CVEDIA

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CVEDIA-RT AI Analytics Plugin for Nx Witness

User Guide: Installation, Activation, Configuration, Update

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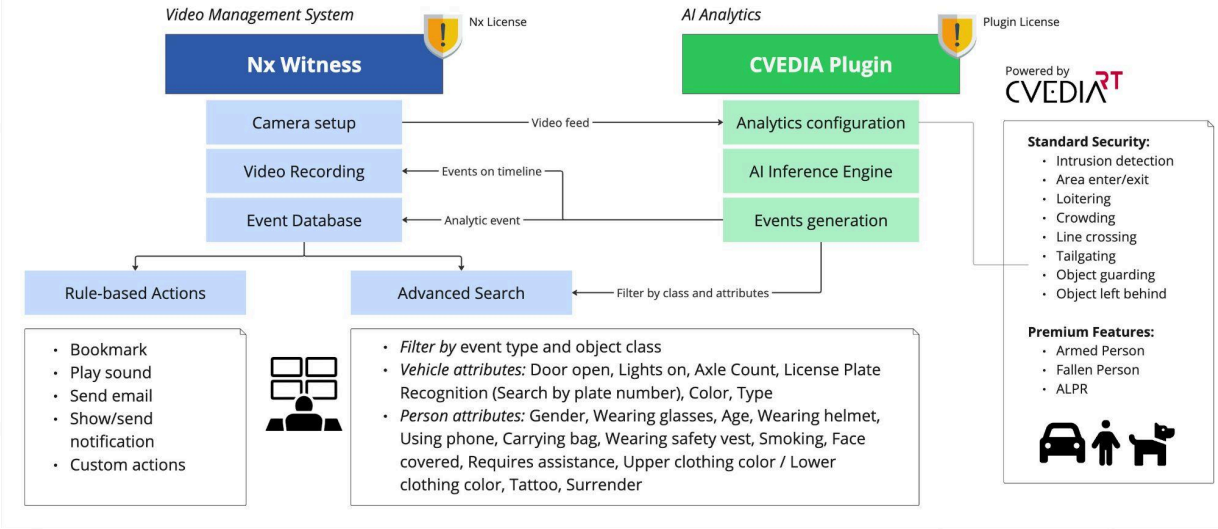
Plugin Overview

The CVEDIA-RT AI Analytics Plugin enables powerful video analytics capabilities in the Nx Witness Video Management System, enhancing the effectiveness of surveillance operations with real-time detection, forensic insights, and intelligent alerts.



Key Features

The plugin supports a wide range of analytics designed to improve situational awareness, streamline investigations, and inform response teams.

Surveillance operators can configure the analytics and create custom rules for triggering events within the Nx Witness VMS to leverage these alerts and make informed decisions in real-world situations.

This guide will walk you through the installation, setup, and usage of this integration.

Standard Security Features

Detects people, vehicles, and animals within a variety of surveillance use cases.

- Intrusion detection
- Area enter/exit
- Loitering
- Object guarding
- Object left behind
- Crowding
- Tailgating
- Line crossing
- Forensic search by appearance:
    - Vehicle: Type and Color
    - Person: Gender, Wearing glasses, Age, Wearing helmet, Using phone, Carrying bag, Wearing safety vest, Smoking, Face covered, Requires assistance, Upper clothing color, Lower clothing color, Tattoo

Premium Features

Specialized analytics that provide enhanced situational context and assist in identifying high-priority events.

- Armed Person Intrusion
- Fallen Person Detection *(Slip & Fall)*
- ALPR *(Automatic License Plate Recognition)*

Enhanced Appearance Search

Advanced object classification is available for retrospective search and metadata filtering:

- Vehicles: Door open, Lights on, Axle Count, License Plate (searchable), Color, Type
- People: Gender, Wearing glasses, Age, Wearing helmet, Using phone, Carrying bag, Wearing safety vest, Smoking, Face covered, Requires assistance, Upper clothing color, Lower clothing color, Tattoo, Surrender pose

Experimental Features *(available in beta)*

These early-access features are under active development and released for experimentation.

- Remote Vehicle Guarding ("door open" + "lights on" attributes)
- Surrender Detection ("person in surrender pose")
- Face Covered Detection ("person with face covered")
- Vehicle Speed Estimation

Notes
• Experimental features are evolving based on user feedback and may change significantly between releases. • All results should be considered provisional and do not represent the final evaluation of performance. • We encourage you to share feedback – early input helps shape and refine these features. Some new features may require the activation of additional licenses.

Specifications and Requirements

CVEDIA-RT Plugin

- Version 2025.1.0 or higher
- Appropriate licensing for Standard Security and Premium features

Nx Witness

- Nx Witness v5.1.4 or higher
- Nx Witness v6.x.x

Supported Decoders

- "video/h264" for H264 streams
- "video/hevc" for H265/HEVC streams

System Requirements

Windows:

- Check compatibility and requirements

Linux:

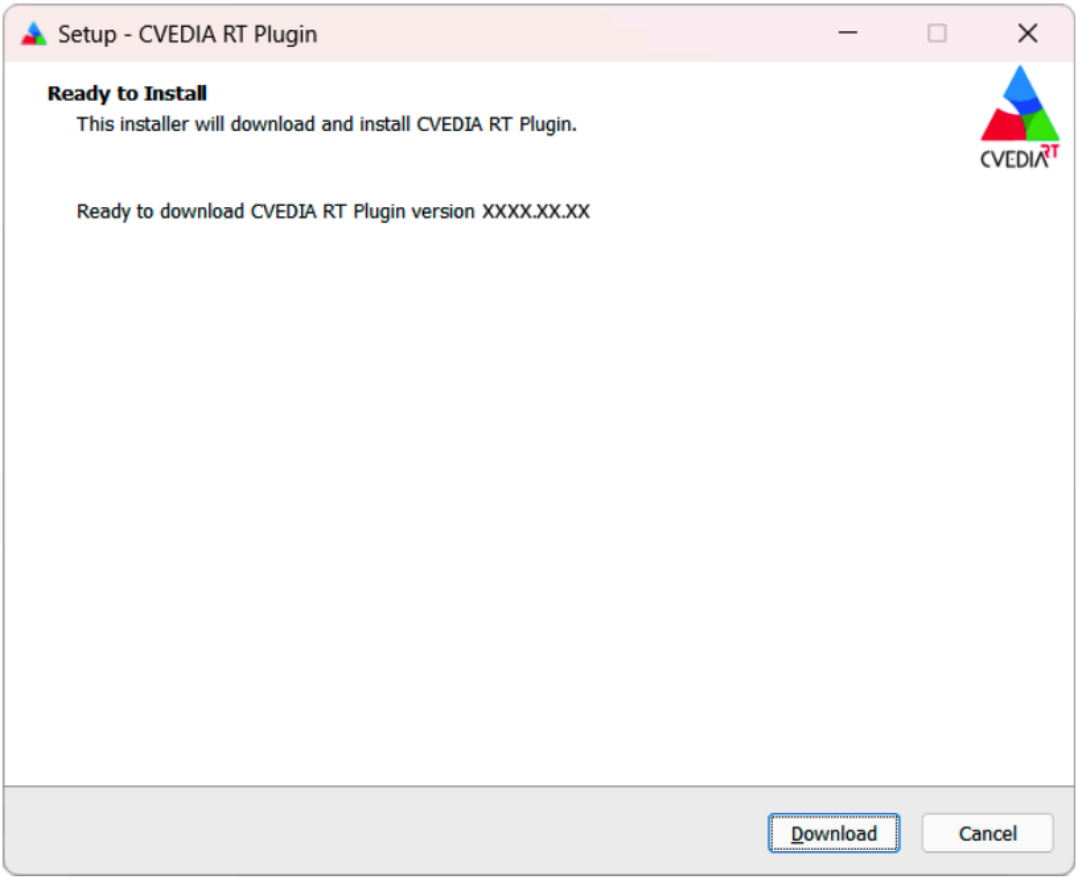
- Check compatibility and requirements

Section 1: Installation and Activation

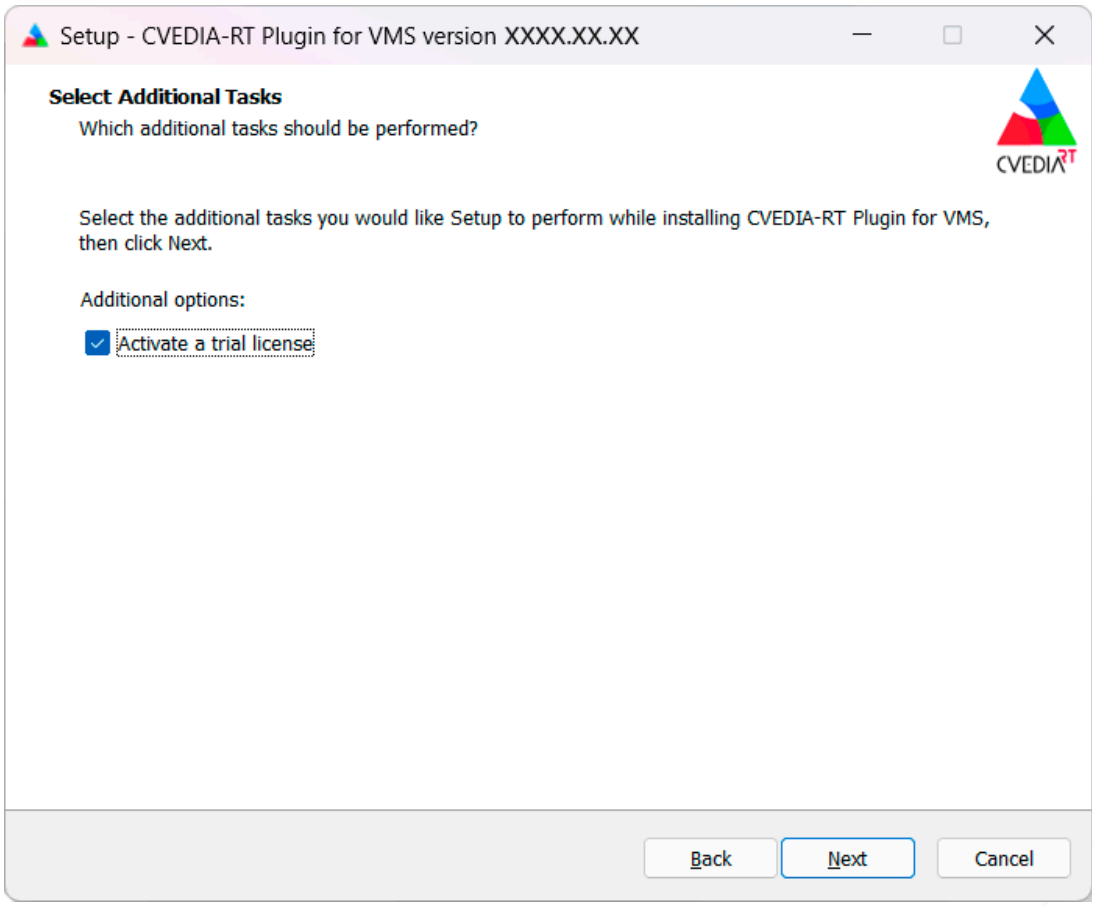
Installation: Windows

Preparation
• Ensure you have Nx Witness Server installed on your machine (on the same device where the plugin will be installed). • Download the AI plugin installer from the official website: https://rt.cvedia.com/NX-Witness • Stop Nx Witness Server before proceeding to installation. • Close the Nx Witness Client.

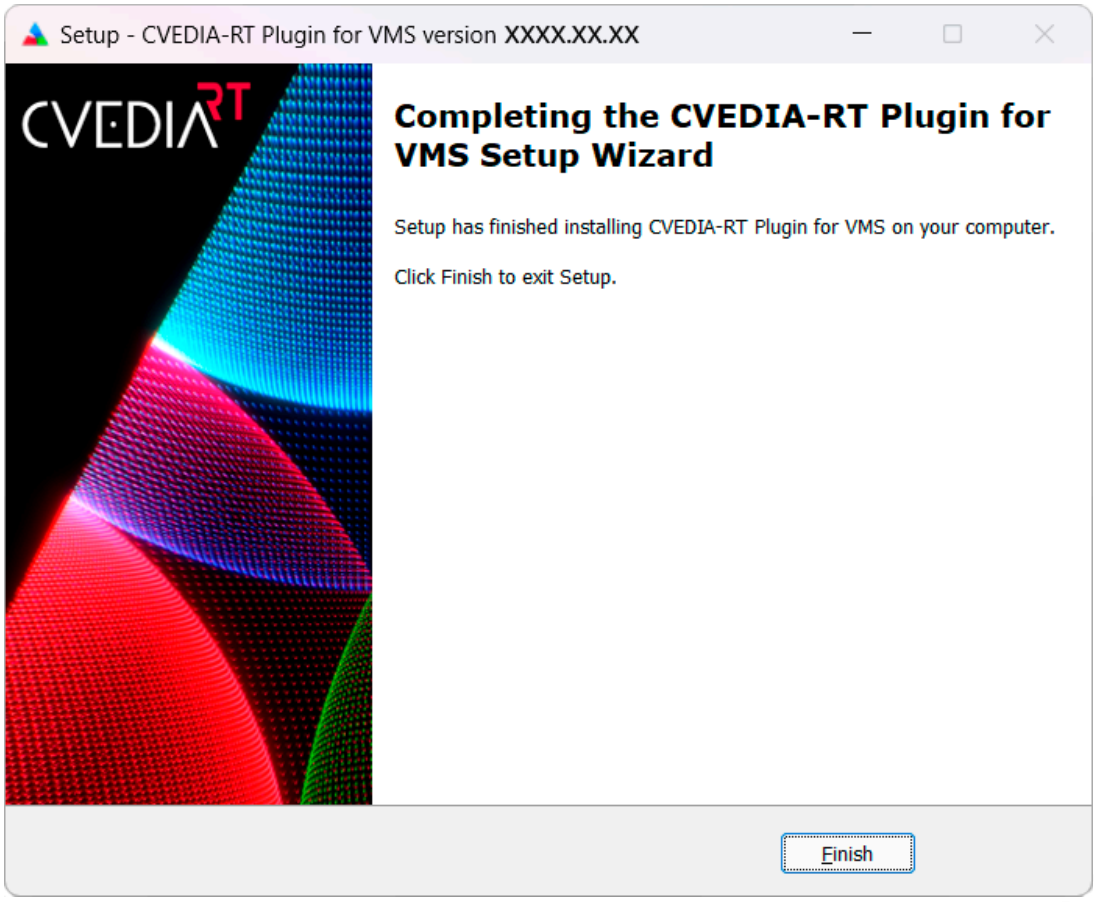
1. Run the AI plugin installer on the machine where the Nx Witness Server is installed.



2. (Optional) During installation, activate a trial license. You can activate it later in the Plugin Settings after installation is complete.

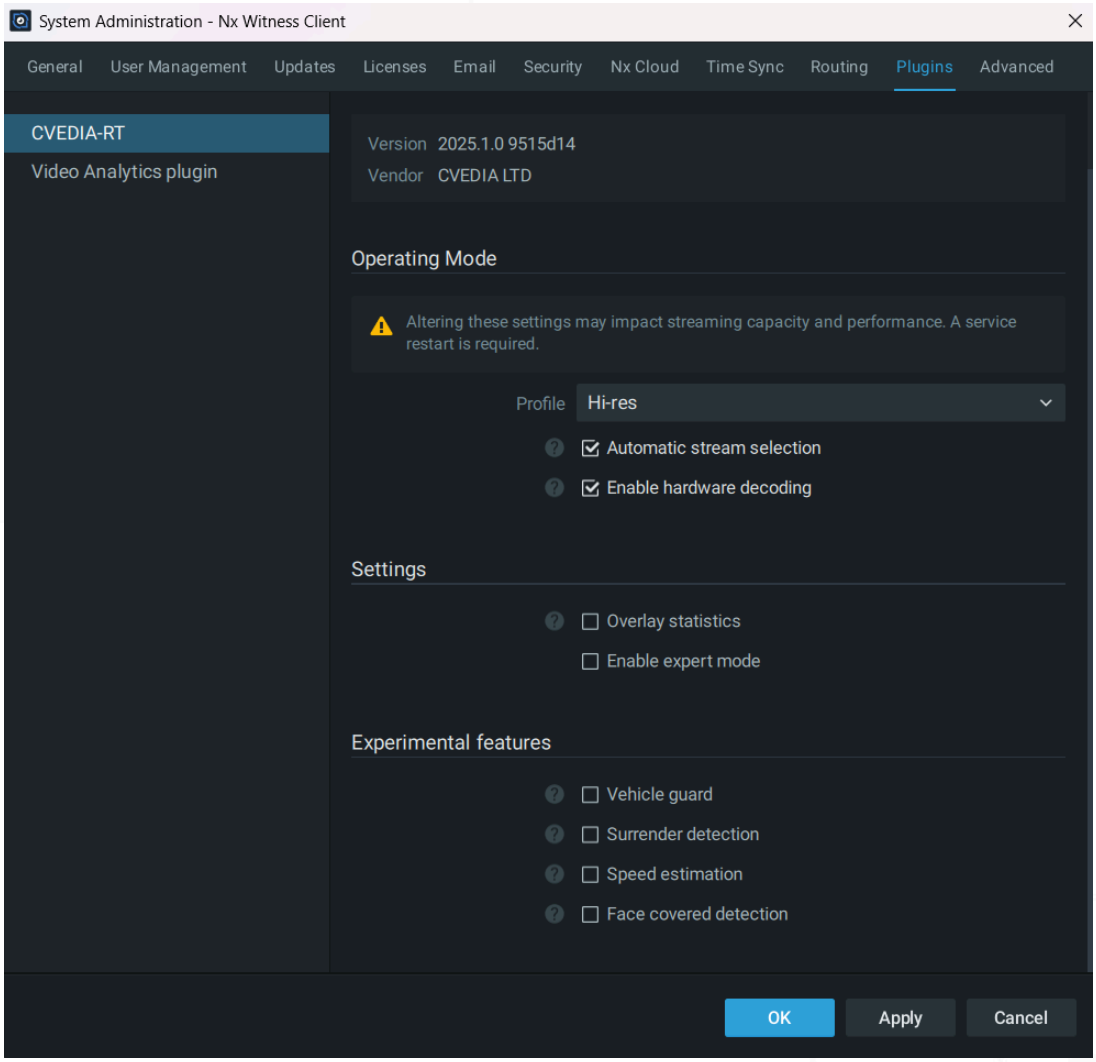


3. Congratulations! The installation is complete.



4. Verify the installation:

   - Open the Nx Witness Client
   - Open the System Administration settings from the hamburger icon in the top left corner (or by pressing Ctrl+Alt+A)
   - Select the Plugins tab
   - Confirm that the CVEDIA-RT plugin is listed on the left menu



Installation: Linux

Preparation
• Ensure you have Nx Witness Server installed on your machine (on the same device where the plugin will be installed). • Download the AI plugin installer from the official website: https://rt.cvedia.com/NX-Witness • Close the Nx Witness Client. • If curl is not installed, install it with: sudo apt install curl

1. Set up the CVEDIA-RT APT repository using the installation script:

```
curl -fsSLo - http://get.cvedia.com | sudo bash
```

2. Install the CVEDIA-RT Nx Plugin package:

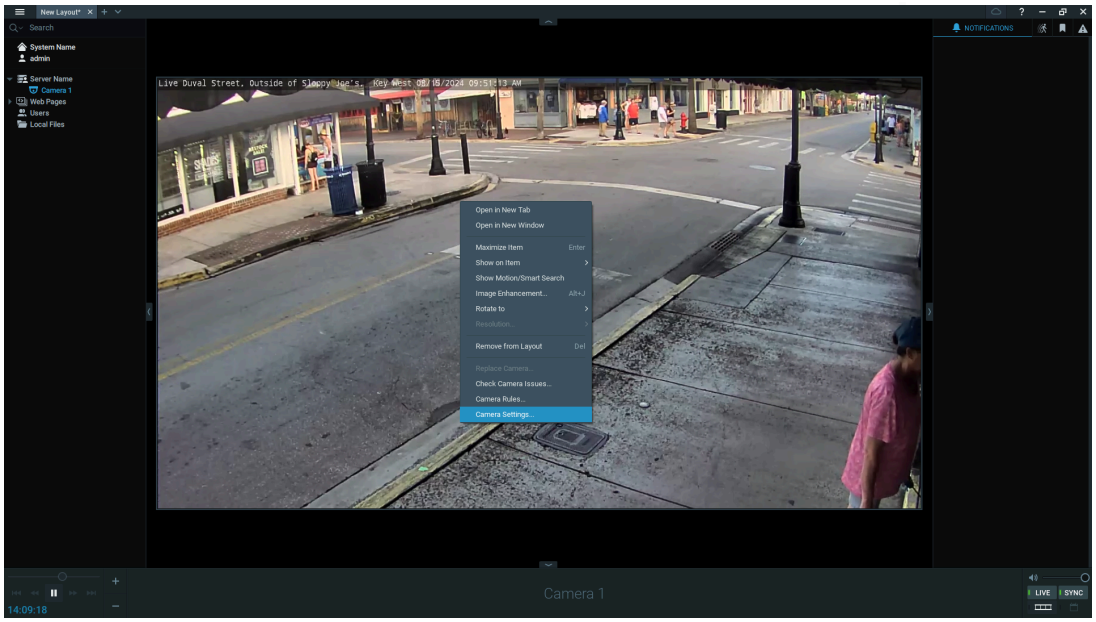
```
sudo apt install cvedia-rt-nxplugin -y
```

📝 Learn more about installation process on Linux:
https://docs.cvedia.com/platforms/linux.html

3. Verify the installation:
    - Open the Nx Witness Client
    - Open the System Administration settings from the hamburger icon in the top left corner (or by pressing Ctrl+Alt+A)
    - Select the Plugins tab
    - Confirm that the CVEDIA-RT plugin is listed on the left menu

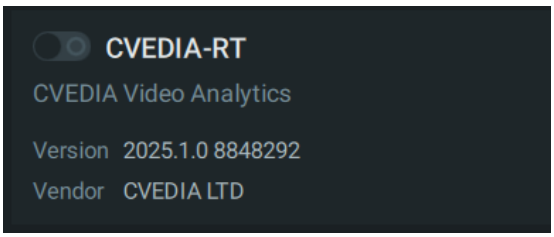
Enable the Plugin

1. Open the Nx Witness Client and connect to the server where you installed the AI plugin.
2. Right-click on a connected camera or a video stream and select "Camera Settings."

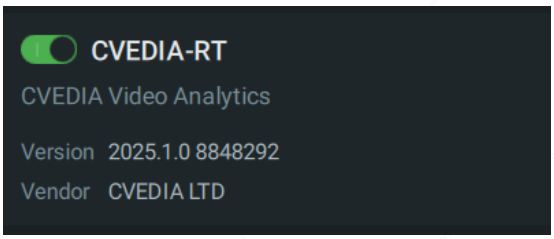


3. Navigate to the Plugins section of the Camera Settings window and enable the plugin.

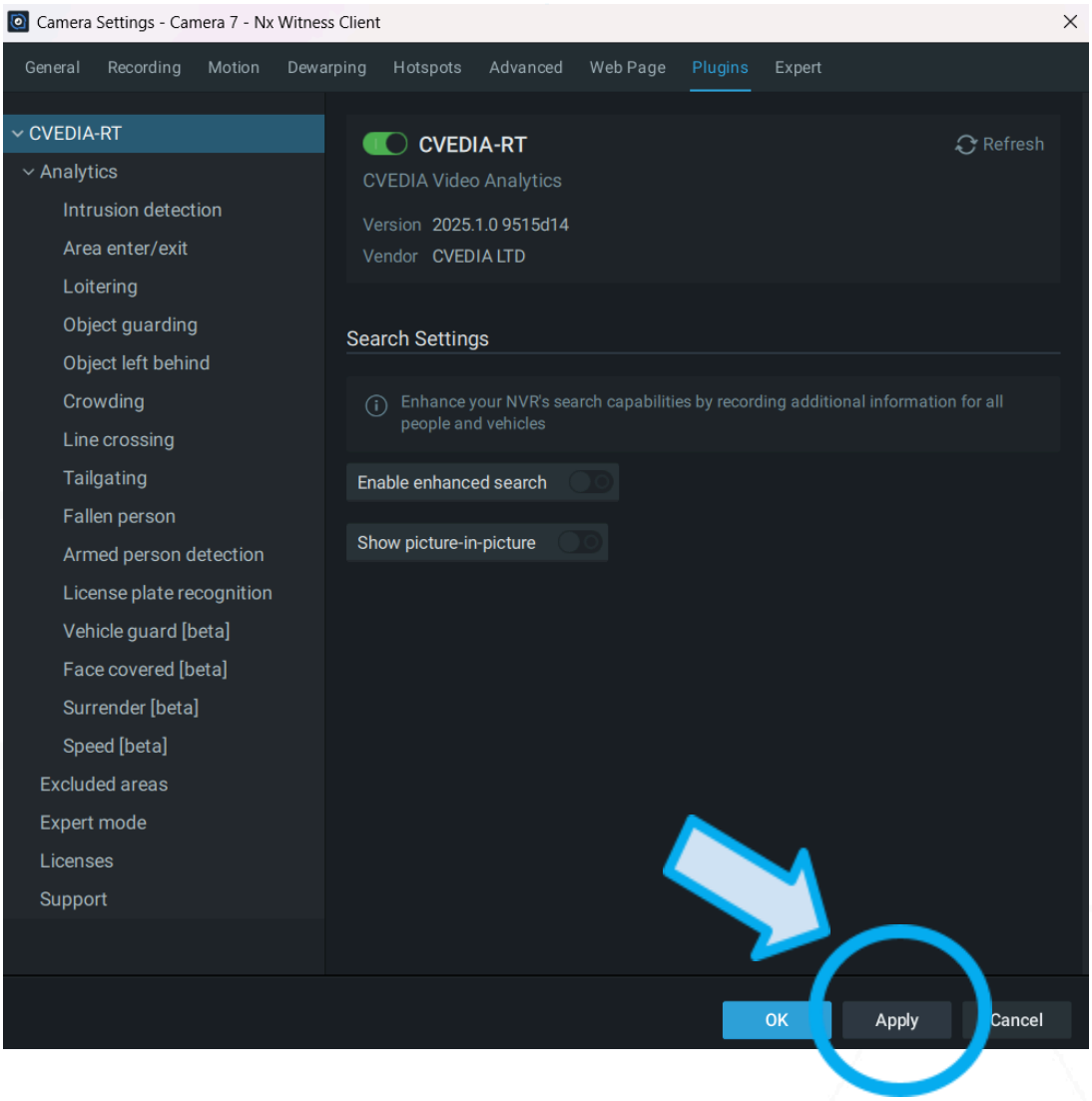
Plugin Off



Plugin On



4. Click the “Apply” button before proceeding with any further configuration.



Notes

- Analytics are active only when the camera is being viewed or recording is enabled.
- If the plugin toggle does not appear immediately, click on the CVEDIA-RT title in the left sidebar to refresh the view.

5. Apply a license to activate the plugin, and configure the analytics from the left sidebar menu.

6. Click "OK" to save the settings.

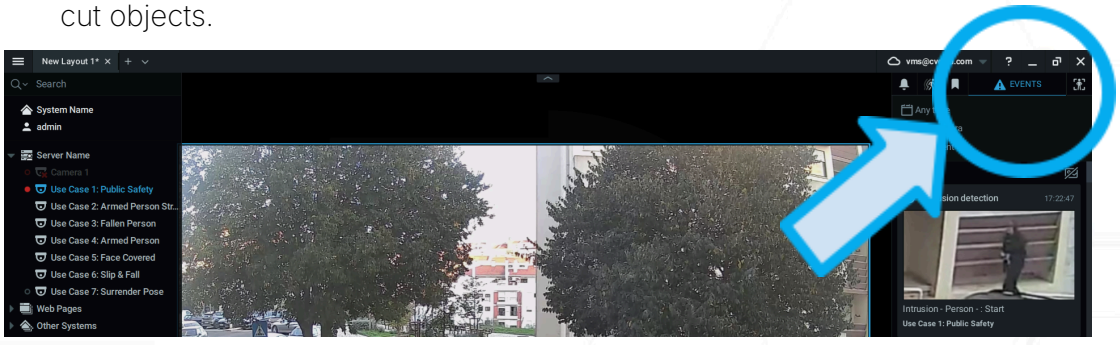
7. Go to the "OBJECTS" tab on the top right to preview the detected objects.

8. To generate events, define the camera rules in Nx Witness:

   - Right-click on the camera and select "Camera Rules."
   - Add a new rule based on Analytic Events.

9. Monitor the events in the "EVENTS" tab.

   - The image of the event may not represent the exact moment when the event was triggered. The system shows the best available crop based on the object size and detection confidence level, to prevent showing occluded or partially cut objects.

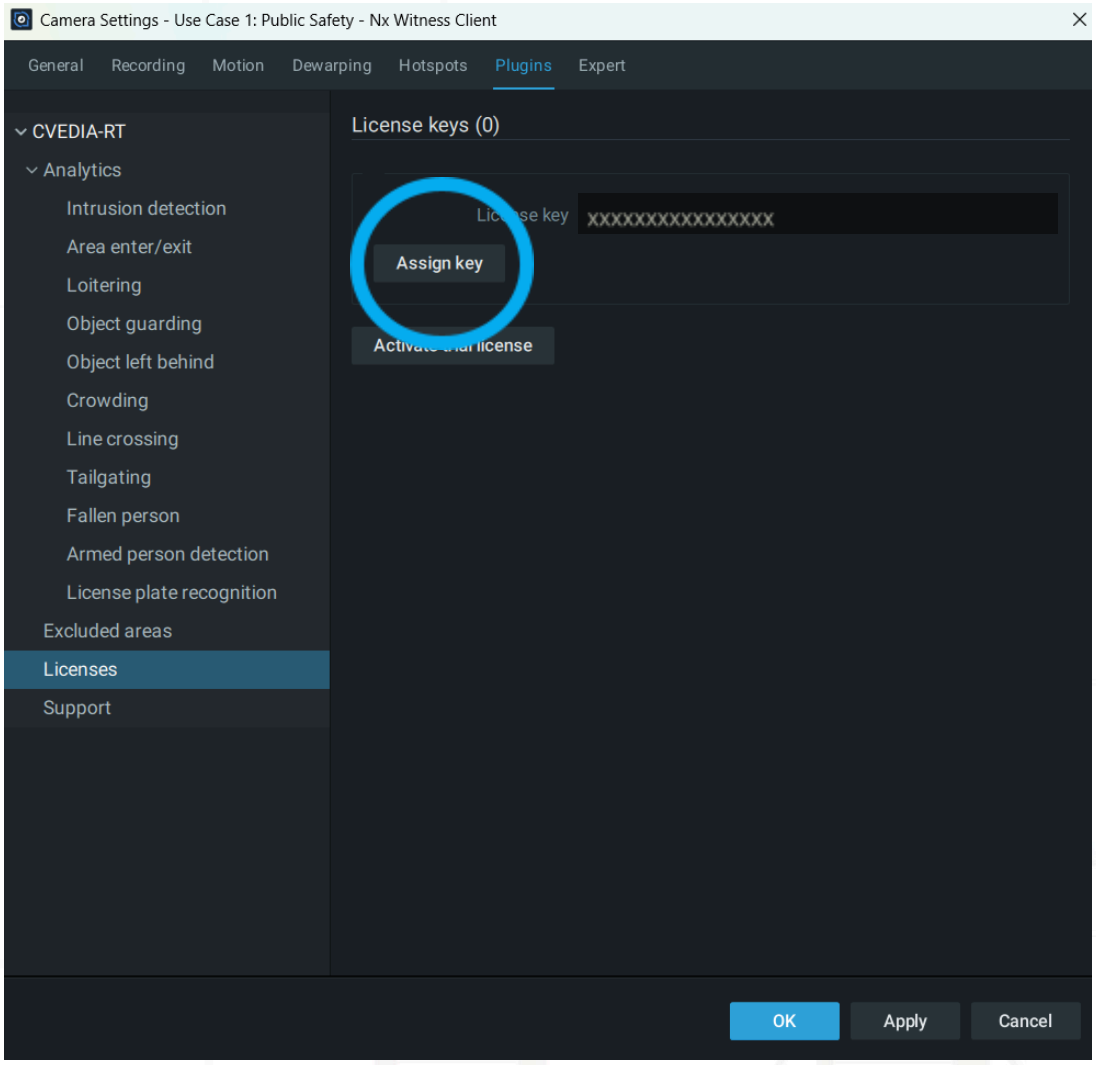


Learn more

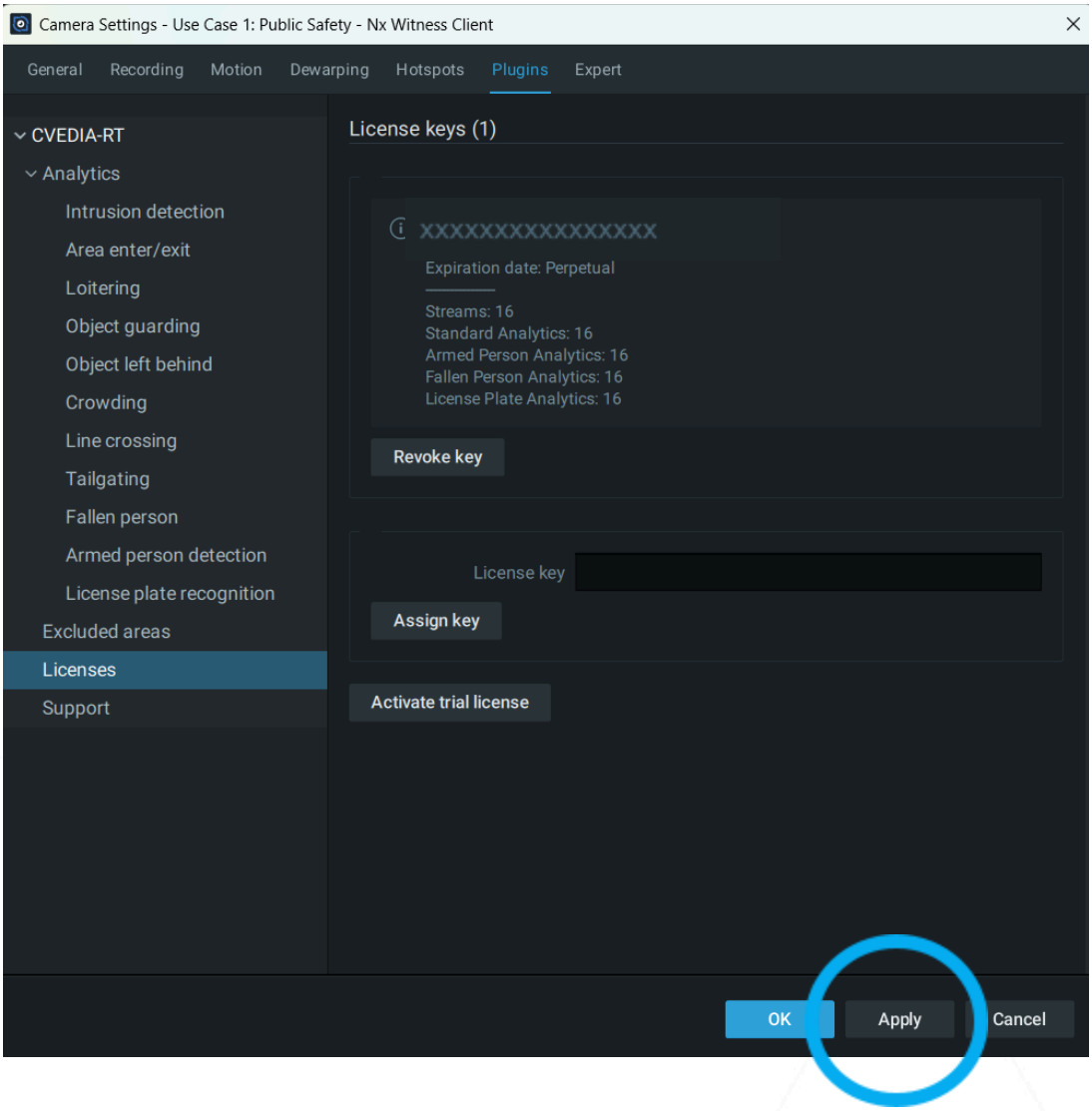
- Visit the official Nx Witness VMS guide to learn more about creating rules and monitoring events.

Apply a License

1. Navigate to Camera Settings and open the "Plugins" tab.
2. Select Licenses on the left side menu panel.
3. Activate a trial license or apply a purchased key (keys) in the designated field.
4. Click "Assign key".



5. Apply the settings before closing the window.



Notes

- Once activated, the license is bound to the device (the Nx Witness server).
- The number of streams indicates a maximum number of concurrent cameras running analytics. To increase this limit, obtain a new license with additional streams and activate it.
- To use the same license key on a different device, deactivate it by clicking the "Revoke Key" button in the Licenses window.
- Even though the license is managed under the settings of a camera, the license is applied to the entire server, and it will be available for all cameras connected to the server.

License Compatibility

- Existing license keys issued for version 2024.2.x of CVEDIA-RT will continue to work with all newer releases, including version 2025.1.0 and beyond. These keys will enable all standard features available prior to 2025.
- Premium features, such as Armed Person Detection, Fallen Person Detection, ALPR, and any future premium analytics, require new license keys.
- New license keys that include one or several premium features are only compatible with CVEDIA-RT version 2025.1.0 or later.
- When issuing or verifying licenses, please confirm the installed CVEDIA-RT version to ensure compatibility with the appropriate key type.

Section 2: Analytics Configuration

Different types of analytics allow you to configure one or more detection areas or lines, choose the types of objects to detect, and select additional related parameters.

Notes
• Analytics are active only if at least one area or one line is defined. • You can enable multiple analytics at the same time. This will not impact the performance of the system.

Best Practice Guide

For the best results when deploying CVEDIA-RT analytics, we recommend reviewing the Best Practice Guide. This companion resource is designed to help you get the most out of your analytics configuration by providing real-world guidance on:

- How to place and configure detection zones effectively
- Optimizing camera angles and stream settings
- Adjusting performance profiles based on your hardware
- Understanding factors that impact detection accuracy and system load

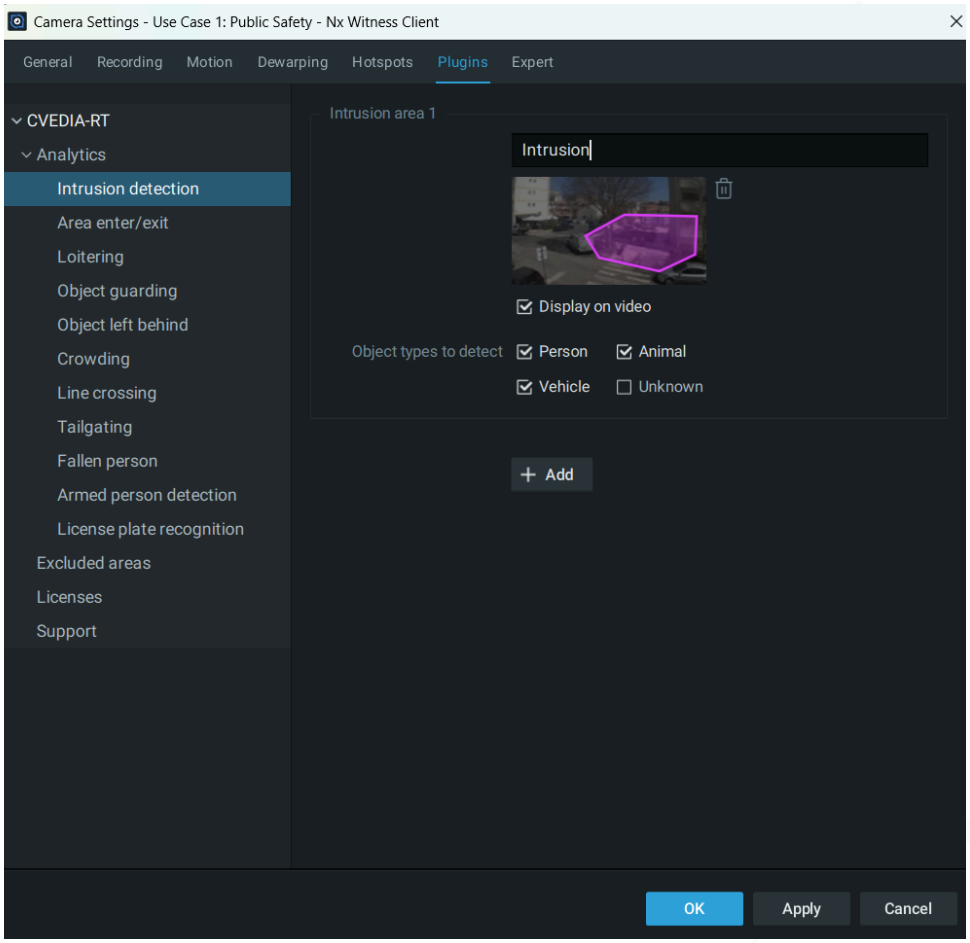
While this User Manual focuses on how to install and configure the plugin, the Best Practice Guide focuses on how to make it work well in your specific environment. It reflects the experience of hundreds of deployments and includes tested recommendations for avoiding common pitfalls.

Whether you're setting up a demo, tuning a live system, or scaling up across a full site, this guide will help ensure a smoother setup and more reliable analytics performance.

Intrusion Detection

Definition

Detects objects that move inside a defined intrusion area. The event is triggered for any new target object (person, vehicle, animal) entering the area.



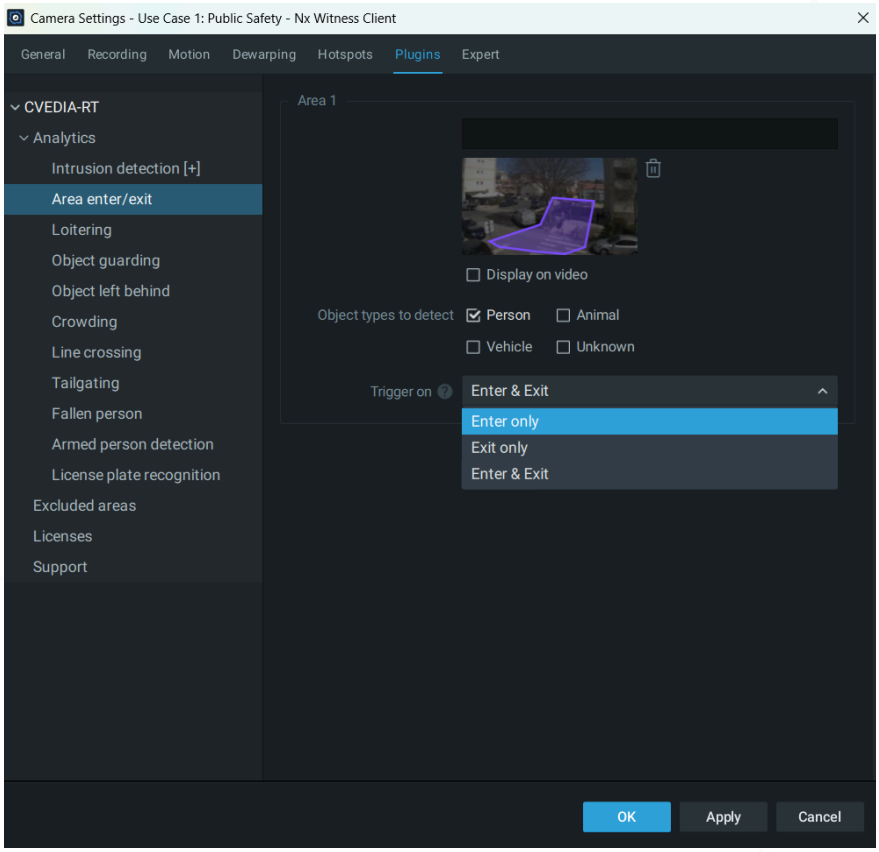
Configuration steps

- Navigate to Camera Settings > Plugins > CVEDIA-RT > Intrusion Detection.
- Click directly on the image under "Intrusion area 1" to define the intrusion detection zone. Draw a custom polygon to encompass the area for intrusion detection.
- Tick the "Display on Video" box to visualize the defined area on the live video stream.
- Select the different Object Types (person, vehicle, animal, unknown) that you would like to detect within each defined area.
- Additional zones can be defined by clicking "+ Add". Draw a different polygon under "Intrusion area 2" if necessary.

Area Enter/Exit

Definition

Detects objects that enter/exit a defined area. This analytic can be employed to monitor objects detected in the area without triggering an intrusion event.



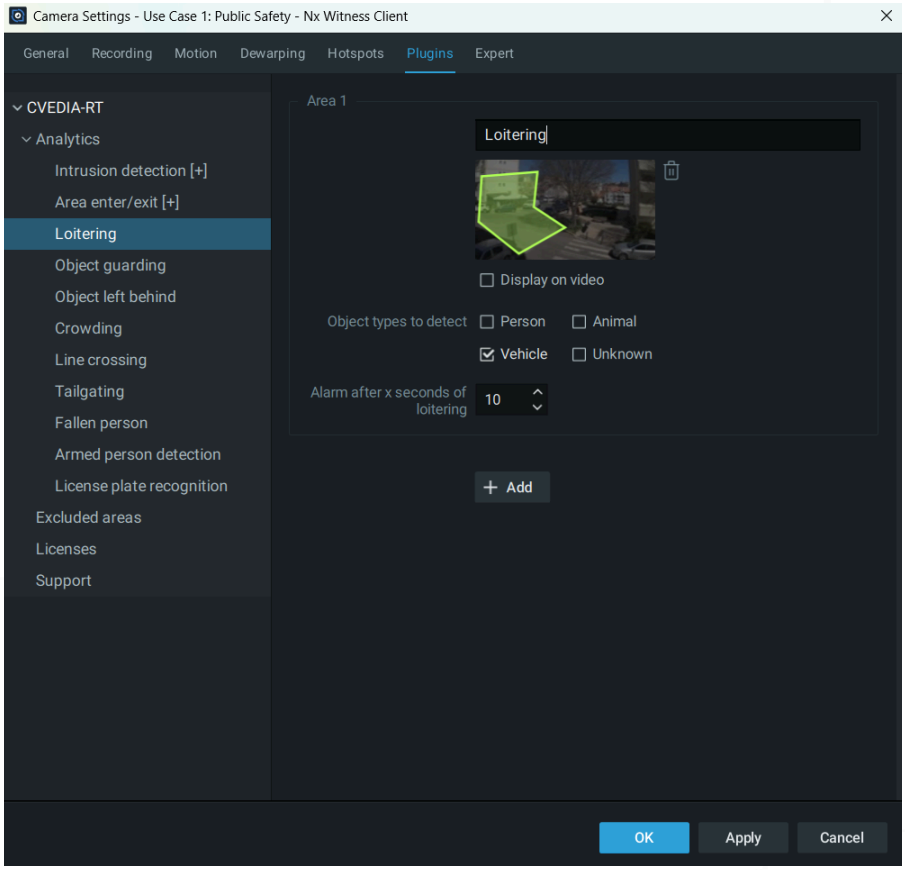
Configuration steps

- Navigate to Camera Settings > Plugins > CVEDIA-RT > Area Enter/Exit.
- Click directly on the image under "Area 1" to define the zone. Draw a custom polygon to encompass the area for object detection.
- Tick the "Display on Video" box to visualize the defined area on the live video stream.
- Select the different Object Types (person, vehicle, animal, unknown) that you would like to detect within each defined area.
- Select which event to trigger - Enter & Exit, Enter Only & Exit Only.
- Additional zones can be defined by clicking "+ Add". Draw a different polygon under "Area 2" if necessary.

Loitering

Definition

Detects objects that stay in the defined area longer than a specified time. By default, an event will be triggered when a target object remains in the area for a duration of 10 seconds.



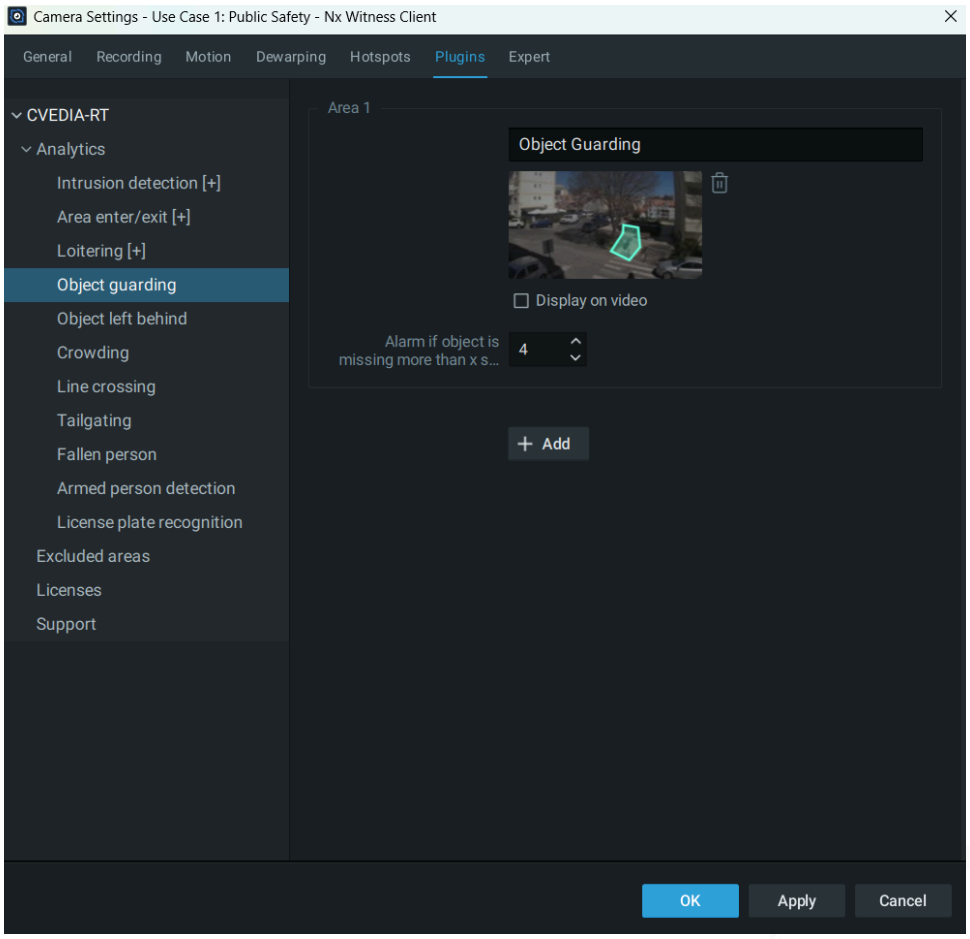
Configuration steps

- Navigate to Camera Settings > Plugins > CVEDIA-RT > Loitering.
- Click directly on the image under "Area 1" to define the zone. Draw a custom polygon to encompass the area for object detection.
- Tick the "Display on Video" box to visualize the defined area on the live video stream.
- Select the different Object Types (person, vehicle, animal, unknown) that you would like to detect within each defined area.
- Set the duration threshold for triggering events.
- Additional zones can be defined by clicking "+ Add". Draw a different polygon under "Area 2" if necessary.

Object Guarding

Definition

Detection of objects being removed from a specified area, indicating potential theft.



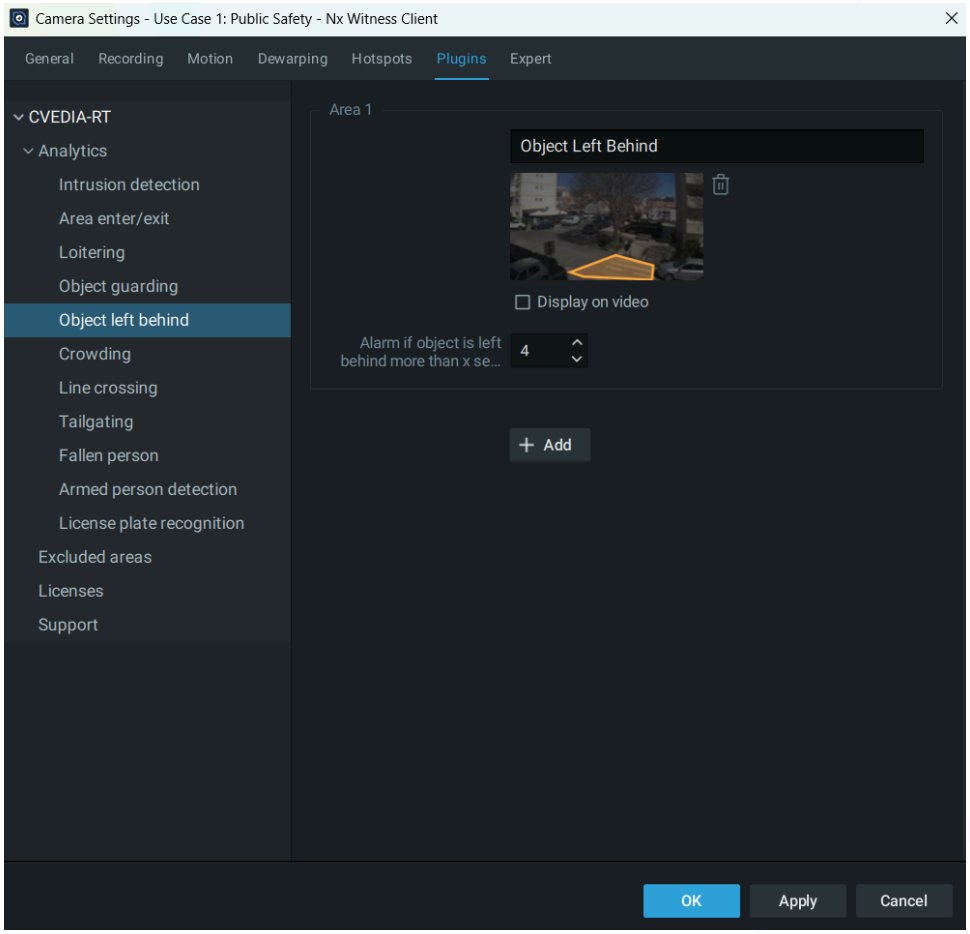
Configuration steps

- Navigate to Camera Settings > Plugins > CVEDIA-RT > Object guarding.
- Click directly on the image under "Area 1" to define the zone. Draw a custom polygon to encompass the area for object guarding.
- Tick the "Display on Video" box to visualize the defined area on the live video stream.
- Set the duration threshold for triggering events.
- Additional zones can be defined by clicking "+ Add". Draw a different polygon under "Area 2" if necessary.

Object Left Behind

Definition

Detection of objects being left in a specified area, indicating potential delivery or object abandonment.



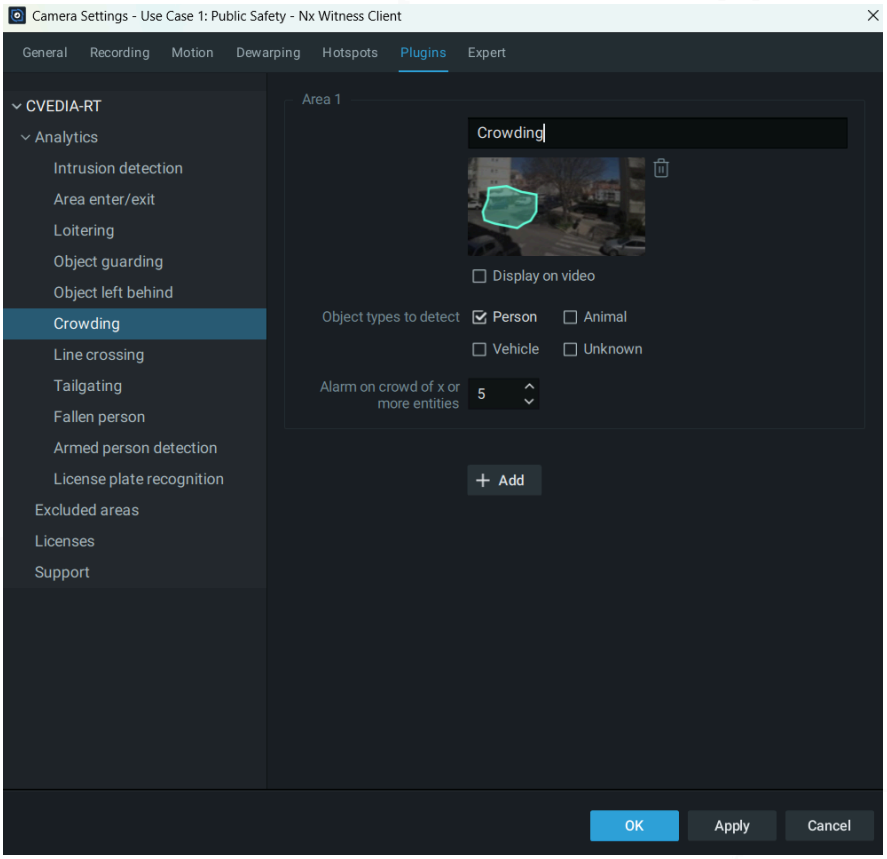
Configuration steps

- Navigate to Camera Settings > Plugins > CVEDIA-RT > Object left behind.
- Click directly on the image under "Area 1" to define the zone. Draw a custom polygon to encompass the area to detect objects left behind.
- Tick the "Display on Video" box to visualize the defined area on the live video stream.
- Set the duration threshold for triggering events.
- Additional zones can be defined by clicking "+ Add". Draw a different polygon under "Area 2" if necessary.

Crowding

Definition

Detects when the number of objects within a defined area at any given time reaches a set threshold. For instance, it could be a useful feature to detect a sudden increase of people in a queue in front of an ATM or in a commercial environment.



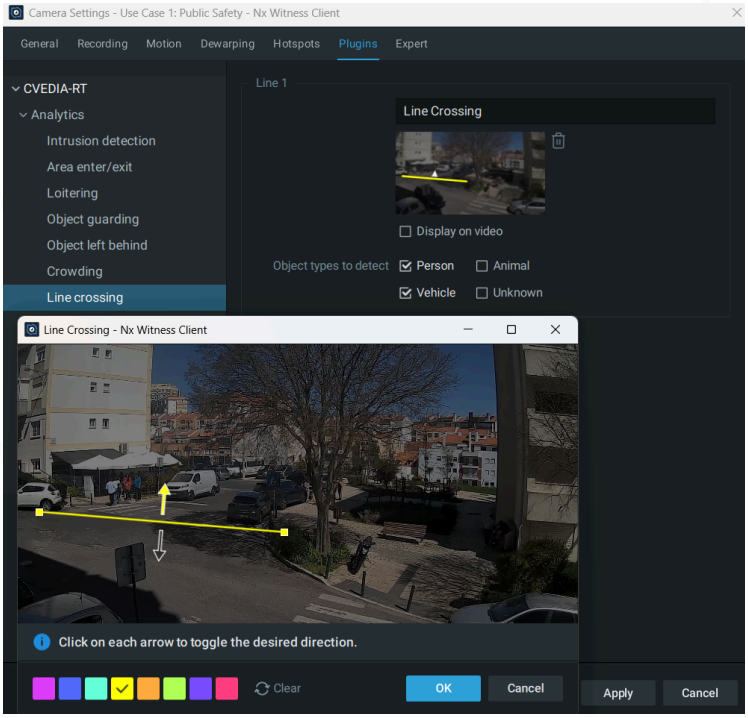
<u>Configuration steps</u>

- Navigate to Camera Settings > Plugins > CVEDIA-RT > Crowding.
- Click directly on the image under "Area 1" to define the zone. Draw a custom polygon to encompass the area for object detection.
- Tick the "Display on Video" box to visualize the defined area on the live video stream.
- Select the different Object Types (person, vehicle, animal, unknown) that you would like to detect within each defined area.
- Specify the minimum number of objects required to trigger an event.
- Additional zones can be defined by clicking "+ Add". Draw a different polygon under "Area 2" if necessary.

Line Crossing

Definition

Detects objects that cross a defined line. Users have the option to create a multi-segment virtual line, and select the direction in which the movement of objects should be monitored.



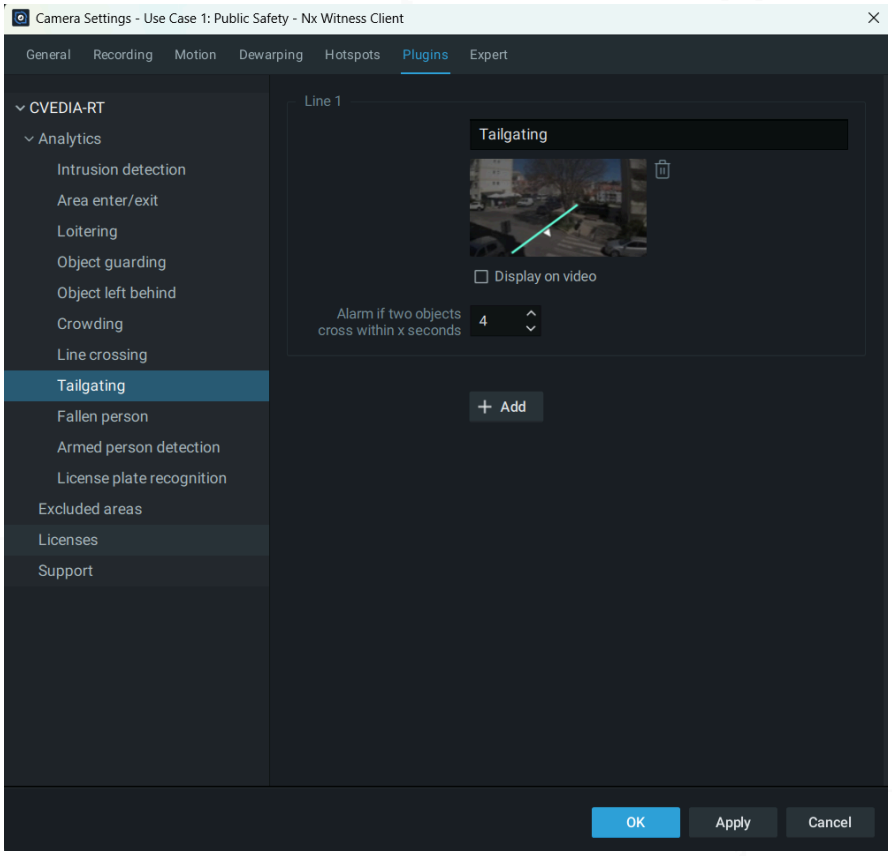
Configuration steps

- Navigate to Camera Settings > Plugins > CVEDIA-RT > Line Crossing.
- Click directly on the image to create a virtual line.
    - Click once to create new points of the line, then click on the last point to end it.
    - Define the direction of movement for object tracking. Click on the Arrows to choose which direction you would like to use to trigger events
- Tick "Display on Video" to visualize the configured virtual lines.
- Select the different Object Types (person, vehicle, animal, unknown) that you would like to detect over line crossing.
- Additional lines can be defined by clicking "+ Add". Draw a different line under "Line 2" if necessary.

Tailgating

Definition

The tailgating feature detects if more than one object crosses a virtual line during a predefined time interval. This feature could be useful for detection of multiple individuals or vehicles following each other in close proximity to gain access to a secured area.



Configuration steps

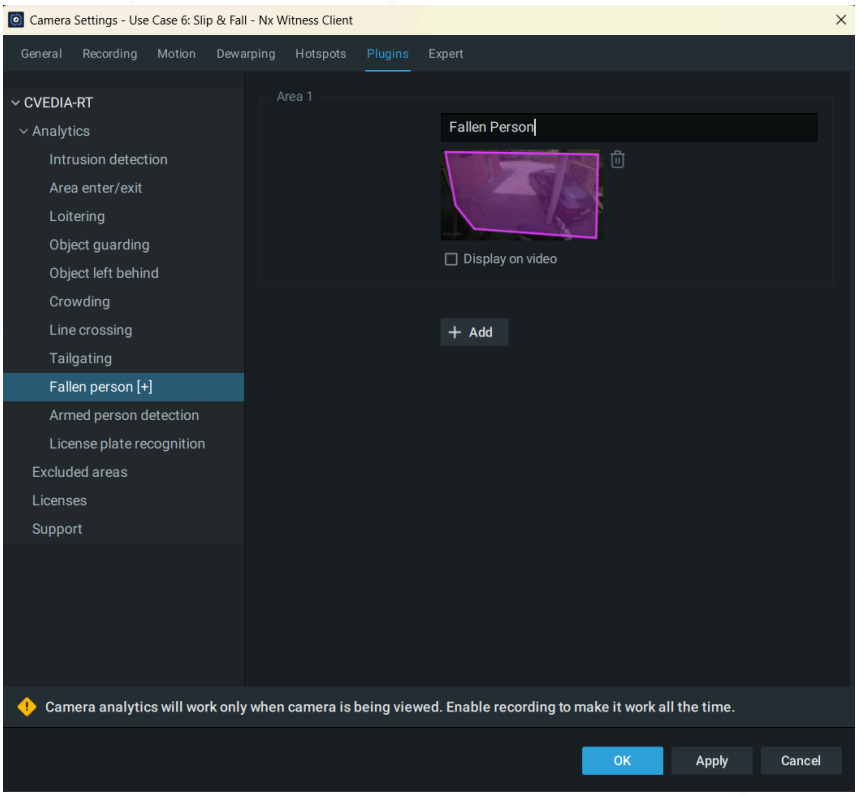
- Navigate to Camera Settings > Plugins > CVEDIA-RT > Tailgating.
- Click directly on the image to create a virtual line.
    - Click once to create new points of the line, then click on the last point to end it.
    - Define the direction of movement for object tracking. Click on the Arrows to choose which direction you would like to use to trigger events.
- Tick "Display on Video" to visualize the configured virtual lines.
- Additional lines can be defined by clicking (+ Add). Draw a different line under "Line 2" if necessary.

Fallen Person

Definition

Fallen Person detection monitors posture changes and triggers an event when a person abruptly collapses into a horizontal position and remains on the ground. This analytic is designed to identify “fallen” incidents in real time, enabling caregivers to respond quickly and potentially prevent further harm.

This feature is particularly suited for preventative safety alerts in healthcare environments such as hospitals, senior care centers, and assisted living facilities, where early intervention is critical.



<u>Configuration steps</u>

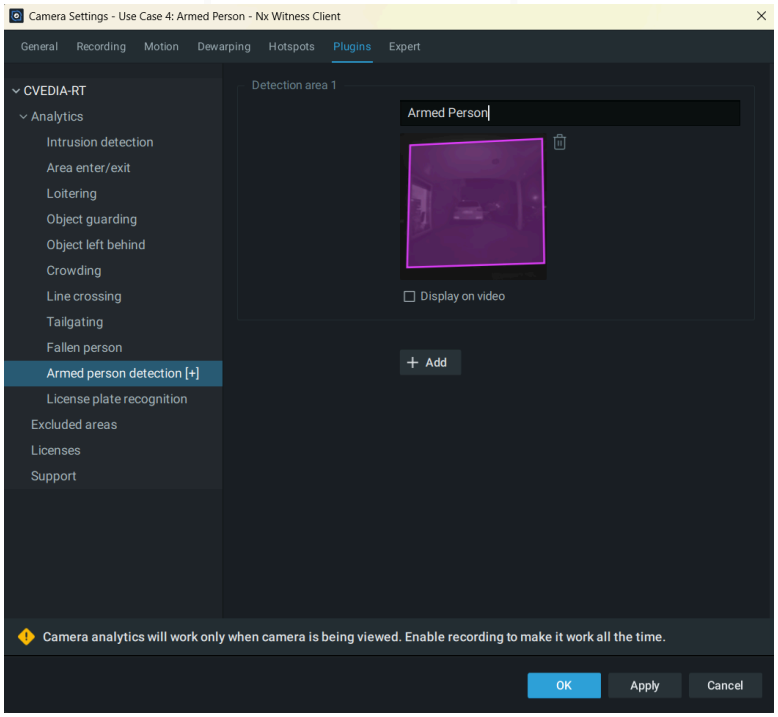
- Navigate to Camera Settings > Plugins > CVEDIA-RT > Fallen Person.
- Click directly on the image under "Area 1" to define the zone. Draw a custom polygon to encompass the area for object detection.
- Tick the "Display on Video" box to visualize the defined area on the live video stream.
- Additional zones can be defined by clicking "+ Add". Draw a different polygon under "Area 2" if necessary.

Armed Person Detection

Definition

The Armed Person Intrusion analytic detects individuals carrying visible firearms within a monitored area. When a person enters a defined detection zone while holding a weapon, the system immediately triggers an event, enabling operators to respond quickly and potentially prevent further harm.

This analytic is designed to enhance security and situational awareness in various environments.



Configuration steps

- Navigate to Camera Settings > Plugins > CVEDIA-RT > Armed Person detection.
- Click directly on the image under "Detection Area 1" to define the zone. Draw a custom polygon to encompass the area for object detection.
- Tick the "Display on Video" box to visualize the defined area on the live video stream.
- Additional zones can be defined by clicking "+ Add". Draw a different polygon under "Detection Area 2" if necessary.

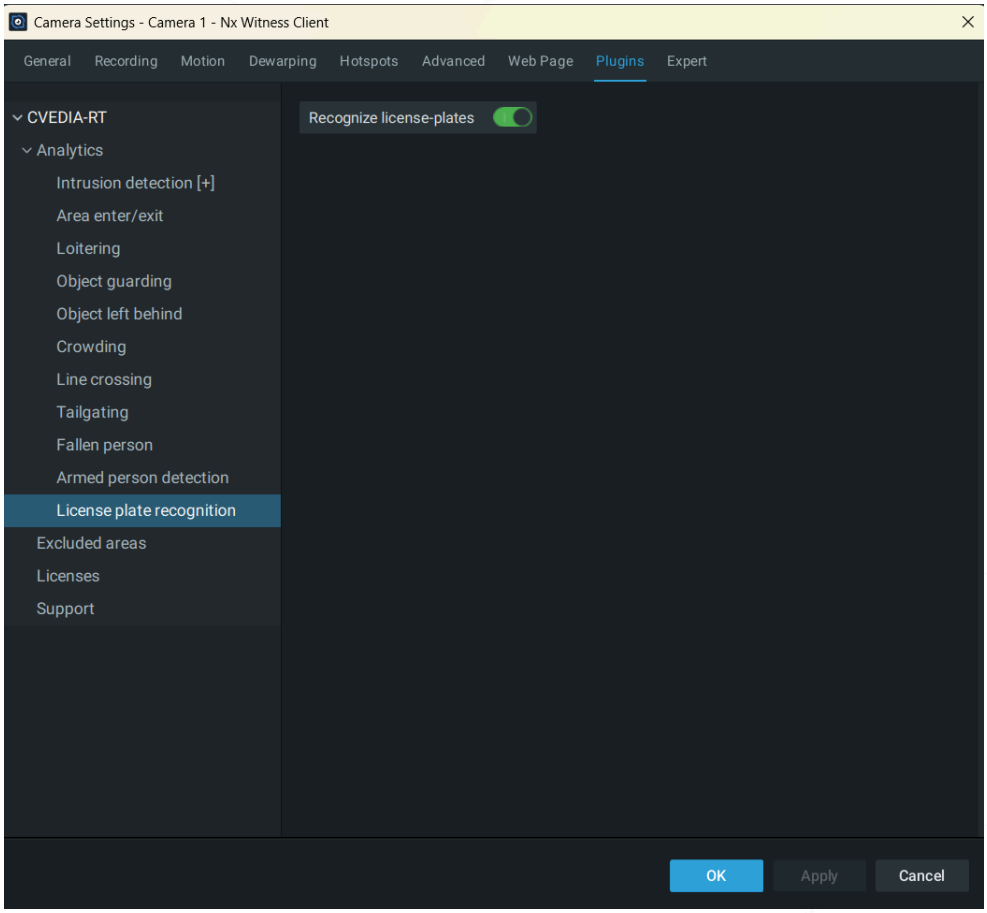
License Plate Recognition

Definition

License Plate Recognition feature automatically detects license plates in the video feed and reads the alphanumeric text using AI-powered optical character recognition (OCR). Once recognized, license plate data is saved and becomes searchable within the Advanced Search feature, allowing users to quickly locate relevant events by entering a specific plate number.

To enable LPR feature:

- Navigate to Camera Settings > Plugins > CVEDIA-RT > License Plates Recognition.
- Move the toggle on “Recognize license plates”.



Enhanced Search

Definition

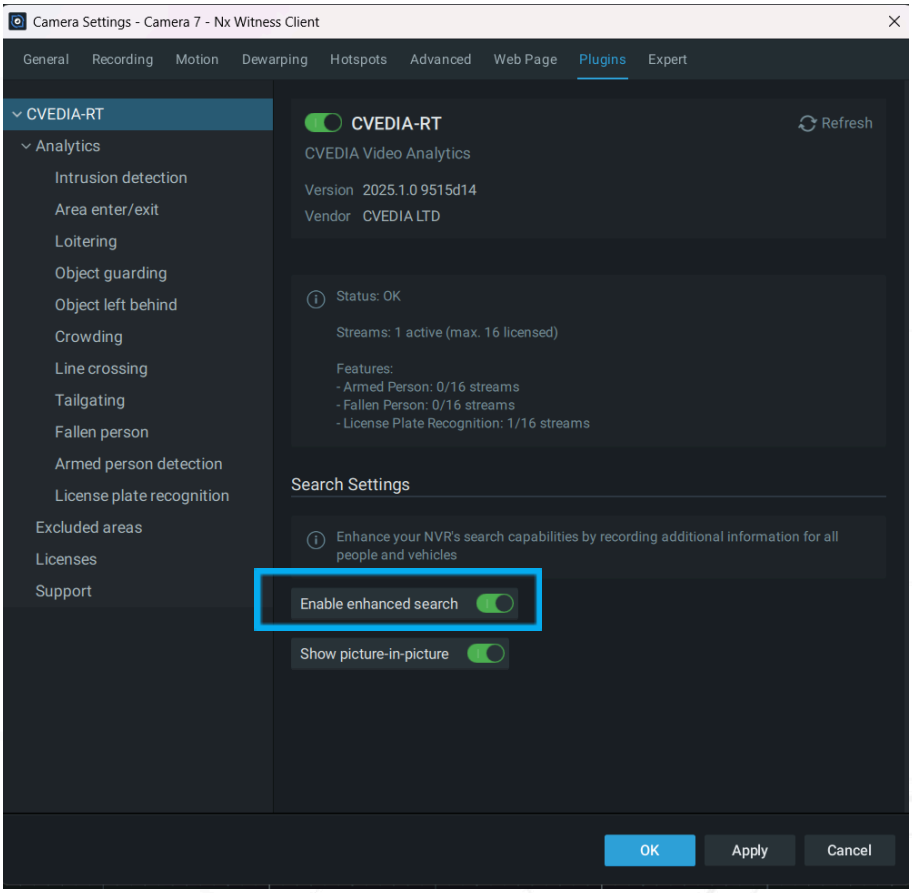
Enhanced Search feature allows users to leverage Advanced Object Search within Nx Witness to identify objects matching search parameters. This feature simplifies the process of locating specific individuals or vehicles within extensive video archives.

Collected Attributes

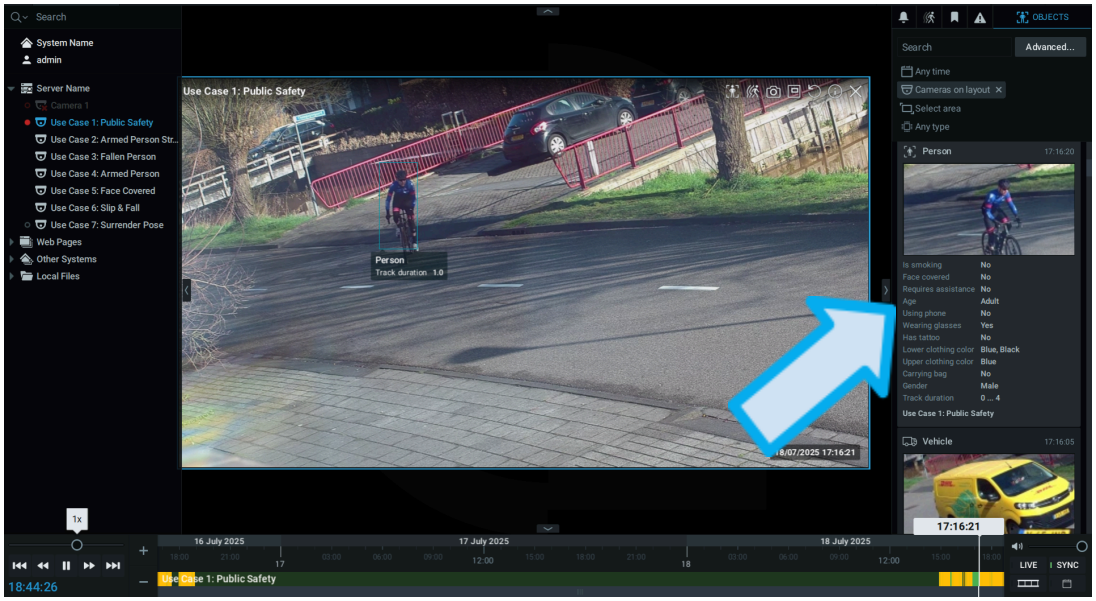
- Vehicles: Door open, Lights on, License Plate (searchable), Color, Type
- People: Gender, Wearing glasses, Age, Using phone, Carrying bag, Smoking, Face covered, Requires assistance, Upper clothing color, Lower clothing color, Tattoo, Surrender pose

To enable Enhanced Search feature:

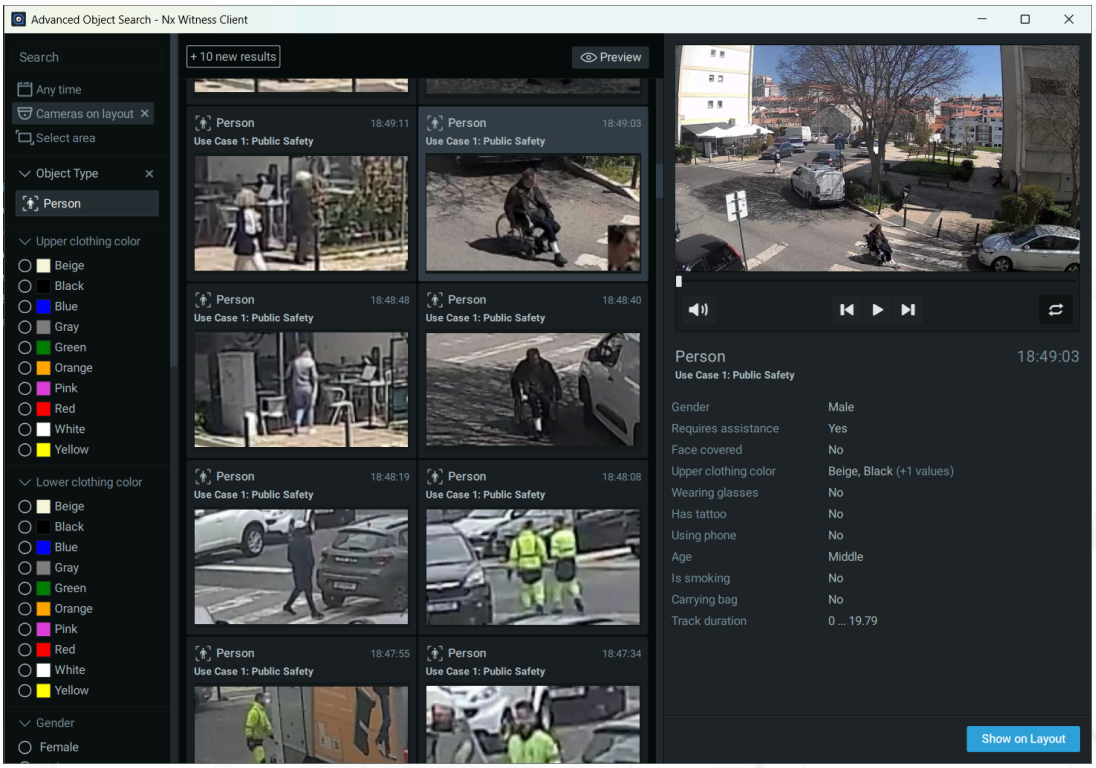
- Navigate to Camera Settings > Plugins > CVEDIA-RT.
- Under “Settings”, move the toggle on “Enable enhanced search”.



- When Enhanced Search is enabled, collected attributes will appear under the thumbnail image of the detected object (in the OBJECTS tab).

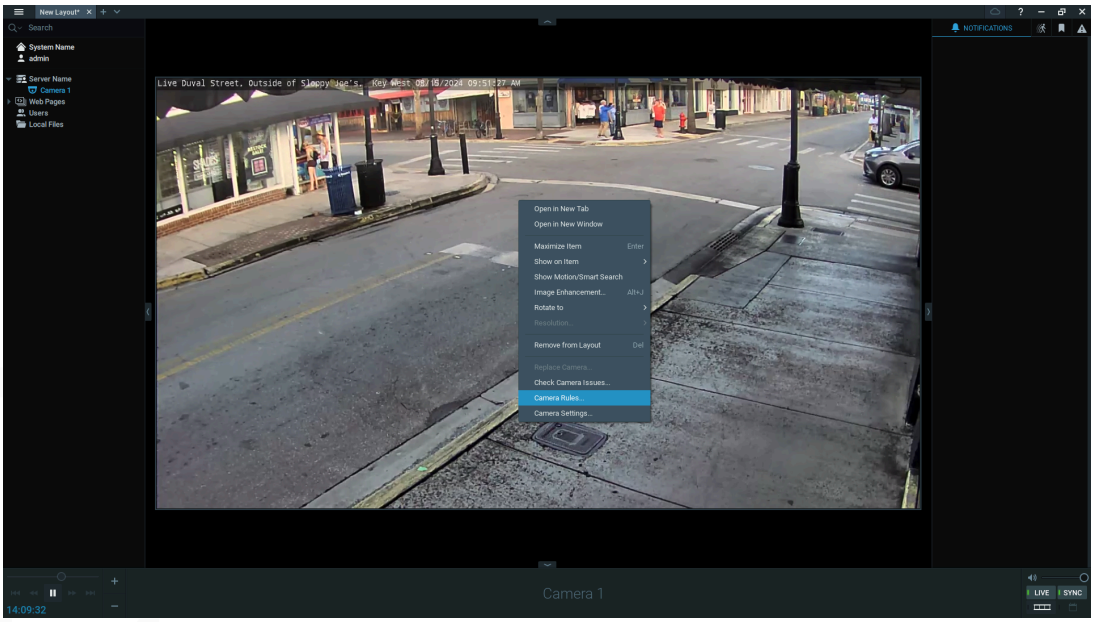


- Users can leverage Enhanced Search functionality to filter out objects in the Advanced Search Window of the Nx Witness Client.

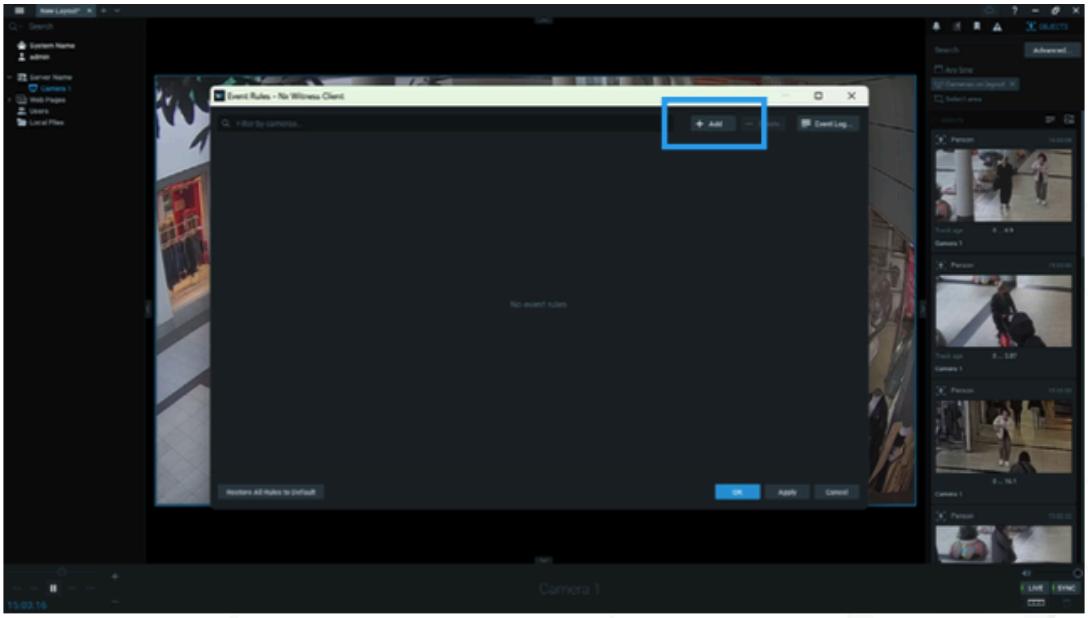


Creating Rules

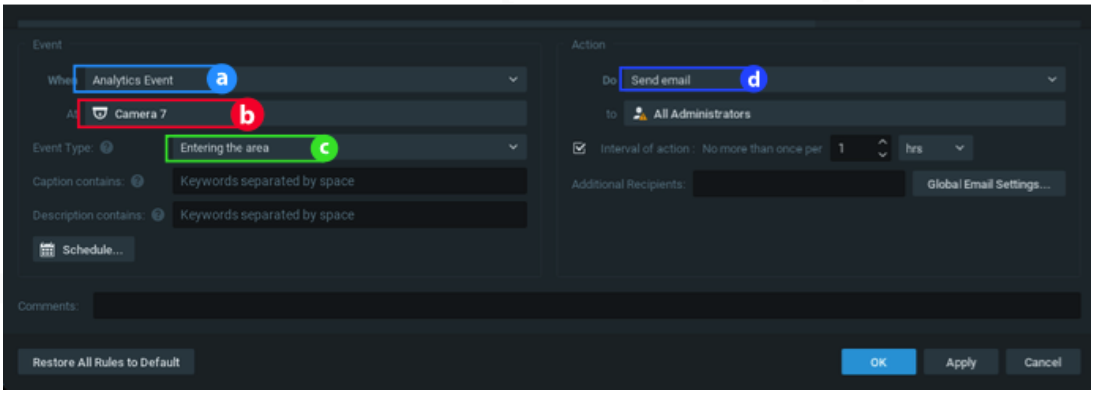
1. Right-click on an open video panel to see the menu options and navigate to camera rules.



2. Click on the "+Add" button at the top right corner.

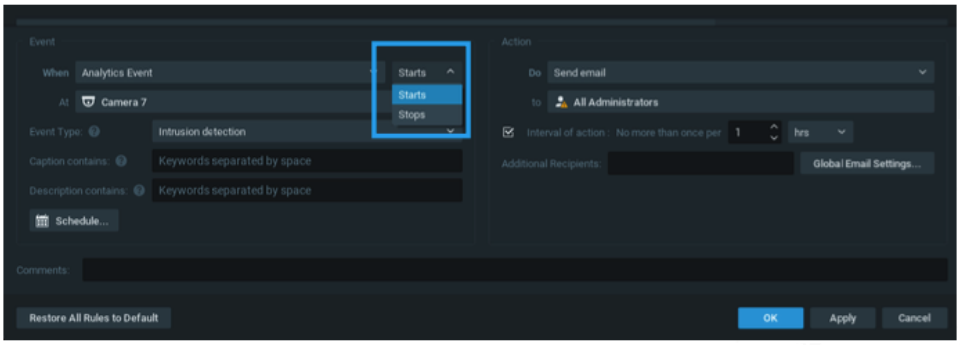


a) When: choose "Analytics Event"
b) At: select the relevant camera(s)
c) Event Type: the event type to be triggered
d) Do: specify actions such as desktop notification, email, sound, or bookmark creation. Bookmarks allow you to navigate the recording back in time to the exact moment when the event occurred (the video recording function should be enabled)



Notes

- For event types "Intrusion" and "Loitering", there will be an additional setting - "Starts or Stops" - so users can choose whether an event gets triggered when intrusion starts or stops.



Caption Filter

The CVEDIA-RT AI Analytics plugin for Nx Witness supports captions in event rules configuration, allowing users to trigger actions based on specific zones or lines. By assigning names to areas or lines in the plugin settings, users can use the "Caption Contains" field to apply rules for specific detections in those locations.

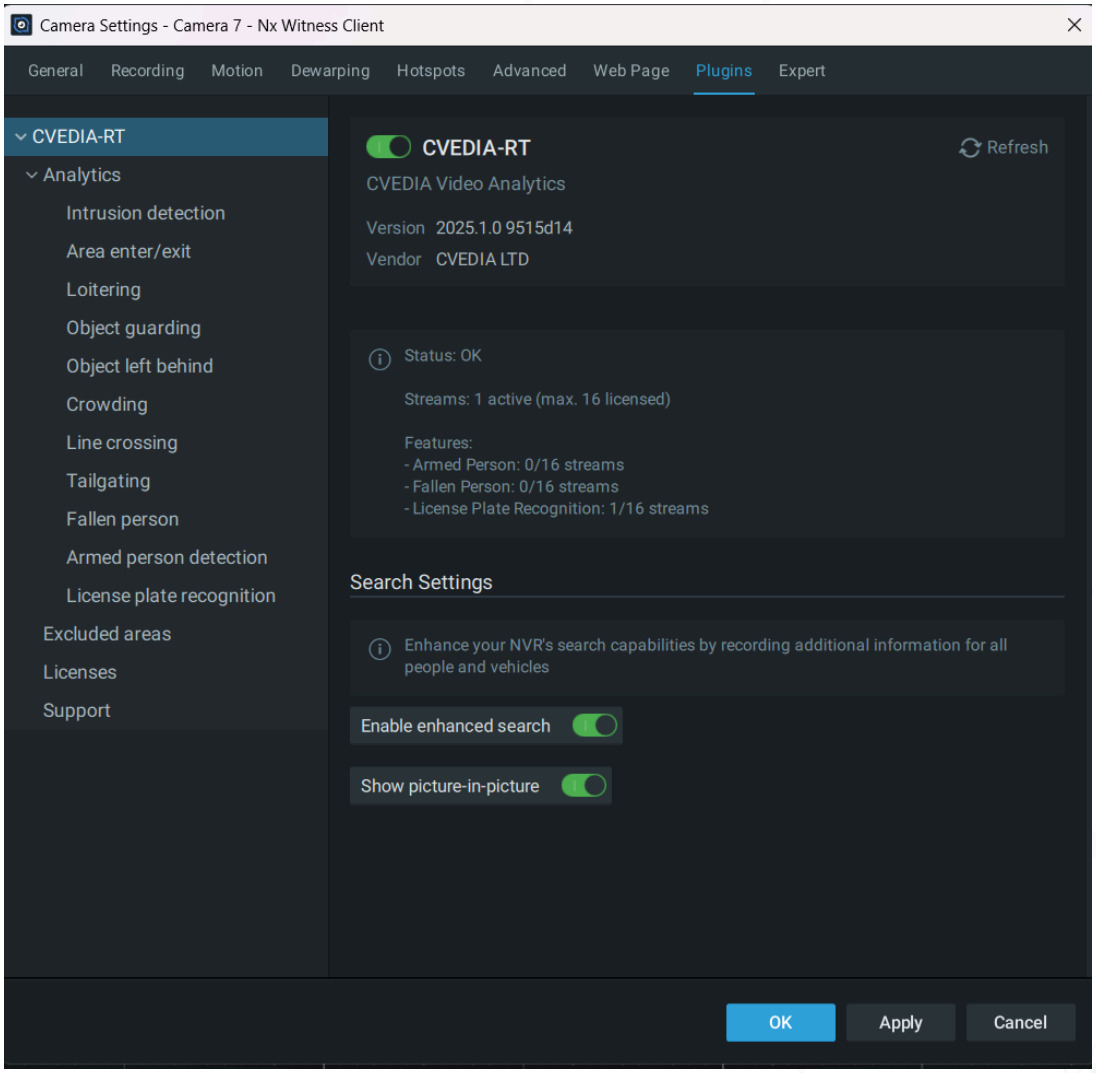
This feature enables targeted actions, such as playing a sound or sending notifications, depending on where the event occurs. It also allows applying different schedules for different areas or lines, enhancing the flexibility and effectiveness of the surveillance system.

Section 3: Plugins Tab in Camera Settings

Plugin Settings allow users to optimize analytics performance for their specific use case.

To navigate to the Plugin Settings:

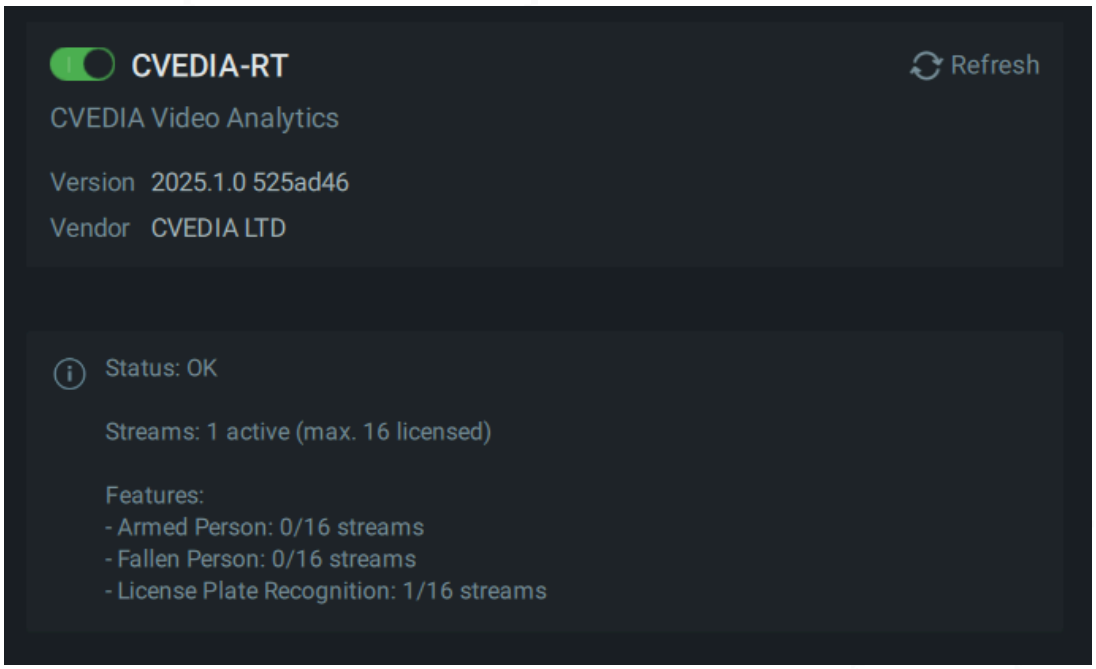
1. Right-click on the video stream and select "Camera Settings."
2. Click on the “Plugins” tab and select CVEDIA-RT on the left menu panel.



License Status

To navigate to the License Status Panel:

1. Right-click on the video stream and select "Camera Settings."
2. Click on the “Plugins” tab and select CVEDIA-RT on the left menu panel.
3. The License Status Panel will appear under the Plugin version. Please note that this Panel is visible only when the plugin is enabled.



License Status panel shows a quick summary of:

- Total active streams vs. maximum licensed streams.

  Example: 4 active (max. 16 licensed) means 4 streams are currently using CVEDIA analytics, and the license allows up to 16.

- Feature availability per stream.

  Premium features like Armed Person Detection, Fallen Person Detection, and License Plate Recognition show how many streams are using each feature out of the total number of streams licensed for it.

  Example: Armed Person: 1/16 streams means one stream is using this feature, with 15 remaining available.

This panel helps users confirm how many cameras are covered by a valid license and whether advanced features are available for activation. If a feature is not working as expected, this is the first place to check for stream limits or licensing issues.

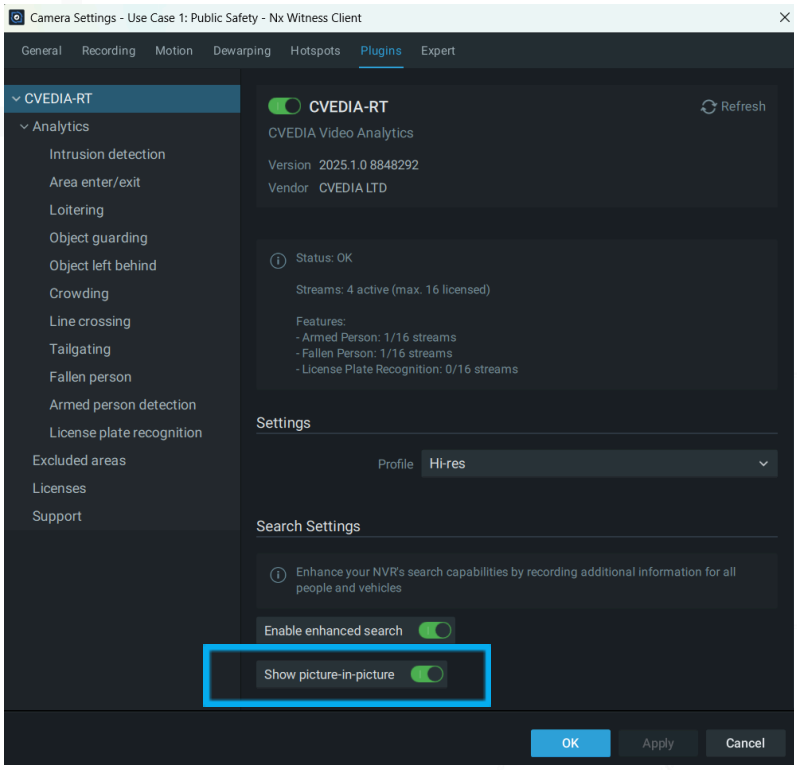
Search Settings

Enable Enhanced Search

Enhanced Search feature allows users to leverage Advanced Object Search within Nx Witness to identify objects matching search parameters based on collected attributes. This feature simplifies the process of locating specific individuals or vehicles within extensive video archives.

Show picture-in-picture

Displays a small overlay image (picture-in-picture) within the detection thumbnail to highlight important details such as faces or license plates. This ensures that key information stands out for quick identification.

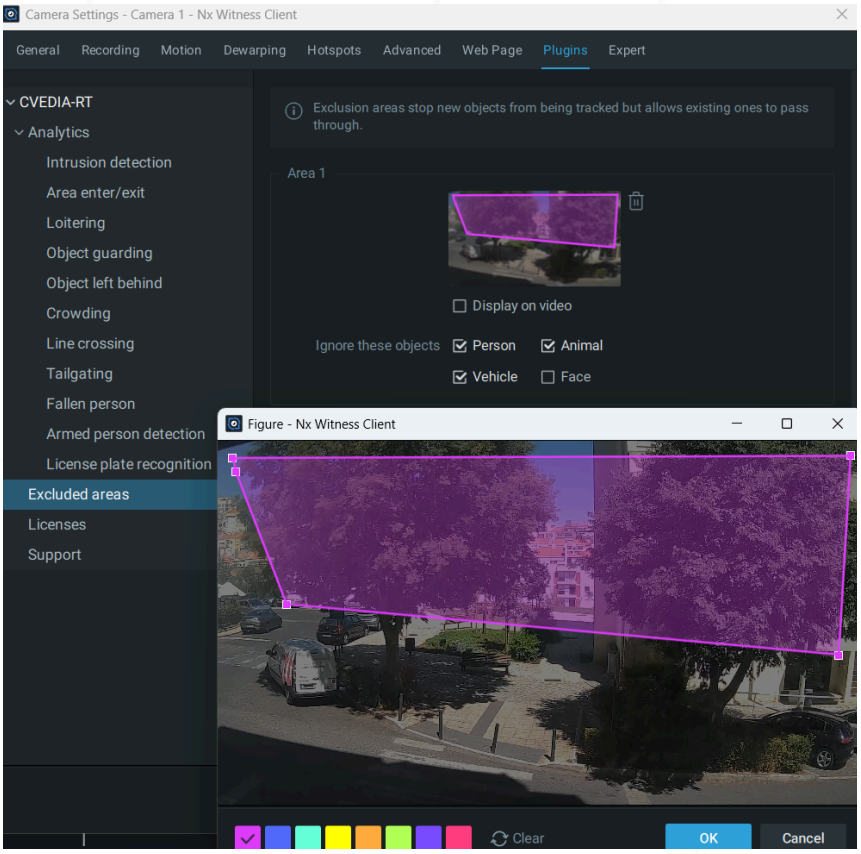


Excluded Areas

Objects in excluded areas would not trigger any events from the configured analytics.

To navigate to Excluded Areas settings:

- Right-click on the video stream and select "Camera Settings."
- Click on the plugin tab and select CVEDIA-RT on the left menu panel.
- Click on Excluded areas on the left side menu panel.



Apply Excluded Area settings to reduce recurring False Positives and enhance detection precision in the area of interest, especially when there is persistent movement in adjacent areas (e.g., a busy road near a sidewalk).

Notes

- Applying Excluded Area settings does not impact recordings on disk.
- This feature is not a replacement for privacy masks and should be used to focus detection on specific parts of the scene.

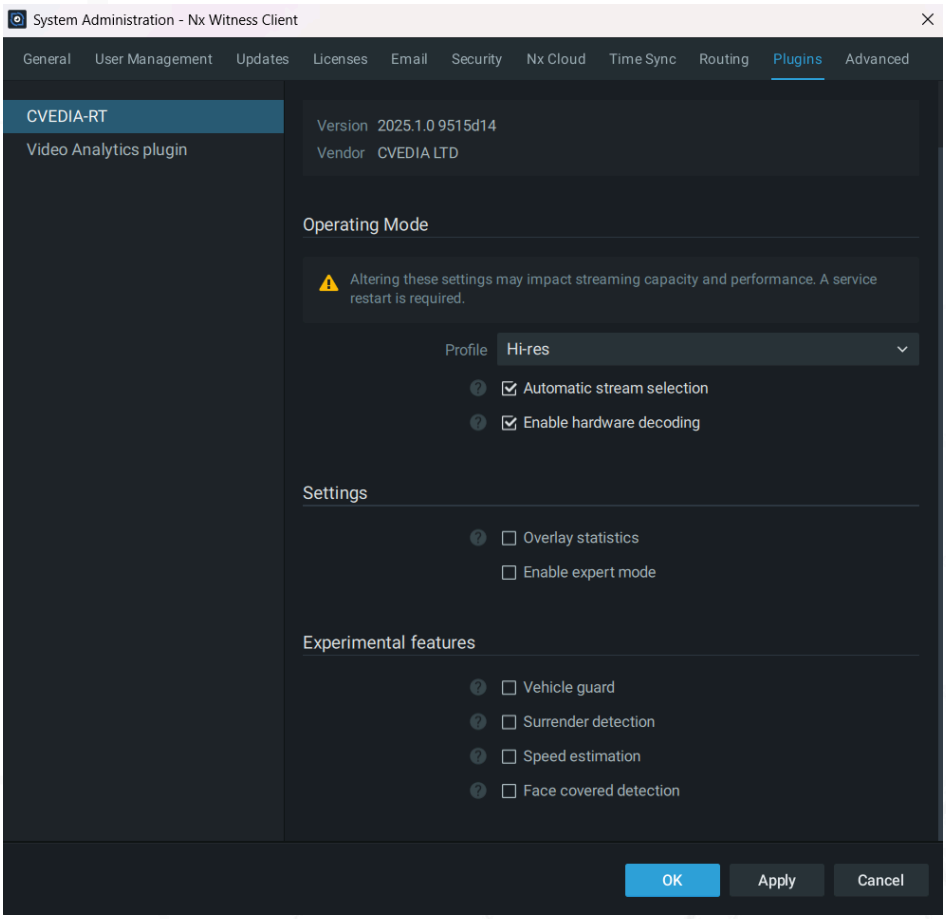
Section 4: System Administration

The plugin includes system-wide settings that apply to all cameras connected to the server.

Warning
• Please note that some settings will only take effect after restarting the media server.

To navigate to System Administration:

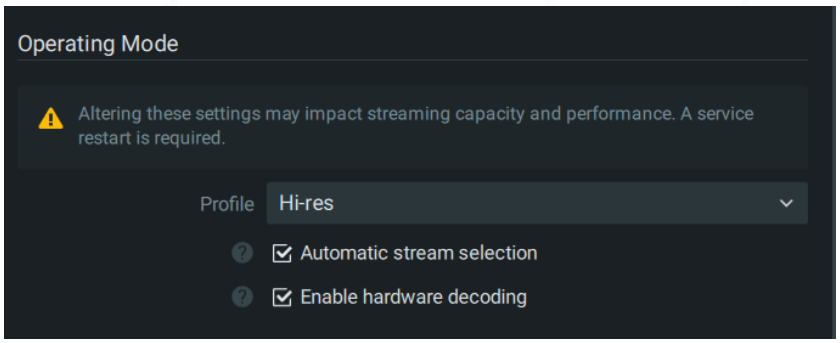
1. Click on the "hamburger icon" in the top left corner of the Nx Witness Client and select "System Administration..." or press the Ctrl+Alt+A key combination.
2. Navigate to the "Plugins" tab and click on the plugin name on the left menu panel.



Profile Settings

To navigate to the Profile Settings:

1. Navigate to the “Plugins” tab in the System Administration settings.
2. Select CVEDIA-RT on the left menu panel.
3. The Profile settings will appear under the Operating Mode section.



The Profile setting allows users to adjust the AI processing mode to best match the camera environment and available system resources. Selecting the right profile helps balance detection accuracy with computational efficiency.

Hi-res Profile

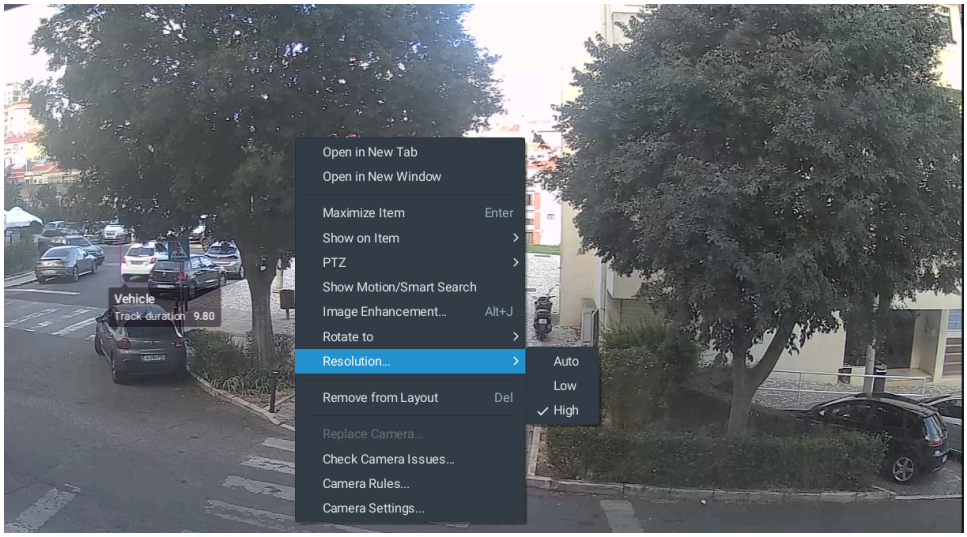
This is the default profile (operating mode). Hi-res mode uses a larger AI model and processes the primary camera stream, delivering higher precision, especially for detecting small or distant objects and operating in busy or crowded scenes. It is recommended for all deployments that require high detection accuracy and where hardware capacity is sufficient.

Standard Profile

Standard mode is optimized for lower resource usage, making it suitable for systems with limited processing power. It uses the secondary camera stream and a lighter AI model. This profile works best in well-lit environments, with minimal movement, and when objects are close to the camera.

Field of View Differences Between Streams

When configuring detection zones, please note that the field of view may differ between the primary (high-resolution) and secondary (low-resolution) camera streams.



If you draw zones while viewing the high-resolution stream but run analytics in Standard mode (which uses the secondary stream), the actual processing resolution may not fully align with the visual configuration. This can lead to detections appearing "outside" the expected zone in recorded or live views.

To avoid this mismatch:

- Always configure zones using the same stream that will be used for AI processing (check your Profile setting under Plugin Settings).
- If using Standard mode, configure zones while viewing the secondary stream.
- For consistent visual feedback and precise zone alignment, use Hi-res mode if the primary stream is required for analytics.

Automatic Stream Selection

When enabled, Automatic Stream Selection configures the streams as follows:

- Hi-res mode: Uses the primary stream.
- Standard mode: Uses the secondary stream.

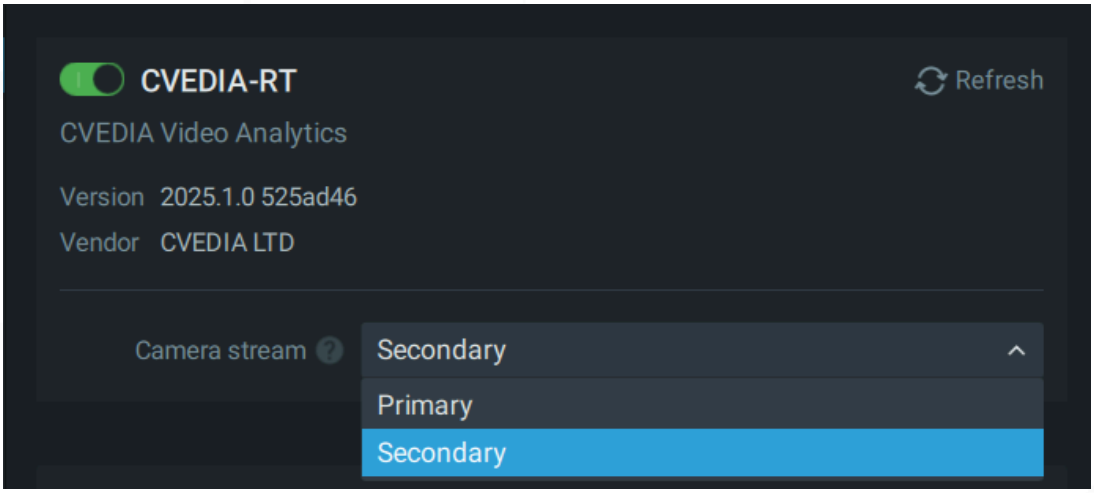
When disabled, you can override the stream selection for running analytics. Disabling this feature allows you to select either the Primary or Secondary stream for running analytics on each camera.

Notes

- The "Camera Stream" selection becomes available only when the "Automatic Stream Selection" is disabled in the Plugin tab of the System Administration settings.

To navigate to the Camera Stream settings:

- Right-click on the video stream and select "Camera Settings."
- Click on the “Plugins” tab and select CVEDIA-RT on the left menu panel.



Important

- Starting from version 6 of the Media Server, if you plan to activate the plugin on an RTSP stream or ONVIF cameras without the secondary stream, you must disable the Automatic Stream Selection, or use the Hi-res profile. Applying these changes requires restarting the Media Server.

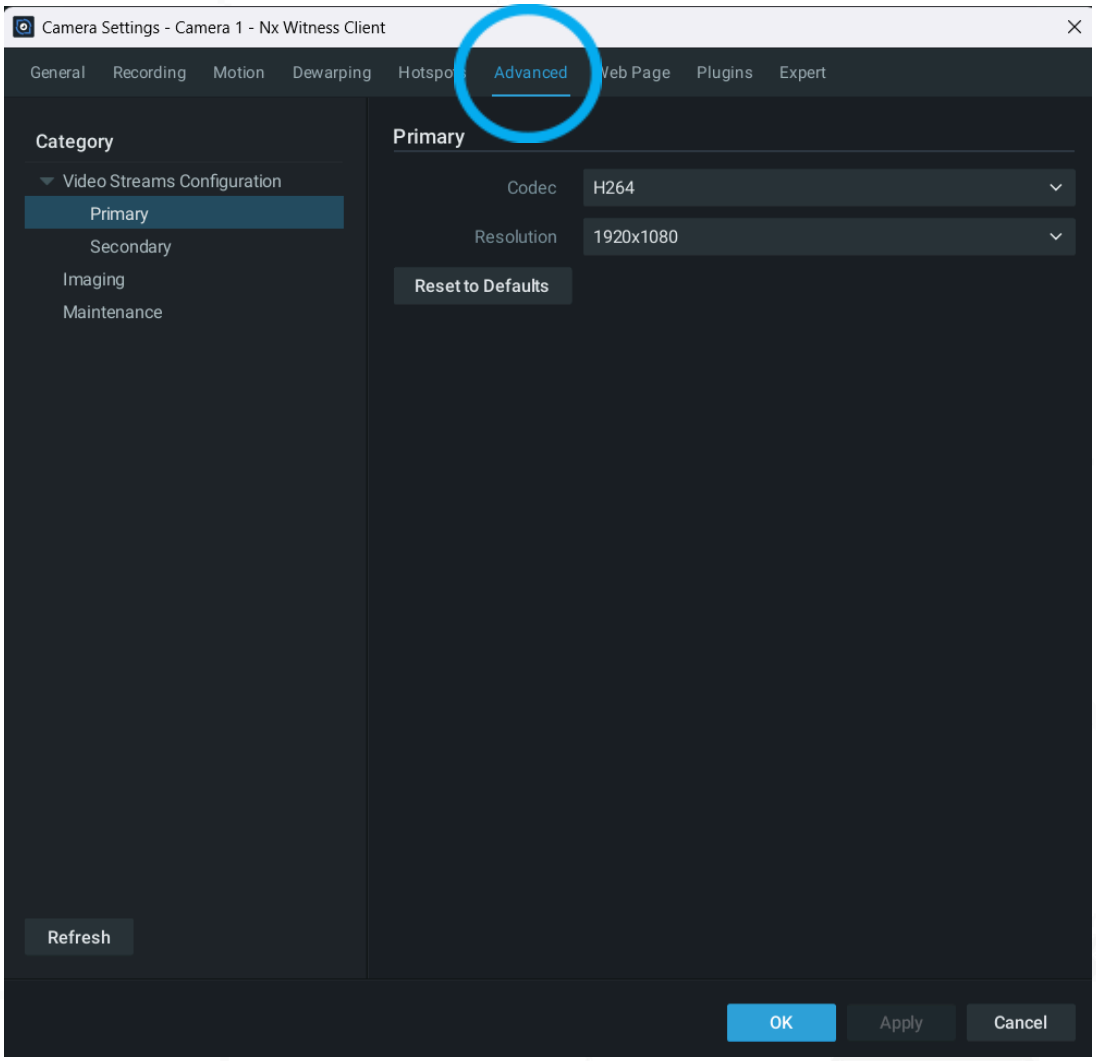
Video Streams Configuration

To navigate to Video Streams Configuration:

- Right-click on the video stream and select "Camera Settings."
- Click on the Advanced tab.
- Click on Video Streams Configuration on the left side menu panel.

Primary Stream (default camera parameters)

These stream configuration parameters are relevant when using Hi-res profile (operating mode of the plugin), or the plugin is manually configured to use the primary stream.



Secondary Stream

These parameters are valid when using the Standard mode, or the plugin is manually configured to use the secondary stream.

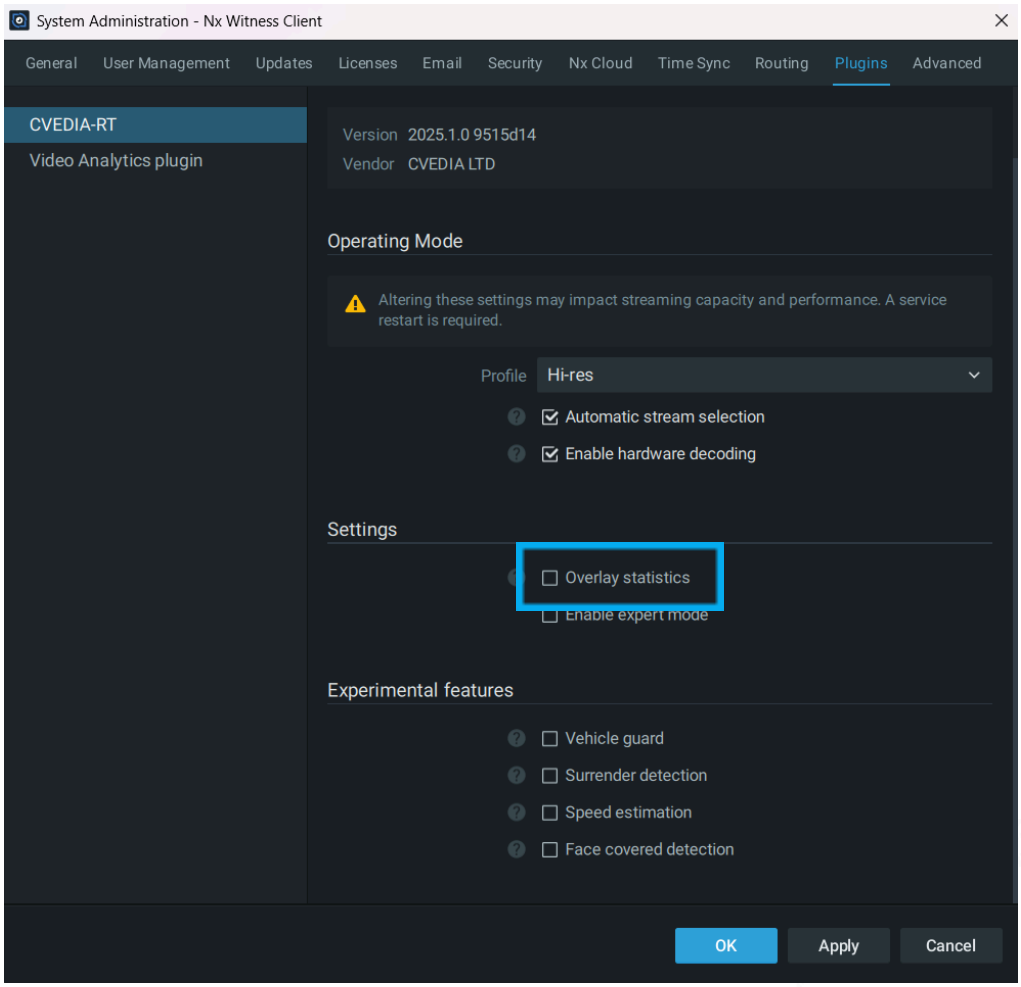
- Resolution: 640×480
- Bitrate: 1 Mbps or higher
- FPS (Frames Per Second): 5 FPS or higher

Notes
• Resolution: A low resolution can hinder the detection of smaller targets. • Bitrate: A low bitrate leads to strong compression, reducing the quality of the video feed and making it difficult to detect smaller targets. • FPS: A low frame rate may cause loss of detections on difficult or fast moving targets, while a high frame rate will increase the system's computational load.

Expert Settings

Overlay Statistics

The Statistics panel can be useful for debugging, providing insights into system health and hardware utilization.



Important

- Don't keep the statistics panel open for extended periods of time. When the panel is visualized, it could prevent the Media Server from recording correctly.

In order to visualize the statistics panel, tick the “Overlay statistics” box in the System Administration Settings. Click "OK" to save the settings, and go to the "OBJECTS" tab. You may need to wait a few seconds for the panel to appear.

Statistics Info Includes:

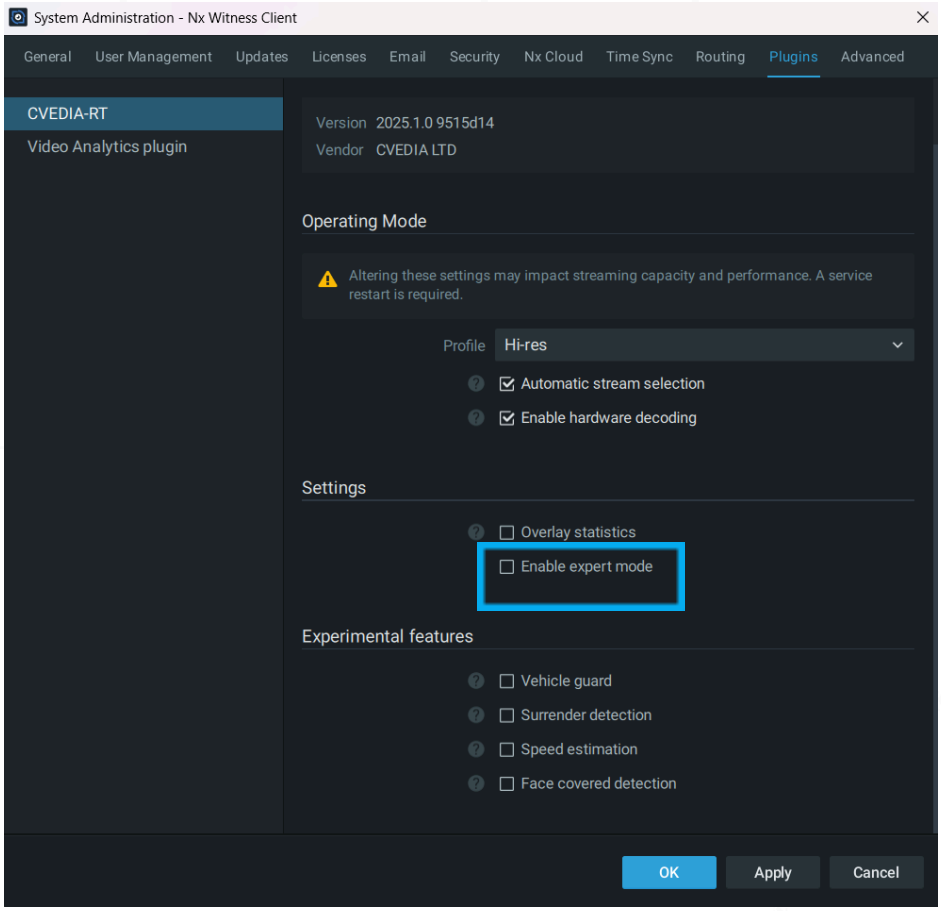
- Engine version
- Plugin version
- Solution version
- NX SDK (Client / Server) Version
- Mode
- Plugin uptime
- Instance uptime
- Input resolution
- AI resolution
- AI latency
- Frames queued
- Frames dropped
- Frames processed
- Dispatcher occupancy
- Decoders
- Accelerators
- AI Models
- Licenses

Enable Expert Mode

Expert mode includes additional features for fine tuning the plugin performance.

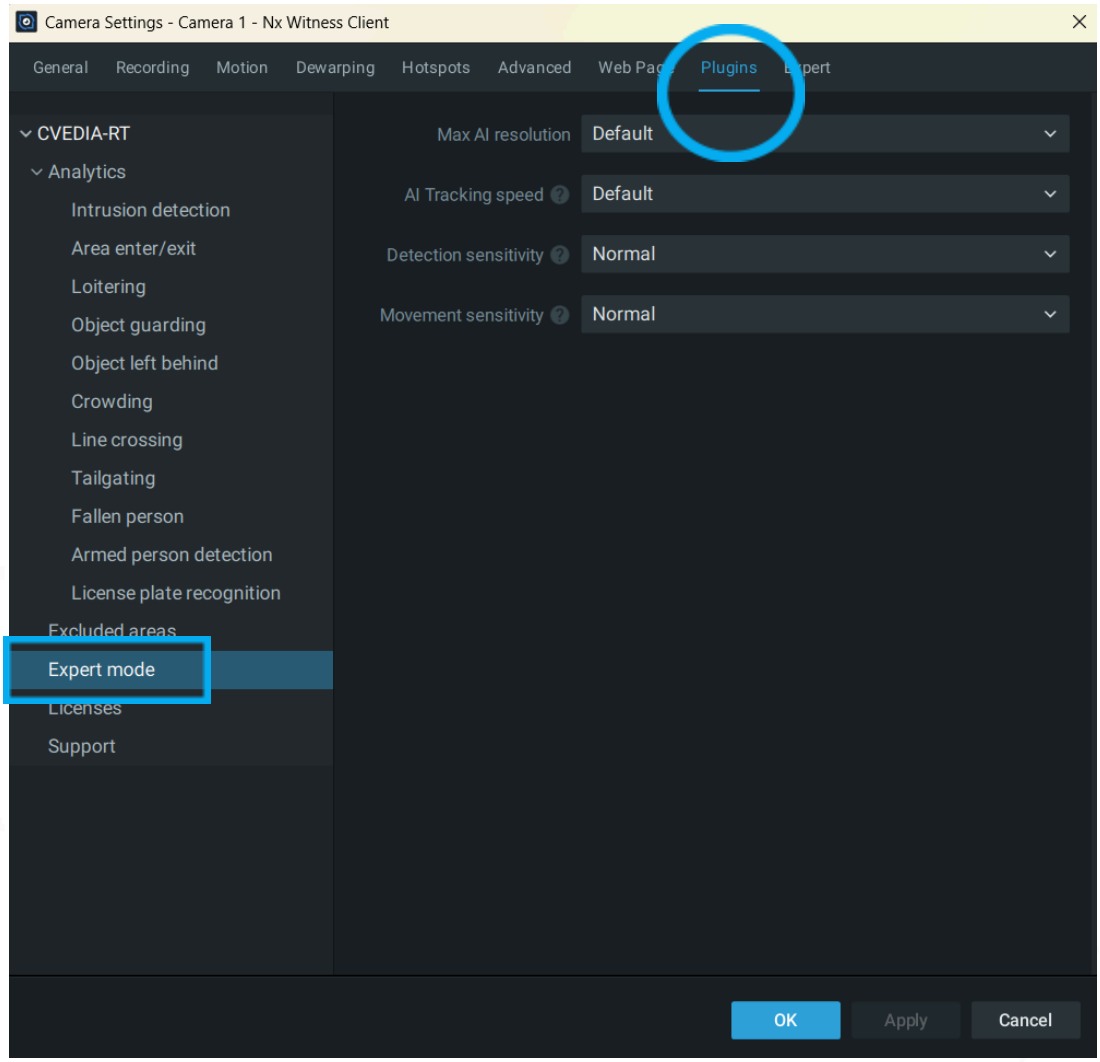
To enable Expert mode:

- Navigate to System Administration → Plugins → CVEDIA-RT
- Locate "Settings" block
- Tick the box next to "Enable expert mode"
- Navigate to Expert mode within Plugin settings



To navigate to Expert mode:

- Ensure Expert mode is enabled in "System Administration" settings.
- Right-click on the video stream and select "Camera Settings."
- Click on the "Plugins" tab and select CVEDIA-RT on the left menu panel.
- Click on Expert mode on the left side menu panel.



Max AI Resolution

Max AI Resolution settings allow you to adjust the maximum resolution that the AI will process. By default, the maximum resolution is defined by the Profile specified in the System Administration Settings. However, you can modify this to suit specific needs.

- If you set a value higher than the camera's resolution, the plugin will automatically revert to the camera's native resolution.
- Increasing the maximum resolution can enhance detection of very small targets.

Important
• Only increase the resolution if required, as it may negatively impact system performance.

AI Tracking Speed

The AI Tracking speed feature enables users to adjust the frame rate at which the AI processes data.

Modifying this from the default setting may impact server performance and reduce the number of AI streams that can run simultaneously on the same device.

Default:	5 FPS	Optimized for most of the security surveillance use cases.
Fast:	10 FPS	Optimized for tracking faster moving targets (e.g. cyclists).
Very Fast:	15 FPS	Optimized for capturing targets that move very fast (e.g. electric scooters).

Detection Sensitivity

Increasing detection sensitivity improves the ability to detect challenging targets (e.g., smaller, occluded, or affected by lens noise) but may lead to more False Positives. Change "Detection Sensitivity" settings to "High" if the system misses events involving small objects or in busy scenes.

Movement Sensitivity

Movement sensitivity controls how the system determines whether motion is occurring. Environmental factors such as rain, snow, camera noise, and light reflections, can cause false motion detection. Lowering motion sensitivity can minimize these false detections, but it increases the risk of missing fast-moving objects or objects visible for a very short time.

Section 5: Updating the Plugin

Notes
• When installing CVEDIA-RT v2025.1.0 over an existing installation (e.g., version 2024.2.8), the installer will prompt you to uninstall the previous version before continuing. • This step is required to prevent compatibility issues between versions. • Uninstalling the previous version does not remove your configuration or license keys – all settings and activations will be preserved automatically. • Once the uninstall is complete, the installer will proceed with installing the new version.

Update: Windows

- Check for new plugin versions on the official website:

  https://rt.cvedia.com/NX-Witness

- Download the new version.
- Close the Nx Witness Client. Stop the Nx Witness Server and run the installer.
- Start the Server once the installation is complete.

Update: Linux

- Check for new plugin versions and release notes on the official website:

  https://rt.cvedia.com/NX-Witness

- Close the Nx Witness Client.
- Access your terminal application. Run the automated update script:

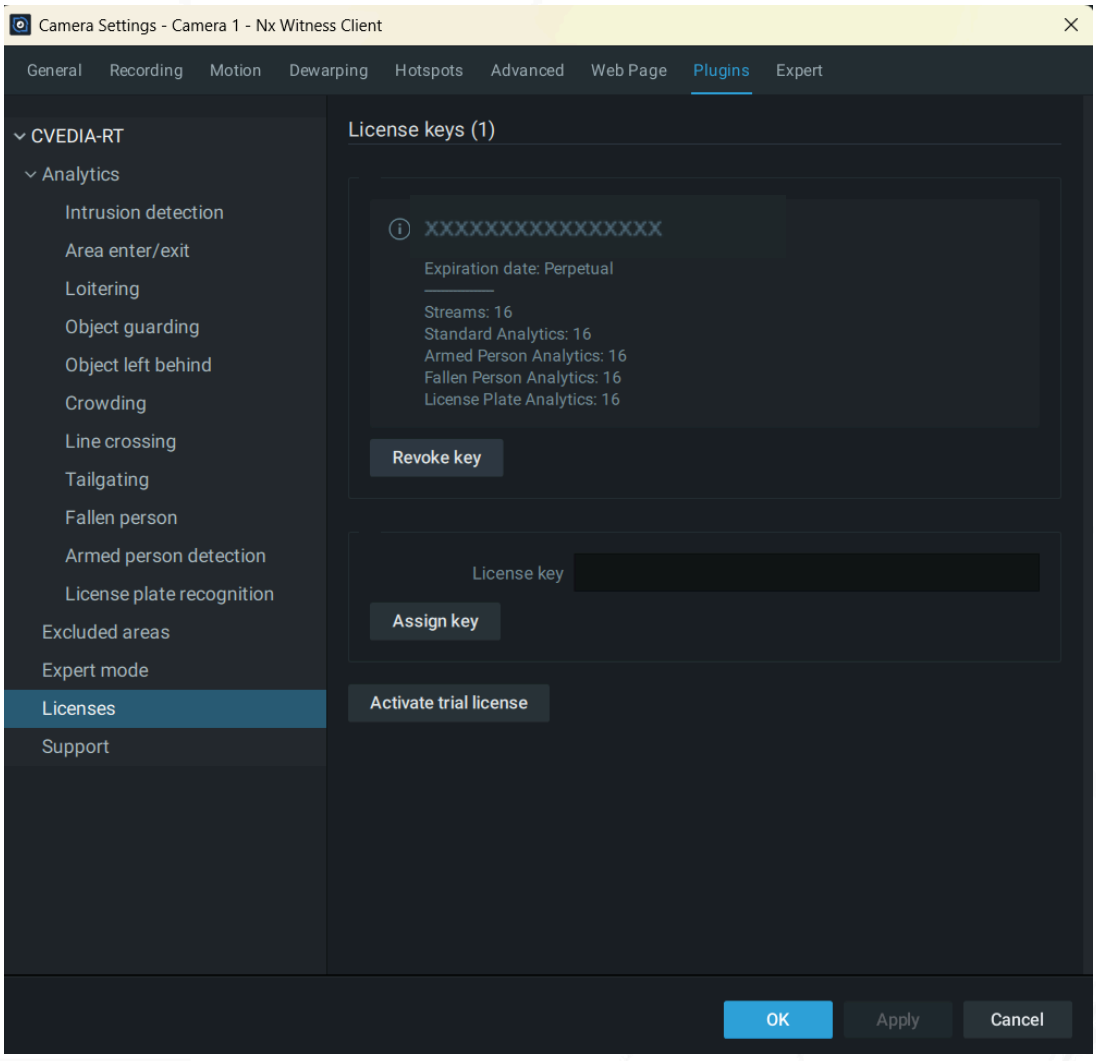
```
apt update
apt install cvedia-rt cvedia-rt-nxplugin -y
```

- Press "Enter" to execute the command. This script will automatically detect a new version.
- Start the Server once the installation is complete.

Section 6: Uninstalling the Plugin

Important

- It is recommended to revoke the license key prior to uninstalling the plugin from your system.
- This way, if the license key is still active and hasn't expired, it can be re-used on a different device.



Uninstall: Windows

1. Open Settings: press Windows key + I or click the Start menu, then select Settings.
2. Go to Apps: click on Installed Apps and find CVEDIA-RT Plugin for VMS in the list.
3. Uninstall the Plugin: select CVEDIA-RT Plugin for VMS and click Uninstall. Confirm if prompted.
4. If prompted, restart your computer to complete the process.

Uninstall: Linux

1. Open Terminal: Press Ctrl + Alt + T or search for Terminal in your applications menu.
2. In the terminal, type the following command and press Enter:

```
sudo apt remove cvedia-rt-nxplugin -y
```

3. If prompted, enter your administrator password and press Enter.
4. The system will automatically remove the plugin. Once done, close the terminal.

Section 7: Technical Support Guidelines

At CVEDIA, we focus on delivering superior detection accuracy for Security and Surveillance use cases by training our models with synthetic data and refining them through continuous customer feedback. Our models evolve with every release, incorporating real-world insights to achieve unprecedented accuracy and reliability.

Why your feedback matters

By reporting false positives, you contribute to enhancing our models' accuracy. We analyze every report to introduce new parameters into our training process, ensuring each release of the plugin delivers improved performance. Your input helps us solve real-world challenges and enhance your surveillance capabilities.

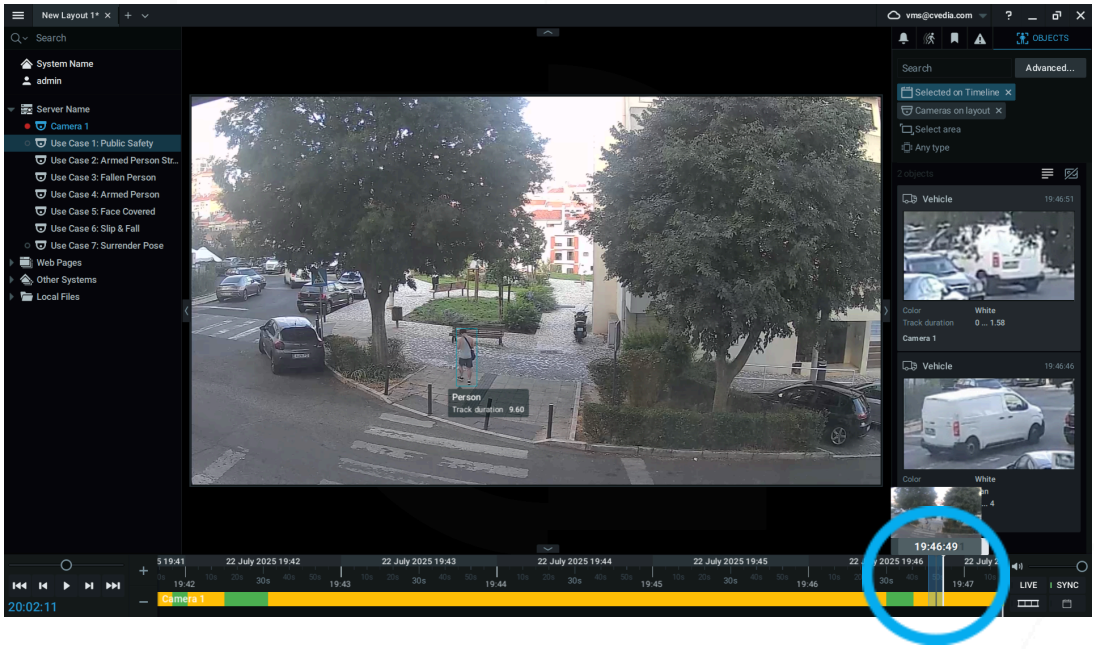
If you'd like to help improve our product, here's how you can report false positive detections.

Smart Reporting

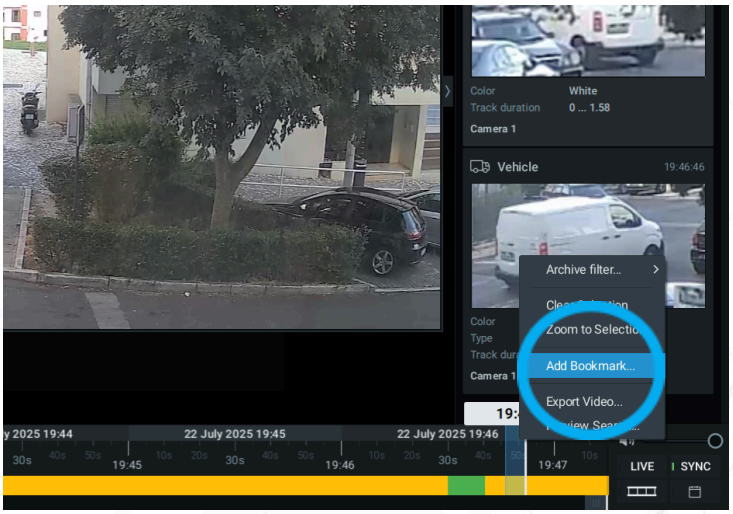
As of version 2024.2.5, the CVEDIA-RT AI Analytics plugin for Nx Witness includes a new reporting feature that is intuitive and easy to use.

False Negatives Reporting

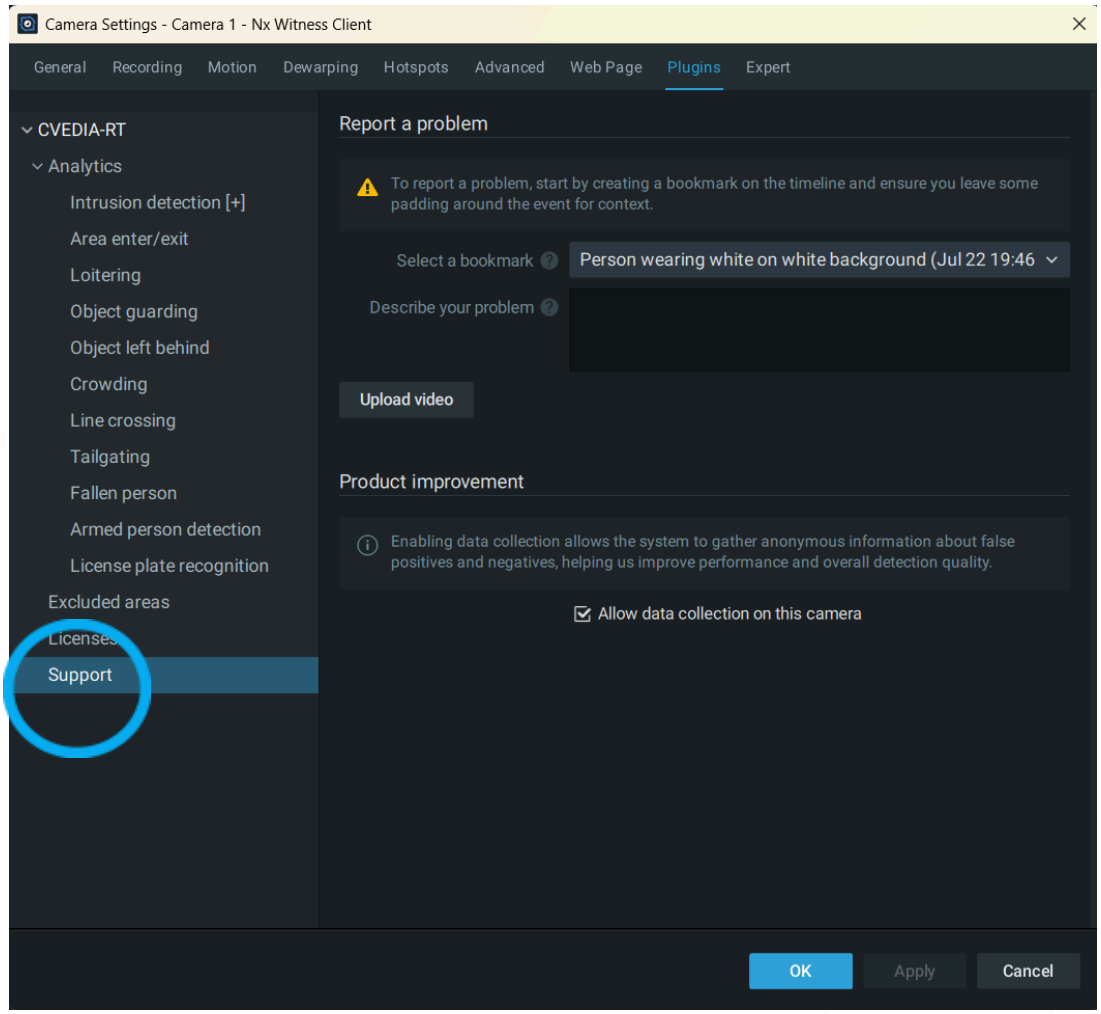
1. Create a Bookmark:
    - Identify the issue in your Nx Witness timeline.



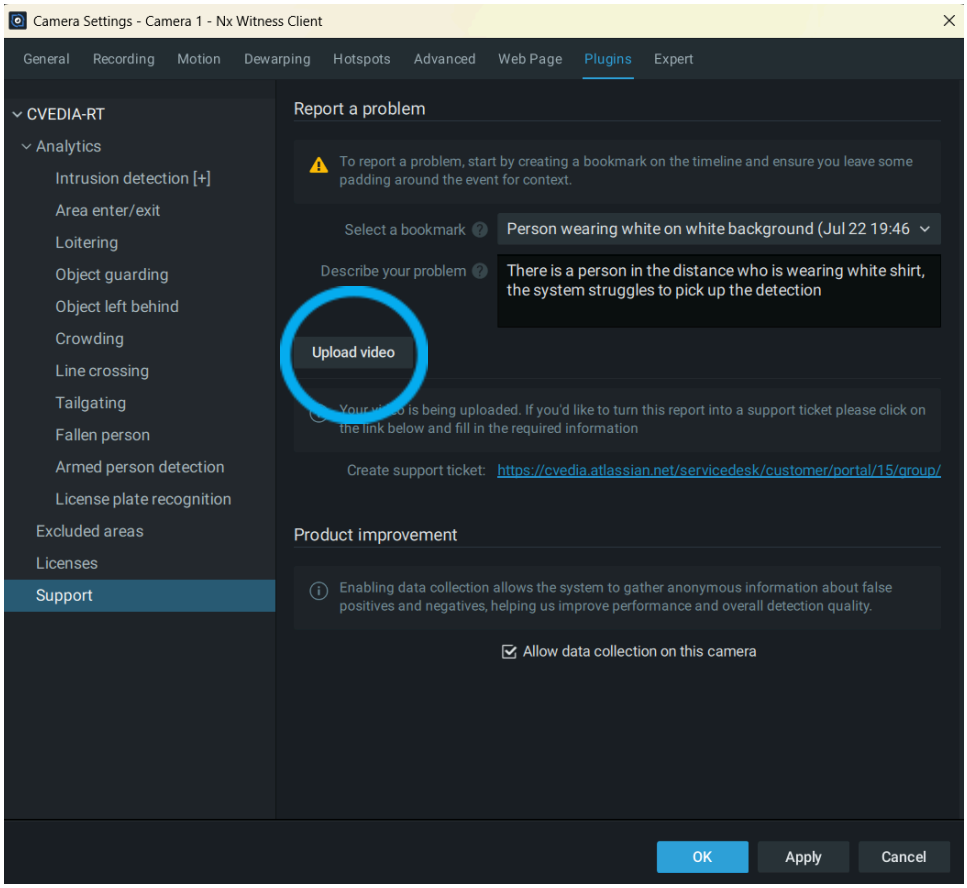
    - Create a bookmark that spans 15-30 seconds, ensuring the issue is clearly visible within this time frame.



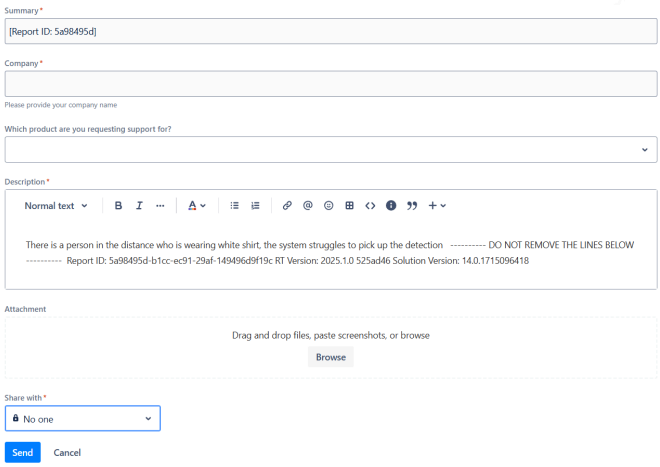
2. Navigate to Camera Settings:
    - Open the Camera Settings and go to Plugins > CVEDIA-RT > Support.



3. Submit Your Report:
    - Select the bookmark you created.
    - Write a brief description of the issue.
    - Click “Upload video” to send the report.



4. (Optional) Create support:
    - For more detailed explanations, submit a support request via our Tech Support Portal directly from the reporting page.
    - Highlight why resolving this issue is critical for your use case.



False Positives Reporting

1. Go to the Objects tab:
    - When the plugin is enabled, navigate to the Objects tab in the Nx Witness UI.
2. Right-Click to Report:
    - Right-click on the object's thumbnail and choose Quick Report.

3. Provide a Description:
    - Add a description of the issue to give context to the false positive.

Notes
• Reports submitted through this method are anonymous. If you want to emphasize the importance of your report, we recommend using Method 1 – Reporting via Bookmarks – and opening a support ticket with the automatically generated link within Nx Witness Client.

Reporting through CVEDIA Tech Support Portal

Please consider this process if you are using Nx Witness version 5.1.x or CVEDIA-RT Plugin versions prior to 2024.2.5

To provide you with the most effective support, we may need to gather specific types of data depending on the issue you are reporting.

Below you will find the guidelines for reporting technical issues to the CVEDIA team.

Open a new tech support request: Open in Browser

Reporting System Issues

Problem Definition

System issues include: start failure, crashes, analytics performance issues.

Report Structure

In the report, please provide:

- Description of the issue and how to reproduce it.
- A screenshot of the Statistics panel
- Plugin log file. Located in:

  C:\Program Files\<VMS Path>\MediaServer\plugins\cvedianxplugin\logs

- Hardware report.
  - On Windows, please run generate_debug_report.bat and generate_system_info.bat and attach their output to your support request (report.txt and systeminfo.json)

Notes

- The default installation folder on Windows is

  C:/ProgramData/CVEDIA/CVEDIA-RT-Plugin

- ProgramData is a hidden folder. To access it, either enable the "Show hidden files, folders, and drives" option, or enter the full path directly into the address bar using (Ctrl+L).

False Positive or Missed Detections Reporting

Problem Definition

A False Positive (FP) event occurs when the system incorrectly detects something that isn't present, triggering an unnecessary alert or action.

A False Negative (FN) event, or a "missed detection," happens when the system fails to recognize something that is present, resulting in no alert or action when one is needed.

Report Structure

For any occurrence of FPs or FNs, in the report to the technical team, please provide:

- One or more screenshots showing the problem (bounding box with the wrong detection, event visible on the "EVENTS" tab). Please ensure that the triggered False Positive event is visible on the screen.
- A source video (raw clip) of the issue (without UI elements and overlay data) recorded in your VMS. The video should start from the moment the object triggering the event enters the scene, or ideally, begin 10 seconds earlier.
- A screenshot of all configured zones within different Analytics
- A screenshot of the Expert mode panel (if you have Expert mode enabled and previously modified settings in that window).
- A screenshot of the Statistics panel.

CVEDIA-RT AI Analytics Plugin for Nx Witness

www.cvedia.com

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Contact Sales
business@cvedia.com

CVEDIA