



UltraSync Wi-Fi Camera Configuration Manual

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Product documentation



Please consult the following web link to retrieve the electronic version of the product documentation. The manuals are available in several languages.

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THE EQUIPMENT SHOULD ONLY BE OPERATED WITH AN APPROVED POWER ADAPTER WITH INSULATED LIVE PINS.

DO NOT CONNECT TO A RECEPTACLE CONTROLLED BY A SWITCH.

THIS UNIT INCLUDES AN ALARM VERIFICATION FEATURE THAT WILL RESULT IN A DELAY OF THE SYSTEM ALARM SIGNAL FROM THE INDICATED CIRCUITS. THE TOTAL DELAY (CONTROL UNIT PLUS SMOKE DETECTORS) SHALL NOT EXCEED 60 SECONDS. NO OTHER SMOKE DETECTOR SHALL BE CONNECTED TO THESE CIRCUITS UNLESS APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION.

WARNING! The equipment should only be operated with an approved power adapter with insulated live pins.

Caution: Risk of explosion if the battery is replaced by an incorrect type. Dispose of batteries according to the instructions. Contact your supplier for replacement batteries.

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Intended use

Use this product only for the purpose it was designed for; refer to the data sheet and user documentation. For the latest product information, contact your local supplier or visit us online at firesecurityproducts.com.

The system should be checked by a qualified technician at least every 3 years and the backup battery replaced as required.

Advisory messages

Advisory messages alert you to conditions or practices that can cause unwanted results. The advisory messages used in this document are shown and described below.

WARNING: Warning messages advise you of hazards that could result in injury or loss of life. They tell you which actions to take or to avoid in order to prevent the injury or loss of life.

Caution: Caution messages advise you of possible equipment damage. They tell you which actions to take or to avoid in order to prevent the damage.

Note: Note messages advise you of the possible loss of time or effort. They describe how to avoid the loss. Notes are also used to point out important information that you should read.

Introduction

Product overview

This is the configuration manual for the following UltraSync Wi-Fi camera models:

TVUC-B01-0401-BUL-W: UltraSync Wi-Fi bullet camera, 4MP, 2.8mm, white

TVUC-B01-0401-DOM-W: UltraSync Wi-Fi dome camera, 4MP, 2.8mm, white

You can download the firmware and the following manuals from our website:

- UltraSync Bullet Wi-Fi Camera Installation Guide
- UltraSync Dome Wi-Fi Camera Installation Guide
- UltraSync Wi-Fi Camera Configuration Manual

Contact information and manuals/firmware

For contact information and to download the latest manuals, tools, and firmware, go to the website of your region:

EMEA:	firesecurityproducts.com Manuals are available in several languages.
Australia/New Zealand:	firesecurityproducts.com.au

Network access

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

UltraSync IP cameras can be configured and controlled using Microsoft Internet Explorer (IE) and other popular browsers. The procedures below described how to use Microsoft Internet Explorer (IE) and other web browsers.

Internet Explorer – Checking the browser security level

When using the web browser interface, you can install ActiveX controls to connect and view video using Internet Explorer. However, due to the increased security measures, you cannot download data, such as videos and images. Consequently, you should check the security level of your PC so that you can interact with the cameras over the web and, if necessary, modify the ActiveX settings.

Configuring IE ActiveX controls

You should confirm the ActiveX settings of your 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 which you want to assign 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 select **Medium**. Click **Reset**.

Then click **OK** on the Internet Options Security tab window.

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

Windows Internet Explorer

Internet Explorer operating systems have increased security measures to protect your PC from any malicious software being installed.

To have complete functionality of the web browser interface with Windows 7, 8, 10, and 11 do the following:

- Run the browser interface as an administrator in your workstation
- Add the camera's IP address to your browser'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 **Internet Options**.
3. Click the **Security** tab, and then select the **Trusted sites** icon.
4. Click the **Sites** button.
5. Clear the “Require server verification (https:) for all sites in this zone box.
6. Enter the IP address in the “Add this website to the zone” field.
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 to find the IP address of the camera.

Activating the camera via a web browser:

1. Power on the camera and connect the camera to the network.
2. Input the IP address into the address bar of the web browser and click **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. Enter the password in the password field.

Note: A valid password range must meet the following conditions:

- Between 8 and 16 characters
- At least 1 lowercase letter

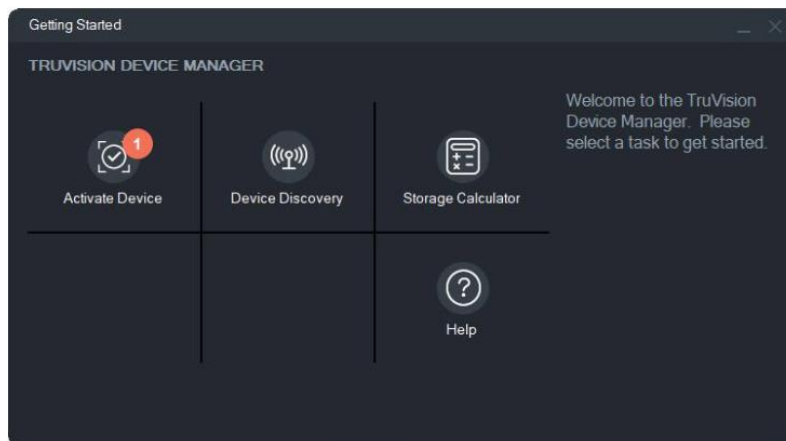
- At least 1 uppercase letter
- At least 1 of the following special characters _ : - , . * & @ / \$? Space.

We recommend that you do not use a space at the start or end of a password and 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.

Activating the camera via TruVision Device Manager:

1. Run *TruVision Device Manager 9.1SP2* or newer to search for TruVision cameras on your local network.
2. After launching Device Manager, the number of inactive video devices (unconfigured devices recently connected to the network) can be displayed by clicking the Activate Device button. From there you can select the cameras you want to activate.



3. Enter the password in the password field and confirm it.

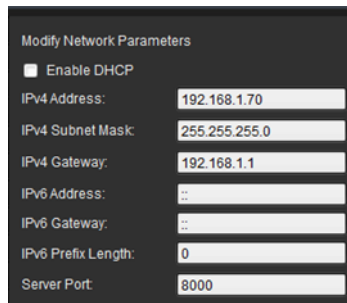
Note: A valid password range must meet the following conditions:

- Between 8 and 16 characters
- At least 1 lower-case letter
- At least 1 upper-case letter
- At least 1 of the following special characters : _ - , . * & @ / \$? Space.
- The password is case-sensitive.

We recommend that you do not use a space at the start or end of a password and 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. Change the device IP address, subnet mask, and gateway, or select the box “Enable DHCP” if you want the camera to automatically receive IP settings from the DHCP server on the network.
5. Click **Apply** to save the password and the new network settings.

A pop-up window appears to confirm the activation. If activation fails, confirm that the password meets the requirements and try again.

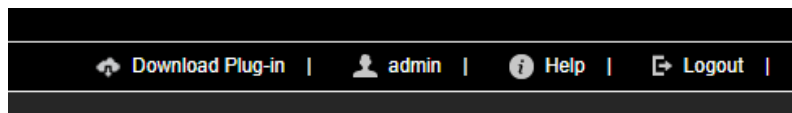


Modify Network Parameters	
<input type="checkbox"/> Enable DHCP	
IPv4 Address:	192.168.1.70
IPv4 Subnet Mask:	255.255.255.0
IPv4 Gateway:	192.168.1.1
IPv6 Address:	::
IPv6 Gateway:	::
IPv6 Prefix Length:	0
Server Port:	8000

Using non-Internet Explorer web browsers (plugin-free browsers)

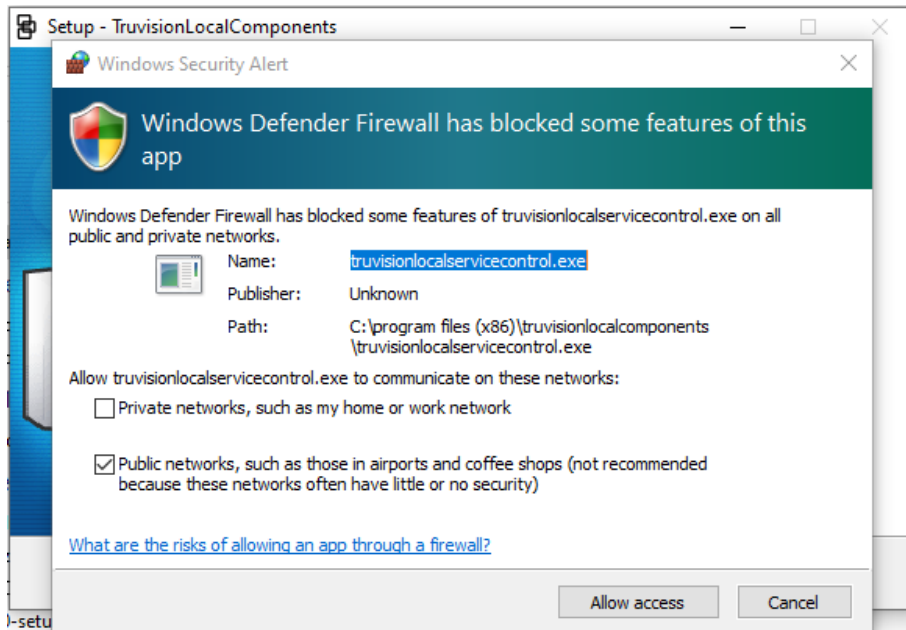
Plugin-free browsers such as Google Chrome, Mozilla Firefox, Microsoft Edge, and Apple Safari have limitations compared to Internet Explorer which uses ActiveX plugins. To solve this, an additional Microsoft Windows compatible plugin can be downloaded through the camera live view web page. Please note that an internet connection is needed to download this plugin.

After activating the camera, you will be redirected to the camera Live View page where you might see a pop-up to download a plugin. In case the plugin has not downloaded automatically, click the “Download Plug-in” icon at the top right of the camera Live View web page to download the plugin installation file to your PC.

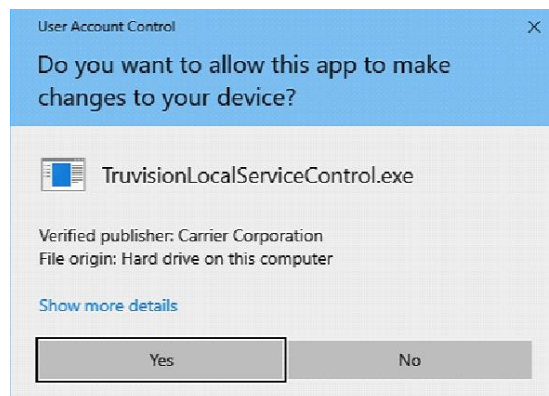


Close the browser and install the downloaded plugin *TruVisionLocalComponents.exe* on your PC. Once the plugin is installed, you can reopen the browser to view and configure the camera.

During the installation of the plug-in, Windows Defender may show a pop-up message that you should accept by clicking the “Allow access” button.



Note that this application will automatically start whenever starting Windows. Depending on your Windows configuration you might see the pop-up message below after logging on to Windows. Accept the message to enable the plugin for plugin-free browsers.



Enabling IE mode in Microsoft Edge

For the best compatibility of this camera with the Microsoft Edge browser, you must enable IE compatibility mode. Using this mode allows you to open certain websites in IE mode within Edge.

To use Microsoft IE mode in Edge:

1. Open Microsoft Edge.
2. Click on the three dots in the top right corner of the window.
3. Select **Settings** from the drop-down menu.
4. Click **Default browser**.
5. Go to **Allow sites to be reloaded in Internet Explorer mode (IE mode)** and click **Allow**.
6. Restart Edge.

7. Click on the three dots in the top right corner of the window.
8. Select **Reload in Internet Explorer mode** from the dropdown menu.
9. Type in the URL of the website you want to open in IE and press Enter.

The website will open in a new tab within Edge, but it will be rendered using the IE engine.

Overview of the camera web browser

The camera web browser lets you view, record, and play back recorded videos as well as manage the camera from any PC with Internet access. The browser's easy-to-use controls give you quick access to all camera functions. See Figure 1, "Example of the Local configuration window", on page 8 for an example.

Camera configuration

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

Once the camera hardware has been installed, configure the camera's settings through the web browser. You must have administrator rights to configure the cameras through the web interface.

The camera web browser lets you configure the camera remotely using your PC. Web browser options may vary depending on the camera model.

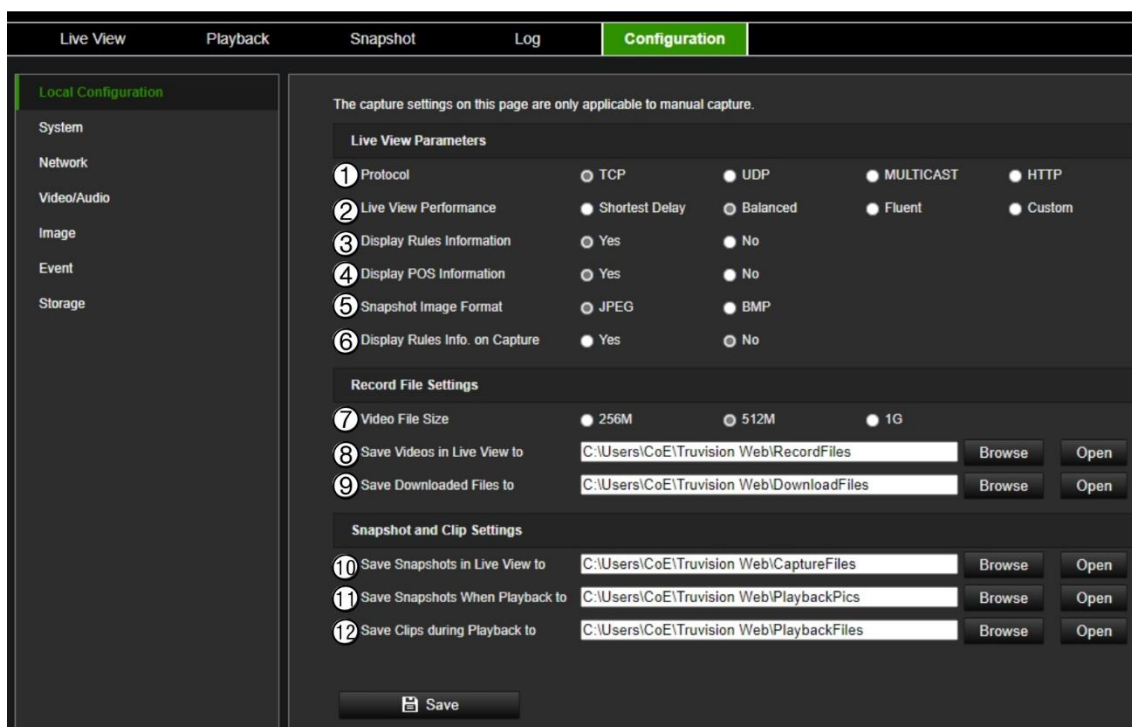
There are two main folders in the configuration panel:

- Local configuration
- Configuration

Local configuration

Use the Local Configuration menu to manage the protocol type, live view performance, and local storage paths for snapshots, downloads, and camera browser recording. In the Configuration panel, click **Local Configuration** to display the local configuration window. See Figure 1 below for descriptions of the different menu parameters.

Figure 1: Example of the Local configuration window



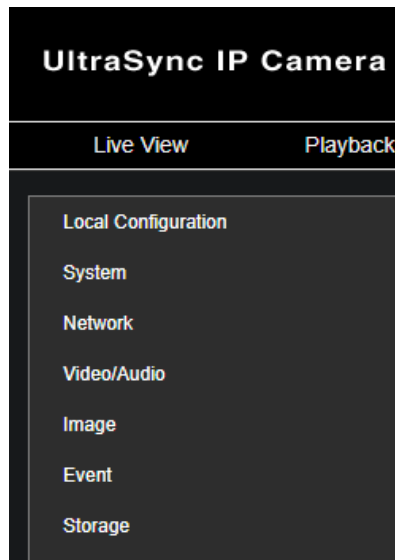
Parameters	Description
Live View Parameters	
1. Protocol	Specify the network protocol used. Options include TCP, UDP, MULTICAST, and HTTP.

Parameters	Description
2. Live View Performance	Specify the transmission speed. Select one of the options: Shortest Delay: Real-time video has priority over video fluency. Balanced: The device ensures both real-time video and fluency. Fluent: Video fluency has priority over real-time video. In a poor network environment, the camera cannot ensure video fluency even if this option is enabled. Custom: Set the frame rate manually. In a poor network environment, reducing the frame rate improves the fluency of the live view. However, the rule information may not be displayed.
3. Meta Data Overlay	It refers to the rules on your local browser. Specify whether to display the colored marks when motion detection, face detection, and intrusion detection are triggered. For example, when the rules option is enabled and a face is detected, the face will be marked with a green rectangle in live view.
4. Display POS Information	Enable external data to be displayed as text overlay on camera image (currently not used)
5. Snapshot Image Format	Choose snapshot image format: JPEG or BMP.
6. Display Rules Info. on Capture	Enable to display the rules information on a captured image.
Record File Settings	
7. Video File Size	Specify the maximum file size. Options include 256 MB, 512 MB, and 1GB.
8. Save Videos in Live View to	Specify the directory for recorded files.
9. Save Downloaded Files to	Specify the directory for downloaded files.
Snapshot and Clip Settings	
10. Save Snapshots in Live View To	Specify the directory for saving snapshots in live view mode.
11. Save Snapshots when Playback To	Specify the directory for saving snapshots in playback mode.
12. Save Clips during Playback to	Specify the directory for saving video clips in playback mode.

Configuration menu overview

Use the Configuration panel to configure the server, network, camera, alarms, users, transactions, and other parameters such as upgrading the firmware. See Figure 2 below for descriptions of the configuration menus available.

Figure 2: Configuration menu overview



Configuration menus	Description
1. System	Displays device basic information including SN and the current firmware version, time settings, maintenance, and serial port parameters. You can only modify the device name and device number. See “System” below for further information.
2. Network	Defines the network parameters required to access the camera over a network. See “Network” on page 21 for further information on the setup.
3. Video/Audio	Defines recording parameters. See “Video/Audio” on page 36 for further information.
4. Image	Defines the image parameters, OSD settings, overlay text, and privacy mask. See “Image” on page 39 for further information on the setup.
5. Event	Defines Basic events motion detection, video tampering, alarm input/output, exception and Smart events Face detection, Intrusion detection, and Cross Line detection. See “Event” on page 44 for further information on the setup.
6. Storage	Defines recording schedule, storage management, NAS configuration, and snapshot. See “Storage” on page 52 for further information on the setup.

System

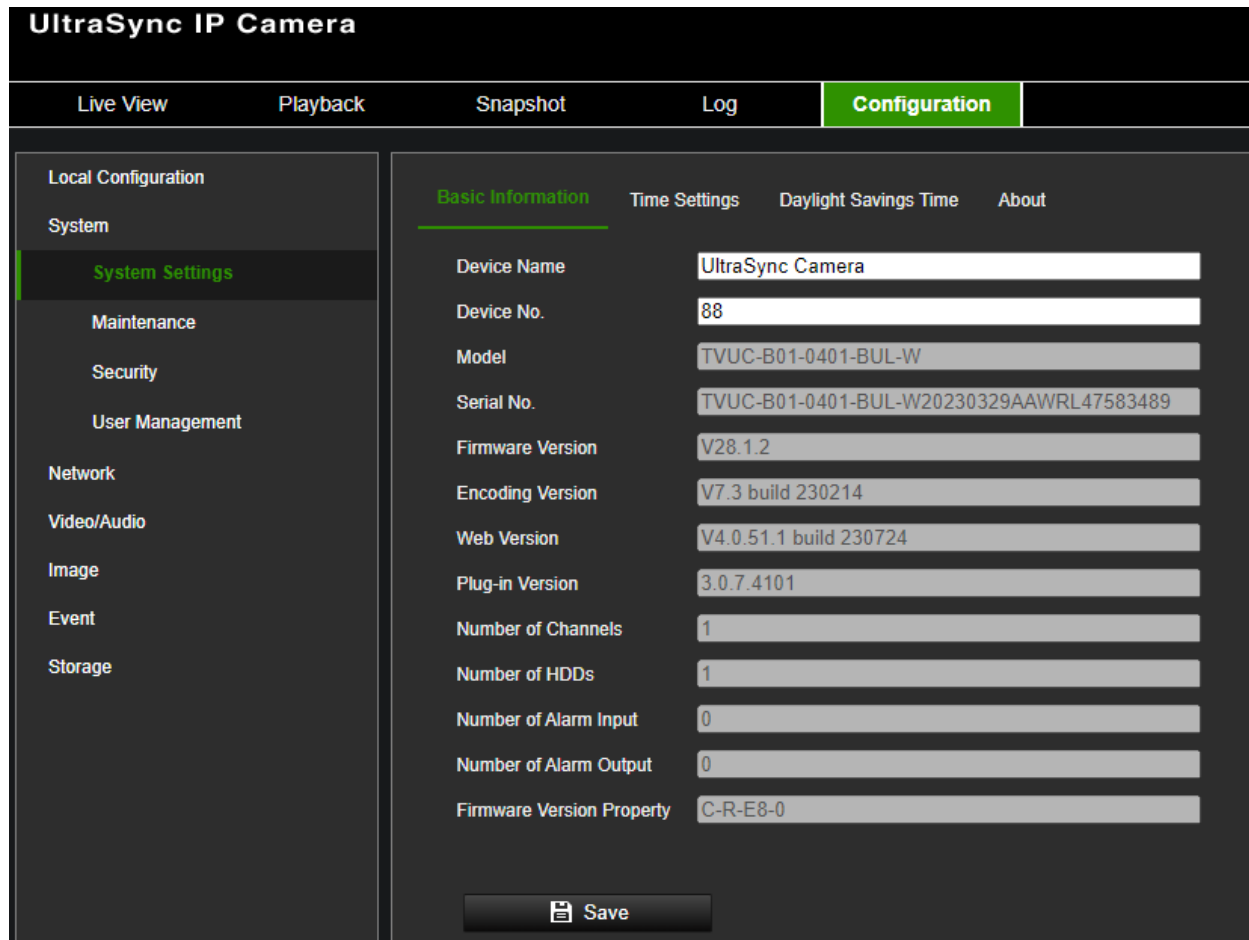
Manage system settings, perform maintenance-related tasks, as well as configure security, and user-related features.

System settings

System settings include an overview of system settings, date & time, and some security options.

Basic Information

This menu displays the hardware and firmware-related information of the device.

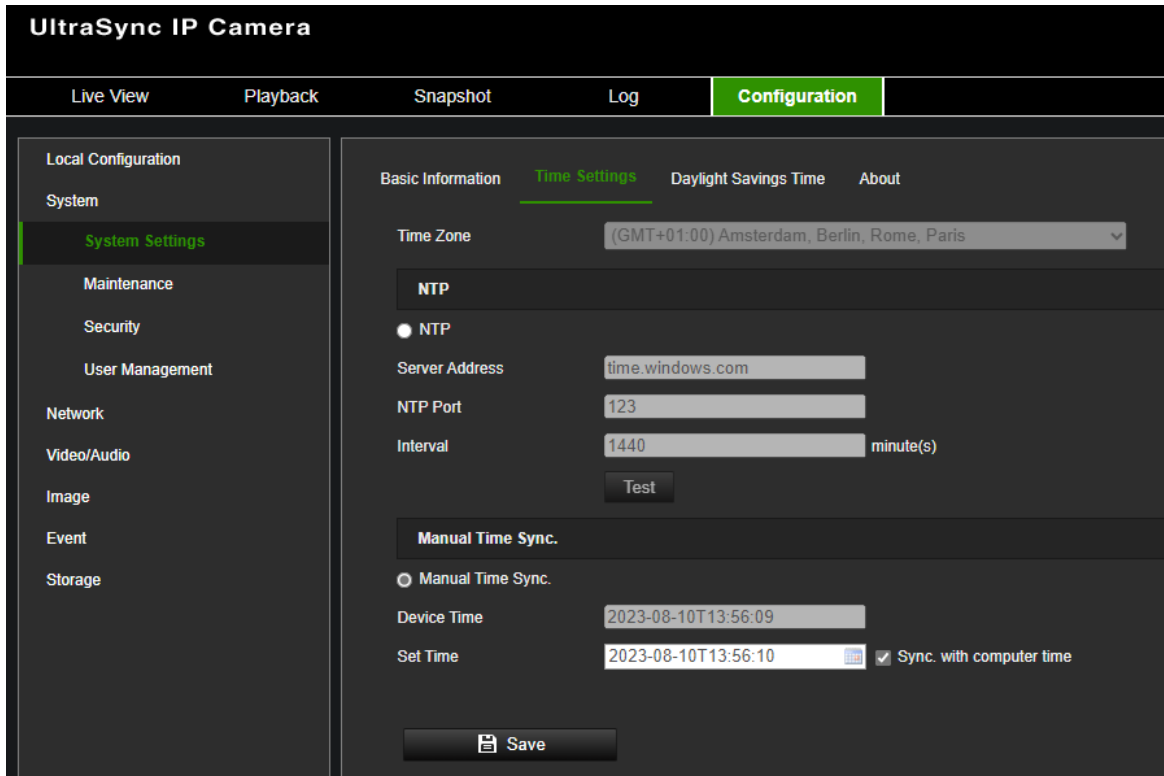


Time Settings

NTP (Network Time Protocol) 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 is the closest to the camera's location.
3. Select one of the options for setting the time and date:

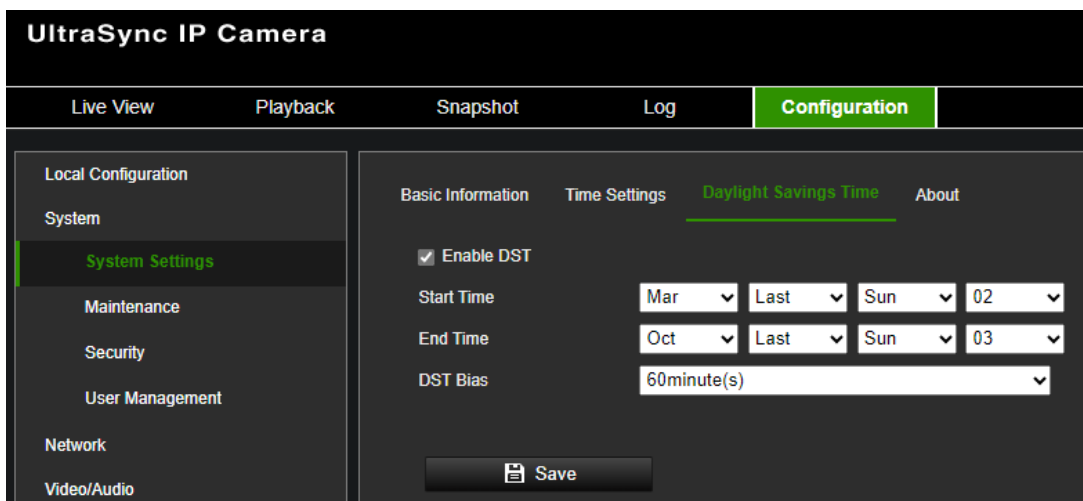
Synchronize with an NTP server: Select the **NTP** enable box and enter the server NTP address. The time interval can be set from 1 to 10080 minutes.

— or —

Set manually: Enable the **Manual Time Sync** function and then click  to set the system time from the pop-up calendar.

Note: You can also select the **Sync with computer time** check box to instantly synchronize the time of the camera with the time of your computer.

To define Daylight Saving Time (DST):



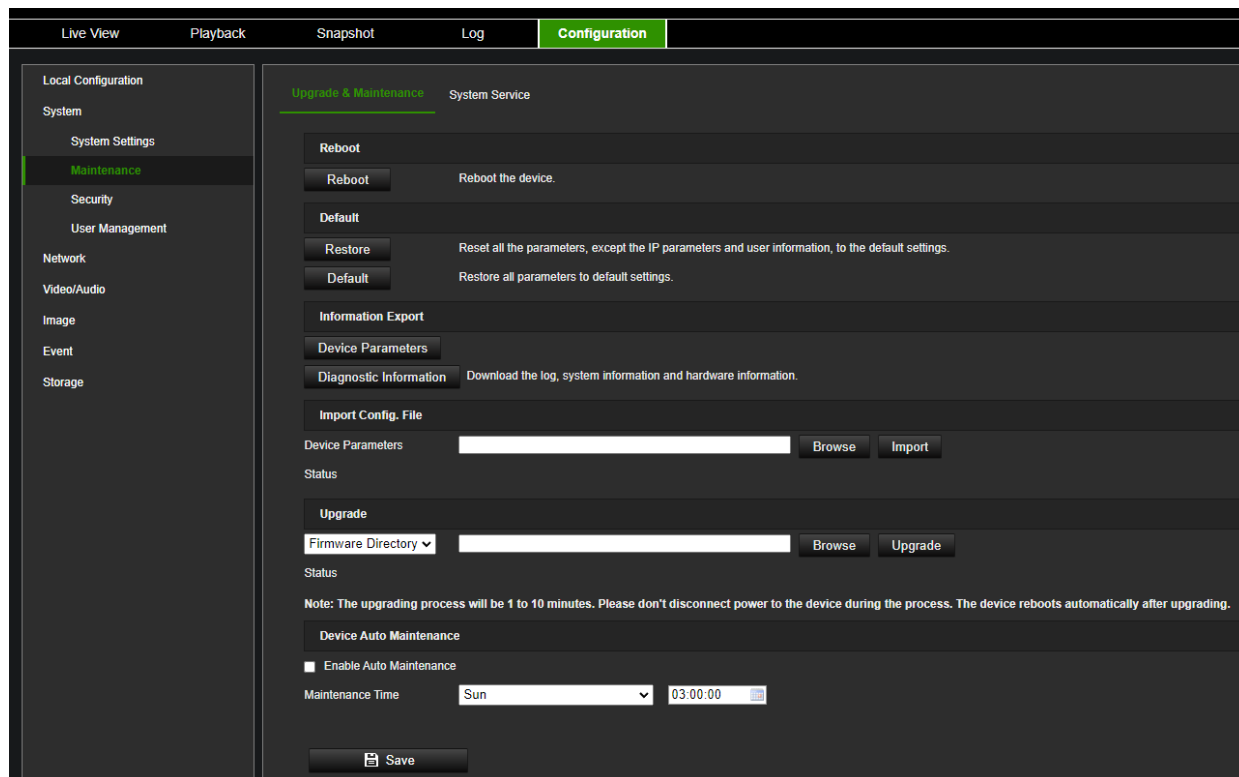
1. Select **Enable DST** to enable the DST (Daylight Savings Time) function and set the dates of the DST period.
2. Click **Save** to save changes.

About

The open-source software licenses used by the camera are listed here.

Maintenance

Maintenance tasks such as importing/exporting configurations and firmware upgrades can be managed in this menu, *Upgrade, and Maintenance*.



Reboot camera

Click **Reboot** to restart the camera.

Restore default settings

Click the **Restore** or **Default** button to restore the default settings to the camera. There are two options available:

- **Restore:** Restore all the parameters, except the IP parameters and user information, 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.

The camera will always ask for the admin password when executing a restore operation.

Hardware reset (factory default): In case the camera web pages can't be accessed anymore or the admin password is lost, there's a possibility to reset the camera to

default settings using the hardware button that is located next to the camera SD card slot. To reset the camera using the reset button, proceed as follows:

1. Disconnect power from the camera.
2. Press and hold the reset button that is located next to the SD card slot.
3. While keeping the button pressed, reconnect power to the camera and continue to hold the button for at least 10 seconds.
4. Release the button and allow the camera to continue its startup.
5. Now all settings have been erased and the camera needs to be activated again.

Import/export a configuration file

The administrator can export and import configuration settings from the camera. This is useful if you want to copy the configuration settings to the camera, or if you want to make a backup of the settings.

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

To import/export configuration file:

1. From the menu toolbar, go to **Configuration > System > Maintenance > Information Export**.
2. Click **Browse** to select the local configuration file and then click **Import** to start importing a configuration file. Depending on the selected file, a password might be needed to import the configuration file.
3. To export camera settings, click **Device Parameters** and set the saving path to save the configuration file. The camera will ask to encrypt the exported file with a password. Choose any password you want and make sure to remember it when importing the file.
4. To export three categories of diagnostic information, click the **Export Diagnostic Info** button.

Upgrade firmware

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

You need to upgrade firmware when it has become outdated. When you upgrade the firmware, all existing settings are unchanged. Only the new features are added with their default settings. In some cases, a factory default might be required after the upgrade. Always refer to the FW release note when upgrading.

To upgrade the firmware version:

1. Download on to your computer the latest firmware from our website at:
www.firesecurityproducts.com
2. When the zipped firmware file is downloaded to your computer, extract it to the desired destination.

Note: Do not save the file on your desktop.

- From the menu toolbar, click **Configuration > Camera Configuration > System > Maintenance**. Select the **Firmware** or **Firmware Directory** option. Then click the **Browse** button to locate the latest firmware file on your computer.
 - Firmware directory** – Locate the upgrading folder of Firmware files. The camera will choose the corresponding firmware file automatically (this feature is currently not supported)
 - Firmware** – Click **Browse** to locate the firmware file manually for the camera.
- Click **Upgrade**. You will receive a prompt asking you to reboot the camera.
- When the upgrade is finished, the device will reboot automatically. The browser will also be refreshed.

Device Auto Maintenance

The camera can be scheduled to restart once a week. To do this, enable the option **Enable Auto Maintenance** and select the day and time when the camera needs to be restarted. We do not recommend using this option since it will always interrupt normal camera operation during the rebooting process.

Security

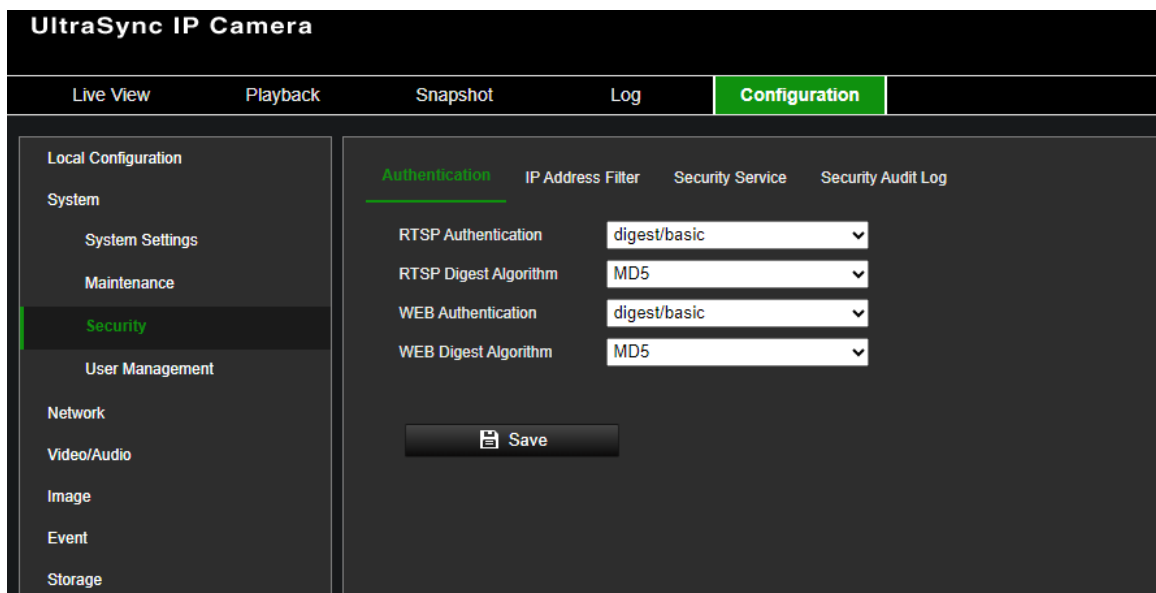
Security-related parameters, such as user accounts and the IP address filter, can be managed via the camera menu **System > Security**.

Authentication

You can secure the stream data of the live view.

To define the RTSP and web authentication:

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



- Select the **RTSP Authentication** type: **digest/basic** or **digest** in the drop-down list and the desired algorithm MD5, SHA256, or MD5/SHA256.

Note: Digest/Basic is the default value and might be needed when the camera is used with other software.

3. Select the **Web Authentication** type: **digest/basic** or **digest** in the drop-down list and the desired algorithm MD5, SHA256, or MD5/SHA256.

Note: Web authentication is the authentication used between the camera and the web browser.

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

IP address filter

This function allows you to give or deny access rights to 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 access the camera.

To define the IP address filter:

1. From the menu toolbar, click **Configuration > System > Security > IP Address Filter**.
2. Select the **Enable IP Address Filter** check box.
3. Select the type of IP Address Filter in the drop-down list: Forbidden or Allowed.
4. Click **Add** to add an IP address and enter the address.
5. Click **Modify** or **Delete** to modify or delete the selected IP address.
6. Click **Save** to save the changes.

MAC address filter

This function allows you to give or deny access rights to defined MAC addresses. For example, the camera can be configured so that only the MAC address of the server hosting the video management software can access the camera.

To define the MAC address filter:

1. From the menu toolbar, click **Configuration > System > Security > Mac Address Filter**.
2. Select the **Enable MAC Address Filter** check box.
3. Select the type of MAC Address Filter in the drop-down list: Forbidden or Allowed.
3. Click **Add** to add a Mac address and enter the address. The MAC address format needs to be xx-xx-xx-xx-xx-xx
4. Click **Modify** or **Delete** to modify or delete the selected MAC address.
6. Click **Save** to save the changes.

Security service

Use this menu to enable the following login and logout functions:

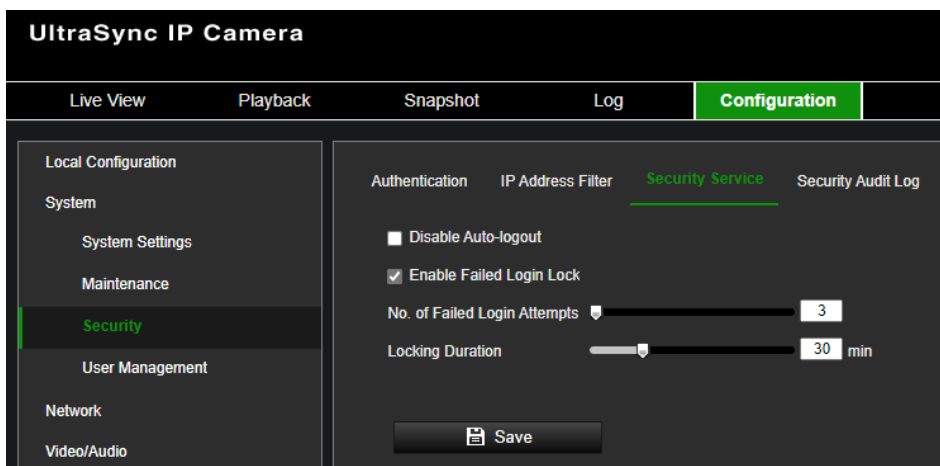
Disable Auto-logout: By default, when logged into the live view webpage or smart display webpage and there is no activity for at least five minutes, the system will automatically log out. Select this function to disable automatic log-out.

Enable Failed Login Lock: When enabled, this function will lock a user out of the system after a certain number of failed login attempts. It is enabled by default.

- The IP address will be locked if a user performs seven failed username/password attempts.
- If the IP address is locked, you can log into the device after 30 minutes.

To enable the failed login lock:

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



2. Select the **Disable Auto-logout** check box to disable auto-logout when staying at the live view or smart display webpage.
3. Select the **Enable Failed Login Lock** check box to check the login attempts.
4. Select the number of failed login attempts from 3 to 20 by adjusting the slider or changing the number in the box.
5. Click **Save** to save the changes.

For security reasons, we recommend leaving the number of failed login attempts at three.

Notes:

- A. The IP address will be blocked when the number of failed login attempts from a user reaches the number of failed username/password attempts configured in the camera (there is no difference in the number of attempts for the admin/operator/user).
- B. If the IP address is blocked, log in to the device again after 30 minutes.

Security audit log

You can search and analyze the security log files of the device and create a client certificate. After the camera boots up, security audit logs are saved to the device's flash memory every 30 minutes.

Due to limited storage in the flash memory, you can save the logs on a log server. Configure the server settings under **Advanced Settings**.

User Management

This section describes how to manage users. You can:

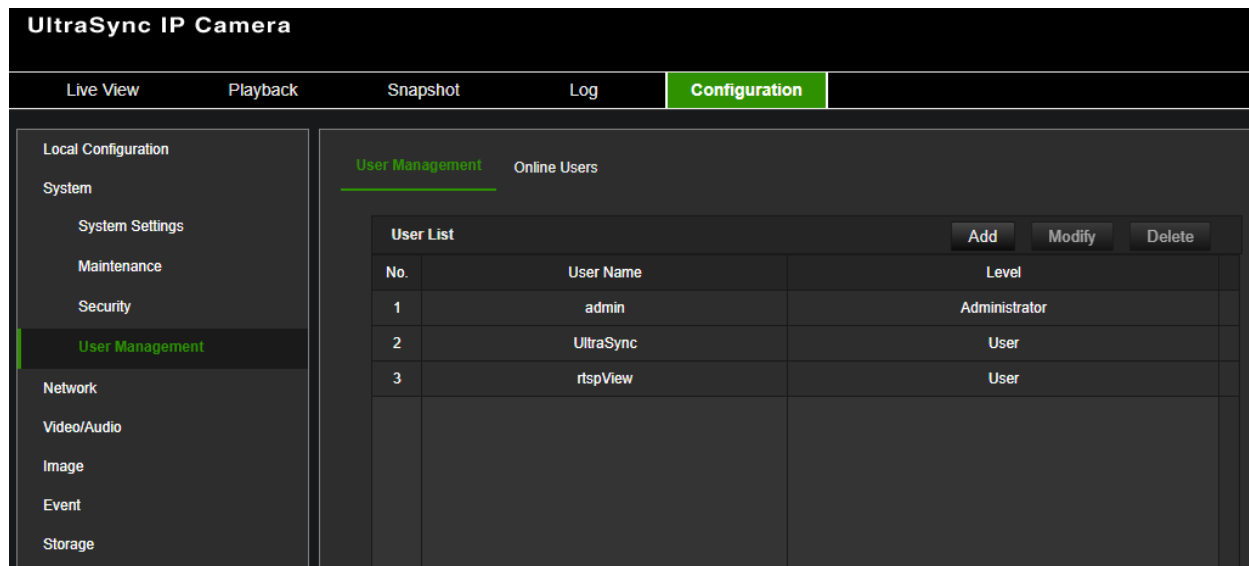
- Add or delete users

- Modify permission
- Modify passwords

Only the administrator can manage web console users. The administrator can create up to 31 individual users for the cameras listed in this manual.

When new web console users are added to the list, the administrator can modify the permissions and password of each user. See Figure 3 below.

Figure 3: User management window



When creating a new user, you must define a password for each user. There is no default password provided for all users. Users can modify their passwords and will receive a pop-up notification asking them to change their password when logging into the camera webpage for the first time.

Note: Keep the admin password in a safe place. If you forget it, please use the Reset Password feature in TruVision Device Manager and contact Technical Support or reset the camera using the camera hardware reset button. Please be aware that by doing so, you will lose all configurations.

Special user accounts

Besides the admin user account, there are two other system user accounts needed for integration purposes.

User Name	Level	Description
admin	Administrator	The admin user can't be deleted or modified and has all permissions.
UltraSync	User	This user needed for UltraSync communication is automatically created when you enable UltraSync connection in the camera. This user cannot be modified or deleted. Disabling UltraSync connection in the camera will delete this user.

rtspView	User	This user needed for xGenConnect alarm panel integration is automatically created when you enable UltraSync connection in the camera. This user cannot be modified or deleted. Disabling UltraSync connection in the camera will delete this user.
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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. The admin user account cannot be deleted.
- **Operator:** This user can only change the configuration of his/her account. An operator cannot create or delete other users.
- **User:** This user has permission for live view, playback, and log search. However, they cannot change any configuration settings.

To add a user:

1. From the menu toolbar, click **Configuration > System > User Management**
2. Click the **Add** button which opens the *Add user* window.

3. Enter a username.
4. Select the type of user from the **Level** drop-down list. The options are User and Operator.
4. Enter the Admin Password
5. In the Password and Confirmation field, enter a password for the new user

The passwords must meet the following requirements:

- Minimum 8 characters and Maximum 16 characters
- Minimum 1 capital letter
- Minimum 1 small letter
- Minimum 1 special character among _ : - , . * & @ / \$? Space

We recommend that you do not use a space at the start or end of a password and that you reset your password regularly. For high-security systems, it is particularly recommended to reset the password monthly or weekly for better protection.

6. Assign permissions to the user. Select from these options:

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

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

To delete a user:

1. From the menu toolbar, click **Configuration > System > User Management**
2. Select the desired user.
3. Click the **Delete** button. A message box appears asking if you want to delete this user. Click **OK**.

Note: Only the administrator can delete a user.

4. Enter the Admin password. Click **OK**.

To modify user information:

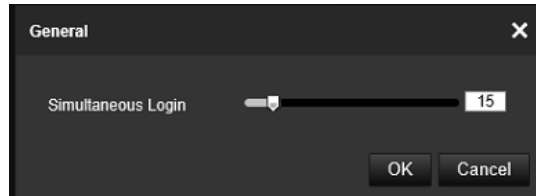
1. From the menu toolbar, click **Configuration > System > User Management**
2. Select the desired user.
3. Click the **Modify** button. The *Modify user* window appears.

4. Change the information required and enter the admin password. Click **OK**.

Note: Only the admin user can modify users.

To define the maximum number of simultaneous logins:

1. From the menu toolbar, click **Configuration > System > User Management**
2. Click the **General** button and use the slider to define the maximum number of simultaneous logins allowed for the camera.



Online users

Use this menu to display users currently connected to the camera. You can see the following user information: user name, level, IP address, and operation time.

User List					Refresh
No.	User Name	Level	IP Address	User Operation Time	
1	admin	Administrator	10.7.70.3	2020-06-04 20:38:29	

Network

Use the Network menu to set the desired network parameters to be able to access the camera. There are two groups of network settings, Basic Settings, and Advanced Settings. The camera has a LAN and WLAN (wireless) interface that can be used to connect to the camera.

TCP/IP

Depending on LAN or WLAN connection, you can set up some of the following TCP/IP parameters:

Function	Description
NIC Type	Enter the NIC type. Default is Auto. Other options include: 10M Half-dup, 10M Full-dup, 100M Half-dup, and 100M Full-dup
DHCP	Enable the parameter to automatically obtain an IP address and other network settings from that server.
IPv4 Address	Enter the IPv4 address of the camera.
IPv4 Subnet Mask	Enter the IPv4 subnet mask.
IPv4 Default Gateway	Enter the IPv4 gateway IP address.
IPv6 Mode	Enter the IPv6 mode: Manual, DHCP or Router Advertisement.
IPv6 Address	Enter the IPv6 address of the camera.

IPv6 Subnet Prefix Length	Enter the IPv6 subnet prefix length value of the camera.
IPv6 Default Gateway	Enter the IPv6 default gateway value of the camera.
MAC Address	Shows the MAC address of the devices.
MTU	Enter the MTU value. The supported value is between 1280 and 1500. Default value is 1500.
Enable Multicast Discovery	This function is optional. It enables the automatic detection of the online network camera via private multicast protocol in the LAN.
DNS server	Specifies the primary and secondary DNS servers for your network.
Host Name Configuration	Enable hostname configuration and define a hostname in case you want to use a name instead of an IP address to connect to the camera

To set up the LAN TCP/IP parameters:

1. Click **Configuration > Network > Basic Settings > TCP/IP > Lan.**

The screenshot shows the 'UltraSync IP Camera' configuration interface. The 'Configuration' tab is selected, and the 'TCP/IP' sub-tab is active. The 'Lan' sub-tab is selected, showing the following settings:

- NIC Type:** Auto (dropdown menu)
- DHCP:** (checkbox)
- IPv4 Address:** 192.168.1.92 (text input)
- IPv4 Subnet Mask:** 255.255.255.0 (text input)
- IPv4 Default Gateway:** (text input)
- IPv6 Mode:** Route Advertisement (dropdown menu)
- IPv6 Address:** 2a02:1810:cc23:ed00:9ef6:1aff:fe (text input)
- IPv6 Subnet Mask:** 64 (text input)
- IPv6 Default Gateway:** :: (text input)
- MAC Address:** 9c:f6:1a:93:0f:bf (text input)
- MTU:** 1500 (text input)
- Multicast Address:** (text input)
- Enable Multicast Discovery:** (checkbox)

Below these settings are sections for:

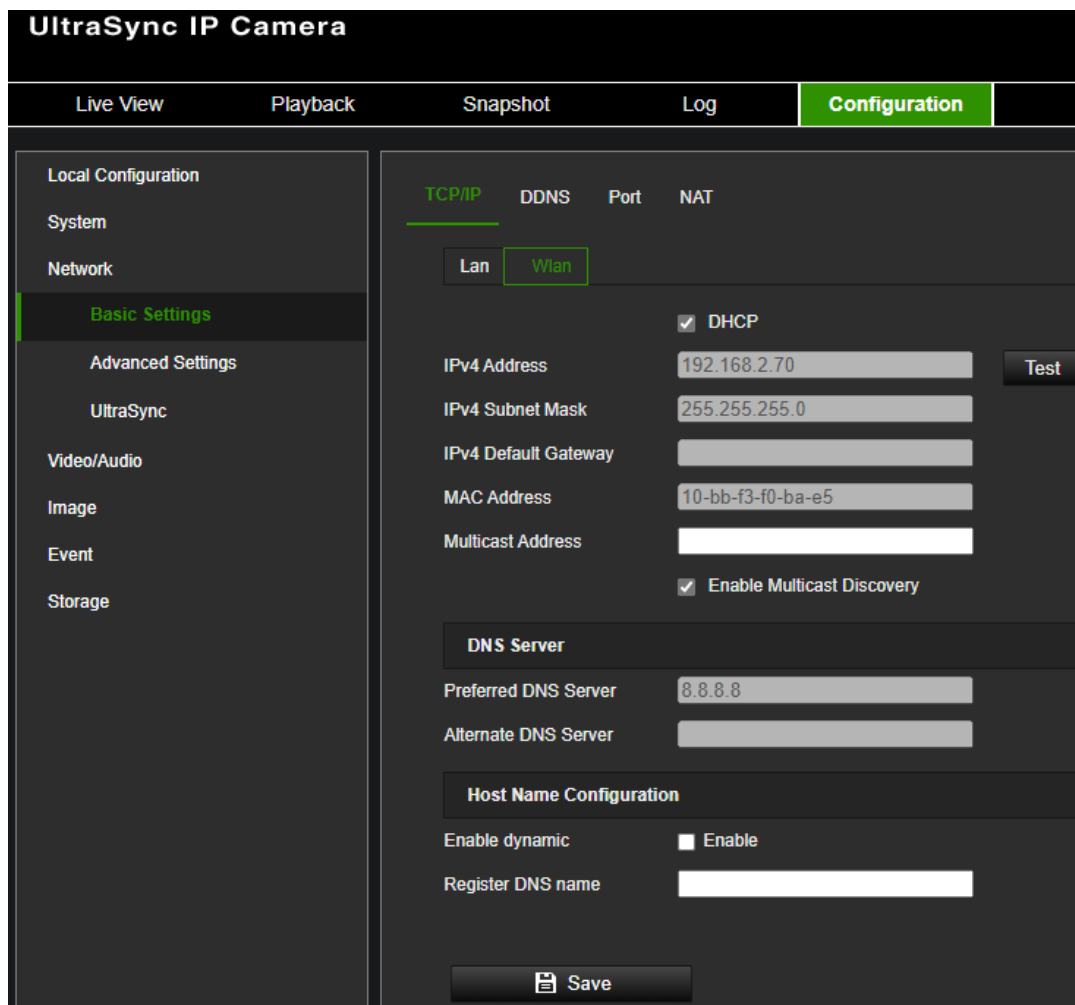
- DNS Server:** Preferred DNS Server (13.57.65.111), Alternate DNS Server (text input)
- Host Name Configuration:** Enable dynamic (checkbox), Register DNS name (text input)

A 'Save' button is located at the bottom of the configuration page.

2. Configure the NIC settings, including the NIC Type, IPv4 settings, IPv6 settings, and MTU settings.
3. If the DHCP server is available, select **DHCP**.
4. If the DNS server settings are required for some applications (e.g., sending email), you should configure the **Preferred DNS Server or Alternate DNS Server**.

5. Click **Save** to save changes.
6. Reboot the device for the changes to take effect.

When using the wireless connection, go to **Configuration > Network > Basic Settings > TCP/IP > Wlan** and configure the wireless connection properties.

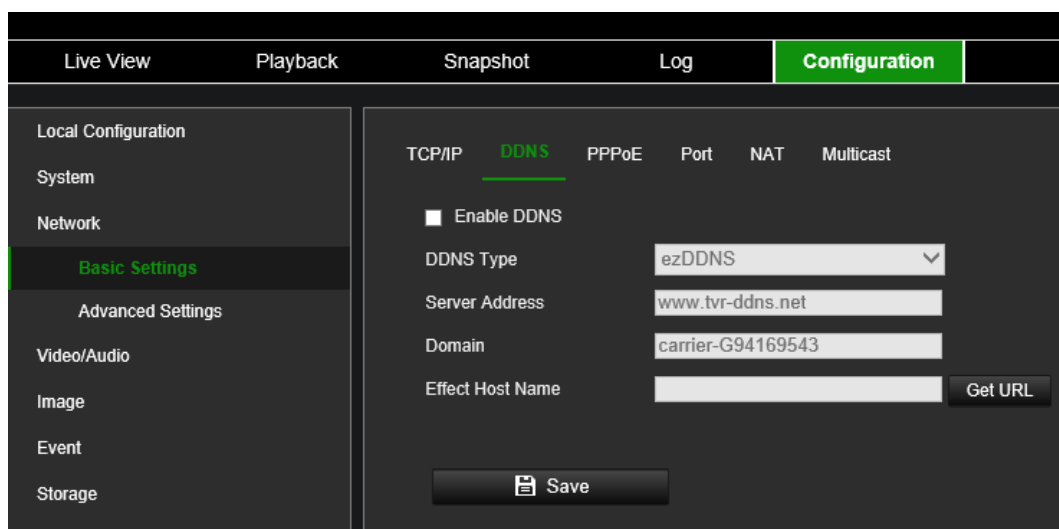


DDNS

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.

To set up the DDNS parameters:

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



2. Select **Enable DDNS** to enable this feature.
3. Select the **DDNS Type**. Three options are available: DynDNS, ezDDNS, and NO-IP.

DynDNS: Select **DynDNS** and enter the server address for DynDNS. In the recorder domain name field, enter the domain name obtained from the DynDNS website. Then enter your username and password registered in the DynDNS network.

For example:

Server address: members.dyndns.org

Domain: mycompanydvr.dyndns.org

User name: myname

Password: mypassword

- Or -

ezDDNS: Enter the hostname. It will automatically register it online. You can define a hostname for the camera. Make sure you entered a valid DNS server in the network settings and have the necessary ports forwarded in the router (HTTP, Server port, RSTP port).

- Or -

NO-IP: Enter the server address (for example, dynupdate.no-ip.com). In the hostname field, enter the host obtained from the NO-IP website. Then enter the user name and password that are registered with the No-IP network.

4. Click **Save** to save changes.
5. Reboot the device for the changes to take effect.

Port

You can set up several ports:

HTTP Port: The default port number is 80, and it can be changed to any port number that is not occupied.

RTSP Port: The default port is 554 and it can be changed to any port number from 1 to 65535.

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

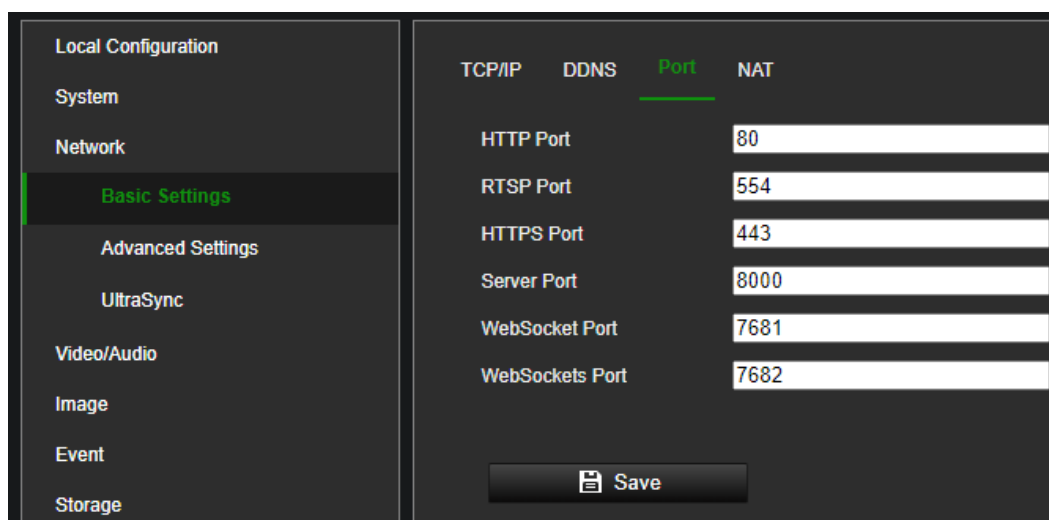
Server Port: The default server port is 8000, and it can be changed to any port number from 2000 to 65535.

WebSocket Port: The default port is 7681. It can be changed to any port number ranging from 1 to 65535.

WebSockets Port: The default server port is 7682. It can be changed to any port number from 1 to 65535.

To set up the port parameters:

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



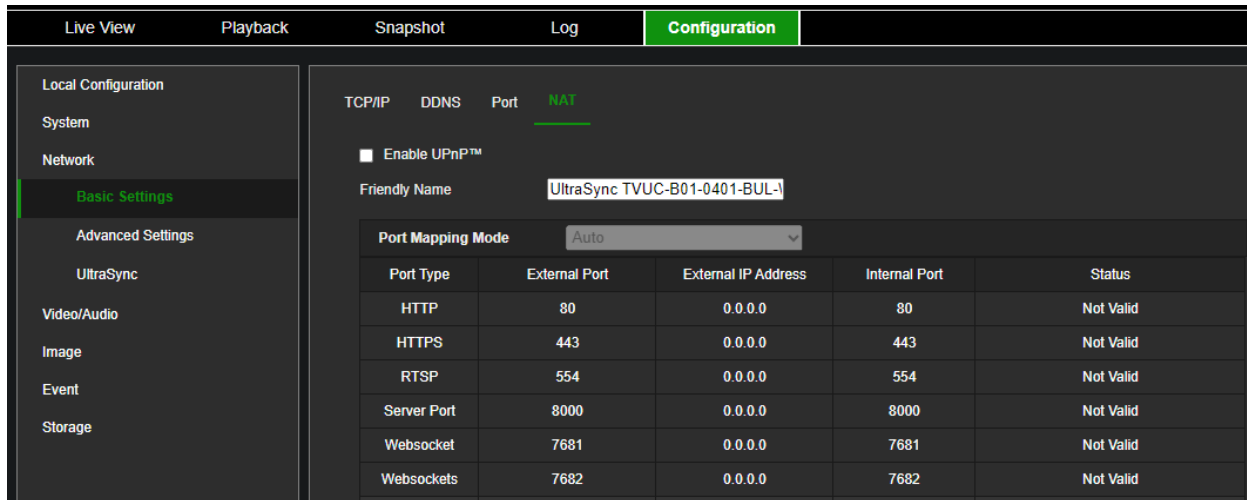
2. Set the HTTP port, RTSP port, HTTPS port, and Server port of the camera.
3. Click **Save** to save changes.
4. When asked, reboot the device for the changes to take effect.

NAT

A NAT (Network Address Translation) is used for network connection. Select the port mapping mode: auto or manual.

To set up the NAT parameters:

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



2. Select the **Enable UPnP™** check box to enable the UPnP™ function.
3. Select **Port Mapping Mode** to be Auto or Manual.

If you choose **Manual** mode, you can set the external port as you want.

Note: If you choose **Auto** mode, enable the UPnP™ function at the router.

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

SNMP

SNMP is a protocol for managing devices on networks. Enable SNMP to get the camera status and parameter-related information.

To set up the SNMP parameters:

1. Click **Configuration > Network > Advanced Settings > SNMP**.

2. Select the corresponding version of SNMPv1, SNMP v2c, or SNMPv3.
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.

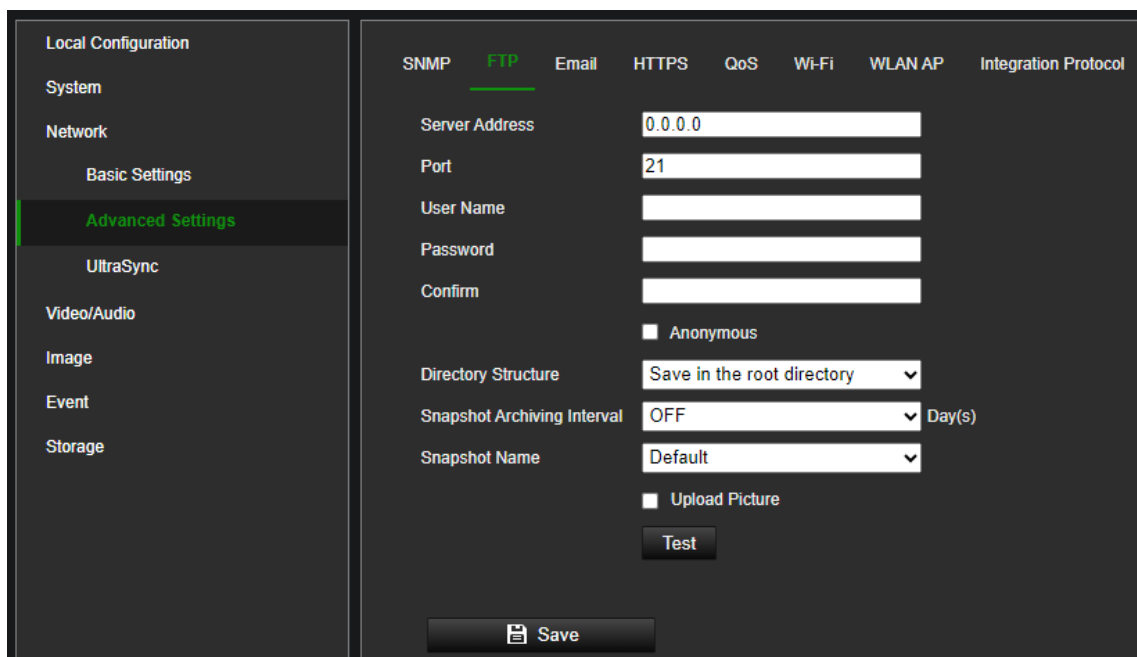
Note: Before setting the SNMP, please download the SNMP software to receive the camera information via the SNMP port. By setting the Trap Address, the camera can send the alarm event and exception messages to the surveillance center. The SNMP version you select should be the same as that of the SNMP software.

FTP

Configure the FTP server to allow the camera to upload snapshot pictures of an event to the server for storage.

To set up the FTP parameters:

1. Click **Configuration > Network > Advanced Settings > FTP**.



The screenshot shows a web management console with a dark theme. On the left is a sidebar menu with categories: Local Configuration, System, Network, Basic Settings, Advanced Settings (highlighted in green), UltraSync, Video/Audio, Image, Event, and Storage. The main content area has tabs for SNMP, FTP (selected), Email, HTTPS, QoS, Wi-Fi, WLAN AP, and Integration Protocol. The FTP configuration form includes the following fields and options:

- Server Address: Text input field containing "0.0.0.0".
- Port: Text input field containing "21".
- User Name: Text input field.
- Password: Text input field.
- Confirm: Text input field.
- Anonymous: Check box, currently unchecked.
- Directory Structure: Dropdown menu with "Save in the root directory" selected.
- Snapshot Archiving Interval: Dropdown menu with "OFF" selected, followed by "Day(s)".
- Snapshot Name: Dropdown menu with "Default" selected.
- Upload Picture: Check box, currently unchecked.
- Test: Button.
- Save: Button with a floppy disk icon.

2. Configure the FTP settings, including server address, port, user name, password, directory, and upload type.

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

Directory: In the *Directory Structure* field, you can select the root directory, Main directory, and Subdirectory. When *Main directory* is selected, you have the option to use the Device Name, Device Number, or Device IP for the name of the directory. When *Subdirectory* is selected, you can use the Camera Name or Camera No. as the name of the directory.

Upload Picture: To enable snapshots to be uploaded to the FTP server.

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

Email

Enter the email address to which messages are sent when an alarm event occurs.

To set up the email parameters:

1. Click **Configuration > Network > Advanced Settings > Email**.

The screenshot displays the 'Email' configuration page. At the top, there is a navigation bar with tabs for SNMP, FTP, Email (selected), HTTPS, QoS, 802.1x, Integration Protocol, Network Service, HTTP Listening, TCP Acceleration, Traffic Shaping, and SRTP. Below the navigation bar, the configuration fields are as follows:

- Sender: [Text Input]
- Sender's Address: [Text Input]
- SMTP Server: [Text Input]
- SMTP Port: [Text Input, value: 25]
- Email Encryption: [Dropdown Menu, value: None]
- Attached Image
- Interval: [Dropdown Menu, value: 2]
- Authentication
- User Name: [Text Input]
- Password: [Text Input]
- Confirm: [Text Input]

Below these fields is a table titled 'Receiver' with the following structure:

No.	Receiver	Receiver's Address	Test
1			[Test Button]
2			[Test Button]
3			[Test Button]

At the bottom of the page, there is a 'Save' button.

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 hostname.

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

Email Encryption: Encrypt via SSL, TLS. NONE is default.

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

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

Authentication: If your email server requires authentication, select this check box to use authentication to log in to this server. Enter the login username 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.

Receiver1: The name of the first user to be notified.

Receiver's Address1: The email address of the user to be notified.

Receiver2: The name of the second user to be notified.

Receiver's Address2: The email address of user to be notified.

Receiver3: The name of the second user to be notified.

Receiver's Address3: The email address of the user to be notified.

3. Click **Test** to test the email parameters set up.

Note: Some email clients block the test message that is sent when using the **Test** button. If you believe the settings are correct, then test the email feature by triggering a real video event.

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

HTTPS

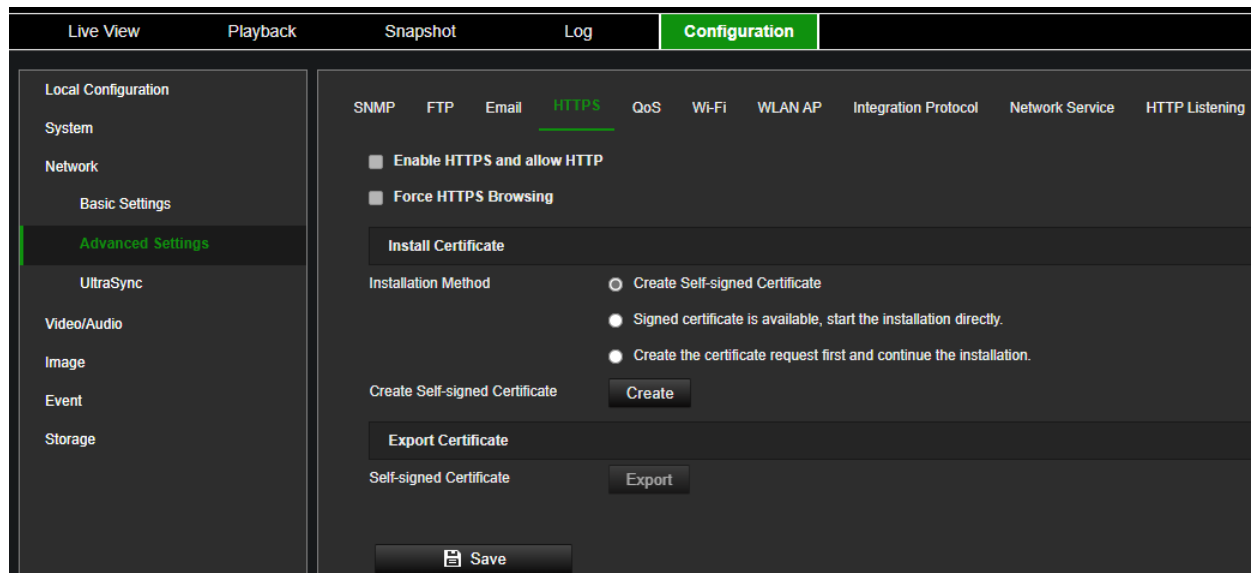
Specifies the authentication of the website and its associated web server, which protects against Man-in-the-middle attacks.

To set up the HTTPS parameters:

1. Click **Configuration > Network > Advanced Settings > HTTPS**.

Select **Enable HTTPS and allow HTTP** to allow connections.

Enabling option **Force HTTPS Browsing** forces the camera to use HTTPS instead of HTTP.



The camera also allows to install a HTTPS certificate using one of the three available installation methods.

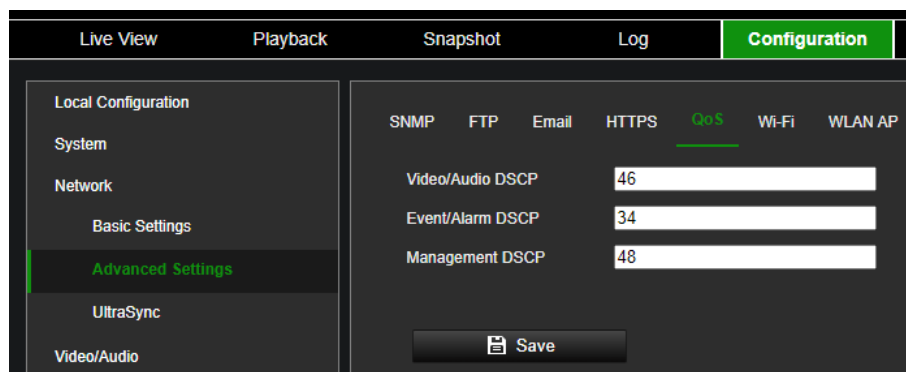
QoS

QoS (Quality of Service) can help solve network delay and network congestion by configuring the priority of data sending.

Enable the option to solve network delay and network congestion by configuring the priority of data sending.

To define the QoS parameters:

1. 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 bigger the DSCP value is, the higher the priority is.
3. Click **Save** to save changes.

Wi-Fi

As described in the **TCP/IP** network configuration section, the camera supports a Wi-Fi connection which can be used in two modes, standard Wi-Fi or WLAN AP.

Wi-Fi mode, which is the most likely option, allows the camera to connect to a wireless network in range of the camera same way as connecting a laptop or other mobile device to a Wi-Fi network.

WLAN AP mode (Access Point mode) is enabled by default and makes the camera broadcast an own SSID which allows you to connect to it directly without having to use another wireless network.

Enabling Wi-Fi will automatically disable WLAN AP and vice versa.

To connect to an available Wi-Fi network within range of the camera:

1. Click **Configuration > Network > Advanced Settings > Wi-Fi**
2. Enable Wi-Fi
3. Click **Save** to save changes
4. Click **Search** to search for Wi-Fi networks in range of the camera. Note that only Wi-Fi networks that are broadcasting SSID will appear here.
5. Select from the list the network you want to register the camera to
6. Fill in the network password of the selected network in **Key 1** and adjust other network parameters if needed.
7. Click **Save** to save changes. A few moments later the connection status should change to connected.

The screenshot shows the camera's configuration interface. The top navigation bar includes 'Live View', 'Playback', 'Snapshot', 'Log', and 'Configuration' (highlighted). The left sidebar lists 'Local Configuration' with sub-items: 'System', 'Network', 'Basic Settings', 'Advanced Settings' (highlighted), 'UltraSync', 'Video/Audio', 'Image', 'Event', and 'Storage'. The main content area has tabs for 'SNMP', 'FTP', 'Email', 'HTTPS', 'QoS', 'Wi-Fi' (highlighted), 'WLAN AP', 'Integration Protocol', 'Network Service', and 'HTTP Listening'. Under the 'Wi-Fi' tab, there is a checkbox for 'Enable' which is checked, with a note: 'The Wlan Hotspot will be disabled after the Wi-Fi being enabled.' Below this is a 'Wireless List' table with a 'Search' button. The table has columns: 'No.', 'SSID', 'Working Mode', 'Security Mode', 'Channel', 'Signal Strength', 'Speed(Mbps)', and 'Connection Status'. The table contains five rows of detected networks. Below the table is the 'Wi-Fi' configuration section with fields for 'SSID' (telenet-DAJ-06), 'Network Mode' (radio button for 'Manage'), 'Security Mode' (WPA2-personal), 'Encryption Type' (TKIP), and 'Key 1' (password field with a green checkmark). A 'Save' button is at the bottom.

No.	SSID	Working Mode	Security Mode	Channel	Signal Strength	Speed(Mbps)	Connection Status
1	telenet-DAJ-06	Manage	WPA2-personal	6	67	150	Disconnected
2	TelenetWiFiFree	Manage	WPA2-enterprise	6	66	150	Disconnected
3	telenet-4A28B34	Manage	WPA2-personal	11	20	150	Disconnected
4	TelenetWiFiFree	Manage	WPA2-enterprise	11	20	150	Disconnected
5	telenet-4A28B34	Manage	WPA2-personal	11	14	54	Disconnected

WLAN AP

The camera can be set to Wireless Access Point mode which will make it broadcast its own SSID allowing you to directly connect to the camera using Wi-Fi.

To connect to the camera in WLAN AP mode:

1. Click **Configuration > Network > Advanced Settings > WLAN AP**
2. Enable WLAN AP
3. Click **Save** to save changes
4. Use the desired device to connect to the camera and search for the camera SSID displayed on this page (e.g. UC-BUL_47583489)
5. When connecting to this network with your laptop or other device, it will ask for a password. Enter 47583489 as network password to connect to the camera's wireless network. These are the last 8 digits of the device serial number.
6. Click **Refresh** to show devices connected to the camera wireless network

Note: For security reasons, it is recommended to not use the default network password permanently. It can be used temporarily to facilitate the initial setup of the camera.

The screenshot shows the camera's configuration interface. At the top, there are tabs for 'Live View', 'Playback', 'Snapshot', 'Log', and 'Configuration'. The 'Configuration' tab is active. On the left, there is a sidebar menu with 'Local Configuration' expanded, showing 'System', 'Network', 'Basic Settings', 'Advanced Settings' (highlighted), 'UltraSync', 'Video/Audio', 'Image', 'Event', and 'Storage'. The main content area is titled 'WLAN AP' and includes the following settings:

- Enable WLAN AP: The Wi-Fi will be disabled after the Wlan Hotspot being enabled.
- SSID: UC-BUL_47583489
- Security Mode: WPA2-personal
- Encryption Type: AES
- Password: [Redacted]
- Confirm: [Redacted]

Below the settings is a table for 'Connected Device' with a 'Refresh' button. The table has columns for 'No.', 'IP Address', 'MAC Address', and 'Connect Time'. The table is currently empty.

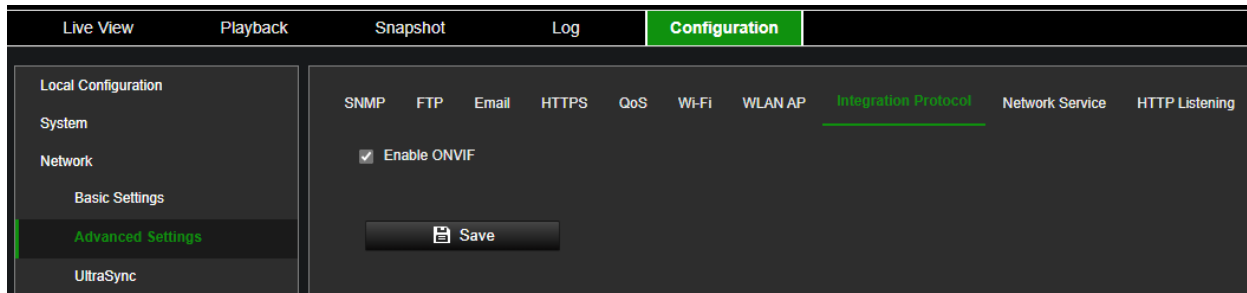
At the bottom of the configuration area is a 'Save' button.

Integration protocol

If you need to access the camera through the third-party platform, you can enable the STD-CGI function. If you need to access the camera through the ONVIF protocol, you can configure ONVIF from this interface. Refer to ONVIF standard for detailed configuration rules.

To set up the integration protocol parameters:

1. Click **Configuration > Network > Advanced Settings > Integration Parameters**.



2. Select the **Enable ONVIF** check box to enable the ONVIF protocol.
3. Click **Save** to save changes.

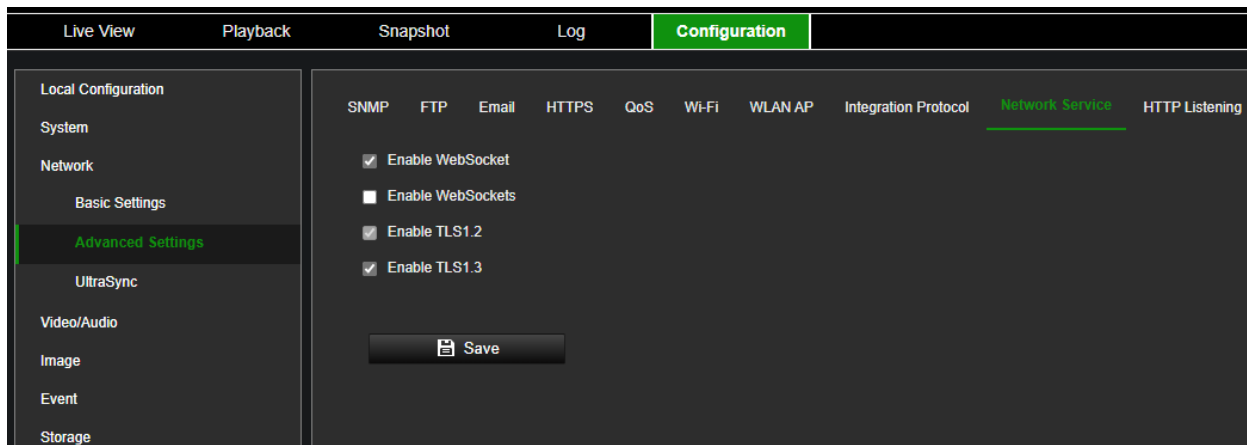
Network service

Use this function to enable or disable certain protocols supported by the camera. Unused functions should be disabled for security reasons. Supported functions depend on the camera model.

- **WebSocket:** TCP-based full-duplex communication protocol port for a plug-in free preview. To access the camera, enable this function if using Google Chrome version 45 and higher or Mozilla Firefox 52 and higher. If not enabled, live view, image capture, and digital zoom cannot be used with these browsers.
- **WebSockets:** TCP-based full-duplex communication protocol port for plug-in free live view. Certificate verification is required to ensure secure access.

To set up the network service parameters:

1. Click **Configuration > Network > Advanced Settings > Network Service**.



2. Select the **Enable WebSocket** check box to enable WebSocket service for live viewing over HTTP protocol without the plug-in.
3. Select the **Enable WebSockets** check box to enable WebSockets service for live viewing over HTTPS protocol without the plug-in.
4. TLS1.2 is enabled by default and cannot be changed as HTTPS protocols rely on it.

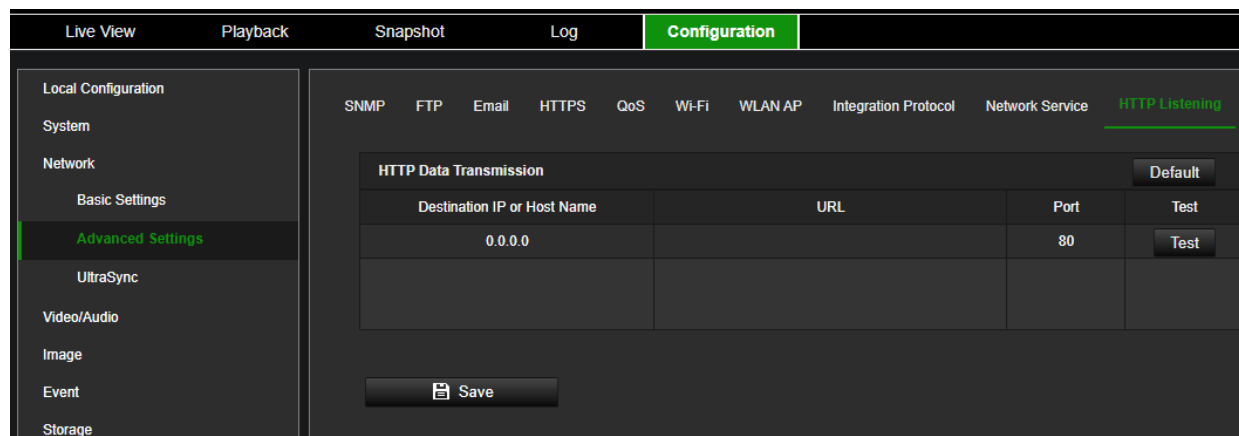
5. Enable/disable the TLS1.3 option.
6. Click **Save** to save changes.

HTTP listening

Alarm information can be sent to the destination IP or Host via HTTP protocol.

To set up the HTTP listening parameters:

1. Click **Configuration > Network > Advanced Settings > HTTP Listening**.



2. Enter the destination IP or hostname, URL, protocol type, and port number.
3. Click the **Test** button to test if the service is available.

Note: the IP address or hostname of a server should be available. The server should listen to the designated port.

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

UltraSync

The camera can be registered (provisioned) on the UltraSync platform to support secure connectivity and integration possibilities with other UltraSync enabled devices.

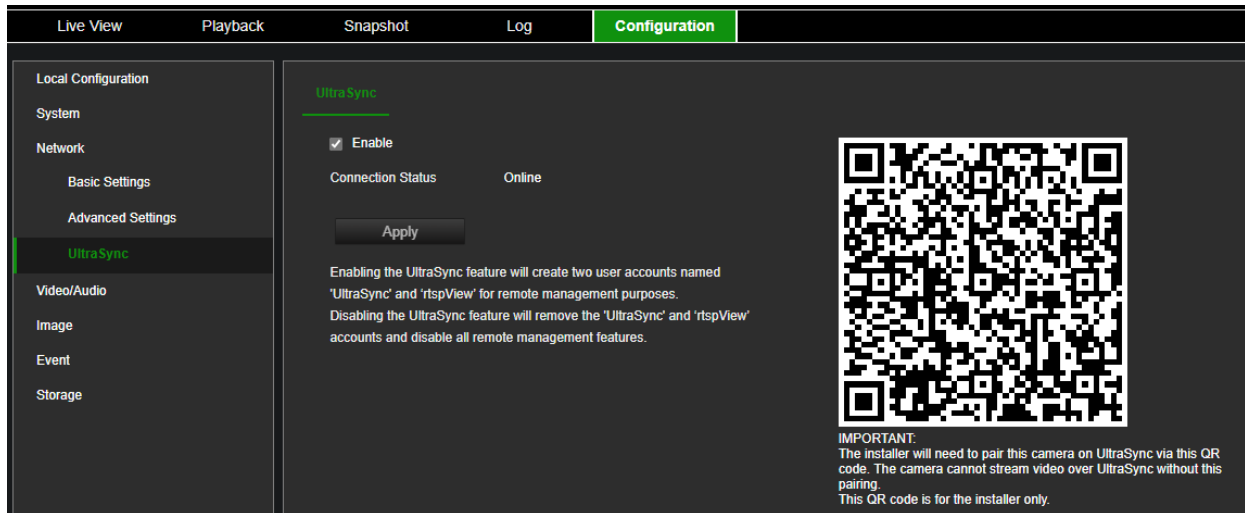
The camera can stream video to applications that support UltraSync.

An UltraSync connection enables a remote connection to the camera without using port forwarding in a router.

To connect the camera to UltraSync:

Note: This setup must be done by an installer. It cannot be done by an end-user.

1. Set date and time of the camera.
2. Click **Configuration > Network > UltraSync**.



3. Select **Enable** to enable this function for the camera and then click **Apply**.

After clicking Apply, it can take up to a couple of minutes before the camera will be connected to UltraSync. A QR code will be shown once the camera is connected.

4. The installer needs to scan the QR code with his mobile phone. The QR will open the UltraSync web login page on the browser of the mobile device used to scan the code. After the installer enters his UltraSync username and password, a web form will open asking the installer to provide some installation details and an appropriate service level. Once this is done and the form is submitted, the camera will be paired to the installer account. This process is also called provisioning.

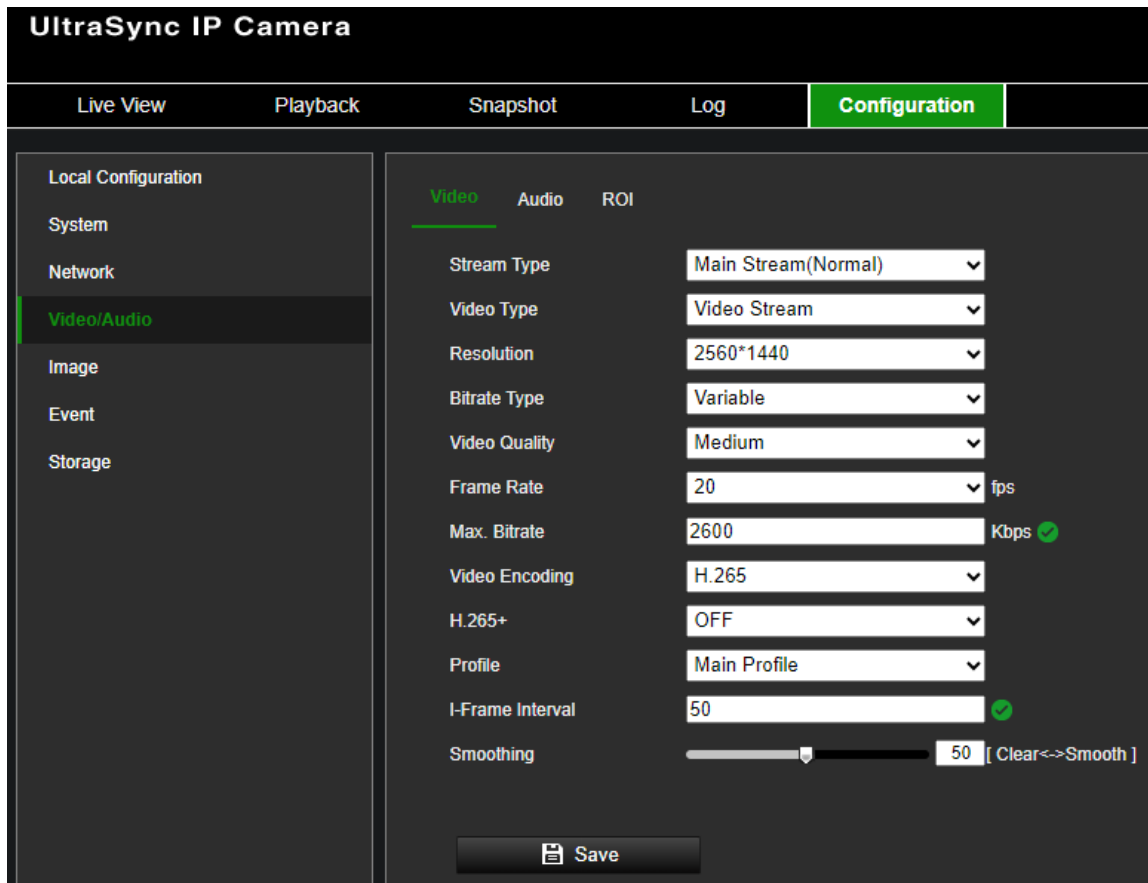
Note:

- The above procedure should only be followed only when the camera is used as a standalone device, not integrated with any recorder or alarm panel.
- When using the camera in combination with an xGenConnect alarm panel and UltraSync+ mobile app, UltraSync will be enabled automatically by the mobile app during the camera enrollment process. The QR doesn't need to be scanned because the camera will automatically be assigned to the alarm panel that is already provisioned on UltraSync.
- Enabling UltraSync will create 2 special system user accounts "UltraSync" and "rtspView". See also section User Management.

Video/Audio

You can adjust the video and audio recording parameters to obtain the image quality best suited to your needs. Figure 4 below lists the video and audio recording options you can configure for the camera.

Figure 4: Video/Audio Settings menu (Video tab shown)

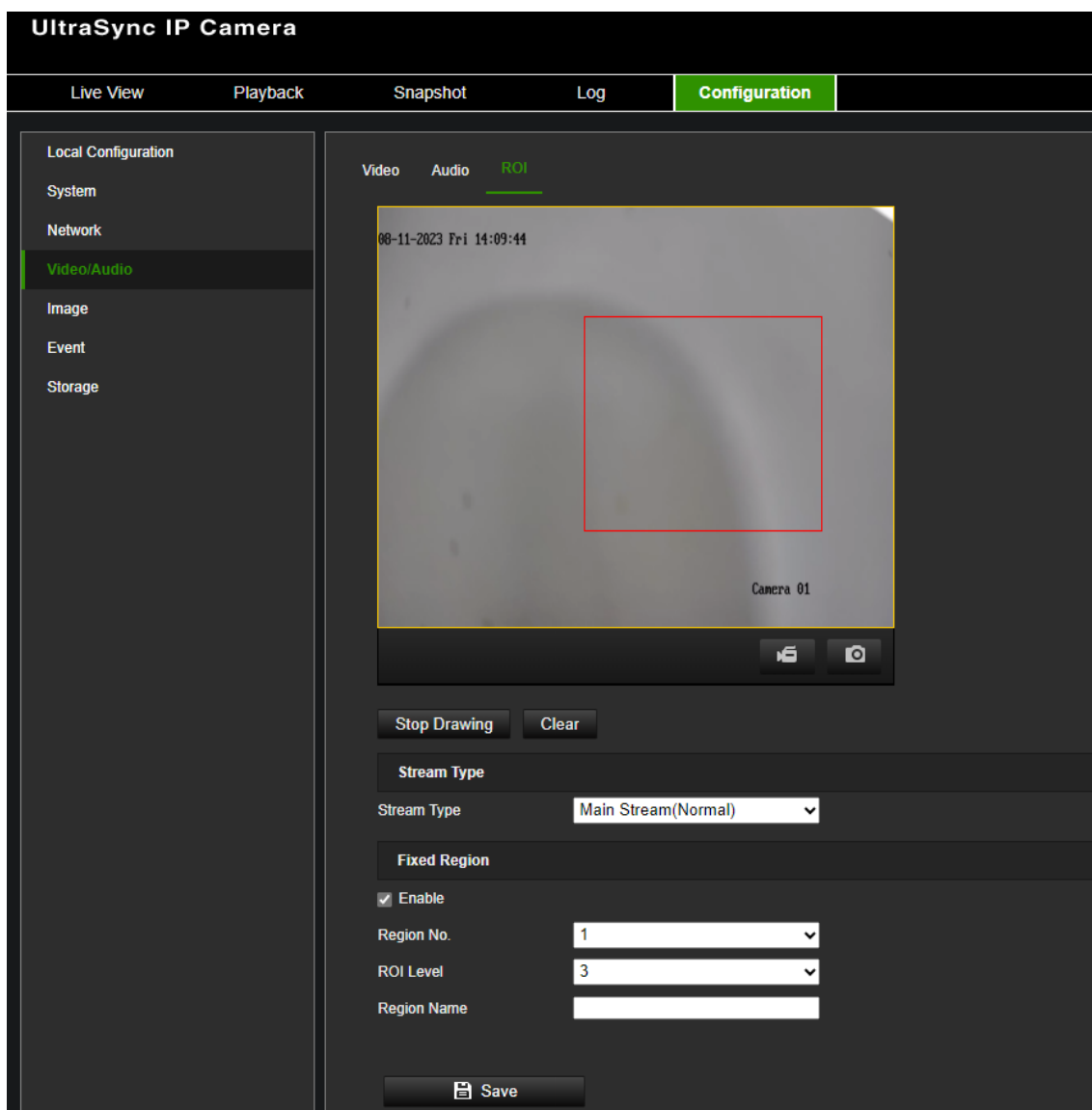


Tab	Parameter descriptions
1. Video	<p>Stream Type: Specifies the streaming method used. Options include Main, Stream, Substream, and Third Stream. Note that Third Stream is only available in Standard Event Mode (menu System > VCA Resource)</p> <p>Video Type: Specifies the stream information you wish to record. Select Video Stream to record video stream only. Select Video&Audio to record both video and audio streams.</p> <p>Note: Video&Audio is only available for those camera models that support audio.</p> <p>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 on whether the main, sub, third, fourth, or fifth stream is being used.</p> <p>Note: Resolutions can vary depending on the camera model.</p> <p>Bit Rate Type: Specifies whether a variable or fixed bit rate is used. Variable produces higher quality results suitable for video downloads and streaming. Default is Constant.</p> <p>Video Quality: Specifies the quality level of the image. It can be set when a variable bit rate is selected. Options include Lowest, Lower, Low, Medium, Higher, and Highest.</p> <p>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.</p> <p>Note: The maximum frame rate depends on the camera model and selected resolution. Please check the camera specifications in its datasheet.</p>

Tab	Parameter descriptions
	<p>Video Encoding: Specifies the video encoding used. You can choose between H.264 and H.265.</p> <hr/> <p>H.264+/H.265+: Depending on the selected Video Encoding, this parameter allows you to activate smart codecs H.264+ or H.265+ by switching it ON. Leaving this parameter OFF will make the camera use standard H.264 or H.265 video encoding.</p> <p>Note: H.264+ and H.265+ can only be in Standard Event mode. When switching to H.265+/H.264+, parameters such as SVC Profile and I-Frame Interval will not be supported.</p> <hr/> <p>Profile: Different profile indicates different tools and technologies used in compression. Options for H.264 include Basic Profile, Main Profile, and High Profile.</p> <hr/> <p>I-Frame Interval: A video compression method. It is strongly recommended not to change the default value 50.</p> <hr/> <p>Smoothing: Adjust the smoothness of the stream. Smoothing is not available when H.264+ or H.265+ video encoding is used.</p>
2. Audio	<p>Audio Encoding: G.722.1, G.711ulaw, G.711alaw, MP2L2, G.726, and PCM are supported.</p> <hr/> <p>Audio Input: Mic In and Line In are selectable for the connected microphone and pickup, respectively.</p> <p>Note: Options can vary depending on the camera model.</p> <hr/> <p>Input Volume: Specifies the microphone volume from 0 to 100.</p> <hr/> <p>Environmental Noise Filter: Set it as OFF or ON. When you set the function On, the noise detected can be filtered.</p>
3. ROI	<p>Enable assigning more encoding resources to the region of interest (ROI) to increase the quality of the ROI whereas the background information is less focused.</p>

To configure ROI settings:

1. Click **Configuration > Video/Audio > ROI**.



2. Draw the region of interest on the image.
3. The stream type used for ROI encoding is always the main stream.
4. Under the *Fixed Region* section, select **Enable** to manually configure the area.

Region No.: You can configure one fixed ROI region.

ROI Level: Choose the image quality enhancing level. The larger the value selected, the better the image quality.

Region Name: Set the desired region name.

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

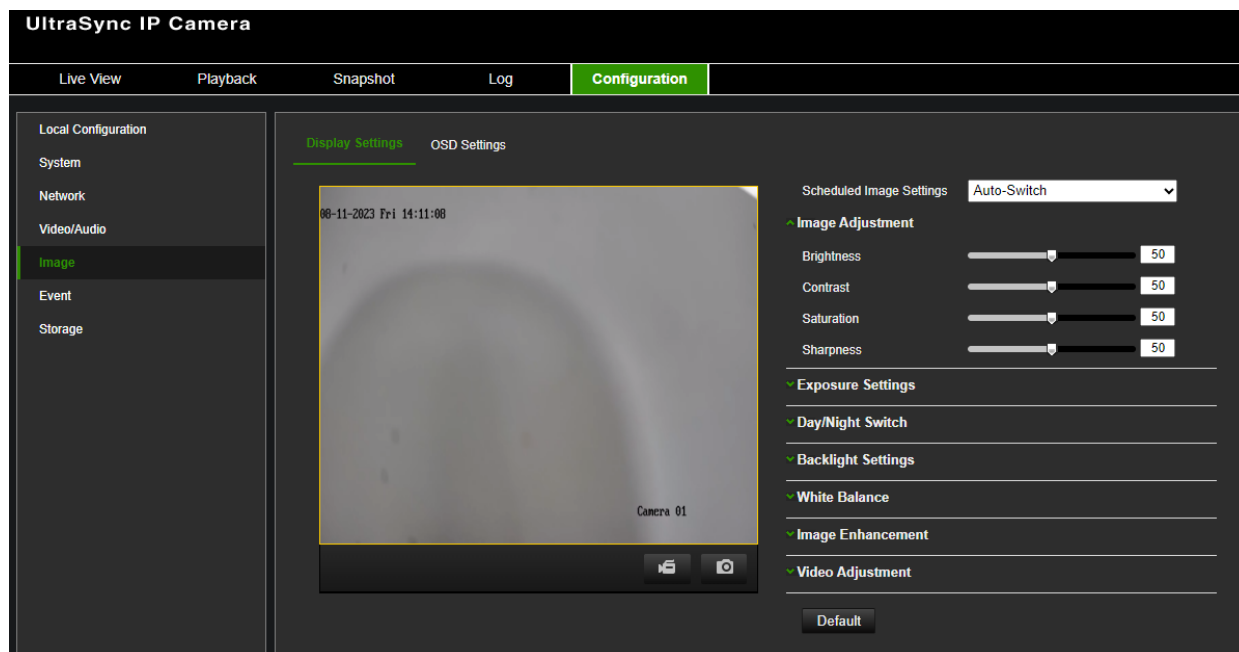
Image

You may need to adjust the camera image depending on the camera model or location background to get the best image quality. See Figure 5 below for more information.

Display Settings

Use this menu to set up how the image is displayed such as image adjustment, exposure settings, day/night settings, backlight settings, and white balance. Available settings can vary slightly depending on the camera model.

Figure 5: Display Settings menu



Parameter	Description
1. Image Adjustment	
Brightness, Contrast, Saturation, Sharpness	Modify the different elements of picture quality by adjusting the values for each parameter. These options can also be modified from the General control panel in Live View.
2. Exposure Settings	
Exposure Mode	Iris Mode: The value cannot be changed as the camera has a fixed iris. Exposure Time: Adjust this value manually to change the light sensitivity of the camera. The higher the value, the slower the shutter speed. It ensures full exposure in underexposed conditions.
3. Day/Night Switch	
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 following options: Day: Camera is always in day mode. Night: Camera is always in night mode. Auto: The camera automatically detects which mode to use depending on the amount of light captured by the camera. Scheduled switch: The camera switches between day and night modes according to the configured period.

Parameter	Description
Sensitivity	Only available when <i>Auto D/N switch</i> mode is selected. It defines the sensitivity of the switch between day and night. Set it between 1 and 7.
Filtering Time	This is the time interval between the day/night switch. You can set it from 5 s to 120 s. When the environment changes from bright to dark and the duration of the dark state is equal to or exceeds the filtering time set, the camera will switch to night mode, and vice versa. If the duration of the environmental brightness change is less than the filtering time, the mode will not change.
Smart Supplement Light	When enabled, it can avoid over-exposure problems by decreasing the amount of IR illumination for objects closer to the camera
Supplement Light Mode	IR Supplement Light: IR illumination Light enables the use of the built-in IR LEDs. OFF: The IR LEDs remain OFF when the camera changes to night mode
Light Brightness Control	Auto: The intensity of the white light will be set automatically according to environmental light. Manual: In manual mode, the white-light intensity can be set to a desired fixed value using the white-light slider.
IR LED	The intensity of the IR LEDs can be changed from 0 to 100 using the slider.
4. Backlight Settings	
BLC Area	This function improves image quality when the background illumination is high. It prevents the object in the center of the image from appearing too dark. Select OFF, Up, Down, Left, Right, or Center.
WDR	When enabled, wide dynamic range (WDR) provides clear images when there is high contrast between light and dark areas in the field of view of the camera. Both bright and dark areas can be displayed in the frame. This option can also be enabled/disabled from the General control panel in Live View.
Wide Dynamic Level	The WDR level can be fine-tuned by changing its value between 0 and 100
HLC	Use the highlight compensation (HLC) function when there are strong sources of light in the scene that affect the image quality. This option can also be enabled/disabled from the General control panel in Live View.

Parameter	Description
5. White Balance	
	<p>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 below:</p> <p>AWB1: Automatically adjust the camera's white balance between 2500 to 9500K for environments where the lighting is always stable.</p> <p>Locked WB: Locks the WB to the current environment color temperature.</p> <p>Incandescent Lamp: For use where there are incandescent lamps installed near the camera.</p> <p>Warm light lamp: For use in situations where an external warm light is present near the camera.</p> <p>Natural light: For use where the camera is installed in a natural light environment.</p> <p>Fluorescent Lamp: For use where there are fluorescent lamps installed near the camera.</p>
6. Image Enhancement	
Digital Noise Reduction	<p>Digital noise reduction (DNR) reduces noise, especially in low light conditions, to improve image performance.</p> <p>Select Normal Mode, OFF, or Advanced. Default is Normal.</p>
Noise Reduction Level	<p>The level of noise reduction can be changed from 0 to 100 using the slider.</p>
7. Video Adjustment	
Mirror	<p>It mirrors the image so you can see it inversed.</p> <p>Select Left/Right, Up/Down, Center, or OFF. Default is OFF.</p>
Video Standard	<p>Select PAL (50 Hz) or NTSC (60 Hz).</p> <p>Select the value depending on the video standards.</p>

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

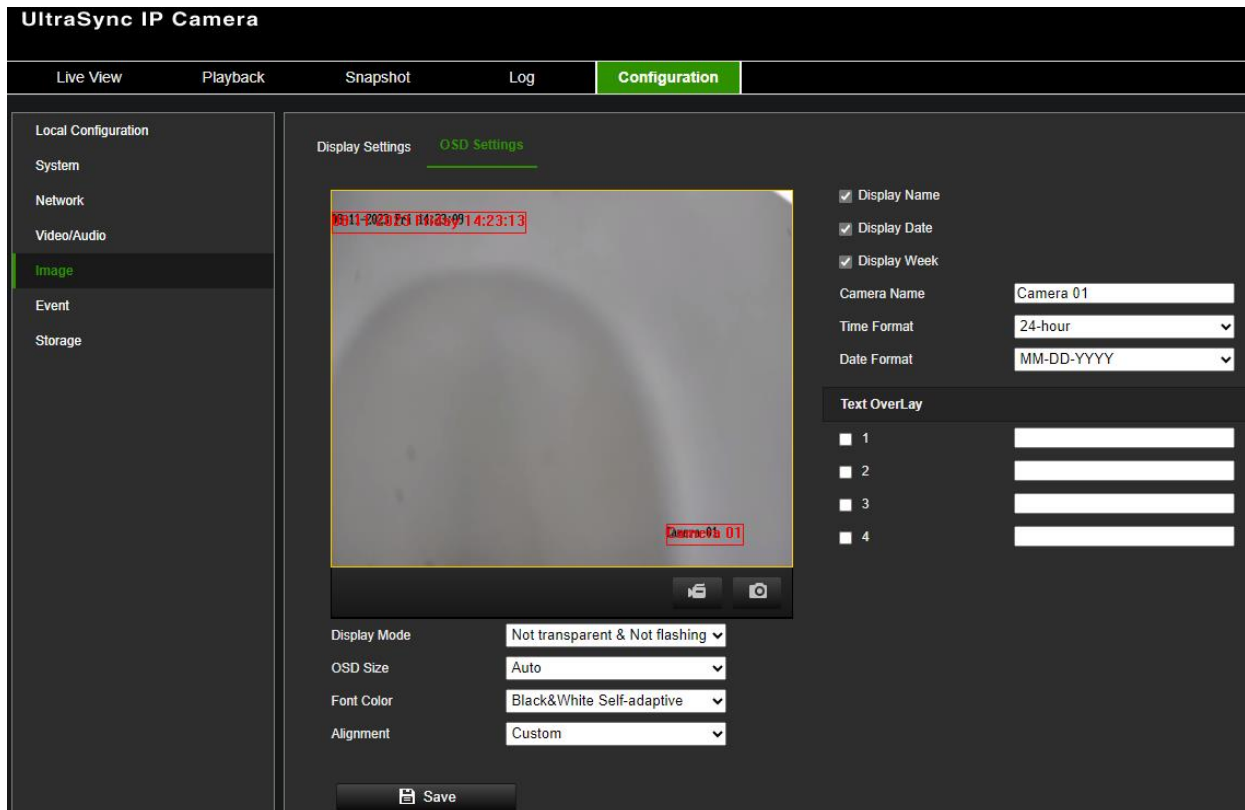
OSD Settings (On Screen Display)

In addition to the camera name, the camera also displays the system date and time on screen. You can also define how the text appears on the screen.

You can also set up the OSD settings from the *Live View General* control panel. Go to **Live View > General > OSD Settings** and select the desired options.

To set up the OSD text:

1. Click **Configuration > Image > OSD Settings**.



2. Select the **Display Name** box to display the camera's name on the screen. You can modify the default name in the text box of **Camera Name**.
3. Select the **Display Date** check box to display the date/time on screen.
4. Select the **Display Week** check box to include the day of the week in the on-screen display.
5. In the **Camera Name** box, enter the camera name.
6. Select the time and date formats from the **Time format** and **Date format** drop-down list boxes.
7. Select a display mode for the camera from the **Display Mode** drop-down list box. 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 default.
 - **Not transparent & Flashing.** The image is behind the text. The text flashes on and off.
8. Select the desired OSD size.
9. Select the desired font color.
10. Select the desired alignment (Custom, Align Left, or Align Right).
11. Click **Save** to save changes.

Note: If the display mode is set as transparent, the text varies, according to the background. With some backgrounds, the text may be not easily readable.

Four additional custom *Text Overlays* can be created and positioned across the camera image by dragging the text overlay to the desired position on the image. You can also add and position text overlays when in live view mode under the *General* menu.

Event

Events can be used to trigger actions whenever the camera is triggered by a physical input or, for example, a VCA event. There are two categories, Basic and Smart Event.

Motion Detection

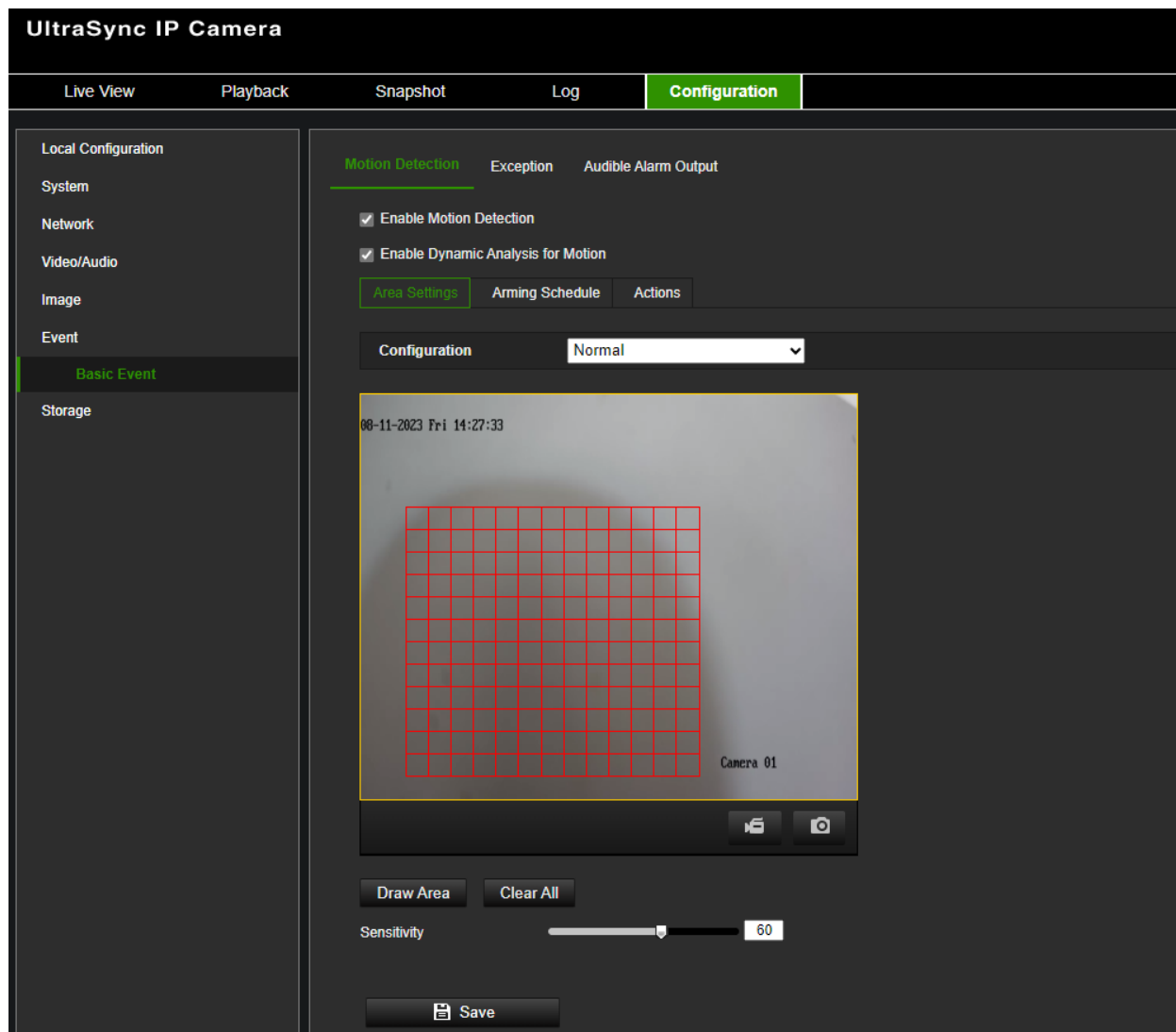
You can define motion detection alarms. A motion detection alarm refers to an alarm triggered when the camera detects motion. However, the motion alarm is only triggered if it occurs during the programmed arming schedule.

You can draw an area on the screen where you want to detect motion and set the motion sensitivity level, the schedule when the camera is supposed to check for motion as well as which methods are used to alert you to a motion detection alarm.

You can also enable dynamic analysis for motion to verify sensitivity in real time. When there is motion, the area will be highlighted as green. See

Figure 6 on page 45.

Figure 6: Motion detection window



Defining a motion detection alarm requires the following tasks:

1. **Draw Area:** Draw an area on the image where you want the camera to generate motion detection alarm and set the detection sensitivity level (see Figure 6 above, item 1).
2. **Arming schedule:** Define the schedule during which the system detects motion (see Figure 6 above, item 2).
3. **Actions:** Specify the actions triggered by the motion event (see Figure 6 above, item 3).
4. **Normal and advanced configuration:** Normal configuration allows you to set the sensitivity level of the motion detection (see Figure 6 above, item 4). Advanced configuration gives you additional configuration options. It allows you to define up to eight separate motion areas with different sensitivity and scene parameters.

To set up motion detection in normal mode:

1. Click **Configuration > Event > Basic Event > Motion Detection**.

- **Set up the motion detection area:**

2. Select the **Enable Motion Detection** check box. Also, select the **Enable Dynamic Analysis for Motion** check box if you want to see real-time motion events.

3. Under Configuration, select **Normal** mode from the drop-down list.

4. Click **Draw Area**. Click the mouse to set the start point of the area where you want to detect motion. Then move to another position while keeping the left mouse button pressed. Repeat this step to draw additional areas and stop drawing when finished.


Note: You can draw up to eight motion detection areas on the same image.

5. Click **Clear All** to delete all areas marked and restart the drawing.

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

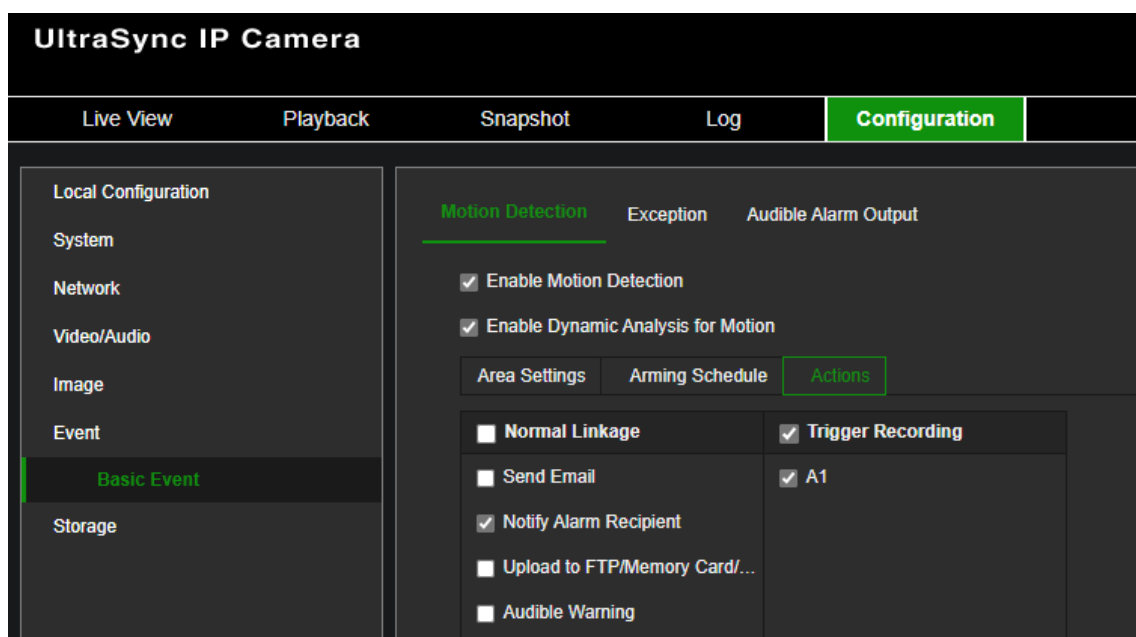
- **Set up the arming schedule:**

7. Drag and click the timeline bar to edit the arming schedule. In the pop-up box, enter the start and end times (hours and minutes).

8. Click  to copy the schedule to other days or the whole week.

- **Set up a linking method to the motion detection alarm:**

9. Click **Actions** to trigger an action when the motion event action occurs. Select one or more response methods for the system when a motion detection alarm is triggered:



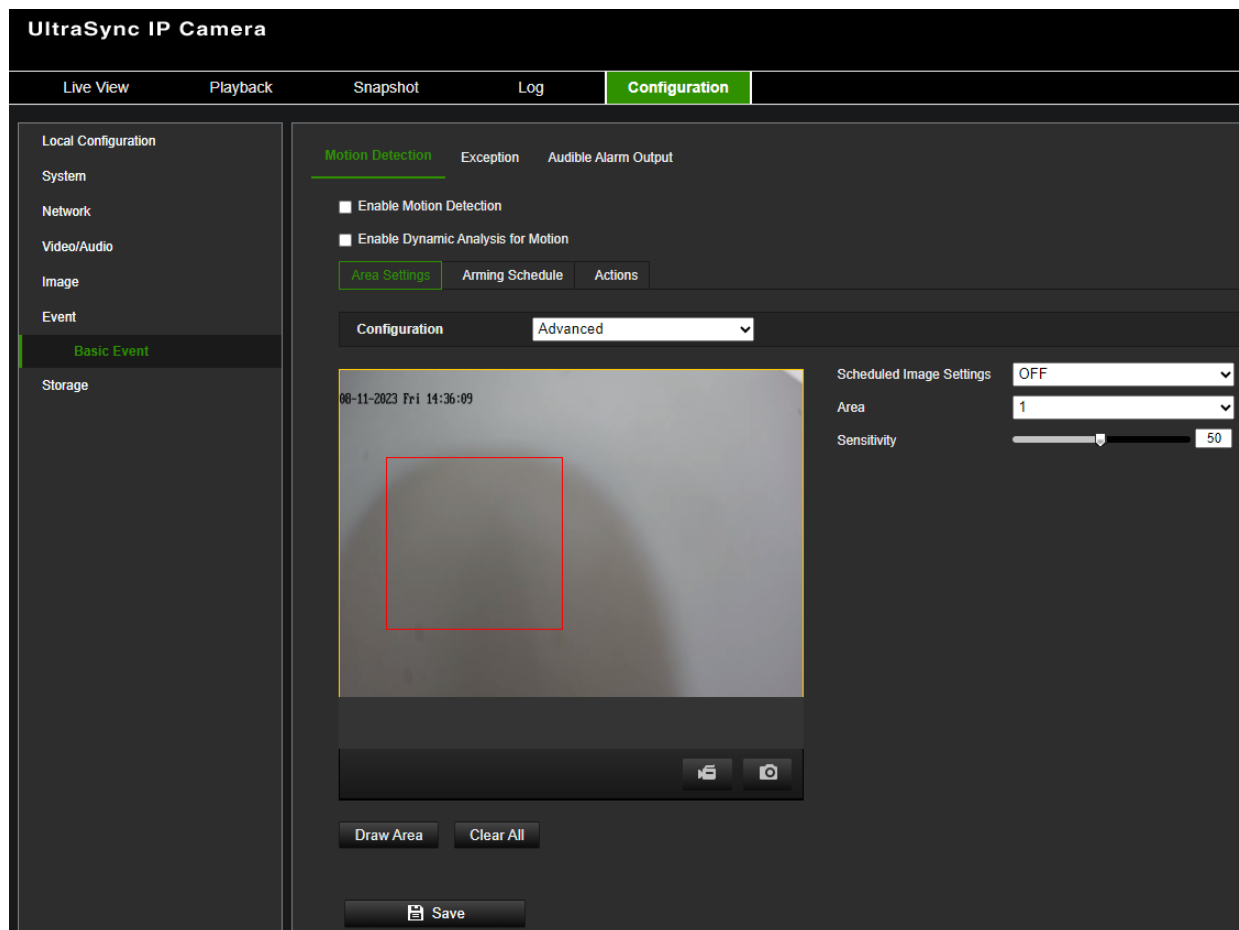
Send Email	<p>Send an email to a specified address when there is a motion detection alarm.</p> <p>Note: You must configure email settings before enabling this option. See “To set up the email parameters” on page 28 for further information. If you want to send the event snapshot together with the email, check the Attached Snapshot option.</p>
Notify Alarm Recipient	<p>Send an exception or alarm signal to remote management software when an event occurs.</p>
Upload to FTP/Memory Card/NAS	<p>Capture the image when an alarm is triggered and upload the picture to NAS, Memory Card, or FTP server.</p> <p>Note: To upload the snapshot to NAS, you must first configure the NAS settings. See “NAS” on page 58 for further information.</p> <p>To upload the snapshot to an FTP, you must first configure the FTP settings. See “To define the FTP parameters” on page 27 for further information. Enable the Upload Type option.</p> <p>To upload the snapshot to FTP and NAS when motion detection or an alarm input is triggered, you must also select Enable Event-triggered Snapshot under the snapshot parameters. See “Storage” on page 52” for further information.</p>
Audible Warning	<p>An audio message can be triggered when an event occurs. For camera models with built-in speakers, the audio can be heard through the speaker. For models without a speaker, the audio is only available via the audio line output. Configure more settings related to this action in the menu Configuration > Event > Basic Event > Audible Alarm Output.</p>
Trigger Recording	<p>Triggers the recording to start in the camera.</p>

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

To set up advanced motion detection:

1. Click **Configuration > Event > Basic Event > Motion Detection**.
- **Set up the motion detection area:**
2. Select the **Enable Motion Detection** box. Also, select **Enable Dynamic Analysis for Motion** if you want to see where motion occurs in real time.

Note: If you do not want the detected object to be marked with the green frame, select **Disable** from **Local Configuration > Live View Parameters > Rules**.
3. Under Configuration, select **Advanced** mode from the drop-down list.



4. Under **Scheduled Image Settings**, select OFF, Auto D/N Switch, or Scheduled D/N settings. Default is OFF.

Auto D/N Switch and Scheduled D/N settings allow you to set different settings for day and night as well as different periods.

5. Select **Area No.** and click **Draw Area**. Click and drag the mouse on the live video image to draw an area sensitive to motion detection.


Note: You can draw up to eight motion detection areas on the same image. **Stop Drawing** shows up after **Draw Area** is clicked.

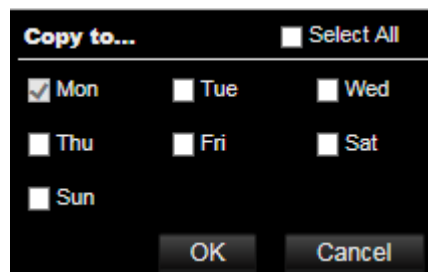
6. Click **Stop Drawing** to finish drawing. Click **Clear All** to delete all areas marked and restart the drawing.
7. Move the **Sensitivity** slider to set the sensitivity of the detection for the selected areas.
8. Click **Save** to save the changes for that area.
9. Repeat steps 5 to 8 for each area to be defined.

- **Set up the arming schedule:**

1. Under **Arming Schedule**, click the day you want to schedule. The Time pop-box appears. Enter the desired start and end times to detect motion.



2. If you want to copy a day's schedule, position the mouse on the desired day and click  to copy the schedule to other days or the whole week. The *Copy to* pop-up window appears. Select the desired days to which to copy the schedule and click **OK** to save the changes.



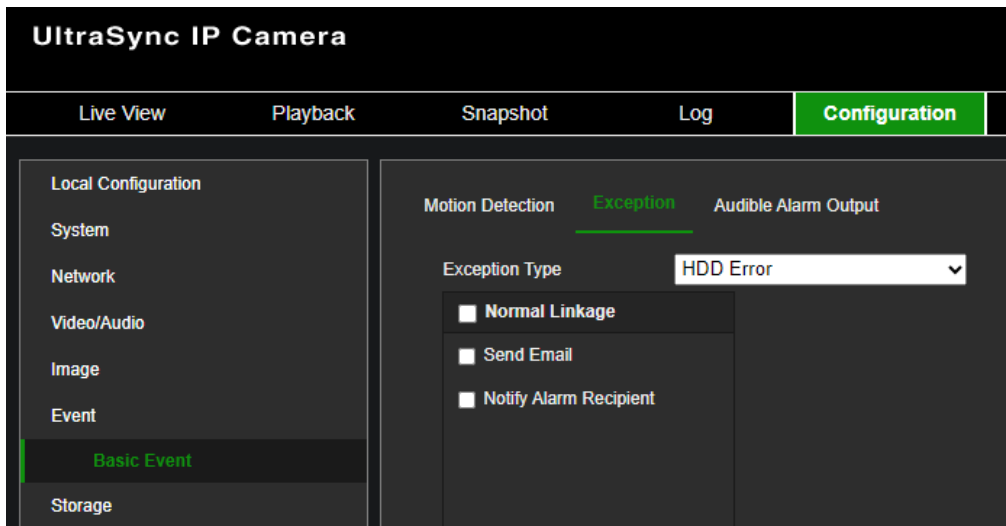
3. Click **OK** to save changes.
 - **Set up a linking method to the motion detection alarm:**
4. Click **Actions** to specify when an event action occurs. Select one or more response methods for the system when a motion detection alarm is triggered. Refer to “Set up a linking method to the motion detection alarm” on page 46 for more details on motion detection actions.
5. Click **Save** to save changes.

Exception

You can set up the camera to notify you when irregular events occur and how you should be notified. These exception alarms include:

- **HDD Error:** Errors occurred while files were being written to the storage, no storage or storage had failed to initialize.
- **Network Disconnected:** Disconnected network cable.
- **IP Address Conflicted:** Conflict in IP address setting.
- **Invalid Login:** Wrong user ID or password login attempt to the cameras.

Figure 7: Exception window



To set up exception alarms:

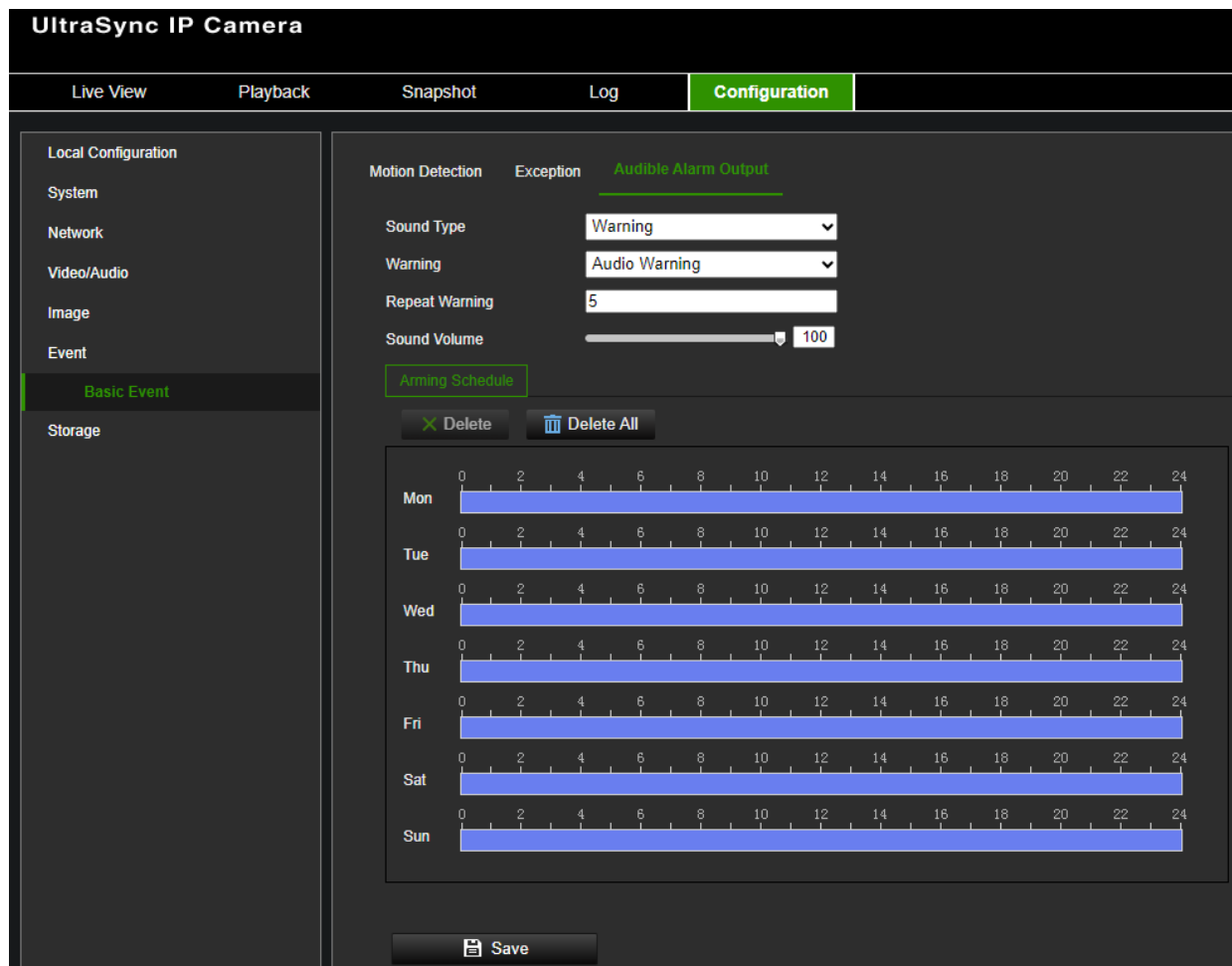
1. Click **Configuration > Event > Basic Event > Exception**.
2. Under **Exception Type**, select an exception type from the drop-down list.
3. Specify the actions when an event occurs. Select one or more response actions when an exception alarm is triggered.

Send Email	Send an email to a specified address when there is a motion detection alarm. Note: You must configure email settings before enabling this option. See “To set up the email parameters” on page 28 for further information. If you want to send the event snapshot together with the email, check the Attached Snapshot option.
Notify Alarm Recipient	Send an exception or alarm signal to remote management software when an event occurs.

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

Audible Alarm Output

The camera can trigger a pre-defined or custom audio alert when an event occurs.



To set up the audible alarm output:

1. Click **Configuration > Event > Basic Event > Audible Alarm Output**.
2. Choose the desired **Sound Type**. You can choose between **Warning** or **Prompt**. **Warning** generates a siren sound while **Prompt** is a short beep.
3. Set the **Repeat Warning** for the audio alarm
4. Adjust the **Sound Volume** slider to the desired level
5. Configure the **Arming Schedule** to define when audio can be triggered
6. Click **Save** to save changes.

Storage

Camera streams can be recorded on an optional recording device, NAS, or SD card inserted into the camera.

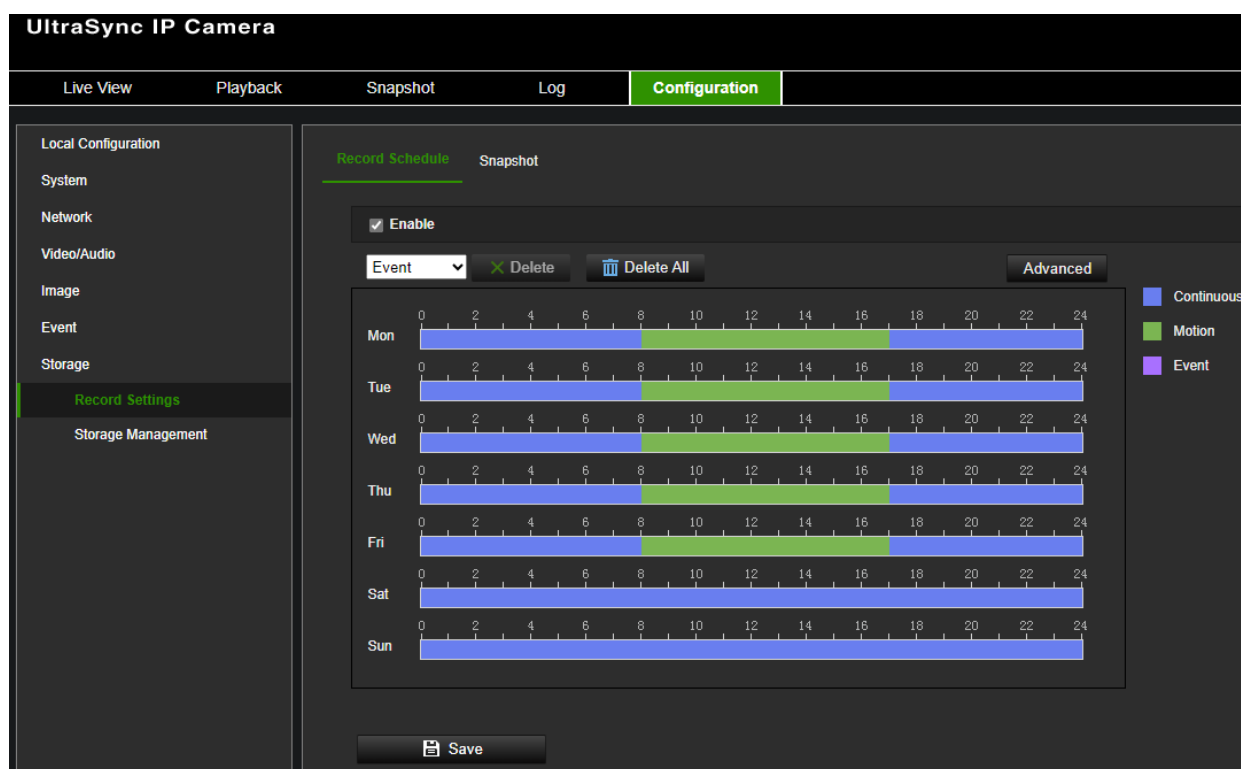
Record Settings

Configure recording and snapshot parameters in this menu.

You can define a recording schedule for the camera in the “Record Schedule” window (see Figure 8 below). The video recordings are saved onto an SD card inserted in the camera or a NAS. The camera’s SD card can provide a backup in case of network failure. The SD card is not provided with the camera.

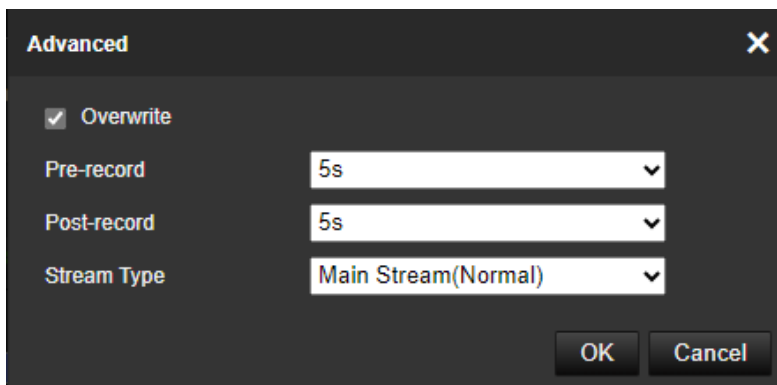
Different recording modes can be defined in the schedule.

Figure 8: Record schedule window



Click the **Advanced** button to open additional recording settings that allow you to set pre-record and post-record times.

Figure 9: Record schedule - Advanced window

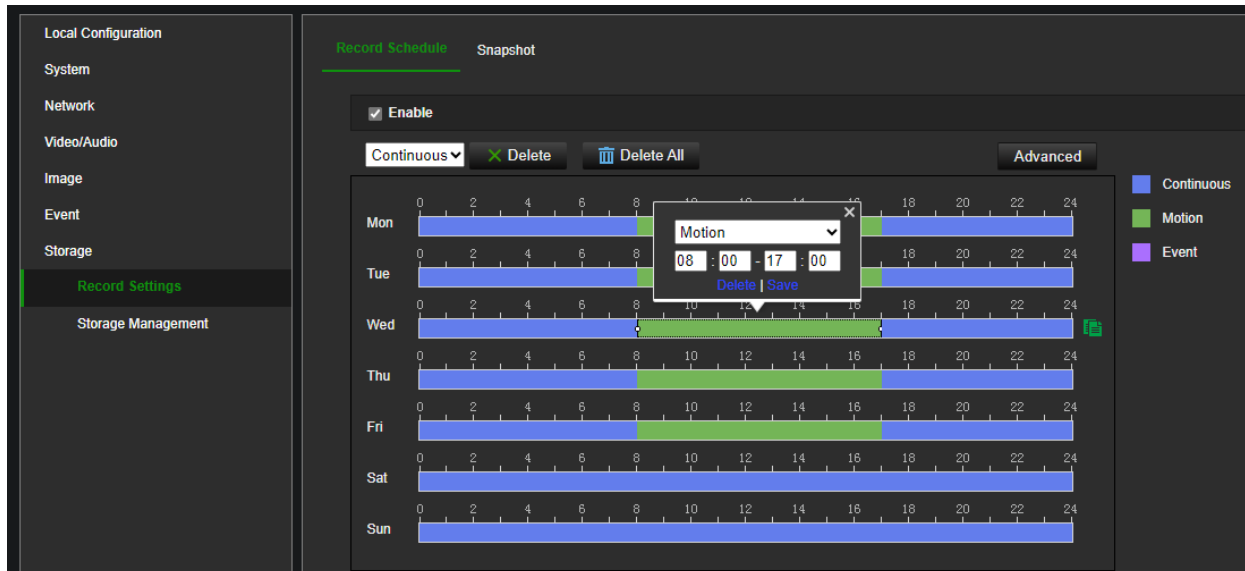


Pre-record time	The pre-record time is set to start recording before the scheduled time or event. For example, if an alarm-triggered recording at 10:00, and the pre-record time is set to 5 seconds, the camera starts to record at 9:59:55. The pre-record time can be configured as No Pre-record, 5 s, 10 s, 15 s, 20 s, 25 s, 30 s, 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 to 5 seconds, the camera records until 11:00:05. The post-record time can be configured as 5 s, 10 s, 30 s, 1 min, 2 min, 5 min, or 10 min.
Stream type	Main stream is always selected since the camera only supports main stream recording on the SD Card.

To set up a recording schedule:

1. From the menu toolbar, click **Configuration > Storage > Record Settings > Record Schedule**.
2. Select the **Enable** check box to enable recording.
Note: To disable recording, disable the option.
3. Configure the recording schedule.

From the drop-down list, select the desired type of recording. Then drag the mouse along the timeline of a day of the week to mark the period of the recording. Click the recording timeline to get the following pop-up window:



4. Enter the exact start and end times of the recording. If required, you can also change the type of recording.
 - **Continuous:** This is continuous recording.
 - **Motion:** Video is recorded when motion is detected.
 - **Event:** Video will be recorded when any type of event is triggered.
5. Set the recording periods for the other days of the week if required. Click **OK**.
Click **Copy** to copy the recording periods to another day of the week.
6. Click the **Advanced** button and set the desired pre- and post-record times stream type and auto-delete mode. Click **Save to save the changes** and return to the main recording schedule menu.
7. Click **Save** to save changes.

Snapshot (Scheduled snapshots)

You can configure scheduled snapshots and event-triggered snapshots. The captured snapshots can be stored on the SD card (if installed) or a NAS. You can also upload the snapshots to an FTP server.

You can set up the format, resolution, and quality of the snapshots. The quality can be low, medium, or high.

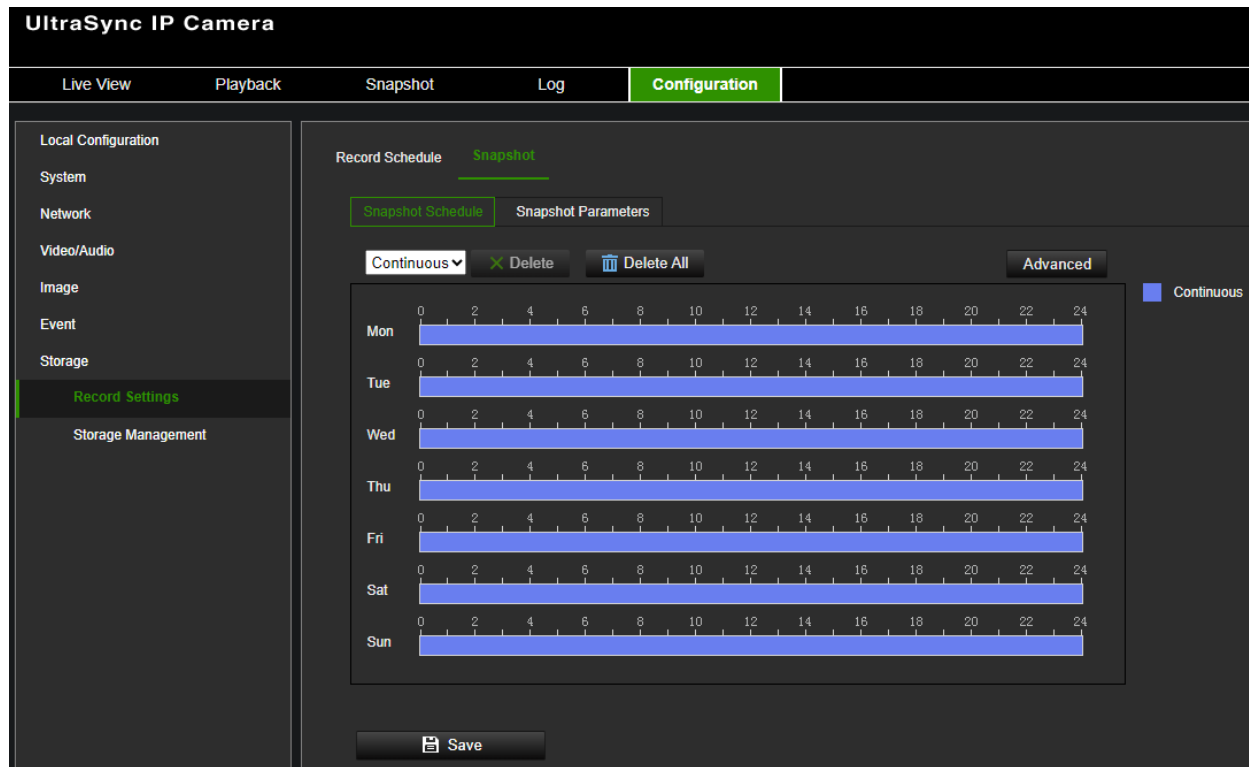
You must enable the option **Enable Timing Snapshot** if you want snapshots to be uploaded with a fixed interval to the FTP server. If you have configured the FTP settings and enabled **Upload Type** in the **Network > Advanced Settings > FTP** tab, the snapshots will not be uploaded to the FTP if the **Enable Timing Snapshot** option is disabled.

You must enable the option **Enable Event-Triggered Snapshot** if you want snapshots to be uploaded to the FTP and NAS when motion detection, VCA event, or an alarm input is triggered. If you have configured the FTP settings in **Network > Advanced Settings > FTP** and selected the action **Upload to FTP/Memory Card/NAS** for motion detection, VCA, or alarm input, the snapshots will be uploaded to the FTP server.

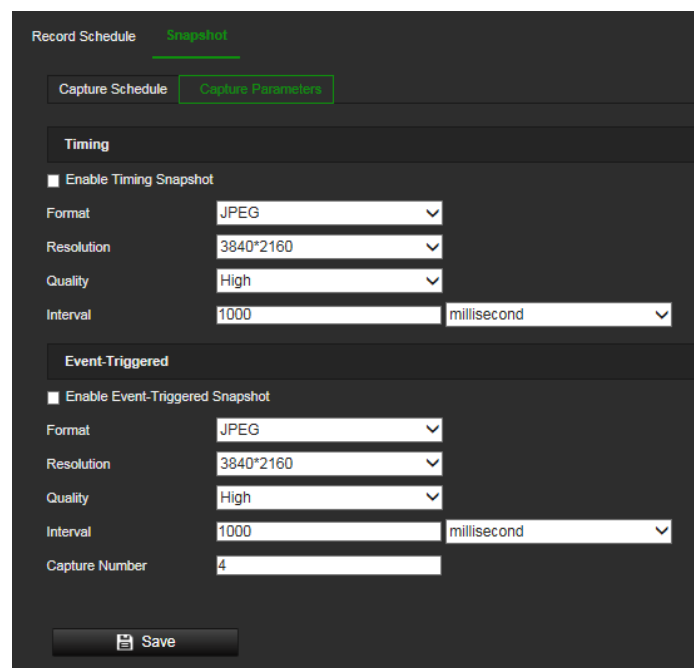
To set up continuous and event-triggered snapshots:

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

Note: *Continuous* is the only recording type available.



2. Click and drag the mouse on the timeline bar of the desired days to set the capture schedule.
3. Click **Advanced** to select the stream type.
4. Select the **Capture Parameters** tab to configure the captured snapshot parameters.



5. In the *Timing* section, select the parameters for continuous snapshots:
 - a) Select the **Enable Timing Snapshot** check box.
 - b) Select the desired format of the snapshot. Default is JPEG.
 - c) Select the desired resolution and quality of the snapshot.
 - d) Enter the time interval between two snapshots. Select the unit of time from the drop-down list: milliseconds, seconds, minutes, hours, or days.

In the *Event-Triggered* section, select the parameters for event-triggered snapshots:

- a) Select the **Enable Event-Triggered Snapshot** check box.
 - b) Select the desired format of the snapshot. Default is JPEG.
 - c) Select the desired resolution and quality of the snapshot.
 - d) Enter the time interval between two snapshots. Select the unit of time from the drop-down list: milliseconds, seconds, minutes, hours, or days.
6. Under **Capture Number**, enter the total number of snapshots that can be taken.
 7. Click **Save** to save changes.

Storage Management

SD card and NAS parameters can be managed in the Storage Management menu.

HDD Management

Use the HDD management window to display the capacity, free space available, and the working status of the HDD of the NAS and the SD card in the camera. You can also format these storage devices.

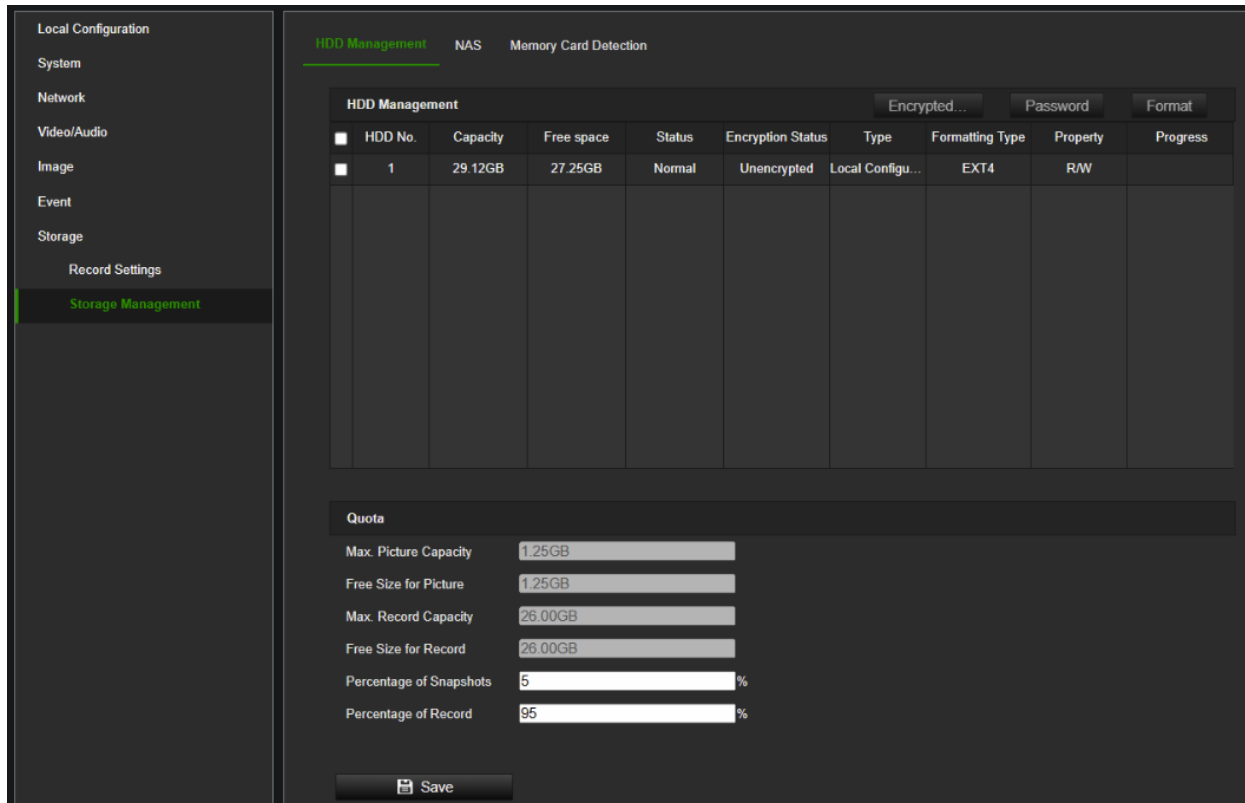
Before formatting the storage device, stop all recording. Once formatting is completed, reboot the camera otherwise the device will not function properly.

To ensure efficient use of the storage space available on HDDs, you can control the camera's storage capacity using HDD quota management. This function lets you allocate different storage capacities for main stream/substream recordings and snapshots.

Note: If the overwrite function is enabled, the maximum capacity for both recordings and snapshots is set to zero by default.

To format the storage devices:

1. Click **Configuration > Storage > Storage Management > HDD Management**.



2. Select the **HDD No.** to select the storage.
3. To format in standard mode, click **Format**.
To perform encrypted formatting, click the **Encrypted format** button.
4. Click **OK** and enter the admin password to start the formatting process.
5. Select an HDD and do one of the following steps
 - a) If the disk status is Uninitialized, click **Initialize** to initialize it. When initialization is finished, the status becomes Normal.
 - b) If the disk status is Unencrypted, click **Encrypted Format** to format it. The encryption password needs to be set during this process.
 - c) The status of the encrypted memory card is Encrypted or Verification Failed. If the status is *Verification Failed*, click **Password**, and enter a password for verification. If the verification is successful, the status becomes Encrypted.

Important note: After a factory default, the camera won't be able to automatically store data on the SD card when this SD card was previously formatted in encrypted mode. After the camera is reset to factory default you must go to the format menu and click the **Password** button and enter the encryption password to grant access for the camera to the encrypted SD card. If the encryption password is lost and you want to reuse the SD card, you must reformat the SD card which will erase all data.

To set the quota storage for recordings and snapshots:

1. Click **Configuration > Storage > Storage Management > HDD Management**.

2. Enter the quota percentage for snapshots and main stream/substream recordings.
3. Click **Save** and refresh the browser page to activate the settings.

NAS

You can use a network storage system (NAS) to remotely store recordings.

To configure record settings, please ensure that you have a network storage device.

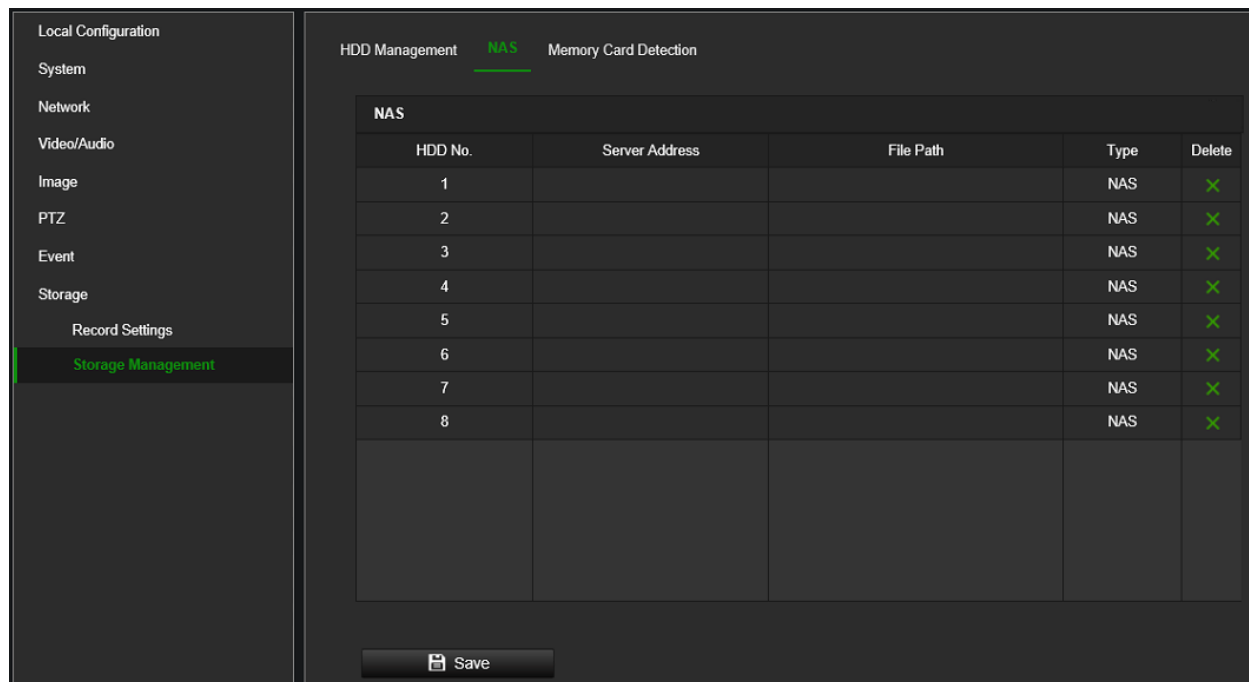
The NAS disk should be available within the network and correctly configured to store the recorded files, log files, etc.

Notes:

- Up to eight NAS disks can be connected to the camera.
- The recommended capacity of NAS should be between 9GB and 2TB as otherwise, it may cause formatting failure.

To set up a NAS system:

1. Click **Configuration > Storage > Storage Management > NAS**.



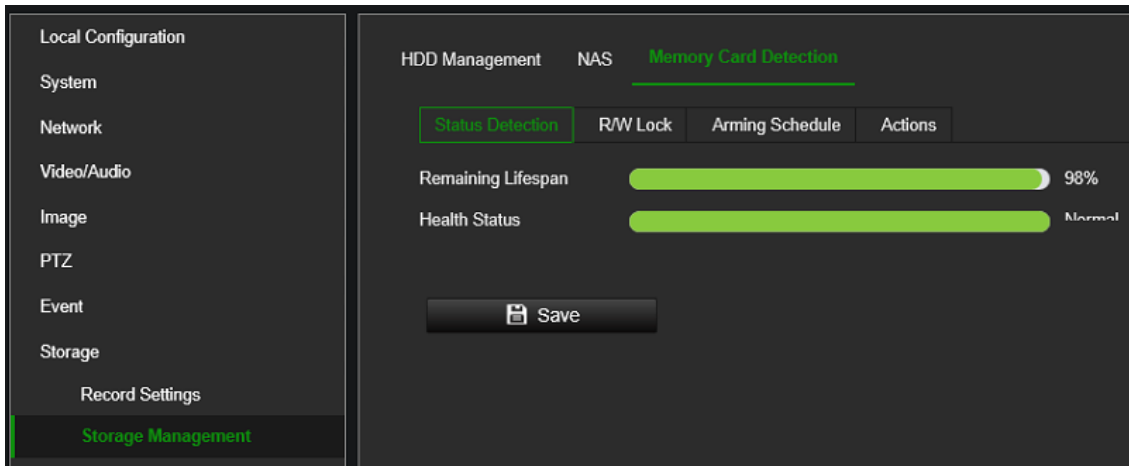
2. Enter the IP address of the network disk and the NAS folder path.
3. Click **Save** to save changes.

To check the SD card status:

1. Click **Configuration > Storage > Storage Management > Memory Card Detection**.

The health status and estimated lifespan of the SD Card are displayed.

Actions can be triggered in case the health status or lifespan of the SD card is below its acceptable threshold.



Camera operation

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

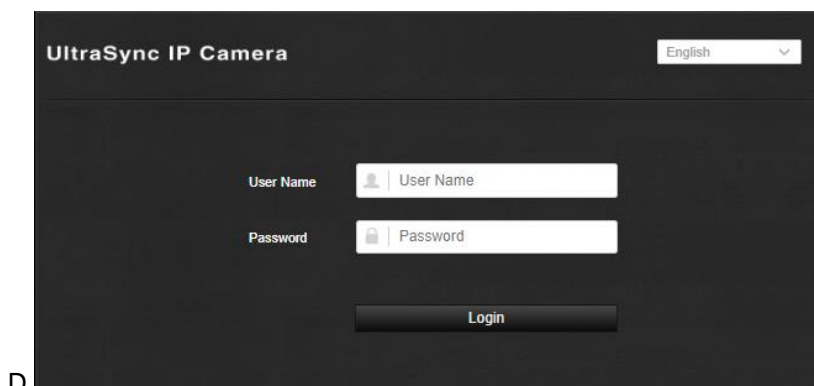
Login and Logout

You can easily log out of the camera browser window by clicking the Logout button on the menu toolbar. You will be asked each time to enter your user name and password when logging in.

Note: When an incorrect username or password has been entered, a message appears showing how many login attempts remain (“Incorrect user name or password. By default, the device will be locked after 3 failed login attempts.”). From a security perspective, we recommend that you leave this setting to default, but login settings can be changed under **Configuration > System > Security > Security Service**.

You can change the language of the interface from the drop-down menu in the top right corner of the window.

Figure 10: Login dialog box














Live view mode

Once logged in, click “Live View” on the menu toolbar to access live view mode. See Figure 11 on page 61 for the description of the interface.

Figure 11: Live view window



Name	Description
1. Live view	Click to view the live video.
2. Playback	Click to play back video. See “Play back recorded video” on page 62 for more information.
3. Snapshot	Click to search snapshots . See “Snapshot” on page 65 for more information.
4. Log	Click to search for event logs. There are three main types: Alarm, Exception, and Operation. See “Log” on page 66 for more information.
5. Configuration	Click to display the configuration window for setting up the camera.
6. Viewer	View live video. Time, date, and camera name are displayed here.
7. Download Plug-in	Click to download and install the web plugin recommended for plugin-free browsers. This button only appears in non-Internet Explorer browsers. PC internet connection is required.
8. Admin	Displays current user logged on.
9. Logout	Click to log out from the system. This can be done at any time.
10. Live view toolbar	<ul style="list-style-type: none">  Click to start/stop live view.  Click to manually capture a snapshot.  Click to manually start/stop recording. The recording is stored in the directory you have configured.  Click to start/stop the digital zoom function.  Live view with main stream, substream, or third stream.  Click to select the third-party plug-in. Not supported by all browsers.

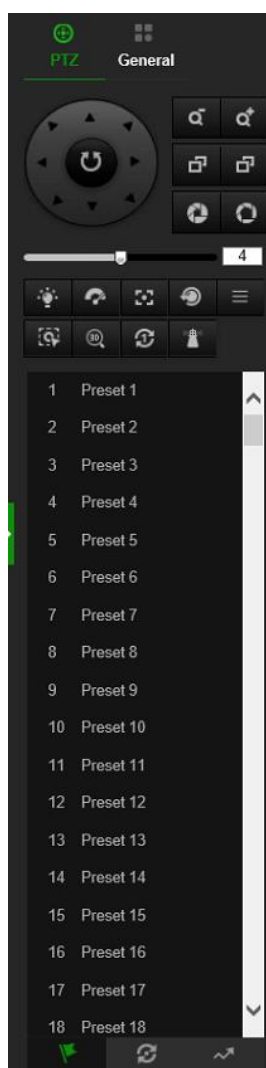
Name	Description
	Turn on/off the microphone.
	Audio on/off and adjust volume/mute.
	Manual alarm
	Pixel counter
	Aspect ratio. Switch window size between 4:3, 16:9, original window size, original ratio, or self-adapt window size.

11. PTZ / General

Configuration options for PTZ and General control panels. These options can be changed from the live view menu. See a description of the control panels below.

Although you can modify the display, OSD, and video/audio settings from the General Control panel, you have greater control of these settings from the Configuration > Image menu.

PTZ control panel



General control panel



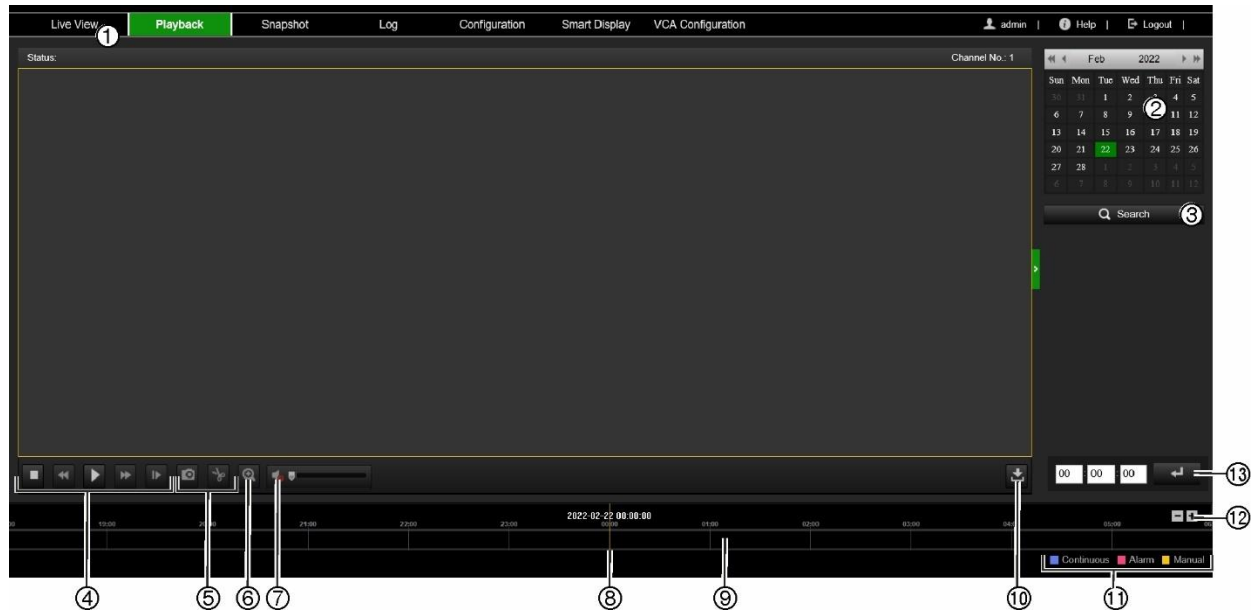
Play back recorded video




You can easily search and play back recorded video in the playback interface.



Note: You must configure NAS or insert an SD card in the camera to be able to use the playback functions.

To search recorded video stored on the camera’s storage device for playback, click **Playback** on the menu toolbar. The Playback window appears. See Figure 12 below.

Figure 12: Playback window




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. Control playback	Click to control how the selected file is played back: play, stop, slow, and fast forward playback.
5. Archive functions	Click these buttons for the following archive actions:  Capture a snapshot image of the playback video.  Start/stop the video clip during playback. Sections of a recording are saved to a local computer folder.
6. Digital zoom	Zoom in and out of the selected camera image.
7. Audio control	Modify the audio level.
8. Timeline	The timeline moves from left (oldest video) to right (newest video). It shows where you are in the playback recording. The current time and date are also displayed.
9. Timeline bar	The timeline bar displays the 24-hour period of the day being played back. It moves from 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 where you want playback to start. The timeline can also be scrolled to earlier or later periods for playback. Click  to zoom out/in the timeline bar. No bar indicates no recording.

Name	Description
10. Download functions	 Download video files.
11. Recording type	The color code displays the recording type. Recording types are schedule recording, alarm recording, and manual recording. The recording type name is also displayed in the current status window.
12. Zoom in/out	Click to zoom in or out of the timeline bar.
13. Jump start	Enter a precise time in the box and click  to jump start the playback from this selected time.


To play back recorded video

1. From the menu toolbar, click **Playback**.
2. Select the date and click the **Search** button. The searched video is displayed in the timeline.
3. 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: You must have playback permission to play back recorded images. See “Assign permissions to the user” on page 20 to permit playback of recorded video files.

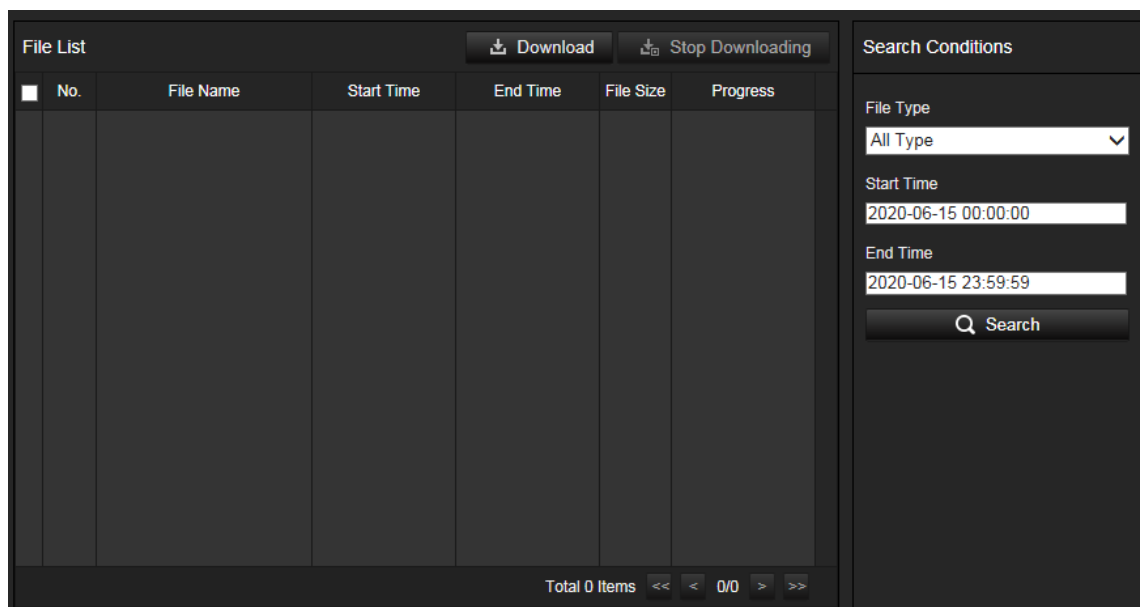
4. Select the date and click the **Search** button to search for the required recorded file.
5. Click **Search** to search the video file.
6. In the pop-up window, select the box of the video file and click  to download the video files.

To archive a recorded video segment during playback:

1. From the menu toolbar, click **Playback**.
2. While playing back a recorded file, click  to start clipping. Click it again to stop clipping. A video segment is created.
3. Repeat step 2 to create additional segments. The video segments are saved on your computer.

To archive recorded video files:

1. Click  to open the recorded file search window.



2. Select the file type and set the start and end times.
3. Click **Search** to search for the recorded video files.
4. Select the desired video files and click **Download** to download them. Downloading files from a NAS or SD card can take some time. A progress bar will be displayed to indicate the download progress.

Snapshot

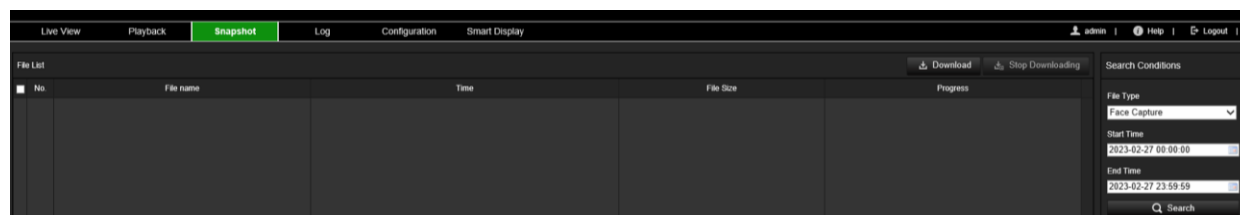
Click **Snapshot** on the menu toolbar to enter the window to search for snapshots. You can search, view, and download the snapshots stored in the NAS or memory card storage.

Notes:

- Make sure the HDD, NAS, or memory card is correctly configured before you process the snapshot search.
- To store snapshots, a capture schedule needs to be configured.

To search recorded snapshots:

1. From the menu toolbar, click **Snapshot**.



2. From the **File Type** drop-down list, select the file type for which you want to search: Continuous, Motion, Alarm, Face Capture, Cross Line Detection, Intrusion Detection, etc.
3. Select the start and end times.
4. Click **Search** to find the matching files.
5. In the list of snapshots, select the check box of the files you need and click **Download**.

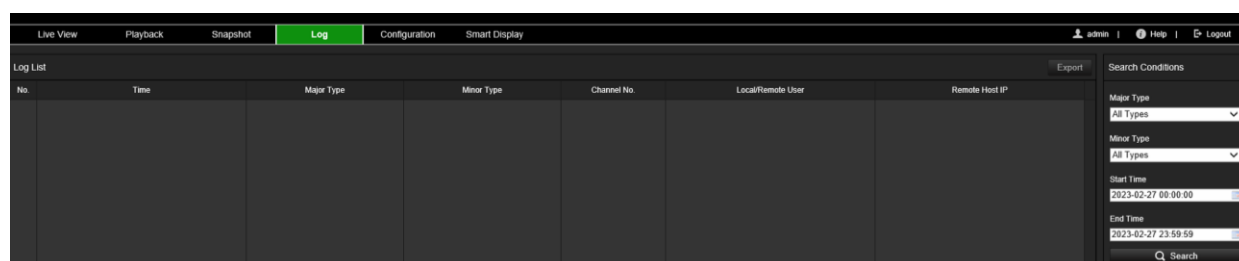
Log

You must configure NAS or install an SD card in the camera to be able to search for log events from the camera.

The number of event logs that can be stored on a NAS or SD card depends on the capacity of the storage devices. When this capacity is reached, the system will start overwriting older logs. To view log events stored on storage devices, click **Log** on the menu toolbar to open the log menu.

Note: The user must have viewing log access rights to search and view logs. See “Assign permissions to the user” under “User Management” on page 20 to permit the user to search and view logs.

Figure 13: Log window



You can search for recorded log events by the following criteria:

Major Type: There are three types of logs: Alarm, Exception, and Operation. You can also search All. See Table 1 below for their descriptions.

Minor Type: Each major type has some minor types which can help to refine your search. See Table 1 below for their descriptions.

Start Time and End Time: Set the time window in which you want to search for log events.

Table 1: Types of logs

Log type	Description of events included
Alarm	Start Motion Detection, Stop Motion Detection, Start Tamper-proof, Stop Tamper-proof
Exception	Invalid Login, HDD Full, HDD Error, Network Disconnected and IP Address Conflicted

Log type	Description of events included
Operation	Power On, Unexpected Shutdown, 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 Export Config File, Remote Import Config File, Remote Get Parameters, Remote Get Working Status, Start Bidirectional Audio, Stop Bidirectional Audio, Remote Alarm Arming, Remote Alarm Disarming

To search logs:

1. From the menu toolbar, click **Log**.
2. In the **Major Type** and **Minor Type** drop-down list, select the desired options.
3. Set the start and end times of the log.
4. Click **Search** to start the search operation. The results appear in the left window.

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