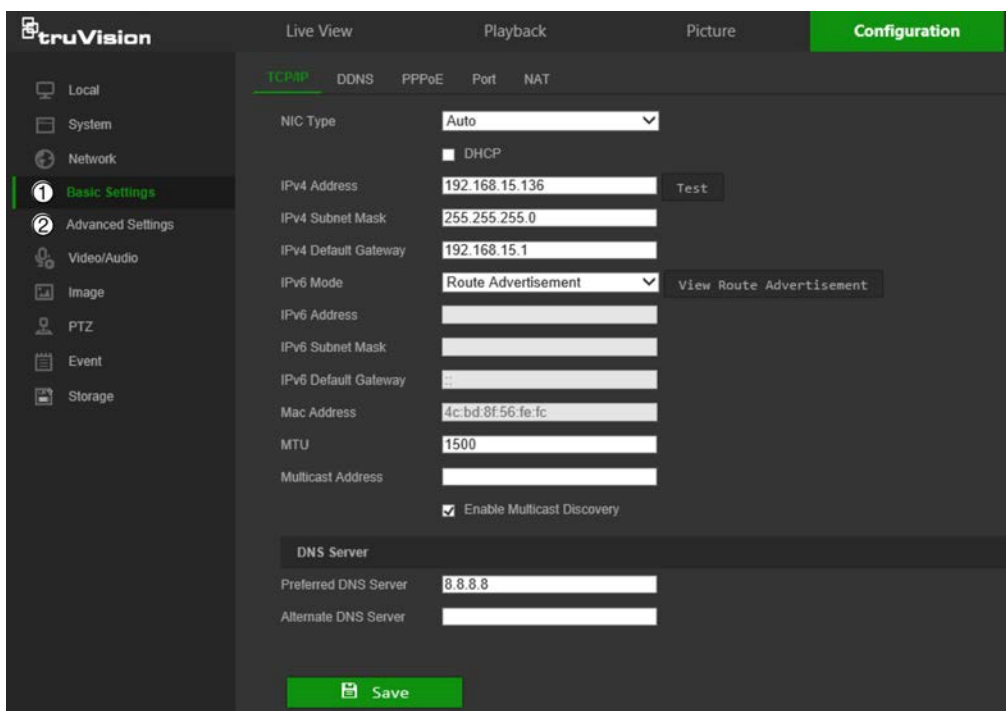
Network submenus		Description
1.	Basic settings	Defines TCP/IP, DDNS, PPPoE, Port, and NAT settings (see "Basic settings" on page 13).
2.	Advanced settings	Defines SNMP, FTP, Email, HTTPS, QoS, and 802.1x settings (see "Advanced settings" on page 16).

Video/Audio

Use the Video/Audio window to define recording parameters for video, audio, region of interest (ROI), and display information on stream.

Image

Use the Image window to define the image display settings, OSD settings, overlay text, and image parameters switch. See "Image" on page 23 for further information on setup.

PTZ

Use the PTZ window to move the lens to the required position using the PTZ panel, and to define PTZ position settings, scheduled tasks, and privacy masks. See "PTZ parameters" on page 28.
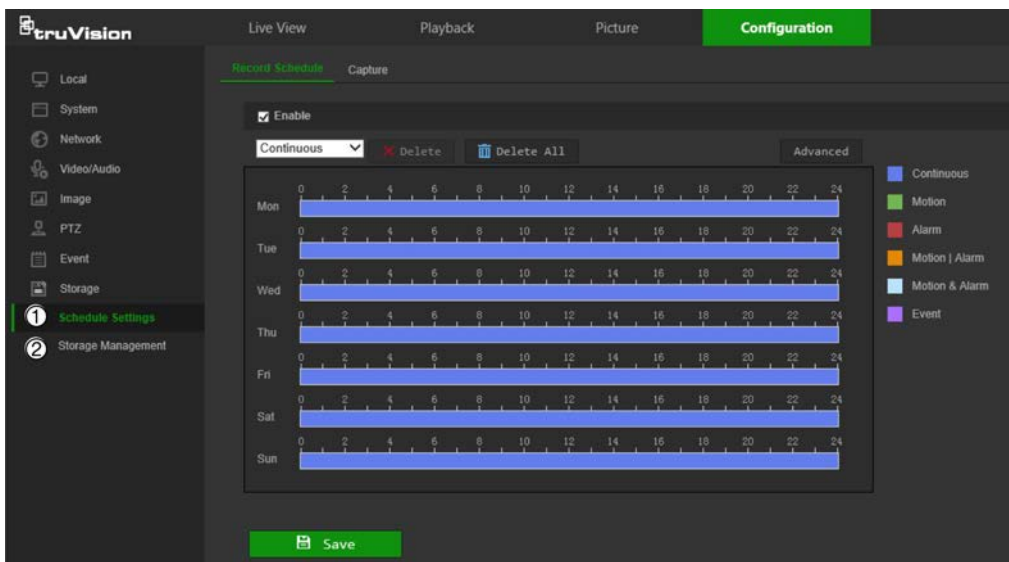
Event

Use the Event window to set up alarms by defining area settings, arming schedules, and linkage methods.
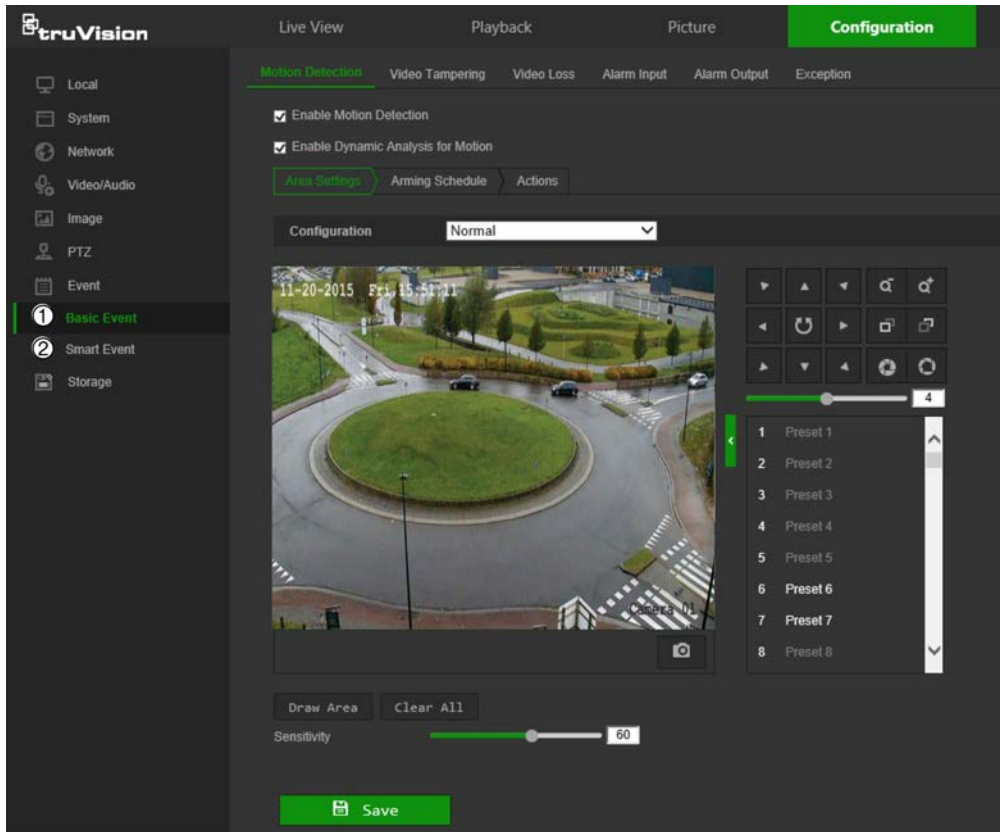
Event submenus		Description
1.	Basic event	Defines motion detection, video tampering, video loss, alarm input/output, and exception alarm.
2.	Smart event	Defines intrusion, audio exception, face, region entrance/exit, and line crossing detection.

Storage

Use the storage window to define recording schedule, storage management, network attached storage (NAS) configuration, and snapshot configuration.

Storage submenus	Description
1. Schedule settings	Configure recording settings and snapshot captures for all available event types on a daily basis.
2. Storage management	Manage hard drive storage space by file type and configure NAS drives.

System time

Network Time Protocol (NTP) is a protocol for synchronizing the clocks of network devices, such as IP cameras and computers. Connecting network devices to a dedicated NTP time server ensures that they are all synchronized.

To define the system time and date:

1. From the menu toolbar, click **Configuration** > **System** > **System Settings** > **Time Settings**.
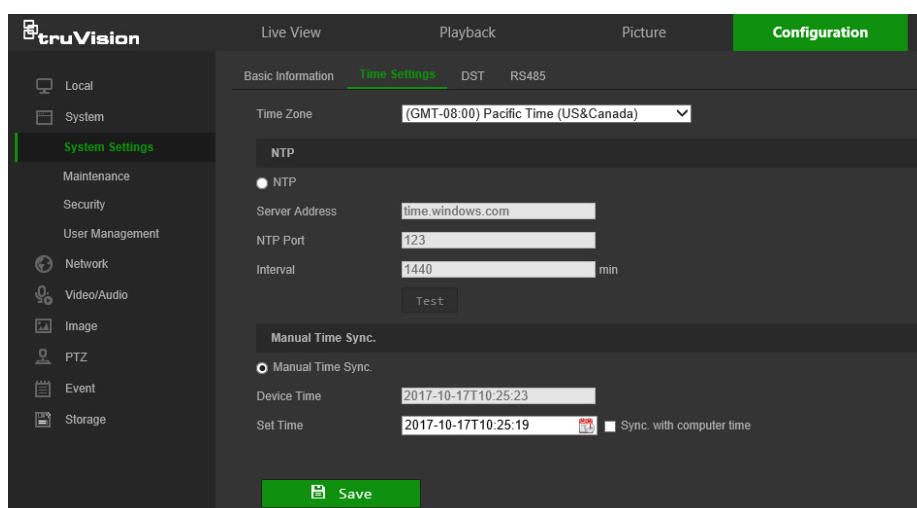
2. From the **Time Zone** drop-down list, select the time zone that corresponds to the camera's location.

3. Select one of the following options for setting the time and date:

    Synchronize with an NTP server: Select the **NTP** radio button and type the required information in the **Server Address** and **NTP Port** boxes. The time interval can be set from 1 to 10080 minutes.

    —or—

    Set manually: Select the **Manual Time Sync** radio button and then click ▥ to set the system time from the pop-up calendar.

    Note: Select the **Sync with computer time** checkbox to synchronize the time of the camera with the time of the computer.

4. Click **Save** to save changes.

5. Click the **DST** tab and then select **Enable DST** to enable the DST (Daylight Savings Time) function, and set the date of the DST period.

6. Set the date and time differential of the DST period using the **Start Time**, **End Time**, and **DST Bias** drop-down lists.
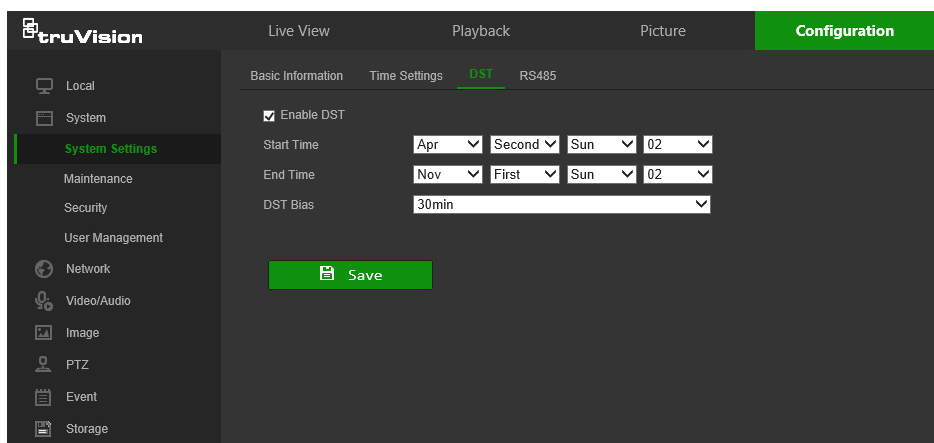
7. Click **Save** to save changes.

RS485

The RS-485 serial port is used to control the PTZ of the camera or connect to light and wiper devices. Configuration of these parameters should be done before you connect to any devices.

To set up RS-485 settings:

1. From the menu toolbar, click **Configuration** > **System** > **System Settings** > **RS485**.

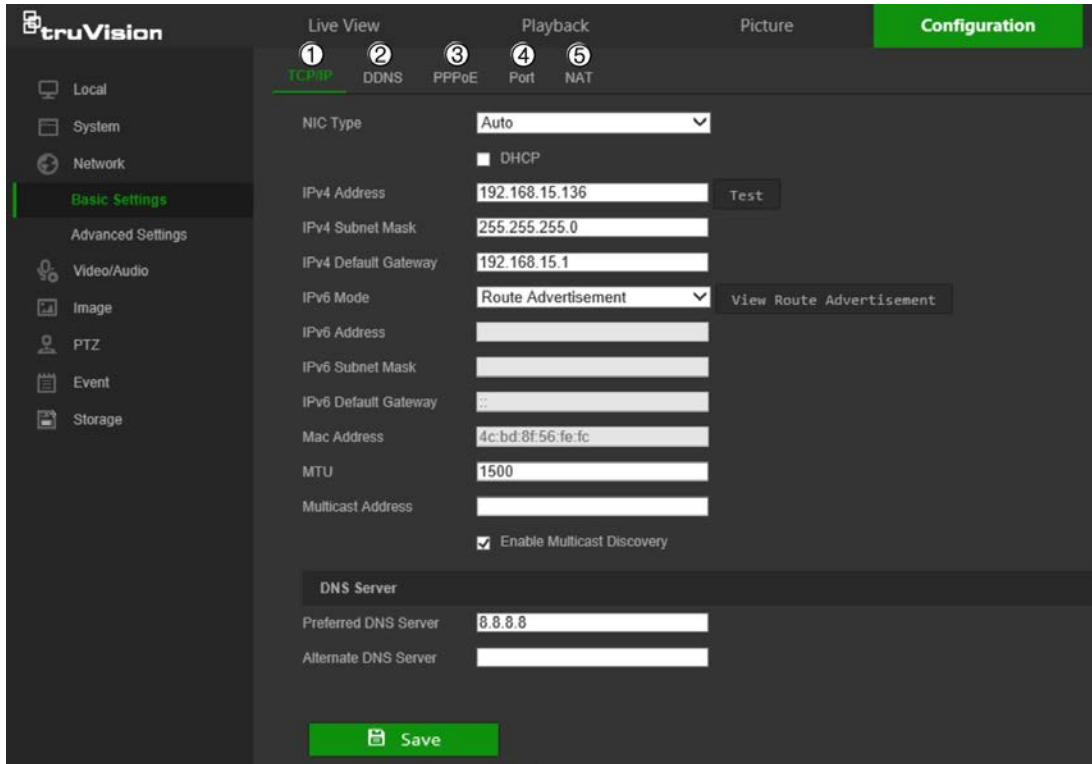2. Select the RS-485 port parameters.

   Note: The Baud Rate, PTZ Protocol, and PTZ Address parameters should be exactly the same as the PTZ camera parameters.

3. Click **Save** to save changes.

Network settings

Accessing the camera through a network requires the definition of certain network settings. Use the Network menu to define these settings.

Basic settings

Menu tabs	Description
1. TCP/IP	**NIC Type**: Select the NIC type from the drop-down list. Default is **Auto**. Other options include **10M Half-dup**, **10M Full-dup**, **100M Half-dup**, and **100M Full-dup**.
	DHCP: Select **DHCP** to automatically obtain an IP address and other network settings from that server.
	IPv4 Address: If necessary, type in the IPv4 address of the camera.
	IPv4 Subnet Mask: If necessary, type in the IPv4 subnet mask.
	IPv4 Default Gateway: If necessary, type in the IPv4 gateway IP address.
	IPv6 Mode: Select **Manual**, **DHCP**, or **Router Advertisement** from the drop-down list.
	IPv6 Address: Type in the IPv6 address of the camera.
	IPv6 Subnet Mask: Type in the IPv6 subnet mask.
	IPv6 Default Gateway: Type in the IPv6 gateway IP address.
	Mac Address: If necessary, type in the MAC address of the devices.
	MTU: Type in the valid value range of MTU. Default is 1500.
	Multicast Address: Enter a D-class IP address between 224.0.0.0 to 239.255.255.255. Only specify this option if using the multicast function. Some routers prohibit the use of multicast function in case of a network storm.
	Enable Multicast Discovery: Enables the automatic detection of the

Menu tabs	Description
	online network camera via private multicast protocol in the LAN. **DNS server**: Specifies the DNS server for the network. See page 14 for setup information.
2. DDNS	DDNS is a service that maps Internet domain names to IP addresses. It is designed to support dynamic IP addresses, such as those assigned by a DHCP server. DDNS permits remote connection to the camera's network; however the router serving that network must be configured properly for remote access. Make a selection from the **DDNS Type** drop-down list (**IPServer**, **DynDNS**, **ezDDNS**, or **NO-IP**). **DynDNS** (Dynamic DNS): Manually create a host name. A user account must first be created using the DynDNS.org hosting web site. **ezDDNS**: Activate the DDNS auto-detection function to set up a dynamic IP address. The server is set up to assign an available host name to the recorder. **IPServer**: Type in the address, host name, and user name for the IP Server. See page 15 for setup information.
3. PPPoE	Retrieves a dynamic IP address. See page 15 for setup information.
4. Port	**HTTP Port**: The HTTP port is used for remote internet browser access. Enter the port used for the IE browser. Default value is 80. **RTSP Port**: RTSP (Real Time Streaming Protocol) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers. Enter the RTSP port value. The default port number is 554. **HTTPS Port**: HTTPS (Hyper Text Transfer Protocol Secure) allows video to be securely viewed when using a browser. Enter the HTTPS port, value. The default port number is 443. **Server Port**: This is used for remote client software access. Enter the server port value. The default port number is 8000. **Alarm Host IP**: Specifies the IP address of the alarm host. **Alarm Host Port**: Specifies the port of the alarm host. See page 15 for setup information.
5. NAT	A NAT (Network Address Translation) is used for network connection. Select **Auto** or **Manual** from the **Port Mapping Mode** drop-down list. See page 16 for setup information.

To define the TCP/IP parameters:

1. From the menu toolbar, click **Configuration** > **Network** > **Basic Settings** > **TCP/IP**.

2. Configure the NIC settings, including the **NIC Type**, IPv4 settings, IPv6 settings, **MTU**, and **Multicast Address**.

3. If a DHCP server is available, select the **DHCP** checkbox.

4. If the DNS server settings are required for some applications (e.g., sending email), configure the **Preferred DNS Server** or **Alternate DNS Server**.

5. Click **Save** to save changes.

   Note: Click the **Wlan** tab to configure the Wlan settings.

To define the DDNS parameters:

1. From the menu toolbar, click **Configuration** > **Network** > **Basic Settings** > **DDNS**.

2. Select the **Enable DDNS** check box to enable this feature.

3. Select **DDNS Type**:

   - **DynDNS:** Enter the DNSS server address, members.ddns.org, which is used to notify DDNS about changes to the IP address, the host name for the camera, the port number (443 (HTTPS)), and the user name and password used to log into the DDNS account. The domain name displayed under "Host Name" is the one created on the DynDNS web site.

   - **ezDDNS:** Type the required host name in the **Host Name** box. The default host name is the utc-serial number. The default server address is www.tvr-ddns.net, which cannot be changed. Click **Get URL** to register generate a URL that, when copied and pasted into a browser, generates an IP address for the camera for remote access.

     Note: The camera's network router must be configured for remote access.

   - **IPServer:** Type the address of the IP Server.

   - **NO-IP:** Type www.noip.com into the **Server Address** box and create a domain name.

4. Click **Save** to save changes.

To define the PPPoE parameters:

1. From the menu toolbar, click **Configuration** > **Network** > **Basic Settings** > **PPPoE**.

2. Check **Enable PPPoE** to enable this feature.

3. Enter User Name, Password, and Confirm password for PPPoE access.

4. Click **Save** to save changes.

To define the port parameters:

1. From the menu toolbar, click **Configuration** > **Network** > **Basic Settings** > **Port**.

2. Set the HTTP port, RTSP port, HTTPS port and Server port of the camera.

   HTTP Port: The default port number is 80, and it can be changed to any port No. which is not occupied.

   RTSP Port: The default port number is 554. It can be changed to any port number in the range from 1 to 65535.

   HTTPS Port: The default port number is 443. It can be changed to any port number that is not occupied.

   Server Port: The default server port number is 8000. It can be changed to any port number in the range from 2000 to 65535.

3. Type the IP address and port to upload the alarm information to the remote alarm host. Also, select the **Notify Alarm Recipient** option in the Normal Linkage of each event page.

4. Click **Save** to save changes.

To set up the NAT parameters:

Network Address Translation (NAT) permits automatic communication with a network router.

1. Click **Configuration** > **Network** > **Basic Settings** > **NAT**.

2. Select the **Enable UPnP** check box to enable the NAT function.

3. Select **Auto** or **Manual** from the **Port Mapping Mode** drop-down list. When **Manual** is selected, click on an external port number to change it by typing in a new port number.

   Note: If a non-default external port number is assigned, the network router settings must be configured accordingly.

4. Click **Save** to save changes.

Advanced settings
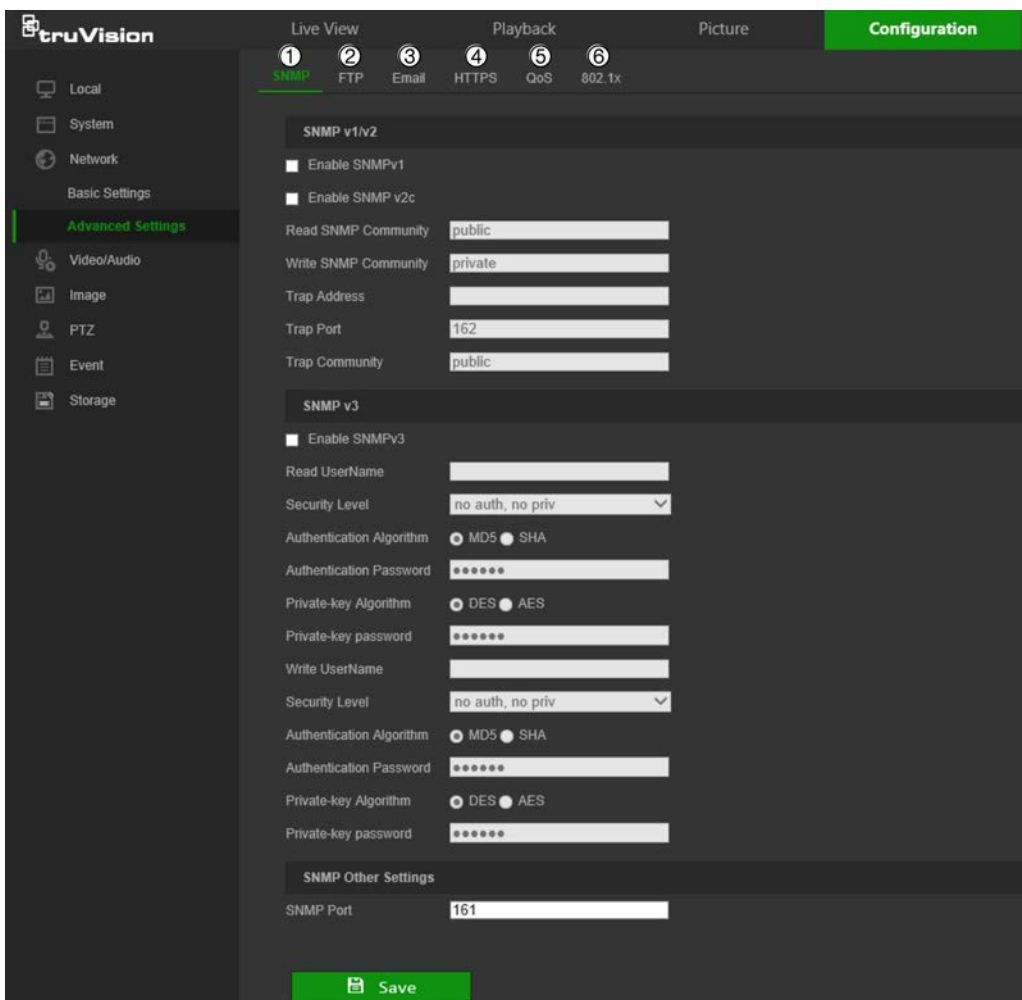
Menu tabs	Description
1. SNMP	SNMP is a protocol for managing devices on networks. Enable SNMP to get camera status and parameter related information. See page 17 for setup information.

Menu tabs		Description
2	FTP	Enter the FTP address and folder to which camera snapshots can be uploaded. See page 17 for setup information.
3.	Email	Enter the email address to which messages are sent when an alarm occurs. See page 18 for setup information.
4.	HTTPS	Specifies authentication of the website and its associated web server, which protects against Man-in-the-middle attacks.
5.	QoS	QoS (Quality of Service) can help solve network delay and congestion by configuring the priority of data sending. See page 20 for setup information.
6.	802.1x	When the feature is enabled, the camera data is secured and user authentication is needed when connecting the camera to the network. See page 20 for setup information.

To define the SNMP parameters:

1. From the menu toolbar, click **Configuration** > **Network** > **Advanced Settings** > **SNMP**.

2. Select the corresponding version of SNMP: v1, v2c or v3.

3. Configure the SNMP settings. The configuration of the SNMP software should be the same as the settings you configure here.

4. Click **Save** to save changes.

   Note: Before configuring SNMP, test your SNMP monitoring software and attempt to receive the camera information via the SNMP port. By setting the Trap Address, the camera can send the alarm event and exception messages to the SNMP monitoring software. The SNMP version you select should be the same as that supported by the SNMP software.

To define the FTP parameters:

1. From the menu toolbar, click **Configuration** > **Network** > **Advanced Settings** > **FTP**.

2. Configure the FTP settings, including the **Server Address**, **Port**, **User Name**, **Password**, **Directory Structure**, and upload type.

   Anonymous: Select this check box to enable anonymous access to the FTP server.

   Directory Structure: Select the **Save in the root directory**, **Save in the parent directory**, or **Save in the child directory**. When the parent directory is selected, select **Use Device Name**, **Use Device Number**, **Use Device IP**, or **Custom** (type in a directory name) for the name of the parent directory. If **Save in the child directory** is selected, select **Use Camera Name**, **Use Camera Number**, or **Custom** as the name of the child directory.

   Snapshot Filing Interval: Select a number of days to specify how many days of snapshots should be stored in a single folder. All snapshots are saved to a single folder in default mode (**OFF**).

   Snapshot Name: Select **Custom Prefix** to change the default snapshot name prefix. Invalid characters for the custom prefix are as follows: / \ : * ? ' " < > | %.
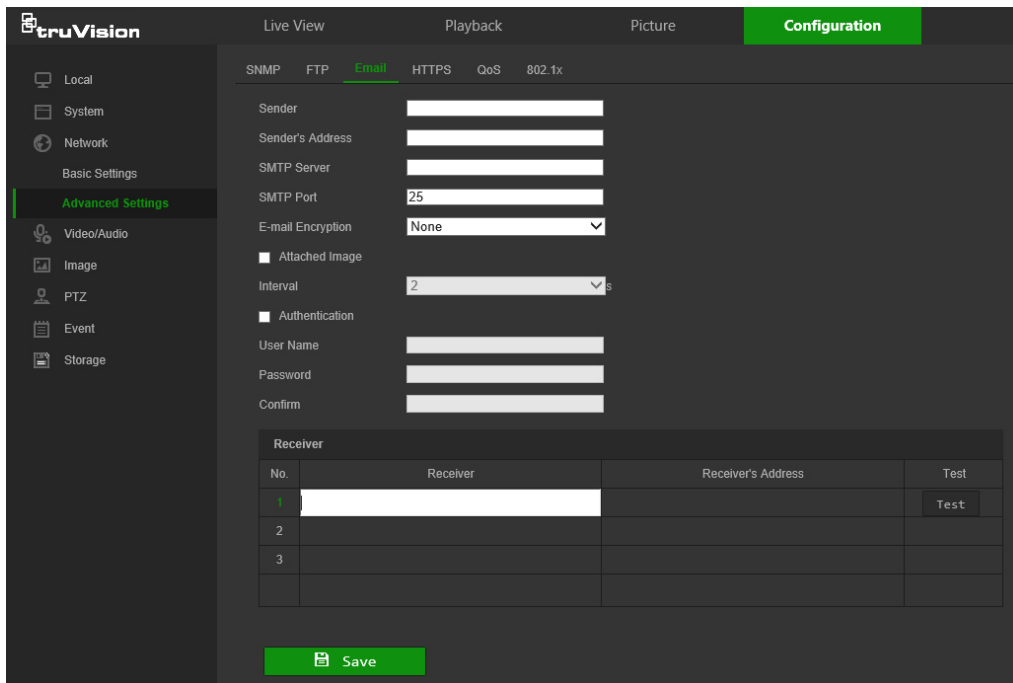
Upload Snapshot: Select this check box to enable the uploading of snapshots to an FTP server.

Test: Click **Test** to test the FTP parameters.

3. Click **Save** to save changes.

To set up the email parameters:

1. From the menu toolbar, click **Configuration** > **Network** > **Advanced Settings** > **Email**.

2. Configure the following settings:

Sender: The name of the email sender.

Sender's Address: The email address of the sender.

SMTP Server: The SMTP Server, IP address, or host name.

SMTP Port: The SMTP port. The default is 25.

Email Encryption: Select **None**, **SSL**, or **TLS**. If the **Enable STARTTLS** check box is not selected after selecting SSL or TLS, emails are sent after encryption via SSL or TLS. The SMTP port should be set as 465 for this encryption method. After selecting SSL or TLS and then selecting **Enable STARTTLS**, emails are sent after encryption via STARTTLS, and the SMTP port should be set as 25.

Note: When using STARTTLS, ensure that the protocol is supported by the email server. If the **Enable STARTTLS** check box is selected when the protocol is not supported by the email server, email will not be encrypted.

Attached Snapshot: Select the **Attached Snapshot** check box to send emails with attached alarm images.

Interval: This is the time between two actions of sending attached snapshots.

Authentication: If the email server requires authentication, select this check box to use authentication to log in to this server. Enter the login user name and password.

User Name: The user name to log in to the server where the images are uploaded.

Password: Enter the password.

Confirm: Confirm the password.

Receiver: Click inside the Receiver table to type in receiver names and email addresses. Row 1 shows the first user to be notified, Row 2 shows the second user to be notified, and so on.

3. Click **Test** to test the email parameters for each receiver.

4. Click **Save** to save changes.

To set up the HTTPS parameters:

A valid certificate must be installed to use a secure HTTPS connection for accessing the user interface.

Caution: Removing and installing certificates is only recommended for advanced users.

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1. Click **Configuration** > **Network** > **Advanced Settings** > **HTTPS**.
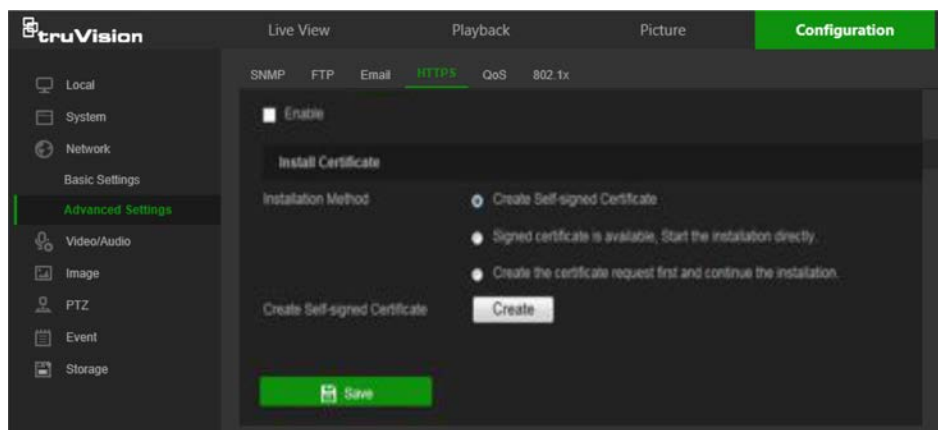
2. Deselect **Enable** and click **Save** to remove the default certificate.

3. **To create a self-signed certificate**:

   Select the **Create Self-signed Certificate** radio button and then click **Create**. Enter the country, host name/IP, validity, and the other information requested.

   —or—

   To create a certificate request:

   Select the **Signed Certificate is available, Start the installation directly** radio button and then click **Create**. Upload the certificate to the device.

   —or—

   To create an authorized certificate:

   Select the **Create the certificate request first and continue the installation** as radio button and then click **Create**. Fill in the required information in the popup

window. Download the certificate request and submit it to the trusted certificate authority (such as Symantec or RSA) for signature. After receiving the signed valid certificate, upload the certificate to the device.

4. Click **OK** to save the settings.

To define the QoS parameters:

1. From the menu toolbar, click **Configuration** > **Network** > **Advanced Settings** > **QoS**.

2. Configure the QoS settings, including **Video/Audio DSCP**, **Event/Alarm DSCP,** and **Management DSCP**. The valid value range of the DSCP is 0-63. The higher the differentiated services code point (DSCP) value, the higher the priority of the service.

3. Click **Save** to save changes.

To define the 802.1x parameters:

1. From the menu toolbar, click **Configuration** > **Network** > **802.1X**.

2. Check **Enable IEEE 802.1X** to enable the feature.

3. Configure the 802.1X settings, including EAPOL version, user name, and password. The EAPOL version must be identical with that of the router or the switch.

4. Click **Save** to save changes.

   Note: The switch or router to which the camera is connected must support the IEEE 802.1X standard, and a server must be configured. Please apply and register a user name and password for 802.1X in the server.

Video/Audio

Adjust the video and audio recording parameters to obtain the required picture quality and file size.

Tab	Parameter descriptions
1. Video	**Stream Type**: Specifies the streaming method used. Options include: **Main Stream (Normal)**, **Sub Stream** and **Third stream**.
	Video Type: Specifies the stream type for recording. Select **Video Stream** to record video stream only. Select **Video&Audio** to record both video and audio streams. **Note**: **Video&Audio** is only available for those camera models that support audio.
	Resolution: Specifies the recording resolution. A higher image resolution provides a higher image quality but also requires a higher bit rate. The resolution options listed depend on the type of camera and if main or sub stream is being used. **Note**: Resolutions can vary depending on the camera model.
	Bitrate Type: Specifies whether variable or fixed bit rate is used. Variable produces higher quality results suitable for video downloads and streaming.
	Video Quality: Specifies the quality level of the image. It can be set when variable bit rate is selected. Options include: **Lowest**, **Lower**, **Medium**, **Higher** and **Highest**.
	Frame Rate: Specifies the frame rate for the selected resolution. The frame rate is the number of video frames that are shown or sent per second. **Note**: The maximum frame rate depends on the camera model and selected resolution. Refer to the camera's specifications.
	Max Bitrate: Specifies the maximum allowed bit rate. To maintain high quality image resolution, a high bit rate must also be selected.
	Video Encoding: Specifies the video encoding used.
	Profile: Different profile options indicate different tools and technologies used in compression. Options include: **High Profile**, **Main Profile,** and **Basic Profile**.
	SVC: Select **OFF** or **ON** to disable/enable the SVC function. Select Auto and the device will automatically extract frames from the original video when the network bandwidth is insufficient.
	I-frame Interval: A video compression method. We strongly recommended not changing the default value of 50.
	Smoothing: Adjust the smoothness of the stream.
2. Audio	**Audio Encoding**: **G.722.1**, **G.711ulaw**, **G.711alaw**, **MP2L2**, **G.726**, and **PCM** encoding standards are selectable.
	Audio Input: **MicIn** is selectable for the connected microphone.
	Input Volume: Specifies the volume from 0 to 100.
	Environmental Noise Filter: Set as OFF or ON to filter environmental. noise.
3. ROI	Define a region of interest (ROI) within the camera view. Assigns more encoding resources to an ROI (background information is less focused when network performance is less than optimal).

Tab	Parameter descriptions
4. Display Info. On Stream	When Dual-VCA mode is enabled, the camera sends video analytics results (metadata) to an NVR or other platforms to generate a VCA alarm.

To configure ROI settings:

1. From the menu toolbar, click **Configuration** > **Video/Audio** > **ROI**.
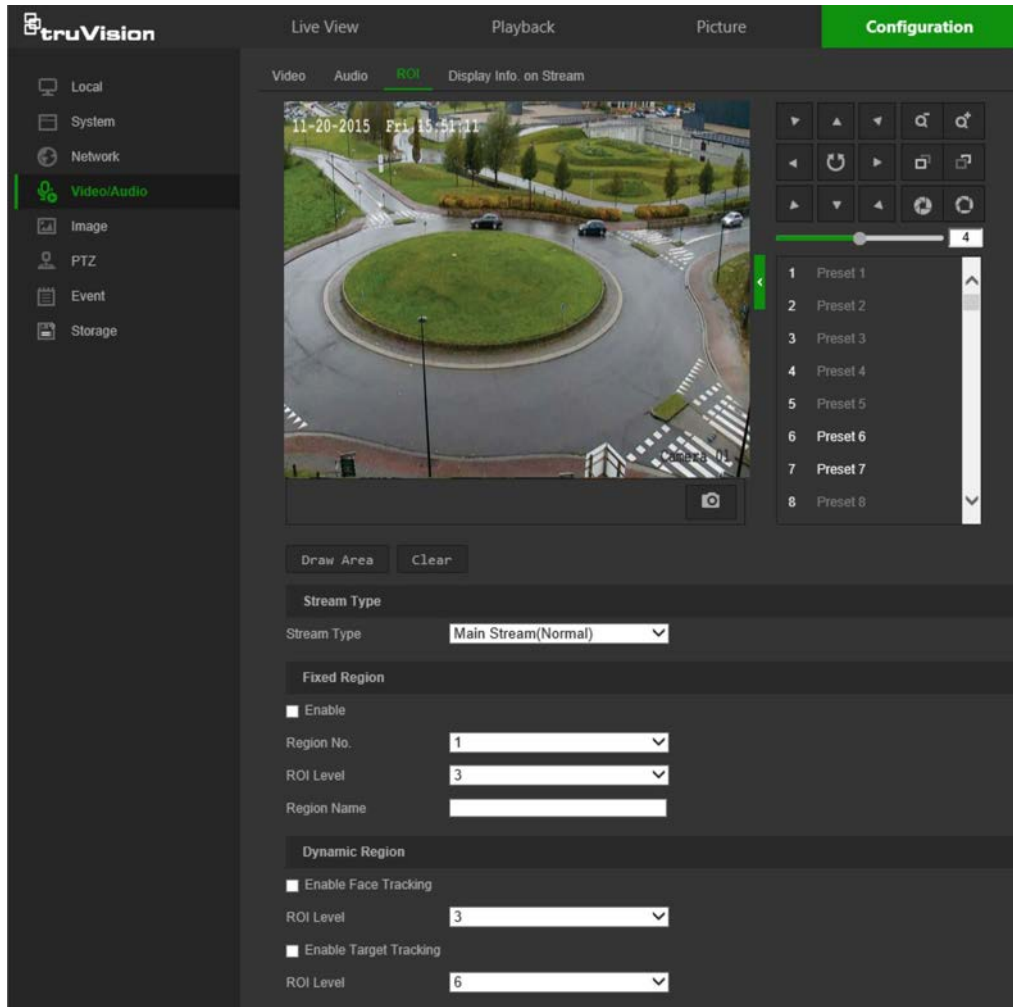
2. Click **Draw Area** to draw the region of interest on the image. Up to four regions can be drawn.

3. Select the stream type from the **Stream Type** drop-down list to set the ROI encoding.

4. Select **Enable** under **Fixed Region** to manually configure the area.

   Region No.: Select the region.

   ROI Level: Choose the image quality enhancing level.

   Region Name: Type the required region name.

5. Select **Enable Face Tracking** and/or **Enable Target Tracking** under **Dynamic Region** for face and target tracking. The ROI will change, depending upon where faces or targets are detected in the scene.

> **ROI Level**: Choose the image quality enhancing level.

6. Click **Save** to save changes.

Dual-VCA (Video Content Analysis)

When Dual-VCA mode is enabled, the camera sends video analytics results (metadata) to an NVR or other platforms to generate a VCA alarm.

For example, with an Interlogix NVR (please check Interlogix website for the latest NVR models supporting this feature), a virtual line can be drawn in the NVR playback window, and the objects or people crossing this virtual line can be searched.

Note: Only cross line and intrusion detection can support dual-VCA mode.

To define Dual-VCA parameters:

1. From the menu toolbar, click **Configuration** > **Video/Audio** > **Display Info. On Stream**.

2. Select the **Enable Dual-VCA** check box.

3. Click **Save** to save changes.

Image

The camera image may need to be adjusted to obtain the best image quality depending on the camera model or location background. Adjust the brightness, contrast, saturation, hue, and sharpness of the video image using the Image menu.

Use this menu to also adjust camera behavior parameters such as exposure time, iris mode, video standard, day/night mode, image flip, WDR, digital noise reduction, white balance, and scene mode (indoor/outdoor, etc.). Use the PTZ control buttons in the PTZ panel to point the camera at a specific area, or select a predefined preset position.

Parameter	Description
1. Scene	
Indoor, Outdoor, Day, Night, Morning, Nightfall, Street, Low Illumination, Custom1, Custom2	Choose the scene according to the current environment. **Note:** The scene must be set to **Outdoor** to enable local output.
2. Image Adjustment	
Brightness, Contrast, Saturation, Sharpness	Modifies the different elements of picture quality by adjusting the position of the values for each parameter.
3. Exposure Settings	
Exposure Mode	The Exposure Mode can be set to Auto, Iris Priority, Shutter Priority, and Manual. **Auto**: The iris, shutter and gain values will be adjusted automatically according to the brightness of the environment. **Iris Priority**: The value of iris needs to be adjusted manually. The shutter and gain values will be adjusted automatically according to the brightness of the environment. **Shutter Priority**: The value of shutter needs to be adjusted manually. The iris and gain values will be adjusted automatically according to the brightness of the environment. **Manual**: You can adjust the values of Gain, Shutter, and Iris manually.
Limit Gain	This feature is used to adjust the image gain. The value ranges from 0 to 100.
Slow Shutter	The shutter speed controls the length of time that the aperture is open to let light into the camera through the lens. A slow shutter speed means it is open for longer. Select On or Off. Default is Off.
Slow Shutter Level	If **Slow Shutter** is enabled, use this feature to adjust the shutter speed. Default value is Slow Shutter*2.
4. Focus Settings	
Focus Mode	If the camera supports an electronic lens, you can set the focus mode as Manual, Auto or Semi-auto. Default is Semi-auto. **Auto**: The camera focus is adjusted automatically. **Manual**: You can control the lens by adjusting the zoom, focus, lens initialization, and auxiliary focus via the PTZ control interface. Default is Manual. **Semi-auto**: The camera focuses automatically only once after panning, tilting and zooming.
Minimum Focus Distance	This function is used to set the limit of the minimum focus distance. The value can be set to 10 cm, 50 cm, 1.5 m, 3 m, 6 m, 10 m, or 20 m. Default is 6 m.
5. Backlight Settings	
BLC Area	If you focus on an object against strong backlight, the object will be too dark to be seen clearly. BLC compensates light to the object in the front to make it clear. Off, Up, Down, Left, Right, and Center are selectable. Default is Off.
WDR	When enabled, this feature (wide dynamic range) allows you to see details of objects in shadows or details of objects in bright areas of frames that have high contrast between light and dark areas. Default is

Parameter	Description
	Off.
Wide Dynamic Level	If WDR is enabled, set the wide dynamic level between 0 and 100.
HLC	Highlight compensation (HLC) is a camera technology that detects if there are any strong spots of light and compensates for the area as needed to produce clearer images. Used to read, for example, car number-plates in streets or parking lots at night. Default is Off.

6. Day/Night Switch

Parameter	Description
Day/Night Switch	Defines whether the camera is in day or night mode. The day (color) option could be used, for example, if the camera is located indoors where light levels are always good. Select one of the options (Default is Auto): **Day**: Camera is always in day mode. **Night**: Camera is always in night mode. **Auto**: The camera automatically detects which mode to use. **Schedule**: Select the start and end times for day mode

7. White Balance

Parameter	Description
White Balance	White balance (WB) tells the camera what the color white looks like. Based on this information, the camera will then continue to display all colors correctly even when the color temperature of the scene changes such as from daylight to fluorescent lighting, for example. Select one of the options (Default is Auto): **MWB**: Manually adjust the color temperature to meet your own requirements. **Outdoor**: Apply for outdoor environments. **Indoor**: Apply for indoor environments. **Fluorescent Lamp**: Apply for scene where there are fluorescent lamps installed near the camera. **Sodium Lamp**: Apply for scene where there are incandescent lamps near the camera. **Auto-Track**: White balance is continuously being adjusted in real-time according to the color temperature of the scene illumination. **Auto**: White balance is determined automatically.

8. Image Enhancement

Parameter	Description
Digital Noise Reduction	Digital noise reduction (DNR) reduces noise, especially in low light conditions, to improve image performance. Select one of the options (Default is Normal Mode): **Normal Mode**: Standard DNR. **Expert Mode**: Set up the Space DNR level and the Time DNR level. *Space DNR* level is used to reduce static noise, but if you configure a higher value, the image may be not clear. *Time DNR* level is used to reduce dynamic noise. If you configure a higher value, the moving object may have an obvious shadow. **Off**: Disable the function.
Noise Reduction Level	Only available when DNR is set to Normal Mode. Set the level of noise reduction in the Normal Mode. Higher value has a stronger noise reduction. Default is 50.
Defog Mode	You can enable the defog function when the environment is foggy and the image is misty. It enhances the subtle details so that the image appears clearer. Default is Off.

Parameter	Description
EIS	Electrical Image Stabilizer (EIS) reduces the effects of vibration in a video. Default is Off.

9. Video Adjustment

Parameter	Description
Mirror	It mirrors the image so you can see it inversed. Center, or OFF are selectable. Default is OFF.
Video Standard	50 Hz and 60 Hz are selectable. Select the standard according to the different video standards; normally 50 Hz for PAL standard and 60 Hz for NTSC standard. Default is 60 Hz.
Capture Mode	Set the desired frame rate to meet the different demands of field of view and resolution. A higher frame rate may be required in a location with a lot of movement (such as a money depot). Default is Off.

10. Other

Parameter	Description
Lens Initialization	Enable the option so that the lens operates the movements for initialization. Default is Disabled.
Zoom Limit	Set the limit of the maximum value of zooming. Default is 23.
Local Output	Select ON or OFF to enable or disable the BNC output. Default is ON.

Note: Click the **Default** button to return all the image settings to default values.

OSD (On Screen Display) Settings

In addition to the camera name, the camera also displays the system date and time on the screen. How the text appears on screen can also be defined.

To position the on-screen date/time and name:

1. From the menu toolbar, click **Configuration** > **Image** > **OSD Settings**.
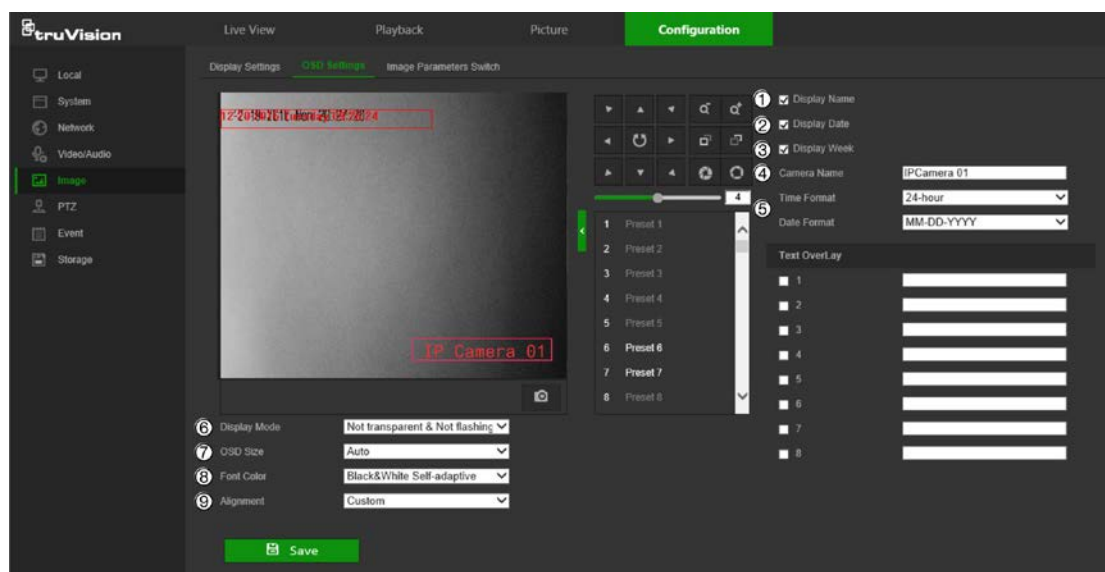
2. Select the **Display Name** check box (1) to display the on-screen camera name.

3. Select the **Display Date** check box (2) to display the date/time on screen.

4. Select the **Display Week** check box (3) to include the day of the week in the on-screen display.

5. In the **Camera Name** box (4), type the camera name.

6. Select the time and date formats from the **Time format** and **Date format** drop-down lists (5).

7. Select a display mode for the camera from the **Display Mode** drop-down list (6). Display modes include:

   • **Transparent & Not flashing.** The image appears through the text.

   • **Transparent & Flashing**. The image appears through the text. The text flashes on and off.

   • **Not transparent & Not flashing.** The image is behind the text. This is the default setting.

   • **Not transparent & Flashing**. The image is behind the text. The text flashes on and off.

8. Select the OSD size (7). Pixel display options include **Auto**, **16*16**, **32*32**, **48*48**, and **64*64**.

9. Select the OSD font color (8). Options include **Black&White Self-adaptive** and **Custom**. Use the color picker to assign a font color after selecting **Custom**.

10. Select the alignment (9). Options include **Align Right**, **Align Left**, and **Custom**.

11. Click **Save** to save changes.

Note: When the display mode is set as transparent, the text varies according the background. With some backgrounds, the text may not be easy to read.

Text overlay

Add up to four lines of on-screen text in the *Text Overlay* section. This option can be used to display emergency contact details and/or other information. Each text line can be positioned anywhere on the screen.

To add on-screen text:

1. From the menu toolbar, click **Configuration** > **Image** > **OSD Settings**.

2. In the Text Overlay section, select check box **1**.

3. Type the text in the text box.

4. Use the mouse to click and drag the red text in the live view window to adjust the text overlay position.

5. Repeat steps 2 to 4 for each extra line of text, selecting the next string number.

   Note: Remove overlay text by deselecting its corresponding check box.

6. Click **Save** to save changes.

Image parameters switch

Link to Preset or Scheduled-Switch can be configured in this window.

Link to Preset: Set the time period and linked scene for the preset and check the corresponding checkbox to go to the linked scene in the configured time period.

Scheduled-Switch: Set the time period and linked scene and it will go to the linked scene in the configured time period when the corresponding check box is selected.

To configure the image parameters switch:

1. From the menu toolbar, click **Configuration** > **Image** > **Image Parameters Switch**.

2. Select the **Link to Preset** or **Scheduled-Switch** check box. Only one of these functions can be selected.

3. If selecting **Link to Preset**, select a number from the Preset drop-down list.

4. Select up to four time period check boxes, set the time period, and make a selection from the **Linked Scene** drop-down list for each time period selected (**Indoor**, **Outdoor**, **Day**, **Night**, **Morning**, **Nightfall**, **Street**, **Low Illumination**, **Custom1**, **Custom2**).
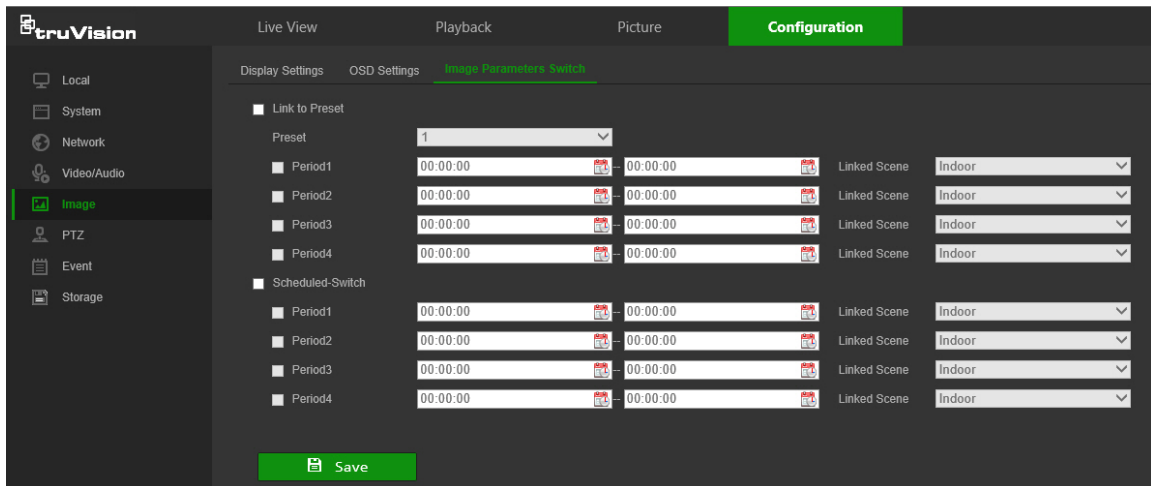
5. Click **Save** to save changes.

PTZ parameters

The following sections explain how to configure the different PTZ parameters.

PTZ home position

The initial position is the PTZ home coordinates. It can be the factory default position or you can customize the initial position to your own requirements.

To set the initial position:

1. From the menu toolbar, click **Configuration** > **PTZ** > **Initial Position**.

2. Click the PTZ control buttons to find a position as the initial position of the camera. You can also call a defined preset and set it as the initial position.

3. Click **Set** to save the position.

To call and delete the initial position:

- Click **Call** to call the initial position.

- Click **Clear** to delete the initial position and restore the factory default initial position.

Basic PTZ parameters

You can configure the PTZ parameters, such as proportional pan, preset freezing, preset speed, keyboard control speed, auto scan speed, and PTZ OSD.

To define basic PTZ parameters:

1. From the menu toolbar, click **Configuration** > **PTZ** > **Basic Settings**.
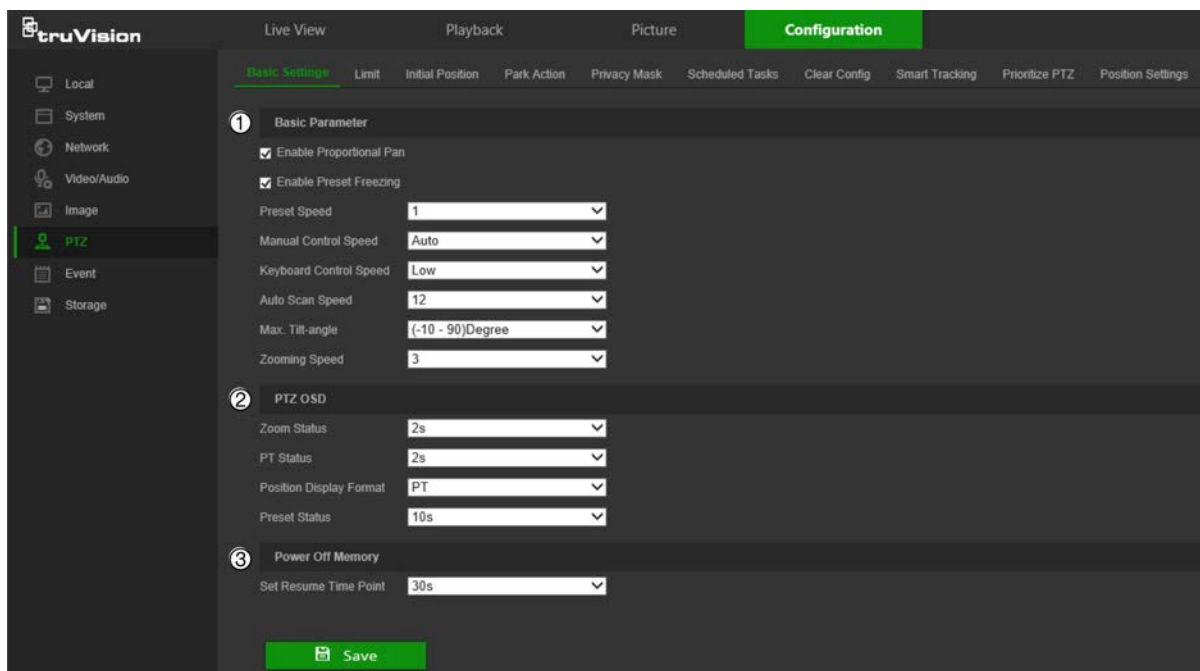
2. Configure the following settings:

1.	**Basic:**	
	Proportional Pan	If you enable this function, the pan/tilt speeds change according to the amount of zoom. When there is a large amount of zoom, the pan/tilt speed will be slower for keeping the image from moving too fast on the live view image.
	Preset Freezing	This function enables live view to switch directly from one scene defined by a preset to another, without showing the middle areas between the presets. This helps ensure surveillance efficiency. It can also reduce the use of bandwidth in a digital network system. **Note**: Preset freezing function is invalid when calling up a pattern.
	Preset Speed	Set the speed of a defined preset from 1 to 8.
	Manual Control Speed	Set the manual control speed by selecting one of the following options (Default is Auto): **Compatible**: The control speed is same as the Keyboard Control Speed. **Pedestrian**: Choose this option when monitoring pedestrians. **Non-motor Vehicle**: Choose this option when monitoring non-motor vehicles. **Motor Vehicle**: Choose this option when monitoring motor vehicles. **Auto**: This is the recommended setting when the application scene of the speed dome is complicated.
	Keyboard Control Speed	Define the speed of PTZ control by a keyboard as Low, Normal or High. Default is Low.

Auto Scan Speed	The camera provides five scan modes: auto scan, tilt scan, frame scan, random scan and panorama scan. The scan speed can be set from level 1 to 40. Default is 12.
Max. Tilt Angle	You can set the maximum tilt angle of the lens. There are six options: -5 to 90, -4 to 90, -3 to 90, -2 to 90, -1 to 90, 0 to 90. Default is -1 to 90.
Zooming Speed	You can vary the zooming speed. The zooming speed can be set from level 1 to 3. Default is 3.

2. PTZ OSD:

Set the on-screen display duration of the PTZ status.

Zoom Status	Set the OSD duration of zooming status as 2 seconds, 5 seconds, 10 seconds, Always Close, or Always Open. Default is 2s.
PT Status	Set the azimuth angle display duration while panning and tilting as 2 seconds, 5 seconds, 10 seconds, Always Close, or Always Open. Default is 2s.
Position Display Format	Set the position display format to **PT** or **Direction**. Default is PT.
Preset Status	Set the preset name display duration while calling the preset as 2 seconds, 5 seconds, 10 seconds, Always Close, or Always Open. Default is 10s.

3. Power-off Memory: The dome resumes its previous PTZ status or actions after it restarts from a power off. You can set the time point at which the dome resumes its PTZ status. You can set it to resume at 30 seconds, 60 seconds, 300 seconds, or 600 seconds before power off. Default is 30s.

3. Click **Save** to save changes.

Limit camera movement

The camera can be programmed to move only within a defined area. It can be limited in how much it can move left/right and up/down. This can be useful when you do not want an area, such as a neighboring building, to be included in the camera view.

To define the limit stop parameters:

1. From the menu toolbar, click **Configuration** > **PTZ** > **Limit**.
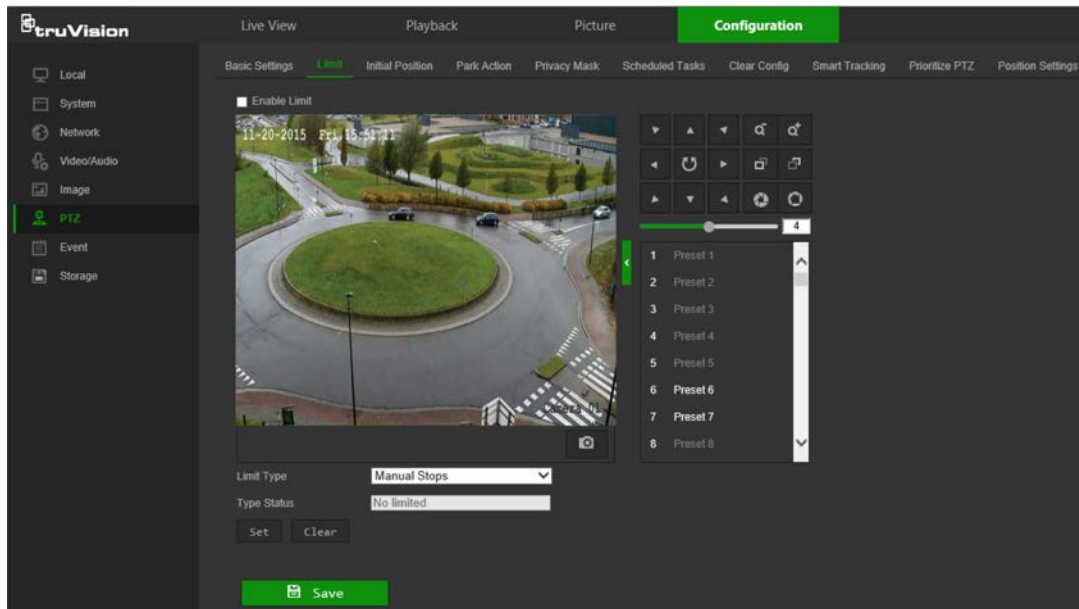
2. Click the **Enable Limit** checkbox to enable the limit function.

3. Click the **Set** button and use the PTZ control panel to set the limits of the camera movement. You can also call up defined presets and set them as the limits of the camera.

   Click **Clear** to delete the set limits.

4. Select the limit type.

   Manual Stops: When manual limit stops are set, you can operate the PTZ control panel manually only within the restricted surveillance area.

   Scan Stops: When scan limit stops are set, the random scan, frame scan, auto scan, tilt scan, panorama scan are performed only within the restricted surveillance area.

   Note: The option **Manual Stops** has priority over **Scan Stops**. If these two functions are set at the same time, only **Manual Stops** is enabled.

   The status of the camera movement is displayed under **Type Status** as *Not Limited* or *Limited*. The limit changes are saved automatically

5. Click **Save** to save changes.

Park actions

This is the action that will run automatically after the dwell time. A park action can be, for example, a scan, preset, patrol, or a pattern.

Note: The *Scheduled Tasks* function (see page 31) has priority over the *Park Action* function. If these two functions are set at the same time, only *Scheduled Tasks* is enabled.

To define a park action:

1. From the menu toolbar, click **Configuration** > **PTZ** > **Park Action**.
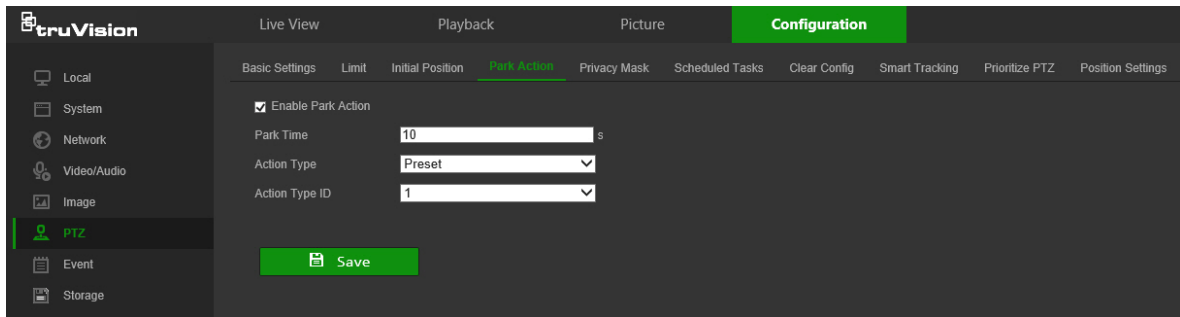
2. Select the **Park Action** check box.

3. Set the **Park Time**, which is the inactivity time of the dome before it starts the park action.

4. Make a selection from the **Action Type** drop-down list.

5. If **Patrol**, **Pattern**, or **Preset** is selected as the Action Type, a number must be also be selected from the **Action Type ID** drop-down list.

6. Click **Save** to save changes.

Privacy masks

Privacy masks let you conceal sensitive areas (such as neighboring windows) to protect them from view on the monitor screen and in the recorded video. The masking appears as a blank area on screen. You can create up to 24 privacy masks per camera.

Note: There may be a small difference in size of the privacy mask area depending on whether local output or the web browser is used.

To add privacy mask area:

1. From the menu toolbar, click **Configuration** > **PTZ** > **Privacy Mask**.
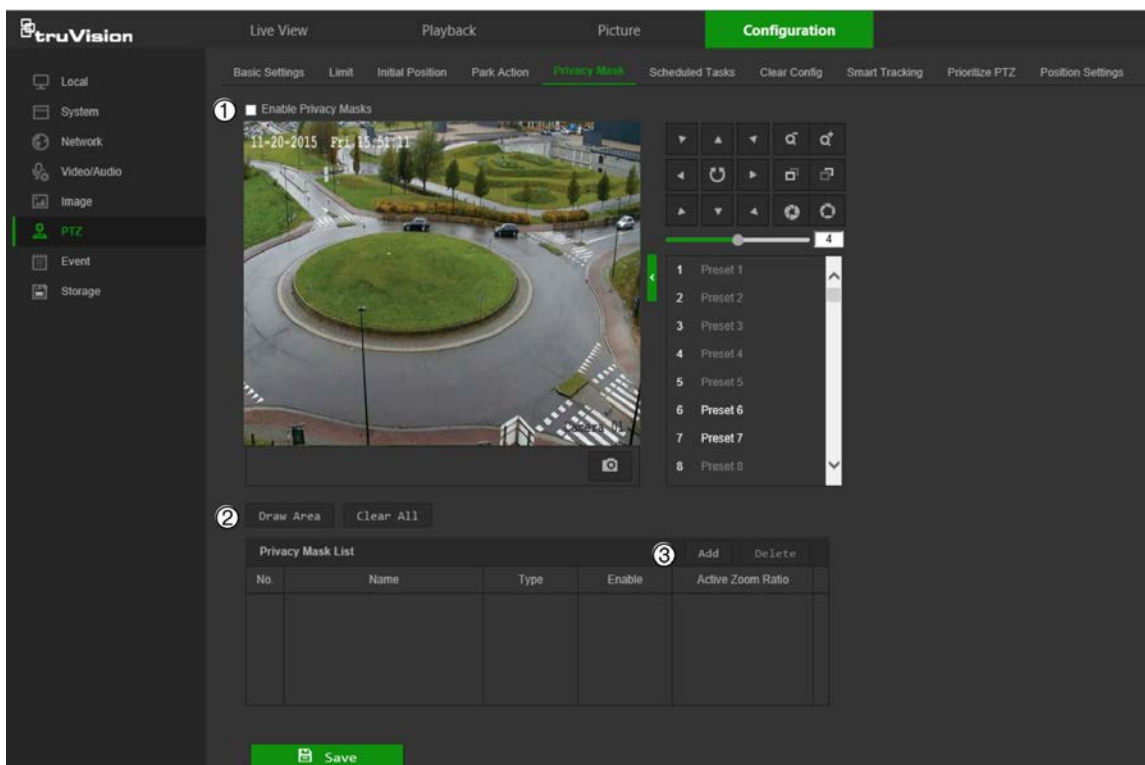
2. Select **Enable Privacy Masks** (1).

3. Using the PTZ control buttons, point the camera at the desired area, or select a predefined preset position, where you want to set the privacy mask.

4. Click the Draw Area button (2). Click and drag the mouse in the live video window to draw the mask area.

5. Click **Stop Drawing** to finish drawing, or click **Clear All** to clear all of the areas you set without saving them.

6. Click **Add** (3) to add the area. Enter its name, color, and active zoom ratio. Each mask can be individually set.

Note: The active zoom ratio is the magnification level the camera will zoom into when motion is detected.

7. Click **Save** to save changes.

Scheduled tasks

You can configure the camera to perform a specific action automatically during a user-defined time period.

To define a scheduled task:

1. From the menu toolbar, click **Configuration** > **PTZ** > **Scheduled Tasks**.
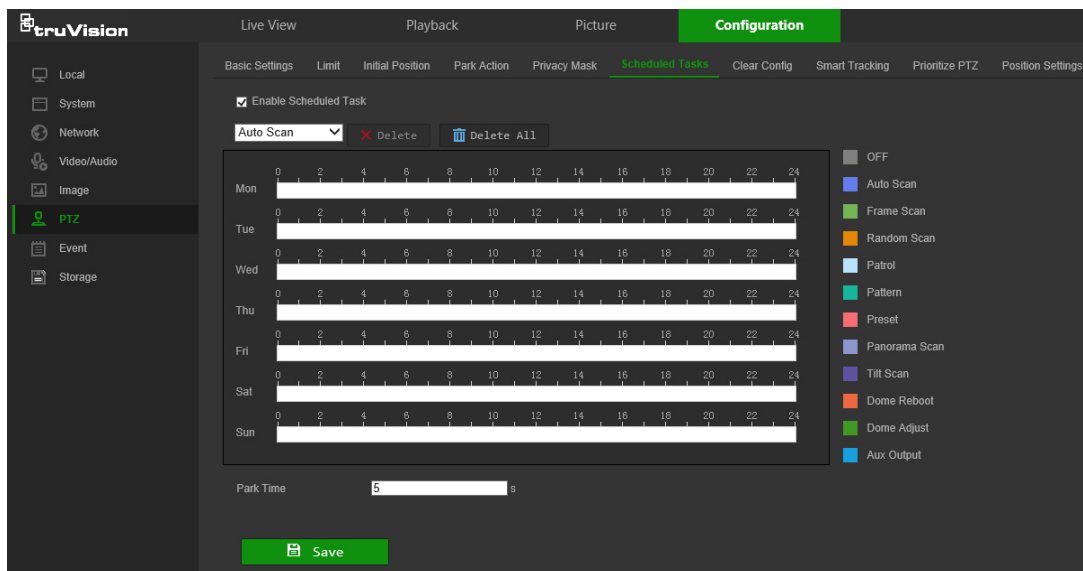
2. Select the **Enable Scheduled Task** check box.

3. Set the **Park Time**. You can set the park time in seconds (a period of inactivity) before the camera starts the scheduled tasks.

4. Choose the task type from the drop-down list (see the list of color-coded tasks on the right side of the window).

5. Click and drag along the time bars or click on a time bar to configure recording schedule times and alarm/event types.
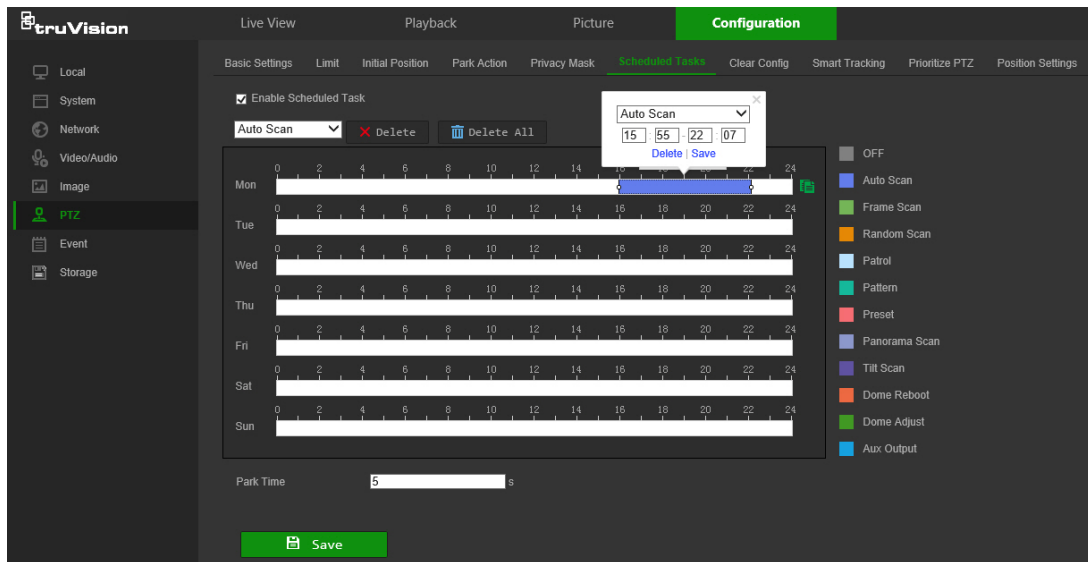
Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

6. Click 📋 to copy the schedule to other days by selecting the corresponding check box next to the day.

7. Click **Save** to save changes.

Clear PTZ configurations

Use the PTZ configurations menu to clear all presets, patrols, patterns, privacy masks, PTZ limits, scheduled tasks, and park actions.

To clear PTZ configurations:

1. From the menu toolbar, click **Configuration** > **PTZ** > **Clear Config**.
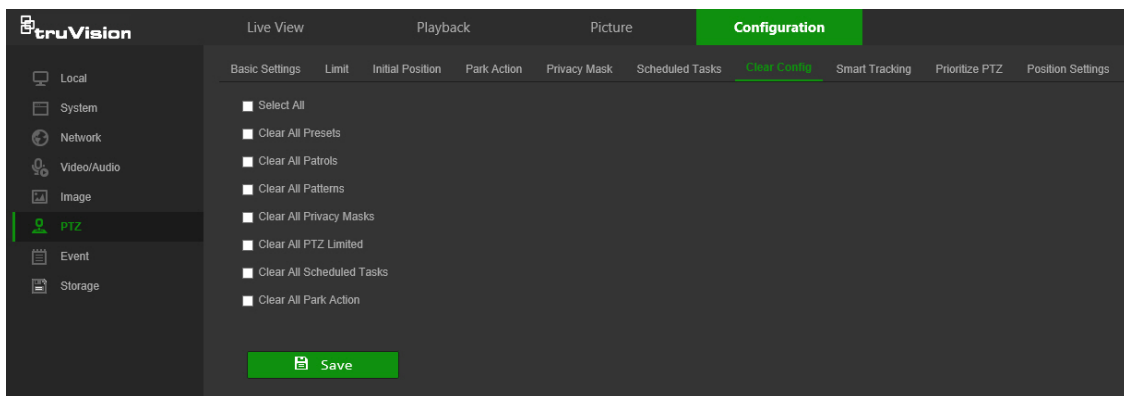
2. Select the check boxes for the options that need to be cleared.

3. Click **Save** to save changes.

Smart tracking

Smart tracking is used to track a moving object or person in a selected region.

To define smart tracking:

1. From the menu toolbar, click **Configuration** > **PTZ** > **Smart Tracking**.
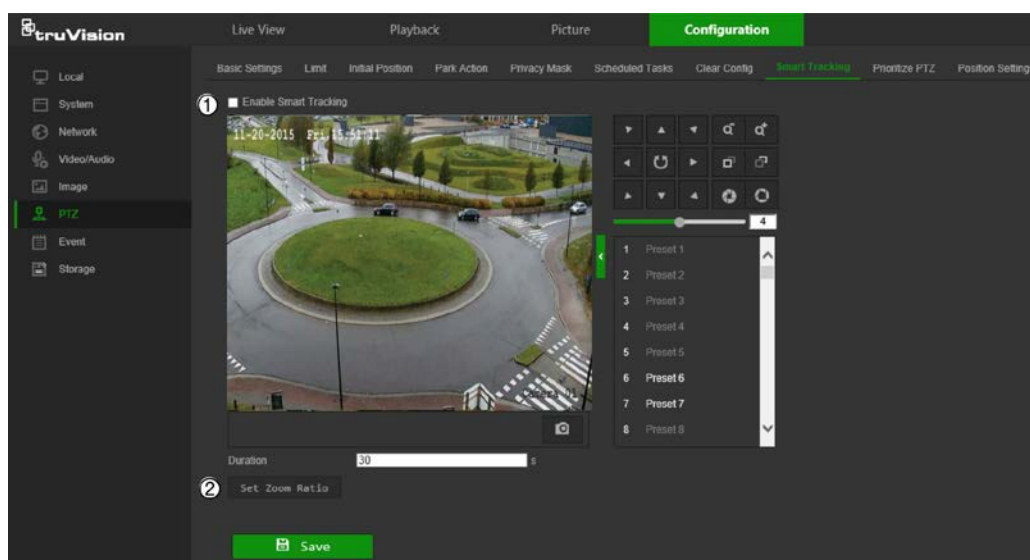
2. Select the **Enable Smart Tracking** check box.

3. Using the PTZ control buttons, point the camera at the desired area, or select a predefined preset position, where you want to set intelligent tracking.

4. Set the duration time. This is the time during which the camera follows the moving object or person. You can select up to 300 seconds.

5. Set the zoom ratio (2). This is the zoom level used when you start to track the person or object.

6. Click **Save** to save changes.

Prioritize PTZ

1. From the menu toolbar, click **Configuration** > **PTZ** > **Prioritize PTZ**.

2. Select **Network** or **RS-485** from the **Prioritize PTZ** drop-down list.

3. Set the delay time by typing a value in the Delay field. The range is from 2-200 seconds.

4. Click **Save** to save changes.

Position settings

1. From the menu toolbar, click **Configuration** > **PTZ** > **Position Settings**.

2. Manually find the north position for the camera in Live View interface, and click **Set at North** to set the north direction.

3. After the camera changes its direction, you can click **Point to North** and the camera turns back to the north direction.

4. Manually set GPS information including longitude and latitude under GPS.
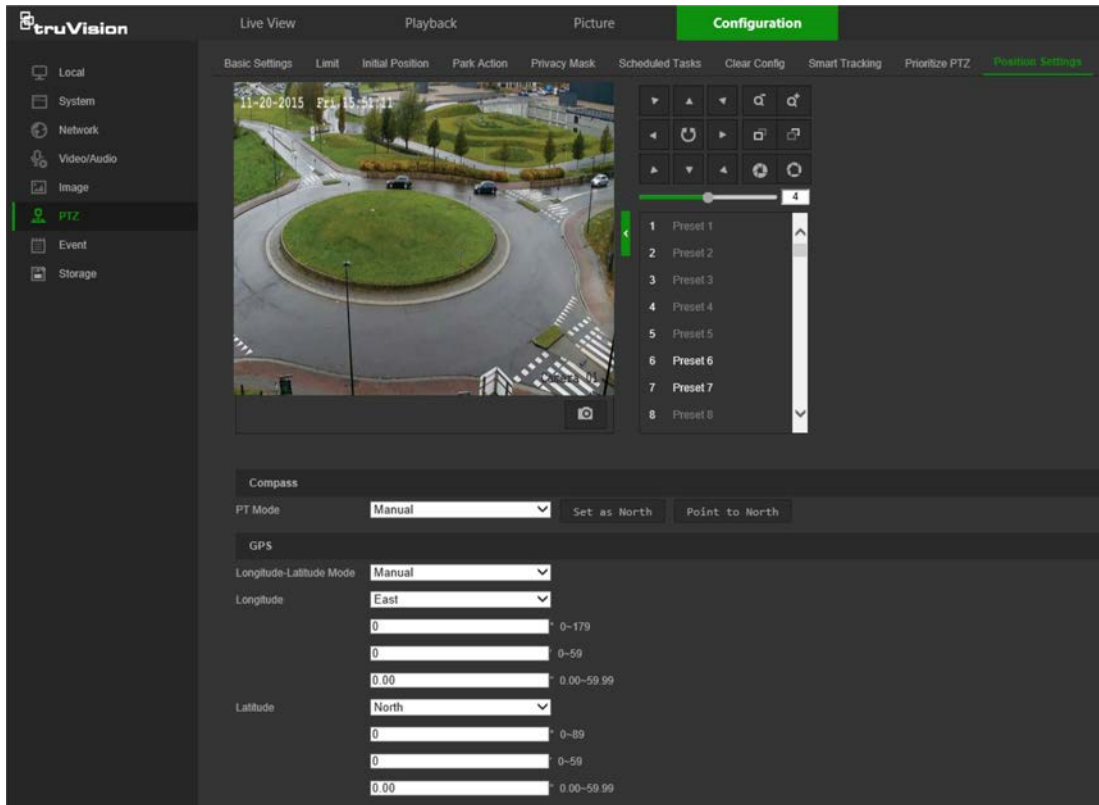
5. Click **Save** to save changes.

Basic event

Motion detection alarms

A motion detection alarm refers to an alarm triggered when the camera detects motion. The motion alarm is only triggered if it occurs during a programmed time schedule.

Select the level of sensitivity to motion as well as the target size so that only objects that could be of interest trigger a motion recording. For example, the motion recording is triggered by the movement of a person but not that of a cat.

Define the area on-screen where the motion is detected, the level of sensitivity to motion, the schedule when the camera is sensitive to detecting motion, as well as which methods are used to produce a motion detection alarm.

Dynamic analysis for motion can also be enabled. When there is motion, the motion area is indicated by green rectangles.
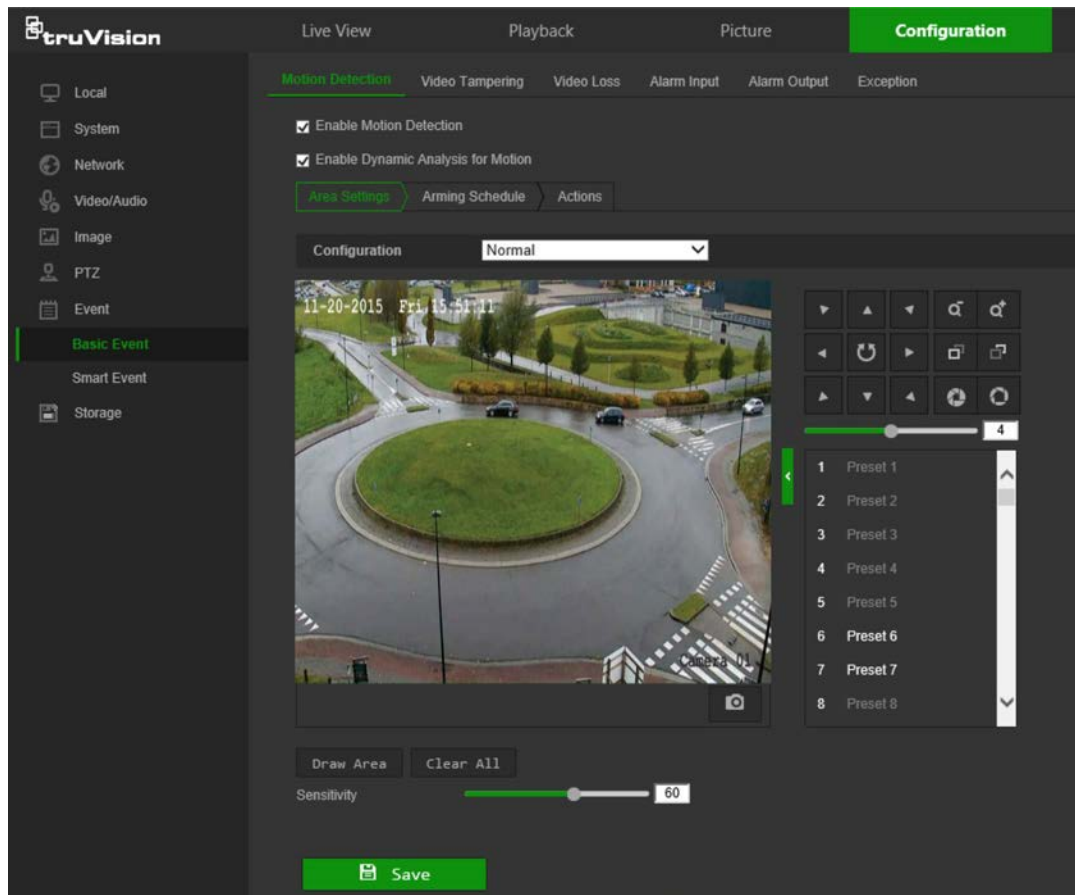
Defining a motion detection alarm requires the following tasks:

1. **Area settings**: Define the on-screen area that can trigger a motion detection alarm and the detection sensitivity level.

2. **Arming schedule**: Define the schedule during which the system detects motion.

3. **Linkage**: Specify the method of response to the alarm (see below). **Trigger Recording** must be selected to launch recordings to be stored on the SD card or in NAS.

4. **Normal and advanced configuration**: Normal configuration permits setting the sensitivity level of the motion detection. Advanced configuration provides more control over how motion is detected. It permits setting the sensitivity level as well as the percentage of the motion detection area that the object must occupy, selecting day or night mode, and setting up eight differently configured defined areas.

5. **Recording schedule**: Define the schedule during which motion detection can be recorded. See "Recording schedule" on page 50 for further information.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

Linkage methods

The linkage methods available are as follows:

Notify Alarm Recipient	Send an exception or alarm signal to the remote management software when an event occurs.
Notify Surveillance Center	Triggers an audible warning locally (only applies to cameras with an audio output).
Send Email	Sends an email to a specified address when there is a motion detection alarm. **Note:** Email settings must be configured before enabling this option. See "To set up the email parameters" on page 18 for further information. To send the event snapshot together with the email, select the **Attached Snapshot** check box.
Upload to Snapshot	Capture a snapshot when an alarm is triggered and upload the snapshot to NAS or an FTP server. **Note**: NAS settings must be configured before uploading the snapshot to NAS. See "NAS settings" on page 54 for further details. FTP settings must be configured before uploading the snapshot to FTP. See "To define the FTP parameters" on page 17 for further details. To upload the snapshot to FTP and NAS when motion detection or an alarm input is triggered, **Enable Event-triggered Snapshot** must also be selected in the snapshot parameters. See "Snapshot parameters" on page 52.
Trigger Alarm Output	Triggers external alarm outputs when an event occurs. Select the check boxes next to individual alarm outputs or select the **Trigger Alarm Output** check box to select all outputs. **Note:** This option is only supported by cameras that feature an alarm output.
Trigger Recording	Triggers the camera recording.

To set up motion detection in normal mode:

1. From the menu toolbar, click **Configuration** > **Event** > **Basic Event** > **Motion Detection**.

2. Select the **Enable Motion Detection** check box. Select **Enable Dynamic Analysis for Motion** to see real-time motion events.

   Note: Select **Local** > **Rules** > **Disable** to *not* have detected objects indicated by green rectangles.

3. Select **Normal** from the Configuration drop-down list.

4. Click **Draw Area**. Click and drag the mouse on the live video image to draw an area sensitive to motion detection.

   Note: Up to eight motion detection areas can be drawn on the same image.

5. Click **Stop Drawing** to finish drawing. Click **Clear All** to delete all areas marked and restart drawing.

6. Move the **Sensitivity** slider to set the sensitivity of the detection. All areas will have the same sensitivity level.

7. Click **Save** to save changes.

8. Click the **Arming Schedule** tab to edit the arming schedule. Click and drag along the time bars or click on a time bar to configure arming schedule times.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

9. Click ![icon] to copy the schedule to other days by selecting the corresponding check box next to the day.

10. Click **Save** to save changes.

11. Click the **Actions** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

12. Click **Save** to save changes.

To set up motion detection in advanced mode:

1. From the menu toolbar, click **Configuration** > **Basic Event** > **Motion Detection**.

2. Select the **Enable Motion Detection** check box. Check **Enable Dynamic Analysis for Motion** to see where motion occurs in real-time.

   Note: Select **Local** > **Rules** > **Disable** to *not* have detected objects indicated with green rectangles.

3. Select **Expert** from the **Configuration** drop-down list.
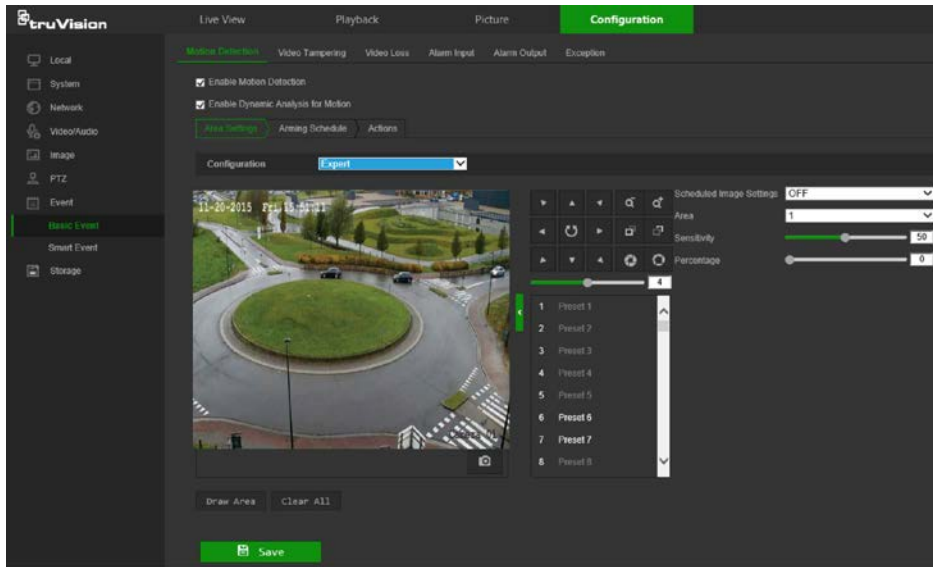
4. In the **Image Settings** drop-down list, select **OFF**, **Auto-switch** or **Scheduled-switch**. Default is **OFF**.

   Auto-switch and Scheduled-switch allow permit different settings for day and night as well as different periods.

5. Select a number from the **Area** drop-down list and click **Draw Area**. Click and drag the mouse on the live video image to draw an area sensitive to motion detection.

   Note: Up to eight motion detection areas can be drawn on the same image.

6. Click **Stop Drawing** to finish drawing. Click **Clear All** to delete all areas marked and restart drawing.

7. Move the **Sensitivity** slider to set the sensitivity of the detection for the selected areas.

8. Move the **Proportion of Object on Area** slider to set the proportion of the object that must occupy the defined area to trigger an alarm.

9. Click **Save** to save the changes for that area.

10. Repeat steps 7 to 9 for each area to be defined.

11. Click the **Arming Schedule** tab to edit the arming schedule. Click and drag along the time bars or click on a time bar to configure arming schedule times.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

12. Click 🗐 to copy the schedule to other days by selecting the corresponding check box next to the day.

13. Click **Save** to save changes.

14. Click the **Linkage Method** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

15. Click **Save** to save changes.

Tamper-proof alarms

The camera can be configured to trigger an alarm when the lens is covered and take an alarm response action.
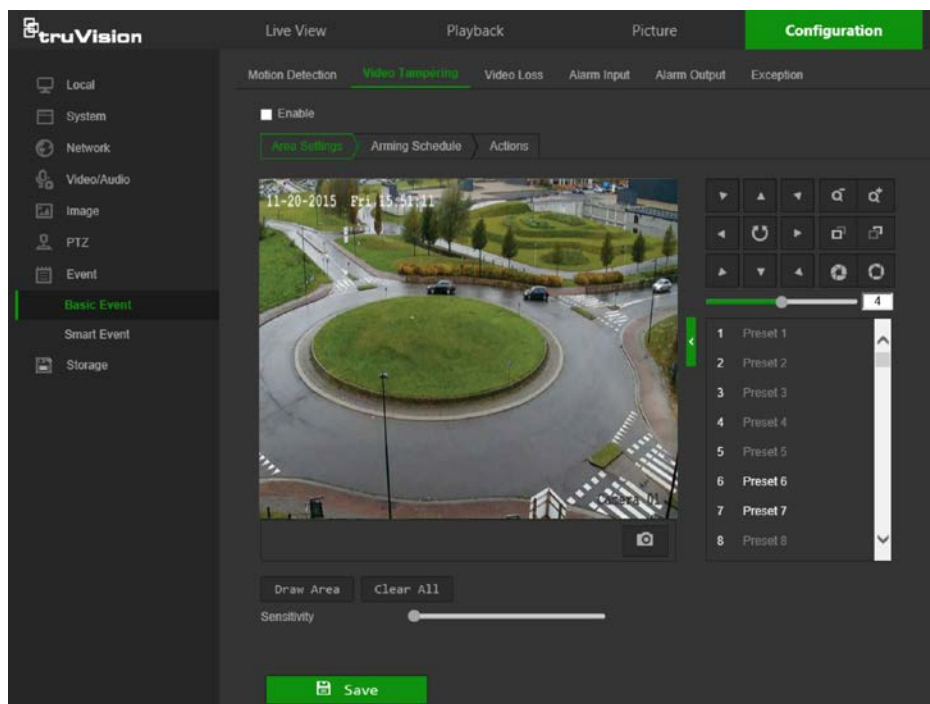
To set up tamper-proof alarms:

1. From the menu toolbar, click **Configuration** > **Event** > **Basic Event** > **Video Tampering**.

2. Select the **Enable** check box.

3. Move the **Sensitivity** slider to set the sensitivity of the detection.

4. Click **Save** to save changes.

5. Click the **Arming Schedule** tab to edit the arming schedule. Click and drag along the time bars or click on a time bar to configure arming schedule times.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

6. Click ![icon] to copy the schedule to other days by selecting the corresponding check box next to the day.

7. Click **Save** to save changes.

8. Click the **Actions** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

9. Click **Save** to save changes.

Alarm inputs and outputs

To define the external alarm input:

1. From the menu toolbar, click **Configuration** > **Event** > **Basic Event** > **Alarm Input**.

2. Select the **Alarm Input No.** and the **Alarm Type**. The alarm type can be **NO** (Normally Open) or **NC** (Normally Closed). Type a name for the alarm into the **Alarm Name** box.

3. Click **Save** to save changes.

4. Click the **Arming Schedule** tab to edit the arming schedule. Click and drag along the time bars or click on a time bar to configure arming schedule times.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

5. Click 📋 to copy the schedule to other days by selecting the corresponding check box next to the day.

6. Click the **Copy to** button to copy the schedule to other alarm inputs.

7. Click **Save** to save changes.

8. Click the **Actions** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

   For **PTZ Linking** the options are: **Preset No.**, **Patrol No.**, or **Pattern No.** Select the required number.

9. Click the **Copy to** button to copy the actions to other alarm inputs.

10. Click **Save** to save changes.

To define alarm output:

1. From the menu toolbar, click **Configuration** > **Event** > **Basic Event** > **Alarm Output**.

2. Select an alarm output channel from the **Alarm Output No.** drop-down list. If required, type a name for the alarm output in the **Alarm Name** box.

3. The delay time can be set to **5s**, **10s**, **30s**, **1min**, **2min**, **5min**, or **10min**. The delay time refers to the time duration that the alarm output remains in effect after the alarm occurs.

4. Click **Save** to save changes.

5. Click and drag along the time bars or click on a time bar to configure arming schedule times.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

6. Click 📋 to copy the schedule to other days by selecting the corresponding check box next to the day.

7. Click the **Copy to** button to copy the schedule to other alarm inputs.

8. Click **Manual Alarm** to generate a test alarm. After setting a manual alarm, click **Clear Alarm** to remove it.

9. Click **Save** to save changes.

Exception alarms

The camera can be configured for notification of irregular events. These exception alarms include:

- **HDD Full:** All recording space of NAS or local storage is full.

- **HDD Error:** Errors occurred while files were being written to the storage, no storage is present, or the storage failed to initialize.

- **Network Disconnected:** Disconnected network cable.

- **IP Address Conflicted:** Conflict in IP address setting.

- **Illegal Login:** Wrong user ID or password used to log in to the cameras.
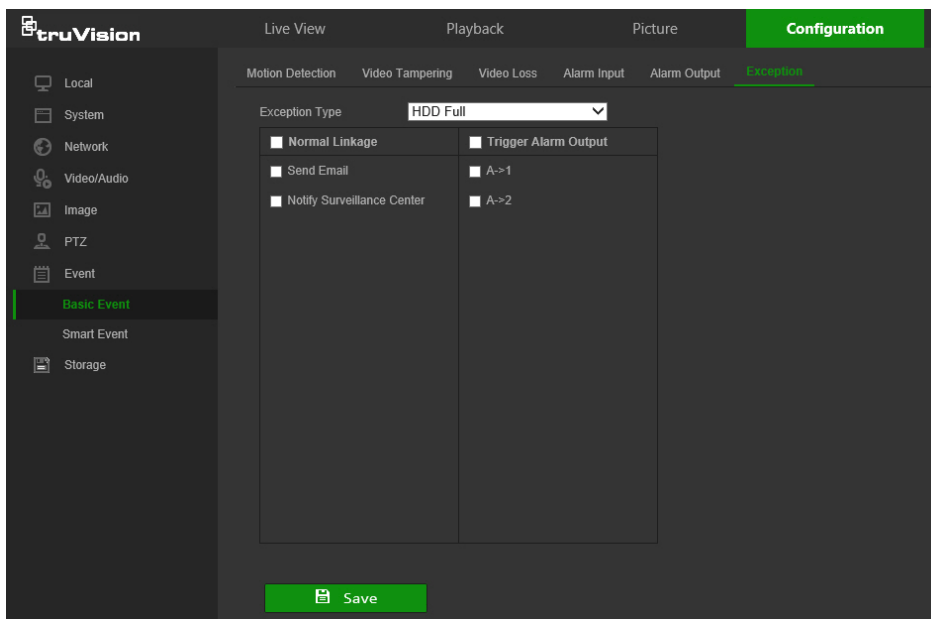
To define exception alarms:

1. From the menu toolbar, click **Configuration** > **Event** > **Basic Event** > **Exception**.

2. Under **Exception Type**, select an exception type from the drop-down list.

3. Click the **Linkage Method** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

4. Click **Save** to save changes.

Smart event

Audio exception detection

Audio exception detection detects sounds that are above a selected threshold.
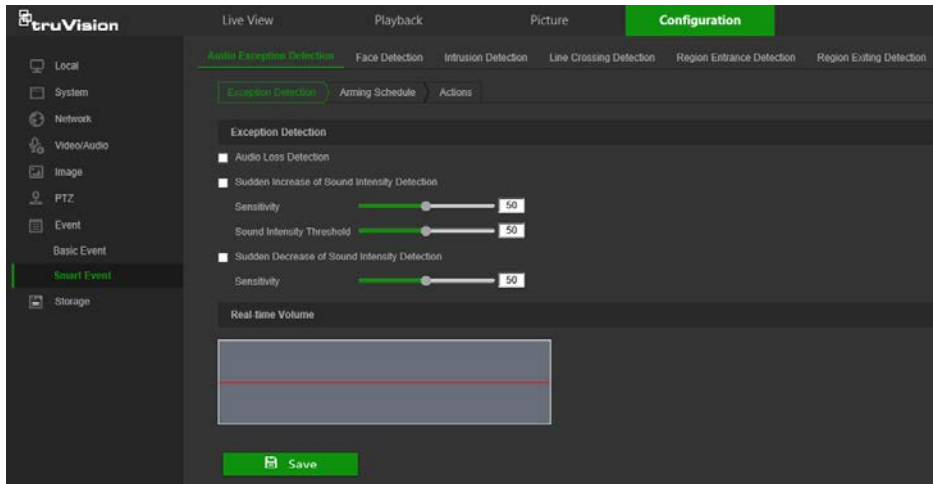
To define audio exception detection:

1. From the menu toolbar, click **Configuration** > **Smart Event** > **Audio Exception Detection**.

2. Select the **Audio Loss Exception** check box to activate the function.

3. Select the **Sudden Increase of Sound Intensity Detection** check box to detect a steep rise in the sound level of the surveillance scene. You can set the detection sensitivity and threshold for a sudden increase.

   Sensitivity: The smaller the value, the larger the change should be to trigger the detection. The range is between 1 and 100.

   Sound Intensity Threshold: This option filters the sound in the environment. The louder the environmental sound, the higher the value. Adjust it according to the actual environment. The range is between 1 and 100.

4. Select the **Sudden Decrease of Sound Intensity Detection** check box to detect a steep drop in the sound level of the surveillance scene. You can set the detection sensitivity and threshold for sound steep drop.

   Sensitivity: The smaller the value, the larger the change should be to trigger the detection. The range is between 1 and 100.

   Sound Intensity Threshold: This option filters the sound in the environment. The louder the environmental sound, the higher the value. Adjust it according to the actual environment. The range is between 1 and 100.

5. Click the **Arming Schedule** tab to edit the arming schedule. Click and drag along the time bars or click on a time bar to configure arming schedule times.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

6. Click 🖹 to copy the schedule to other days by selecting the corresponding check box next to the day.

7. Click **Save** to save changes.

8. Click the **Actions** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

9. Click **Save** to save changes.

Face detection

When the face detection function is enabled, the camera can detect a human face that is moving towards it, triggering a configurable response. The camera can only detect a face looking directly into the camera, not side views. This feature is best suited when the camera is in front of a door or is located in a narrow corridor.
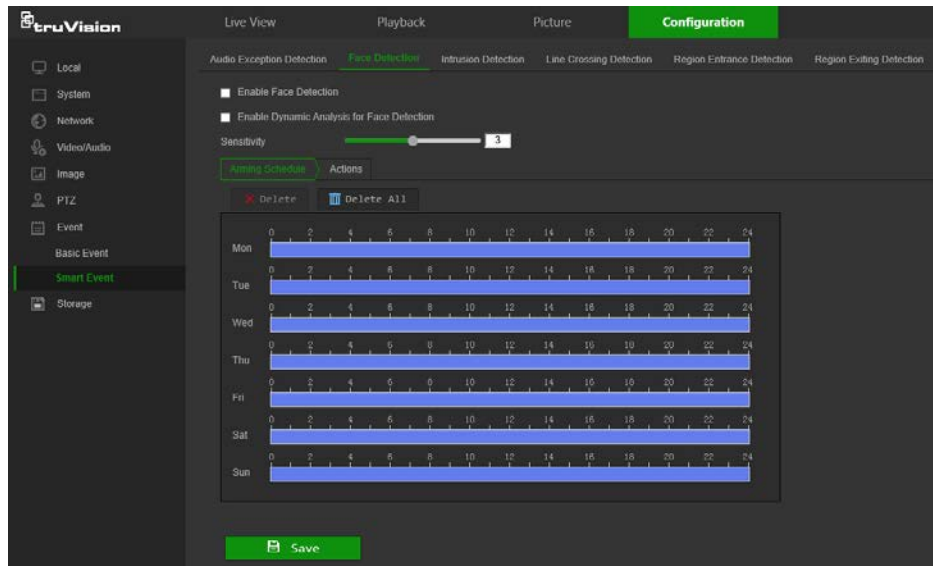
To define face detection:

1. From the menu toolbar, click **Configuration** > **Smart Event** > **Face Detection**.

2. Check **Enable Face Detection** to enable the function.

3. Check **Enable Dynamic Analysis** for **Face Detection** if you want the face detected to be marked with a green frame in live view.

   Note: If you do not want the detected face marked with the green frame, select **Disable** from **Configuration** > **Local Configuration** > **Live View Parameters** > **Rules**.

4. Configure the sensitivity of the face detection. The range is between 1 and 5.

5. Click and drag along the time bars or click on a time bar to configure arming schedule times.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

6. Click ▣ to copy the schedule to other days by selecting the corresponding check box next to the day.

7. Click **Save** to save changes.

8. Click the **Actions** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

9. Click **Save** to save changes.

Intrusion detection

An area in the surveillance scene can be configured to detect when intrusion occurs. If someone enters the area, a set of alarm actions can be triggered.

To define intrusion detection:

1. From the menu toolbar, click **Configuration** > **Event** > **Smart Event** > **Intrusion Detection**.
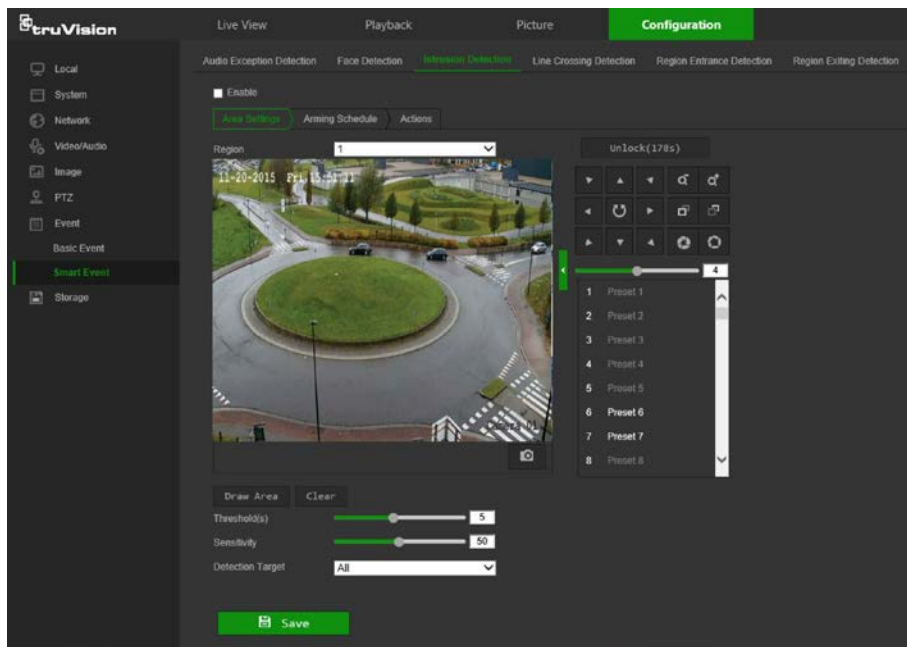
2. Select the **Enable** check box to enable intrusion detection.

3. Select the region number to be configured from the **Region** drop-down list.

4. Click **Draw Area**, and then draw a rectangle on the image as the defense region.

   When drawing the rectangle, connect all lines end-to-end to each other. Up to four areas are supported. Click **Clear** to clear the areas drawn. The defense region parameters can be set up separately.

   Note: The drawn area can only be quadrilateral.

5. Set the sliders as follows:

   Threshold: This is the time threshold that the object remains in the region. If the value is set as 0, the alarm is triggered immediately after the object enters the region. The range is between 0 and 100.

   Sensitivity: The sensitivity value defines the size of the object that can trigger the alarm. When the sensitivity is high, a small object can trigger the alarm. The range is between 1 and 100.

6. Select an option from the **Detection Target** drop-down list to set the target type that can trigger an alarm. Options are **All**, **Human**, and **Vehicle**.

7. Click **Save** to save changes.

8. Click the **Arming Schedule** tab to edit the arming schedule. Click and drag along the time bars or click on a time bar to configure arming schedule times.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

9. Click 📋 to copy the schedule to other days by selecting the corresponding check box next to the day.

10. Click **Save** to save changes.

11. Click the **Actions** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

12. Click **Save** to save changes.

Cross line detection

This function can be used to detect people, vehicles, and objects crossing a pre-defined line or an area on-screen. The line crossing direction can be set as unidirectional or bi-directional. Unidirectional is crossing the line from left to right or from right to left. Bi-directional is crossing the line from both directions.

A series of linkage methods can be triggered if an object is detected crossing the line.

To define cross line detection:

1. From the menu toolbar, click **Configuration** > **Event** > **Smart Event** > **Line Crossing Detection**.
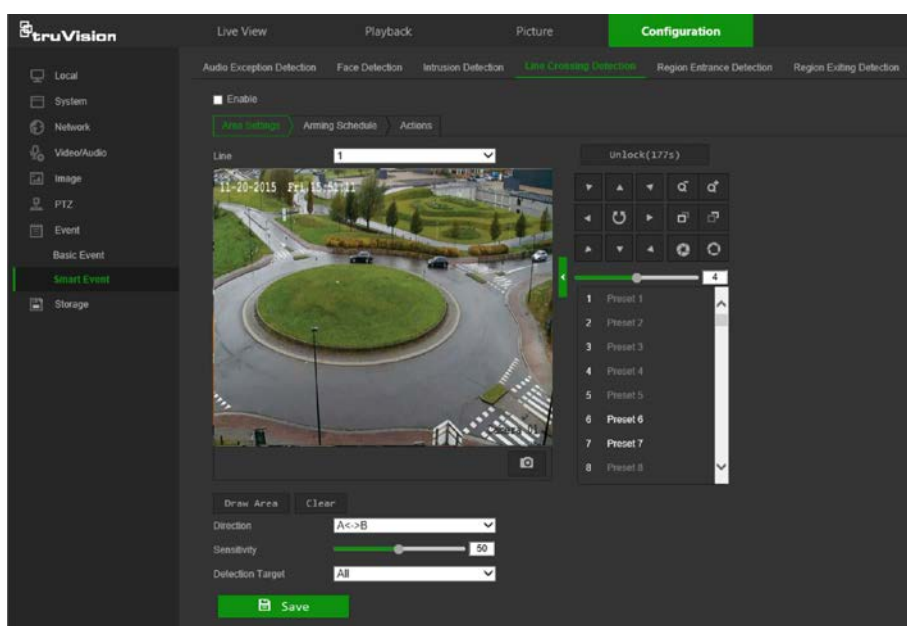
2. Select the **Enable** check box to enable the function.

3. Select the line number to be configured from the **Line** drop-down list.

4. Click **Draw Area**. A crossing plane appears on the image.

5. Click the line and two red squares that appear at each end. Drag one of the red squares to define the arming area.

   Select the direction as **A<->B**, **A ->B**, or **B->A** from the drop-down list:

   - **A<->B:** Only the arrow on the B side is displayed. When an object moves across the plane in both directions, it is detected and alarms are triggered.

   - **A->B:** Only an object crossing the pre-defined line from the A to the B side can be detected and trigger an alarm.

   - **B->A:** Only an object crossing the pre-defined line from the B to the A side can be detected and trigger an alarm.

6. Set the sensitivity level between 1 and 100.

7. If required, select another line crossing area to configure from the **Line** drop-down list and repeat steps 3-5. Up to four line crossing areas can be configured.

8. Click **Save** to save changes.

9. Click the **Arming Schedule** tab to edit the arming schedule. Click and drag along the time bars or click on a time bar to configure arming schedule times.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

10. Click 📋 to copy the schedule to other days by selecting the corresponding check box next to the day.

11. Click **Save** to save changes.

12. Click the **Actions** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

13. Click **Save** to save changes.

Region Entrance Detection

This function can be used to detect people, vehicles, and objects entering a pre-defined area on-screen.

To define region entrance detection:

1. From the menu toolbar, click **Configuration** > **Event** > **Smart Event** > **Region Entrance Detection**.

2. Select the **Enable** check box to enable the function.

3. Select the region number to be configured from the **Region** drop-down list.

4. Click **Draw Area**, and then draw a rectangle on the image as the defense region.

When drawing the rectangle, connect all lines end-to-end to each other. Up to four areas are supported. Click **Clear** to clear the areas drawn. The defense region parameters can be set up separately.

Note: The drawn area can only be quadrilateral.

5. Select an option from the **Detection Target** drop-down list to set the target type that can trigger an alarm. Options are **All**, **Human**, and **Vehicle**.

6. Click **Save** to save changes.

7. Click the **Arming Schedule** tab to edit the arming schedule. Click and drag along the time bars or click on a time bar to configure arming schedule times.

   Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

8. Click 📋 to copy the schedule to other days by selecting the corresponding check box next to the day.

9. Click **Save** to save changes.

10. Click the **Actions** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

11. Click **Save** to save changes.

Region Exiting Detection

This function can be used to detect people, vehicles, and objects exiting a pre-defined area on-screen.

To define region exiting detection:

1. From the menu toolbar, click **Configuration** > **Event** > **Smart Event** > **Region Exiting Detection**.

2. Select the **Enable** check box to enable the function.

3. Select the region number to be configured from the **Region** drop-down list.

4. Click **Draw Area**, and then draw a rectangle on the image as the defense region.

   When drawing the rectangle, connect all lines end-to-end to each other. Up to four areas are supported. Click **Clear** to clear the areas drawn. The defense region parameters can be set up separately.

   Note: The drawn area can only be quadrilateral.

5. Select an option from the **Detection Target** drop-down list to set the target type that can trigger an alarm. Options are **All**, **Human**, and **Vehicle**.

6. Click **Save** to save changes.

7. Click the **Arming Schedule** tab to edit the arming schedule. Click and drag along the time bars or click on a time bar to configure arming schedule times.

Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

8. Click [icon] to copy the schedule to other days by selecting the corresponding check box next to the day.

9. Click **Save** to save changes.

10. Click the **Actions** tab to specify the linkage method for when an event occurs. Select one or more response methods for the system when an alarm is triggered. See "Linkage methods" on page 37 for details.

11. Click **Save** to save changes.

Schedule settings

Recording schedule

Use the Record Schedule window to define a recording schedule for the camera. The recording is saved to the SD card or the NAS in the camera. The camera's SD card provides a backup in case of network failure.

The selected recording schedule applies to all alarm types.

To set up a recording schedule:

1. From the menu toolbar, click **Configuration** > **Storage** > **Schedule Settings** > **Record Schedule**.

2. Select the **Enable** check box to enable recording.

   Note: To disable recording, deselect the option.

3. Click **Advanced** to set the camera record parameters. Select **Overwrite** to overwrite the recording. Configure **Pre-record**, **Post-record**, and **Stream Type**.
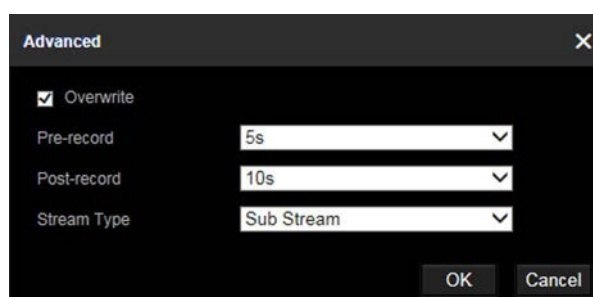
Pre-record time

The pre-record time is set to start recording before the scheduled time or event. For example, if an alarm triggers recording at 10:00, and the pre-record time is set as 5 seconds, the camera starts to record at 9:59:55. The pre-record time can be configured as **No Pre-record**, **5s**, **10s**, **15s**, **20s**, **25s**, **30s**, or **Not Limited**.

Post-record time

The post-record time is set to stop recording after the scheduled time or the event. For example, if an alarm triggered recording ends at 11:00, and the post-record time is set as 5 seconds, the camera records until 11:00:05. The post-record time can be configured as **5s**, **10s**, **30s**, **1min**, **2min**, **5min**, or **10min**.

4. Select a recording type from the drop-down list:

   • **Schedule**: For scheduled recording.

   • **Motion:** Video is recorded when the motion is detected.

   • **Alarm** (Desktop cameras only): Video is recorded when the alarm is triggered via the external alarm input.

   • **Motion | Alarm** (Desktop cameras only): Video is recorded when the external alarm is triggered or motion is detected.

   • **Motion & Alarm** (Desktop cameras only): Video is recorded when motion and alarms are triggered at the same time.

   • **Event**: Video is recorded if the configured alarms for events (cross line detection, intrusion, audio exception detection, face detection, region entrance or exit detection) are triggered.

5. Click and drag along the time bars or click on a time bar to configure recording schedule times and alarm/event types.
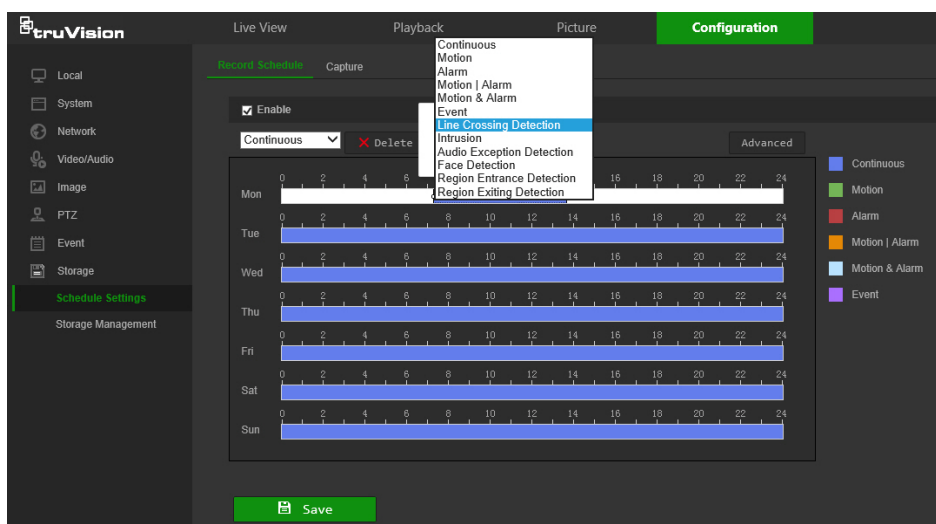
Note: All scheduled times are based on the 24-hour clock. Ensure that the correct time zone and daylight saving time settings have been configured in **Configuration** > **System** > **System Settings**.

6. Click 📋 to copy the schedule to other days by selecting the corresponding check box next to the day.

7. Click **Save** to save changes.

Note: If the recording type is set to a motion and/or alarm setting, an arming schedule must also be defined in order to trigger motion detection or alarm input recording.

Snapshot parameters

Scheduled and event-triggered snapshots can be captured and stored in the camera's SD card or in a NAS (if configured). The snapshots can also be uploaded to an FTP server.

Select the **Enable Timing Snapshot** check box to have snapshots uploaded to the FTP. Also, ensure that the **Upload Snapshot** check box in the **Network** > **Advanced Settings** > **FTP** tab is selected to upload snapshots to the FTP.

Select the **Enable Event-Triggered Snapshot** check box to have snapshots uploaded to the FTP and/or NAS when motion detection or an alarm input is triggered. Also, ensure that the **Upload Snapshot** check box in the **Network** > **Advanced Settings** > **FTP** tab is selected to upload snapshots to the FTP.

To set up a snapshot schedule:

1. From the menu toolbar, click **Configuration** > **Storage** > **Schedule Settings** > **Capture**.

2. Click the **Capture Schedule** tab to configure the capture schedule by clicking and dragging the mouse on the time bar. Click 📋 to copy the schedule to other days by selecting the corresponding check box next to the day.

3. Click **Advanced** to select stream type (**Sub Stream** or **Main Stream**).
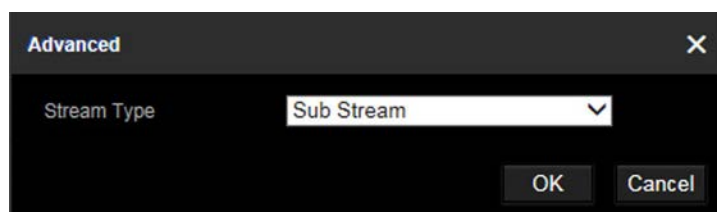
4. Click **Save** to save changes.

To set up timed snapshots:

1. From the menu toolbar, click **Configuration** > **Storage** > **Schedule Settings** > **Capture** > **Capture Parameters**.
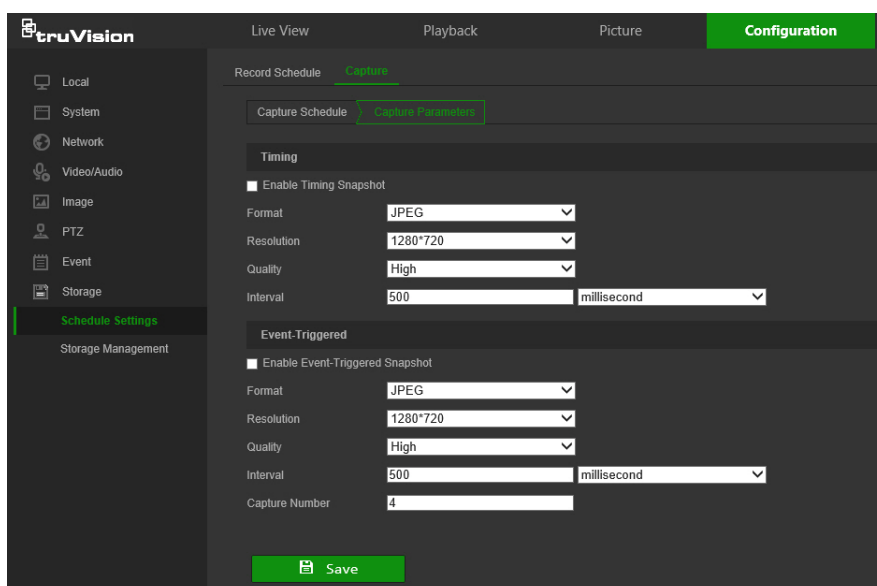
2. Select **Enable Timing Snapshot** to enable continuous snapshots.

3. Select the file format for the snapshot from the **Format** drop-down list.

4. Select the resolution and quality of the snapshot from the **Resolution** and **Quality** drop-down lists.

5. Enter the time interval between two snapshots. Select the unit of time from the drop-down list: **millisecond**, **second**, **minute**, **hour**, or **day**.

6. Click **Save** to save changes.

To set up event-triggered snapshots:

1. From the menu toolbar, click **Configuration** > **Storage** > **Schedule Settings** > **Capture** > **Capture Parameters**.

2. Check **Enable Event-triggered Snapshot** to enable event-triggered snapshots.

3. Select the file format for the snapshot from the **Format** drop-down list.

4. Select the resolution and quality of the snapshot from the **Resolution** and **Quality** drop-down lists.

5. Enter the time interval between two snapshots. Select the unit of time from the drop-down list: **millisecond**, **second**, **minute**, **hour**, or **day**.

6. Under **Capture Number**, enter the total number of snapshots required.

7. Click **Save** to save changes.

Storage management

Use the storage management window to display the capacity, free space available, and the working status of NAS hard drives and the SD card in the camera. These storage devices can also be formatted in the **Storage Management** window.

Before formatting the storage device, stop all recording. Reboot the camera after formatting is complete, otherwise the device will not function properly.

If **Overwrite** is selected, the oldest files are overwritten when the storage becomes full.
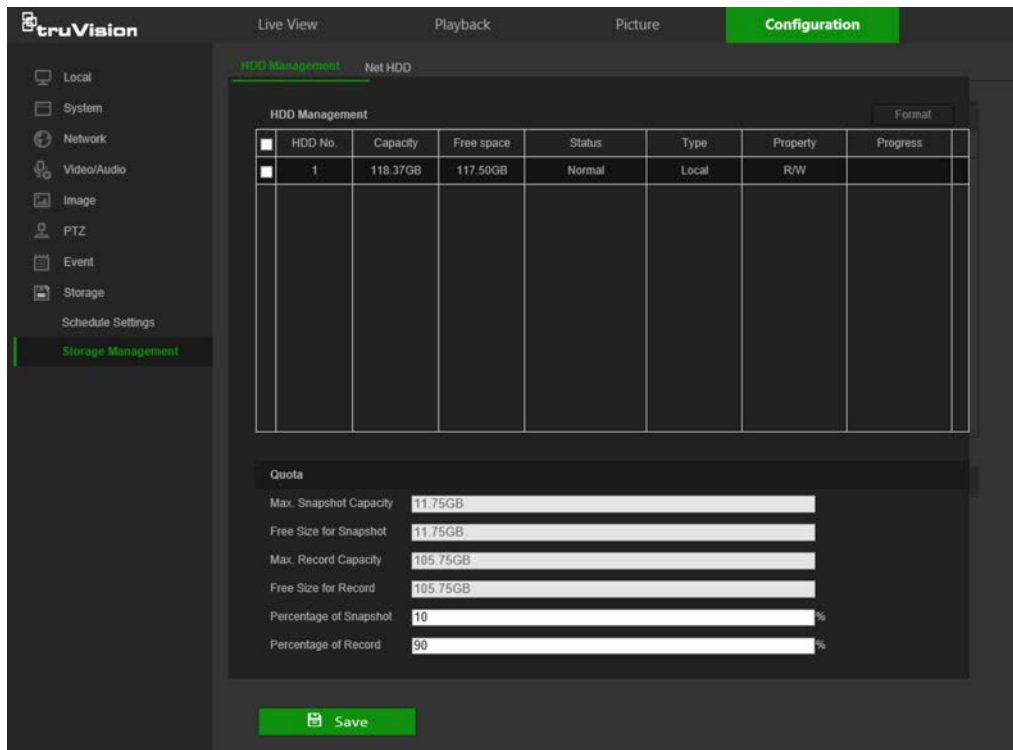
To format the storage devices:

1. From the menu toolbar, click **Configuration** > **Storage** > **Storage Management** > **HDD Management**.

2. Select the check box next to the HDD No. of the hard drive to be formatted.

3. Define the quota percentage for snapshots and recordings by modifying the values in the **Percentage of Snapshot** and **Percentage of Record** boxes.

4. Click **Format**. A formatting permissions window appears.

5. Click **OK** to start formatting the hard drive.

NAS settings

A network attached storage (NAS) device can be used to remotely store recordings.

To configure recording settings, ensure that one or more NAS disks are available within the network and correctly configured to store the recorded files, log files, etc.

Notes:

• Up to eight NAS disks can be connected to a camera.

• To prevent formatting failure, we recommend NAS drives with a capacity between 9 GB and 2 TB.
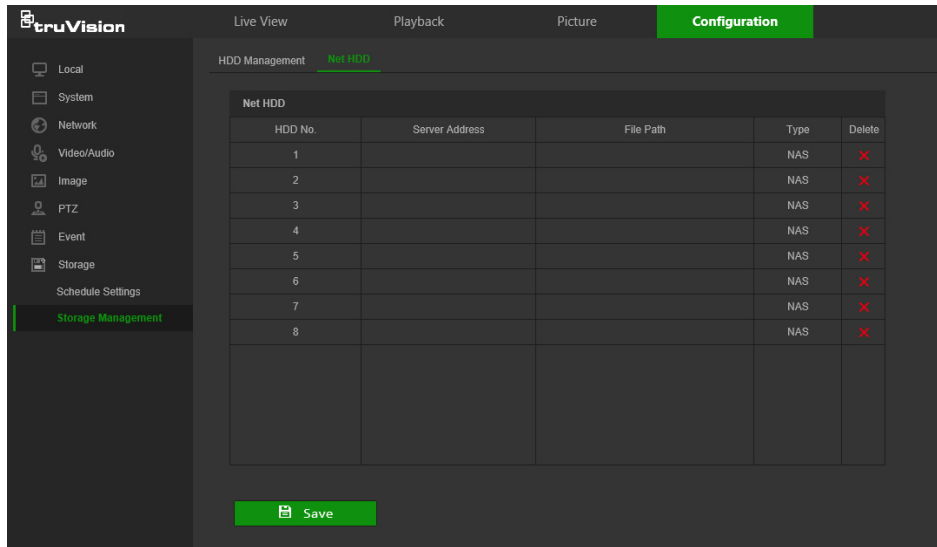
To set up a NAS system:

1. From the menu toolbar, click **Configuration** > **Storage** > **Storage Management** > **Net HDD**.

2. Click inside the NAS table to type the IP address and the file path of the network disk in the appropriate HDD No. row.

3. Select the hard drive mounting protocol (**NFS** or **SMB/CIFS**). A user name and password are required if **SMB/CIFS** is selected.
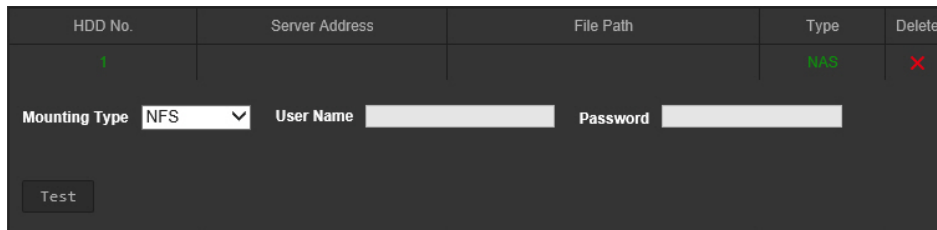
4. Click **Save** to save changes.

Camera management

This chapter describes how to use the camera's web browser interface to manage users, configure security settings, and perform camera maintenance.

User management

This section describes how to:

- Add or delete users
- Modify permissions
- Modify passwords

Only the administrator can manage users. The administrator can create up to 31 individual users for the cameras listed in this manual (see "Introduction" on page 2).

When new users are added to the list, the administrator can modify the permissions and passwords for each user.
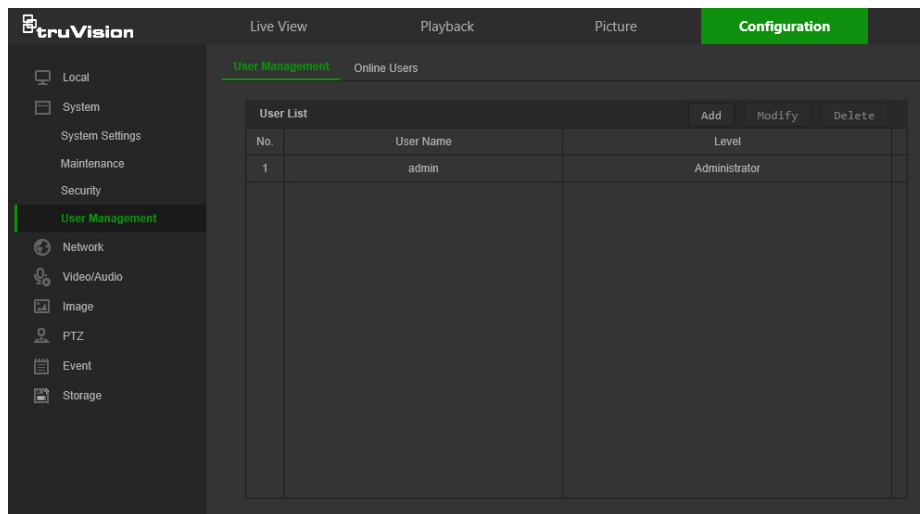
Passwords limit access to the camera and the same password can be used by several users. When creating a new user, the user must be assigned a password. There is no default password provided for all users. Users can modify their passwords after they have been assigned.

Note: Keep the admin password in a safe place. Contact technical support if the password is forgotten.

Types of users

A user's access privileges to the system are automatically defined by their user type. There are three types of users:

- **Admin**: This is the system administrator. The administrator can configure all settings. Only the administrator can create and delete user accounts. Admin cannot be deleted.

- **Operator**: This user can only change the configuration of his/her own account. An operator cannot create or delete other users.

- **Viewer**: This user has the permission of live view, playback, and log search. Viewers cannot change any configuration settings.

Add and delete users

The administrator can create up to 31 users. Only the system administrator can create or delete users.

To add a user:

1. From the menu toolbar, click **Configuration** > **System** > **User Management** > **User Management**.

2. Click the **Add** button. The user management window appears.

3. Type a name in the **User Name** box.

4. Assign the user a password. Passwords can have up to 16 alphanumeric characters.

5. Select the type of user from the **Level** drop-down list. The options are **Viewer** and **Operator**.

6. Assign permissions to the user. Select from the following permissions:

Basic Permissions	Camera Configuration
Remote: Parameters Settings	Remote: Live View
Remote: Log Search/Interrogate Working Status	Remote: PTZ Control
Remote: Upgrade/Format	Remote: Manual Record
Remote: Bi-directional Audio	Remote: Playback
Remote: Shutdown/Reboot	
Remote: Notify Alarm Recipient/Trigger Alarm Output	
Remote: Video Output Control	
Remote: Serial Port Control	

7. Click **OK** to save the settings.

To delete a user:

1. Select a user from the User List.

2. Click the **Delete** button. A message box appears.

   Note: Only the administrator can delete a user.

3. Click **Save** to save the changes.

To modify user information:

Information about a user such as their name, password, and permissions can be modified.

To modify user information:

1. Select a user from the User List.

2. Click the **Modify** button. The user management window appears

3. Change the information required.

   Note: The user "Admin" can only be changed by entering the admin password.

4. Click **Save** to save the changes.

Online users

Click **Configuration** > **System** > **User Management** > **Online Users** to view the current users accessing the device through the camera configuration interface. Information such as user name, level, IP address, and operation time appears in the User List for each user. Click **Refresh** to refresh the list.
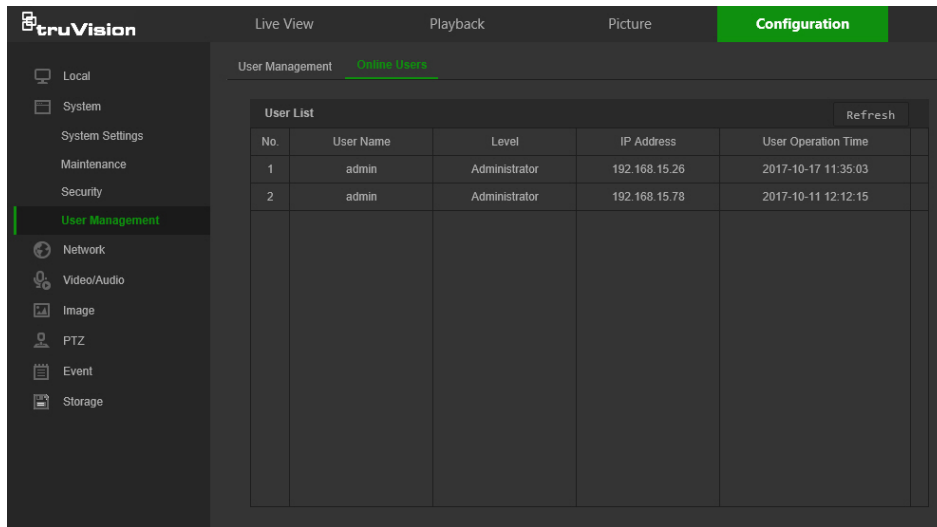
Security

RTSP authentication

Add Real Time Streaming Protocol (RTSP) functionality to Live View streaming in the Authentication window.
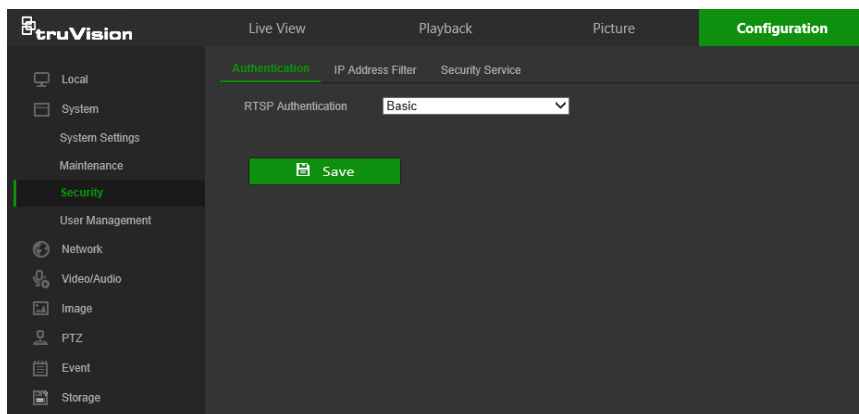
To define RTSP authentication:

1. From the menu toolbar, click **Configuration** > **System** > **Security** > **Authentication**.

2. In the **RTSP Authentication** drop-down list, select **Enable** or **Disable** to enable or disable the RTSP authentication.

3. Click **Save** to save the changes.

IP address filter

Use the IP address filter window to set access rights for defined IP addresses. For example, the camera can be configured so that only the IP address of the server hosting the video management software can be accessed. Attempts by users to access other IP addresses would be denied.
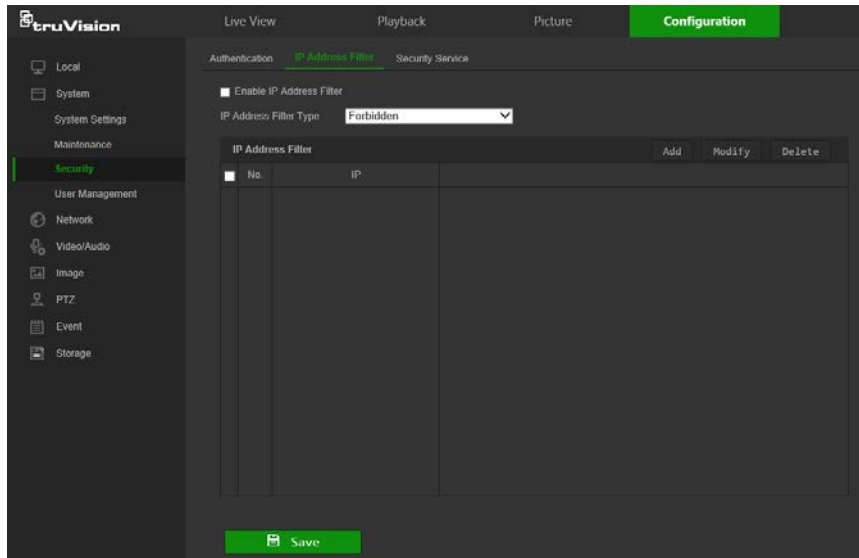
To define the IP address filter:

1. From the menu toolbar, click **Configuration** > **Security** > **IP Address Filter**.

2. Select the **Enable IP Address Filter** check box.

3. Select **Forbidden** or **Allowed** from the **IP Address Filter Type** drop-down list.

4. Click **Add** to add an IP address.

5. Click **Modify** or **Delete** to modify or delete the selected IP address**.**

6. Click **Clear** to delete all the IP addresses.

7. Click **Save** to save the changes.

Security service

Enable the illegal login lock to block the IP address after five failed user name/password login attempts. After the IP address is locked, a user can log in to the device after 10 minutes
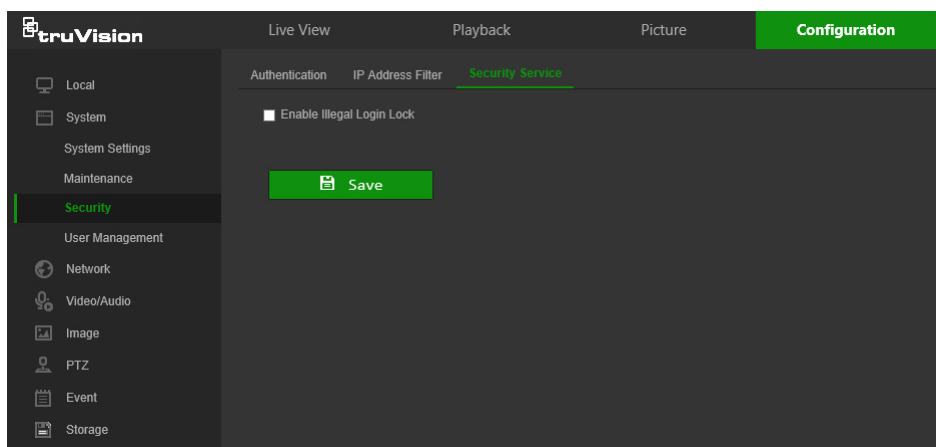
To enable the illegal login lock:

1. Click **Configuration** > **System** > **Security** > **Security Service**.

2. Select the **Enable Illegal Login Lock** check box

3. Click **Save** to save the changes.

Maintenance

Reboot camera

The camera can be rebooted remotely.

To reboot the camera through the web browser:

1. Click **Configuration** > **Security** > **Maintenance** > **Upgrade & Maintenance**.

2. Click the **Reboot** button to reboot the device.

3. Click **OK** in the pop-up message box to confirm reboot operation.

Restore default settings

Use the **Upgrade & Maintenance** tab window to restore factory default settings to the camera.

- **Restore:** Restore all the parameters, except the IP parameters, to the default settings.

- **Default:** Restore all the parameters to the default settings.

Note: If the video standard is changed, it will not be restored to its original setting when **Restore** or **Default** is used.

To restore default settings:

1. From the menu toolbar, click **Configuration** > **System** > **Maintenance** > **Upgrade & Maintenance**.

2. Click either **Restore** or **Default**. A window showing user authentication appears.

3. Enter the admin password and click **OK**.

4. Click **OK** in the pop-up message box to confirm restoring operation.

Import or export a configuration file

The administrator can export and import configuration settings from the camera. This is useful for copying configuration settings from an existing camera to a new camera or backing up camera settings.

Note: Only the administrator can import or export configuration files.

To import or export a configuration file:

1. Click **Configuration** > **System** > **Maintenance** > **Upgrade & Maintenance**.

2. Click **Browse** under Import Config. File to select the local configuration file and then click **Import** to start importing the configuration file.

3. Click **Export** under Export Config. File and set the saving path to save the configuration file.

Upgrade firmware

The camera firmware is stored in the flash memory. Use the upgrade function to write the firmware file into the flash memory.

Firmware should be upgraded when it has become outdated. When upgrading the firmware, all existing settings are unchanged. Only the new features are added with their default settings.

The camera selects the corresponding firmware file automatically. Cookies and data in the web browser are automatically deleted when the firmware is updated.

To upgrade the firmware version:

1. Download the latest camera firmware from our web site at www.interlogix.com/video/category/ip-cameras.

2. When the firmware file has downloaded, extract the file to the required destination.

   Note: Do not save the file on the computer desktop.

3. From the menu toolbar, click **Configuration** > **Security** > **Maintenance** > **Upgrade & Maintenance**. Select the **Firmware** or **Firmware Directory** option from the **Upgrade** drop-down list, and then click the **Browse** button to locate latest firmware file on the computer.

   - **Firmware directory** – Locate the folder containing the firmware file. The camera chooses the appropriate firmware file automatically.

   - **Firmware** – Locate the firmware file manually.

4. Click **Update**. A prompt to reboot the camera appears.

5. When the upgrade is finished, the device reboots automatically. The browser is also refreshed.

TruVision Device Manager

Use the Manual Firmware Upgrade function to upgrade the firmware of the selected device or devices in TruVision Device Manager. Before following the instructions in the *TruVision Device Manager User Manual*, ensure that the firmware update file has already been downloaded to the local computer.

To access the *TruVision Device Manager User Manual*, go to www.interlogix.com/video/product/truvision-device-manager and click **Downloads**.

Searching event logs

Configure NAS storage (see "NAS settings" on page 54) or insert a SD card in the camera before using the log functions.

The number of event logs that can be stored on NAS or SD card depends on the capacity of the storage devices. When the capacity limit is reached, the system starts deleting older events.

Note: View log access rights are required to search and view logs.
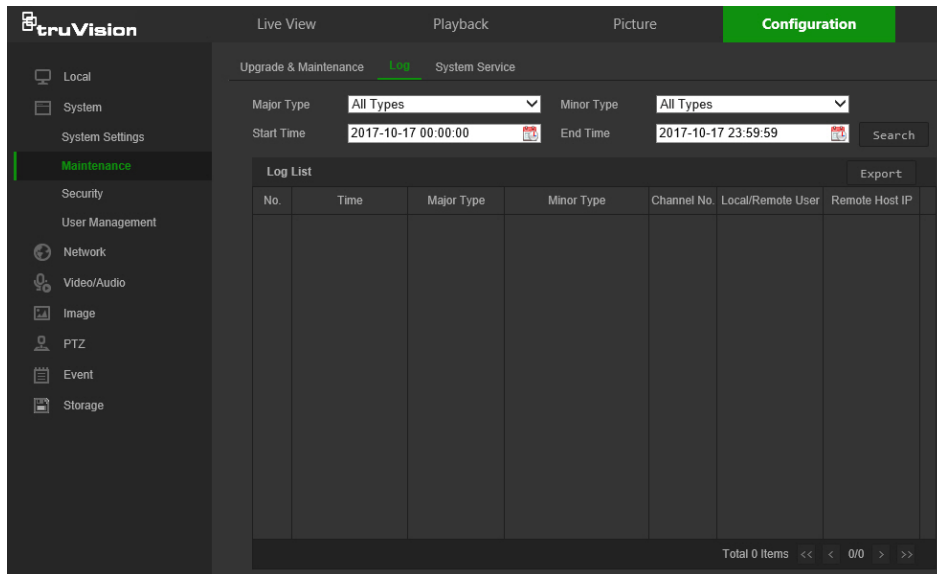
Search for recorded logs using the following criteria:

Major type: There are four types of logs: All Types, Alarm, Exception, and Operation.

Minor type: Each major type log has some minor types.

Date and Time: Logs can be searched by start and end recording time.

Export: Export the Log List to text or Microsoft Excel (XLS) file format.

Main log type	Minor log types: Description of events included
Alarm	Alarm Input, Alarm output, Start Motion Detection, Stop Motion Detection, Start Tamper-proof, Stop Tamper-proof, Cross Line Detection Started, Cross Line Detection Stopped, Intrusion Detection Started, Intrusion Detection stopped, Start PIR Alarm, Stop PIR alarm
Exception	Illegal Login, HDD Full, HDD Error, Network Disconnected, IP Address Conflicted
Operation	Power On, Local Reboot, Local Abnormal Shutdown, Local Login, Local Logout, Local Configure Parameters, Local Upgrade, Local Start Record, Local Stop Record, Local Export Config File, Local Import Config File, Remote Reboot, Remote Login, Remote Logout, Remote Configure parameters, Remote Upgrade, Remote Start Record, Remote Stop Record, Remote PTZ Control, Remote Initialize HDD, Remote Playback by File, Remote Playback by Time, Remote Get Parameters, Remote Get Working Status, Start Bi-directional Audio, Stop Bi-directional Audio, Remote Alarm Arming, Remote Alarm Disarming, Remote Export Config File, Remote Import Config File

To search logs:

1. From the menu toolbar, click **Configuration** > **System** > **Maintenance** > **Log**.

2. In the **Major Type** and **Minor Type** drop-down list, select the required option.

3. Select start and end time of the log.

4. Click **Search** to start the search. The results appear in the window.

Camera operation

This chapter describes how to use the camera after it is installed and configured.

Logging on and off

1. If necessary, log out of the camera browser window by clicking the **Logout** button on the menu toolbar. A user name and password are always required when logging in.

2. If necessary, change the language of the interface from the drop-down list in the top right corner of the login window.

3. The camera comes with a user account with administrative rights for configuring all options on the camera. The user name is "admin" and the password is "1234". Type in these values and click Login.
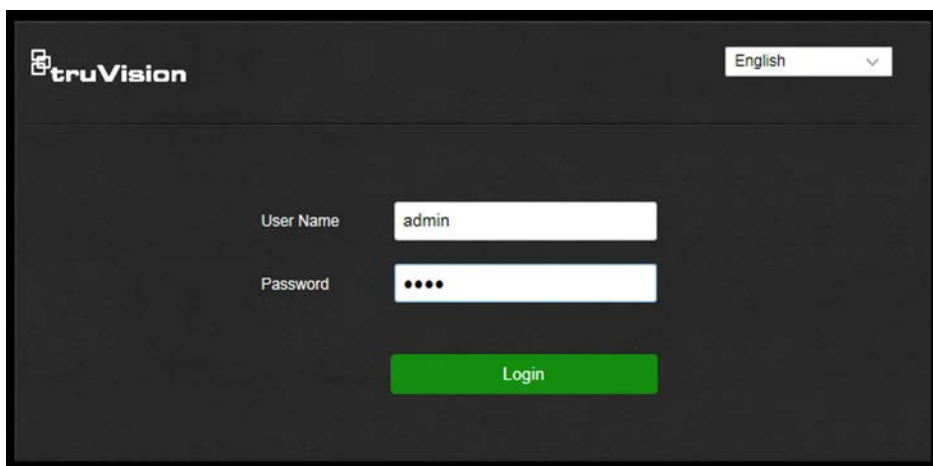
4. *Initial login*: The default password notification appears. Click **OK**. For enhanced security, we highly recommend changing the default password during initial setup.
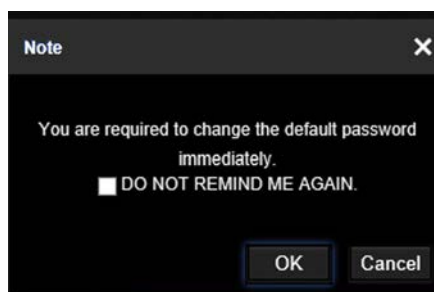
5. *Initial login*: The video standard notification appears. Click **OK**.
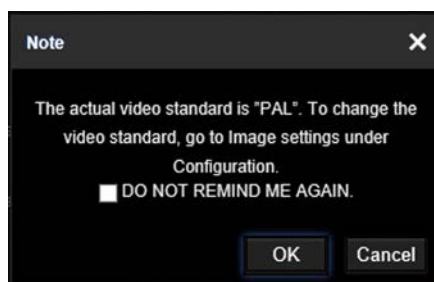
Live view mode

After logging in, click the **Live View** tab on the menu toolbar to access live view mode. See "Activating the camera

When you first start up the camera, the Activation window appears. You must define a high-security admin password before you can access the camera. There is no default password provided.

You can activate a password via a web browser and via TruVision Device Manager (included on the CD to find the IP address of the camera).

Activation via the web browser:

1. Power on the camera and connect the camera to the network.

2. Type the IP address into the address bar of the web browser, and press **Enter** to enter the activation interface.

Note:

*   The default IP address of the camera is 192.168.1.70.

*   For the camera to enable DHCP by default, you must activate the camera via TruVision Device Manager. Please refer to the following section, "Activation via TruVision Device Manager".

3. Type the password in the **Password** field.

    Note: A valid password range must be between 8 and 16 characters. You can use a combination of numbers, lower and upper case letters, and special characters : _ - , . * & @ / $? Space. The password must contain characters from at least two of these groups. We also recommend that you reset your password regularly. For high security systems, it is particularly recommended to reset the password monthly or weekly for better protection.

4. Confirm the password.

5. Click **OK** to save the password and enter the live view interface.

Activation via TruVision Device Manager:

For instructions on how to activate the camera using TruVision Device Manager, refer to the TruVision Device Manager User Manual.

Go to www.interlogix.com/video/**product/truvision-device-manager** and click **Downloads**.

Overview of the camera web browser" on page 4 for a description of the interface.

Start/stop live view: Stop and start live view by clicking the Start/stop live view button on the bottom of the window.

Record: Record live video and store it in a configured directory. In the live view window, click the **Record** button at the bottom of the window. To stop recording, click the button again.

Take a snapshot: Take a snapshot of a scene when in live view. Click the **Capture** button located at the bottom of the window to save an image. The image is in JPEG format. Snapshots are saved on the hard drive.

Playing back recorded video

Search for and play back recorded video in the playback interface.

Note: Configure the NAS or insert an SD card in the camera before using the playback functions. See "Storage " on page 53 for more information.

To search recorded video stored on the camera's storage device for playback, click **Playback** on the menu toolbar. The Playback window appears.

Name		Description
1.	Playback button	Click to open the Playback window.
2.	Search calendar	Click the day required to search.
3.	Search	Start search.
4.	Set playback time	Input the time and click ➡ to locate the playback point.
5.	Recording type	The color code displays the recording type. Recording types are Schedule, Alarm, and Manual. The recording type name is also displayed in the current status window.
6.	Download functions	Download video files.
7.	Audio control	Control level of audio.
8.	Archive functions	Click these buttons for the following archive actions: ⊕ Enable digital zoom. 📷 Capture a snapshot image of the playback video. ✂ Start/Stop clipping video files.

Name		Description
9.	Time moment	Vertical bar shows the current position within the playback recording. The current time and date are also displayed.
10.	Control playback	Click to control how the selected file is played back: Play, Stop, Slow or Fast Forward playback, and Single Frame playback.
11.	Timeline bar	The timeline bar displays the 24-hour period of the day being played back. It moves left (oldest) to right (newest). The bar is color-coded to display the type of recording.
		Click a location on the timeline to move the cursor to a time for playback to start. The timeline can also be scrolled to earlier or later periods for playback.
		Click � icon to zoom in and out on the timeline bar.

To play back recorded video:

1. Select the date and click the **Search** button. The searched video appears in the timeline.

2. Click **Play** to start playback. While playing back a video, the timeline bar displays the type and time of the recording. The timeline can be manually scrolled using the mouse.

   Note: Playback permission is required to play back recorded images. See "To modify user information" on page 58 for more information.

3. Select the date and click the **Search** button to search for a recorded file.

4. Click ⬇ to search the video file.

5. In the pop-up window, select the check box next to the video file and click **Download** to download the video files.

To archive a recorded video segment during playback:
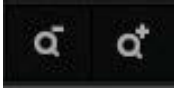
1. While playing back a recorded file, click ✂ to start clipping. Click it again to stop clipping. A video segment is created.

2. Repeat step 1 to create additional segments. The video segments are saved on the local computer.

Operating PTZ control

In the live view interface, use the PTZ control buttons to control pan/tilt/zoom and other functions of the camera (where supported).

PTZ control panel

In live view, click ‹ / › to display/hide the PTZ control panel.

Button	Name	Description
	PTZ Control Panel	Hold and press the direction buttons to pan/tilt the camera. Click to pan the camera. Click to stop panning.
	Zoom in/out	Click to zoom in. Click to zoom out.
	Focus near/far	Click to focus on items far from the camera. Click to focus on nearby items.
	Iris close/open	When the image is too dark, click to open the iris. When the image is too bright, click to close the iris.
	Auxiliary Functions	The auxiliary functions include light, wiper, auxiliary focus, lens initialization, manual tracking, 3D positioning, one-touch patrol, one-touch park, and on-screen menu.
	Speed Adjustment	Adjusts the speed of pan/tilt movements.
	Preset	See "Presets" on page 70.
	Patrol	See "Patrols" on page 72.
	Pattern	See "Patterns" on page 73.

Note: To perform pan/tilt movement using the direction buttons, the PTZ parameters in the RS-485 window must be set correctly. See "RS485" on page 12.

Preset/Patrol/Patterns buttons

Button	Description
	Start the selected patrol/pattern.
	Stop current patrol/pattern.
	Set the selected preset/patrol.

Button	Description
✕	Delete the selected preset/patrol/pattern.
◉	Start recording a pattern.
●	Stop recording the pattern.

Auxiliary function buttons

Button	Description
☀	Light. Click this button to enable/disable the camera light. This function is reserved.
⟳	Wiper. Click this button to move the wiper once.
⊡	Auxiliary focus. This function is reserved.
⟲	Manual tracking. Select **Enable Smart Tracking** (**Configuration** > **PTZ** > **Smart Tracking**) to use this function. Click this button and then click on a moving object in live video. The camera tracks the object automatically.
🔍	3D positioning. Click this button and then click in live video to move that camera position into the center of the live video. Hold down the left mouse button and drag the mouse to the lower right on the live video. The corresponding position moves to the center of the live video and is zoomed in. Hold down the left mouse button and drag the mouse to the upper left on the live video. The corresponding position moves to the center of the live video and is zoomed out.
⟳	One-touch patrol. See "One-touch patrol" on page 73.
⚓	One-touch park. Click this button to save the current view as preset No. 32 and park the camera at the current position.

Presets

A preset is a predefined image position. A defined preset can be quickly accessed by clicking the calling button.

To set a preset:

1. Select a preset number from the preset list in the PTZ control panel.
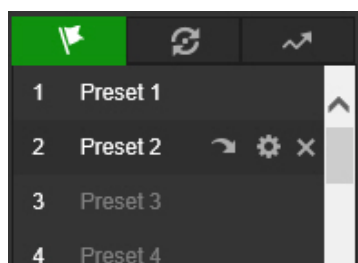
2. Use the PTZ directional buttons to move the camera to the required position.

3. Click ⚙ to finish the setting of the current preset.

4. Click ✕ to delete the preset.

   Note: Up to 256 presets can be configured.

To call a preset:

1. Select a defined preset from the list.

2. Click ⬏ to call the preset, or type the number of the preset required on the keyboard.

Special presets

• The following presets are predefined with special commands. These presets can be called but not configured. For example, preset 99 is the "Start auto scan." If preset 99 is called, the camera starts the auto scan function.

• Preset pattern functions vary depending on camera model.

Preset	Function	Preset	Function
33	Auto flip	92	Start to set limit stops
34	Back to initial position	93	Set limit stops manually
35	Call patrol 1	94	Remote reboot
36	Call patrol 2	95	Call OSD menu
37	Call patrol 3	96	Stop a scan
38	Call patrol 4	97	Start random scan
39	Day mode (IR cut filter in)	98	Start frame scan
40	Night mode (IR cut filter out)	99	Start auto scan
41	Call pattern 1	100	Start tilt scan
42	Call pattern 2	101	Start panorama scan
43	Call pattern 3	102	Call patrol 5
44	Call pattern 4	103	Call patrol 6
45	One-touch Patrol	104	Call patrol 7
90	Wiper	105	Call patrol 8
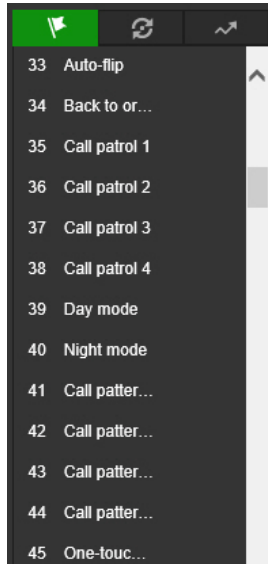
Note: The OSD (On Screen Display) menu may need to be used when controlling the camera remotely. To display the OSD menu on the live view screen, call the preset number 95.

Patrols

A patrol is a memorized series of preset functions. The camera stays at a step for a set dwell time before moving on to the next step. The steps are defined by presets. A patrol can be configured with up to 32 presets.

You can configure up to eight patrols.

To set a patrol:

1. In the PTZ control panel, click ⟳ to enter the patrol settings interface.

2. Select a patrol number from the list.

3. Click ＋ to enter the adding interface of the preset.

4. Configure the preset number, patrol time, and patrol speed.

Patrol Duration:	The dwell time. The length of time in seconds for which a camera stays at a preset before moving to the next preset.
Patrol Speed:	The speed the camera moves from one preset to another.

5. Click **OK** to save a preset into the patrol.

6. Repeat the steps from 3 to 5 to add more presets.

7. Click **OK** to save all the patrol settings.

To call a patrol:

In the PTZ control panel, select a defined patrol from the list and click ▶ to call the patrol.
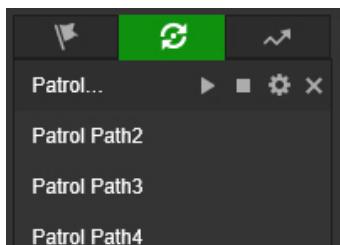
One-touch patrol

One-touch patrol is an automatically created patrol. The system automatically adds preset No.1 to No. 32 to the patrol path 8. When the one-touch patrol is called the camera moves as the patrol path 8 automatically.

To activate one-touch patrol:

1. Set preset No.1 to No. 32. See "Presets" on page 70 for further information.

2. Call preset No. 45, and the camera moves as patrol path 8.

3. Click ⟳ to enter the patrol settings interface and start/stop one-touch patrol, and edit the patrol time and the speed.

4. Click ⟳ on the PTZ control panel to start one-touch patrol.

Patterns

A pattern is a memorized series of pan, tilt, zoom, and preset functions. A pattern can be called using the pattern settings interface. There are up to four patterns that can be customized.

Note: Pattern functions vary depending on camera model.

To set a pattern:

1. In the PTZ control panel, click ↗ to enter the pattern settings interface.

2. Select a pattern number from the list.
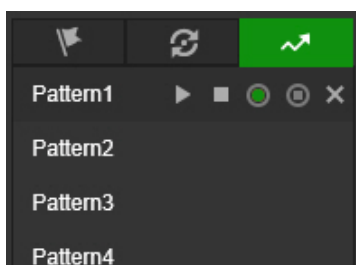
3. Click ◉ to enable recording the panning, tilting, and zooming actions.

4. Use the PTZ directional buttons to move the camera to the required position after the PROGRAM PATTERN REMAINING MEMORY(%) information appears on the screen.

5. Click ● to save all the pattern settings.

    Note: The four patterns can be operated separately and with no priority level.

    When configuring and calling the pattern, the proportional pan is valid, the limit stops and auto flip will be invalid, and the 3D positioning operation is not supported.

Picture

Note: Follow the instructions under "Snapshot parameters" on page 52 to configure snapshot capture parameters before using the Picture menu.

Click **Picture** to launch the picture searching interface. Use this menu to search for, view, and download the pictures stored in the camera's SD card or in network storage.

To search the snapshots:

1. Make a selection from the **File Type** drop-down list. **Schedule**, **Motion**, **Alarm**, **Cross Line**, and **Intrusion Detection** are selectable.

2. Click on the calendar icon in the **Start Time** and **End Time** boxes to select the start time and end time.

3. Click **Search** to search the matched pictures.

4. Select the check box next to one or more snapshots and then click **Download** to download the selected images.

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