

ZN-AIBOX-STD Integration Guide for
Milestone XProtect VMS v1.0

1. Introduction

1.1 Prerequisites

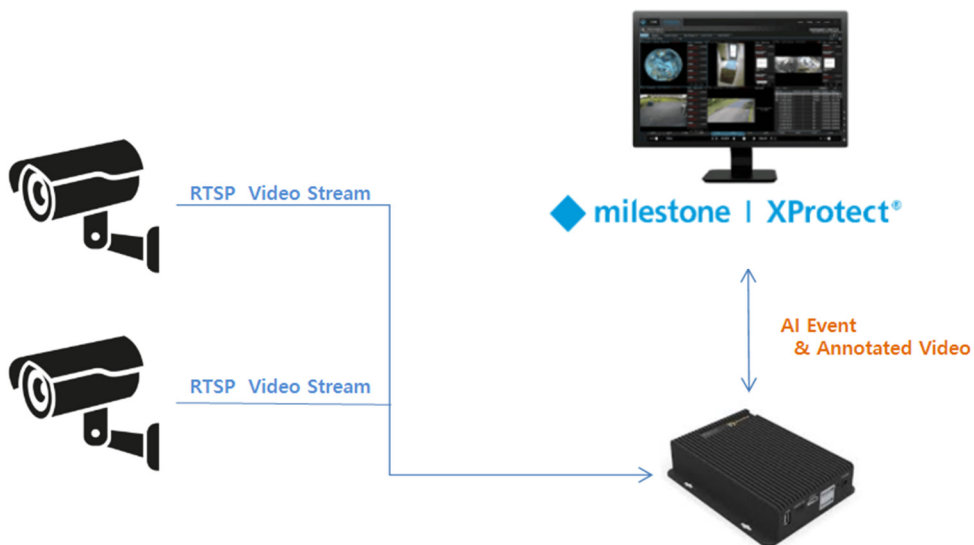
- ZN-AIBOX-STD FW version 102801 or greater.
- Milestone XProtect 2023 R1 or greater.

1.2 Learn about integration architecture

There are two ways to integrate ZN-AIBOX-STD with Milestone XProtect VMS:

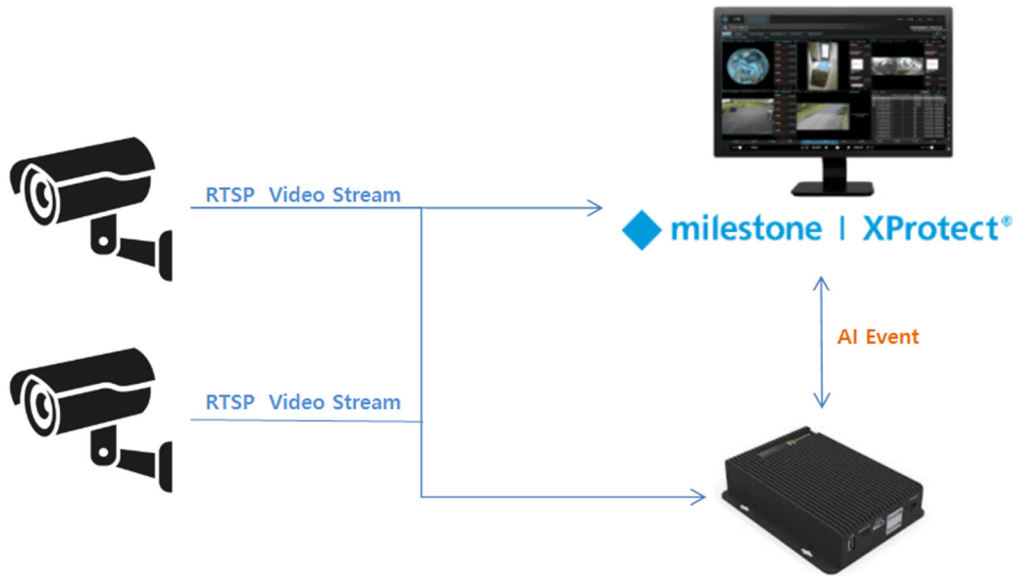
1) Case 1:

The ZN-AIBOX-STD receives the RTSP video stream from the IPCAM and provides the annotated video and event data after AI analysis. The annotated video is transcoded to provide object recognition information, bounding boxes, zone information, and more from ZN-AIBOX-STD's AI analysis.



2) Case 2:

Both ZN-AIBOX-STD and Milestone XProtect VMS simultaneously receive the RTSP video stream from the IPCAM, and the ZN-AIBOX-STD sends the AI analysis events to XProtect VMS. If the customer wishes, they can also receive the RTSP stream from Milestone XProtect VMS instead of the IPCAM's RTSP video stream.



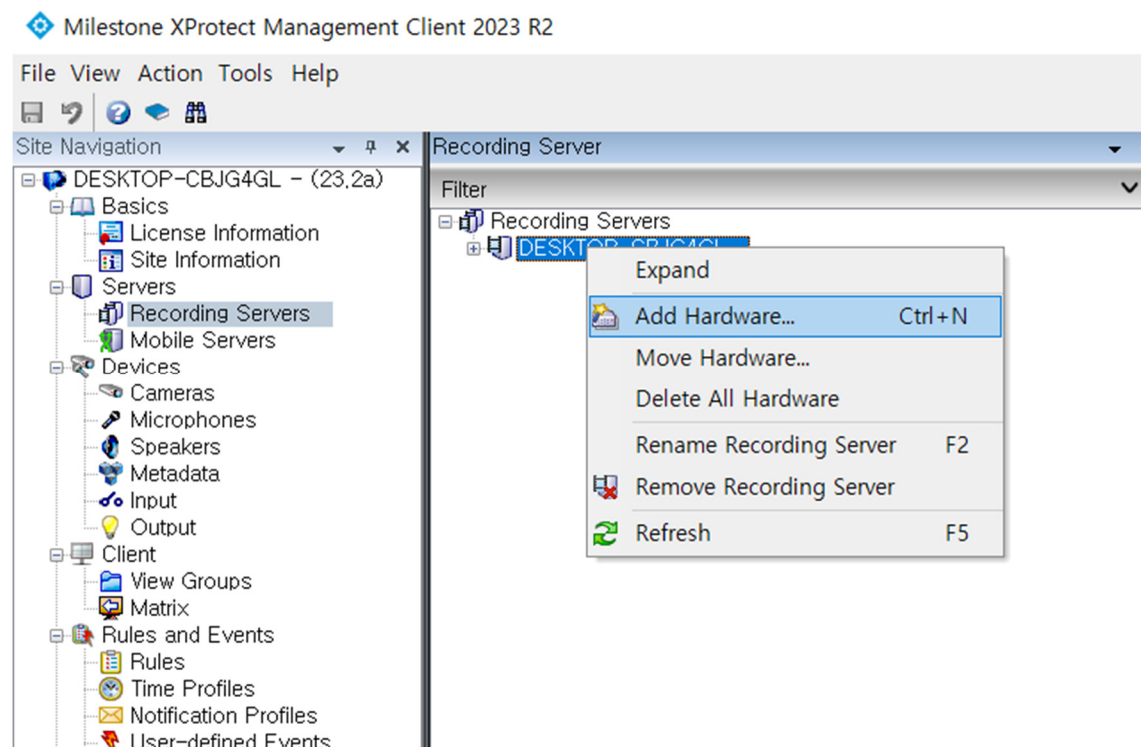
2. Configuration

2.1 Milestone xProtect VMS Configuration

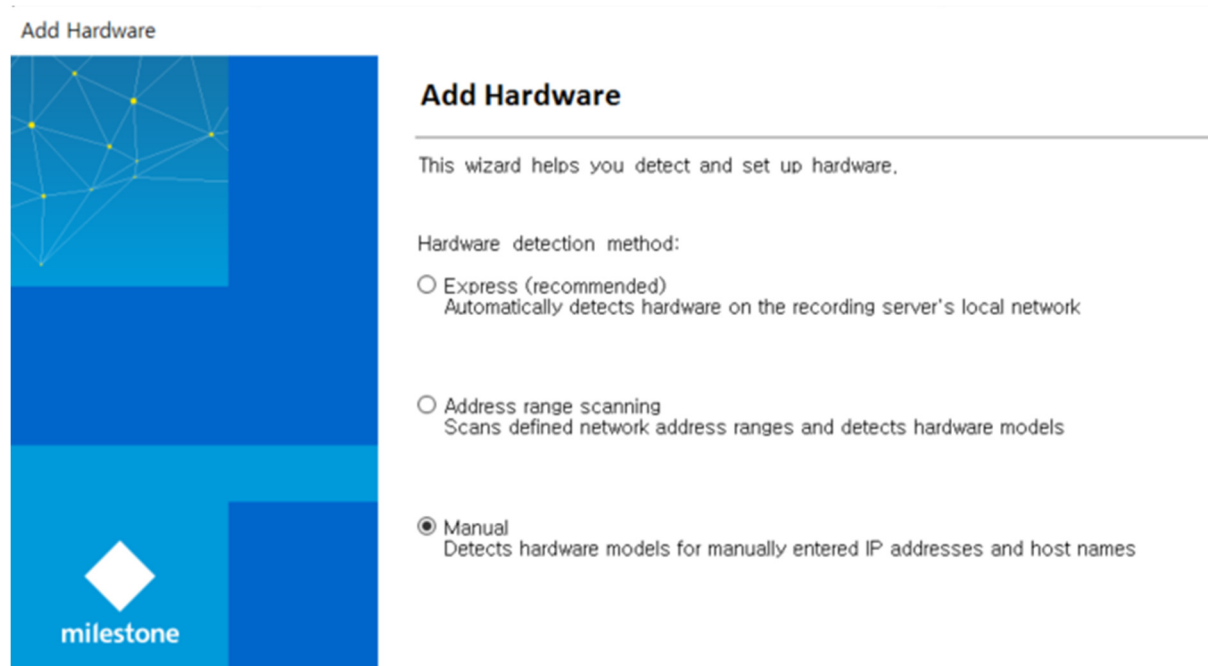
We will explain how to integrate ZN-AIBOX-STD with Milestone XProtect VMS using the Casel method.

1) Adding the ZN-AIBOX-STD to Milestone XProtect VMS.

In the XProtect Management Client, select "Add Hardware".



If you know the IP address of the ZN-AIBOX-STD device, choose "manual add".
(Automatic search is also available.)



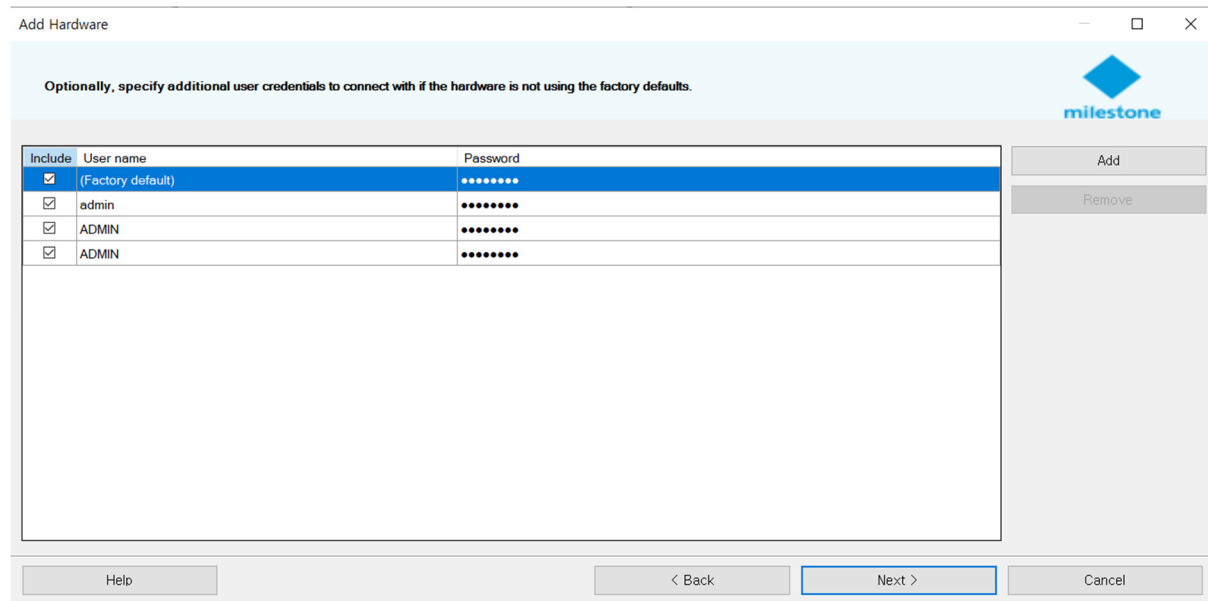
Add Hardware

This wizard helps you detect and set up hardware.

Hardware detection method:

- Express (recommended)
Automatically detects hardware on the recording server's local network
- Address range scanning
Scans defined network address ranges and detects hardware models
- Manual
Detects hardware models for manually entered IP addresses and host names

Enter the login information for the ZN-AIBOX-STD.



Optionally, specify additional user credentials to connect with if the hardware is not using the factory defaults.

Include	User name	Password
<input checked="" type="checkbox"/>	(Factory default)
<input checked="" type="checkbox"/>	admin
<input checked="" type="checkbox"/>	ADMIN
<input checked="" type="checkbox"/>	ADMIN

Buttons: Add, Remove, Help, < Back, Next >, Cancel

Select "ONVIF" from the device driver options.

Add Hardware

Select which drivers to use when scanning for hardware.
The more drivers selected, the slower the scanning.

- Arecont
- AXIS
- Bosch
- Canon
- Hanwha
- HikVision
- Infinova
- i-PRO/Panasonic
- JVC
- Milestone
- Mobotix
- ONVIF
- Samsung
- Sony

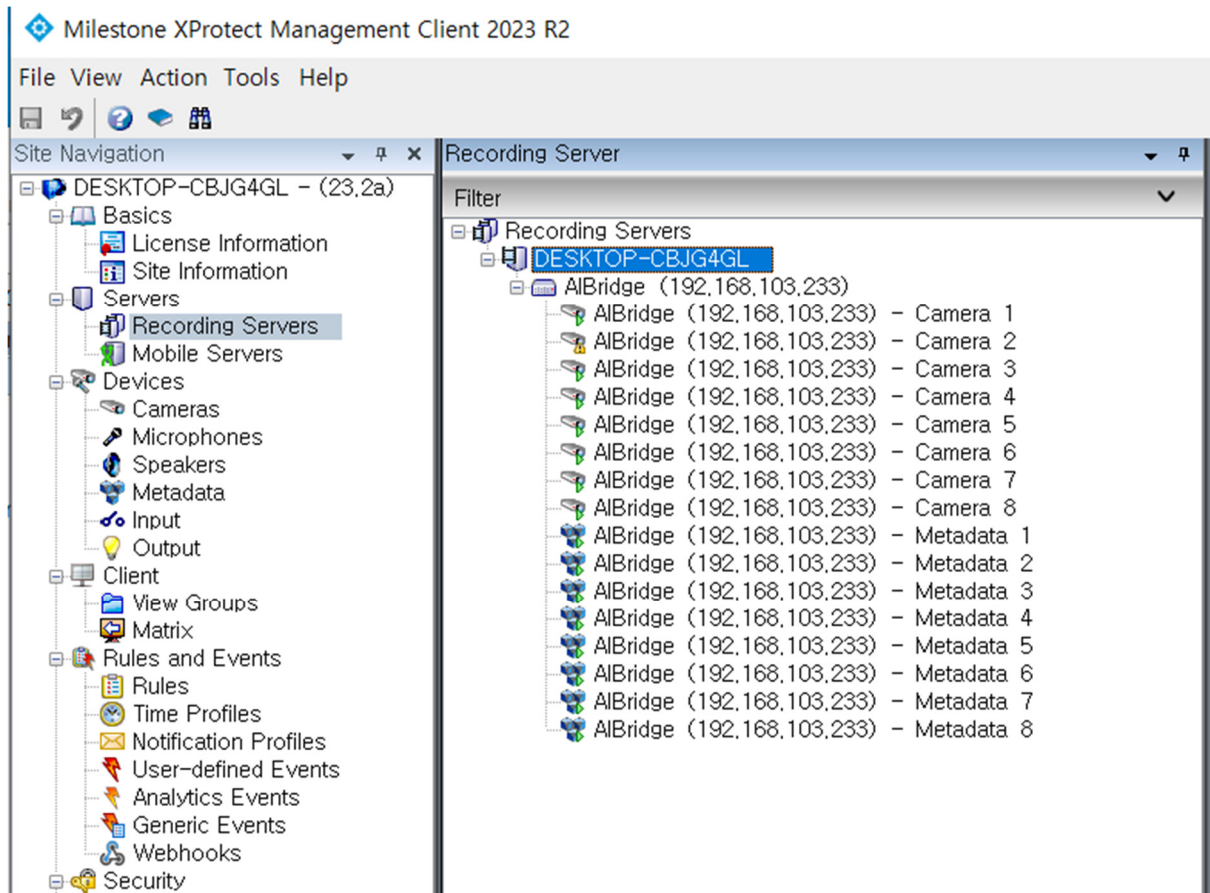
Enter the IP address information of the ZN-AIBOX-STD. If you haven't changed the onvif service port settings of ZN-AIBOX-STD, the Port is 80. HTTPS is not used.

Add Hardware

Enter the network address and port of the hardware you want to add.
Optionally, select the hardware model to speed up detection.

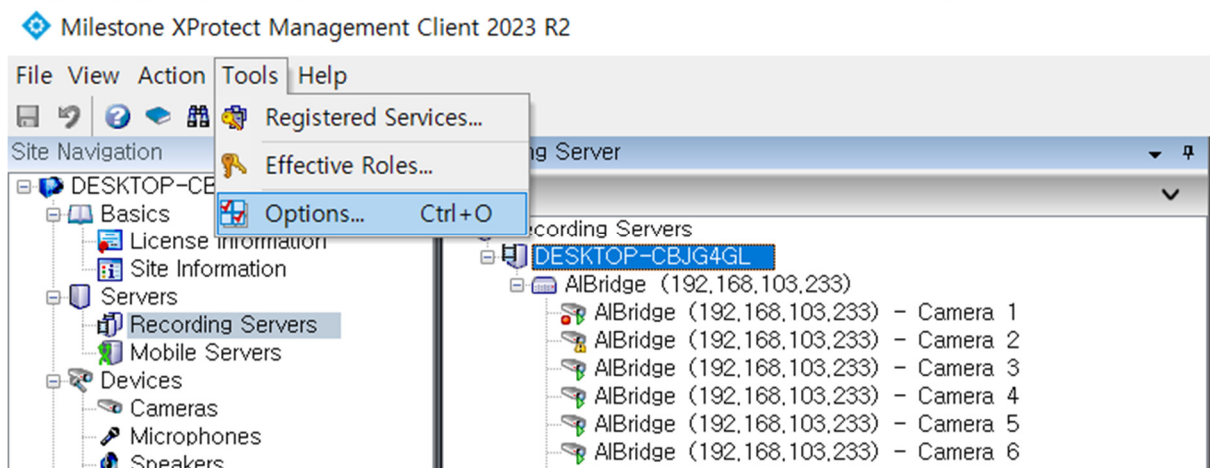
	Address	Port	Use HTTPS	HTTPS port	Hardware model
▶	192.168.103.233	80	<input type="checkbox"/>	443	(Auto-detect)

Add the detected ZN-AIBOX-STD hardware and change the name as desired. If this fails, recheck the setup and try again.



2) Enable the XProtect analytics events

Click on the **Tools > Options** menu in the XProtect Management Client.



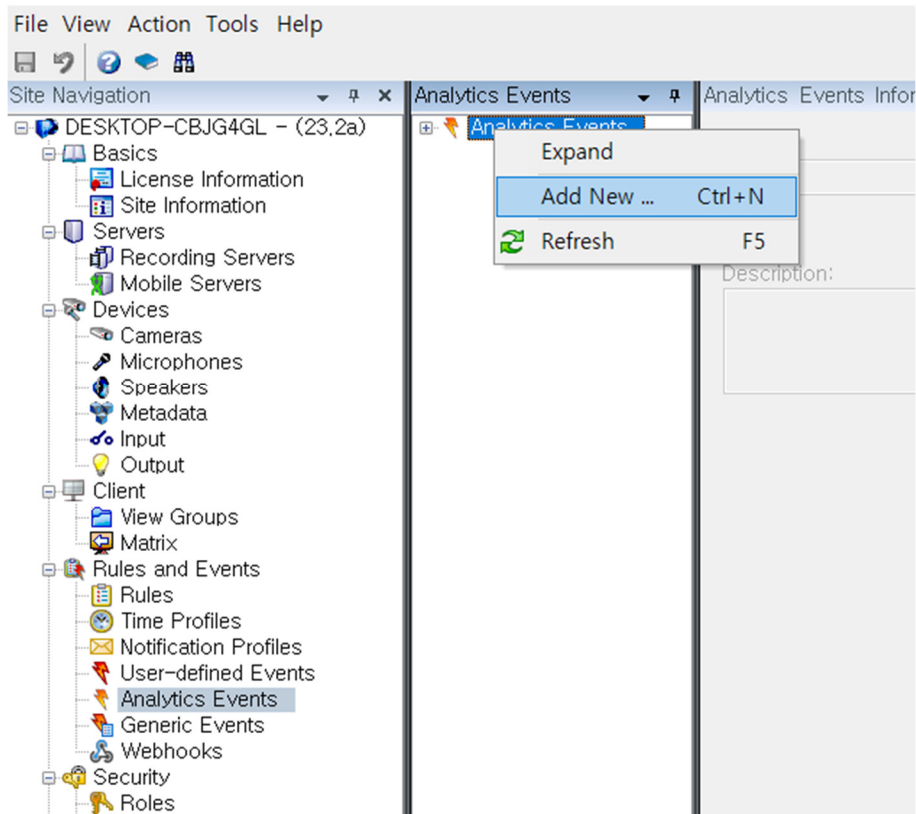
In the Analytics Event tab, check the **Enabled** checkbox. The service port must be open in the firewall. If you change the service port, you must enter the same port number when registering the ZN-AIBOX-STD's Milestone action handler.

The image shows a software configuration window titled "Options" with a close button (X) in the top right corner. The window has several tabs: "External IDP", "Audio Messages", "Privacy settings", "Access Control Settings", "Analytics Events", and "Customer Dashboard". The "Analytics Events" tab is active. In this tab, there is a section for "Analytics events" which contains a checked checkbox labeled "Enabled" and a text input field labeled "Port:" containing the value "9090". Below this is a "Security" section with the heading "Events allowed from:". There are two radio button options: "All network addresses" (which is selected) and "Specified network addresses:". Under the "Specified network addresses:" option, there is a table with one column labeled "Address" and one row containing a wildcard character "*". Below the table is an "Import..." button. At the bottom of the dialog, there are three buttons: "Help", "OK", and "Cancel".

3) Add analytics events and alarm definitions.

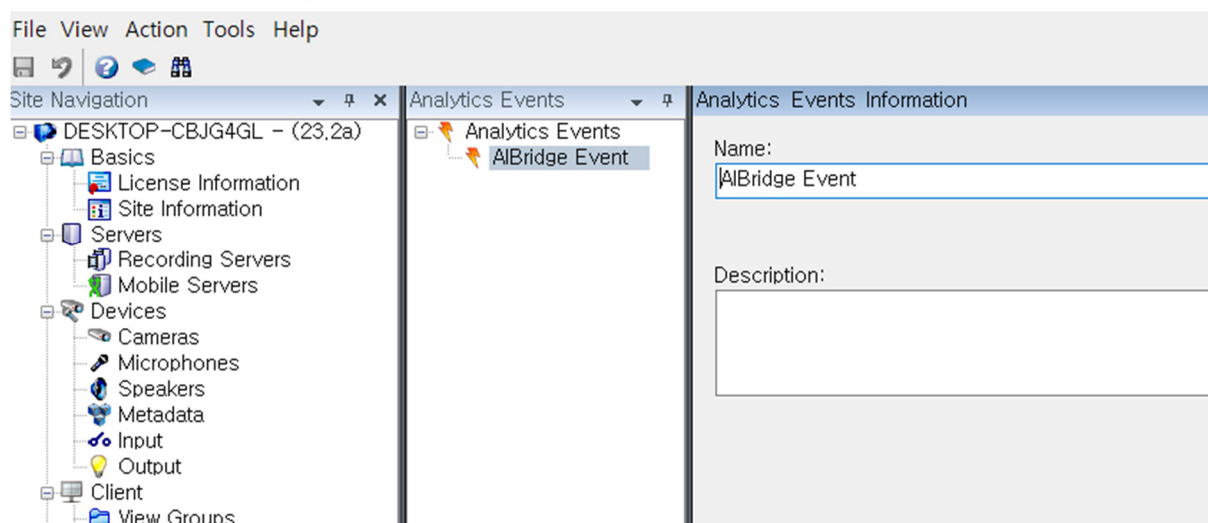
In the XProtect Management Client, select **"Analytics events"** from the left panel, right-click, and choose **"Add New"**.

◆ Milestone XProtect Management Client 2023 R2



Enter the event name as **"ZN-AIBOX-STD Event"**. This value is an essential key for distinguishing events between ZN-AIBOX-STD and XProtect. It must be entered in the **"Message key"** property in the Milestone Action handler settings of ZN-AIBOX-STD.

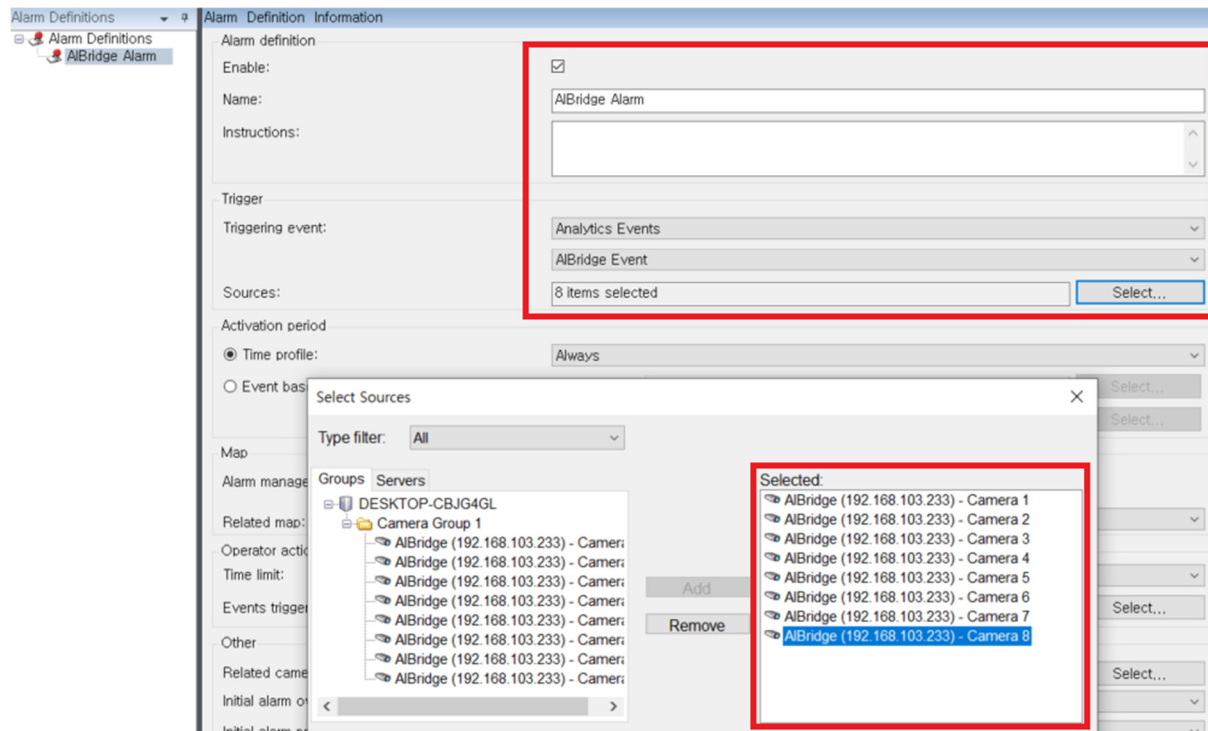
◆ Milestone XProtect Management Client 2023 R2



In the XProtect Management Client, add "Alarm definitions".

Select "Analytics Events" for the Trigger Event item, and choose the "ZN-AIBOX-STD Event" you added earlier. For the Trigger Source item, add the channel of the ZN-AIBOX-STD.

Note: When registering the Trigger Source, if you add the IPCAM channel instead of the ZN-AIBOX-STD camera channel, it operates as the Case2 integration type.



2.2 ZN-AIBOX-STD Configuration

1) Add Video Stream

Set (add) the video stream. You can add it either by conducting an Onvif device search or by directly adding the IPCAM RTSP stream address.

The screenshot displays the configuration interface for channel CH 3. On the left is a dark sidebar menu with the following sections: VIDEO (Video Input, Video Stream, False Alarm Reduction), DISPLAY (Display), EVENT ACTION LIST (Event Action List), SYSTEM SETTINGS (Network, System, License Management), and APP SETTINGS (Explore AI Apps). The 'Video Stream' option is selected and highlighted in blue.

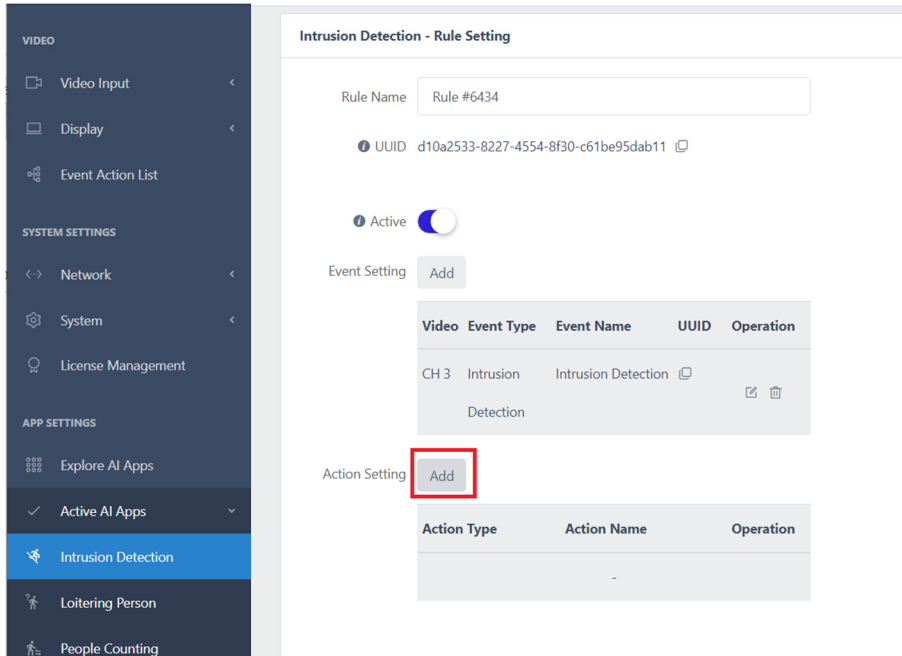
The main configuration area is titled 'CH 3' and contains two sections:

- Attribute:** A text input field for 'Channel Name' containing the value 'Office-Milestone'.
- Video Source:** A form with the following fields:
 - URL: `rtsp://192.168.103.222/live/main`
 - Transport: A dropdown menu set to 'TCP'.
 - HTTP(S) Port: A numeric input field set to '0' with up/down arrows.
 - Authentication: An unchecked checkbox.
 - Username: An empty text input field.
 - Password: An empty text input field.
 - Video Type: A dropdown menu set to 'Normal (Min.1280x720, M)'.

2) Set up the AI App

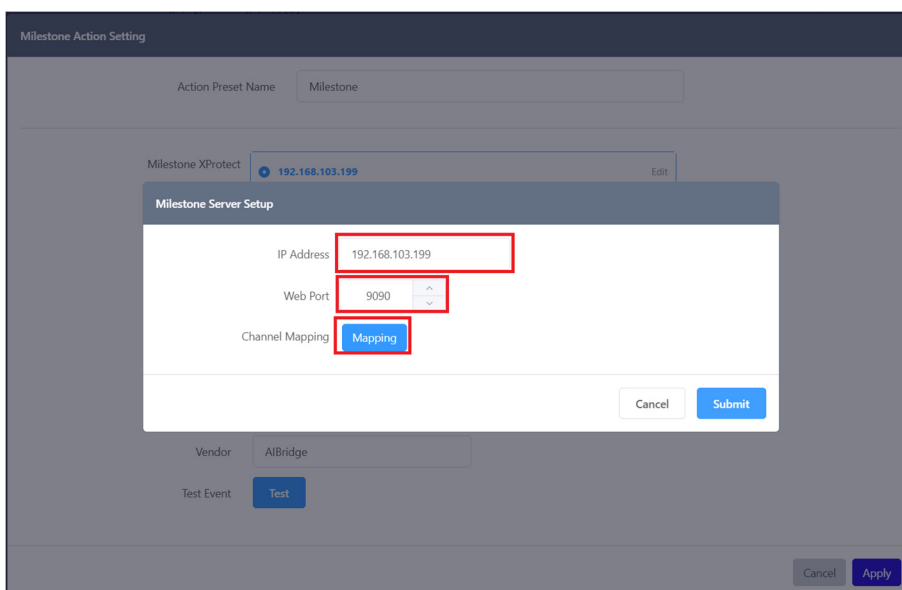
Select the desired AI App and set the AI event for the channel.

In the Actions Setting, click the Add button to add the Milestone action handler.



3) Enter the Milestone XProtect VMS Server Information

Enter the IP address of the Milestone XProtect VMS and the Analytic Event service port number. Then click the channel "Mapping" button.



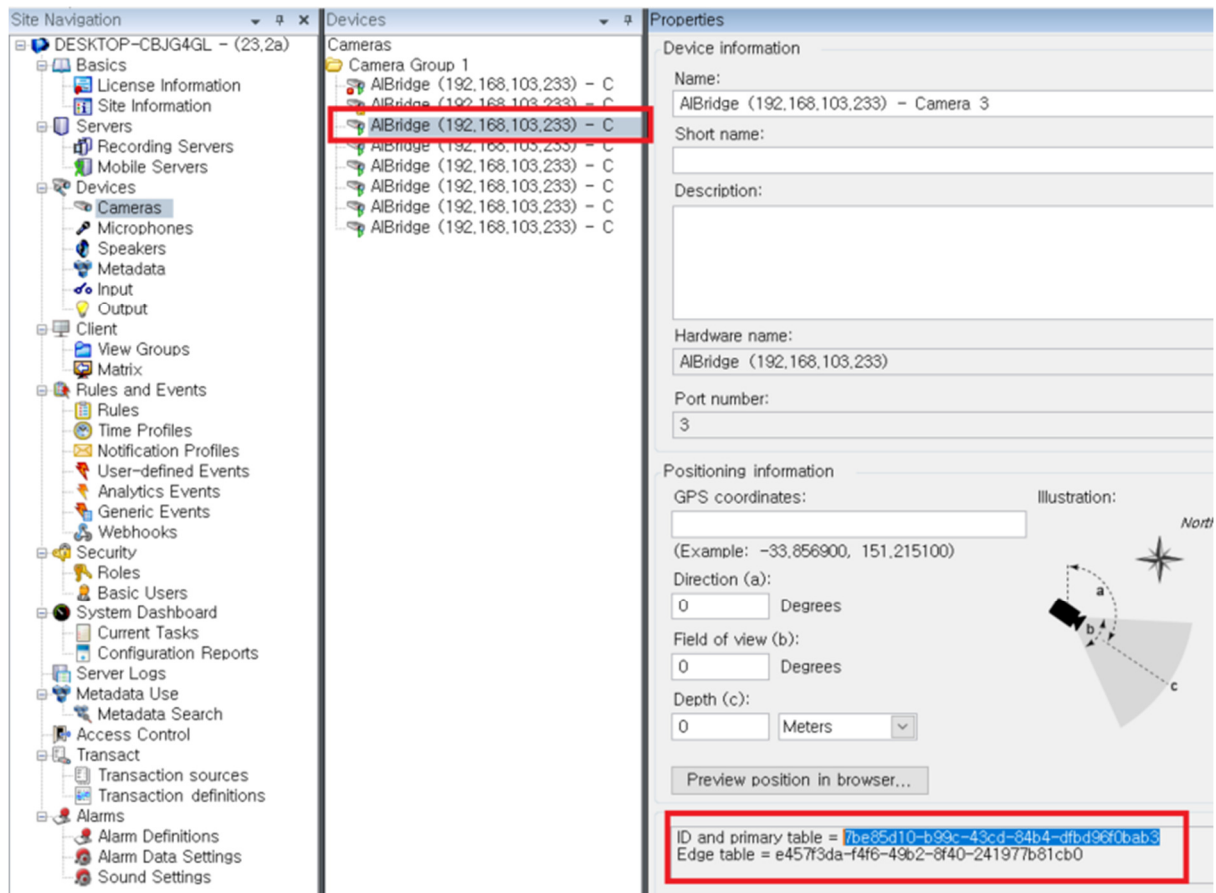
Enter the Camera Channel ID of Milestone XProtect VMS.

Note: If you enter the IPCAM channel ID information instead of the ZN-AIBOX-STD camera channel ID in the camera mapping information, it operates as the Case2 integration type.

The screenshot shows a 'Channel Mapping' window with a dark header. Below the header, there are eight rows, each representing a channel. The first row is labeled '1 CH' and contains the UUID '747dbad9-8bf7-4f47-b91e-6066e0c27d16'. The remaining seven rows are labeled '2 CH' through '8 CH' and each contains the text 'Milestone Source'. At the bottom right of the window, there is a blue button labeled 'Close'.

Channel	Source
1 CH	747dbad9-8bf7-4f47-b91e-6066e0c27d16
2 CH	Milestone Source
3 CH	7be85d10-b99c-43cd-84b4-dfbd96f0bab3
4 CH	Milestone Source
5 CH	Milestone Source
6 CH	Milestone Source
7 CH	Milestone Source
8 CH	Milestone Source

You can find the UUID for the Camera Channel ID by selecting the channel with the mouse while holding down the CTRL key and then looking at the bottom of the info tab.



For the "Message Key" property, input the name of the "Analytic Event" that you added in Milestone XProtect. In this guide, we have entered it as "ZN-AIBOX-STD Event".

Milestone Action Setting

Action Preset Name

Milestone XProtect

Web Port |

Only one Milestone server can be used.

Message key

Object

Location

Vendor

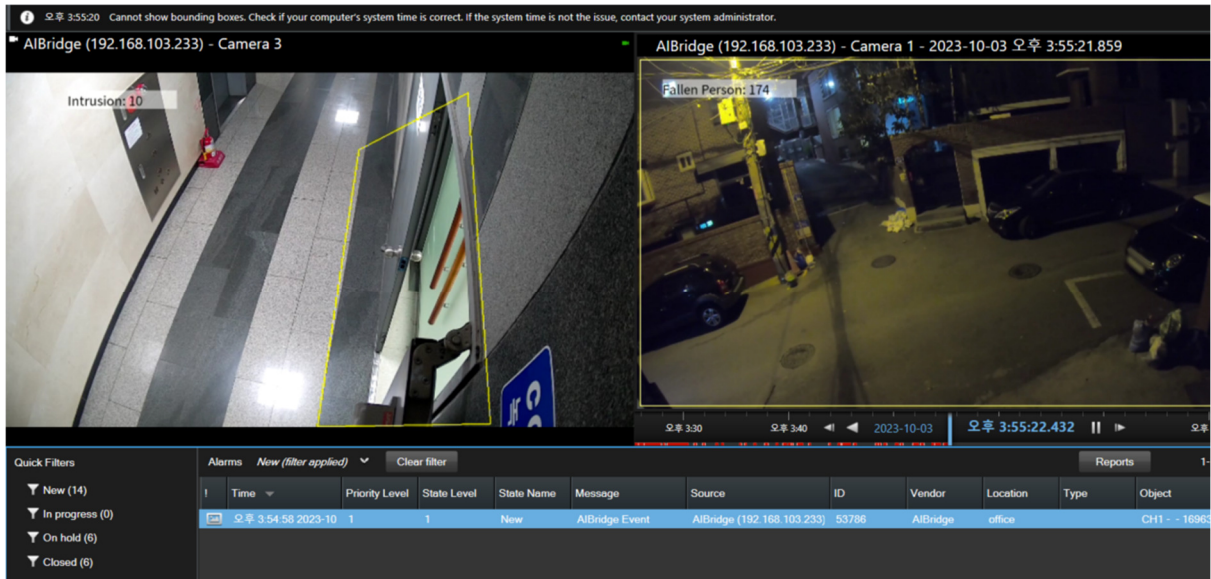
Test Event

The Object field can be utilized in various ways. You can enter event texts, LPR information, etc., so you can send additional information in the Milestone XProtect Alarm Manager.

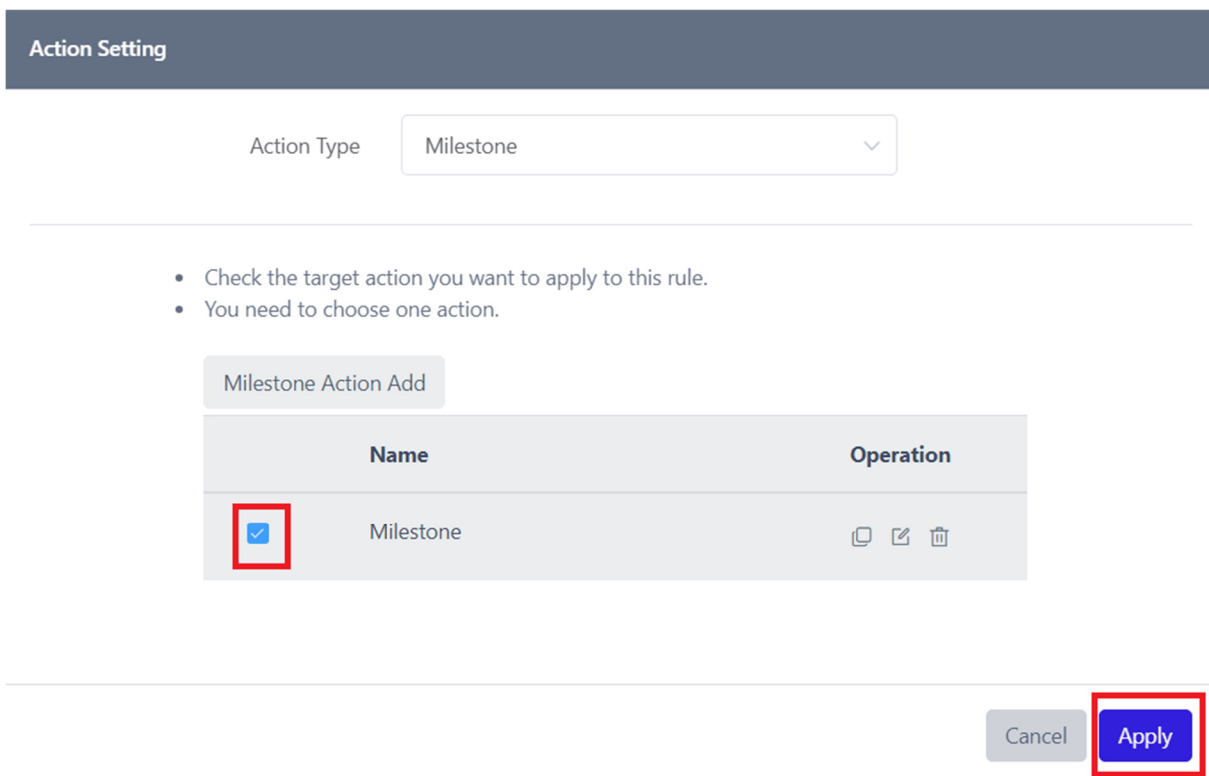
Object	Object
String Construction <input type="text" value="Use template"/> <input type="button" value="Use"/>	String Construction <input type="text" value="Simple LPR msg template"/> <input type="button" value="Use"/>
<input type="button" value="Add"/>	<input type="text" value="Select to add tokens"/> <input type="button" value="Add"/>
Editable Box <input type="text" value="Simple msg template(Json) (P)"/>	Editable Box <input type="text" value="{{LIST OBJECTS(PARAM=COMMA)}} (-OBJ LP_TEXT_DETECTED)}}{{LIST OBJECTS(PARAM=COMMA)}}"/>
Message Example <input type="text" value="Basic LPR msg template 456"/>	Message Example <input type="text" value="DR161AR, FR809XE"/>
<input type="text" value="LPR msg template(Json)"/>	

Note: If you want to set the Object property differently for each AI App, you can create a separate Milestone Action handler for each AI App.

By pressing the "Test" button, you can check the Test Event in the Milestone XProtect Client.



If the event test is successful, check the "Activate Milestone action handler" checkbox and press the "Apply" button to save the handler settings.



Finally, press the "Submit" button located at the bottom of the AI App settings to save all configurations.

- System
- License Management
- APP SETTINGS
 - Explore AI Apps
 - Active AI Apps
 - Intrusion Detection**
 - Loitering Person
 - People Counting

Combined Add

Rule

Reference Rule / Event	NOT	Time Range	Operation
			-

Cancel

Submit

3. Demo

3.1 Live

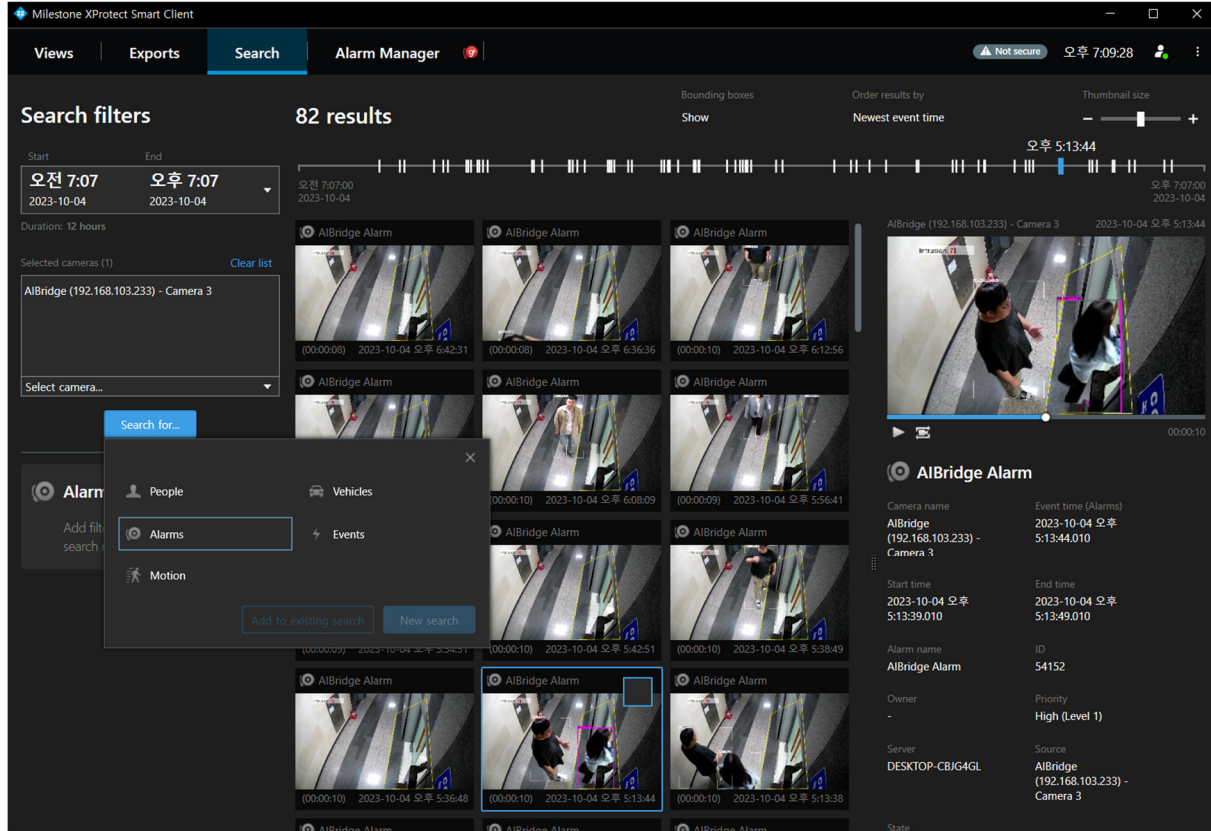
In the Live screen of the XProtect Smart Client, the analytics events will be listed within the Alarms panel as well as the annotated video.

The screenshot displays the Milestone XProtect Smart Client interface. At the top, there are navigation tabs: Views, Exports, Search, and Alarm Manager. The main area shows two live video feeds from 'AIBridge (192.168.103.233) - Camera 3'. The left feed shows an empty hallway with a yellow bounding box labeled 'Intrusion: 82'. The right feed shows a person walking in the hallway with a red bounding box labeled 'Intrusion: 81'. Below the video feeds is the 'Alarms' panel, which contains a table of detected events. The table has columns for Time, Priority Level, State Level, State Name, Message, Source, ID, Vendor, Location, Type, and Object. The 'Alarms' panel also includes a 'Quick Filters' sidebar on the left and a 'Reports' button on the right. At the bottom of the interface, there are 'PLAYBACK' and 'LIVE' buttons.

Time	Priority Level	State Level	State Name	Message	Source	ID	Vendor	Location	Type	Object
오후 6:42:31 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54182	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696412551.350
오후 6:38:36 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54179	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696412196.387
오후 6:12:56 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54174	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696410776.560
오후 6:08:35 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54171	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696410515.429
오후 6:08:09 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54170	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696410489.824
오후 5:56:41 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54166	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696409801.394
오후 5:54:51 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54165	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696409691.408
오후 5:42:51 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54161	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696408971.431
오후 5:38:49 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54160	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696408729.555
오후 5:36:48 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54158	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696408608.913
오후 5:13:44 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54152	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696407224.008
오후 5:13:38 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54151	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696407218.473
오후 4:52:15 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54144	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696405935.006
오후 4:52:09 2023-10	1	1	New	AIBridge Event	AIBridge (192.168.103.233)	54143	AIBridge	office	Intrusion	CH3 - Intrusion Detection - 1696405929.220

3.2 Search

In the search menu, click on the "Search for.." button and select Alarms to search for AI Events.



3.3 Alarm Manager

In the Alarm Manager, by clicking on an individual alarm, you can check detailed event occurrence information with recorded video.

The screenshot displays the Milestone XProtect Smart Client interface, specifically the Alarm Manager section. The main window shows a video playback of an alarm event. The video title is "53774 AlBridge Event - AlBridge (192.168.103.233) - Camera 1". The video shows a person falling on a set of stairs at night. A pink bounding box highlights the person on the stairs. The video playback controls show the time as 2023-10-03 오후 2:42:38.837. Below the video, there are fields for "Camera: AlBridge (192.168.103.233) - Camera 1" and "Go to Alarm Time".

On the left side, there are "Quick Filters" and "Servers" sections. The "Quick Filters" section shows "New (12)", "In progress (0)", "On hold (6)", and "Closed (9)". The "Servers" section shows "DESKTOP-CBJG4GL".

On the right side, there is a "Reports" table with 1-12 items. The table has columns for ID, Vendor, Location, Type, and Object. The data is as follows:

ID	Vendor	Location	Type	Object
53774	AlBridge	office	Fallen	CH1 - Fallen Person Detection
53775	AlBridge	office	Fallen	CH1 - Fallen Person Detection
53776	AlBridge	office	Fallen	CH1 - Fallen Person Detection
53777	AlBridge	office	Fallen	CH1 - Fallen Person Detection
53778	AlBridge	office	Fallen	CH1 - Fallen Person Detection
53779	AlBridge	office	Intrusion	CH3 - Intrusion Detection - 1698
53780	AlBridge	office	Fallen	CH1 - Fallen Person Detection
53781	AlBridge	office	Fallen	CH1 - Fallen Person Detection
53782	AlBridge	office	Fallen	CH1 - Fallen Person Detection
53783	AlBridge	office	Fallen	CH1 - Fallen Person Detection
53786	AlBridge	office	Fallen	CH1 - 1698318098 217268
53788	AlBridge	office	Fallen	CH1 - Fallen Person Detection

Note: The Alarm Manager is supported in Milestone XProtect Express+ and higher versions.

4. Revision History

v1.00 Initial document creation.