Hanwha Vision

Hanwha Vision Plug-in

User Manual

For Milestone

CE

About This User Manual

This manual describes how to register a **Hanwha Vision**'s product, how to install the **Hanwha Vision Plug-in**, and how to use them in **Milestone XProtect**. Please read this manual carefully before using the product for proper use.

- This document explains how to use the product based on its defaults and default screens.
- The content in this document is subject to change depending on the product software updates and company policies and to partial changes without prior notification to users.

Target Audience

This manual contains information for the operator using the products of **Hanwha Vision** and the **Milestone XProtect** program of **Milestone**.

- Please refer to the official **Milestone** website (www.milestonesys.com) for more information on how to install and set up the **Milestone XProtect** program.

Product Usage

Users of this product can perform the following functions:

- Search for object (person/face/vehicle/license plate/Wisenet Road AI/user defined/AI pack/barcode) detection events analyzed via AI cameras and its video playback
- Control for various camera functions
- Linking various events from IP audio devices and **Milestone XProtect**
- Intercom device control and event management

The **Hanwha Vision Plug-in** is based on the **Hanwha Vision**'s products and the **Milestone XProtect** program of **Milestone**. Please refer to the following sites for details.

- **Hanwha Vision**: www.HanwhaVision.com
- **Milestone**: www.milestonesys.com

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Learn about the Hanwha Vision Plug-in

What is the Hanwha Vision Plug-in?

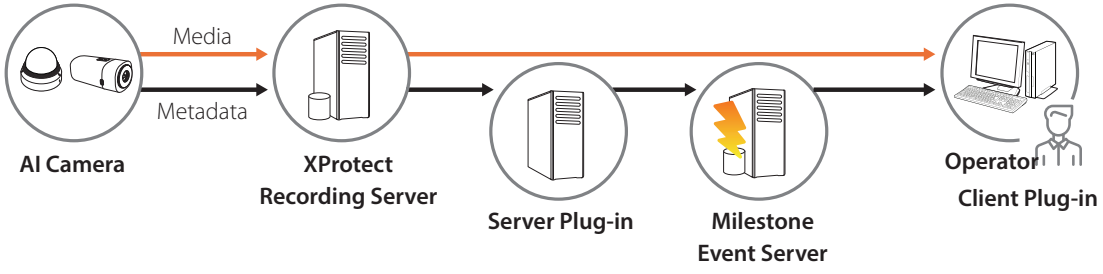
The **Hanwha Vision Plug-in** provides the following functions:

- **Search for object detection events of AI cameras and playback of videos**
  The plug-in uses the detailed object conditions to search for object (person/face/vehicle/license plate/Wisenet Road AI/user defined/AI pack/barcode) detection events analyzed by AI cameras in the **Milestone XProtect** program and plays back the desired video.
- **Control for various camera functions**
  Various functions supported by the camera can be used in **Milestone XProtect**.
- **Linking various events from IP audio devices and Milestone XProtect**
  By linking events from IP audio devices of Hanwha Vision and **Milestone XProtect**, the set audio source can be played when an event occurs.
- **Intercom device control and event management**
  You can answer any call request from an intercom device and view the call history.

Note
The **Hanwha Vision Plug-in** was developed using the Milestone MIP SDK.

Learn about the Hanwha Vision Plug-in System Configuration

The **Hanwha Vision Plug-in** consists of the following:



- **AI Camera**: A camera that supports AI analytics.
- **XProtect Recording Server**: Videos and data for the Milestone XProtect program are saved and managed.
- **Server Plug-in**: A plug-in that sends events analyzed by the AI camera to the Milestone Event Server.
- **Milestone Event Server**: Events of the Milestone XProtect program are managed.
- **Client Plug-in**: A plug-in that adds an AI event search menu to the XProtect Smart Client program.
- **Operator**: A PC that operates the Milestone XProtect program.

System Requirements

The following are the system requirements for running the **Hanwha Vision Plug-in**:

- XProtect

OS	XProtect Version	XProtect License
Windows 10 64 bit Windows 11 64 bit	2022 R3 or higher	Expert, Corporate, Express+, Professional+

- .Net Framework 4.8 or later

Supported Devices

The following are the products that support the **Hanwha Vision Plug-in**:

Note

- The devices marked with an asterisk (*) offer additional support for search.
- The supported AI attributes and detailed functions vary depending on the camera model. Please refer to your camera's specifications for more information.

AI box

AIB-800*

Intercom

TID-600R

IP audio

SPA-C100B, SPA-C100W, SPA-C110B, SPA-C110W, SPA-H100B, SPA-H100W, SPA-P100B, SPA-P100W, SPA-W100B, SPA-W100W, SPA-S1000, SPA-S2000

Audio beacon

SPS-A100M*

Network camera

- **P series**

PNB-A6001*, PNB-A9001*, PNB-A9001LP*, PND-A6081RF*, PND-A6081RV*, PND-A9081RF*, PND-A9081RV*, PND-A9081RVG*, PNM-C12083RVD*, PNM-C16013RVQ*, PNM-C16083RQZ*, PNM-C16083RVQ*, PNM-C32083RQZ*, PNM-C32083RVQ*, PNM-C34404RQPZ*, PNM-C7083RVD*, PNM-C9022RV*, PNO-A6081R*, PNO-A9081R*, PNO-A9081RG*, PNO-A9081RLP*, PNO-A9311R*, PNO-A9311RLP*, PNV-A6081R*, PNV-A9081R*, PNV-A9081RLP*

- **X series**

XNP-6400, XNP-6400R, XNP-6400RW, XNP-8250, XNP-8250R, XNP-8300RW, XNP-9250, XNP-9250R, XNP-9300RW, XNB-6003*, XNB-8003*, XNB-9003*, XND-6083RV*, XND-8083RV*, XND-8093RV*, XND-9083RV*, XND-A8084RV*, XND-A9084RV*, XND-C6083RV*, XND-C7083RV*, XND-C8083RV*, XND-C9083RV*, XNF-9013RV*, XNO-6083R*, XNO-6123R*, XNO-8083R*, XNO-9083R*, XNO-A8084R*, XNO-A9084R*, XNO-C6083R*, XNO-C7083R*, XNO-C8083R*, XNO-C9083R*, XNP-C6403*, XNP-C6403R*, XNP-C6403RW*, XNP-C8253*, XNP-C8253R*, XNP-C8303RW*, XNP-C9253*, XNP-C9253R*, XNP-C9303RW*, XNV-6083R*, XNV-6083RZ*, XNV-6083Z*, XNV-6123R*, XNV-8083R*, XNV-8083RZ*, XNV-8083Z*, XNV-8093R*, XNV-9083R*, XNV-9083RZ*, XNV-A8084R*, XNV-A9084R*, XNV-C6083*, XNV-C6083R*, XNV-C7083R*, XNV-C8083R*, XNV-C9083R*

- **Q series**

QNP-6250, QNP-6250H, QNP-6250R, QNP-6320, QNP-6320H, QNP-6320R, QNO-C8083R*, QNO-C9083R*, QNV-C8011R*, QNV-C8012*, QNV-C8083R*, QNV-C9011R*, QNV-C9083R*, QNO-6082RLP*, QNV-6082RLP*

- **T series**

TNO-4030TR, TNO-4040TR, TNO-4050T , TNO-L4030TR, TNO-L4040T, TNO-L4040TR, TNO-L4050T, TNB-9000*, TNM-C3620TDR*, TNM-C3622TDR*, TNM-C4940TD*, TNM-C4940TDR*, TNM-C4942TDR*, TNM-C4950TD*, TNM-C4960TD*, TNO-7180RLP*, TNO-C3010TRA*, TNO-C3012TRA*, TNO-C3020TRA*, TNO-C3022TRA*, TNO-C3030TRA*, TNO-C3032TRA*, TNS-9040IBC*, TNS-9050IBC*, TNS-9060IBC*, TNV-C7013RC*

Setting up Camera

Enable AI analytics for the AI camera to run the **Hanwha Vision Plug-in**.

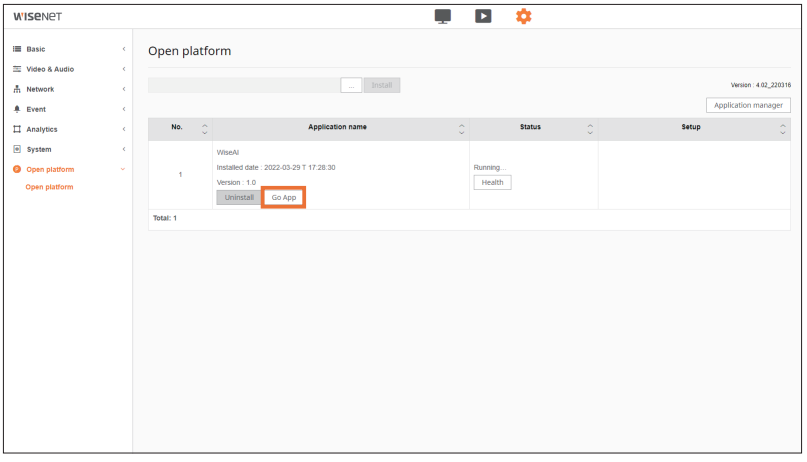
In order to use the AI analytics function, **BestShot** or **DetectionShot** must be enabled.

Note

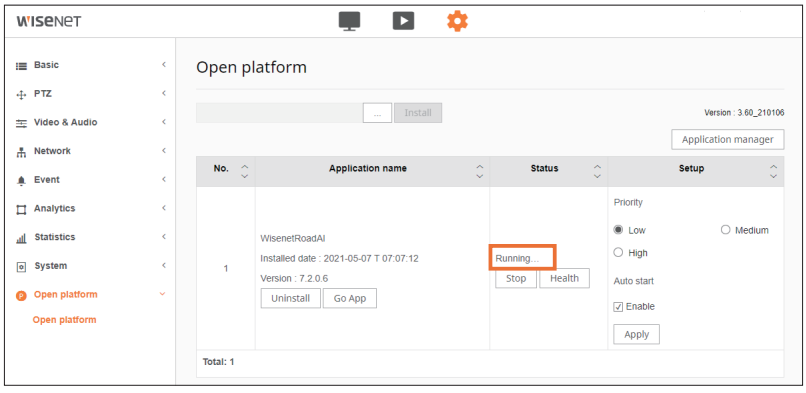
The setting method for object detection may differ depending on the camera model. Please refer to the camera's User Manual for more information.

Setting up in the 'Open platform' Menu

1. Launch the web browser.
2. Enter the IP address of the AI camera. (e.g. http://192.168.9.107)
3. Enter **ID** and **Password** to log in to the camera web viewer.
4. Select **Setup** and click **Open platform** on the left menu.
5. Click **Open platform** and then click **Go App**.



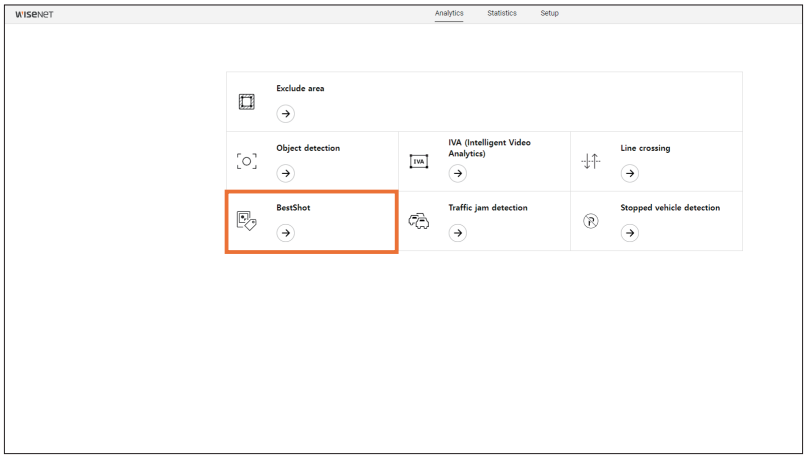
6. Check if the application is running on the **Open platform**.



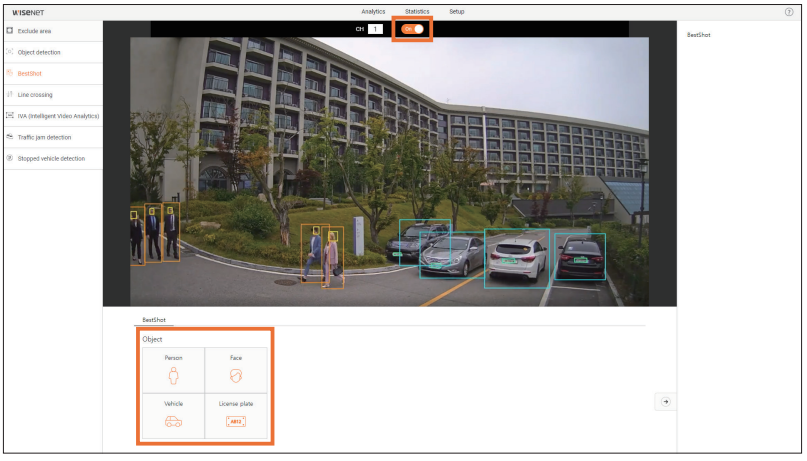
Note

Please refer to the device's User Manual for more information on the application settings and operation.

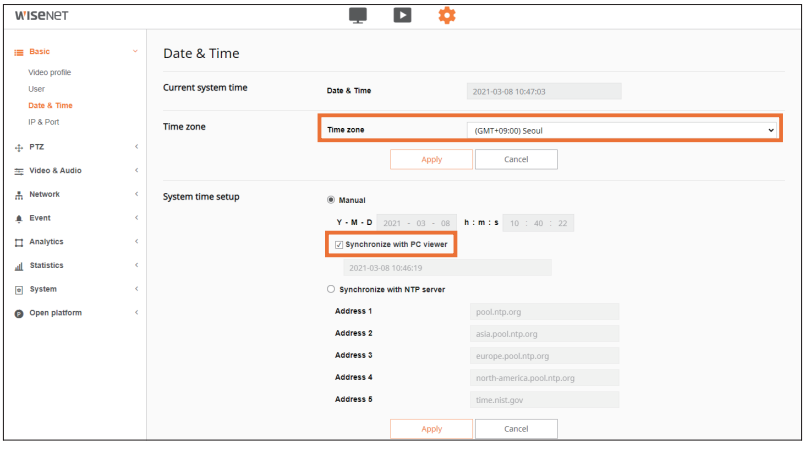
7. Click **BestShot** on the **WiseAI** app screen.



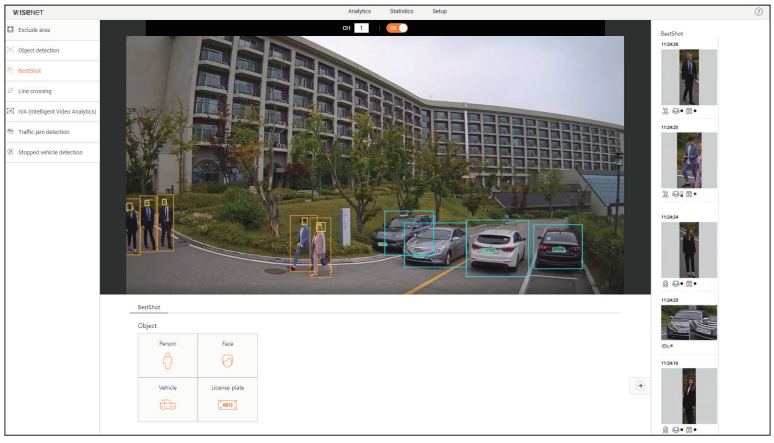
8. Select **On** by clicking the button that enables the function at the top of the screen. On the **BestShot** tab, click the object type you want to detect.



9. Click **Camera web viewer** > **Setup** > **Basic** > **Date & Time**.
Select the **Time zone** identical with the Milestone XProtect Server and click **Apply**.
Check **Synchronize with PC viewer** and click **Apply**.

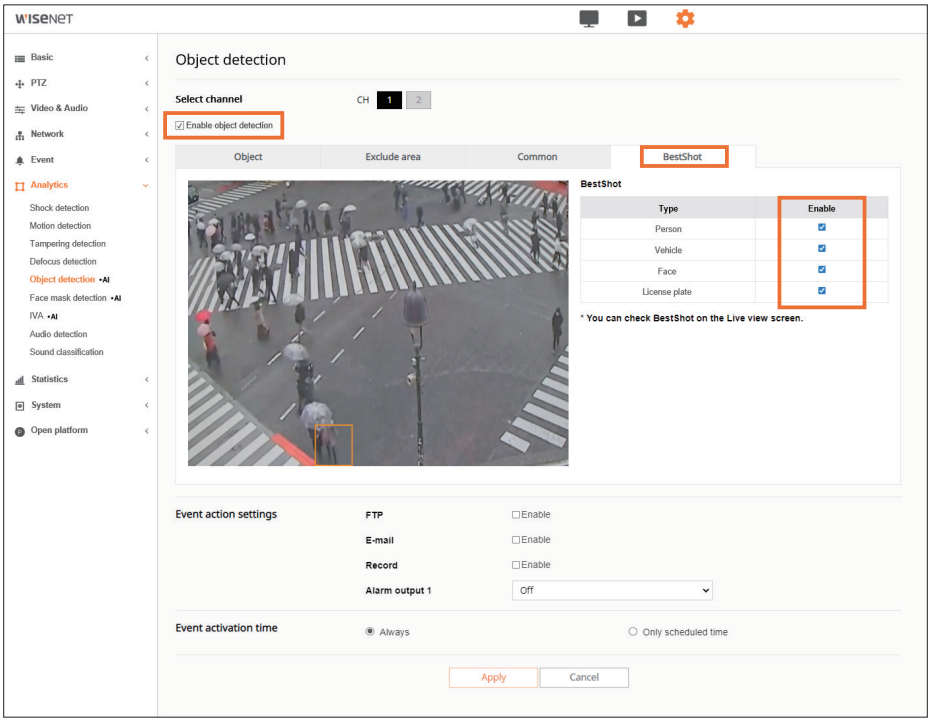


10. Check the BestShot list on the right to see if AI-analyzed events are detected.



Setting up in the 'Analytics' Menu

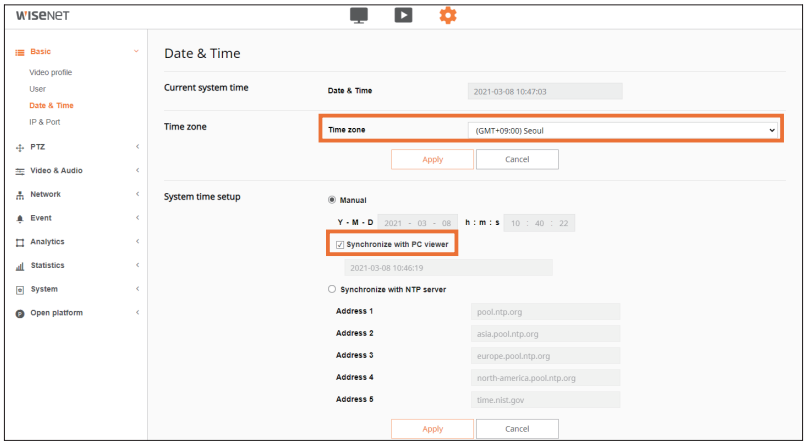
1. Launch the web browser.
2. Enter the IP address of the AI camera. (e.g. http://192.168.9.107)
3. Enter **ID** and **Password** to log in to the camera web viewer.
4. Select **Setup** and click **Analytics** on the left menu.
5. Click **Object detection** and check **Enable object detection** box.
   On the **BestShot** or **DetectionShot** tab, check the **Enable** box for the object type you want to detect.
   Click **Apply**.



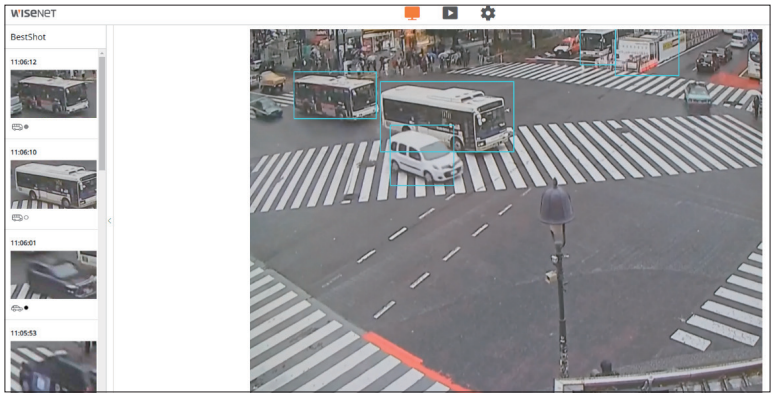
Note

In order to use AI analytics, you must check the **Enable object detection** and **Enable** boxes for the **BestShot** or **DetectionShot** type you want to detect.

6. Click **Camera web viewer** > **Setup** > **Basic** > **Date & Time**.
   Select the **Time zone** identical with the Milestone XProtect Server and click **Apply**.
   Check **Synchronize with PC viewer** and click **Apply**.



7. To see if AI-analyzed events are detected, select **Live** and check the BestShot list on the left.



Note

When the camera supports DetectionShot, press the [**Ctrl+Alt+S**] key to check the image of DetectionShot on the live page for the camera web viewer.

Registering Camera

You must register your AI camera to the **XProtect Management Client** program to use the **Hanwha Vision Plug-in**.

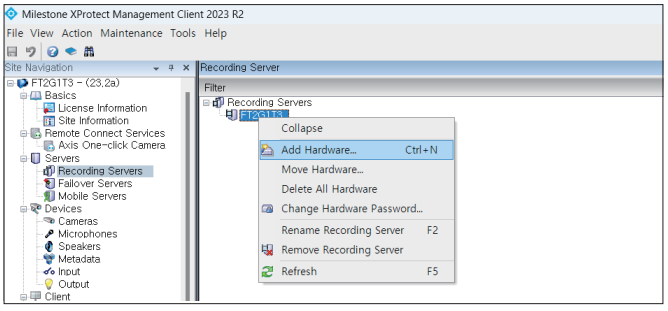
Note

- To play event videos, recording settings must be set for the camera. For more details on recording settings, refer to the user's guide for the Milestone XProtect.
- IPv6 cameras do not support search for AI analytics events.

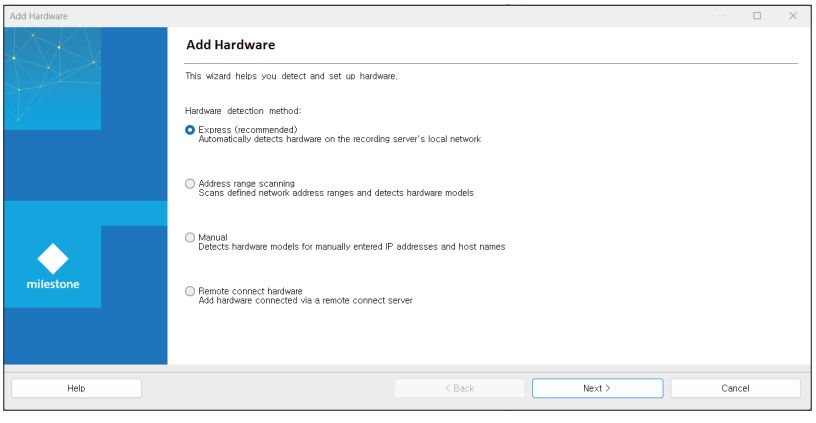
Registering the Camera Automatically

You can automatically search and register your AI camera in the **XProtect Management Client** program.

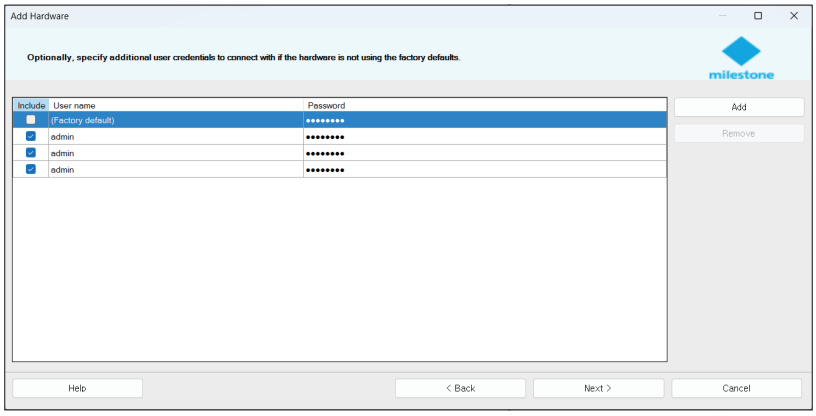
1. Launch the **XProtect Management Client** program.
2. Select **Servers** > **Recording Servers**.
   Select **Add Hardware** from the context menu of the server.



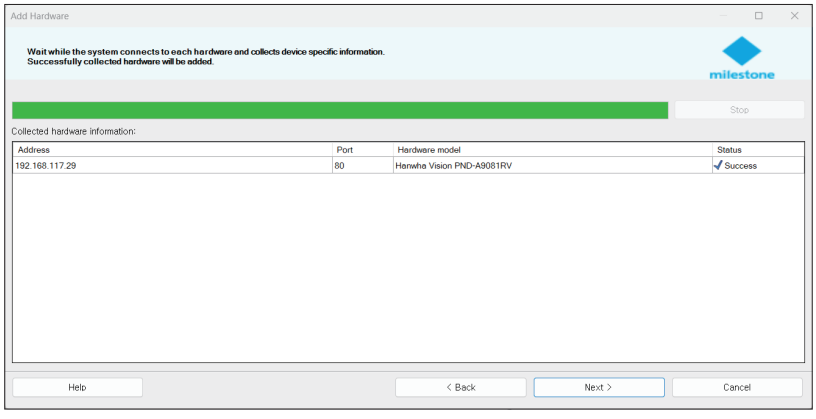
3. Select **Express (recommended)** or **Address range scanning**, and click **Next**.



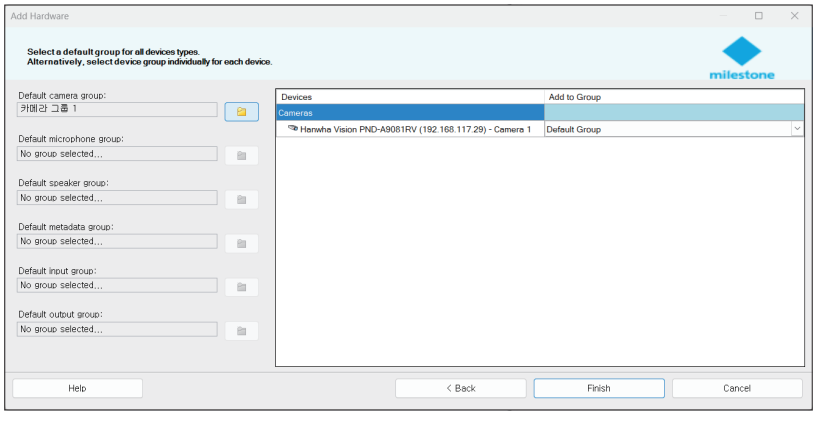
4. Enter a user name and password, and click **Next**.



5. Check if the camera has been properly registered, and click **Next**.



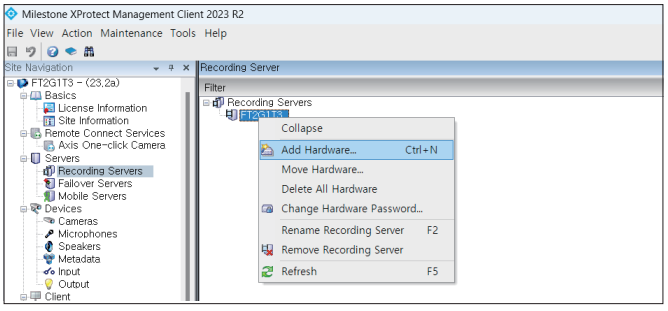
6. Select a group which a device or a device group will belong to. Click **Finish** to complete the camera registration.



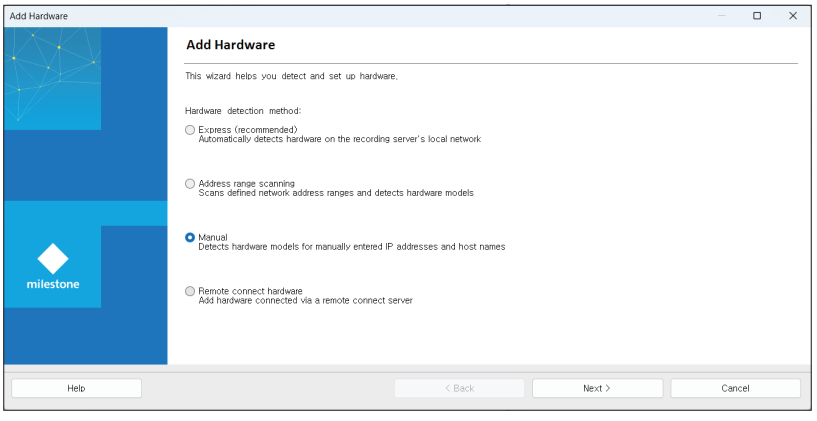
Registering Camera Manually

You can manually enter and register your AI camera's IP address in the **XProtect Management Client** program.

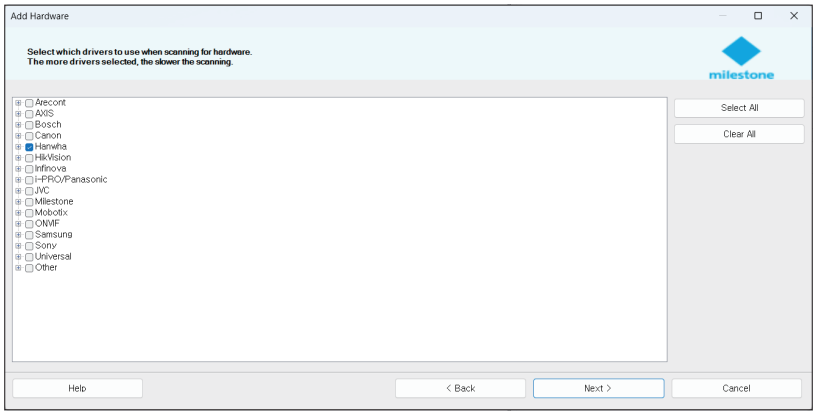
1. Execute the **XProtect Management Client** program.
2. Select **Servers** > **Recording Servers**.
   Select **Add Hardware** from the context menu of the server.



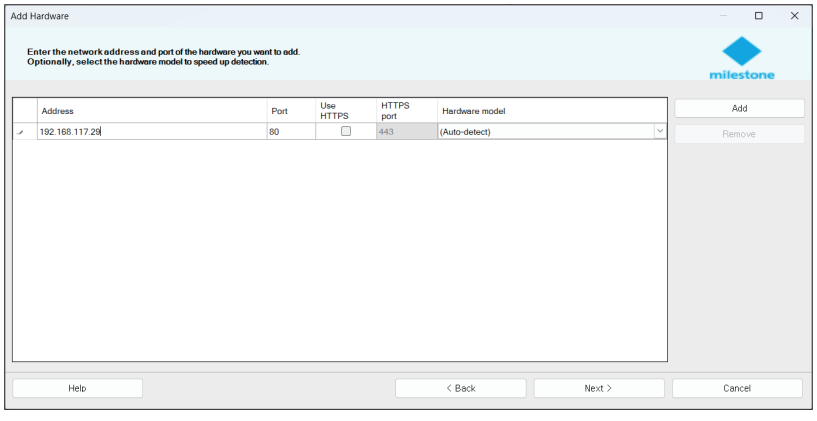
3. Select **Manual**, and click **Next**.



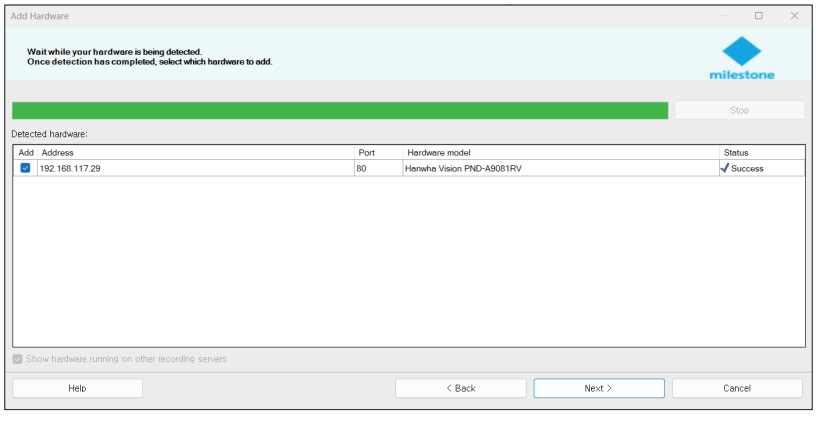
4. Check **Hanwha** and click **Next**.



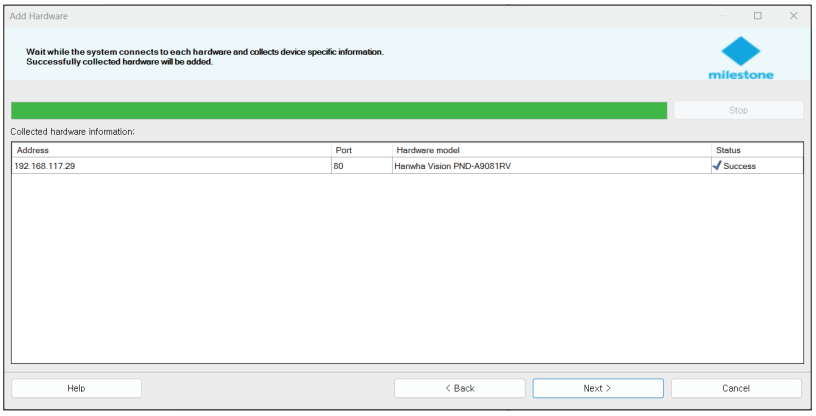
5. Enter the IP address of the AI camera.
   Select **Auto-detect** for **Hardware model**, and click **Next**.



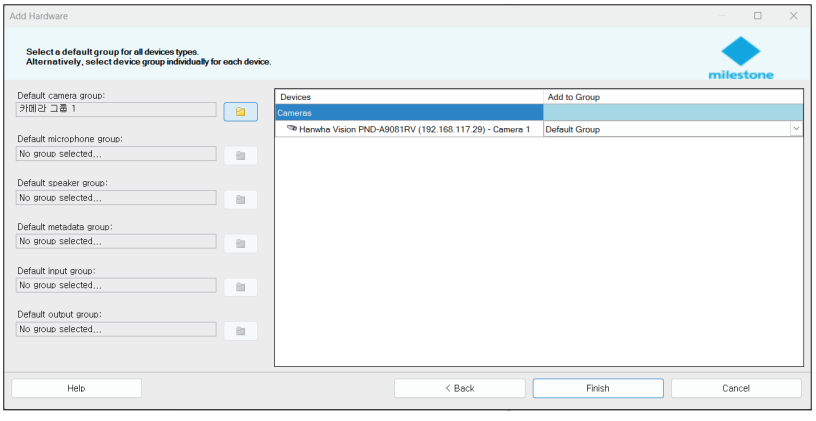
6. Check the detection status of the hardware model, and click **Next**.



7. Check if the camera has been properly registered, and click **Next**.



8. Select a group which a device or a device group will belong to. Click **Finish** to complete the camera registration.

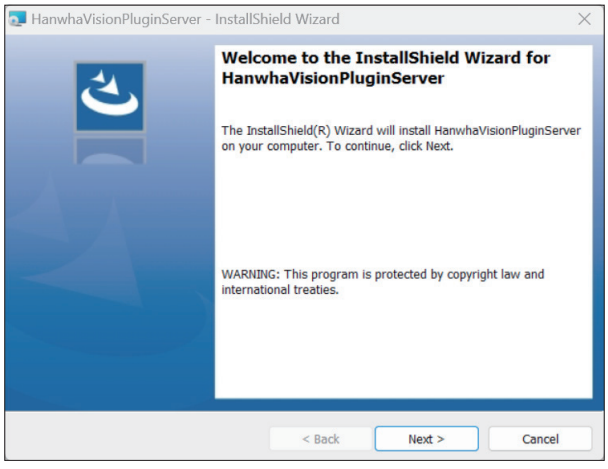


Installing the Hanwha Vision Plug-in

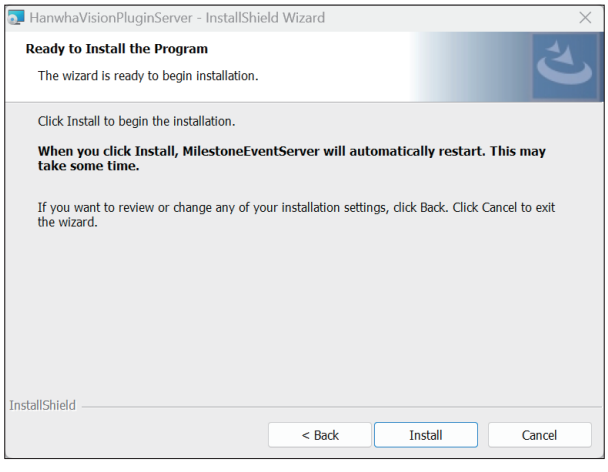
Installing Server Plug-in

The **Server Plug-in** needs to be installed on the **Milestone Event Server**. In order for the **Server Plug-in** to receive AI metadata, the Event Server computer will need to be able to communicate directly with the cameras.

1. Execute the Server Plug-in installation file as administrator.
   When the installation wizard appears, click **Next**.



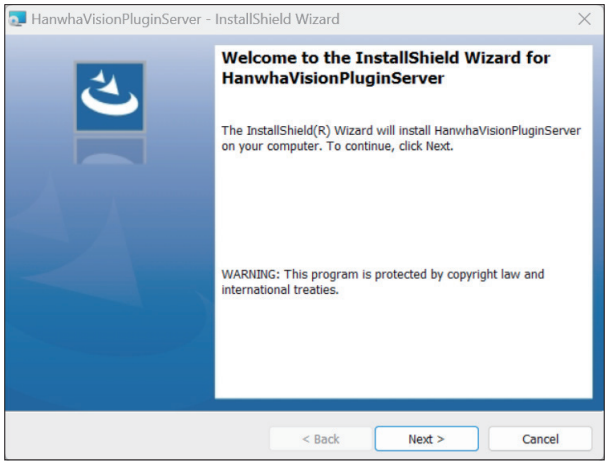
2. Click **Install**.
   The **Milestone Event Server** service is stopped.



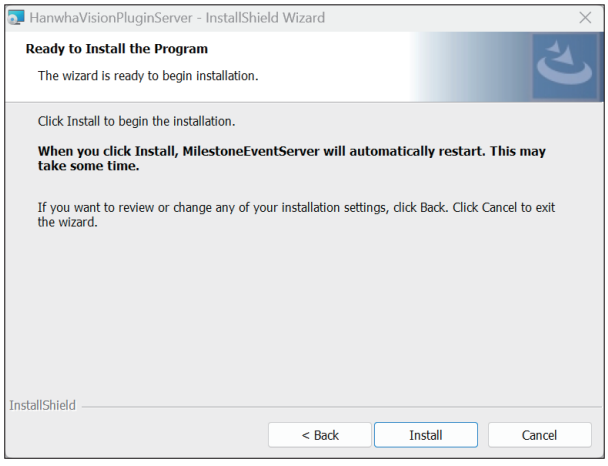
3. After installation, the **Milestone Event Server** service is automatically started again.
   Click **Finish** to end.

Updating Server Plug-in

1. Execute the Server Plug-in installation file as administrator.
   To start updating, click **Next**.



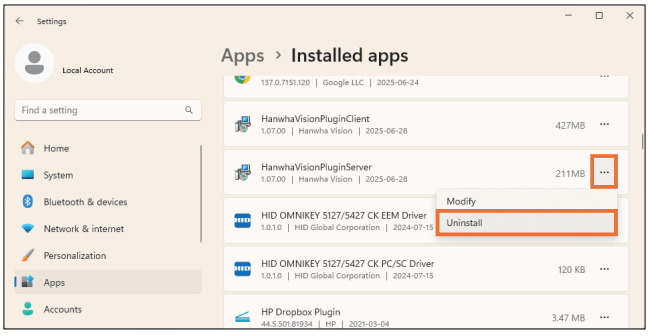
2. Click **Install**.
   The **Milestone Event Server** service is stopped.



3. After update, the **Milestone Event Server** service is automatically started again.
   Click **Finish** to end.

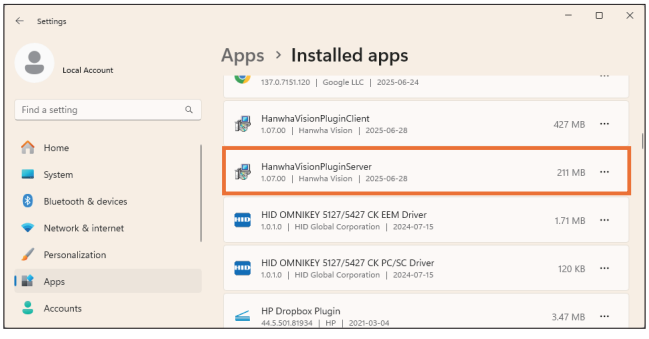
Removing Server Plug-in

Click **Start** > **Setup** > **Apps** > **Apps & Features** or **Installed apps** > **HanwhaVisionPluginServer** > ··· > **Uninstall**.
Then, Server Plug-in will be uninstalled.



Checking Server Plug-in Version

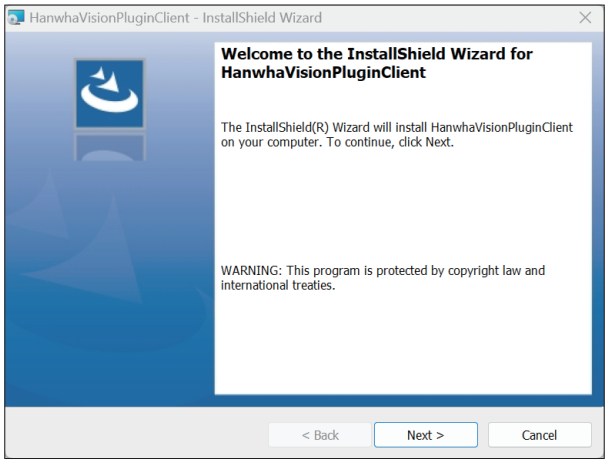
You can check the version information in **Start** > **Setup** > **Apps** > **Apps & Features** or **Installed apps** > **HanwhaVisionPluginServer**.



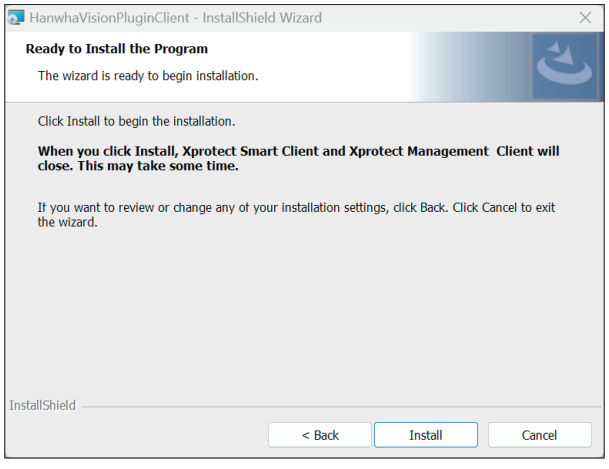
Installing Client Plug-in

The **Client Plug-in** is installed on any PC where the **XProtect Smart Client** program, and the **XProtect Management Client** is installed, and the plugin will be used.

1. Execute the Client Plug-in installation file as administrator.
   When the installation wizard appears, click **Next**.



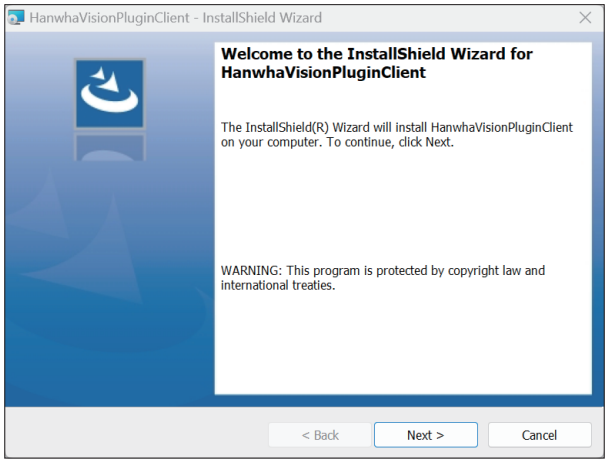
2. Click **Install**.
   The active **XProtect Smart Client** and **XProtect Management Client** programs ends automatically.



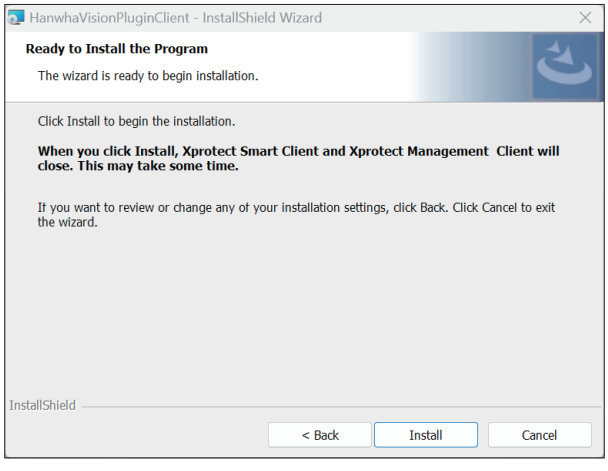
3. After installation, click **Finish** to end.

Updating Client Plug-in

1. Execute the Client Plug-in installation file.
   To start updating, click **Next**.



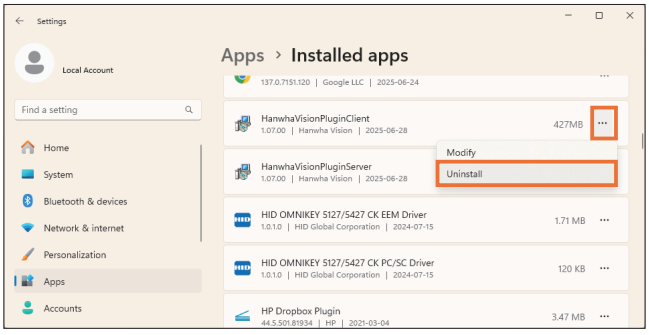
2. Click **Install**.
   The active **XProtect Smart Client** and **XProtect Management Client** programs ends automatically.



3. After update, click **Finish** to end.

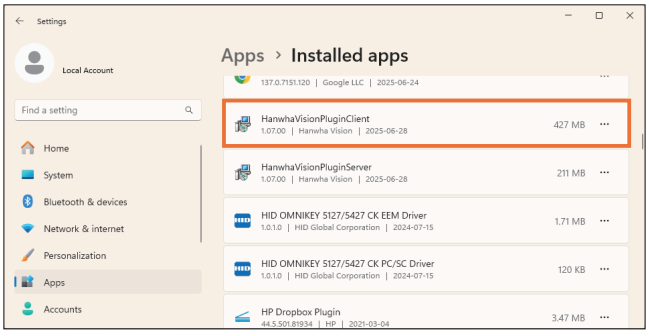
Uninstalling Client Plug-in

1. Close the **XProtect Smart Client** program.
2. Click **Start** > **Setup** > **Apps** > **Apps & Features** or **Installed apps** > **HanwhaVisionPluginClient** > ··· > **Uninstall**.
   Then, Client Plug-in will be uninstalled.



Checking Client Plug-in Version

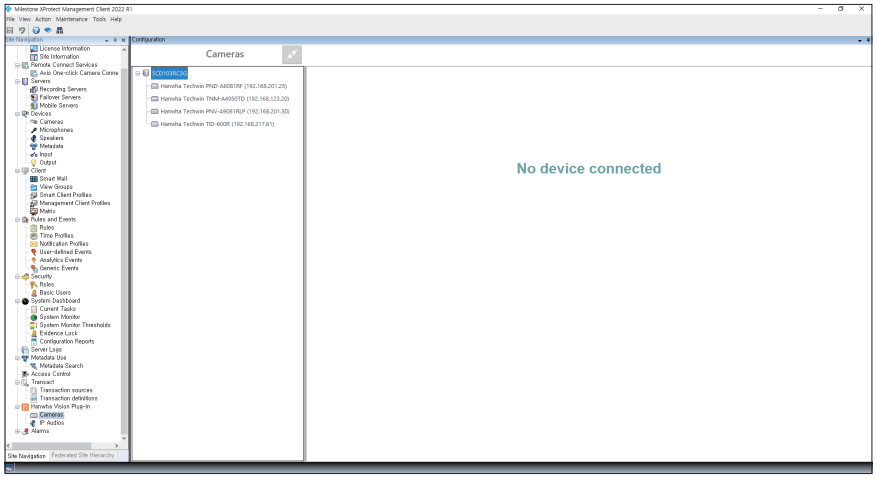
You can check the version information in **Start** > **Setup** > **Apps** > **Apps & Features** or **Installed apps** > **HanwhaVisionPluginClient**.



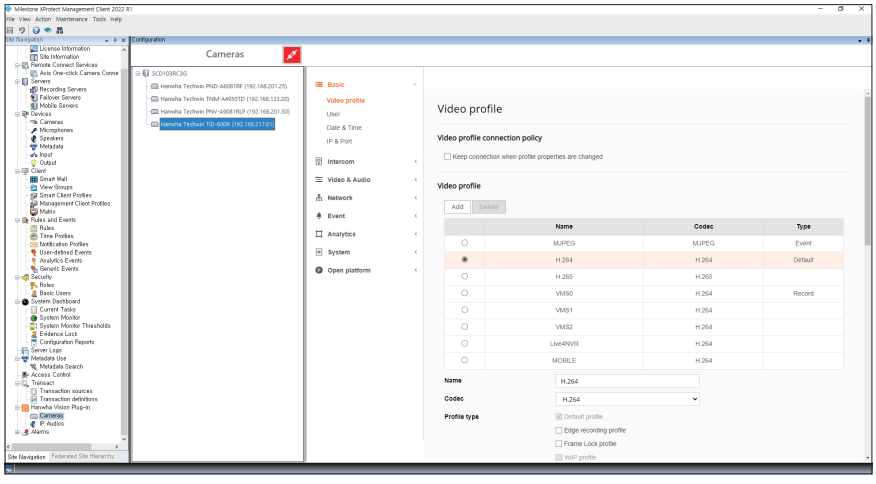
Changing the Camera Settings

You can change the Hanwha Vision camera settings in the **XProtect Management Client** program without accessing a separate browser.

1. Launch the **XProtect Management Client** program.
2. Select **Hanwha Vision Plug-in** > **Cameras**.



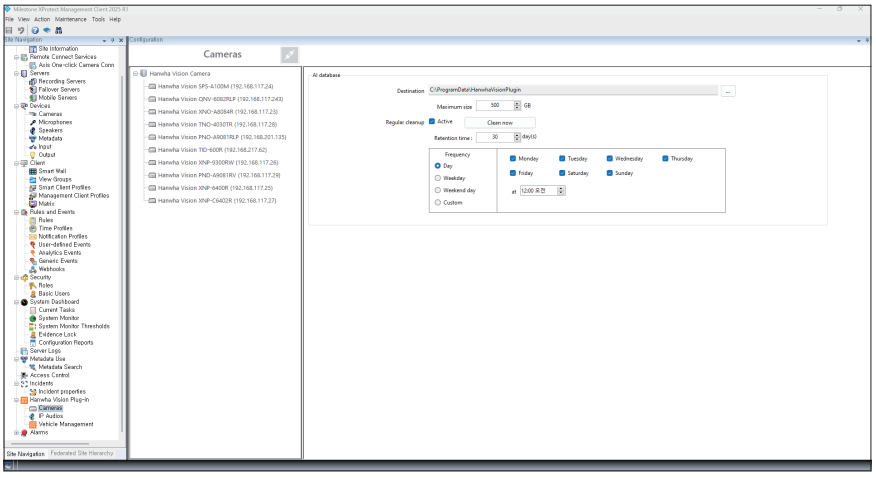
3. Select a camera to change the settings for.
   You can change the settings of the camera on the right screen.



Setting up AI Event Repository

You can change the location for storing AI analytics events. Additionally, you can enable the automatic cleanup feature of the database to set the retention time.

1. Launch the **XProtect Management Client** program.
2. Select **Hanwha Vision Plug-in** > **Cameras**.
3. Select the top node in the tree.
   The **AI database** settings screen is displayed.



- **Destination**
  You can change the database storage location.
  However, the database must be located on the PC where **XProtect Event Server** is installed.
  - The default database recording path is C:\ProgramData\HanwhaVisionPlugin.
  - To change the location, click the ... button to select a desired location. When the location is changed, the saved file is moved to the changed location. Settings cannot be changed while moving, and it may take some time.
- **Maximum size**
  You can set the maximum storage capacity for a database folder.
  - The default is 500 GB, and the maximum value is 1 EB.
  - If the storage capacity exceeds the set capacity or the user PC's maximum capacity, data will be deleted in chronological order.

- **Regular cleanup**
  You can set the database retention period.
  - To set the retention period, check **Regular cleanup** and then set the period.
    The data recorded after the set period will be automatically deleted. Database management files, sound source event files, and blank folders will also be deleted.
  - The default of automatic cleanup period is 30 days, and you can set the period up to 9999 days.
  - You can set the **Clean each** period by selecting **Day**, **Weekday**, **Weekend day** or **Custom**. To set a desired day, select **Custom** and click on the desired day.
- **Clean now**
  You can immediately delete the data which are past the set period.
  Example) Clicking **Clean now** on the database retention period set to 30 days will delete all data which are past 30 days from the current date.

Note

If you create and use multiple **Hanwha Vision Plug-in**s, the same database storage may result in duplicate results after an event search.

Setting up IP Audios

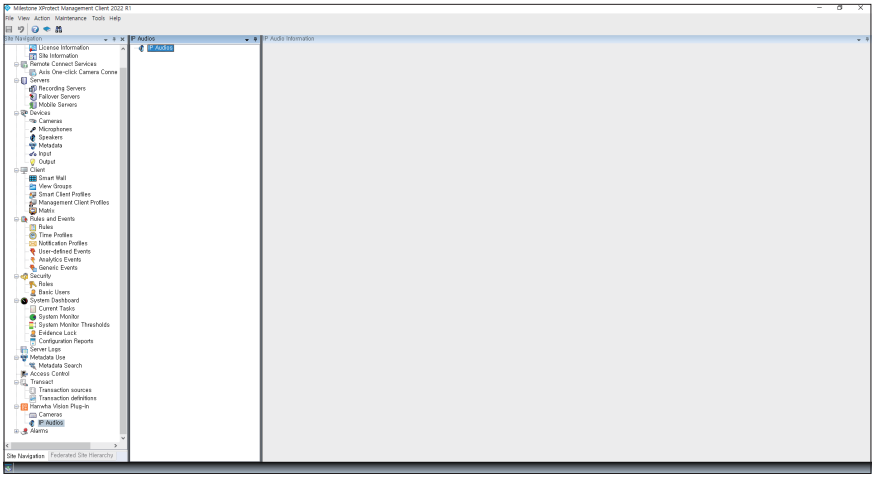
The Hanwha Vision Plug-in can add an IP audio and register devices and sound sources to broadcast. When an event occurs, it can be broadcast using the added IP audio.

Note

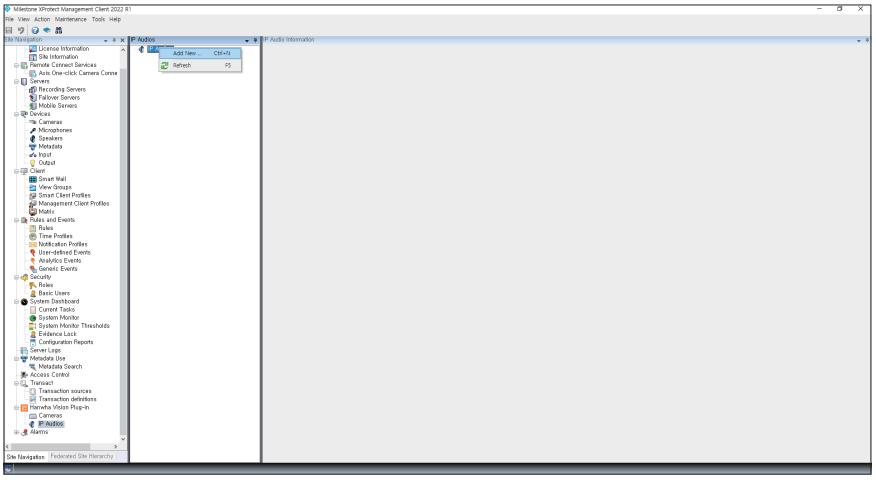
If the operating mode is changed in the web viewer, speakers may not function properly with the current plugin settings. To resolve this, delete the device from the plugin and re-register it.

Adding an IP Audio

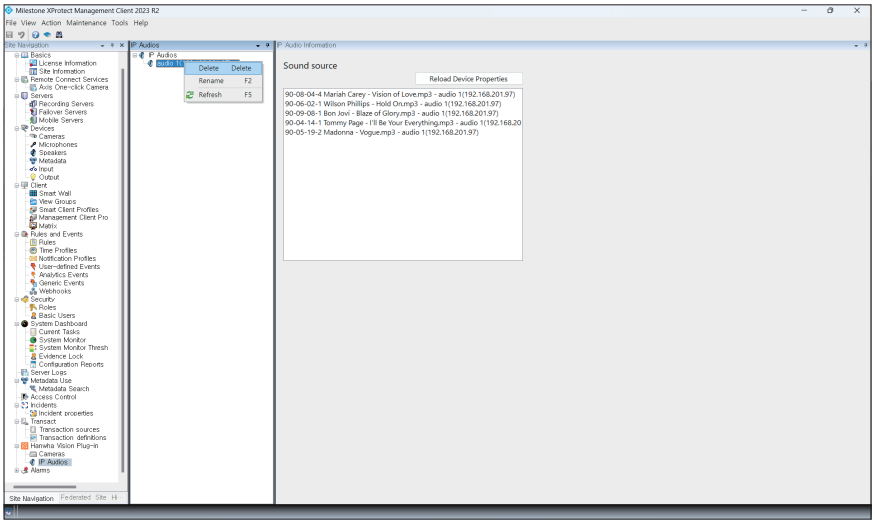
1. Launch the **XProtect Management Client** program.
2. Select **Hanwha Vision Plug-in** > **IP Audios**.



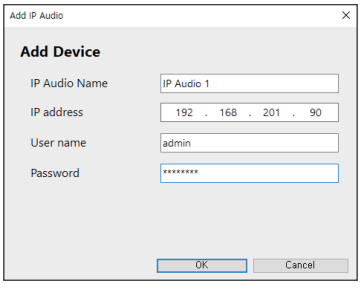
3. Select **IP Audios**, then right-click it and select **Add New Items**.



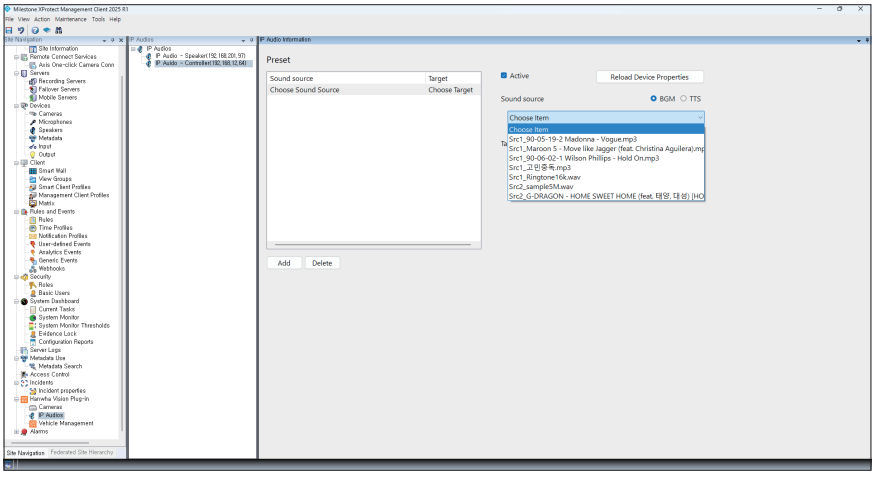
- You can delete an unused IP audio by selecting it from the list.



4. Enter the name, IP address, user name, and password of the IP audio you want to add, then click **OK**.



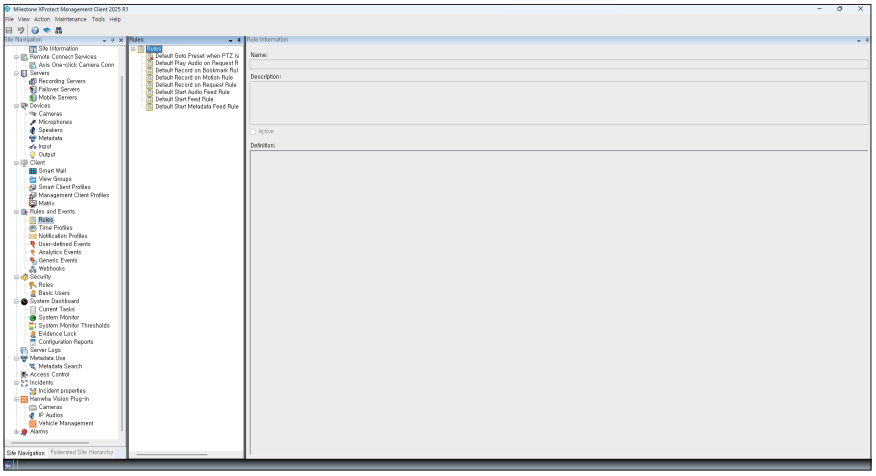
5. If the selected device is in **Controller** mode or is an audio server, click the **Add** button to add a preset. Select a source and target of the IP audio you want to add.



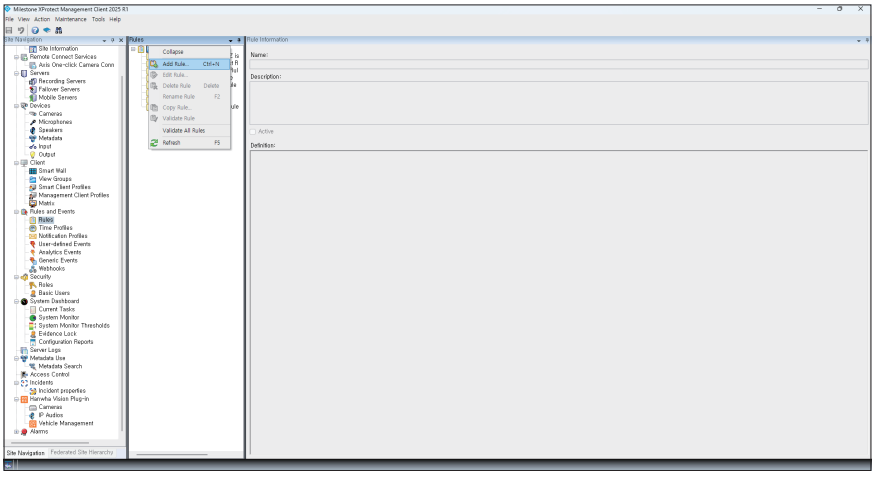
- The presets are predefined actions that respond to device events and can be applied when creating rules.
- If you click **Reload Device Properties**, the settings information of the device is updated with the latest information.

Setting Rules

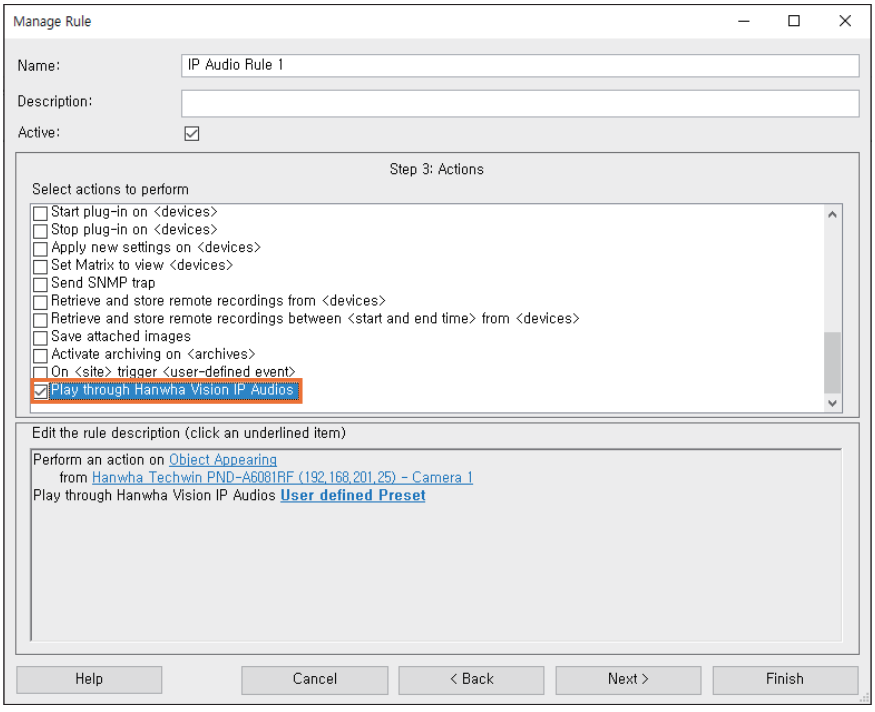
1. Launch the **XProtect Management Client** program.
2. Select **Rules and Events** > **Rules**.



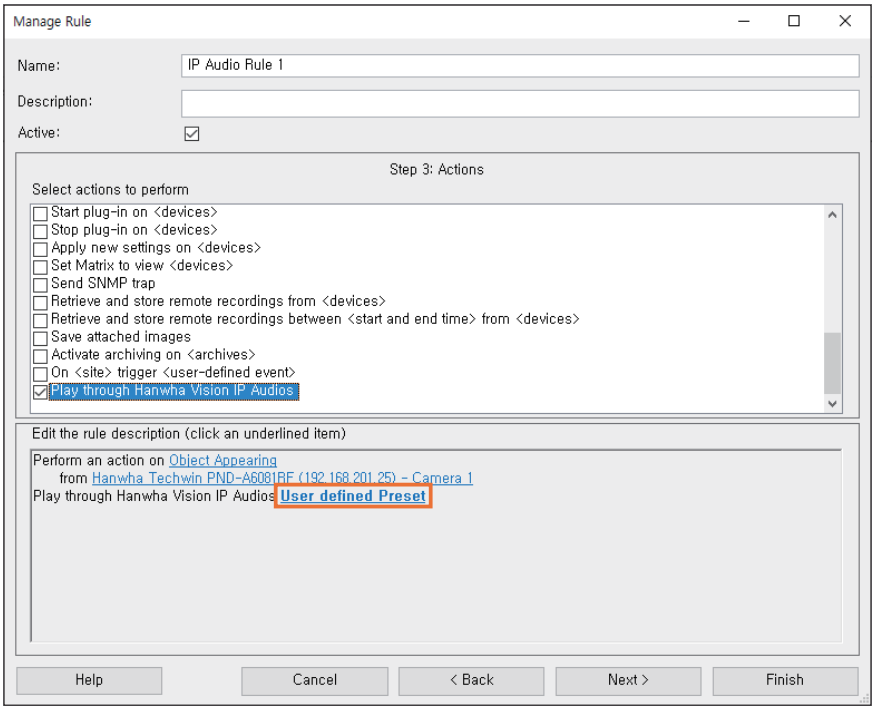
3. Select **Rules**, then right-click it and select **Add Rules**.



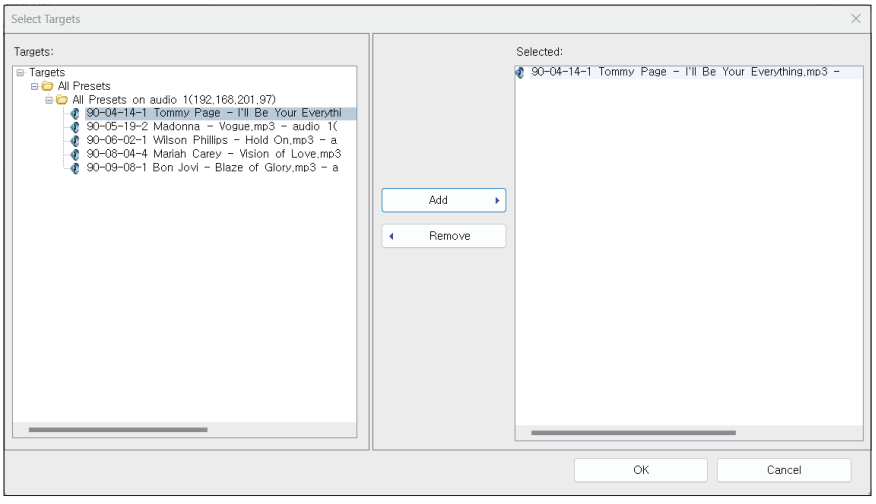
4. Enter the name of the rule to add.
   Check **Play through Hanwha Vision IP Audios** under **Select action to perform** item.



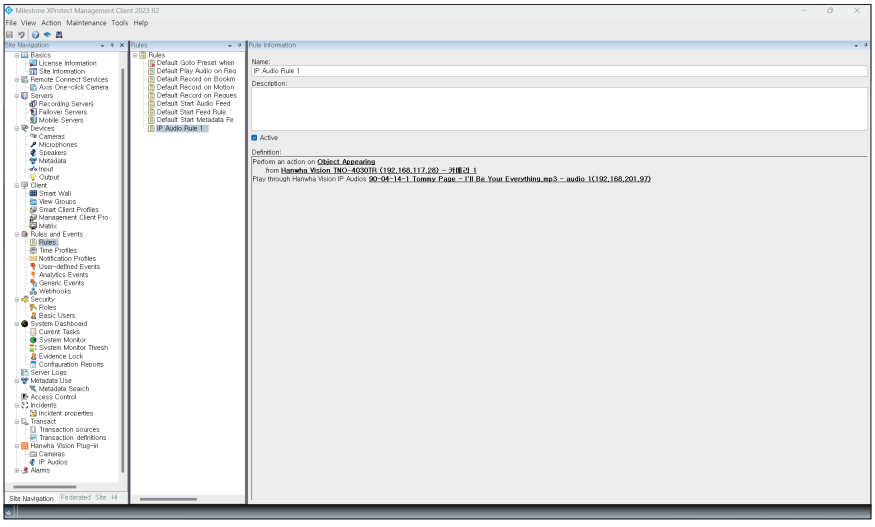
5. Click **User defined Preset**.



6. Select a preset to apply to the rule, then click **Add**.
Click **OK** to close the window.



7. Click **Finish** to complete the rule creation.
   You can see detailed information on the rules you have created.



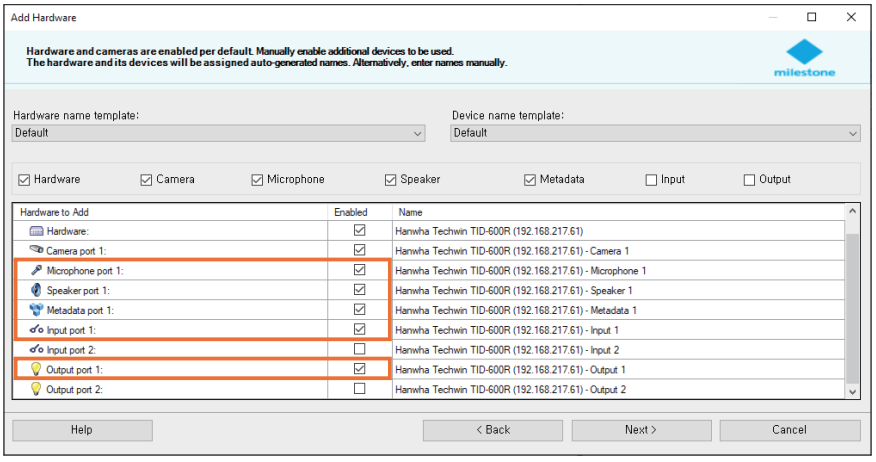
Using an Intercom

You can call or open doors through the Hanwha Vision intercom device using the **Hanwha Vision Plug-in.** You can also see call history and export the video you want.

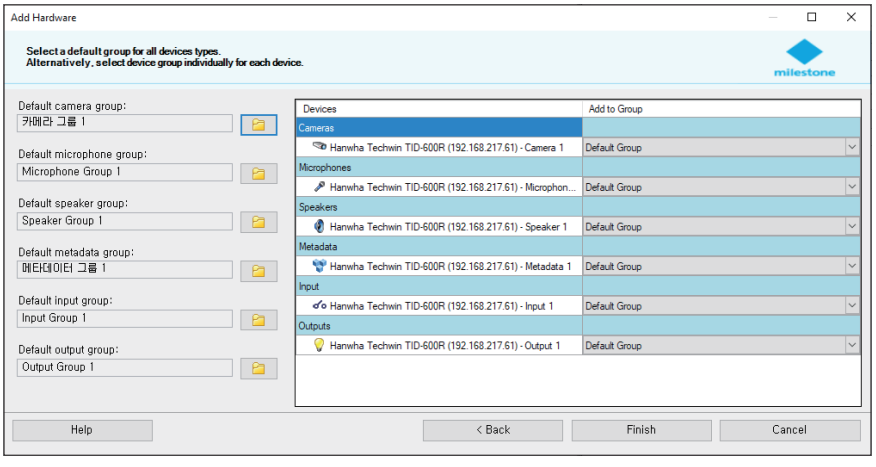
Setting up an Intercom Device

You can register and activate an intercom device.

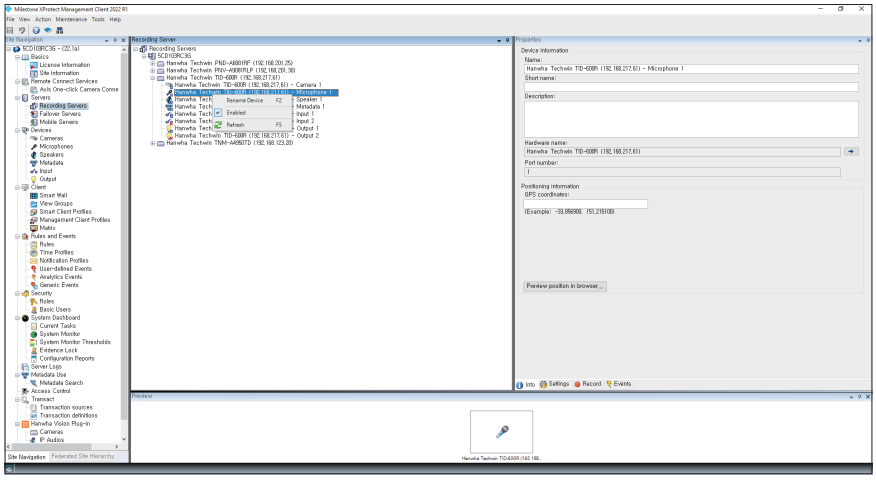
1. Launch the **XProtect Management Client** program and refer to Registering Camera Manually complete registration of the intercom device.
2. Check microphone port 1, speaker port 1, metadata port 1, input port 1, and output port 1 items from the **Add Hardware** window, then click **Next**.



3. Check the added device.
   Click **Finish** to complete the device registration.



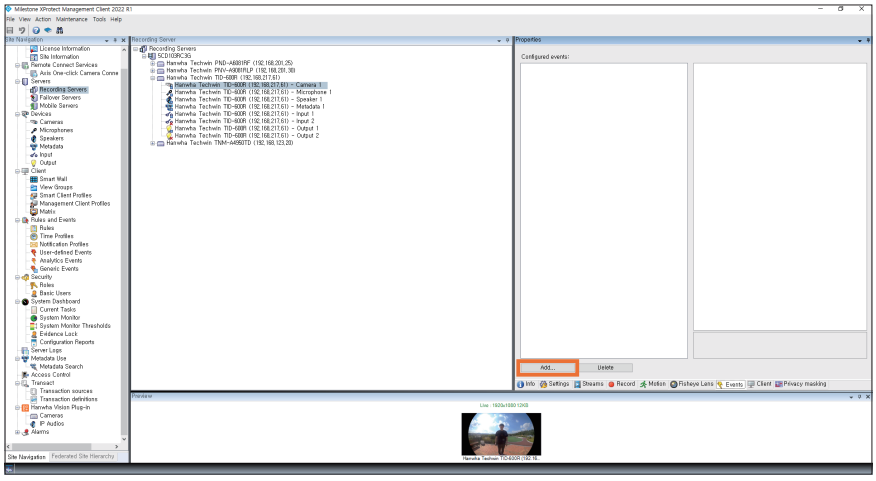
If an intercom device is already registered, launch the **XProtect Management Client** program to activate the recording server device (microphone 1, speaker 1, metadata 1, input 1, output 1).



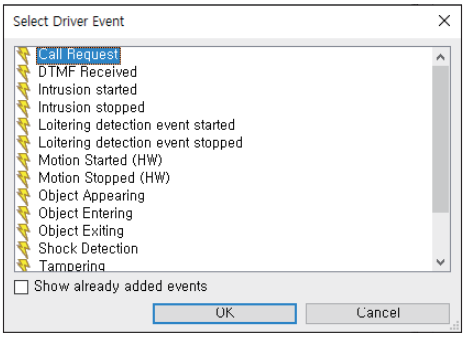
Setting Call Request Events

You can enable the Milestone system to receive call request events from intercom devices.

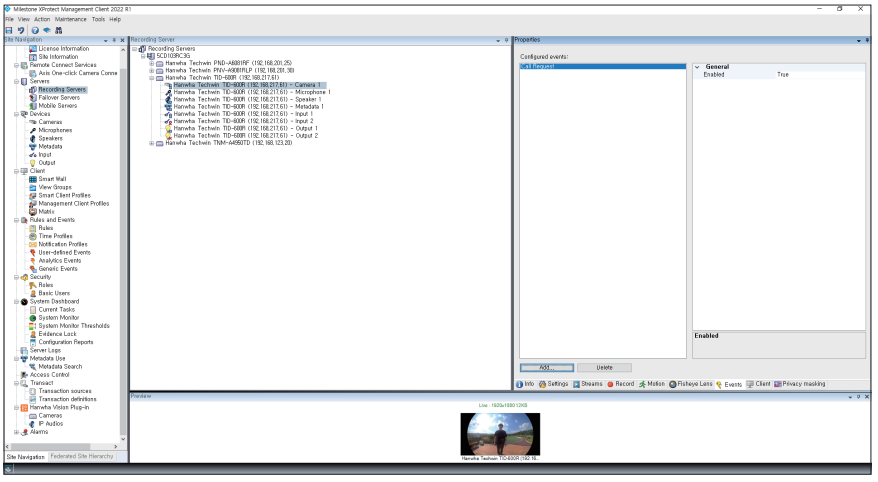
1. Launch the **XProtect Management Client** program.
2. Select **Servers** > **Recording Servers**.
3. Select a device to set an event, then click **Add**.



4. Select **Call Request** from the **Select Driver Event** window, then click **OK**.



5. Check the added **Call Request** event in the **Configured events** list.



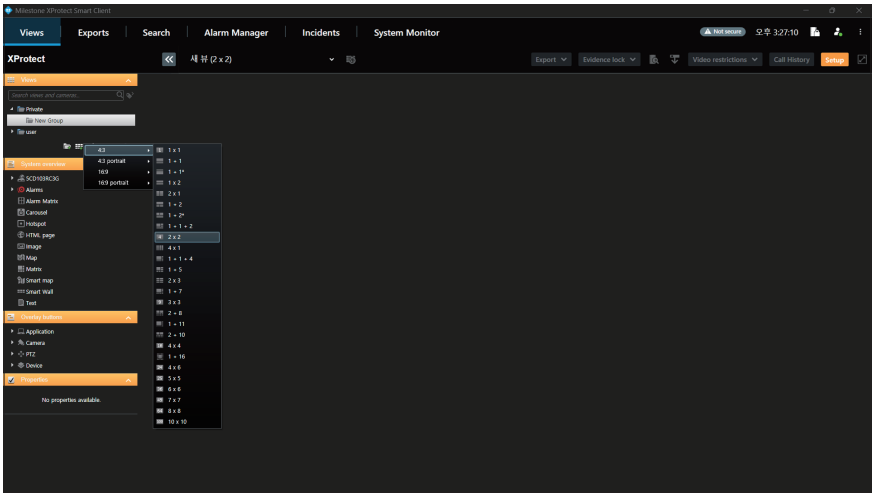
Answering Call Requests

You can accept or decline call requests from intercom devices and open doors.

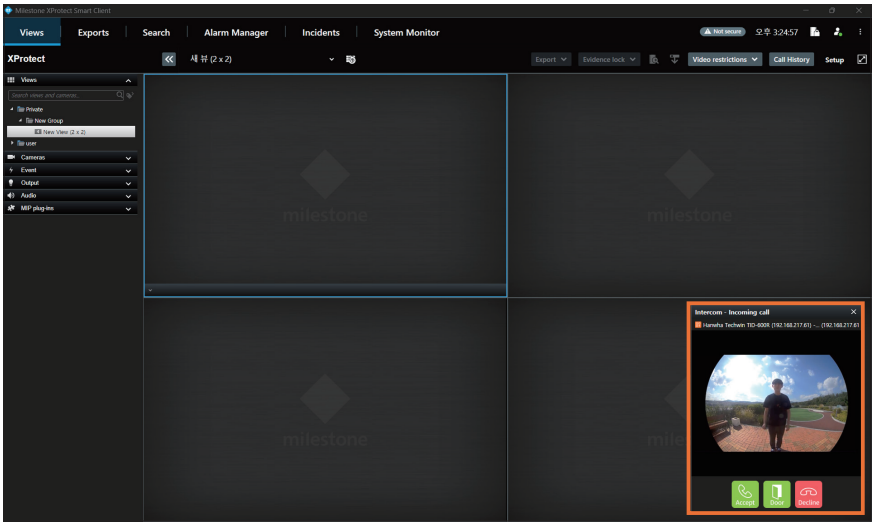
Note

The Hanwha Vision Intercom plug-in can receive call request events from multiple PCs (clients) connected to the same Milestone server and view the call history.

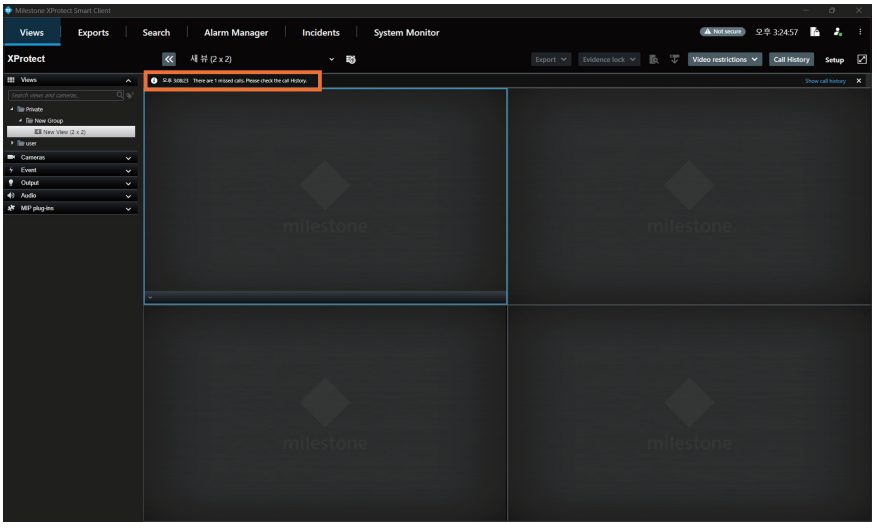
1. Launch the **XProtect Smart Client** program.
2. Click the **Live** tab.
   - To use the plug-in properly, create a view if there is no view in use.



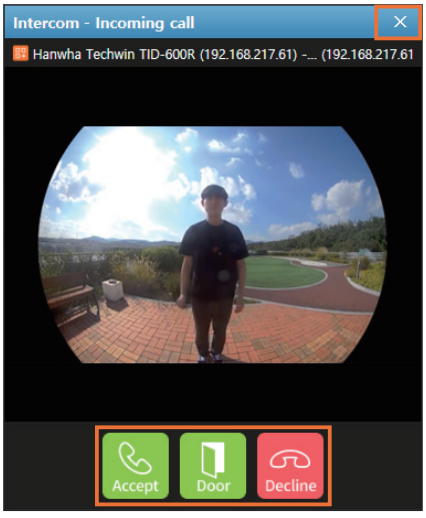
3. If a call request event occurs in the intercom device, the call window is displayed. Select the function you want to control.

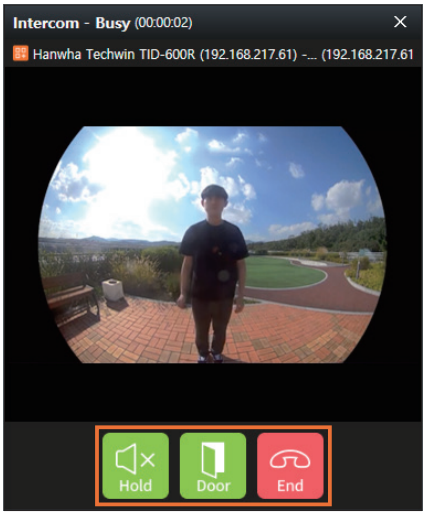


- If there is no action for 30 seconds after the call window is displayed, it is treated as a missed call, and the contents are displayed.



4. Select the function you want to control.





- **X**: Close the call window without interacting with the other party. If you click **X** when there is no other PC (client) receiving the same call request event, it is treated as a missed call and the details are displayed.
- **Accept**: Speak to the other party.
- **Door**: Open the door.
- **Decline**: Decline the call.
- **Hold/Resume**: Use during a call after clicking **Accept**, and it can turn on or off the microphone.
- **End**: End the call.
- If the **Auto close call window** feature is enabled, the Door, Decline, and End actions occur and the call window closes after three seconds. For more information, please refer to Setting Client Use.

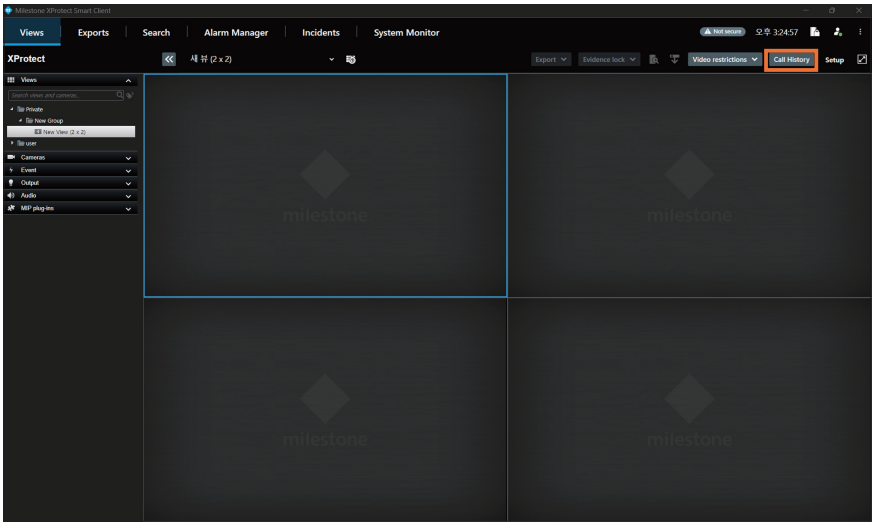
Viewing the Call History

You can check the call history for the past one week on the intercom device. You can also play or export the videos that you want.

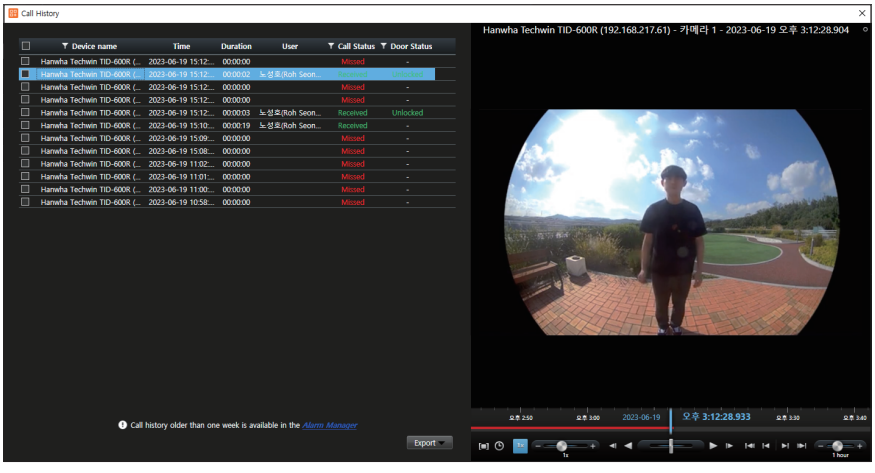
Note

You can check the call history older than a week under **Settings** > **Alarm Manager**.

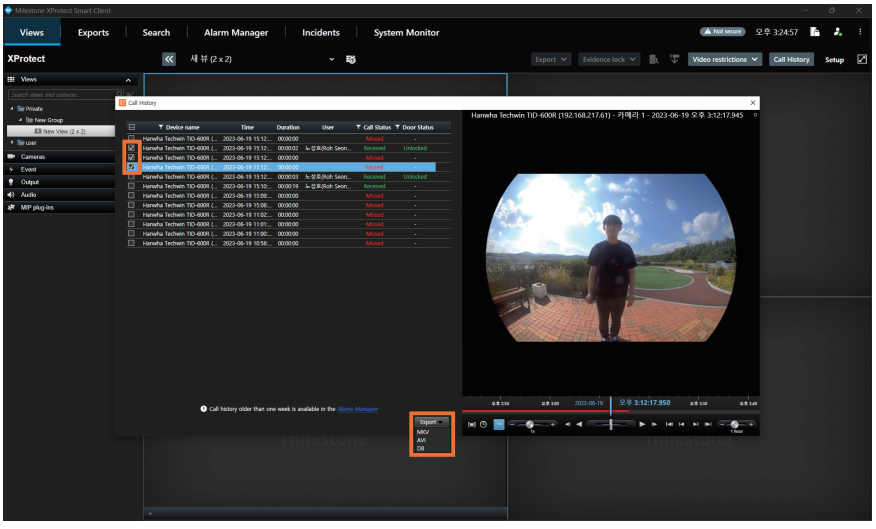
1. Launch the **XProtect Smart Client** program.
2. Click the **Live** tab.
3. Click **Call History**.
   A list of calls is displayed, and you can view the details of the call history.



4. To playback an event video, click the item you want from the list.



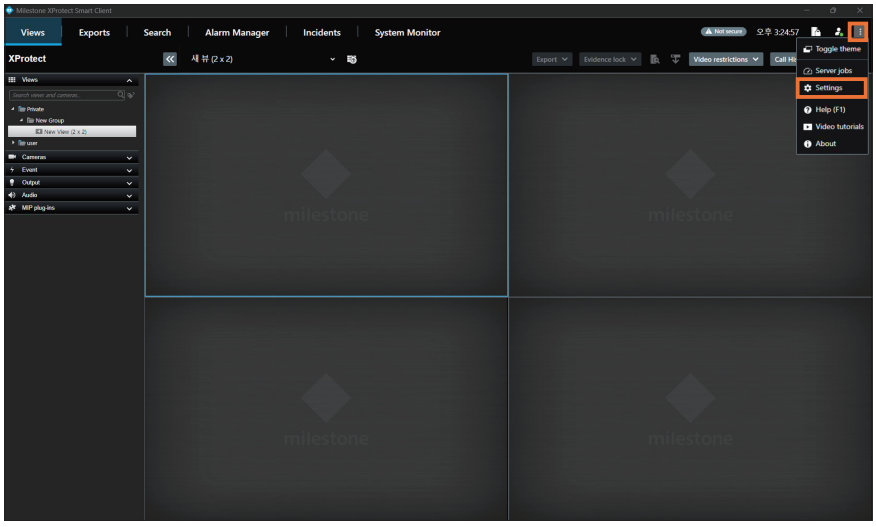
5. If you want to extract an event video as a file, check the item you want from the list. Click **Export**, then select MKV, AVI, or DB for the file format, and export it.



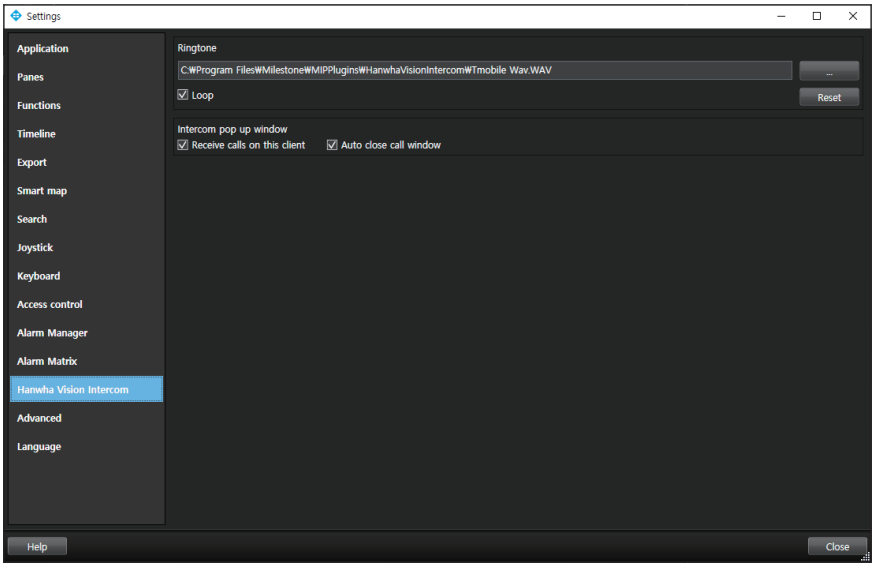
Setting Client Use

You can change the ringtone to use and the call window settings for call request events in the intercom device.

1. Launch the **XProtect Smart Client** program.
2. Click the **Live** tab.
3. Click **More** > **Settings**.



4. Click **Hanwha Vision Intercom** and set the function you want.



- **Ringtone**
  - You can change the intercom ringtone. Click the ... button, then select the sound source file you want.
  - Check **Loop** to play the sound source file on repeat.
- **Intercom pop up window**
  - If you uncheck **Receive calls on this client**, the current PC does not display the call window for the call request.
  - If you check **Auto close call window**, the call window automatically closes when a door is opened, a call is rejected, a call is ended, or a missed call occurs in response to a call request.
- **Reset**
  - You can initialize all settings.

Setting up Vehicle Management

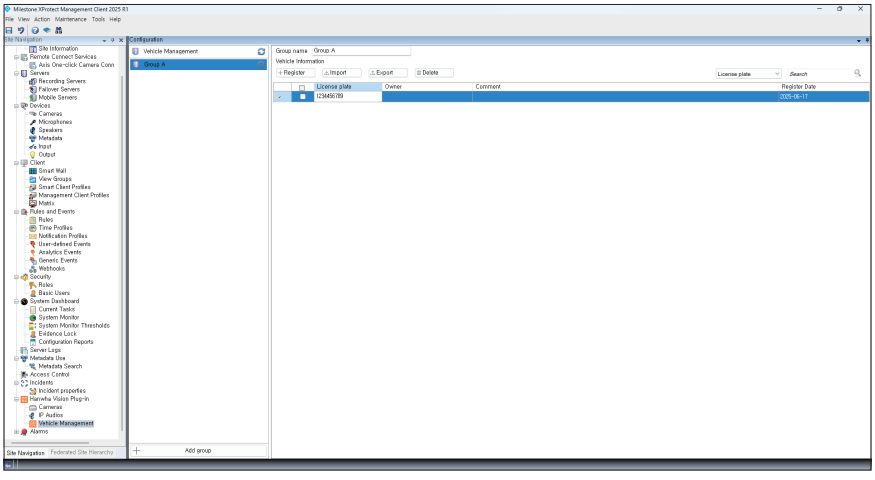
The Hanwha Vision Plug-in allows you to add groups for vehicle management and register license plate information. When a license plate included in a group is detected, an analytics event is triggered.

Note

- An analytics event is automatically generated using the name of the group added in Vehicle Management.
- To use analytics events, click the **Enabled** checkbox located under **XProtect Management Client** > **Tools** > **Option** > **Analytics events**.

Adding Groups

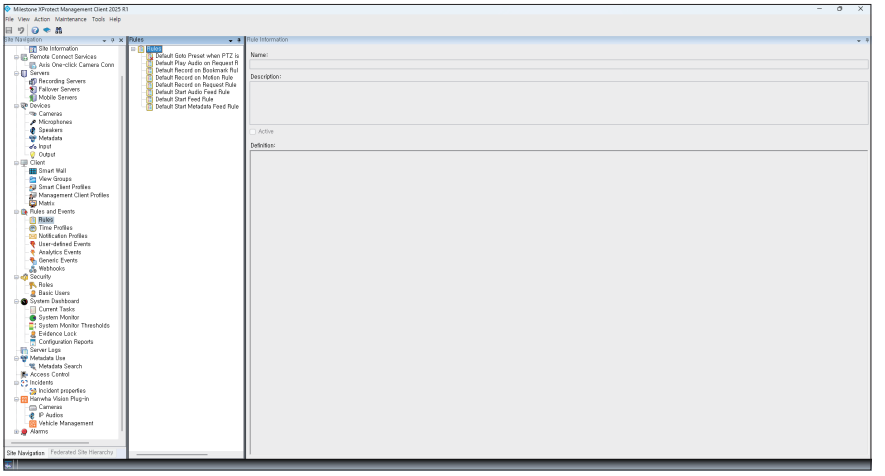
1. Launch the **XProtect Management Client** program.
2. Select **Hanwha Vision Plug-in** > **Vehicle Management**.



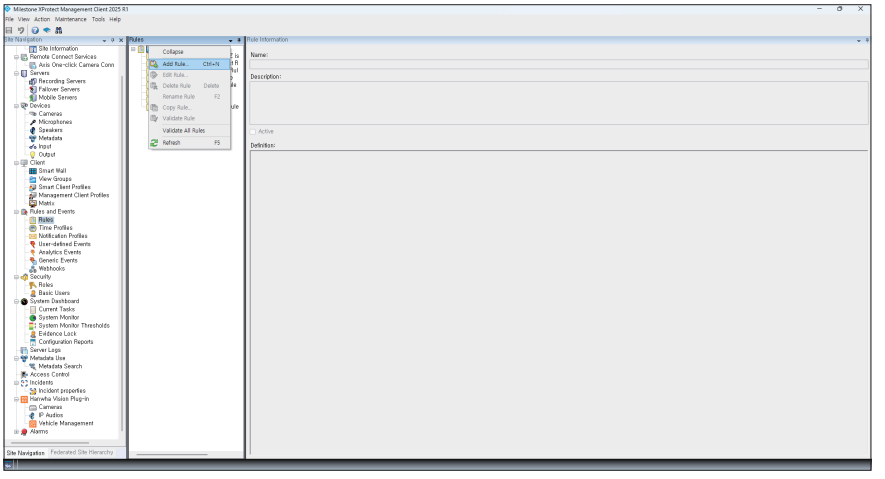
- **Add group**: You can add a new group.
- **Group name**: You can rename the group. Group names cannot be duplicated.
- **Register**: You can add license plate information.
- **Import**: You can import a CSV file containing license plate information.
- **Export**: You can export the entered license plate information as a CSV file.
- **Delete**: You can delete the selected license plate information.

Setting Rules

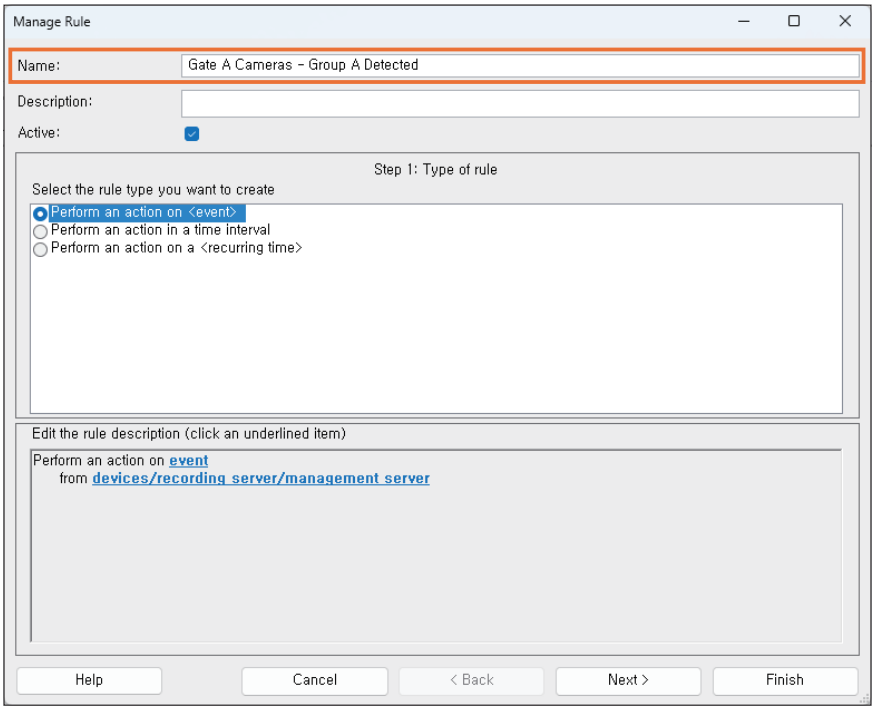
1. Launch the **XProtect Management Client** program.
2. Select **Rules and Events** > **Rules**.



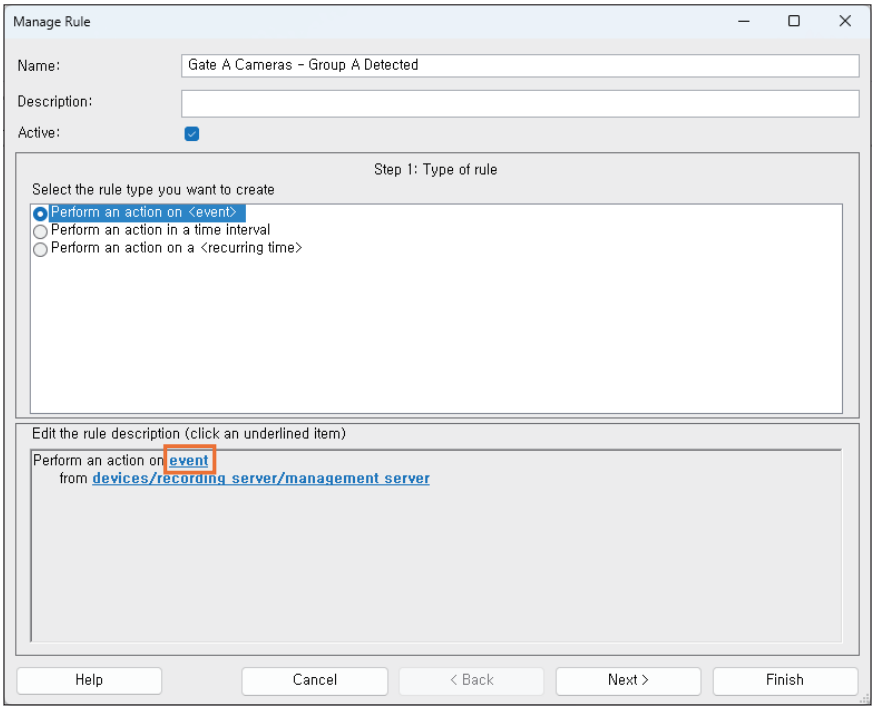
3. Select **Rules**, then right-click it and select **Add Rule**.



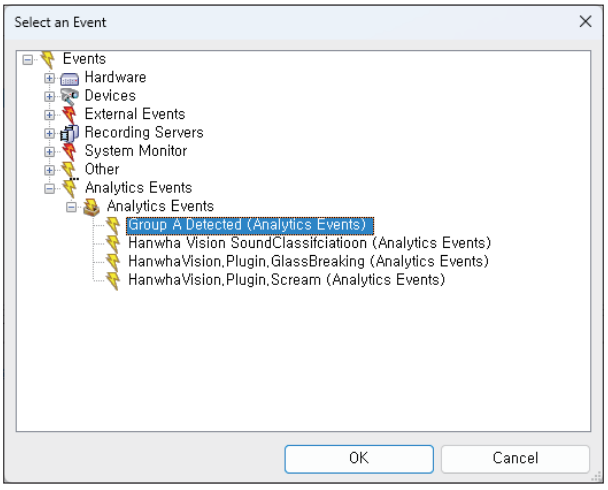
4. Enter the name of the rule to add.



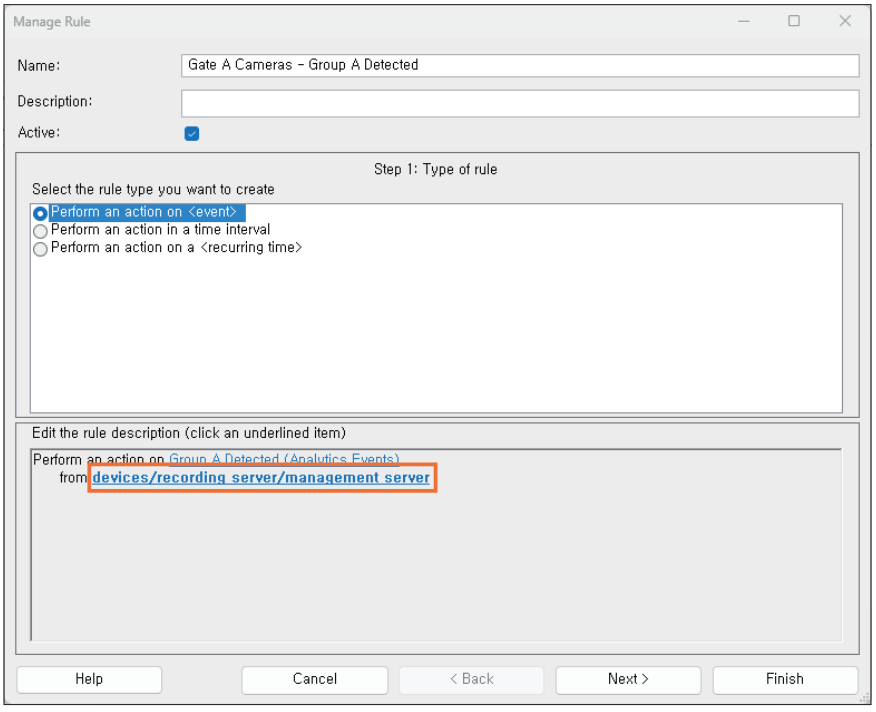
5. Click **event**.



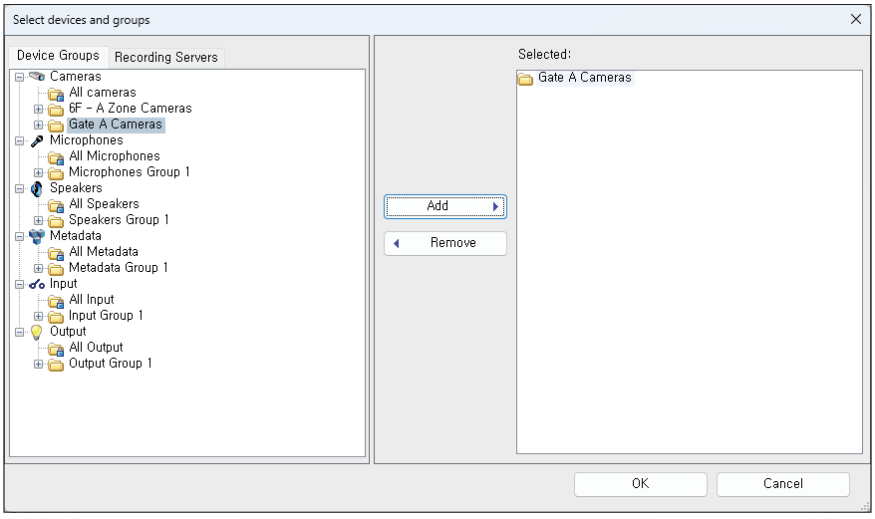
6. Select the generated event, then click **OK**.



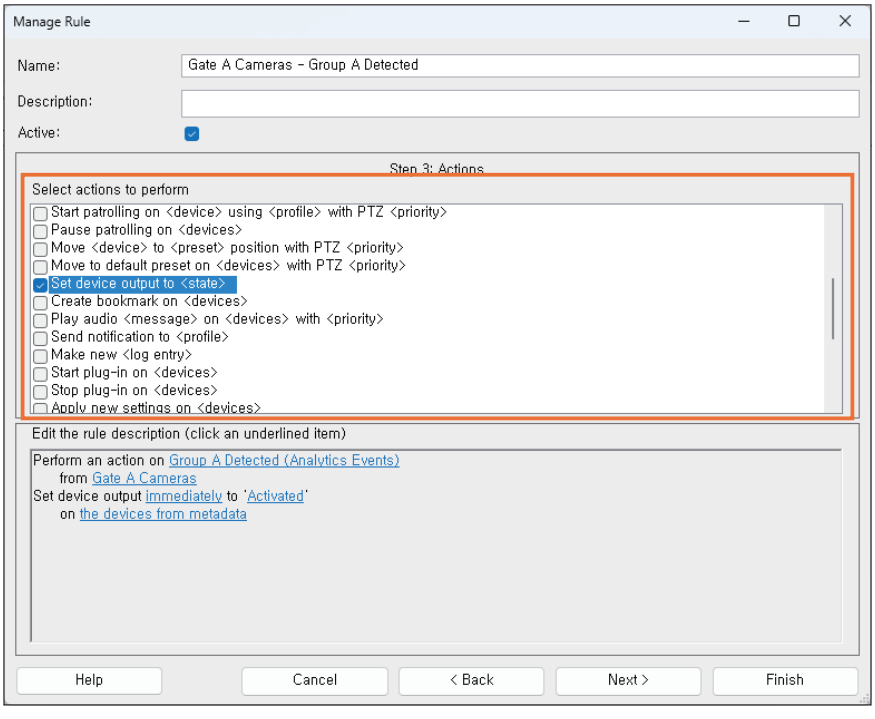
7. Click **devices/recording server/management server**.



8. Select the camera for detecting the event you created, then click **Add**.
   Click **OK** to close the window.



9. Select the action to perform when an event is detected by the selected camera, then click **Finish**.



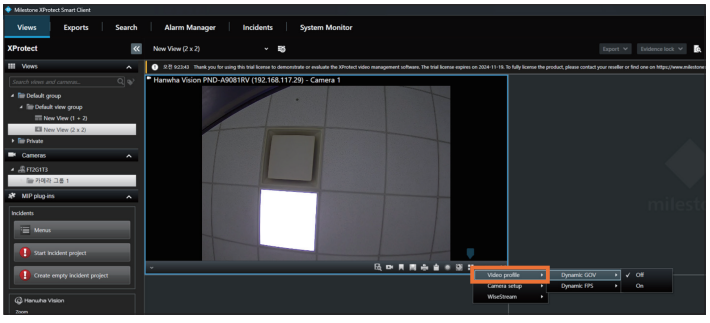
Using the Camera Function

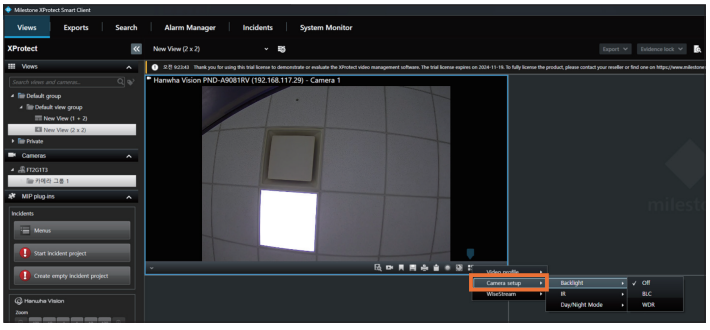
The **Hanwha Vision Live Plug-in** allows you to control various functions of the camera.

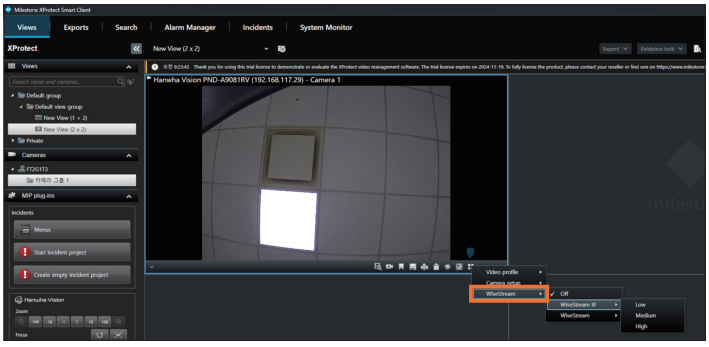
Note

- The supported functions of the Plug-in are as follows:
  - PTZ and general functions: Zoom, focus, auto focus, focus initialization, dynamic GOV, dynamic FPS, backlight, IR, day/night mode, WiseStream, heater, wiper, and spinning dry
  - Share thermal/true image metadata
  - Spot temperature display
- Camera functions cannot be used on virtual channels.
- Depending on the camera model, supported control functions may vary. For more details, refer to the camera specifications.

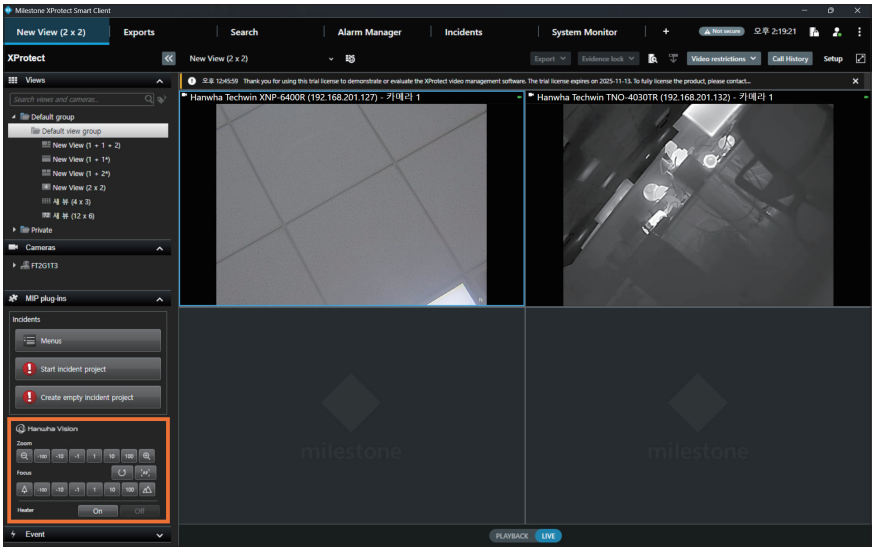
1. Execute the **XProtect Smart Client** program.
2. Click the **Live** tab.
3. Click icon on the channel where you want to control the camera's functions.
   The supported functions of the camera display in the **Video profile**, **Camera setup**, and **Wisestream** menu.
   Select the function you want to control a camera.







4. Select a channel to control camera functions.
   The supported functions with the camera are activated in the **Hanwha Vision** menu.
   Select the function you want to control a camera.



Note

- Depending on the camera model, supported control functions may vary. The following functions appear on the panel to the right if available.
  - Metadata sharing, spot temperature, wiper, heater, spinning dry

- **Zoom**

  You can zoom in or out the video by using the camera's zoom.

- **Focus**

  You can manually move the camera's focus closer or further away.

- **Auto focus**

  You can automatically adjust the focus of your camera.

  Adjust the focus manually, as the function may not properly operate in the following cases.

  - When the object moves or disappears during focusing
  - When there is a sudden change in luminance during focusing
  - When the contrast of the video is low
  - When there are strong light sources around
  - When the focus was not initialized

- **Initialize focus**

  You can initialize camera focusing to default values.
  It is recommended to perform a focus initialization when using a camera for the first time.

- **Dynamic GOV**

  By applying the optimal GOV value depending on the degree of movement in the video, you can reduce its capacity and view a high-resolution video. In the video with little movement, the GOV length is increased. When any motion is detected, the GOV length is reduced to operate at the optimal GOV value.

- **Dynamic FPS**

  By applying the optimal FPS value depending on the degree of movement in the video, you can reduce its capacity and view a high-resolution video. In the video with little movement, the minimum FPS value is applied to reduce the bitrate of the entire video. When any motion is detected, the FPS value is increased to operate at the optimal FPS value.

- **Backlight**

  The backlight mode can express both bright and dark areas well at the same time in a backlit situation.
  In backlight mode, noise may occur between bright and dark areas.

- **IR**

  By using the IR uniformly in an environment without light, the dark areas outside the image are minimized so that subjects can be easily identified.

  The supported specifications may differ depending on the camera model. Refer to your camera's specifications for more information.

  - **Off**: IR mode is disabled.
  - **On**: IR is enabled.
  - **Auto**: The IR brightness is automatically adjusted according to the brightness of the subject in the center of the screen.
  - **Auto 1**: The IR brightness is automatically adjusted according to the brightness of the subject in the center of the screen.
  - **Auto 2**: The IR brightness is automatically adjusted according to the brightness of the subject in the center or periphery of the screen.
  - **Manual**: The IR brightness can be adjusted manually.
  - **Day/Night**: The IR turns off if the image is expressed in color. Otherwise, the IR turns on.
  - **Sensor**: The IR mode is changed depending on the amount of light from the optical sensor.
  - **Schedule**: Set the IR On time.

- **Day/Night**

  You can change the video to color or B/W depending on your camera conditions. By setting the conversion time, the video can be switched to color or B/W upon the schedule.
  While switching between day and night modes, motion detection events or video analytics events are not detected.

  Supported specifications may vary depending on the camera model. For more details, refer to the camera specifications.

  - **Color**: Videos are always output in color.
  - **B/W**: Videos are always output in black and white.
  - **Auto**: Videos are switched to color in the daytime and to B/W at night or a low light level.
  - **External**: When the alarm input terminal is integrated with an external device, you can switch to the color or black and white.
  - **Timed**: The day and night mode changes according to the schedule set in the Web viewer.

- **WiseStream**

  You can select a WiseStream mode. Use WiseStream to select the bitrate reduction level to apply: **Low**, **Medium**, and **High**.
  If you do not use WiseStream, select **Mode off**.

  Supported specifications may vary depending on the camera model. For more details, refer to the camera specifications.

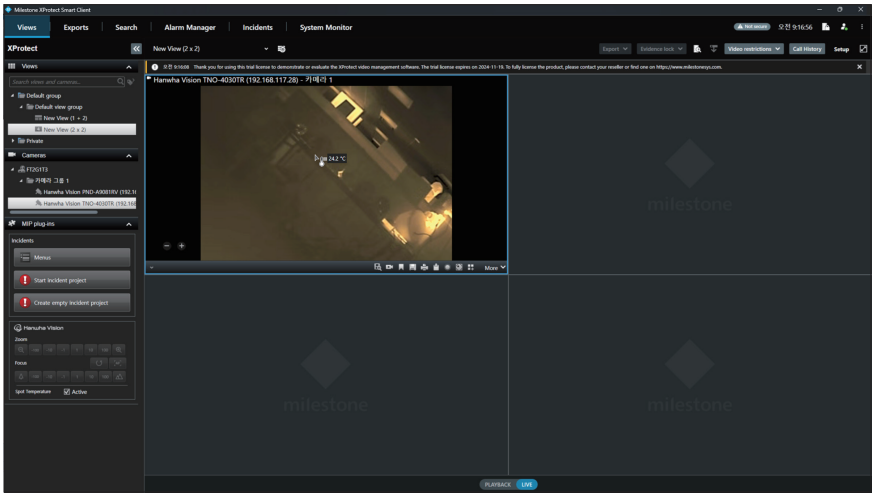
  - **WiseStream**: It operates based on motion detection. Bitrate is reduced by lowering the image quality in other areas while keeping the image quality in the target area. In the environment with no movement or low complexity, the bitrate reduction effect may be high. However, in the environment with lots of movements or high complexity, the bitrate reduction effect may be low.
  - **WiseStream III**: It operates based on the AI object detection area. As the size of the object detection area becomes smaller, the bit rate decreases, and as the size of the area becomes larger, the bit rate increases.

- **Metadata sharing**

  Metadata can be shared between true images and thermal images.
  When an event (object) occurs on a specific channel, it transmits the analytics information to other channels and displays an object analytics area on the screen based on the transmitted analytics information.

- **Spot temperature**

  You can see the temperature by clicking a desired spot on the view of a thermal imaging camera that supports temperature information.
  When you click a spot to check the temperature in the video of the active channel, the temperature appears next to the mouse pointer.
  The temperature unit of display may differ dependig on the camera setting.



- **Heater**

  If there is frost, run the heater to remove the frost.
  Since the heater is activated automatically based on the ambient temperature, it may operate differently from how the user settings are configured.

- **Wiper**

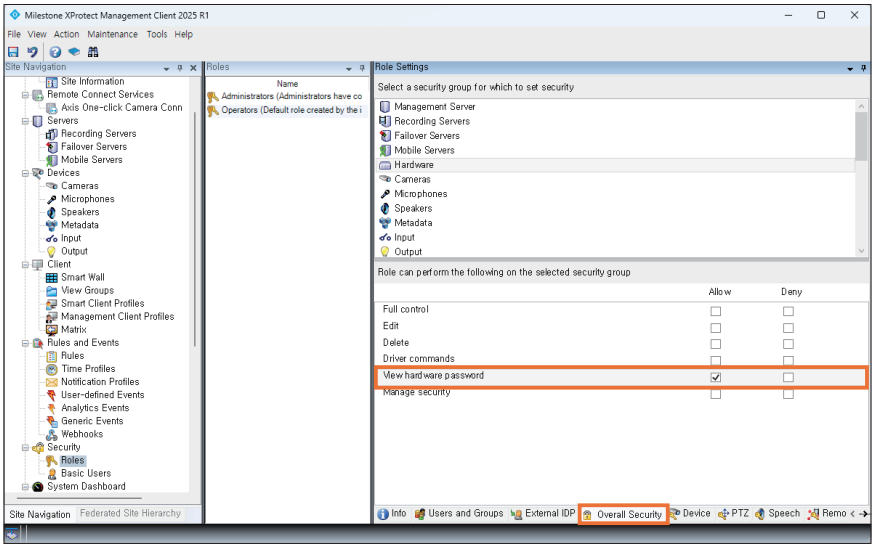
  Run the wiper to clear the lens of rainwater or other foreign substance.

- **Spinning dry**

  Spin the camera at high speed to remove rainwater or other foreign substance.

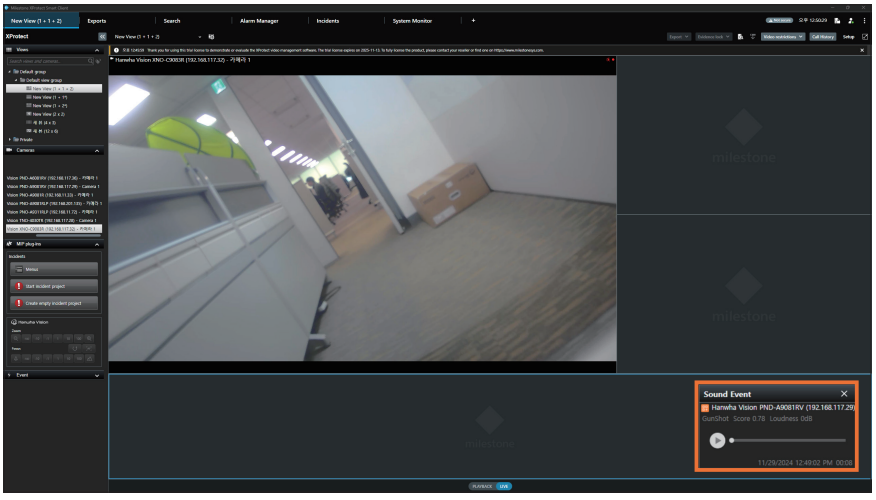
Note

You can use the **Hanwha Live Plug-in** function by accessing it with an administrator account. If you are accessing it with a general account, set the **View hardware password** to **Allow**.



Monitoring Events

You can check the realtime event for the sound source (scream/gunshot/crashing glass) which occur in the registered device.
When a sound event occurs on a camera that supports the Sound Classification feature, the **Sound Event** pop-up window is displayed.
The pop-up window displays the device where the event occurs, time, information on properties, and sound source playback control bar.



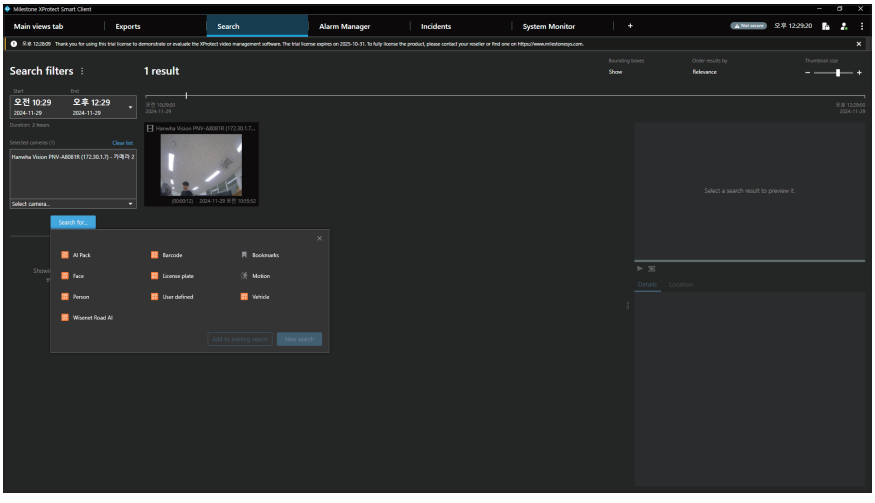
Searching for AI Analytics Events

AI analytics events save only one event per object based on the most accurate time of recognizing an object (Person/Face/Vehicle/License plate/Wisenet Road AI/User defined/AI Pack/barcode) that is being continuously analyzed by the AI camera.

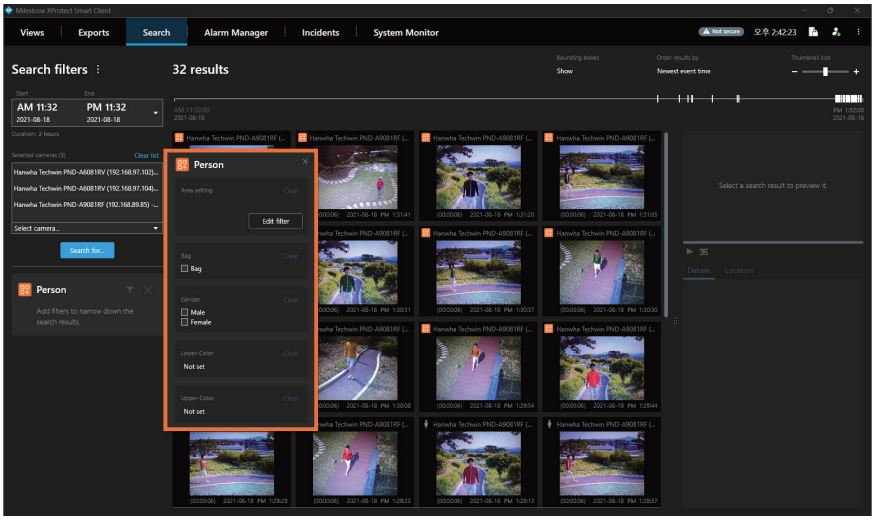
You can search for the saved events by setting the details of each object or camera area.

Searching for Persons

1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time, and camera, and click the **Search for...** button. Additional search filters will be displayed.

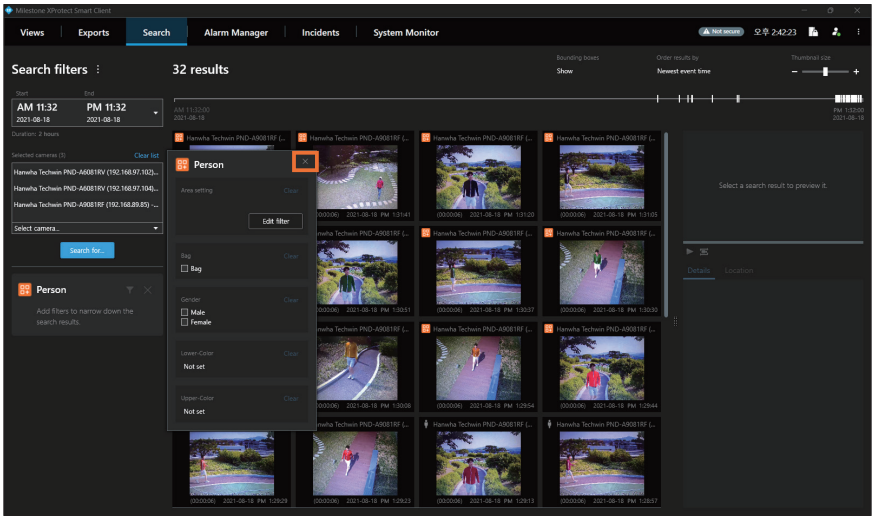


4. Select **Person** from the search criteria, and click the **New search** button.
Person will be added to the search criteria, and the filter window will appear.
Click the checkbox of detailed items to check the search results right away.
Click the **Clear** button to delete the selected item.
From the list, you can select an event and play its video.

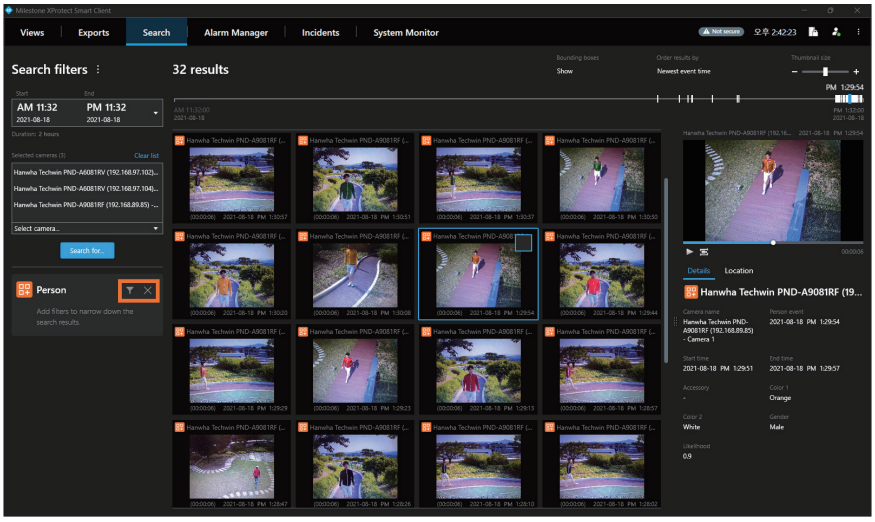


- If you select **Male** only from **Gender**, women and objects with unrecognized gender are excluded from the search results.
  If you select both **Male** and **Female**, objects with unrecognized gender are excluded from the search results.
- If you select **Male** and **Bag**, only objects recognized as male wearing a bag are included in the search results.
- For **Color**, up to two colors can be selected. Searching is valid if any one of the two colors is present.

5. Close the filter window by clicking **X** to complete the setup.

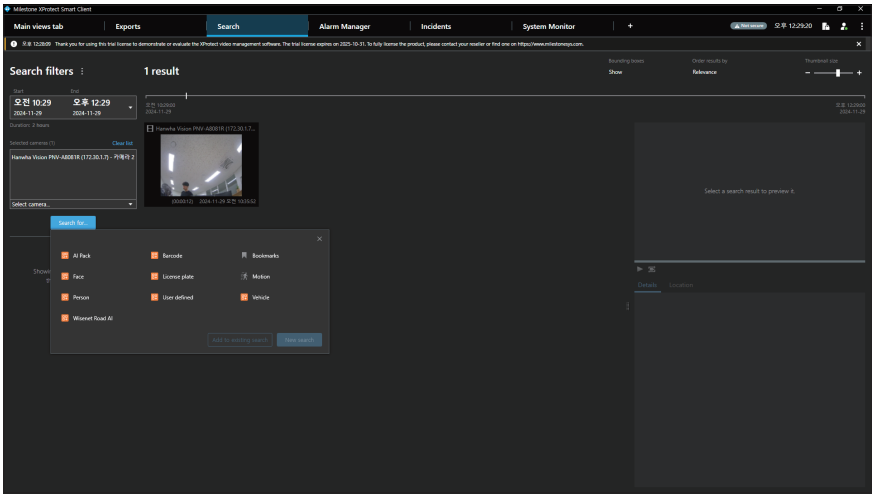


- Click  and the filter window will appear again, and the detailed items can be changed.
- Click **X** to remove **Person** from the search criteria.

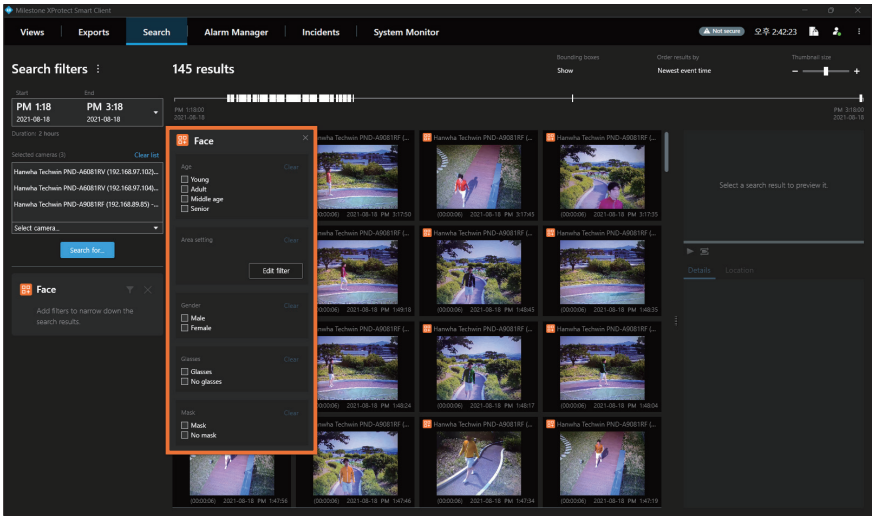


Searching for Faces

1. Launch the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time, and camera, and click the **Search for...** button.
   Additional search filters are displayed.

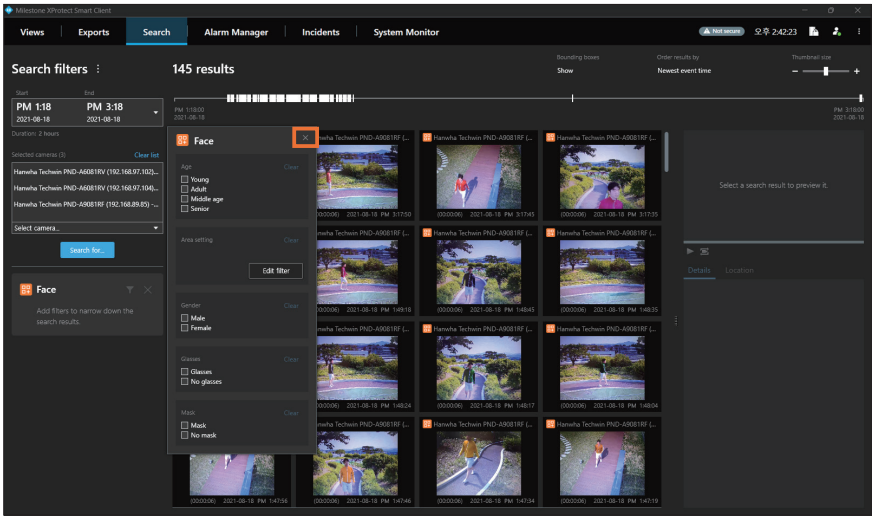


4. Select **Face** from the search criteria, and click the **New search** button.
   Face will be added to the search criteria, and the filter window will appear.
   Click the checkbox of detailed items to check the search results right away.
   Click the **Clear** button to delete the selected item.
   From the list, you can select an event and play its video.

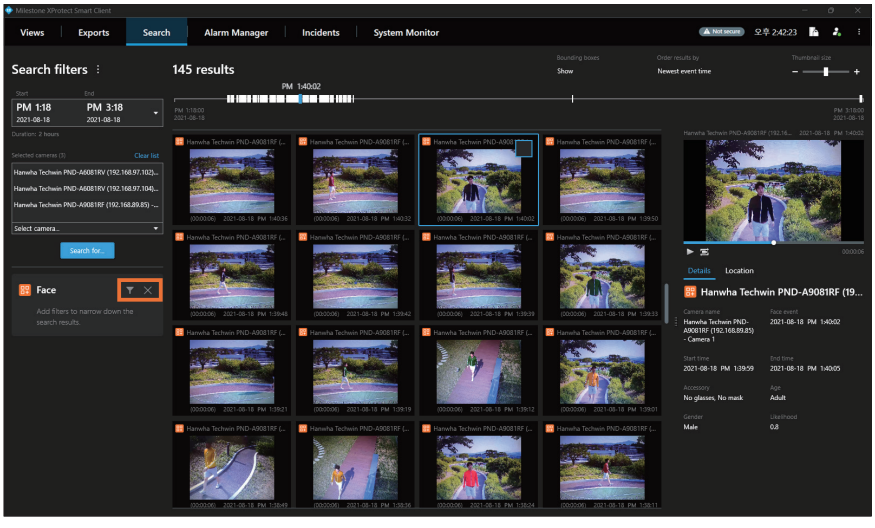


- If you select **Male** only from **Gender**, women and objects with unrecognized gender are excluded from the search results.
  If you select both **Male** and **Female**, objects with unrecognized gender are excluded from the search results.
- If you select **Male** and **Glasses**, only objects recognized as males wearing glasses will be included in the search results. Objects not wearing glasses and objects that may not be wearing glasses will be excluded from the search results.
- If you select **Young** only from **Age**, Adult/Middle age/Senior and objects with unrecognized age are excluded from the search results.
- If you select both **Glasses** and **No glasses**, objects with indeterminate results for whether glasses are worn will be excluded from the search results.
- If you select both **Mask** and **No mask**, objects with indeterminate results for whether a mask is worn will be excluded from the search results.

5. Close the filter window by clicking **X** to complete the setup.

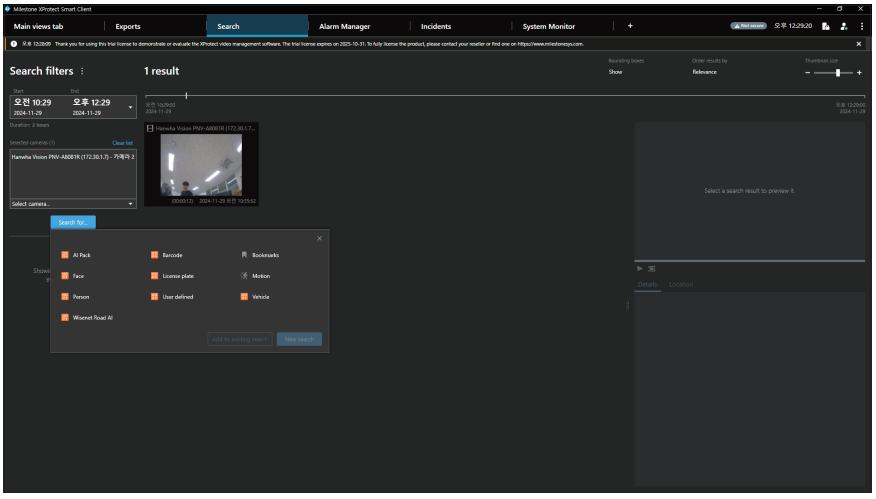


- Click  and then the filter window appears again, and the detailed items can be changed.
- Click **X** to remove **Face** from the search criteria.

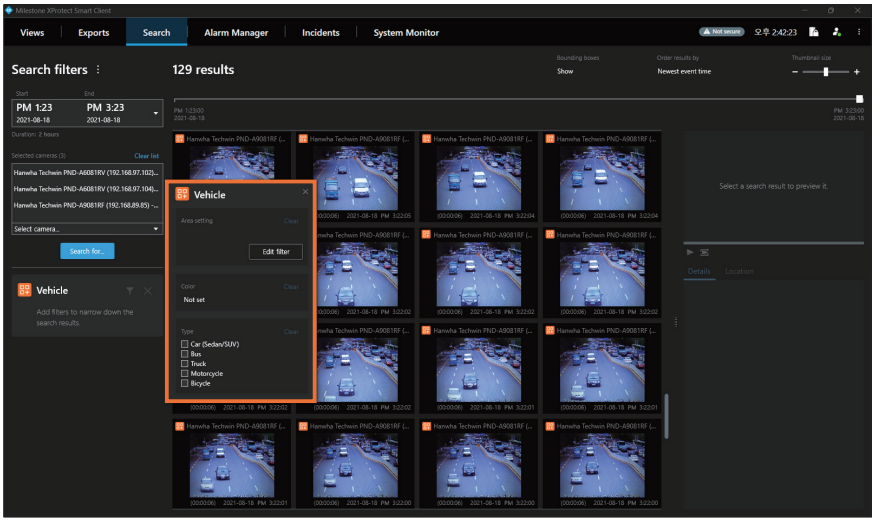


Searching for Vehicles

1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time and camera, click the **Search for...** button.
   Additional search filters are displayed.

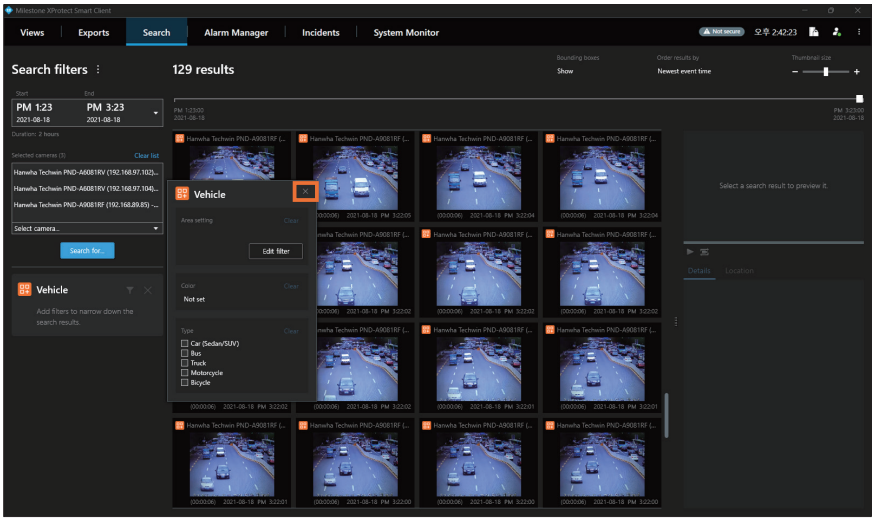


4. Select **Vehicle** from the search criteria, and click the **New search** button.
   Vehicle will be added to the search options, and the filter window will appear.
   Click the checkbox of detailed items to check the search results right away.
   Click the **Clear** button to delete the selected item.
   From the list, you can select an event and play its video.

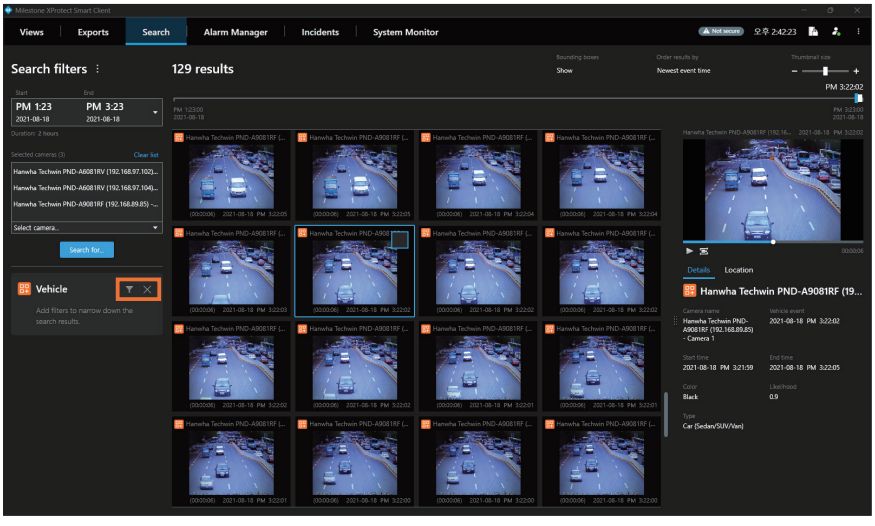


- If you select **Bus** only from **Type**, those objects with unchecked or unrecognized types are excluded from the search results.
- For **Color**, up to two colors can be selected. Searching is valid if any one of the two colors is present.

5. Close the filter window by clicking **X** to complete the setup.

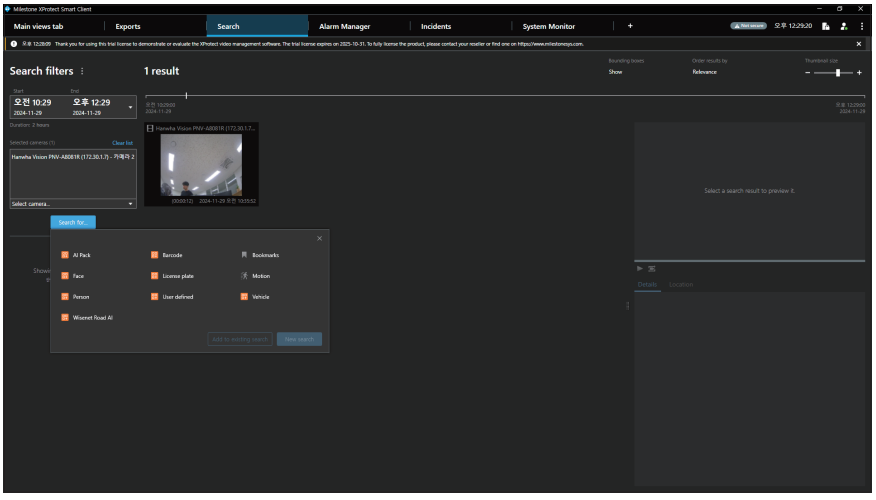


- Click and then the filter window appears again, and the detailed items can be changed.
- Click **X** to remove **Vehicle** from the search criteria.

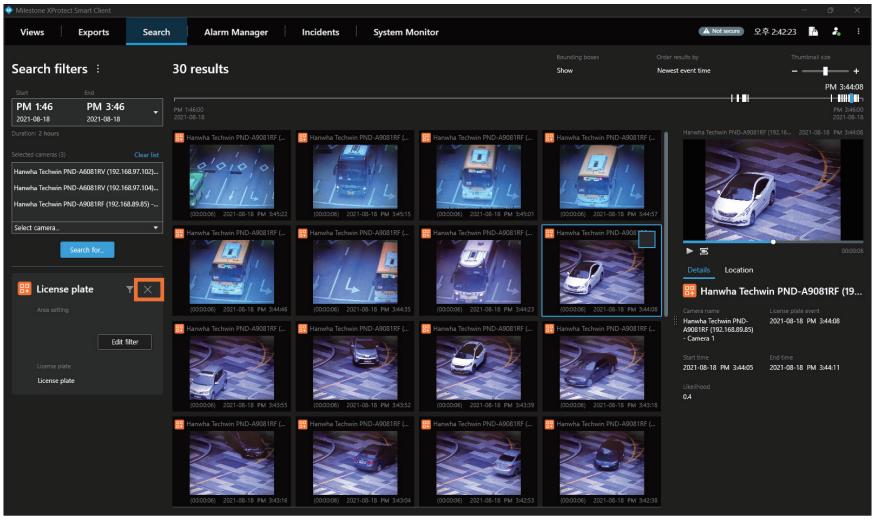


Searching for Vehicle License Plates

1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time and camera, click the **Search for...** button.
   Additional search filters are displayed.



4. Select **License plate** from the search criteria, and click the **New search** button.
   License plate will be added to the search criteria, and the search results can be checked.
   From the list, you can select an event and play its video.
   - **License plate** searches for a vehicle license plate.
     If you want to search by manually entering a vehicle license number, see Searching for Wisenet Road AI.
5. Click **X** to remove **License plate** from the search criteria.

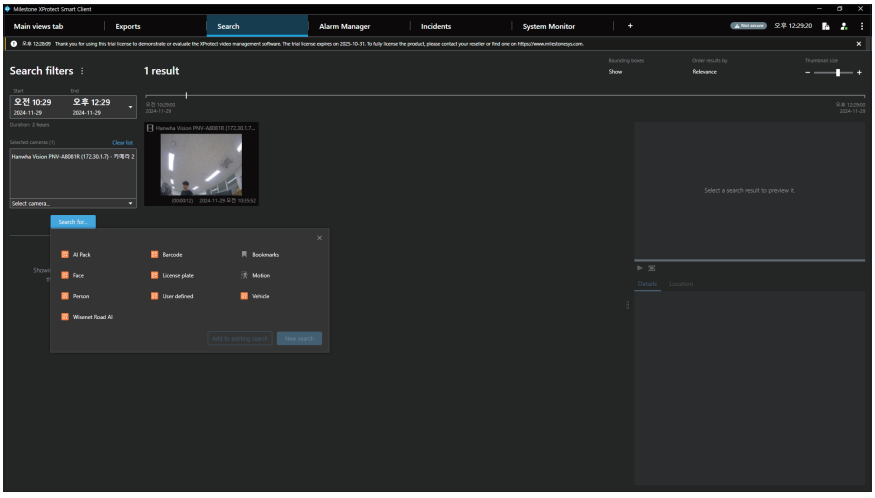


Searching for Wisenet Road AI

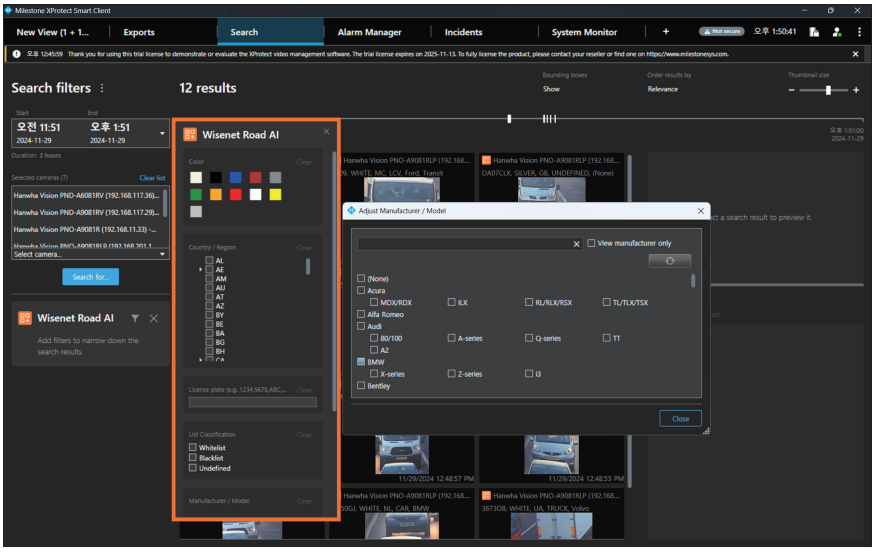
Note

Wisenet Road AI search is only available on cameras with the WisenetRoadAI or ParkWatch application installed.

1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time and camera, click the **Search for...** button. Additional search filters are displayed.

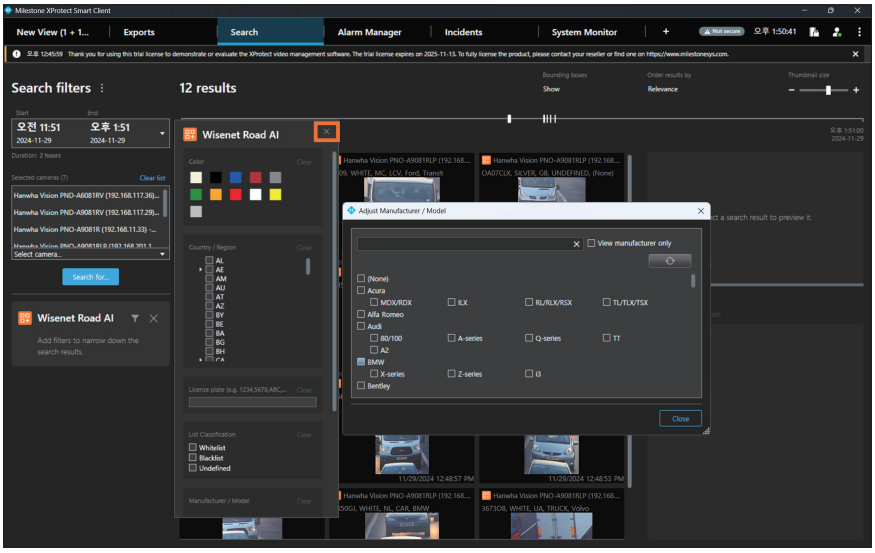


4. Select **Wisenet Road AI** from the search criteria, and click the **New search** button.
Wisenet Road AI will be added to the search criteria, and the filter window will appear.
Click the checkbox of detailed items to check the search results right away.
Click the **Clear** button to delete the selected item.
From the list, you can select an event and play its video.

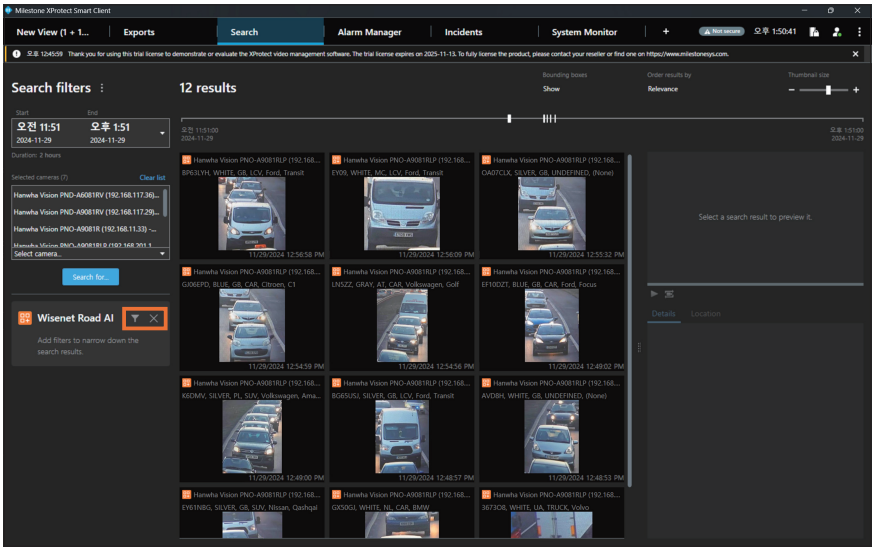


- You can select **Country/Region** and **Color** without number limits.
- For some countries, you can search by selecting specific regions.
- You can enter the license plate number of a vehicle that you want to search for in **License plate**. You can also enter multiple conditions for search, separated by commas. (e.g. 3690, ABC1234, 1ABC234)
- You can select the manufacturer or model name of the vehicle that you want to search by clicking the **Edit filter** button in the **Manufacturer/Model**. Click the button to reset your selection.
- In the search results, the following vehicle information can be found:
  - Country/Region, License plate, Manufacturer/Model, Type, Vehicle color, License plate color
- You can select **Whitelist** (registered vehicle), **Blacklist**, or **Undefined** on the vehicle classification criteria.
  Undefined indicates all vehicles, excluding **Whitelist** and **Blacklist**.

5. Close the filter window by clicking **X** to complete the setup.



- Click and then the filter window appears again, and the detailed items can be changed.
- Click **X** to remove **Wisenet Road AI** from the search criteria.

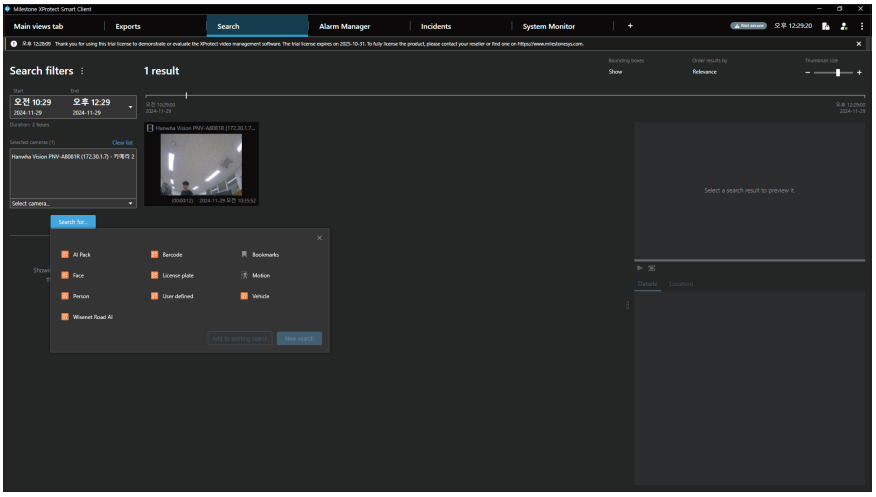


Searching for User defined

Note

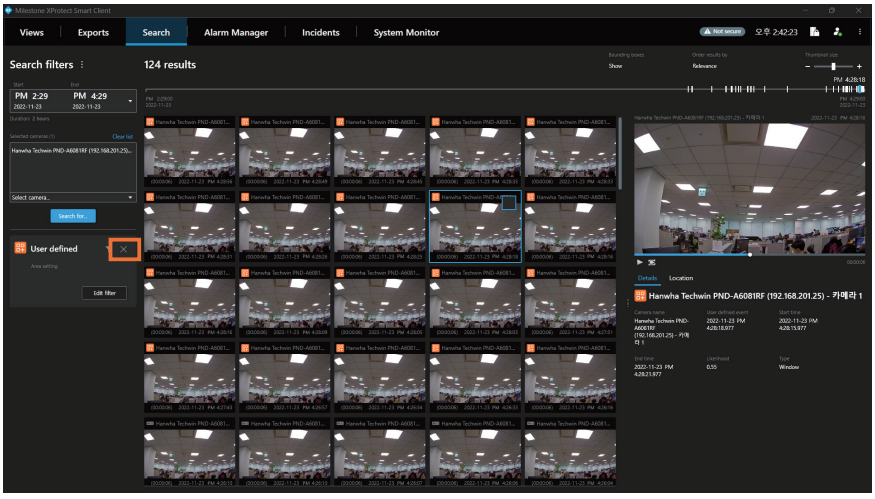
User defined search is only available in camera model(P AI series) that support the WiseDetector function.

1. Launch the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time, and camera, and click the **Search for...** button.
   Additional search items are displayed.



4. Select **User defined** from the search criteria, and click the **New search** button.
   User defined will be added to the search criteria, and the search results can be checked.
   From the list, you can select an event and play its video.
   - **User defined** searches the object that is defined through the camera's WiseDetector function.
     For specific usage methods, refer to How to use WiseDetector on the Device Manager.

5. Click the **X** to remove **User defined** from the search criteria.

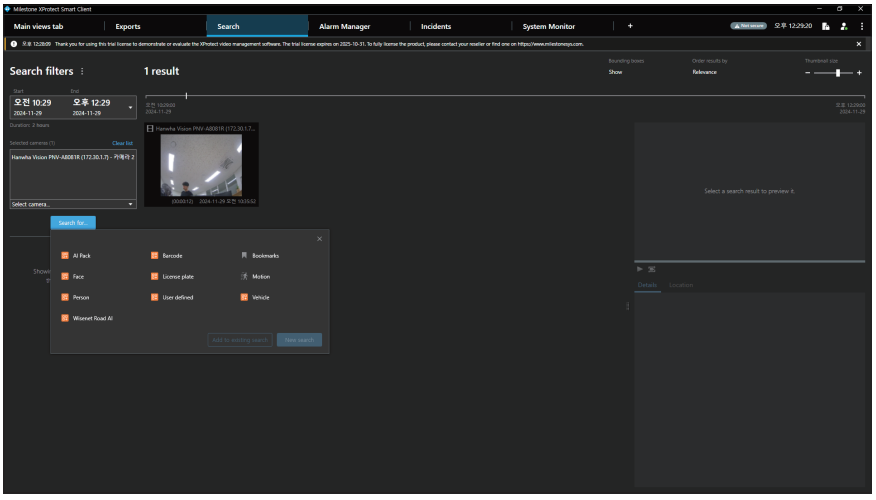


Searching for AI Pack

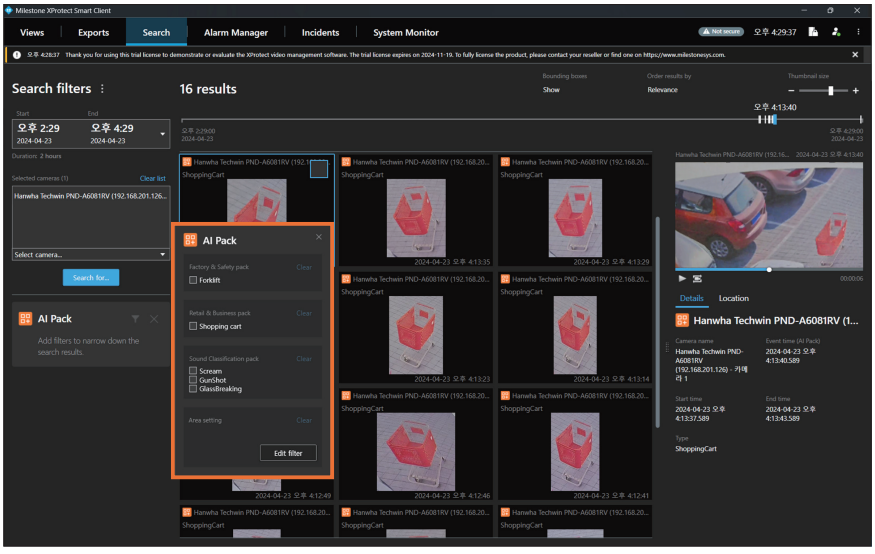
Note

- AI Pack search is available only in cameras with the AI Pack license applied. For detailed instructions on the usage, refer to the AI Pack specifications.
- The plug-in supports two apps out of the four in the AI Pack: Retail&Business pack and Factory&Safety pack.

1. Launch the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time, and camera, and click the **Search for...** button. Additional search items are displayed.

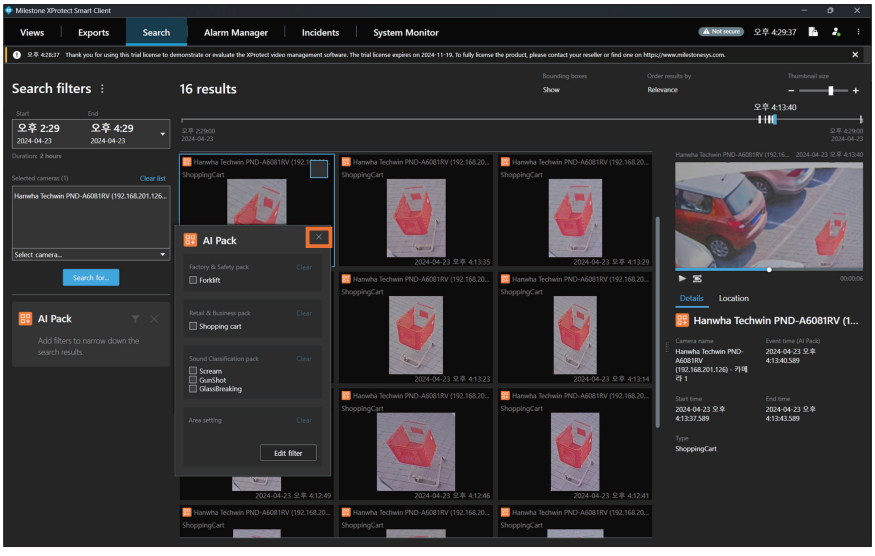


4. Select **AI Pack** from the search criteria, and click the **New search** button.
   AI Pack will be added to the search criteria, and the filter window will appear.
   Click the checkbox of detailed items to check the search results right away.
   Click the **Clear** button to delete the selected item.
   From the list, you can select an event and play its video.

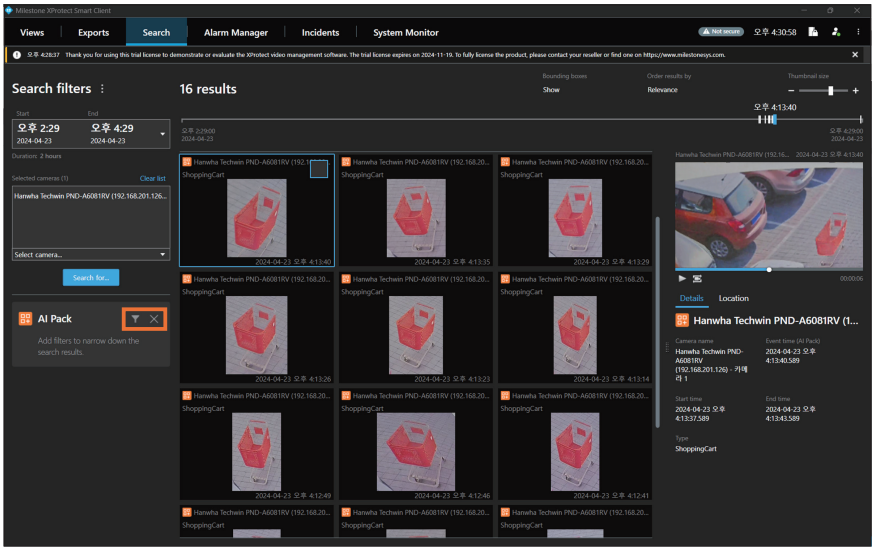


- The event search results for the **Sound Classification pack** display the device where the event occurs, time, information on properties, and sound source playback control bar, but no video thumbnails.

5. Close the filter window by clicking **X** to complete the setup.



- Click and then the filter window appears again, and the detailed items can be changed.
- Click **X** to remove **AI Pack** from the search criteria.

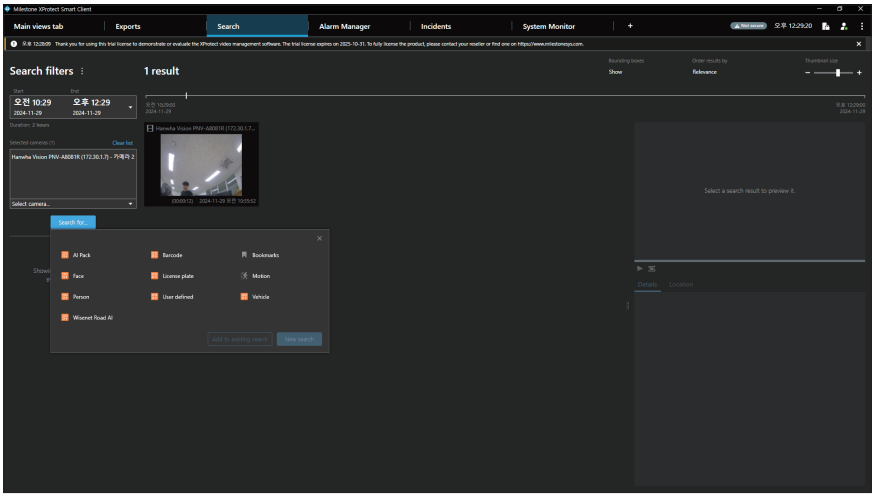


Searching for Barcodes

Note

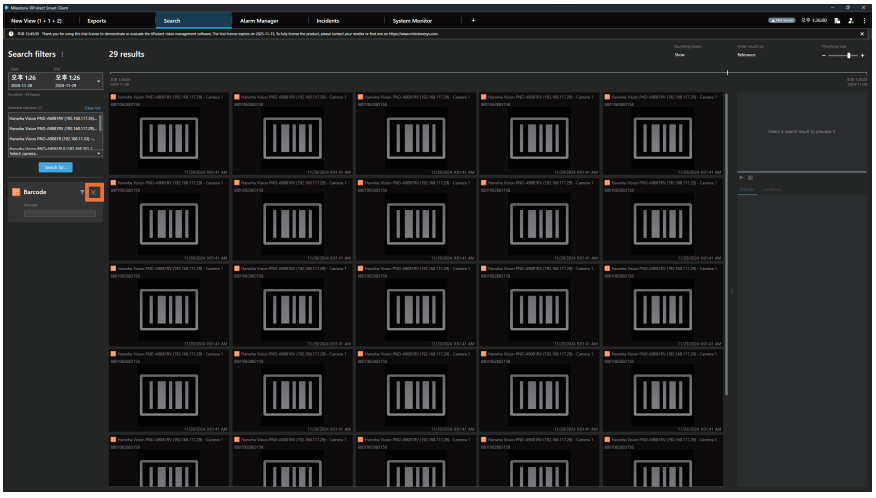
To facilitate the use of the plug-in, you should set the second profile resolution of No.2 channel on the BCR camera differently from the profile resolution being used in the Milestone.
You can change the resolution of the camera in the camera web viewer.
For details, refer to the related items in **Hanwha Vision website** > **QUICK LINKS** > **Technical Support Portal** > **Hardware** > **Cameras**.

1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time and camera, click the **Search for...** button.
   Additional search filters are displayed.



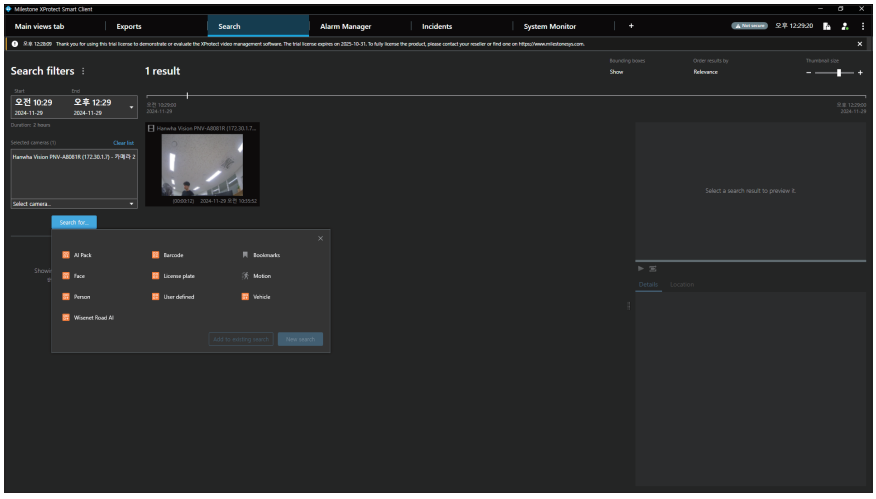
4. Select **Barcode** from the search criteria, and click the **New search** button.
   Barcode will be added to the search criteria, and the search results can be checked.
   - Even partial input of the barcode will display all search results including the input barcode.
   - The thumbnail images do not appear in the barcode event search results.

5. Click **X** to remove **Barcode** from the search criteria.

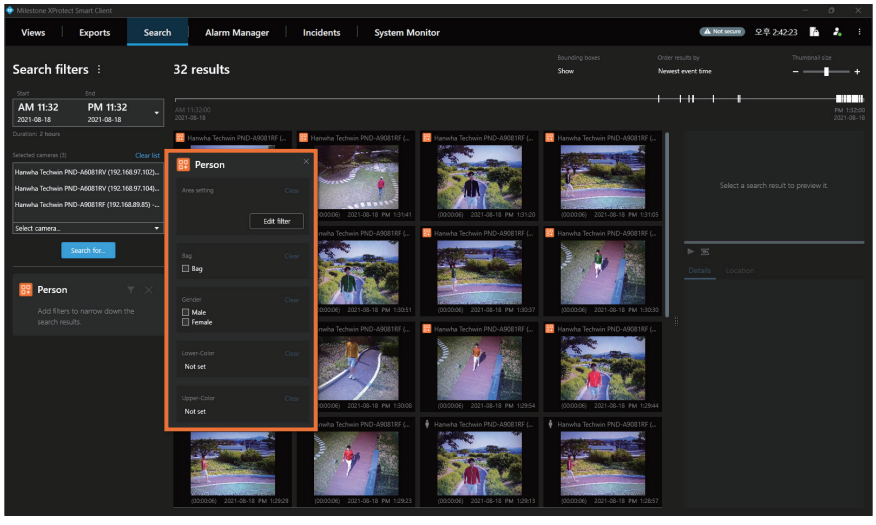


Setting up Event Area

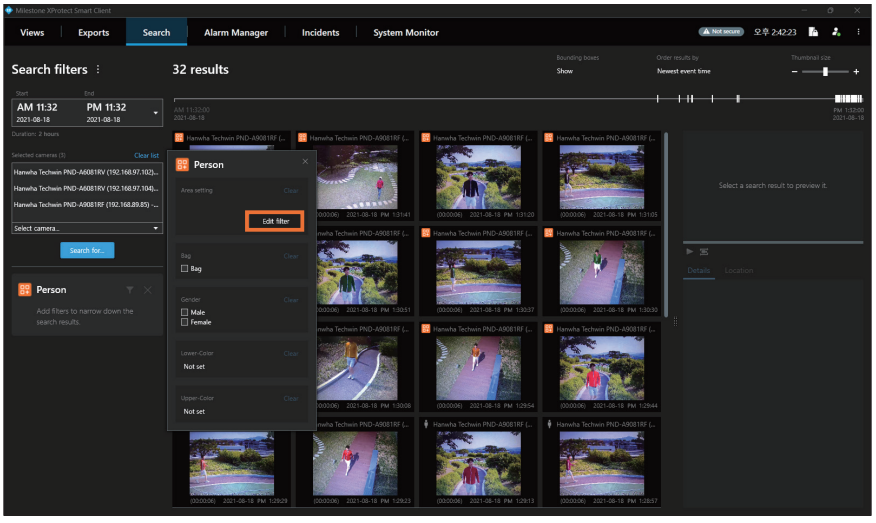
1. Execute the **XProtect Smart Client** program.
2. Click the **Search** tab.
3. Select a search start time, end time and camera, click the **Search for...** button.
   Additional search filters are displayed.



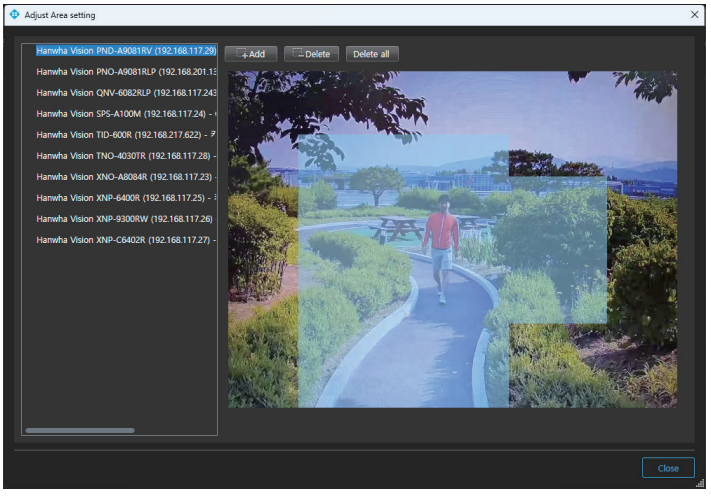
4. Select a search item you want, and click the **New search** button.
   The selected item will be added to the search criteria, and the filter window will appear.
   - **Person**, **face**, **vehicle**, **license plate**, **user defined**, and **AI Pack** can be searched by setting the area.
     Wisenet Road AI and **barcode** do not support area settings.



5. After setting the details, click the **Edit filter** button.
   Then, the **Adjust Area setting** window will appear.



6. Select the camera for area setting, and set the area you want.



- **Add**: You can drag the mouse to set the area you want.
- **Delete**: You can drag the mouse to delete a previously set area.
- **Delete all**: You can delete all areas previously set for the selected camera.

Note

Up to 4 camera areas can be set at the same time.

7. To finish the setup, click **Close**.

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cefsharp/CefSharp.MinimalExample

<cefsharp/CefSharp.MinimalExample>

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