Milesight

Installation and Operating Guide

Milesight Plugin for Nx Witness

Version: V1.0
Date: 2025-04-30

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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]

Table 1.

Camera Series	Platform	Firmware Version
Mini Series	PD	51.7.0.77-r9-c2 or above
AI 360° Panoramic Fisheye	PA	32.8.0.3-r1-c6 or above
AI Multi-directional Camera	PE	62.8.0.4-r2 or above
Pro Series		61.8.0.4-r6 or above
PTZ Series		
180° Panoramic Dome/Bullet Camera		

Camera Series	Platform	Firmware Version
Road Traffic Management Series	PE	T_61.8.0.4-c11 or above
Solar-powered Series	SP111	52.8.0.4-r2

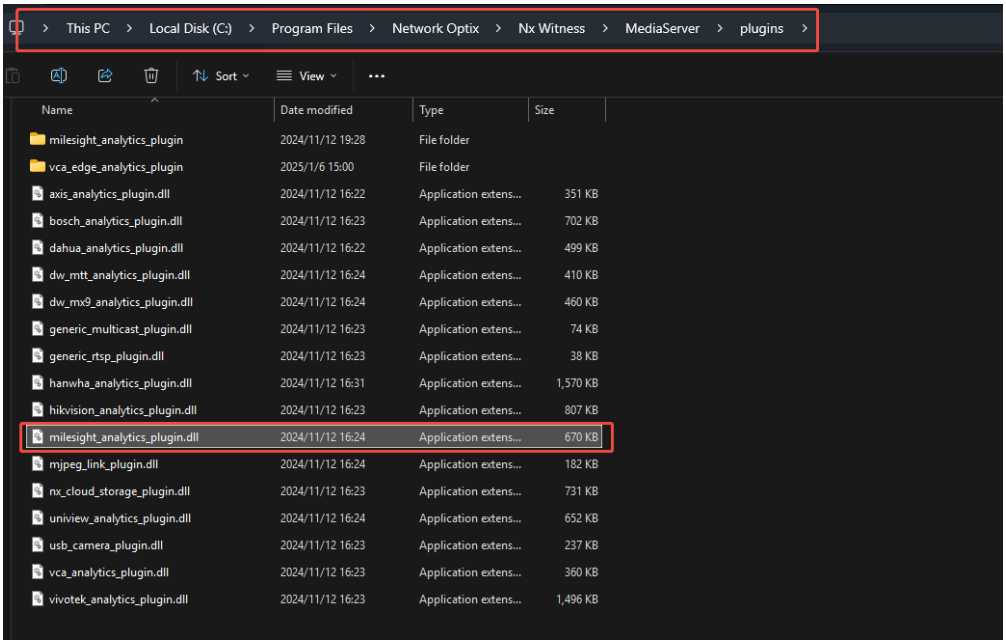
[Supported Functionalities]

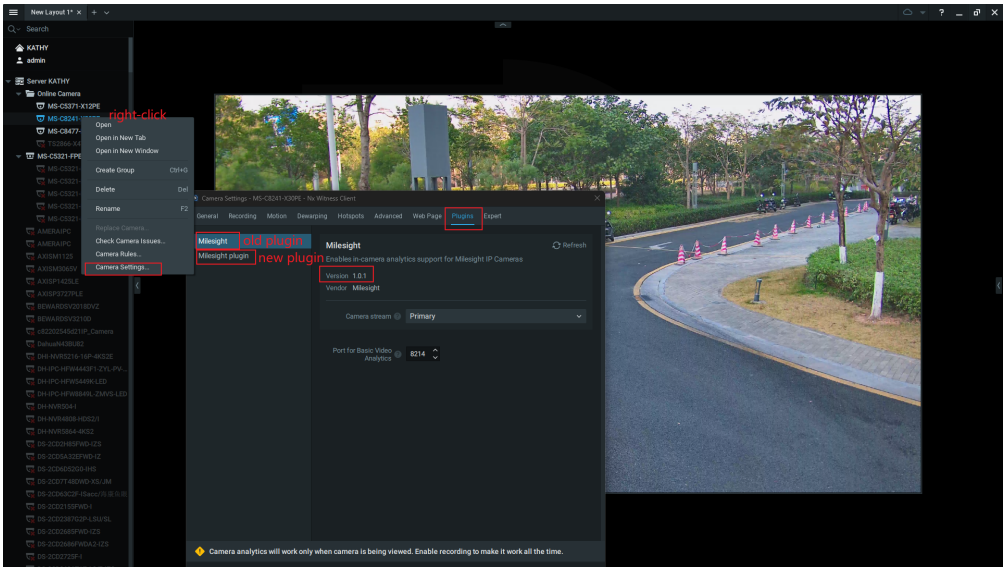
You can get the detailed information from this link: Milesight & Network Optix flyer.

Chapter 2. Installations

If you are using the old plug-in, we recommend removing it. You can delete the *“milesight_analytics_plugin.dll”* file located in the path of C:\Program Files\Network Optix\Nx Witness\MediaServer\plugins to achieve this.

If you have installed Milesight new plugin, you can find the *"milesight_analytics_plugin"* folder located in the same path as old plugin. Additionally, you can view the plugin on the Nx Witness by right-clicking the corresponding camera.





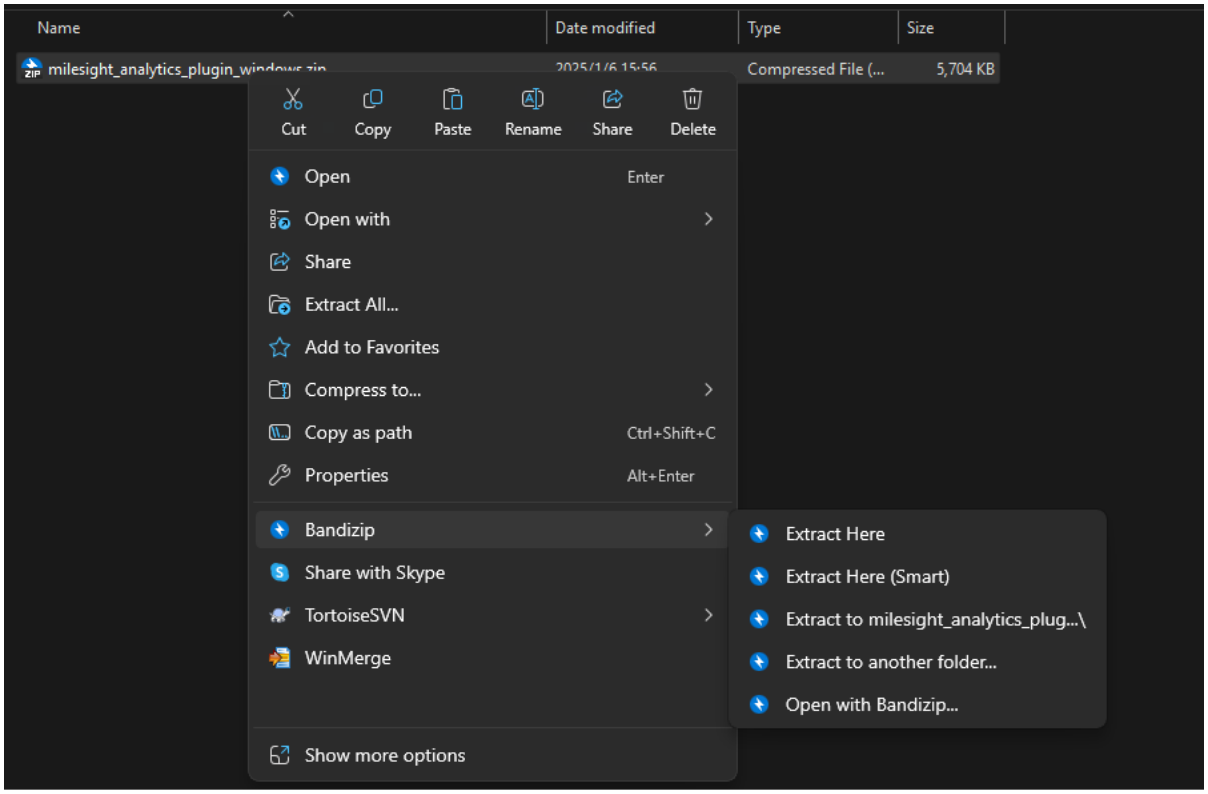
If you need, you can contact our Support Team to get the installation package of the Milesight Plugin or download the version from this link.

1. Standard Windows Version
2. Standard Linux Version
3. Neutral Windows Version
4. Neutral Linux Version

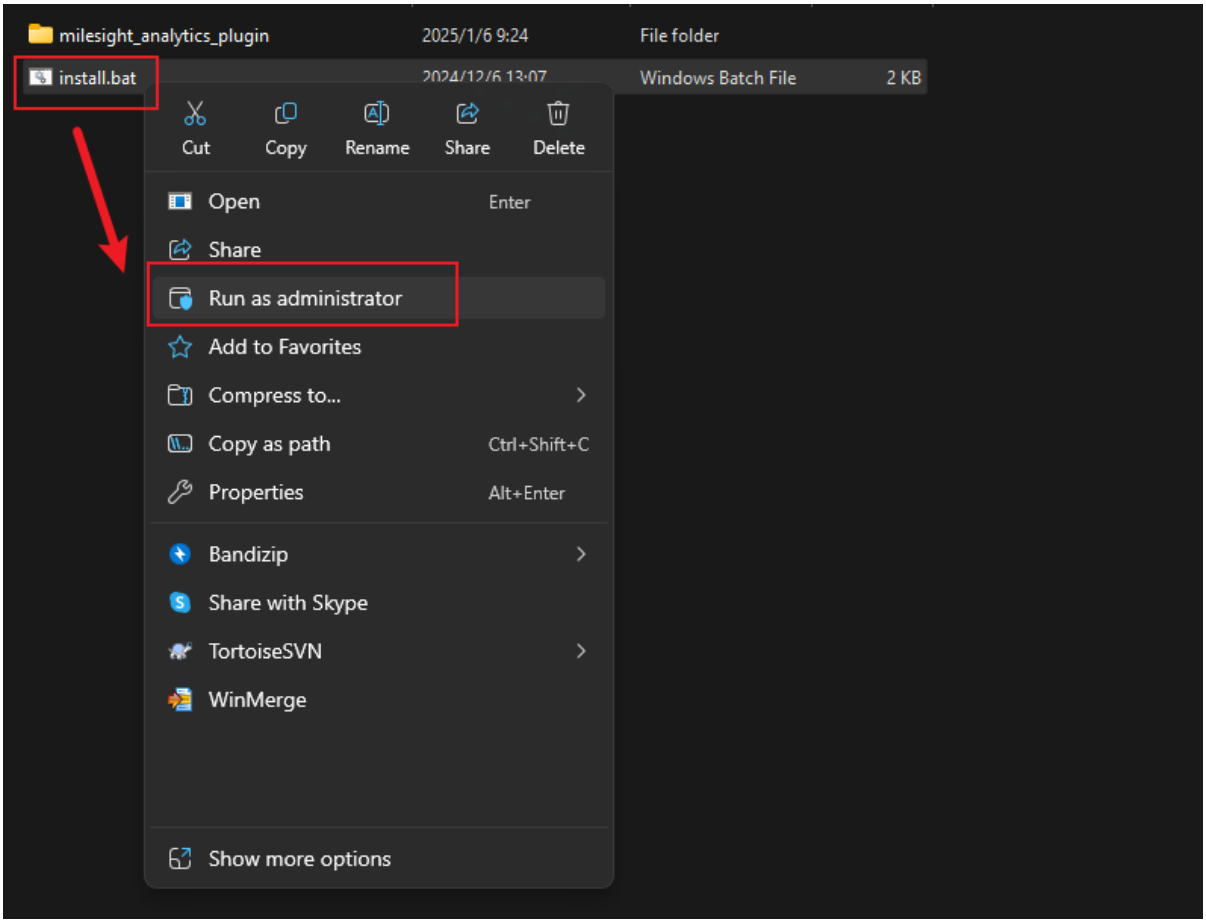
2.1 Windows Installation

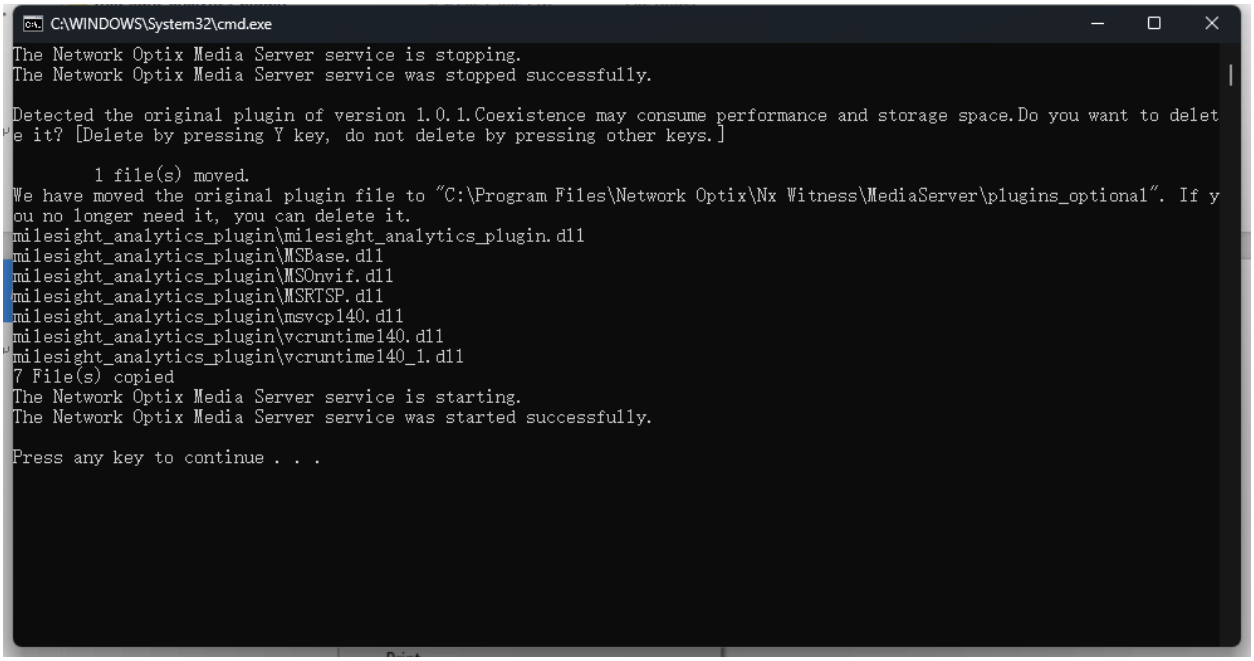
- **Automatic installation**

Step1: Extract `milesight_analytics_plugin.zip` into a folder.

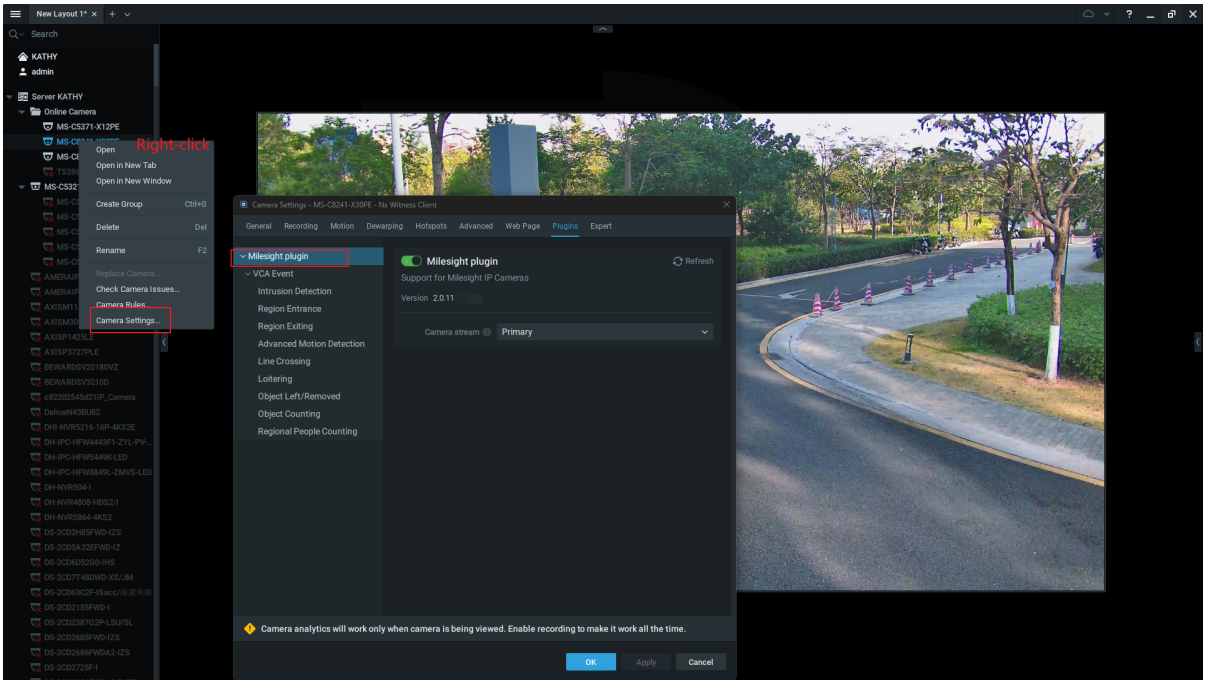


Step2: Right-click on "install.bat" and select "Run as administrator" to open the command prompt then follow the prompt to install the plugin. This step will restart the Nx Witness server.


milesight_analytics_plugin
2025/1/6 9:24
File folder
install.bat
Windows Batch File
2 KB
Cut
Copy
Rename
Share
Delete
Open
Enter
Share
Run as administrator
Add to Favorites
Compress to...
Copy as path
Ctrl+Shift+C
Properties
Alt+Enter
Bandizip
Share with Skype
TortoiseSVN
WinMerge
Show more options

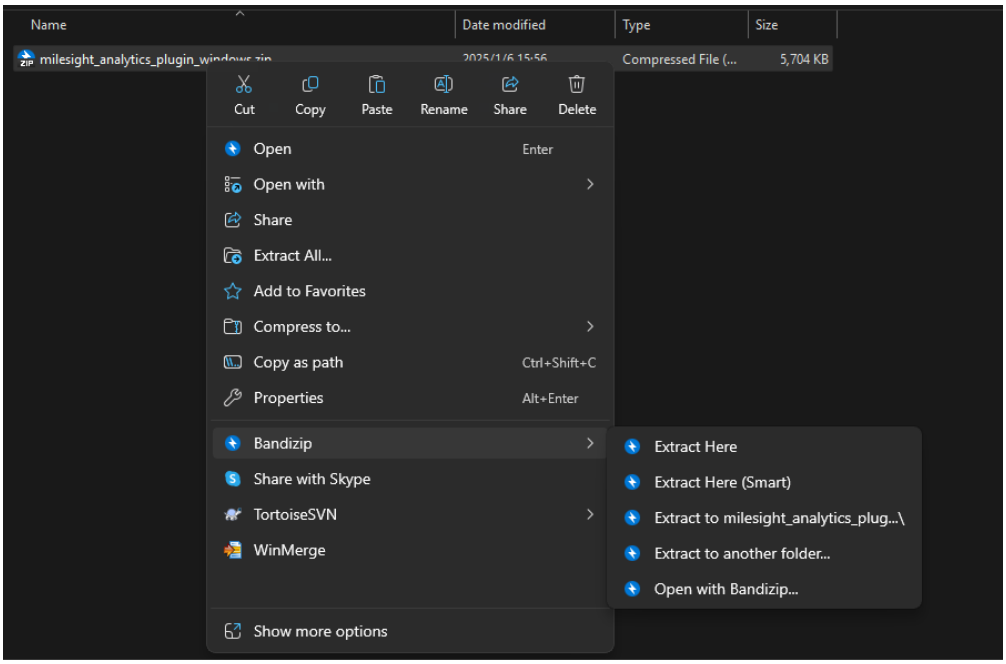

C:\WINDOWS\System32\cmd.exe
The Network Optix Media Server service is stopping.
The Network Optix Media Server service was stopped successfully.
Detected the original plugin of version 1.0.1.Coexistence may consume performance and storage space.Do you want to delet
e it? [Delete by pressing Y key, do not delete by pressing other keys.]
1 file(s) moved.
We have moved the original plugin file to "C:\Program Files\Network Optix\Nx Witness\MediaServer\plugins_optional". If y
ou no longer need it, you can delete it.
milesight_analytics_plugin\milesight_analytics_plugin.dll
milesight_analytics_plugin\MSBase.dll
milesight_analytics_plugin\MSOnvif.dll
milesight_analytics_plugin\MSRTSP.dll
milesight_analytics_plugin\msvcp140.dll
milesight_analytics_plugin\vcruntime140.dll
milesight_analytics_plugin\vcruntime140_1.dll
7 File(s) copied
The Network Optix Media Server service is starting.
The Network Optix Media Server service was started successfully.
Press any key to continue . . .

Step3: After finishing the installation, you may launch the Nx Witness and enable the plugin feature within the camera settings.



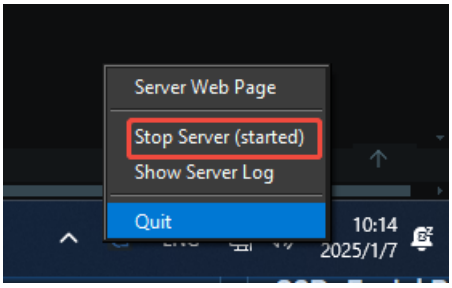
- **Manual Installation**

Step1: Extract `milesight_analytics_plugin.zip` into a folder.

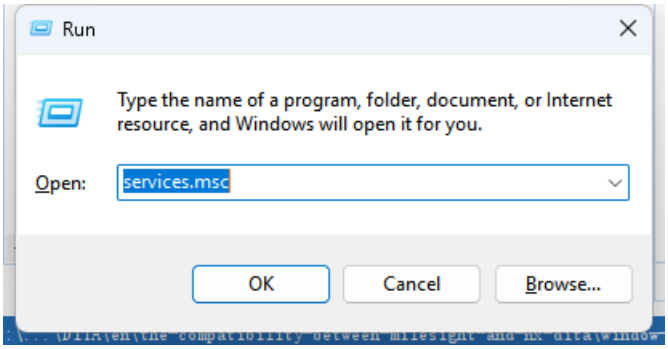


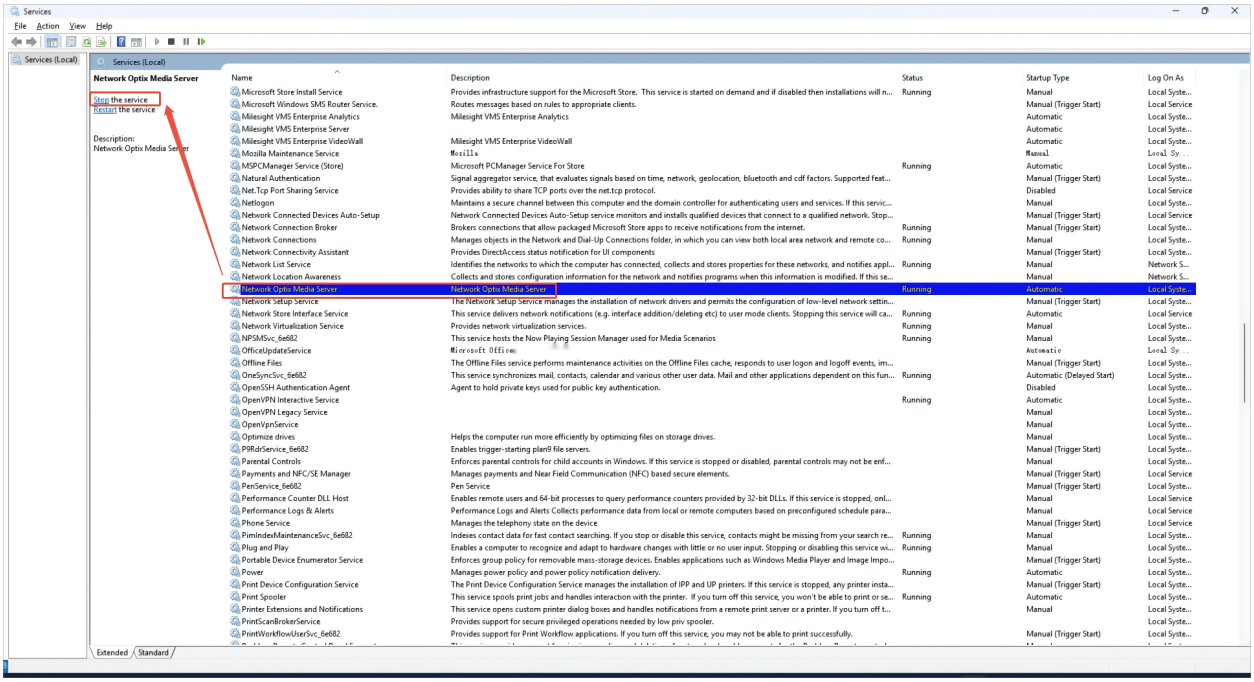
Step2: Stop the Nx Witness server.

Method1: Right-click the taskbar tray bar and select the "Stop Server(Started)", and then double-click to restart the server.

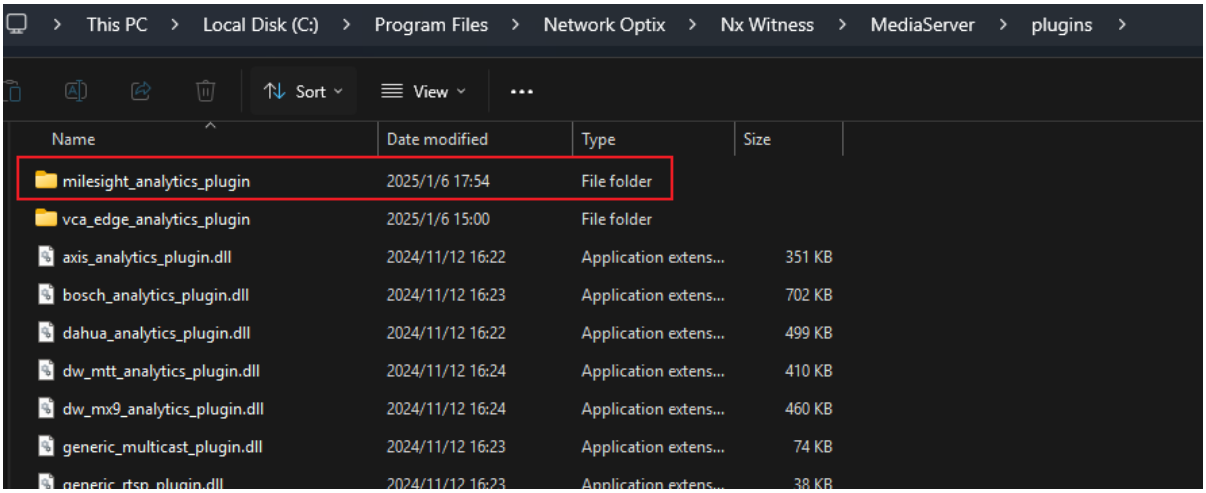


Method2: Alternatively, you can stop the server by entering the `services.msc` command after pressing Win+R on your keyboard, and then stop the Network Optix Media Server.



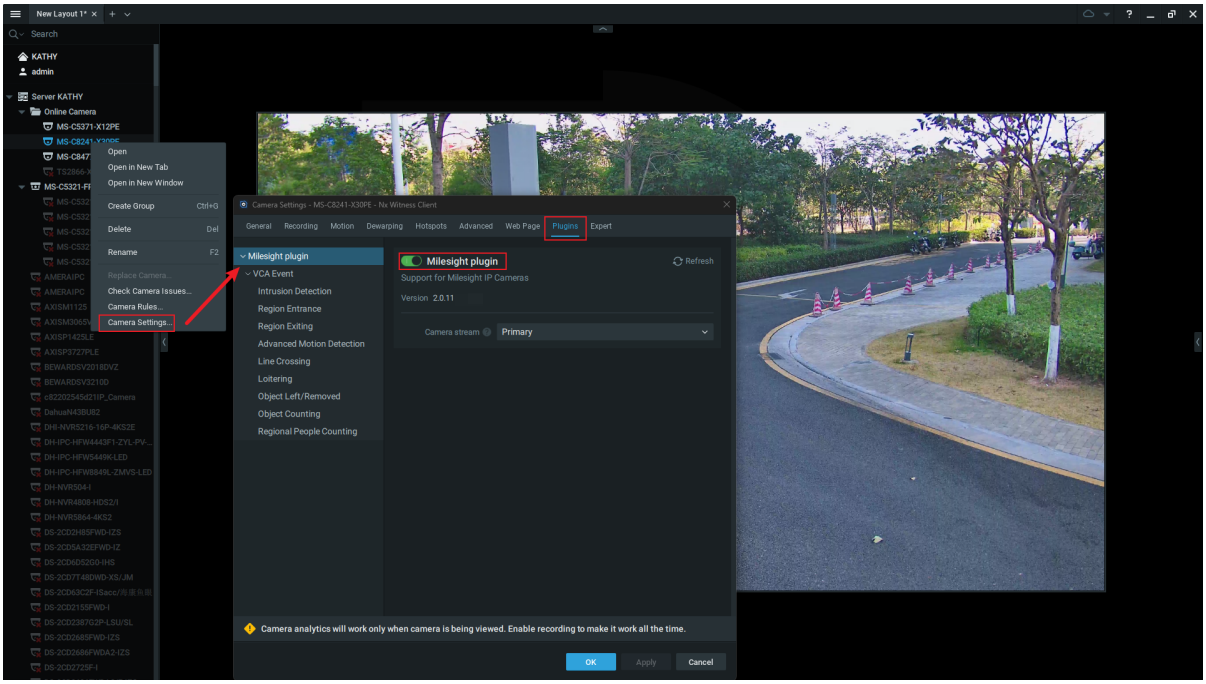


Step3: Copy the entire `milesight_analytics_plugin` folder to the following directory `C:\Program Files\Network Optix\Nx Witness\MediaServer\plugins`.



Step4: Start Nx Witness Server and enable Milesight plugin.

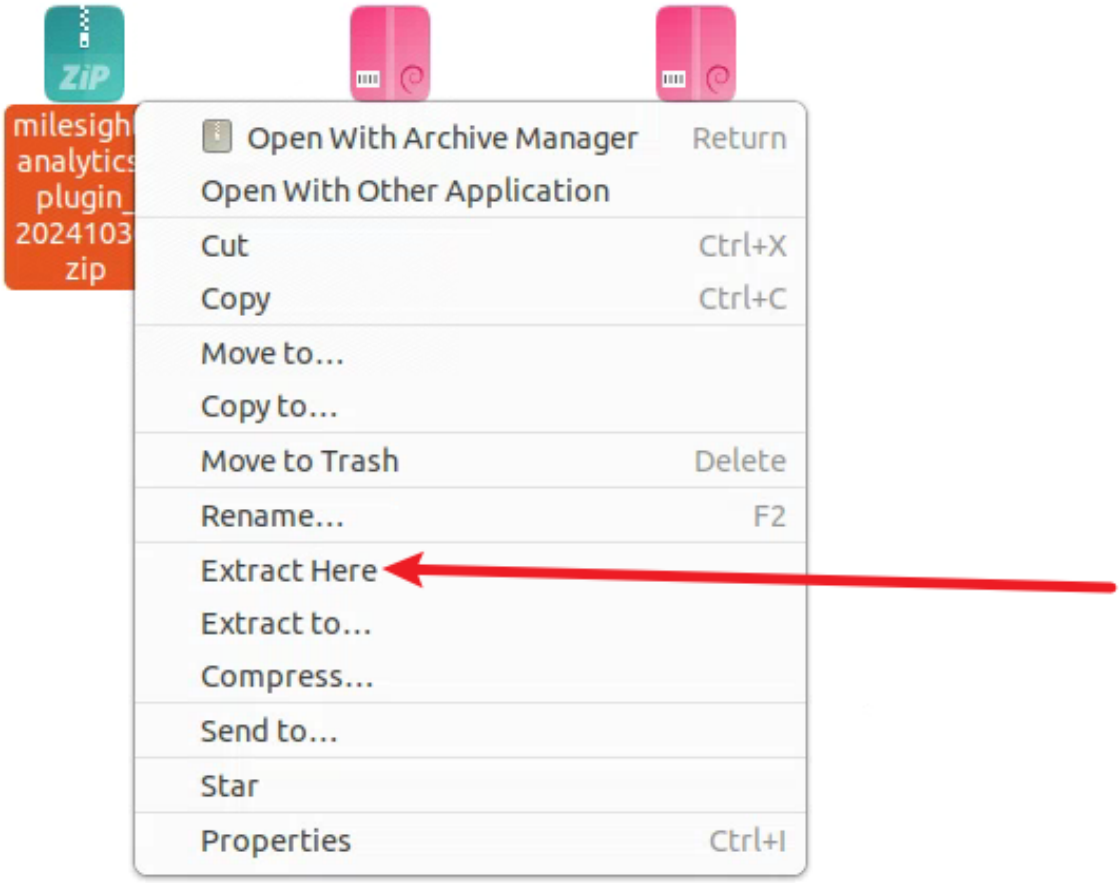
First of all, you must start the Network Optix Media Server before using the Nx Witness server and enabling the plugin. The method is the same as the stopping steps. Once you have finished the installation, you can right-click the corresponding camera and enable the plugin, The advanced function will then be effective.



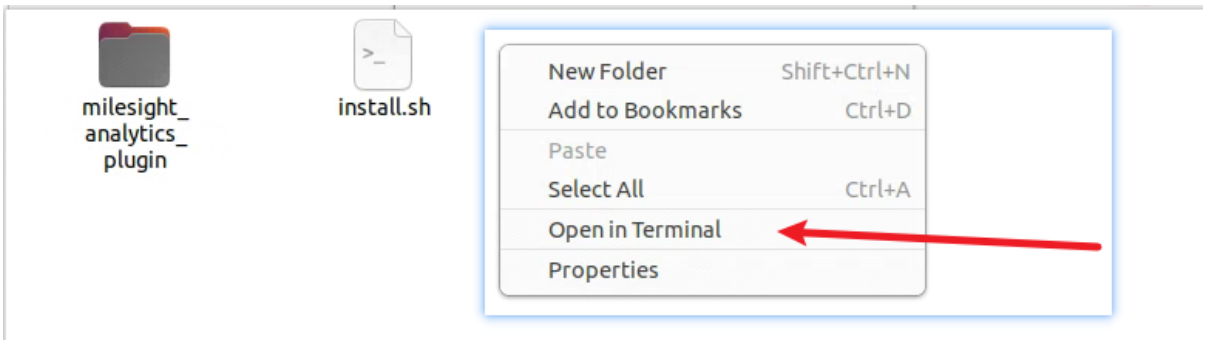
2.2 Linux Installation

- **Automatic Installation**

Step1: Extract milesight_analytics_plugin.zip into a folder.

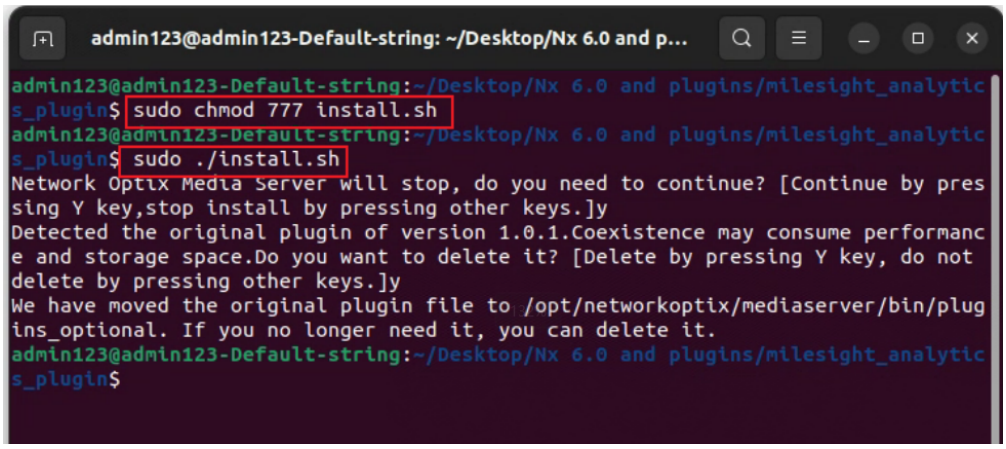


Step2: Open the current folder in a terminal.

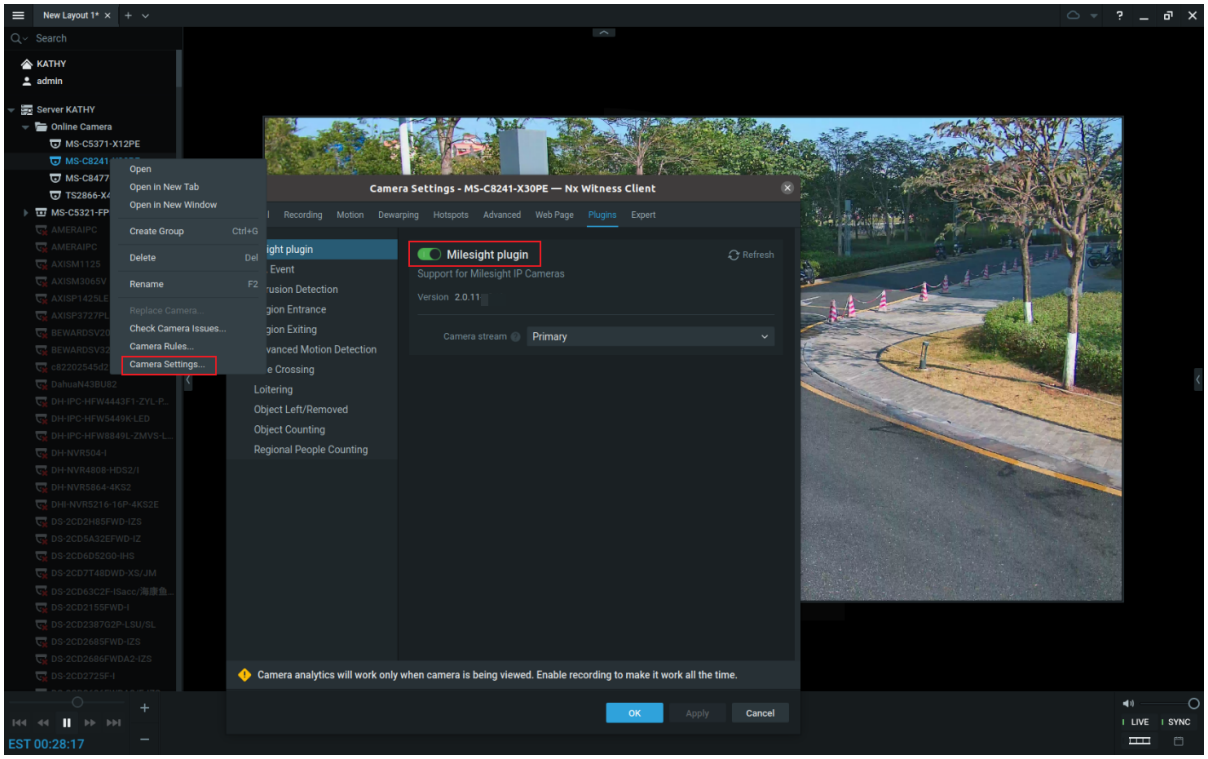


Step3: Enter the following commands, and follow the prompt to install the plugin. This step will restart the Nx Witness server.

```
su
sudo chmod 777 ./install.sh
sudo ./install.sh./
```



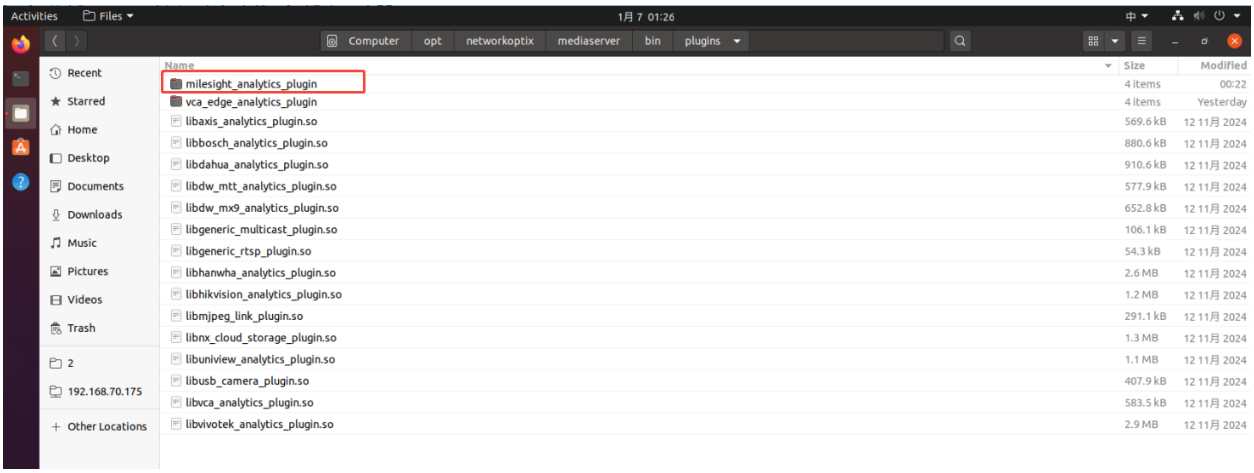
Step4: Start Nx Witness Server and enable Milesight plugin. This procedure is the same as the steps for Windows installation.



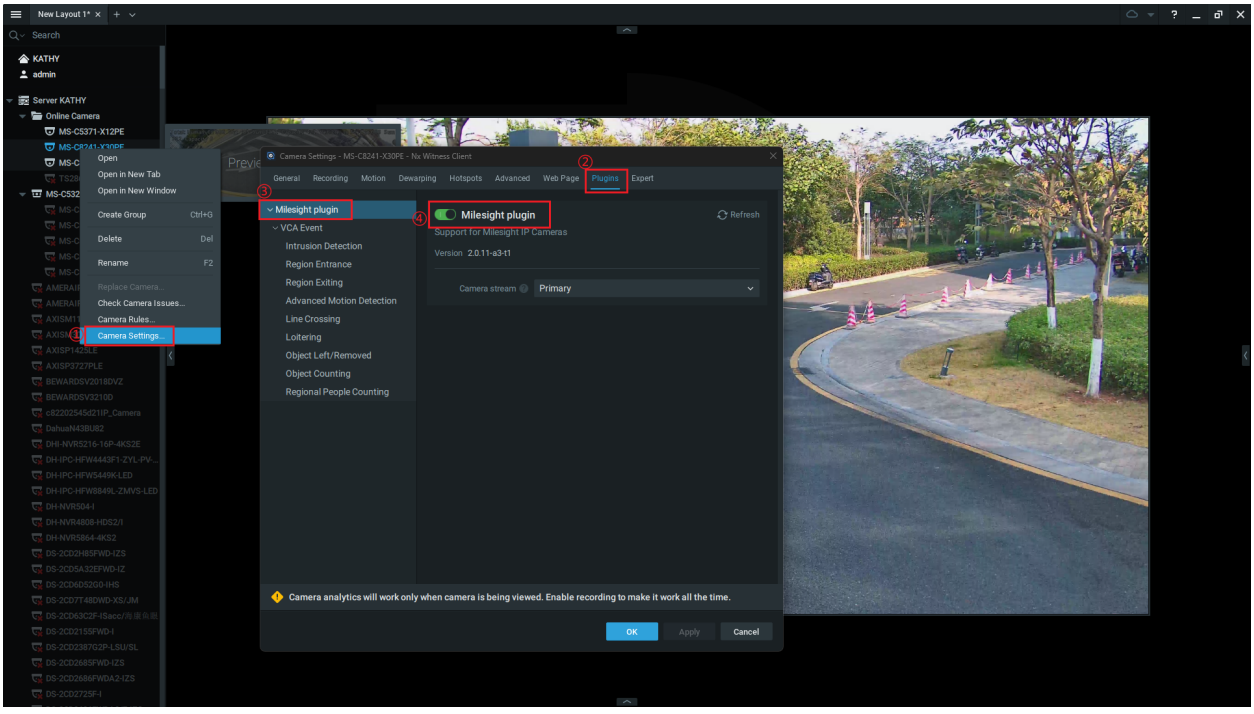
- **Manual Installation**

Step1: Copy the entire `milesight_analytics_plugin` folder to the following directory `/opt/networkoptix/mediaserver/bin/plugins`.

Step2: Restart the server using the command, *`sudo systemctl restart networkoptix-mediaserver`*.



Step3: Enable the plugin by right-clicking on the respective camera.



Chapter 3. Configuration

3.1 ***Configure Recording Settings***

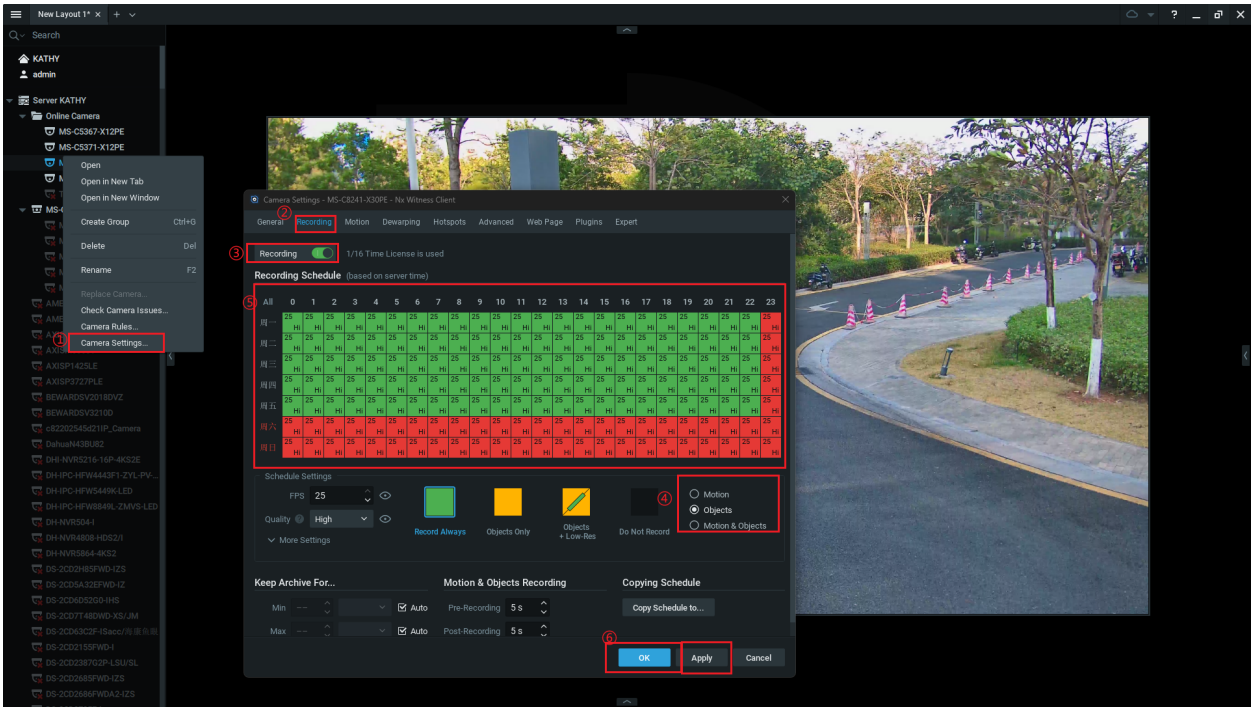
After completing the installation and enabling the plugin, to ensure that detected objects are recorded and displayed correctly, you must verify that the camera video stream is being record.

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.]



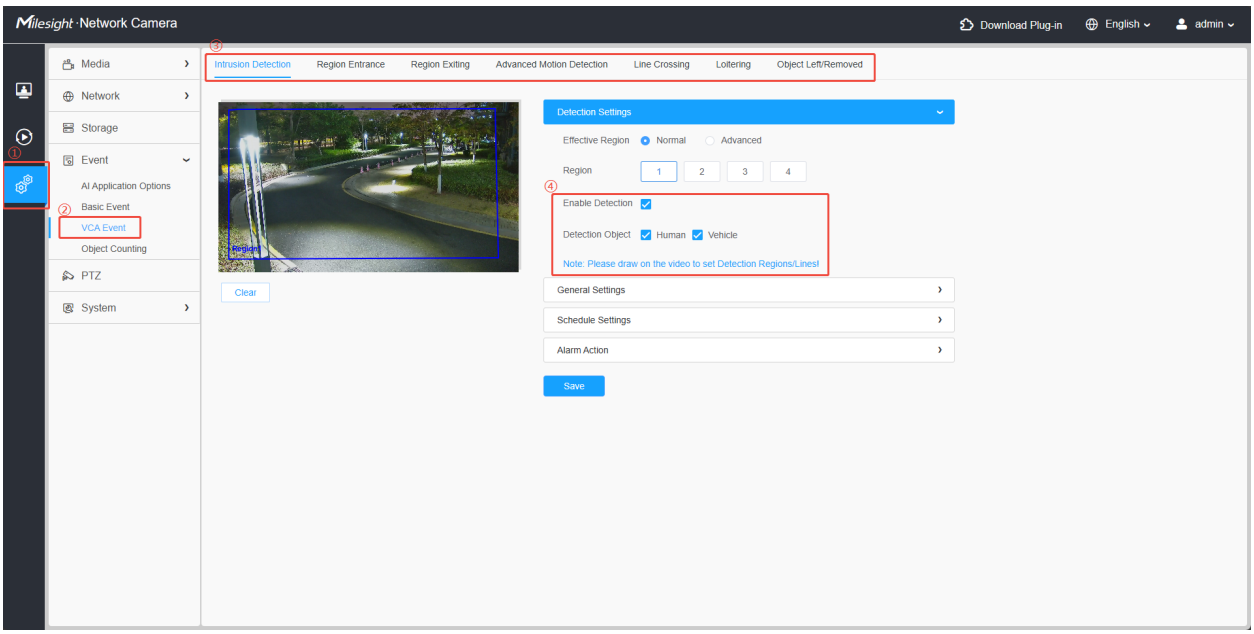
3.2 Camera Event Configuration

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

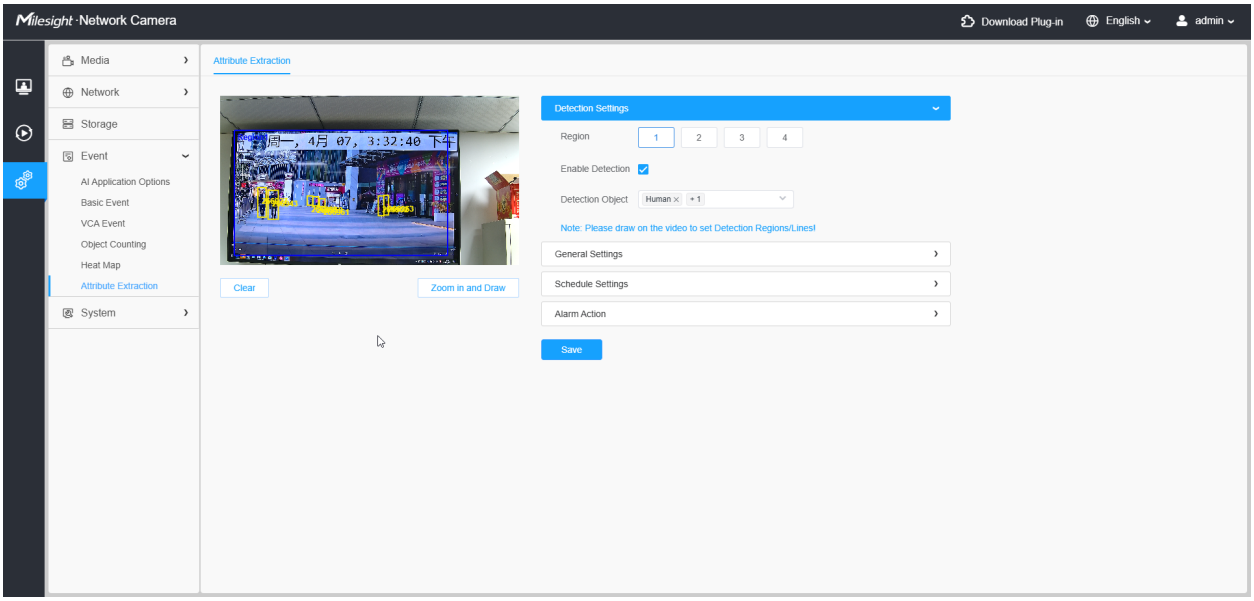
Milesight Video Surveillance Series

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

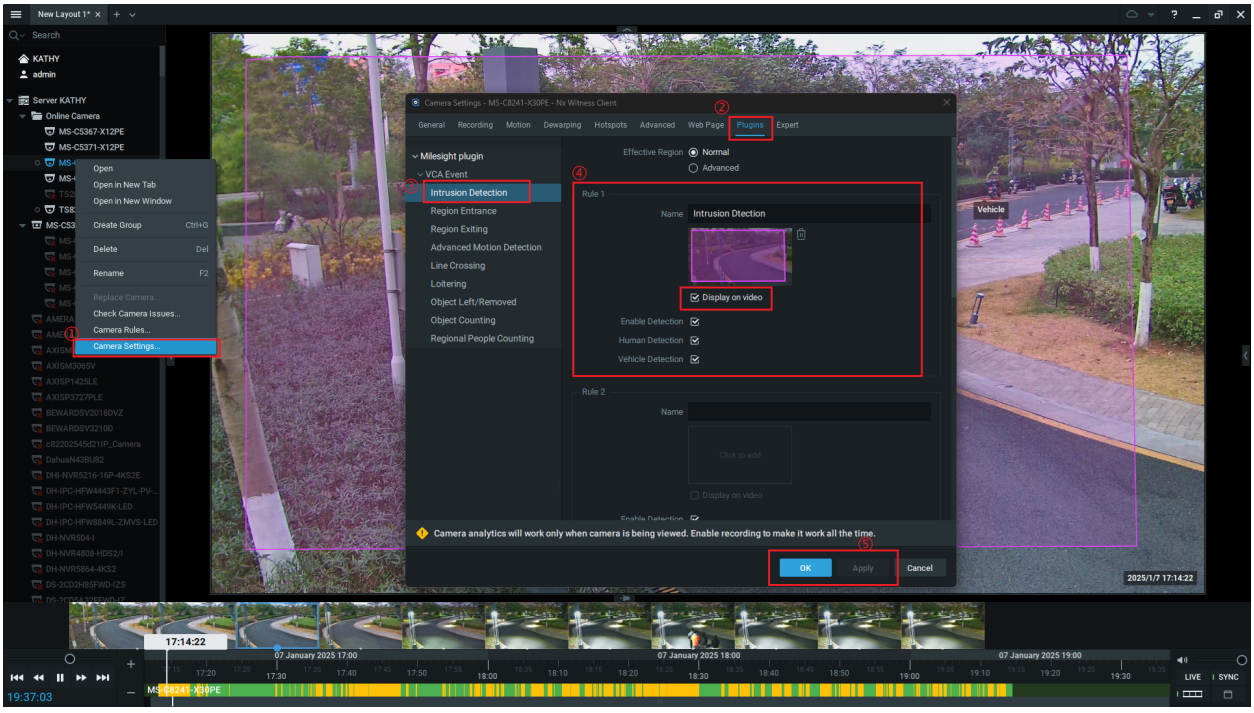
Method1: Access the camera's webpage, complete the necessary configurations, and click "Save" to apply the settings. Meanwhile, these configurations will take effect on Nx Witness.



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



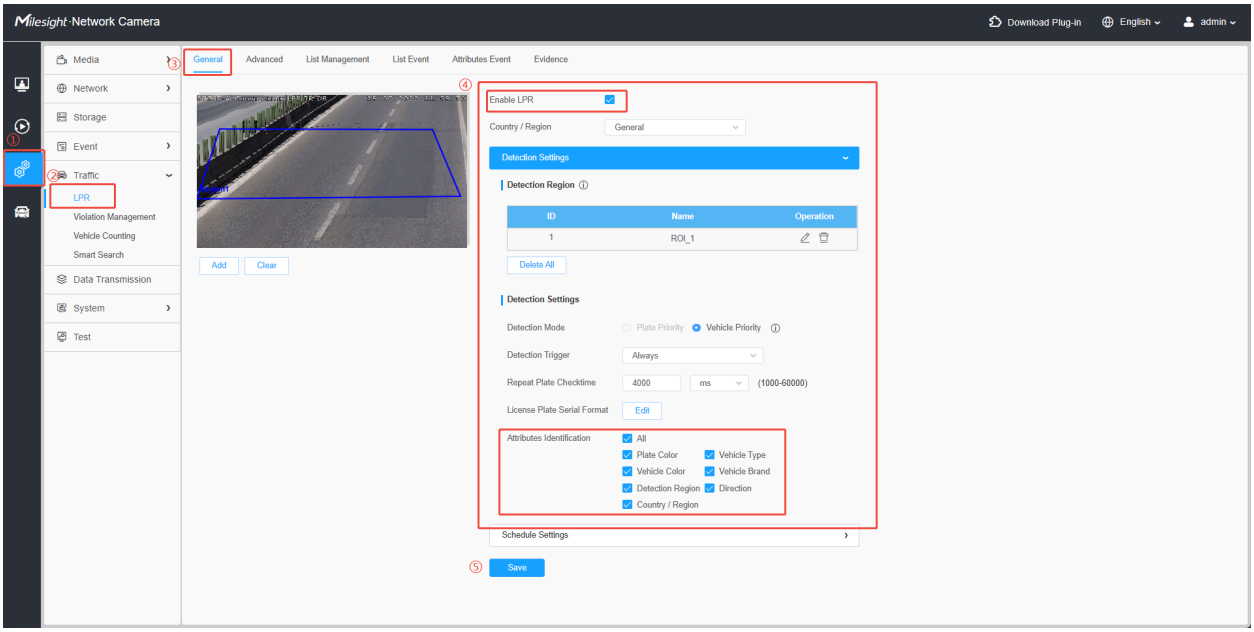
Method2: Alternatively, you can complete the configuration directly on the Nx Witness, additionally, enable the "Display on video" feature to display the detected area on the real-time stream.

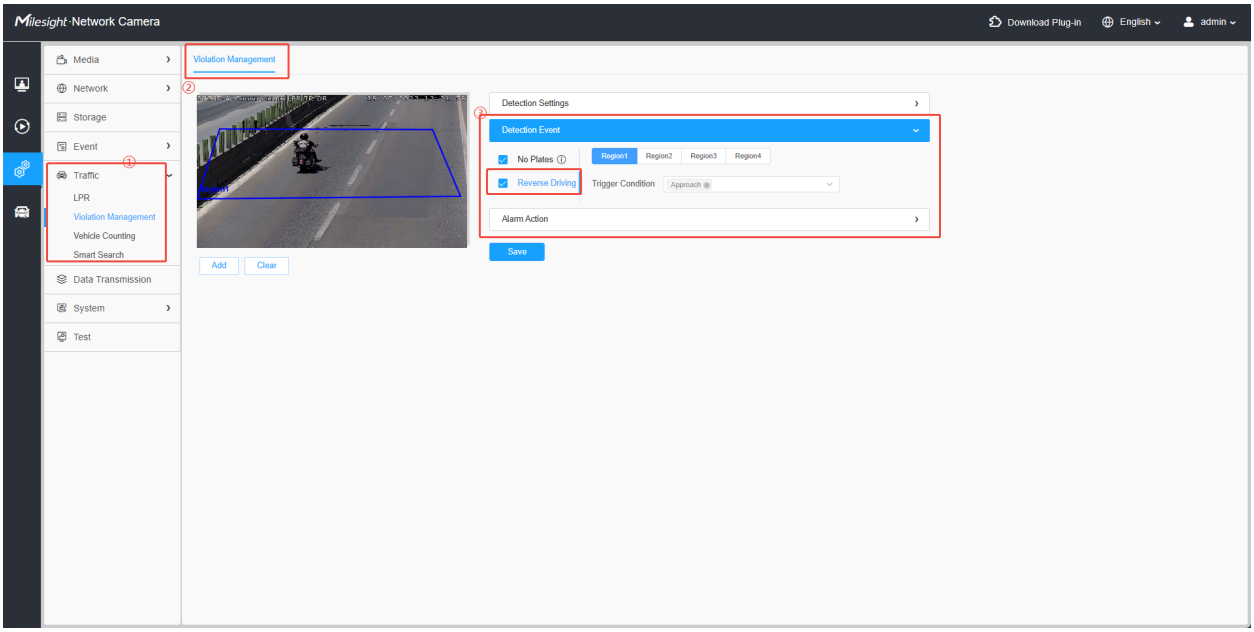


Intelligent Traffic Series

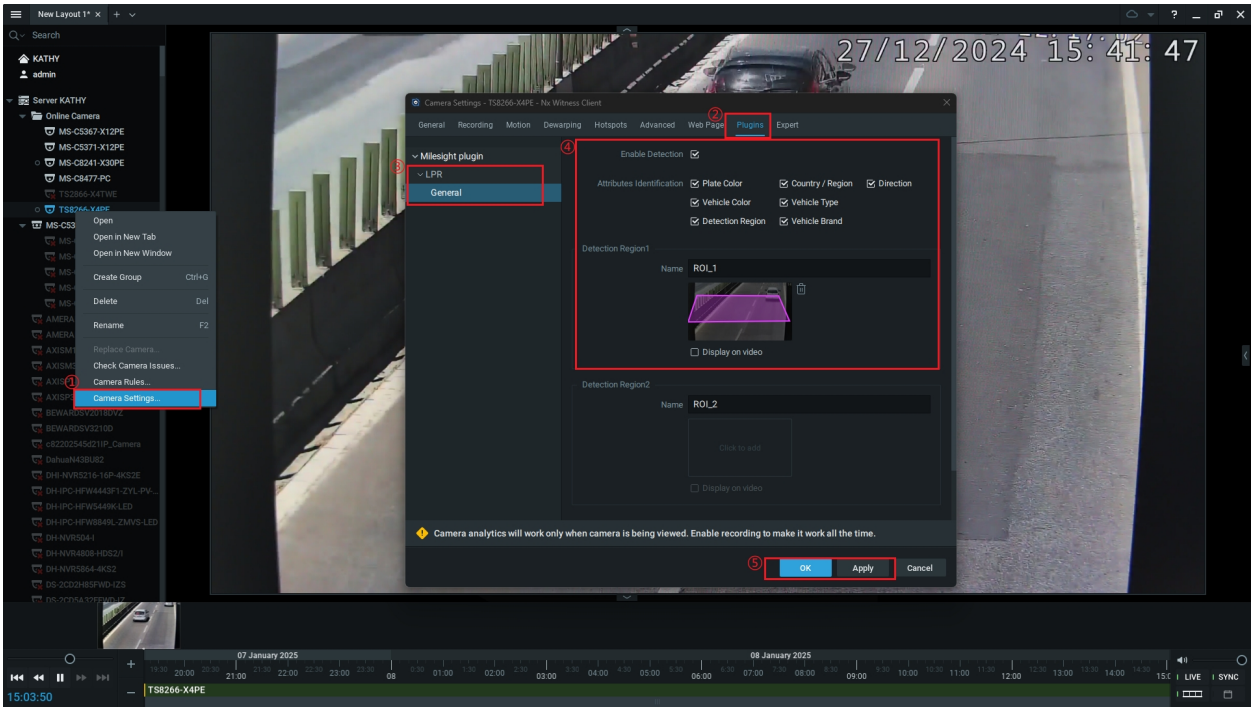
Step1:

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

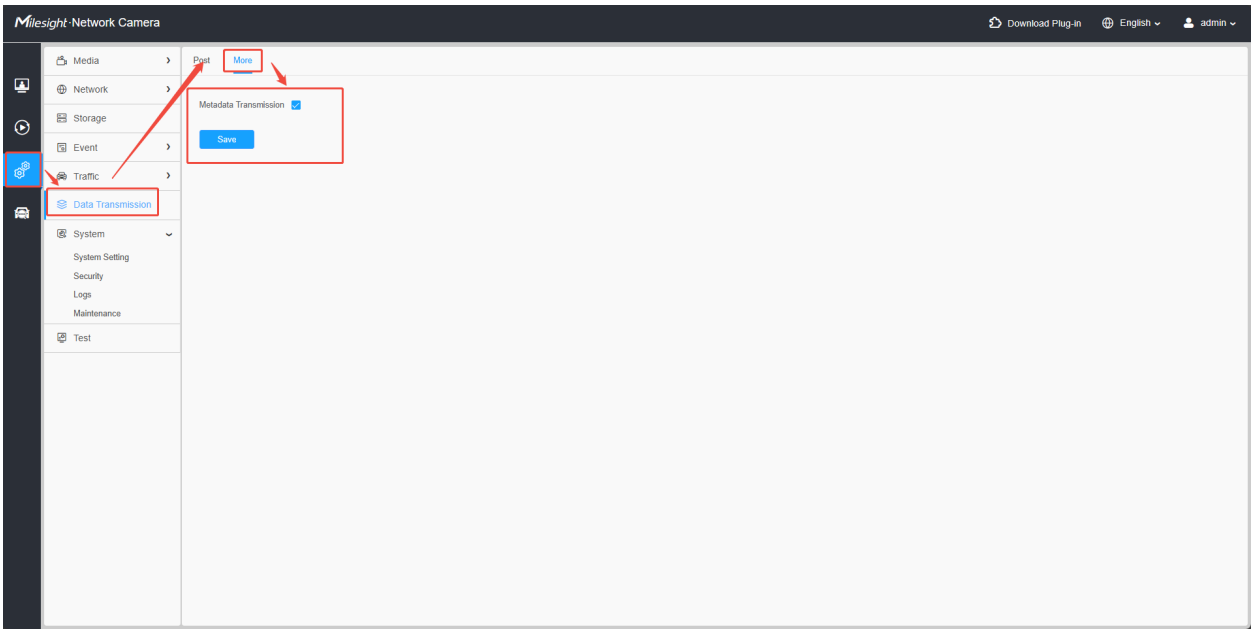




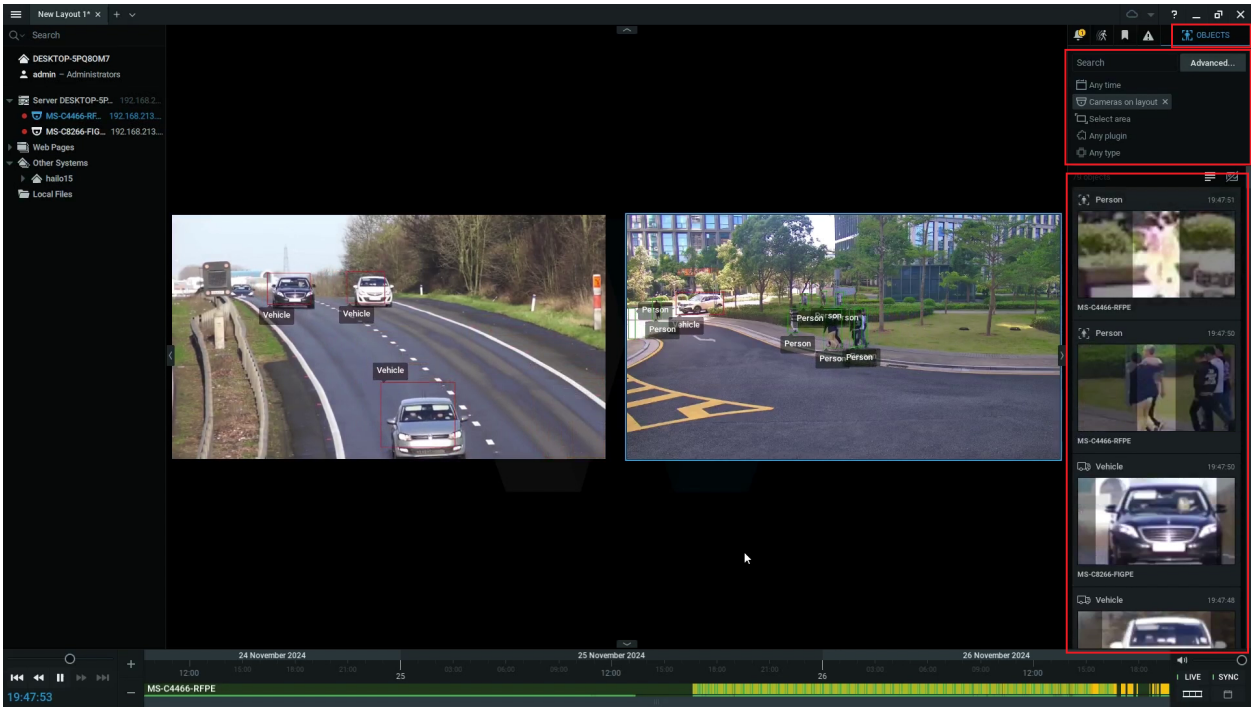
Method2: You also can complete the configuration directly on the Nx Witness.



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.



3.3 Analytics Events

What is Analytics Events?

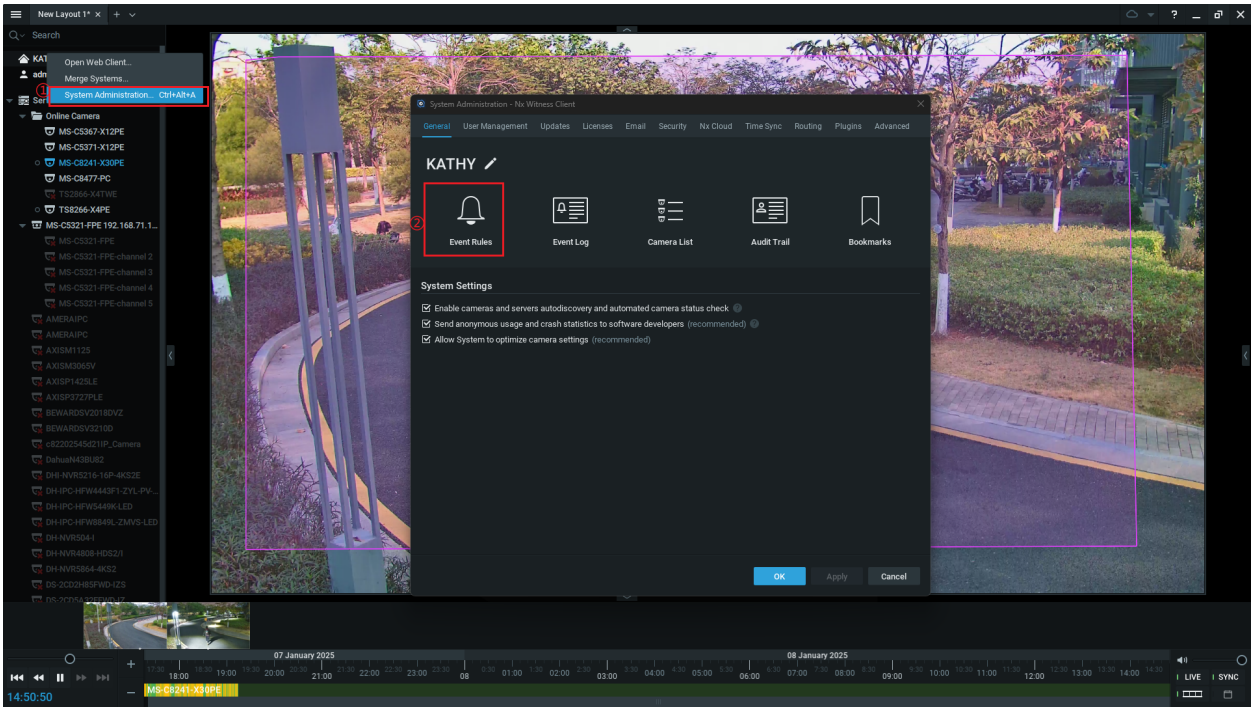
Analytics Events is utilized to configure action rules for **event** triggers. When an event occurs, such as the front camera triggering an Advanced Motion Detection event, appropriate actions can be performed, such as showing a desktop notification. Event metadata is also captured, and can be searched,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

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

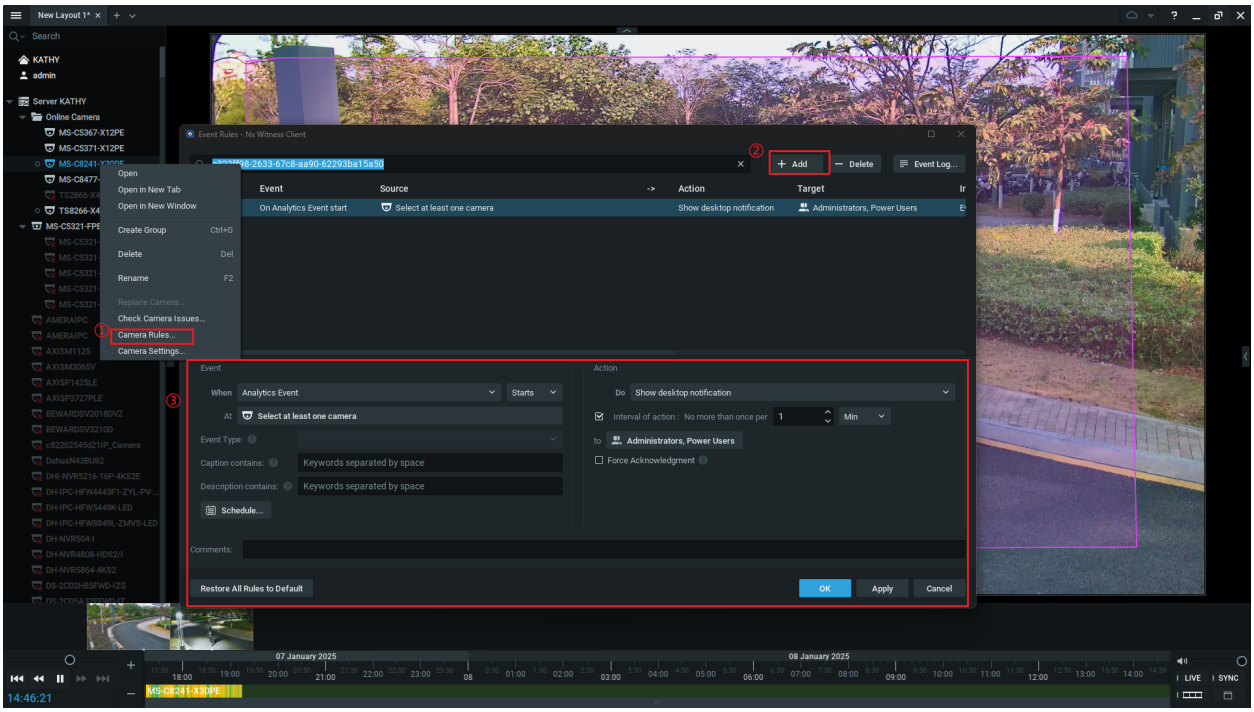
Step1: Access the camera's web page to confirm that event detection is properly configured and enabled on the camera you plan to use. Milesight's cameras can have their detection configured within the Nx Witness desktop client. See Camera Event Configuration *(page 15)* for more information.

Step2:

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

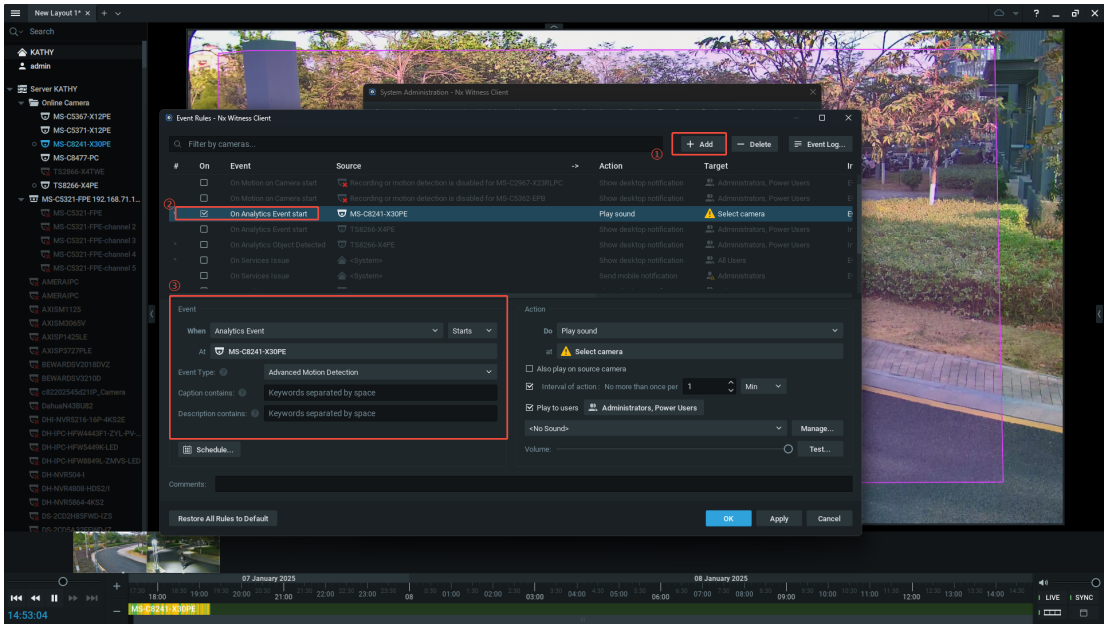


Method2: Alternatively, add a rule for the designed camera by right-clicking and selecting "Camera Rules".



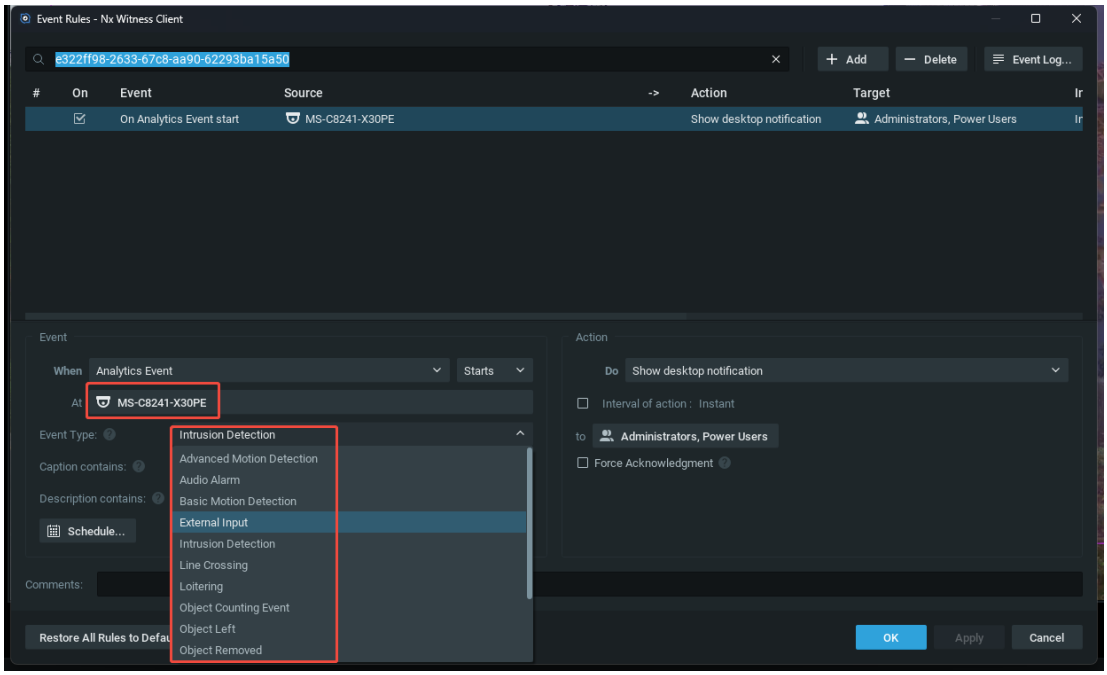
Step3: Nx Witness generates a default set of Event Rules. Click on the “+ Add” button.

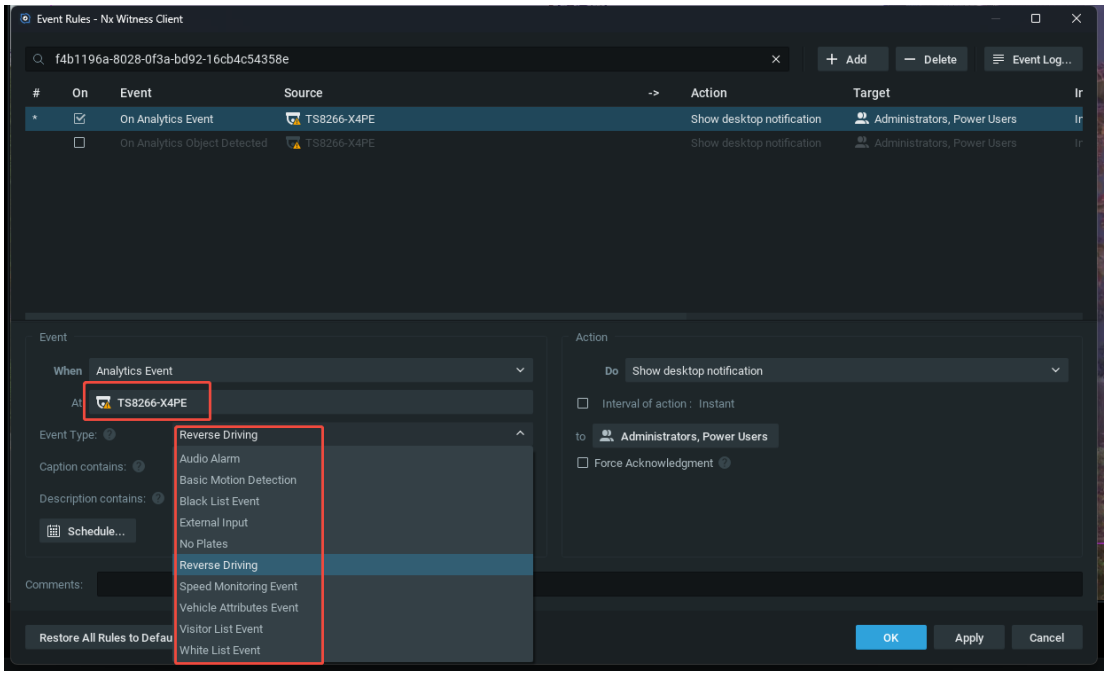
When the default Event row appears, click on the “Event” dropdown menu and select “Analytics Event”, or select "Analytics Event" from the "When" field.



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 Milesight's camera series(e.g., **Milesight 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.

3.4 Analytics Object Detected Event

What is Analytics Object Detected Event?

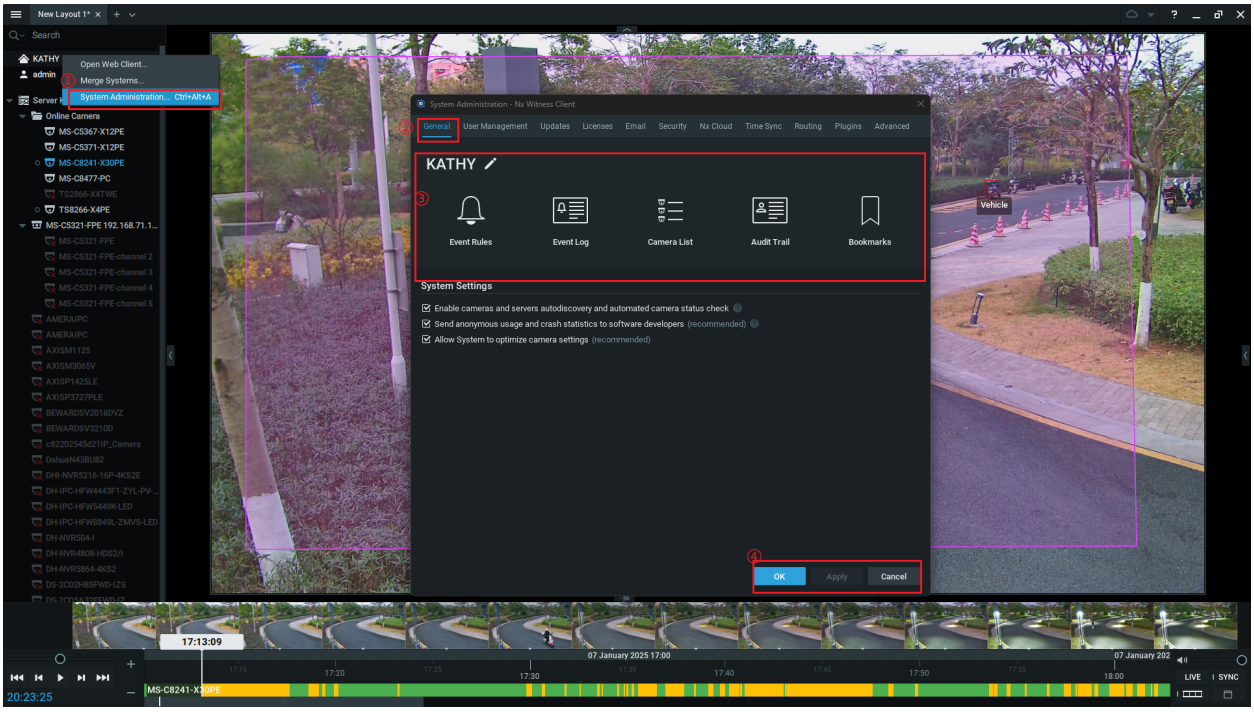
The Analytics Object Detected Event is used to configure action rules for specific **object**. For instance, when the front camera detects a license plate and pushes it to Nx Witness, it can trigger a corresponding alert action. Additionally, specific object attributes can be set such as triggering a 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 14)* and 3.2 Camera Event Configuration *(page 15)*.

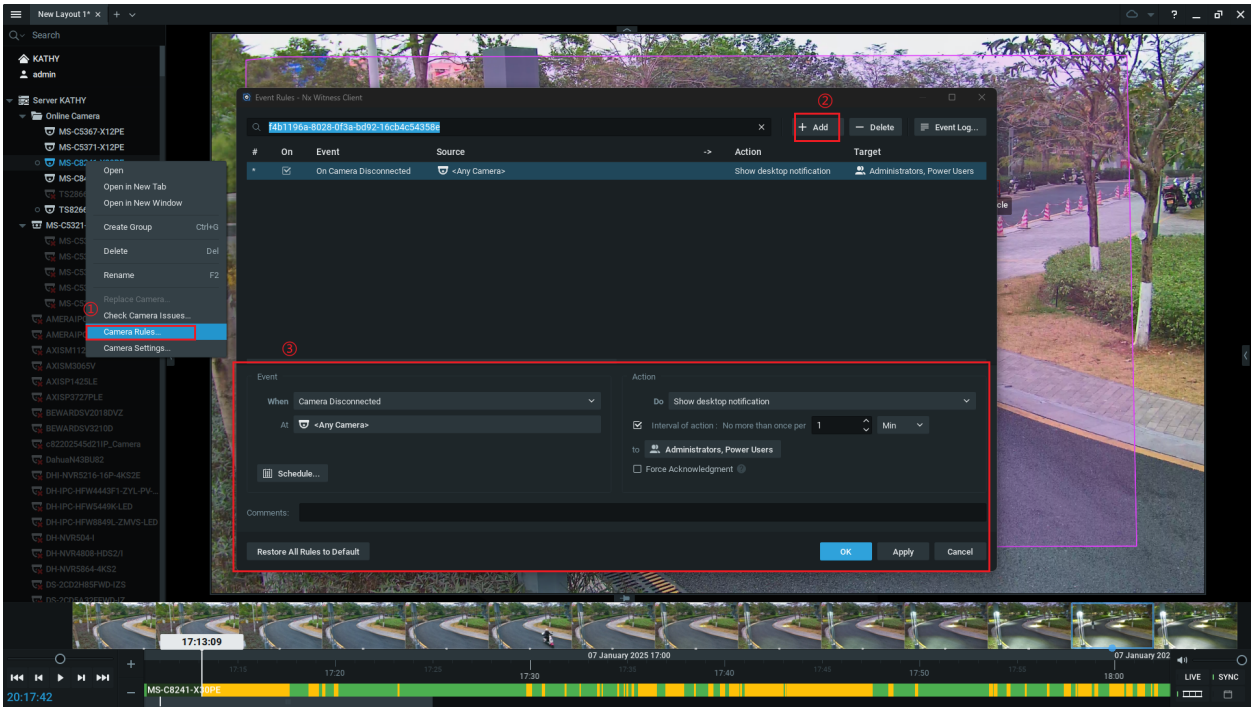
You can create an event rule to notice the user when a specified object (Person, Vehicle, etc.) is detected by creating an Event Rule.

Step1:

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

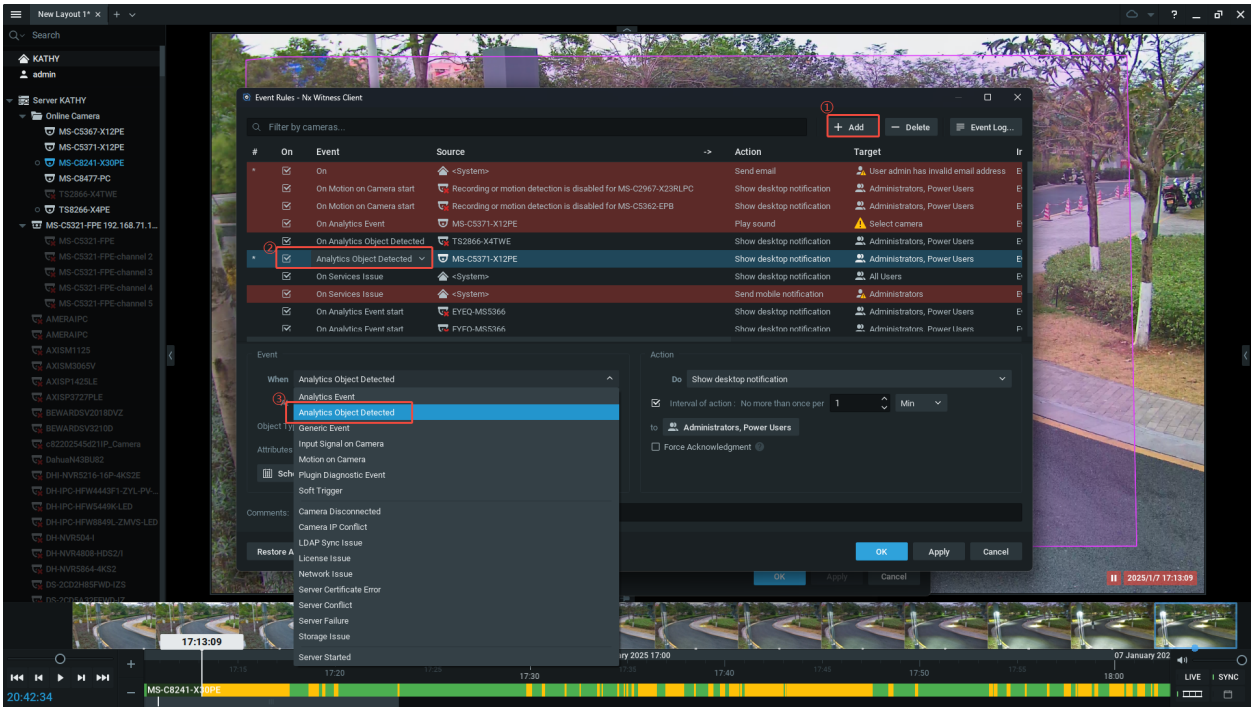


Method2: Alternatively, add a rule for the designed camera by right-clicking and selecting "Camera Rules".



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”.

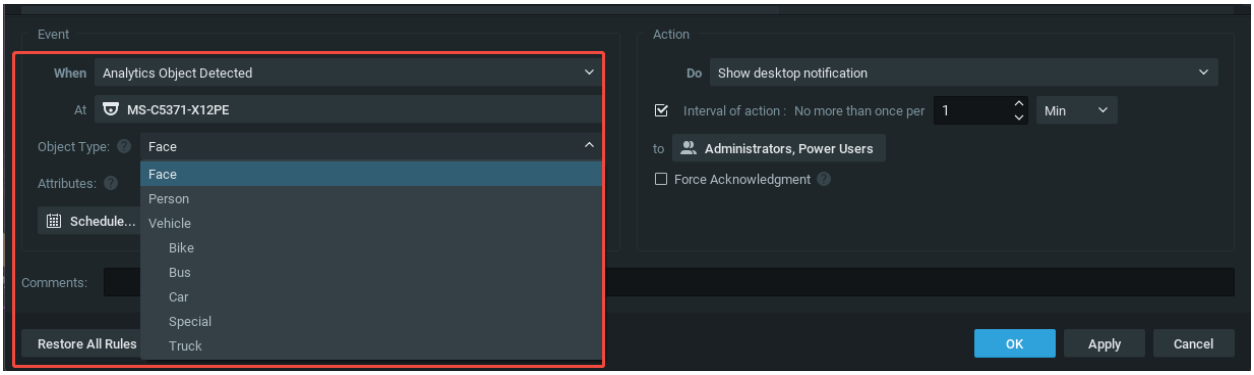


Step3: Complete the parameter configuration. There are two sections, "Event" and "Action" section.

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 32)*.

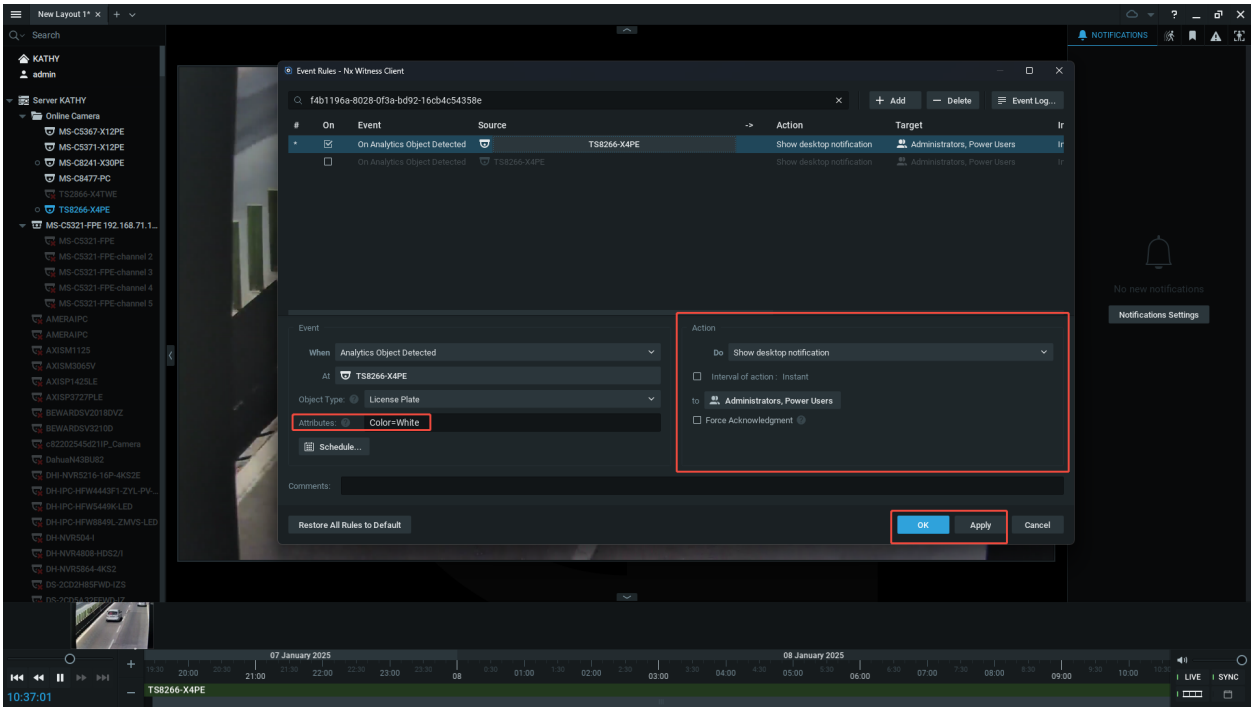
Attributes: In this field, enter Attribute name and the value following the format `<attribute_name>=<attribute_value>`. Event will only trigger if names entered in this field match the attributes of detected objects in the Objects tab(e.g., Gender=Woman Age=Adult).



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".

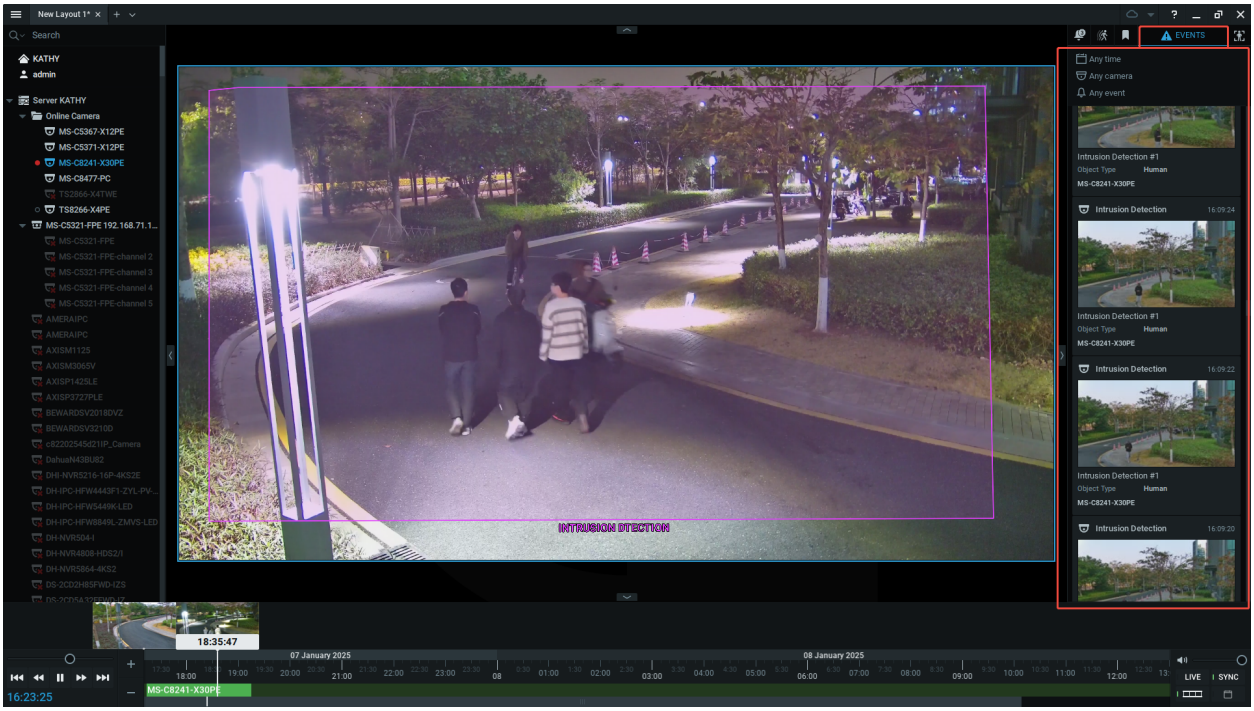


Step5: Upon completing the above settings, a notification will appear on the NOTIFICATIONS panel when the corresponding object detection event rule is met.

3.5 Viewing the Detection Result

Viewing Object Detection Events

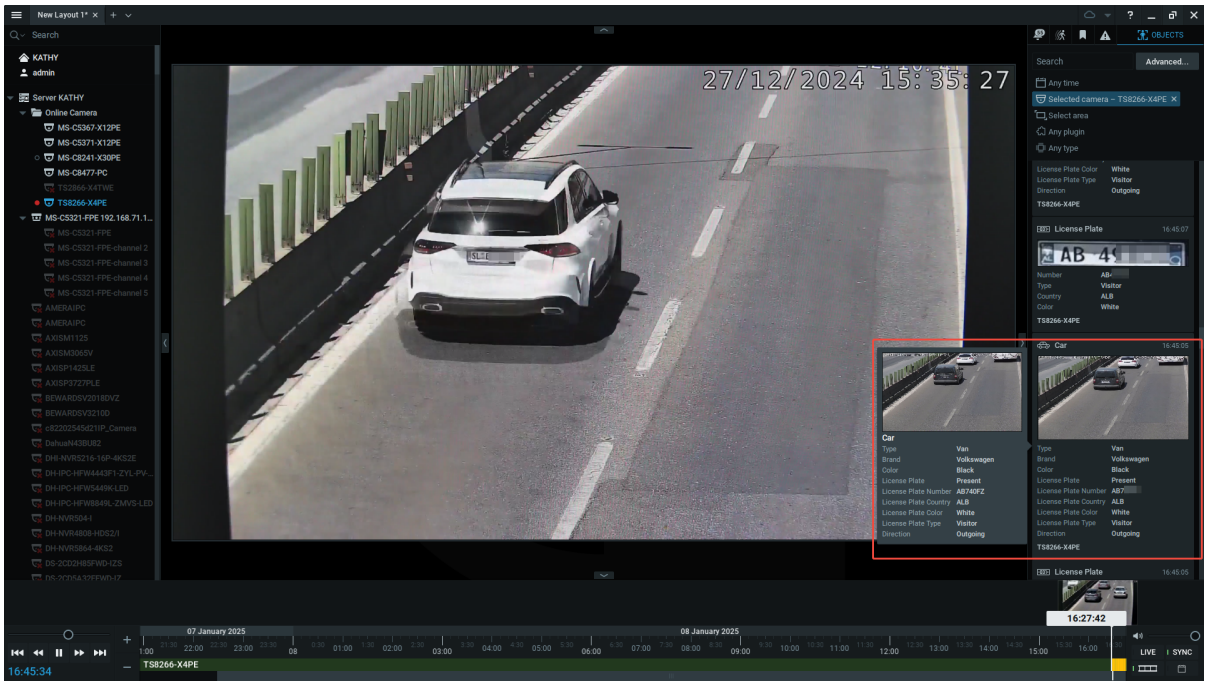
On the Live View interface, click on the "Events" icon. Detected events will appear in the Events side panel. Double-clicking the image expands the event on the desktop layout. This allows you to examine the video in greater detail.



Viewing Face, Person or Vehicle objects

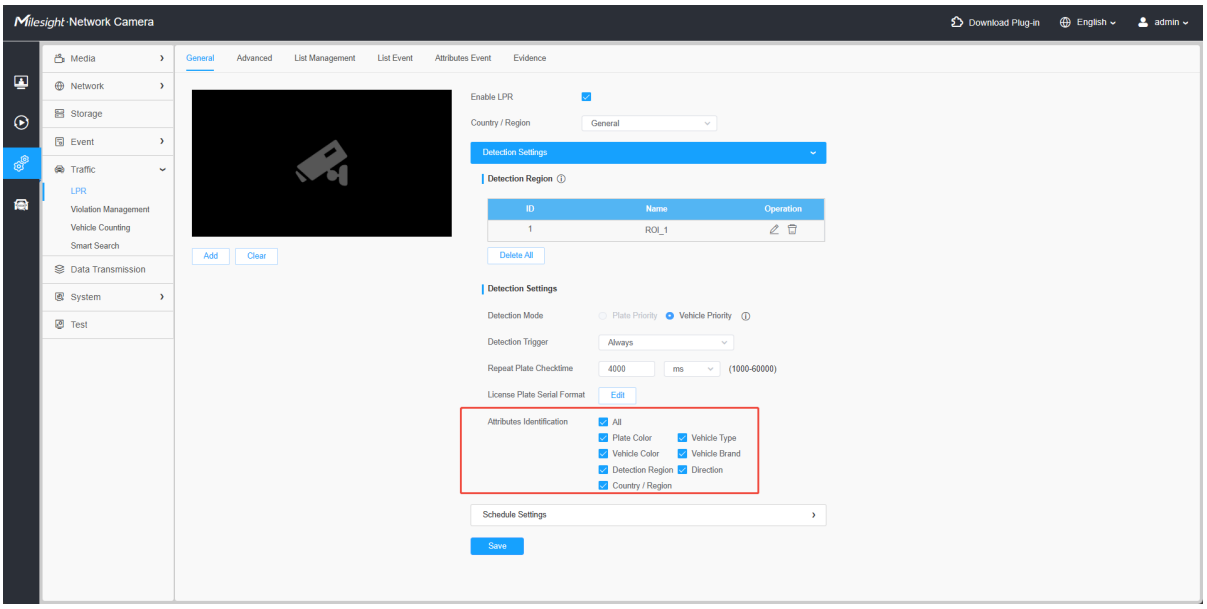
When an object is detected by the camera, it is transmitted via the plugin to the Nx Witness display, appearing on the OBJECT panel. You can view the object's information by clicking on the image in the menu. At the top of the OBJECT panel, you can filter the search criteria to retrieve specific object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

New Layout 1*
Search
DESKTOP-5PQ80M7
admin – Administrators
Server DESKTOP-5P...
MS-C4466-RF...
MS-C8266-FIG...
Web Pages
Other Systems
hallo15
Local Files
OBJECTS
Search
Advanced...
Any time
Cameras on layout
Select area
Any plugin
Any type
Person
MS-C4466-RFPE
Vehicle
MS-C8266-FIGPE
Vehicle
MS-C8266-FIGPE
Person
24 November 2024
25 November 2024
26 November 2024
MS-C4466-RFPE
LIVE
SYNC
19:47:52


New Layout 1*
Search
KATHY
admin
Server KATHY
Online Camera
MS-C5367-X12PE
MS-C5371-X12PE
MS-C8241-X30PE
MS-C8477-PC
TS8266-X4PE
MS-C5321-FPE 192.168.71.1...
OBJECTS
Search
Advanced...
Any time
Selected camera – TS8266-X4PE
Select area
Any plugin
Any type
License Plate
Car
27/12/2024 15:35:27
07 January 2025
08 January 2025
TS8266-X4PE
LIVE
SYNC
16:45:34
16:27:42

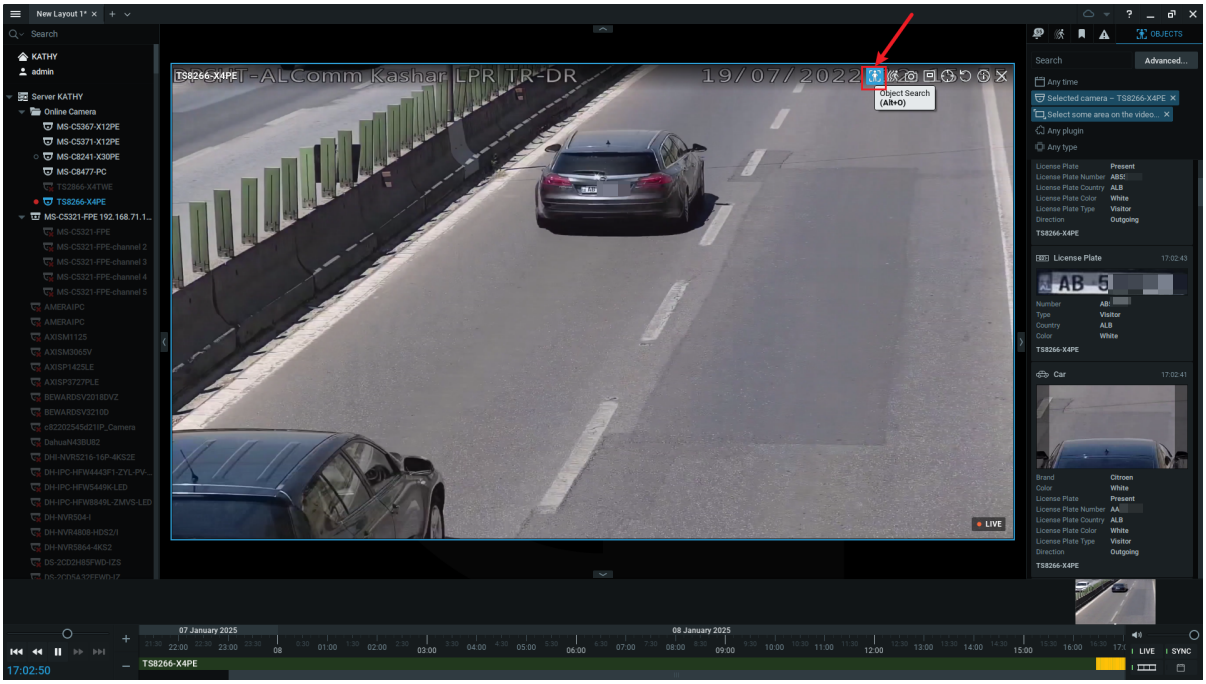
Note:

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 15)*.



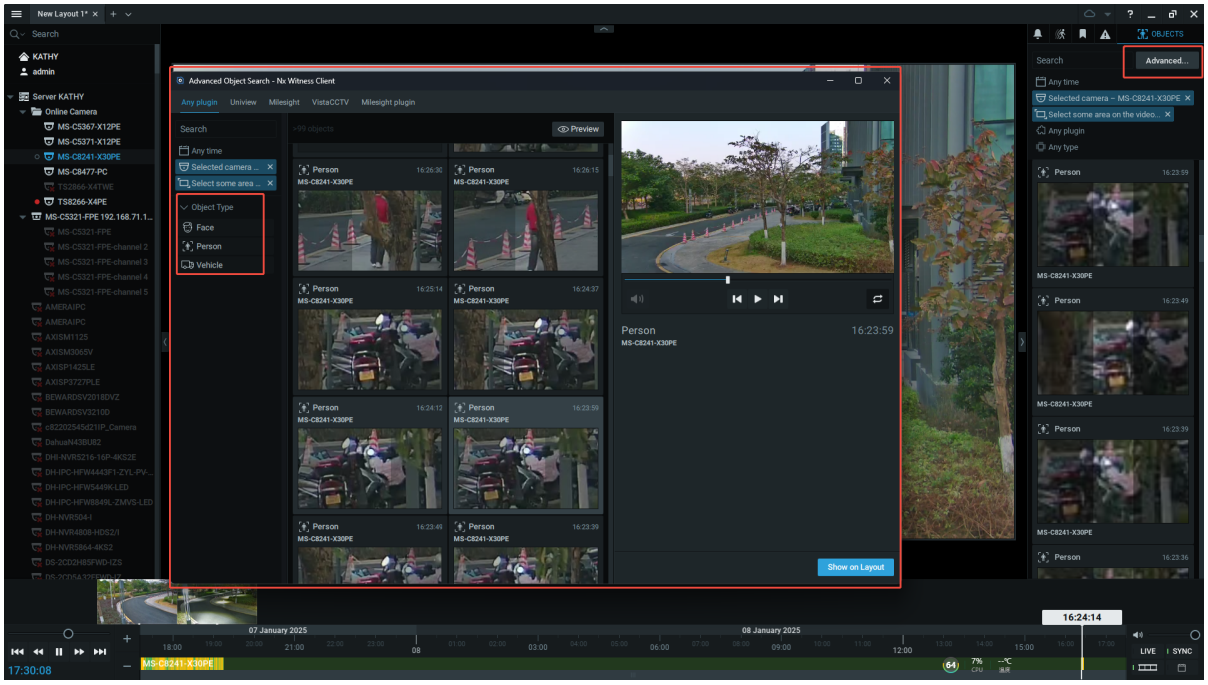
Viewing Objects in the Specific Area

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.



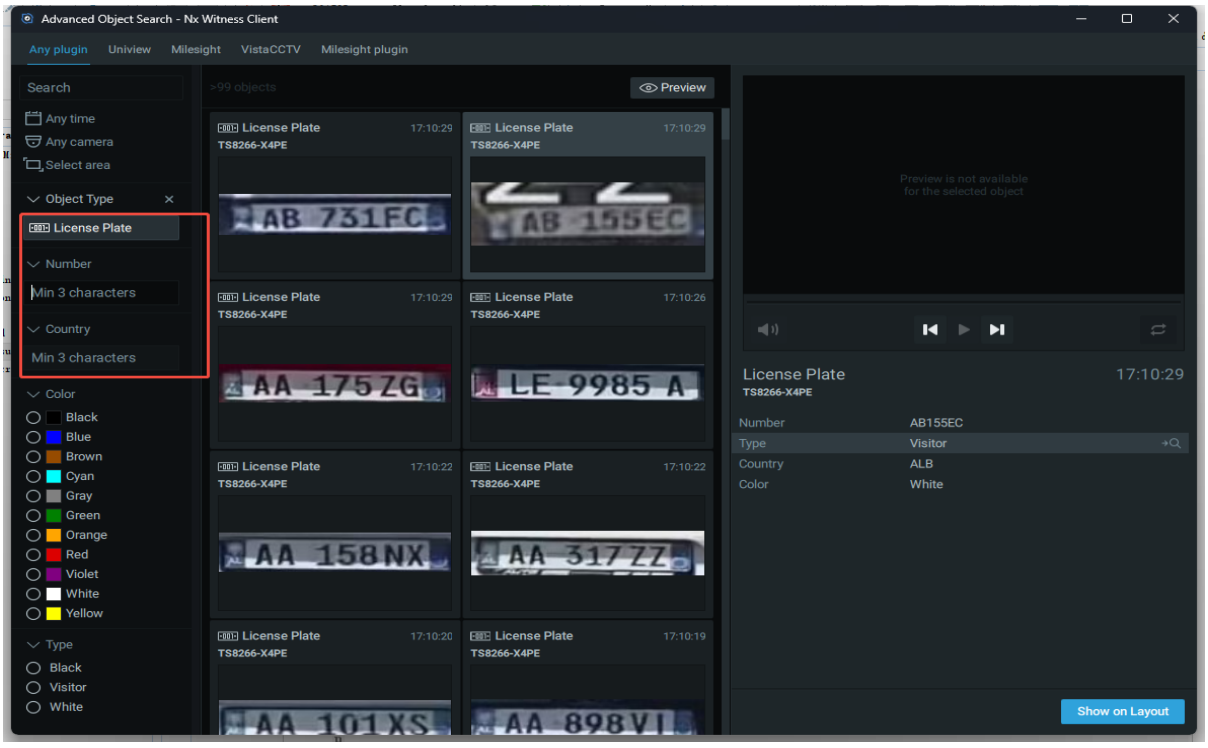
Advanced Object Search

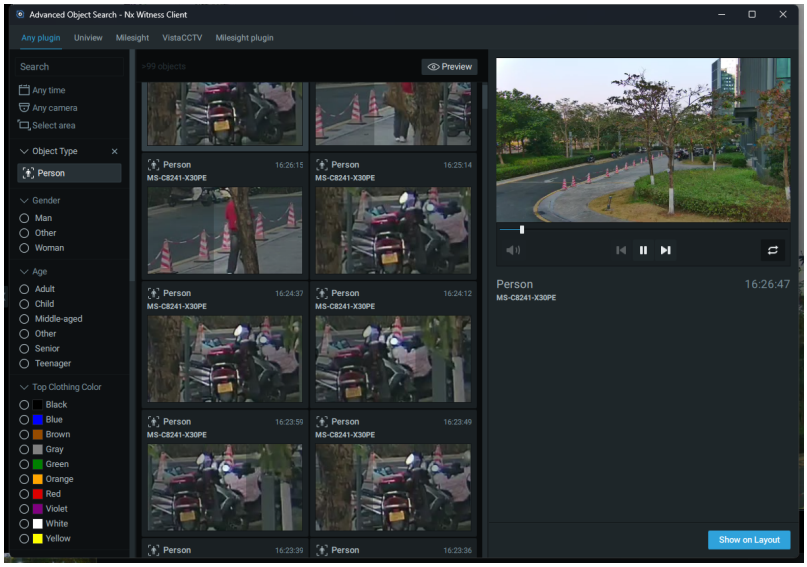
Click the "Advanced" option for a more detailed search. Each object possesses its own attributes, and enhanced object search and filtering based on these attributes are now available. For more detailed information on objects and attributes, please visit the link: Metadata Objects and Attributes *(page 32)*.



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

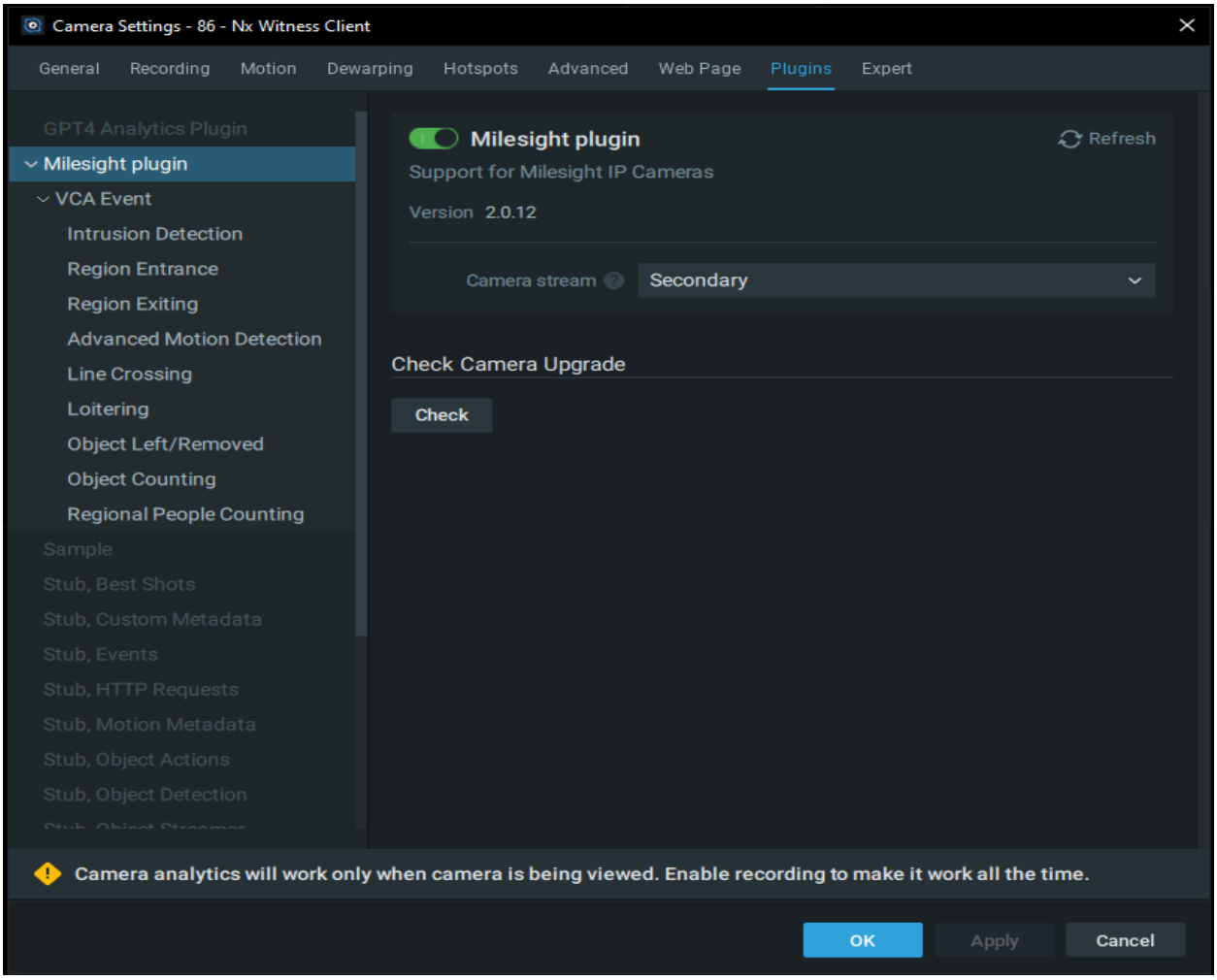
Table 2. Metadata Objects and Attributes

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
		Face	Gender
			Age
			Mask
			Hat
			Glasses

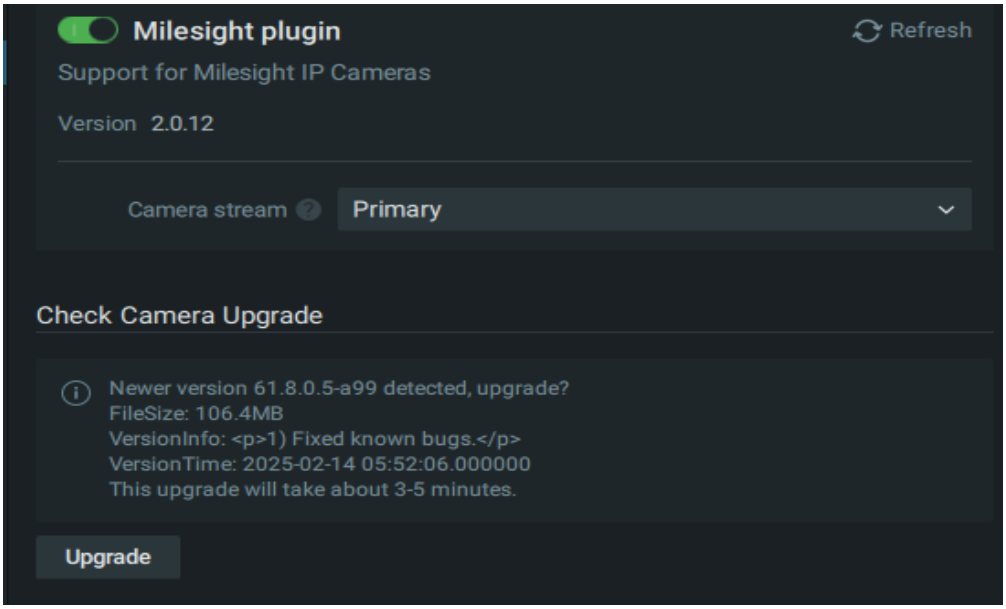
<table>
<tr><th>Camera Series</th><th>Camera Name Rules</th><th>Objects</th><th>Attributes</th></tr>
<tr><td rowspan="8">Intelligent Traffic Series</td><td rowspan="4">Model number starting with MS-C, with "L" in ending letters.
E.g. MS-C2972-RFLPE</td><td rowspan="4">Vehicle</td><td>Color</td></tr>
<tr><td>Vehicle Type</td></tr>
<tr><td>Brand</td></tr>
<tr><td>Speed</td></tr>
<tr><td rowspan="4">Model number starting with TS.
E.g. TS4441-X36RPE</td><td>Direction</td></tr>
<tr><td rowspan="4">License Plate</td><td>Number</td></tr>
<tr><td>Color</td></tr>
<tr><td>Country</td></tr>
<tr><td>Plate Type</td></tr>
</table>

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.

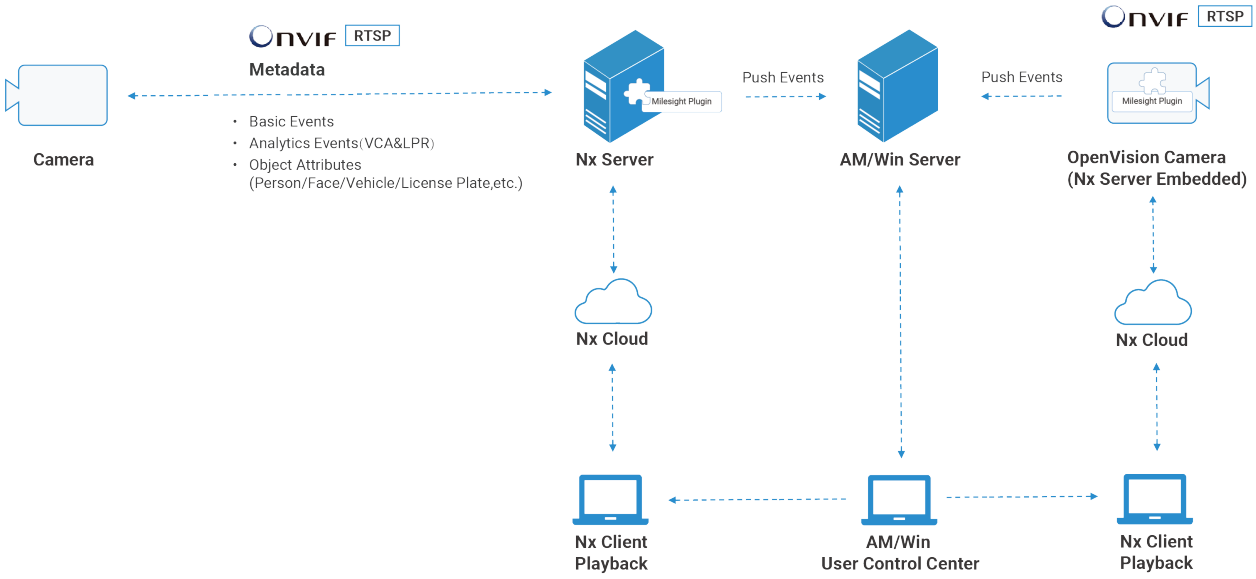


Step 3: Click the Upgrade button to initiate the download and installation of the latest firmware.

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

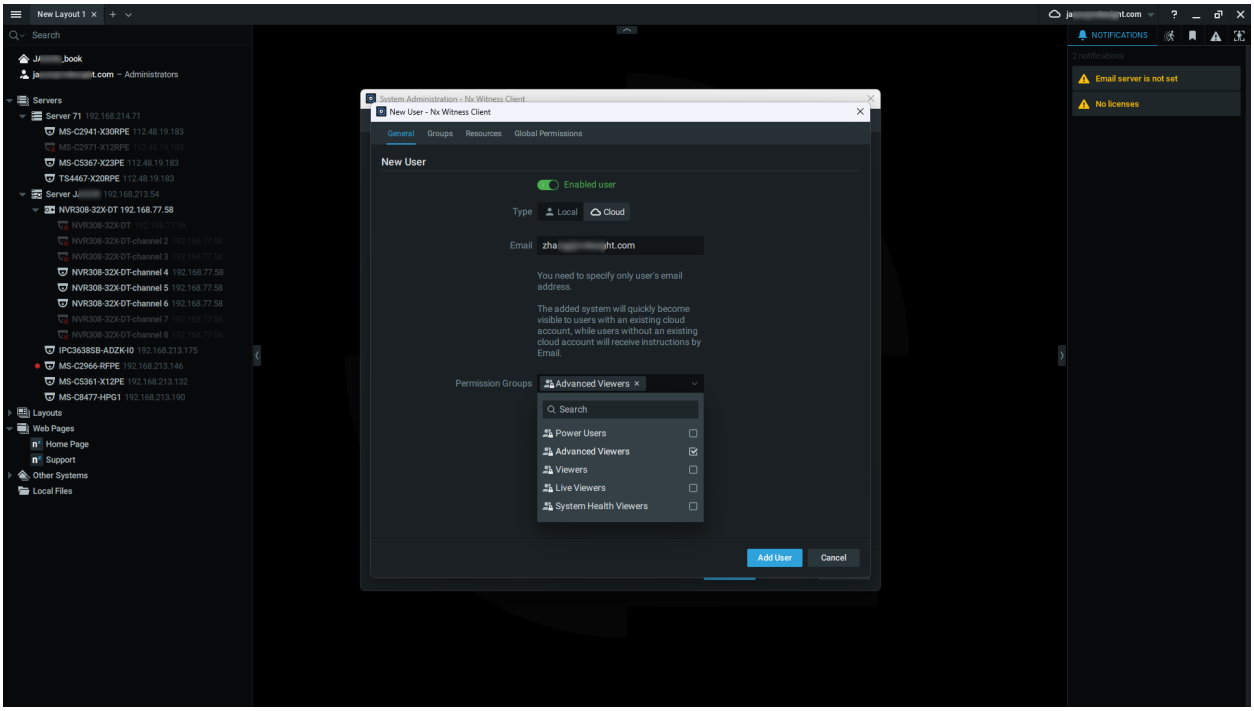
The integration topology through the Nx plugin with the AM/Win platform is shown below:

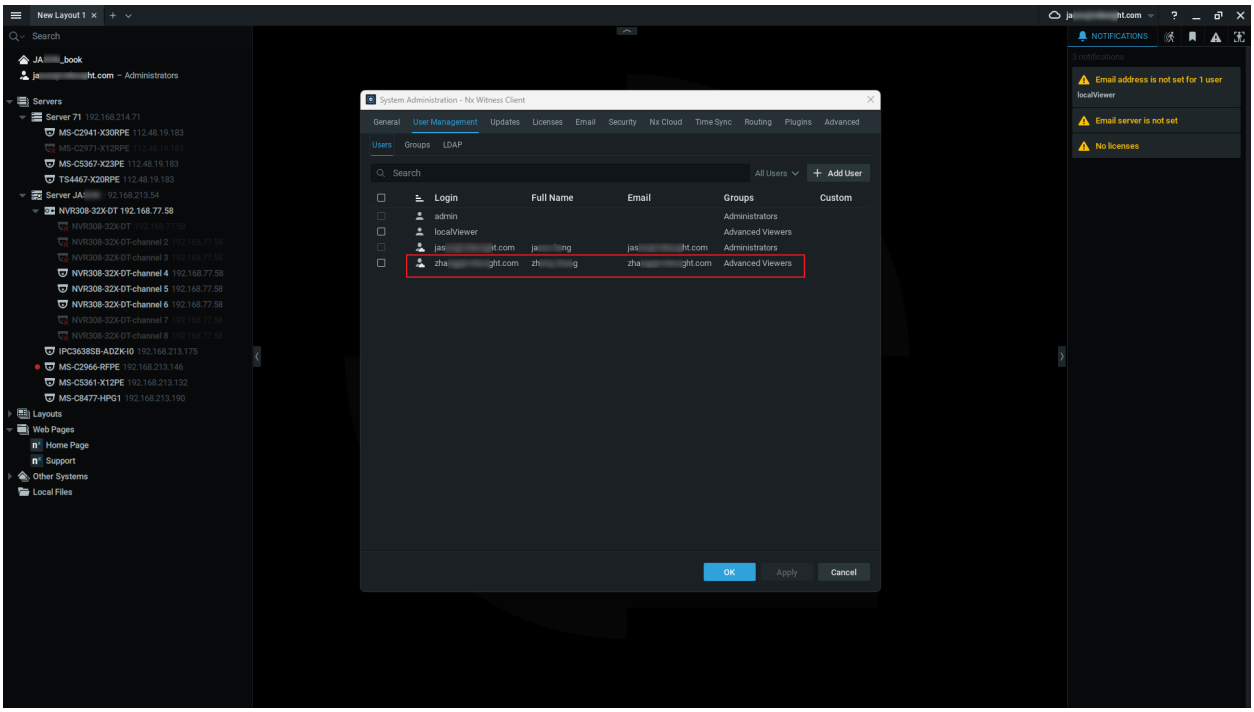


Step 1: Two configuration methods for you to successfully open the Nx Client on the AM/Win platform to connect to the Nx System on the Internet and play the recorded videos stored on the Nx Server:

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

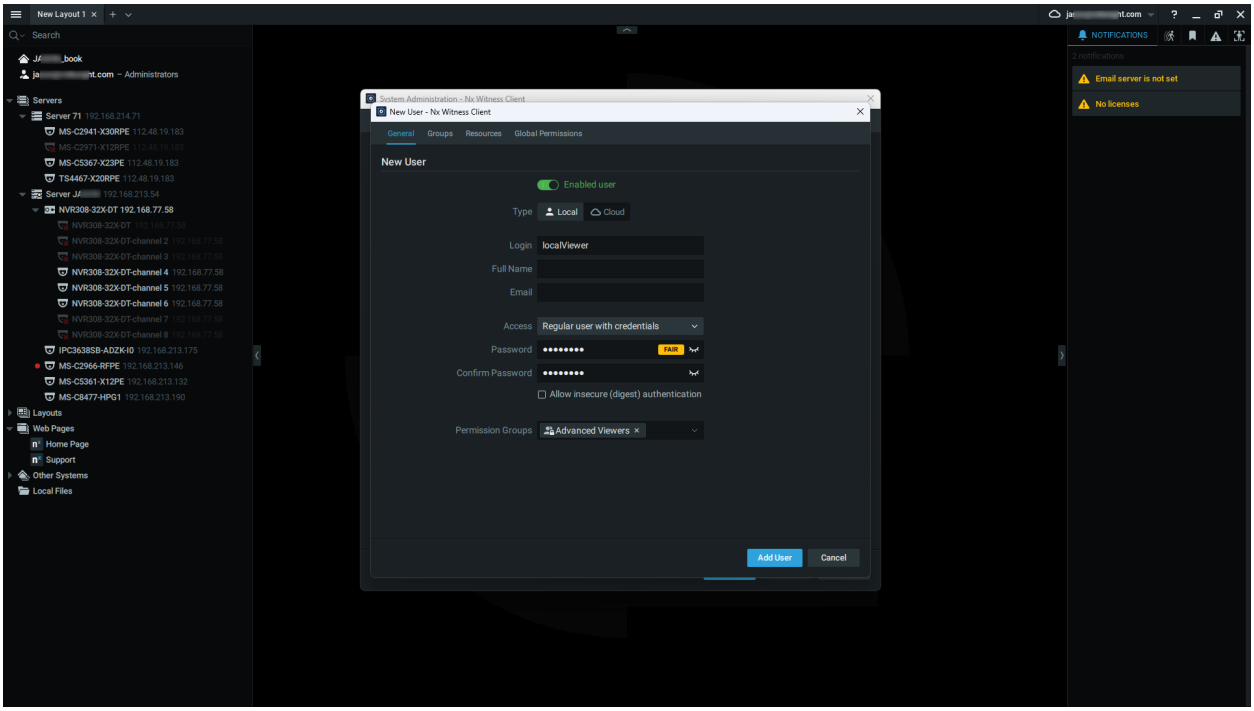
First, assign the appropriate role permissions to the Nx Cloud account in the Nx System. This ensures that when connecting to the Nx System via the Nx Client, the account has the correct camera access and recording viewing permissions.

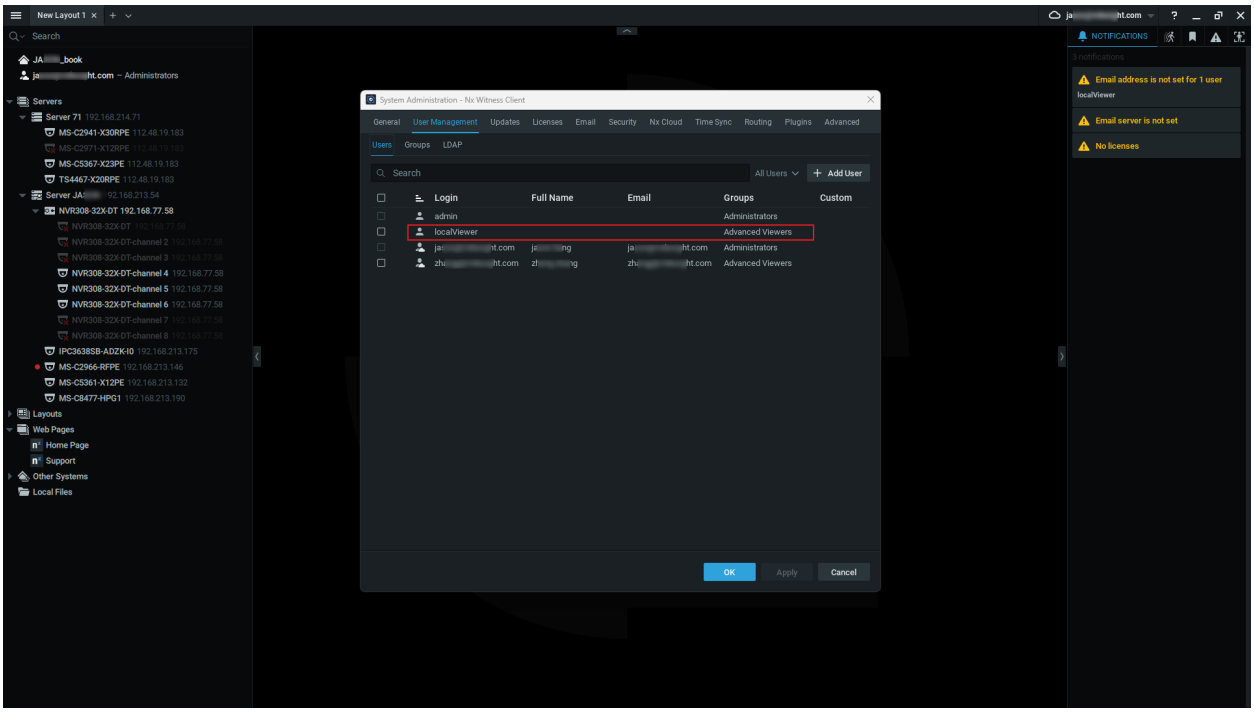




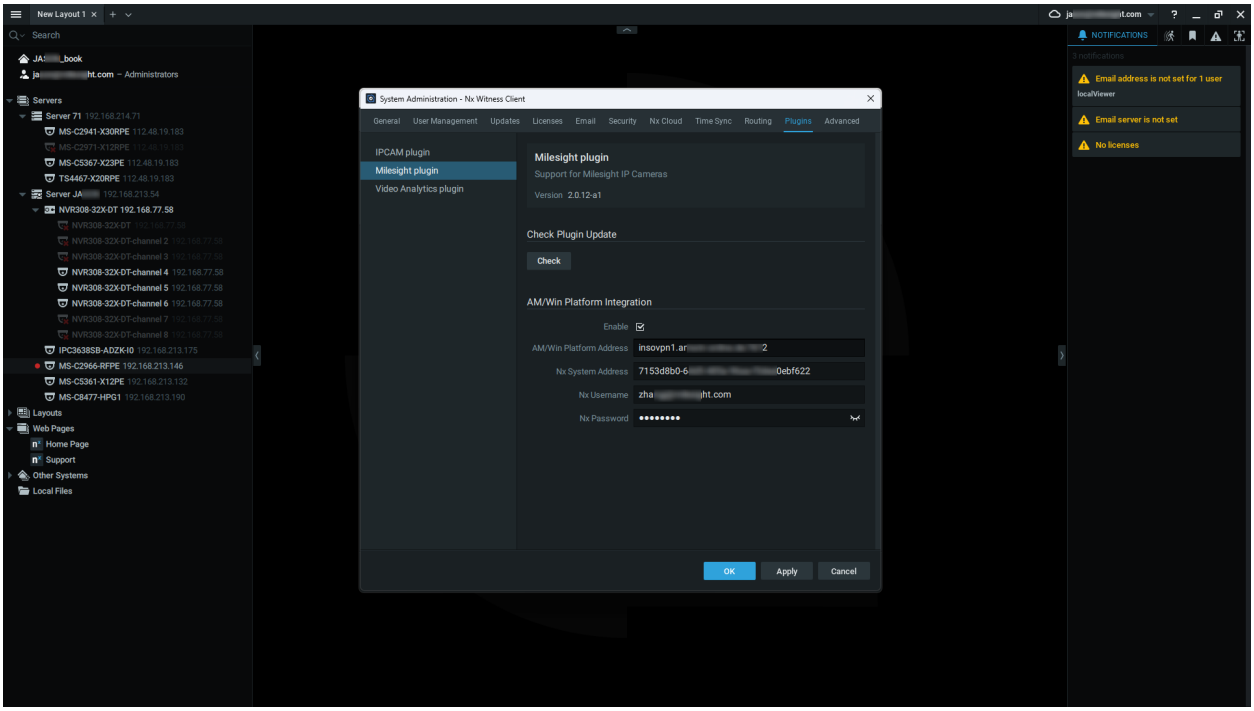
Method 2: Connect to the Nx System via a local Nx account.

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.

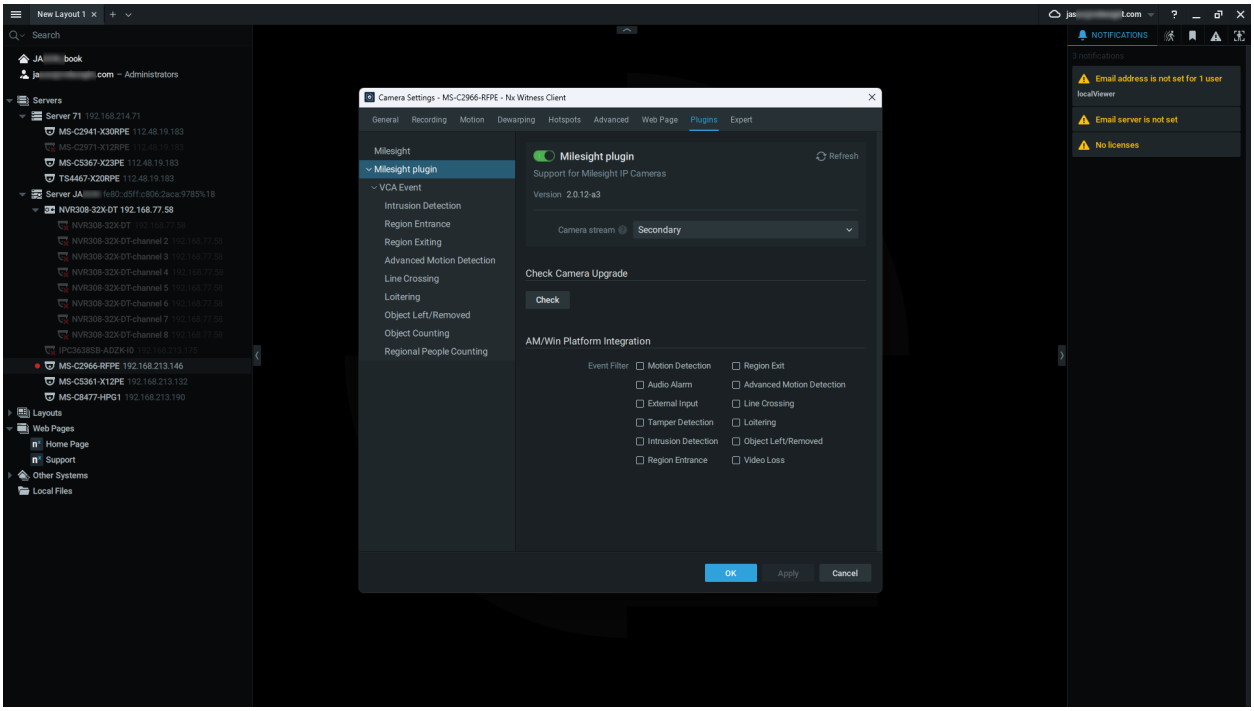
- If using a local Nx account, enter the local account name.

4. Nx System Password:

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

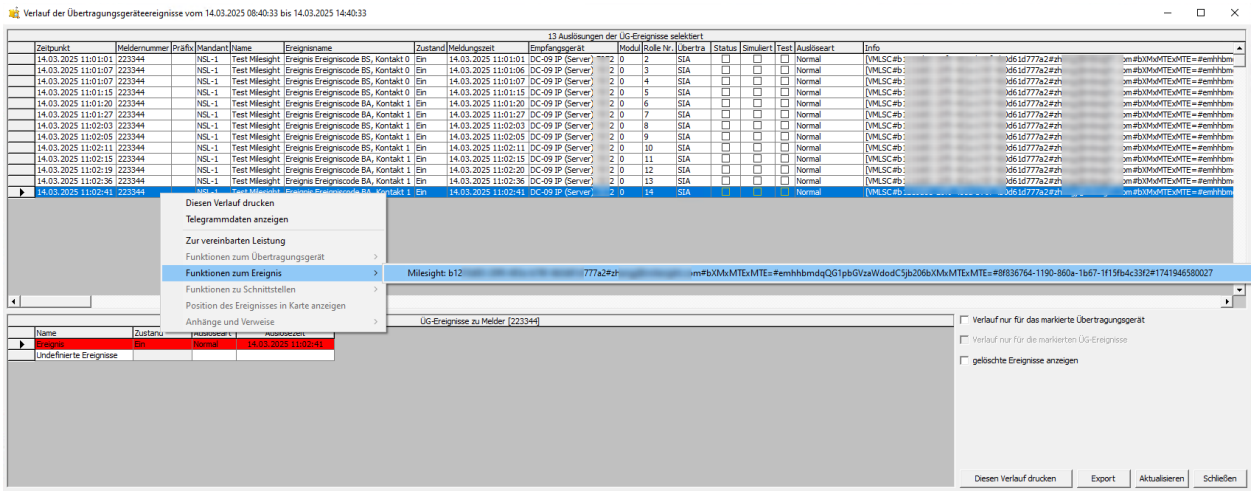
- If using a local Nx account, enter the password of the local account.

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.

New Layout 1*
Search
Servers
Server 71 192.168.214.71
MS-C2941-X30RPE 112.48.19.183
MS-C5367-X23PE 112.48.19.183
TS4467-X20RPE 112.48.19.183
NVR308-32X-DT 192.168.77.58
IPC3638SB-ADZK-I0 192.168.213.175
MS-C2966-RFPE 192.168.213.146
MS-C5361-X12PE 192.168.213.132
MS-C8477-HPG1 192.168.213.190
Web Pages
Other Systems
Local Files
NOTIFICATIONS
No new notifications
Notifications Settings
11:28:31
07 February 2021
08 February 2021
09 February 2021
10 February 2021
MS-C2966-RFPE
11:39:46
LIVE
SYNC

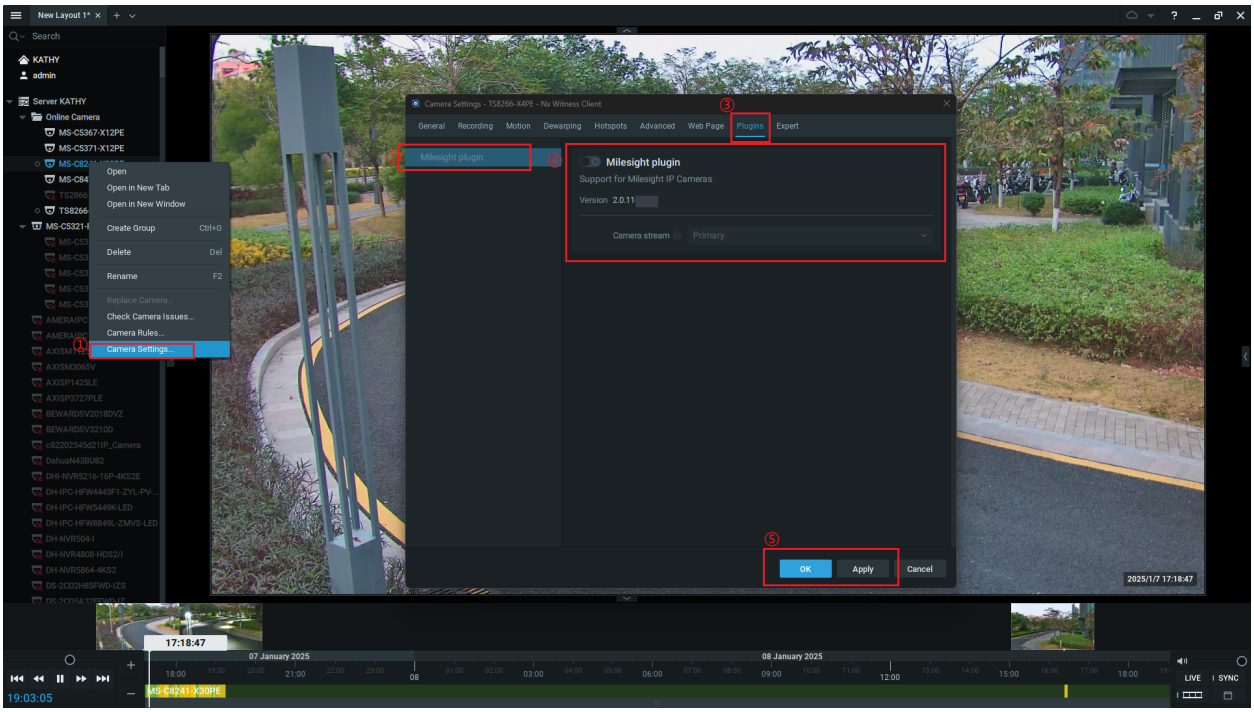
Chapter 4. Uninstall and Update

Disable Milesight plugin

You can follow these steps to disable the plugin from a Milesight 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 "Milesight Plugin" tab.

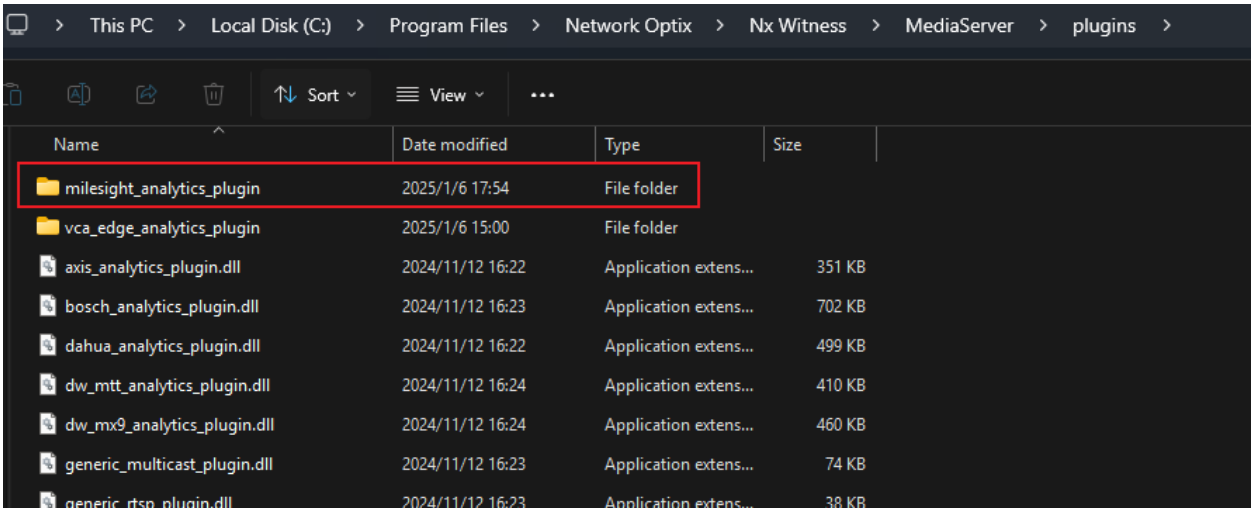


Uninstall Milesight plugin

[Windows]

Step1: Stop the Nx Witness server. please refer to Stop Nx Witness *(page 6)*.

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



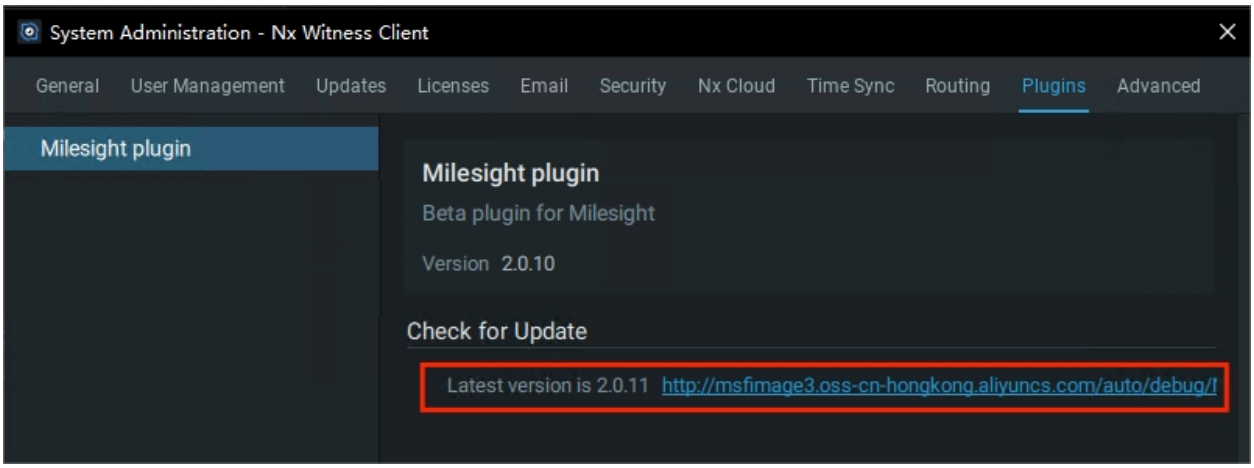
[Linux]

Use the following command to remove the plugin:

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

Update the plugin

You can acquire the latest version by selecting the "Check for Update" option within the Plugin interface. Once you have obtained the updated file package, please reinstall the plugin according to the Installations section.



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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Add: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China