



Installation and Operating Guide

Milesight Plugin for Nx Witness

Version: V2.0.14

Date: 2026-06-30

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Chapter 1. Introduction

Using Milesight's advanced plugin, Network Optix's video management software integrates seamlessly with Milesight cameras to enhance operational efficiency. The plugin acquires the AI metadata stream from Milesight cameras, supporting sophisticated Smart Video

Content Analysis (VCA), Face Detection, and Automatic Number Plate Recognition (ANPR), etc., each metadata entity is transmitted as an individual object to the Nx Witness. These

objects can be viewed, searched, and alarms can be configured upon their detection, enabling centralized management through the Nx Witness , and achieving smarter and faster monitoring.

This User Guide provides an overview of the integration between Milesight's plugin and Nx Witness for capturing and analyzing. For a more thorough understanding of how the Nx

Witness handles AI metadata, we encourage you to consult the [Nx Witness](#) and its [VMS and camera applications manuals](#).

If you have any questions, please do not hesitate to contact our Milesight Support Team at support@milesight.com.

1.1 System Requirement

[Supported Nx Witness Version]

Network Optix Witness VMS v 5.1 or above.

[Supported Operating Systems]

Linux: Ubuntu 20.04, 22.04

Windows: 10,11

[Supported Milesight Camera Version]

Camera Series	Firmware Version
Mini Series (PD)	51.7.0.77-r9-c2 or above
Q Series (PG1)	CQ_8.0.4-r5 or above
AI 360° Panoramic Fisheye	CF_63.8.0.6
AI Multi-directional Camera (PE)	62.8.0.4-r2 or above
Pro Series (PE)	

PTZ Series (PE)	61.8.0.4-r6 or above
180° Panoramic Dome/Bullet Camera (PE)	

Camera Series	Firmware Version
Pro Series (PG1)	63.8.0.5-r2 or above
Road Traffic Management Series (PE)	T_61.8.0.4-r3 or above
Solar-powered Series (SP111&SP112)	52.8.0.4-r2 (for SP111) S_63.8.0.5 (SP112)

[Supported Functionalities]

You can get the detailed information from this link: [Milesight & Network Optix flyer](#).

Chapter 2. Installations

To provide a smoother installation experience, starting from Version 2.0.14, we have packaged the Analytics Plugin into standard executable installers. You no longer need to handle complex batch scripts or manual file copying.

This package supports the following environments:

Operating System	Architecture	Package Format	Notes
Windows	x86	.exe	Standard Executable Installer
Linux (Ubuntu)	X86	.deb	Debian Package Format
Linux (Ubuntu)	ARM64	.deb	For ARM-based Server/Devices
Embedded Linux	ARM64	.zip	For Server Embedded IPC Devices

Compatible Nx Platforms:

Nx Witness	Nx Meta	Nx Go	All Nx-based OEM Brands
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2.1 Windows Installation

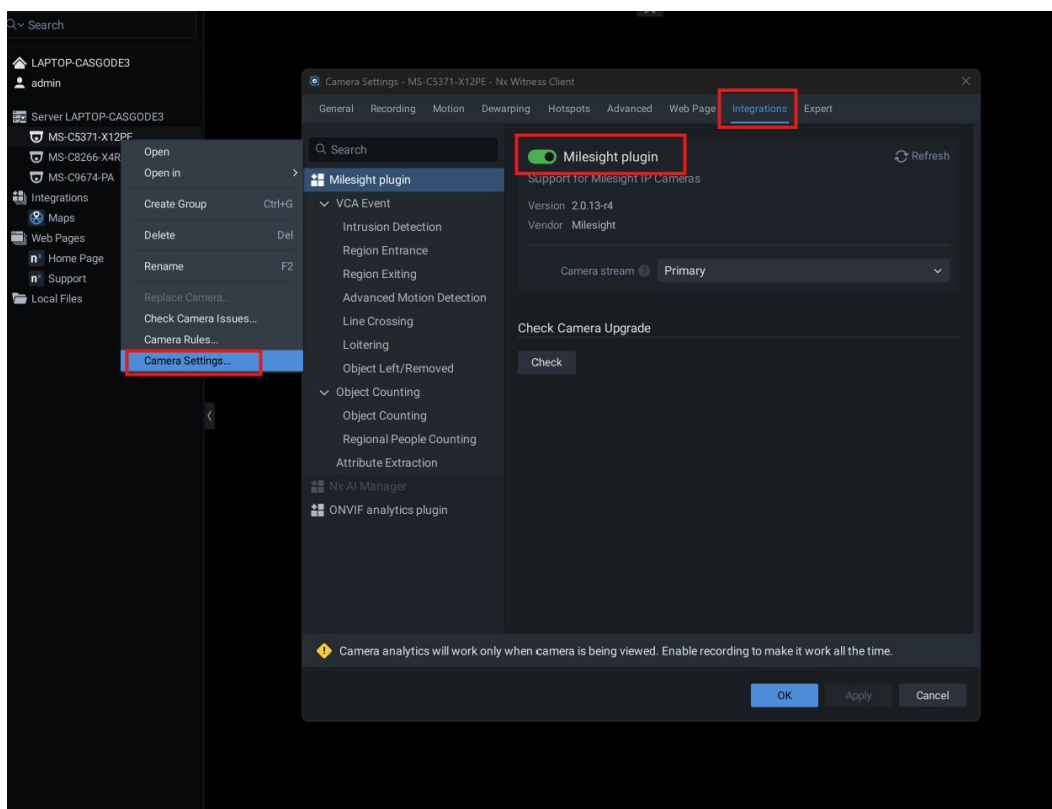
Step1: Go to Milesight Official Website, find the newest Nx Plugin, and download it: [Milesight Firmware & SDK](#)

The screenshot shows the 'SDK & Plugin' section of the Milesight website. It features a navigation bar with 'Firmware' and 'SDK & Plugin' tabs. Below the navigation, there are filters for 'All Series', 'Camera', 'IoT Gateway', 'Cellular Router', and 'Discontinued Product'. A search bar is also present. The main content is a table listing various SDKs and plugins. The row for 'Milesight Analytics Plugin for Network Optix (Windows)' is highlighted with a red border. This row shows version 'v2.0.14' and a release date of '2026-07-02'. Other rows include 'Milesight Analytics Plugin for Network Optix (Linux)', 'Milesight BACnet Driver', 'Milesight Plugin for Genetec', 'Milesight Plugin for Milestone (for Win64)', 'Milesight Storage Plugin for Network Optix (Linux)', 'Milesight Storage Plugin for Network Optix (Windows)', 'UF51-501EU (Software v76.x.x.x) Python SDK', 'UF51-504xx(-W4) Node-RED Plugin', 'UG56 Python SDK', and 'UG65&UG67 Python SDK'.

Step2: Find the file folder where you stored the installer. And click the file “milesight_analytics_plugin_windows_V2.0.14” to initiate installation.



Step3: After finishing the installation, you may launch the Nx Witness, and then right-click on a camera, select "camera settings", go to the "Integrations" tab, and toggle the switch to enable the Milesight Plugin, then you can enable the plugin feature within the camera settings.



2.2 Linux Installation

Step1: Go to Milesight Official Website, find the newest Nx Plugin, and download it: [Milesight Firmware & SDK](#)

Firmware > SDK & Plugin >

SDK & Plugin

All Series Camera IoT Gateway Cellular Router Discontinued Product Search...

Milesight Analytics Plugin for Network Optix (Linux)	v2.0.14	2026-07-02	User Manual >	↓
Milesight Analytics Plugin for Network Optix (Windows)	v2.0.14	2026-07-02	User Manual >	↓
Milesight BACnet Driver	v1.0.1.9	2025-07-14	User Manual >	↓
Milesight Plugin for Genetec	V1.0.0.1	2026-03-03	User Manual >	↓
Milesight Plugin for Milestone (for Win64)	V2.0.0.3	2026-03-26	User Manual >	↓
Milesight Storage Plugin for Network Optix (Linux)	V1.0.3	2026-05-21	User Manual >	↓
Milesight Storage Plugin for Network Optix (Windows)	V1.0.3	2026-05-21	User Manual >	↓
UF51-501EU (Software v76.x.x.x) Python SDK	v2.2.1	2021-10-22	Quick Guide >	↓
UF51-504xx(-W4) Node-RED Plugin	v2.0.1	2025-04-11	Release Note >	↓
UG56 Python SDK	v1.1.15	2022-12-06	Quick Guide >	↓
UG65&UG67 Python SDK	v1.1.14	2020-09-29	Quick Guide >	↓

Step2: Find the file folder where you stored the installer. And right click on the interface of the file folder, click “Open in Terminal”.

milesight_analytics_plugin_amd64_V2.0.14.deb 3.7 MB

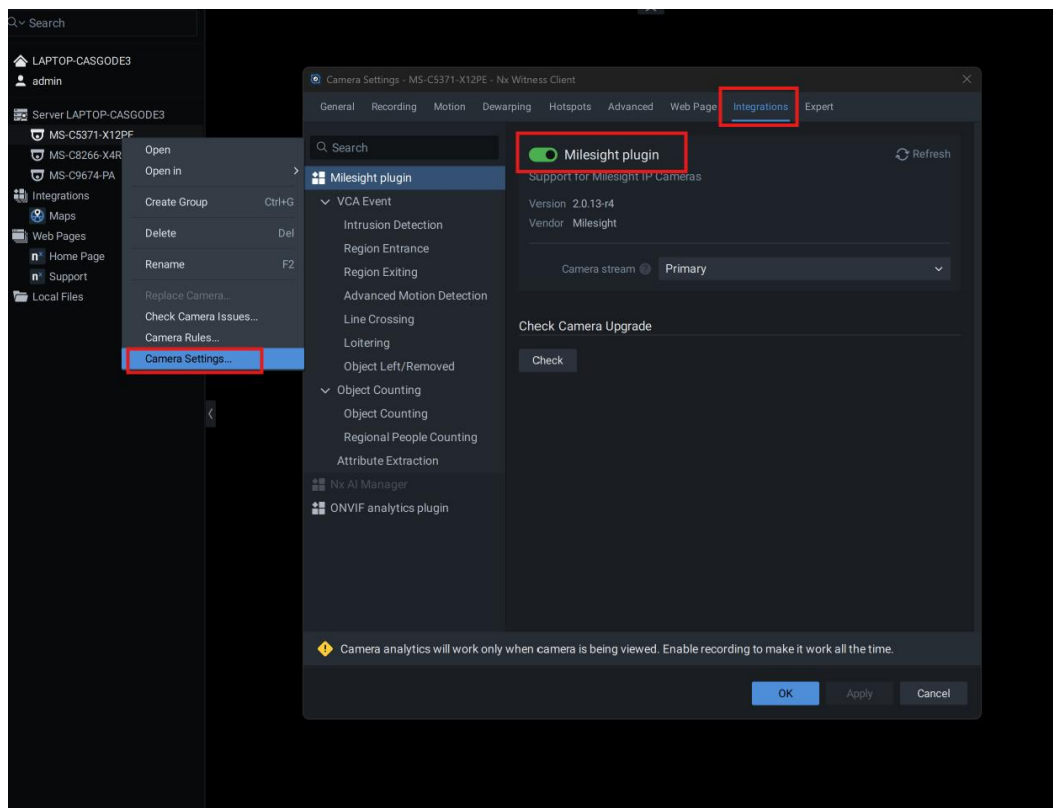


Step3: Enter the following commands, and follow the prompt to install the plugin. This step will restart the Nx Witness server.

```
sudo dpkg -i milesight_analytics_plugin_amd64_V2.0.14
```

```
ms@ms-Default-string: ~/
ms@ms-Default-string: $ sudo dpkg -i milesight_analytics_plugin_amd64_V2.0.14.deb
```

Step 4: After finishing the installation, you may launch the Nx Witness, and then right-click on a camera, select "camera settings", go to the "Integrations" tab, and toggle the switch to enable the Mileight Plugin, then you can enable the plugin feature within the camera settings.



Chapter 3. Configuration

3.1 Configure Recording Settings

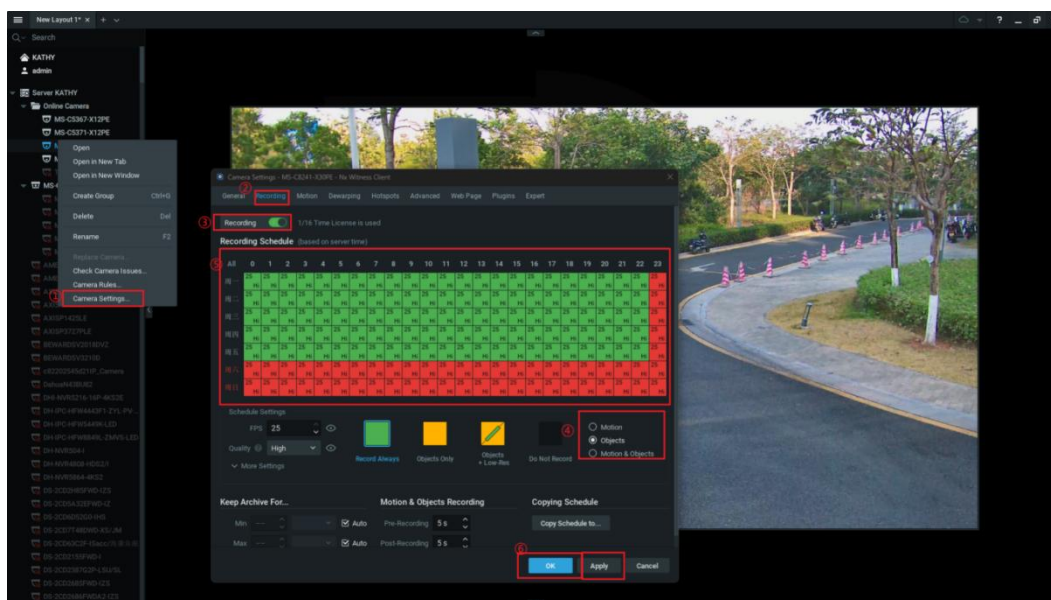
After completing the installation and enabling the plugin, to ensure that detected objects are recorded and displayed correctly, you must verify that the camera video stream is being recorded.

The recording schedule provides the following modes, which can be applied in 1 hour blocks:

Record Always: Always records.

Object Only: Recording will start when an object is detected. when the camera triggers an event and identifies an object, recording will automatically begin.

For the detailed instructions on configuring the **Recording**, please refer to this link: [Nx Witness User Manual-Recording](#).



3.2 Camera Event Configuration

Having finished the recording configuration, kindly proceed to fully configure your camera event to capture detailed information about objects by following these steps:

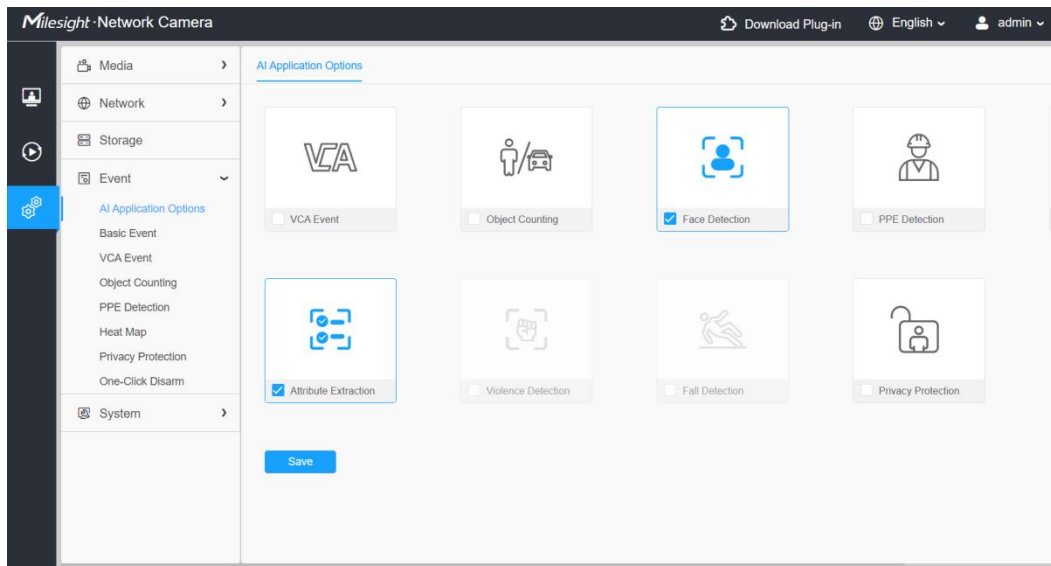
[Milesight Video Surveillance Series](#)



Note:

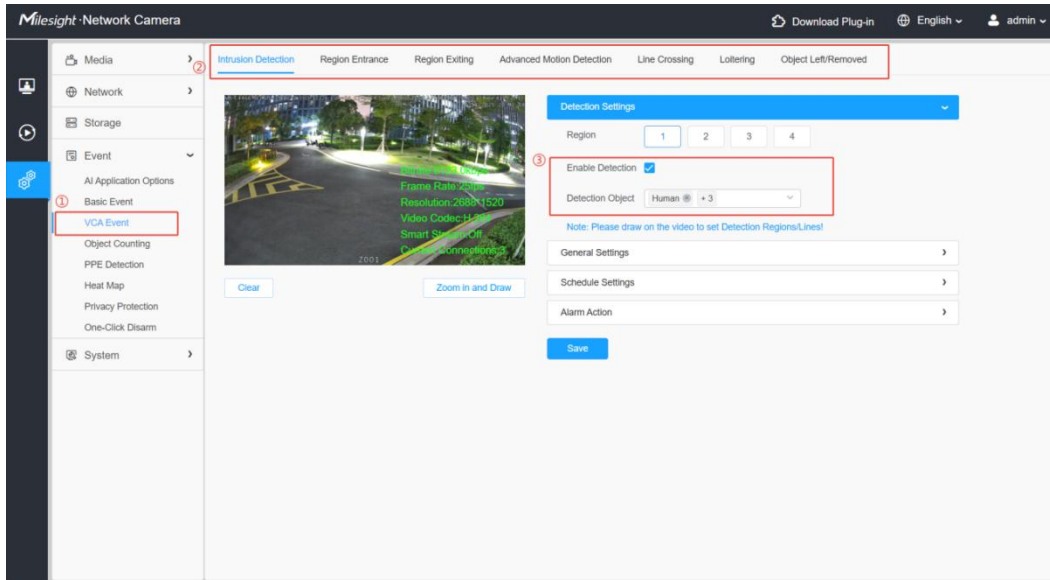
1. Before utilizing the corresponding function, please enable it within the AI Application Options interface.
2. MS-Cxxxx-G1 models are compatible with event types such as Violence Detection, Fall Detection, and PPE Detection. Sound classification is also supported by the MS-Cxx72-G1 model.

Violence Detection and Fall Detection cannot be used simultaneously with VCA Event, Object Counting, Face Detection and Attribute Extraction.

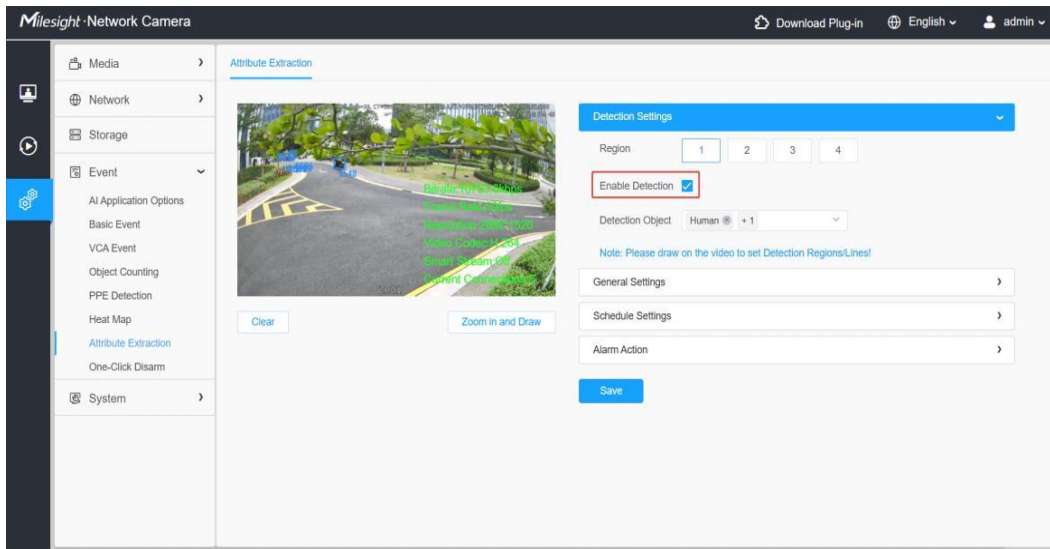


The following uses **Intrusion Detection** as an example, other events follow the same steps.

Method1: Access the camera's webpage, complete the necessary configurations, and click "Save" to apply the settings. Meanwhile, these configurations will take effect on Nx Witness.



PS: The camera attribute recognition result needs to enable device side Attribute Extraction.

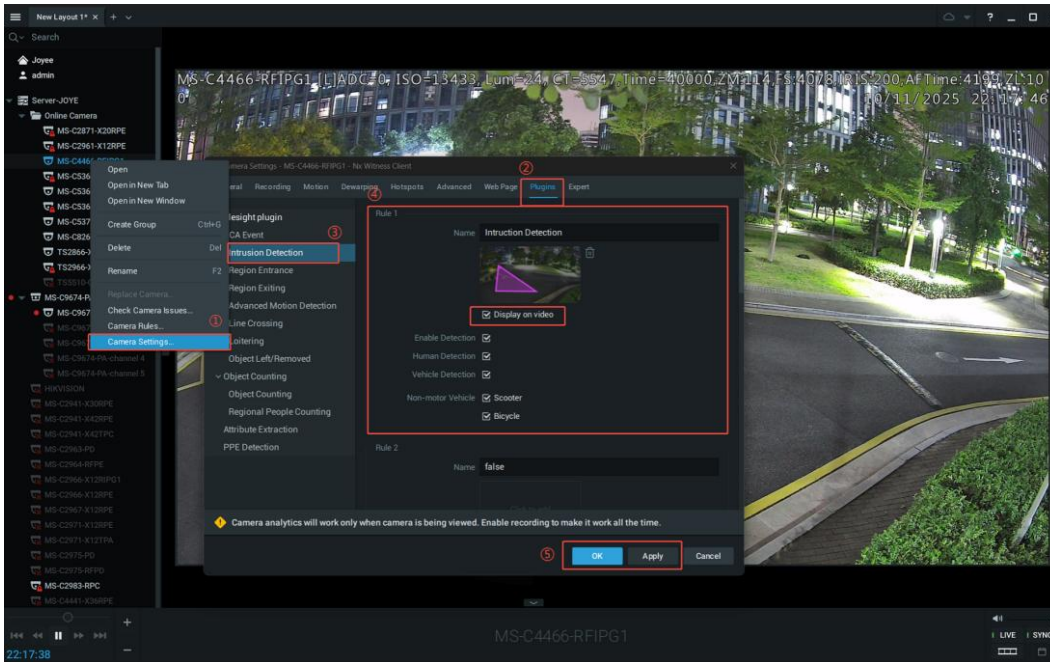


Note: For more details about how to set camera events, please refer to <https://support.milesight.com/support/solutions/articles/69000643371-how-to-set-vca-solution>.

Method2: Alternatively, you can complete the configuration directly on the Nx Witness.

The detailed steps are as follows:

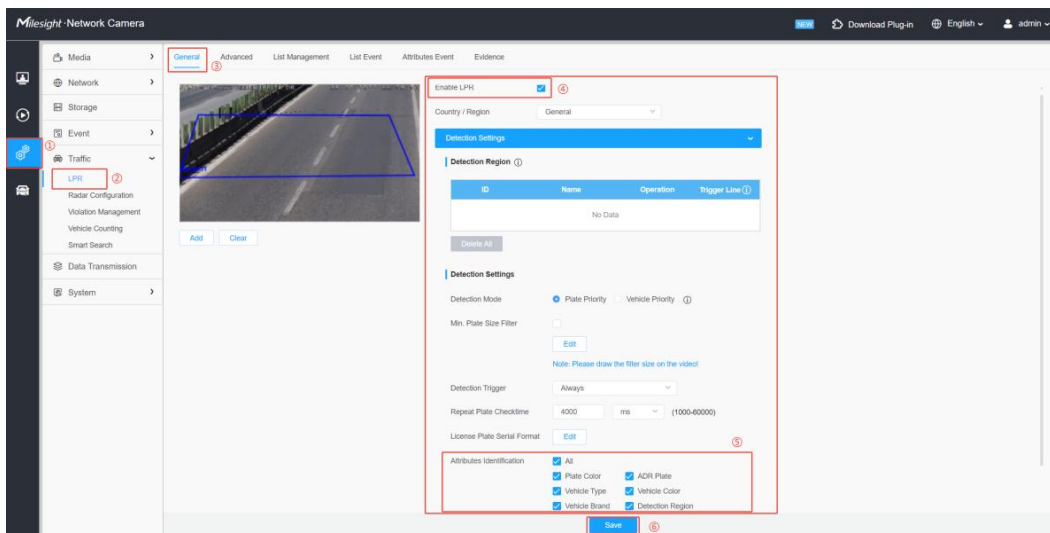
Right-click the camera you want to configure, select "Camera Setting", click "Plugins", and then click "Intrusion Detection" to configure the event. Additionally, you can enable the "Display on video" feature to display the detected area on the real-time stream.

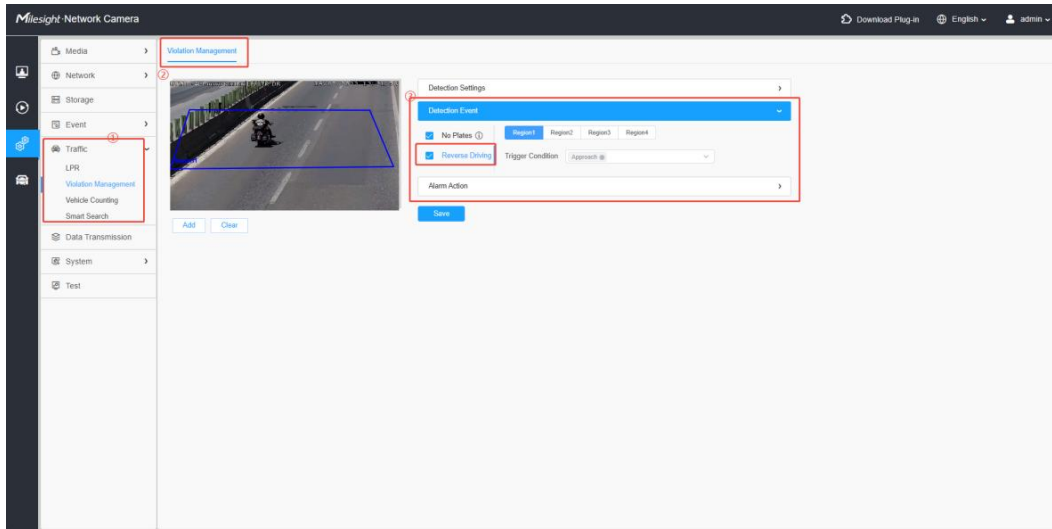


Intelligent Traffic Series

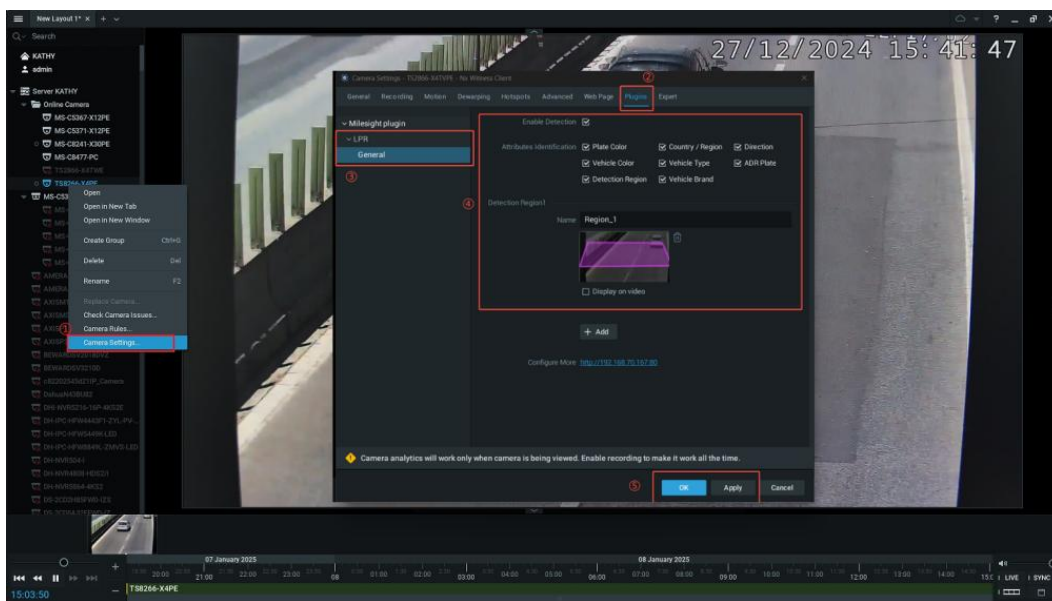
Step1:

Method1: Access the camera's webpage, complete necessary configurations, and click "Save" to apply the settings.

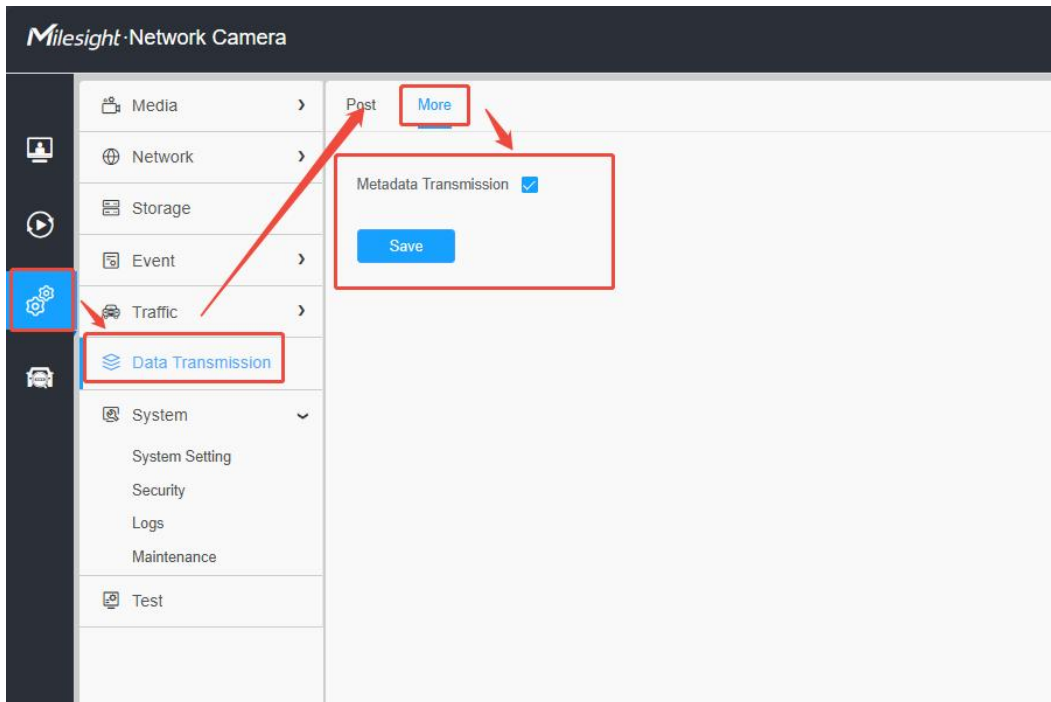




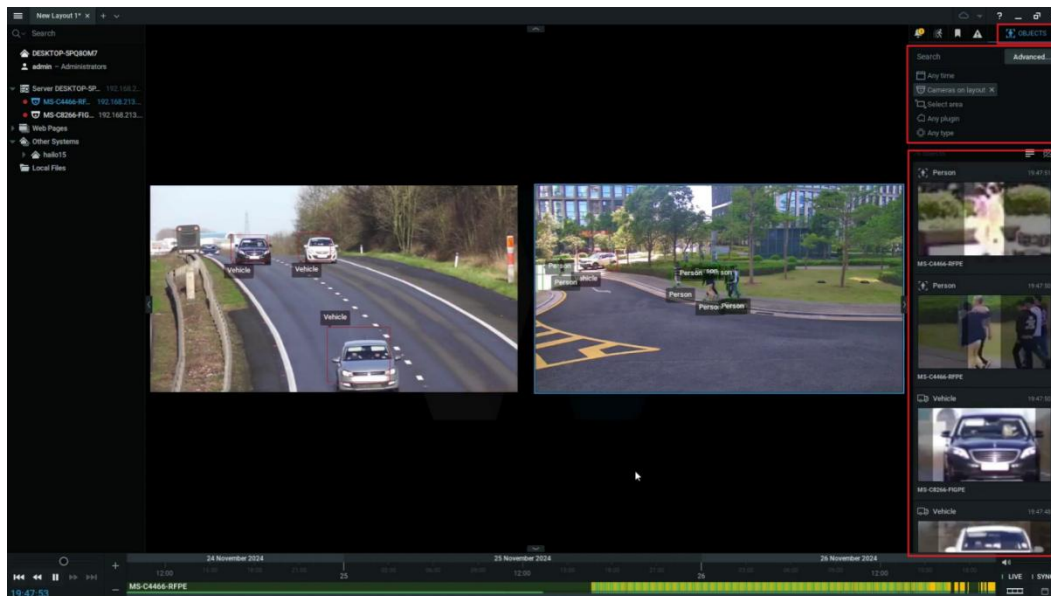
Method2: You also can complete the configuration directly on the Nx Witness.



Step2: Most importantly, please enable the **"Metadata Transmission"** function. If this is disabled, Nx Witness cannot receive metadata, rendering attribute identification ineffective.



After completing the above settings, when an event is triggered and related objects are detected, the object's attribute information will be pushed in real-time within the OBJECT panel.



Notes:

Currently, Milesight Plugin supports these Milesight Event Configuration on Nx Platform:

Plugin Version	V 2.0.14
Camera Series	AI Events

Milesight Video Surveillance Series	VCA	Region Entrance
		Region Exit
		Intrusion Detection
		Line Crossing
		Loitering
		Advanced Motion Detection
		Object Left
		Object Removed
	MSense	Object Counting (Including People Counting & Vehicle Counting)
		Regional People Counting
		Face Detection
		Attributes Extraction
		Fall Detection
		Violence Detection
	Sound Classification	
Privacy Protection		
Milesight Intelligent Traffic Series	General (The regular LPR Setting and Attributes Management)	

3.3 Analytics Events

What is Analytics Events?

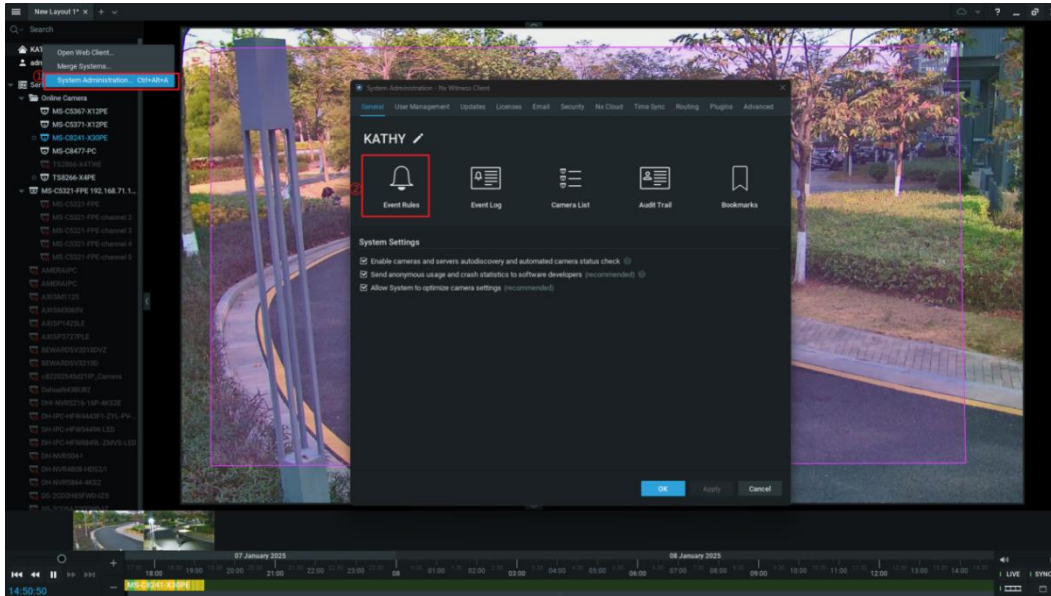
Analytics Events is utilized to configure action rules for **event** triggers. When an event occurs, such as the front camera triggering an Advanced Motion Detection event, appropriate actions can be performed, such as showing a desktop notification. Event metadata is also captured, and can be searched, filtered, and further analyzed.

IMPORTANT: Analytics must be configured in the camera first in order to be detected by Nx Witness.

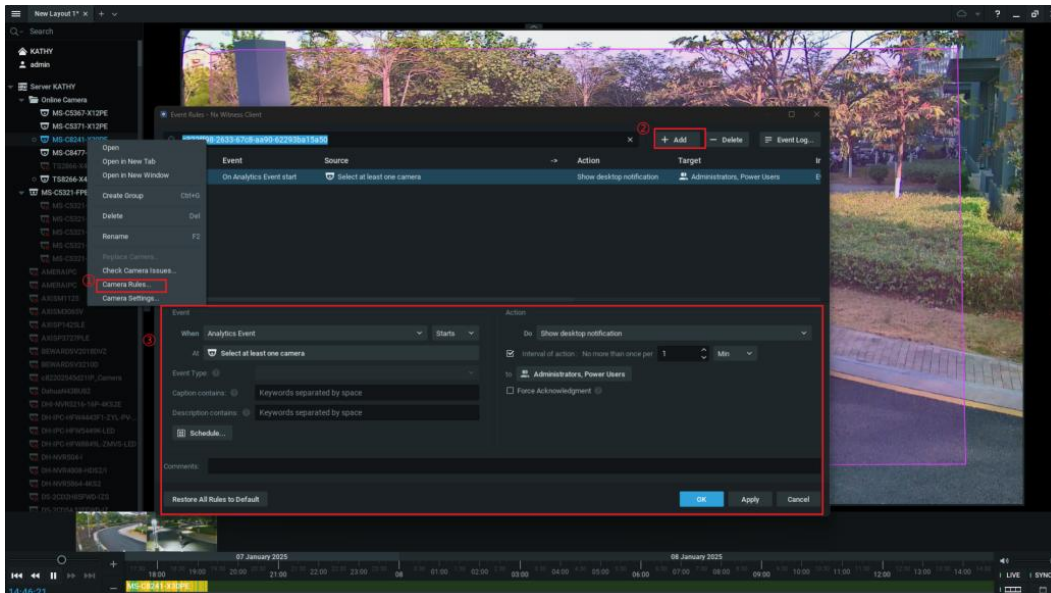
Step1: Access the camera's web page to confirm that event detection is properly configured and enabled on the camera you plan to use. Milesight's cameras can have their detection configured within the Nx Witness desktop client. See [Camera Event Configuration \(page 8\)](#) for more information.

Step2:

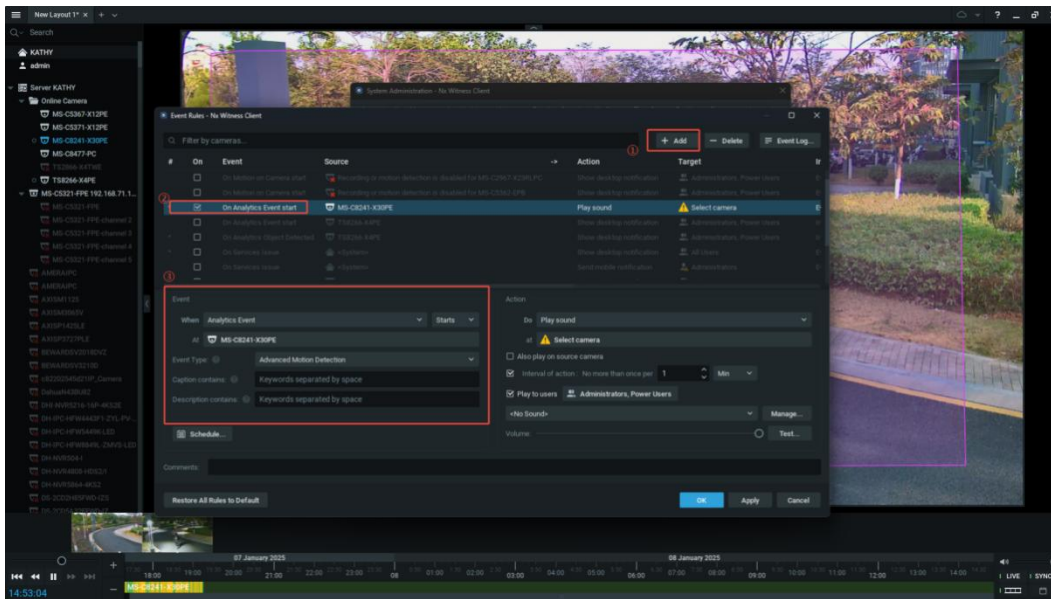
Method1: Right-click the system home icon and select the "System Administration". and choose "Event Rule".



Method2: Alternatively, add a rule for the designed camera by right-clicking and selecting "Camera Rules".

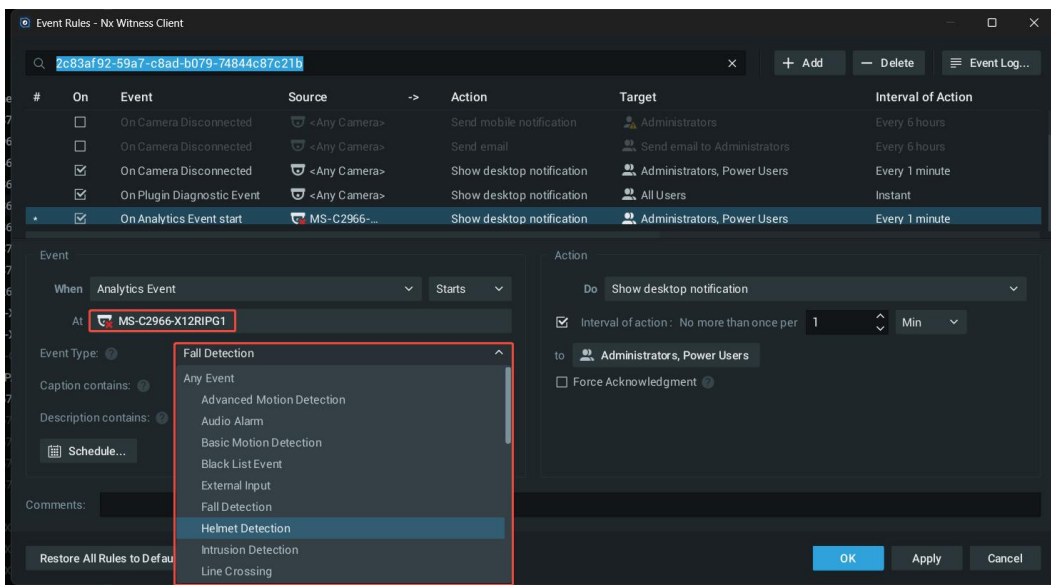


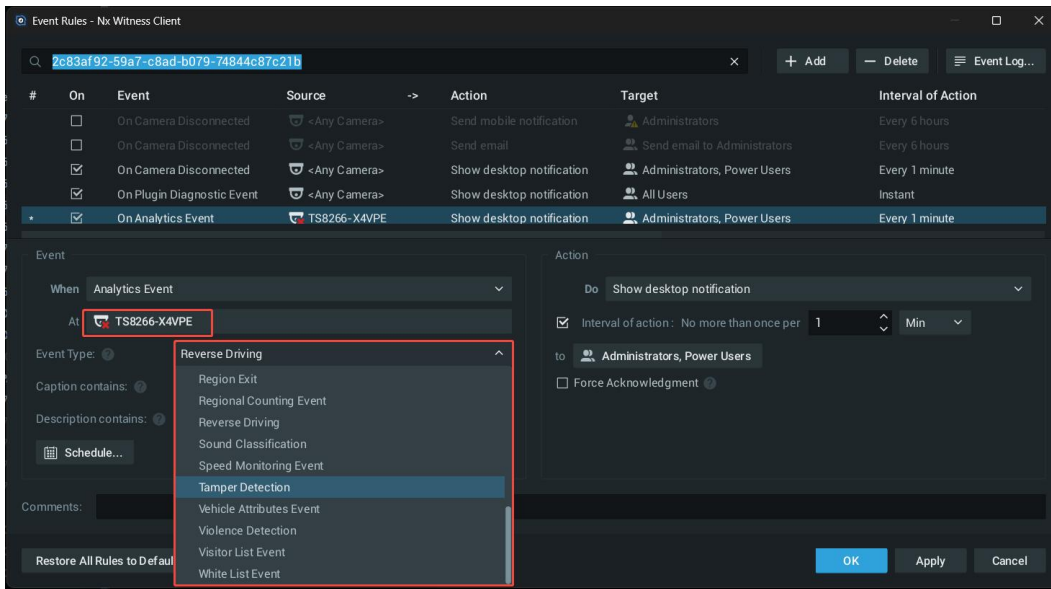
Step3: Nx Witness generates a default set of Event Rules. Click on the “+ Add” button. When the default Event row appears, click on the “Event” dropdown menu and select “Analytics Event”, or select "Analytics Event" from the "When" field.



Step4: Click on the “At” field to select the camera(s) and choose the "Event Type" that will trigger the rule.

Each camera will have a different set of available event type depending on the Mileight's camera series(e.g., **Mileight Video Surveillance Series, Intelligent Traffic Series,** etc.)





Step5: After completing the above settings, a notification will appear on the NOTIFICATIONS panel when the corresponding event rule is matched.



Currently, the Mileight Plugin supports receive notification from these edge Mileight Events and manage subsequent function through Nx platform.

Plugin Version	V 2.0.14	
Camera Series	AI Events	
Mileight Video Surveillance Series	VCA	Region Entrance
		Region Exit

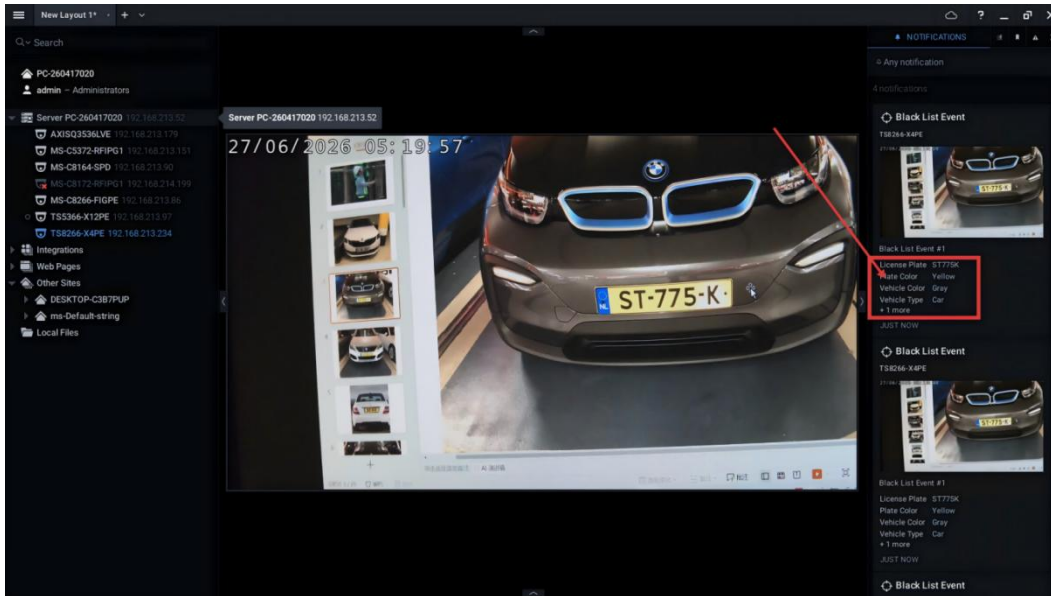
		Intrusion Detection
		Line Crossing
		Loitering
		Advanced Motion Detection
		Object Left
		Object Removed
	MSense	Object Counting (Including People Counting & Vehicle Counting)
		Regional People Counting
		Face Detection
		Attributes Extraction
		Fall Detection
		Violence Detection
		Sound Classification
	Privacy Protection	
Milesight Intelligent Traffic Series	Reverse Driving	
	No-plate Detection	
	Speed Detection	
	Phone Use Detection	
	Seatbelt Detection	
	Truck Lane Occupancy Detection	
	Emergency Lane Occupancy Detection	
	Bus Lane Occupancy Detection	
	Not Following Directional Sign	
	Red Light Running	
	Cross Line at Red Light	

	Slow Traffic
	Congestion
	Illegal Lane Change
	Attributes Events
	White List Event
	Black List Event
	Visitor Event

Besides, Milesight Plugin supports attaching certain attributes within events to Nx. Currently, the available event attributes are as follows:

Plugin Version	V 2.0.14	
Camera Series	AI Events Attributes	
Milesight Video Surveillance Series	Human	
	Vehicle	
Milesight Intelligent Traffic Series	License Plate	
	Detection Region	
	Vehicle Attributes	Vehicle Color
		Vehicle Type
		Plate Color
		Direction
		Speed

These attributes will be pushed with event to Nx:



3.4 Analytics Object Detected Event

What is Analytics Object Detected Event?

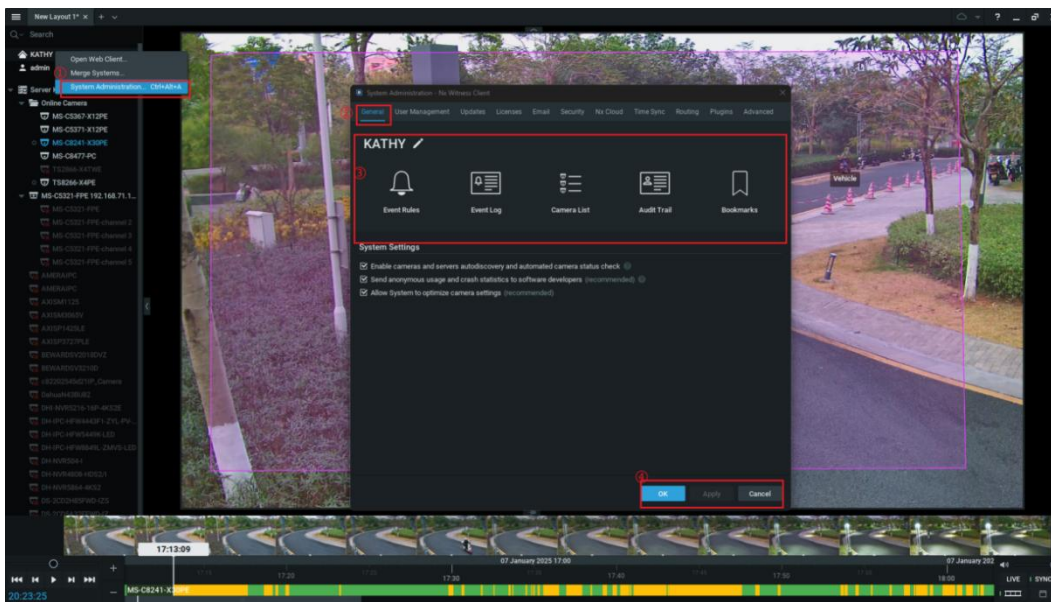
The Analytics Object Detected Event is used to configure action rules for specific **object**. For instance, when the front camera detects a license plate and pushes it to Nx Witness, it can trigger a corresponding alert action. Additionally, specific object attributes can be set such as triggering a notification when a **white** license plate is detected.

Ensure that the detection is enabled and that all other settings, including the detection region, time threshold, sensitivity, schedule, and other parameters, are properly configured. For detailed configuration, you can refer to [3.1 Configure Recording Settings \(page 7\)](#) and [3.2 Camera Event Configuration \(page 8\)](#).

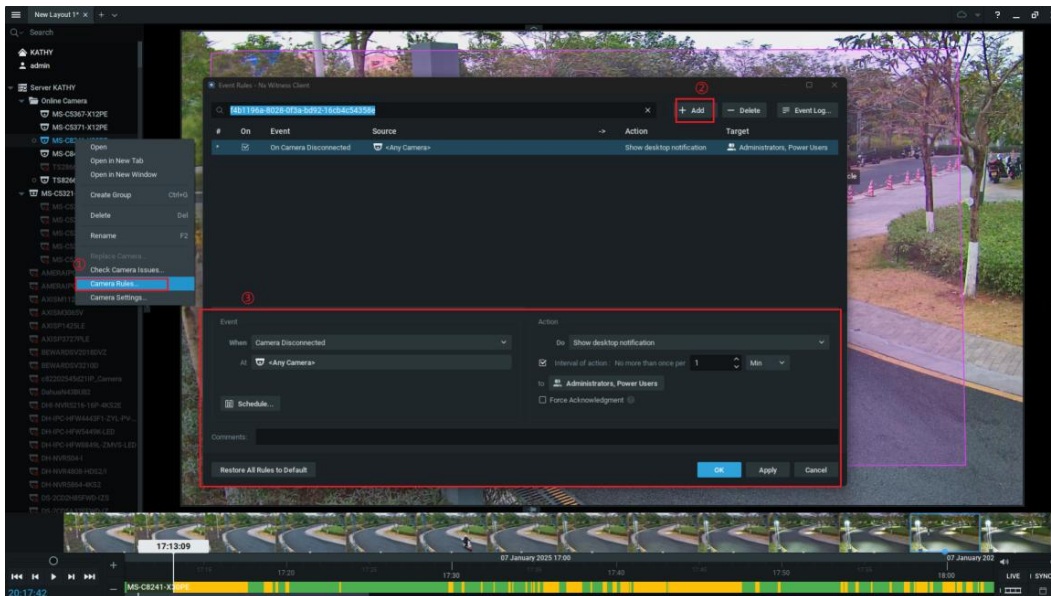
You can create an event rule to notice the user when a specified object (Person, Vehicle, etc.) is detected by creating an Event Rule.

Step1:

Method1: Right-click the system home icon and select the "System Administration". and choose "Event Rule".



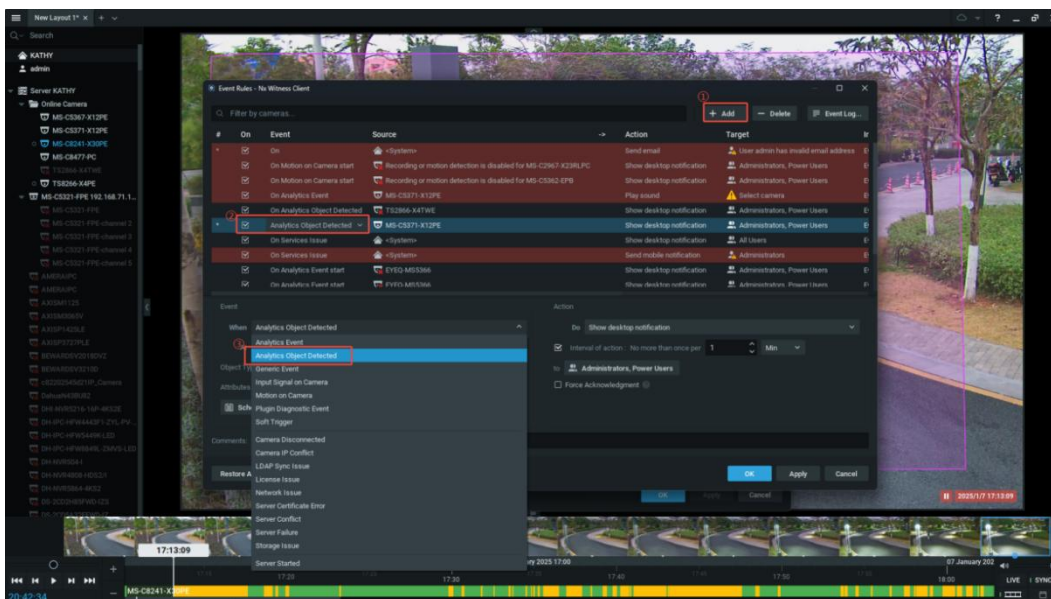
Method2: Alternatively, add a rule for the designed camera by right-clicking and selecting "Camera Rules".



Step2:

Nx Witness generates a default set of Event Rules. Click on the “+ Add” button.

When the default Event row appears, click on the “Event” dropdown menu and select “Analytics Object Detected”.

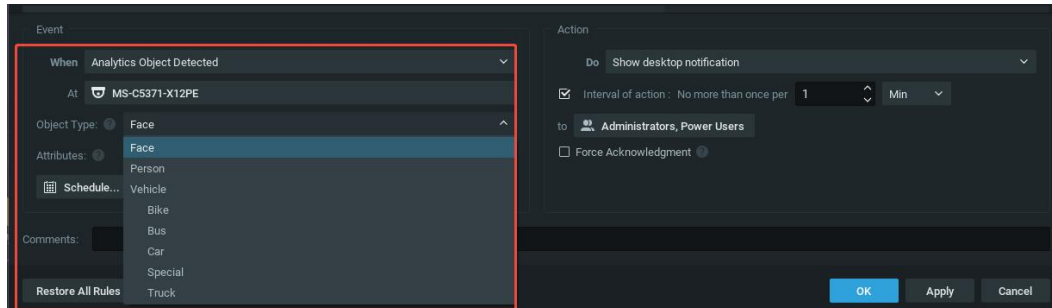


Step3: Complete the parameter configuration. There are two sections, "Event" and "Action" section.

At/ Source: Click in this field to [select devices](#) to monitor, all devices can be selected.

Object Type: Select the object types that may be available to you (e.g., Face, Person, Vehicle, etc.), Here, the objects supported by Milesight’s camera are displayed. For more detailed information on objects and attributes, please visit the link: [Metadata Objects and Attributes \(page 28\)](#).

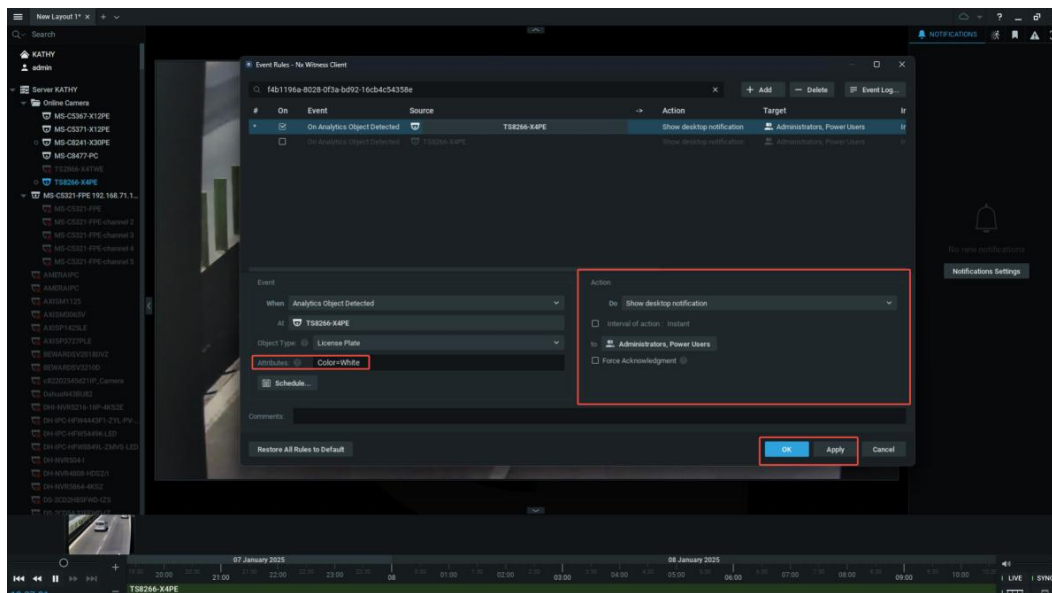
Attributes: In this field, enter Attribute name and the value following the format <attribute_name>=<attribute_value>. Event will only trigger if names entered in this field match the attributes of detected objects in the Objects tab(e.g., Gender=Woman Age=Adult).



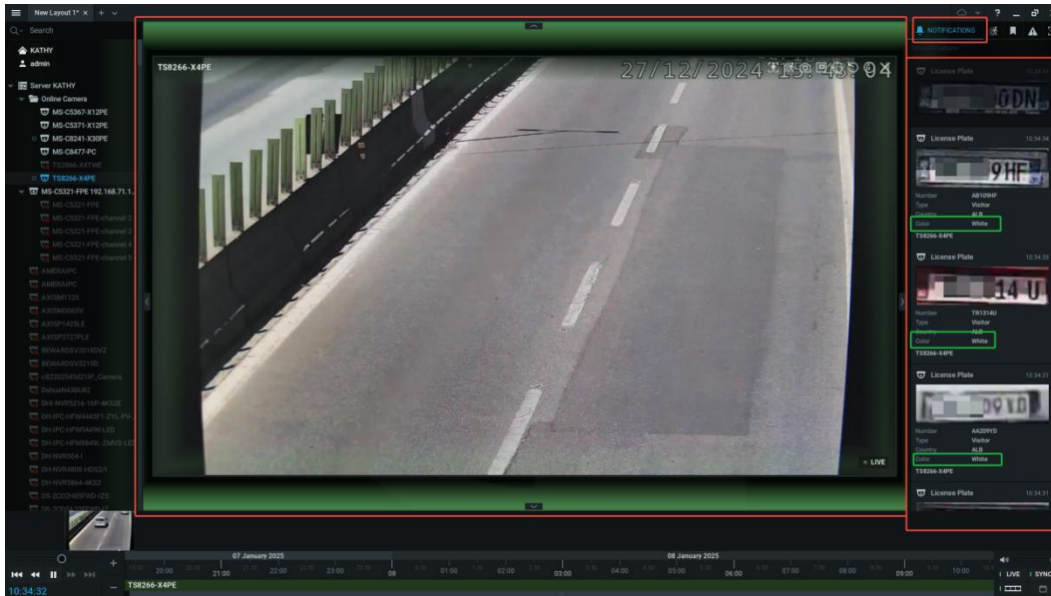
Step4: Under the "Action" section, you can select various actions for the supported events, which will be executed when an event occurs.

The following uses "Show desktop notification" action as an example, other actions can follow the same steps.

Selecting an action option will open a dropdown list. For "Show Desktop Notification", you need to decide who can view the notifications. The default option is "All Users". Additionally, you can set the "Interval of action" to define the frequency at which the action is occurred consequently. Apply all configurations by clicking "Apply".



Step5: Upon completing the above settings, a notification will appear on the NOTIFICATIONS panel when the corresponding object detection event rule is met.



3.5 Viewing the Detection Result

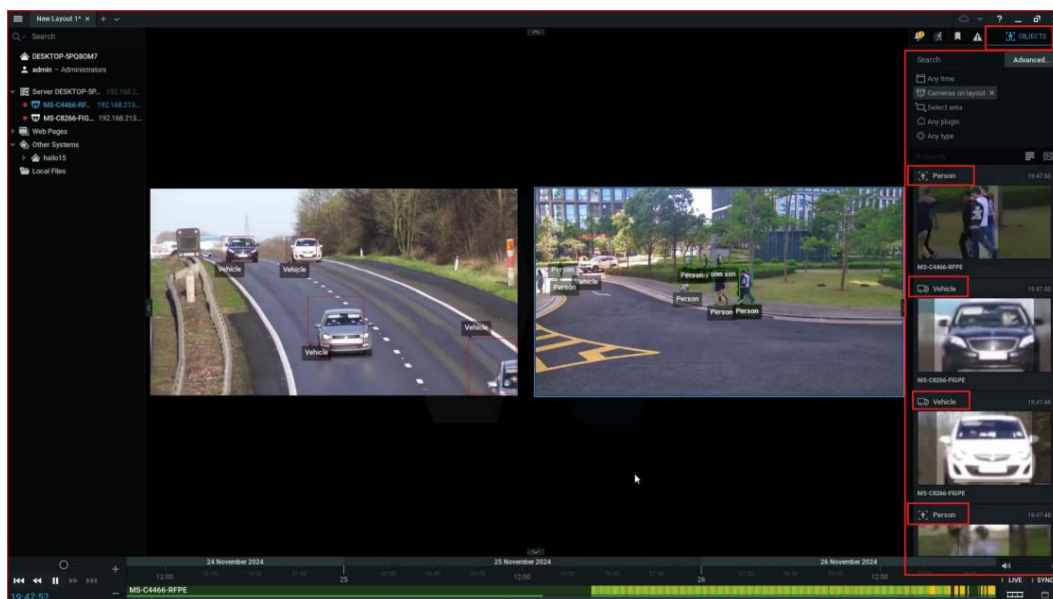
Viewing Object Detection Events

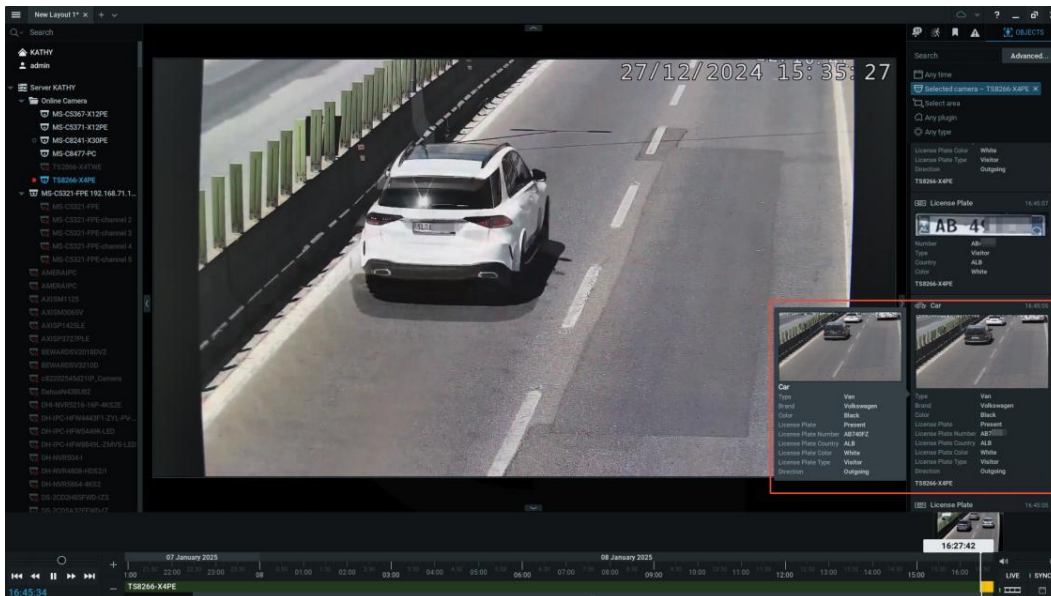
On the Live View interface, click on the "Events" icon. Detected events will appear in the Events side panel. Double-clicking the image expands the event on the desktop layout. This allows you to examine the video in greater detail.



Viewing Face, Person or Vehicle objects

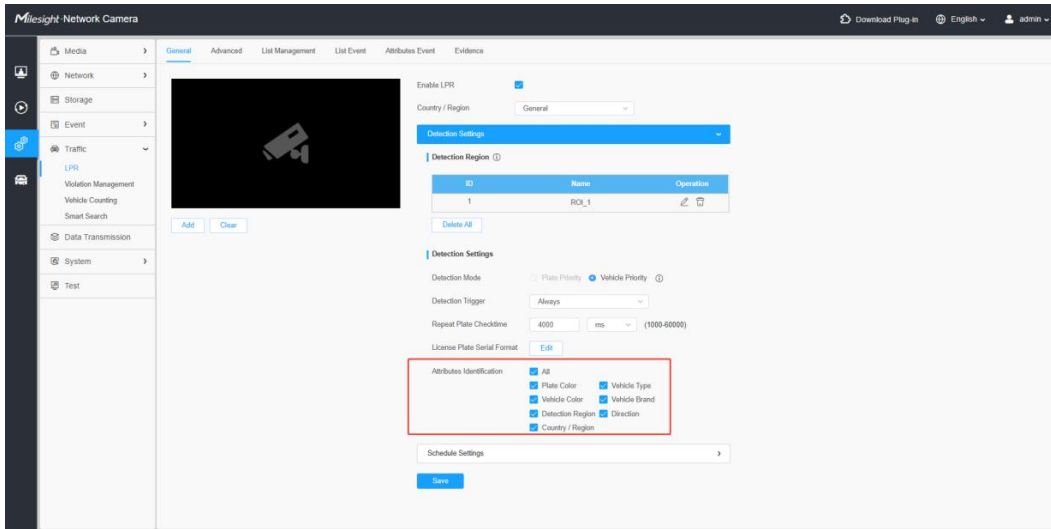
When an object is detected by the camera, it is transmitted via the plugin to the Nx Witness display, appearing on the OBJECT panel. You can view the object's information by clicking on the image in the menu. At the top of the OBJECT panel, you can filter the search criteria to retrieve specific object information.





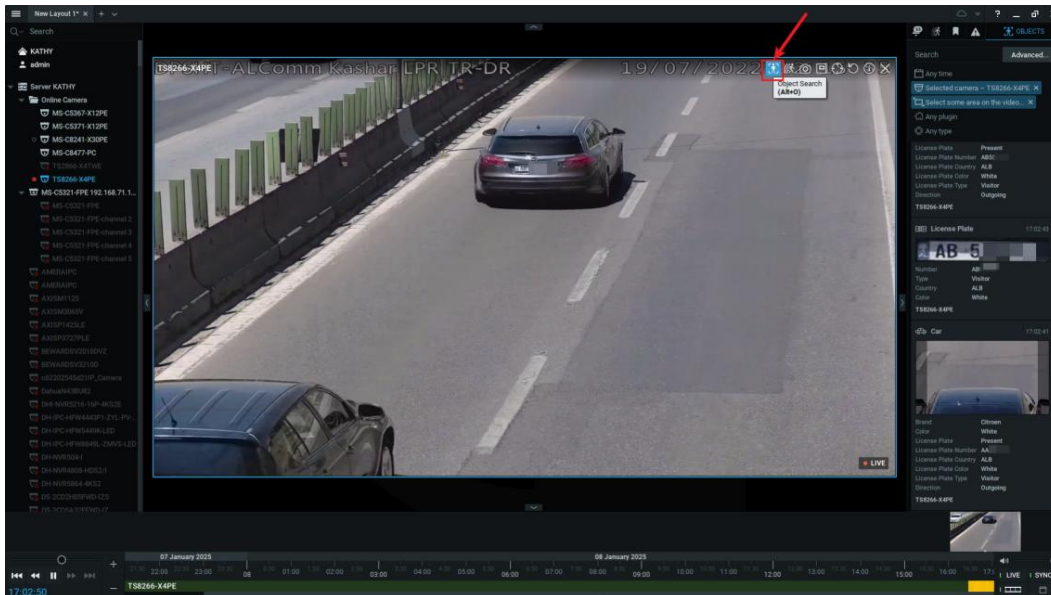
Note:

1. For Milesight Video Surveillance Series, please note that it is essential to use Real- Time Priority or Quality Priority mode for face detection. Additionally, ensure you enable Attribute Recognition on the camera's webpage if you wish to display face attributes in real-time stream.
2. For the Milesight Intelligent Traffic Series, please ensure you select the desired attribute information for recognition. For additional configuration steps, please refer to Section [3.2 Camera Event Configuration \(page 8\)](#).



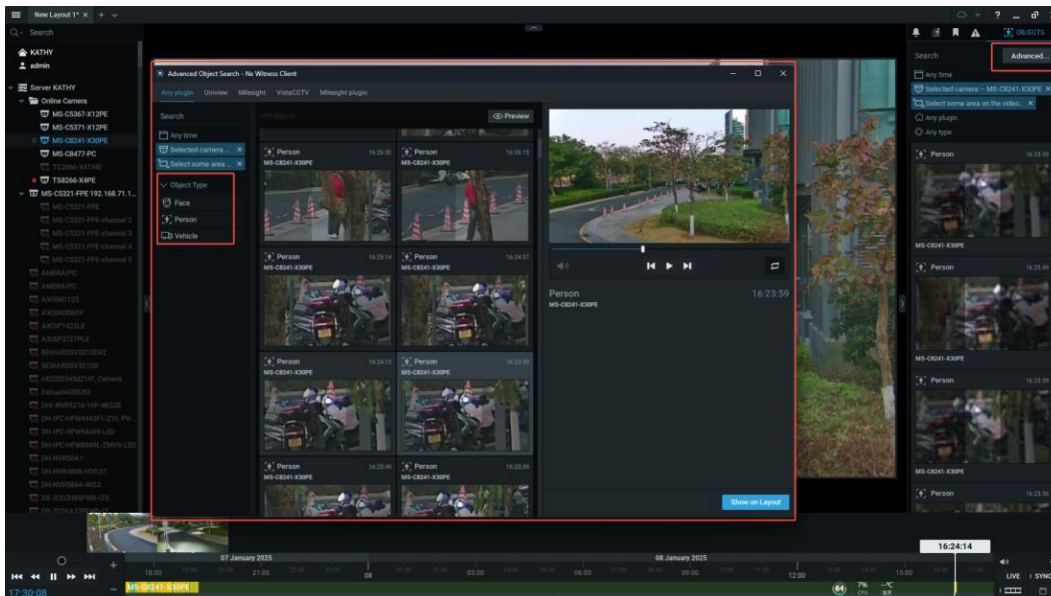
Viewing Objects in the Specific Area

Here, you can click the Object Search icon and draw an area to search for objects within the designated region. Once you have completed the drawing, the objects will automatically appear on the OBJECT panel.



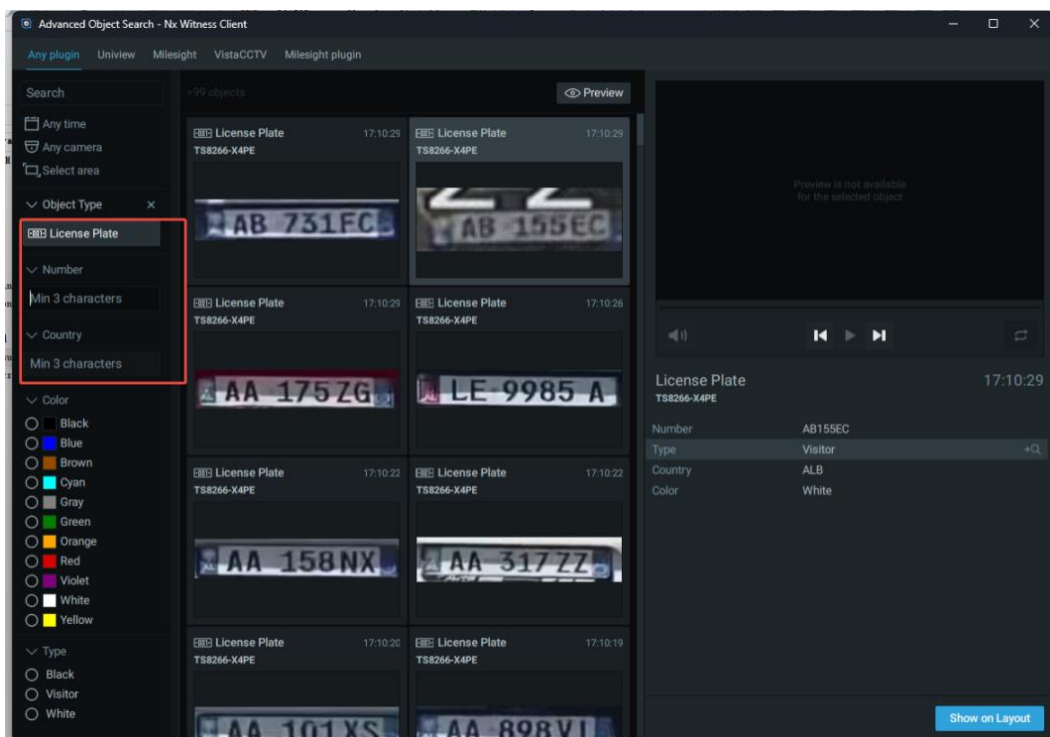
Advanced Object Search

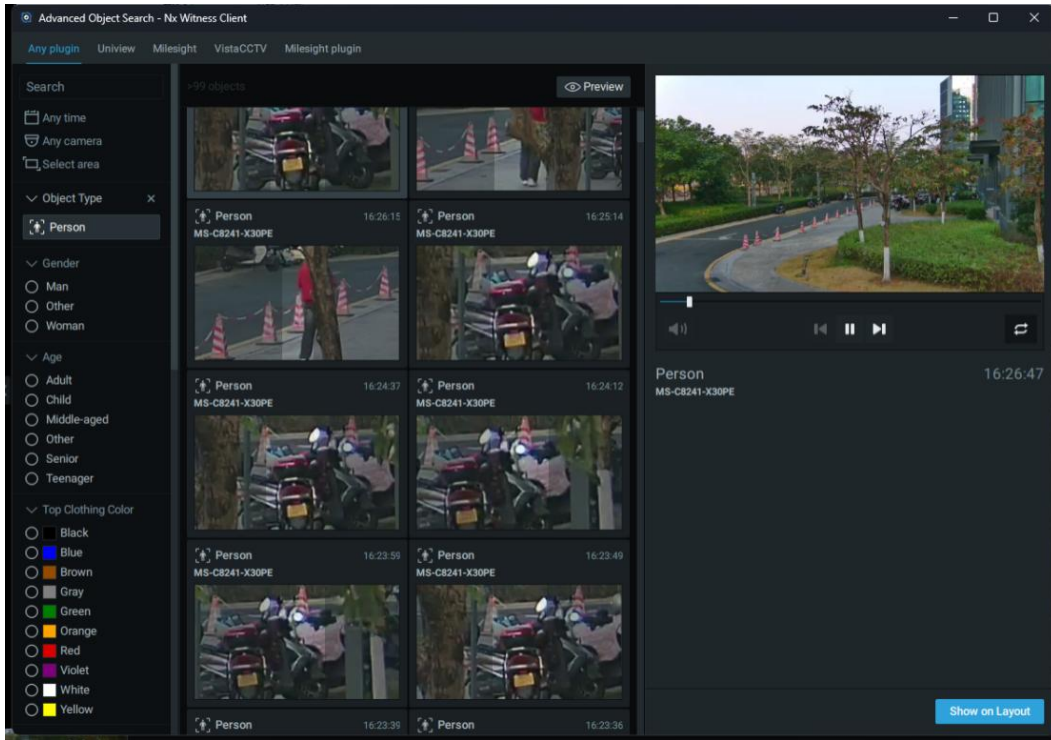
Click the "Advanced" option for a more detailed search. Each object possesses its own attributes, and enhanced object search and filtering based on these attributes are now available. For more detailed information on objects and attributes, please visit the link: [Metadata Objects and Attributes \(Page 28\)](#) .



The Milesight plugin is enabled, and its Object Types are displayed like the following image. A set of attribute-specific filters is shown, allowing the user to specify the search criteria.

For instance, the user can filter attributes by "Object Type" etc., standard search filters such as "Any time," "Any camera," and "Select area" can be simultaneously combined.





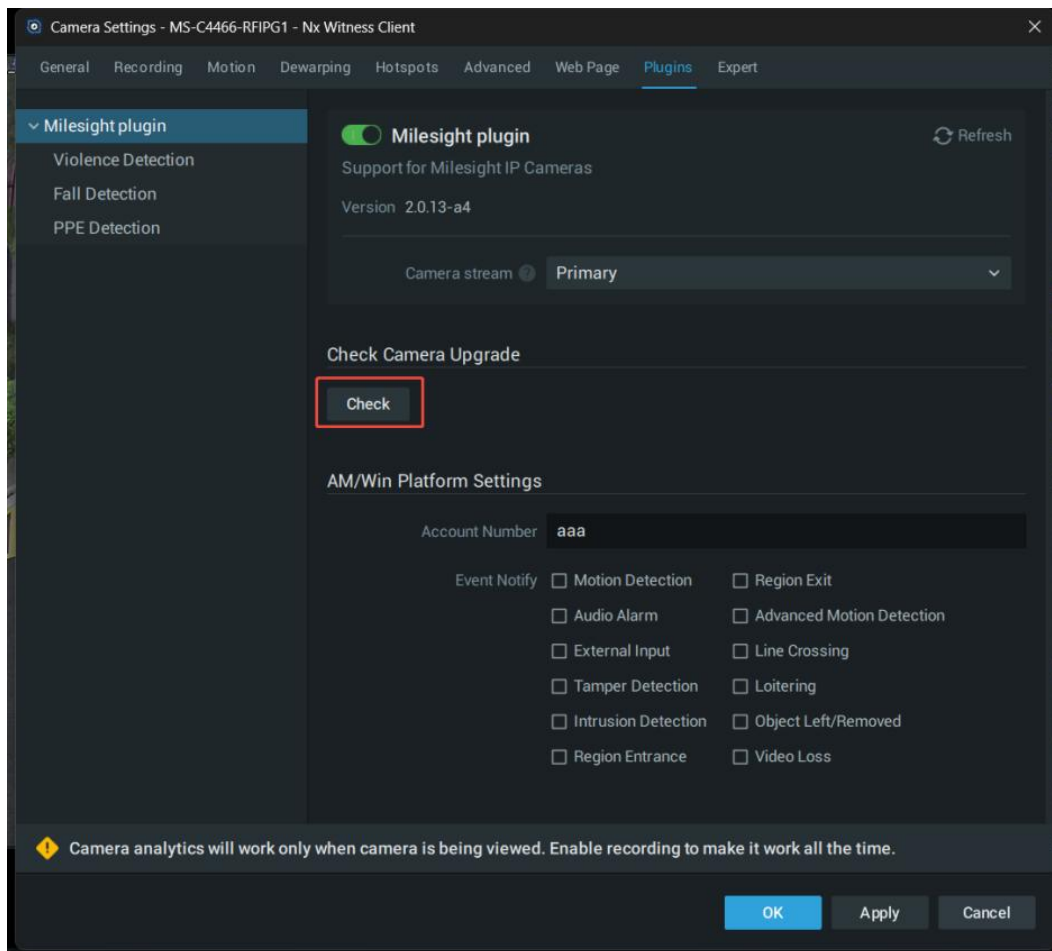
3.6 Object and the Corresponding Attributes

Camera Series	Camera Name Rules	Objects	Attributes
Milesight Video Surveillance Series	Model number starting with MS-C, without "L" in ending letters. E.g. MS-C5372-FPE	Person	Hat
			Top Clothing Color
			Bottom Clothing Color
		Vehicle	Vehicle Type
			Vehicle Color
		Face	Gender
			Age
			Mask
			Hat
		Others	

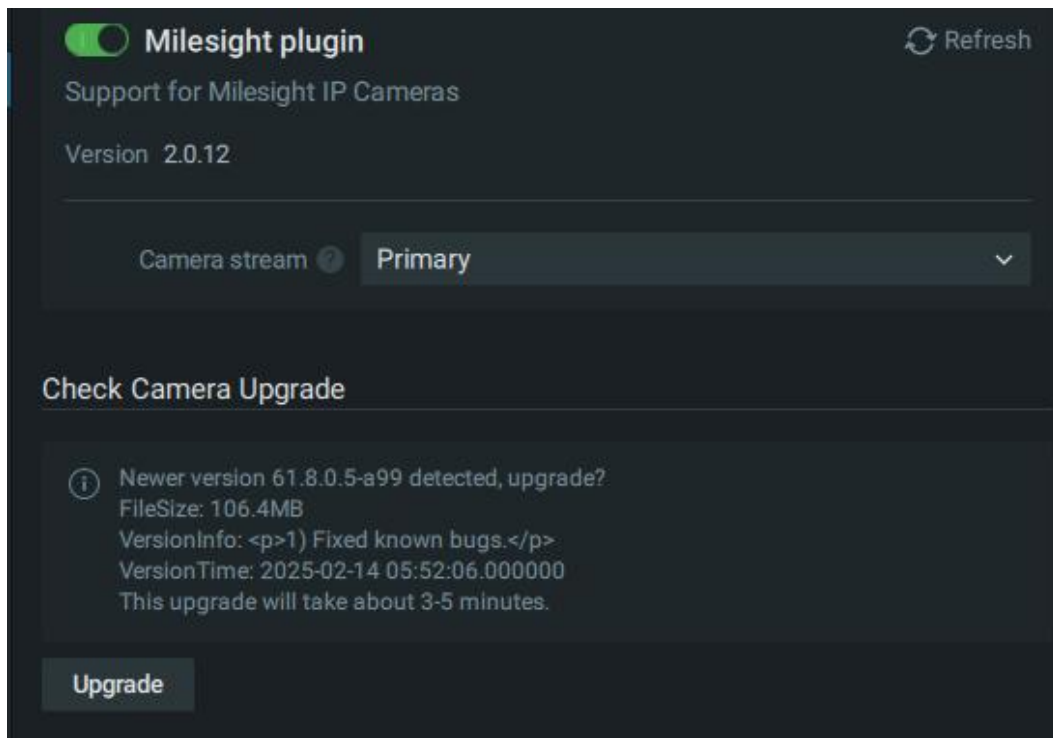
Intelligent Traffic Series	Model number starting with MS-C, with "L" in ending letters. E.g. MS-C2972-RFLPE	Vehicle	Color
			Vehicle Type
			Brand
			Speed
	Model number starting with TS. E.g. TS4441-X36RPE	License Plate	Direction
			ADR Plate
			Number
			Color

3.7 IPC Online Upgrade

Step 1: Locate and select the Check button under **Check Camera Upgrade** to verify the availability of a new firmware version for the IPC.



Step 2: If an update is detected, the Upgrade button will be activated.

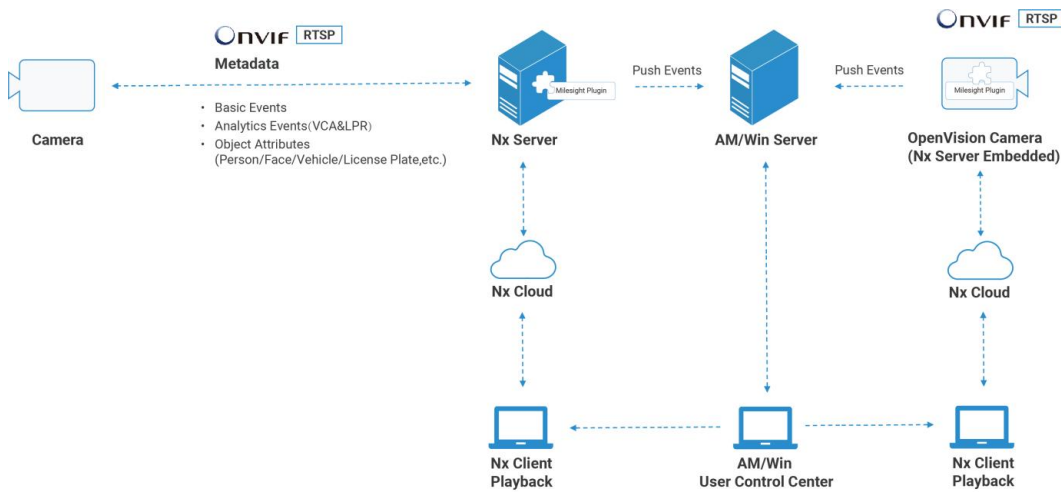


Step 3: Click the Upgrade button to initiate the download and installation of the latest firmware.

Step 4: The upgrade process typically requires several minutes. Upon completion, re-enter the plugin interface to ensure updated data synchronization.

3.8 The Integration with the AM/Win Platform Via the SIA Protocol

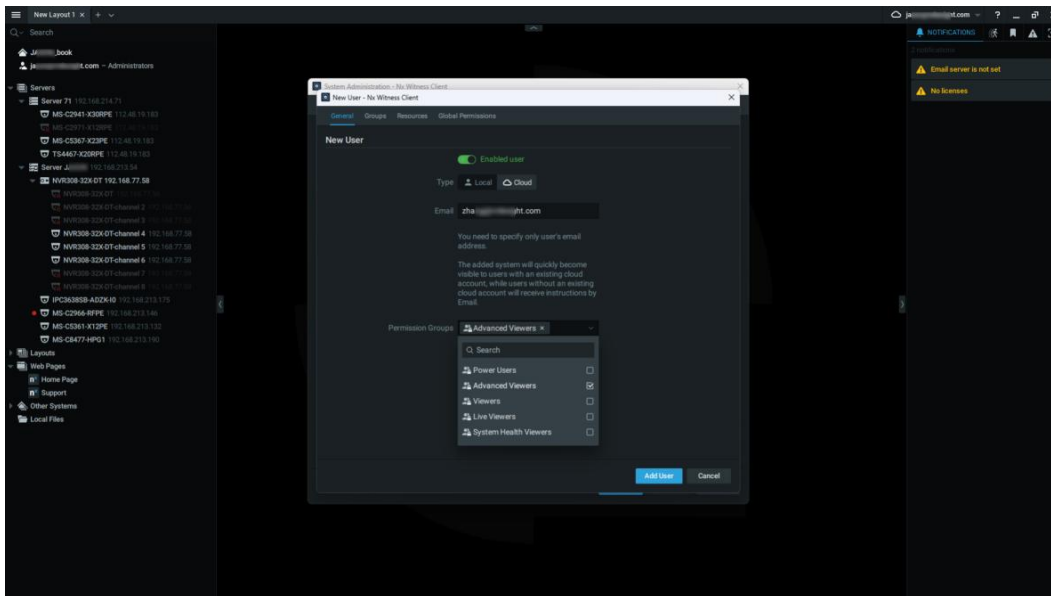
The integration topology through the Nx plugin with the AM/Win platform is shown below:

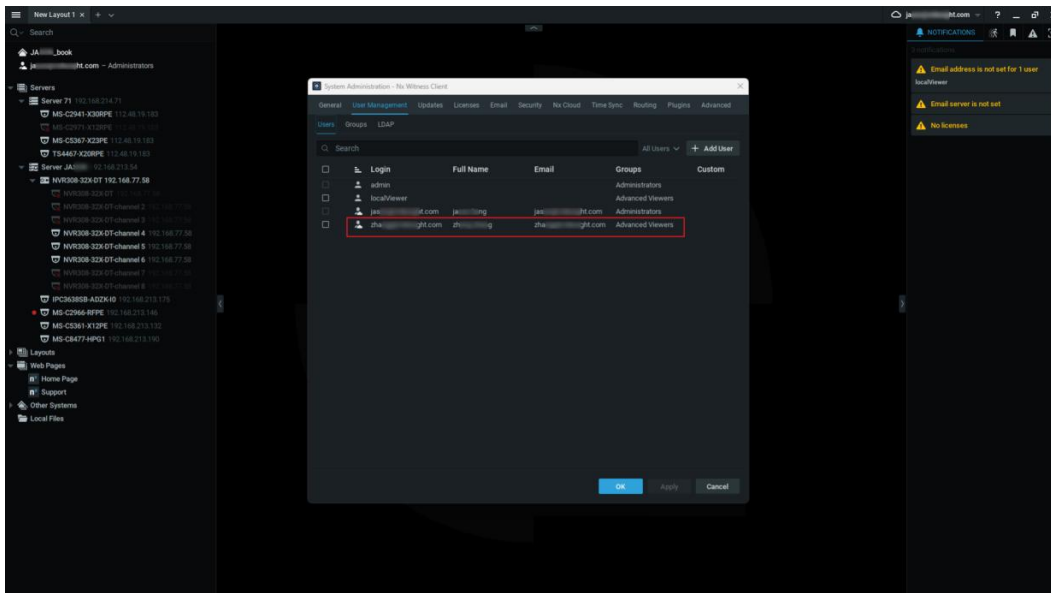


Step 1: Two configuration methods for you to successfully open the Nx Client on the AM/ Win platform to connect to the Nx System on the Internet and play the recorded videos stored on the Nx Server:

Method 1: Connect to the Nx System via an Nx Cloud account.

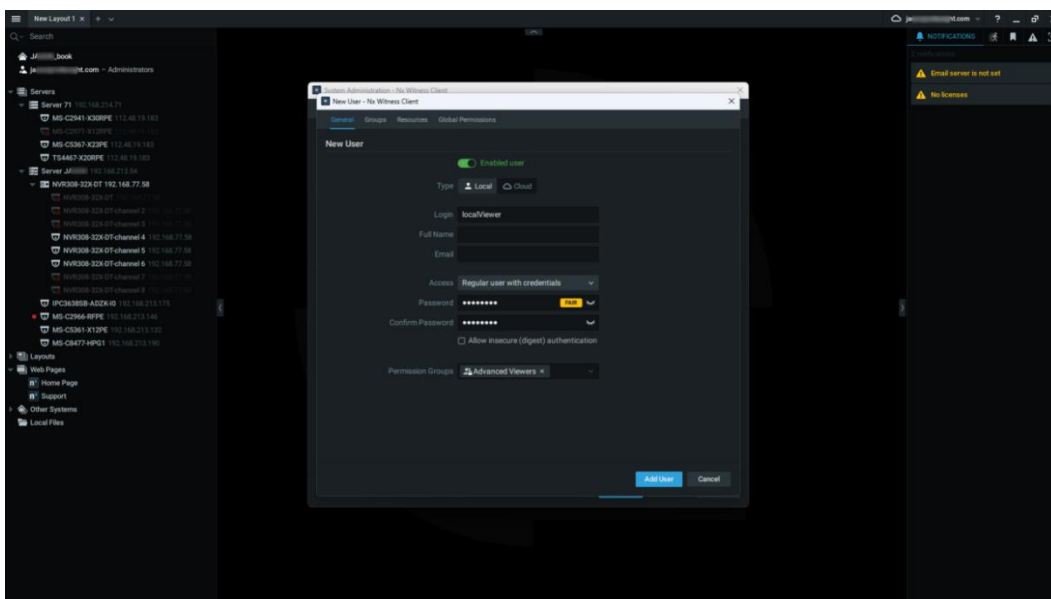
First, assign the appropriate role permissions to the Nx Cloud account in the Nx System. This ensures that when connecting to the Nx System via the Nx Client, the account has the correct camera access and recording viewing permissions.

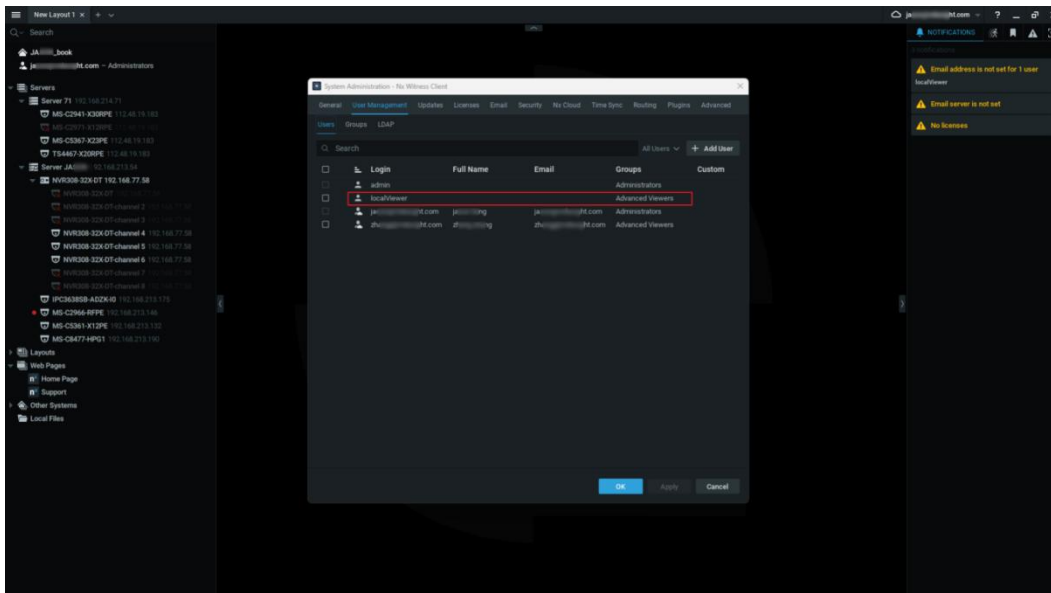




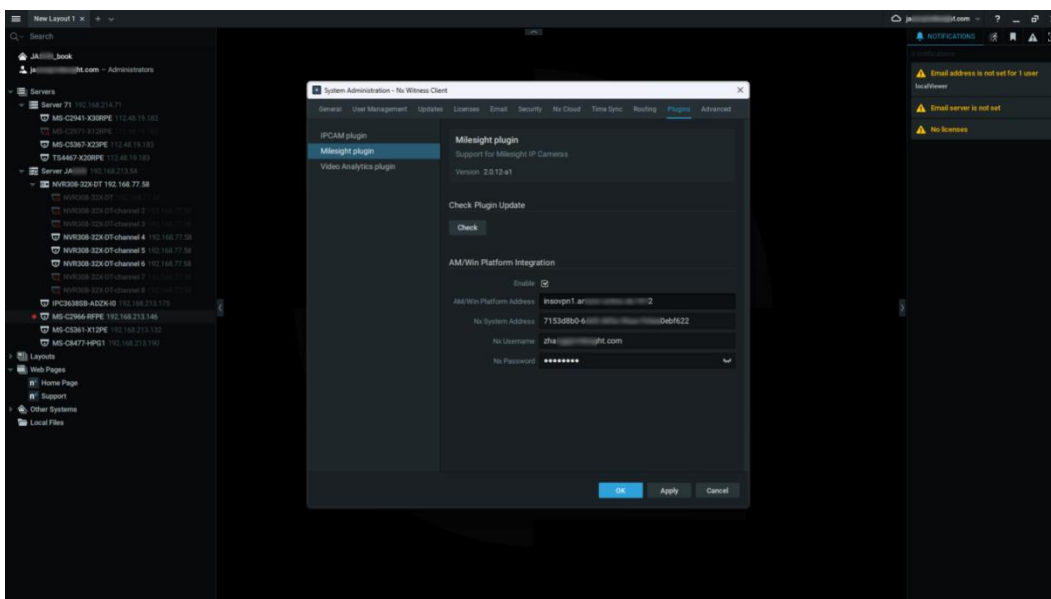
Method 2: Connect to the Nx System via a local Nx account.

Please complete port forwarding for the Nx Server to ensure that the Nx System can be connected to. Create a local account in the Nx System and assign the appropriate role permissions, so that the correct camera access and recording viewing permissions are granted when connecting to the Nx System via this account using the Nx Client.





Step 2: Go to System Administration -> Plugins. Under the Milesight Plugin tab, fill in the necessary information.



Including:

1. AM/Win Platform Address: Enter the address and port information of the AM/Win platform.
2. Nx System Address:
 - If using an Nx Cloud account, enter the Cloud System ID of the current Nx System here. Refer to the Nx official documentation for obtaining the Cloud System ID:

[What is Cloud Connect? – Network Optix](#)

- If using a local Nx account, enter the IP: Port.

3. Nx System Username:

- If using an Nx Cloud account, enter the username of the Nx Cloud account.

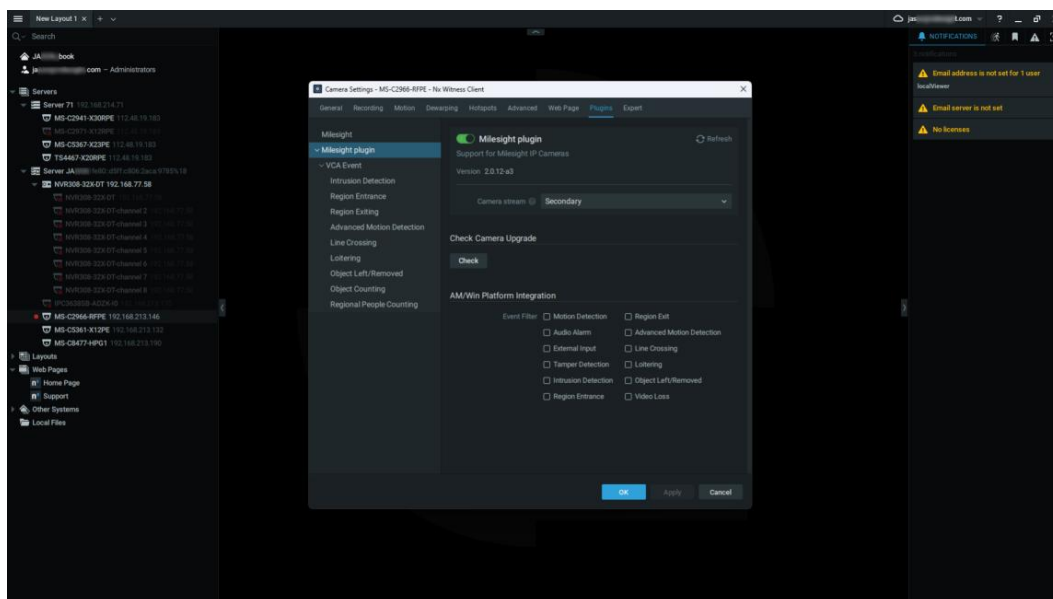
- If using a local Nx account, enter the local account name.

4. Nx System Password:

- If using an Nx Cloud account, enter the password of the Nx Cloud account.

- If using a local Nx account, enter the password of the local account

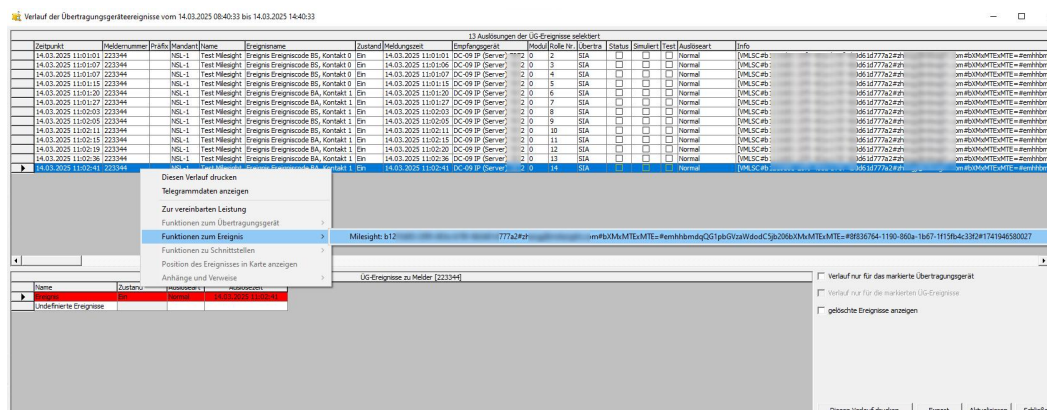
Step 3: You can select certain event types that you want to be sent to AM/Win and save, in the designated Camera Plugin page.



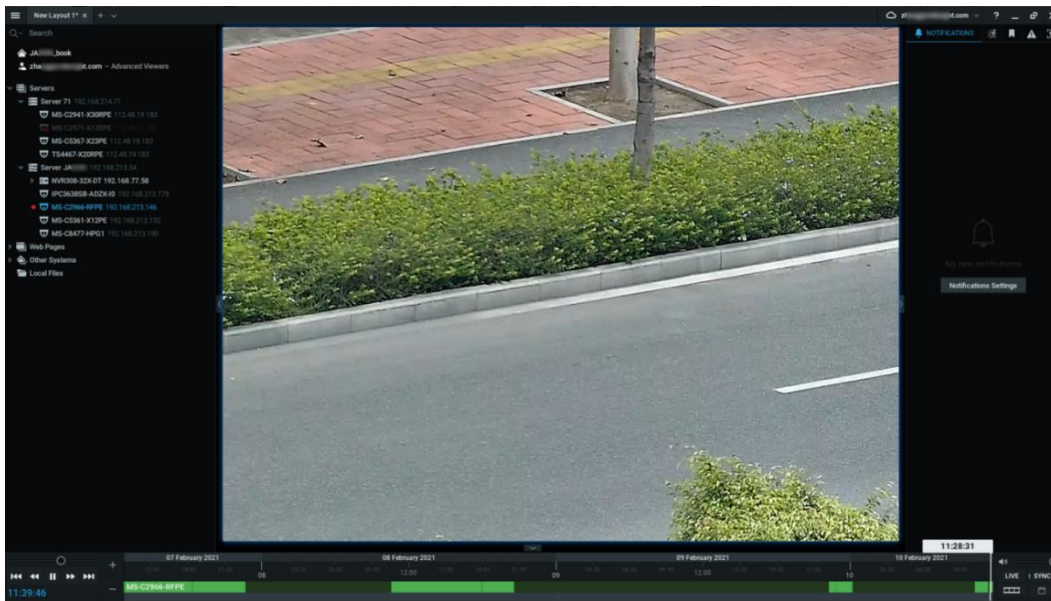
Step 4: When the plugin receives an event alert from the IPC front-end, it sends relevant data to the AM/Win platform using the SIA protocol (a network protocol) in the format

specified by the protocol agreement.

Step 5: After receiving an alarm on the AM/Win platform, you can open the Nx Client and automatically connect to the corresponding Nx System.



Step 6: Once connected, the camera's video at the time of the alarm will automatically play.



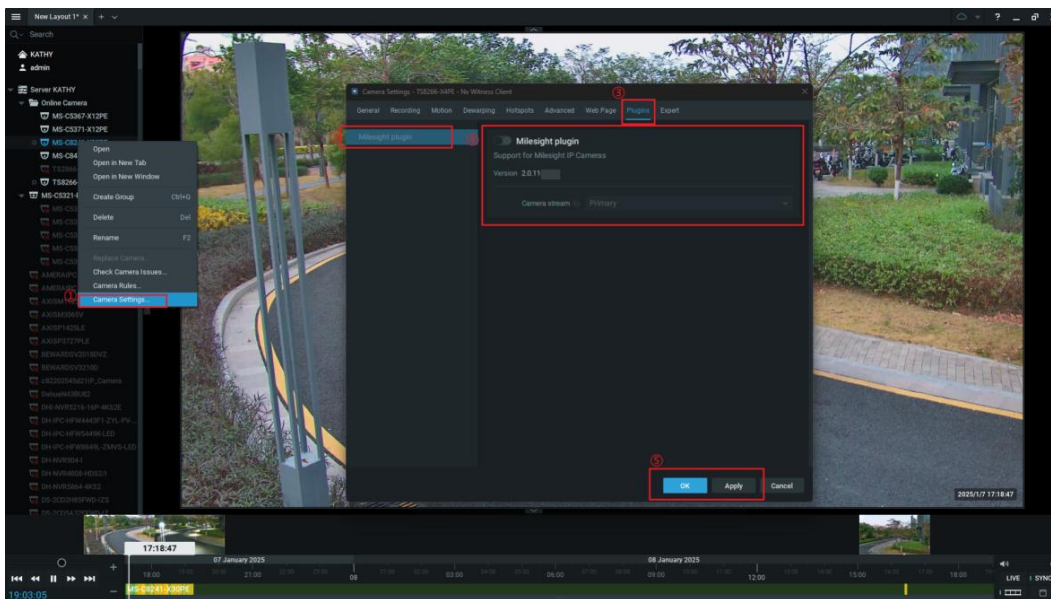
Chapter 4. Uninstall and Update

4.1 Disable Mileight Plugin

You can follow these steps to disable the plugin from Mileight Camera.

Step1: Right-click on the camera and choose "Camera Settings" from the options provided.

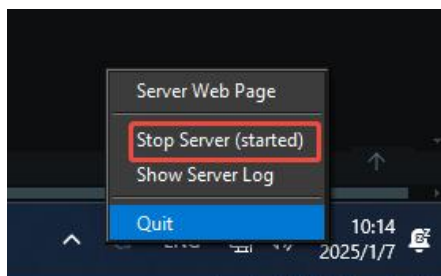
Step2: Click on the "Plugins" tab in the top menu and disable the plugin in the "Mileight Plugin" tab.



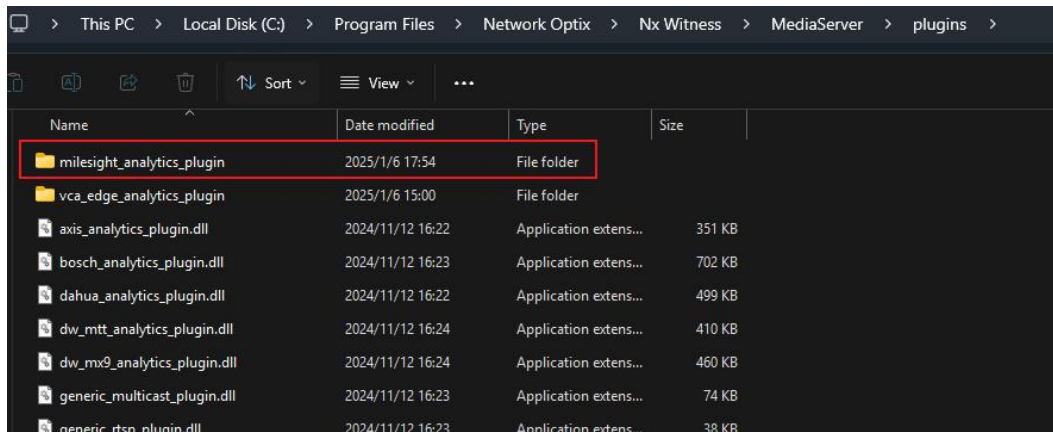
Uninstall Mileight plugin

[Windows]

Step1: Stop the Nx Witness server. Right-click the taskbar tray bar and select the "Stop Server (Started)", and then double-click to restart the server.



Step2: Delete the entire milesight_analytics_plugin folder in the following directory
C:\Program Files\Network Optix\Nx Witness\MediaServer\plugins.



[Linux]

Use the following command to remove the plugin:

```
sudo rm -rf /opt/networkoptix/mediaserver/bin/plugins/milesight_analytics_plugin
```

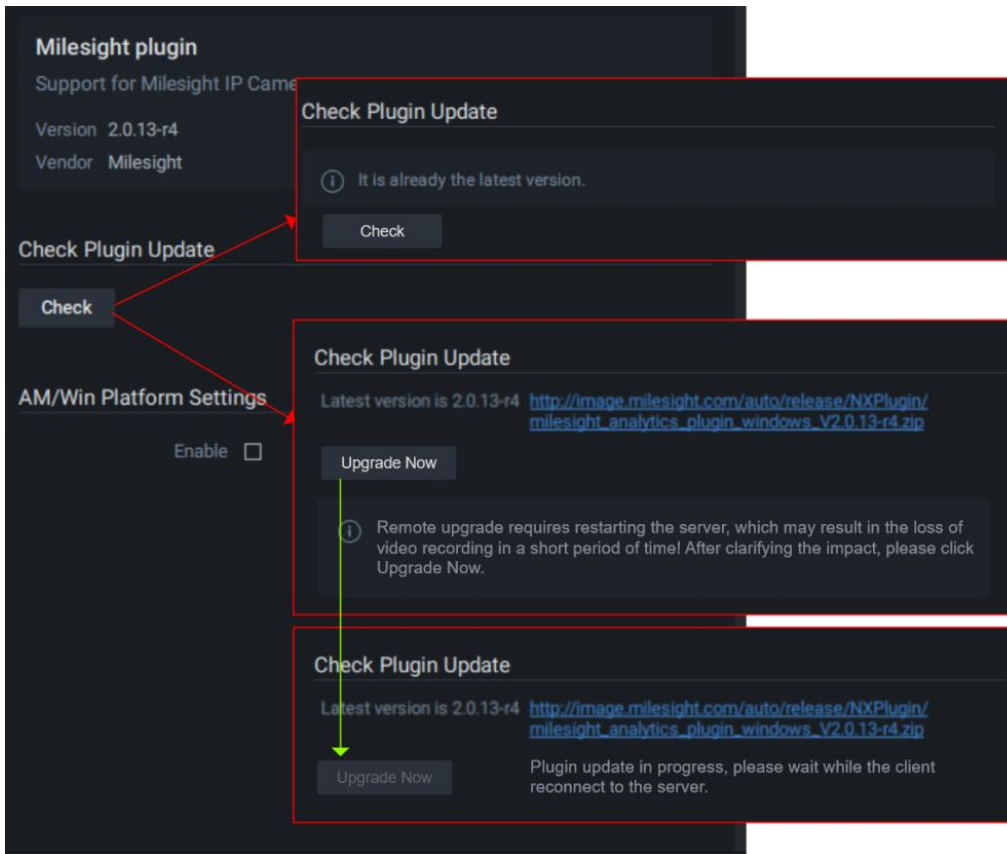
4.2 Update Milesight Plugin

Our Milesight Plugin supports automatic update detection.

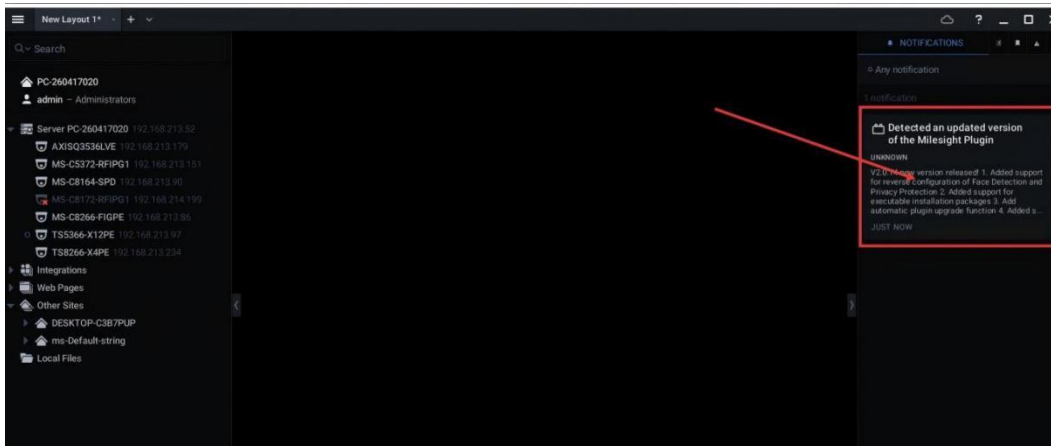
Firstly, go to "Integration" tab, and find Milesight plugin. Entering into the Milesight Plugin, you will find a column "Check Plugin Update". And you can find the plugin condition there.

If the plugin is the newest. There will have a hint "It is already the latest version."

If the plugin is not the newest, this interface will show the download link for the latest version. And the button will become "Upgrade Now". Click it and then upgrade the plugin into the latest Version.



Besides, when the plugin has newly released version, the plugin will automatically release the notification on Nx Witness's Live View Interface.



Chapter 5. Services

Milesight provides customers with timely and comprehensive technical support services. End-users can contact your local dealer to obtain technical support. Distributors and resellers can contact directly with Milesight for technical support.

Technical Support Mailbox: support@milesight.com

Web: <https://www.milesight.com>

Online Problem Submission System: <https://www.milesight.com/service/feedback.asp>

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