

User Manual

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Here you will find all user guides for the analytics system.

- Settings (see page 25)
- Crowd Detection (see page 116)
- Face Recognition (see page 128)
- Forensic Analytics (see page 156)
- Gun Detection (see page 171)
- Hard Hat Detection (see page 183)
- Heat Map (see page 194)
- LPR (see page 207)
- Military Detection (see page 243)
- Motion Detection (see page 256)
- Object Detection (see page 275)
- Smart Parking (see page 311)
- Smart Tracking System (see page 340)
- Smoke & Fire Detection (see page 351)
- Smoking (see page 363)
- Traffic Analytics (see page 377)
- Red Light Violation (see page 396)
- UIC & Container (see page 408)
- Microsoft Power BI (see page 419)

Settings

Introduction

Use this guide to understand the interface and features of the Analytics System Settings and learn how to customize them.

Main Items

The Settings section includes:

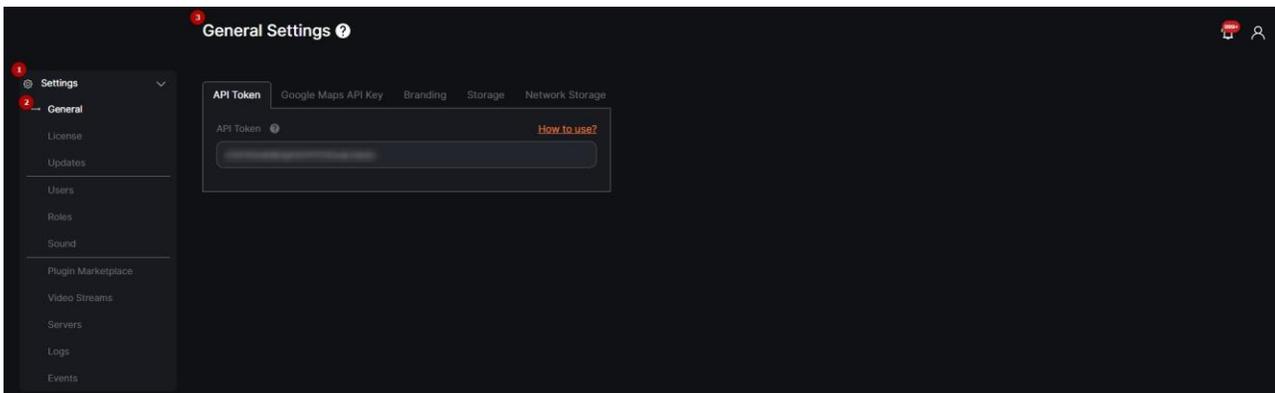
- General Settings item to set general system parameters
- License item to manage licenses and get up-to-date information about them
- Updates item to view and update the Middleware version
- Clients item to manage clients and differentiate access to the system between different client structures
- Users item to view and manage system users
- Roles item to view and manage user access rights
- Sound item to manage sound alerts for installed plugins
- Plugin Marketplace item to view and manage plugins
- Video Streams item to view and manage video streams
- Servers item to view the data of server load and analytics activity
- Logs item to view all user actions in the system
- Events item to customize internal notifications and manage events for further sending to the third-party services or API

General Settings

 This page describes the General Settings item that allows setting general system parameters.

Overview

To open the General Settings item, in the left menu:



This page describes the General Settings item that allows setting general system parameters.

1. Select the Settings section
2. Choose the General item
3. See general settings

Use and Functionality

The General Settings navigation menu consists of 5 tabs:

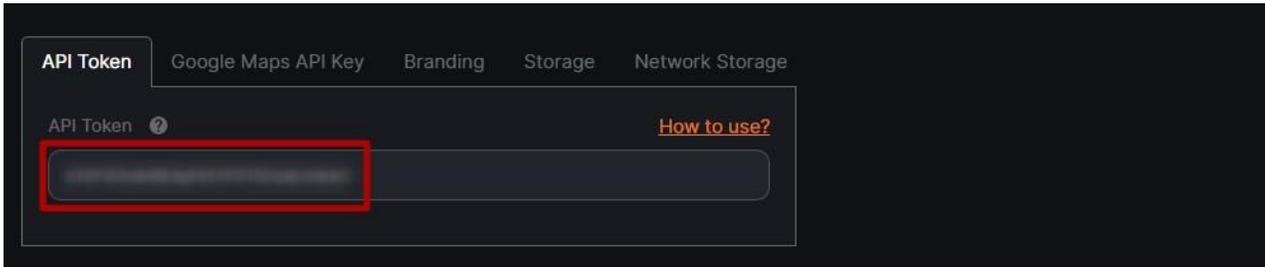


- API Token
- Google Maps API Key
- Branding
- Storage
- Network Storage

 The selected tab is always highlighted.

API Token Tab

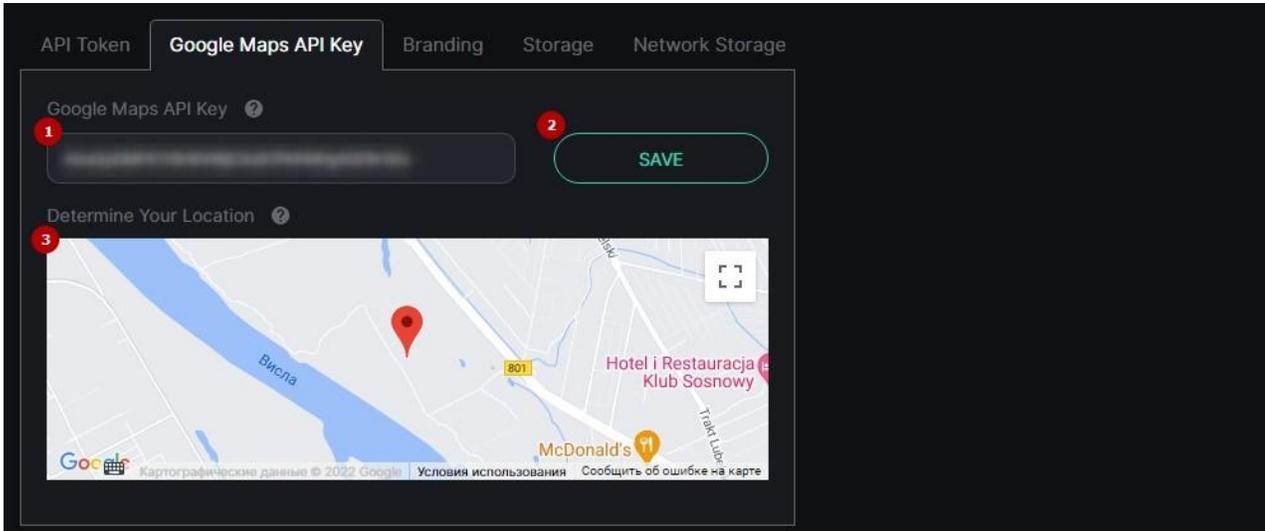
To use the API token, select and copy the token from the corresponding field:



 Click the How to Use button to open the API documentation for installed plugins in the system.

Google Maps API Key Tab

To use the Google Maps service:



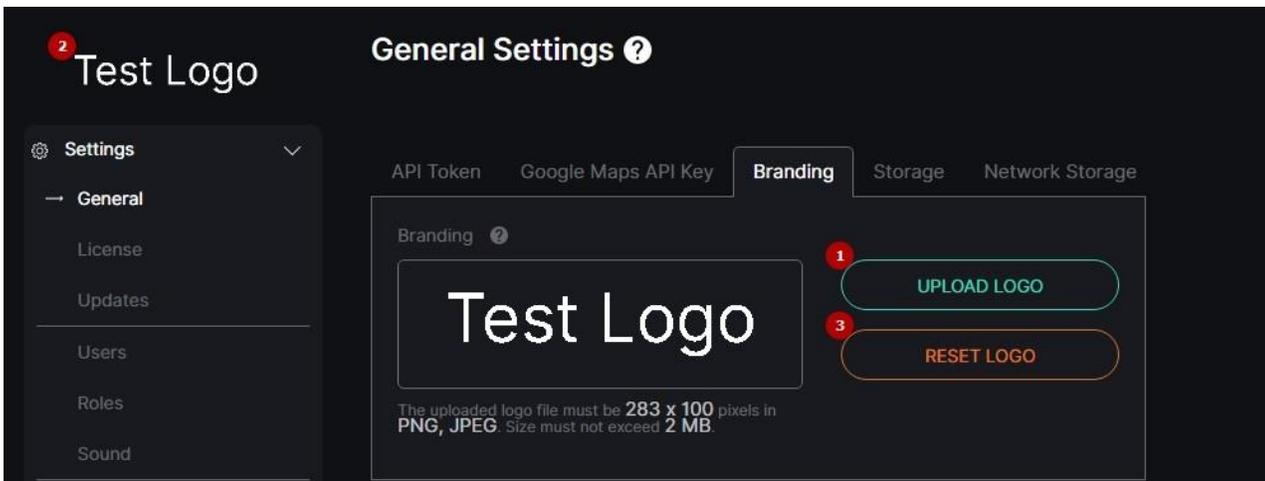
1. Insert the Google Maps API key into the corresponding field
2. Click the Save button for connection to Google Maps
3. Set a default Camera Location marker by clicking the desired place on the map to find the approximate location of streaming cameras



To learn more about getting the Google Maps API key, read [How to Get Google Maps API Key](#).

Branding Tab

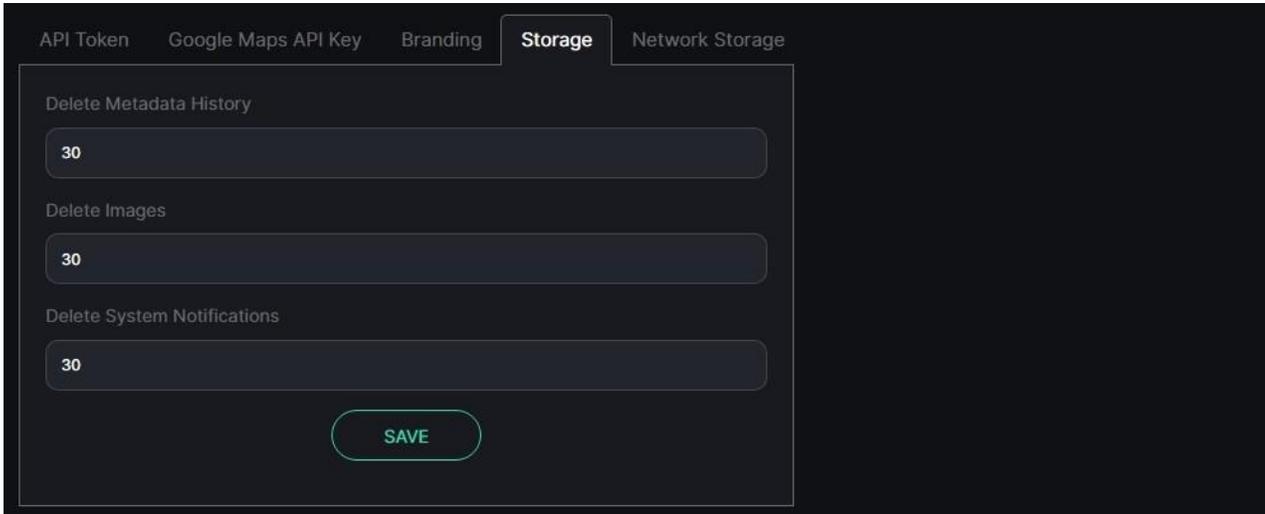
The Branding tab allows to:



1. Upload a logo image from the device
2. View the uploaded logo inserted into the system interface
3. Reset the logo image to the default settings

Storage Tab

The Storage tab allows customizing the data archive settings. Set the parameters as needed:

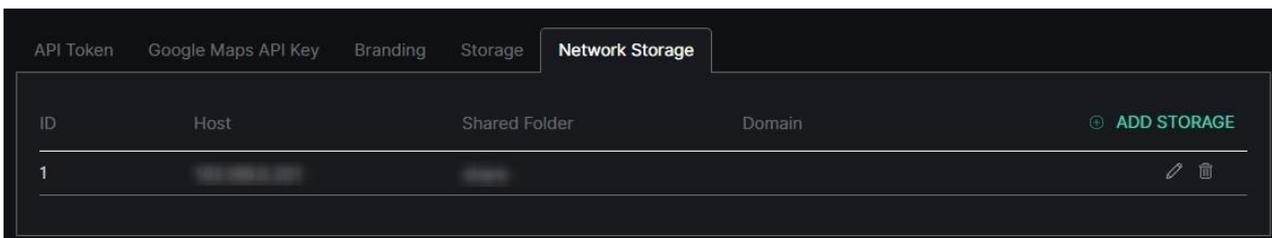


- Specify the time in days during which the system stores:
 - History of search results (Delete Metadata History field)
 - Images (Delete Images field)
 - History of events (Delete System Notifications field)
- Click the Save button to apply changes

Network Storage

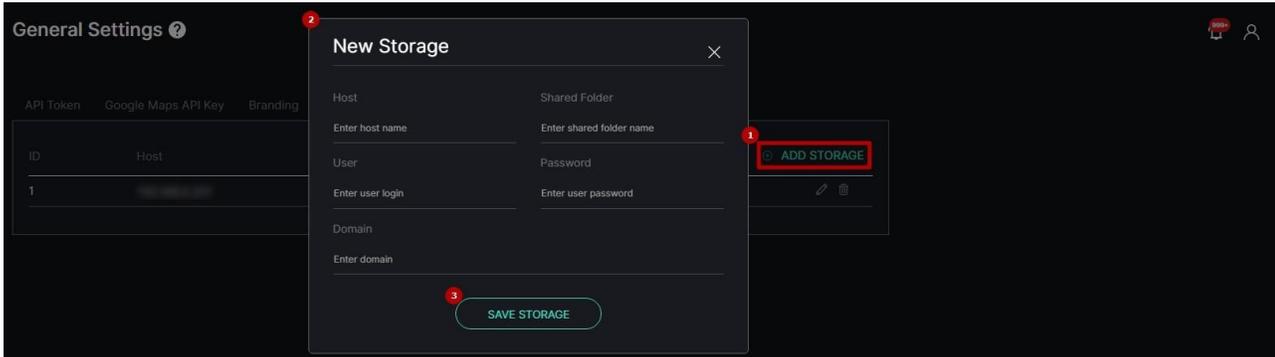
 The Network Storage tab is only compatible with Forensic Analytics and works only via SMB protocol in Linux

The Network Storage tab holds the information about storage:



- ID
- Host
- Shared folder name
- Domain

To add new storage:

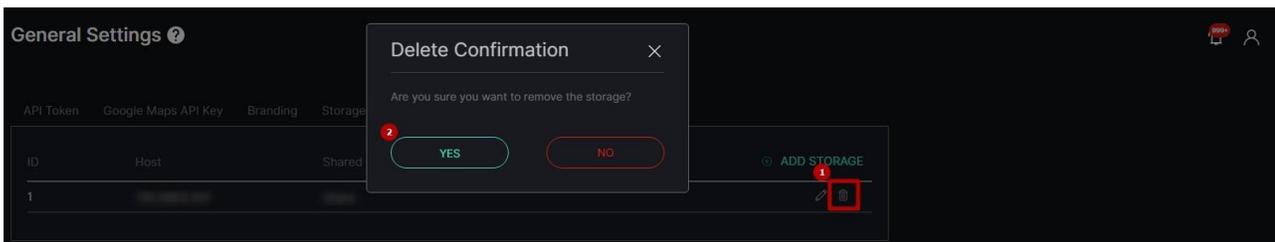


1. Click the Add Storage button
2. Fill in the required fields:
 - a. Host name
 - b. Shared folder name
 - c. Shared folder access login and password (optionally)
 - d. Domain
3. Click the Save Storage button to confirm the intention

To edit the required storage:

1. Select the Edit icon
2. Fill in the required fields:
 - a. Host name
 - b. Shared folder name
 - c. Shared folder access login and password (optionally)
 - d. Domain
3. Click the Save Storage button to apply changes

To remove the storage:



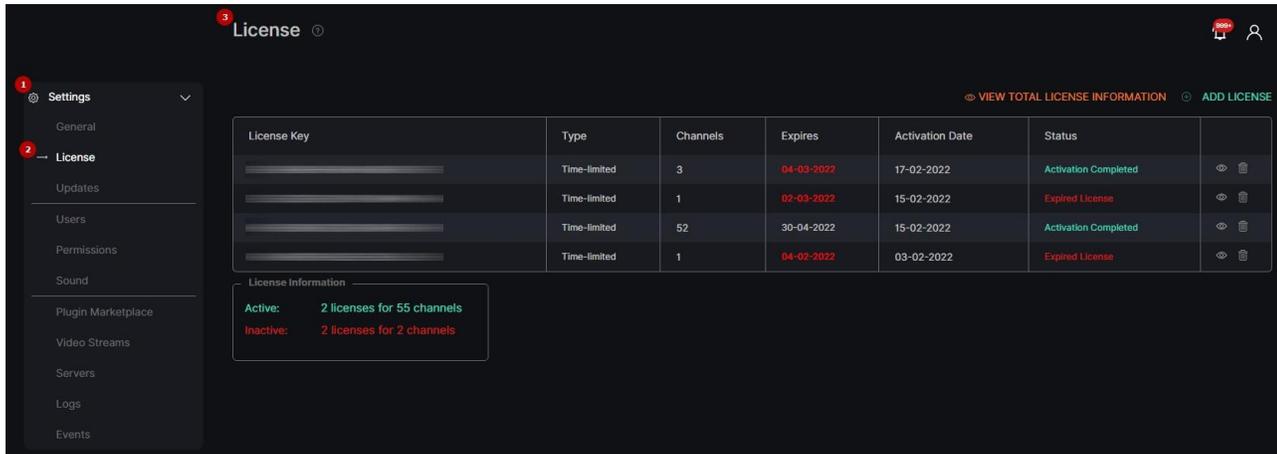
1. Select the Delete icon
2. Confirm the intention

License

i This page describes the License item that allows managing licenses and getting up-to-date information about them.

Overview

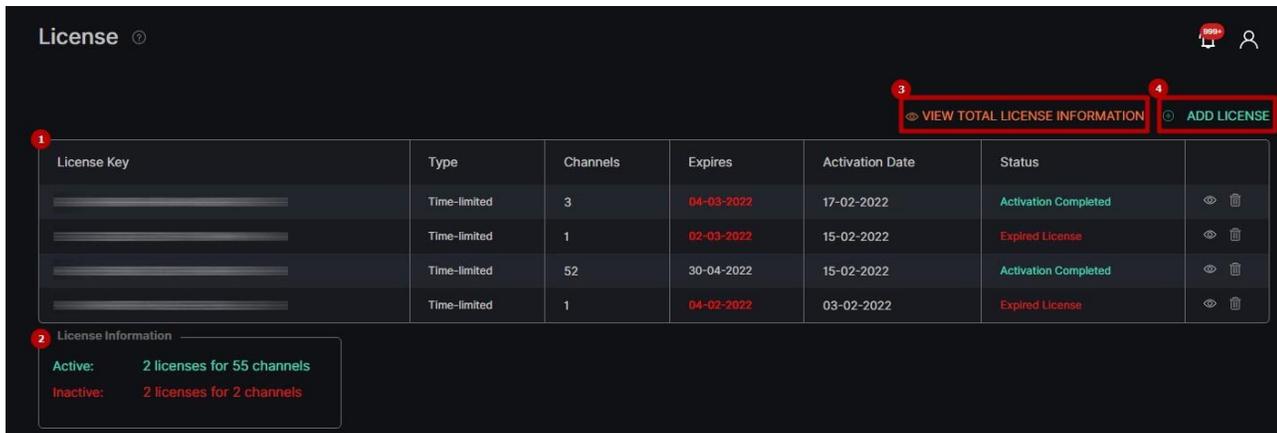
To open the License item, in the left menu:



1. Select the Settings section
2. Choose the License item
3. See licenses

Use and Functionality

The License item shows:



1. Table with license data and tools that includes:
 - a. License Key number
 - b. Type of license
 - c. Channels (analytics) quantity
 - d. Expiration date
 - e. Activation date
 - f. License status
 - g. Toolbox includes:
 - i. License details

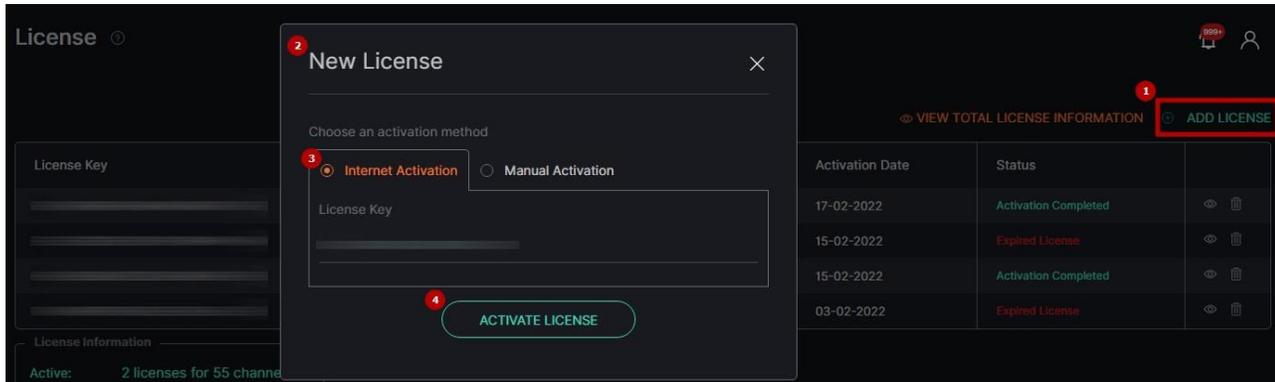
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ii. License deactivation

2. Additional info box with active/inactive licenses counter
3. Pop-up window with total information about licenses
4. Online/offline license activation form

License Online Activation

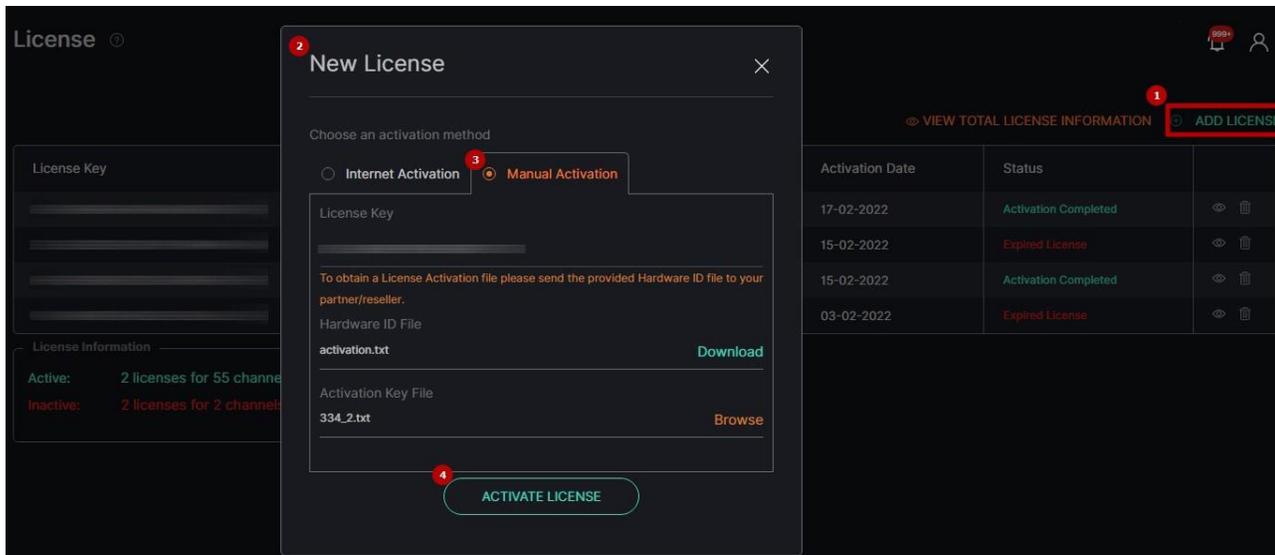
To activate a new license online:



1. Click the Add License button
2. See the New License pop-up window
3. Make sure the Internet Activation tab is selected, then fill in the License Key field (in the form XXXXX-XXXXX-XXXXX-XXXXX-XXXXX)
4. Select the Activate License button

License Offline Activation

To activate a new license offline:



1. Click the Add License button
2. See the New License pop-up window
3. Make sure the Manual Activation tab is selected, then:

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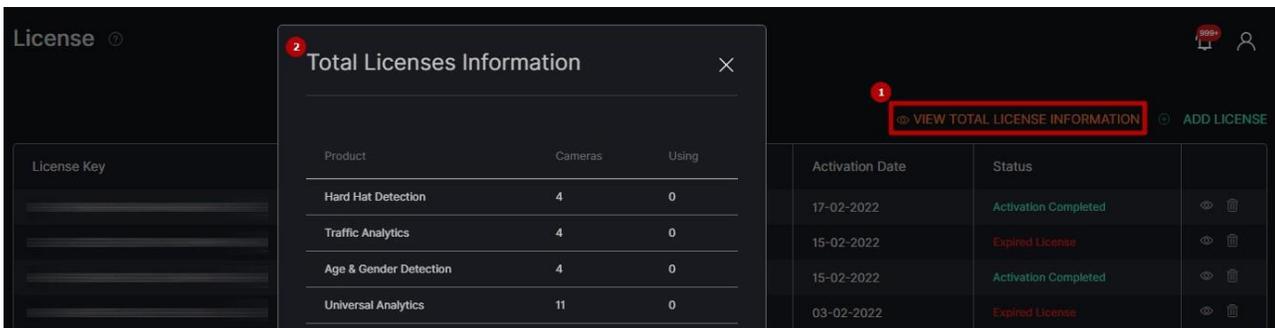
- a. Enter the License Key (in the form XXXXX-XXXXX-XXXXX-XXXXX-XXXXX) sent by the partner/reseller via email
 - b. Click the Download button to obtain the Hardware ID File and send it to the partner/ reseller
 - c. Get the Activation Key File from the partner/reseller and click on the Browse button to upload the obtained file
4. Select the Activate License button

 • The download button becomes available only when a valid license key is entered in the License Key field.

• The Activate License button becomes available only when a valid Activation Key File is uploaded.

View Total License Information

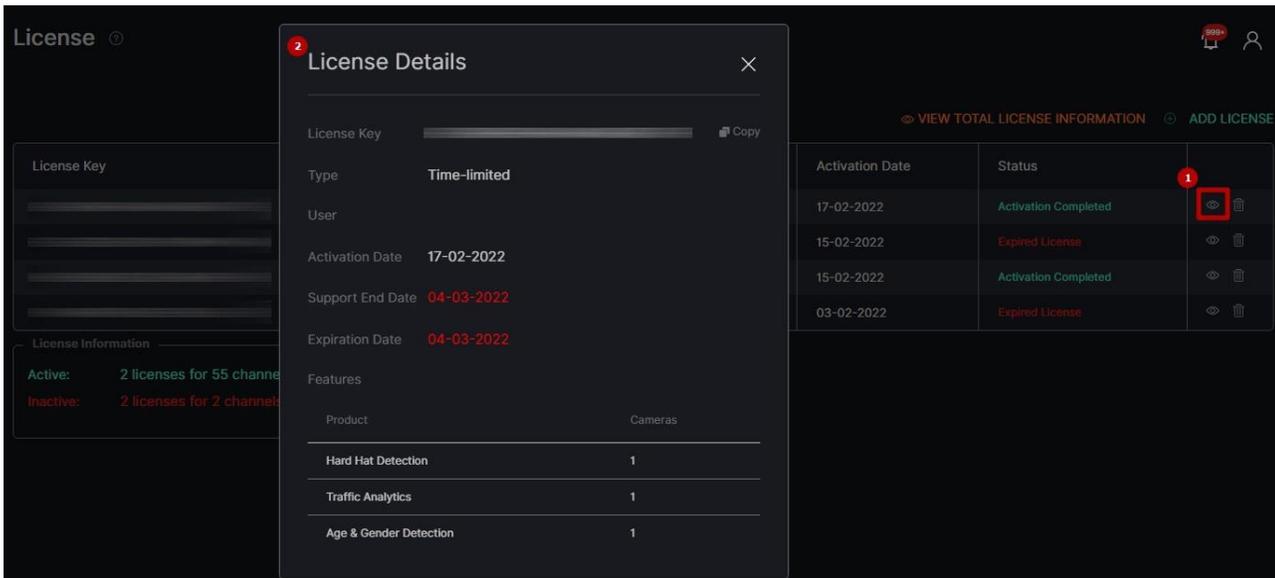
To view the total license information:



1. Select the View Total License Information button
2. See the total licenses information that includes:
 - a. List of analytics included in all licenses (both active and inactive)
 - b. Number of video streams available for simultaneous connection in each analytics
 - c. Number of currently running analytics

License Details

To view the required license details:

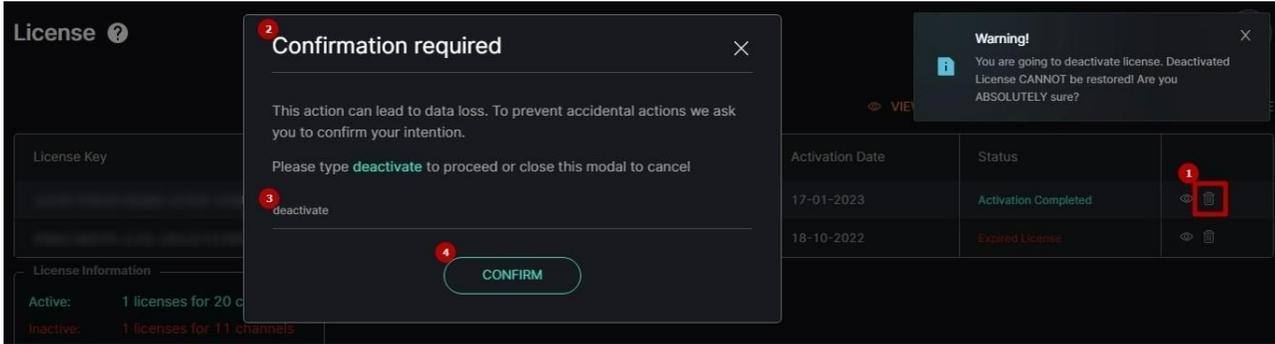


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1. Click the View icon on the toolbox
2. View detailed information about the required license, and the list of analytics and their quantity that the license includes

Deactivate License

To deactivate the desired license:



1. Click the Delete icon on the toolbox
2. See the deactivation confirmation pop-up window
3. Enter the "deactivate" word in the corresponding field
4. Confirm the intention

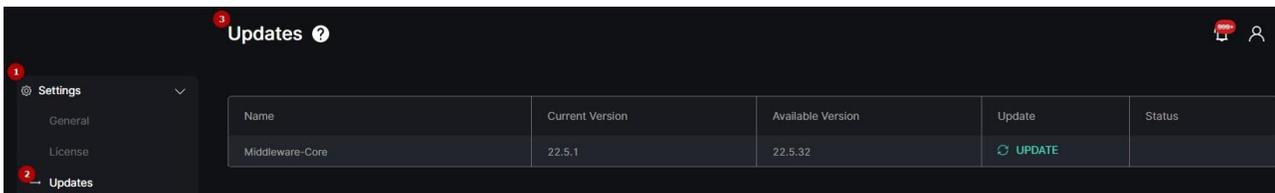
The deactivated license data cannot be restored. If the deactivation confirmation pop-up window was opened by accident, just close it without confirming the intention.

Updates

This page describes the Updates item that allows viewing and updating the Middleware version.

Overview

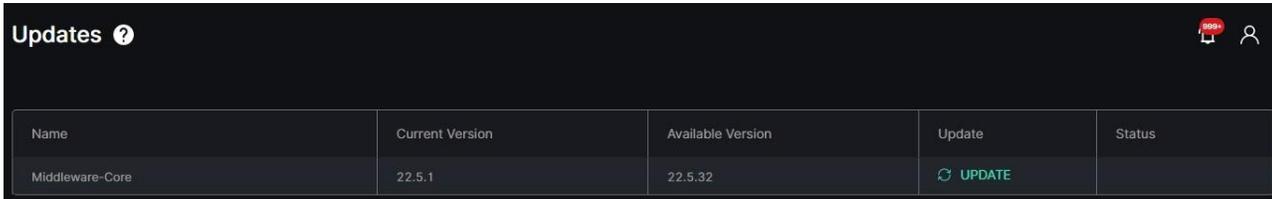
To open the Updates item, in the left menu:



1. Select the Settings section
2. Choose the Updates item
3. See updates

Use and Functionality

The Updates item shows the table that includes:



The screenshot shows a table titled "Updates" with a help icon. The table has five columns: Name, Current Version, Available Version, Update, and Status. There is one row with the following data:

Name	Current Version	Available Version	Update	Status
Middleware-Core	22.5.1	22.5.32	UPDATE	

- Middleware name
- Current version
- Last available version for update
- Update button to run the process of version updating
- Current update status

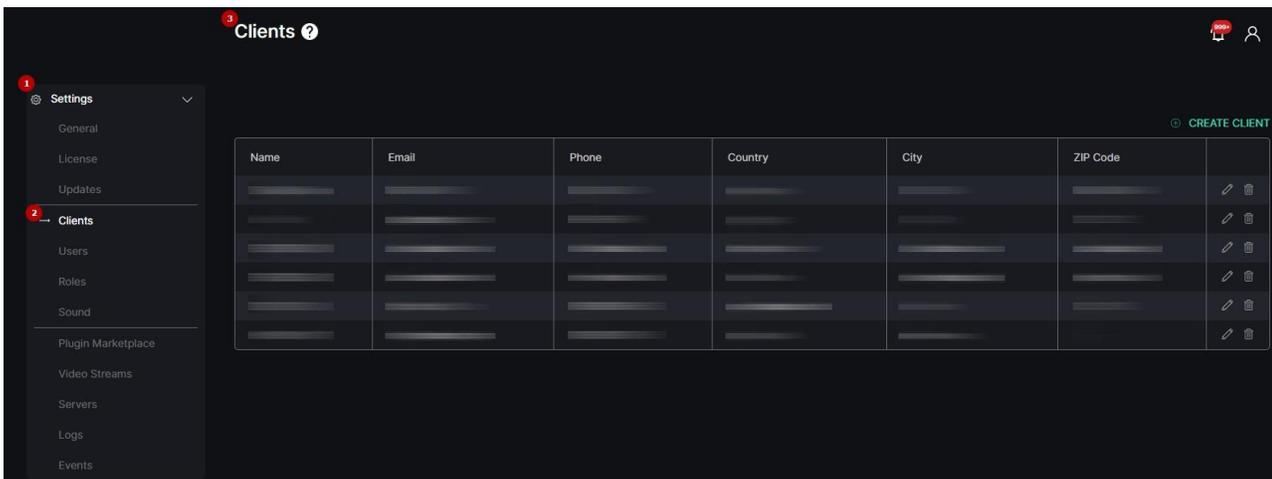
The status is only displayed during the update process.

Clients

This page describes the Clients item that allows managing clients and differentiating access to the system between different client structures.

Overview

To open the Clients item, in the left menu:



The screenshot shows the "Clients" page in the application. The left sidebar has a "Settings" section with a dropdown arrow, and "Clients" is selected. The main content area shows a table with columns: Name, Email, Phone, Country, City, ZIP Code, and a column with edit and delete icons. There is a "CREATE CLIENT" button in the top right corner of the table area.

1. Select the Settings section
2. Choose the Clients item
3. See clients

- The Clients item is enabled in the Settings section only for Administrator. All created clients and users don't have access to the Clients item.
- Different clients do not see each other and do not interact in the system. The same applies to users associated with different clients.

Use and Functionality

The Clients item shows:

Name	Email	Phone	Country	City	ZIP Code	

- List of created clients and their contact information including:
 - Name
 - Email
 - Phone
 - Country
 - City
 - ZIP Code
- Toolbox includes:
 - Delete Client tool
 - Edit Client tool

Create Client

To create a new client:

2

1

Client Name
Enter client name

Country City
Select Enter city

Address ZIP Code
Enter address Enter ZIP code

Email Phone
Enter email Enter phone number

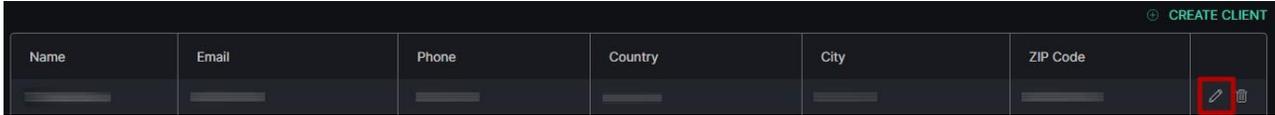
Comment
Enter comment

SAVE

- Click the Create Client button
- Fill in the fields with the client's contact information in the Create Client pop-up window
- Click the Save button to confirm the intention

Edit Client

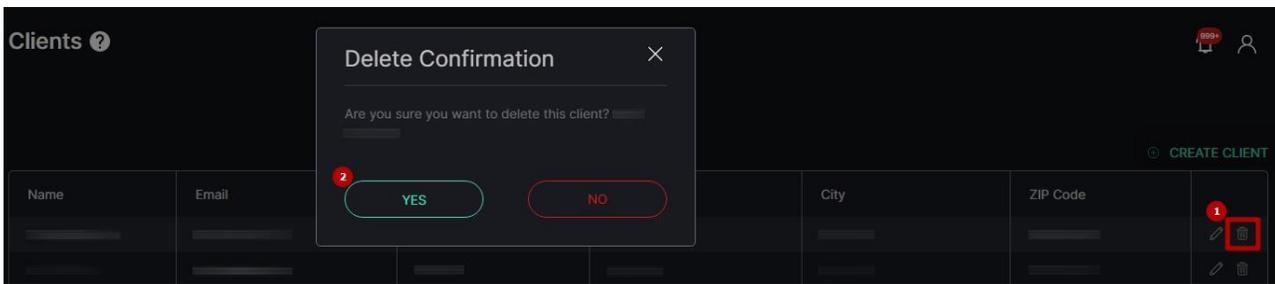
To edit the contact information of the selected client, click the Edit icon on the toolbox:



- Change the contact information in the required fields
- Click the Save button to apply changes

Delete Client

To remove the required client:



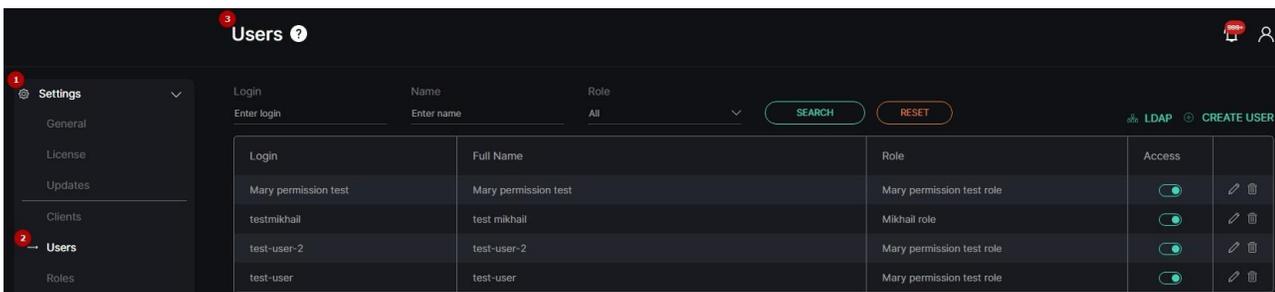
1. Select the Delete icon on the toolbox
2. Confirm the intention

Users

i This page describes the Users item that allows viewing and managing system users.

Overview

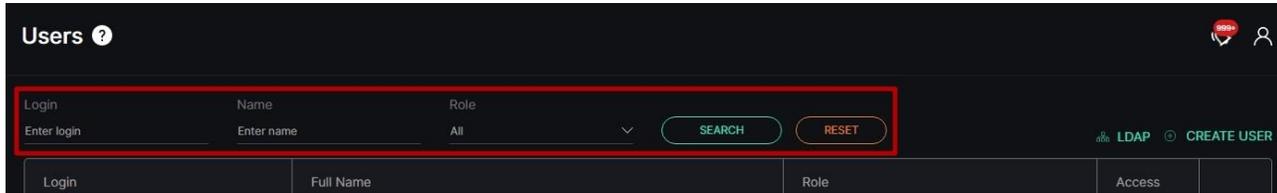
To open the Users item, in the left menu:



1. Select the Settings section
2. Choose the Users item
3. See users

Use and Functionality

The Users functional menu allows to:



- Enter the login or characters in the login
- Enter the username or characters in the name
- Select the role assigned to the user from the drop-down list
- Click the Search button to start filtering
- Click the Reset button to clear the filters

Once selected and filtered, see the list of users in the table below. It holds:

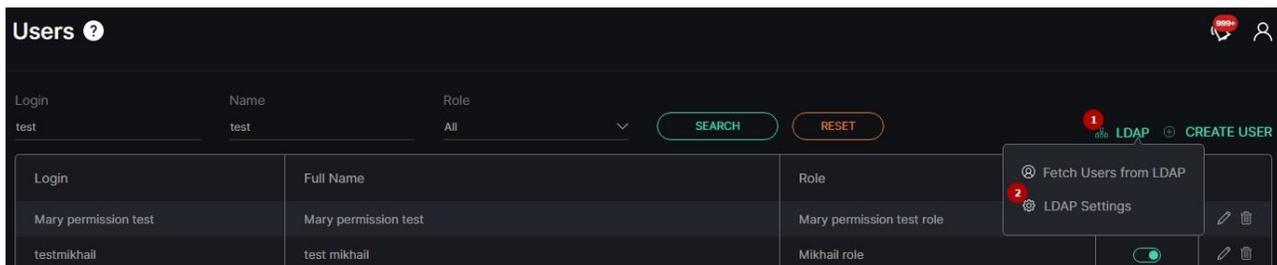
The screenshot shows the 'Users' management page with a table of users. The table has columns for 'Login', 'Full Name', 'Role', 'Access', and a toolbox. The 'Access' column contains toggle switches, and the toolbox contains edit and delete icons. The table contains the following data:

Login	Full Name	Role	Access	Toolbox
Mary permission test	Mary permission test	Mary permission test role	<input checked="" type="checkbox"/>	[Edit] [Delete]
testmikhail	test mikhail	Mikhail role	<input checked="" type="checkbox"/>	[Edit] [Delete]
test-user-2	test-user-2	Mary permission test role	<input checked="" type="checkbox"/>	[Edit] [Delete]
test-user	test-user	Mary permission test role	<input checked="" type="checkbox"/>	[Edit] [Delete]

- User's account login (with LDAP tag in case the selected user was fetched to the system from LDAP)
- User's full name
- Role assigned to the user
- Toggle to enable (green) or disable (grey) the user access to the system
- Toolbox includes:
 - Edit User tool
 - Delete User tool

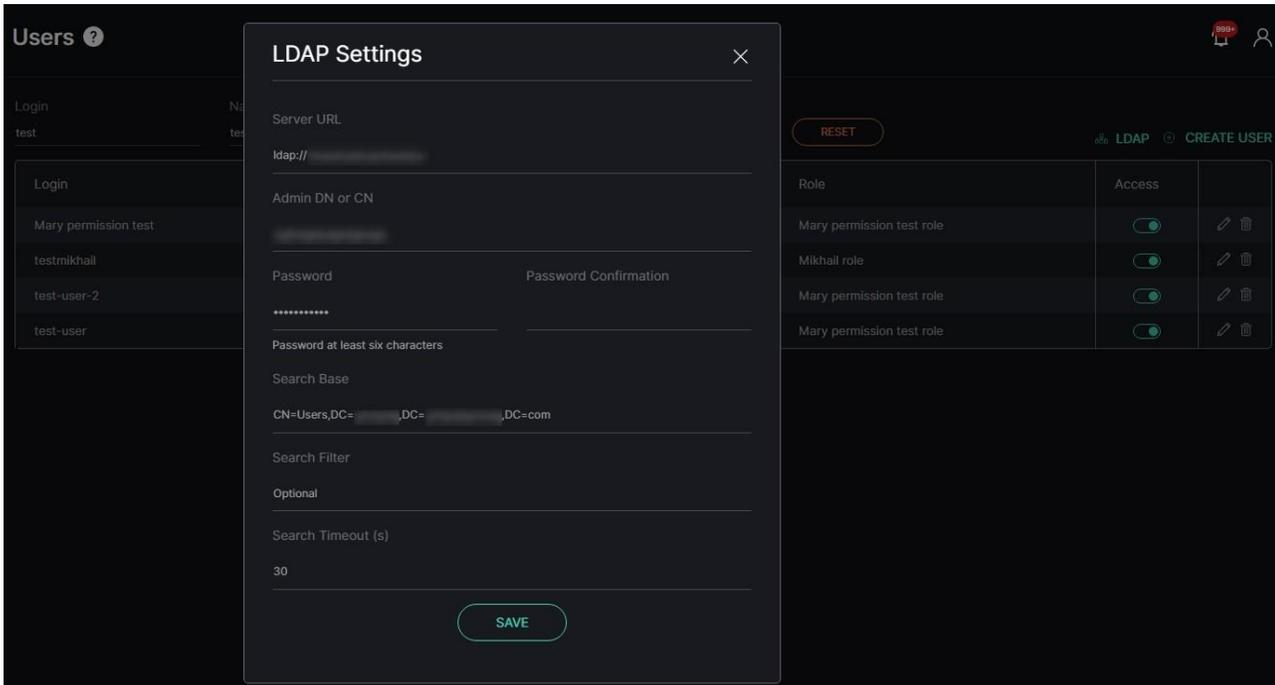
LDAP

To set the LDAP parameters:



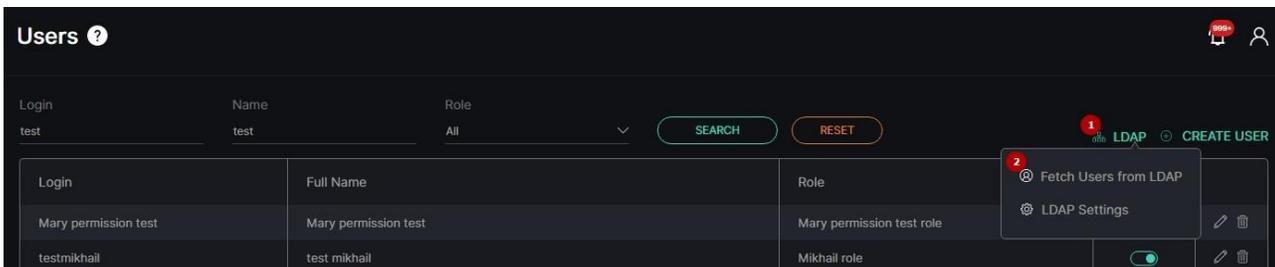
1. Click the LDAP button to open the drop-down menu
2. Select the LDAP Settings button

In the LDAP Settings pop-up window:



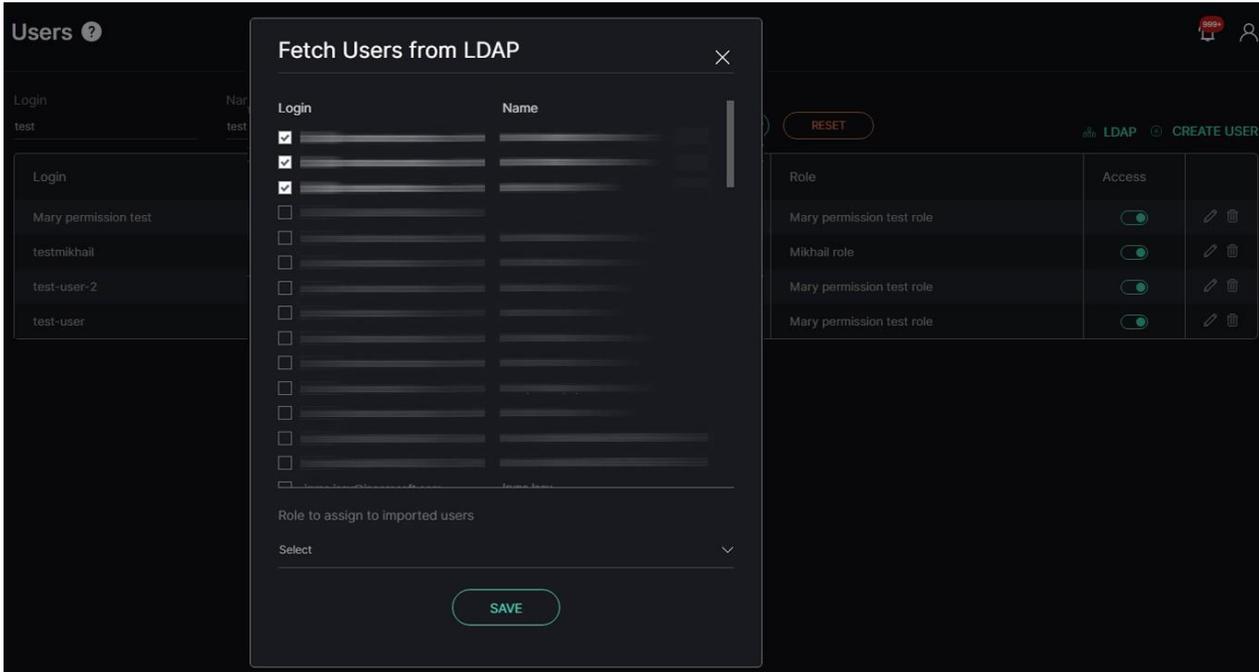
- Fill in the required fields:
 - LDAP Server URL
 - Administrator's Distinguished Name (DN) or Common Name (CN)
 - Administrator's Password
 - Search Base components
 - Search Filter (optional parameter)
 - Search Timeout (in seconds)
- Click the Save button to apply settings

To import users from LDAP:



1. Click the LDAP button to open the drop-down menu
2. Select the Fetch Users from LDAP button

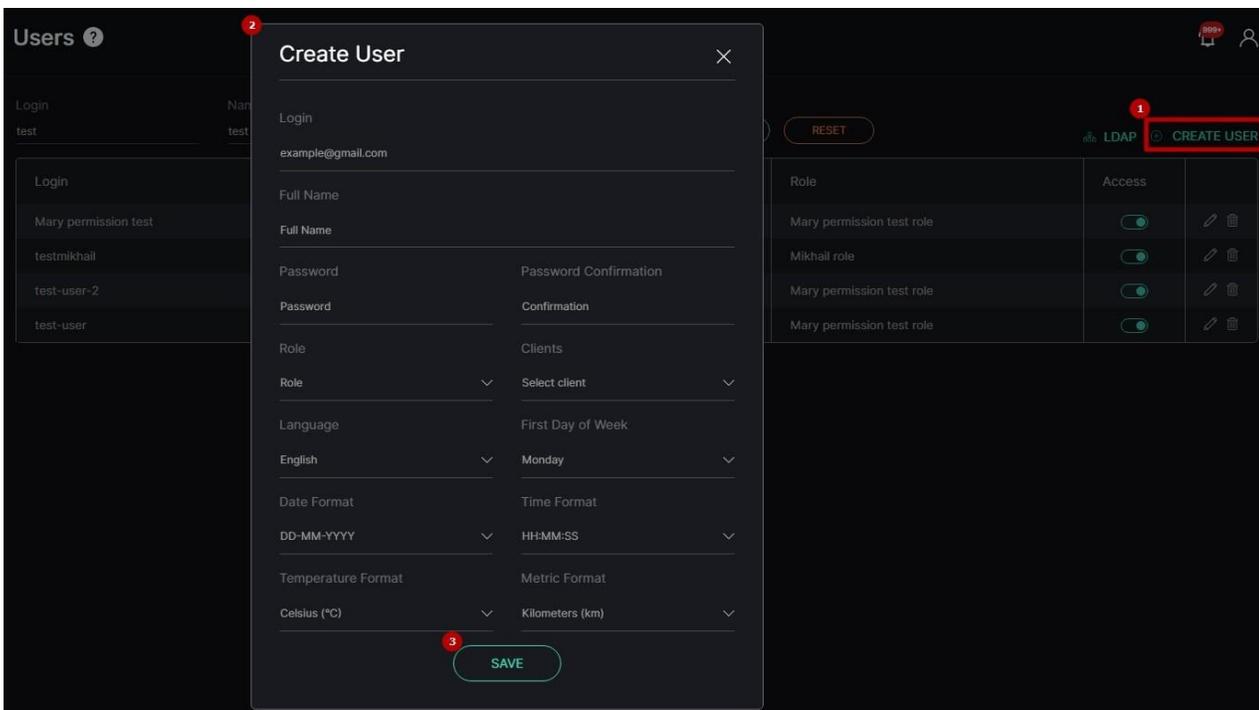
In the Fetch Users from LDAP pop-up window:



- Check the boxes next to the required users
- Select the role for new users from the drop-down list
- Click the Save button to confirm the intention

Create User

To create a new user:

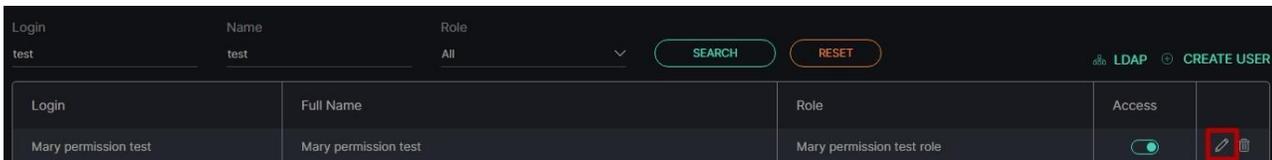


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1. Click the Create User button
2. See the Create User pop-up window and fill in the required fields:
 - a. Enter the user's email address in the Login field
 - b. Enter the user's full name
 - c. Enter the password for the new user's account and confirm it
 - d. Select the role (set of access rights) for the user from the drop-down list
 - e. Select the client to which the new user belongs from the drop-down list
 - f. Select the interface language from the drop-down list
 - g. Select the first day of the week (Monday or Sunday) from the drop-down list
 - h. Select the Date, Time, Temperature, and Metric formats from the drop-down lists
3. Click the Save button to confirm the intention

Edit User

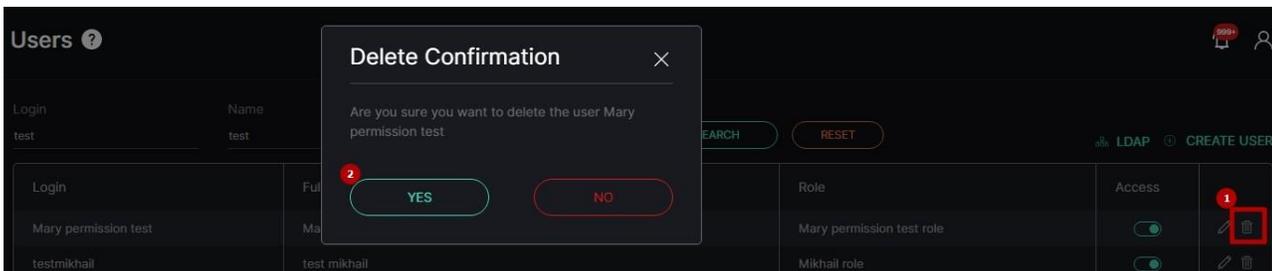
To edit the parameters of the selected user, click the Edit icon on the toolbox:



To view editing user parameters, except for Login editing, read [Create User](#).

Delete User

To remove the required user:



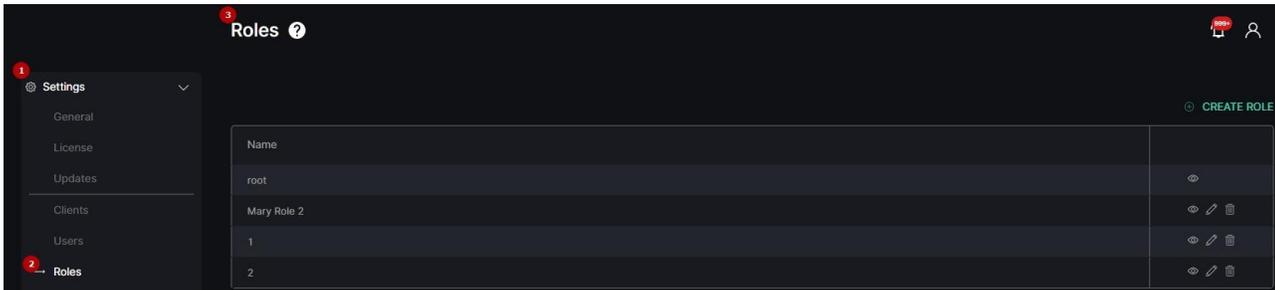
1. Select the Delete icon on the toolbox
2. Confirm the intention

Roles

 This page describes the Roles item that allows viewing and managing user access rights.

Overview

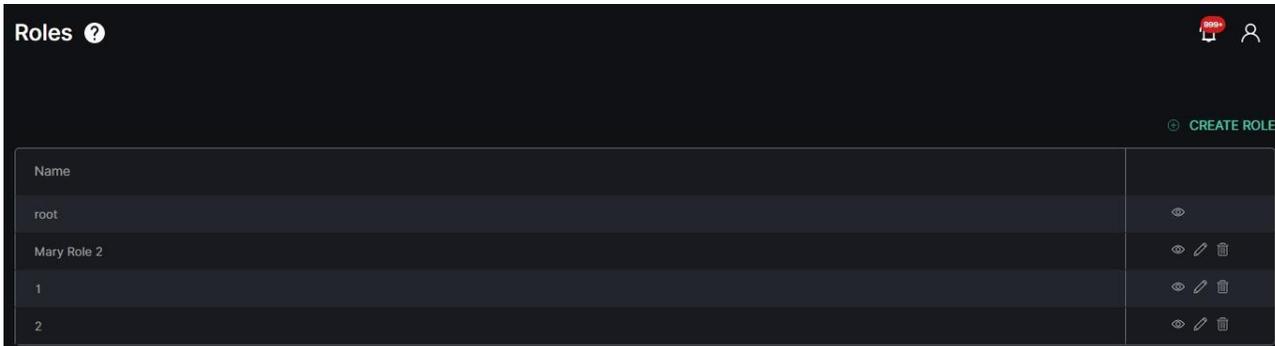
To open the Roles item, in the left menu:



1. Select the Settings section
2. Choose the Roles item
3. See roles

Use and Functionality

The Roles item shows:

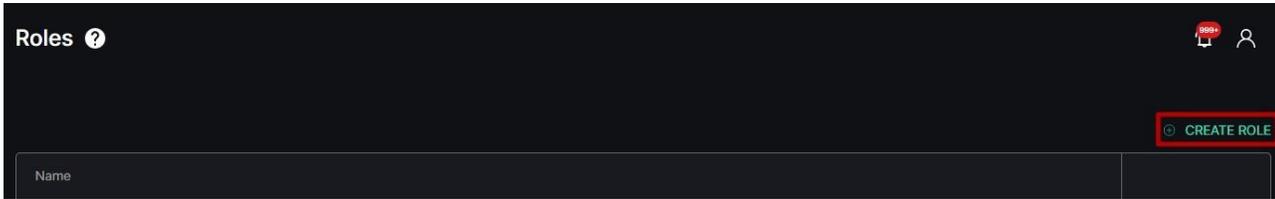


- List of created roles
- Toolbox includes:
 - Delete
 - Edit
 - View

 The root role is created by default and cannot be edited or removed.

Create Role

To create a new role, click the Create Role button:



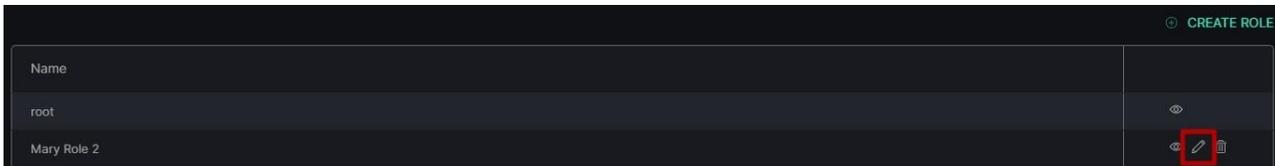
In the Create Role pop-up window:

- Enter the role name
- Set the access rights:
 - Check the boxes next to the required plugins to assign access rights
 - Click the arrows next to the required plugin name to open extended access rights options
- Click the Save button to confirm the intention

 Some access rights checkboxes are disabled until the earlier primary access rights are checked.

Edit Role

To edit the required role, click the Edit icon on the toolbox:



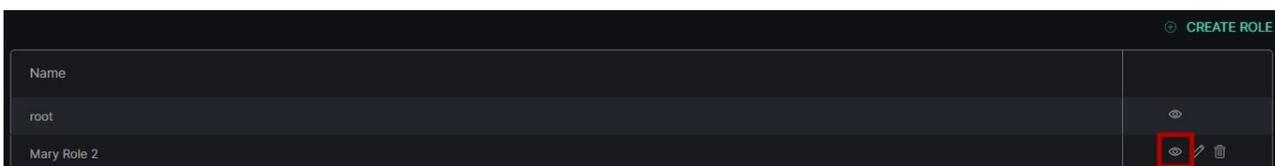
In the Edit Role pop-up window:

- Change the role name
- Set the access rights:
 - Check the boxes next to the required plugins in order to assign access rights
 - Click the arrows next to the required plugin name to open the extended access rights options
- Click the Save button to save changes

 Some access rights checkboxes are disabled until the earlier primary access rights are checked.

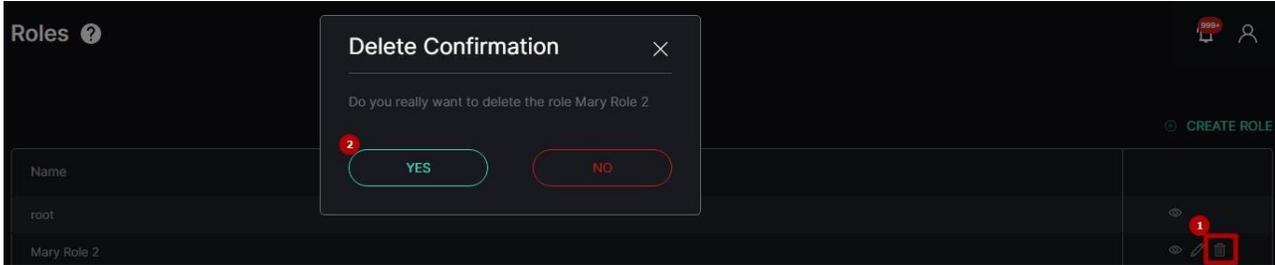
View Role

To view the access rights for the required role, click the View icon on the toolbox:



Delete Role

To remove the role:



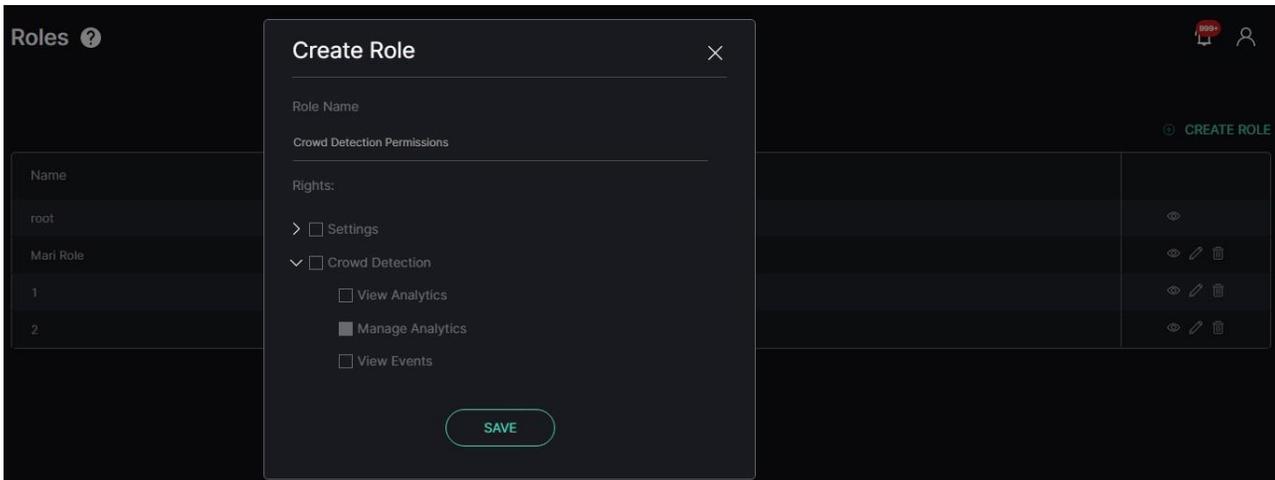
1. Select the Delete icon on the toolbox
2. Confirm the intention

Crowd Detection: User Access Rights

i This page includes the Crowd Detection user access rights overview.

Overview

Crowd Detection permissions include:



- Primary permissions:
 - View Analytics
 - View Events
- Secondary permission Manage Analytics

- 💡** The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The user has full access to the Crowd Detection section features only if all Crowd Detection permissions are selected within the assigned role.
- The user does not have any access to the Crowd Detection section unless at least one Crowd Detection primary permission is selected within the assigned role.

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View Analytics

The View Analytics permission gives limited access to the [Analytics3](#) item of the Crowd Detection section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Events

The View Events permission gives full access to the [Events4](#) item of the Crowd Detection section.

 It also allows [viewing events for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

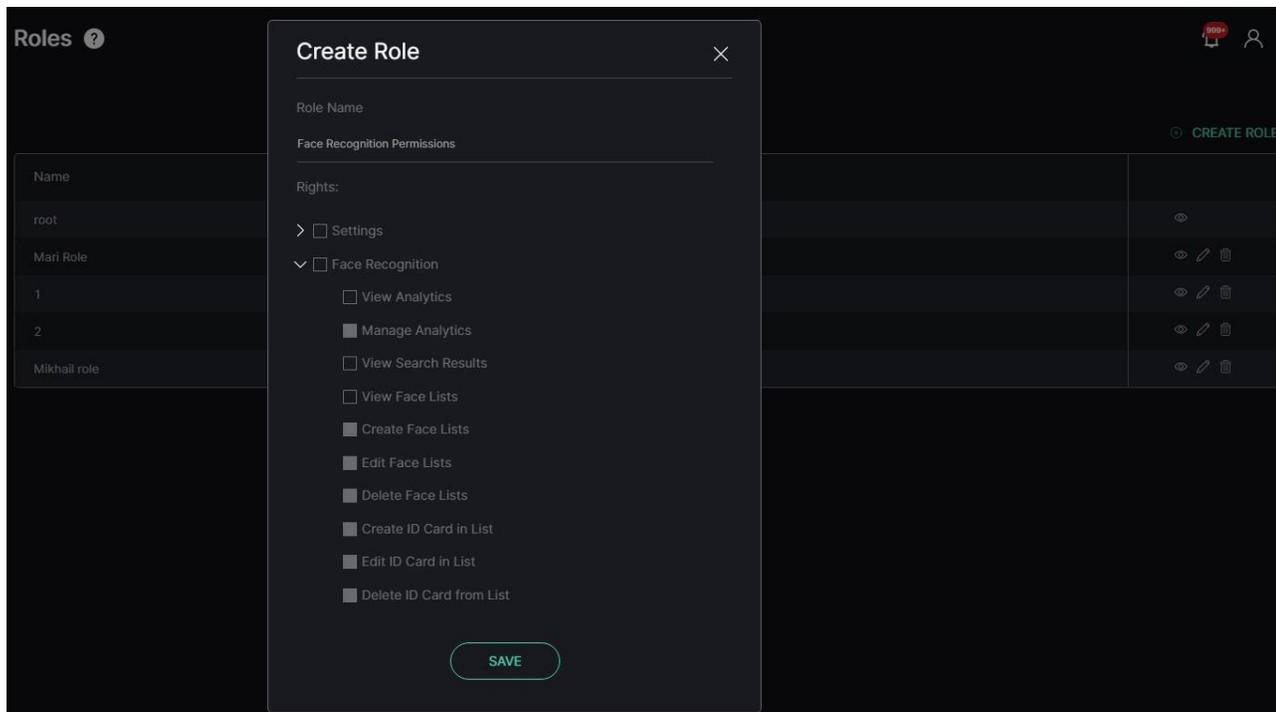
- Create analytic
- Edit analytic
- Change analytics status
- View analytics live
- Delete analytic

Face Recognition: User Access Rights

 This page includes the Face Recognition user access rights overview.

Overview

Face Recognition permissions include:



- Primary permissions:
 - View Analytics
 - View Search Results
 - View Face Lists
- Secondary permissions:
 - Manage Analytics
 - Create Face Lists
 - Edit Face Lists
 - Delete Face Lists
 - Create ID Card in List
 - Edit ID Card in List
 - Delete ID Card from List

- 💡 • The Manage Analytics permission requires the previous assignment of the View Analytics permission. Otherwise, this option is blocked.
- The Create/Edit/Delete Face Lists, Create ID Card in List, Edit ID Card in List, and Delete ID Card from List permissions require the previous assignment of the View Face Lists permission. Otherwise, these options are blocked.
- The user has full access to the Face Recognition section features only if all Face Recognition permissions are selected within the assigned role.
- The user does not have any access to the Face Recognition section unless at least one Face Recognition primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the Face Recognition section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Search Results

The View Search Results permission gives full access to the [Search](#) and [Statistics](#) items of the Face Recognition section.

- 💡 It also allows [viewing search results for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

View Face Lists

The View Face Lists permission gives limited access to the [Lists](#) item and full access to the [Events](#) item of the Face Recognition section. In the Lists item, it allows to:

- Filter lists for quick search
- View the table with created lists
- Search ID Cards by photo
- Search ID Cards by name
- View created lists
- View ID Cards

Manage Analytics

The Manage Analytics permission allows to:

- Create analytics
- Edit analytics
- Change analytics status
- View analytics live
- Delete analytics

Create Face Lists

The Create Face Lists permission allows [creating lists of faces](#) in the Lists item.

Edit Face Lists

The Edit Face Lists permission allows [editing lists of faces](#) on the List View page and on the main page of the Lists item.

Delete Face Lists

The Edit Face Lists permission allows [removing lists of faces](#) on the List View page and on the main page of the Lists item.

Create ID Card in List

The Create ID Card in List permission allows creating ID cards on the List View page of the Lists item.

 It also allows creating ID cards from the Search item (requires the View Search Results permission assigned) and View Analytics page of the Analytics item (requires the View Analytics and Manage Analytics permissions assigned).

Edit ID Card in List

The Edit ID Card in List permission allows [editing ID cards](#) on the List View and ID Card pages of the Lists item.

Delete ID Card from List

The Delete ID Card from List permission allows [removing ID cards](#) on the List View and ID Card pages of the Lists item.

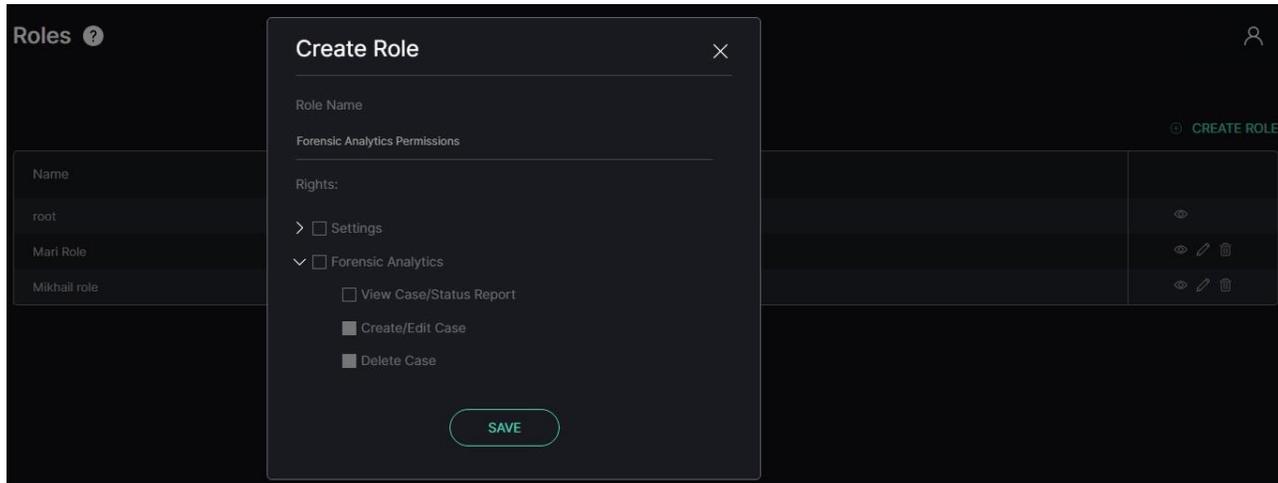
- Overview
- View Analytics
- View Search Results
- View Face Lists
- Manage Analytics
- Create Face Lists
- Edit Face Lists
- Delete Face Lists
- Create ID Card in List
- Edit ID Card in List
- Delete ID Card from List

Forensic Analytics: User Access Rights

i This page makes up the Forensic Analytics user access rights overview.

Overview

Forensic Analytics permissions include:



- Primary permission View Case/Status Report
- Secondary permissions:
 - Create/Edit Case
 - Delete Case

- 💡 • The Create/Edit Case and Delete Case permissions require the previous assignment of the View Case/Status Report permission. Otherwise, these options are blocked.
- The user has full access to the Forensic Analytics section features only if all Forensic Analytics permissions are selected within the assigned role.
- The user does not have any access to the Forensic Analytics section unless the View Case/Status Report primary permission is selected within the assigned role.

View Case/Status Report

The View Case/Status Report permission gives limited access to the [Cases](#) item and full access to the [Status Report](#) item of the Forensic Analytics section. In the Cases item it allows to:

- View the created cases
- Filter cases for quick search
- Manage sources in the [Sources](#) tab
- View and filter recognition results in the [Objects](#) and [LPR](#) tabs
- [Manage filter presets](#) in the Objects tab

Create/Edit Case

The Create/Edit Case permission allows to:

- [Create cases](#)
- [Edit cases](#)

Delete Case

The Delete Case permission allows to [delete cases](#).

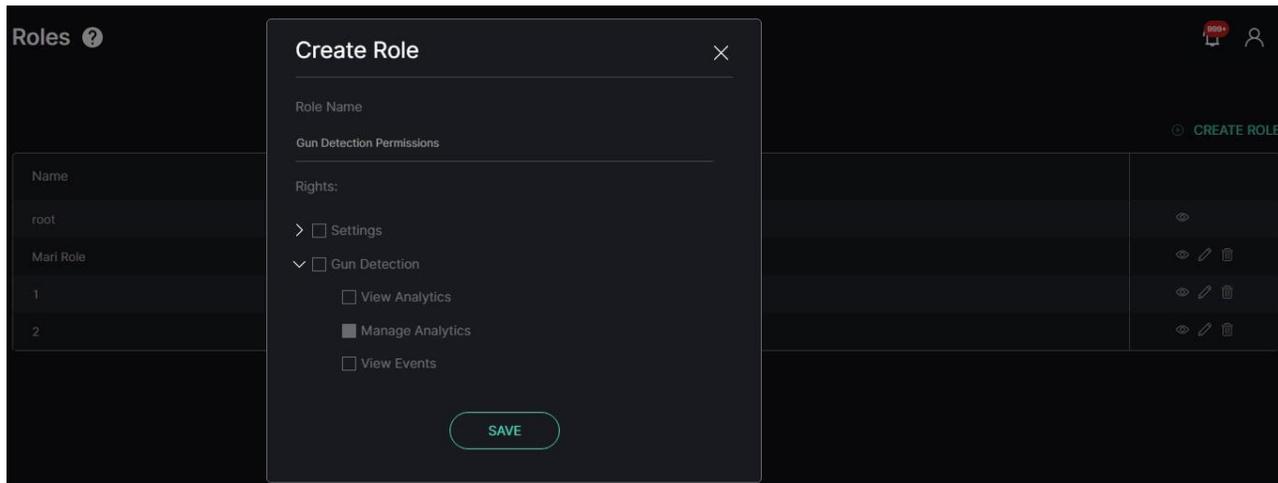
- Overview
- View Case/Status Report
- Create/Edit Case
- Delete Case

Gun Detection: User Access Rights

i This page includes the Gun Detection user access rights overview.

Overview

Gun Detection permissions include:



- Primary permissions:
 - View Analytics
 - View Events
- Secondary permission Manage Analytics

- 💡** The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The user has full access to the Gun Detection section features only if all Gun Detection permissions are selected within the assigned role.
- The user does not have any access to the Gun Detection section unless at least one Gun Detection primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the Gun Detection section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Events

The View Events permission gives full access to the [Events](#) item of the Gun Detection section.

💡 It also allows [viewing events for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

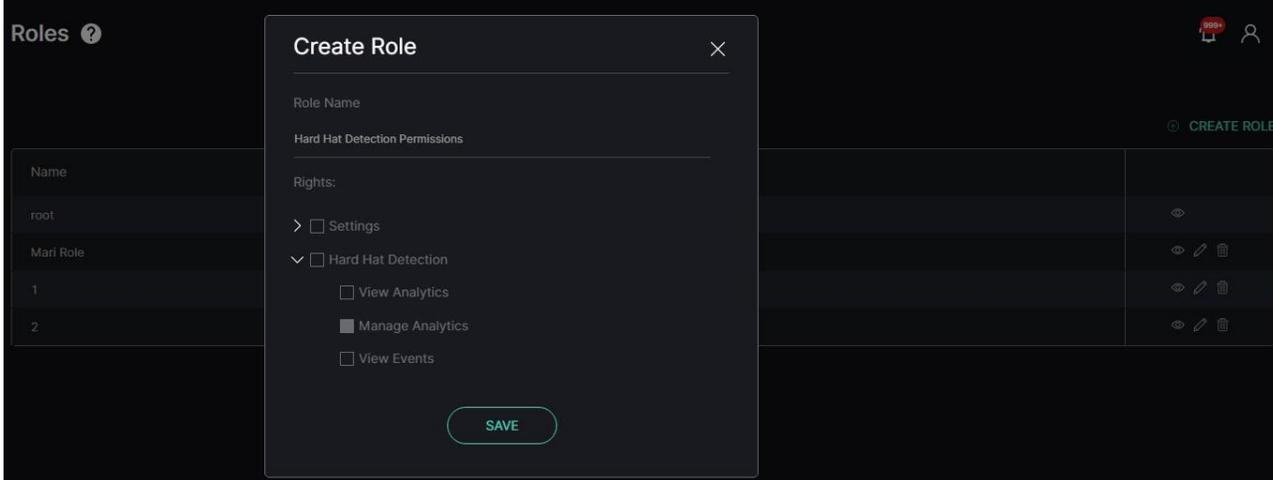
- Create analytics
- Edit analytics
- Change analytics status
- View analytics live
- Delete analytics

Hard Hat Detection: User Access Rights

📘 This page includes the Hard Hat Detection user access rights overview.

Overview

Hard Hat Detection permissions include:



- Primary permissions:
 - View Analytics
 - View Events
- Secondary permission Manage Analytics

💡

- The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The user has full access to the Hard Hat Detection section features only if all Hard Hat Detection permissions are selected within the assigned role.
- The user does not have any access to the Hard Hat Detection section unless at least one Hard Hat Detection primary permission is selected within the assigned role.

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View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the Hard Hat Detection section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Events

The View Events permission gives full access to the [Events](#) item of the Hard Hat Detection section.

💡 It also allows [viewing events for required analytics](#) in the Analytics item, if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

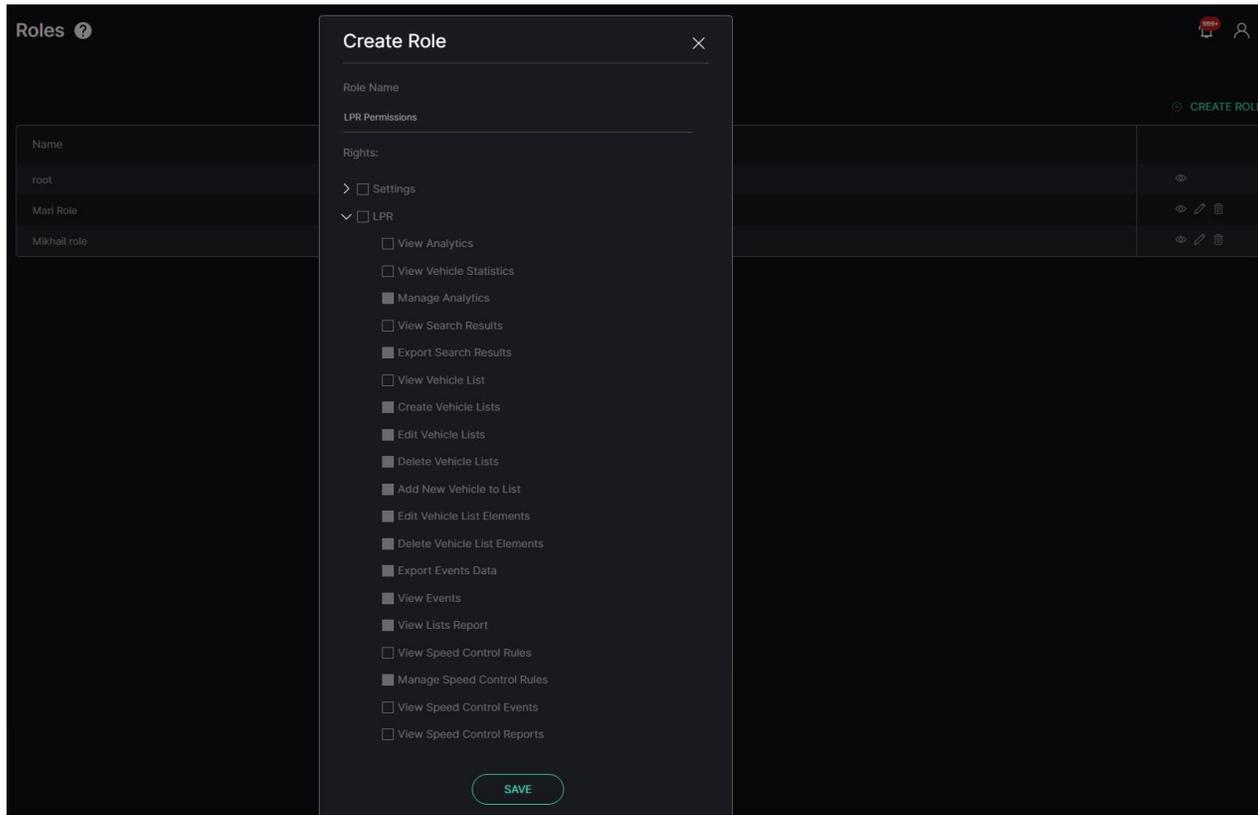
- Create analytics
- Edit analytics

LPR: User Access Rights

📘 This page includes the LPR user access rights overview.

Overview

LPR permissions include:



- Primary permissions:
 - View Analytics
 - View Vehicle Statistics
 - View Search Results
 - View Vehicle Lists
 - View Speed Control Rules
 - View Speed Control Events
 - View Speed Control Reports
- Secondary permissions:
 - Manage Analytics
 - Export Search Results
 - Create Vehicle Lists
 - Edit Vehicle Lists
 - Delete Vehicle Lists
 - Add New Vehicle to List
 - Edit Vehicle List Elements
 - Delete Vehicle List Elements
 - View Events
 - View Lists Report
 - Manage Speed Control Rules
- Export Events Data tertiary permission

- 💡 • The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The Export Search Results permission requires the earlier assignment of the View Search Results permission. Otherwise, this choice is blocked.
- The Create/Edit/Delete Vehicle Lists, Add New Vehicle to List, Edit/Delete Vehicle Lists Elements, View Events, and View Lists Report permissions require the earlier assignment of the View Vehicle Lists permission. Otherwise, these options are blocked.
- The Export Events Data permission requires the earlier assignment of the View Vehicle Lists and View Events permissions. Otherwise, this choice is blocked.
- The Manage Speed Control Rules permission requires the earlier assignment of the View Speed Control Rules permission. Otherwise, this choice is blocked.
- The user has full access to the LPR section features only if all LPR permissions are selected within the assigned role.
- The user does not have any access to the LPR section unless at least one LPR primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the LPR section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Vehicle Statistics

The View Vehicle Statistics permission gives full access to the [Vehicle Statistics](#) item of the LPR section.

View Search Results

The View Search Results permission gives almost full access to the [Search](#) item of the LPR section, except exporting search results reports.

 It also allows [viewing search results for required analytics](#) from the Analytics item if the View Analytics permission is assigned too.

View Vehicle Lists

The View Vehicle Lists permission gives limited access to the [Lists](#) item of the LPR section. In the [Lists](#) tab, it allows to:

- Filter lists for quick search
- View the table with created lists
- Search vehicle information cards by number
- View created lists
- View vehicle information cards

View Speed Control Rules

The View Speed Control Rules permission opens access to the [Speed Control](#) item of the LPR section and allows viewing the list of created rules in the [Rules](#) tab.

View Speed Control Events

The View Speed Control Events permission opens access to the [Speed Control](#) item of the LPR section and gives full access to the [Events](#) tab.

 It also allows viewing events with required rules from the Rules tab, if the View Speed Control Rules permission is assigned too.

View Speed Control Reports

The View Speed Control Reports permission opens access to the [Speed Control](#) item of the LPR section and gives full access to the [Report](#) tab.

Manage Analytics

The Manage Analytics permission allows to:

- Create analytics
- Edit analytics
- Change analytics status
- View analytics live
- Delete analytics

Export Search Results

The Export Search Results permission allows export search results reports in PDF format in the Search item.

Create Vehicle Lists

The Create Vehicle Lists permission allows you to [create lists of vehicles](#) in the Lists tab of the Lists item.

Edit Vehicle Lists

The Edit Vehicle Lists permission allows to [edit lists of vehicles](#) in the Lists tab and on the List View page of the Lists item.

Delete Vehicle Lists

The Delete Vehicle Lists permission allows to [remove lists of vehicles](#) in the Lists tab and on the List View page of the Lists item.

Add New Vehicle to List

The Add New Vehicle to List permission allows to create a vehicle information card and import lists of vehicle information cards in CSV on the List View page of the Lists item.

 It also allows creating vehicle information cards from the Search item (requires the View Search Results permission assigned) and View Analytics page of the Analytics item (requires the View Analytics and Manage Analytics permissions assigned).

Edit Vehicle List Elements

The Edit Vehicle List Elements permission allows to [edit vehicle information cards](#) on the List View and Card pages of the Lists item.

Delete Vehicle List Elements

The Delete Vehicle List Elements permission allows to [remove vehicle information cards](#) on the List View and Card pages of the Lists item.

View Events

The View Events permission gives full access to the [Events](#) tab of the Lists item, except exporting event reports.

Export Events Data

The Export Events Data permission allows exporting event reports in PDF format in the Events tab of the Lists item.

View Lists Report

The View List Report permission gives full access to the [Report](#) tab of the Lists item.

Manage Speed Control Rules

The Manage Speed Control Rules permission allows to:

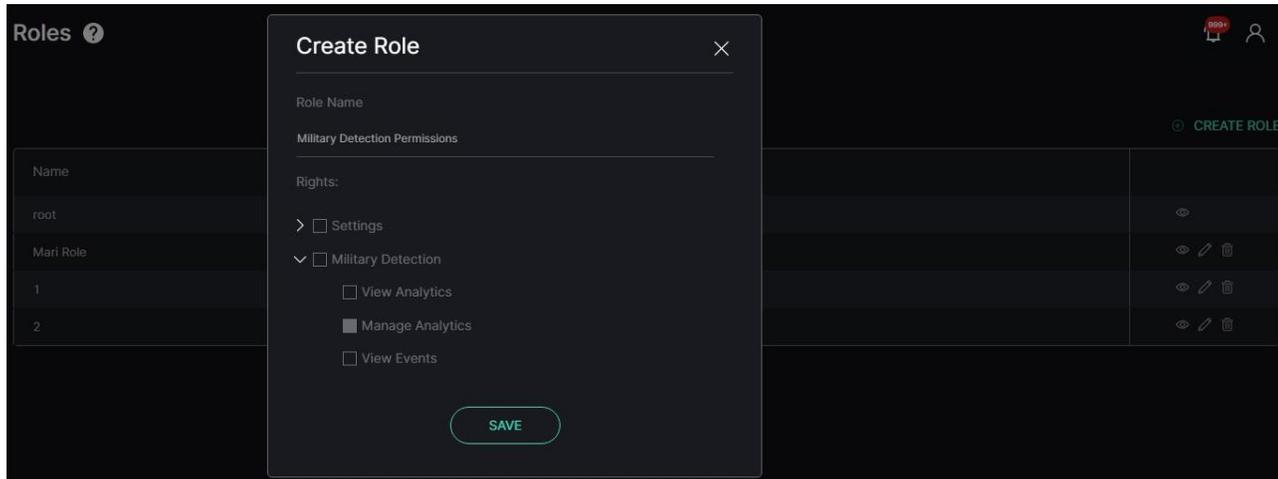
- Create rules
- Edit rules
- Delete rules

Military Detection: User Access Rights

 This page includes the Military Detection user access rights overview.

Overview

Military Detection permissions include:



- Primary permissions:
 - View Analytics
 - View Events
- Secondary permission Manage Analytics

-  The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The user has full access to the Military Detection section features only if all Military Detection permissions are selected within the assigned role.
- The user does not have any access to the Military Detection section unless at least one Military Detection primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the Military Detection section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Events

The View Events permission gives full access to the [Events](#) item of the Military Detection section.

-  It also allows [viewing events for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

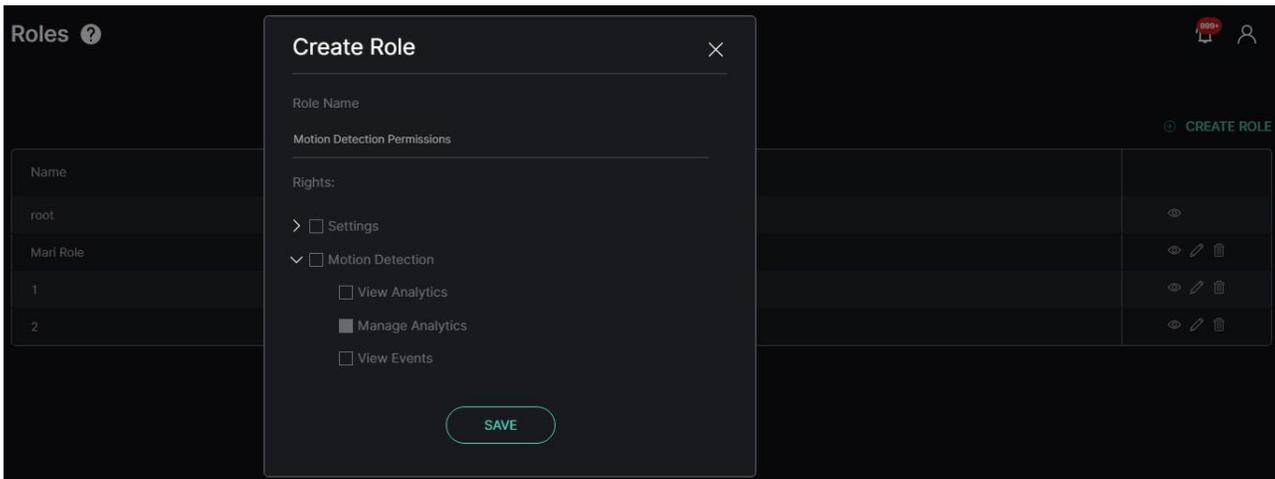
- Create analytics
- Edit analytics
- Change analytics status
- View analytics live
- Delete analytics

Motion Detection: User Access Rights

i This page includes the Motion Detection user access rights overview.

Overview

Motion Detection permissions include:



- Primary permissions:
 - View Analytics
 - View Events
- Secondary permission Manage Analytics

- 💡** The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The user has full access to the Motion Detection section features only if all Motion Detection permissions are selected within the assigned role.
- The user does not have any access to the Motion Detection section unless at least one Motion Detection primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the [Analytics92](#) item of the Motion Detection section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

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View Events

The View Events permission gives full access to the [Events](#)93 item of the Motion Detection section.

💡 It also allows [viewing events for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

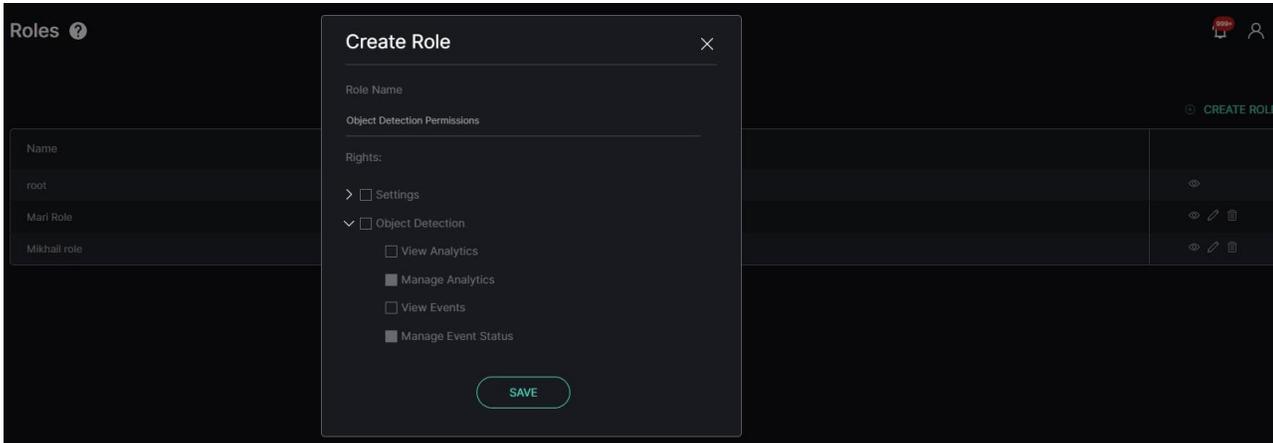
- Create analytics
- Edit analytics
- Change analytics status
- View analytics live
- Delete analytics

Object Detection: User Access Rights

📘 This page includes the Object Detection user access rights overview.

Overview

Object Detection permissions include:



- Primary permissions:
 - View Analytics
 - View Events
- Secondary permissions:
 - Manage Analytics
 - Manage Event Status

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- The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The Manage Event Status permission requires the earlier assignment of the View Events permission. Otherwise, this choice is blocked.
- The user has full access to the Object Detection section features only if all Object Detection permissions are selected within the assigned role.
- The user does not have any access to the Object Detection section unless at least one Object Detection primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the Object Detection section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Events

The View Events permission gives full access to the [Events](#) item of the Object Detection section.

It also allows [viewing events for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

- Create analytics
- Edit analytics
- Change analytics status
- View analytics live
- Delete analytics

Manage Event Status

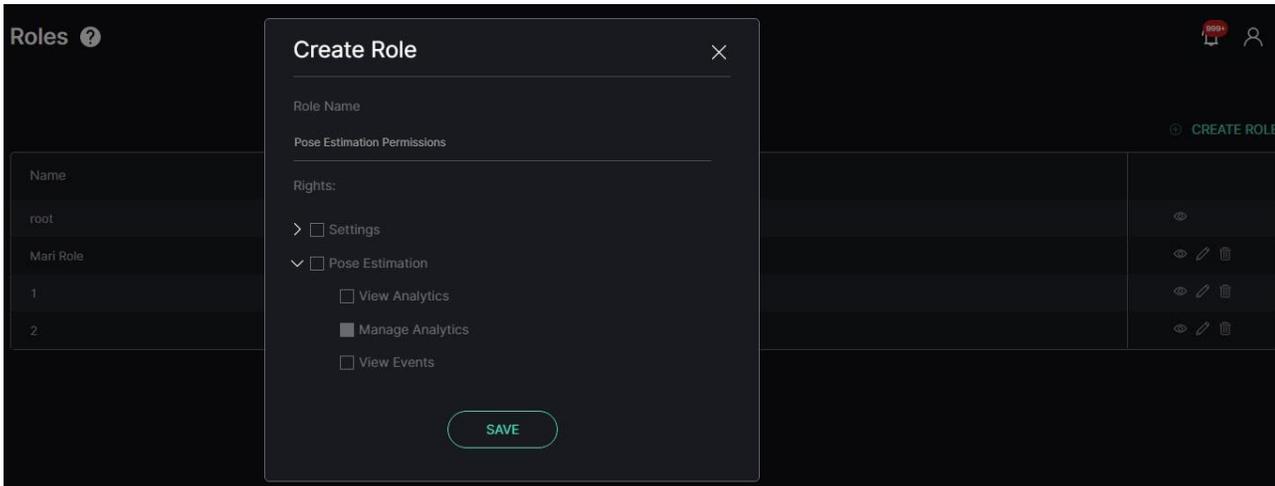
The Manage Event Status permission allows to manually mark events as True Positive or False Positive and move them to the proper set of filtered events in the Events item.

Pose Estimation: User Access Rights

 This page includes the Pose Estimation user access rights overview.

Overview

Pose Estimation permissions include:



- Primary permissions:
 - View Analytics
 - View Events
- Secondary permission Manage Analytics

-  • The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The user has full access to the Pose Estimation section features only if all Pose Estimation permissions are selected within the assigned role.
- The user does not have any access to the Pose Estimation section unless at least one Pose Estimation primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the Pose Estimation section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Events

The View Events permission gives full access to the [Events](#) item of the Pose Estimation section.

-  It also allows [viewing events for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

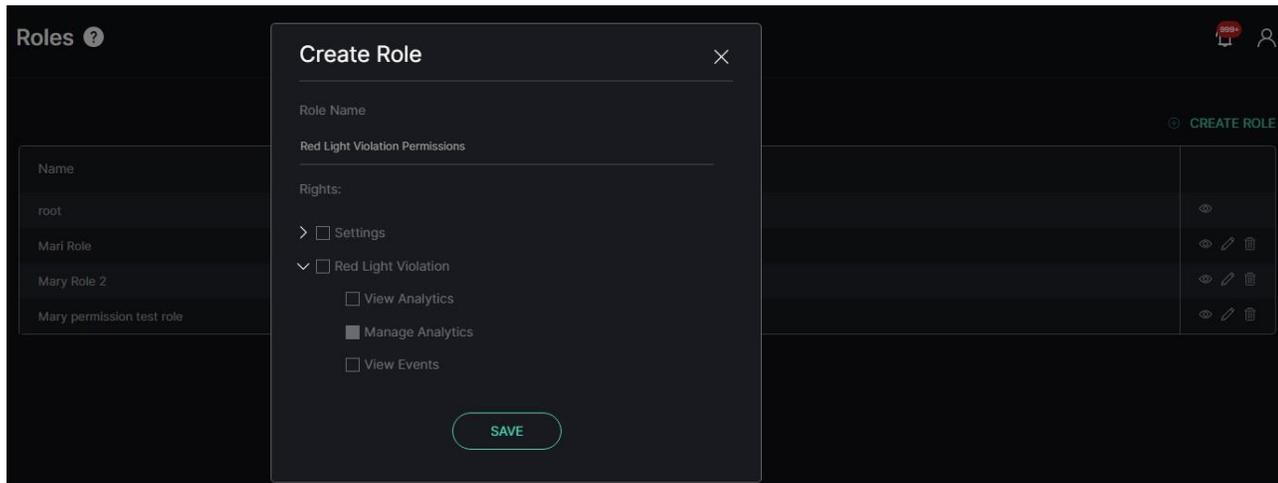
- Create analytics
- Edit analytics
- Change analytics status
- View analytics live
- Delete analytics

Red Light Violation: User Access Rights

 This page includes the Red-Light Violation user access rights overview.

Overview

Red Light Violation permissions include:



- Primary permissions:
 - View Analytics
 - View Events
- Secondary permission Manage Analytics

-  The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The user has full access to the Red-Light Violation section features only if all Red-Light Violation permissions are selected within the assigned role.
- The user does not have any access to the Red-Light Violation section unless at least one Red Light Violation primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the Red-Light Violation section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Events

The View Events permission gives full access to the [Events](#) item of the Red-Light Violation section.

💡 It also allows [viewing events for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

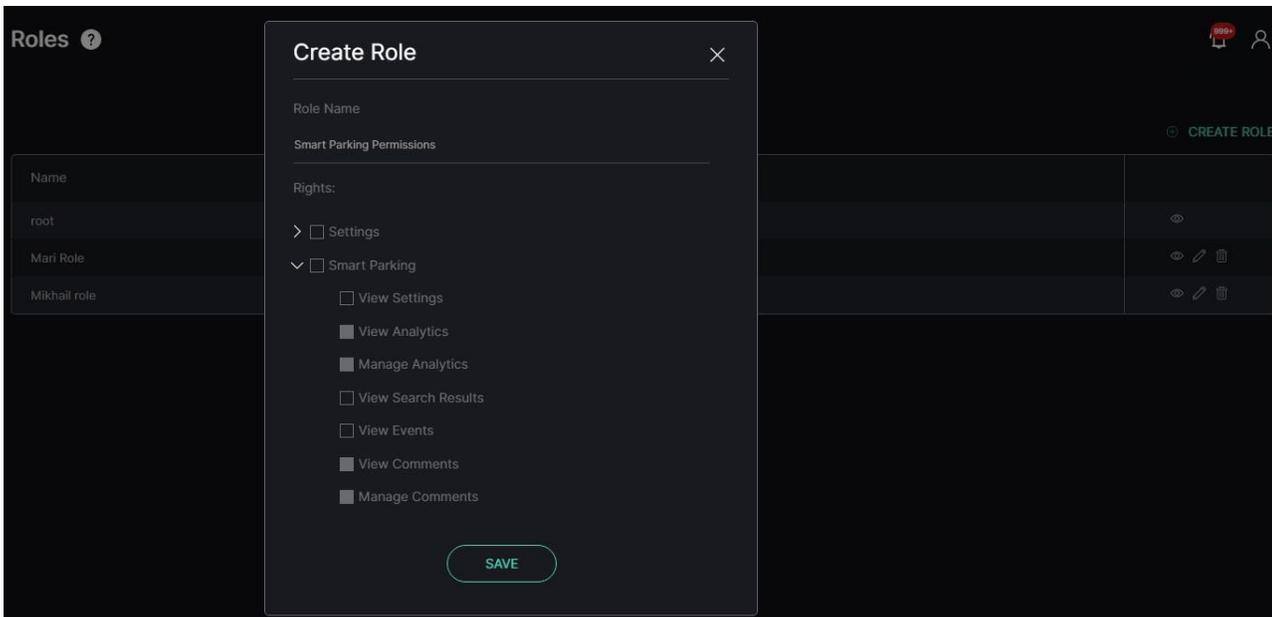
- Create analytics
- Edit analytics
- Change analytics status
- View analytics live
- Delete analytics

Smart Parking: User Access Rights

📘 This page includes the Smart Parking user access rights overview.

Overview

Smart Parking permissions include:



- Primary permissions:
 - View Settings
 - View Search Results
 - View Events
- Secondary permissions:
 - View Analytics
 - View Comments

- Tertiary permissions:
 - Manage Analytics
 - Manage Comments

- 💡 • The View Analytics and View Comments permissions require the earlier assignment of the View Settings permission. Otherwise, these options are blocked.
- The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The Manage Comments permission requires the earlier assignment of the View Comments permission. Otherwise, this choice is blocked.
- The user has full access to the Smart Parking section features only if all Smart Parking permissions are selected within the assigned role.
- The user does not have any access to the Smart Parking section unless at least one Smart Parking primary permission is selected within the assigned role.

View Settings

The View Settings permission gives limited access to the [Settings](#) item of the Smart Parking section. It allows to:

- View the [Cameras](#)
- View and manage:
 - Sites
 - Custom Vehicle Fields
 - Vehicle Tags
 - Manage Vehicles
 - Rules

View Search Results

The View Search Results permission gives full access to the [Search131](#) item of the Smart Parking section.

- 💡 It also allows [viewing search results for required analytics](#) in the Cameras tab of the Settings item, if the View Settings and View Analytics permissions are assigned too.

View Events

The View Events permission gives full access to the [Events](#) item of the Smart Parking section.

View Analytics

The View Analytics permission gives limited access to the Cameras tab of the Settings item. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Comments

The View Comments permission allows [viewing comments about vehicles](#) on the Vehicle Information page of the Manage Vehicles tab.

Manage Analytics

The Manage Analytics permission allows to:

- Create analytics
- Edit analytics
- Change analytics status

- View analytics live
- Delete analytics

Manage Comments

The Manage Comments permission allows to:

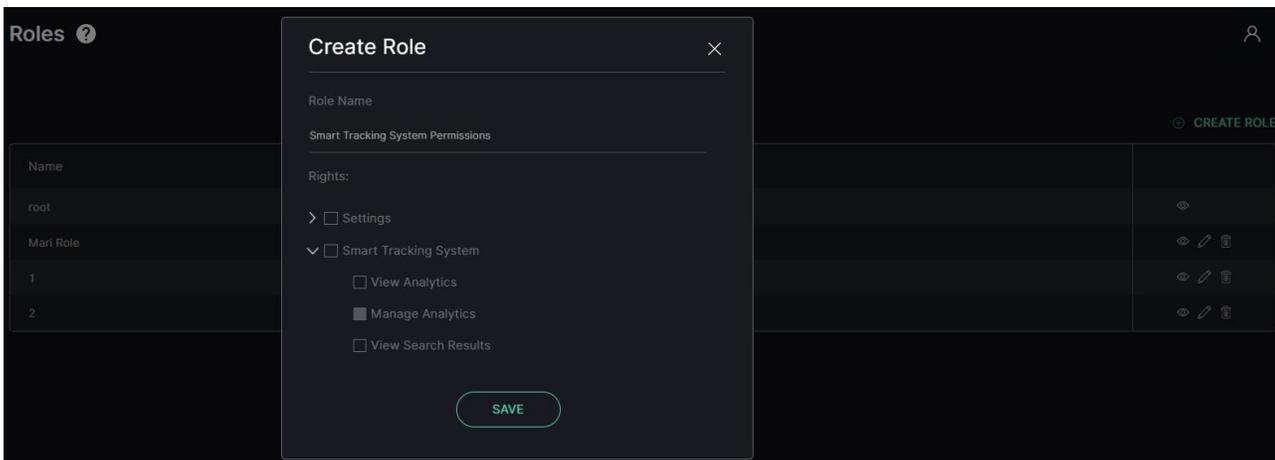
- Add a new comment to the vehicle
- Edit the existing comments
- Delete comments

Smart Tracking System: User Access Rights

i This page includes the Smart Tracking System user access rights overview.

Overview

Smart Tracking System permissions include:



- Primary permissions:
 - View Analytics
 - View Search Results
- Secondary permission Manage Analytics

- 💡** The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The user has full access to the Smart Tracking System section features only if all Smart Tracking System permissions are selected within the assigned role.
- The user does not have any access to the Smart Tracking System section unless at least one Smart Tracking System primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the **Analytics** item of the Smart Tracking System section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Search Results

The View Search Results permission gives full access to the [Search](#) item of the Smart Tracking System section.

Manage Analytics

The Manage Analytics permission allows to:

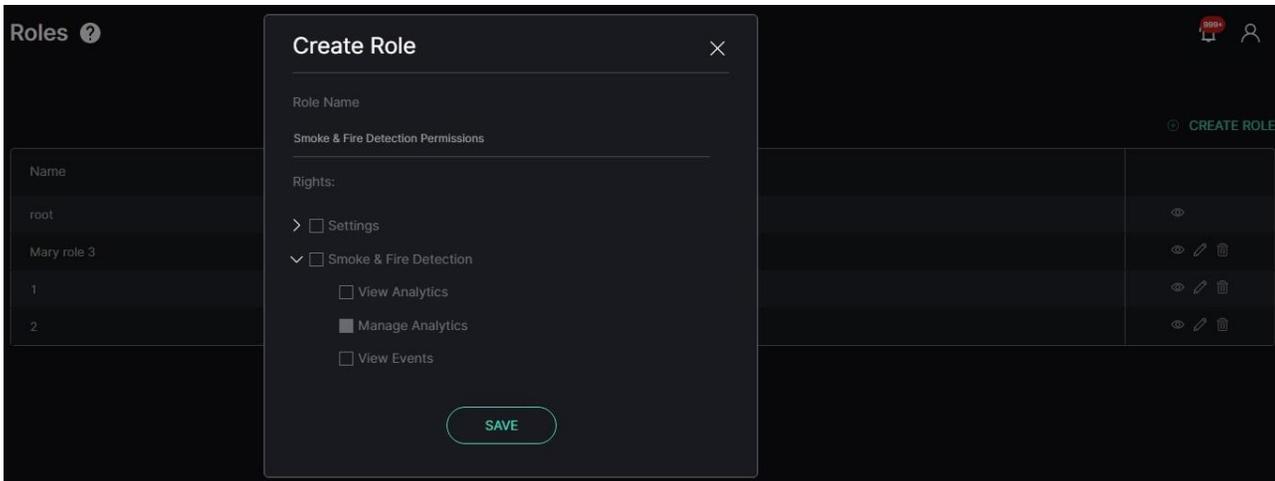
- Create analytics
- Edit analytics
- Change analytics status
- Delete analytics

Smoke & Fire Detection: User Access Rights

i This page includes the Smoke & Fire Detection user access rights overview.

Overview

Smoke & Fire Detection permissions include:



- Primary permissions:
 - View Analytics
 - View Events
- Secondary permission Manage Analytics

- 💡** The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The user has full access to the Smoke & Fire Detection section features only if all Smoke & Fire Detection permissions are selected within the assigned role.
- The user does not have any access to the Smoke & Fire Detection section unless at least one Smoke & Fire Detection primary permission is selected within the assigned role.

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View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the Smoke & Fire Detection section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Events

The View Events permission gives full access to the [Events](#) item of the Smoke & Fire Detection section.

 It also allows [viewing events for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

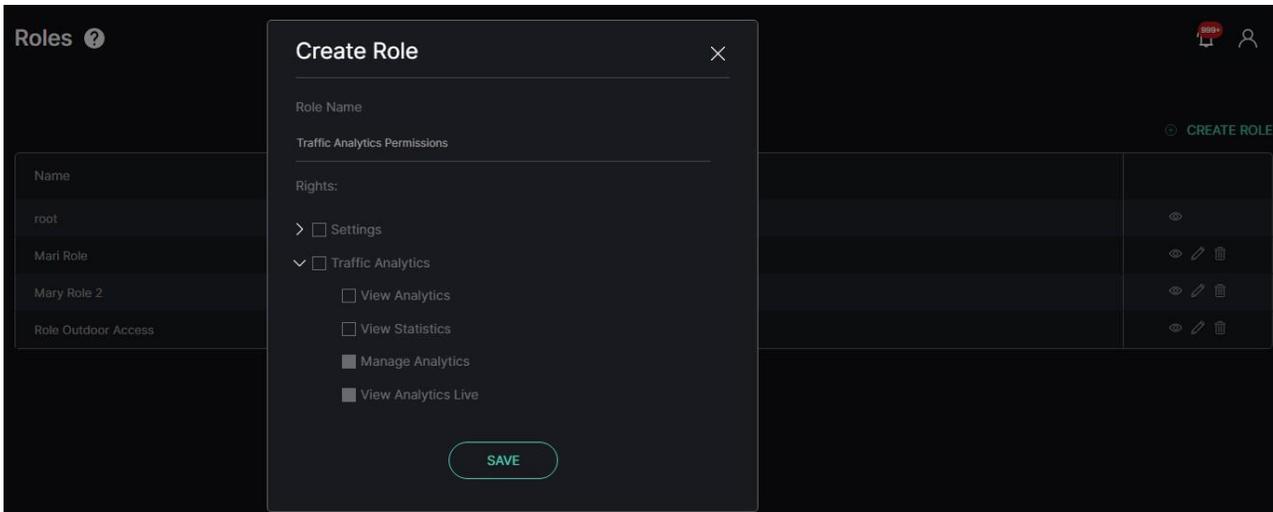
- Create analytics
- Edit analytics
- Change analytics status
- View analytics live
- Delete analytics

Traffic Analytics: User Access Rights

 This page includes the Traffic Analytics user access rights overview.

Overview

Traffic Analytics permissions include:



- Primary permissions:
 - View Analytics
 - View Statistics
- Secondary permissions:

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- Manage Analytics
- View Analytics Live



- The Manage Analytics and View Analytics Live permissions require the earlier assignment of the View Analytics permission. Otherwise, these options are blocked.
- The user has full access to the Traffic Analytics section features only if all Traffic Analytics permissions are selected within the assigned role.
- The user does not have any access to the Traffic Analytics section unless at least one Traffic Analytics primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the Traffic Analytics section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Statistics

The View Statistics permission gives full access to the [Statistics](#), [Events](#), and [Object Counter](#) items of the Traffic Analytics section.



It also allows [viewing events for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

- Create analytics
- Edit analytics
- Change analytics status
- Delete analytics

View Analytics Live

The View Analytics Live permission allows [viewing analytics in live mode](#).

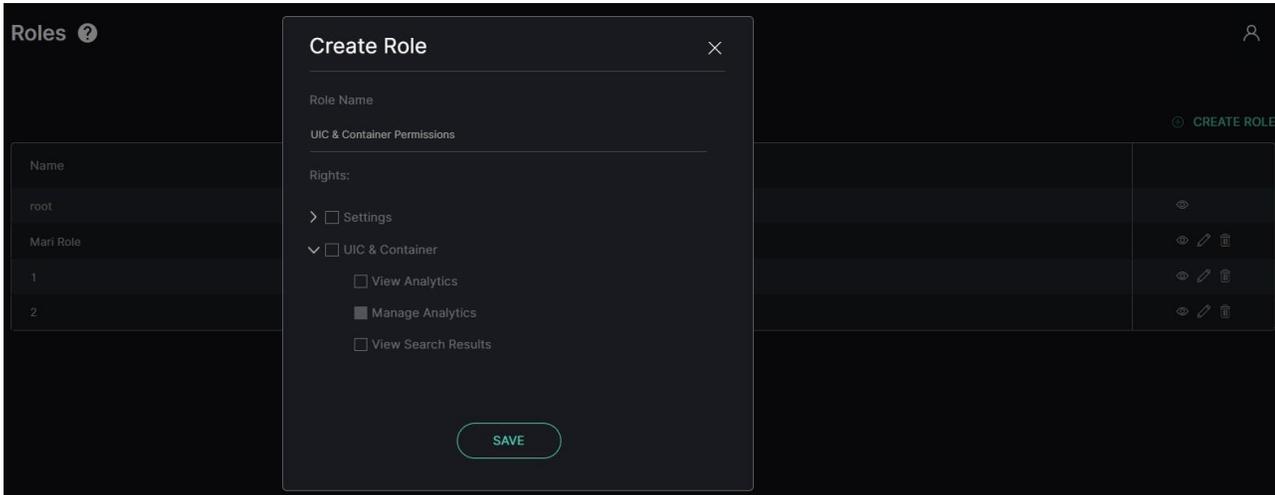
- Overview
- View Analytics
- View Statistics
- Manage Analytics
- View Analytics Live

UIC & Container: User Access Rights

 This page includes the UIC & Container user access rights overview.

Overview

UIC & Container permissions include:



- Primary permissions:
 - View Analytics
 - View Search Results
- Secondary permission Manage Analytics

-  • The Manage Analytics permission requires the earlier assignment of the View Analytics permission. Otherwise, this choice is blocked.
- The user has full access to the UIC & Container section features only if all UIC & Container permissions are selected within the assigned role.
- The user does not have any access to the UIC & Container section unless at least one UIC & Container primary permission is selected within the assigned role.

View Analytics

The View Analytics permission gives limited access to the [Analytics](#) item of the UIC & Container section. It allows to:

- View the list of created analytics and their status
- Filter analytics for quick search

View Search Results

The View Search Results permission gives full access to the [Search](#) item of the UIC & Container section.

-  It also allows [viewing search results for required analytics](#) in the Analytics item if the View Analytics permission is assigned too.

Manage Analytics

The Manage Analytics permission allows to:

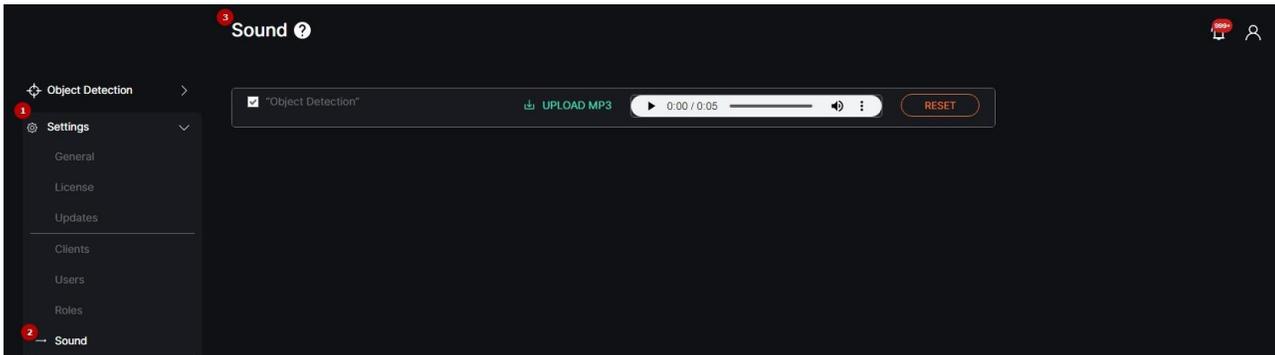
- Create analytics
- Edit analytics
- Change analytics status
- View analytics live
- Delete analytics

Sound

i This page describes the Sound item that allows managing sound alerts for installed plugins.

Overview

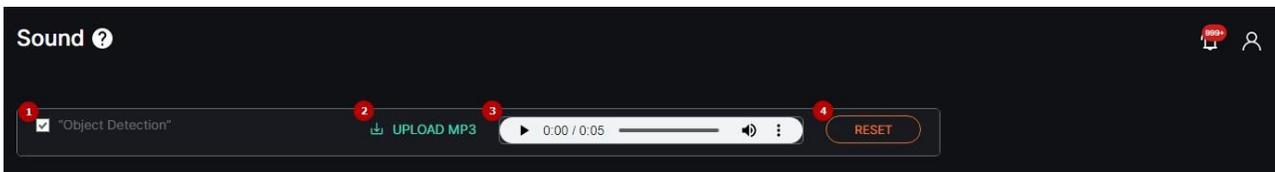
To open the Sound item, in the left menu:



1. Select the Settings section
2. Choose the Sound item
3. See sounds

Use and Functionality

The Sound item allows to:



1. Select/deselect the checkbox next to the required plugin name to enable/disable the notification alert sound for the selected plugin
2. Click the Upload MP3 button to change the default alert sound to the one chosen on the device
3. Use functionality of the Audio Player that includes:
 - a. Play toggle to start/stop the audio file playback
 - b. Sound current duration and total duration time displayed as mm:ss
 - c. Volume bar to control the volume level by dragging the handle
 - d. Mute toggle to turn on and off the playback sound
 - e. Extra menu with Download and Playback Speed buttons
4. Click the Reset button to return to the default sound settings

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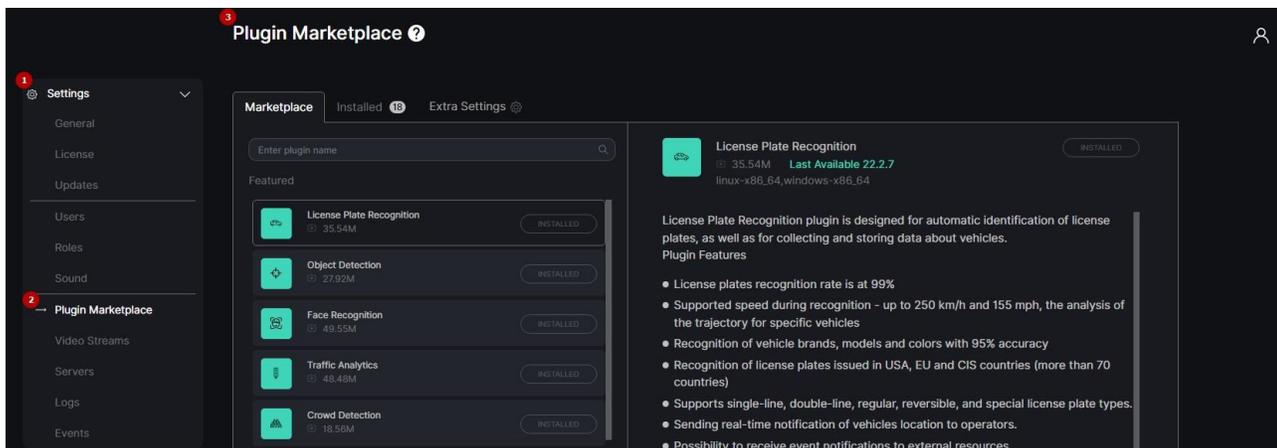
-  The event notification sound alert is produced when all of the following conditions are met in the system:
1. The Sound toggle is enabled in the Account settings.
 2. The required plugin is installed and enabled in the Plugin Marketplace item of the Settings section (enabled plugins are displayed in the system menu).
 3. The checkbox next to the required plugin is selected in the Sound item of the Settings section.
 4. The required plugin includes the Events item.
 5. The Internal Notification checkbox is selected in the Notifications tab while adding or editing the analytics settings in the required plugin.
 6. The required plugin icon is displayed on the Notifications panel.

Plugin Marketplace

 This page describes the Plugin Marketplace item that allows viewing and managing plugins.

Overview

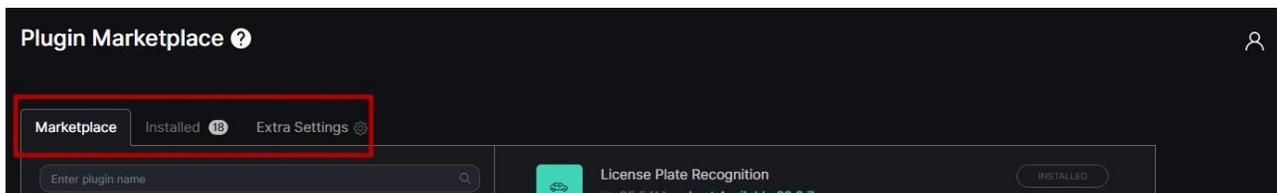
To open the Plugin Marketplace item, in the left menu:



1. Select the Settings section
2. Choose the Plugin Marketplace item
3. See plugin marketplace

Use and Functionality

The Plugin Marketplace functional menu includes:



- Marketplace tab to install plugins
- Installed tab to manage installed plugins
- Extra Settings button with options to:
 - Install plugin from disk

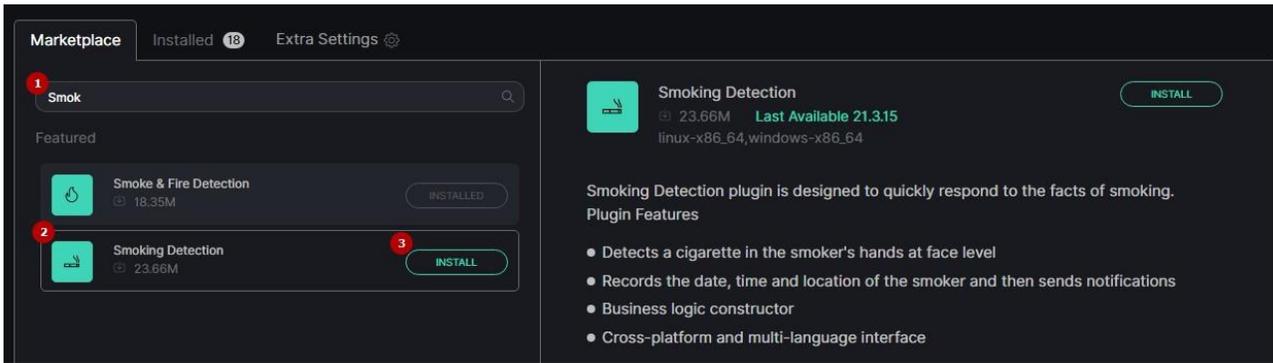
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- Disable all downloaded plugins
- Enable all downloaded plugins

- 💡 Selected tab is always highlighted. Switch between tabs by clicking on their names.
- Marketplace tab opens first by default.
- Figure in a circle next to the Installed tab means the number of plugins available for update.

Marketplace Tab

The Marketplace tab holds a list of all available for installation plugins in the system.
To install a new plugin:



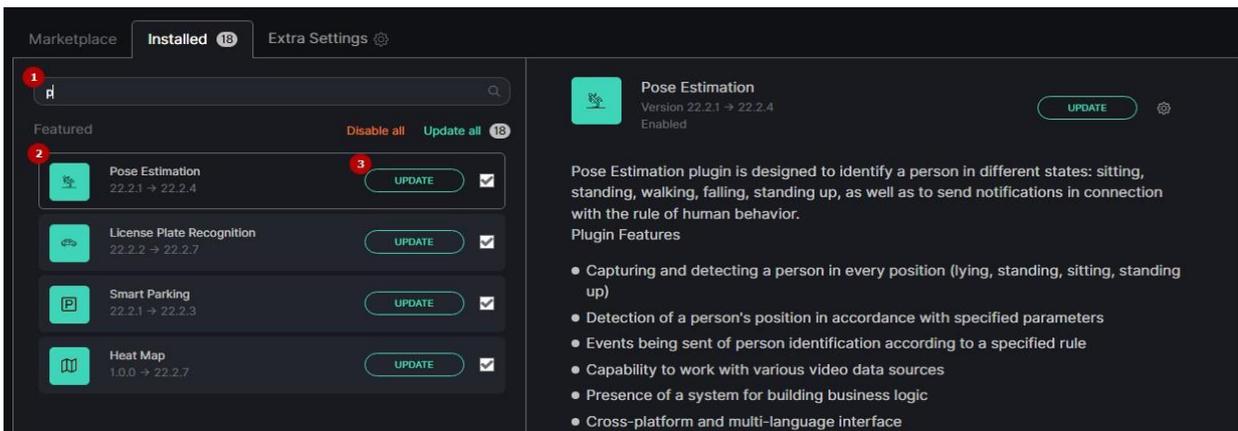
1. Enter the plugin name or characters in the name to filter plugins in the list
2. Select the required plugin in the list to read the information about it in the Description block
3. Click the Install button to start the installation

The Description block includes:

- File size
- Last available update version
- Supported OS
- Plugin features description
- Install button

Installed Tab

The Installed tab holds a list of installed plugins in the system.
To update a plugin:



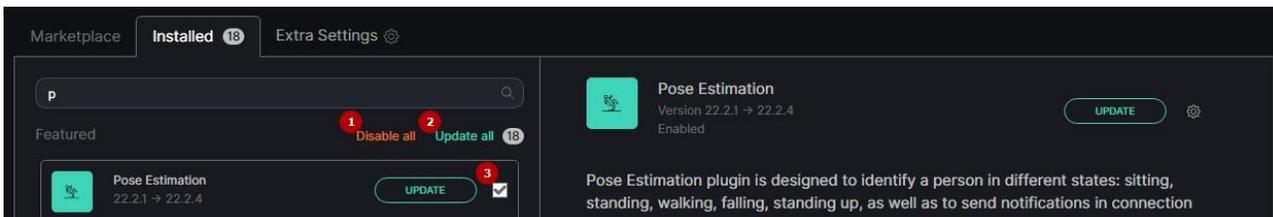
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1. Enter the plugin name or characters in the name to filter plugins in the list
2. Select the required plugin in the list to read the information about it and check the last available version in the Description block
3. Click the Update button to start the plugin version update

The Description block includes:

- Current and last available update version
- Enabled or Disabled plugin status
- Plugin features description
- Update button
- Settings icon with options to:
 - Enable or disable the selected plugin
 - Uninstall the selected plugin

Installed tab added options allow users to:



1. Click the Disable All button and confirm the intention in the pop-up window to disable all installed plugins at once
2. Click the Update All button and confirm the intention in the pop-up window to update all plugins to the last available versions at once
3. Select the checkbox next to the required plugin to enable or disable only the selected plugin



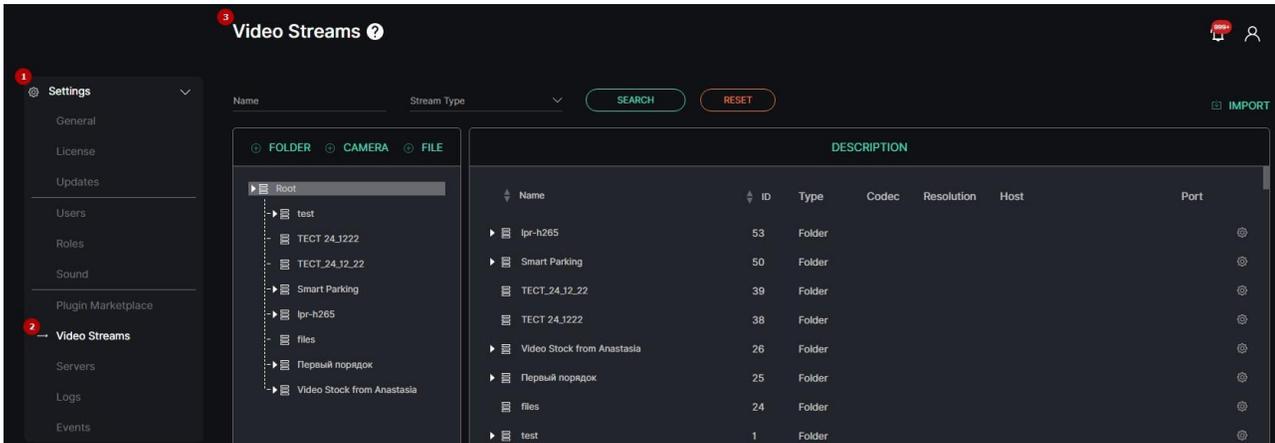
- Enabled plugins are displayed in the left menu by default.
- Disabled plugins are removed from the main menu but still installed in the system.

Video Streams

i This page describes the Video Streams item that allows viewing and managing video streams.

Overview

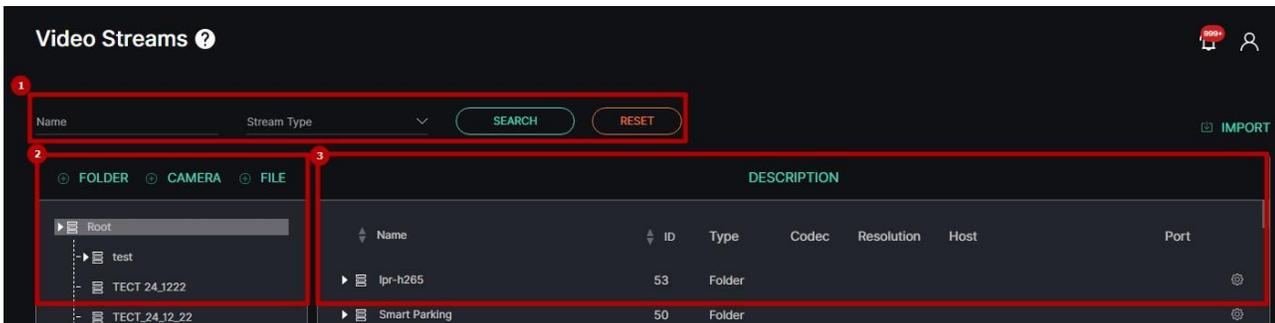
To open the Video Streams item, in the left menu:



1. Select the Settings section
2. Choose the Video Streams item
3. See video streams

Use and Functionality

The Video Streams item shows:



1. Functional menu to:
 - a. Enter the video stream name or characters in the name to filter video streams
 - b. Select the video stream type from the drop-down list:
 - i. RTSP
 - ii. FTP
 - iii. HTTP
 - iv. File
 - c. Click the Search button to start filtering
 - d. Click the Reset button to clear the filters
2. Folders block to add folders, cameras, and files
3. Description blocks to:

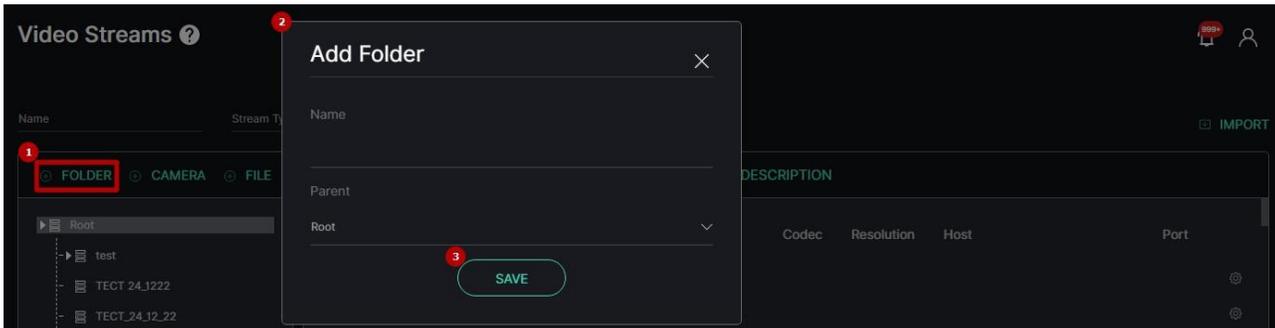
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- a. View the list of created folders, cameras, and files with added data
- b. Use extra functionality for cameras and files management

- The Add Folder, Add Camera, and Add File buttons are also available in the drop-down menu upon clicking on the RMB anywhere inside the Folders or Description blocks.
- Toggles next to the Name and ID titles in the Description block allow users to sort the content by the corresponding parameters.

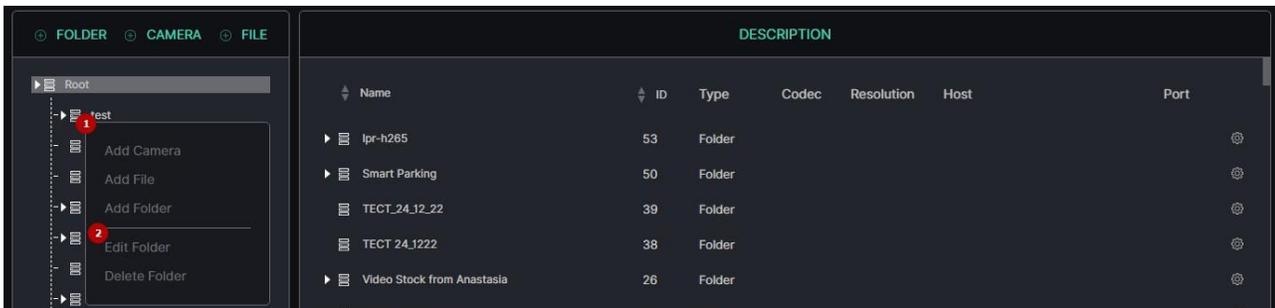
Manage Folders

To add a new folder:



1. Select the Folder button at the top of the Folders block
2. Fill in the fields in the Add Folder pop-up window:
 - a. Enter the name of the new folder
 - b. Select the required parent folder from the drop-down list
3. Click the Save button to confirm the intention

To edit a folder:



1. Click the required folder with RMB to open the drop-down menu
2. Select the Edit Folder button. In the pop-up window:
 - a. Edit the name of the folder
 - b. Select another parent folder from the drop-down list
 - c. Click the Save button to apply changes

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To remove a folder:

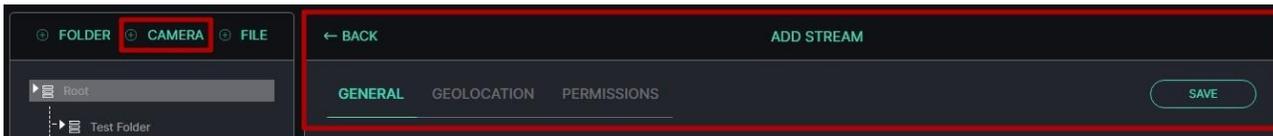


- Select the required folder with RMB to open the drop-down menu
- Select the Delete Folder button and confirm the intention in the pop-up window

It is unable to remove a folder holding a video stream or video file. First, remove all items from the folder and then continue with the deletion.

Manage Cameras

To add a new camera, select the Camera button at the top of the Folders block. The Add Stream navigation menu allows to:



- Click the Back button to return to the Description block
- See the setting tabs and move among them by clicking their titles:
 - General
 - Geolocation
 - Permissions
- Select the Save button to confirm the intention

The current tab is always highlighted.

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In the General tab fill in the fields:

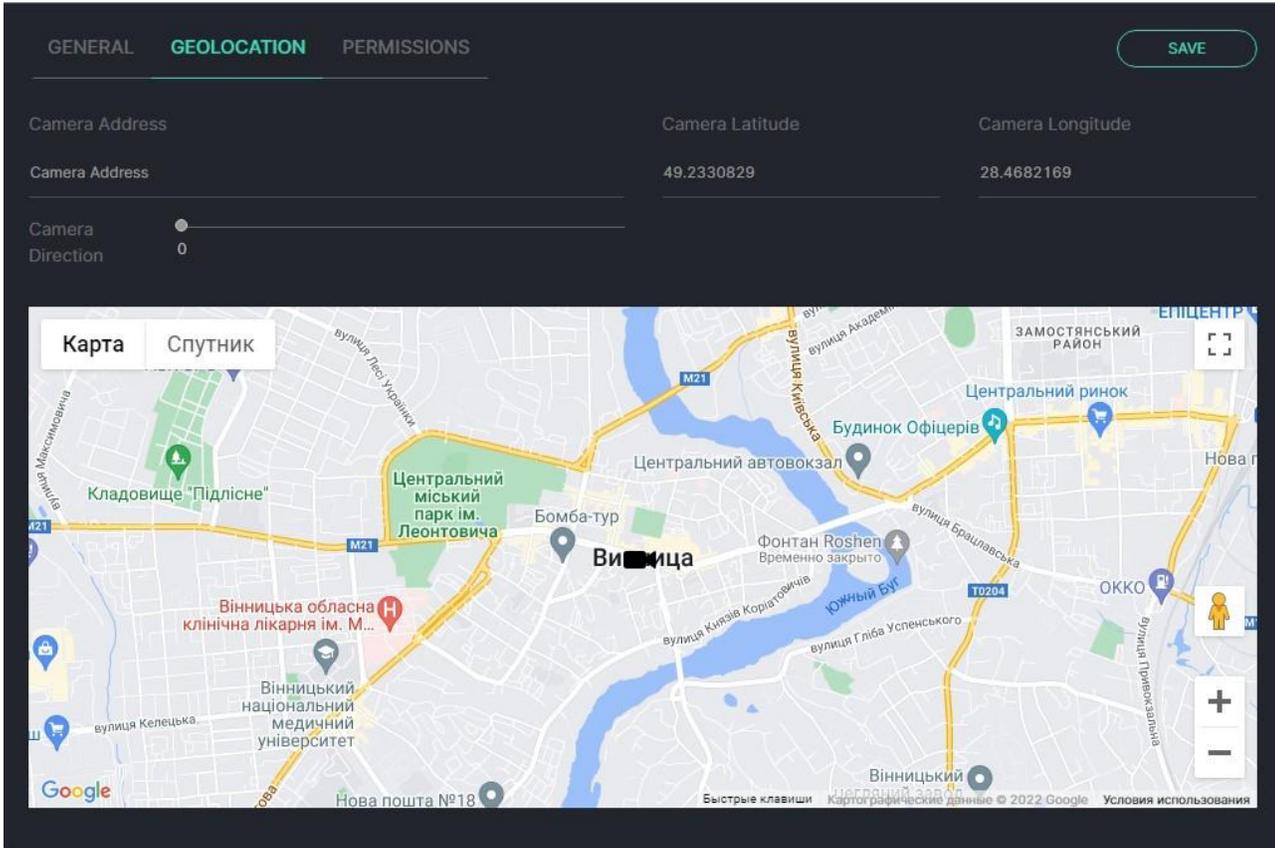
The screenshot shows a configuration interface with three tabs: GENERAL, GEOLOCATION, and PERMISSIONS. The GENERAL tab is active. At the top right is a 'SAVE' button. The form contains the following fields:

- Name: [Text input]
- Folder: [Drop-down menu with 'Root' selected]
- Source: [Text input]
- Time Zone: [Drop-down menu]
- RTSP: [Drop-down menu with 'Select' selected]
- Host: [Text input]
- Port: [Text input with '554' entered]
- Path: [Text input]
- Authentication: [Toggle switch, currently off]
- Video Source Address: [Text input with 'rtsp://554' entered]

- Enter the video stream name
- Select the video source type from the drop-down list and fill in the added fields:
 - RTSP (added fields: Host Name, Host Port, Host Path, Authentication - Login and Password (optionally), Video Source Address)
 - FTP (added fields: Host Name, Host Port, Host Path, Events and Extra Options (optionally), Video Source Address)
 - HTTP (added fields: Host Name, Host Port, Host Path, Authentication - Login and Password (optionally), Video Source Address)
- Select a folder from a drop-down list to place the video stream
- Select the camera's relative location and time zone

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The Geolocation tab supplies the ability to:



- Set the camera address, latitude, and longitude by:
 - Clicking and dragging the Camera icon on the Google Map
 - Filling in the Camera Address, Camera Latitude, and Camera Longitude fields
- Set the camera direction by moving the slider

The Permissions tab supplies the ability to:

- Assign video stream permissions for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required permissions
 - Click the Delete icon to remove the unnecessary role
- Assign video stream permissions for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required permissions
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required video stream permissions by default

 The View Video Streams permission allows viewing the video stream in the Video Streams item, as well as using the video stream in analytics and viewing search results, event notifications, and statistics related to the video stream. The Manage Video Streams permission allows editing and removing the video stream in the Video Streams item. Default parameters are active only if no Roles or Users are added. The quantity of added Roles and Users is not limited.

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To edit a camera:

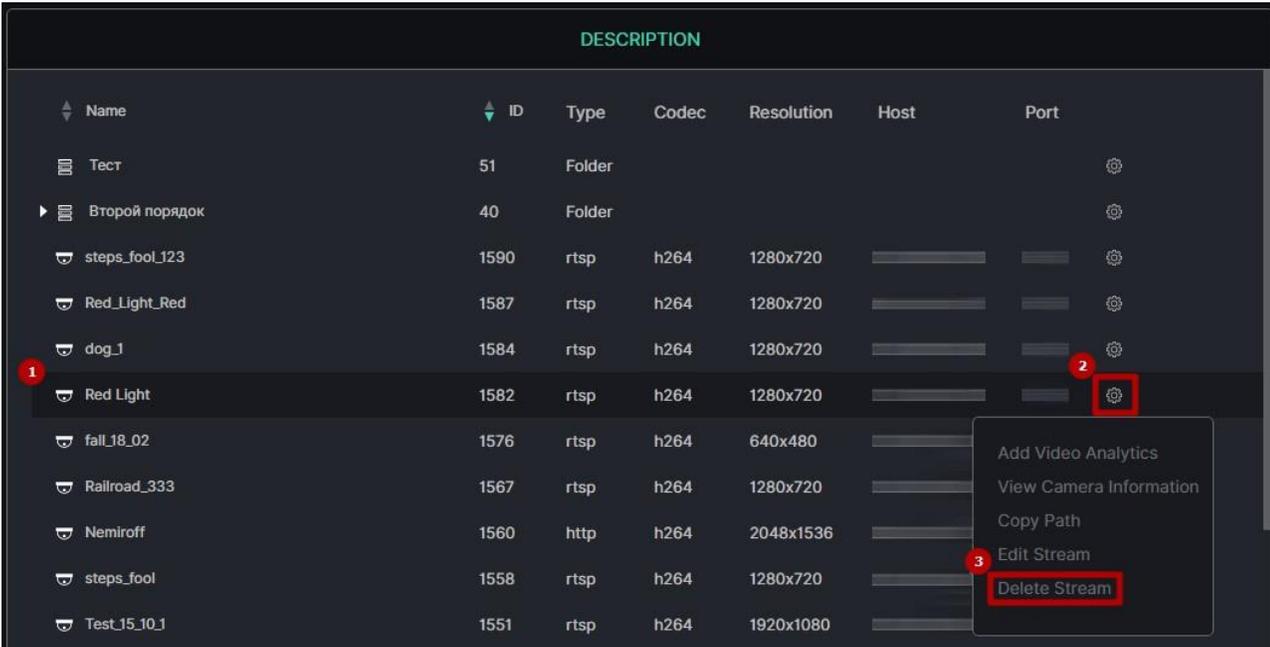
The screenshot shows a table with columns: Name, ID, Type, Codec, Resolution, Host, and Port. The 'Red Light' stream (ID 1582) is selected. A context menu is open over the settings icon for this stream, with the 'Edit Stream' option highlighted. Red circles with numbers 1, 2, and 3 indicate the steps: 1. Find the desired video stream, 2. Hover over the settings icon, and 3. Select the Edit Stream button.

Name	ID	Type	Codec	Resolution	Host	Port
Тест	51	Folder				
Второй порядок	40	Folder				
steps_fool_123	1590	rtsp	h264	1280x720		
Red_Light_Red	1587	rtsp	h264	1280x720		
dog_1	1584	rtsp	h264	1280x720		
Red Light	1582	rtsp	h264	1280x720		
fall_18_02	1576	rtsp	h264	640x480		
Railroad_333	1567	rtsp	h264	1280x720		
Nemiroff	1560	http	h264	2048x1536		
steps_fool	1558	rtsp	h264	1280x720		
Test_15_10_1	1551	rtsp	h264	1920x1080		

1. Find the desired video stream in the Description block
2. Hover the mouse over the Settings icon to open the drop-down menu
3. Select the Edit Stream button

- All parameters configured while adding a video stream are editable.
- Only the administrator can make changes to permissions while editing the video stream. For other system users, the Permissions tab is disabled.

To remove a camera:

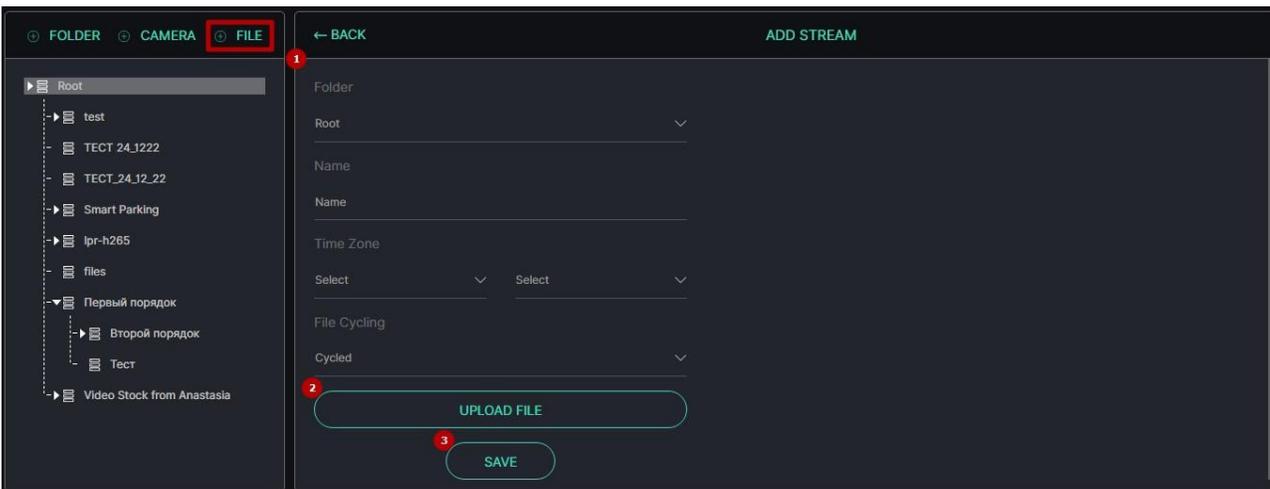


1. Find the desired video stream in the Description block
2. Hover the mouse over the Settings icon to open the drop-down menu
3. Select the Delete Stream button and confirm the intention in the pop-up window

It is unable to remove a video stream associated with created analytics. First, remove all analytics associated with the video stream and then continue with the deletion.

Manage Files

To add a new video file, select the File button at the top of the Folders block. In the Add Stream block:



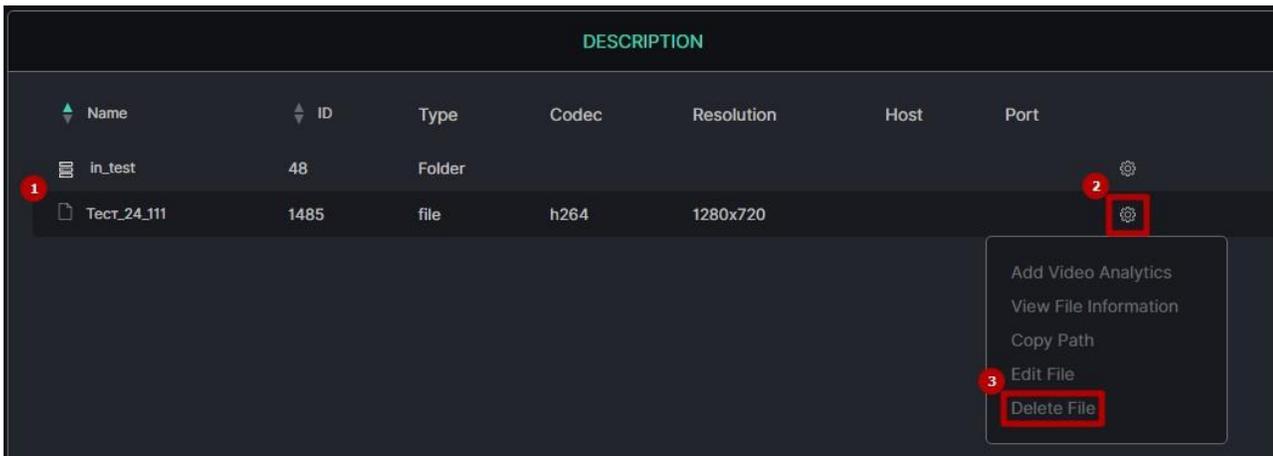
1. Fill in the required fields:
 - a. Select a folder from a drop-down list to place the video file
 - b. Enter the video file name

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- c. Select the camera's relative location and time zone
- d. Select the type of video file playback in the analytics process from the drop-down list:
 - i. Once
 - ii. Cycled
2. Click the Upload File button to select a video file from the device
3. Select the Save button to confirm the intention

 Click the Back button to return to the Description block.

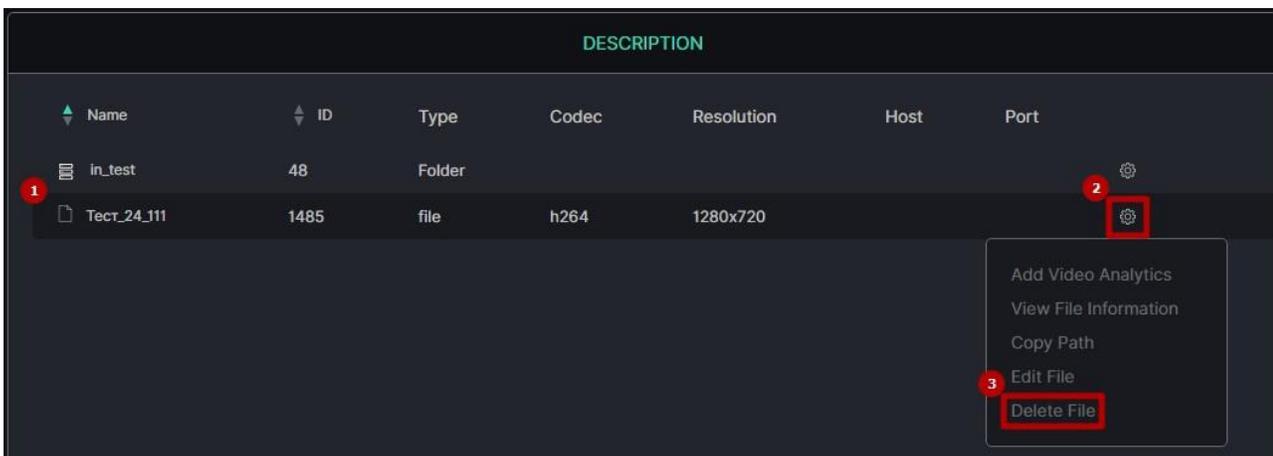
To edit a video file:



1. Find the desired video file in the Description block
2. Hover the mouse over the Settings icon to open the drop-down menu
3. Select the Edit File button

 All parameters configured while adding a video file are editable.

To remove a video file:



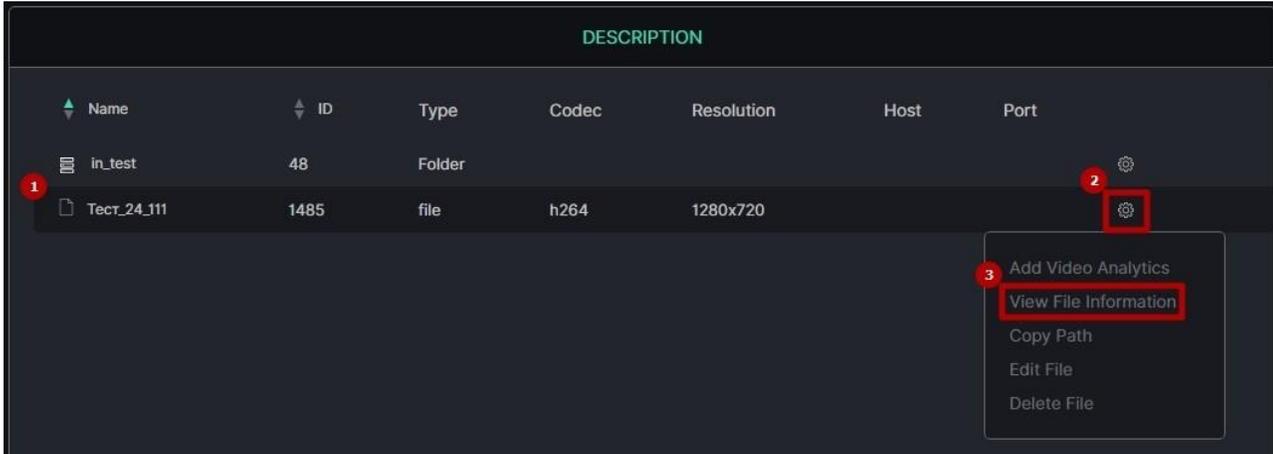
1. Find the desired video file in the Description block
2. Hover the mouse over the Settings icon to open the drop-down menu
3. Select the Delete File button and confirm the intention in the pop-up window

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It is unable to remove a video file associated with created analytics. First, remove all analytics associated with the video file and then continue with the deletion.

View Camera/File Information

To view the video stream or video file information and video preview:

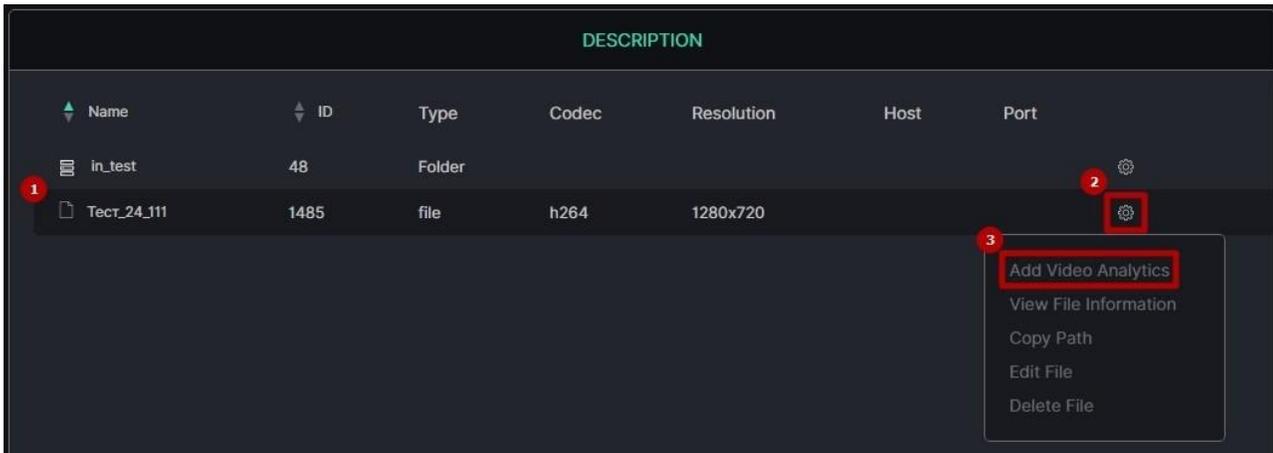


1. Find the desired video stream or video file in the Description block
2. Hover the mouse over the Settings icon to open the drop-down menu
3. Select the View Camera Information (for video streams) or View File Information (for video files) button to open the information pop-up window

To update the video stream preview, click the Update button above the preview in the popup window. The option is available only for video streams.

Add Video Analytics

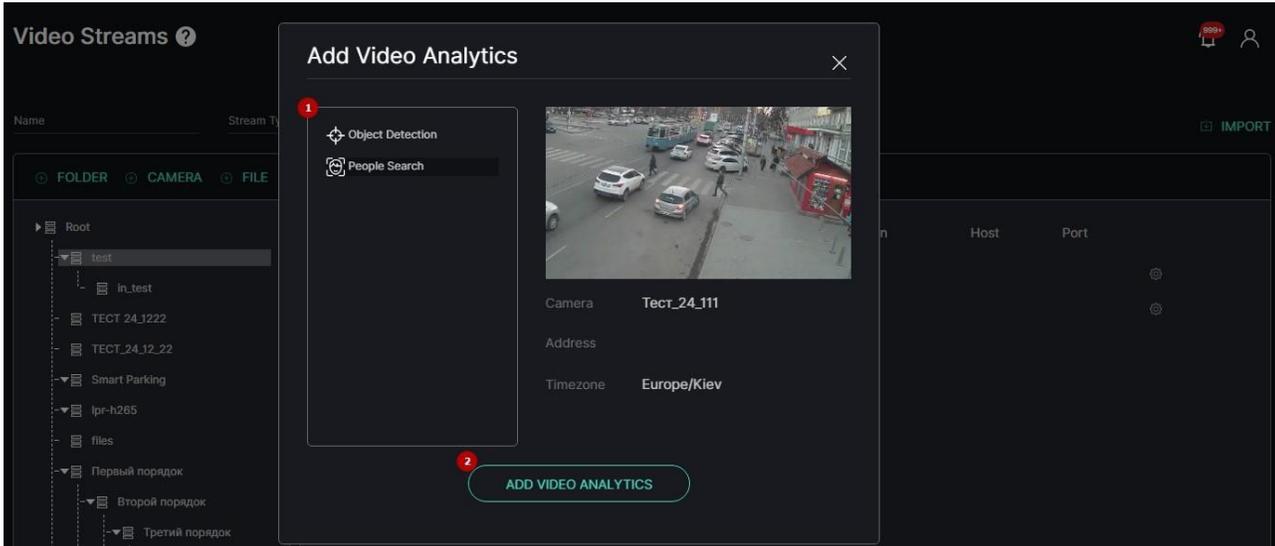
To add video analytics from a video stream or video file:



1. Find the desired video stream or video file in the Description block
2. Hover the mouse over the Settings icon to open the drop-down menu
3. Select the Add Video Analytics button to open the pop-up window

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In the Add Video Analytics pop-up window:

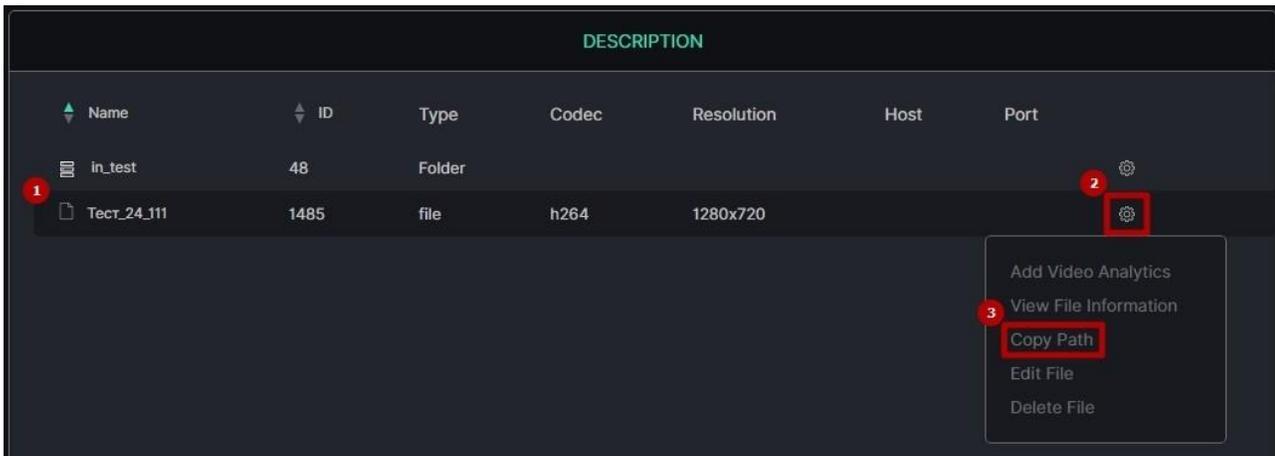


1. Select the required plugin from the list
2. Click the Add Video Analytics button to open the Add Analytics page of the selected plugin

 The selected video file or video stream is automatically set in the Video field on the Add Analytics page.

Copy Path

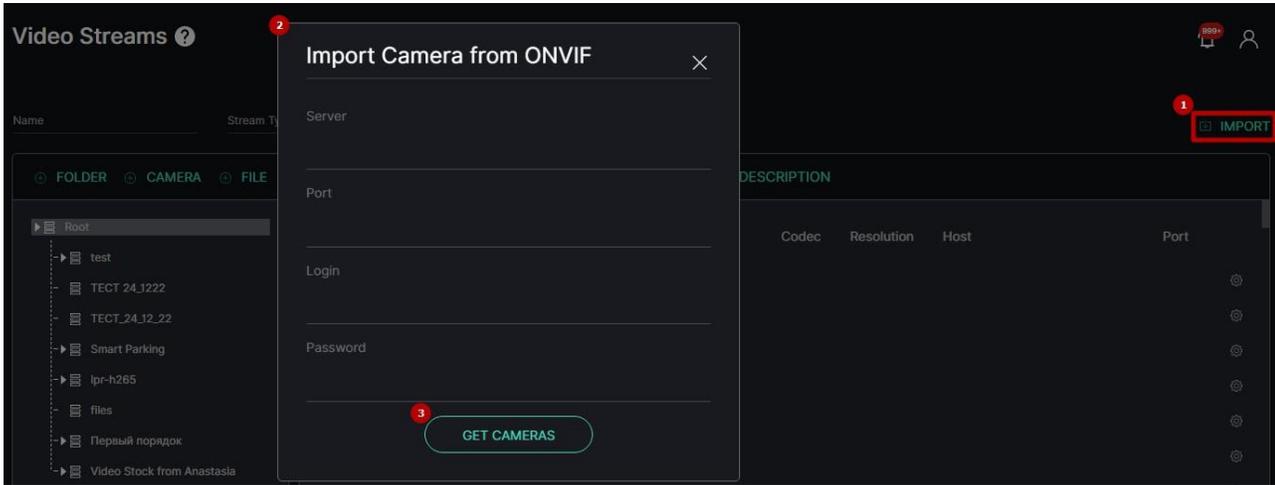
To copy the path to a video stream or video file:



1. Find the desired video stream or video file in the Description block
2. Hover the mouse over the Settings icon to open the drop-down menu
3. Select the Copy Path button to copy the path to the clipboard for further use

Import Cameras from ONVIF

To add several video streams from ONVIF:



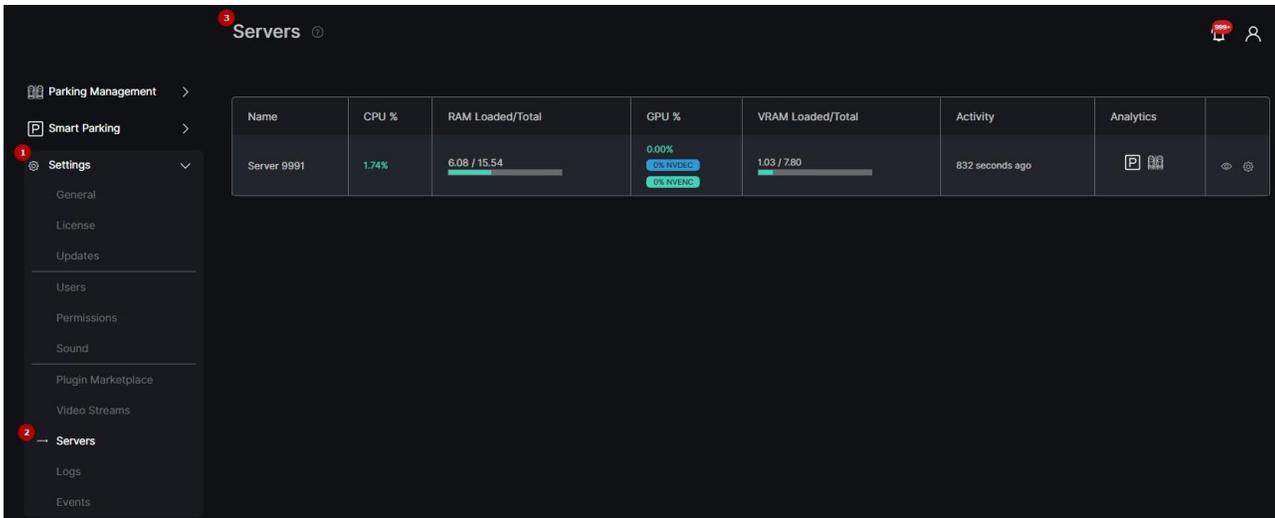
1. Click the Import button
2. View the Import Camera from ONVIF pop-up window and fill in the required fields:
 - a. Enter the address of the server to which the cameras are connected
 - b. Enter the port number
 - c. Enter the ONVIF login
 - d. Enter the ONVIF password
3. Click the Get Cameras button to confirm the intention

Servers

 This page describes the Servers item that allows viewing the data of server load and analytics activity.

Overview

To open the Servers item, in the left menu:



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1. Select the Settings section
2. Choose the Servers item
3. See servers

Use and Functionality

The Servers item shows:

Name	CPU %	RAM Loaded/Total	GPU %	VRAM Loaded/Total	Activity	Analytics
Server 9991	1.74%	6.08 / 15.54	0.00% 0% NVDEC 0% NVENC	1.03 / 7.80	832 seconds ago	[Analytics Icons]

- Server name
- CPU and GPU current activity in percentage
- RAM and VRAM load
- Latest update time of the server load data
- Current working analytics

The GPU % column also displays the current percent of GPU consumption by the encoding and decoding processes.

Server Details

To view server details:

Server Details

Analytics Details

ID	Name	Type	Up Time
2756	Test_Road	Smart Parking	3m 0s
2873	Test_15_10	Parking Management	23h 22m 48s

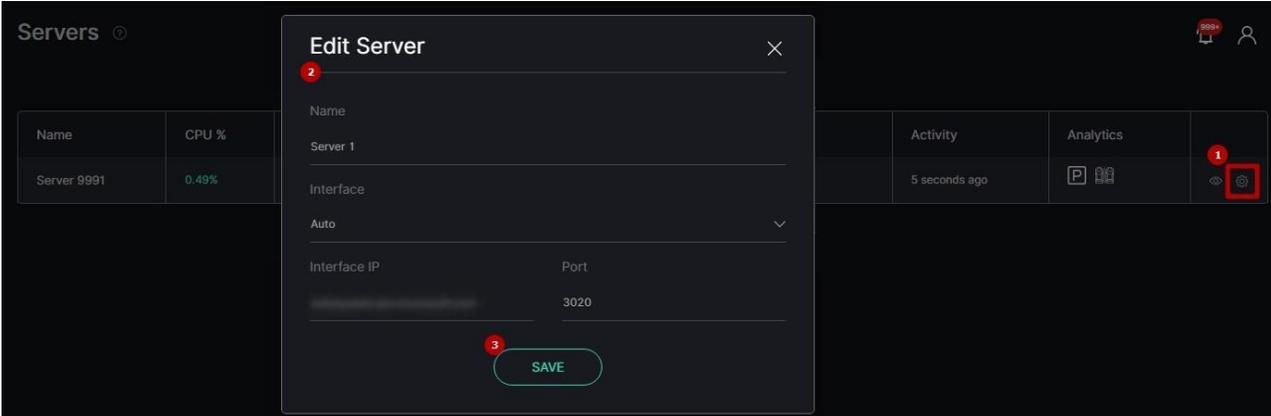
Analytics Quantity

Type	Total Quantity
Smart Parking	1
Parking Management	1

1. Click the View icon on the toolbox
2. See the Server Details pop-up window
3. View active analytics details
4. Click the:
 - a. Edit icon to edit settings in the selected analytics
 - b. View icon to see the selected analytics process in real-time
5. View active analytics quantity

Edit Server

To edit server parameters:



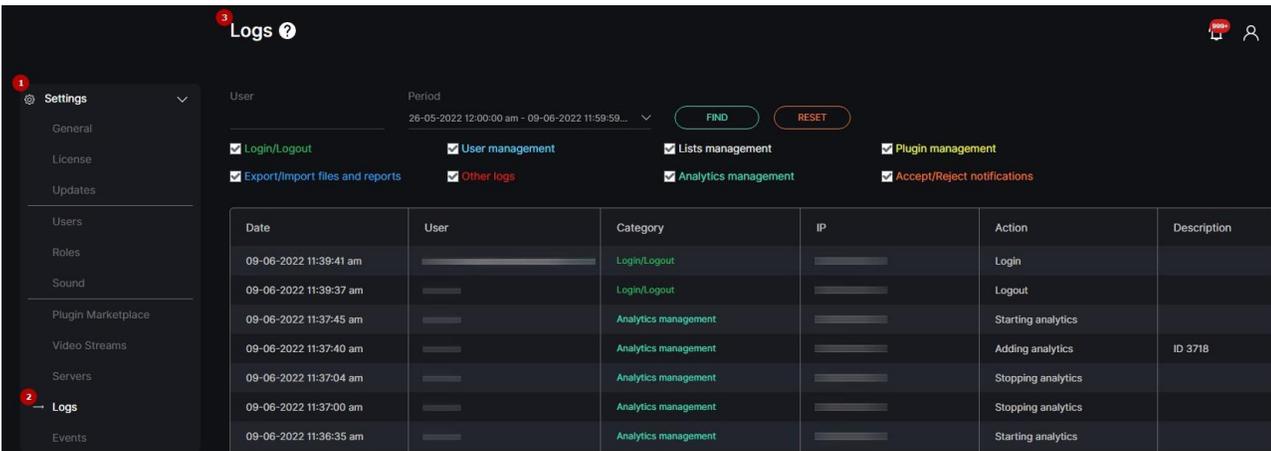
1. Click the Settings icon on the toolbox
2. Fill in the fields in the Edit Server pop-up window:
 - a. Edit the server's name
 - b. Select NIC to receive real-time analytics broadcast
 - c. Specify the IP address for real-time analytics broadcast
 - d. Specify the port for real-time analytics broadcast or leave the default setting (3020)
3. Click the Save button to apply changes

Logs

i This page describes the Logs item that allows viewing the log of user actions in the system.

Overview

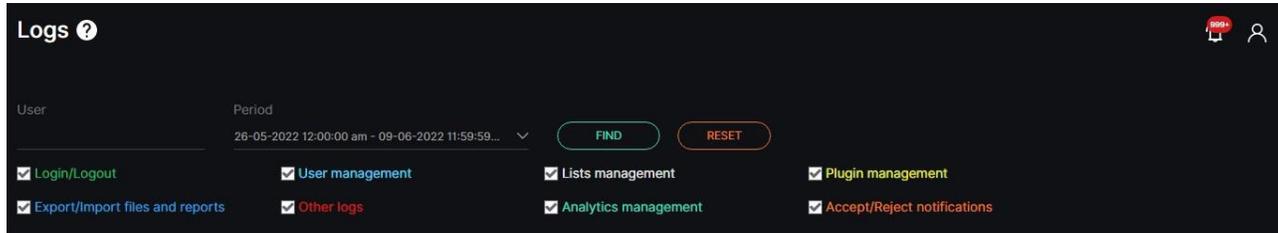
To open the Logs item, in the left menu:



1. Select the Settings section
2. Choose the Logs item
3. See logs

Use and Functionality

The Logs functional menu allows to:



- Enter the username or characters in the name to filter users
- Select the required time frame
- Check the user action category boxes:
 - Login/Logout
 - User Management
 - Lists Management
 - Plugin Management
 - Export/Import Files and Reports
 - Other Logs
 - Analytics Management
 - Accept/Reject Notifications
- Click the Find button to start filtering
- Click the Reset button to clear the filters

Once selected and filtered, see the log of user actions in the table below. It contains:

The screenshot shows the 'Logs' interface with the same search filters as above. Below the filters, a table displays the filtered log entries. The table has columns for Date, User, Category, IP, Action, and Description.

Date	User	Category	IP	Action	Description
09-06-2022 11:39:41 am	[Redacted]	Login/Logout	[Redacted]	Login	
09-06-2022 11:39:37 am	[Redacted]	Login/Logout	[Redacted]	Logout	
09-06-2022 11:37:45 am	[Redacted]	Analytics management	[Redacted]	Starting analytics	
09-06-2022 11:37:40 am	[Redacted]	Analytics management	[Redacted]	Adding analytics	ID 3718

- Date and time of the action
- Name of the user that performed the action
- Name of the user action category
- IP address of the user that performed the action
- Action performed by the user in the system
- Short description of each performed action

User Action Types

User actions in the system include:

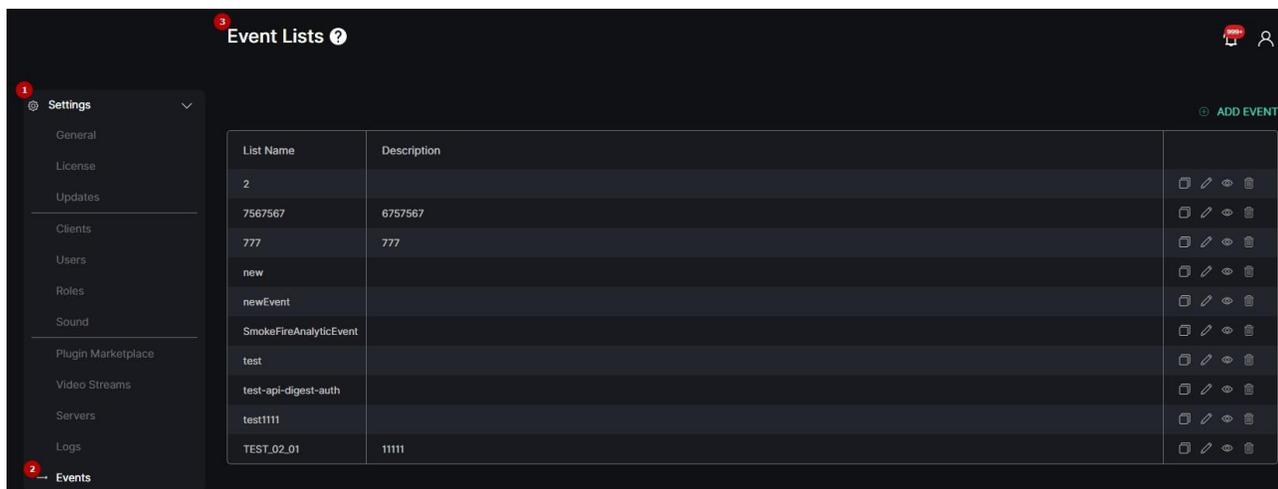
- Login and logout
- Adding and editing a user
- Adding and editing a rule
- Adding and editing a Google Maps API Key
- Changes to Storage (event storage time)
- Adding and editing a License Key
- Adding, editing, enabling, disabling, and removing a plugin
- Enabling and disabling a sound effect
- Adding, editing, and removing a video stream
- Adding, editing, enabling, disabling, and removing an analytics
- Accepting and rejecting notifications as false
- File import and export
- Reports export
- Adding, editing, and removing a list
- Adding, editing, and removing a list element
- Enabling and disabling a list notification
- Editing parameters for events out of the lists
- Resetting the notification panel
- Adding, editing, and removing elements from the Event Manager

Events

i This page describes the Events item that allows viewing and managing event lists.

Overview

To open the Events item, in the left menu:



1. Select the Settings section
2. Choose the Events item
3. See event lists

Use and Functionality

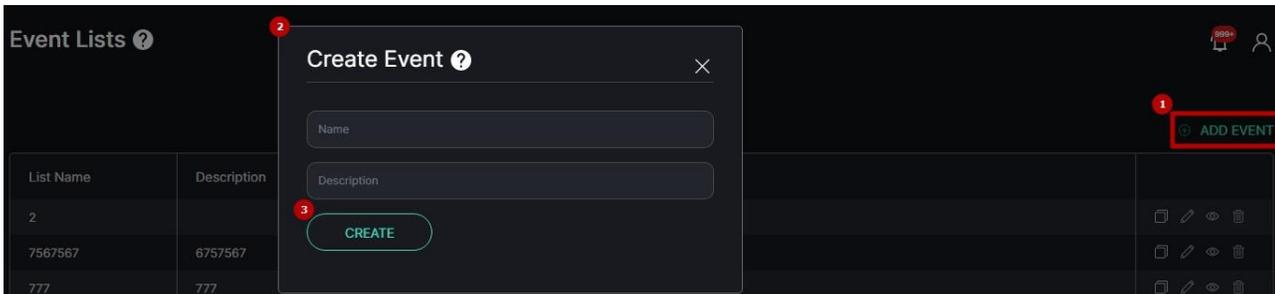
The Events item shows:

List Name	Description	
2		
7567567	6757567	
777	777	

- Event list name
- List description
- Toolbox includes:
 - Copy Event tool
 - Edit Event tool
 - View Event tool
 - Delete Event tool

Add Event

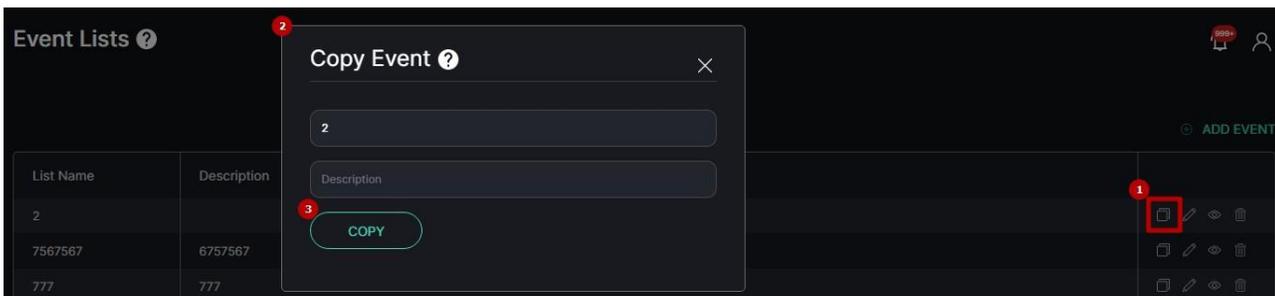
To add a new event:



1. Click the Add Event button
2. Fill in the fields in the pop-up window:
 - a. Enter the event name
 - b. Type a short event description
3. Click the Create button to confirm the intention

Copy Event

To copy the existed event:

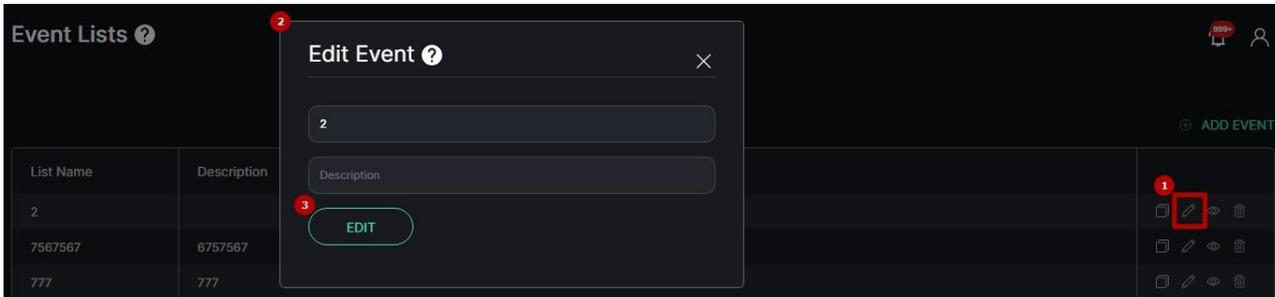


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1. Select the Copy Event icon on the toolbox
2. Fill in the fields in the pop-up window:
 - a. Enter a name for the copied event
 - b. Type a short event description
3. Click the Copy button to confirm the intention

Edit Event

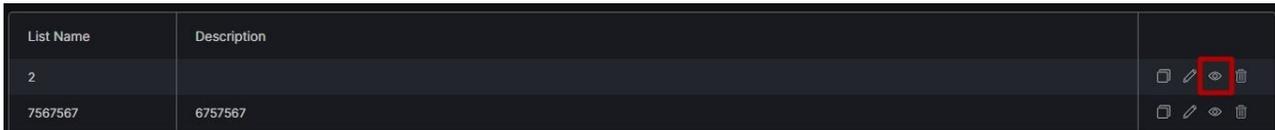
To edit the event:



1. Select the Edit Event icon on the toolbox
2. Fill in the fields in the pop-up window:
 - a. Enter another name for the selected event
 - b. Type a short event description
3. Click the Edit button to apply changes

View Event

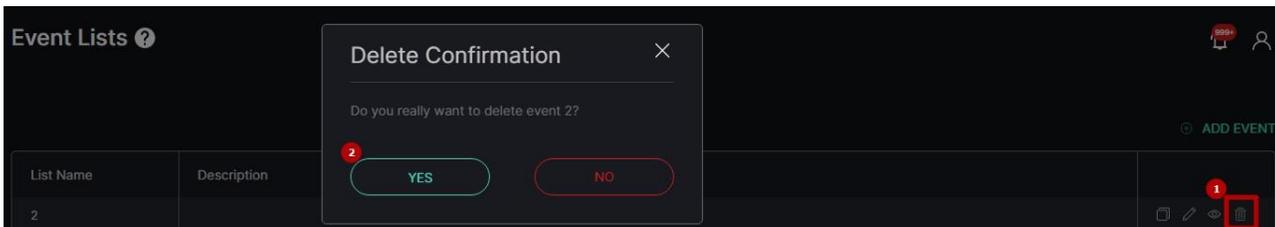
To open Event Manager Constructor, select the View Event icon on the toolbox:



To learn more about events configuration in Event Manager Constructor, read [Event Manager](#).

Delete Event

To remove the event:



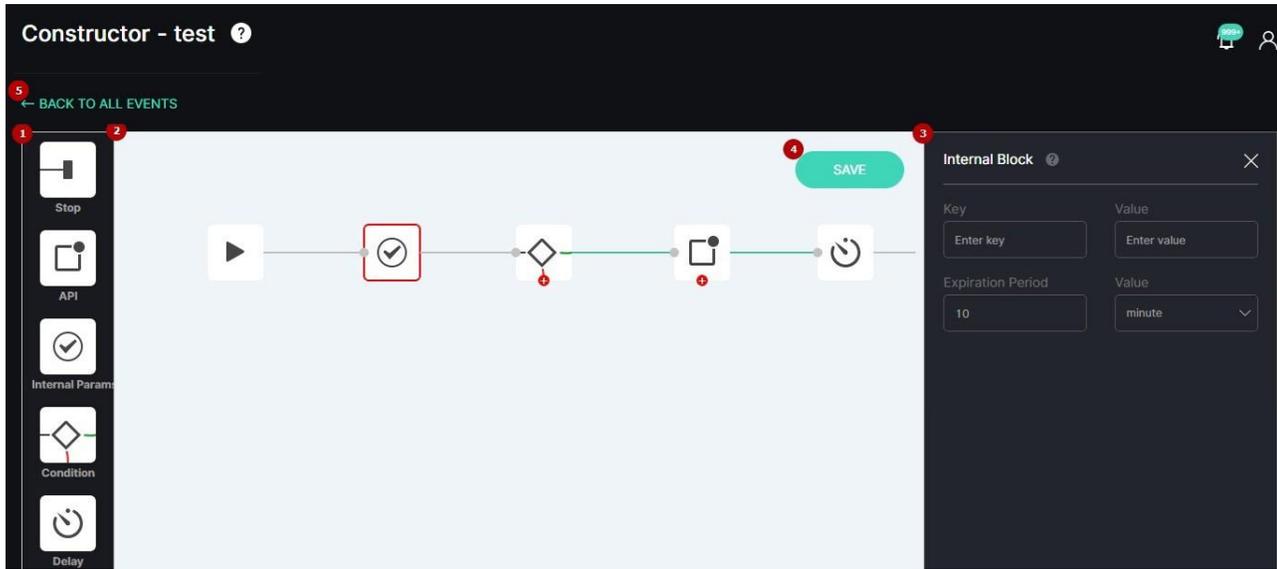
1. Select the Delete Event icon on the toolbox
2. Confirm the intention

Event Manager

i This page describes the Event Manager Constructor interface and functionality.

Overview

The main Constructor interface considers:



1. Block menu with all available blocks
2. Workspace to customize the sequence of blocks
3. Block settings box to configure the required block parameters
4. Save button to save settings
5. Back to All Events button to return to the main Events item

By default, the workspace holds 2 blocks connected to each other:

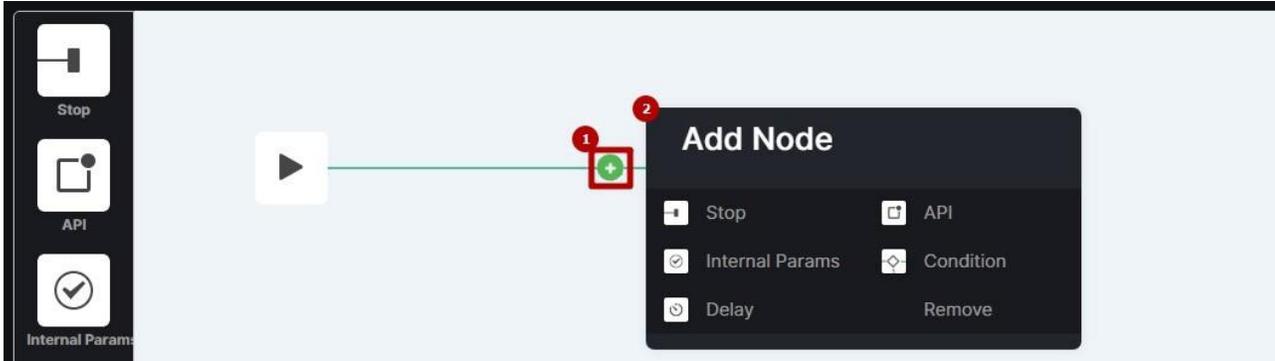


1. Start block
2. Stop block

- 💡** There is only one Start block in the workspace at the beginning of the branch, while a Stop block is added multiple times for each block branch end.
- The Start and Stop blocks are one-sided and cannot be placed between other blocks.

Use and Functionality

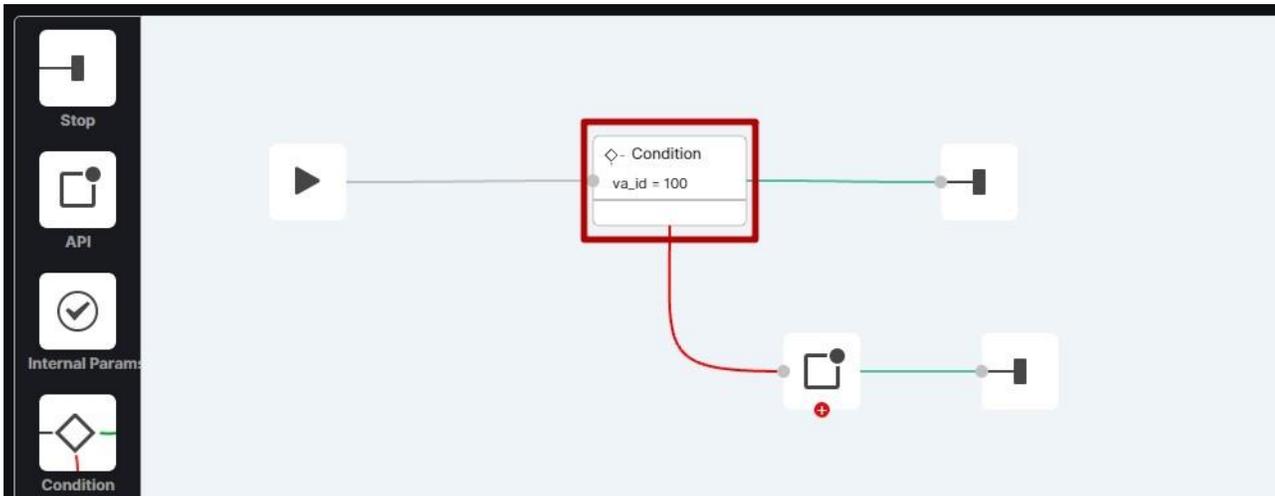
To add a new block in the connection:



1. Hover the mouse over the connection and click the green Plus button
2. Select the required block in the pop-up window

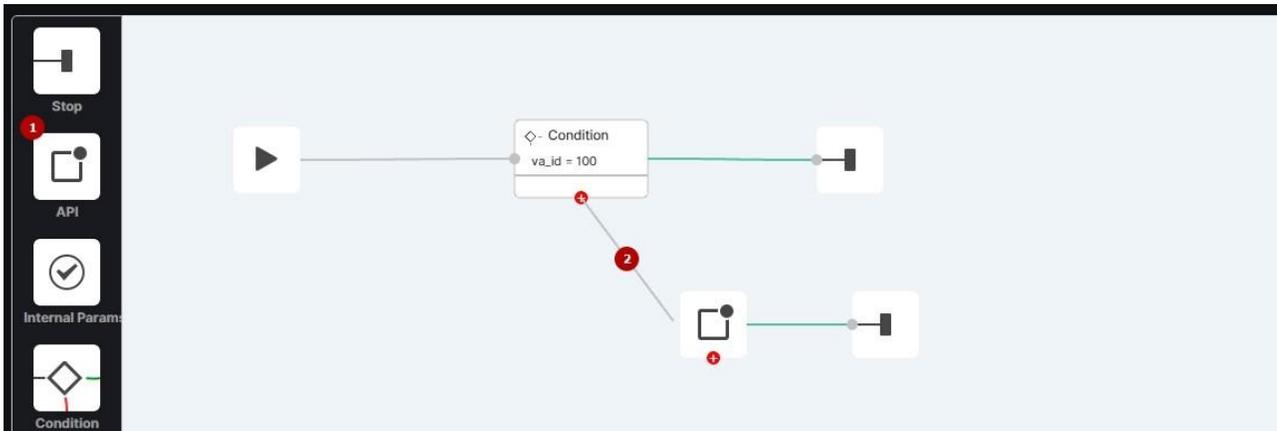
💡 Click and drag the desired block to the required location within the workspace to move blocks.

To view the block's parameters preview, double-click the required block icon in the workspace:



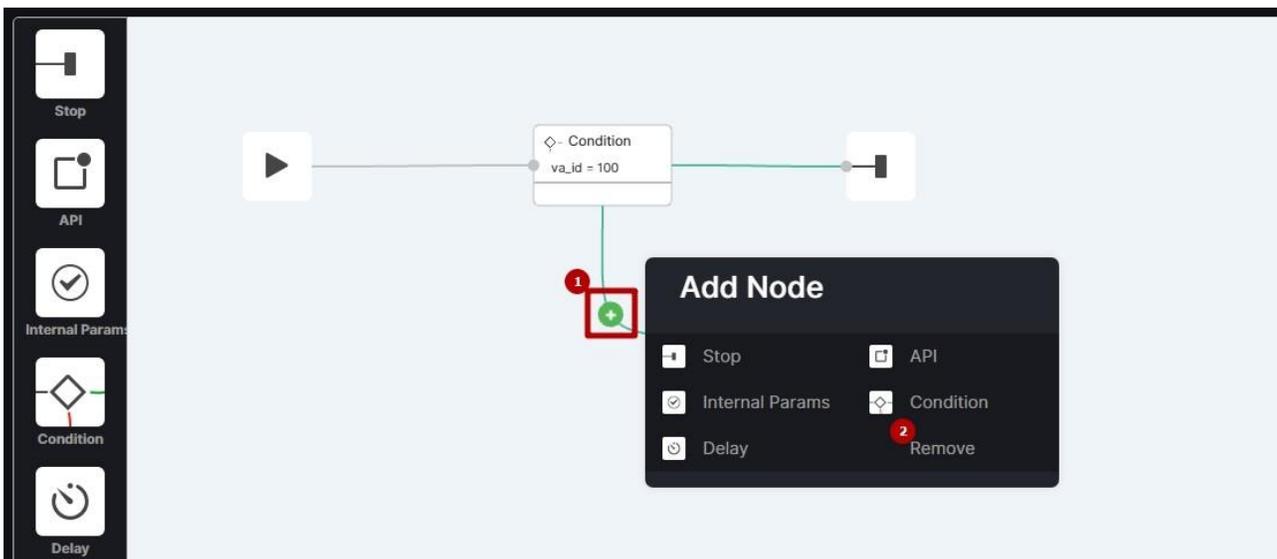
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The Condition and API blocks in the workspace have two node connections: Green for successful requests and red for failed ones. To continue the connection with the red node:



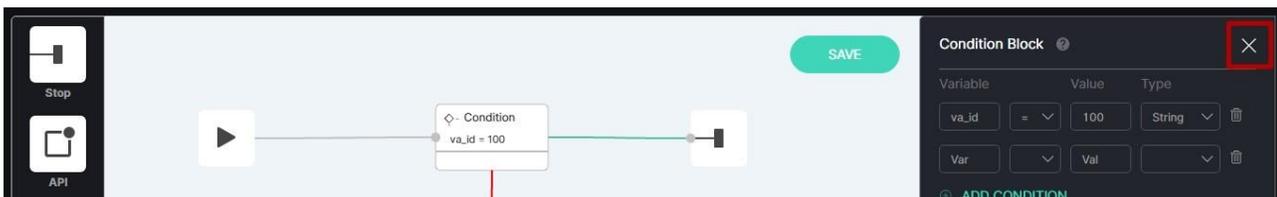
1. Click the required block in the block menu and drag it to the workspace
2. Click the red connection node and drag the line to the required block to link them

To remove a connection between two blocks:

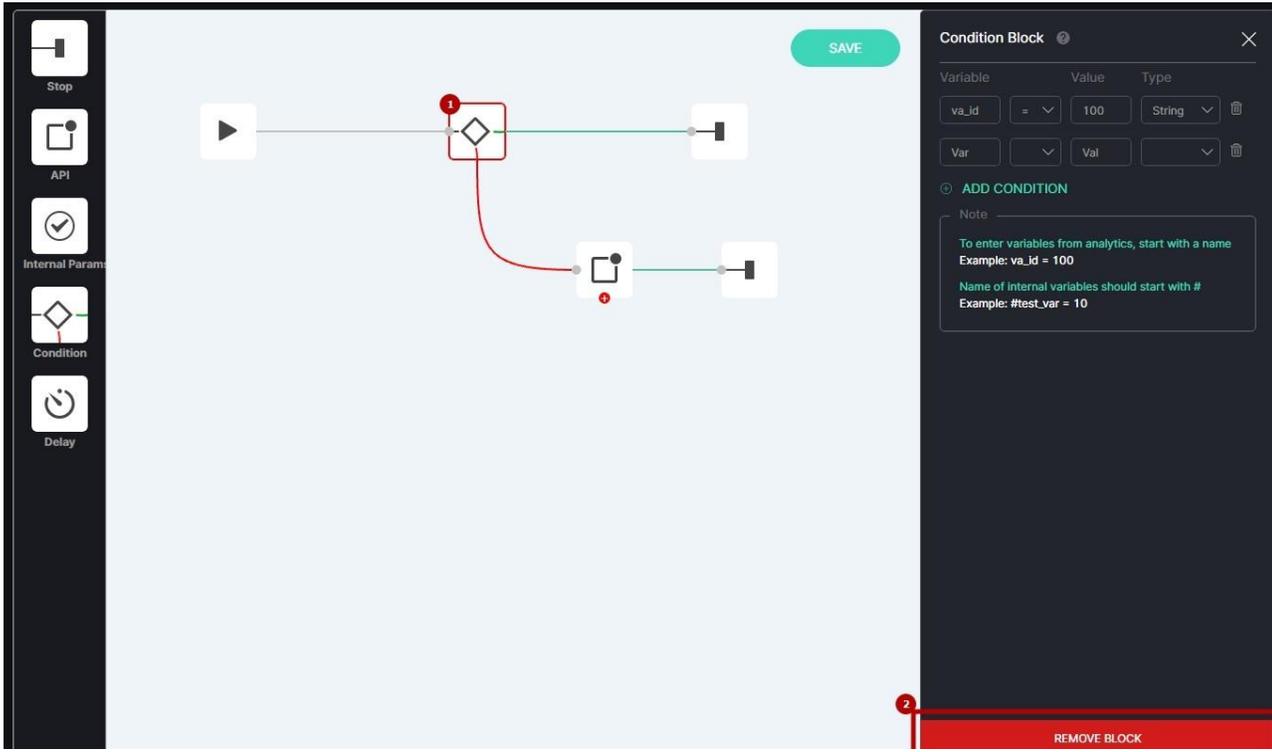


1. Hover the mouse over the required connection and click the green Plus button
2. Select the Remove button in the pop-up window

To close a block box, click the Close button in the upper-right corner of the box:



To remove the required block:



1. Select the block icon in the workspace to open the block box
2. Click the Remove Block button at the bottom of the box



The Start block is not available for removal from the workspace.

Event Data

Introduction

Use these variables and values as examples to set the event notifications properly in the Condition and API blocks to send to third-party services.

Event Data: Crowd Detection

```
{  
  "stream.location.longitude": "28.468217",  
  "stream.params.file_cycle": "0",  
  "va_id": "2381",  
  "stream.status": "online",  
  "ms_type": "stats",  
  "stream.fileName": "1635777954360GYdAb4CuApqkekYqGdFg2VG43Lz2jDot.jpg",  
  "ms_type": "stats",  
  "stream.fileName": "1635777954360GYdAb4CuApqkekYqGdFg2VG43Lz2jDot.jpg",  
  "stream.params.login": "",  
  "stream.modules.2379.notifyEnabled": "true",  
}
```

```
"stream.location.latitude": "49.233083",
"stream.modules.2379.id": "2379",
"client_id": "0",
"people_num": "2",
"stream.modules.2381.type": "crowd",
"stream_id": "1464",
"stream.modules.2380.enabled": "false",
"stream.modules.2381.notifyEnabled": "true",
"stream.modules.2381.enabled": "true",
"stream.modules.2379.type": "person_reid",
"stream.address": "",
"stream.modules.2379.enabled": "true",
"stream.modules.2380.id": "2380",
"timestamp": "2021-11-01 16:51:31",
"stream.uuid": "e66d5fe5-930c-4ed4-8b2d-f6f77e7db1a8",
"stream.id": "1464",
"stream.type": "rtsp",
"stream.clientId": "0",
"stream.modules.2380.type": "traffic",
"stream.modules.2380.events": "[]",
"stream.modules.2381.events": "[{\\"id\\":\\"7800c045-0a8d-4545-9ef1-1b0a3f0de6c4\\", \\"params\\":{}}]",
"stream.resolution.width": "1920",
"people_num_cap": "0",
"stream.resolution.height": "1080",
"stream.modules.2379.events": "[{\\"id\\":\\"7800c045-0a8d-4545-9ef1-1b0a3f0de6c4\\", \\"params\\":{}}]",
"stream.params.password": "",
"stream.name": "load_Testing",
"stream.params.file_fast_speed": "0",
"stream.url": "rtsp://localhost:8554/load_Testing",
"stream.createdAt": "01-11-2021 16:45:34",
"stream.params.auth_type": "no_auth",
"stream.direction": "0",
"stream.modules.2380.notifyEnabled": "false",
"detect_time": "0",
"stream.modules.2381.id": "2381",
"analytics_type": "crowd"
}
```

Event Data: Face Recognition

```
{
"age": "22-30",
"alert.author": "user",
"alert.comment": "",
"alert.createdAt": "27-10-2021 18:13:34",
"alert.id": "20",
"alert.image": "wanted_faces/c2fd86c8-db95-4d79-9543-9b94c0347249.jpg",
"alert.images": "[\\"wanted_faces/c2fd86c8-db95-4d79-9543-9b94c0347249.jpg\\"]",
"alert.list_id": "9",
"alert.name": "person",
"alert.status": "1",
"angles_deviation": "0.8360419273376465",
"camera_buffer": "10",
"client_id": "0",
```

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```
"encoding": "[-0.030368655920028687,...]",
"exp_time": "1635152739",
"face_image": "faces/
2237/2021/10/25/12/9c8db0e2-281b-434e-9428-32b73b424c26_1635152734709_cropped.jpg",
"frame_image": "faces/
2237/2021/10/25/12/9c8db0e2-281b-434e-9428-32b73b424c26_1635152734709.jpg",
"gender": "0",
"image_keys": "[\\\"facesbdc2eb24-29ba-467f-8eda-7edc99fb2395\\\", \\\"faces1b0daa2e-81b4-4fd9-aa61-de62e4df4093\\\",
\\\"facesc236cd19-7c53-4980-93e5-26fb665c6ff6\\\"]",
"image_quality": "0.22306156158447266",
"list.attendanceEnabled": "false",
"list.clientId": "0",
"list.color": "#ffffff",
"list.comment": "",
"list.createdAt": "13-10-2021 12:38:25",
"list.creation_unix_timestamp_ms": "1634117905000",
"list.enabled": "false",
"list.entrance_streams": "[]",
"list.events": "[]",
"list.exit_streams": "[]",
"list.id": "9",
"list.name": "test",
"list.params.confidenceThreshold": "65",
"list.size": "6",
"list.status": "0",
"list.streams": "[]",
"mask": "false",
"millis_from_start": "0",
"ms_type": "detection",
"race": "Asian",
"stream.address": "",
"stream.clientId": "0",
"stream.createdAt": "06-10-2021 15:46:53",
"stream.direction": "0",
"stream.fileName": "16348308437100aMR2CgJofmXnME7hluTbhgYLg7GLIBE.jpg",
"stream.id": "1448",
"stream.location.latitude": "49.233083",
"stream.location.longitude": "28.468217",
"stream.modules.35.enabled": "false",
"stream.modules.35.events": "[]",
"stream.modules.35.id": "35",
"stream.modules.35.notifyEnabled": "false",
"stream.modules.35.type": "alpr",
"stream.modules.36.enabled": "false",
"stream.modules.36.events": "[]",
"stream.modules.36.id": "36",
"stream.modules.36.notifyEnabled": "false",
"stream.modules.36.type": "object_in_zone",
"stream.modules.38.enabled": "false",
"stream.modules.38.events": "[]",
"stream.modules.38.id": "38",
"stream.modules.38.notifyEnabled": "false",
"stream.modules.38.type": "railroad",
"stream.modules.39.enabled": "false",
"stream.modules.39.events": "[]",
```

```
"stream.modules.39.id": "39",
"stream.modules.39.notifyEnabled": "false",
"stream.modules.39.type": "object_in_zone",
"stream.modules.42.enabled": "false",
"stream.modules.42.events": "[]",
"stream.modules.42.id": "42",
"stream.modules.42.notifyEnabled": "false",
"stream.modules.42.type": "object_in_zone",
"stream.modules.46.enabled": "false",
"stream.modules.46.events": "[]",
"stream.modules.46.id": "46",
"stream.modules.46.notifyEnabled": "false",
"stream.modules.46.type": "object_in_zone",
"stream.modules.47.enabled": "false",
"stream.modules.47.events": "[]",
"stream.modules.47.id": "47",
"stream.modules.47.notifyEnabled": "false",
"stream.modules.47.type": "alpr",
"stream.modules.48.enabled": "false",
"stream.modules.48.events": "[]",
"stream.modules.48.id": "48",
"stream.modules.48.notifyEnabled": "false",
"stream.modules.48.type": "object_in_zone",
"stream.modules.49.enabled": "false",
"stream.modules.49.events": "[]",
"stream.modules.49.id": "49",
"stream.modules.49.notifyEnabled": "false",
"stream.modules.49.type": "alpr",
"stream.modules.2226.enabled": "true",
"stream.modules.2226.events": "[{\\"params\\":{}}]",
"stream.modules.2226.id": "2226",
"stream.modules.2226.notifyEnabled": "true",
"stream.modules.2226.type": "object_in_zone",
"stream.modules.2235.enabled": "false",
"stream.modules.2235.enabled": "false",
"stream.modules.2235.events": "[{\\"params\\":{}}]",
"stream.modules.2235.id": "2235",
"stream.modules.2235.notifyEnabled": "false",
"stream.modules.2235.type": "face",
"stream.modules.2237.enabled": "true",
"stream.modules.2237.events": "[{\\"id\\":\\"eb61a5cc-3322-4ae7-8bd8-94f03e7b5336\\",\\"params\\":{}}]",
"stream.modules.2237.id": "2237",
"stream.modules.2237.notifyEnabled": "true",
"stream.modules.2237.type": "face",
"stream.modules.2247.enabled": "false",
"stream.modules.2247.events": "[]",
"stream.modules.2247.id": "2247",
"stream.modules.2247.notifyEnabled": "false",
"stream.modules.2247.type": "object_in_zone",
"stream.modules.2255.enabled": "false",
"stream.modules.2255.events": "[]",
"stream.modules.2255.id": "2255",
"stream.modules.2255.notifyEnabled": "false",
"stream.modules.2255.type": "object_in_zone",
"stream.modules.2266.enabled": "false",
```

```
"stream.modules.2266.events": "[]",
"stream.modules.2266.id": "2266",
"stream.modules.2266.notifyEnabled": "false",
"stream.modules.2266.type": "object_in_zone",
"stream.modules.2282.enabled": "false",
"stream.modules.2282.events": "[]",
"stream.modules.2282.id": "2282",
"stream.modules.2282.notifyEnabled": "false",
"stream.modules.2282.type": "object_in_zone",
"stream.modules.2295.enabled": "false",
"stream.modules.2295.events": "[]",
"stream.modules.2295.id": "2295",
"stream.modules.2295.notifyEnabled": "false",
"stream.modules.2295.type": "object_in_zone",
"stream.modules.2298.enabled": "false",
"stream.modules.2298.events": "[]",
"stream.modules.2298.id": "2298",
"stream.modules.2298.notifyEnabled": "false",
"stream.modules.2298.type": "object_in_zone",
"stream.name": "Faces_test",
"stream.params.auth_type": "basic",
"stream.params.id": "4b442282-2f17-4f05-9e7c-cad8b59de6f9",
"stream.params.login": "",
"stream.params.password": "",
"stream.resolution.height": "600",
"stream.resolution.width": "800",
"stream.status": "online",
"stream.type": "rtsp",
"stream.url": "rtsp://admin:password@127.0.0.1:554/live/42528faa-d125-4585-ac04-a9d3442dfec1",
"stream.uuid": "13bbfb9f-d12f-4c5b-9bbc-a655cd6ae089",
"stream_id": "1448",
"timestamp": "2021-10-25 09:05:34",
"uuid": "9c8db0e2-281b-434e-9428-32b73b424c26",
"va_id": "2237",
"weighting_coeffs": "[0.3334648311138153,0.3350006937980652,0.3315344750881195]"
}
```

Event Data: LPR

```
{
"alert.author": "user",
"alert.comment": "",
"alert.createdAt": "10-09-2021 16:41:22",
"alert.id": "3",
"alert.list_id": "3",
"alert.name": "AB7766BM",
"alert.status": "enabled",
"alert.type": "1",
"color": "5",
"country": "UKRAINE-1",
"direction": "81",
"frame": "plates/2343/2021/10/25/11/AB7766BM_1635152343194.jpg",
"inList": "true",
"list.clientId": "0",
}
```

```
"list.color": "#ffffff",
"list.comment": "",
"list.createdAt": "10-09-2021 16:33:14",
"list.creation_unix_timestamp_ms": "1631280794000",
"list.enabled": "true",
"list.events": "[]",
"list.id": "3",
"list.name": "list 2",
"list.size": "3",
"list.status": "1",
"list.streams": "[]",
"make_model": "[{"year": "\\", \"model\": \"ONIX\", \"make\": \"CHEVROLET\"}]",
"ms_type": "detection",
"number": "AB7766BM",
"objects": [{"image": "plates/2343/2021/10/25/11/
AB7766BM_1635152343194_cropped.jpg\", \"box\":
[0.24375000596046448,0.27222222089767456,0.3140625059604645,0.31203705072402954],
\"type\": \"number\", \"uuid\": \"a7a8b134-acc8-4b38-a625-4bf2b28c5f11\"}],
"stream.address": "",
"stream.clientId": "0",
"stream.createdAt": "20-10-2021 12:53:21",
"stream.direction": "0",
"stream.fileName": "1634804597329fmi9fSQ1BeG0dm8px8PS3YuVPoebcUrw.jpg",
"stream.id": "1459",
"stream.location.latitude": "49.233083",
"stream.location.longitude": "28.468217",
"stream.modules.2314.enabled": "false",
"stream.modules.2314.events": "[]",
"stream.modules.2314.id": "2314",
"stream.modules.2314.notifyEnabled": "false",
"stream.modules.2314.type": "alpr",
"stream.modules.2321.enabled": "false",
"stream.modules.2321.events": "[]",
"stream.modules.2321.id": "2321",
"stream.modules.2321.notifyEnabled": "false",
"stream.modules.2321.type": "alpr",
"stream.modules.2327.enabled": "false",
"stream.modules.2327.events": "[]",
"stream.modules.2327.id": "2327",
"stream.modules.2327.notifyEnabled": "false",
"stream.modules.2327.type": "object_in_zone",
"stream.modules.2343.enabled": "true",
"stream.modules.2343.events": [{"id": \"eb61a5cc-3322-4ae7-8bd8-94f03e7b5336\", \"params\": {}}],
"stream.modules.2343.id": "2343",
"stream.modules.2343.notifyEnabled": "true",
"stream.modules.2343.type": "alpr",
"stream.name": "alpr-test",
"stream.params.auth_type": "basic",
"stream.params.id": "42528faa-d125-4585-ac04-a9d3442dfec1",
"stream.params.login": "admin",
"stream.params.password": "password",
"stream.resolution.height": "1080",
"stream.resolution.width": "1920",
"stream.status": "online",
"stream.type": "rtsp",
```

```
"stream.url": "rtsp://admin:password@127.0.0.1:554/live/42528faa-d125-4585-ac04-a9d3442dfec1",  
"stream.uuid": "f249ff99-acb6-4f3d-a787-3063d85c9205",  
"stream_id": "1459",  
"timestamp": "1635152343194",  
"va_id": "2343"  
}
```

Color ID Description

- 1 - Black,
- 2 - Blue,
- 3 - Yellow,
- 4 - Unknown,
- 5 - White,
- 6 - Brown,
- 7 - Red,
- 8 - Green,
- 9 - Orange,
- 10 - Beige,
- 11 - Violet,
- 12 - Grey,
- 13 - Cyan,
- 14 - Pink,
- 15 - Silver,
- 16 - Golden,
- 17 - Bordeaux

Event Data: Motion Detection

```
{  
"stream.location.longitude": "28.468217",  
"va_id": "2382",  
"stream.status": "online",  
"frame_image": "motion_alerts/2382/2021/11/1/16/1635778593177.jpg",  
"stream.modules.2382.type": "motion",  
"stream.fileName": "1635777954360GYdAb4CuApqkekYqGdFg2VG43Lz2jDot.jpg",  
"stream.modules.2379.id": "2379",  
"client_id": "0",  
"stream.modules.2381.type": "crowd",  
"stream_id": "1464",  
"stream.modules.2380.enabled": "false",  
"stream.modules.2379.type": "person_reid",  
"stream.modules.2380.id": "2380",  
"stream.modules.2382.enabled": "true",  
"stream.uuid": "7b42a0d5-83b0-4164-8c77-198fcfcf453b",  
"stream.type": "rtsp",  
"stream.clientId": "0",  
"stream.modules.2380.type": "traffic",  
"stream.modules.2381.events": "[{"id": "7800c045-0a8d-4545-9ef1-1b0a3f0de6c4", "params": {}}]",  
"stream.resolution.width": "1920",  
"in_time": "2021-11-01 14:56:33",  
"stream.url": "rtsp://localhost:8554/load_Testing",  
"stream.createdAt": "01-11-2021 16:45:34",  
"stream.params.auth_type": "no_auth",  
"analytics_type": "motion",  
}
```

```
"stream.params.file_cycle": "0",
"stream.modules.2382.notifyEnabled": "true",
"stream.params.login": "",
"stream.modules.2379.notifyEnabled": "true",
"stream.location.latitude": "49.233083",
"box":
"[0.019999999552965164,0.009999999776482582,0.029999999329447746,0.019999999552965164]",
"rule_type": "disappeared_object",
"stream.modules.2381.notifyEnabled": "true",
"stream.modules.2381.enabled": "true",
"stream.address": "",
"stream.modules.2379.enabled": "true",
"stream.modules.2382.id": "2382",
"timestamp": "2021-11-01 14:56:33",
"stream.modules.2382.events": "[{\\"id\\":\\"7800c045-0a8d-4545-9ef1-1b0a3f0de6c4\\", \\"params\\":{}}]",
"stream.id": "1464",
"stream.modules.2380.events": "[]",
"thumbnail_image": "motion_alerts/2382/2021/11/1/16/1635778593177_thumbnail.jpg",
"rule_id": "714fd00ca6bc",
"stream.resolution.height": "1080",
"stream.modules.2379.events": "[{\\"id\\":\\"7800c045-0a8d-4545-9ef1-1b0a3f0de6c4\\", \\"params\\":{}}]",
"stream.params.password": "",
"stream.name": "load_Testing",
"stream.params.file_fast_speed": "0",
"stream.direction": "0",
"rule_points": "[[0.0072916666977107525,0.013888888992369175],
[0.6875,0.007407407276332378],[0.5755208134651184,0.6509259343147278],
[0.3765625059604645,0.5824074149131775],[0.0072916666977107525,0.9851852059364319]]",
"stream.modules.2380.notifyEnabled": "false",
"stream.modules.2381.id": "2381"
}
```

Event Data: Object Detection

```
{
"stream.modules.2376.enabled": "true",
"stream.location.longitude": "28.468217",
"stream.modules.1359.events": "[]",
"va_id": "2376",
"ms_type": "alert",
"stream.modules.1479.notifyEnabled": "false",
"stream.modules.1479.id": "1479",
"stream.modules.1804.events": "[]",
"stream.status": "online",
"frame_image": "object_alerts/2376/2021/11/1/16/1635777073646.jpg",
"stream.modules.2376.notifyEnabled": "true",
"stream.fileName": "16357768419588IHhFSiPznO601x0qDw5rOPx025a6bcP.jpg",
"check_type": "absent",
"type": "2",
"client_id": "0",
"stream_id": "1326",
"zone_polygon": "[[0.0072916666977107525,0.013786764815449715],
[0.5296875238418579,0.007352941203862429],[0.3921875059604645,0.9613970518112183],
[0.0072916666977107525,0.9779411554336548]]",
}
```

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```
"stream.modules.2333.enabled": "false",  
"stream.modules.1479.enabled": "false",  
"stream.uuid": "bfacacf7-dbbb-4076-9e1a-18996aad87b0",  
"stream.type": "rtsp",  
"stream.clientId": "0",  
"stream.modules.2376.events": "[{"id": "\7800c045-0a8d-4545-9ef1-1b0a3f0de6c4", "params": {}}]",  
"stream.modules.2376.id": "2376",  
"stream.resolution.width": "1920",  
"stream.params.luxriot_channel_id": "107",  
"stream.modules.1360.type": "traffic",  
"in_time": "2021-11-01 14:31:10",  
"stream.modules.1360.enabled": "false",  
"stream.url": "rtsp://localhost:8554/lpr-ua",  
"stream.createdAt": "11-05-2021 10:28:25",  
"stream.params.auth_type": "no_auth",  
"stream.modules.1359.enabled": "false",  
"analytics_type": "object_in_zone",  
"stream.params.file_cycle": "0",  
"stream.modules.1479.type": "alpr",  
"stream.params.login": "",  
"stream.params.luxriot_server_id": "101",  
"stream.modules.1804.notifyEnabled": "false",  
"stream.location.latitude": "49.233083",  
"box": "[[0.2800000011920929,0.0,0.5099999904632568,0.07999999821186066]]",  
"stream.modules.1360.notifyEnabled": "false",  
"stream.modules.1479.events": "[]",  
"stream.modules.1804.enabled": "false",  
"zone_id": "24c19529cf8f",  
"stream.modules.1360.events": "[]",  
"stream.modules.1804.id": "1804",  
"stream.modules.1804.type": "object_in_zone",  
"stream.modules.1359.id": "1359",  
"stream.modules.1360.id": "1360",  
"stream.address": "",  
"stream.modules.2333.notifyEnabled": "false",  
"stream.modules.2376.type": "object_in_zone",  
"timestamp": "2021-11-01 14:31:13",  
"stream.id": "1326",  
"stream.modules.2333.type": "alpr",  
"thumbnail_image": "object_alerts/2376/2021/11/1/16/1635777073646_thumbnail.jpg",  
"stream.modules.1359.notifyEnabled": "false",  
"stream.modules.2333.id": "2333",  
"stream.modules.2333.events": "[]",  
"stream.resolution.height": "1080",  
"stream.params.password": "",  
"stream.name": "alpr-ua",  
"stream.params.file_fast_speed": "0",  
"stream.modules.1359.type": "alpr",  
"stream.direction": "0"  
}
```

Event Data: Person Alert Expiration Message

```
{  
  "cause": "person_alert_expired",  
  "alert_id": "123",  
  "list_id": "1"  
}
```

Event Data: Pose Estimation

```
{  
  "stream.location.longitude": "28.468217",  
  "stream.params.file_cycle": "0",  
  "va_id": "2383",  
  "ms_type": "alert",  
  "stream.status": "online",  
  "frame_image": "fallen_people/2383/2021/11/1/17/1635779096852.jpg",  
  "stream.fileName": "1635778935451d0KAPIDbMhlxTQUcR8wB8ltyBBQMhb77.jpg",  
  "stream.params.login": "",  
  "stream.location.latitude": "49.233083",  
  "box": "[134,100,220,337]",  
  "client_id": "0",  
  "Analytics System User Manual - User Manual  
  Settings - 106",  
  "zone_id": "1635779047538",  
  "rule_type": "walking",  
  "stream_id": "1465",  
  "zone_polygon": "[[9,9],[630,9],[630,470],[9,470]]",  
  "stream.address": "",  
  "timestamp": "1635779096795",  
  "stream.modules.2383.enabled": "true",  
  "stream.modules.2383.type": "fallen_people",  
  "stream.uuid": "487199c4-3dac-40bc-9dea-82723568a159",  
  "stream.id": "1465",  
  "stream.type": "rtsp",  
  "stream.clientId": "0",  
  "stream.modules.2383.notifyEnabled": "true",  
  "thumbnail_image": "fallen_people/2383/2021/11/1/17/1635779096852_thumbnail.jpg",  
  "stream.resolution.width": "640",  
  "stream.modules.2383.events": "[[{\\"id\\": \"7800c045-0a8d-4545-9ef1-1b0a3f0de6c4\", \"params\\\": {}}]]",  
  "stream.resolution.height": "480",  
  "stream.params.password": "",  
  "stream.name": "fall",  
  "stream.params.file_fast_speed": "0",  
  "stream.url": "rtsp://localhost:8554/fall",  
  "stream.createdAt": "01-11-2021 17:02:15",  
  "stream.params.auth_type": "no_auth",  
  "stream.direction": "0",  
  "stream.modules.2383.id": "2383",  
  "analytics_type": "fallen_people"  
}
```

Event Data: Smart Tracking System

```
{
"stream.location.longitude": "28.468217",
"attributes.gender": "1",
"stream.status": "online",
"frame_image": "persons-reid/2021/11/1/17/_37_46_711469.jpg",
"stream.modules.2382.type": "motion",
"stream.fileName": "1635777954360GYdAb4CuApqkekYqGdFg2VG43Lz2jDot.jpg",
"stream.modules.2379.id": "2379",
"client_id": "0",
"attributes.up_length": "short",
"stream.modules.2381.type": "crowd",
"stream_id": "1464",
"attributes.hat": "0",
"stream.modules.2380.enabled": "false",
"stream.modules.2379.type": "person_reid",
"stream.modules.2380.id": "2380",
"stream.modules.2382.enabled": "true",
"attributes.down_length": "long",
"attributes.down_clothes": "pants",
"stream.uuid": "5964b4c4-b8d1-4e1c-80a3-d27b0f84811c",
"stream.type": "rtsp",
"stream.clientId": "0",
"stream.modules.2380.type": "traffic",
"embeddings_id": "1635781066503304002",
"stream.modules.2381.events": "[{"id": "7800c045-0a8d-4545-9ef1-1b0a3f0de6c4", "params": {}}]",
"stream.resolution.width": "1920",
"attributes.hair_length": "short",
"stream.url": "rtsp://localhost:8554/load_Testing",
"stream.createdAt": "01-11-2021 16:45:34",
"stream.params.auth_type": "no_auth",
"attributes.up": "5",
"analytics_type": "person_reid",
"stream.params.file_cycle": "0",
"distance": "0.0",
"stream.modules.2382.notifyEnabled": "true",
"stream.params.login": "",
"stream.modules.2379.notifyEnabled": "true",
"stream.location.latitude": "49.233083",
"box":
"[0.8799999952316284,0.5299999713897705,0.9300000071525574,0.7200000286102295]",
"stream.modules.2381.notifyEnabled": "true",
"stream.modules.2381.enabled": "true",
"stream.address": "",
"stream.modules.2379.enabled": "true",
"frame_id": "1489602",
"stream.modules.2382.id": "2382",
"timestamp": "01-11-2021 17:37:45",
"stream.modules.2382.events": "[{"id": "7800c045-0a8d-4545-9ef1-1b0a3f0de6c4", "params": {}}]",
"attributes.bag": "bag",
"stream.id": "1464",
"stream.modules.2380.events": "[]",
"unix_timestamp_ms": "1635781065561",
"stream.resolution.height": "1080",
```

```
"stream.modules.2379.events": "[{\\"id\\":\\"7800c045-0a8d-4545-9ef1-1b0a3f0de6c4\\", \\"params\\":{}}]",  
"stream.params.password": "",  
"stream.name": "load_Testing",  
"stream.params.file_fast_speed": "0",  
"attributes.down": "1",  
"attributes.age": "adult",  
"stream.direction": "0",  
"stream.modules.2380.notifyEnabled": "false",  
"person_image": "persons-reid/2021/11/1/17/_37_46_711469_cropped_2.jpg",  
"stream.modules.2381.id": "2381"  
}
```

Event Data: Traffic Analytics

```
{  
"stream.modules.2376.enabled": "true",  
"stream.location.longitude": "28.468217",  
"stream.modules.1359.events": "[]",  
"va_id": "2377",  
"stream.modules.1479.notifyEnabled": "false",  
"stream.modules.1479.id": "1479",  
"stream.modules.1804.events": "[]",  
"stream.status": "online",  
"stream.modules.2376.notifyEnabled": "true",  
"stream.fileName": "16357768419588IHhFSiPznO601x0qDw5rOPx025a6bcP.jpg",  
"stream.modules.2377.notifyEnabled": "true",  
"stream_id": "1326",  
"stream.modules.2333.enabled": "false",  
"stream.modules.1479.enabled": "false",  
"stream.uuid": "86022427-9e61-4e40-bd9b-ca2c56ed4141",  
"stream.type": "rtsp",  
"stream.clientId": "0",  
"stream.modules.2376.events": "[{\\"id\\":\\"7800c045-0a8d-4545-9ef1-1b0a3f0de6c4\\", \\"params\\":{}}]",  
"stream.modules.2376.id": "2376",  
"stream.resolution.width": "1920",  
"stream.params.luxriot_channel_id": "107",  
"stream.modules.1360.type": "traffic",  
"stream.modules.1360.enabled": "false",  
"stream.url": "rtsp://localhost:8554/lpr-ua",  
"stream.createdAt": "11-05-2021 10:28:25",  
"stream.params.auth_type": "no_auth",  
"stream.modules.1359.enabled": "false",  
"analytics_type": "traffic",  
"stream.params.file_cycle": "0",  
"stream.modules.2377.enabled": "true",  
"stream.modules.1479.type": "alpr",  
"stream.params.login": "",  
"stream.params.luxriot_server_id": "101",  
"stream.modules.2377.id": "2377",  
"stream.modules.1804.notifyEnabled": "false",  
"stream.location.latitude": "49.233083",  
"stream.modules.1360.notifyEnabled": "false",  
"stream.modules.1479.events": "[]",  
"result": "{\\"0\\":{\\"2\\":{\\"1\\":1, \\"image\\":\\"traffic_alerts/2377/car/"
```

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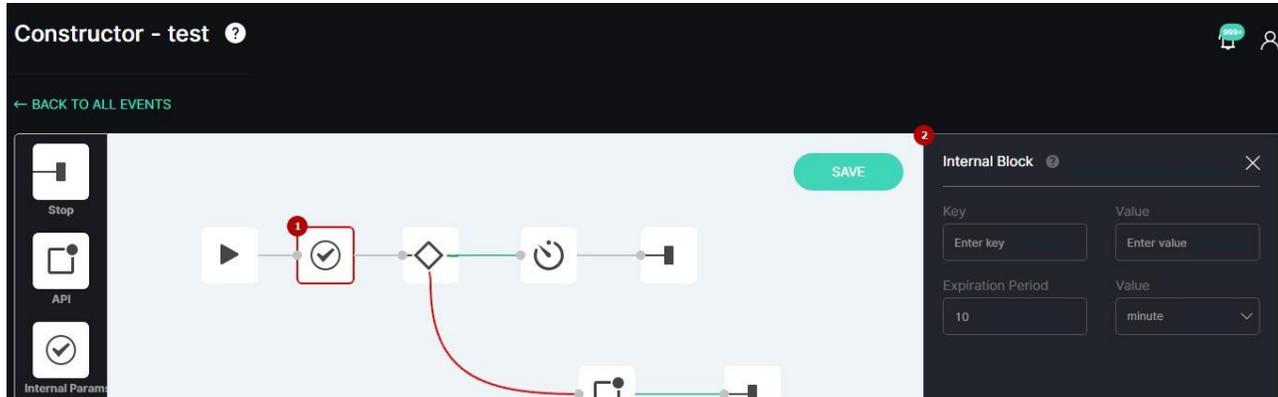
```
2021/11/1/16/1635777522.jpg\", \"crop_images\": [\"traffic_alerts/2377/car/  
2021/11/1/16/1635777522_crop_0.jpg\"]}],  
  \"stream.modules.1804.enabled\": \"false\",  
  \"stream.modules.1360.events\": \"[]\",  
  \"stream.modules.1804.id\": \"1804\",  
  \"stream.modules.1804.type\": \"object_in_zone\",  
  \"stream.modules.1359.id\": \"1359\",  
  \"stream.modules.1360.id\": \"1360\",  
  \"stream.address\": \"\",  
  \"stream.modules.2333.notifyEnabled\": \"false\",  
  \"stream.modules.2376.type\": \"object_in_zone\",  
  \"stream.id\": \"1326\",  
  \"millis_from_start\": \"0\",  
  \"stream.modules.2333.type\": \"alpr\",  
  \"stream.modules.2377.events\": \"[{\"id\": \"7800c045-0a8d-4545-9ef1-1b0a3f0de6c4\", \"params\": {}}]\",  
  \"stream.modules.1359.notifyEnabled\": \"false\",  
  \"stream.modules.2377.type\": \"traffic\",  
  \"stream.modules.2333.id\": \"2333\",  
  \"stream.modules.2333.events\": \"[]\",  
  \"stream.resolution.height\": \"1080\",  
  \"stream.params.password\": \"\",  
  \"stream.name\": \"alpr-ua\",  
  \"stream.params.file_fast_speed\": \"0\",  
  \"stream.modules.1359.type\": \"alpr\",  
  \"stream.direction\": \"0\"  
}
```

Internal Block

i This page describes the Internal block of the Event Manager Constructor. This block is intended for preserving the required parameters for a certain period for further use in the Condition block.

Overview

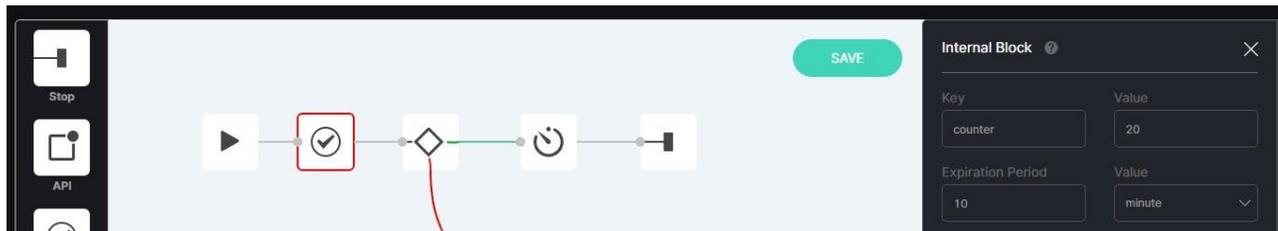
To open the Internal block, in the Event Manager Constructor workspace:



1. Select the Internal block icon
2. See the Internal block

Use and Functionality

The Internal block functional menu allows to:



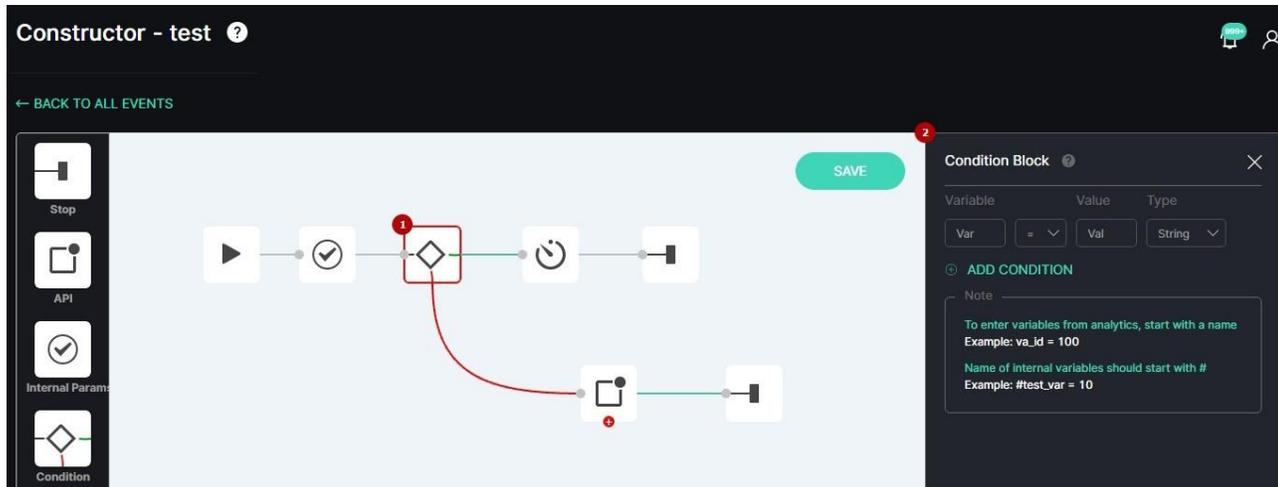
- Enter the required parameter name in the Key field and the corresponding value in the Value field
- Set the end time period in the Expiration Period field and select the time unit of measure from the Value drop-down list:
 - Seconds
 - Minutes
 - Hours
 - Days

Condition Block

i This page describes the Condition block of the Event Manager Constructor. This block is intended for setting the conditions for sending customized event notifications within the system, to third-party services and API.

Overview

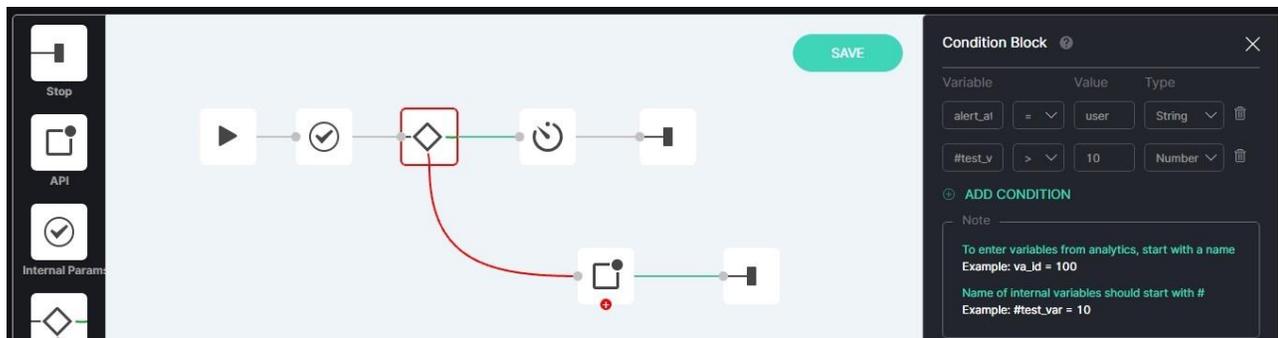
To open the Condition block, in the Event Manager Constructor workspace:



1. Select the Condition block icon
2. See the Condition block

Use and Functionality

The Condition block functional menu allows to:



- Enter variables and values for comparison
- Select the comparison condition from the drop-down list:
 - more (>)
 - less (<)
 - equal (=)
 - unequal (!=)
- Select the data type from the drop-down list:
 - Number
 - String
 - Boolean

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- Delete the required condition by clicking the Delete icon
- Add more conditions by clicking the Add Condition button

 Only lowercase letters are allowed in variables.
Event notifications are sent further only if all configured conditions in the block are met simultaneously.

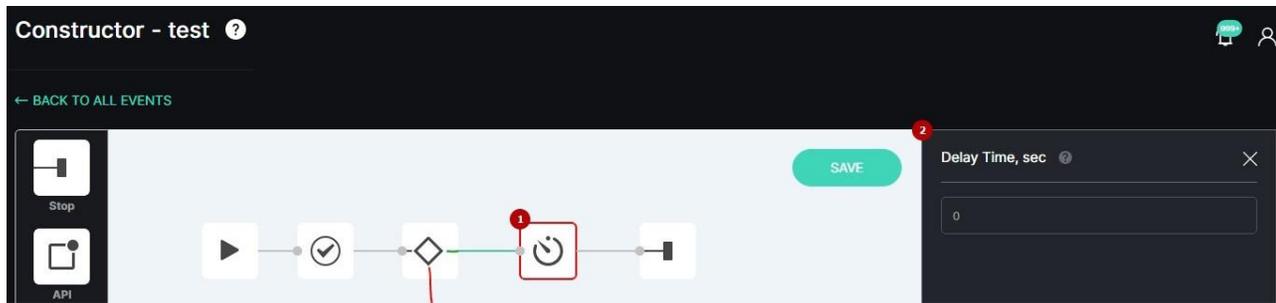
Internal variables are configured by users at their own discretion. Read articles in the [Event Data](#) section to view variables from analytics and values settings.

Delay Block

 This page describes the Delay block of the Event Manager Constructor. This block is intended for setting the delay time between notifications sending.

Overview

To open the Delay block, in the Event Manager Constructor workspace:



1. Select the Delay block icon
2. See the Delay block

Use and Functionality

To set the delay time, fill in the field with a value in seconds:

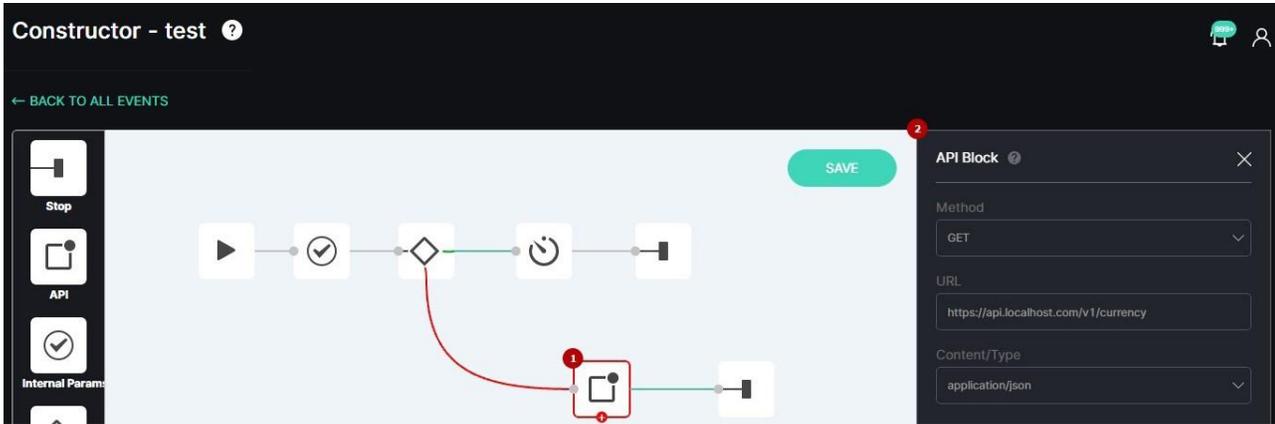


API Block

i This page describes the API block of the Event Manager Constructor. This block is intended for sending messages on the specified API.

Overview

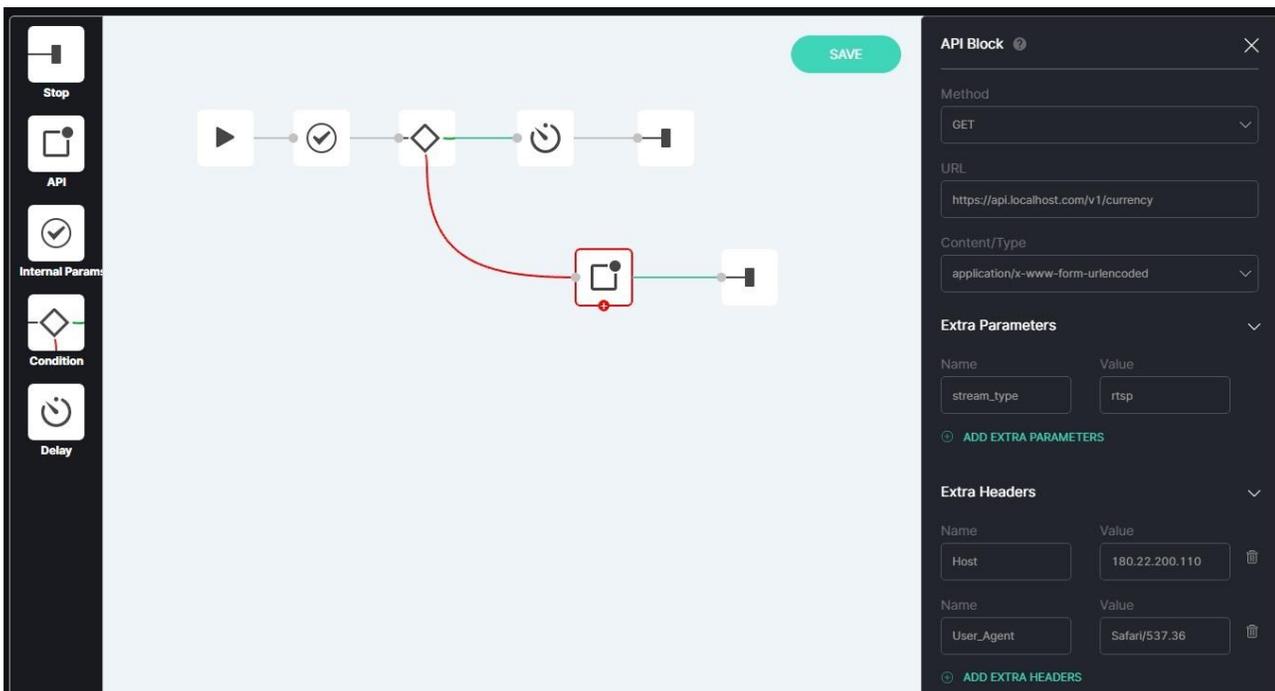
To open the API block, in the Event Manager Constructor workspace:



1. Select the API block icon
2. See the API block

Use and Functionality

The API block functional menu allows to:

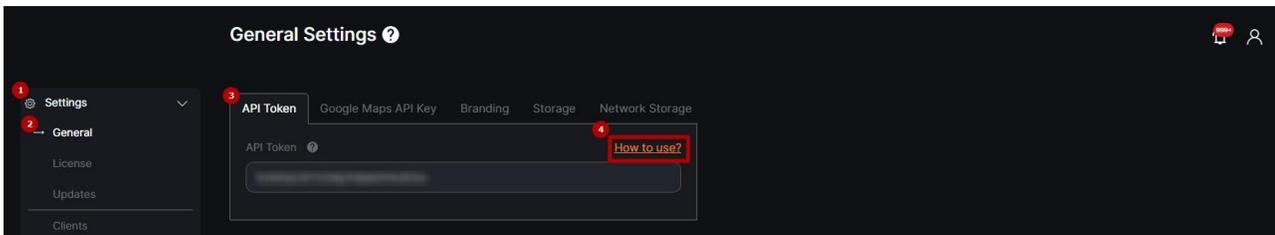


- Select the request method from the drop-down list:

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- a. Get
- b. Post
- Enter the API URL
- Select the content/type from the drop-down list:
 - a. application/json
 - b. application/x-www-form-urlencoded
 - c. application/xml
- Fill in the Extra Params and Extra Headers fields
- Delete the required parameters or headers by clicking the Delete icon
- Add more parameters or headers by clicking the Add Extra Params or Add Extra Headers buttons respectively

To learn more about extra parameters, open the API documentation:



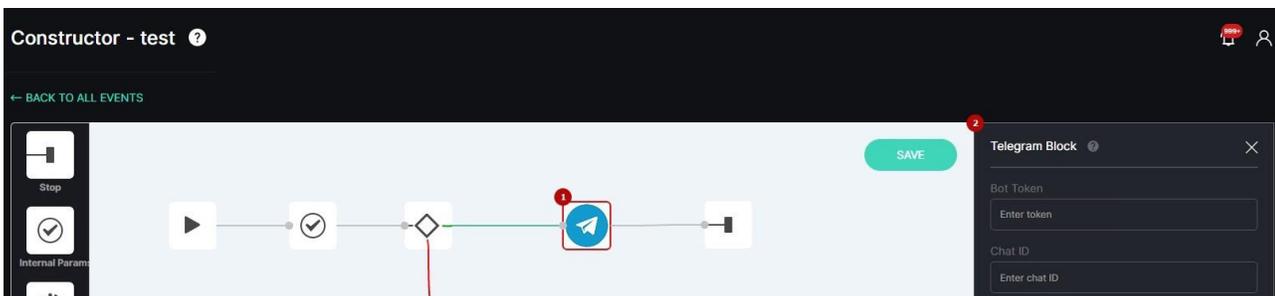
1. Select the Settings section
2. Choose the General item
3. Select the API Token tab
4. Click the How to Use button

Telegram Block

i The Telegram block is intended for sending messages to the Telegram messenger.

Overview

To open the Telegram block, in the Event Manager Constructor workspace:

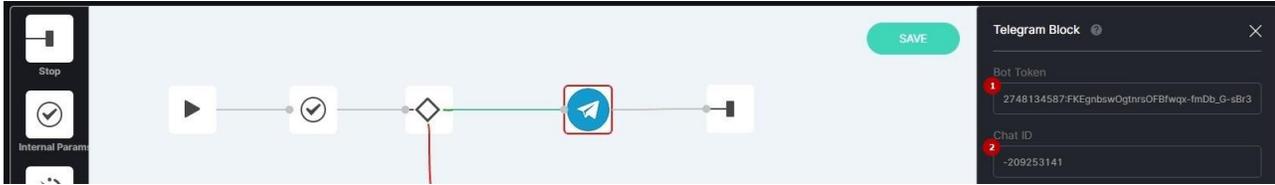


1. Select the Telegram block icon
2. See the Telegram block

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Use and Functionality

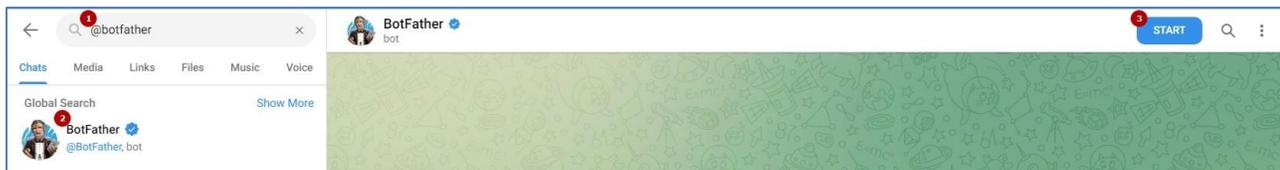
The Telegram block functional menu allows to:



- Enter bot token
- Enter chat ID

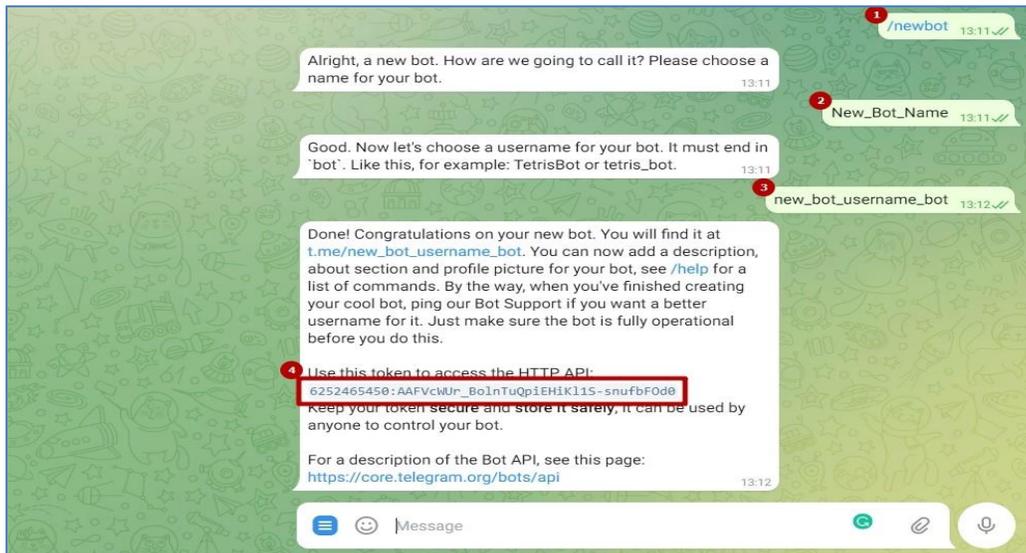
Get Bot Token

To start the bot creation process, in the Telegram window:



1. Enter @botfather in the Search field
2. Select BotFather from the search results in the drop-down list
3. Click the Start button to start the chat

To create a new chat bot and get a bot token:

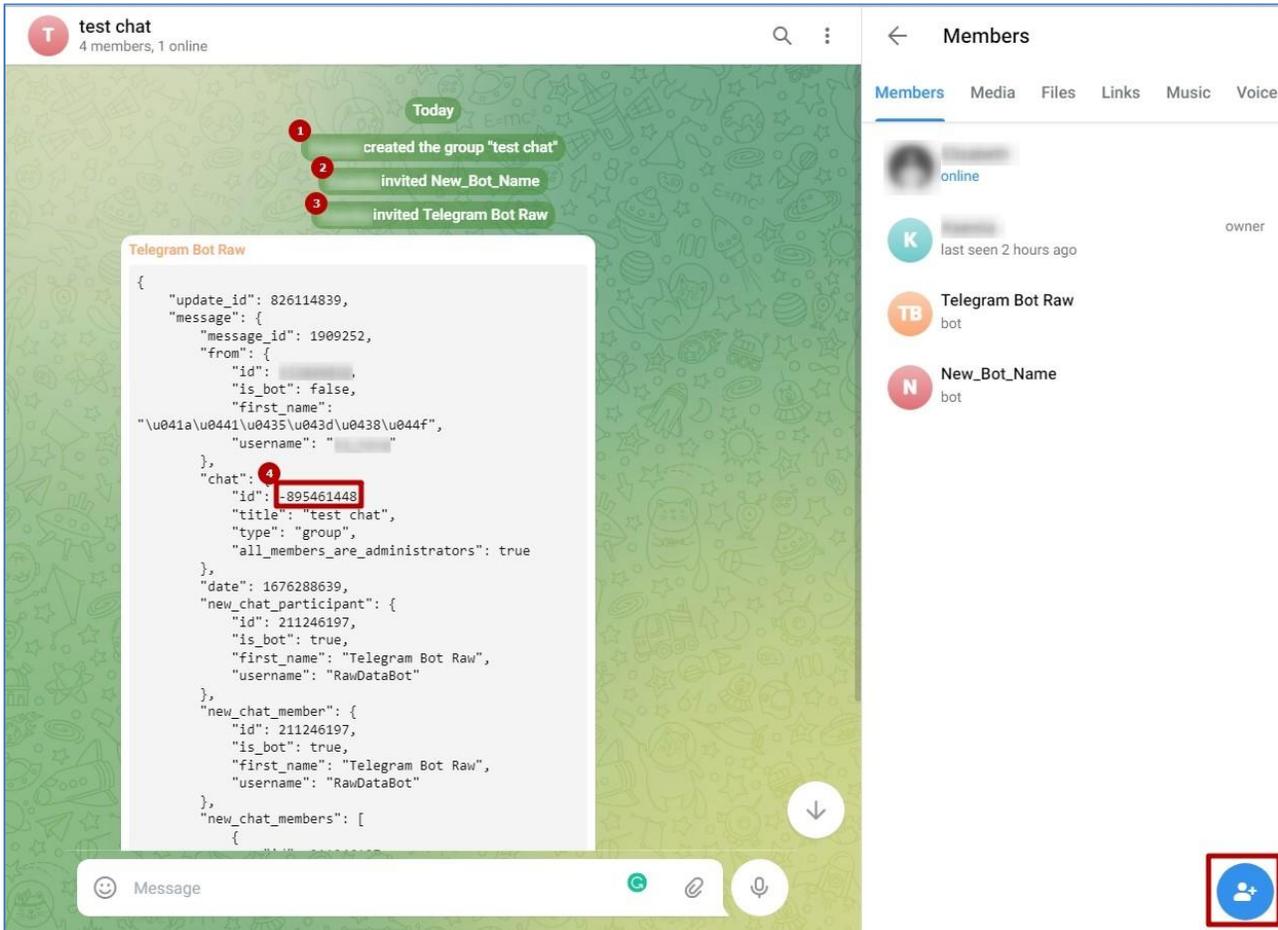


1. Enter /newbot command
2. Enter desired bot name
3. Enter desired bot username
4. Get the new token

💡 Bot username must end in "bot" (e.g. test_bot).

Get Chat ID

To get the Telegram chat ID:



1. Create a new group chat and add all required members
2. Add your previously created bot upon the Add Users button in the bottom-right corner of the window
3. Add @RawDataBot upon the Add Users button in the bottom-right corner of the window
4. Get the chat ID in the new message from the Telegram Bot Raw

Crowd Detection

Introduction

Use this guide to understand the interface and features of the Crowd Detection plugin and learn how to use it for the best result.

What Is Crowd Detection?

Crowd Detection estimates the number of people within a given area in real-time and triggers an alarm when a specified number of people (capacity) or a specified percentage of people (occupancy) is reached. The plugin is ideal for public surveillance applications where the volume of people needs to be watched for public safety or quality of service.

Primary Capabilities

Crowd Detection is capable to:

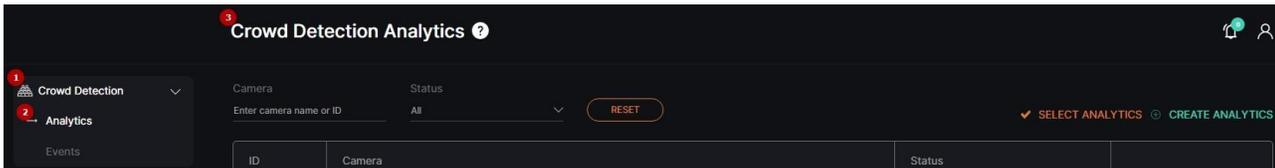
- Figure out people congestion and crowd on the streets, indoors, in public locations, or in commercial premises
- Figure out queues in stores, restaurants, banks, and public institutions

Crowd Detection: Analytics

i This page comprises the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

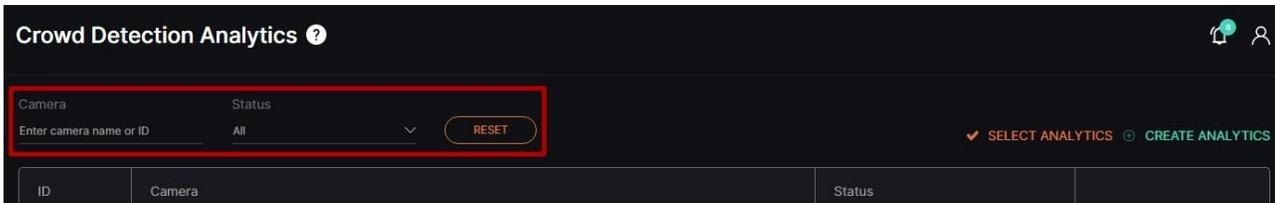
To open the Analytics item, in the left menu:



1. Select the Crowd Detection section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Crowd Detection Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID

CORTROL CVA *(Extended Video Analytics)*

CEVA v1.0.0

- Select the required analytics status
- Click the Reset button to clear the filters

 The status options include All, Active, and Stopped.

See the list of analytics in the table below. It holds:

ID	Camera	Status	
1	demo		
153	demo-street GPU H.264 - NVDEC 25 FPS	Active (00:00:08 / 5)	STOP
75	demo-face GPU H.264 - NVDEC 25 FPS	Stopped	START

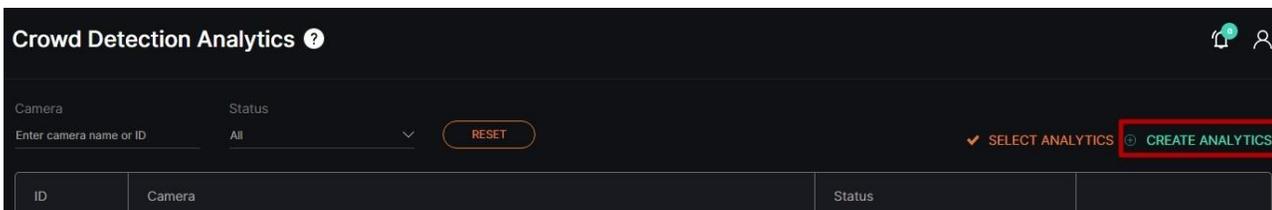
- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - Additional hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Events
 - View
 - Delete

 • To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).

• To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

Create Analytics

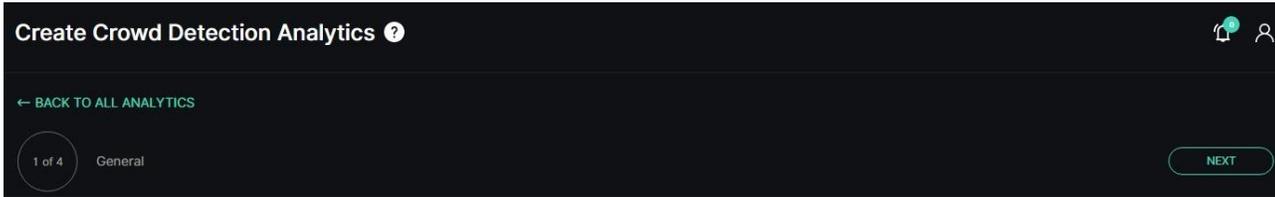
To create new analytics, click the Create Analytics button:



ID	Camera	Status	

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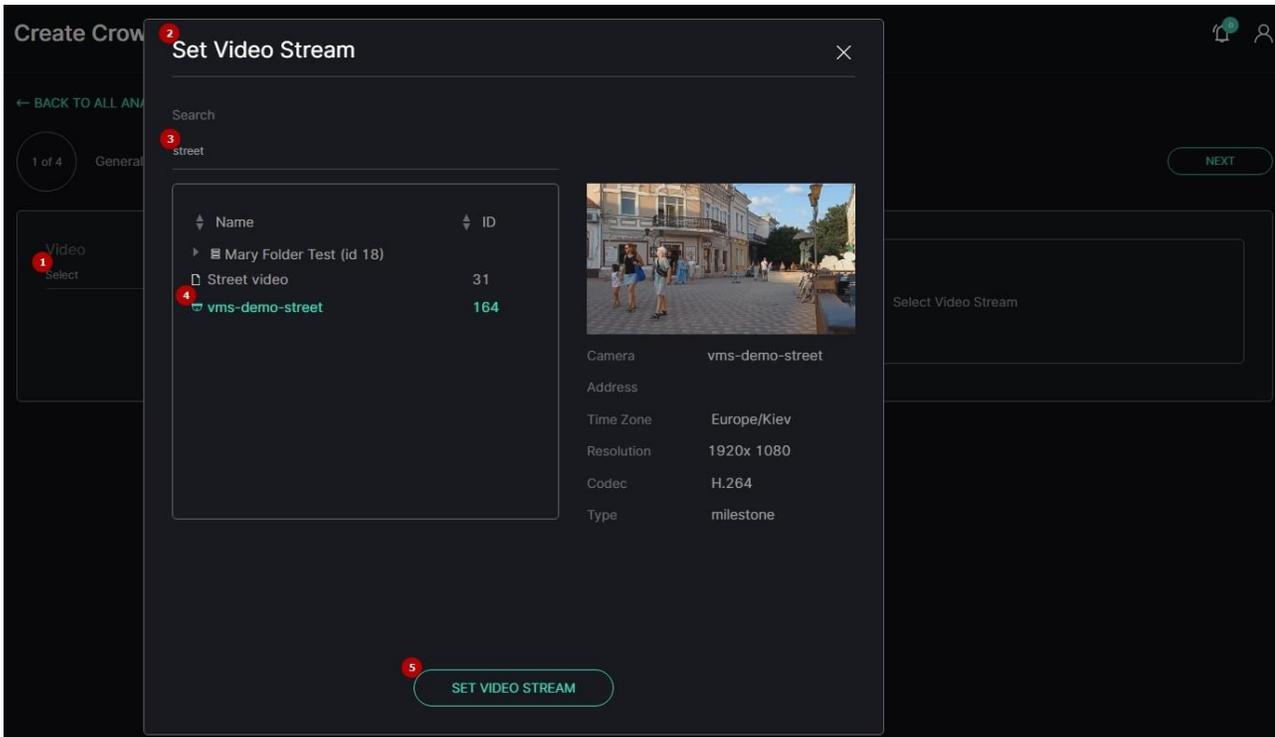
The Create Crowd Detection Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

General Tab

The General tab supplies the ability to set a video stream and customize analytics parameters. To set a video stream:

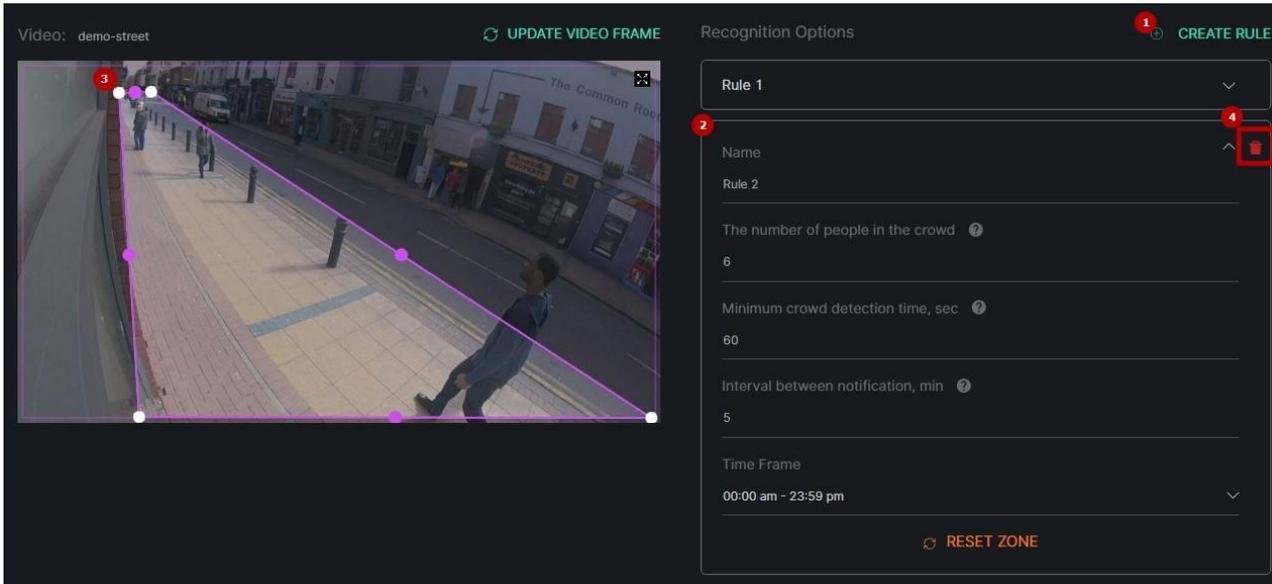


1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

To perform the recognition, apply these recognition options:



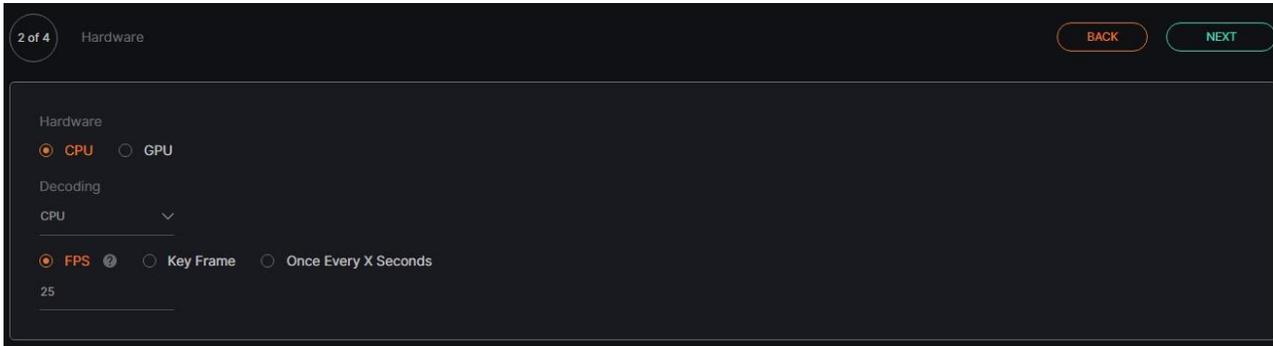
The screenshot shows the CORTROL CVA interface. On the left, a video preview titled 'demo-street' displays a sidewalk scene with a purple polygonal detection zone overlaid. A red circle with the number '3' is positioned near the top-left handle of the zone. Above the video is an 'UPDATE VIDEO FRAME' button. On the right, the 'Recognition Options' panel is visible, featuring a 'CREATE RULE' button (marked with a red circle '1') and a list of rules. The first rule, 'Rule 1', is selected. A red circle '2' is next to the 'Name' field. A red circle '4' is next to a red trash can icon (Delete) in the top right corner of the rule configuration area. The configuration for 'Rule 1' includes: 'The number of people in the crowd' set to 6, 'Minimum crowd detection time, sec' set to 60, 'Interval between notification, min' set to 5, and 'Time Frame' set to '00:00 am - 23:59 pm'. A 'RESET ZONE' button is located at the bottom of the panel.

1. Select the Create Rule button to create a new rule
2. Set the notification parameters:
 - a. Enter the rule name
 - b. Enter the minimum number of people for detection as a crowd
 - c. Enter the minimum crowd detection time in seconds
 - d. Enter the interval between notifications in minutes
 - e. Select the required time frame to specify the analytics working hours
3. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to delete it
 - d. Click the Reset Zone button to return the detection zone borders to their original position
4. Select the red Delete icon to delete the required rule section

-  • The possible range for The Number of People in the Crowd is from 2 to 100 people. The recommended value is from 6 to 20 people.
- The possible range for Minimum Crowd Detection Time is from 5 to 600 sec. The recommended value is 60 sec.
- The possible range for Interval Between Notifications is from 1 to 60 min. The recommended value is 5 min.
- The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab supplies the ability to customize hardware parameters:

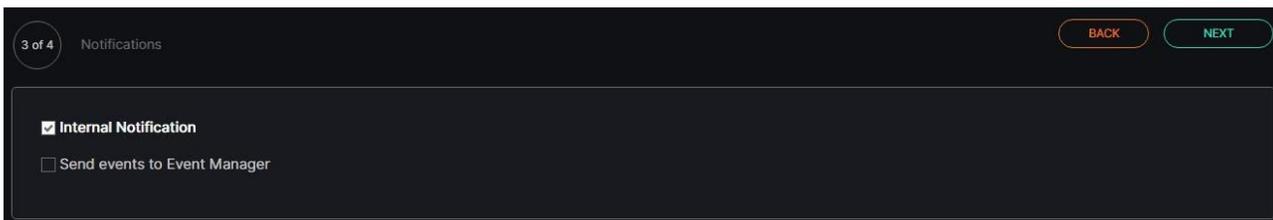


- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

- 💡 • The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Notifications Tab

The Notifications tab allows managing the event notifications:

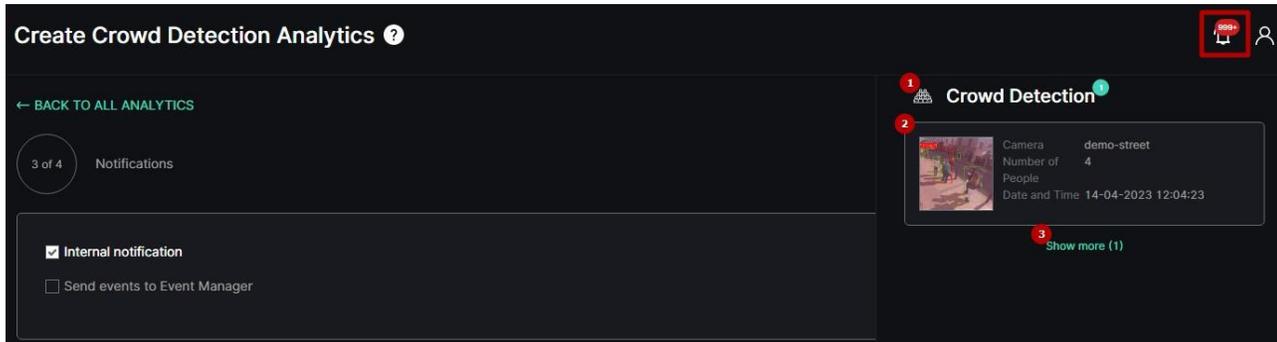


- Check the Internal Notification box to allow the system to send all notifications to the Events section
- Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources

- 💡 The default parameters allow the production of analytics. To customize the analytics, set parameters as needed: Check one of them or use both simultaneously.

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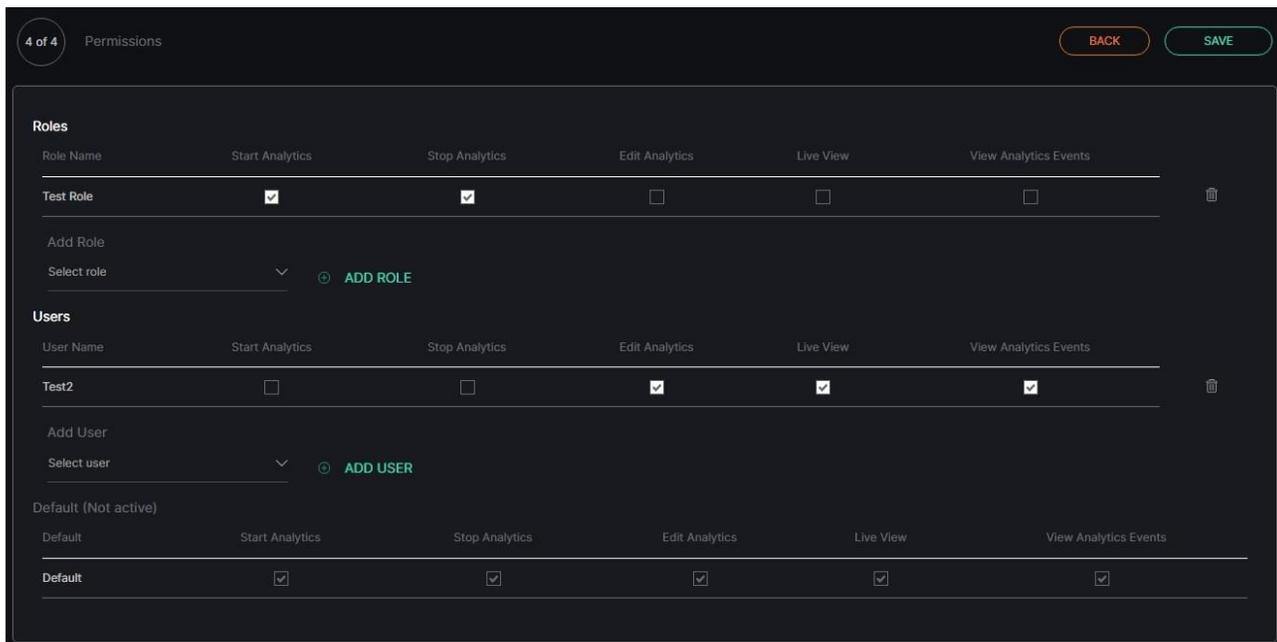
Once the Internal Notification box is checked, and the analytics is created and enabled, the Notification icon signals each new event notification. Click the Notification icon to open the Notification Panel. It includes:



1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
 - b. Clear all plugin event notifications at once from the Notification Panel by clicking the Close button (this action doesn't affect events in the Events item)
2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
3. Show More button with the total events number to open the Events item and view all events

Permissions Tab

The Permissions tab provides the ability to:



- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button

- Select the checkboxes for the required access rights
- Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu

💡

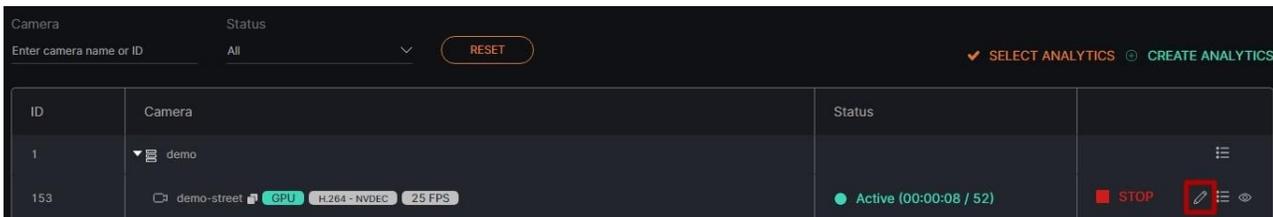
- The default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users is not limited.

Once saved, the Crowd Detection Analytics editor opens to allow the users to:

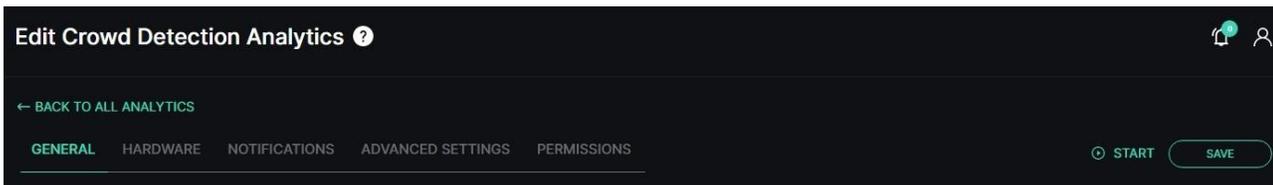
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Crowd Detection Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time

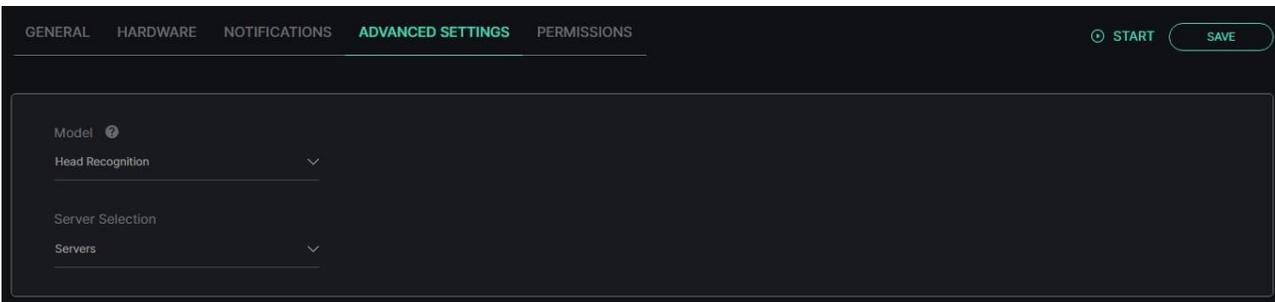
- Select the Save button to apply the changes to the chosen analytics

 • The current tab is always highlighted.
• Analytics editing is available only when selected analytics is disabled.
• The Stop button is available only when the current analytics is active.
• The Start button is available only when the current analytics is stopped.
• The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics](#).

Advanced Settings Tab

The Advanced Settings tab allows the users to:

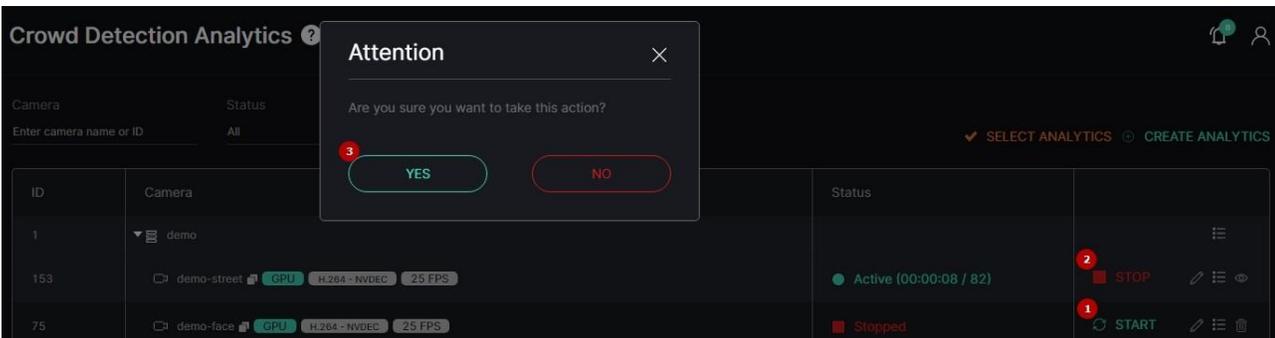


- Select an analytics model:
 - Quality
 - Performance
 - Head Recognition
- Select a server from the drop-down list to run the analytics

 • The Quality model supplies exceptional detection quality at the expense of analytics performance.
• The Performance model supplies exceptional analytics performance at the expense of detection quality.
• The Head Recognition model uses the head detector, as opposed to the Quality and Performance models which use the body detector.
• Default parameters allow the production of analytics. To customize the analytics, set parameters as needed.

Analytics Status

To enable or disable the analytics and view the change in the analytics status:

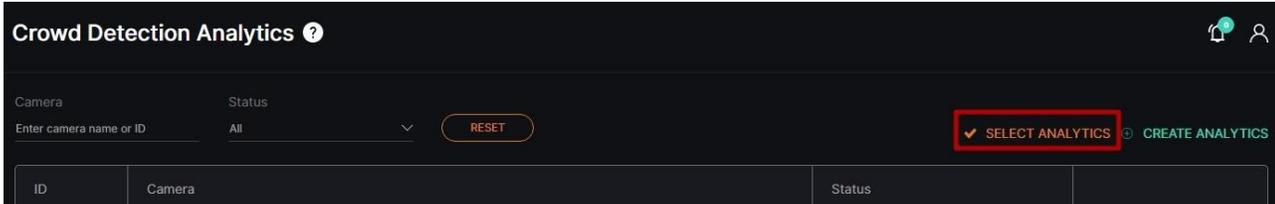


1. Select the Start button to enable the analytics

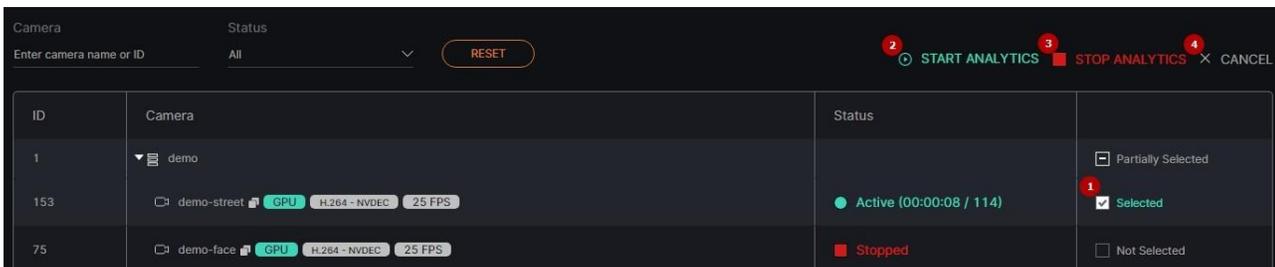
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2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



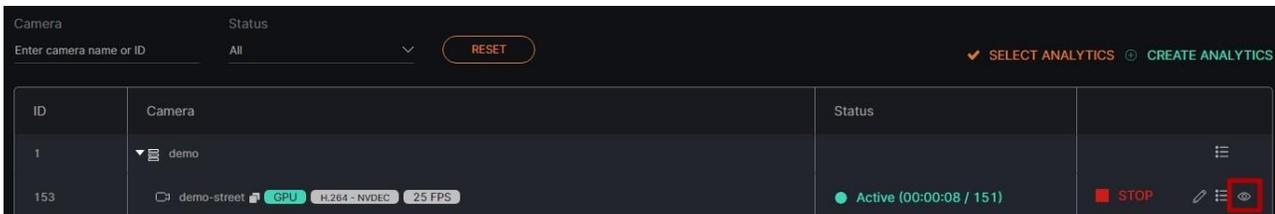
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics choice

View Analytics

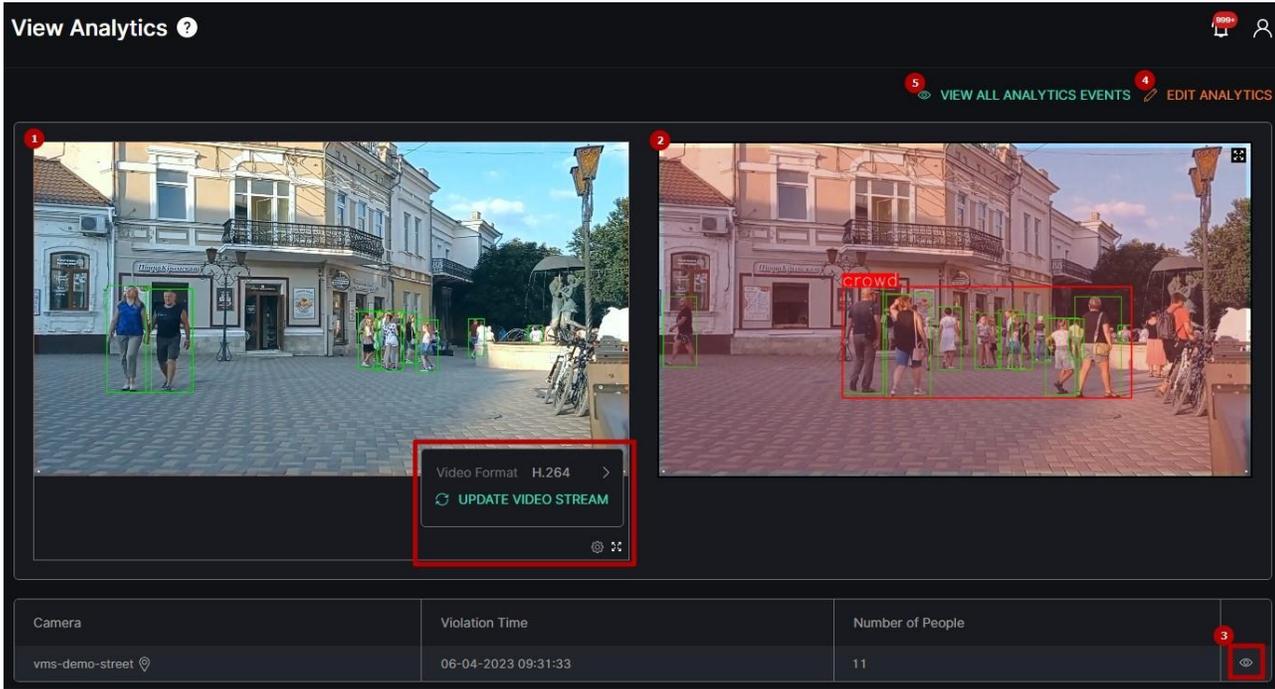
To see the selected analytics in real-time, click the View icon on the toolbox:



The View icon becomes available only when selected analytics is active.

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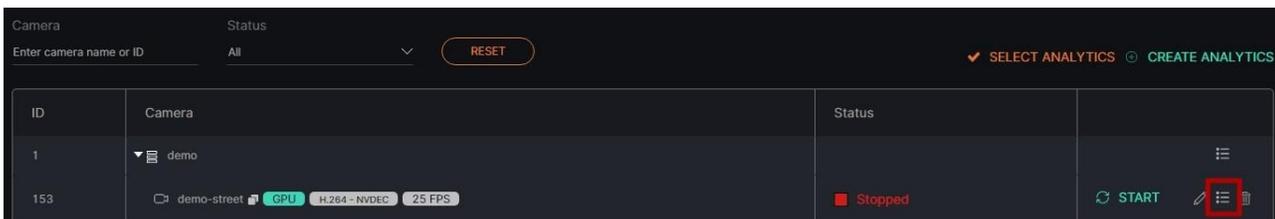
Live view analytics mode allows to:



1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View the frame preview with a detected crowd
3. Select the View icon in the table below to open the image and save it in full size
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics

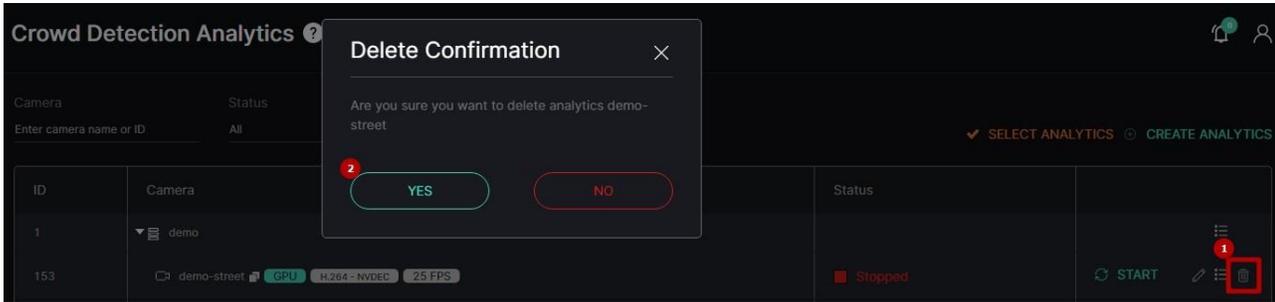
View Events

To view selected analytics events in the Analytics item, click the Events icon on the toolbox:



Delete Analytics

To delete the analytics:



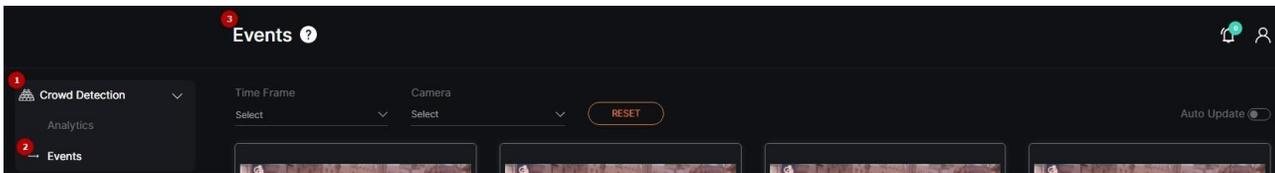
1. Select the Delete icon on the toolbox
2. Confirm the intention

Crowd Detection: Events

i This page includes the Events item overview and functionality description. The item displays the event notifications including a frame, camera, date, time, and the number of people within a required area.

Overview

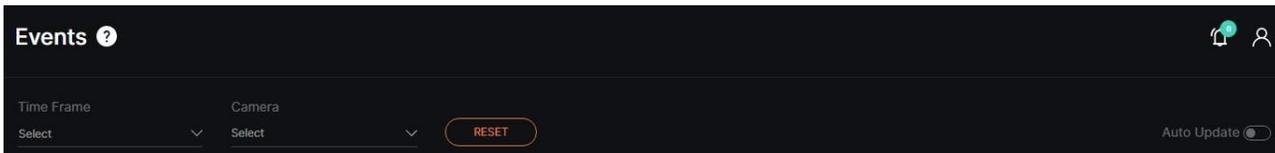
To open the Events item, in the left menu:



1. Select the Crowd Detection section
2. Choose the Events item
3. See event notifications

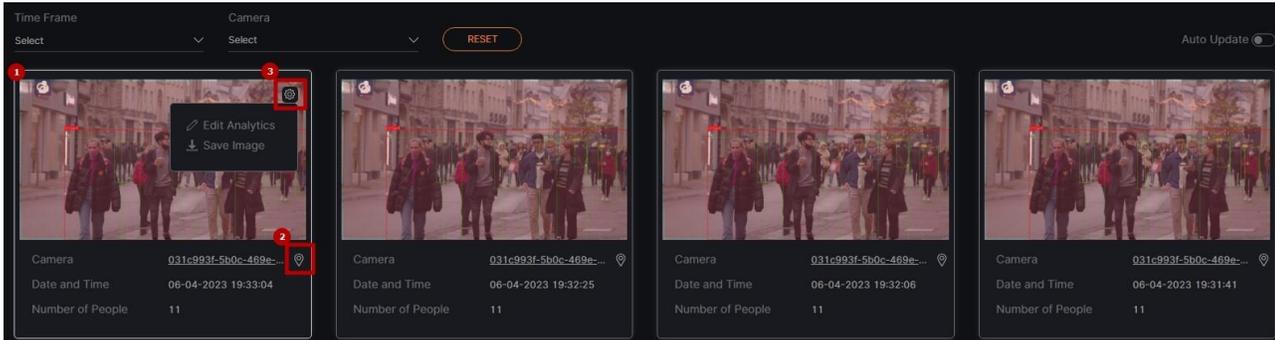
Use and Functionality

The Events functional menu allows to:



- Select the required events time frame
- Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable auto update of the event notifications

Once selected and filtered, in the events:



1. View the frame preview and information about the event. To filter events by the recognized data, in the required event block:
 - a. Click the camera name to filter events only by the camera related to the event
 - b. Click the date to filter events only by the date related to the event
2. View the camera location on the map by clicking the View Geolocation icon
3. Hover the mouse over the event block and select the Extra Options icon. In the drop-down menu:
 - a. Click the Edit Analytics button to make changes to the settings of the analytics which is related to the selected event
 - b. Click the Save Image button to download the event frame in full size



Click the frame preview to open the image and see the event information.

Face Recognition

Introduction

Use this guide to understand the interface and features of the Face Recognition plugin and learn how to use it for the best result.

What is Face Recognition?

Face Recognition detects people in the frame, verifies and finds the person (compares with the base of faces), and determines age and gender. The plugin allows users to customize face lists, alert settings, and view statistical reports.

Primary Capabilities

Face Recognition is capable to:
Show a face with 98% accuracy

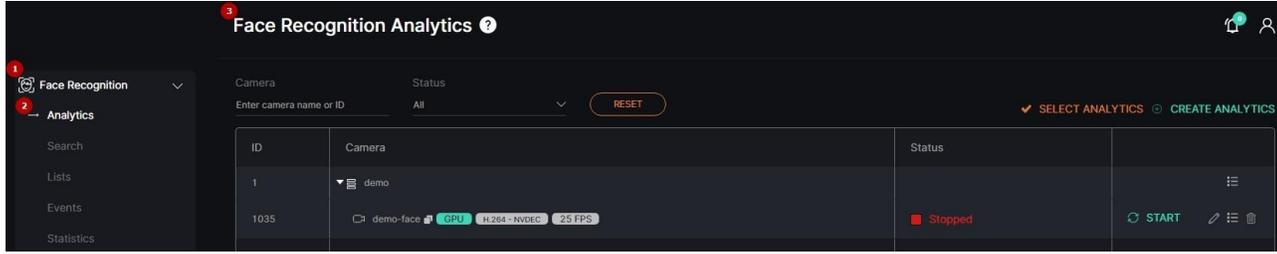
- Capture and recognize the face within 0,1 second
- Recognize up to 200 faces in the frame simultaneously
- Support face recognition with glasses, caps, mask, beard, and moderate facial rotation
- Determinate age and gender

Face Recognition: Analytics

i This page comprises the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

To open the Analytics item, in the left menu:



1. Select the Face Recognition section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Face Recognition Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

💡 The status options include All, Active, and Stopped.

See the list of analytics in the table below. It holds:

ID	Camera	Status	
1	demo		
1035	demo-face GPU H.264-NVDEC 25 FPS	Active (00:00:18 / 3)	STOP
938	demo-face CPU H.264-CPU 25 FPS	Stopped	START

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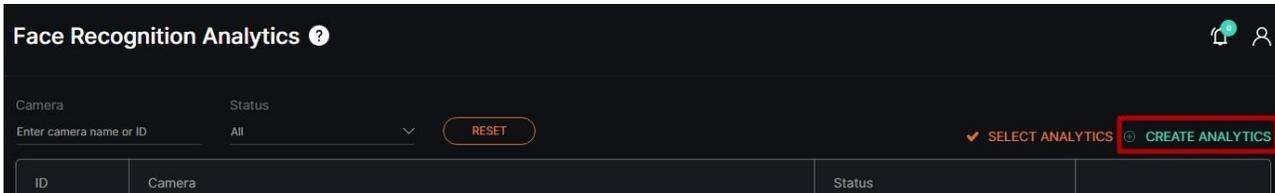
CEVA v1.0.0

- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - Added hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Search Results
 - View
 - Delete

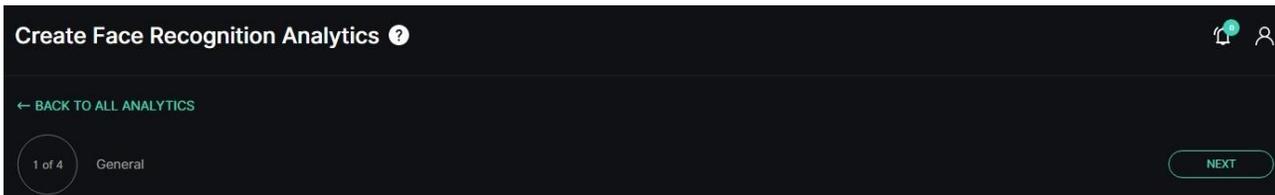
- 💡 • To learn more about grouping video streams into folders and making the proper changes in the Video Streams item, read [Video Streams](#).
- To find out the ID of CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

Create Analytics

To create new analytics, click the Create Analytics button:



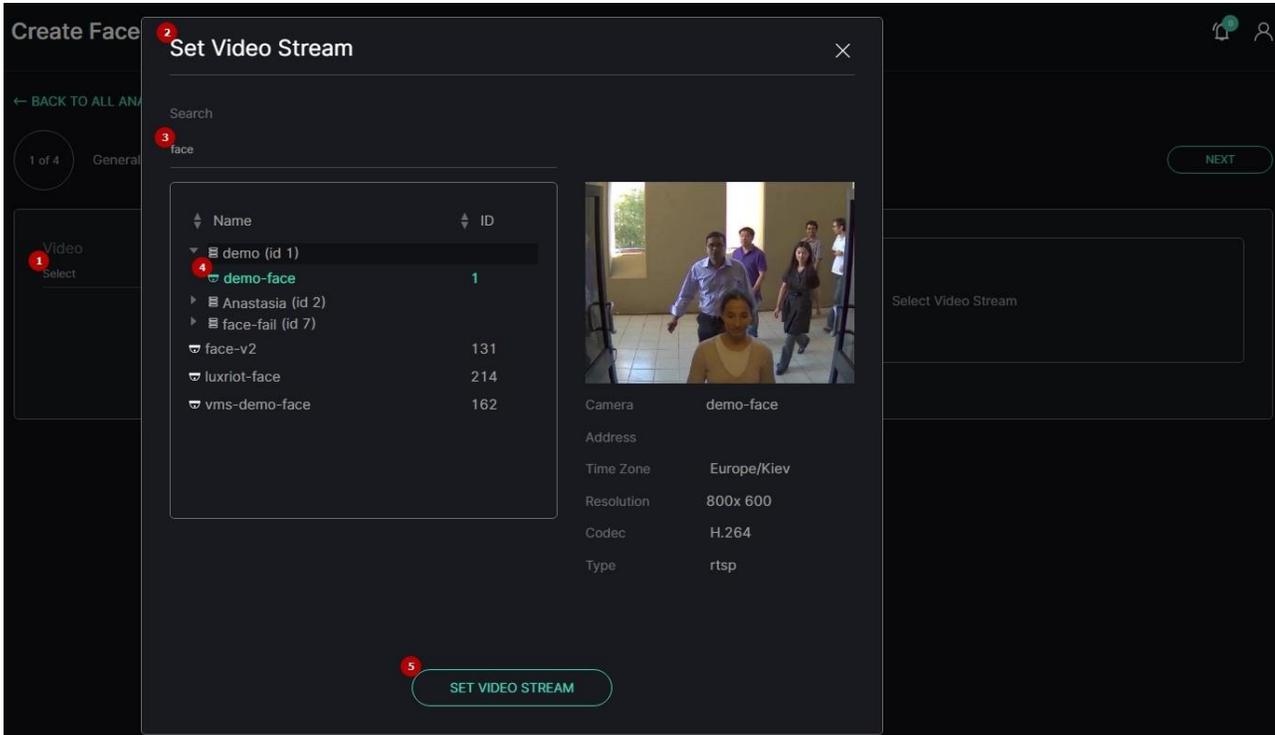
The Create Face Recognition Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters. To set a video stream:



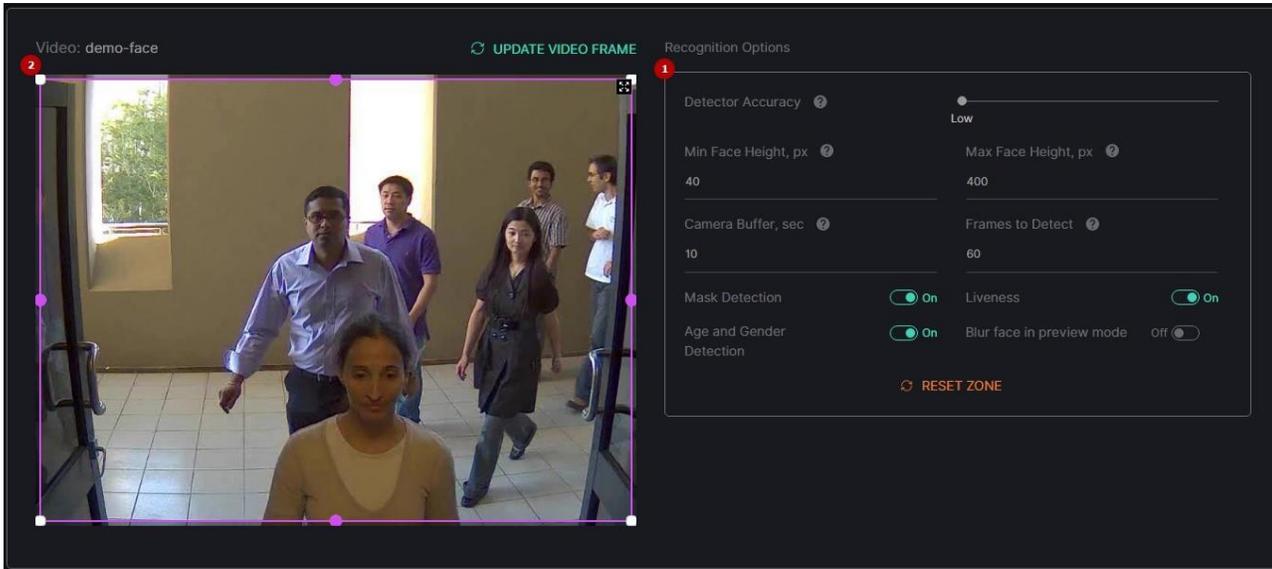
1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention



To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

To perform the recognition, apply these recognition options:



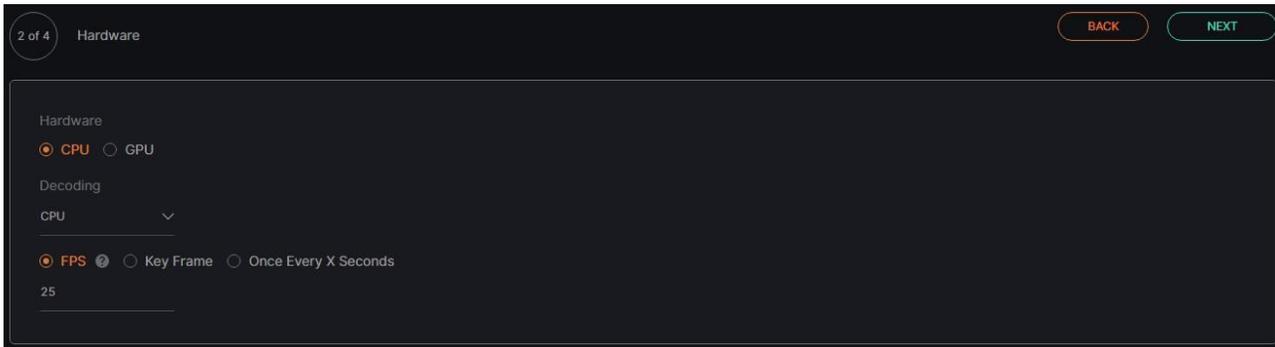
1. Set the parameters:
 - a. Move the slider to the left (to decrease) or to the right (to increase) the detector accuracy
 - b. Set the minimum and maximum face height in pixels for detection
 - c. Set the delay time in seconds before recognizing the same face again in the Camera
 - d. Buffer, sec parameter
 - e. Set the number of frames for the sample from which the best frame is selected for face
 - f. detection in the Frames to Detect parameter
 - g. Click the toggles to enable/disable:
 - i. Age and gender detection
 - ii. Medical mask detection
 - iii. Liveness recognition
 - iv. Blur face in preview mode to blur the face area in the analytics live view mode
2. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to remove it
 - d. Click the Reset Zone button to return the detection zone borders to their original position

- Increasing the Detector Accuracy parameter results in more accurate recognition, fewer objects are recognized by the analytics, but some objects may be skipped. While decreasing the parameter, the recognition accuracy decreases and the analytics recognizes more objects, but false recognitions are possible.
- The minimum value for the Min Face Height, px parameter is 20 pixels.
- The maximum value for the Max Face Height, px parameter is limited only by the height of the frame.
- The possible range for the Camera Buffer sec parameter is from 1 to 600 sec. The optimal value depends on the average duration of the expected face presence in the zone. The longer the face stays in the zone, the greater the value of the parameter should be to avoid re-recognition.
- The possible range for the Frames to Detect parameter is from 1 to 100 frames. The lower the value is set, the faster the sample is processing, but the quality of detection is lesser as well. The higher the value is set, the more accurate is the face detection, but it takes more hardware resources and time for choosing the best frame for detection.

- The Liveness parameter is responsible for checking the image of a person for artificiality (e.g. image of a face on an advertising sign, a doll, or a human face mask).
- The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:

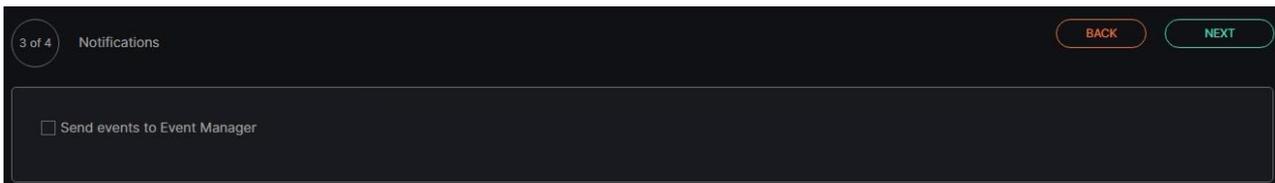


- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

- 💡 • The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Notifications Tab

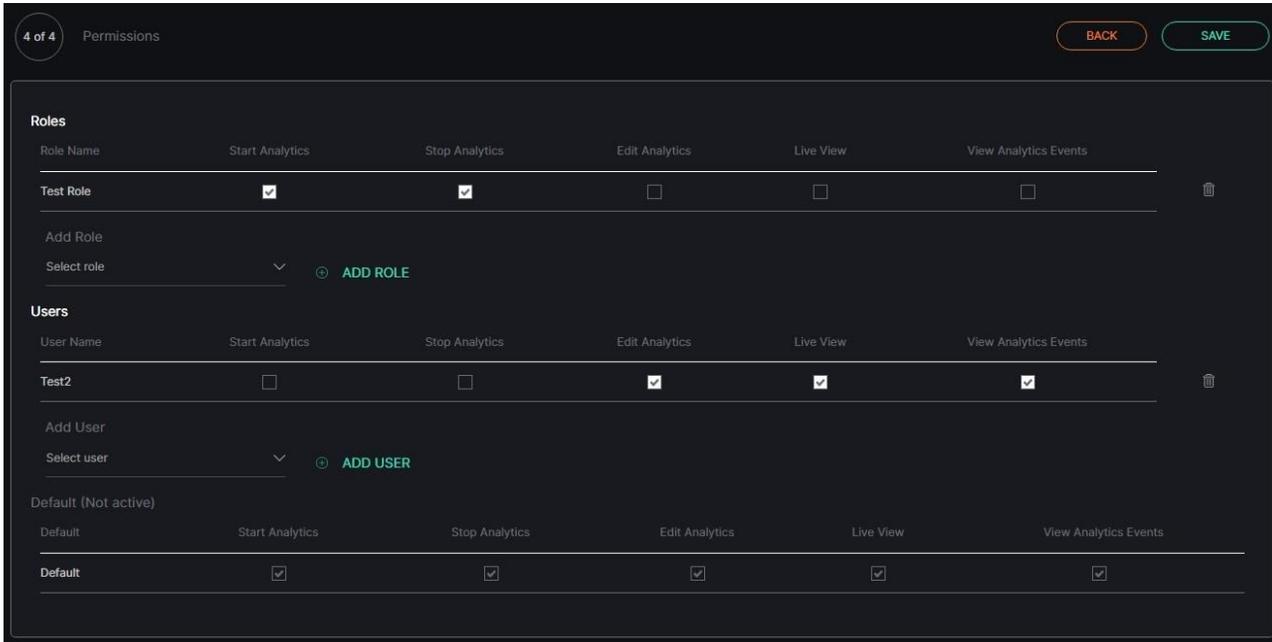
The Notifications tab allows managing the events notifications. Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources:



- 💡 • The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.

Permissions Tab

The Permissions tab provides the ability to:



- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu



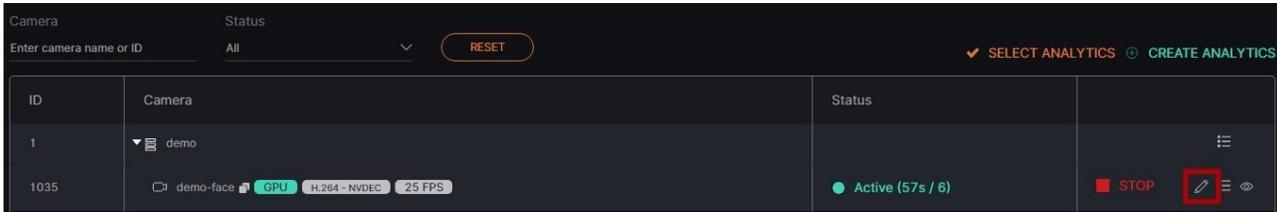
- The default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users is not limited.

Once saved, the Face Recognition Analytics editor opens to allow the users to:

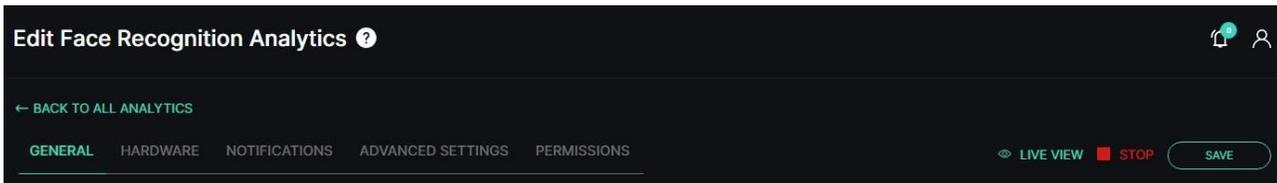
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Face Recognition Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the selected analytics

• The current tab is always highlighted.

• Analytics editing is available only when selected analytics is disabled.

• The Stop button is available only when the current analytics is active.

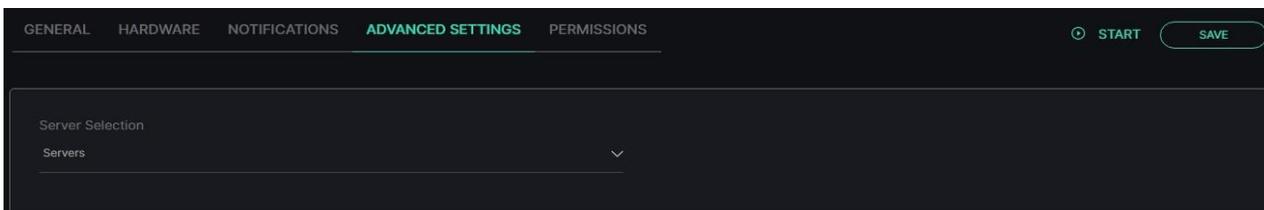
• The Start button is available only when the current analytics is stopped.

• The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, except for Video Stream editing, read [Create Analytics](#).

Advanced Settings Tab

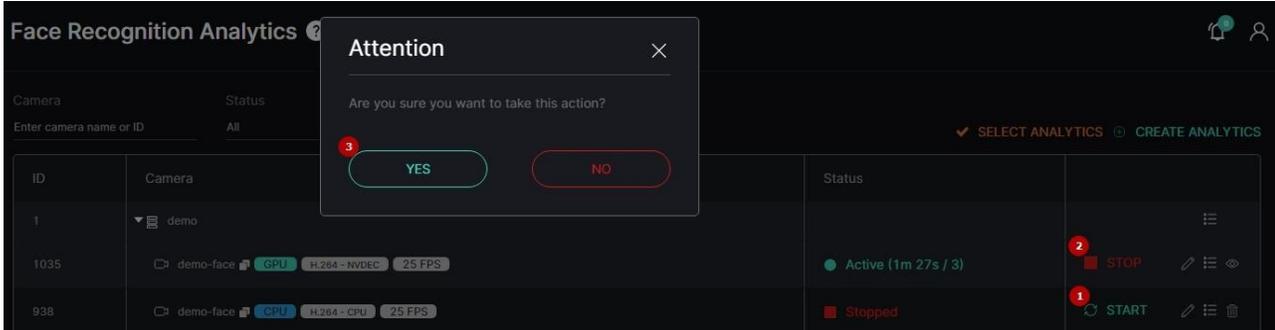
The Advanced Settings tab allows the users to select a server from the drop-down list to run the analytics:



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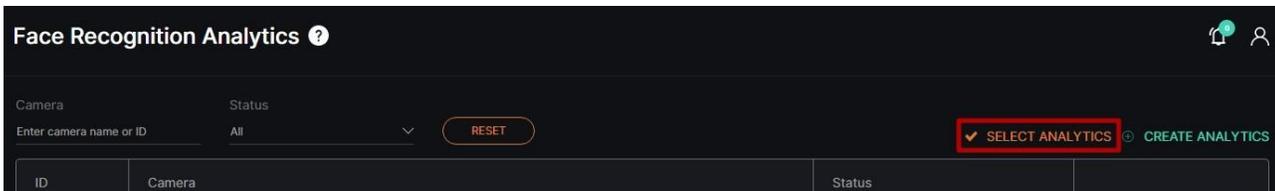
Analytics Status

To enable or disable the analytics and view the change of the analytics status:

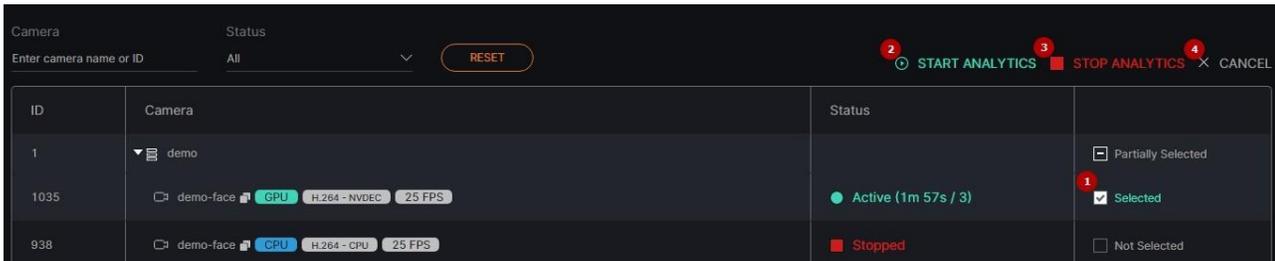


1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



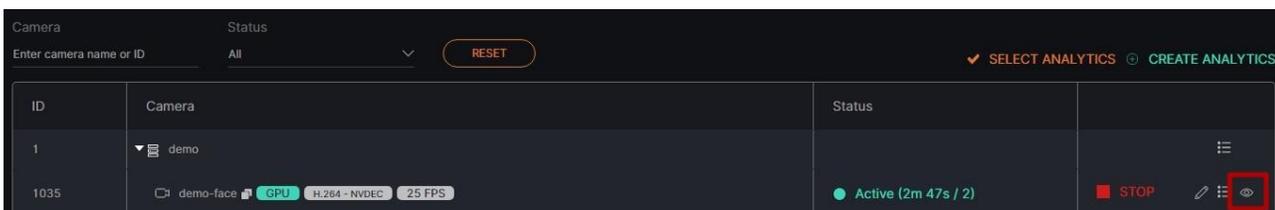
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics selection

View Analytics

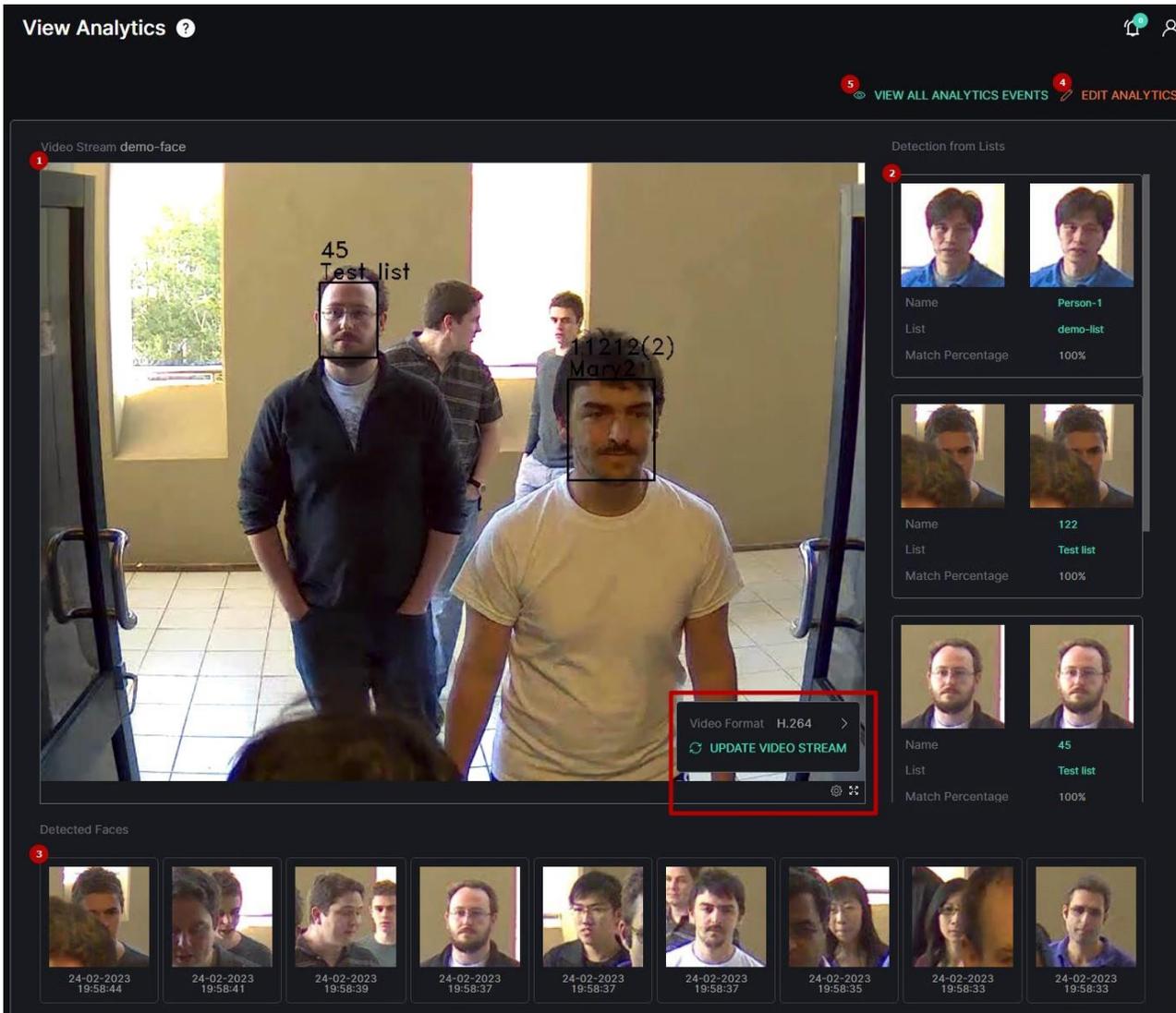
To see the selected analytics in real-time, click the View icon on the toolbox:



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💡 The View icon becomes available only when selected analytics is active.

Live view analytics mode allows to:

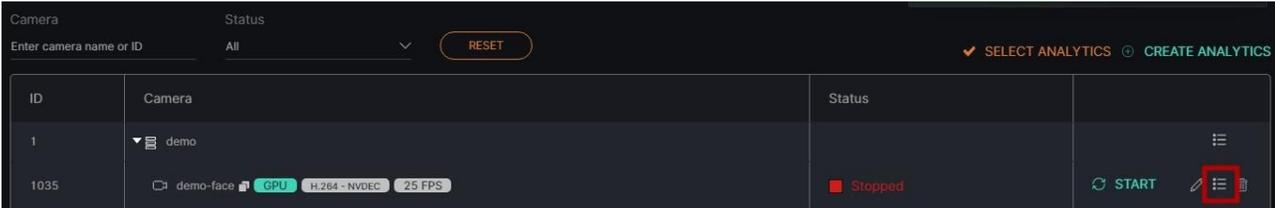


1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View recognized faces from lists:
 - a. Click the required frame to open the extended face recognition information
 - b. Click the required person's name to open the ID Card
 - c. Click the required list name to open the list
3. View all faces detected by the analytics with the exact date and time
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics

 The ID Card and list names are also displayed in the video next to the person with ID Card in the list.

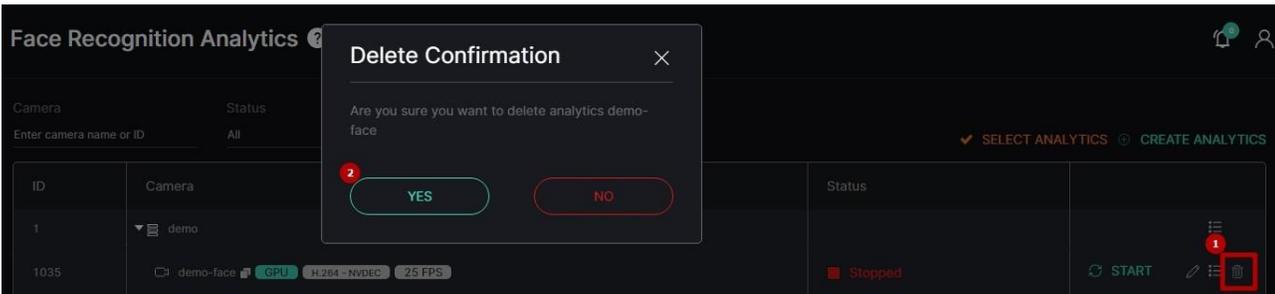
View Search Results

To view selected analytics search results in the Analytics item, click the Search Results icon on the toolbox:



Delete Analytics

To delete the analytics:



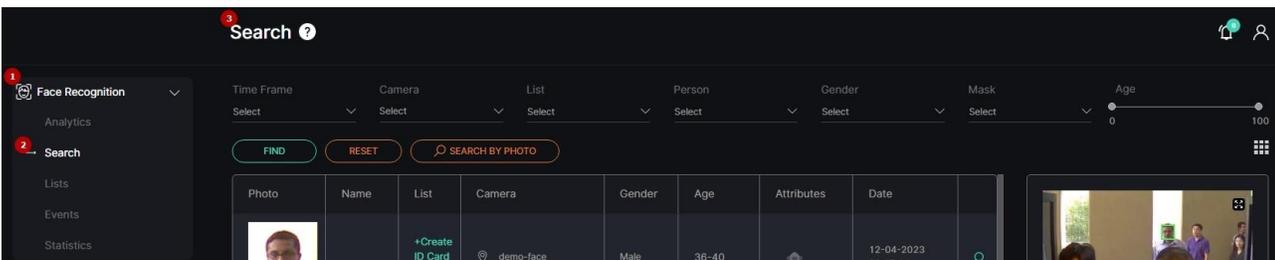
1. Select the Delete icon on the toolbox
2. Confirm the intention

Face Recognition: Search

 This page includes the Search item overview and functionality description. The item displays the face search results including a name, age and gender, presence of a mask, date and time, camera data, and frame with a person.

Overview

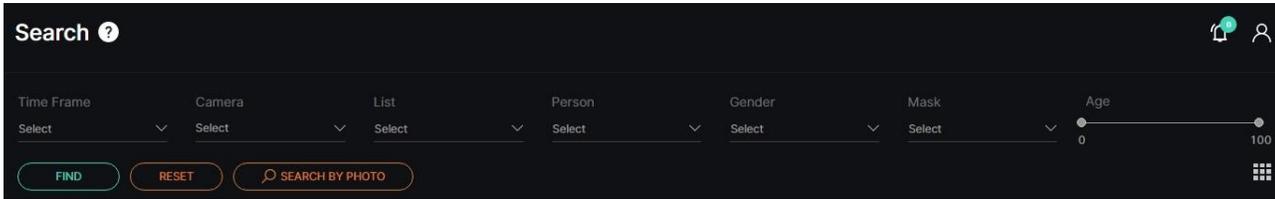
To open the Search item, in the left menu:



1. Select the Face Recognition section
2. Choose the Search item
3. See the face search functional menu

Use and Functionality

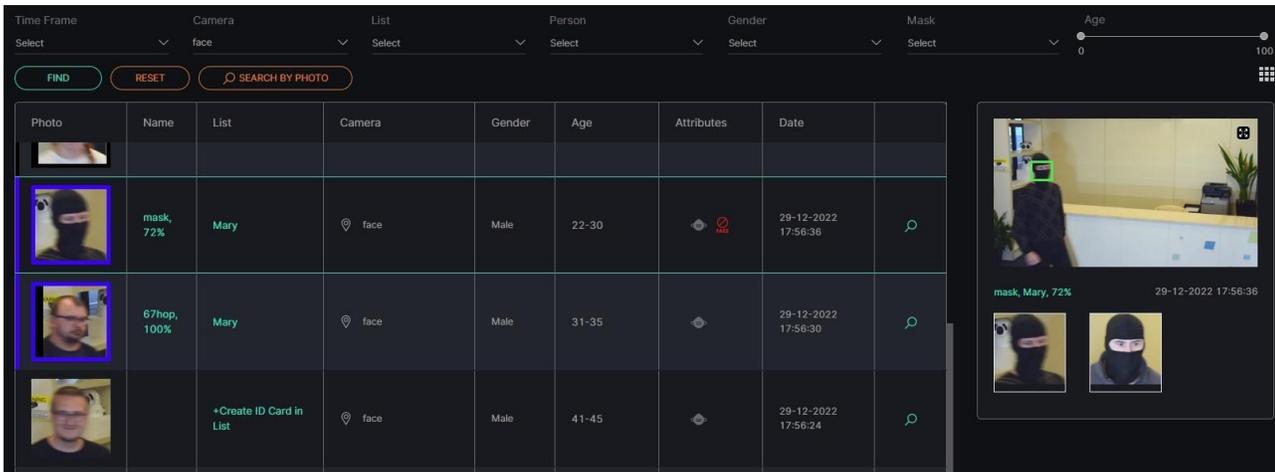
The Search functional menu allows to:



- Select the desired time frame
 - Click the Camera parameter to choose the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
- Click the Select Video Analytics button
- Select a necessary list name, the All Lists or Off the List option from the drop-down list
- Select a required person from a drop-down list
- Choose the gender from the drop-down list
- Set a medical mask presence or absence on a face
- Set the age range by moving the sliders
- Click the Find button to start filtering
- Click the Reset button to clear the filters
- Click the Search by Photo button to show faces among chosen photos on a device
- Move between List and Grid view modes by clicking the corresponding toggle

The Person drop-down list holds options only if a certain List was selected.

Once selected and filtered, in the search results:



- View recognized people data, date, and time faces have been recognized by the analytics
- View recognized attributes:
 - Mask
 - Liveness
- Click the list name to open the List View item or add a person to the required list by clicking the Add to List button. In the Add Person to List pop-up window:
 - Enter the person's full name

- Write a comment about the person in the Notes field
- Select a required list
- Click the Save button
- View the selected camera location on the map by clicking the corresponding icon in the Camera column
- Click the Magnifying Glass icon in the required row to filter search results only for the selected face. In the Search by Confidence pop-up window:
 - Set the confidence start value in percentage
 - Click the Search button
- Select the enlargement icon in the upper-right corner of the frame preview to view the other information. In the pop-up window:
 - See the extended person's data
 - Save the image in the full-size
 - Add a person to the list

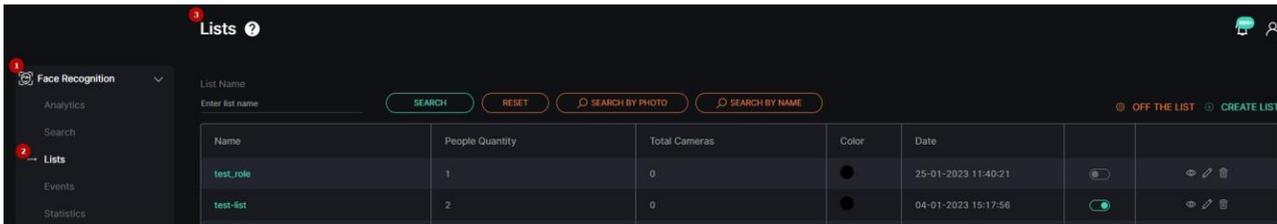
 The same options are available in the grid view mode.

Face Recognition: Lists

 This page comprises the Lists item overview and options to customize the faces lists. The item allows filtering and managing lists and personal information cards.

Overview

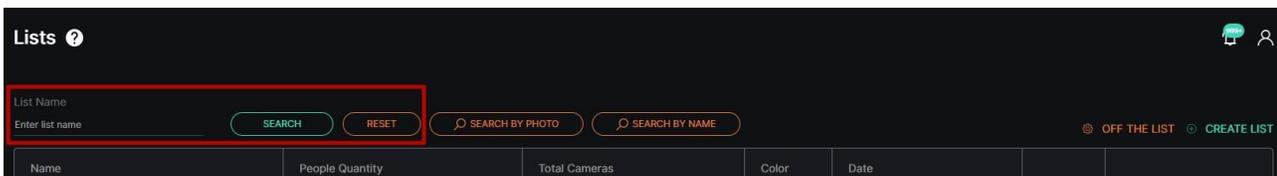
To open the Lists item, in the left menu:



1. Select the Face Recognition section
2. Choose the Lists item
3. See lists

Use and Functionality

The Lists functional menu allows to:



- Enter the list name or characters in the name to filter lists
- Select the Search button to start filtering
- Select the Reset button to clear the filters

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See the filtered lists in the table below. It holds:

Name	People Quantity	Total Cameras	Color	Date		
test_role	1	0	●	25-01-2023 11:40:21	<input type="checkbox"/>	  
test-list	2	0	●	04-01-2023 15:17:56	<input checked="" type="checkbox"/>	  
Test list	3	1	●	09-02-2023 14:21:17	<input checked="" type="checkbox"/>	  
Mary list	9	1	●	27-01-2023 10:45:12	<input checked="" type="checkbox"/>	  
Coworkers	2	0	●	31-01-2023 16:01:43	<input checked="" type="checkbox"/>	  

- List name
- Number of people included in the list
- Total number of video streams involved in the list
- List color
- List creation date
- Enabled/Disabled list toggle
- Toolbox includes:
 - Edit List
 - Delete List
 - View List



Turn on the Enabled\Disabled toggle to get matches with the list elements in the search results.

Off List Notification Settings

To set up notifications about recognized faces off lists select the Off the List button:

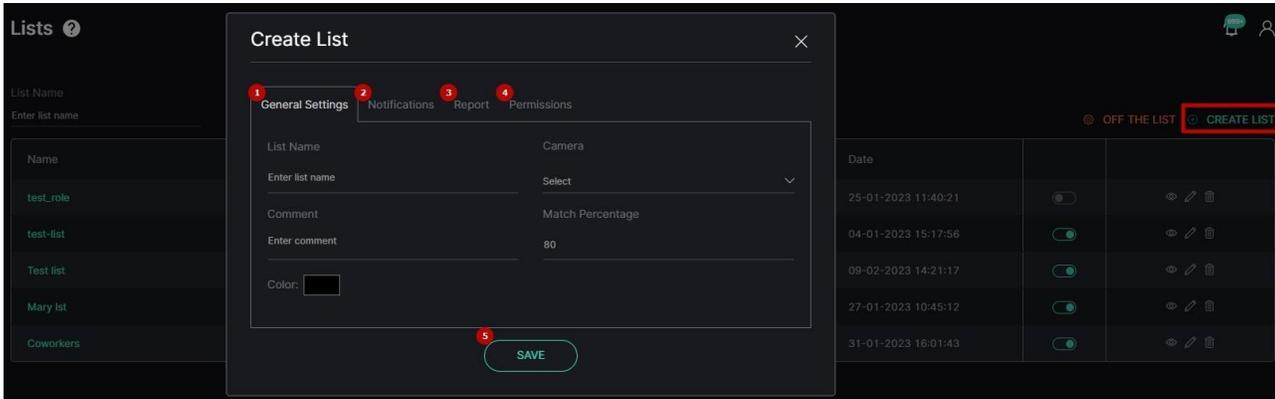
Name	People Quantity	Total Cameras	Color	Date		
test_role	1	0	●	25-01-2023 11:40:21	<input type="checkbox"/>	  
test-list	2	0	●	04-01-2023 15:17:56	<input checked="" type="checkbox"/>	  
Test list	3	1	●	09-02-2023 14:21:17	<input checked="" type="checkbox"/>	  
Mary list	9	1	●	27-01-2023 10:45:12	<input checked="" type="checkbox"/>	  
Coworkers	2	0	●	31-01-2023 16:01:43	<input checked="" type="checkbox"/>	  

In the Off List Notification Settings pop-up window:

- Click the Camera parameter to choose the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Check the Internal Notification box to allow the system to send all notifications to the Events item
- Check the Send Events to Event Manager box to allow the system to send all notifications about people out of lists to the Event Manager and then to external resources
- Click the Save button

Create List

To create a new list, click the Create List button. In the Create List pop-up window:



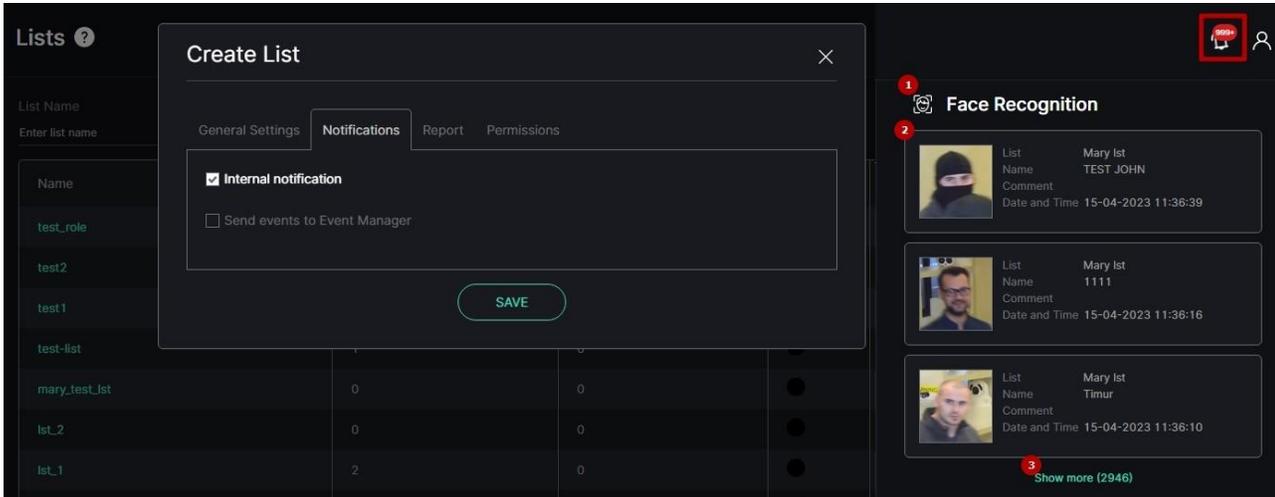
1. Configure the General Settings tab's parameters:
 - a. Enter the list name
 - b. Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - i. Check the boxes next to the required video analytics and folders
 - ii. Click the Select Video Analytics button
 - c. Type a comment to the list in the Notes field
 - d. Set the confidence threshold in percentage
 - e. Click on the Color block to pick a color for the list
2. Configure the Notifications tab's parameters:
 - a. Check the Internal Notification box to allow the system to send all notifications to the Events item
 - b. Check the Send Events to Event Manager box to allow the system to send all notifications about people in the list to the Event Manager and then to external resources
3. Select the Report tab to check the Time & Attendance box to set entrance and exit cameras for list report generation
4. Configure the Permissions tab's parameters:
 - a. Assign list access rights for roles:
 - i. Select the required role from the drop-down list
 - ii. Click the Add Role button
 - iii. Select the checkboxes for the required access rights
 - iv. Click the Delete icon to remove the unnecessary role
 - b. Assign list access rights for users:
 - i. Select the required user from the drop-down list
 - ii. Click the Add User button
 - iii. Select the checkboxes for the required access rights
 - iv. Click the Delete icon to remove the unnecessary user
 - c. Select the checkboxes for the required list access rights by default
5. Click the Save button to save parameters and create a new list



- The Permissions tab's default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users in the Permissions tab is not limited.
- Checking the Internal Notification box allows getting event notifications only in case the Enabled/Disabled list toggle is turned on.

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Once the list is created with the checked Internal Notification box, the Enabled/Disabled list toggle is turned on, and at least one of the selected analytics is enabled, the Notification icon signals about each new event notification. Click the Notification icon to open the Notification Panel. It comprises:



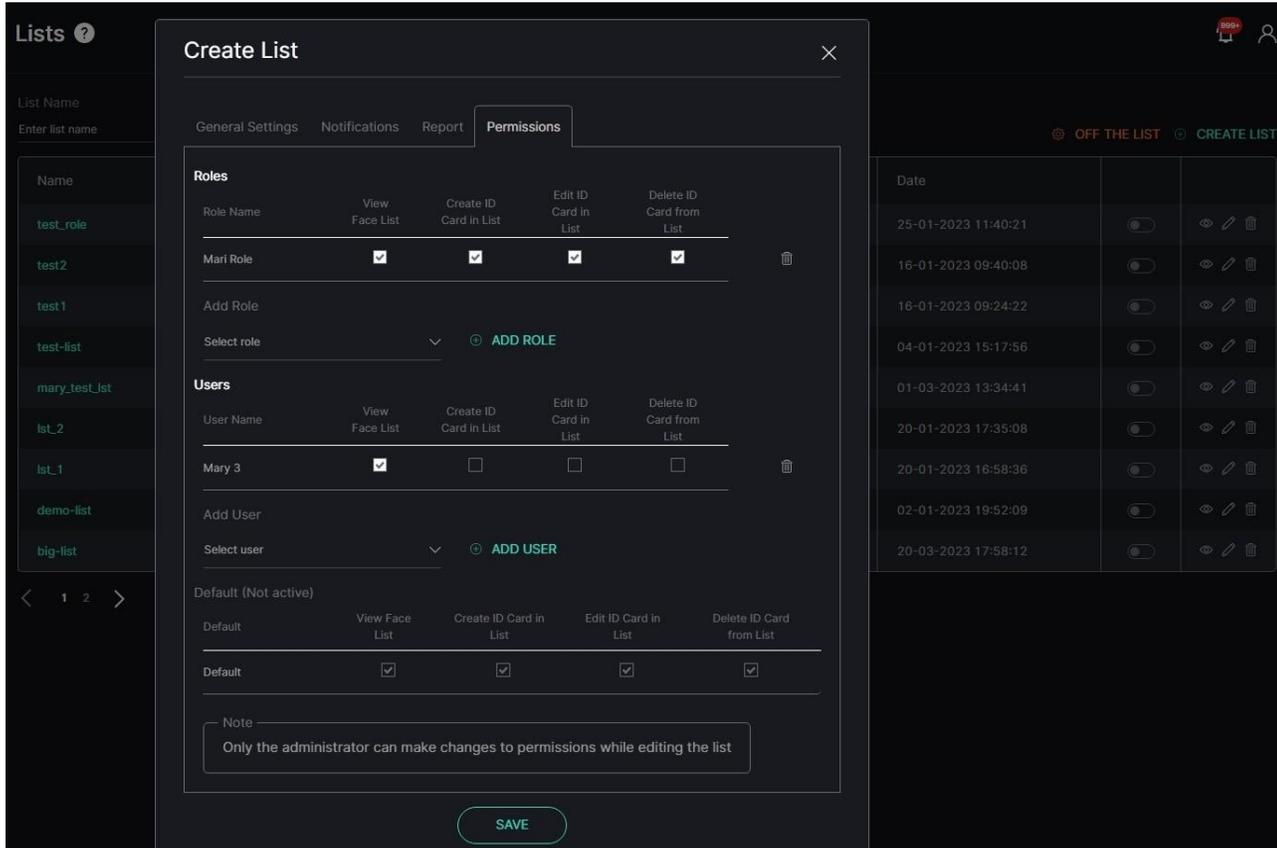
1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
 - b. Clear all plugin event notifications at once from the Notification Panel by clicking the
 - c. Close button (this action doesn't affect events in the Events item)
2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
3. Show More button with the total events number to open the Events item and view all events

List Permissions Configuration

For example, it is necessary to give full access to a new list to all users related only to a specific role, and at the same time, to restrict the ID Card managing access rights in the list for one of the users related to this role. For this purpose:

1. In the Roles item of the Settings section assign all required Face Recognition permissions to the role, including:
 - a. View Face Lists
 - b. Create ID Card in List
 - c. Edit ID Card in List
 - d. Delete ID Card from List
2. In the Users item of the Settings section assign the selected role to all required users
3. In the Create List pop-up of the Lists item open the Permissions tab

Configure the parameters in the Permissions tab:



1. In the Roles block, add the required role and check all access rights boxes
2. In the Users block, add the required user and check only the View Face Lists access right box
3. Finish the list configuration and save it

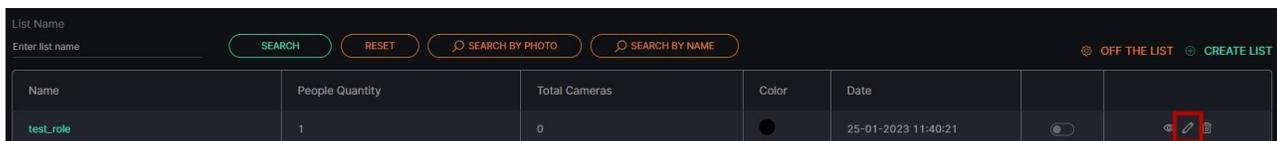
Once the list is created, all users with the selected role can view the new list and manage ID Cards in it. At the same time, the additionally selected user can only view the new list but cannot manage ID Cards in this list.

 User permissions are with higher priority than Role permissions. The sequence of access rights validation in the list by the system:

1. Global permissions
2. User permissions
3. Role permissions
4. Default permissions

Edit List

To edit the list, select the Edit icon on the toolbox:

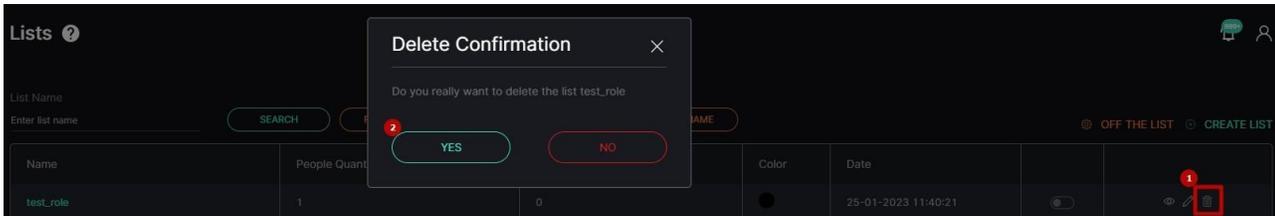


To view editing list parameters, read [Create List](#).

 Only the administrator can make changes to permissions while editing the video stream. For other system users, the Permissions tab is disabled.

Delete List

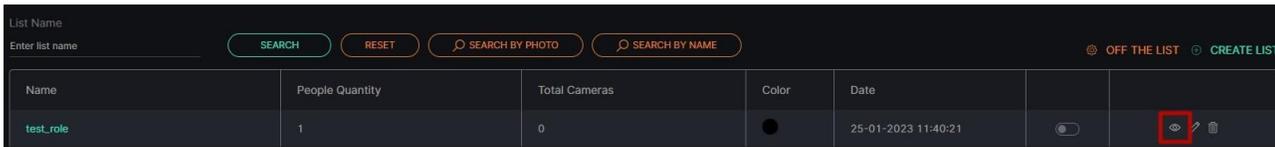
To remove the list:



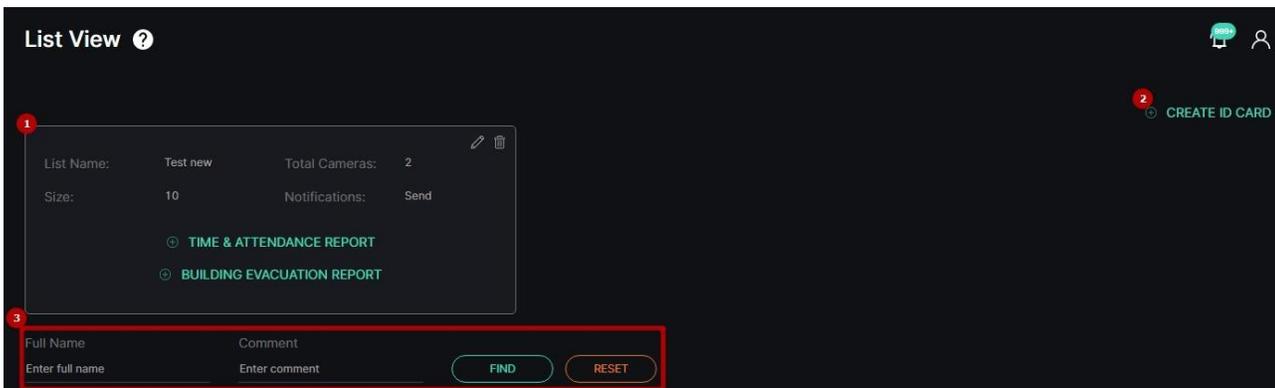
1. Select the Delete icon on the toolbox
2. Confirm the intention

View List

To view the list, select the View icon on the toolbox:



The List View functional menu includes:



1. List Info Box holds:
 - List parameters
 - Edit List tool
 - Delete List tool
 - Time & Attendance Report and Building Evacuation Report buttons to generate a list report. In the Generate a Report pop-up window:
 - Select the required time frame
 - Select the report file format type (CSV)
 - Click the Generate button
2. Create an ID Card button to add a person to the list and create the ID Card. In the pop-up window:

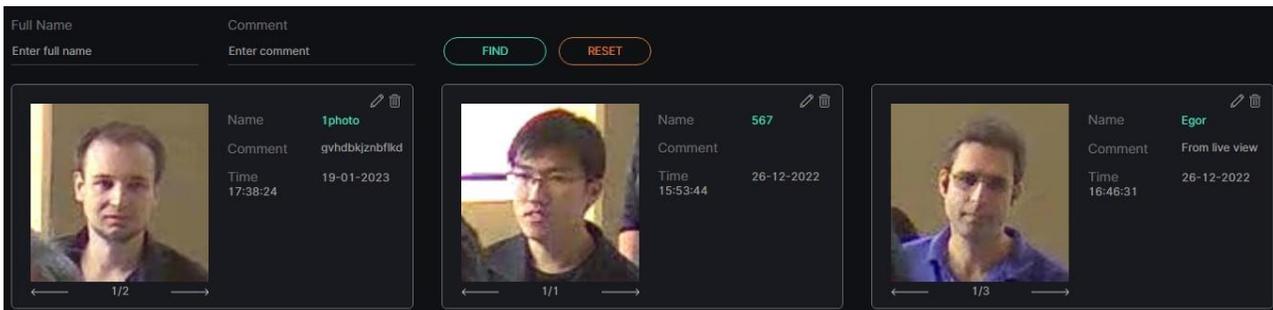
CORTROL CVA *(Extended Video Analytics)*

CEVA v1.0.0

- Upload multiple photos with a person for comparison and identification by clicking the Upload Photo button
 - Enter the person's full name
 - Type a comment to the person in the Message field
 - Check the Set Card Expiration Date box to set the ID Card end parameters:
 - Select the date and time
 - Choose the action after the end. Check the:
 - Move to Another List box and select another list to move the ID Card
 - Remove from the Current List box to remove the ID Card from the list
 - Send Event to Event Manager box to allow the system to send the notification about ID Card end to the Event Manager and then to external resources
 - Click the Save button
3. Filters to:
- Enter the person's full name or characters in the name
 - Enter the comment or characters in the comment
 - Click the Find button to start filtering
 - Click the Reset button to clear the filters

- 💡 • To remove the photo in the Create ID Card pop-up window, hover the mouse over the required photo and select the Delete icon.
- To create the ID Card, select at least one photo.

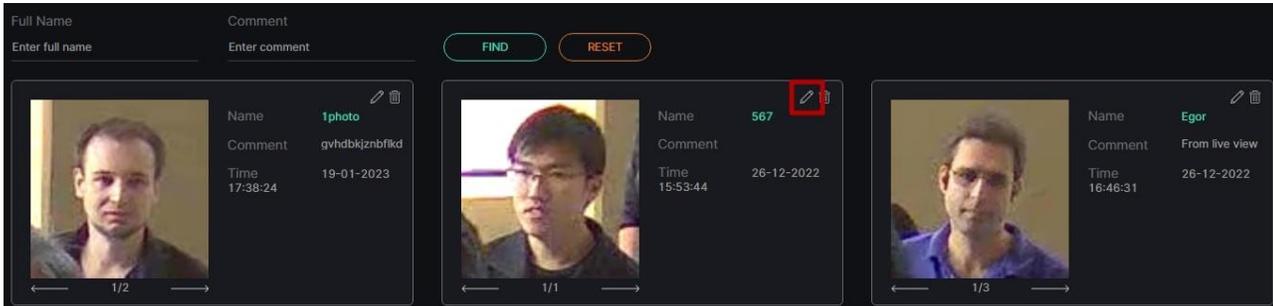
The tiles with ID Cards have:



- Clickable photo of the person
- Person's full name
- Comment to the person
- Date and time the person was added to the list
- Edit ID Card tool
- Delete ID Card tool

Edit ID Card

To edit the ID Card, select the Edit icon:



In the Edit ID Card pop-up window:

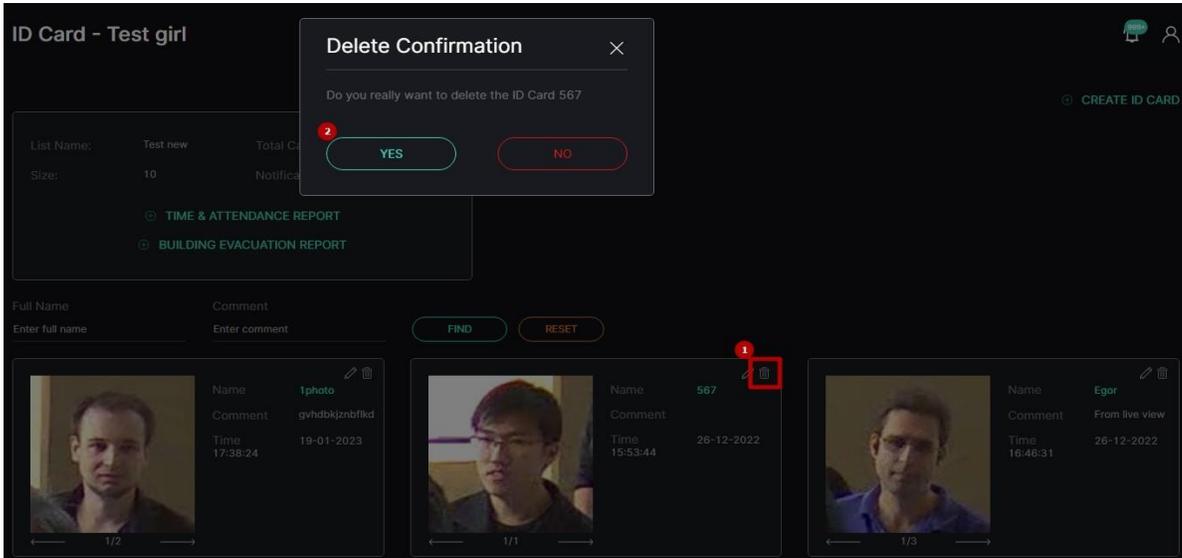
- Add other photos with a person for comparison and identification by clicking the Upload Photo button
- Delete the photo by hovering the mouse over the required photo and selecting the Delete icon
- Change the person's full name
- Type a comment to the person in the Message field
- Select another list to move the ID Card
- Check the Set Card Expiration Date box to set the ID Card expiration parameters:
 - Select the date and time
 - Choose the action after the expiration. Check the:
 - Move to Another List box and select another list to move the ID Card
 - Remove from the Current List box to remove the ID Card from the list
 - Send Event to Event Manager box to allow the system to send the notification about ID Card expiration to the Event Manager and then to external resources
- Click the Save button



To save the ID Card, select at least one photo.

Delete ID Card

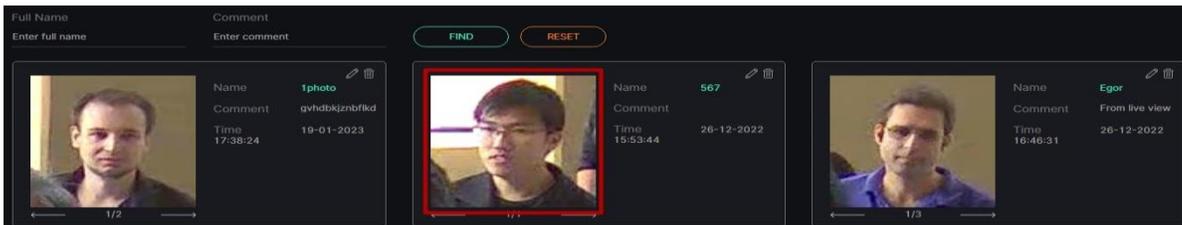
To remove the ID Card:



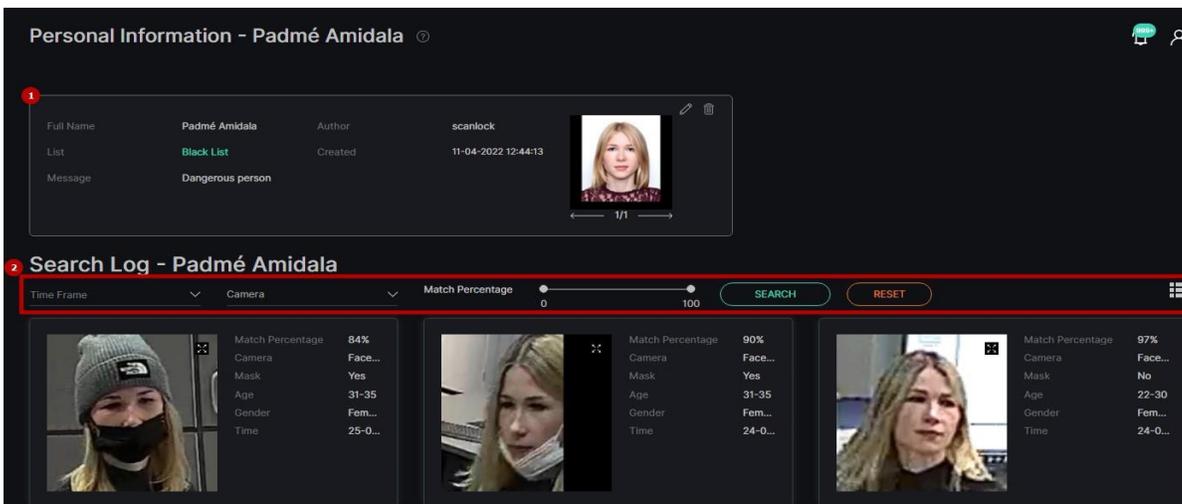
1. Select the Delete icon
2. Confirm the intention

View ID Card

To view the required ID Card, click the photo of a person:



The Personal Information functional menu includes:



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1. ID Card Info Box holds:
 - a. Information about the person
 - b. Photos of a person for comparison and identification
 - c. Edit ID Card tool
 - d. Delete ID Card tool
2. Search Log filters to:
 - a. Select the required time frame
 - b. Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - i. Check the boxes next to the required video analytics and folders
 - ii. Click the Select Video Analytics button
 - c. Set the range of coincidence in percentage by moving the sliders
 - d. Click the Search button to start filtering
 - e. Click the Reset button to clear the filters
 - f. Move between List and Grid view modes by clicking the corresponding toggle

Once selected and filtered, in the search log:

Search Log - Padmé Amidala

Time Frame | FaceRecogGlasses | Match Percentage: 80-100 | SEARCH | RESET

Match Percentage	Camera	Mask	Age	Gender	Time
84%	Face...	Yes	31-35	Fem...	25-0...
90%	Face...	Yes	31-35	Fem...	24-0...
97%	Face...	No	22-30	Fem...	24-0...
85%	Face...	Yes	31-35	Fem...	24-0...

- View recognized person's data, date and time the person has been recognized, and coincidence in percentage
- View the camera location on the map by clicking the corresponding icons in the Camera parameter
- Select the Enlargement icon to open the frame with the person. To save the frame in the full size click the Save Image button in the pop-up window

The same options are available in the grid view mode.

Search by Photo

To identify faces among chosen photos on a device, on the main Lists item click the Search by Photo button:

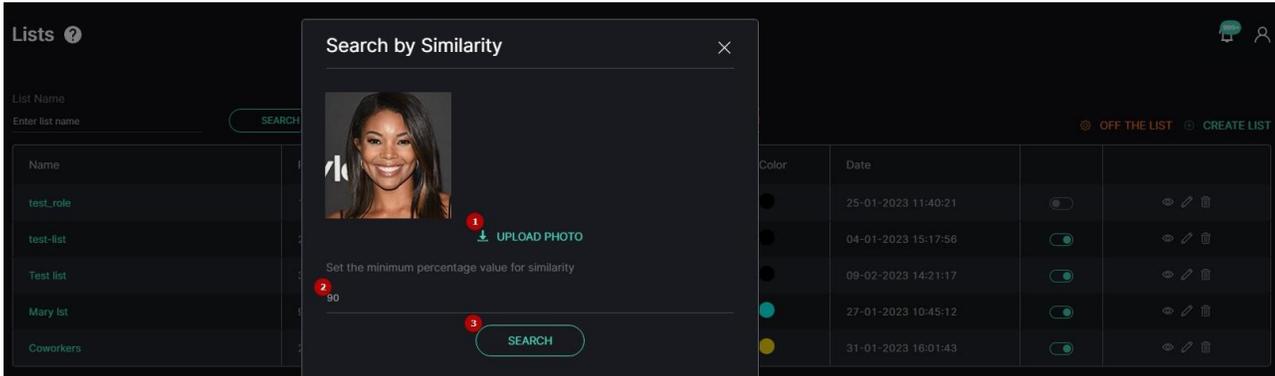
Lists ?

List Name: Enter list name | SEARCH | RESET | **SEARCH BY PHOTO** | SEARCH BY NAME | OFF THE LIST | CREATE LIST

Name	People Quantity	Total Cameras	Color	Date

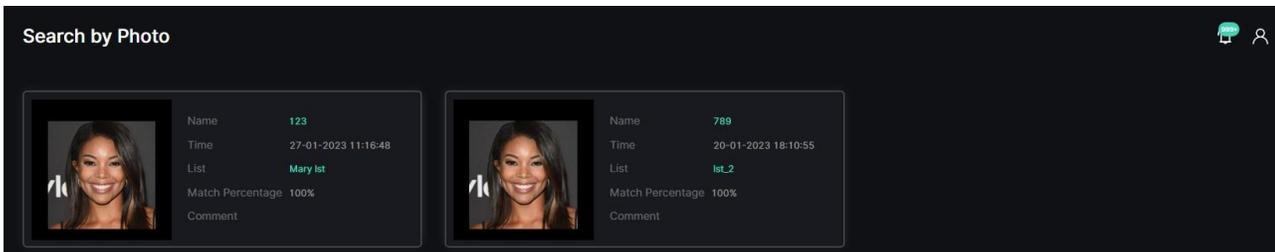
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

In the Search by Similarity pop-up window:



1. Click the Upload Photo button to upload photos from the device
2. Set the minimum percentage value for similarity
3. Select the Search button to find similar faces among ID Cards in the lists

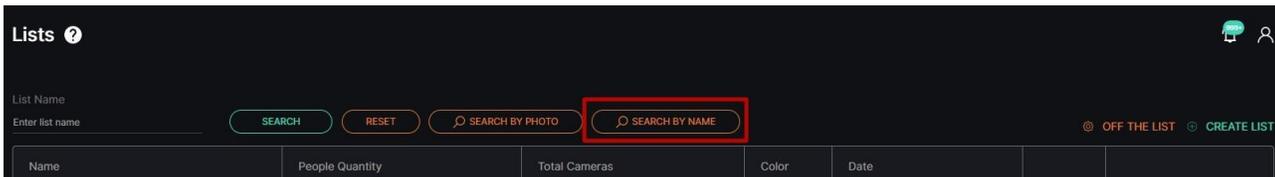
Once search results are ready, ID Cards are displayed on the Search by Photo page. They include:



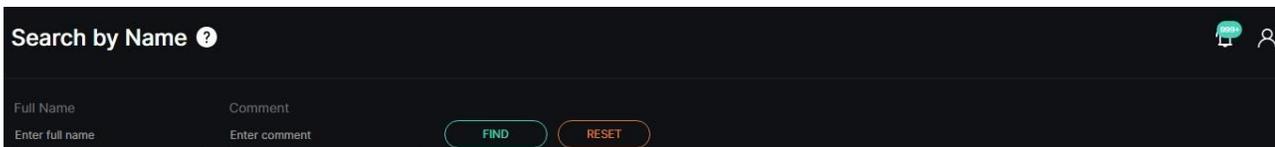
- Clickable photo of a person
- Person's full name
- Time the ID Card was created
- List which holds the ID Card
- Percentage of similarity
- Comment to the ID Card

Search by Name

To quickly find an ID Card, on the main Lists item click the Search by Name button:



The Search by Name functional menu allows to:



CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

- Enter the person's full name or characters in the name
- Enter the comment or characters in the comment
- Click the Find button to start filtering
- Click the Reset button to clear the filters

View the search results in the tiles below. They include:



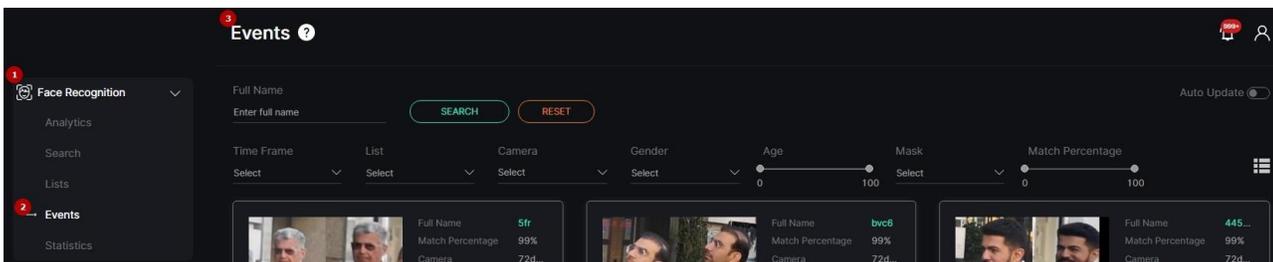
- Clickable photo of a person
- Person's full name
- Date and time the person was added to the list
- List which holds the ID Card
- Comment to the ID Card

Face Recognition: Events

i This page includes the Events item overview and functionality description. The item displays the event notifications including a name, age and gender, presence of a mask, date and time, camera data, and frame with a detected person.

Overview

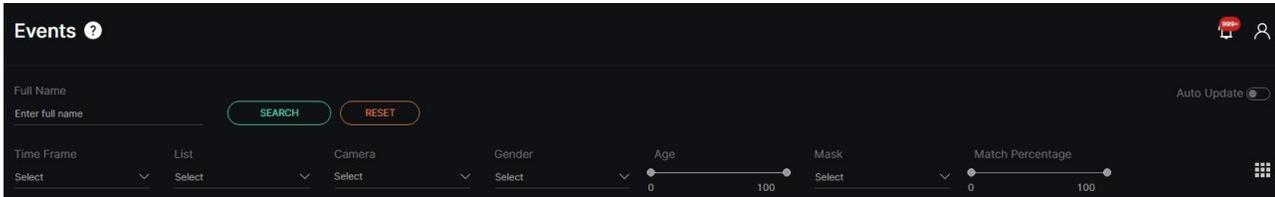
To open the Events item, in the left menu:



1. Select the Face Recognition section
2. Choose the Events item
3. See event notifications

Use and Functionality

The Events functional menu allows to:



- Enter the person's full name to filter events
- Select the required time frame
- Choose the desired list
- Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Choose the gender from the drop-down list
- Set the age range by moving the sliders
- Set a medical mask presence or absence on a face
- Set the range of coincidence in percentage by moving the sliders
- Click the Search button to start filtering
- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable auto update of the event notifications
- Move between List and Grid view modes by clicking the corresponding toggle

Once selected and filtered, in the event notifications:

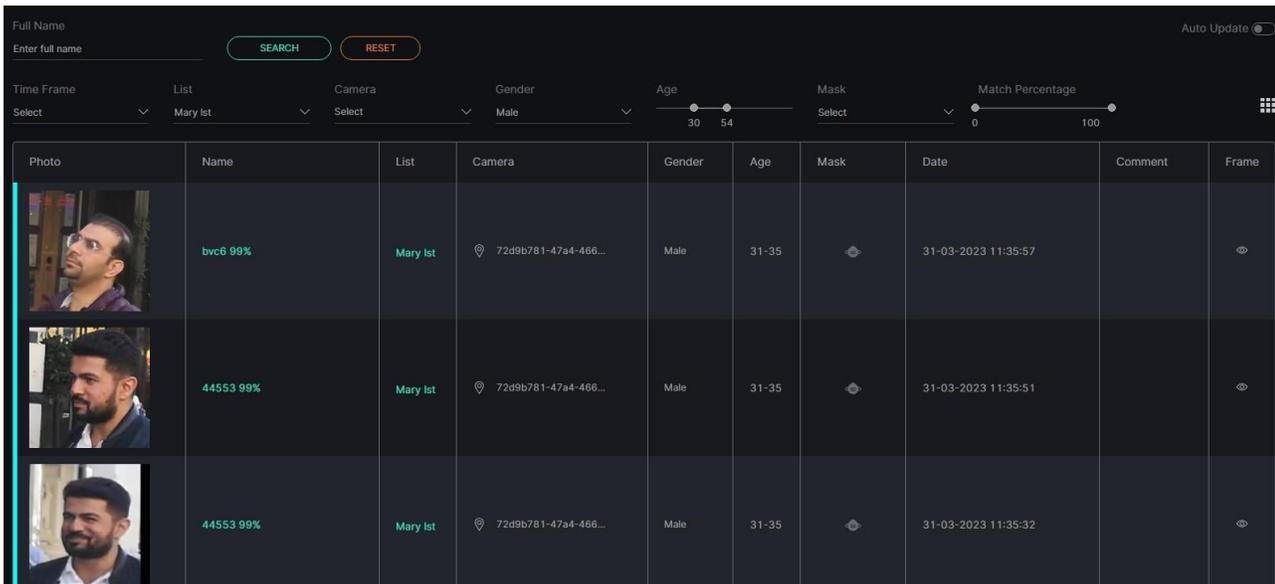


Photo	Name	List	Camera	Gender	Age	Mask	Date	Comment	Frame
	bvc6 99%	Mary Ist	72d9b781-47a4-466...	Male	31-35		31-03-2023 11:35:57		
	44553 99%	Mary Ist	72d9b781-47a4-466...	Male	31-35		31-03-2023 11:35:51		
	44553 99%	Mary Ist	72d9b781-47a4-466...	Male	31-35		31-03-2023 11:35:32		

- View recognized people data, date and time faces have been detected by the selected camera
- Click the person's name to open the Personal Information Card
- Click the list name to open the List View item or add a person to the required list by clicking the
- Add to List button. In the Add Person to List pop-up window:
 - Enter the person's full name
 - Write a comment about the person in the Notes field

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

- Select a required list
- Click the Save button
- View the selected camera location on the map by clicking the corresponding icon in the Camera column
- Read the message related to the recognized person
- Select the View icon to view the detection information. In the pop-up window:
 - See the person's data
 - Save the image in the full-size
 - Add a person to the list

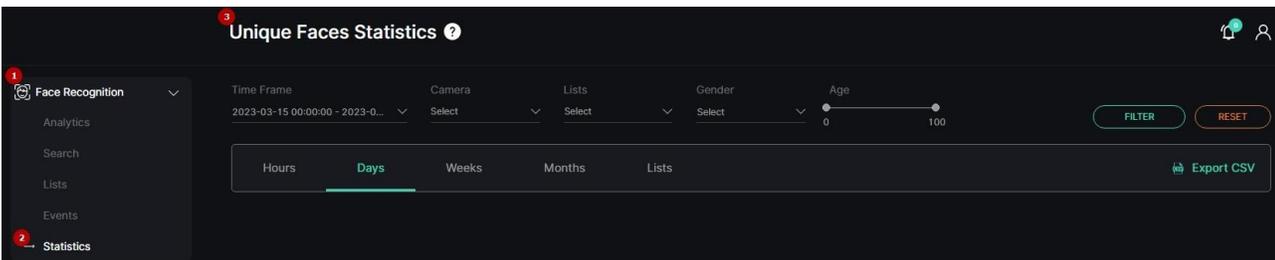
 The same options are available in the grid view mode.

Face Recognition: Statistics

 This page describes the Statistics item that allows viewing unique faces statistics filtered by multiple parameters.

Overview

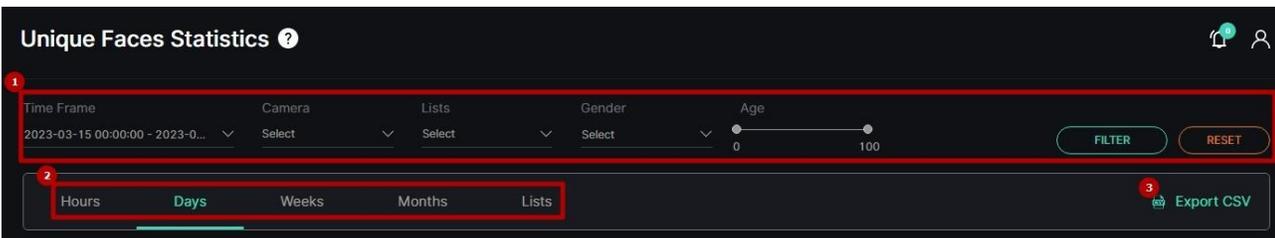
To open the Statistics item, in the left menu:



1. Select the Face Recognition section
2. Choose the Statistics item
3. See unique faces statistics

Use and Functionality

The Unique Faces Statistics functional menu comprises:



1. Filters to:
 - a. Select the desired time frame to produce statistics
 - b. Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - i. Check the boxes next to the required video analytics and folders
 - ii. Click the Select Video Analytics button
 - c. Select multiple lists
 - d. Choose the gender from the drop-down list

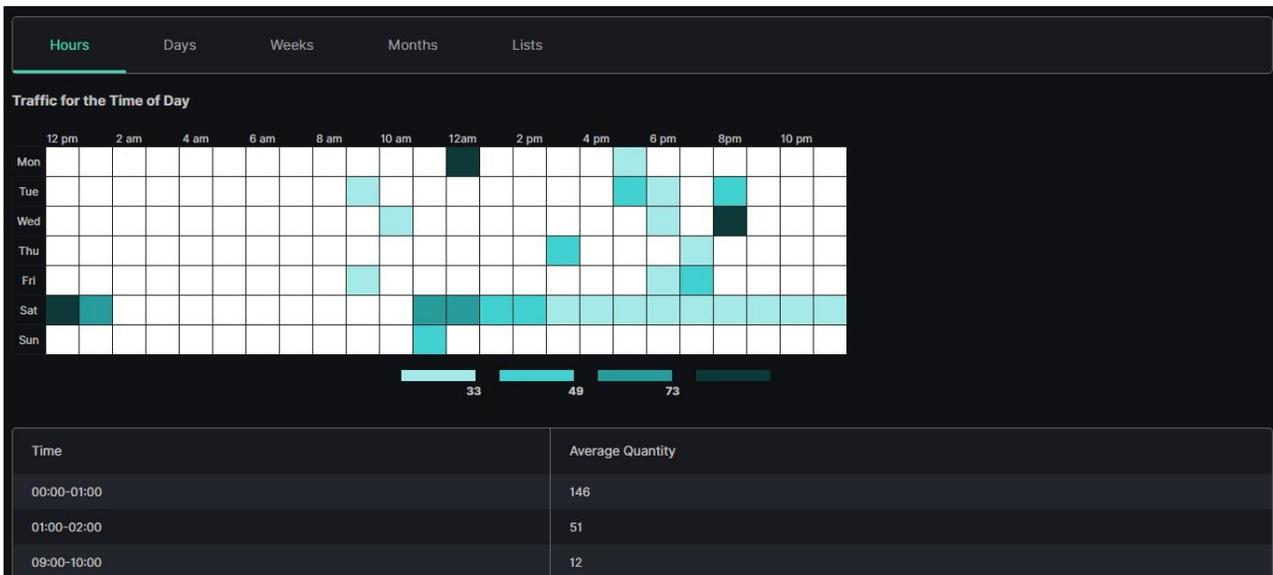
CORTROL CVA *(Extended Video Analytics)* CEVA v1.0.0

- e. Set the age range by moving the sliders
 - f. Click the Filter button to start filtering
 - g. Click the Reset button to clear the filters
2. Tabs to filter statistics data by:
 - a. Hours
 - b. Days
 - c. Weeks
 - d. Months
 - e. Lists
 3. Export CSV option to download the statistics report in the CSV format

 • The Unique Faces Statistics item opens with the Days tab by default.
• The Export CSV option is available only for the Days and Lists tabs.

Hours Tab

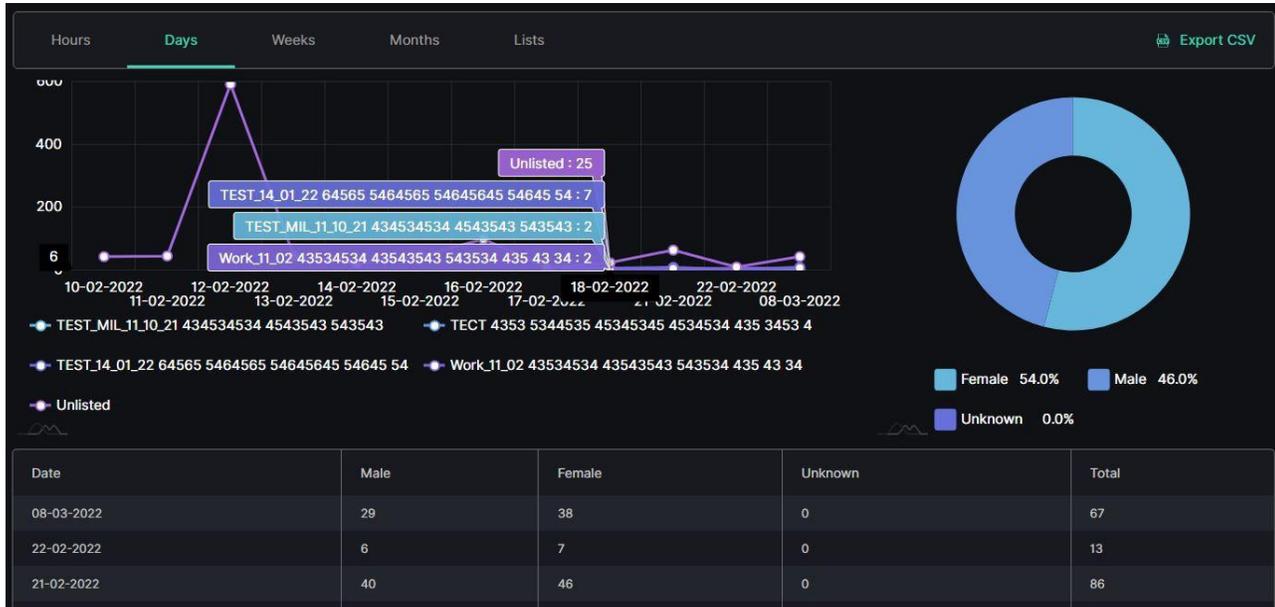
The Hours tab shows:



- Table chart with the unique faces data by hours and days of a week
- Table with Time and Average Quantity columns

Days, Weeks, and Months Tabs

The Days tab shows:



- Checkpoints on the graphs by listed and unlisted unique faces quantity and date
- Slices on the donut chart with the amount of the unique faces recognized by gender in percentage
- Table columns by date and gender

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- Hover the mouse over the graphs to see the unique faces quantity and amount.
- The Weeks and Months tabs' content differs with the usage of week and month time intervals instead of days.

Lists Tab

The Lists tab shows the tables per selected dates that comprise:

The 'Lists' tab interface shows a navigation bar with 'Hours', 'Days', 'Weeks', 'Months', and 'Lists' (selected). An 'Export CSV' button is in the top right. The main content area displays two tables for different dates.

List	Male	Female	Unknown	Total
TEST_MIL_11_10_21 434534534 4543543 543543	0	3	0	3
TECT 4353 5344535 45345345 4534534 435 3453 4	1	1	0	2
TEST_14_01_22 64565 5464565 54645645 54645 54	6	4	0	10
Work_11_02 43534534 43543543 543534 435 43 34	5	3	0	8
Unlisted	17	27	0	44
Total Number by Camera	29	38	0	67

List	Male	Female	Unknown	Total
TEST_14_01_22 64565 5464565 54645645 54645 54	1	1	0	2
Unlisted	5	6	0	11
Total Number by Camera	6	7	0	13

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

- List column with the preselected list name(s)
- Gender columns with the preselected gender

Forensic Analytics

Introduction

Use this guide to understand the interface and features of the Forensic Analytics plugin and learn how to use it for the best result.

What Are Forensic Analytics?

Forensic Analytics analyzes multiple video sources and performs a quick search for people and vehicles according to the specified filters and attributes. The plugin helps to effectively track the subjects' movement across multiple video surveillance zones and, as a result, find their location within the specified period.

Primary Capabilities

Forensic Analytics is capable to:

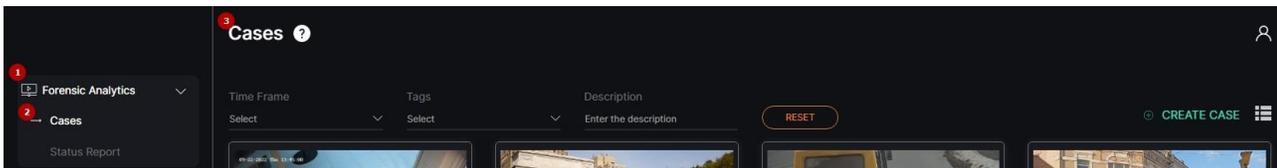
- Search for a person with more than 50 appearance attributes
- Supply the people search by appearance similarity
- Find the people's location and direction of movement within the specific time frame
- Recognize the make, model, and color of the vehicle, as well as the country identifier with 95% accuracy
- Determinate the vehicle's movement direction

Forensic Analytics: Cases

i This page includes the Cases item overview and functionality description. The item displays a list of cases having a video frame, case name, related analytics, and the ability to manage cases.

Overview

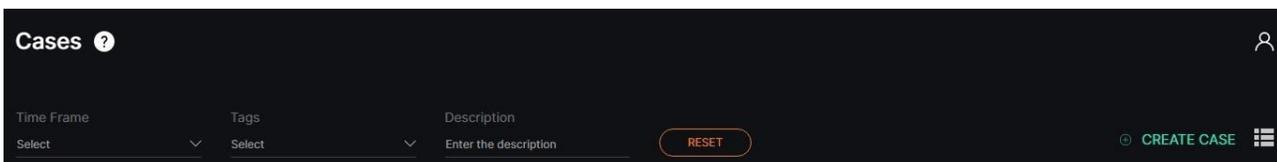
To open the Cases item, in the left menu:



1. Select the Forensic Analytics section
2. Choose the Cases item
3. See cases

Use and Functionality

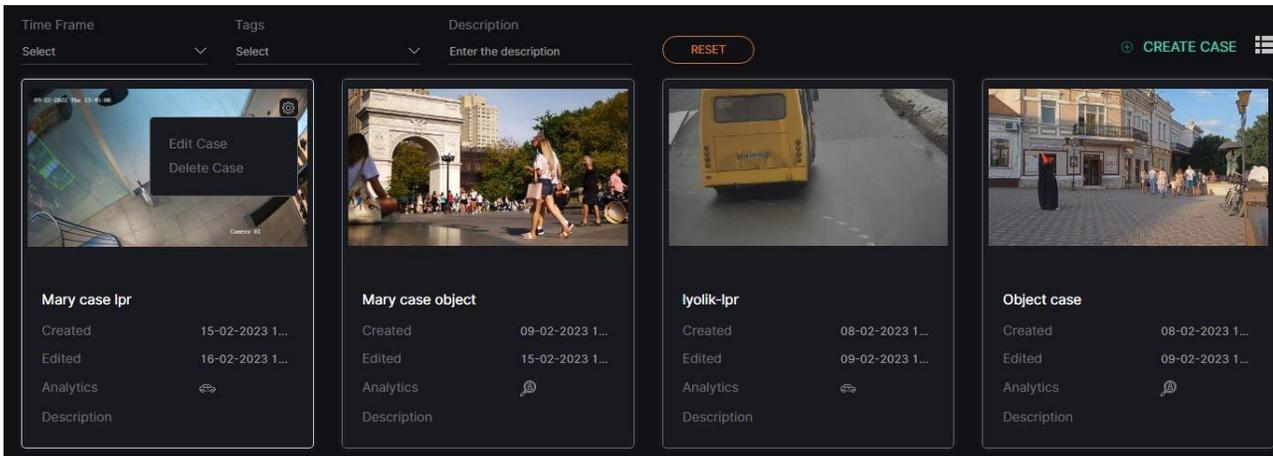
The Cases functional menu allows to:



CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

- Select the required time frame
- Choose desired tags
- Enter case description or characters in the description
- Click the Reset button to clear the filters
- Move between List and Grid view modes by clicking the corresponding toggle

See the cases in the blocks below. They have:

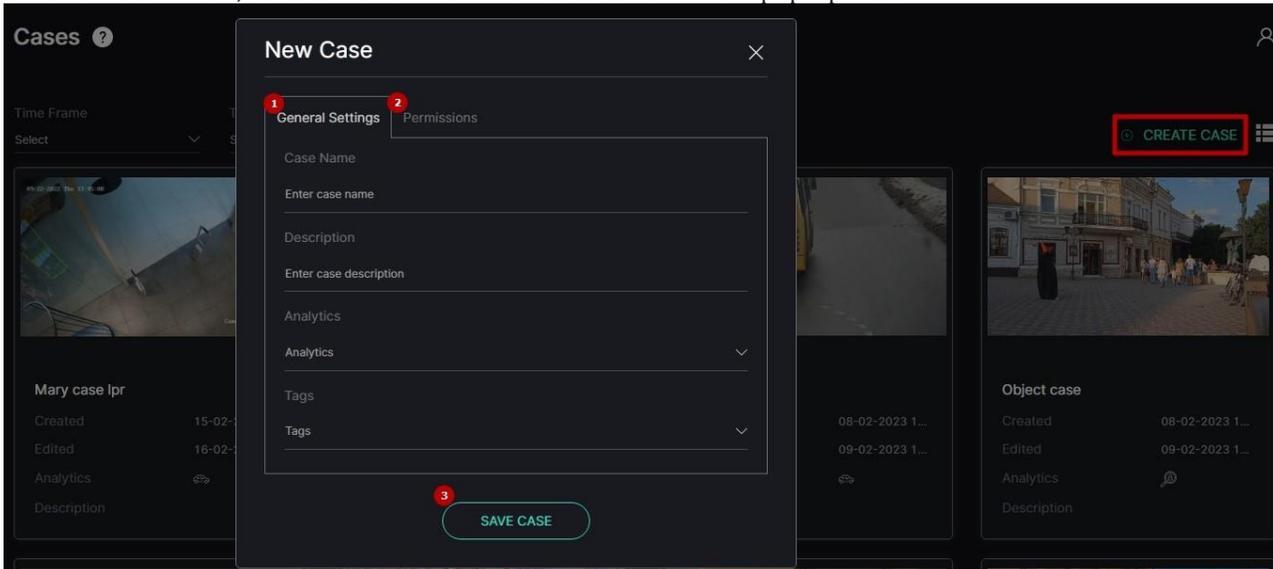


1. Case info box with video frame and short case information
2. Options to:
 - a. View case
 - b. Edit case
 - c. Delete case

 The same options are available in the list view mode.

Create Case

To create a new case, click the Create Case button. In the New Case pop-up window:



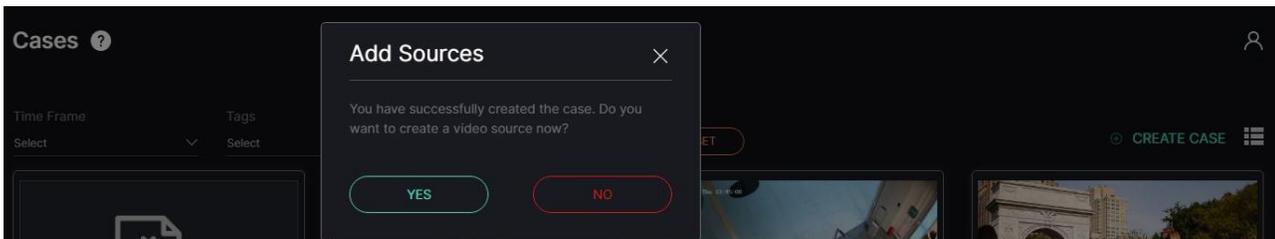
CORTROL CVA *(Extended Video Analytics)* CEVA v1.0.0

1. Configure the General Settings tab's parameters:
 - a. Enter the case name
 - b. Enter the case description
 - c. Select the required analytics from the drop-down list:
 - i. All
 - ii. LPR
 - iii. Smart Tracking System
 - d. Enter custom tags or select the required ones from the drop-down list
2. Configure the Permission tab's parameters:
 - a. Assign case access rights for roles:
 - i. Select the required role from the drop-down list
 - ii. Click the Add Role button
 - iii. Select the checkboxes for the required access rights
 - iv. Click the Delete icon to remove the unnecessary role
 - b. Assign case access rights for users:
 - i. Select the required user from the drop-down list
 - ii. Click the Add User button
 - iii. Select the checkboxes for the required access rights
 - iv. Click the Delete icon to remove the unnecessary user
 - c. Select the checkboxes for the required case access rights by default
3. Click the Save Case button to save parameters and create a new case



- The Permissions tab's default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users in the Permissions tab is not limited.

Once the new case is created, in the Add Source pop-up window:



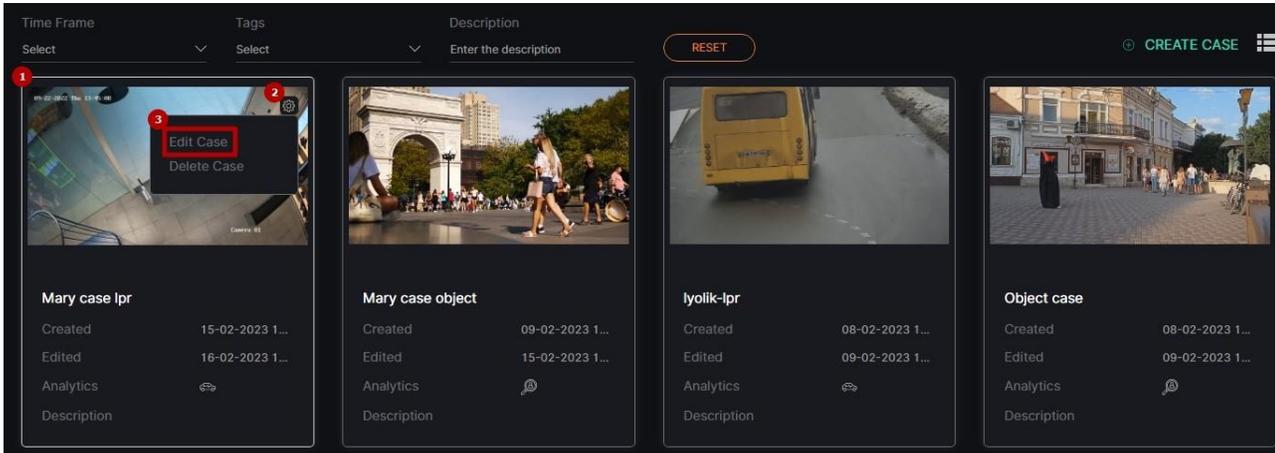
- Click Yes to move to the Sources page and instantly start creating video sources in the case
- Click No to stay on the current page and create video sources later



To learn more about the source creation process, read [Create Source](#).

Edit Case

To edit the case:



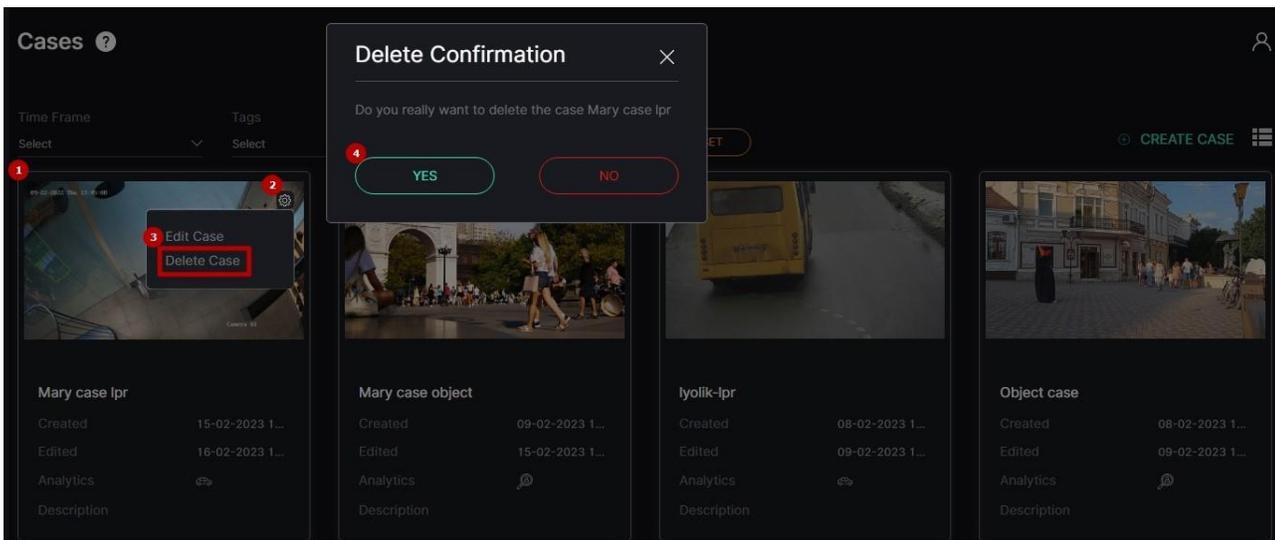
1. Hover the mouse over the required case block
2. Select the Options icon
3. Click the Edit Case button



In the list view mode, select the Edit icon on the toolbox.
To view editing case parameters, read [Create Case](#).

Delete Case

To delete the case:



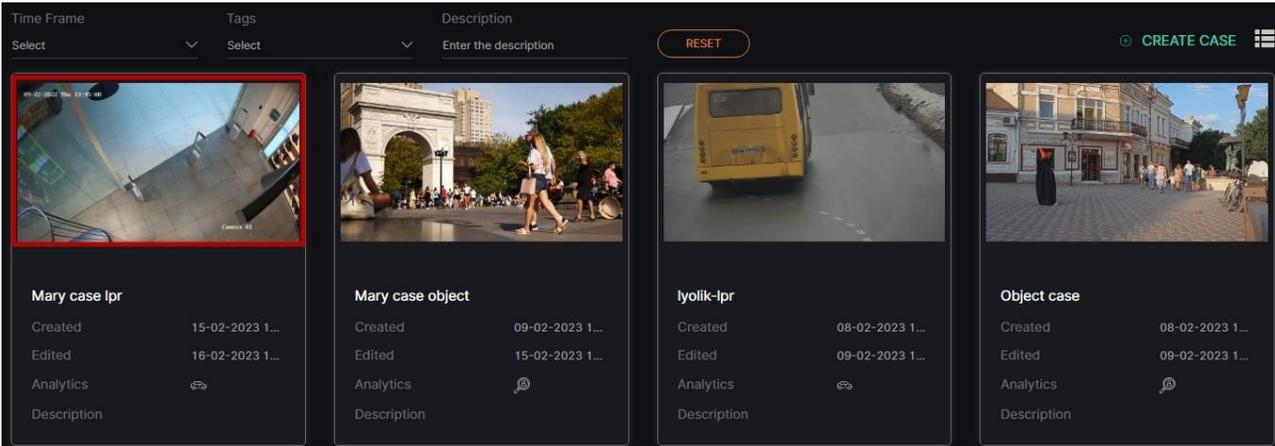
1. Hover the mouse over the required case block
2. Select the Options icon
3. Click the Delete Case button
4. Confirm the intention in the pop-up window

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

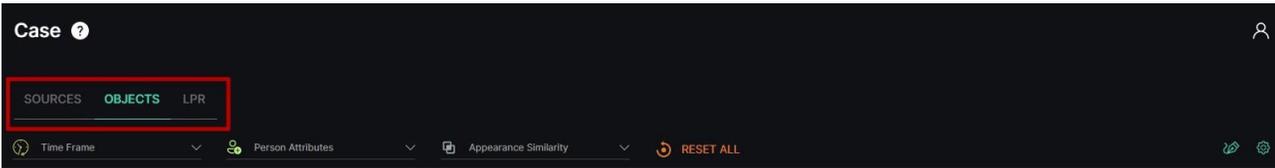
💡 In the list view mode, select the Delete icon on the toolbox.

View Case

To view the case, click the video frame inside the required case block:



The Case navigational menu consists of 3 tabs:



- Sources
- Objects
- LPR

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- The Objects tab is available only in the cases with selected Smart Tracking System analytics.
- The LPR tab is available only in the cases with selected LPR analytics.
- The selected tab is always highlighted.

Cases: Sources

i This page describes the Sources tab that allows managing video sources and getting up-to date information about video processing status.

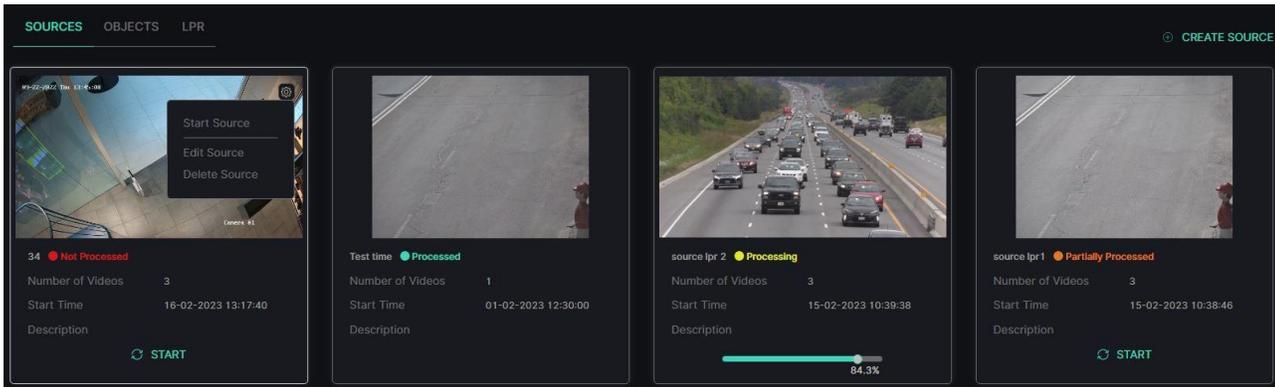
Overview

Select the Sources tab in the tab's menu:



Use and Functionality

The Sources tab shows video sources in the blocks. They hold:

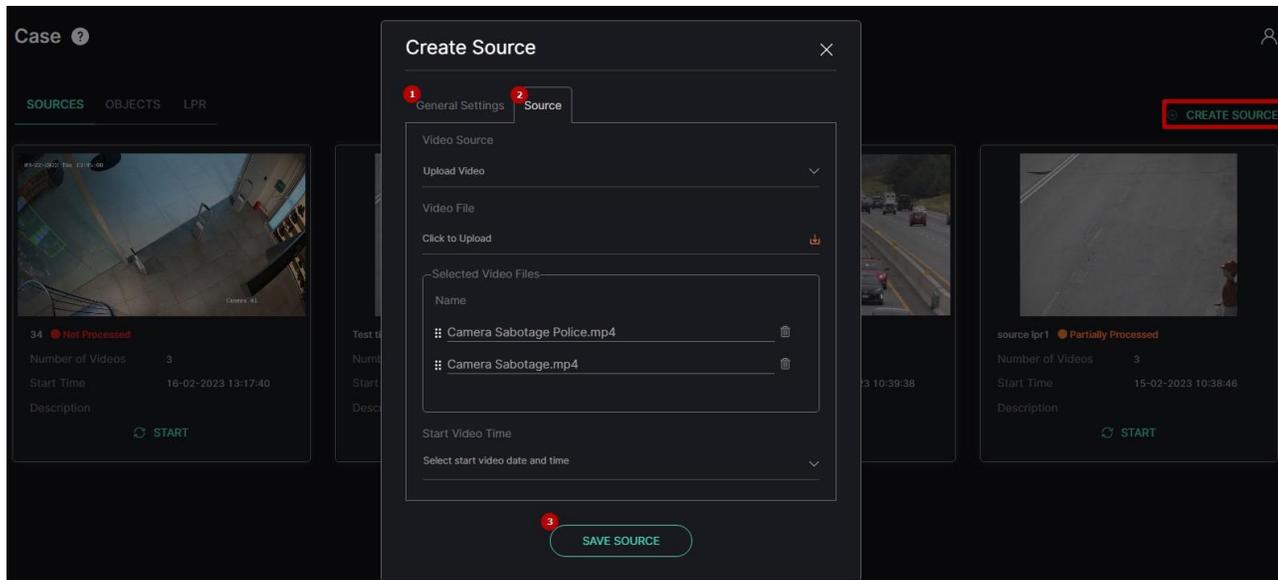


1. Source info box to view:
 - a. Video frame
 - b. Source name
 - c. Source processing status:
 - d. Not Processed
 - e. Processing
 - f. Processed
 - g. Partially Processed
 - h. Preparing for Start
 - i. Number of videos in the source
 - j. Short source information
 - k. Processing progress bar
2. Options to:
 - a. Start/Stop source processing
 - b. Restart source processing
 - c. Edit source
 - d. Delete source

- The Start Source option is available only for sources with Not Processed and Partially Processed statuses.
- The Stop Source option is available only for sources with Processing status.
- The Restart Source option is available only for sources with Processed status.
- The processing progress bar is visible only during the source loading and processing.

Create Source

To create a new source, click the Create Source button. In the Create Source pop-up window:

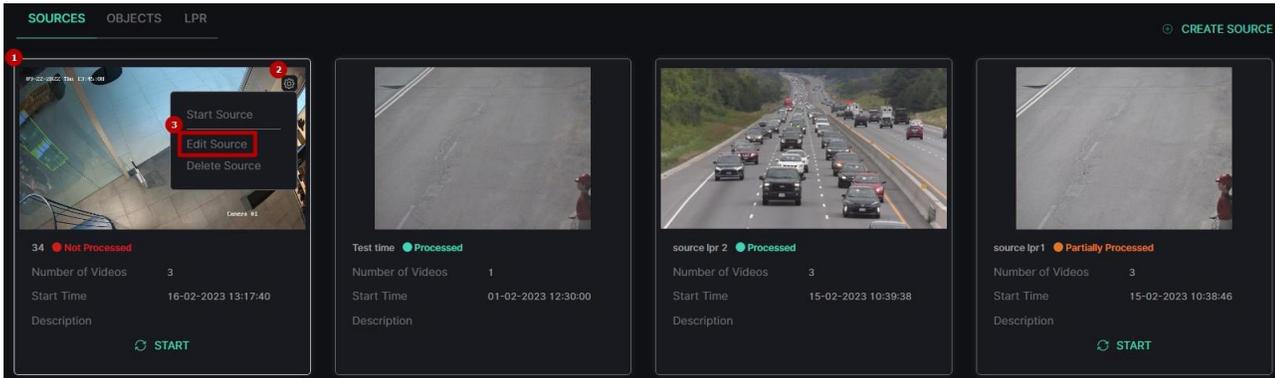


1. Configure the General Settings tab's parameters:
 - a. Enter the source name
 - b. Enter the source description
2. Configure the Source tab's parameters:
 - a. In the Video Source parameter select the adding video source method from the dropdown list:
 - i. Upload Video to upload video files from the device
 - ii. Browse Network Video to select required videos from the Network Storage
 - b. In the Video File parameter (available upon selecting the Upload Video method):
 - i. Click the Upload icon
 - ii. Select the required video from the device
 - c. In the Network Video parameter (available upon selecting the Browse Network Video method):
 - i. Click the Select button to open the Select Network Video pop-up window
 - ii. Select the required video files from the list in the pop-up window
 - iii. Click the Select button at the bottom of the pop-up window to confirm the choice
 - d. In the Selected Video Files block:
 - i. See the names of selected videos
 - ii. Click the Delete icon next to the unnecessary video to remove it from the source
 - iii. Hold and drag the video names to rearrange the videos in the block
 - e. In the Start Video Time parameter manually select the start date and time of the video recording
3. Click the Save Source button to save parameters and create a new source

 The Video Source parameter in the Source tab can be changed only during a source creation process. Once the source is created, this parameter cannot be edited.

Edit Source

To edit the source:

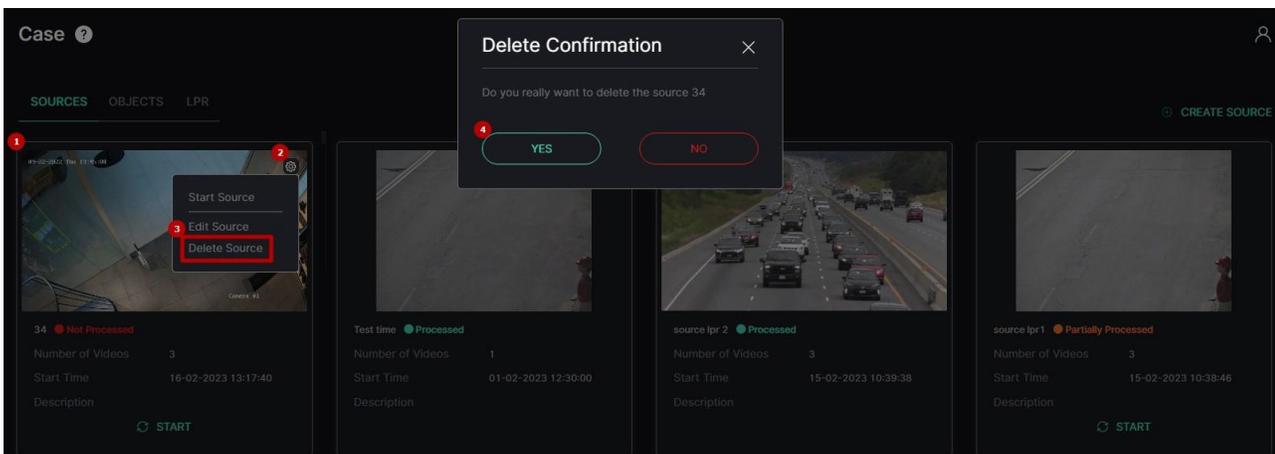


1. Hover the mouse over the required source block
2. Select the Options icon
3. Click the Edit Source button

 To view editing source parameters, except Video Source selecting, read [Create Source](#).

Delete Source

To delete the source:



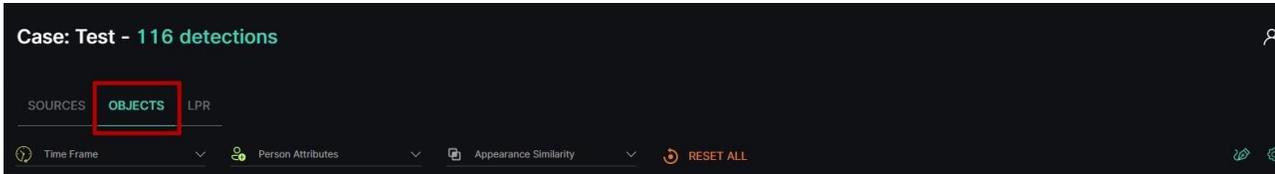
1. Hover the mouse over the required source block
2. Select the Options icon
3. Click the Delete Source button
4. Confirm the intention in the pop-up window

Cases: Objects

i This page comprises the Objects tab overview and functionality description. The tab displays the person recognition results including appearance attributes and appearance similarity for the required period.

Overview

Select the Objects tab in the tab's menu:



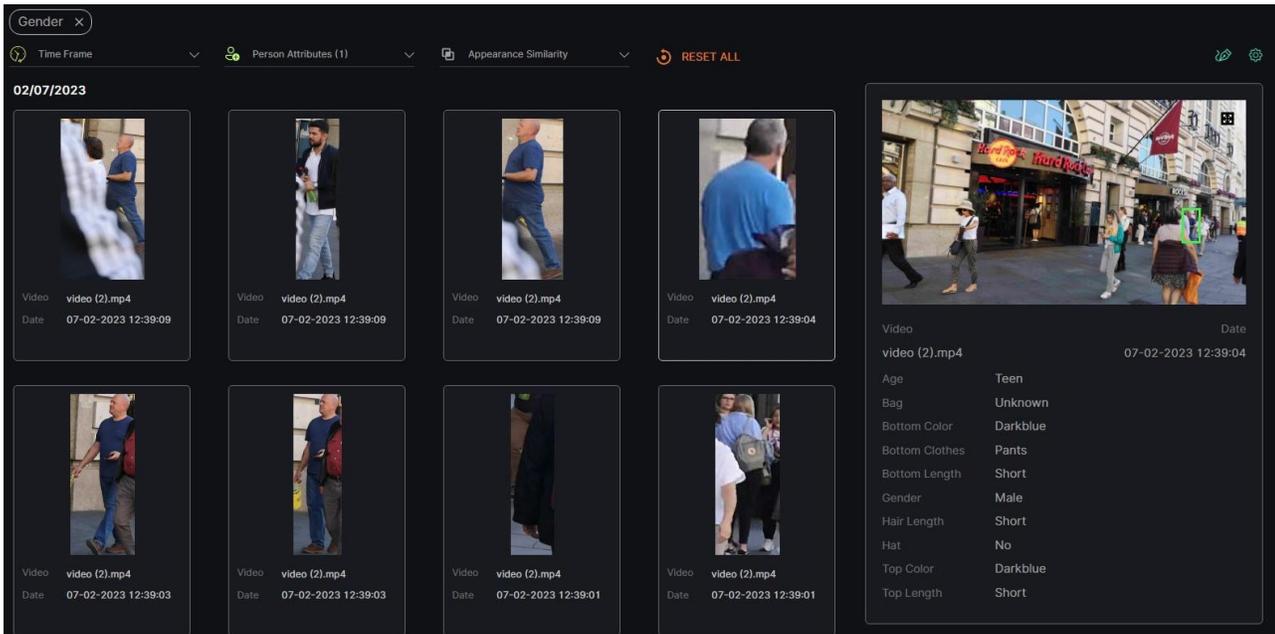
Use and Functionality

The Objects tab functional menu allows to:



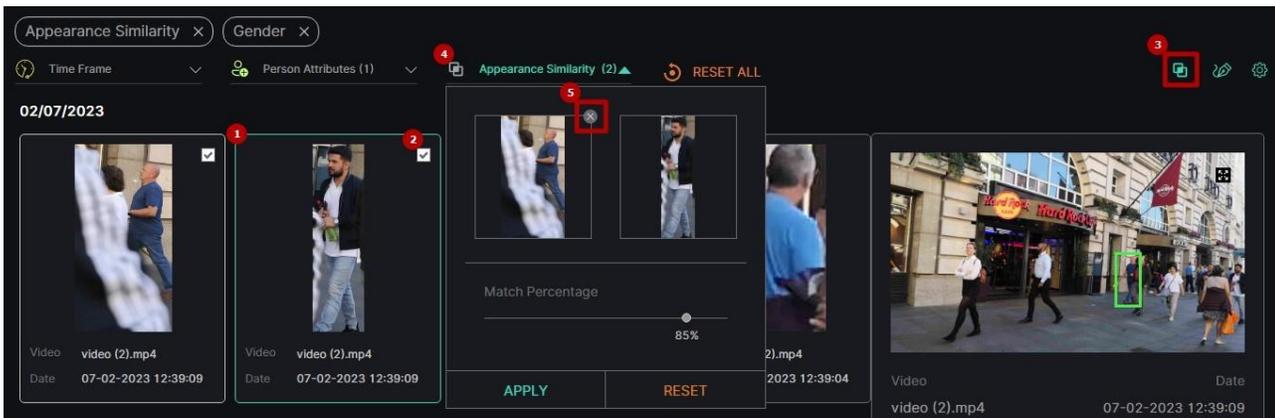
- Select the required time frame. In the Time Frame drop-down menu:
 - Set the Starting Point date and time
 - Set the End Point date and time
 - Click the Reset button at the bottom of the menu to clear the time parameters
- Choose multiple appearance attributes in the Person Attributes drop-down menu:
 - Gender
 - Top Length (and Color)
 - Bottom Length (and Color)
 - Bottom Clothes
 - Hat
 - Hair Length
 - Bag
 - Age
 - Click the Reset button at the bottom of the menu to clear the attribute parameters
- Filter recognition results by selected frames. In the Appearance Similarity drop-down menu:
- Specify the percentage of similarity by moving the Match Percentage slider
 - Click the Apply button to apply the similarity parameters
 - Click the Reset button to clear the similarity parameters
 - Click the Reset All button to clear all filters

Once selected and filtered, in the recognition results:



- View recognition info boxes with:
 - Frame preview
 - Name of the video file that holds the frame with the required person
 - Exact date and time the frame has been captured
- Click the required recognition info box to see the recognized person's appearance attributes on the right side of the page
- Select the frame preview on the right side of the page to view the other information. In the pop-up window:
 - See the extended person's attributes data
 - Watch the video fragment where the person was detected

To add multiple frames to the Appearance Similarity filter:



1. Hover the mouse over the recognition info box with the required frame
2. Check the box in the upper-right corner to select it
3. Click the Appearance Similarity icon to add selected results to the Appearance Similarity filter
4. See added frames in the Appearance Similarity filter

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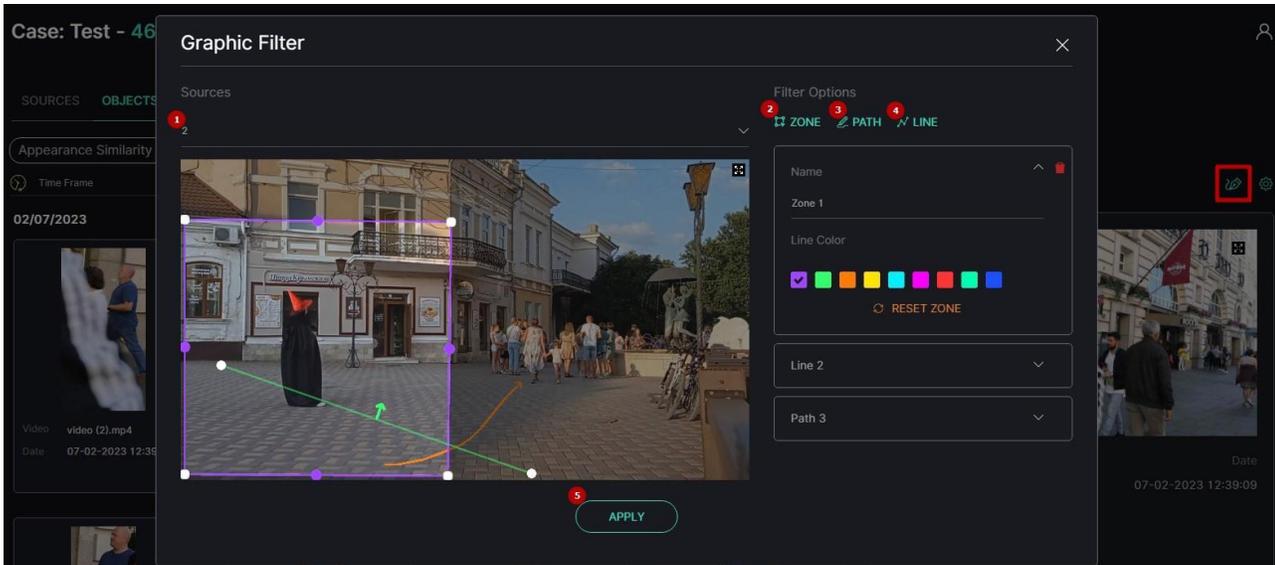
5. Hover the mouse over the unnecessary frame and click the Close icon in the upper-right corner of the frame to remove it from the filter



The Appearance Similarity icon is available only upon selecting at least one recognition info box.

Graphic Filter

To add the graphic filter, click the Graphic Filter icon. In the Graphic Filter pop-up:



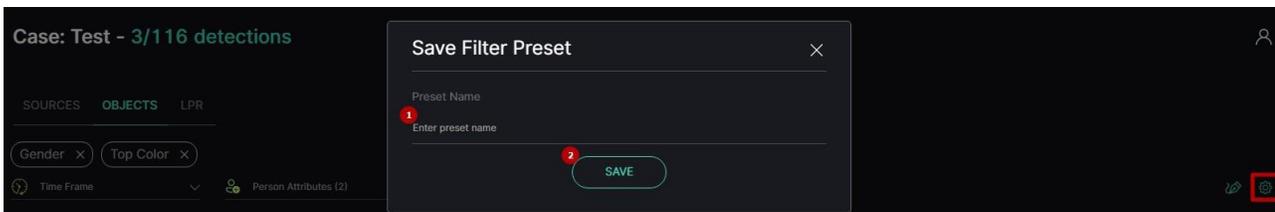
1. Select the required source (or multiple sources having videos with identical camera views) from the drop-down list
2. Add the Zone filter:
 - a. Click the Zone button in the filter options
 - b. Modify the recognition zone on the frame:
 - i. Click and drag the handles with LMB to set the zone borders
 - ii. Click and drag the area inside the zone with LMB to move the whole zone
 - iii. Click the handle with RMB to remove it
 - c. Set the parameters in the Zone block:
 - i. Enter the zone name
 - ii. Select the zone border line color
 - iii. Click the Reset Zone button to return the zone borders to their original position
 - d. Select the red Delete icon in the upper-right corner of the Zone block to remove the Zone filter
3. Add the Path filter:
 - a. Click the Path button in the filter options
 - b. Draw the path on the frame by clicking and holding down the LMB
 - c. Set the required parameters in the Path block:
 - i. Enter the path name
 - ii. Select the path line color
 - iii. Click the Reset Path button to reset the drawn path
 - d. Select the red Delete icon in the upper-right corner of the Path block to remove the Path filter
4. Add the Line filter:
 - a. Click the Line filter in the filter options
 - b. Modify the line on the frame:
 - i. Click and drag the handles with LMB to set the line size and location

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- ii. Click and drag the line with LMB to move the whole line
 - c. Set the parameters in the Line block:
 - i. Enter the line name
 - ii. Select the line color
 - iii. Redirect the movement by clicking the Change Direction button
 - iv. Click the Reset Line button to return the line to its original position
 - d. Select the red Delete icon in the upper-right corner of the Line block to remove the Line filter
5. Click the Apply button to apply the graphic filter

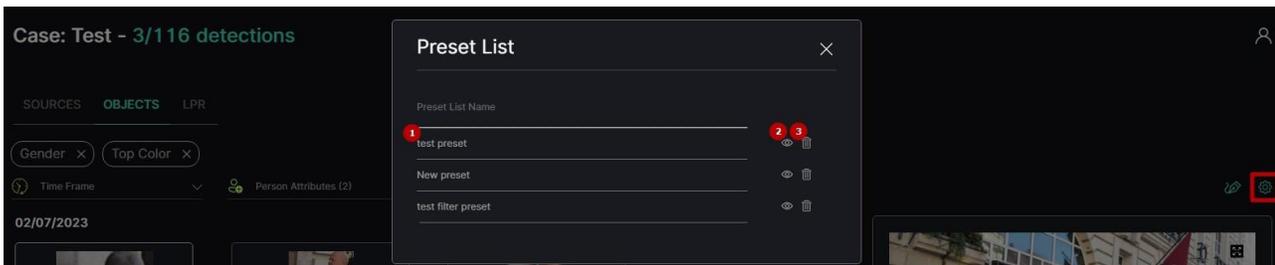
Filter Preset

To save selected filters as a new preset, click the Options icon and select the Save Preset button in the drop-down menu. In the Save Filter Preset pop-up window:



1. Enter the preset name
2. Click the Save button

To manage the created filter presets, click the Options icon and select the Preset List button in the drop-down menu. In the Preset List pop-up window:



1. See the list of created filter presets
2. Click the View icon next to the required preset to apply its filters
3. Click the Delete icon next to the required preset and confirm the intention in the confirmation pop-up window to remove the filter preset

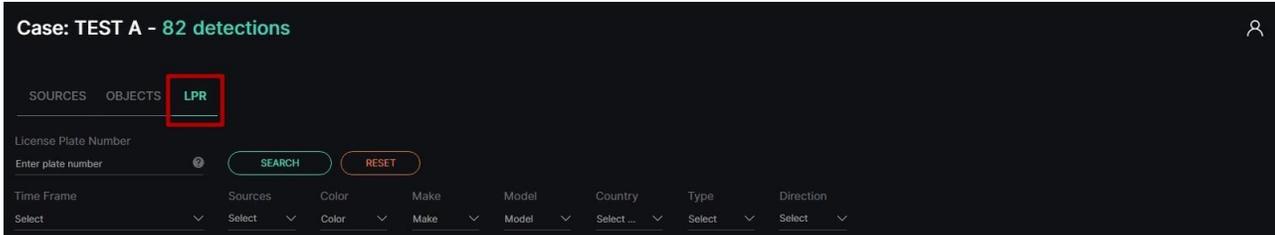
 To change the set of filters in the applied filter preset, click the Options icon and select the Update Selected Preset button in the drop-down menu.

Cases: LPR

i This page includes the LPR tab overview and functionality description. The tab displays the vehicle recognition results including a license plate number, make and model, date and time, camera data, vehicle attributes, and frame with a vehicle.

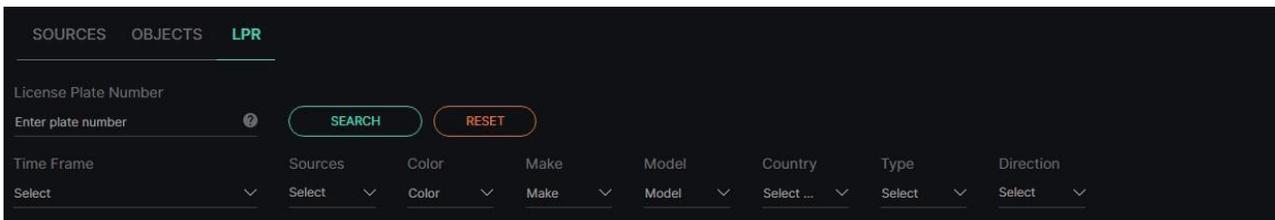
Overview

Select the LPR tab in the tab's menu:



Use and Functionality

The LPR tab functional menu allows to:



- Enter the license plate number to filter vehicles
- Select the required time frame
- Click the Sources parameter to select the desired videos. In the pop-up window:
 - Check the boxes next to the required sources or videos in the sources
 - Click the Select Video Source button
- Select from the drop-down lists the estimated vehicle:
 - Color
 - Make
 - Model
 - Country of registration
 - Type
 - Direction of movement
- Click the Search button to start filtering
- Click the Reset button to clear the filters

Once selected and filtered, in the recognition results:

License Plate Number
Enter plate number SEARCH RESET

Time Frame Sources Color Make Model Country Type Direction
Select Select Red TOYOTA Model Select ... Select Select

Number	Make	Attributes	Date	Video
<input type="checkbox"/> K1073	TOYOTA TACOMA		15-02-2023 10:41:03	LPR USA FRONT.mp4
<input type="checkbox"/> K1073	TOYOTA TACOMA		15-02-2023 10:41:03	LPR USA FRONT.mp4
<input type="checkbox"/> K1073	TOYOTA TACOMA		15-02-2023 10:41:03	LPR USA FRONT.mp4

LPR USA FRONT.mp4 15-02-2023 10:41:03

IDAHO K 1073 IDAHO K 1073

TOYOTA TACOMA

- Click the Magnifying Glass icon next to the required number to filter recognition results only by the required number
- View recognized vehicle data, date and time the license plate number has been recognized
- View recognized vehicle attributes:
 - Country of registration
 - Color of the vehicle
 - Direction of movement
 - Vehicle type:
 - Bicycle
 - Car
 - Motorcycle
 - Bus
 - Truck
- View the name of the video file that holds the frame with the required vehicle
- Click the row in the table with the desired license plate number to see the frame with a vehicle preview
- Select the frame preview to view the other information. In the pop-up window:
 - See the extended vehicle data
 - Watch the video fragment where the vehicle was detected

Forensic Analytics: Status Report

This page describes the Status Report item that allows watching the status of video processing in cases.

Overview

To open the Status Report item, in the left menu:

Status Report

Case Name Source Name Status
Enter case name Enter source name Select RESET

Case	Source	Video Name	User	Added	Status	Video Recording Time
------	--------	------------	------	-------	--------	----------------------

1. Select the Forensic Analytics section
2. Choose the Status Report item
3. See video processing statuses in cases

Use and Functionality

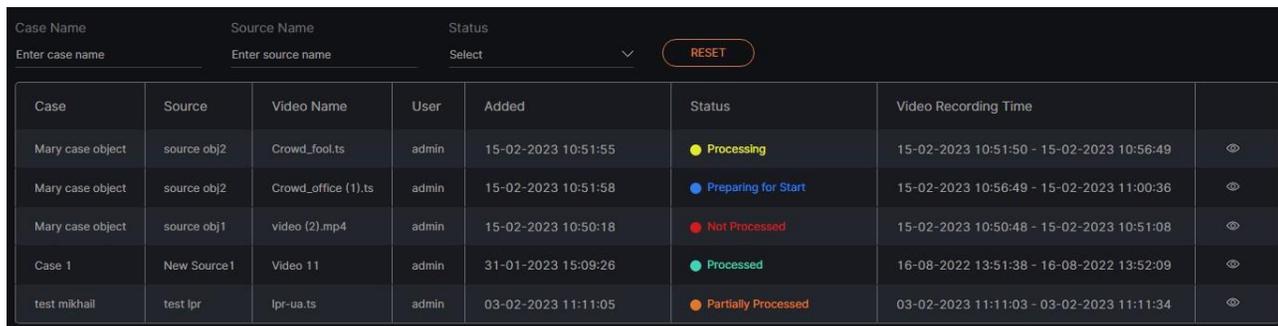
The Status Report functional menu allows to:



The screenshot shows a dark-themed interface with the title "Status Report" and a help icon. Below the title are three filter fields: "Case Name" with the placeholder "Enter case name", "Source Name" with the placeholder "Enter source name", and "Status" with a dropdown menu labeled "Select". To the right of these fields is a red "RESET" button.

- Enter case name or characters in the name to filter by case name
- Enter source name or characters in the name to filter by source name
- Select the required video source processing status from the drop-down list:
 - All
 - Not Processed
 - Processing
 - Processed
 - Partially Processed
 - Preparing for Start

Once selected and filtered, see the video processing status report in the table below. It contains:



Case	Source	Video Name	User	Added	Status	Video Recording Time	
Mary case object	source obj2	Crowd_fool.ts	admin	15-02-2023 10:51:55	Processing	15-02-2023 10:51:50 - 15-02-2023 10:56:49	👁
Mary case object	source obj2	Crowd_office (1).ts	admin	15-02-2023 10:51:58	Preparing for Start	15-02-2023 10:56:49 - 15-02-2023 11:00:36	👁
Mary case object	source obj1	video (2).mp4	admin	15-02-2023 10:50:18	Not Processed	15-02-2023 10:50:48 - 15-02-2023 10:51:08	👁
Case 1	New Source1	Video 11	admin	31-01-2023 15:09:26	Processed	16-08-2022 13:51:38 - 16-08-2022 13:52:09	👁
test mikhail	test lpr	lpr-ua.ts	admin	03-02-2023 11:11:05	Partially Processed	03-02-2023 11:11:03 - 03-02-2023 11:11:34	👁

- Name of the case that contains the source
- Name of the source that contains the video
- Video file name
- Name of the user that added the video
- Exact date and time the video was added
- Status of video processing
- Time of video recording
- View icon on the toolbox to open the required case

Gun Detection

Introduction

Use this guide to understand the interface and features of the Gun Detection plugin and learn how to use it for the best result.

What Is Gun Detection?

Gun Detection effectively recognizes multiple types of weapons in real-time, using existing cameras and hardware. The plugin helps to provide safety and to reduce potential physical security risks with a prompt alarm and notification system, depending on the time interval and the rules settings.

Primary Capabilities

Gun Detection is capable to:

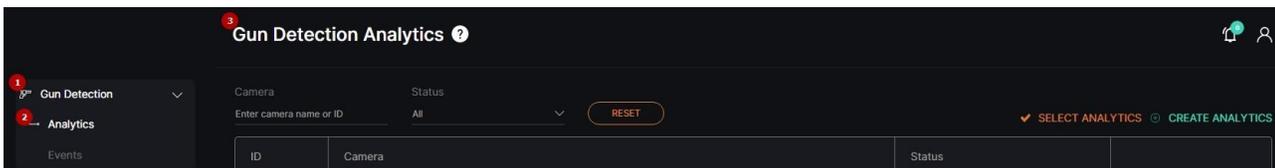
- Determinate the weapon type (pistols, rifles, knives)
- Check the presence or absence of a weapon within a specified timeframe in the selected area
- Differentiate commonly carried everyday items and a variety of threat objects, triggering only on those that present a threat

Gun Detection: Analytics

i This page includes the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

To open the Analytics item, in the left menu:



1. Select the Gun Detection section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Gun Detection Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID

- Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

 The status options comprise All, Active, and Stopped.

See the list of analytics in the table below. It holds:

ID	Camera	Status	
1	demo		
901	demo-gun GPU H.264 - NVDEC 25 FPS	Active (53s / 2)	STOP
549	demo-gun GPU H.264 - NVDEC 25 FPS	Stopped	START

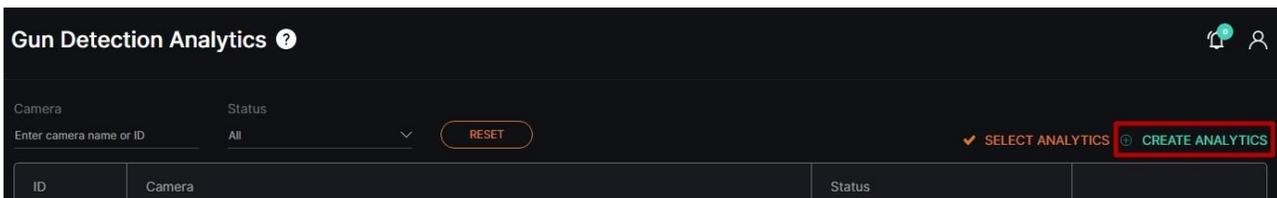
- Analytics and folders ID
- Camera includes:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - More hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox includes:
 - Start/Stop
 - Edit
 - Events
 - View
 - Delete



- To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).
- To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

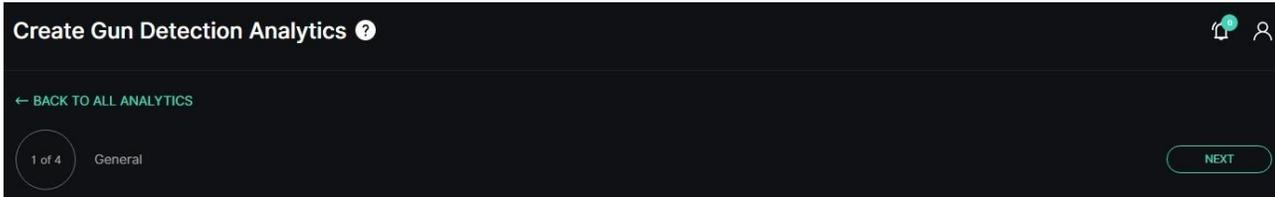
Create Analytics

To create new analytics, click the Create Analytics button:



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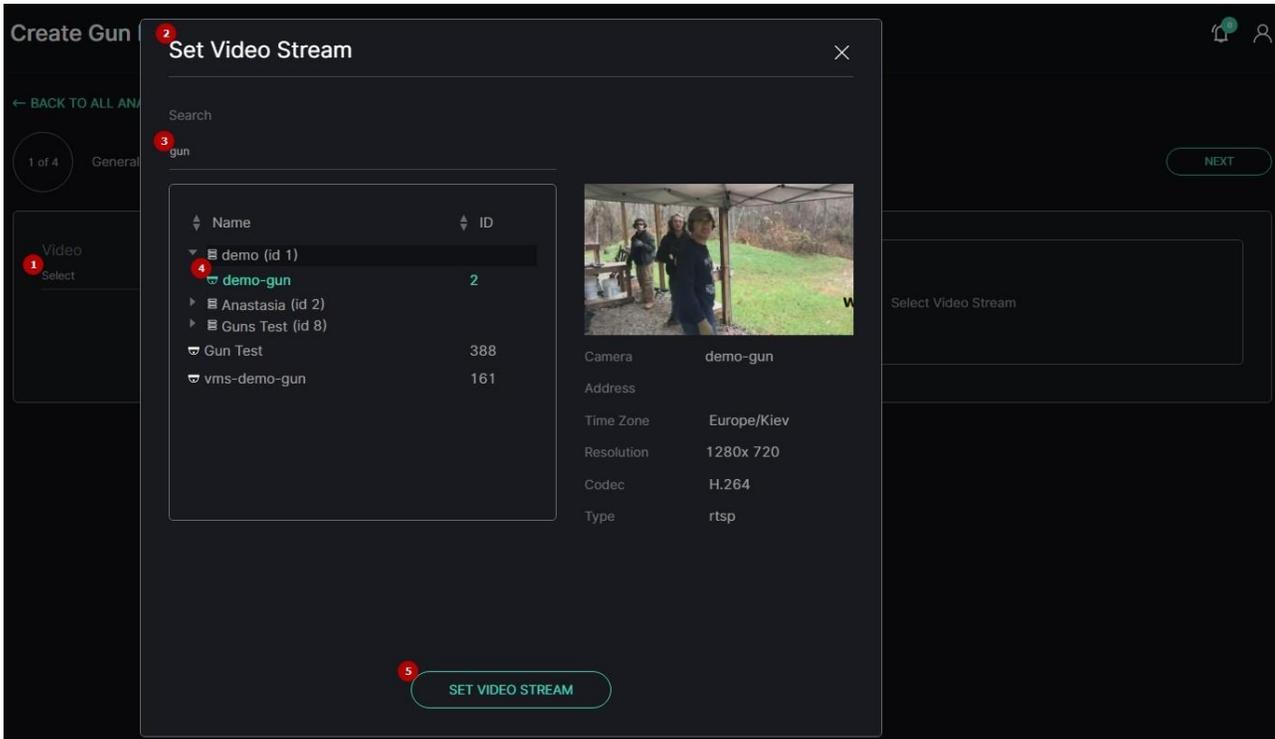
The Create Gun Detection Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

General Tab

The General tab supplies the ability to set a video stream and customize analytics parameters. To set a video stream:

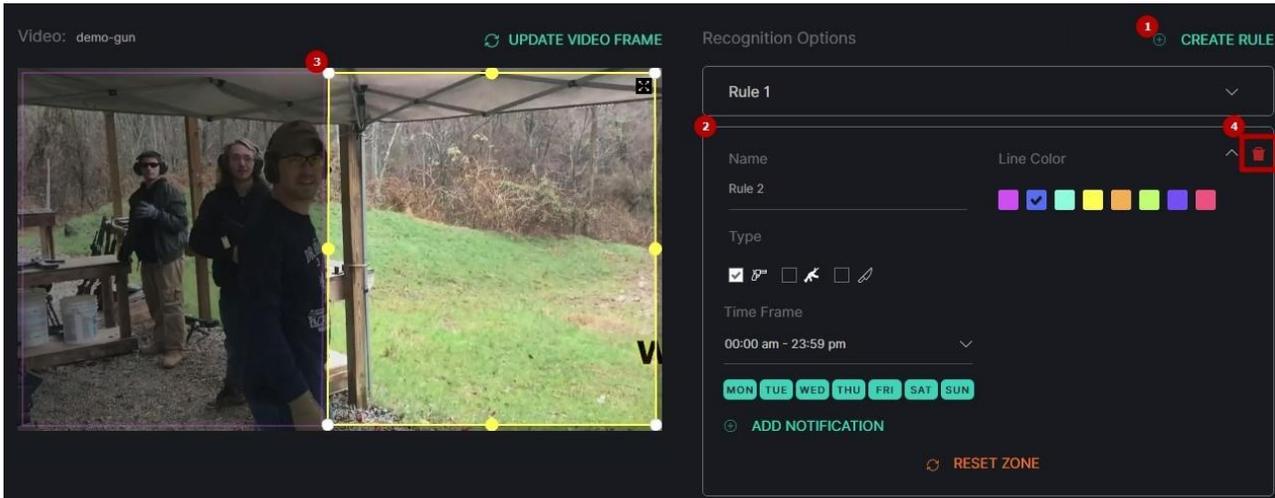


1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

To perform the recognition, apply these recognition options:

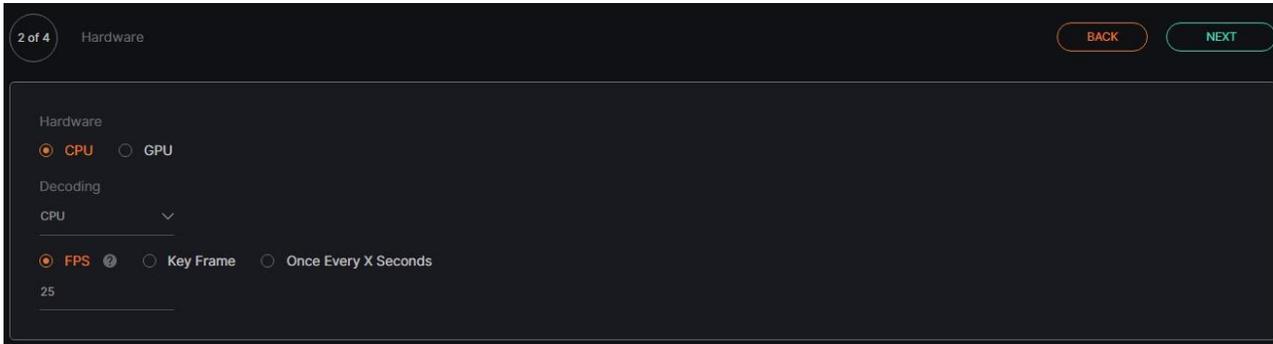


1. Select the Create Rule button to create a new rule
2. Set the notification parameters:
 - a. Enter the rule name
 - b. Select the color of the detection zone
 - c. Select the required checkboxes to set weapon types (pistols, rifles, knives)
 - d. Select the required time frame
 - e. Select days of the week to receive the specified notifications
 - f. Click the Add Notification button to create multiple rule notifications
 - g. Click the Delete icon to remove the notification
3. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to remove it
 - d. Click the Reset Zone button to return the recognition area borders to their original position
4. Select the red Delete icon to remove the required rule section

-  • All days of the week are selected by default. Buttons become grey when deselected.
• The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab supplies the ability to customize hardware parameters:

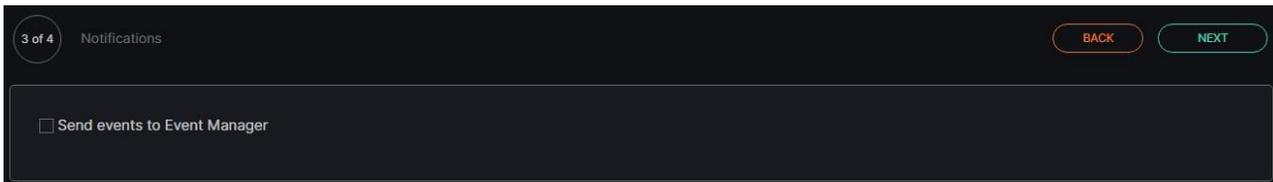


- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

- 💡 • The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Notifications Tab

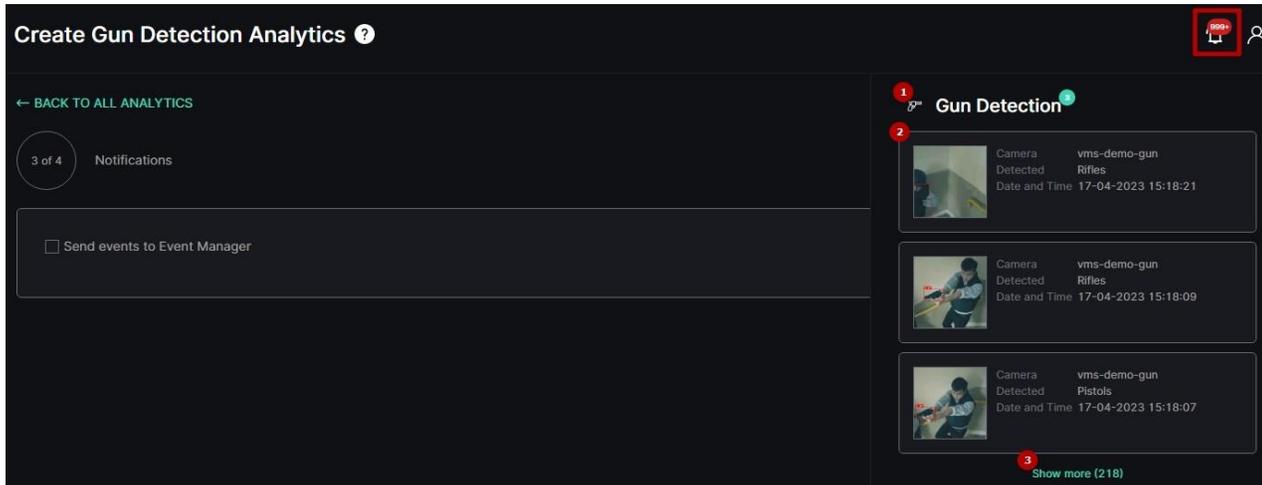
The Notifications tab allows managing the events notifications. Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources:



- 💡 • The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.

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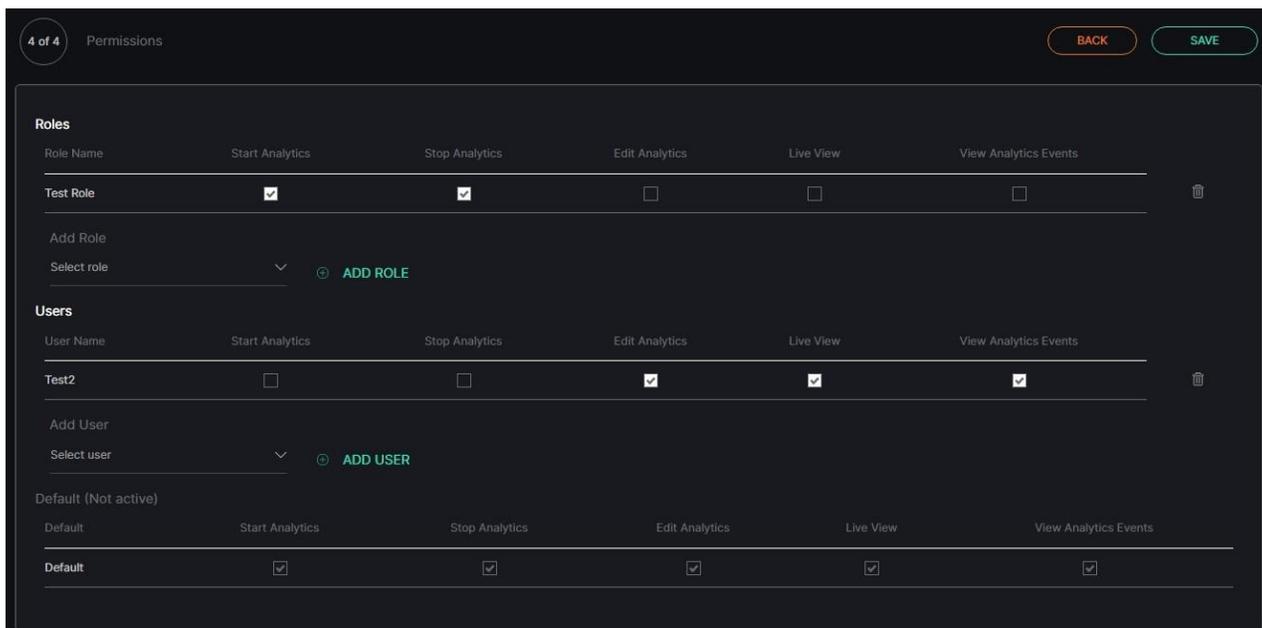
Once the analytics is created and enabled, the Notification icon signals about each new event notification. Click the Notification icon to open the Notification Panel. It includes:



1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
 - b. Clear all plugin event notifications at once from the Notification Panel by clicking the
 - c. Close button (this action doesn't affect events in the Events item)
2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
3. Show More button with the total events number to open the Events item and view all events

Permissions Tab

The Permissions tab supplies the ability to:



- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu



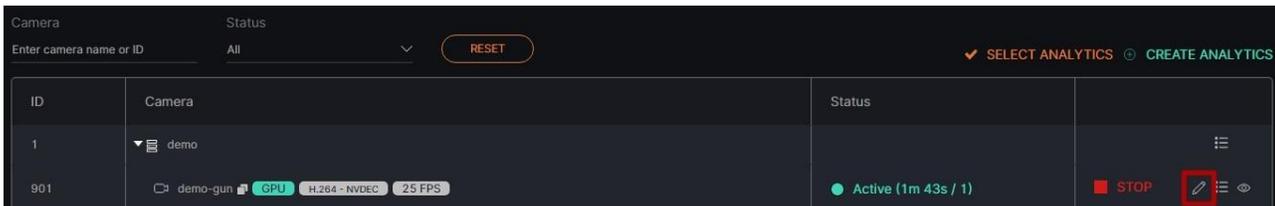
- The default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users is not limited.

Once saved, the Gun Detection Analytics editor opens to allow the users to:

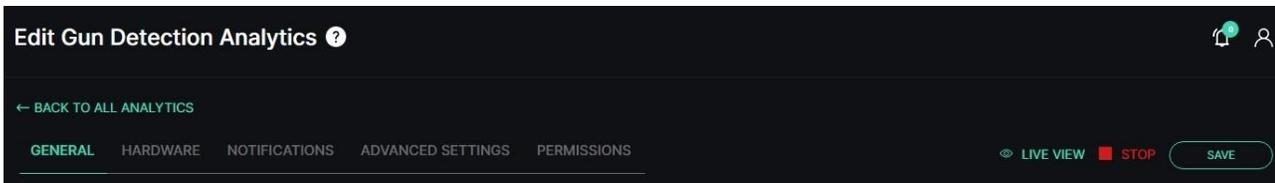
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Gun Detection Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window

- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the chosen analytics



- The current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.
- The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics](#).

Advanced Settings Tab

The Advanced Settings tab allows the users to:

- Move the slider to the left (to increase) or to the right (to decrease) the detector accuracy
- Select a server from the drop-down list to run the analytics
- Enter the recognized object storage time in the buffer (in seconds)
- Set the minimum height of an object for recognition (in pixels)
- Set the minimum width of an object for recognition (in pixels)

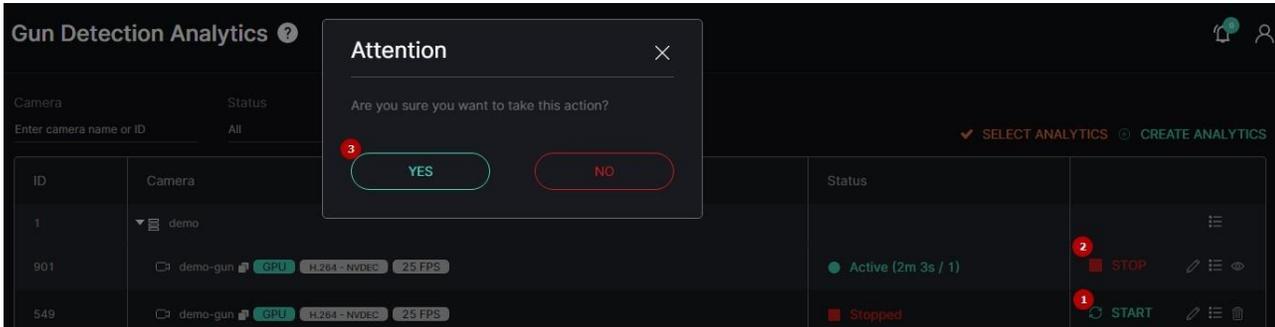


- The Detector Accuracy setting is decided by the parameters of the original image. A High value is recommended for a low-quality image to increase the detection probability, and a Low value is better for a high-quality image to avoid false detection. The possible range is 1 to 10, the value is 5 by default.
- The minimum value for the Tracker Buffer Time parameter is 10 sec. The default value is 20 sec.
- The minimum value for the Min Height Limit is 25 pixels. The default value is 25 pixels.
- The maximum value is limited by the frame height.
- The minimum value for the Min Width Limit is 25 pixels. The default value is 25 pixels.
- The maximum value is limited by the frame width.
- Default parameters allow the production of analytics. To customize the analytics, set parameters as needed.

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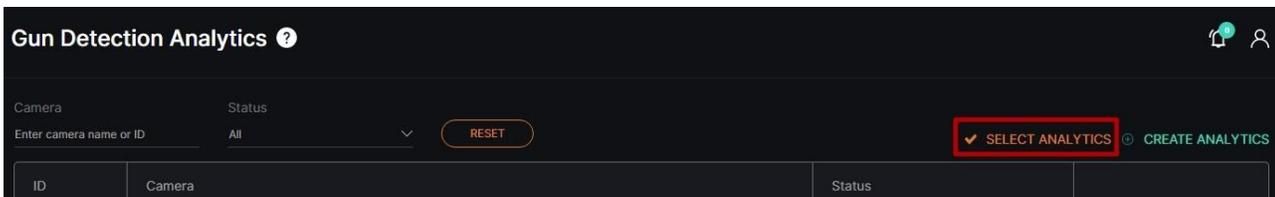
Analytics Status

To enable or disable the analytics and view the change of the analytics status:

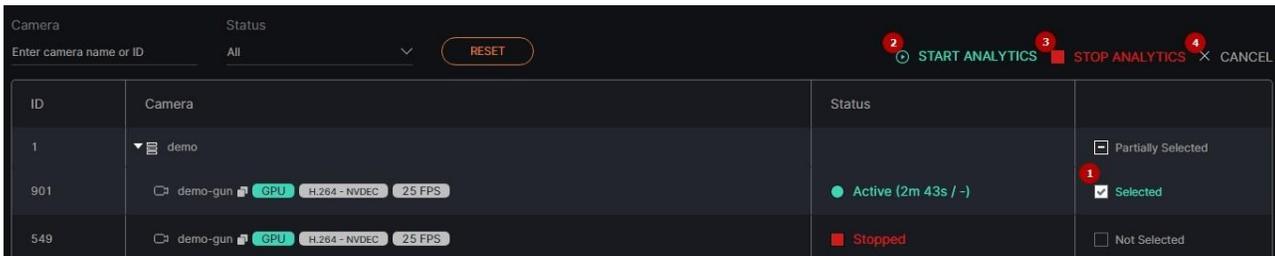


- Select the Start button to enable the analytics
- Click the Stop button to disable the analytics process
- Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



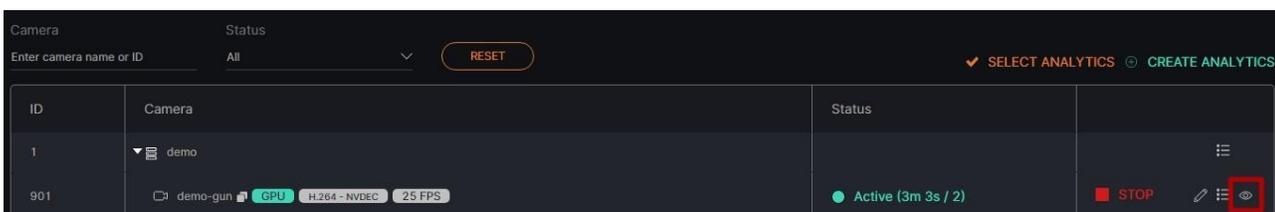
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics choice

View Analytics

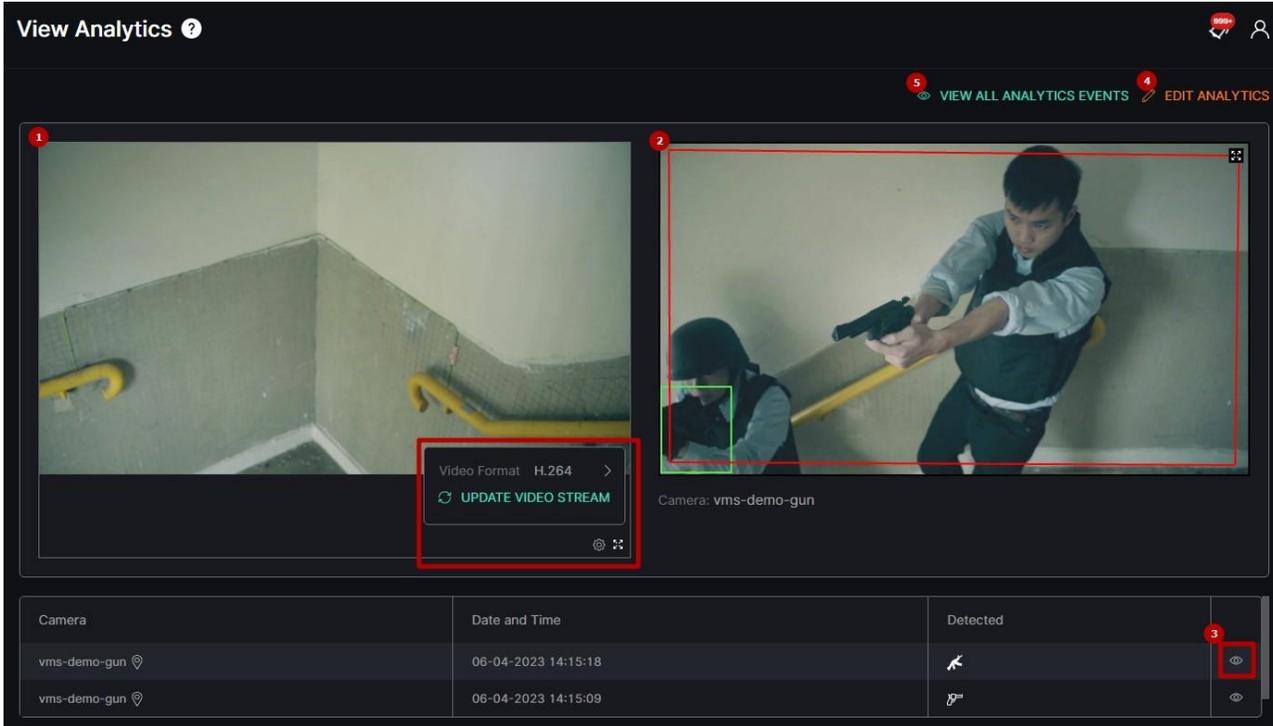
To see the selected analytics in real-time, click the View icon on the toolbox:



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 The View icon becomes available only when selected analytics is active.

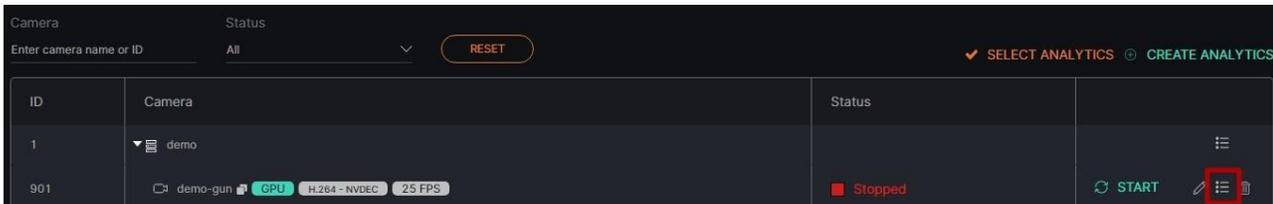
Live view analytics mode allows to:



1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View the frame preview with detected weapons
3. Select the View icon in the table below to open the image with a detected weapon in full size and save it
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics

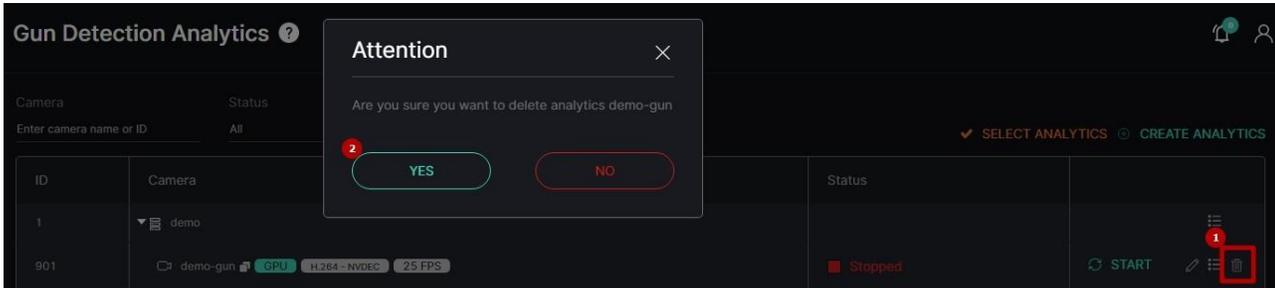
View Events

To view selected analytics events in the Analytics item, click the Events icon on the toolbox:



Delete Analytics

To delete the analytics:



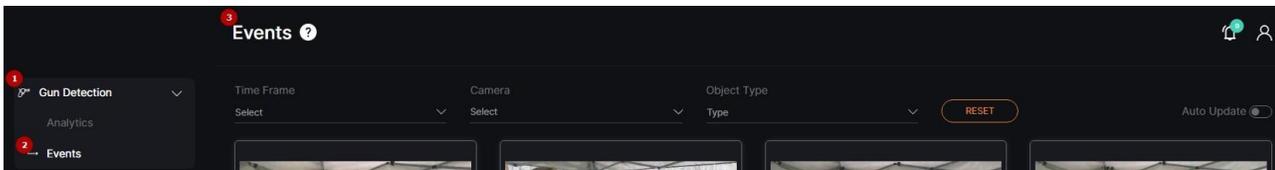
1. Select the Delete icon on the toolbox
2. Confirm the intention

Gun Detection: Events

i This page includes the Events item overview and functionality description. The item displays the event notifications including a frame, camera, date, time, and detected weapon type.

Overview

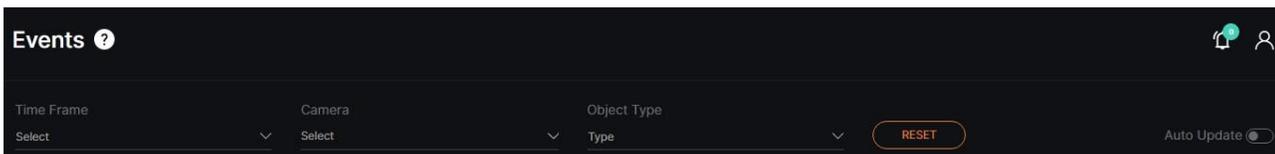
To open the Events item, in the left menu:



1. Select the Gun Detection section
2. Choose the Events item
3. See event notifications

Use and Functionality

The Events functional menu allows to:

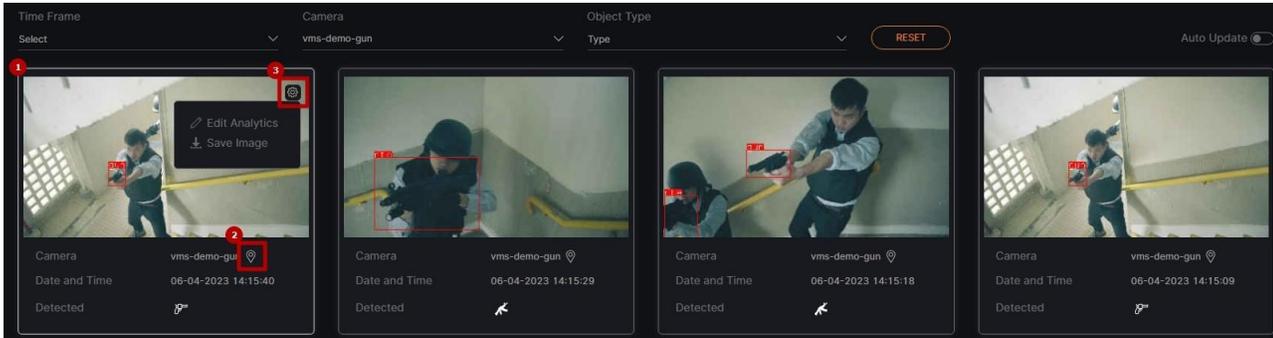


- Select the required events time frame
- Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Select weapon type:
 - Pistols
 - Rifles
 - Knives

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- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable auto update of the event notifications

Once selected and filtered, in the events:



1. View the frame preview and information about the event. To filter events by the recognized data, in the required event block:
 - a. Click the camera name to filter events only by the camera related to the event
 - b. Click the date to filter events only by the date related to the event
 - c. Click the weapon type icon to filter events only by the selected weapon type related to the event
2. View the camera location on the map by clicking the View Geolocation icon
3. Hover the mouse over the event block and select the Extra Options icon. In the drop-down menu:
 - a. Click the Edit Analytics button to make changes to the settings of the analytics which is related to the selected event
 - b. Click the Save Image button to download the event frame in full size

 Click the frame preview to open the image and see the event information.

Hard Hat Detection

Introduction

Use this guide to understand the interface and features of the Hard Hat Detection plugin and learn how to use it for the best result.

What Is Hard Hat Detection?

Hard Hat Detection rapidly shows the absence of a protective hard hat on a person's head while scanning a site. It alerts management teams so they can prevent any injury.

Primary Capabilities

Hard Hat Detection is capable to:

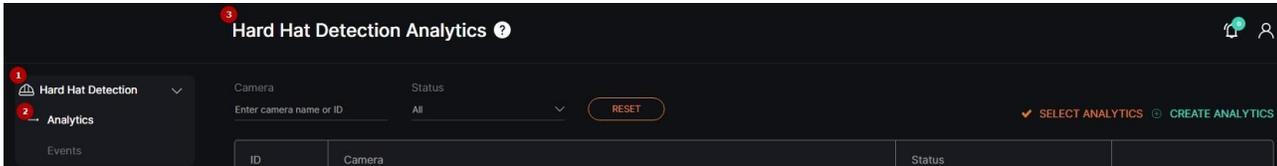
- Check the absence of a protective hard hat on a person's head in the selected area
- Decide hard hats of different colors

Hard Hat Detection: Analytics

i This page comprises the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

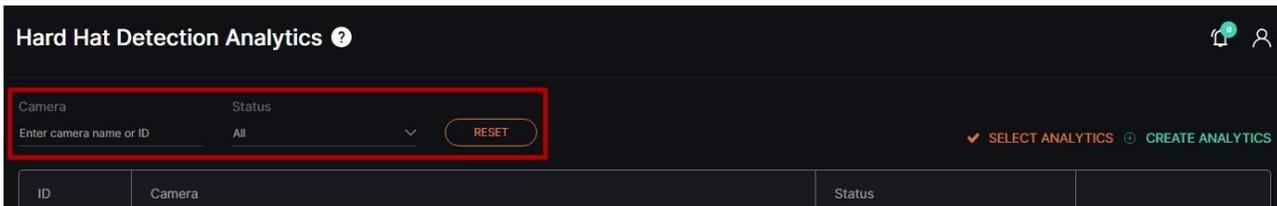
To open the Analytics item, in the left menu:



1. Select the Hard Hat Detection section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Hard Hat Detection Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

💡 The status options include All, Active, and Stopped.

See the list of analytics in the table below. It holds:

ID	Camera	Status	
1	demo		
907	demo-face GPU H.264 - NVDEC 25 FPS	Active (22s / 6)	STOP
641	demo-face GPU H.264 - NVDEC 25 FPS	Stopped	START

- Analytics and folders ID
- Camera includes:

CORTRON CVA *(Extended Video Analytics)*

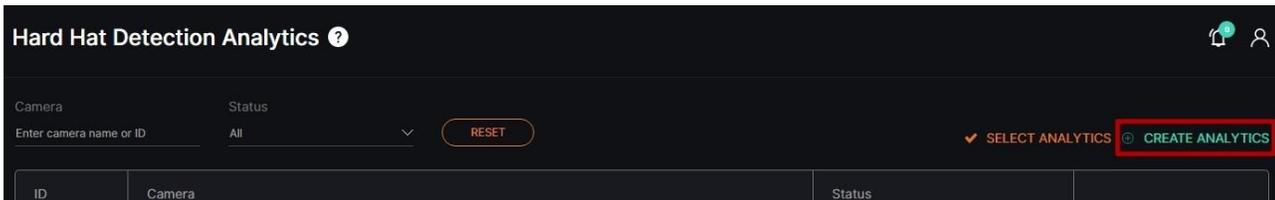
CEVA v1.0.0

- Folders' and separate video streams' names
- Copy Name icon to copy the video stream name
- Video source type
- More hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox includes:
 - Start/Stop
 - Edit
 - Events
 - View
 - Delete

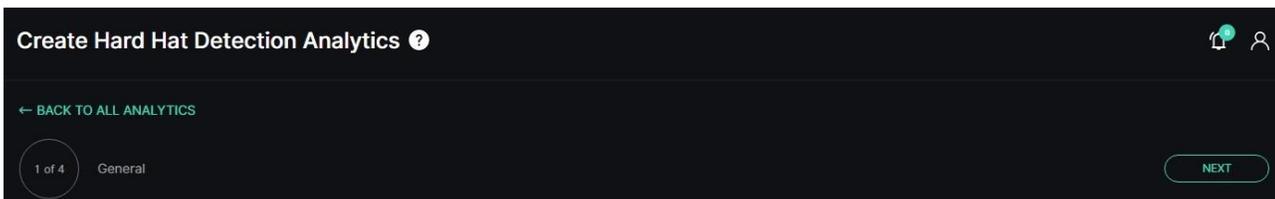
- 💡 • To learn more about grouping video streams into folders and making the proper changes in the Video Streams item, read [Video Streams](#).
- To find out the ID of CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

Create Analytics

To create new analytics, click the Create Analytics button:



The Create Hard Hat Detection Analytics navigation menu allows to:

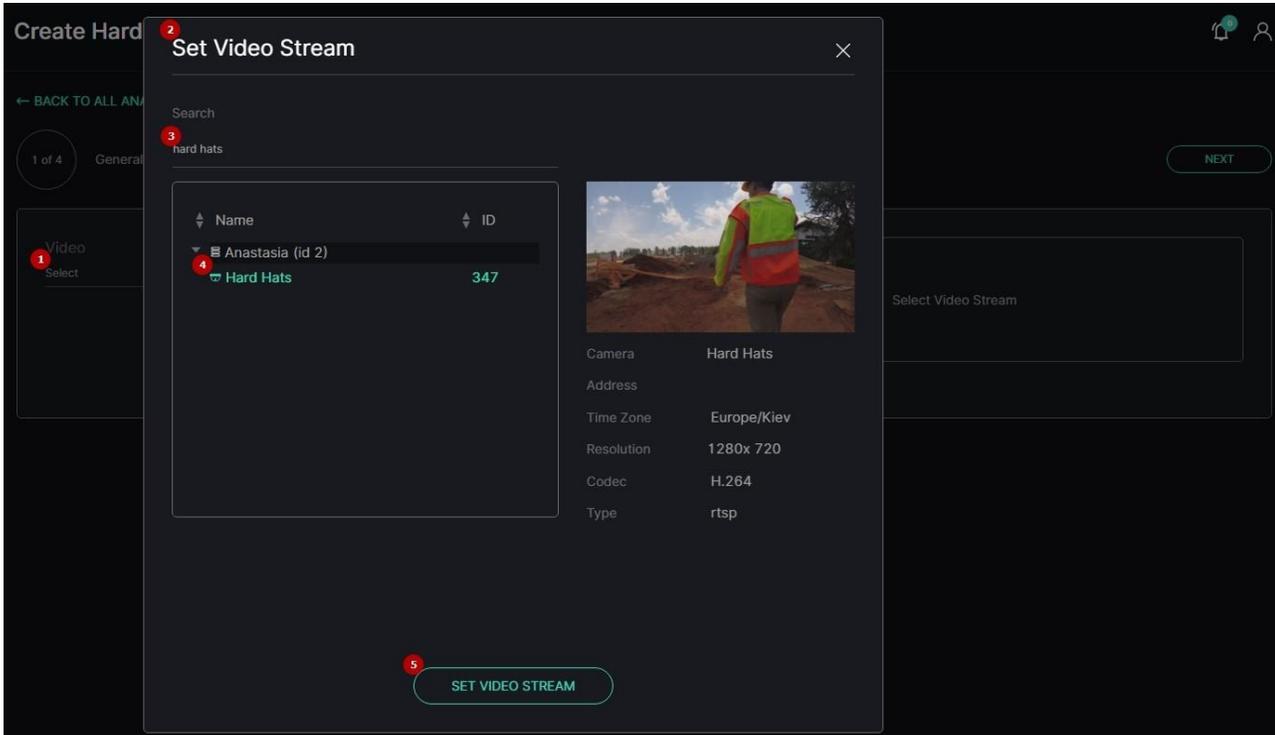


- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters. To set a video stream:

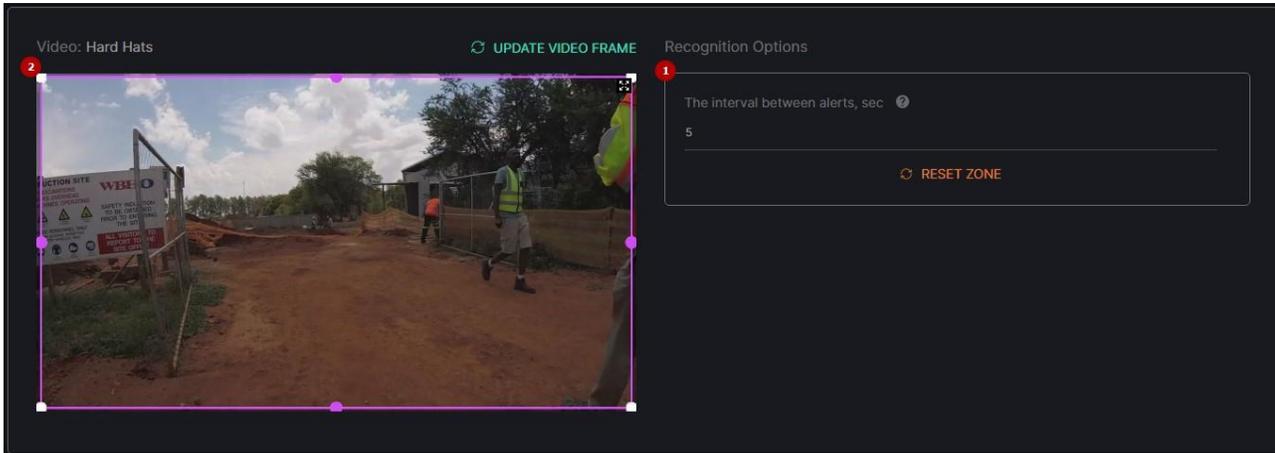


1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

To perform the recognition, apply these recognition options:

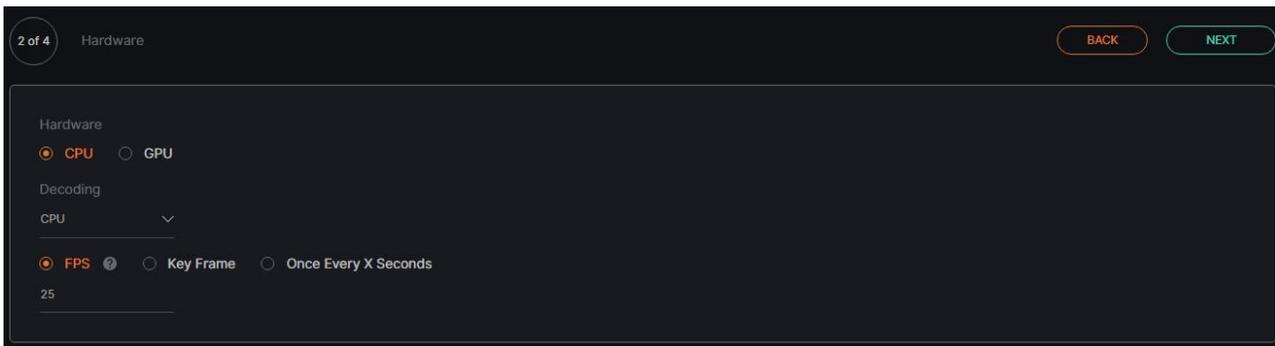


1. Set the interval between alerts in seconds
2. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to delete it
 - d. Click the Reset Zone button to return the detection zone borders to their original position

- 💡 • The interval between alerts handles the frequency with which the system checks for notifications. The possible range is from 1 to 300 seconds. The recommended value is 1 second.
- The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:



- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second

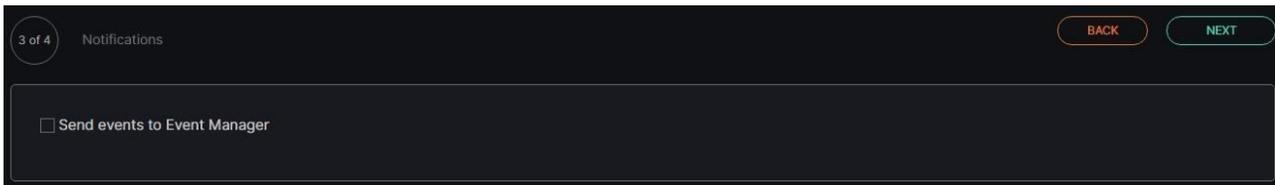
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

- Key Frame to set the frame processing only by keyframes
- Once Every X Seconds to set intervals in seconds between frame processing

- 💡 The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

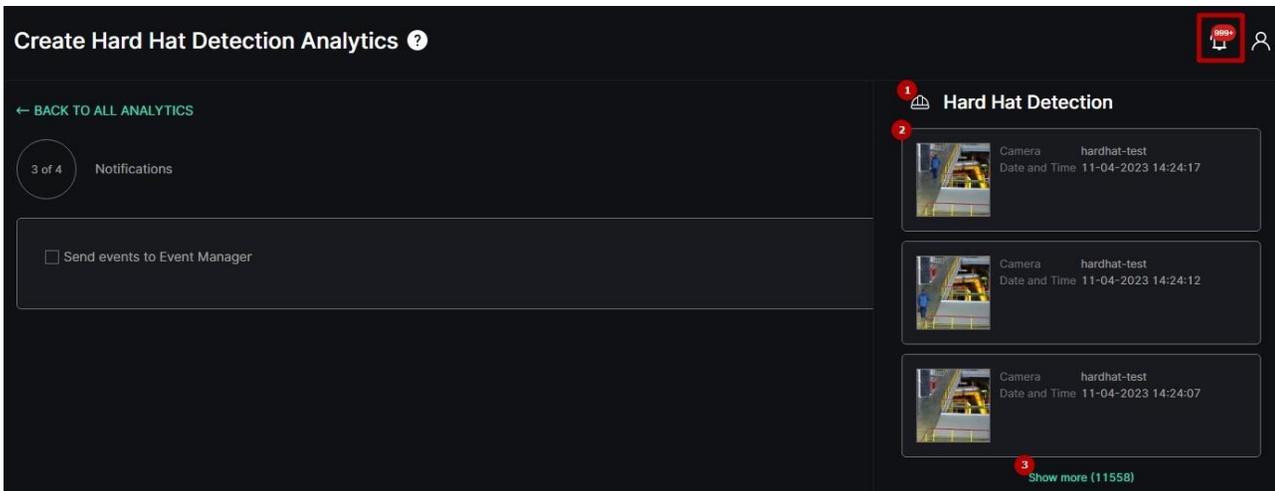
Notifications Tab

The Notifications tab allows managing the events notifications. Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources:



- 💡 The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.

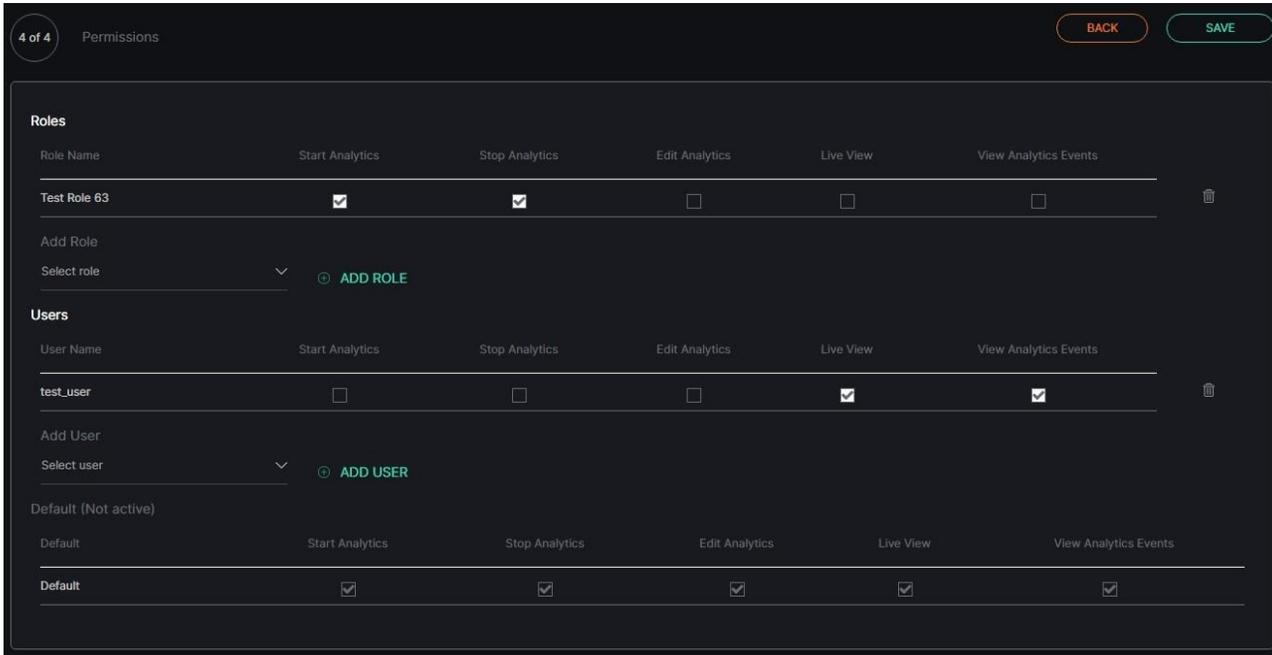
Once the analytics is created and enabled, the Notification icon signals about each new event notification. Click the Notification icon to open the Notification Panel. It includes:



1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
 - b. Clear all plugin event notifications at once from the Notification Panel by clicking the Close button (this action doesn't affect events in the Events item)
2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
3. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
4. Show More button with the total events number to open the Events item and view all events

Permissions Tab

The Permissions tab supplies the ability to:



- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu

 • Default parameters are active only if no Roles or Users are added.

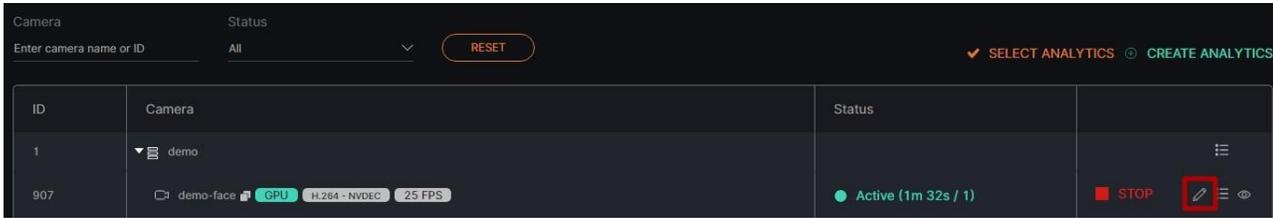
• The quantity of added Roles and Users is not limited.

Once saved, the Hard Hat Detection Analytics editor opens to allow the users to:

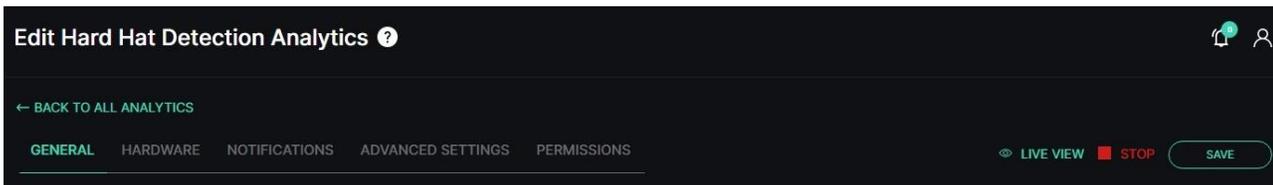
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Hard Hat Detection Analytics navigation menu allows to:



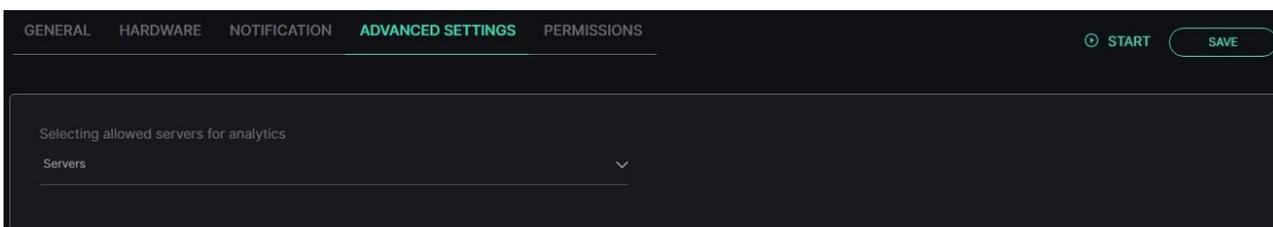
- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the selected analytics

- 💡 • The current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- The Stop button is open only when the current analytics is active.
- The Start button is open only when the current analytics is stopped.
- The Live View button is open only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics](#).

Advanced Settings Tab

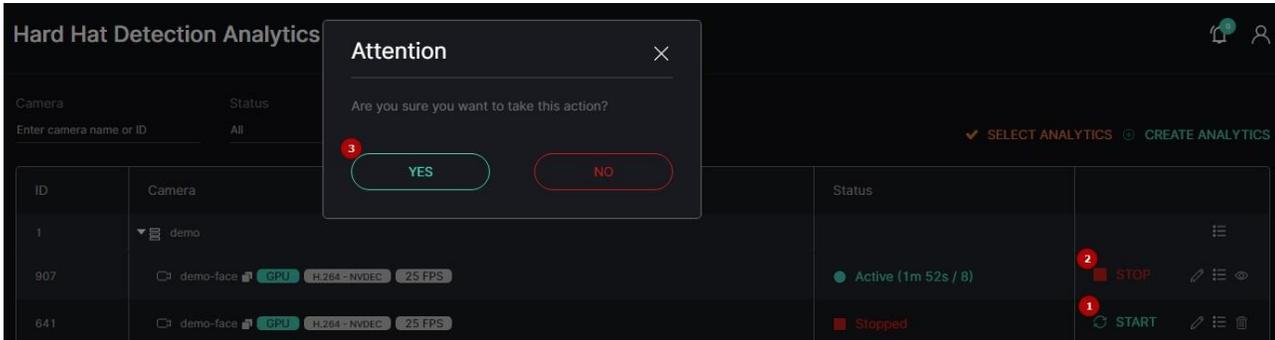
The Advanced Settings tab allows the users to select a server from the drop-down list to run the analytics:



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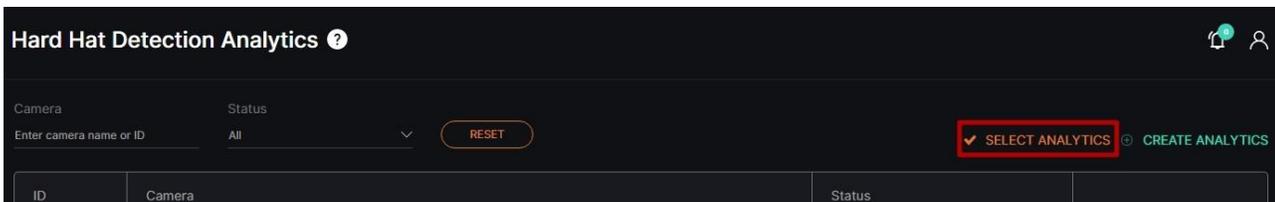
Analytics Status

To enable or disable the analytics and view the change of the analytics status:

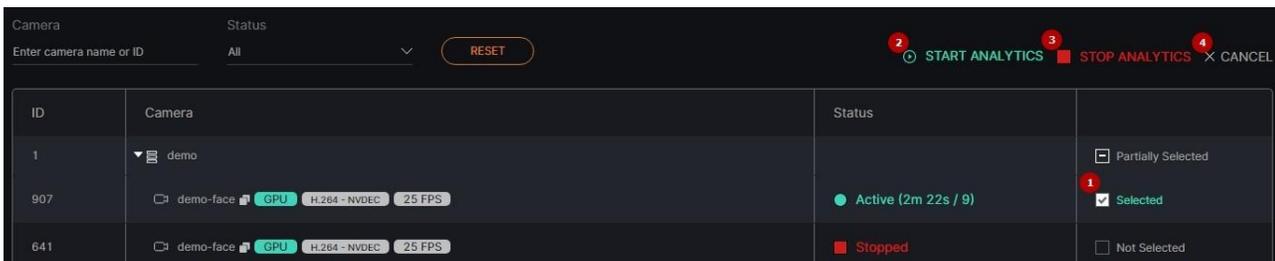


1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



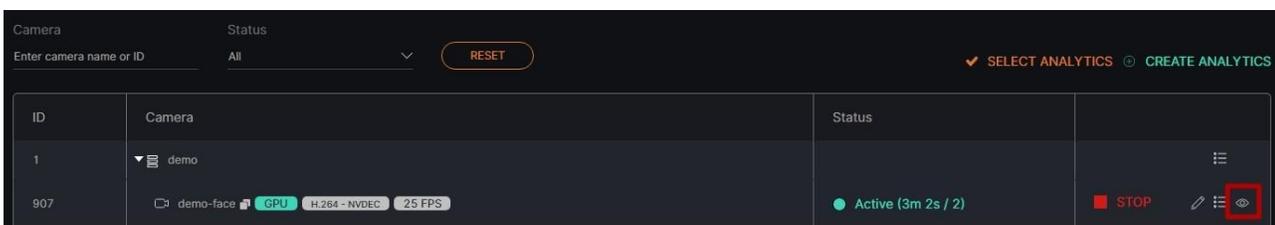
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics choice

View Analytics

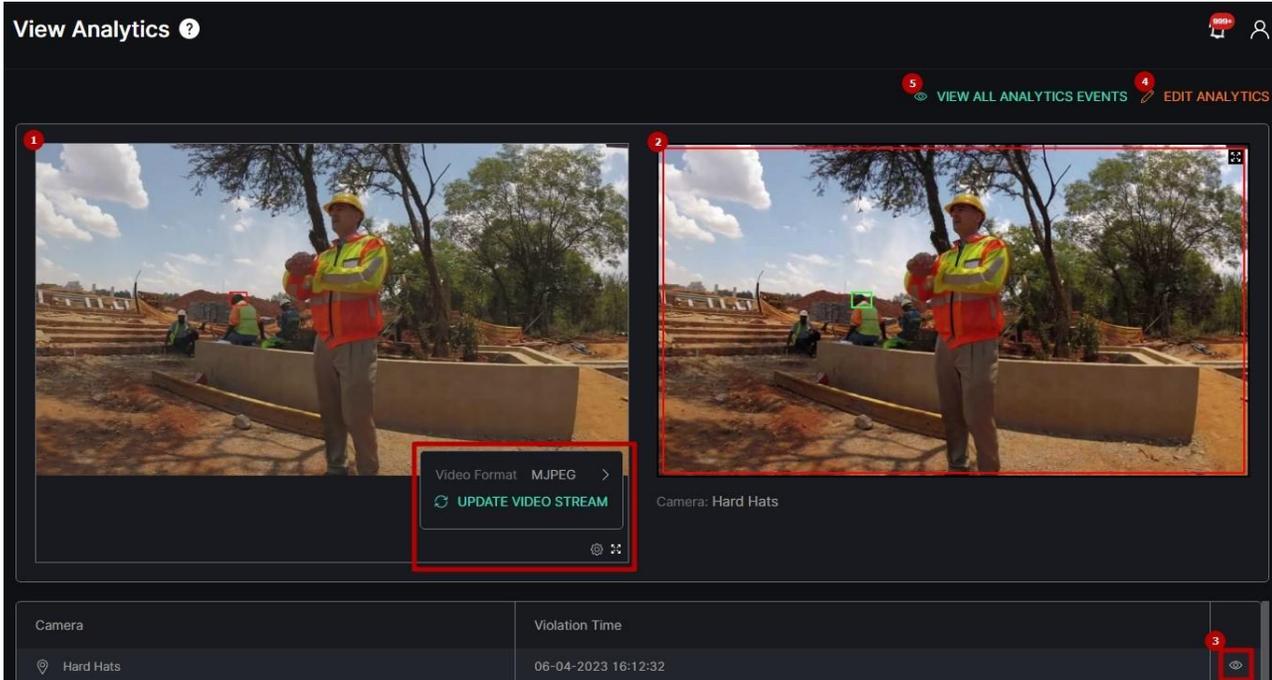
To see the selected analytics in real-time, click the View icon on the toolbox:



CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

💡 The View icon becomes available only when selected analytics is active.

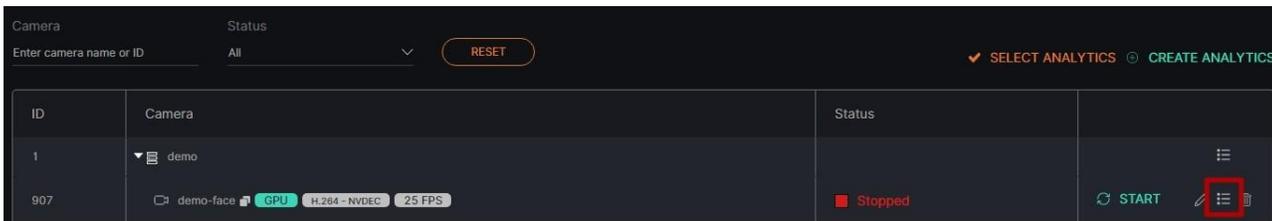
Live view analytics mode allows to:



1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View the frame preview with a detected person without the protective hard hat
3. Select the View icon in the table below to open the image and save it in full size
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics

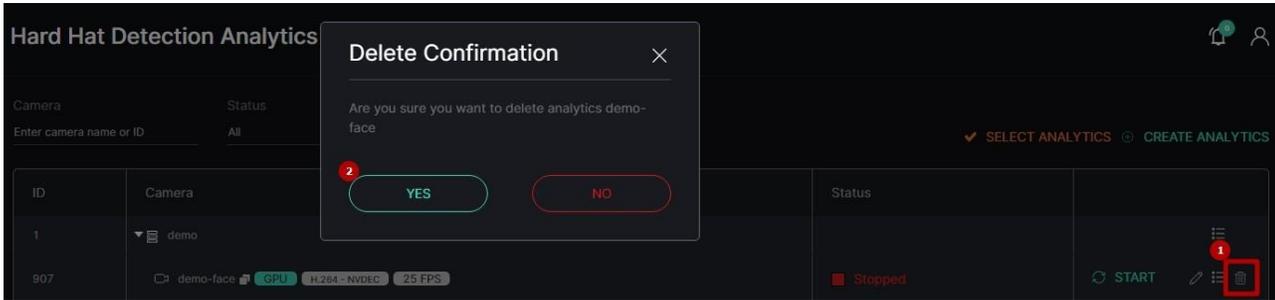
View Events

To view selected analytics events in the Analytics item, click the Events icon on the toolbox:



Delete Analytics

To delete the analytics:



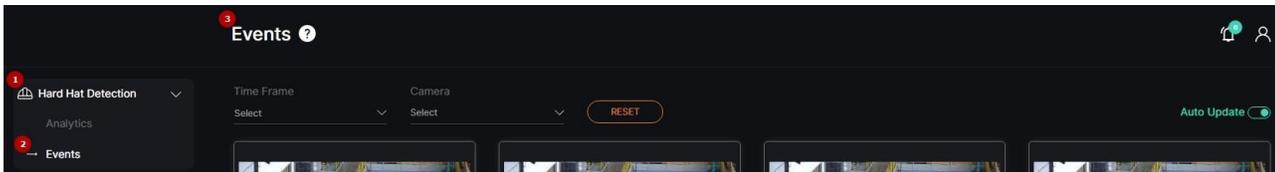
1. Select the Delete icon on the toolbox
2. Confirm the intention

Hard Hat Detection: Events

i This page comprises the Events item overview and functionality description. The item displays the event notifications including a frame, camera, date, time, and detected people without a protective hard hat.

Overview

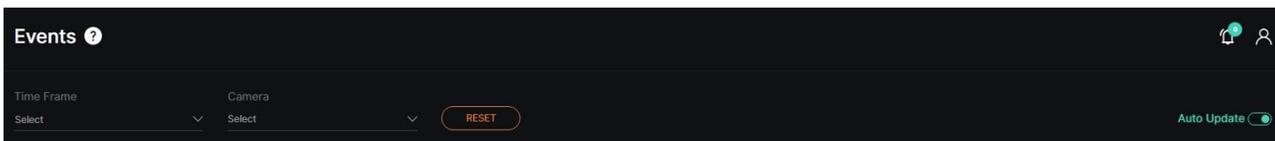
To open the Events item, in the left menu:



1. Select the Hard Hat Detection section
2. Choose the Events item
3. See event notifications

Use and Functionality

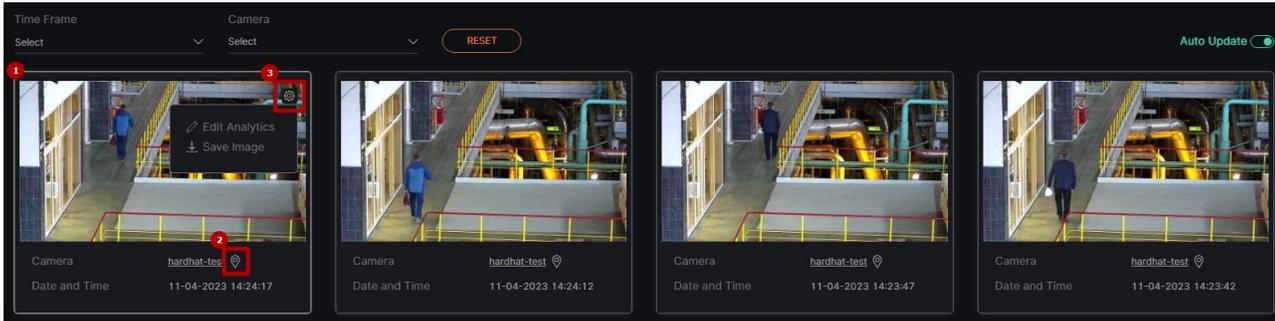
The Events functional menu allows to:



- Select the required events time frame
- Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable auto update of the event notifications

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Once selected and filtered, in the events:



1. View the frame preview and information about the event. To filter events by the recognized data, in the required event block:
 - a. Click the camera name to filter events only by the camera related to the event
 - b. Click the date to filter events only by the date related to the event
2. View the camera location on the map by clicking the View Geolocation icon
3. Hover the mouse over the event block and select the Extra Options icon. In the drop-down menu:
 - a. Click the Edit Analytics button to make changes to the settings of the analytics which is related to the selected event
 - b. Click the Save Image button to download the event frame in full size



Click the frame preview to open the image and see the event information.

Heat Map

Introduction

Use this guide to understand the interface and features of the Heat Map plugin and learn how to utilize it for the best result.

What is a Heat Map?

Heat Map provides information on the most visited places in the store, and displays hot and cold zones depending on the activity of the customers.

Primary Capabilities

Heat Map is capable to:

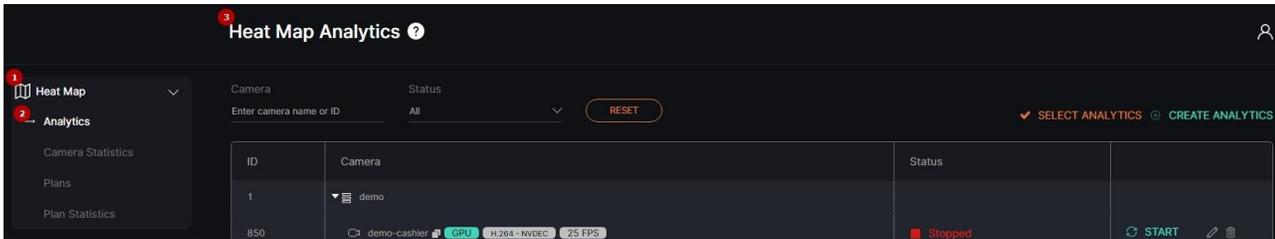
- Form a heat map, which shows the intensity and density of people flow at the different periods of time
- Generate a heat map to determine the traffic flow density on city roads

Heat Map: Analytics

i This page includes the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

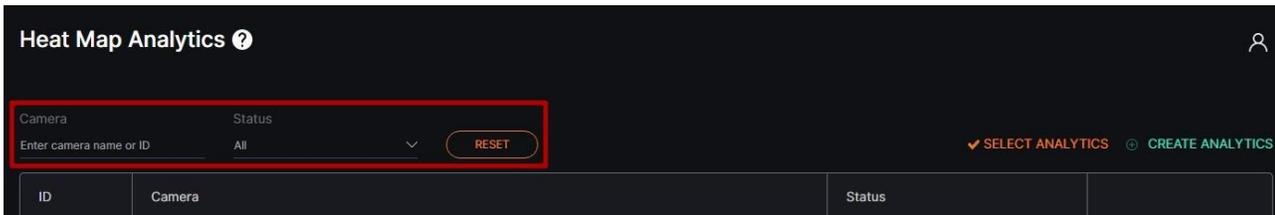
To open the Analytics item, in the left menu:



1. Select the Heat Map section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Heat Map Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

💡 The status options comprise All, Active, and Stopped.

See the list of analytics in the table below. It contains:

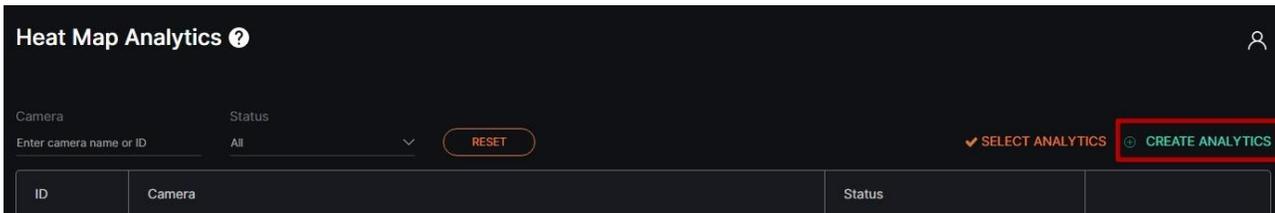
ID	Camera	Status
1	demo	
2	Anastasia	
1019	Gun-Detection-Pharmacy GPU H.264 - NVDEC 5 FPS	Active (13s / 6)
14	Permission analytics Mary check	Server: 1, GPU: 0

- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - Additional hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Delete

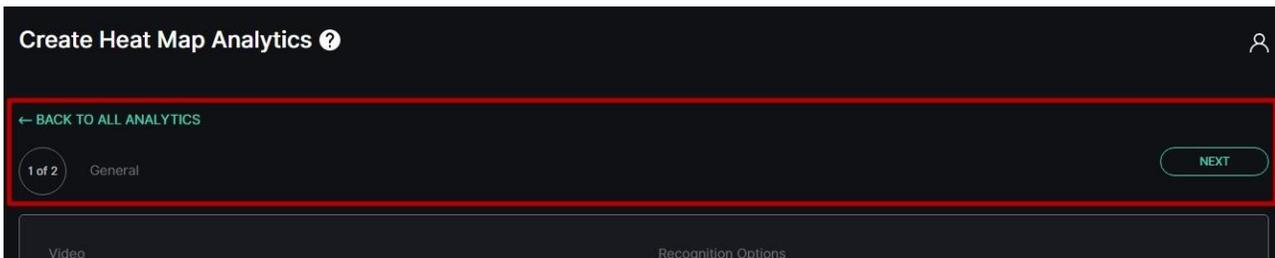
- To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).
- To find out the ID of CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

Create Analytics

To create new analytics, click the Create Analytics button:



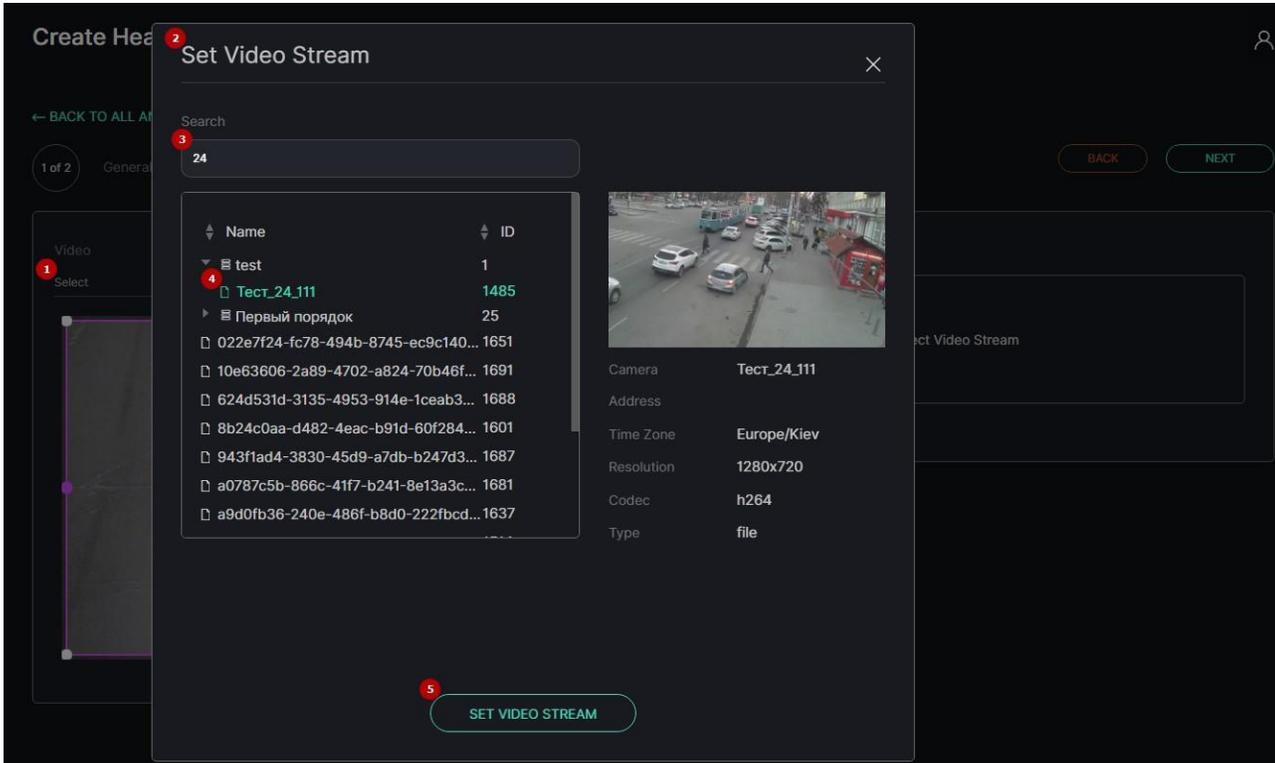
The Create Heat Map Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters. To set a video stream:

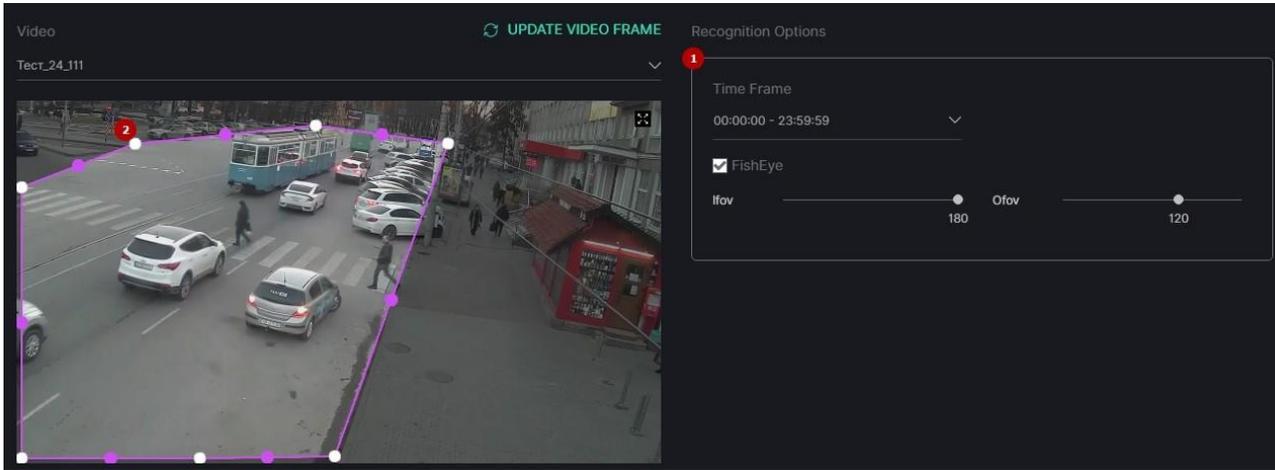


1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

To perform the recognition, apply these recognition options:

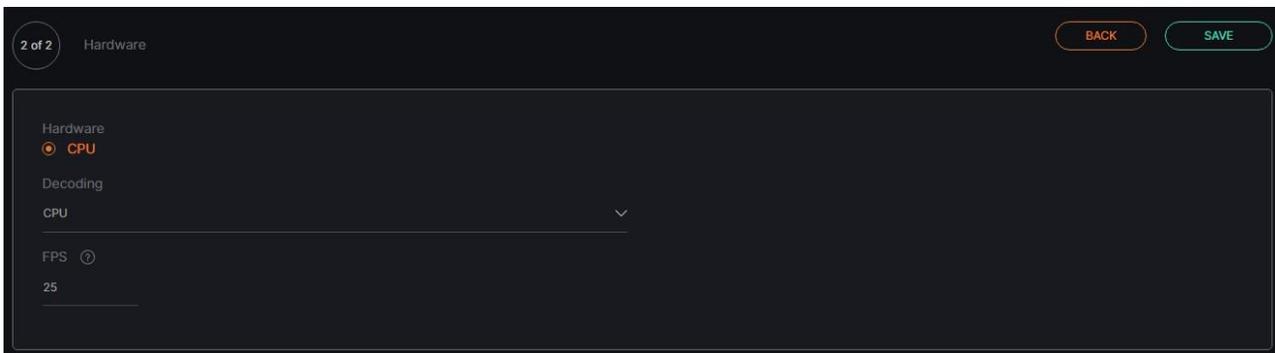


1. Set the parameters:
 - a. Set the required time frame
 - b. Check the FishEye box and set the parameters as required:
 - i. Ifov parameter to set the fisheye aperture in degrees
 - ii. Ofov parameter to set the output frame aperture in degrees
2. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to delete it

- The possible range for the Ifov parameter is from 0 to 180 degrees. The default value is 180 degrees.
- The possible range for the Ofov parameter is from 0 to 180 degrees. The default value is 120 degrees.
- The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:



Parameters include:

Parameter	Impact
Hardware	Select the CPU hardware acceleration (the GPU option is unavailable in the Heat Map plugin).
Decoding	Select the hardware decoder from the drop-down list: CPU, Intel, NVDEC.
FPS	Enter the desired number of frames per second in the field for detection. The recommended value is 25.

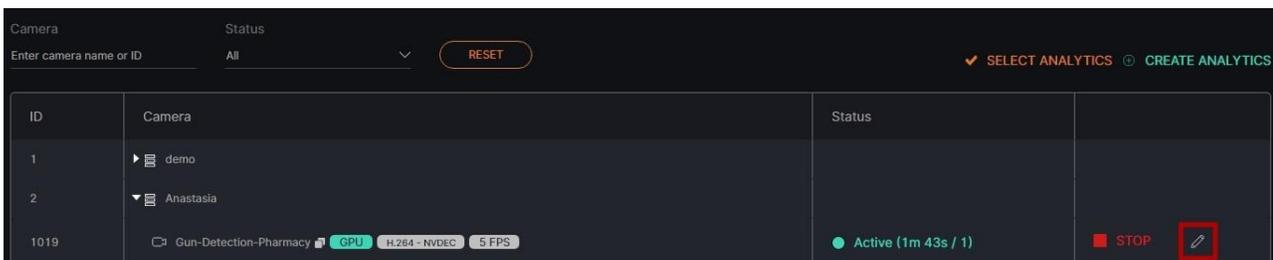
- 💡 • The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Select the Save button to confirm the intention in the navigation menu. Once saved, the Heat Map Analytics editor opens to allow the users to:

- Modify parameters
- Set parameters
- Run the created analytics

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Heat Map Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Advanced Settings
- Select the Stop Analytics button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start Analytics button to enable the analytics
- Select the Save button to apply the changes to the selected analytics

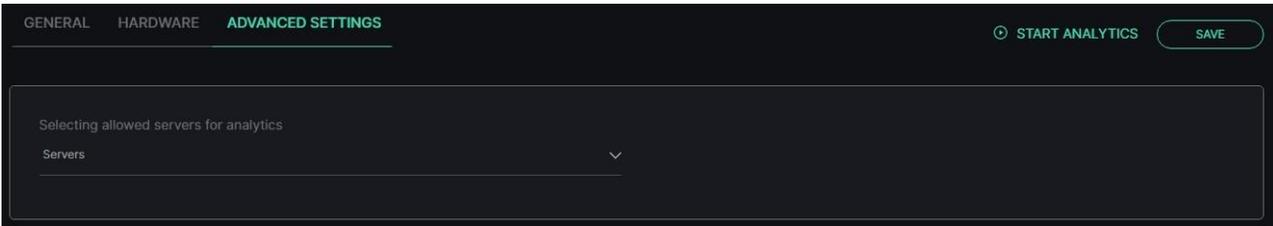
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

- Current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- Stop Analytics button is available only when the current analytics is active.
- Start Analytics button is available only when the current analytics is stopped.

To view editing parameters for the General and Hardware tabs, except for Video Stream editing, read [Create Analytics](#).

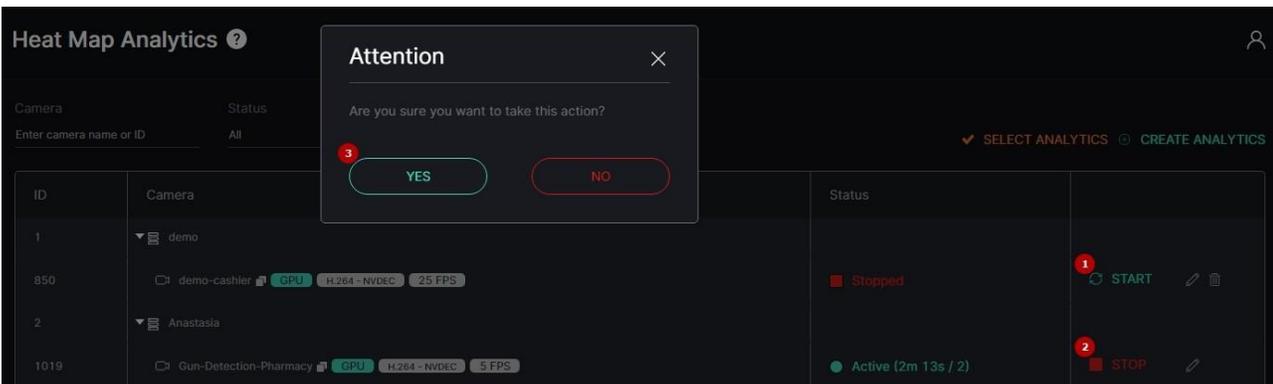
Advanced Settings Tab

The Advanced Settings tab allows the users to select a server from the drop-down list to run the analytics:



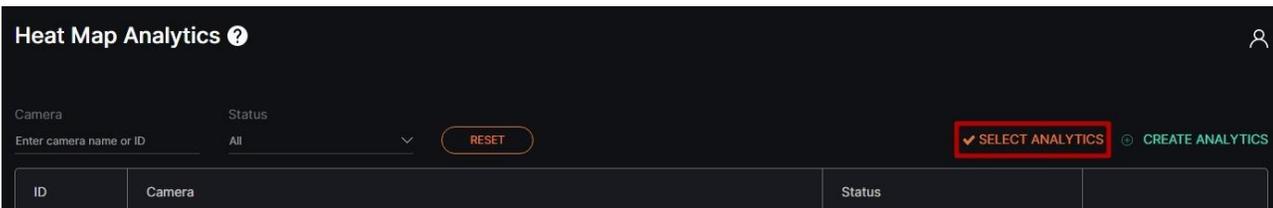
Analytics Status

To enable or disable the analytics and view the change of the analytics status:



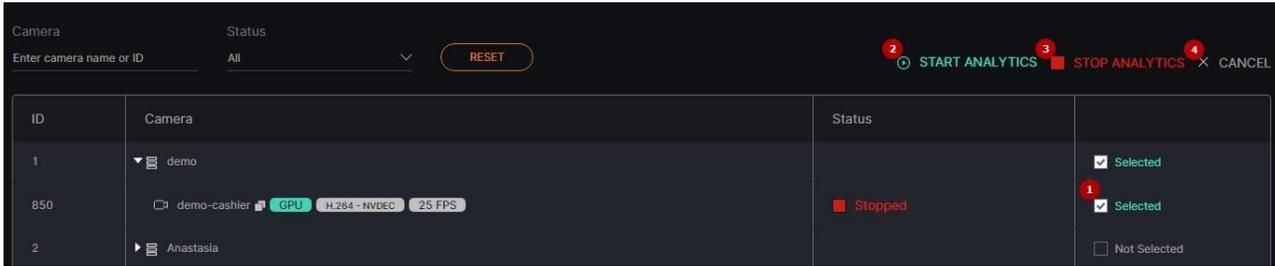
1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

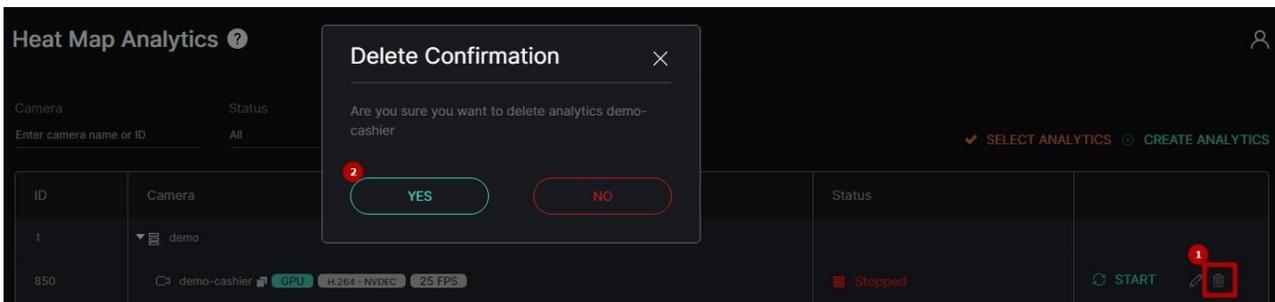
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics selection

Delete Analytics

To delete the analytics:



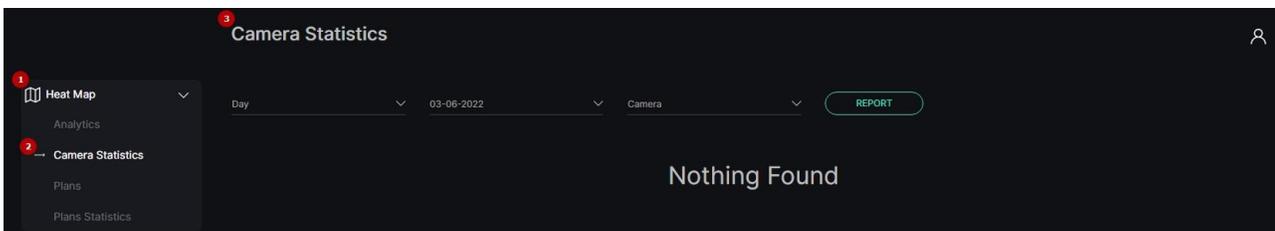
1. Select the Delete icon on the toolbox
2. Confirm the intention

Heat Map: Camera Statistics

i This page describes the Camera Statistics item that allows viewing heat maps filtered by cameras for a selected period.

Overview

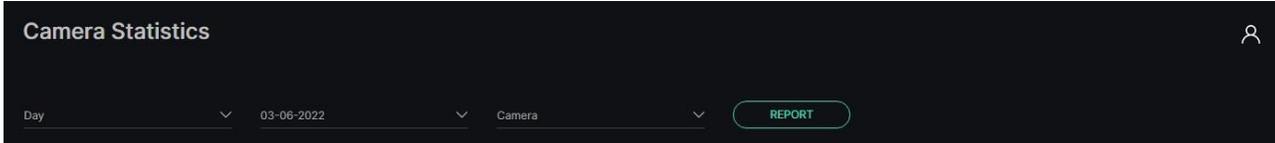
To open the Camera Statistics item, in the left menu:



1. Select the Heat Map section
2. Choose the Camera Statistics item
3. See camera statistics functional menu

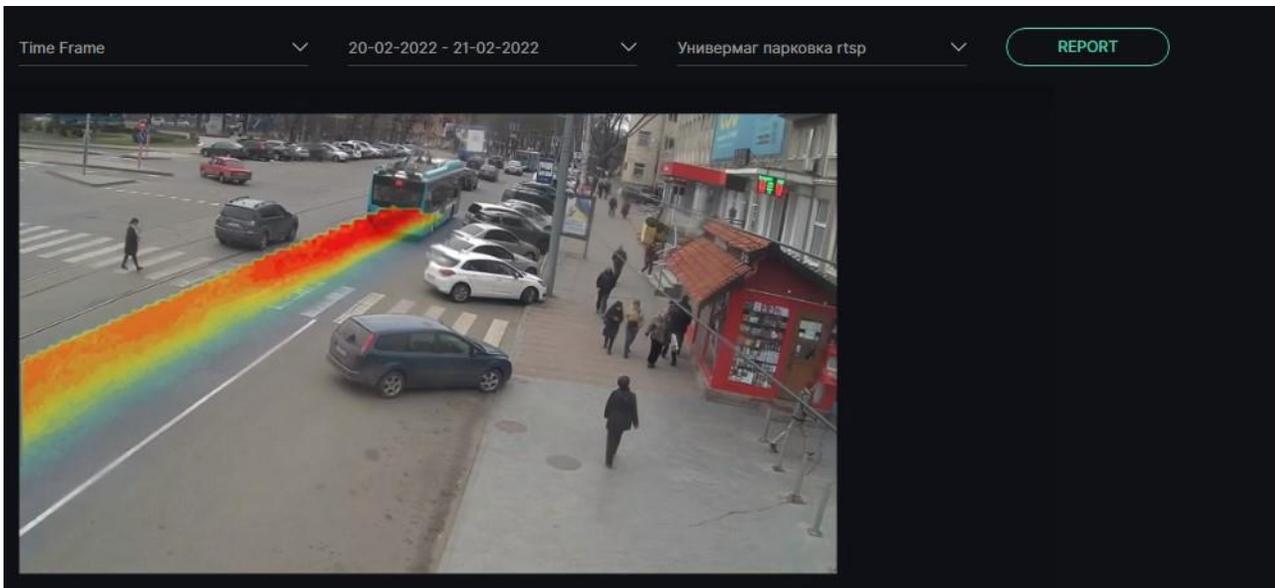
Use and Functionality

The Camera Statistics functional menu allows to:



- Select the desired period of time:
 - Day
 - Week
 - Month
 - Time Frame
 - Set the date
- Select the required camera from the drop-down list
- Click the Report button to start filtering

Once selected and filtered, see the generated heat map:



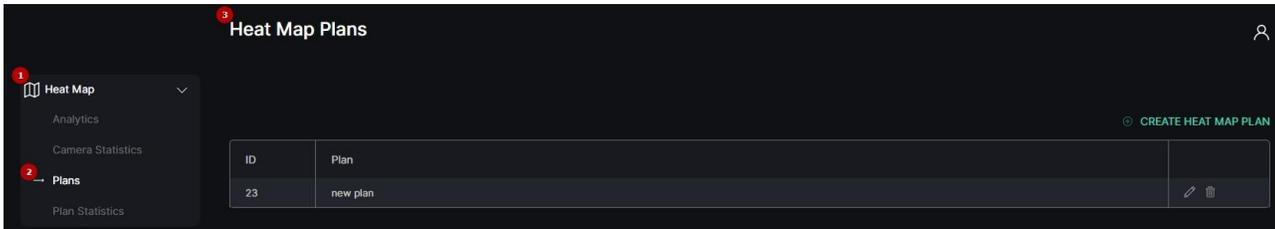
Click the frame with a heat map to view and save it in the full size.

Heat Map: Plans

i This page includes the Plans item overview and options to customize plans. The item displays a list of plans with the ability to manage them.

Overview

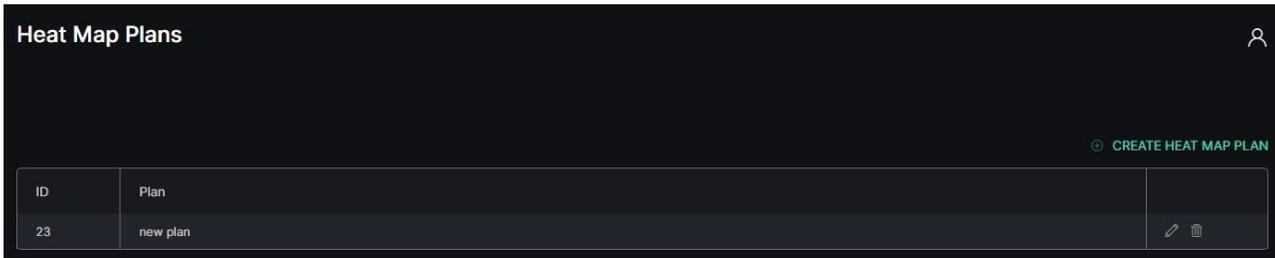
To open the Plans item, in the left menu:



1. Select the Heat Map section
2. Choose the Plans item
3. See heat map plans

Use and Functionality

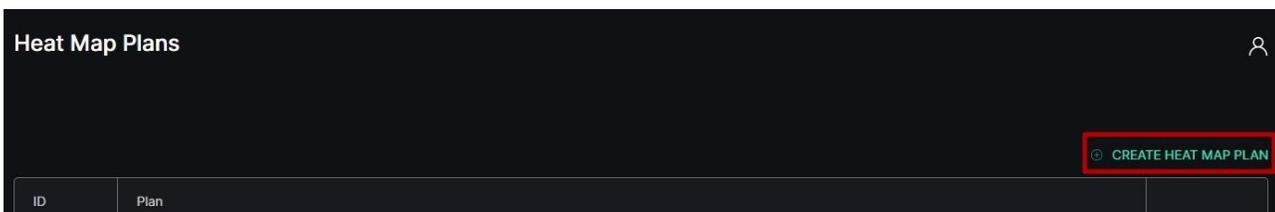
The Heat Map Plans item shows:



- List of created plans with their ID
- Toolbox includes:
 - Edit
 - Delete

Create Plan

To create a new plan, click the Create Heat Map Plan button:

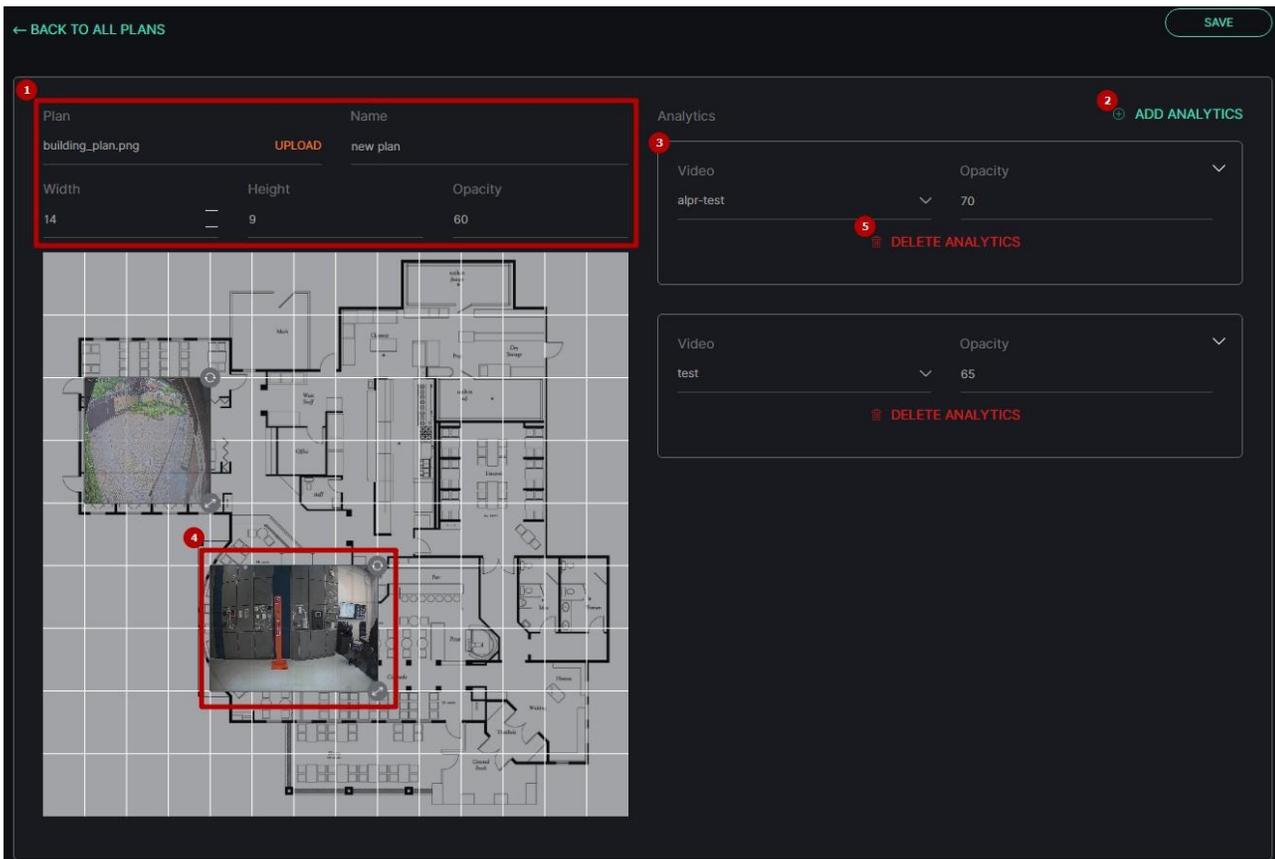


The Create Heat Map Plan navigation menu allows to:



- Click the Back to All Plans button to return to the main Plans item
- Select the Save button to apply settings

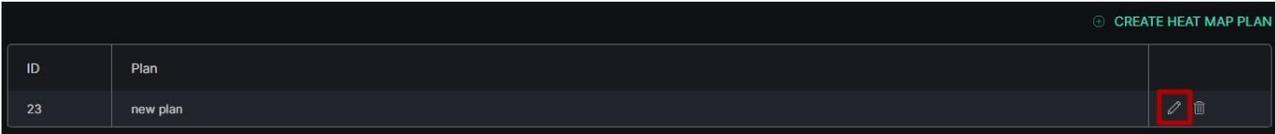
To set up the heat map plan:



1. Upload the plan image and set the required parameters:
 - a. Enter the name of the plan
 - b. Select the quantity of column and row lines in the grid
 - c. Set the image opacity in percentage
2. Click the Add Analytics button to add a video frame above the grid
3. Set the video frame parameters:
 - a. Click the Video parameter to select the desired video analytics. In the pop-up window:
 - b. Check the boxes next to the required video analytics and folders
 - c. Click the Select Video Analytics button
 - d. Set the video frame opacity above the plan image
4. Drag, scale, and rotate the video frame to fit it properly to the grid above the plan image
5. Click the Delete Analytics button to remove the video frame from the plan

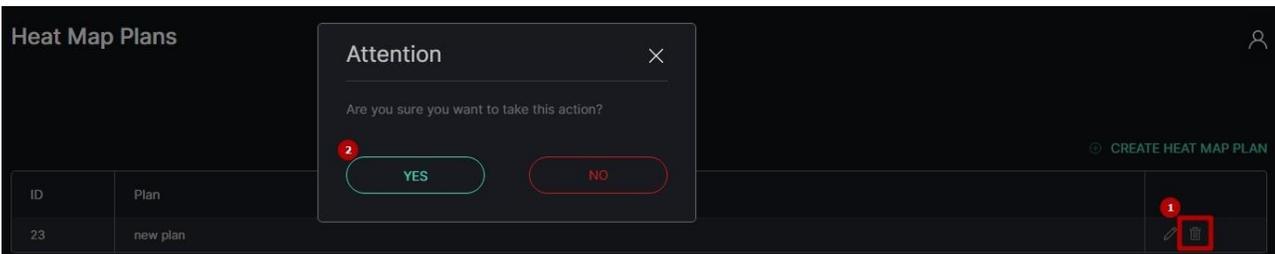
💡 Once the plan is created it appears in the list of plans on the main Heat Map Plans item.

To edit settings in the selected plan, click the Edit icon on the toolbox:



Delete Plan

To delete the heat map plan:



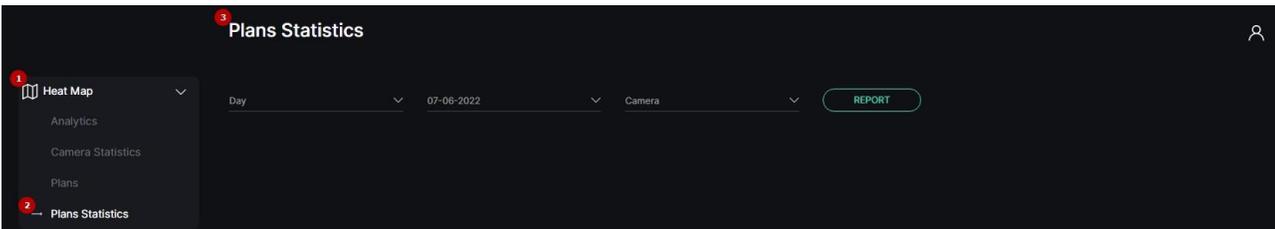
1. Select the Delete icon on the toolbox
2. Confirm the intention

Heat Map: Plans Statistics

📘 This page describes the Plans Statistics item that allows viewing heat maps filtered by created plans for a selected period.

Overview

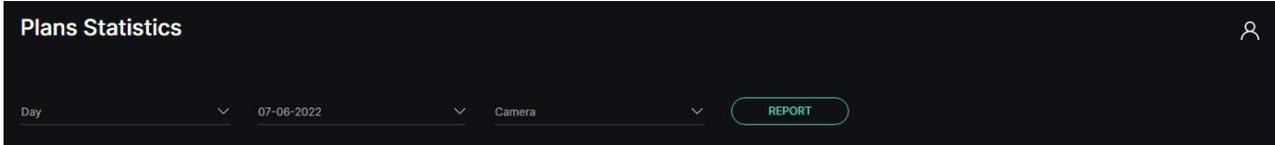
To open the Plans Statistics item, in the left menu:



1. Select the Heat Map section
2. Choose the Plans Statistics item
3. See plans statistics functional menu

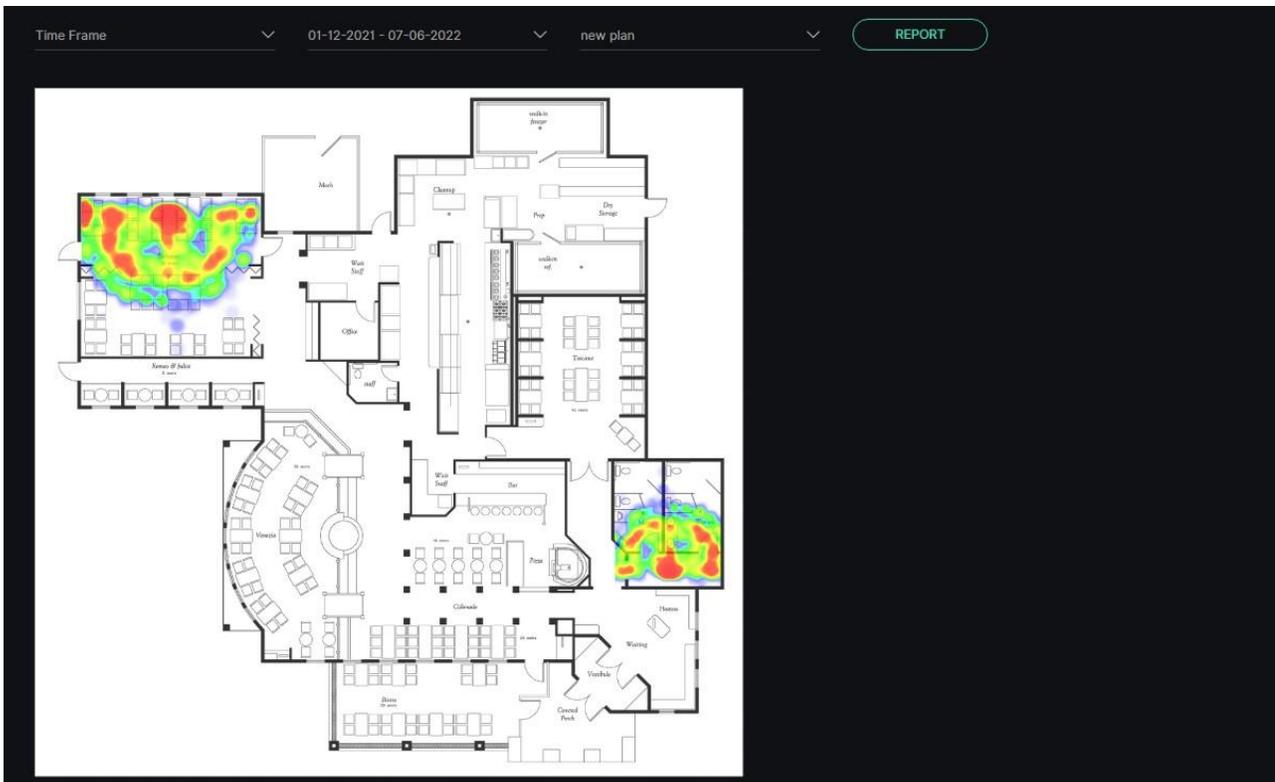
Use and Functionality

The Plans Statistics functional menu allows to:



- Select the desired period of time:
 - Day
 - Week
 - Month
 - Time Frame
 - Set the date
- Select the required camera from the drop-down list
- Click the Report button to start filtering

Once selected and filtered, see the generated plan with the heat map:



 Click the plan with the heat map to view and save it in the full size.

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LPR

Introduction

Use this guide to understand the interface and features of the LPR plugin and learn how to utilize it for the best result.

What Is LPR?

LPR automatically identifies license plates, collects and stores vehicle data in the database.

Primary Capabilities

LPR is capable to:

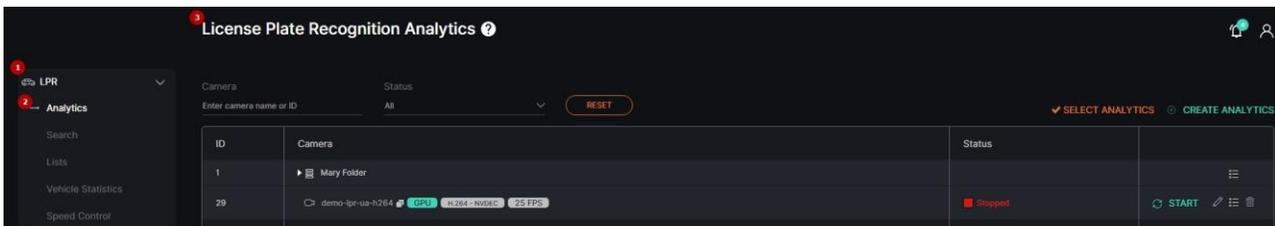
- Capture and recognize the license plate within 8-30 milliseconds
- Support license plate recognition at speeds up to 250 km/h
- Recognize the make, model, and color of the vehicle, as well as the country identifier with 95% accuracy
- Determinate the route and direction of the vehicle

LPR: Analytics

i This page includes the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

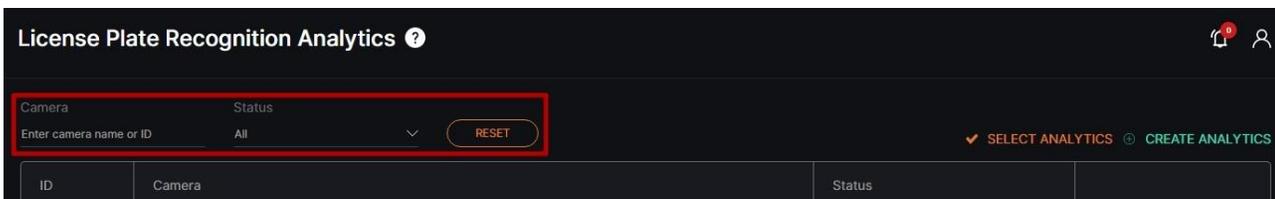
To open the Analytics item, in the left menu:



1. Select the LPR section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The License Plate Recognition Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID

CORTROL CVA *(Extended Video Analytics)*

CEVA v1.0.0

- Select the required analytics status
- Click the Reset button to clear the filters

 The status options include All, Active, and Stopped.

See the list of analytics in the table below. It holds:

ID	Camera	Status
1	Mary Folder	
29	demo-lpr-us-h264 GPU H.264 - NVDEC 25 FPS	Active (46s / 2)
26	copy-control-2 GPU H.265 - NVDEC 25 FPS	Server: 999, GPU: 0

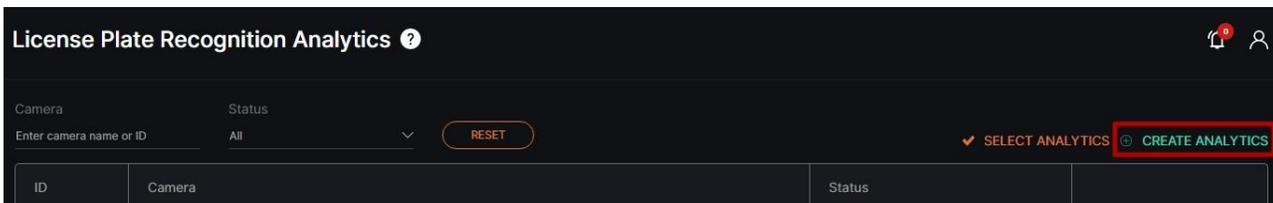
- Analytics and folders ID
- Camera includes:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - More hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox includes:
 - Start/Stop
 - Edit
 - Search Results
 - View
 - Delete

 To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).

To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

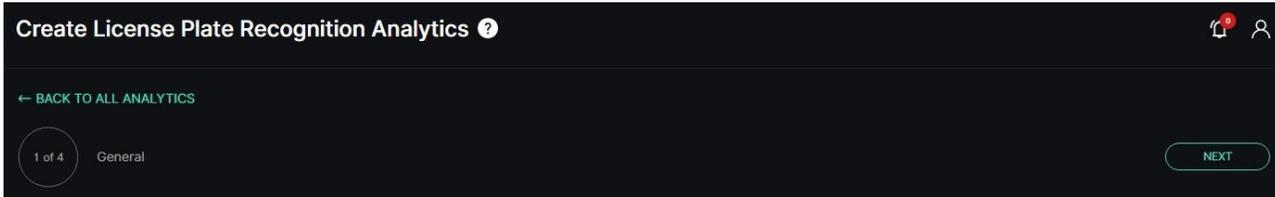
Create Analytics

To create new analytics, click the Create Analytics button:



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The Create License Plate Recognition Analytics navigation menu allows to:

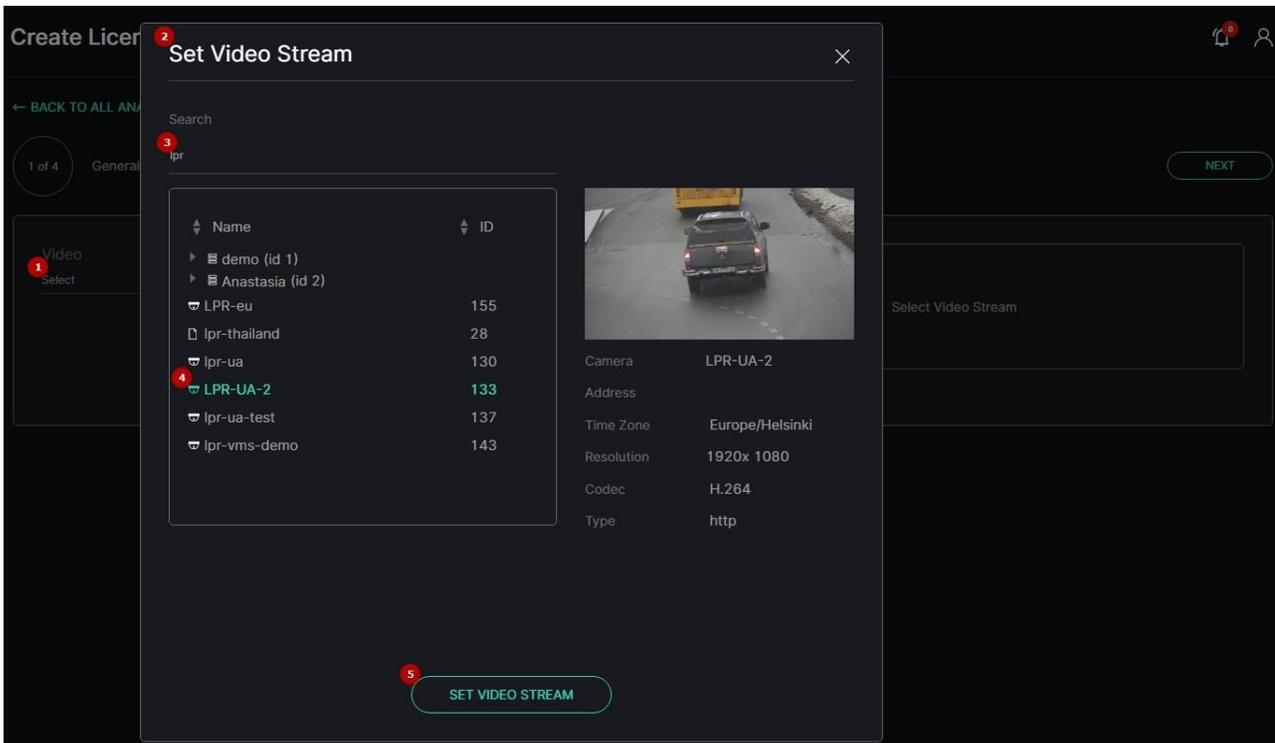


Click the Back to All Analytics button to return to the main Analytics item

- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters. To set a video stream:

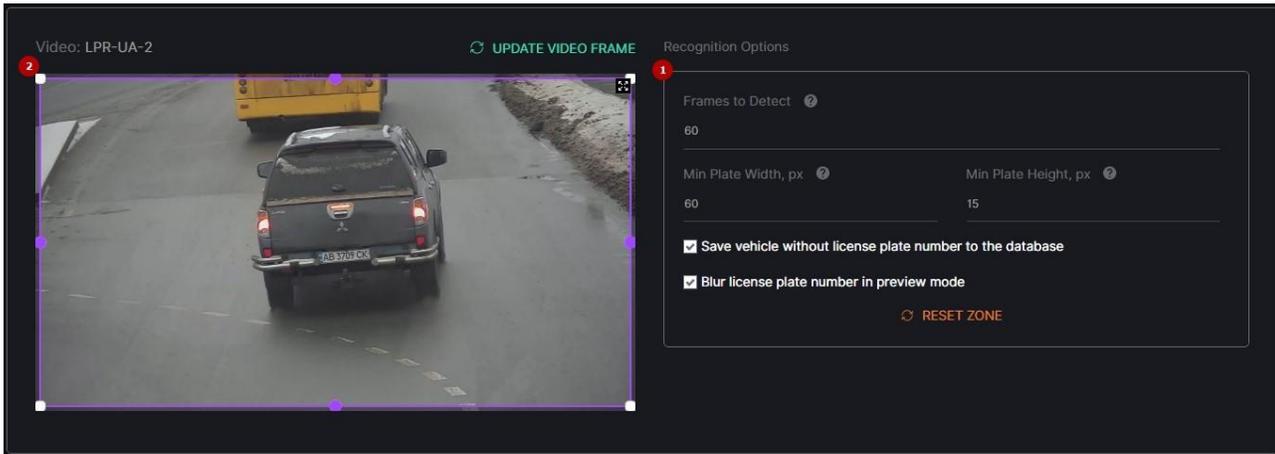


1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

To perform the recognition, apply these recognition options:

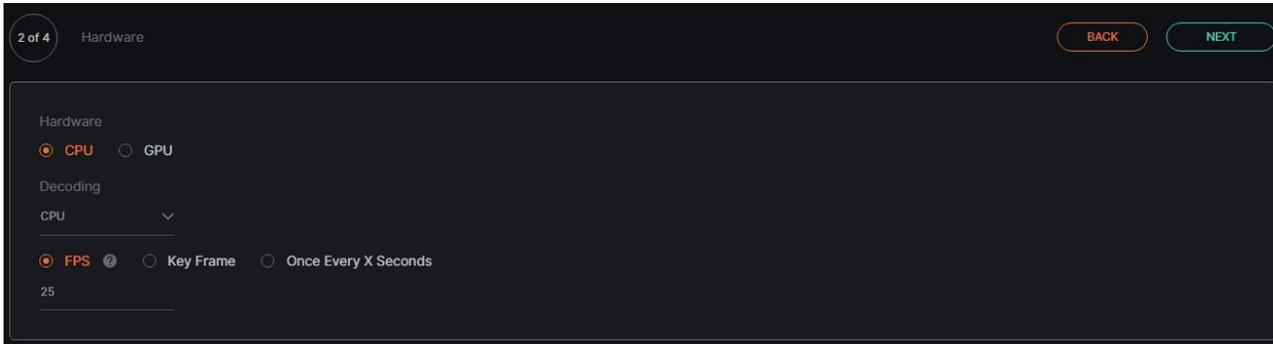


1. Set the parameters:
 - a. Set the number of frames for the sample from which the best frame is selected for vehicle detection
 - b. Set the minimum plate width for recognition (in pixels)
 - c. Set the minimum plate height for recognition (in pixels)
 - d. Select the Save Vehicle Without License Plate Number to the Database checkbox to save detected vehicles with absent or unrecognizable license plate numbers to the database
 - e. Select the Blur License Plate Number in Preview Mode checkbox to blur the license plate area in the analytics live view mode
2. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to delete it
 - d. Click the Reset Zone button to return the detection zone borders to their original position

-  • The possible range for the Frames to Detect parameter is from 1 to 100 frames.
- The minimum value for the Min Plate Width, px parameter is 60 pixels.
 - The minimum value for the Min Plate Height, px parameter is 15 pixels.
 - The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:

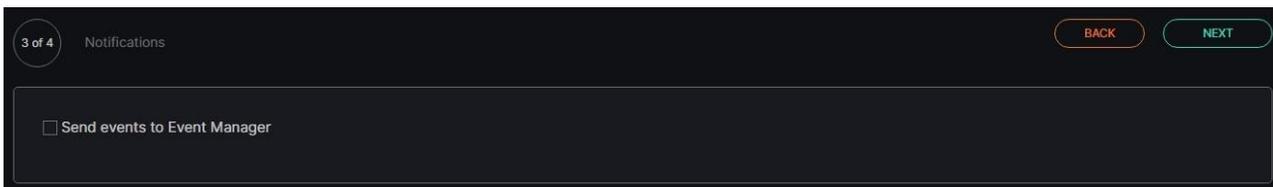


- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

- 💡 • The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Notifications Tab

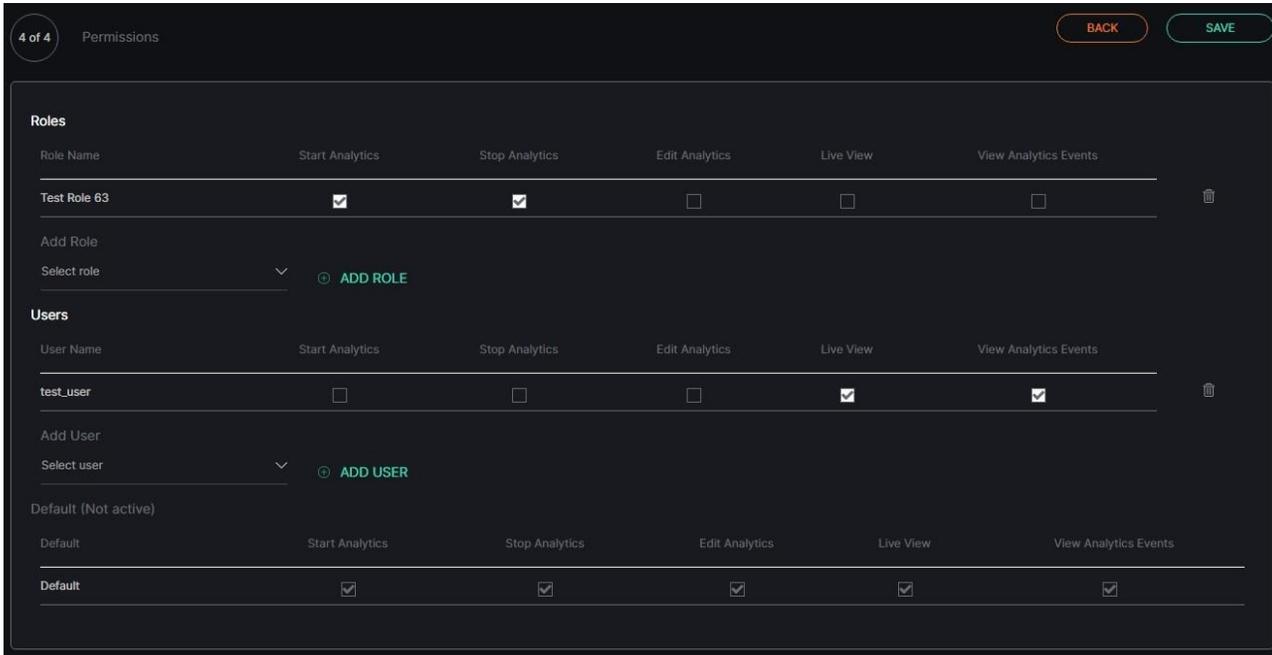
The Notifications tab allows managing the events notifications. Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources:



- 💡 • The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.

Permissions Tab

The Permissions tab provides the ability to:



- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu

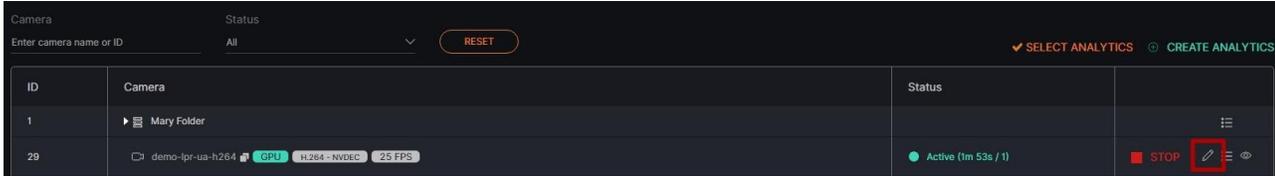
- 💡 • Default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users is not limited.

Once saved, the LPR Analytics editor opens to allow the users to:

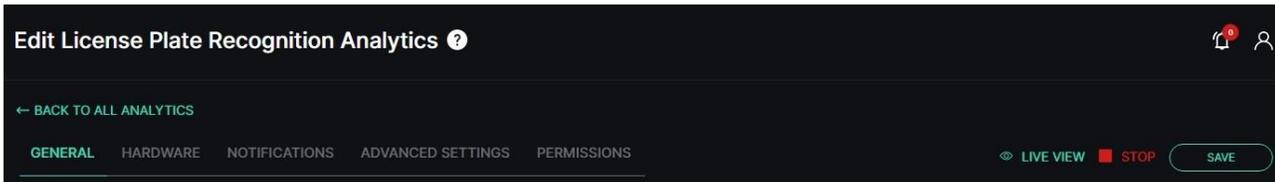
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit License Plate Recognition Analytics navigation menu allows to:



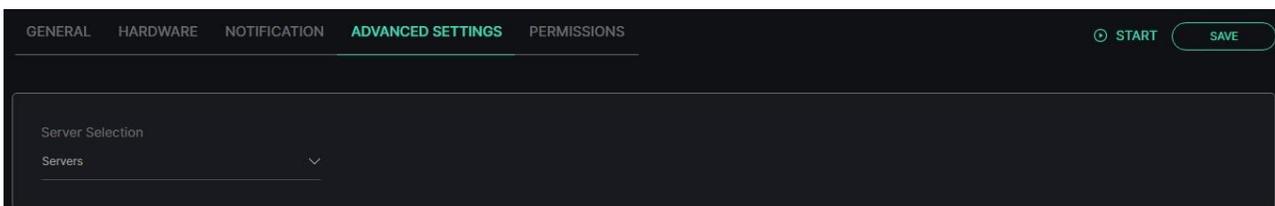
- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the selected analytics

- 💡 • The current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.
- The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics](#)199.

Advanced Settings Tab

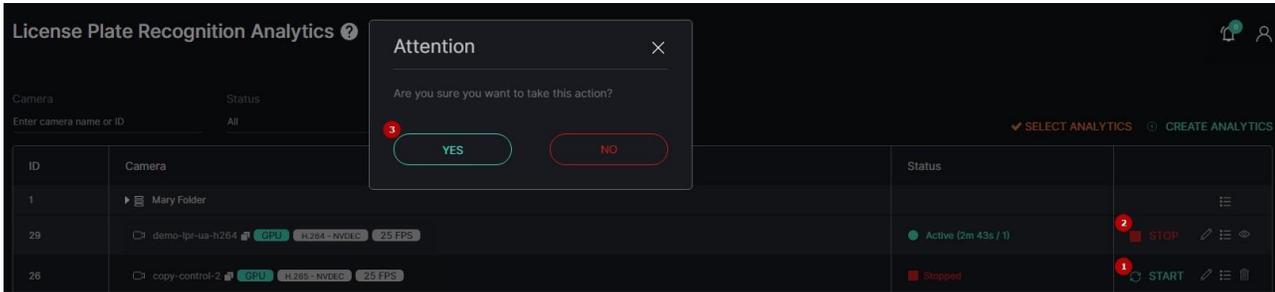
The Advanced Settings tab allows the users to select a server from the drop-down list to run the analytics:



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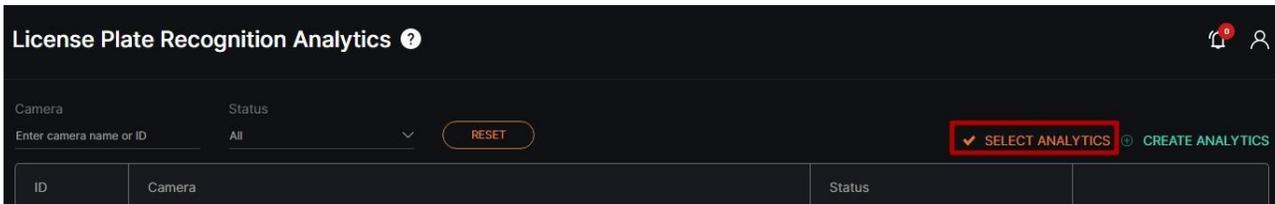
Analytics Status

To enable or disable the analytics and view the change of the analytics status:

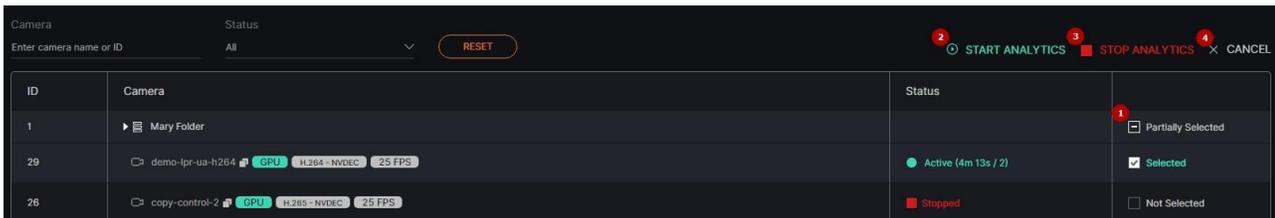


1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



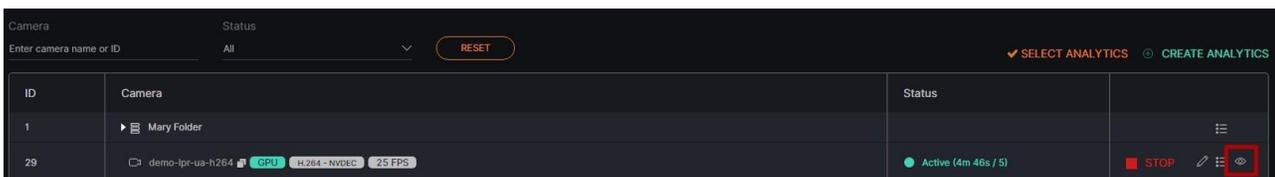
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics selection

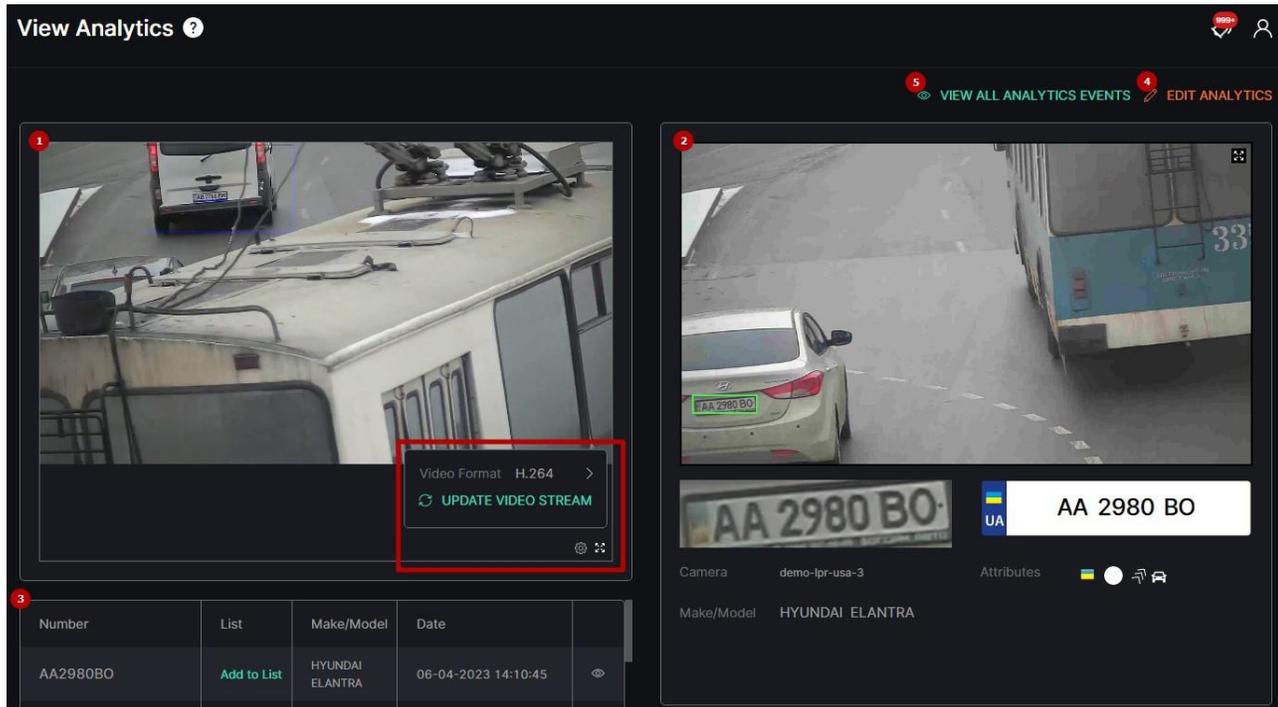
View Analytics

To see the selected analytics in real-time, click the View icon on the toolbox:



The View icon becomes available only when selected analytics is active.

Live view analytics mode allows to:



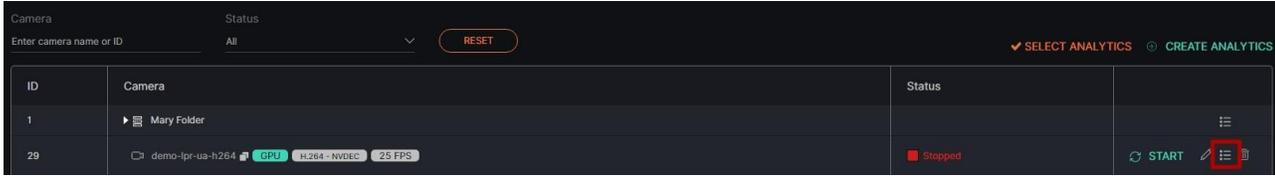
1. In the video block:
 - a. View the video from the camera in real-time mode
 - b. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - c. Click the Enlargement icon to expand the video to full screen
2. In the vehicle data block:
 - a. View the frame preview with the recognized license plate number
 - b. View the recognized vehicle information
3. In the table below:
 - a. Select the Add to List button to add the license plate number to the required list. In the pop-up window:
 - i. Write a comment about the license plate number in the Notes field
 - ii. Select a required list
 - iii. Click the Save button
 - b. Select the View icon to view the additional information. In the pop-up window:
 - i. See the extended vehicle data
 - ii. Save the image in the full-size
 - iii. Export the selected license plate recognition report
 - iv. Add the license plate number to the required list
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics

 Click the enlargement icon in the upper-right corner of the frame preview to open the Fullscreen view mode.

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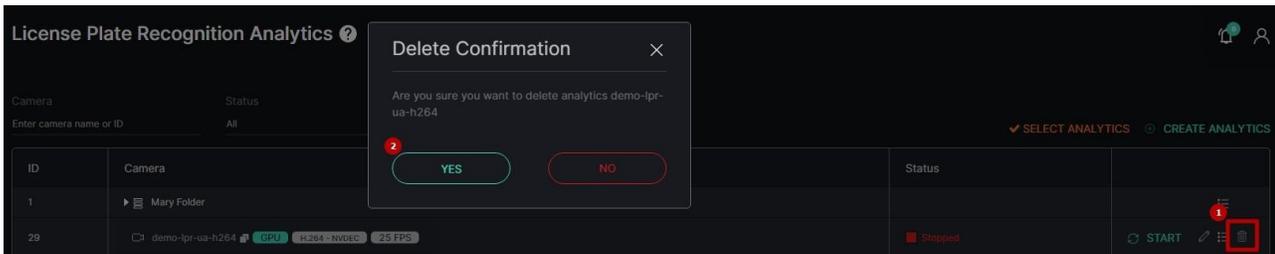
View Search Results

To view selected analytics search results in the Analytics item, click the Search Results icon on the toolbox:



Delete Analytics

To remove the analytics:



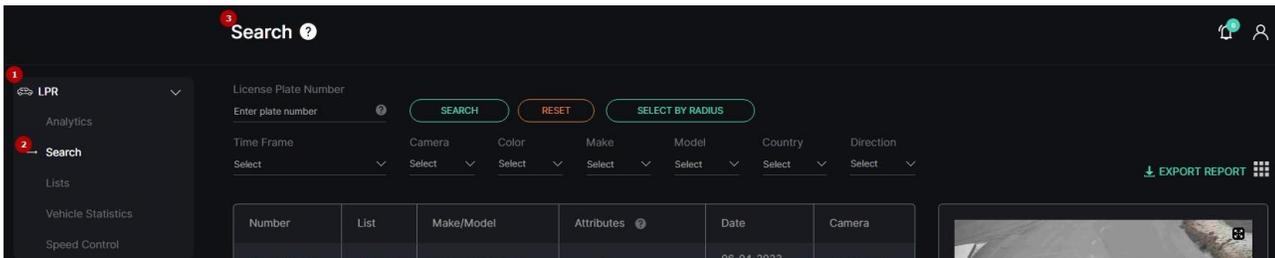
1. Select the Delete icon on the toolbox
2. Confirm the intention

LPR: Search

i This page comprises the Search item overview and functionality description. The item displays the vehicle search results including a license plate number, make and model, date and time, camera data, and frame with a vehicle.

Overview

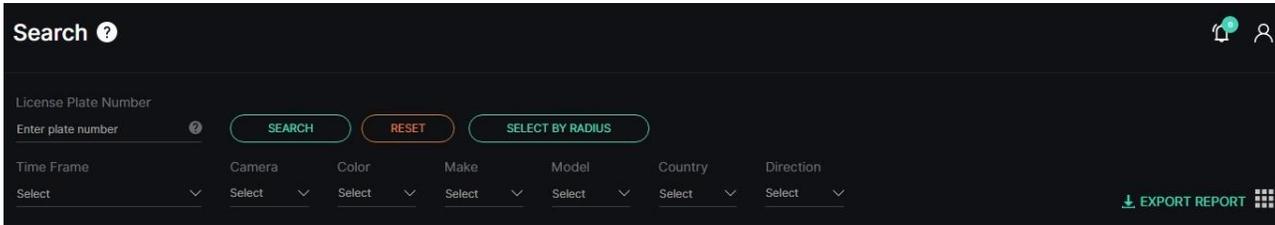
To open the Search item, in the left menu:



1. Select the LPR section
2. Choose the Search item
3. See vehicle search

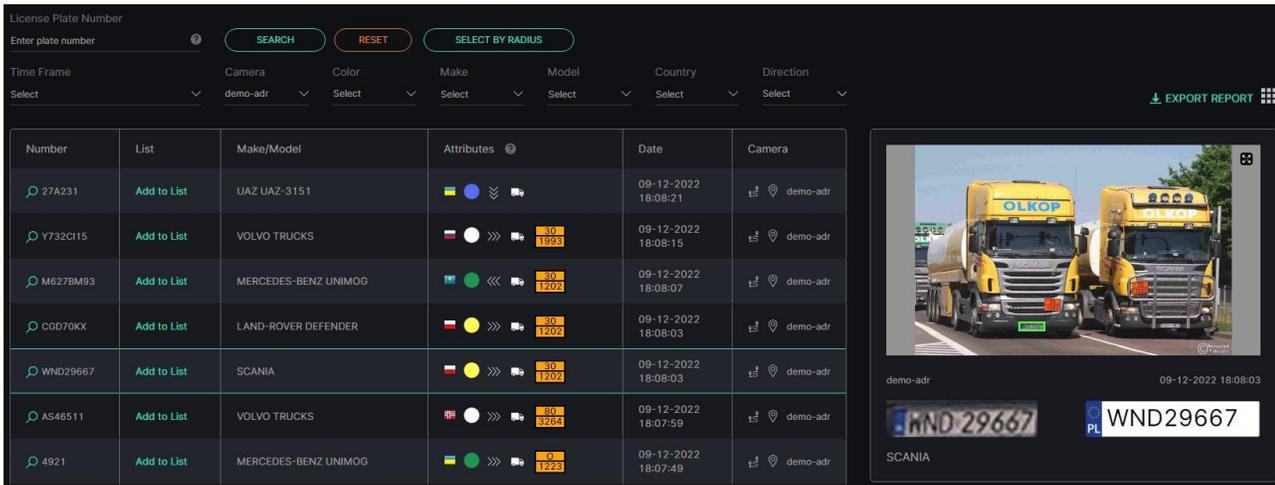
Use and Functionality

The Search functional menu allows to:



- Enter the license plate number to filter vehicles
- Click the Select by Radius button to set the area for search. In the pop-up window:
 - Enter the radius in kilometers
 - Click the map at the desired spot to set the center of the search circle
 - Select the Search button
- Select the required time frame
- Click the Camera parameter to choose the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Select from the drop-down lists the estimated vehicle's:
 - Color
 - Make
 - Model
 - Country of registration
 - Direction of movement
- Click the Search button to start filtering
- Click the Reset button to clear the filters
- Click the Export Report button to download the report. In the Export Settings pop-up window, set the parameters:
 - Select the required report file format:
 - PDF
 - CSV
 - Enter the required number of the newest results collected for the report
 - Check the Add Frames with License Plate Numbers box to include relevant photos of license plates in the report
 - Click the Export button to confirm the intention
- Move between List and Grid view modes by clicking the corresponding toggle

Once selected and filtered, in the search results:



The screenshot shows the CORTROL CVA interface. At the top, there is a search bar with 'Enter plate number' and buttons for 'SEARCH', 'RESET', and 'SELECT BY RADIUS'. Below the search bar are filters for 'Time Frame', 'Camera', 'Color', 'Make', 'Model', 'Country', and 'Direction'. The main area contains a table with the following columns: Number, List, Make/Model, Attributes, Date, and Camera. The table lists several vehicles, including UAZ UAZ-3151, VOLVO TRUCKS, MERCEDES-BENZ UNIMOG, LAND-ROVER DEFENDER, SCANIA, and MERCEDES-BENZ UNIMOG. To the right of the table is a preview window showing a video frame of two yellow trucks. Below the video frame, there is a license plate number 'WND 29667' and a button to 'Add to List'.

Number	List	Make/Model	Attributes	Date	Camera
27A231	Add to List	UAZ UAZ-3151	[Icons]	09-12-2022 18:08:21	demo-adr
Y732C15	Add to List	VOLVO TRUCKS	[Icons]	09-12-2022 18:08:15	demo-adr
M627BM93	Add to List	MERCEDES-BENZ UNIMOG	[Icons]	09-12-2022 18:08:07	demo-adr
C0D70KX	Add to List	LAND-ROVER DEFENDER	[Icons]	09-12-2022 18:08:03	demo-adr
WND29667	Add to List	SCANIA	[Icons]	09-12-2022 18:08:03	demo-adr
AS46511	Add to List	VOLVO TRUCKS	[Icons]	09-12-2022 18:07:59	demo-adr
4921	Add to List	MERCEDES-BENZ UNIMOG	[Icons]	09-12-2022 18:07:49	demo-adr

- Click the Magnifying Glass icon next to the required number to filter search results only for the selected number
- View recognized vehicle data, date and time the license plate number has been recognized by the selected analytics
- View recognized vehicle attributes:
 - Country of registration
 - Color of the vehicle
 - Direction of movement
 - Vehicle type:
 - Car
 - Motorbike
 - Bus
 - Truck
 - Van
 - Pickup
 - SUV
 - ADR code (in case a vehicle carries dangerous goods)
- Click the list name to open the List View item or add a license plate number to the required list by clicking the Add to List button. In the pop-up window:
 - Write a comment about the license plate number in the Notes field
 - Select a required list
 - Click the Save button
- View the vehicle route and camera location on the map by clicking the corresponding icons in the Camera column
- Click the row in the table with the desired license plate number to see the frame with a vehicle preview
- Select the enlargement icon in the upper-right corner of the frame preview to view the other information. In the pop-up window:
 - See the extended vehicle data
 - Save the image in the full-size
 - Add the license plate number to the required list



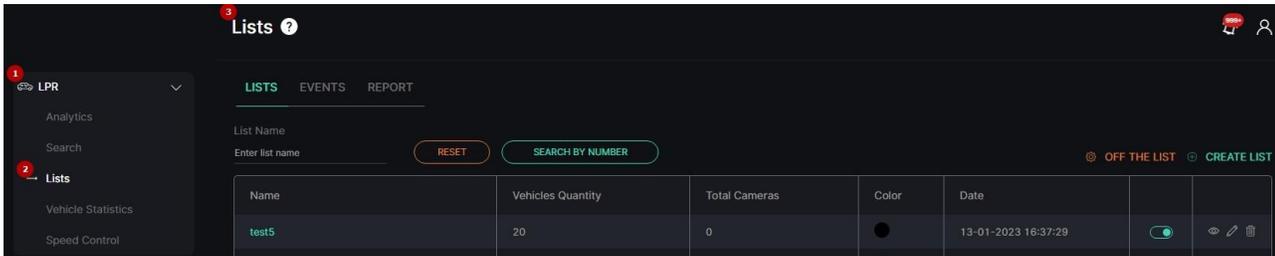
The same options are available in the grid view mode.

LPR: Lists

i This section describes the Lists item that allows filtering and managing vehicle lists and cards, as well as viewing events and lists statistics data.

Overview

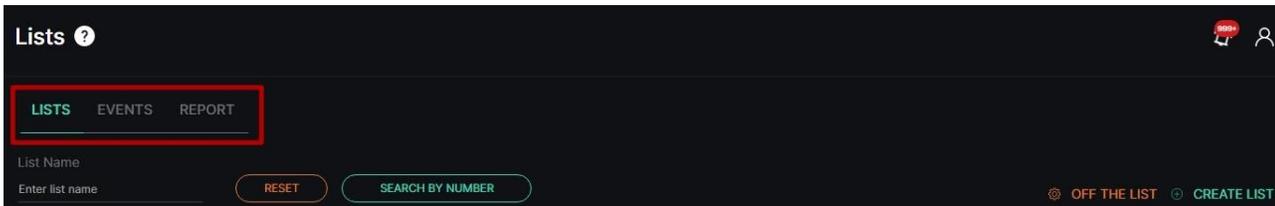
To open the Lists item, in the left menu:



1. Select the LPR section
2. Choose the Lists item
3. See lists navigational menu

Use and Functionality

The Lists navigational menu consists of 3 tabs:



- Lists
- Events
- Report



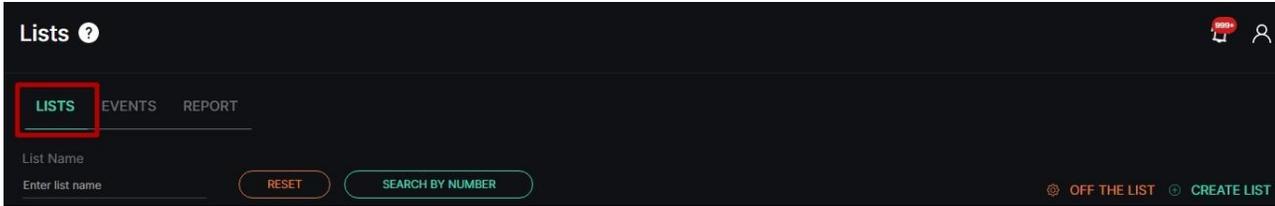
- The Lists item opens with the Lists tab by default.
- The selected tab is always highlighted.

Lists: Lists

 This page includes the Lists tab overview and options to customize vehicle lists. The item allows filtering and managing lists and vehicle cards.

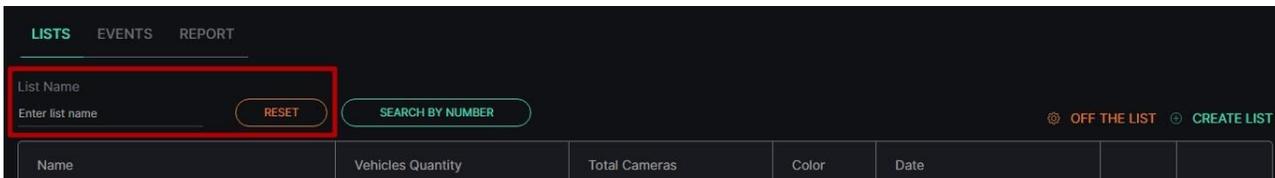
Overview

Select the Lists tab in the tabs menu:



Use and Functionality

The Lists tab functional menu allows to:



- Enter the list name or characters in the name to filter lists
- Select the Reset button to clear the filters

See the filtered lists in the table below. It contains:

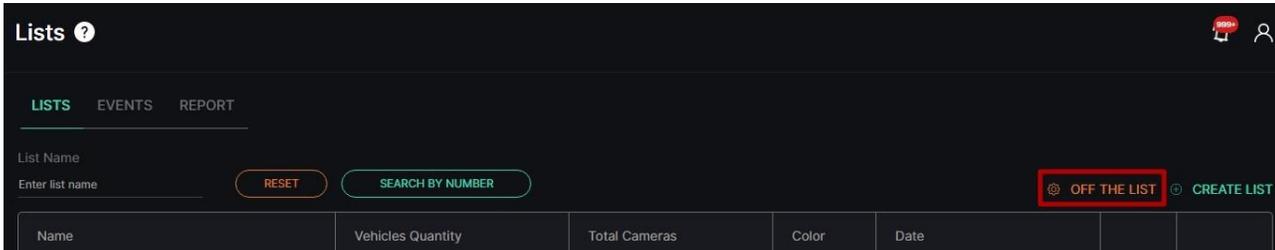
Name	Vehicles Quantity	Total Cameras	Color	Date		
test5	0	0	●	13-01-2023 16:37:29	<input type="checkbox"/>	 
test3	0	0	●	16-01-2023 09:33:58	<input type="checkbox"/>	 
test2	1	0	●	16-01-2023 09:39:43	<input checked="" type="checkbox"/>	 

- List name
- Number of vehicles included in the list
- Total number of video streams involved in the list
- List color
- Enabled/Disabled list toggle
- Toggle to enable or disable the notifications in the list
- Toolbox includes:
 - Edit List
 - Delete List
 - View List

 Turn on the Enabled\Disabled toggle to get matches with the list elements in the search results.

Off List Notification Settings

To set up notifications about recognized license plates out of lists select the Off the List button:

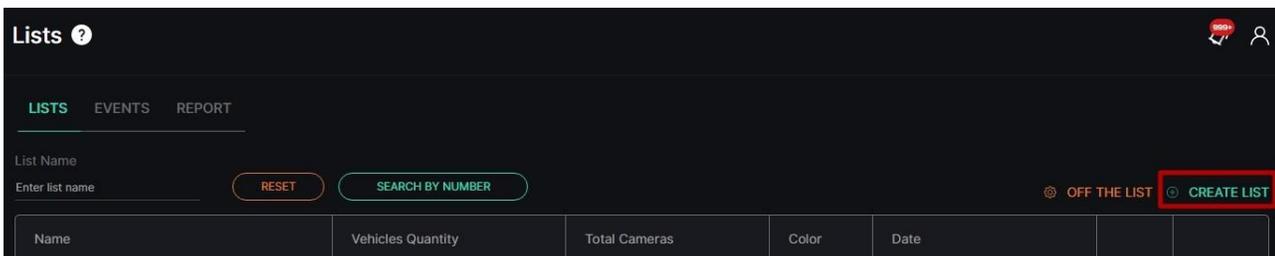


In the Off List Notification Settings pop-up window:

- Click the Camera parameter to choose the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Check the Internal Notification box to allow the system to send all notifications to the Events tab of the Lists item
- Check the Send Events to Event Manager box to allow the system to send all notifications about license plates out of lists to the Event Manager and then to external resources
- Click the Save button

Create List

To create a new list, click the Create List button:



The Create List pop-up window allows to:

- Configure the General Settings tab's parameters:
 - Enter the list name
 - Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
 - Type a comment to the list in the Notes field
 - Click on the Color block to pick a color for the list
- Configure the Notifications tab's parameters:
 - Check the Internal Notification box to allow the system to send all notifications to the Events tab of the Lists item
 - Check the Send Events to Event Manager box to allow the system to send all notifications about license plates in the list to the Event Manager and then to external resources
- Configure the Permissions tab's parameters:
 - Assign list access rights for Roles:
 - Select the required role from the drop-down list

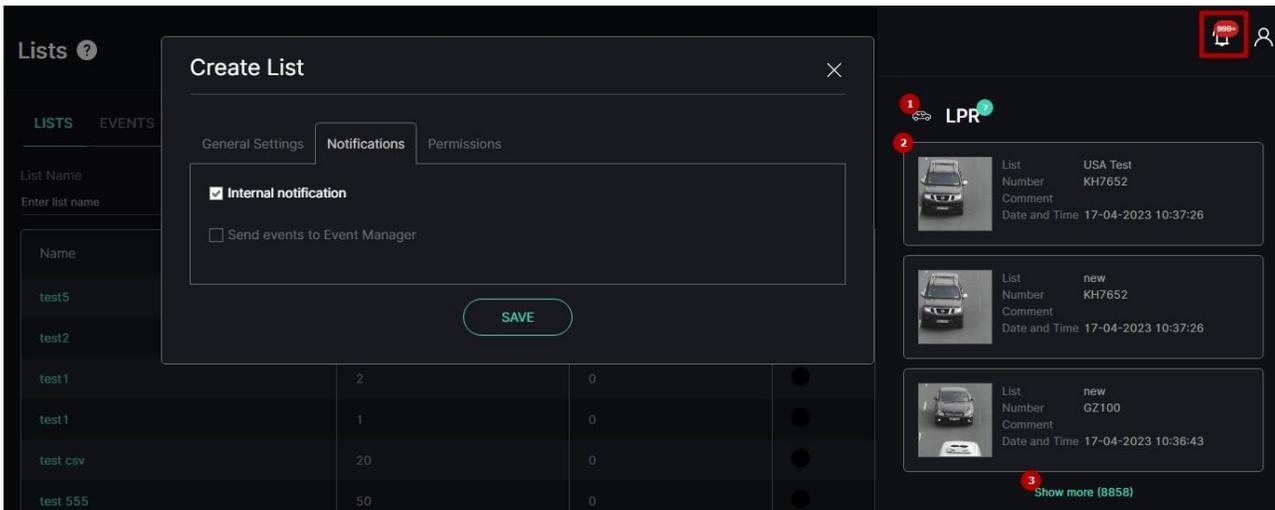
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- Click the Add Role button
- Select the checkboxes for the required access rights
- Click the Delete icon to remove the unnecessary role
- Assign list access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required list access rights by default
- Click the Save button to save parameters and create a new list

- The Permissions tab's default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users in the Permissions tab is not limited.
- Checking the Internal Notification box allows getting event notifications only in case the Enabled/Disabled list toggle is turned on.

Once the list is created with the checked Internal Notification box, the Enabled/Disabled list toggle is turned on, and at least one of the selected analytics is enabled, the Notification icon signals about each new event notification. Click the Notification icon to open the Notification Panel. It comprises:



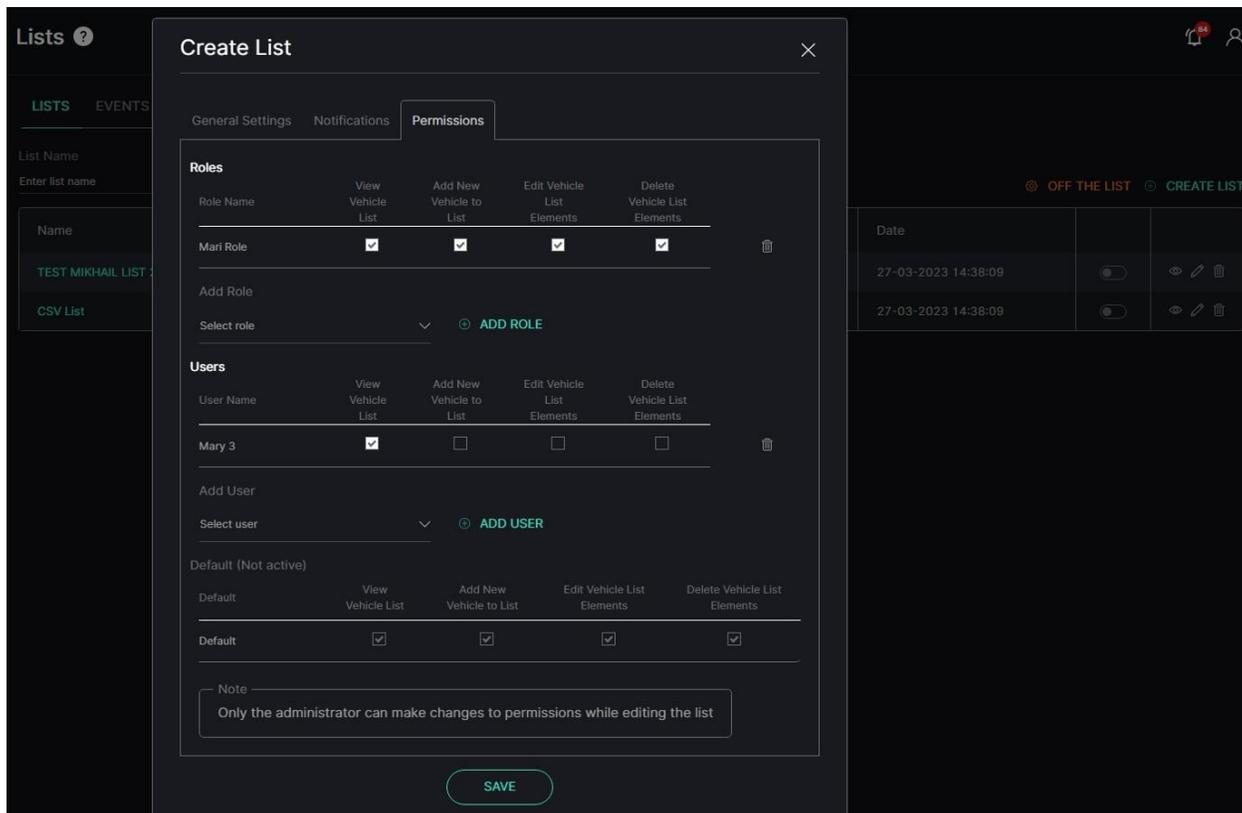
1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
 - b. Clear all plugin event notifications at once from the Notification Panel by clicking the Close button (this action doesn't affect events in the Events tab of the Lists item)
2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events tab of the Lists item)
3. Show More button with the total events number to open the Events tab of the Lists item and view all events

List Permissions Configuration

For example, it is necessary to give full access to a new list to all users related only to a specific role, and at the same time, to restrict the vehicle card managing access rights in the list for one of the users related to this role. For this purpose:

1. In the Roles item of the Settings section assign all required LPR permissions to the role, including:
 - a. View Vehicle Lists
 - b. Add New Vehicle to List
 - c. Edit Vehicle List Elements
 - d. Delete Vehicle List Elements
2. In the Users item of the Settings section assign the selected role to all required users
3. In the Create List pop-up of the Lists item open the Permissions tab

Configure the parameters in the Permissions tab:



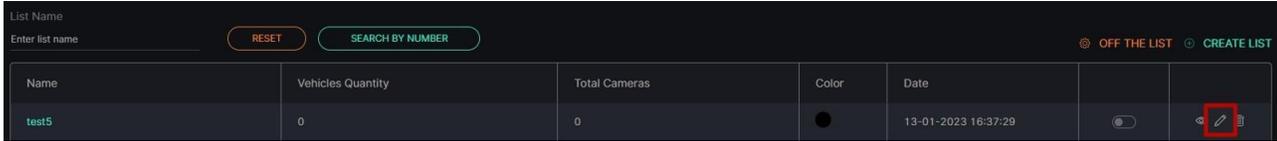
1. In the Roles block, add the required role and check all access rights boxes
2. In the Users block, add the required user and check only the View Vehicle Lists access right box
3. Finish the list configuration and save it

Once the list is created, all users with the selected role can view the new list and manage vehicle cards in it. At the same time, the additionally selected user can only view the new list but cannot manage vehicle cards in this list.

- User permissions are with higher priority than Role permissions.
- The sequence of access rights validation in the list by the system:
 - Global permissions
 - User permissions
 - Role permissions
 - Default permissions

Edit List

To edit the list, select the Edit icon on the toolbox:

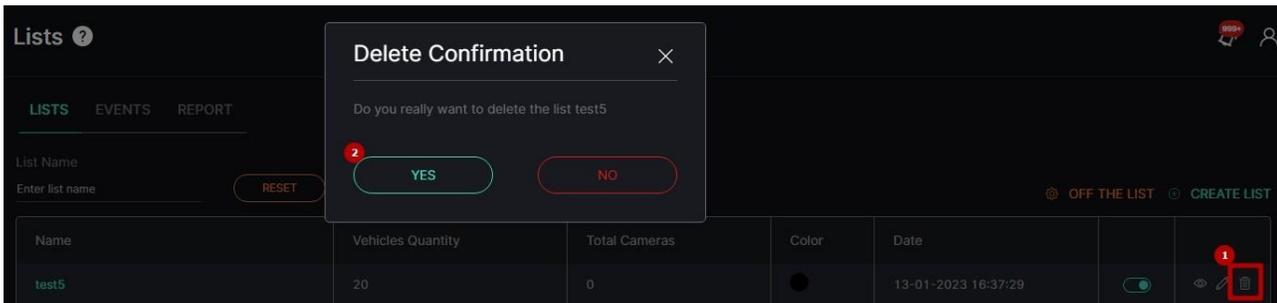


To view editing list parameters, read [Create List203](#).

Only the administrator can make changes to permissions while editing the video stream. For other system users, the Permissions tab is disabled.

Delete List

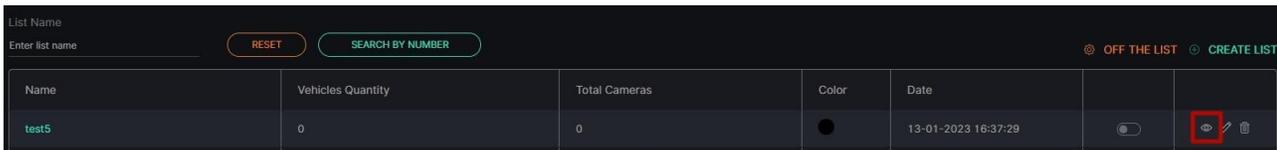
To delete the list:



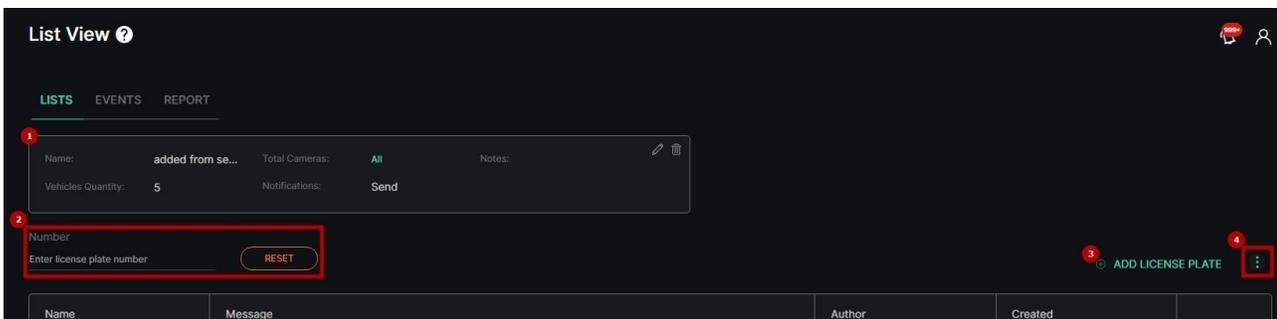
1. Select the Delete icon on the toolbox
2. Confirm the intention

View List

To view the list, select the View icon on the toolbox:



The List View functional menu comprises:



1. List Info Box contains:
 - a. List parameters
 - b. Edit List tool
 - c. Delete List tool
2. Filters to:
 - a. Enter the license plate number to filter vehicles
 - b. Click the Reset button to clear the filters
3. Add License Plate button to add a license plate number to the list. In the pop-up window:
 - a. Enter the desired license plate number
 - b. Type a comment to the vehicle in the Message field
 - c. Click the Save button
4. Options to import and export the list of vehicle information cards in CSV

See the list of license plate numbers in the table below. It contains:

Name	Message	Author	Created	
9208YX46	htgfdc	admin	22-08-2022 18:39:08	  
C4721SH		admin	22-08-2022 18:44:33	  

- License plate number
- Author's username and comment
- Date and time the number was added to the list
- Toolbox includes:
 - Edit Card
 - Delete Card
 - View Card

Edit Card

To edit the vehicle information card, select the Edit icon on the toolbox:

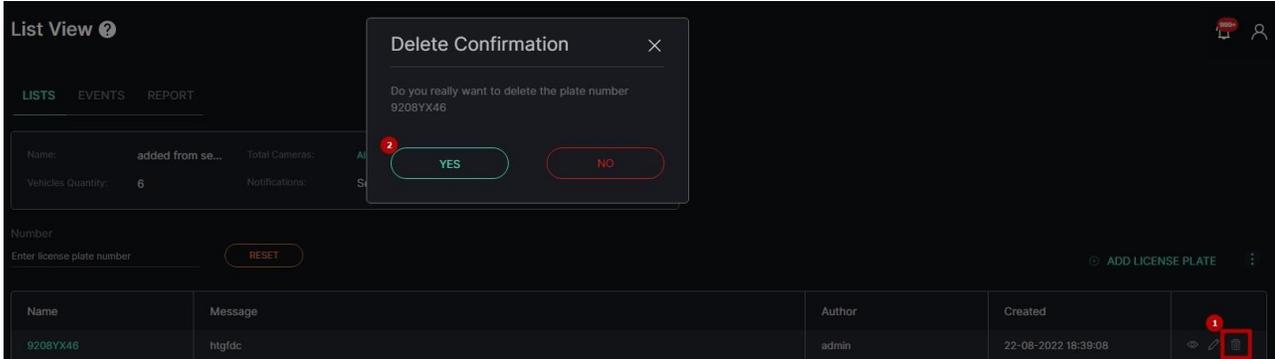
Name	Message	Author	Created	
9208YX46	htgfdc	admin	22-08-2022 18:39:08	  
C4721SH		admin	22-08-2022 18:44:33	  

In the pop-up window:

- Change the license plate number
- Type a comment to the vehicle in the Message field
- Choose another list to move the vehicle card
- Click the Save button

Delete Card

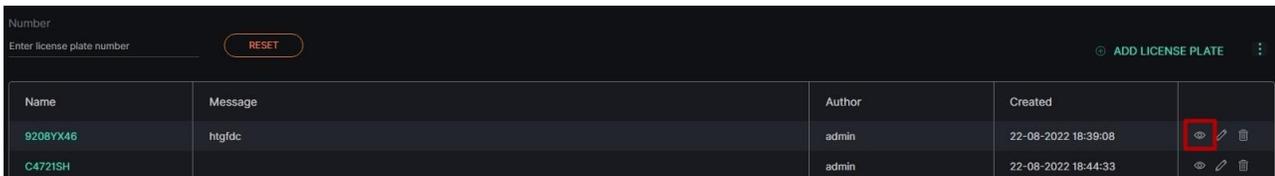
To delete the vehicle card:



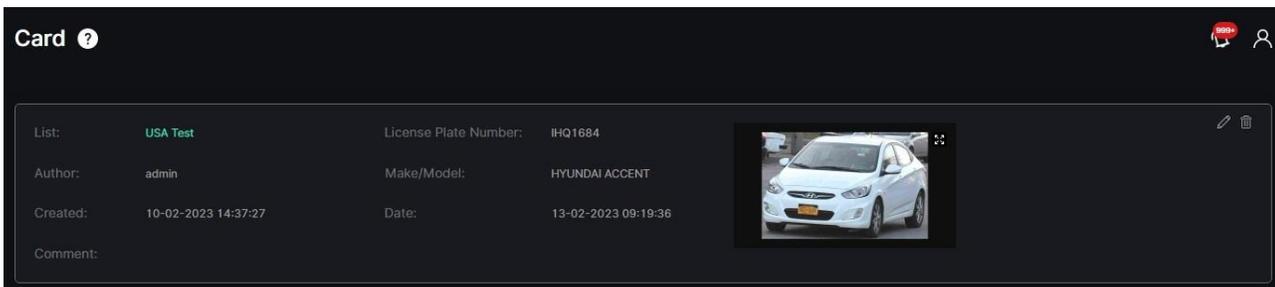
1. Select the Delete icon on the toolbox
2. Confirm the intention

View Card

To view the required vehicle card, select the View icon on the toolbox:



The Card Info Box holds:



- Vehicle info
- Frame with a vehicle
- Enlargement icon over the frame preview to view the image in the full-size
- Edit Card tool
- Delete Card tool

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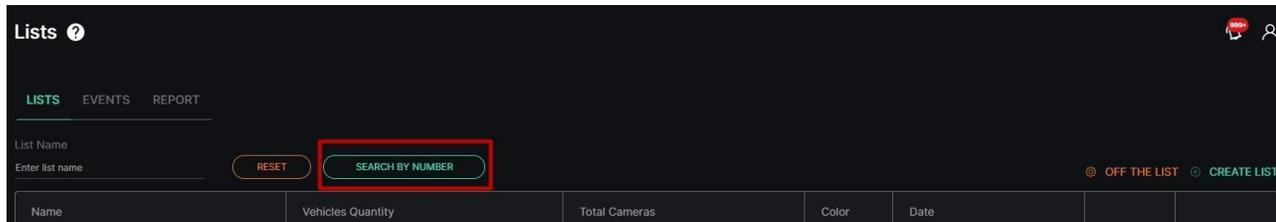
The vehicle's Events Log in the table below allows users to:

Object	Number	Make/Model	Camera	Date	Frame
	IHQ1684	HYUNDAI ACCENT	demo-lpr-usa Route	13-02-2023 09:19:36	
	IHQ1684	HYUNDAI ACCENT	demo-lpr-usa Route	13-02-2023 09:18:48	
	IHQ1684	HYUNDAI ACCENT	demo-lpr-usa Route	10-02-2023 14:38:15	

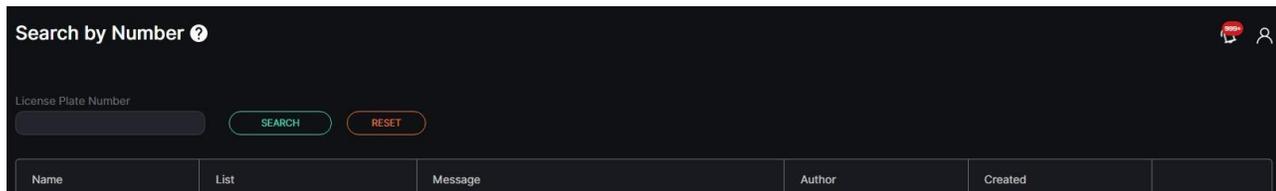
- View recognized vehicle data, date and time the license plate number has been recognized
- View the vehicle route and camera location on the map by clicking the corresponding icons in the Camera column
- Select the View icon to open the frame with the vehicle. To save the frame in full size click the Save Image button in the pop-up window

Search by Number

To quickly find a vehicle card, on the main Lists tab click the Search by Number button:



The Search by Number functional menu allows to:



- Enter the license plate number to filter vehicle cards
- Click the Search button to start filtering
- Click the Reset button to clear the filters

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View the search results in the table below:

Name	List	Message	Author	Created	
AP2888EA			scanlock	11-06-2019 14:51:10	  
EKU9HA7	City 1		scanlock	31-01-2022 10:05:05	  
AA1235TX	Test list		scanlock	23-02-2022 11:56:51	  
AX1445BM	Test list		scanlock	23-02-2022 11:57:09	  
AI4040HP	Test list		scanlock	23-02-2022 11:57:25	  

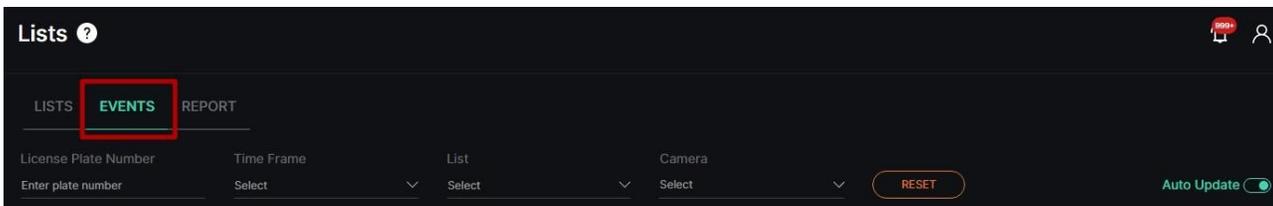
- License plate number
- The name of the list which holds the required number
- Author's username and comment
- Date and time the number was added to the list
- Toolbox includes:
 - Edit Card
 - Delete Card
 - View Card

Lists: Events

 This page includes the Events tab overview and functionality description. The tab displays the events including vehicle and camera data, date and time, and frame with a vehicle.

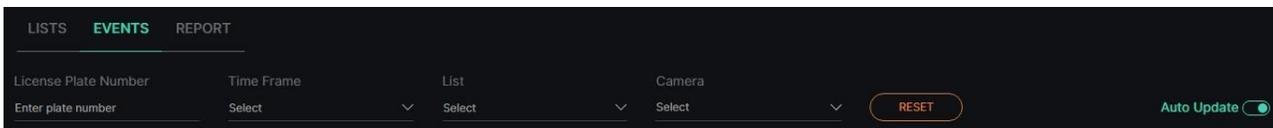
Overview

Select the Events tab in the tab's menu:



Use and Functionality

The Events tab functional menu allows to:



- Enter the license plate number to filter vehicles
- Select the required time frame
- Choose the desired list
- Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button

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- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable the events auto update

Once selected and filtered, in the event notifications:

License Plate Number	Time Frame	List	Camera					
Enter plate number	Select	new	Select	RESET	Auto Update <input type="checkbox"/>			
Number	Comment	List	Camera	Object	Make/Model	Country	Date	Frame
AA8001KX		new	demo-lpr-ua Route	AA 8001KX	TOYOTA HIGHLANDER	UA	03-04-2023 14:58:21	Frame
RJA84337		new	demo-lpr-ua Route	RJA 84337	VOLKSWAGEN SHARAN	PL	03-04-2023 14:58:17	Frame
61171BI		new	demo-lpr-ua Route	611-71BI	VAZ 2107	UA	03-04-2023 14:58:16	Frame
AB2805CM		new	demo-lpr-ua Route	AB 2805 CM	RENAULT MEGANE	UA	03-04-2023 14:58:11	Frame

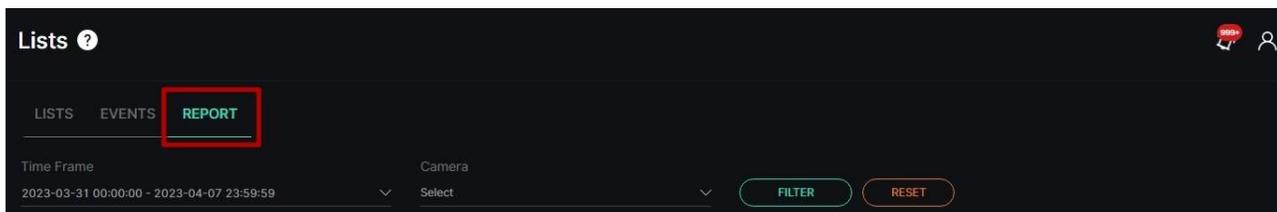
- Click the desired license plate number to open the License Plate Information Card item
- Read the message related to the recognized license plate number
- Click the list name to open the List View item or add a license plate number to the required list by clicking the Add to List button. In the pop-up window:
 - Write a comment to the license plate number in the Notes field
 - Select a required list
 - Click the Save button
- View the vehicle route and camera location on the map by clicking the corresponding icons in the Camera column
- View recognized vehicle data, date and time the license plate number has been recognized by the selected analytics
- Select the View icon to open the frame with the vehicle. To save the frame in the full size click the Save Image button in the pop-up window

Lists: Report

i This page describes the Report tab that allows viewing statistics for vehicles from the lists.

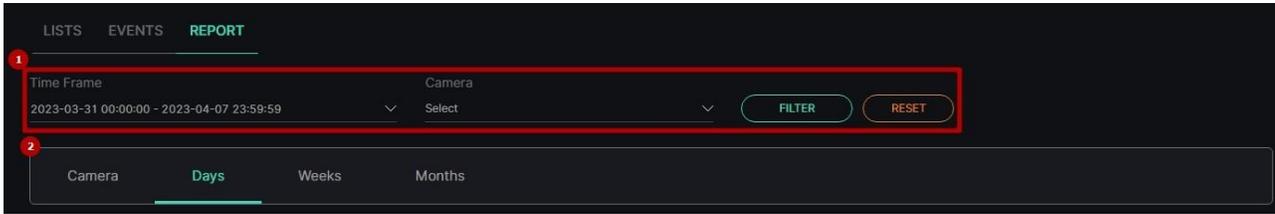
Overview

Select the Report tab in the tab's menu:



Use and Functionality

The Report tab functional menu includes:



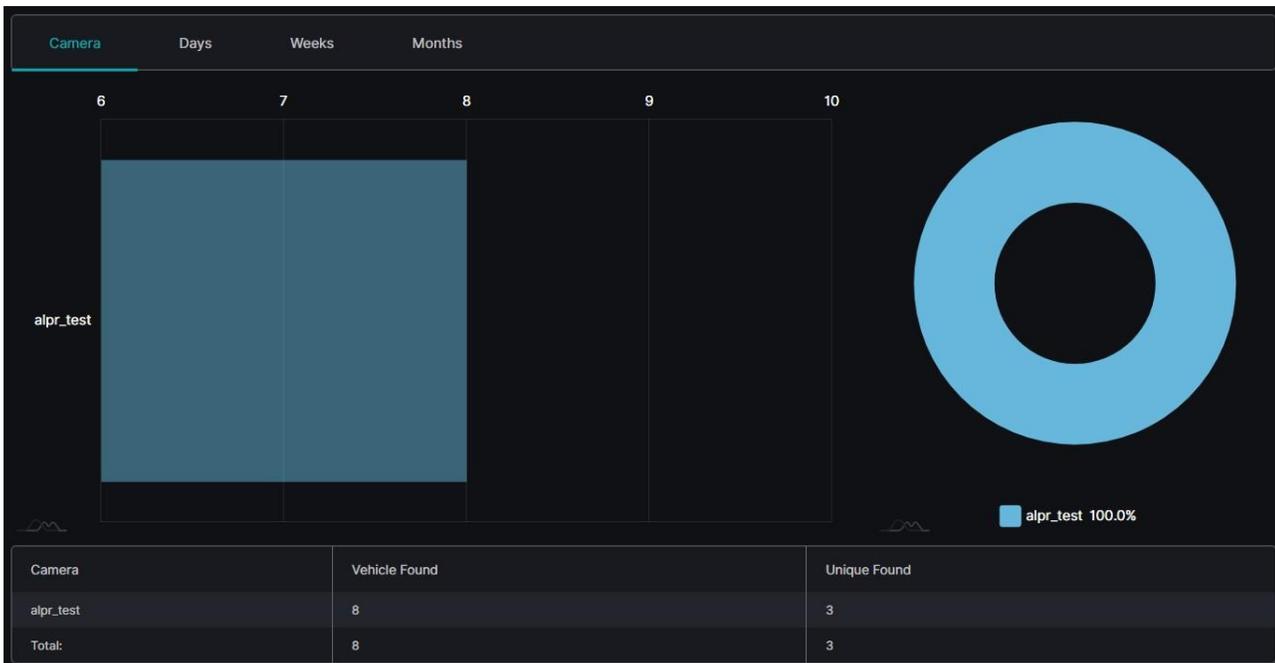
1. Filters to:
 - a. Select the desired time frame to produce statistics
 - b. Click the Camera parameter to choose the desired video analytics. In the pop-up window:
 - i. Check the boxes next to the required video analytics and folders
 - ii. Click the Select Video Analytics button
 - c. Click the Filter button to start filtering
2. Tabs to filter statistics data by:
 - a. Camera
 - b. Days
 - c. Weeks
 - d. Months



The Report tab opens with the Days tab by default.

Camera Tab

The Camera tab shows:



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- Rectangular bars on the bar chart with lengths proportional to the vehicles from lists quantity detected by selected cameras
- Slices on the donut chart with the amount of the found by selected cameras vehicles from lists in percentage
- Table columns by selected cameras, detected vehicles from lists, and unique vehicles (detected by the desired camera or by all cameras in general)

- 💡 • Vehicle Found column counts every time the vehicle from the lists was detected by the camera.
- The Unique Found column counts only detected unique vehicle numbers from the lists. The unique vehicle number is counted only once for the selected time frame.

Days Tab

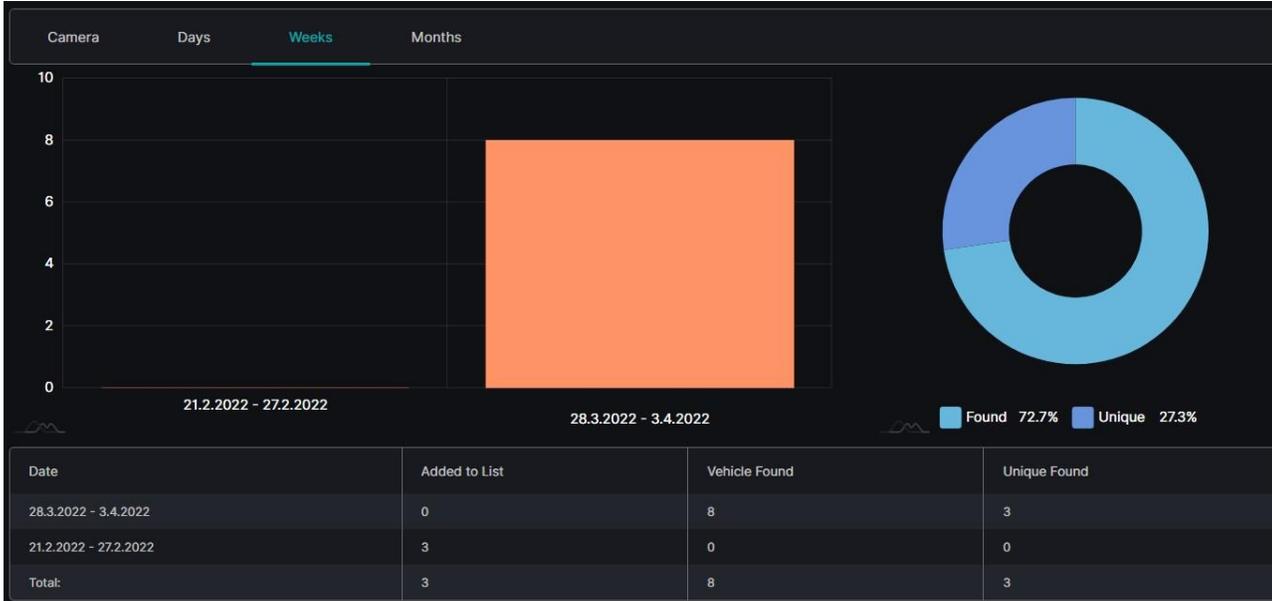
The Days tab shows:



- Columns on the combo chart with heights proportional to the number of vehicles from the lists (scale with numbers to the left of the graph) detected within the required date
- Checkpoints on the combo chart by vehicles quantity (scale with numbers to the right of the graph) added to the list within the required date
- Slices on the donut chart with the amount of the total found and unique vehicles from lists in percentage
- Table columns by date, number of vehicles added to the lists, detected vehicles from lists, and unique vehicles (detected by the desired camera or by all cameras in general)

Weeks and Months Tab

The Weeks tab shows:



- Columns on the column chart with heights proportional to the number of vehicles from the lists detected within the required weeks
- Slices on the donut chart with the amount of the total found and unique vehicles from lists in percentage
- Table columns by weeks, number of vehicles added to the lists, detected vehicles from lists, and unique vehicles (detected by the desired camera or by all cameras in general)

💡

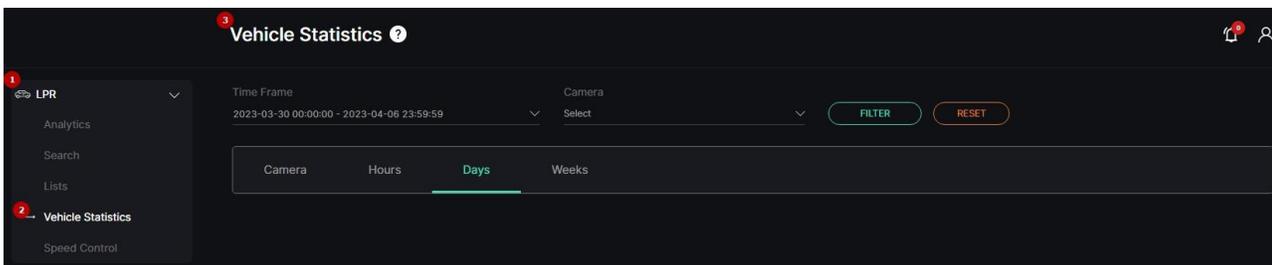
- Hover the mouse over the graphs to see the object quantity and amount.
- The Months tab content differs with the usage of month time intervals instead of weeks.

LPR: Vehicle Statistics

📘 This page describes the Vehicle Statistics item that allows viewing statistics from the selected video stream.

Overview

To open the Vehicle Statistics item, in the left menu:

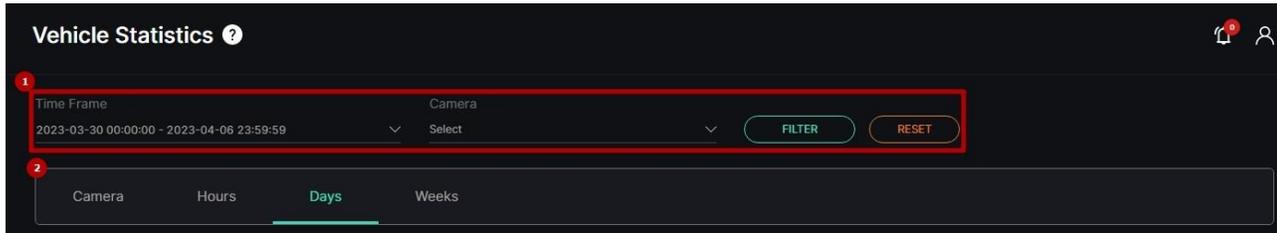


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1. Select LPR section
2. Choose Vehicle Statistics item
3. See statistics

Use and Functionality

The Vehicle Statistics functional menu includes:



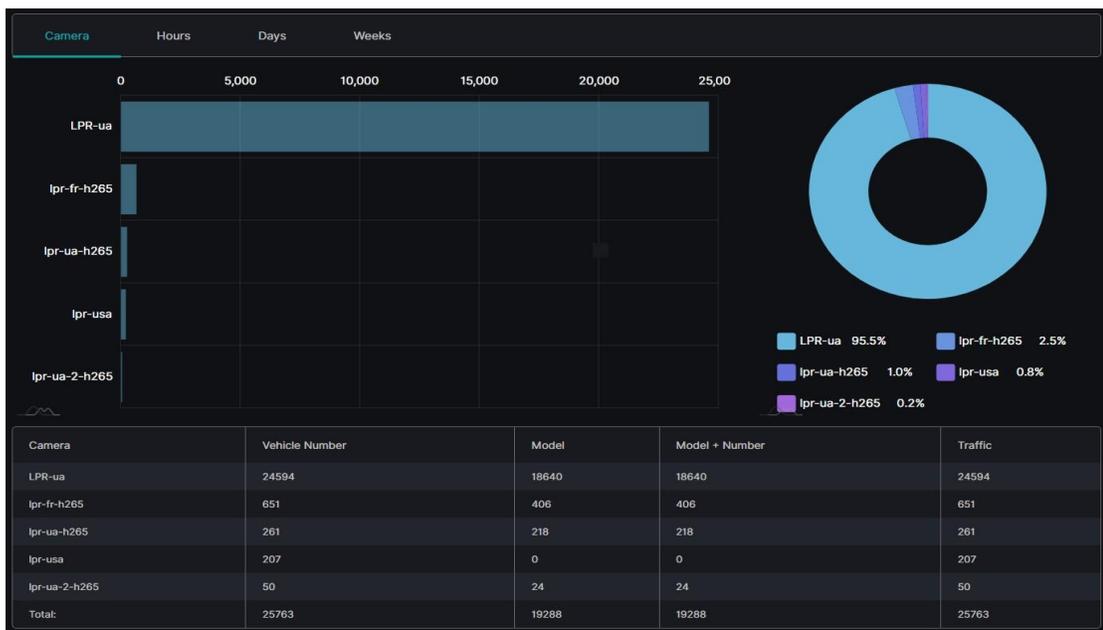
1. Filters to:
 - a. Select the desired time frame to produce statistics
 - b. Click the Camera parameter to choose the desired video analytics. In the pop-up window:
 - i. Check the boxes next to the required video analytics and folders
 - ii. Click the Select Video Analytics button
 - c. Click the Filter button to start filtering
2. Tabs to filter statistics data by:
 - a. Camera
 - b. Hours
 - c. Days
 - d. Weeks



The Vehicle Statistics item opens with the Days tab by default.

Camera Tab

The Camera tab shows:



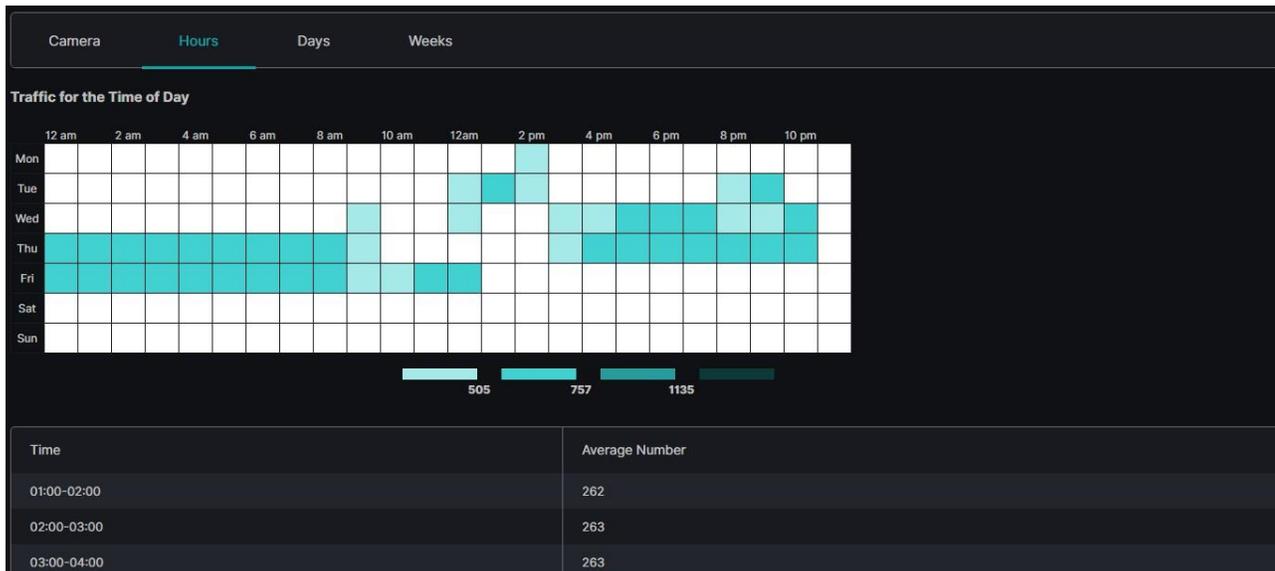
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Rectangular bars on the bar chart with lengths proportional to the vehicle quantity detected by selected cameras
 Slices on the donut chart with the amount of the found by selected cameras vehicles in percentage
 Table columns by selected cameras, detected vehicle number and model, as well as their total number detected by the desired camera or by all cameras in general

💡 Hover the mouse over the donut chart's slices to see the found vehicle quantity and amount by a required camera.

Hours Tab

The Hours tab shows:



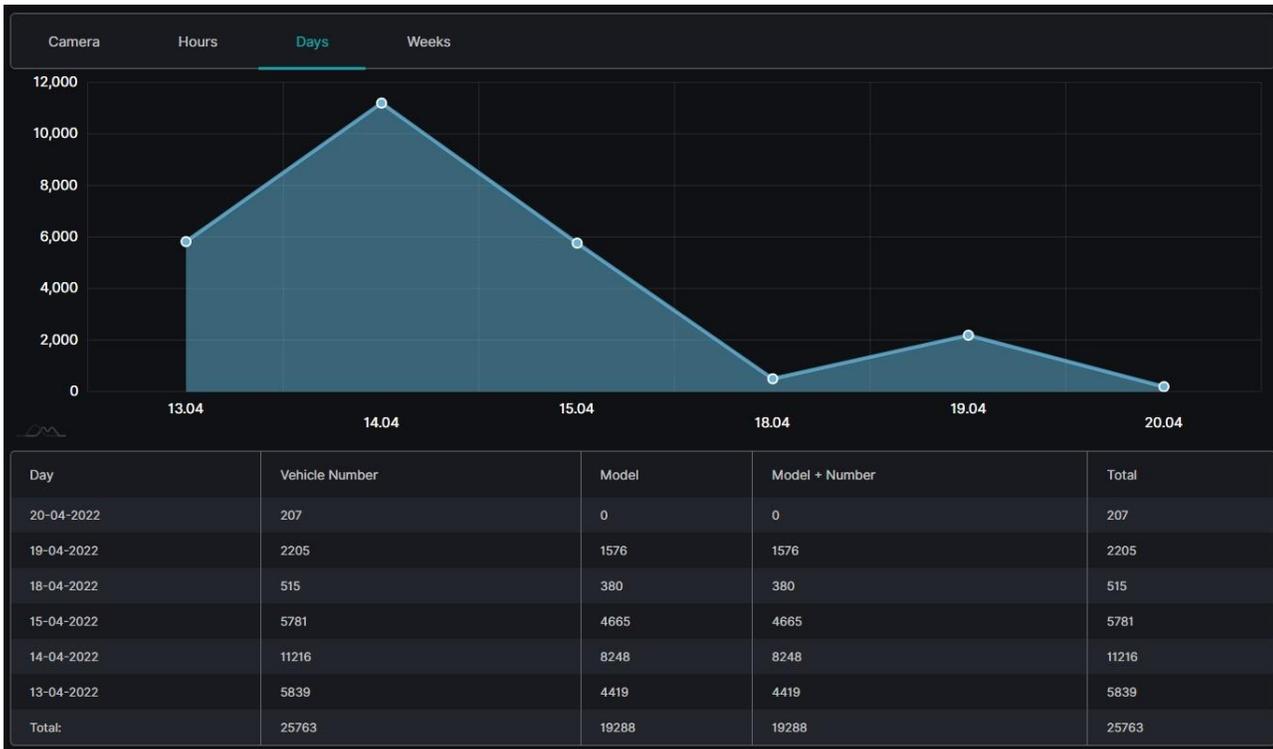
- Table chart with the number of the vehicles by hours and days of a week
- Table with Time and Average Number columns

💡 Hover the mouse over the colored squares to see the found vehicle quantity for the required time interval.

Days Tab

The Days tab shows:

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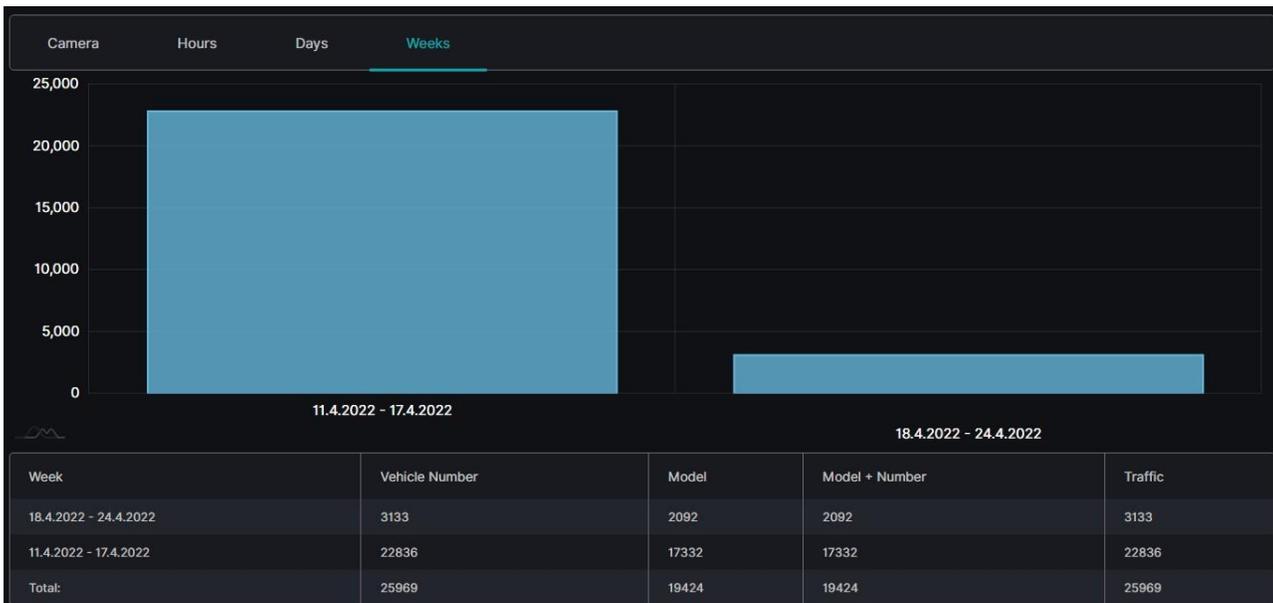


- Checkpoints on the area chart by found vehicle quantity and date
- Table columns by date, detected vehicle number and model, as well as their total number for a specific day or for a required time frame in general

 Hover the mouse over the checkpoints to see the found vehicle quantity for a required date.

Weeks Tab

The Weeks tab shows:



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- Columns on the column chart with heights proportional to the vehicle quantity detected during the required weeks
- Table columns by weeks, detected vehicle number and model, as well as their total number for a specific week or for a required time frame in general

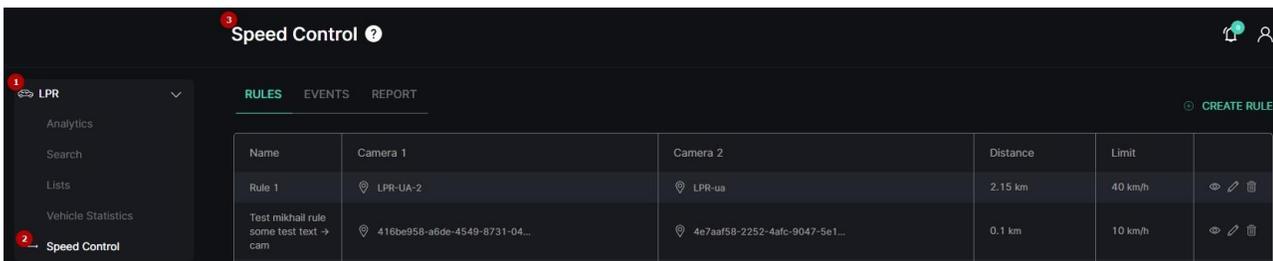
 Hover the mouse over the chart columns to see the found vehicle quantity for a required week.

LPR: Speed Control

 This section describes the Speed Control item that allows managing speed rules and viewing events and statistics on the recognized vehicles' average speed by selected rules.

Overview

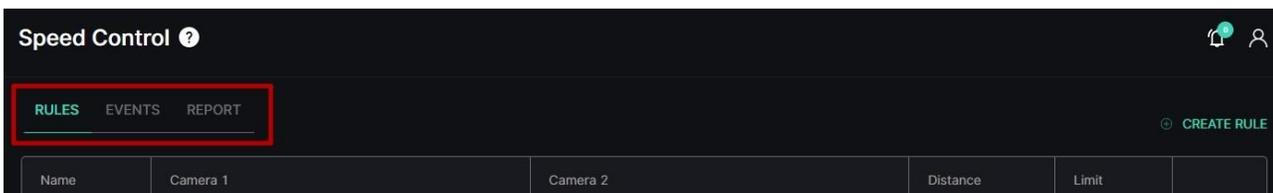
To open the Speed Control item, in the left menu:



1. Select LPR section
2. Choose the Speed Control item
3. See the speed control navigational menu

Use and Functionality

The Speed Control navigational menu consists of 3 tabs:



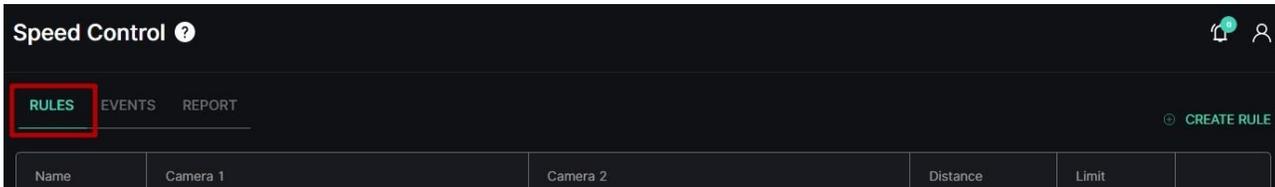
 • Speed Control item opens with the Rules tab by default.
• The selected tab is always highlighted.

Speed Control: Rules

i This page includes the Rules tab overview and options to set the rules for average vehicle speed counting.

Overview

Select the Rules tab in the tab's menu:



Use and Functionality

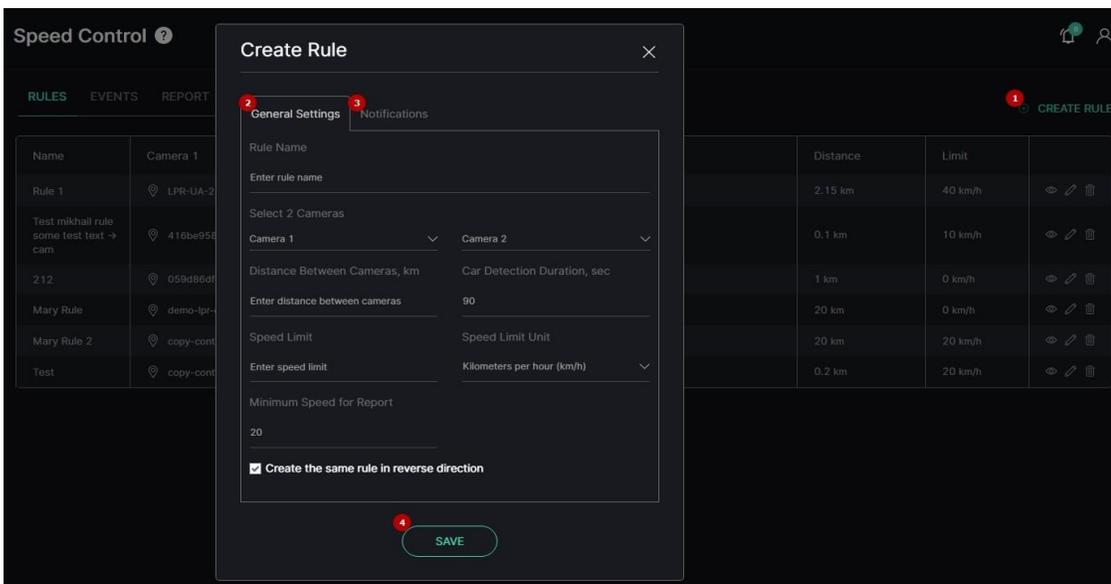
See the list of rules in the table. It holds:

Name	Camera 1	Camera 2	Distance	Limit	
rule test	Motorbike	London traffic	6 km	65 km/h	
rule test	London traffic	Motorbike	6 km	65 km/h	

- Rule name
- Pair of selected cameras for vehicle recognition
- Road distance between the selected cameras
- Speed limit, exceeding which triggers an event notification
- Toolbox includes:
 - View Events icon to see all events related to the selected rule
 - Edit icon to change the selected rule settings
 - Delete icon to remove the selected rule

Create Rule

To create a new rule:



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1. Click the Create Rule button
2. Set the required parameters in the General Settings tab:
 - a. Enter the new rule name
 - b. Select cameras for vehicle recognition
 - c. Enter the distance between the selected cameras in kilometers
 - d. Enter the maximum time in seconds for which the vehicle is supposed to overcome the distance between the selected cameras
 - e. Enter the vehicle speed limit, exceeding which triggers a speeding record in the Events tab
 - f. Select speed units (km/h or mi/h) from the drop-down list
 - g. Enter the minimum vehicle speed for displaying in the Report tab
 - h. Check the Create the Same Rule in Reverse Direction box to create one extra rule with the same parameters but with the reverse route between the selected cameras
3. Check the Send Events to Event Manager box in the Notifications tab to allow the system to send all rule events notifications to the Event Manager and then to external resources
4. Click the Save button to apply settings

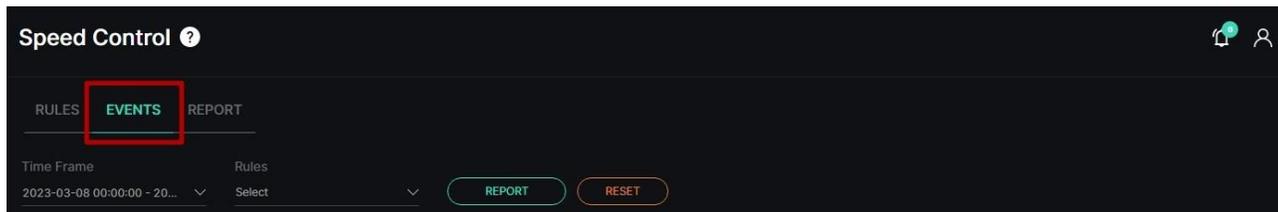
 The Edit Rule pop-up window allows editing the same parameters, except for the Create the Same Rule in Reverse Direction checkbox.

Speed Control: Events

 This page describes the Events tab that allows viewing the average speed of the recognized vehicles by the selected rule.

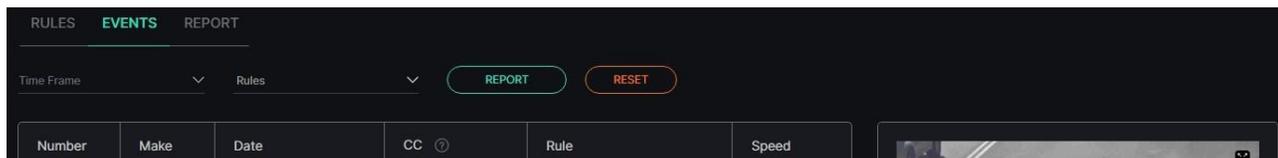
Overview

Select the Events tab in the tab's menu:



Use and Functionality

The Events tab functional menu allows to:



- Set the required time frame
- Select multiple rules from the drop-down list
- Click the Report button to start filtering
- Click the Reset button to clear the filters

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Once selected and filtered, in the event notifications:

Number	Make	Date	CC	Rule	Speed
AB3070CM	RENAULT SANDERO STEPWAY	13-05-2022 15:15:21	UA	2	5.0 km/h
AB6292HI		13-05-2022 15:14:46	UA	2	5.0 km/h
AB1439EK	PEUGEOT 3008	13-05-2022 15:14:12	UA	2	5.0 km/h
AB9003AM		13-05-2022 15:13:36	UA	2	5.0 km/h
BX7663CX		13-05-2022 15:13:03	UA	2	5.0 km/h
AB1545EH	AUDI A4	13-05-2022 15:13:01	UA	2	5.0 km/h
AB8151EC	MITSUBISHI PAJERO SPORT	13-05-2022 15:12:26	UA	2	5.0 km/h
AB7773AA	BMW 5 SERIES	13-05-2022 15:12:25	UA	2	5.0 km/h
KA8510BC	CHEVROLET LACETTI	13-05-2022 15:11:52	UA	2	5.0 km/h
AB7049AC	FORD ECONOLINE	13-05-2022 15:11:19	UA	2	5.0 km/h
AB8059BE	SSANGYONG KORANDO	13-05-2022 15:11:16	UA	2	5.0 km/h
AB1747HI	FORD ECOSPORT	13-05-2022 15:11:14	UA	2	5.0 km/h
AM1514EB	HYUNDAI I30	13-05-2022 15:11:12	UA	2	5.0 km/h

The interface also includes a 'Time Frame' dropdown set to '2', 'REPORT' and 'RESET' buttons, and two camera frame previews. The top preview is labeled 'Camera: Smart Parking input' with a timestamp of '13-05-2022 15:09:36'. The bottom preview is labeled 'Camera: Smart Parking output' with a timestamp of '13-05-2022 15:15:21'. Both previews show a white SUV in a parking lot with an enlargement icon in the top right corner.

- View recognized vehicle data, date and time the vehicle has been recognized by the second selected camera in the rule, rule name, and average vehicle speed
- Click the row in the table with the desired license plate number to view the frame preview from the route entry and exit cameras in the selected rule
- Select the enlargement icon in the upper-right corner of the frame preview to open the image
- See the extended vehicle data in the pop-up window and save the image in the full-size

Speed Control: Report

i This page describes the Report tab that allows viewing average speed statistics from the selected rule.

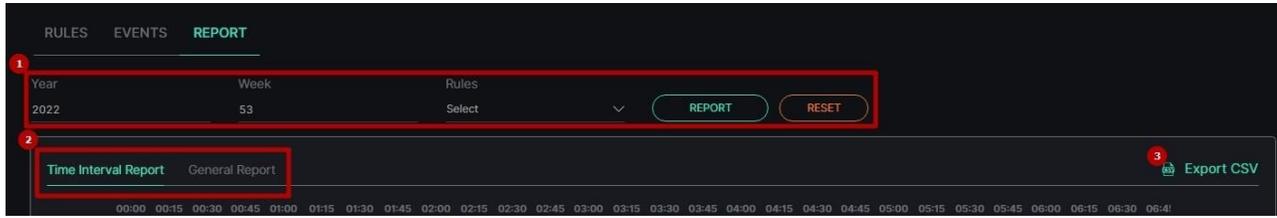
Overview

Select the Report tab in the tab's menu:

The screenshot shows the 'Speed Control' interface with a navigation menu at the top containing 'RULES', 'EVENTS', and 'REPORT'. The 'REPORT' tab is highlighted with a red box. Below the menu, there are filters for 'Year' (2023) and 'Week' (14), and a 'Rules' dropdown menu. At the bottom, there are 'REPORT' and 'RESET' buttons.

Use and Functionality

The Report tab functional menu includes:



1. Filters to:
 - a. Enter the required year and week
 - b. Select multiple rules from the drop-down list
 - c. Click the Report button to start filtering
 - d. Click the Reset button to clear the filters
2. Tabs to display statistics in:
 - a. Time Interval Report
 - b. General Report
3. Export choice to download the speed report in the CSV format

- The Time Frame filter is enabled only for the General Report tab.
- The Export option is available only for the Time Interval Report tab.

Time Interval Report Tab

The Time Interval Report shows:

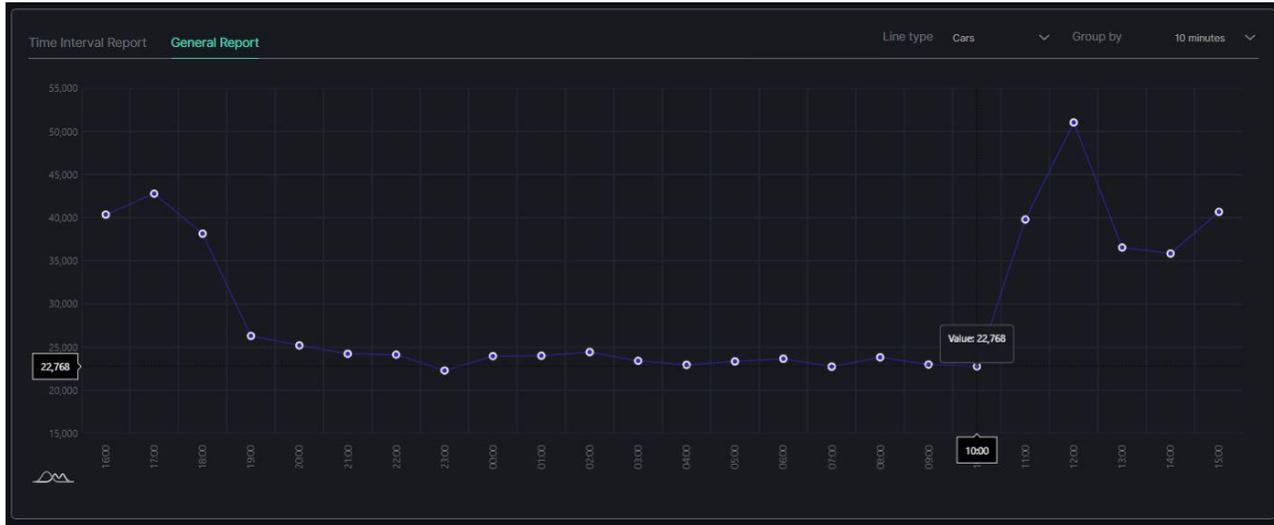


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- Table chart with the number of vehicles and average speed by 15 minutes time intervals and days of a week
- Table with columns by 15 minutes time intervals and rows by days of the week, number of vehicles, and average speed

General Report Tab

The General Report allows to:



- Select the Line Type parameter from a drop-down list that the curve displays on the graph:
 - Average speed (km/h)
 - Average speed (mi/h)
 - Car's quantity
- Select the desired time intervals from a Group By drop-down list to set the intervals between the graph breakpoints
- Hover the mouse over the desired breakpoint on the graph to view the specific statistics data

Military Detection

Introduction

Use this guide to understand the interface and features of the Military Detection plugin and learn how to utilize it for the best result.

What Is Military Detection?

Military Detection effectively recognizes multiple types of military equipment in real-time, using existing cameras and hardware. The plugin helps to detect military equipment in advance and reduce potential security risks with a prompt alarm and notification system, depending on the time frame and the rules settings.

Primary Capabilities

Military Detection is capable to:

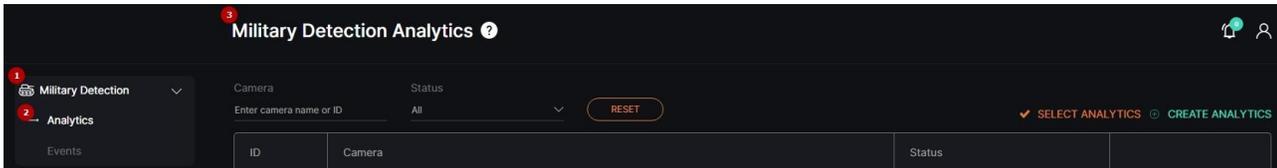
- Determinate the military equipment type (tank, armoured vehicle, MRL)
- Check the presence or absence of military equipment within a specified time frame in the selected area
- Effectively detect military equipment among the objects of the environment, triggering only on those that present a threat

Military Detection: Analytics

i This page includes the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

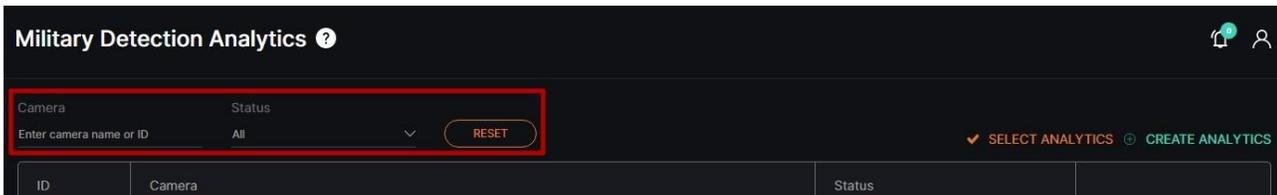
To open the Analytics item, in the left menu:



1. Select the Military Detection section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Military Detection Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

💡 The status options include All, Active, and Stopped.

See the list of analytics in the table below. It holds:

ID	Camera	Status	
1	Test Folder		
469	demo_street GPU H.264 - NVDEC FPS	Stopped	START
16	Military		
477	military v1 GPU H.264 - NVDEC 25 FPS	00:00:00 00:01:18	START
476	military v5 GPU H.264 - NVDEC 25 FPS	Active (20s / 7)	STOP
462	Gunshots-Fired-at-Gas-Station GPU H.264 - NVDEC 25 FPS	Stopped	START

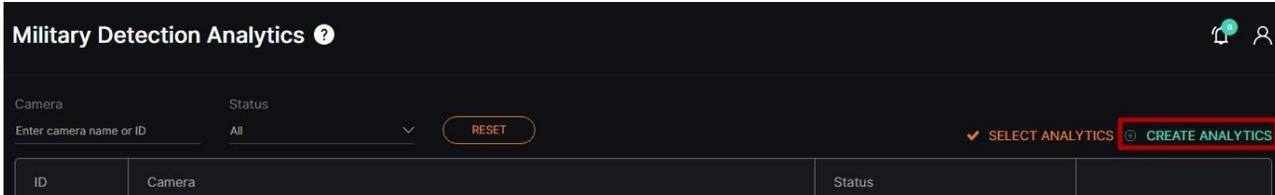
- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - Additional hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Events
 - View
 - Delete

 • To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).

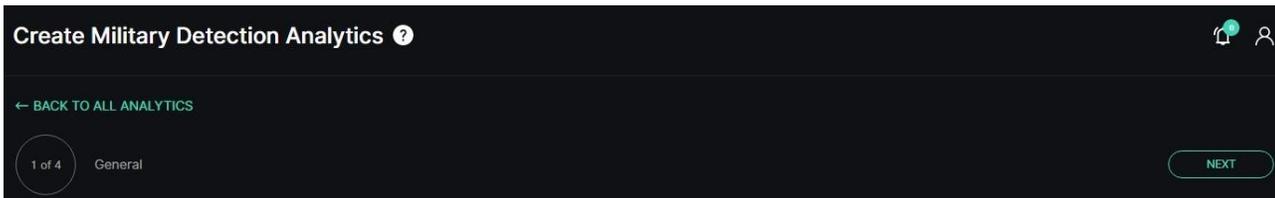
• To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

Create Analytics

To create new analytics, click the Create Analytics button:



The Create Military Detection Analytics navigation menu allows to:

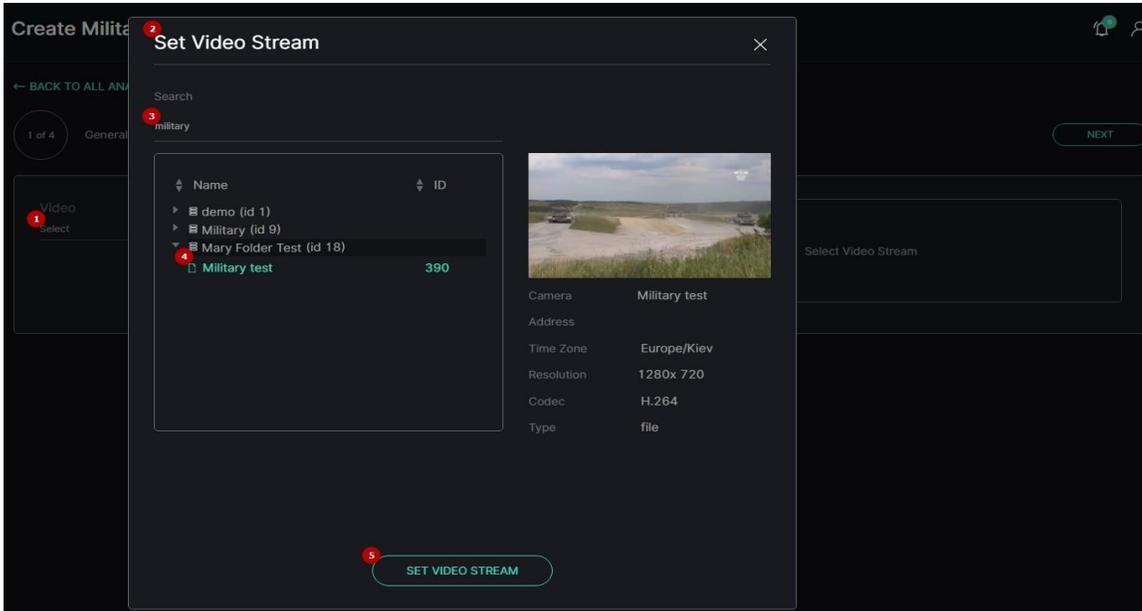


- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

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General Tab

The General tab supplies the ability to set a video stream and customize analytics parameters. To set a video stream:

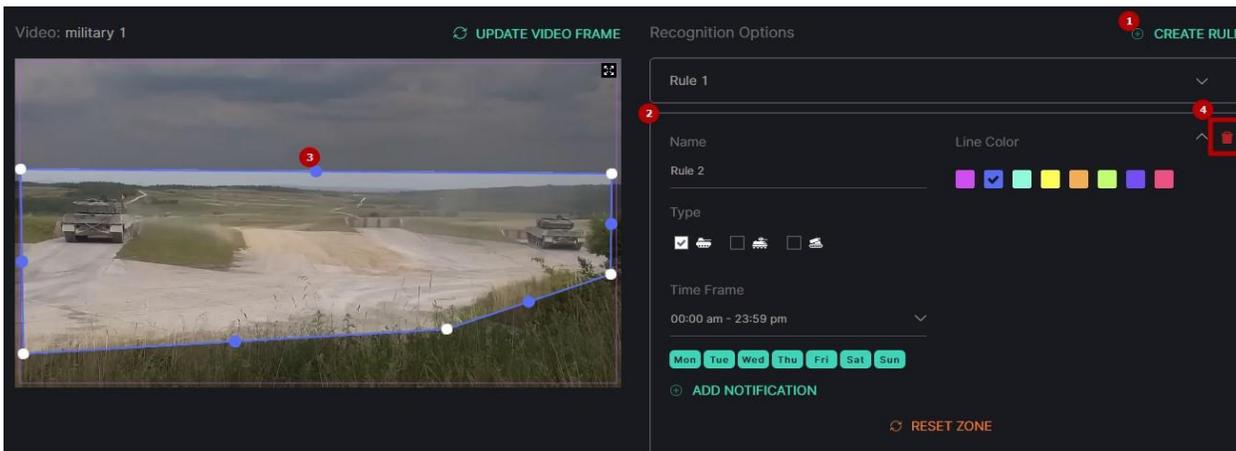


1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

To perform the recognition, apply these recognition options:



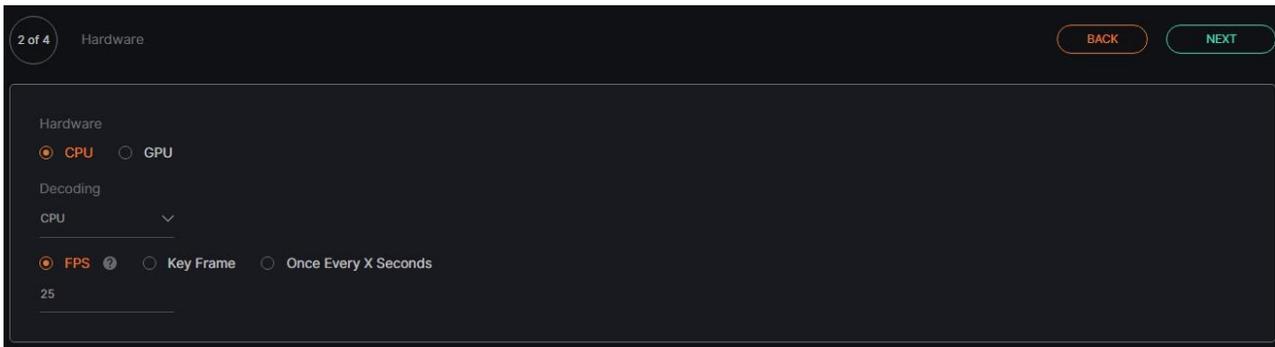
1. Select the Create Rule button to create a new rule
2. Set the notification parameters:
 - a. Enter the rule name
 - b. Select the color of the detection zone
 - c. Select the required checkboxes to set military equipment types (tanks, armored vehicles, MRL)
 - d. Select the required time frame
 - e. Select days of the week to receive the specified notifications
 - f. Click the Add Notification button to create multiple rule notifications
 - g. Click the Delete icon to remove the notification
3. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to remove it
 - d. Click the Reset Zone button to return the recognition area borders to their original position
4. Select the red Delete icon to remove the required rule section



- All days of the week are selected by default. Buttons become grey when deselected.
- The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab supplies the ability to customize hardware parameters:



- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

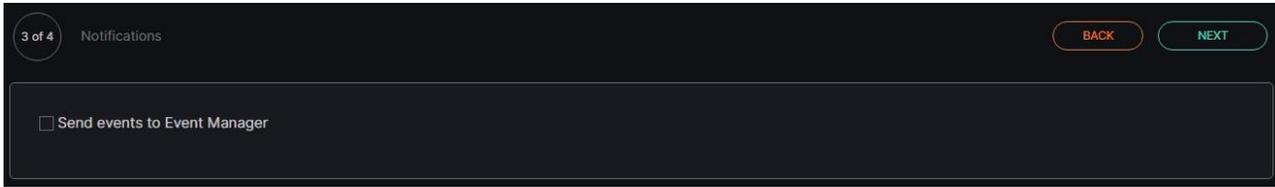


- The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

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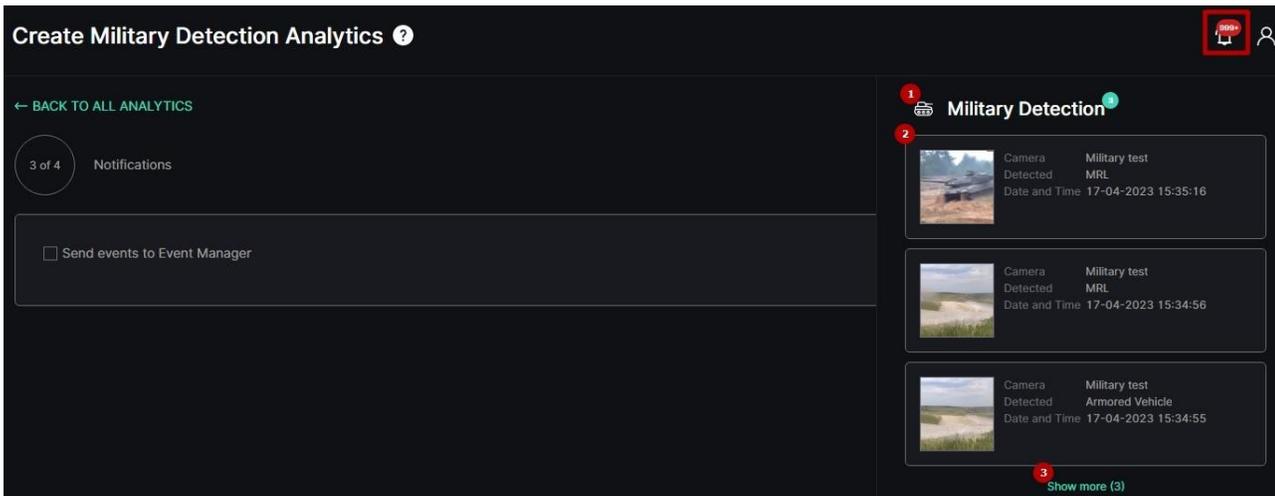
Notifications Tab

The Notifications tab allows managing the events notifications. Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources:



 The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.

Once the analytics is created and enabled, the Notification icon signals about each new event notification. Click the Notification icon to open the Notification Panel. It comprises:



1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
 - b. Clear all plugin event notifications at once from the Notification Panel by clicking the Close button (this action doesn't affect events in the Events item)
2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
3. Show More button with the total events number to open the Events item and view all events

Permissions Tab

The Permissions tab supplies the ability to:

The screenshot shows a dark-themed interface for managing permissions. At the top left, it says '4 of 4 Permissions'. At the top right, there are 'BACK' and 'SAVE' buttons. The interface is divided into two main sections: 'Roles' and 'Users'. Each section has a table with columns for 'Role Name' or 'User Name', 'Start Analytics', 'Stop Analytics', 'Edit Analytics', 'Live View', and 'View Analytics Events'. In the 'Roles' section, there is one role named 'Test Role' with checkboxes for 'Start Analytics' and 'Stop Analytics' checked, and 'Edit Analytics', 'Live View', and 'View Analytics Events' unchecked. Below the table is an 'Add Role' section with a dropdown menu for 'Select role' and an 'ADD ROLE' button. The 'Users' section has a similar table with one user named 'Test2' and checkboxes for 'Start Analytics' and 'Stop Analytics' unchecked, and 'Edit Analytics', 'Live View', and 'View Analytics Events' checked. Below the table is an 'Add User' section with a dropdown menu for 'Select user' and an 'ADD USER' button. At the bottom, there is a 'Default (Not active)' section with a table where all checkboxes are checked.

- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu



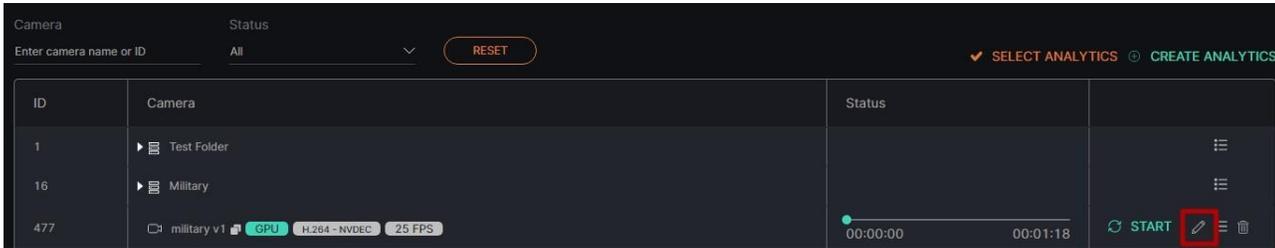
- The default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users is not limited

Once saved, the Military Detection Analytics editor opens to allow the users to:

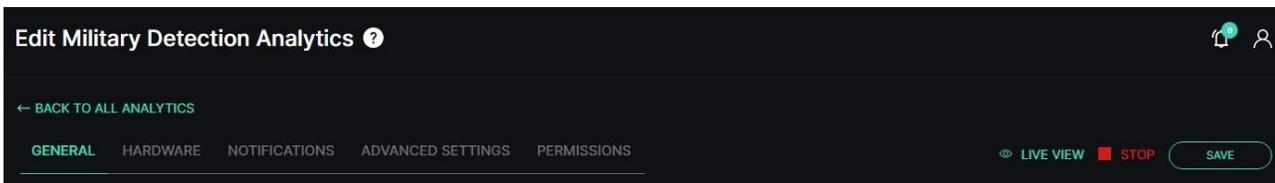
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Military Detection Analytics navigation menu allows to:



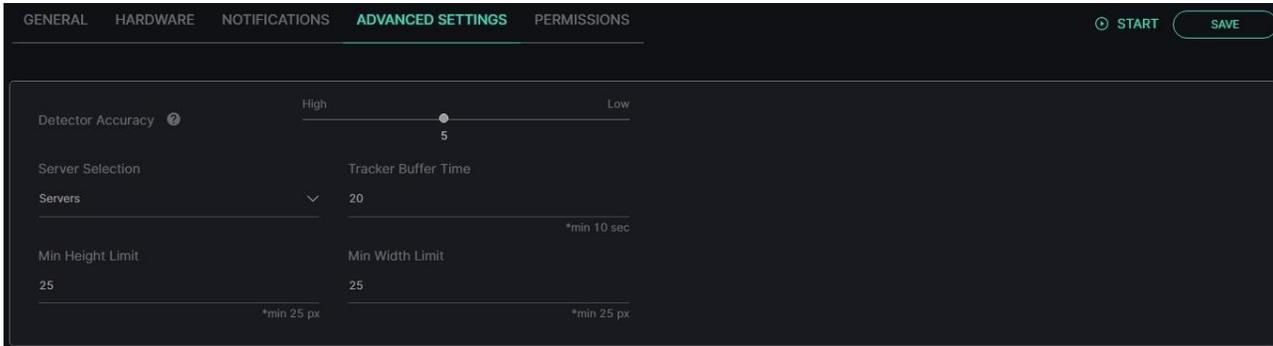
- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the chosen analytics

- 💡 • The current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.
- The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics206](#).

Advanced Settings Tab

The Advanced Settings tab allows the users to:

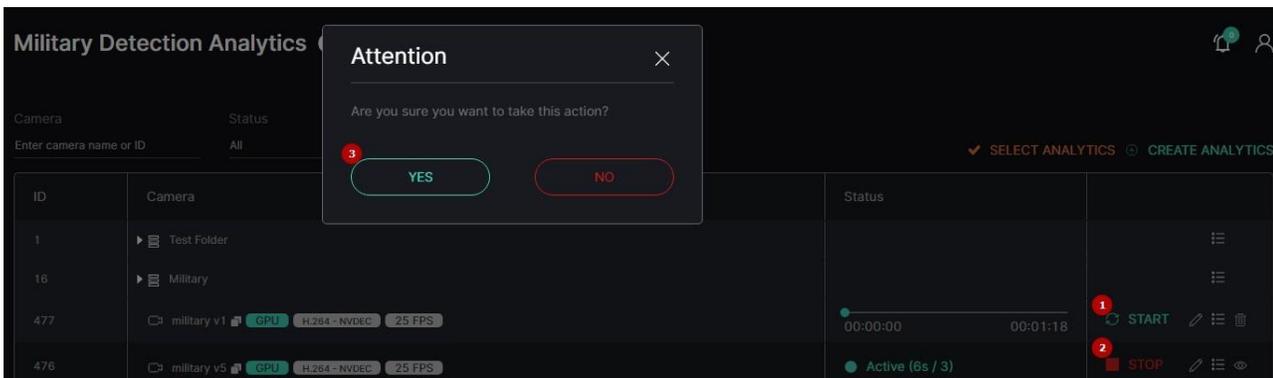


- Move the slider to the left (to increase) or to the right (to decrease) the detector accuracy
- Select a server from the drop-down list to run the analytics
- Enter the recognized object storage time in the buffer (in seconds)
- Set the minimum height of an object for recognition (in pixels)
- Set the minimum width of an object for recognition (in pixels)

- The Detector Accuracy setting is determined by the parameters of the original image.
- A High value is recommended for a low-quality image to increase the detection probability, and a Low value is better for a high-quality image to avoid false detection. The possible range is 1 to 10, the value is 5 by default.
- The minimum value for the Tracker Buffer Time parameter is 10 sec. The default value is 20 sec.
- The minimum value for the Min Height Limit is 25 pixels. The default value is 25 pixels. The maximum value is limited by the frame height.
- The minimum value for the Min Width Limit is 25 pixels. The default value is 25 pixels. The maximum value is limited by the frame width.
- Default parameters allow the production of analytics. To customize the analytics, set parameters as required.

Analytics Status

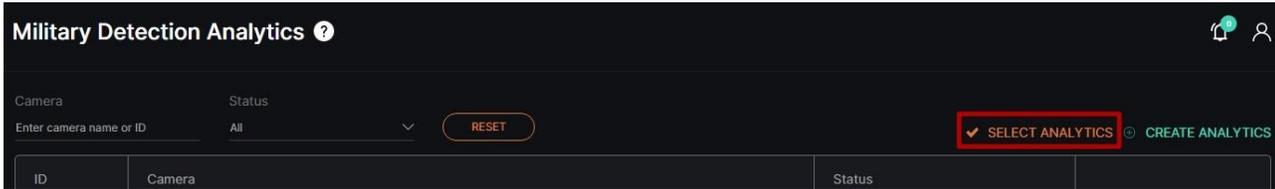
To enable or disable the analytics and view the change of the analytics status:



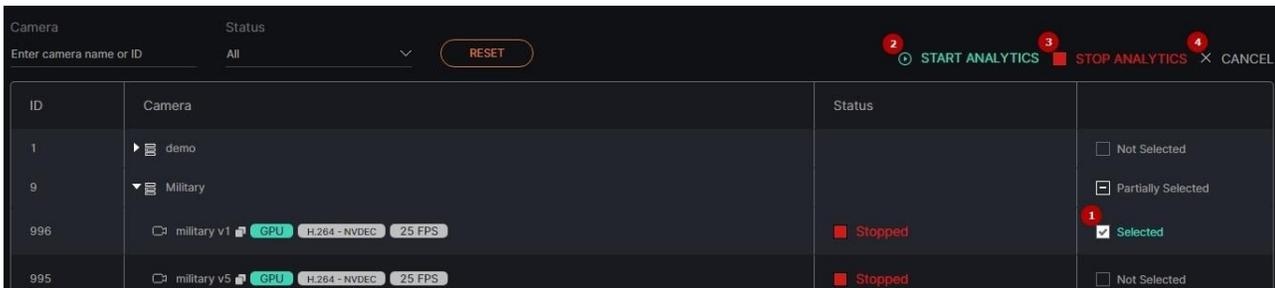
- Select the Start button to enable the analytics
- Click the Stop button to disable the analytics process
- Confirm the intention

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To enable or disable multiple analytics at once, click the Select Analytics button:



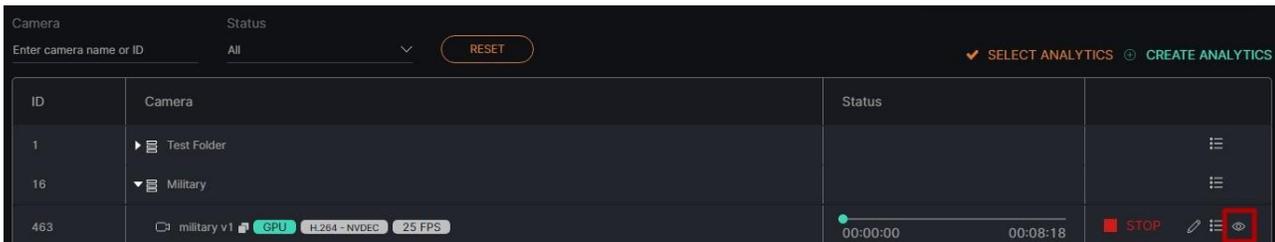
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics choice

View Analytics

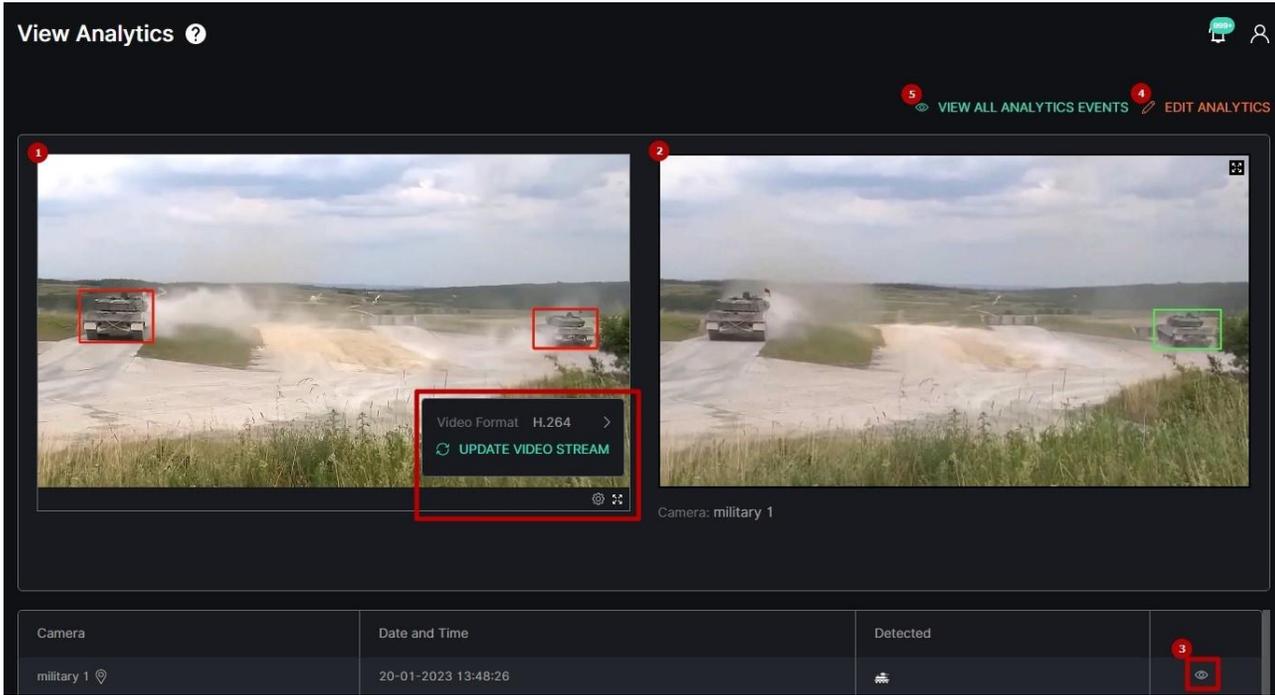
To see the selected analytics in real-time, click the View icon on the toolbox:



The View icon becomes available only when selected analytics is active.

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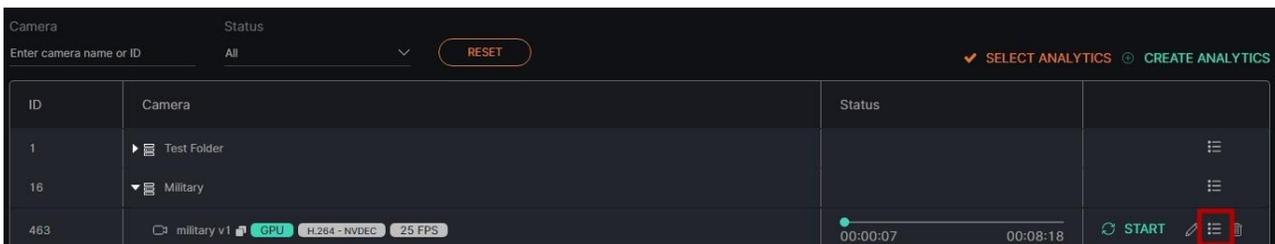
Live view analytics mode allows to:



1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View the frame preview with detected military equipment
3. Select the View icon in the table below to open the image with detected military equipment in full size and save it
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics

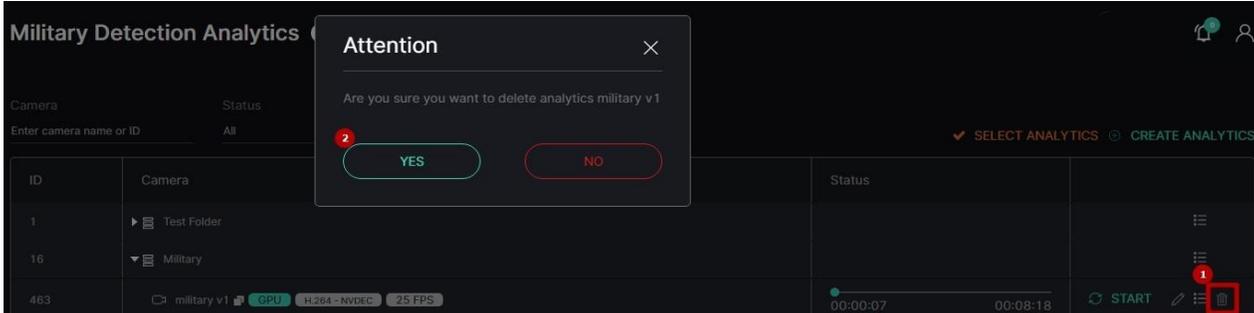
View Events

To view selected analytics events in the Analytics item, click the Events icon on the toolbox:



Delete Analytics

To remove the analytics:



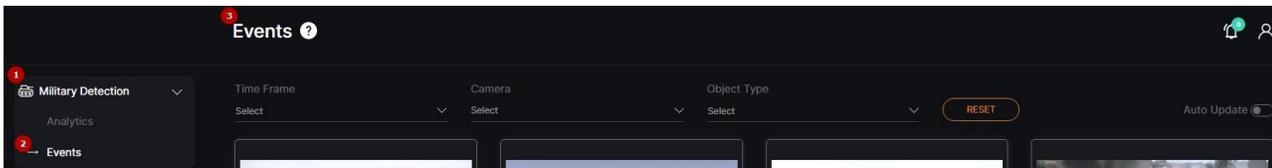
1. Select the Delete icon on the toolbox
2. Confirm the intention

Military Detection: Events

i This page includes the Events item overview and functionality description. The item displays the event notifications including a frame, camera, date, time, and detected military equipment type.

Overview

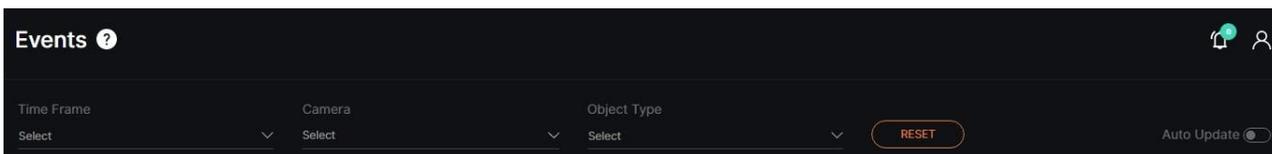
To open the Events item, in the left menu:



1. Select the Military Detection section
2. Choose the Events item
3. See event notifications

Use and Functionality

The Events functional menu allows to:

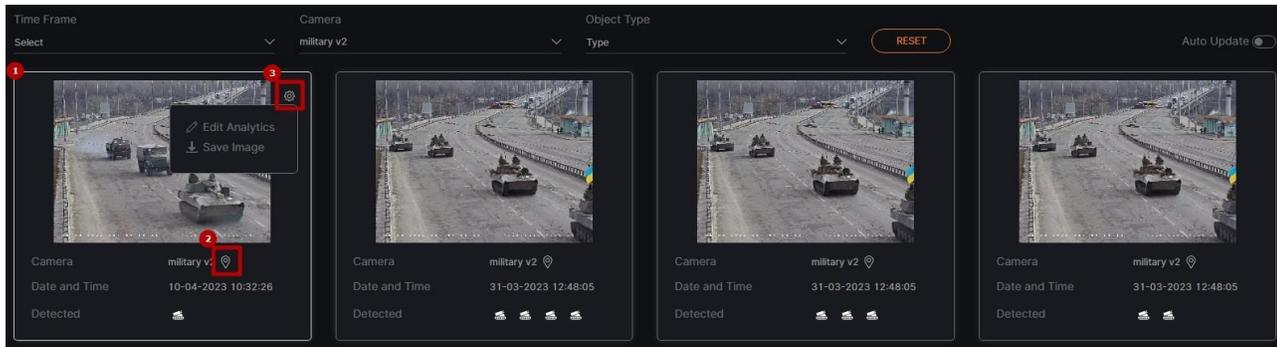


- Select the required events time frame
- Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Select military equipment type:
 - Tanks
 - Armored Vehicles
 - MRL

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- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable auto update of the event notifications

Once selected and filtered, in the events:



1. View the frame preview and information about the event. To filter events by the recognized data, in the required event block:
 - a. Click the camera name to filter events only by the camera related to the event
 - b. Click the date to filter events only by the date related to the event
 - c. Click the military equipment type icon to filter events only by the selected military equipment type related to the event
2. View the camera location on the map by clicking the View Geolocation icon
3. Hover the mouse over the event block and select the Extra Options icon. In the drop-down menu:
 - a. Click the Edit Analytics button to make changes to the settings of the analytics which is related to the selected event
 - b. Click the Save Image button to download the event frame in full size

 Click the frame preview to open the image and see the event information.

Motion Detection

Introduction

Use this guide to understand the interface and features of the Motion Detection plugin and learn how to use it for the best result.

What Is Motion Detection?

Motion Detection helps to analyze moving objects using different rules within predefined areas. It recognizes the object size, determines the object's movement, and differentiates the perspectives.

Primary Capabilities

Motion Detection is capable to:

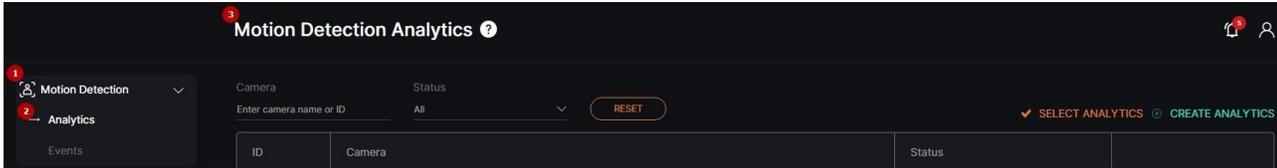
- Find the intrusion into a specific zone
- Find the suspicious loitering within the specific zone
- Find the left objects in the public places
- Find the disappearance of an object from a specific zone
- Find the object crossing the set line
- Find the camera sabotage

Motion Detection: Analytics

i This page includes the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

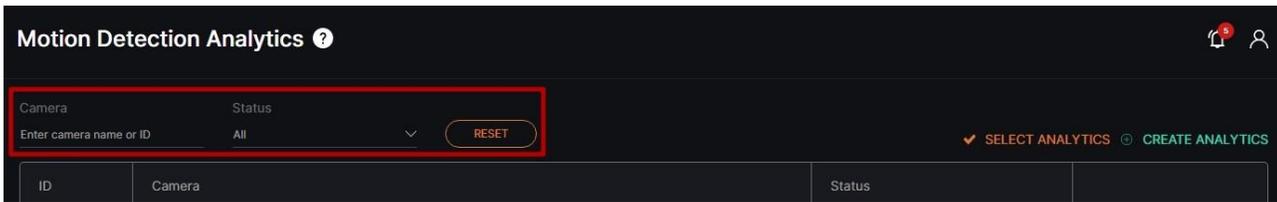
To open the Analytics item, in the left menu:



1. Select the Motion Detection section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Motion Detection Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

💡 The status options comprise All, Active, and Stopped.

See the list of analytics in the table below. It contains:

ID	Camera	Status	
1	demo		
1206	demo-abandoned GPU H.264 - NVDEC 25 FPS	Active (00:00:17 / 8)	STOP
1204	demo-cashier GPU H.264 - NVDEC 25 FPS	Stopped	START

- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names

CORTROL CVA *(Extended Video Analytics)*

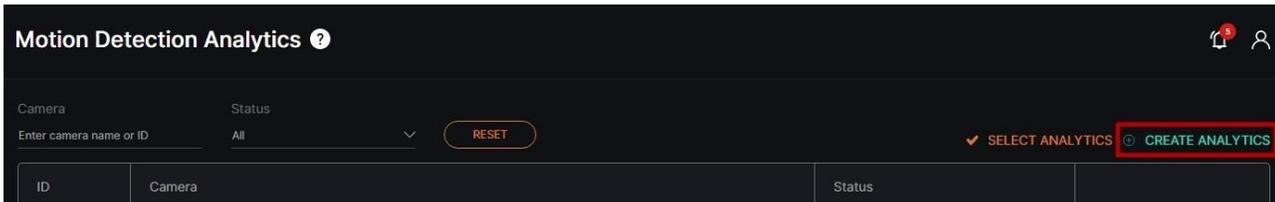
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- Copy Name icon to copy the video stream name
- Video source type
- Additional hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Events
 - View
 - Delete

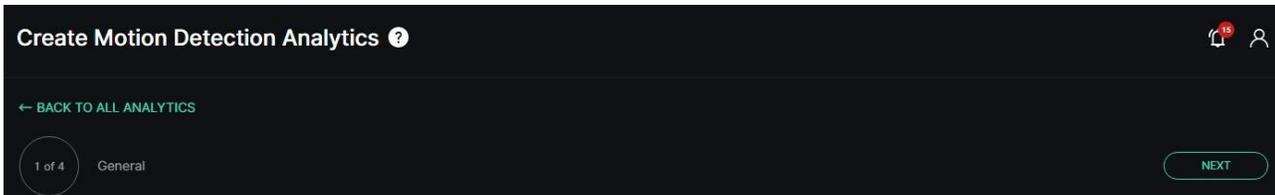
- To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).
- To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

Create Analytics

To create new analytics, click the Create Analytics button:



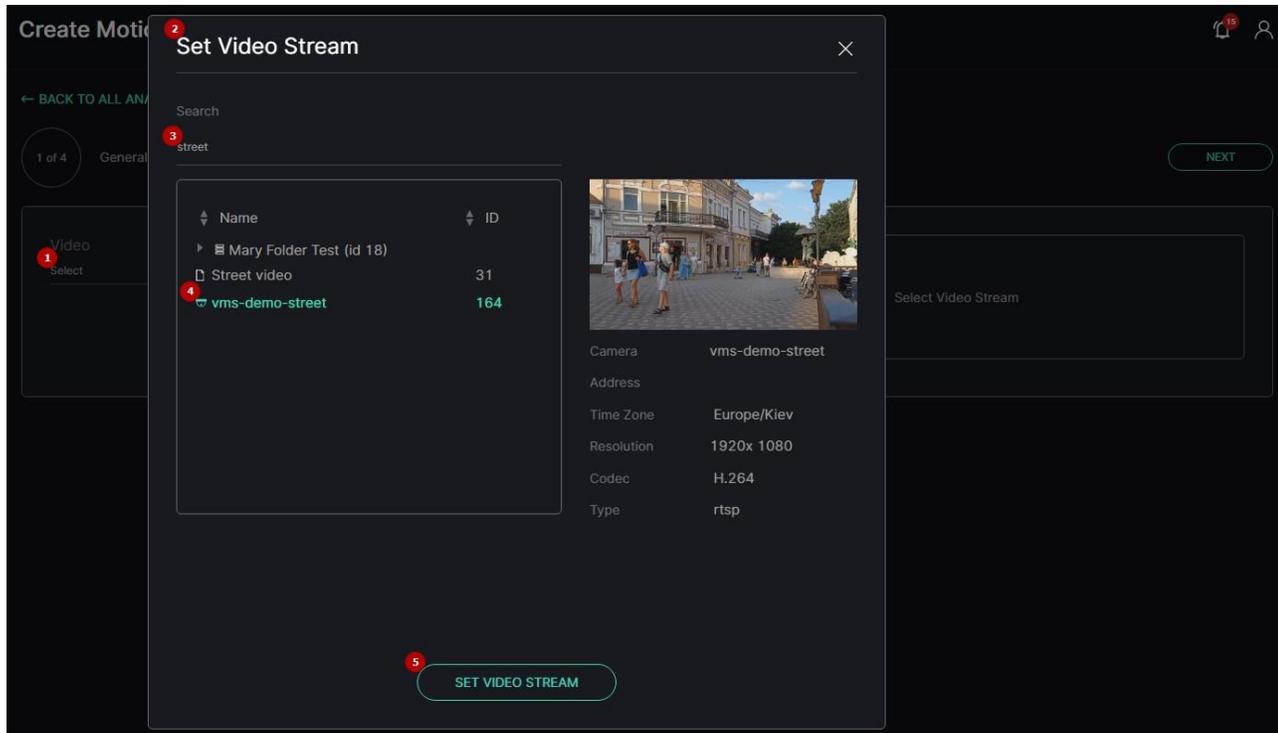
The Create Motion Detection Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters.
To set a video stream:



1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

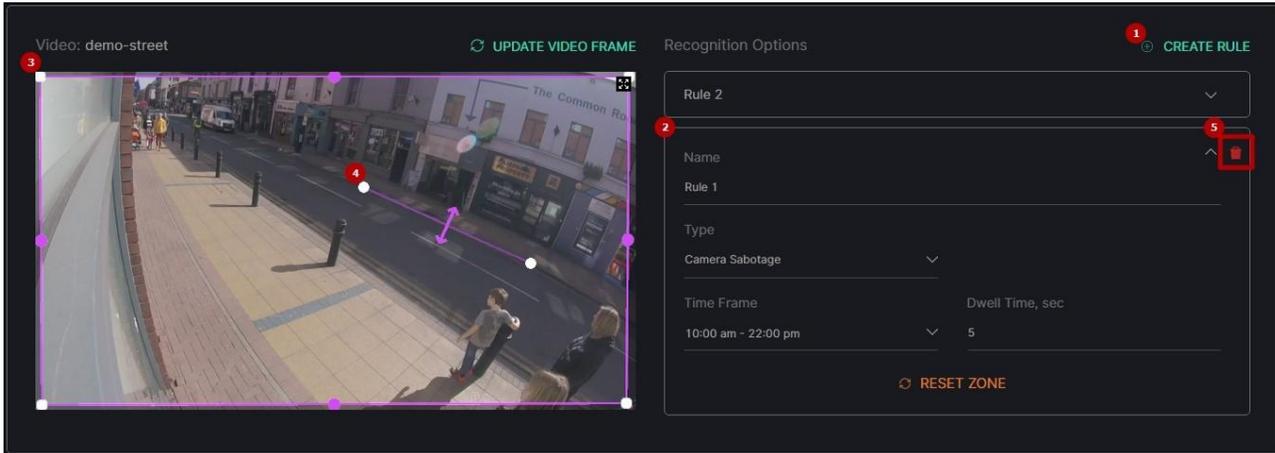
Recognition Options

-  • **Intrusion Object**208 rule executes whenever the object enters the detection zone. The rule does not execute if the object has been in the detection zone before the analytics was enabled.
- **Loitering**209 rule executes if the object moves within the detection zone for a certain time.
- **Abandoned Object**210 rule executes if an object is brought into the detection zone and remains motionless for a specific time. The object is considered abandoned if it has not been in the detection zone before the analytics was enabled.
- Disappeared Object rule executes if the object has been moved out from the detection zone. The object is considered missing if it has been in the detection zone before the analytics was enabled.
- **Line Crossing**211 rule executes if the object crosses the set line.
- **Camera Sabotage**212 rule executes if the image from the camera is overlapped for the specified time.

To learn more about rules and view the examples of their use, read [Rules](#)213

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To perform the recognition, apply these recognition options:



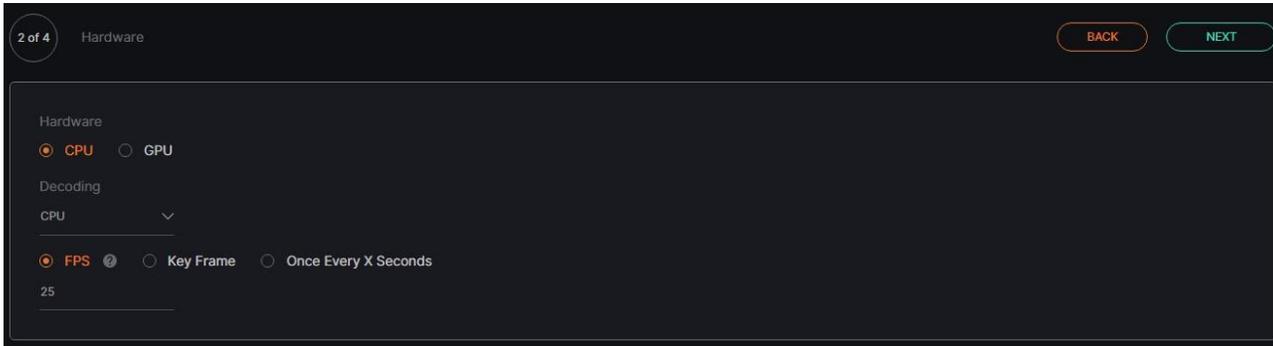
1. Select the Create Rule button to create a new rule
2. Set the parameters:
 - a. Enter the rule name
 - b. Select the rule type:
 - i. Intrusion Object
 - ii. Loitering
 - iii. Abandoned Object
 - iv. Disappeared Object
 - v. Line Crossing
 - vi. Camera Sabotage
 - c. Select the required time frame to specify the analytics working hours
 - d. Set the detection time in seconds for the Dwell Time, sec parameter
3. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to delete it
 - d. Click the Reset Zone button to return the detection zone borders to their original position
4. Modify the line (only for the Line Crossing rule type):
 - a. Click and drag the handles with LMB to set the line size and location
 - b. Click and drag the line with LMB to move the whole line
 - c. Click the Reset Line button to return the line to its original position
5. Select the red Delete icon to delete the required rule section



The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:

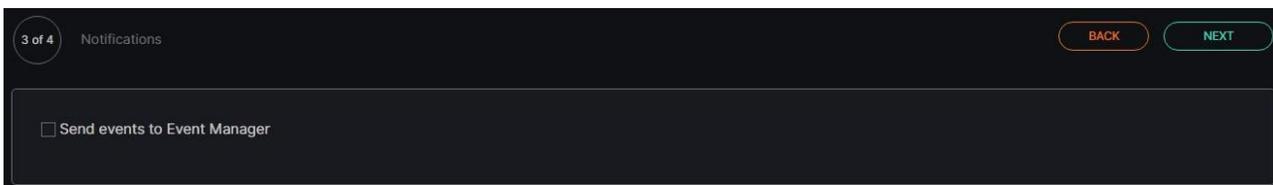


- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

- 💡 • The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as required.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Notifications Tab

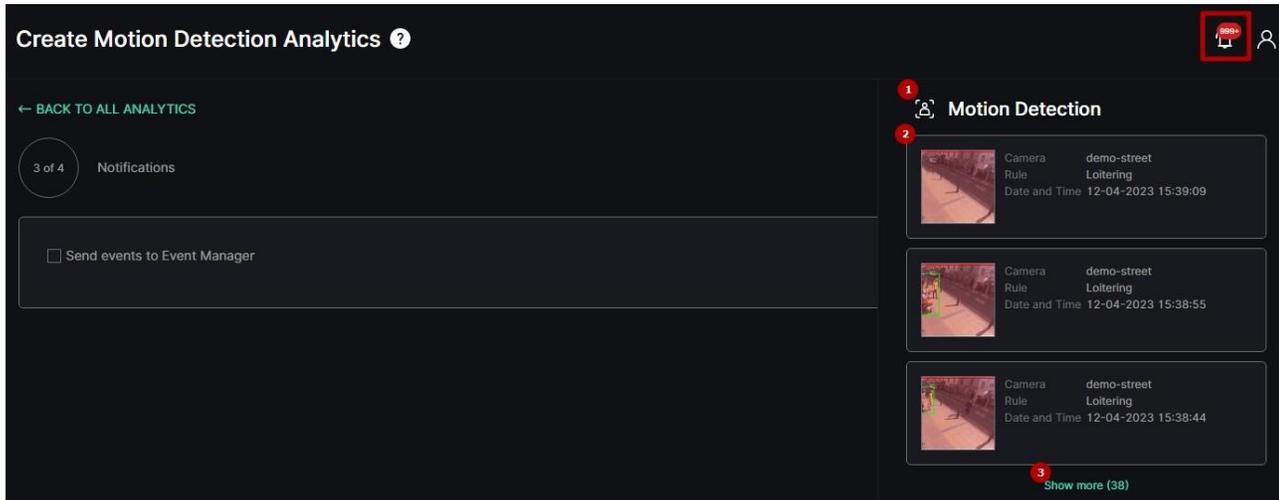
The Notifications tab allows managing the events notifications. Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources:



- 💡 • The default parameters allow the production of analytics. To customize the analytics, set parameters as required.

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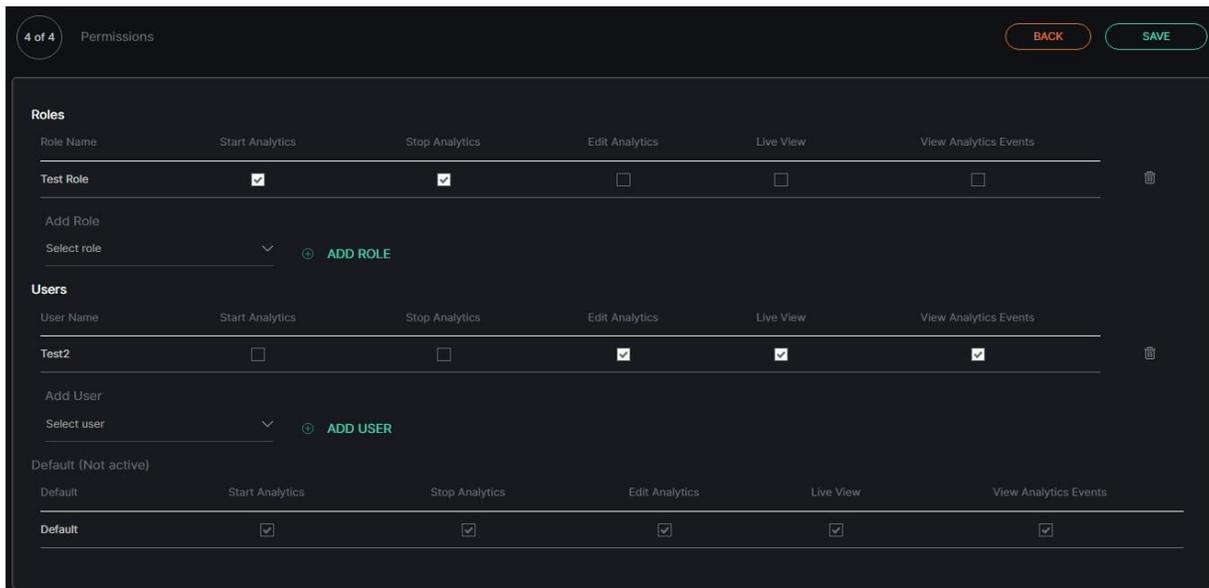
Once the analytics is created and enabled, the Notification icon signals about each new event notification. Click the Notification icon to open the Notification Panel. It comprises:



1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
 - b. Clear all plugin event notifications at once from the Notification Panel by clicking the
 - c. Close button (this action doesn't affect events in the Events item)
2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
3. Show More button with the total events number to open the Events item and view all events

Permissions Tab

The Permissions tab provides the ability to:



- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu

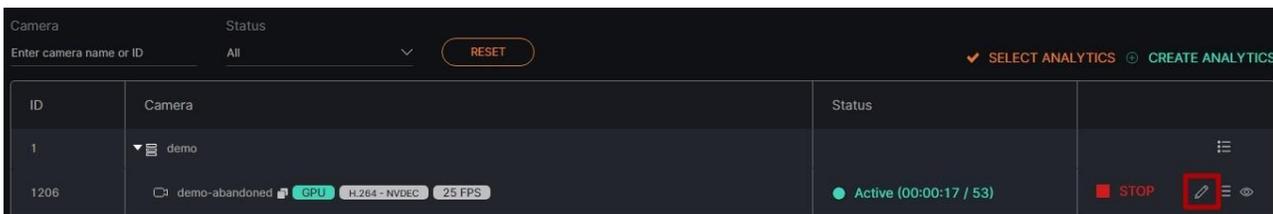
💡 • The default parameters are active only if no Roles or Users are added.
 • The quantity of added Roles and Users is not limited.

Once saved, the Motion Detection Analytics editor opens to allow the users to:

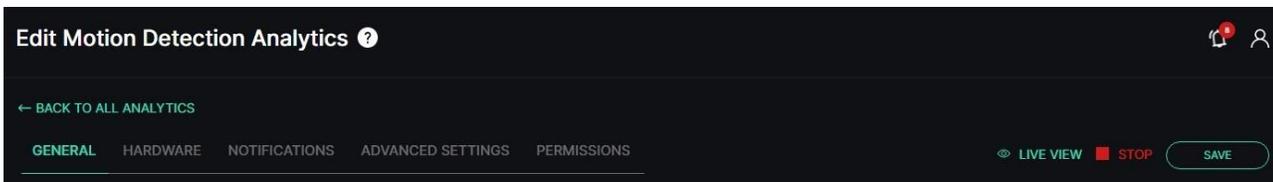
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Motion Detection Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window

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- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the chosen analytics

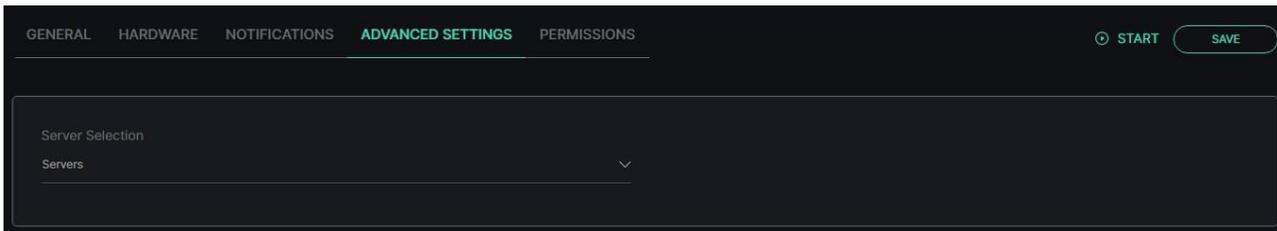
 • The current tab is always highlighted.

- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.
- The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics](#).

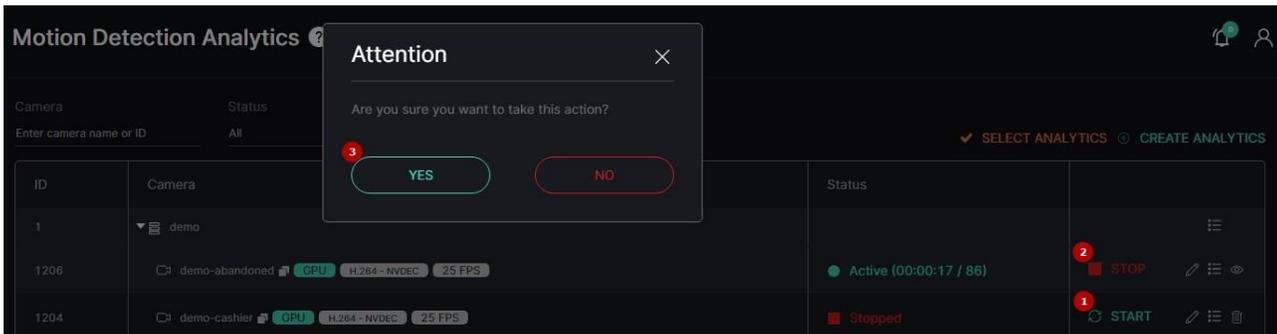
Advanced Settings Tab

The Advanced Settings tab allows the users to select a server from the drop-down list to run the analytics:



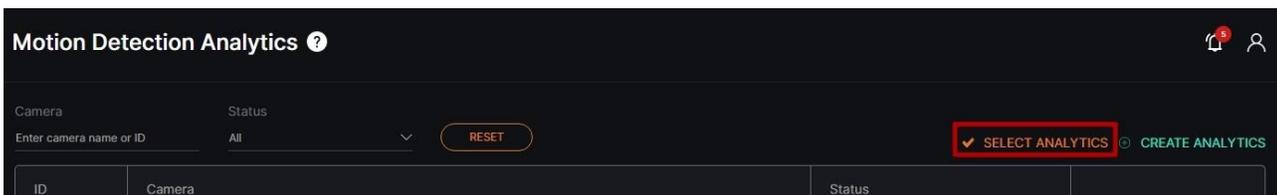
Analytics Status

To enable or disable the analytics and view the change in the analytics status:



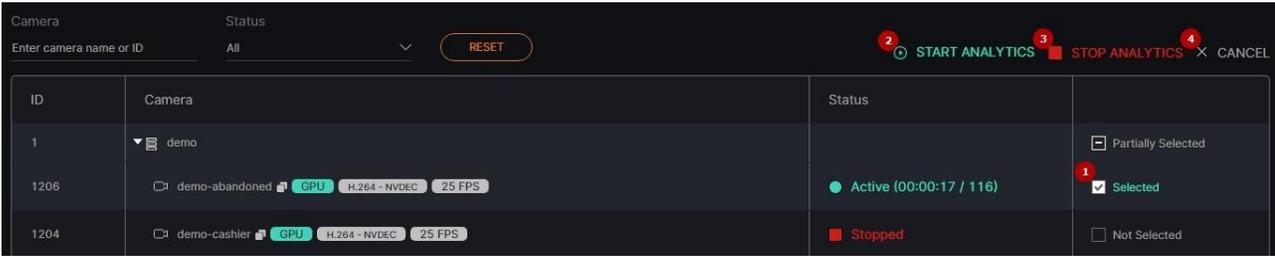
1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



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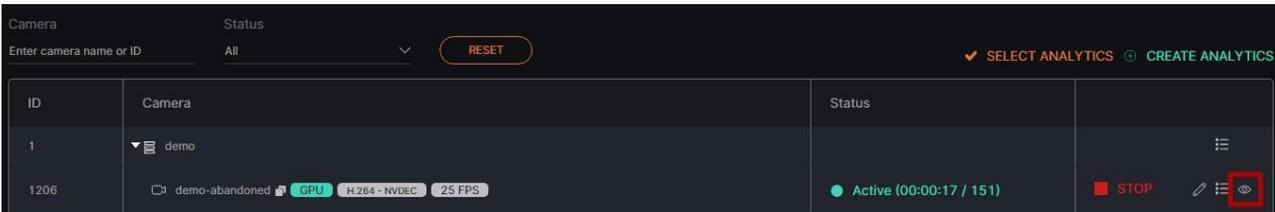
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics selection

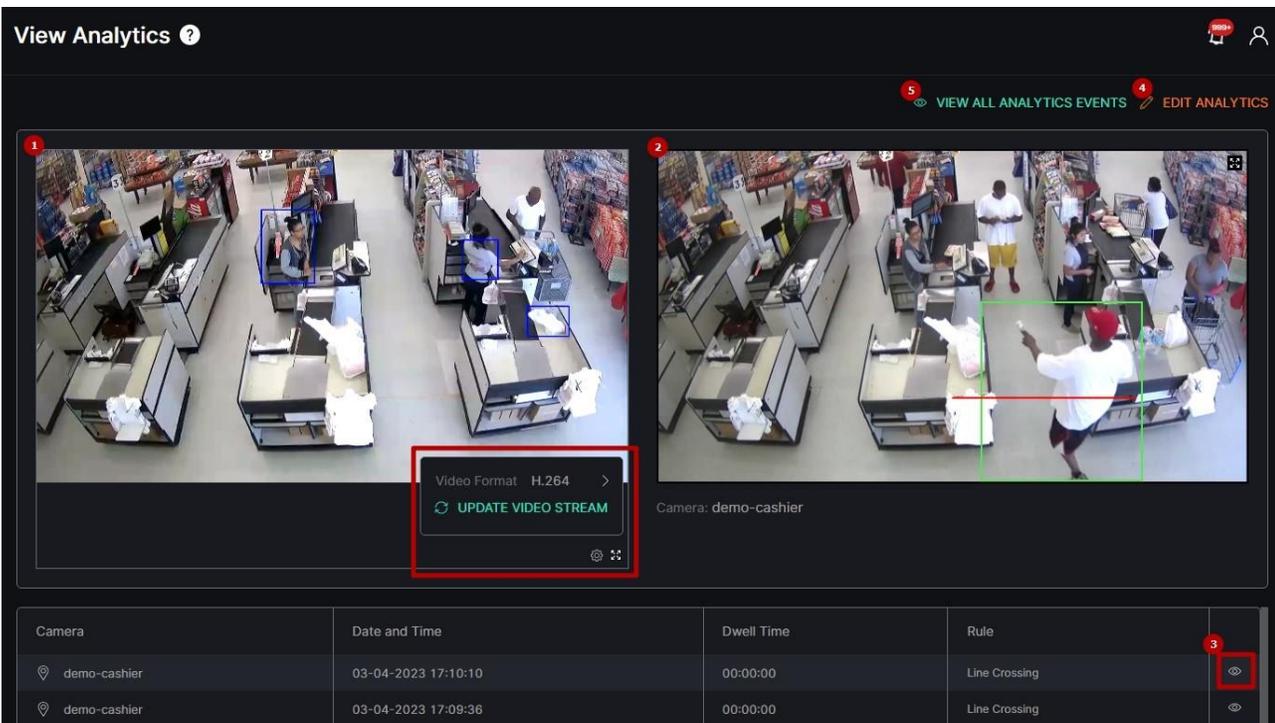
View Analytics

To see the selected analytics in real-time, click the View icon on the toolbox:



The View icon becomes available only when selected analytics is active.

Live view analytics mode allows to:

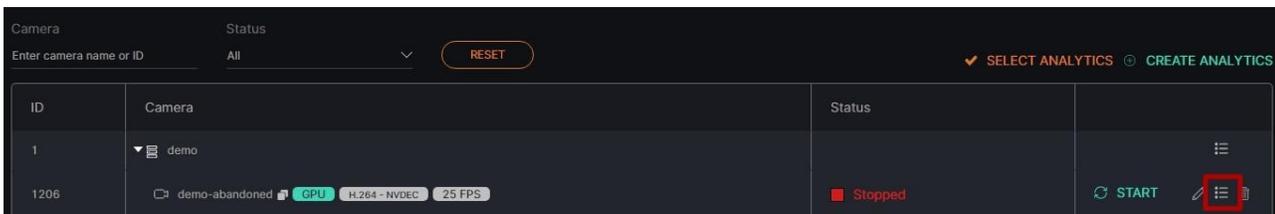


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1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View the frame preview with the detected movement according to the set rule
3. Select the View icon in the table below to open the image in full size and save it
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics

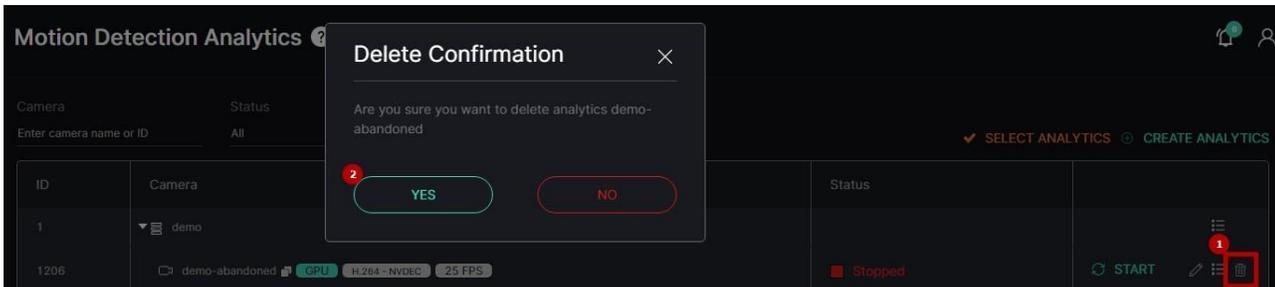
View Events

To view selected analytics events in the Analytics item, click the Events icon on the toolbox:



Delete Analytics

To delete the analytics:



1. Select the Delete icon on the toolbox
2. Confirm the intention

Motion Detection: Rules

i This page describes all types of rules in the Motion Detection plugin and the examples of their use.

Intrusion Object

Use the Intrusion Object rule to get event notifications for the required time frame about each object, which entered the detection zone and was inside it for the specified time in seconds.

For example, set the parameters:

The screenshot displays the GANZ CORTROL CVA interface. On the left, a video stream titled "Video: Face Rec. Glasses" shows a person walking through a room. A green rectangular detection zone is overlaid on the video, with white handles at the corners for adjustment. Above the video, there are buttons for "UPDATE VIDEO FRAME" and "CREATE RULE". On the right, the "Recognition Options" panel is open, showing the following configuration:

- Name: Rule 1
- Type: Intrusion Object
- Time Frame: 09:00:00 - 19:59:00
- Dwell Time, sec: 5
- RESET ZONE button

- Select the required video stream
- Modify the detection zone by clicking and dragging the handles
- Enter the rule name
- Select the Intrusion Object rule from the Type drop-down list
- Set the Time Frame parameter as 09:00-19:59
- Enter the value 5 in the Dwell Time, sec field

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After the settings are saved and the analytics is started, wait for the detection. Once the analytics detects the object that meets all the specified conditions, the system sends the event notification with results as in this example:

Event Information ⚙️ ✕



Camera: Face Rec. Glasses

Date and Time: 11-04-2023 17:21:01

Dwell Time: 00:00:05

Rule: Intrusion Object

Bounding Box Zone

- Date is 11-04-2023
- Time is 17:21:01
- Dwell time is 5 seconds
- Intrusion Object rule

The object was detected in the required detection zone by the selected camera at 17:21:01 on the 11th of April, 2023. At this point, the detected object appeared in the detection zone and stayed in it for 5 seconds.

Loitering

Use the Loitering rule to get event notifications for the required time frame about each object, which moves within the detection zone for a specified time.

For example, set the parameters:

Video: Face Rec. Glasses
↻ UPDATE VIDEO FRAME
Recognition Options
⊕ CREATE RULE



Name: Rule 1

Type: Loitering

Time Frame: 09:00:00 - 19:59:00

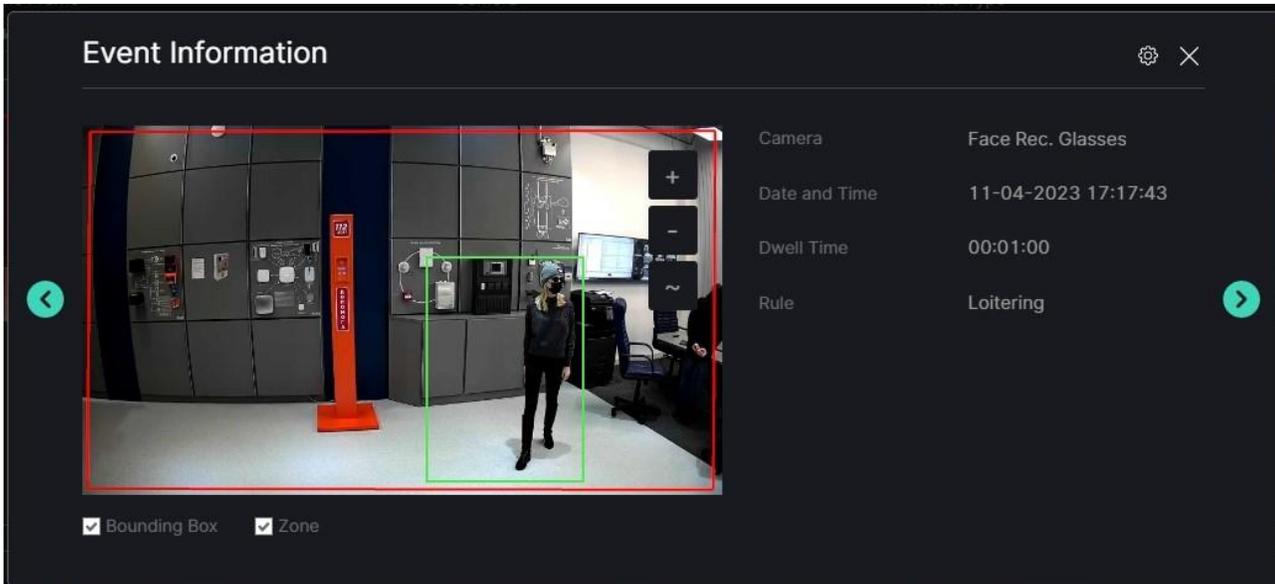
Dwell Time, sec: 60

↻ RESET ZONE

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

- Select the required video stream
- Modify the detection zone by clicking and dragging the handles
- Enter the rule name
- Select the Loitering rule from the Type drop-down list
- Set the Time Frame parameter as 09:00-19:59
- Enter the value 60 in the Dwell Time, sec field

After the settings are saved and the analytics is started, wait for the detection. Once the analytics detects the object that meets all the specified conditions, the system sends the event notification with results as in this example:



The screenshot displays the 'Event Information' window. On the left, a video frame shows a person in a dark jacket and cap walking in a control room. A red bounding box surrounds the entire frame, and a green detection zone is drawn around the person. Below the video frame are two checked checkboxes: 'Bounding Box' and 'Zone'. On the right, a table lists the event details:

Camera	Face Rec. Glasses
Date and Time	11-04-2023 17:17:43
Dwell Time	00:01:00
Rule	Loitering

- Date is 11-04-2023
- Time is 17:17:43
- Dwell time is 1 minute
- Loitering rule

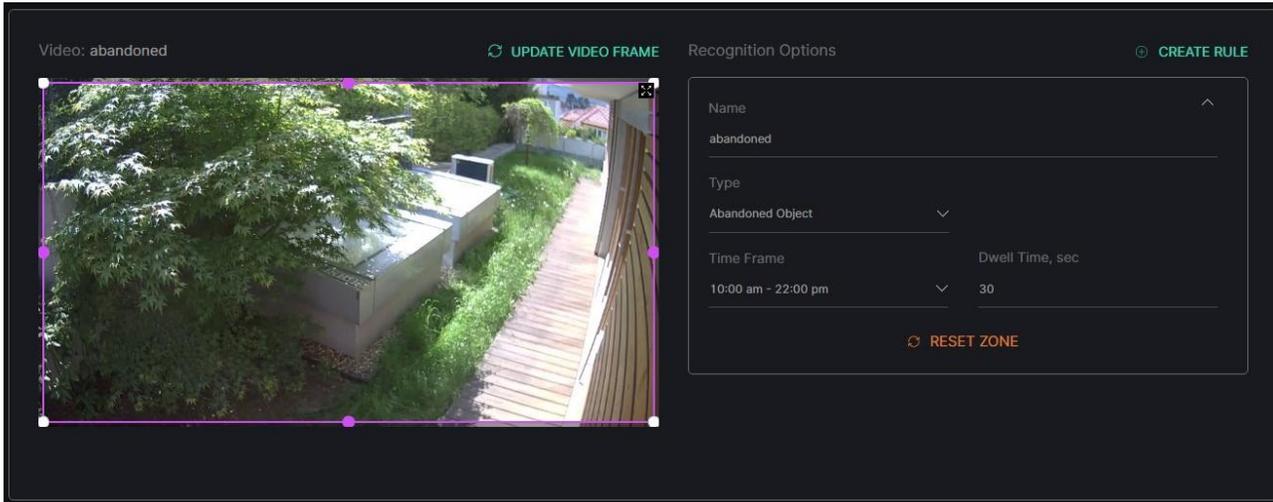
The object has been detected in the required detection zone by the selected camera at 17:17:43 on the 11th of April, 2023. At this point, the detected object appeared in the detection zone and moved within it for 1 minute.

Abandoned Object

Use the Abandoned Object rule to get event notifications for the required time frame about each object, which is brought into the detection zone and remains motionless for a specific time. The objects are not considered abandoned if they had been initially inside the detection zone before the analytics was enabled.

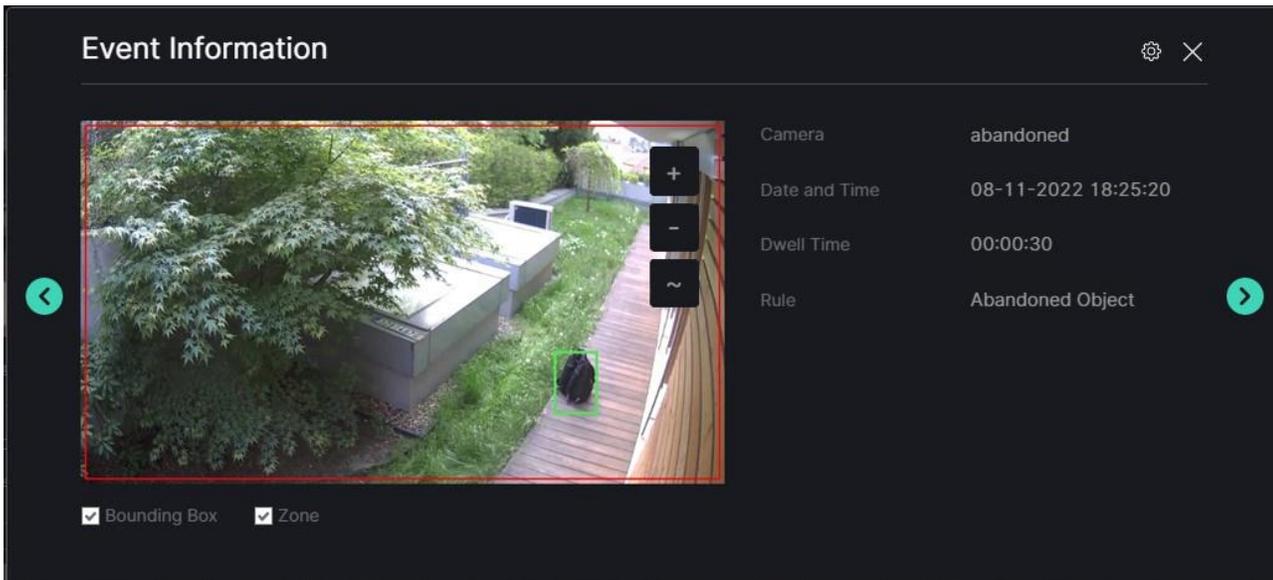
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

For example, set the parameters:



- Select the required video stream
- Modify the detection zone by clicking and dragging the handles
- Enter the rule name
- Select the Abandoned Object rule from the Type drop-down list
- Set the Time Frame parameter as 10:00-22:00
- Enter the value 30 in the Dwell Time, sec field

After the settings are saved and the analytics is started, wait for the detection. Once the analytics detects the object that meets all the specified conditions, the system sends the event notification with results as in this example:



- Date is 08-11-2022
- Time is 18:25:20
- Dwell time is 30 seconds
- Abandoned Object rule

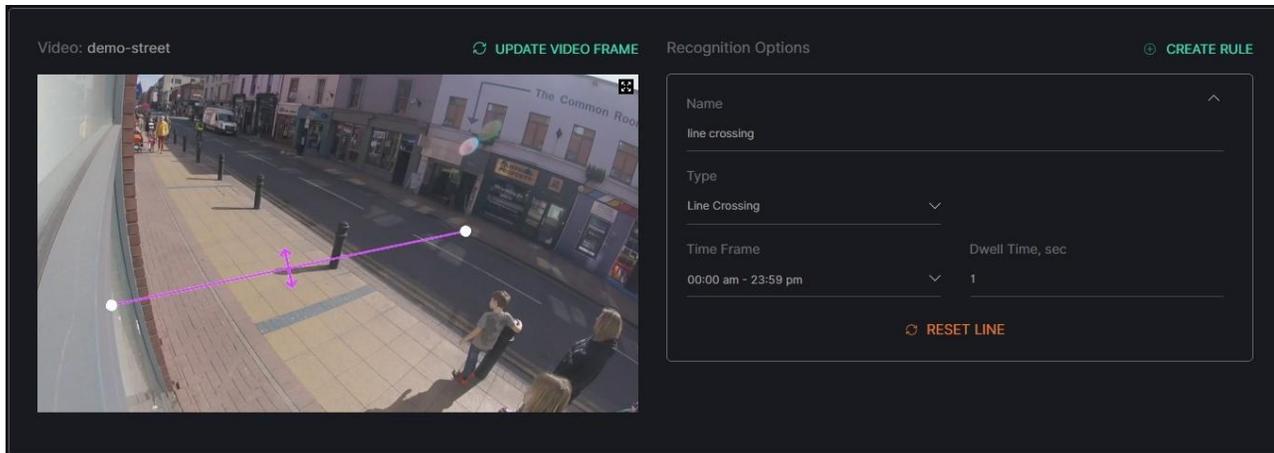
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

The static object has been detected in the required detection zone by the selected camera at 18:25:20 on the 8th of November, 2022. At this point, the detected object was brought into the detection zone and left motionless for 30 seconds.

Line Crossing

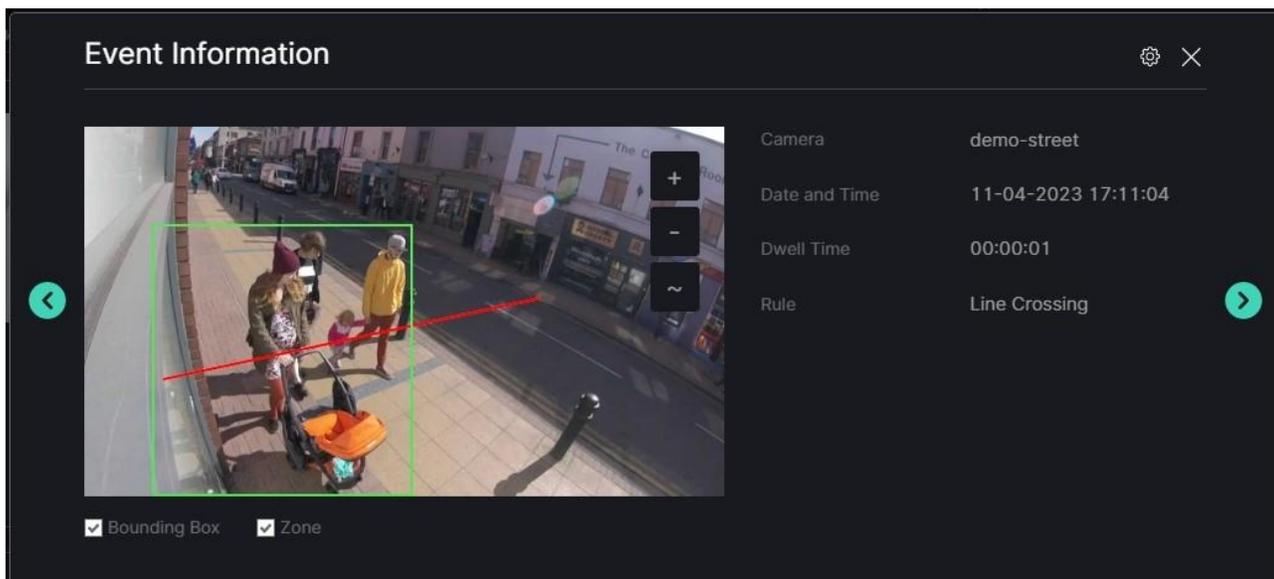
Use the Line Crossing rule to get event notifications for the required time frame about each object, which crosses the set line in any direction.

For example, set the parameters:



- Select the required video stream
- Set the line by clicking and dragging the handles
- Enter the rule name
- Select the Line Crossing rule from the Type drop-down list
- Set the Time Frame parameter as 00:00-23:59
- Enter the value 1 in the Dwell Time, sec field to set the delay between notifications

After the settings are saved and the analytics is started, wait for the detection. Once the analytics detects the object that meets all the specified conditions, the system sends the event notification with results as in this example:



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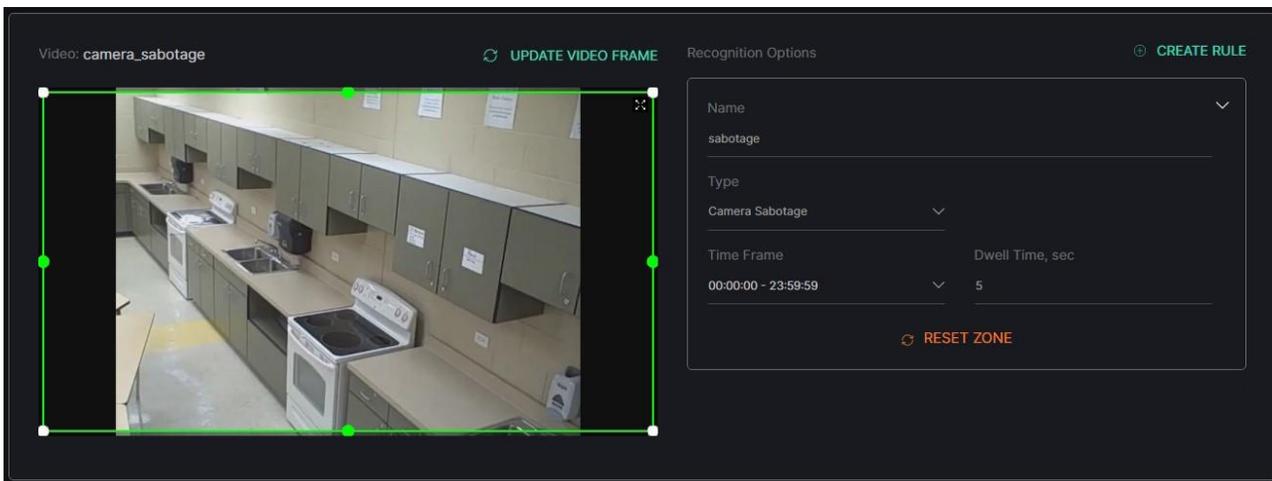
- Date is 11-04-2023
- Time is 17:11:04
- Dwell time is 1 second
- Line Crossing rule

The object was detected crossing the set line in the required detection zone by the selected camera at 17:11:04 on the 11th of April 2023.

Camera Sabotage

Use the Camera Sabotage rule to get event notifications for the required time frame if the image from the camera is overlapped for the specified time.

For example, set the parameters:



- Select the required video stream
- Modify the detection zone by clicking and dragging the handles
- Enter the rule name
- Select the Camera Sabotage rule from the Type drop-down list
- Set the Time Frame parameter as 00:00-23:59
- Enter the value 5 in the Dwell Time, sec field

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

After the settings are saved and the analytics is started, wait for the detection. Once the analytics notices an image overlapping for 5 seconds, the system sends the event notification with results as in this example:

The screenshot shows the 'Event Information' window. On the left is a video frame of a kitchen with a red bounding box and a zone overlay. On the right is a metadata table:

Camera	camera_sabotage
Date and Time	08-11-2022 10:44:18
Dwell Time	00:00:05
Rule	Camera Sabotage

At the bottom left, there are checkboxes for 'Bounding Box' and 'Zone', both of which are checked.

- Date is 08-11-2022
- Time is 10:44:18
- Dwell time is 5 seconds
- Camera Sabotage rule

Because the image from the camera is overlapped, the event frame displays the last moment before the overlap:

The screenshot shows the 'Event Information' window with a red 'CAMERA CLOSED' message overlaid on the video frame. The metadata table at the bottom is:

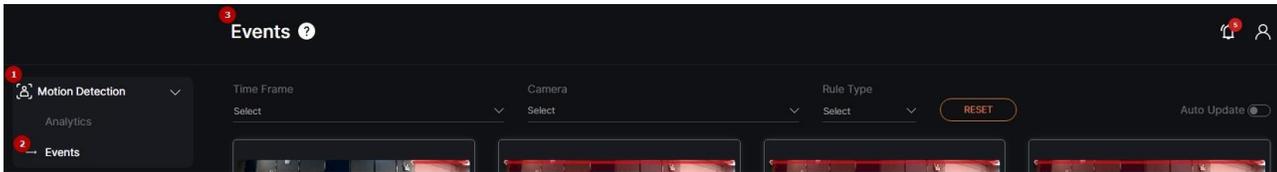
Camera	Date and Time	Dwell Time
camera_sabotage	08-11-2022 10:44:18	5

Motion Detection: Events

i This page comprises the Events item overview and functionality description. The item displays the event notifications including a frame, camera, date, time, dwell time, and rule type.

Overview

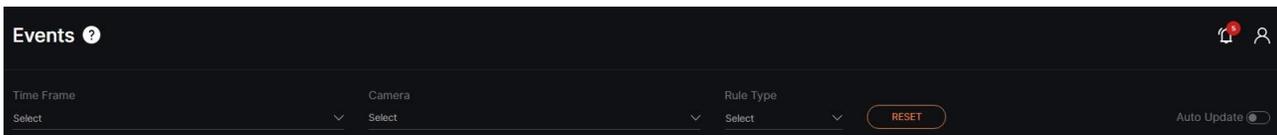
To open the Events item, in the left menu:



1. Select the Motion Detection section
2. Choose the Events item
3. See event notifications

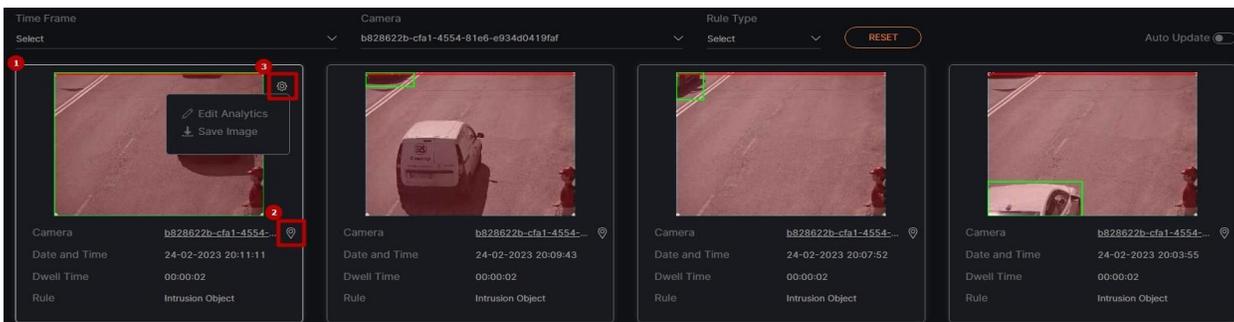
Use and Functionality

The Events functional menu allows to:



- Select the required events time frame
- Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Select a rule type:
 - Intrusion Object
 - Loitering Object
 - Abandoned Object
 - Disappeared Object
 - Line Crossing Object
 - Camera Sabotage
- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable auto update of the event notifications

Once selected and filtered, in the events:



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1. View the frame preview and information about the event. To filter events by the recognized data, in the required event block:
 - a. Click the camera name to filter events only by the camera related to the event
 - b. Click the date to filter events only by the date related to the event
 - c. Click the rule name to filter events only by the rule related to the event
2. View the camera location on the map by clicking the View Geolocation icon in the event block
3. Hover the mouse over the event block and select the Extra Options icon. In the drop-down menu:
 - a. Click the Edit Analytics button to make changes to the settings of the analytics which is related to the selected event
 - b. Click the Save Image button to download the event frame in full size

 Click the frame preview to open the image and see the event information.

Object Detection

Introduction

Use this guide to understand the interface and features of the Object Detection plugin and learn how to utilize it for the best result.

What Is Object Detection?

Object Detection determines the type of object and issues an alert according to the specified rule.

Primary Capabilities

Object Detection is capable to:

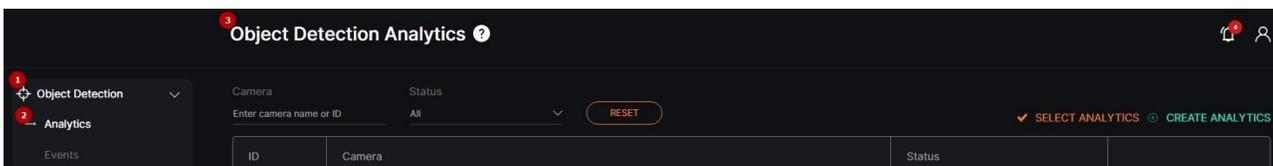
- Determinate the object type (person, bicycle, car, motorbike, bus, truck, animal, stuff)
- Check the presence or absence of an object within a specified timeframe in the selected area
- Track and classify up to 30 objects simultaneously both moving and stationary
- Count objects according to the selected types to analyze the congestion of intersections and streets

Object Detection: Analytics

 This page comprises the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

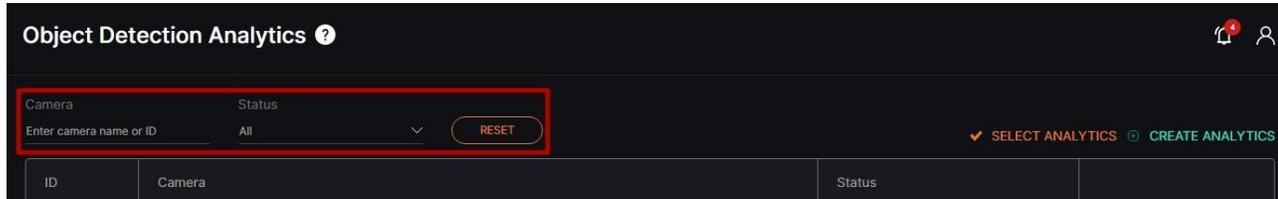
To open the Analytics item, in the left menu:



- Select the Object Detection section
- Choose the Analytics item
- See analytics

Use and Functionality

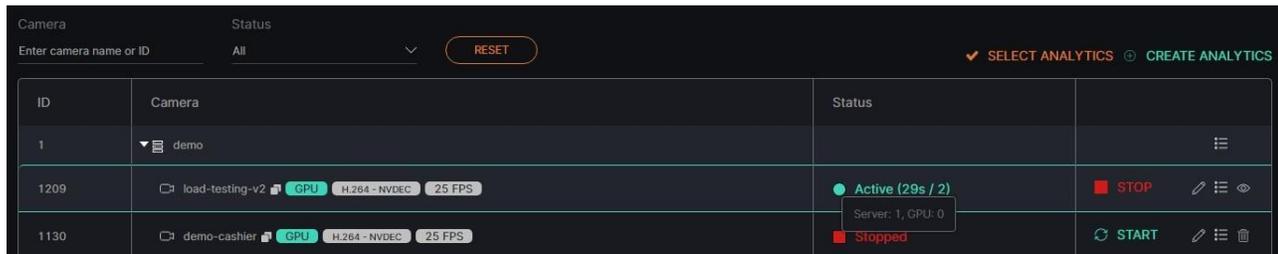
The Object Detection Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

The status options comprise All, Active, and Stopped.

See the list of analytics in the table below. It contains:



- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - Additional hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Events
 - View
 - Delete

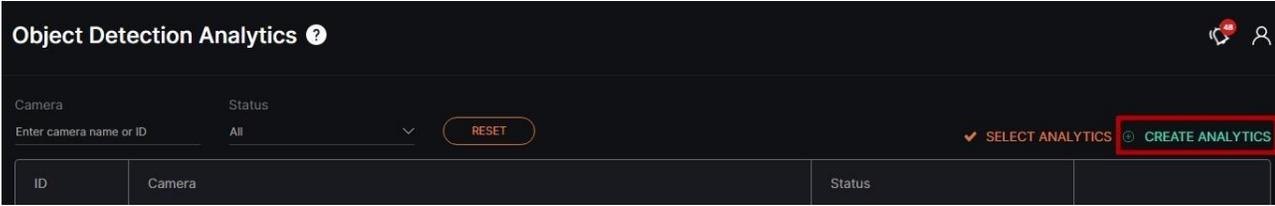
• To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).

• To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

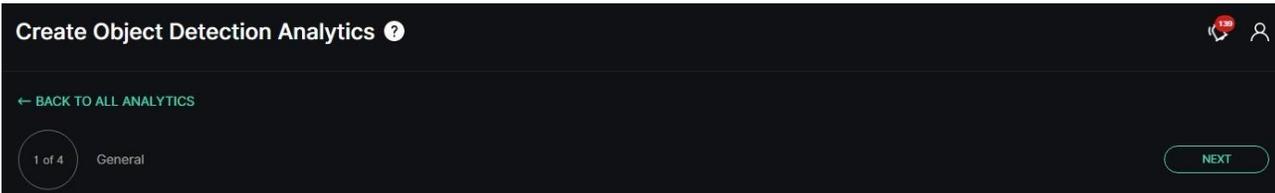
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

Create Analytics

To create new analytics, click the Create Analytics button:



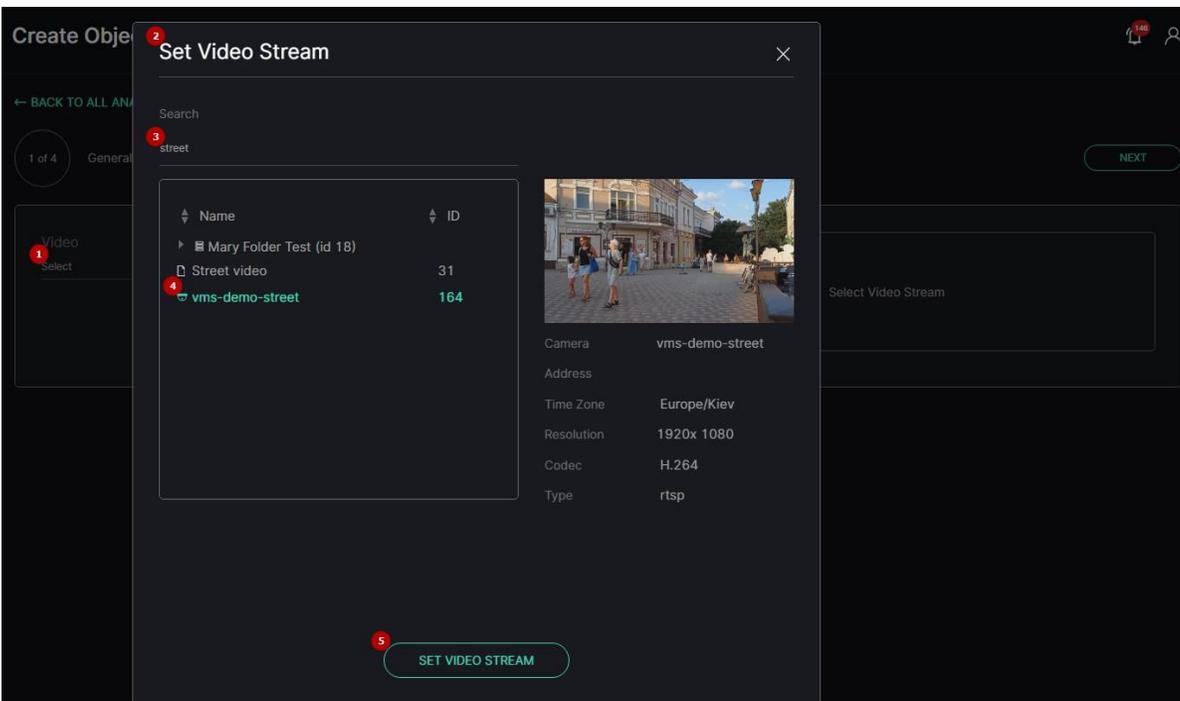
The Create Object Detection Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters. To set a video stream:



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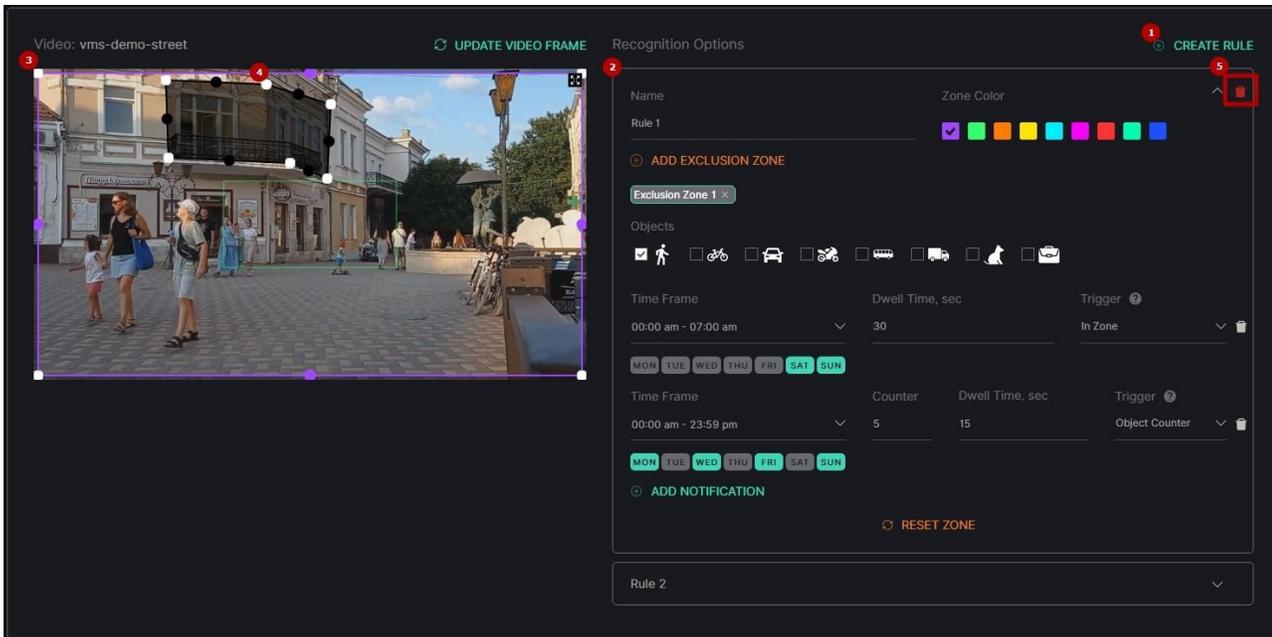
1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

-  **In Zone** trigger type executes if an object entered the empty detection zone (or initially occupied it) and was within it for the specified time.
 - Out of Zone** trigger type executes if the object leaves the detection zone and stays outside for at least the specified time. The trigger does not execute if at least one object is still in the detection zone. The trigger executes only when the detection zone is completely empty.
 - Object Counter** trigger type calculates the number of simultaneously detected objects in the detection zone. It triggers provided that the number of objects in the detection zone is greater than or equal to the specified parameter.
 - Presence Control** trigger type executes with the In Zone tag if an object entered the empty detection zone (or initially occupied it) and was within it for the specified time. The trigger executes the next time with the Out of Zone tag when the object leaves the detection zone and it keeps empty for the specified time.
 - Intrusion** trigger type executes if an object entered the detection zone and was inside it for the specified time.
- To learn more about triggers and view the examples of their use, read [Triggers](#).

To perform the recognition, apply these recognition options:



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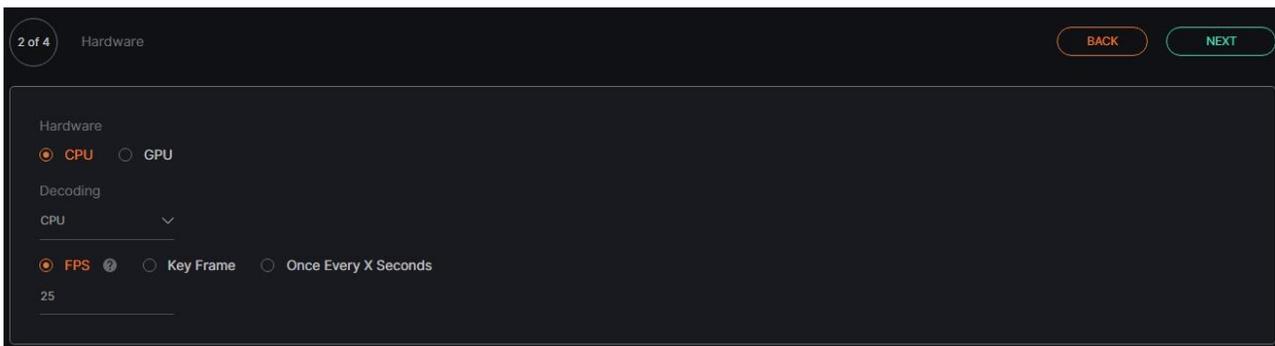
1. Select the Create Rule button to create a new rule
2. Set the notification parameters:
 - a. Enter the rule name
 - b. Select the color of the detection zone
 - c. Select the required checkboxes to set objects
 - d. Select the required time frame to specify the analytics working hours
 - e. Set the detection time in seconds for the Dwell Time, sec parameter
 - f. Set the amount of the required objects for the Counter parameter
 - g. Select the notification trigger type:
 - i. In Zone
 - ii. Out of Zone
 - iii. Object Counter
 - iv. Presence Control
 - v. Intrusion
 - h. Select days of the week to receive the specified notifications
 - i. Click the Add Notification button to create multiple rule notifications
 - j. Click the white Delete icon to delete the notification
3. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to delete it
 - d. Click the Reset Zone button to return the detection zone borders to their original position
4. Modify the exclusion zone:
 - a. Click the Add Exclusion Zone button to add up to 3 exclusion zones in each rule
 - b. Click and drag the handles with LMB to set the exclusion zone borders
 - c. Click and drag the area inside the zone with LMB to move the whole exclusion zone
 - d. Click the handle with RMB to delete it
 - e. Click the Close button next to the required exclusion zone name to remove it
5. Select the red Delete icon to delete the required rule section



- All days of the week are selected by default. Buttons become grey when deselected.
- The Counter parameter becomes available only for the Object Counter trigger type.
- The detection and exclusion zones are based on at least 3 handles.

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:



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- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

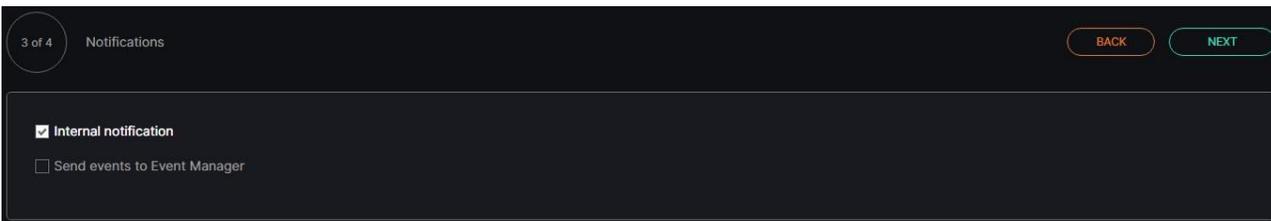
 • The recommended value for the FPS mode is 25.

• The default parameters allow the production of analytics. To customize the analytics, set parameters as required.

• To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Notifications Tab

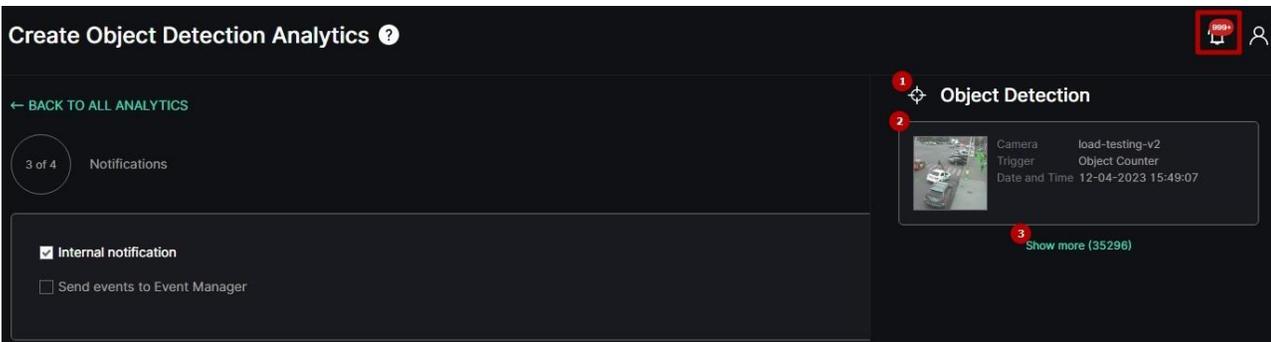
The Notifications tab allows managing the event notifications:



- Check the Internal Notification box to allow the system to send all notifications to the Events section
- Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources

 The default parameters allow the production of analytics. To customize the analytics, set parameters as required: Check one of them or use both simultaneously.

Once the Internal Notification box is checked, and the analytics is created and enabled, the Notification icon signals each new event notification. Click the Notification icon to open the Notification Panel. It comprises:



1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
 - b. Clear all plugin event notifications at once from the Notification Panel by clicking the Close button (this action doesn't affect events in the Events item)

2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
3. Show More button with the total events number to open the Events item and view all events

Permissions Tab

The Permissions tab provides the ability to:

The screenshot shows the 'Permissions' tab interface. At the top, there are 'BACK' and 'SAVE' buttons. The interface is divided into three main sections: Roles, Users, and Default (Not active). Each section contains a table with columns for 'Start Analytics', 'Stop Analytics', 'Edit Analytics', 'Live View', and 'View Analytics Events'. In the Roles section, a role named 'Plugin permissions test' is shown with checkboxes for 'Start Analytics' and 'Stop Analytics' checked. Below the Roles section, there is an 'Add Role' section with a 'Select Role' dropdown and an 'ADD ROLE' button. The Users section shows a user named 'test_user' with checkboxes for 'Live View' and 'View Analytics Events' checked. Below the Users section, there is an 'Add User' section with a 'Select User' dropdown and an 'ADD USER' button. The Default (Not active) section shows a 'Default' row with checkboxes for all five permissions checked.

- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu



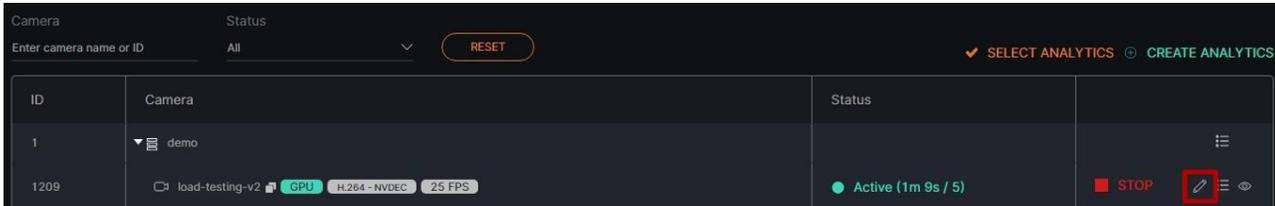
- The default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users is not limited.

Once saved, the Object Detection Analytics editor opens to allow the users to:

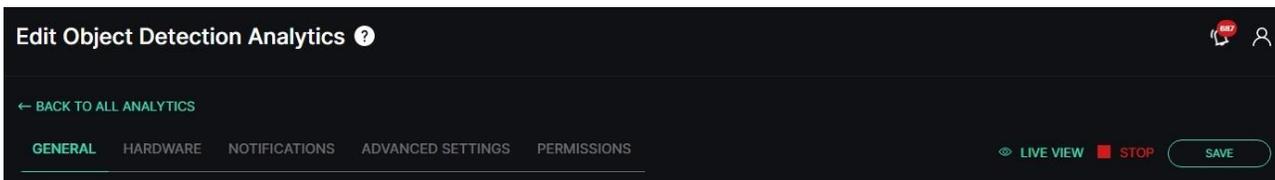
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Object Detection Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the selected analytics

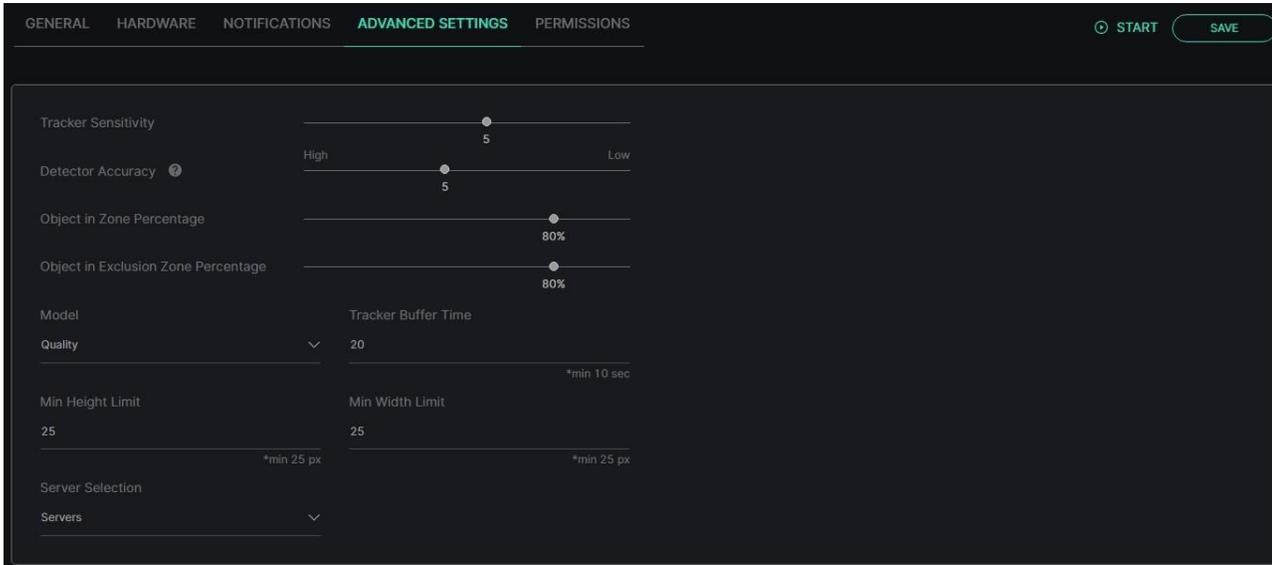


- The current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.
- The Live View button is available only when the current analytics is active

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics](#).

Advanced Settings Tab

The Advanced Settings tab allows the users to:



- Move the slider to the left (to decrease) or to the right (to increase) the tracker sensitivity
- Move the slider to the left (to increase) or to the right (to decrease) the detector accuracy
- Move the slider to the left (to decrease) or to the right (to increase) the object box and detection zone borders intersection percentage
- Move the slider to the left (to decrease) or to the right (to increase) the object box and exclusion zone borders intersection percentage
- Select an analytics model:
 - Quality
 - Performance
 - Head Recognition
- Enter the recognized object storage time in the buffer (in seconds)
- Set the minimum height of an object for recognition (in pixels)
- Set the minimum width of an object for recognition (in pixels)
- Select a server from the drop-down list to run the analytics

- 💡 The Tracker Sensitivity parameter is responsible for the sensitivity/accuracy of the tracker. The possible range is 1 to 8, the value is 5 by default.
- The Detector Accuracy setting is determined by the parameters of the original image. A High value is recommended for a low-quality image to increase the detection probability, and a Low value is better for a high-quality image to avoid false detection.
- The possible range is 1 to 10, the value is 5 by default.
- The possible range for the Object in Zone Percentage parameter is from 10% to 100%, the value is 80% by default.
- The possible range for the Object in Exclusion Zone Percentage parameter is from 10% to 100%, the value is 80% by default.
- The Quality model provides exceptional detection quality at the expense of analytics performance.
- The Performance model provides exceptional analytics performance at the expense of detection quality.
- The Head Recognition model uses the head detector, as opposed to the Quality and Performance models which use the body detector.
- The minimum value for the Tracker Buffer Time parameter is 10 sec. The default value is 20 sec.

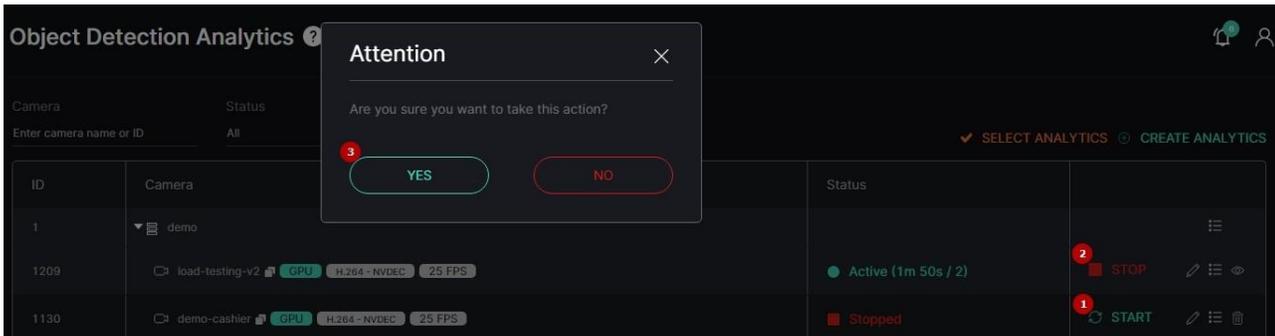
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- The minimum value for the Min Object Height is 25 pixels. The default value is 25 pixels. The maximum value is limited by the frame height.
- The minimum value for the Min Object Width is 25 pixels. The default value is 25 pixels. The maximum value is limited by the frame width.
- Default parameters allow the production of analytics. To customize the analytics, set parameters as required.

To learn more about the analytics advanced settings and view examples of their usage, read [Advanced Settings](#).

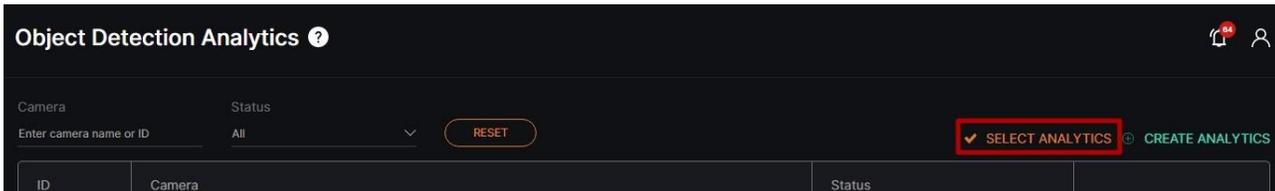
Analytics Status

To enable or disable the analytics and view the change in the analytics status:

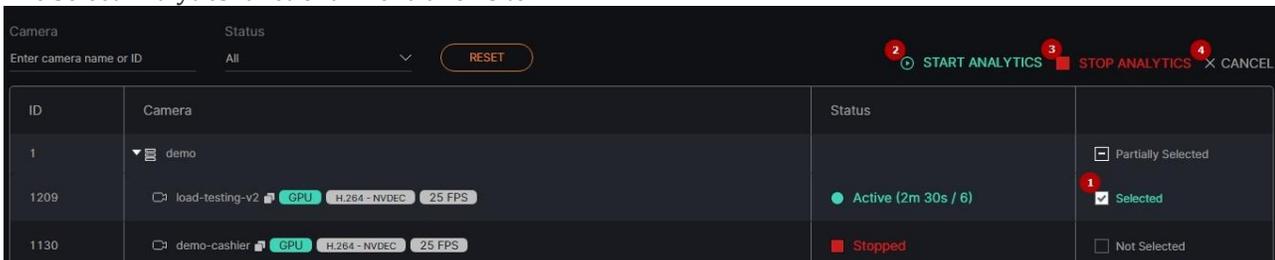


1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



The Select Analytics functional menu allows to:

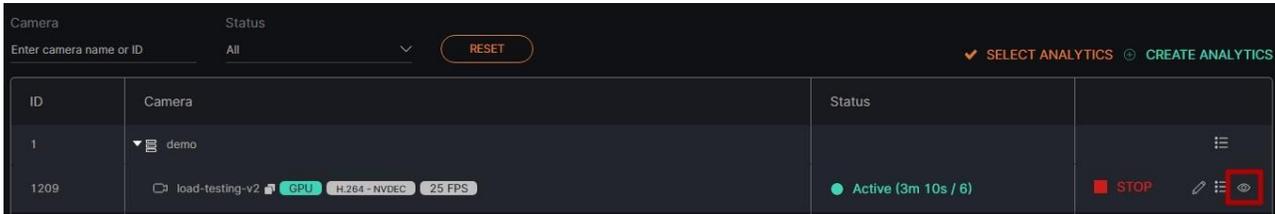


1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics selection

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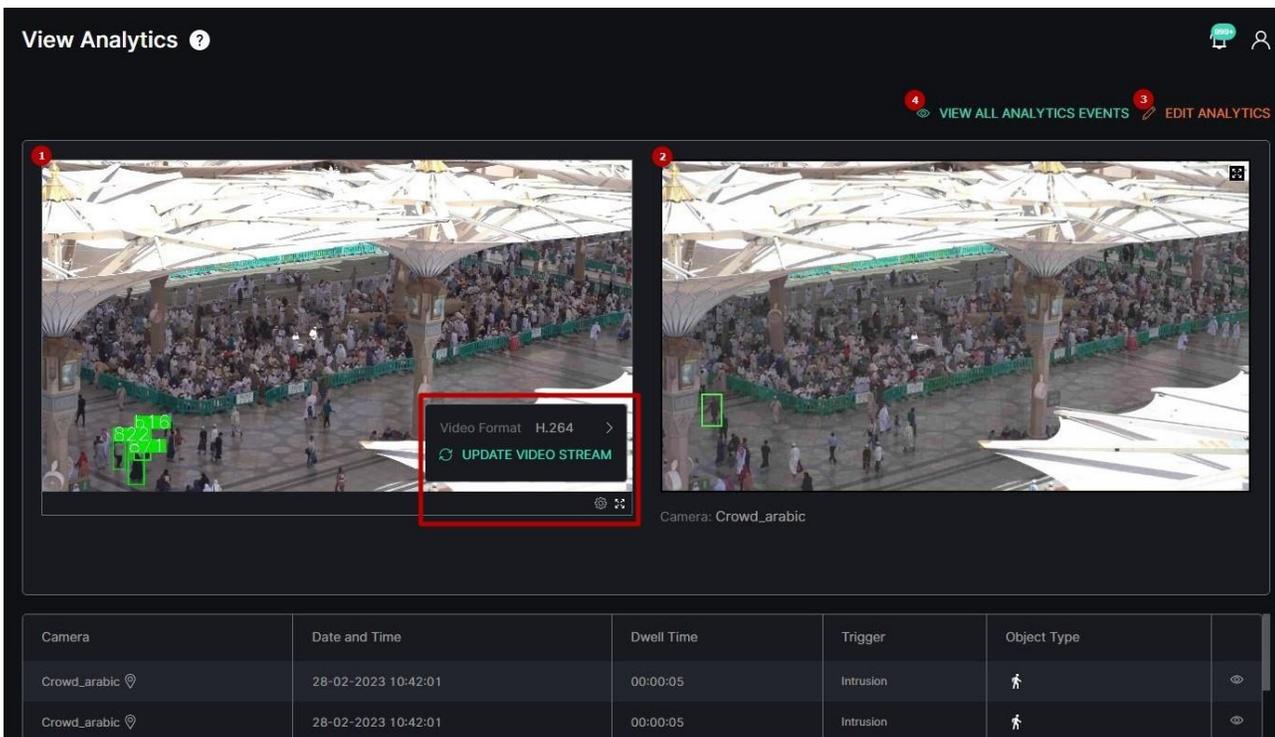
View Analytics

To see the selected analytics in real-time, click the View icon on the toolbox:



 The View icon becomes available only when selected analytics is active.

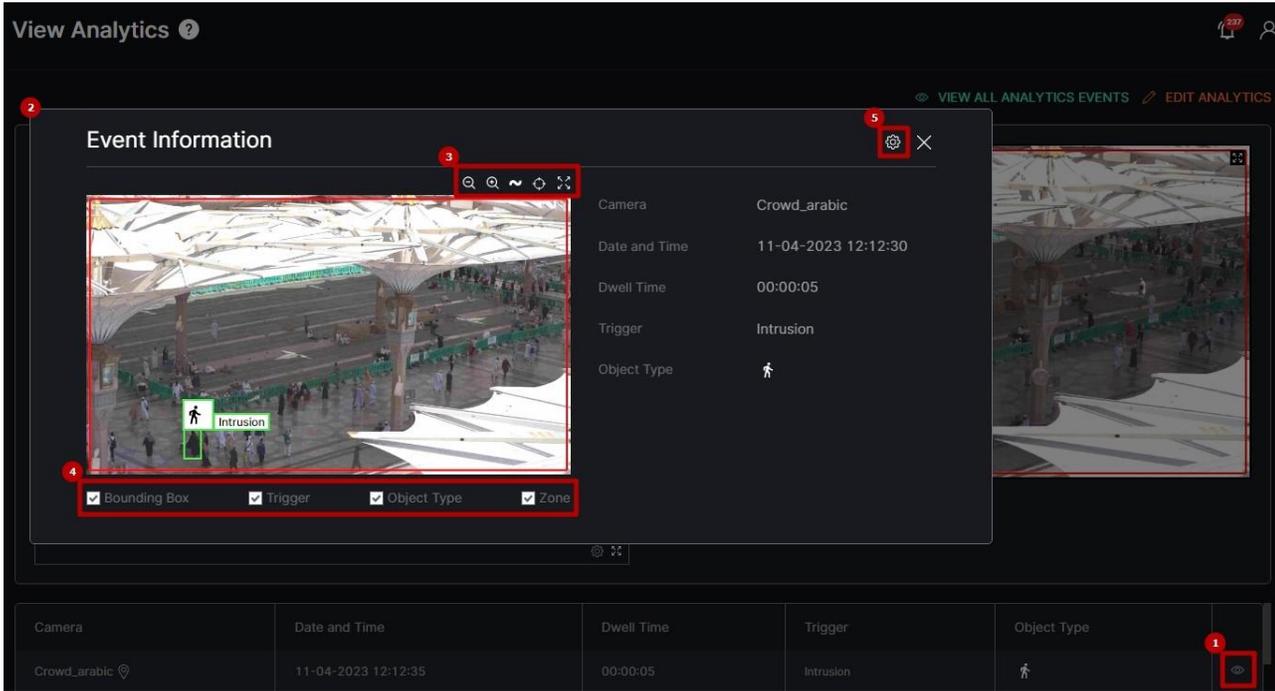
Live view analytics mode allows to:



1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View the frame preview with recognized objects
3. Click the Edit Analytics button to make changes to the current analytics settings
4. Click the View All Analytics Events button to see all events from the selected analytics

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To view the required event:

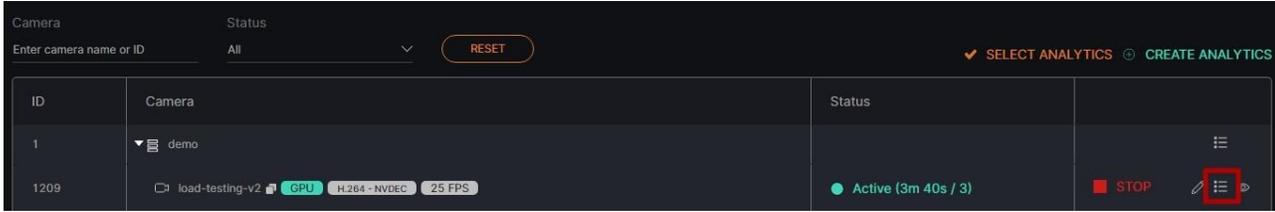


1. Click the View icon in the table below
2. See the event's pop-up window
3. Use frame view tools:
 - a. Zoom Out icon (-) to zoom out from a specific area of the frame
 - b. Zoom In icon (+) to zoom in on a specific area of the frame
 - c. Reset View icon (~) to reset the frame to its original size and position
 - d. Target icon to zoom in on the detected object in the frame (available for the Presence Control and Intrusion trigger types)
 - e. Enlargement icon to open the frame in full-screen (in the full-screen press the Esc button to return to default view)
4. Check the required boxes to enable or disable the display elements in the frame:
 - a. Bounding Box
 - b. Trigger
 - c. Object Type
 - d. Zone
5. Hover the mouse over the Extra Options icon. In the drop-down menu:
 - a. Click the Edit Analytics button to make changes to the settings of the analytics which is related to the selected event
 - b. Click the Save Image button to download the event frame in full size

- Hover the mouse over the bounding box in the frame to see its width and height parameters in pixels and analytics sensitivity value.
- Click and drag the image across the zoomed-in frame in order to view different parts of it

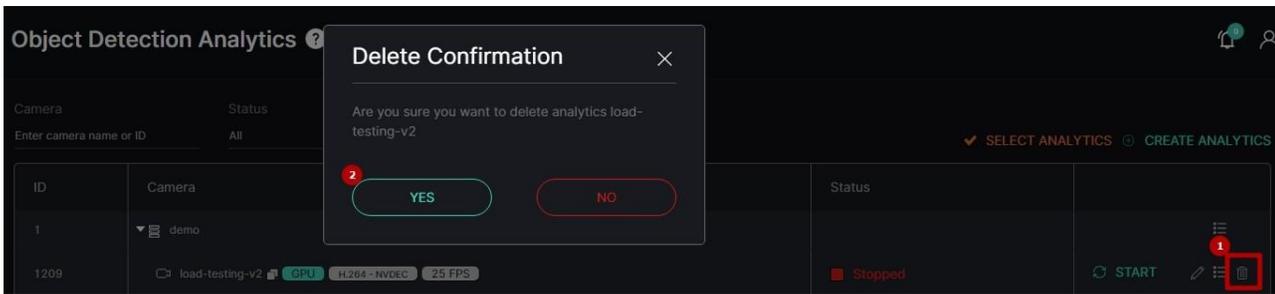
View Events

To view selected analytics events in the Analytics item, click the Events icon on the toolbox:



Delete Analytics

To delete the analytics:



1. Select the Delete icon on the toolbox
2. Confirm the intention

Object Detection: Triggers

i This page describes all trigger types available in the Object Detection plugin and provides examples of their use.

In Zone

The In Zone trigger is designed for use in situations where it is necessary to monitor the presence of objects that exceed the allowable time of stay in indoor or outdoor areas with restricted or forbidden access.

Such territories include, for example:

- Places with an increased level of security, such as a closed bank vault, server room, weapons or military equipment warehouse, or dangerous goods warehouse
- Areas adjacent to critical infrastructure, including engineering systems for power, electricity, heat, gas and water supply, and transport depots
- Hazardous areas, such as construction sites or underground or aboveground structures (tunnels, bridges, overpasses, or buildings) undergoing reconstruction or in emergency condition
- Zones at the front entrance of a building, such as a hotel, shopping mall, entertainment complex, or administrative office
- Checkpoint areas, including gates, barriers, and turnstiles
- Expedition areas in a store, warehouse, river/seaport, or airport
- Transport routes, such as an airport runway, railroad tracks, or highway

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Case 1: Control of Unauthorized Access to a Closed Bank Vault

For example, it is necessary to strengthen the security of a closed bank vault. Suppose that bank personnel who have access to the vault door can open it within 5 minutes, while an intruder may need much more time to disable the security system and break in.

To track unauthorized attempts of intrusion into the vault, it is necessary to set up 24/7 video surveillance of the vault door area and configure Object Detection analytics with the following parameters:

- The detection zone should cover the full area of the vault door and adjacent wall and floor areas where intruders may be located
- The object type should be set to Person
- The trigger type should be set to In Zone
- The dwell time should be set to 310 seconds
- The detection time frame should be set from 12:00 am to 11:59 pm, with all days of the week selected

With these settings, if a person or group of people enters the detection zone at any time of the day, the time countdown starts. If they leave the detection zone before 5 minutes and 10 seconds have elapsed (e.g., bank personnel walks past the door, or personnel with access rights enters the vault on time without being delayed), and the area near the vault door is empty again, the time counter will reset, and no notification will be sent. If people do not leave the detection zone within 5 minutes and 10 seconds, the system sends a notification with an event frame about the suspiciously long presence of people near the vault door. In case of a security threat, this allows for a quick reaction and proper measures to be taken.

Case 2: Watching the Presence of Vehicles of Certain Types in the Store's Expedition Area

For example, it is necessary to ensure unobstructed access of trucks to the unloading area of the store during the period of time from 7:00 to 7:50 am on Mondays and Thursdays. This can be prevented by the presence of vehicles of other types in the area at this time.

To track the presence of vehicles of other types in the expedition area, it is necessary to set up video surveillance over the expedition area of the store and configure Object Detection analytics with the following parameters:

- The detection zone should cover the full area of the entrance and goods unloading zones
- The object types should include Bicycle, Motorcycle, Bus, and Car
- The trigger type should be set to In Zone
- The dwell time should be set to 10 seconds
- The detection time frame should be set to 6:55-7:55 am with Monday and Thursday selected

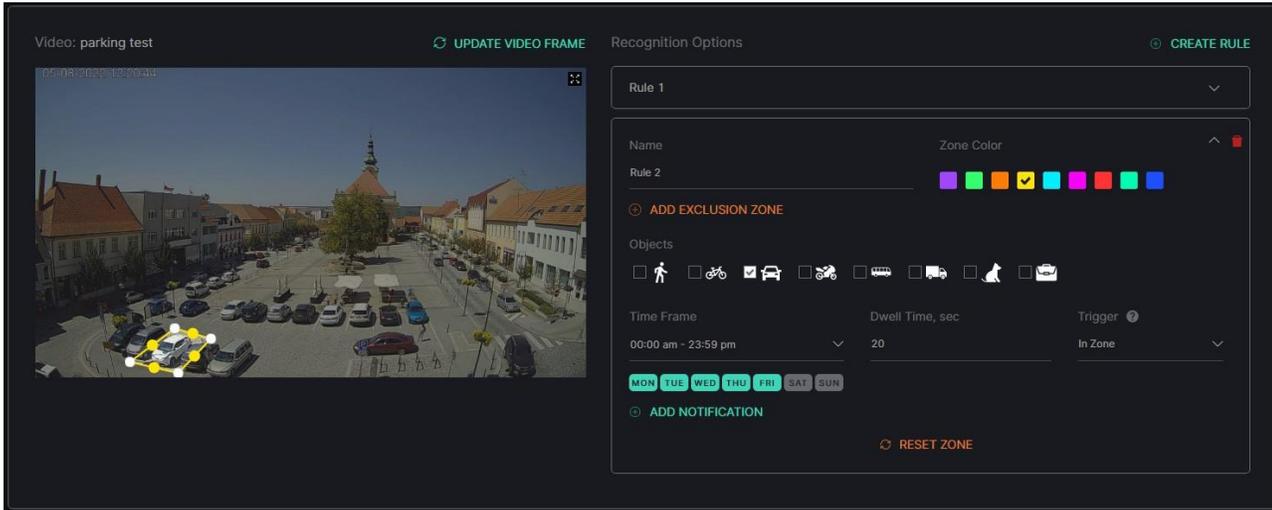
With these settings, if at least one vehicle of the forbidden types (bicycle, motorcycle, bus, or car) is found in the expedition area on Mondays and Thursdays from 6:55 to 7:55 am, the time countdown starts. If vehicles of forbidden types leave the detection zone in less than 10 seconds and the expedition zone empties again, the time counter resets and no notification is sent. If these vehicles do not leave the detection zone within 10 seconds, the system sends a notification with an event frame about the presence of the forbidden vehicle in the expedition area. In case access to the expedition area is blocked, it allows for a quick reaction and the taking of proper measures to remove the obstacle.

Use the In Zone trigger type to receive event notifications for the required time frame during each selected day of the week about detection zone occupation by objects of the selected type for the specified time in seconds.

 Before analytics is started, the detection zone must be empty or initially occupied by an object of the selected type.

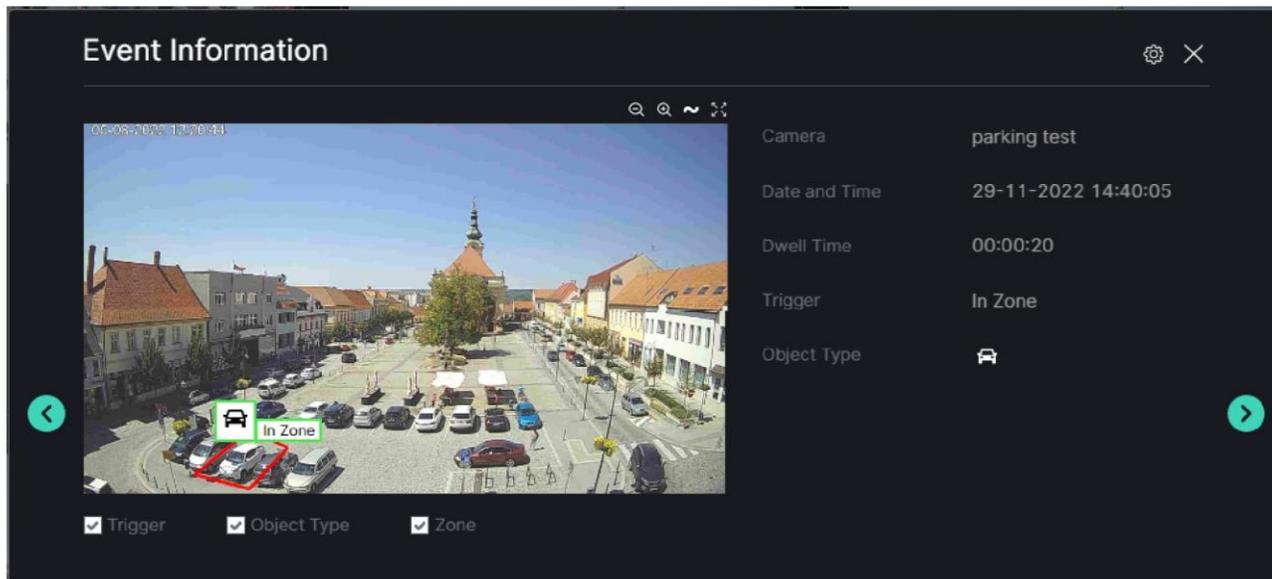
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For example, set the parameters:



- Select the required video stream
- Modify the detection zone by clicking and dragging the handles
- Check the Car object type box
- Set the Time Frame parameter to 00:00-23:59
- Enter the value 20 in the Dwell Time, sec field
- Select In Zone from the Trigger drop-down list
- Deselect the Saturday and Sunday buttons on the days of the week

After the settings are saved and analytics is started, wait for detection. Once the analytics detects that the zone has been occupied for a specified time and all the conditions of the rule are met, the system will send an event notification with results as shown in this example:



- Date is 29-11-2022 (Tuesday)
- Time is 14:40:05
- Dwell time is 20 seconds

- In Zone trigger
- Car object type

At 14:40:05 on Tuesday, November 29th, 2022, the selected camera detected a car in the required detection zone. At this point, the detection zone had been continuously occupied by this or any other car for 20 seconds.



The In Zone trigger will not execute again until all objects occupying the zone have left it.

Out of Zone

The Out of Zone trigger is designed for use in situations where objects that are supposed to be in a controlled area within a certain period of time leave it, causing the zone to become empty.

Such situations include, for example:

- Absence of personnel at their workplace during working hours: cash register, administrator's desk, security post or patrol zone, production line
- Absence of a vehicle on a secured territory: private property, residential complex parking lot, car dealership
- Absence of a patient under observation in the ward: hospital, psychiatric clinic, nursing home, rehabilitation center

Case 1: Cashier Presence Control at Workplace to Optimize Personnel Management

For example, it is necessary to track the presence of a cashier at the cash register area in a supermarket from 9:00 am until 10:00 pm every day. Assuming that the cashier may leave the workplace several times per day (lunch break, other tasks), another employee should come to serve customers at the cash register for 5 minutes during the shift.

To automatically determine when the cash register area remains unattended for a long time, it is necessary to set up video surveillance over the cash register area and configure Object Detection analytics with the following parameters:

- An individual rule should be created for each cash register area in the surveillance zone
- The detection zone should be set to fully capture the cashier's work area
- The object type should be set to Person
- The trigger type should be set to Out of Zone
- The dwell time should be set to 5 minutes
- The detection time frame should be set from 9:00 am to 10:00 pm, with all days of the week selected

With these settings, every day from 9:00 am to 10:00 pm, when a person leaves the detection zone, the time countdown starts. If the person returns to the detection zone in less than 5 minutes (for example, if it's the same cashier or their substitute), the time counter resets, and no notification is sent. However, if the person does not return to the detection zone within 5 minutes, the system will send a notification with a frame of the event, alerting that the cashier did not show up at their workplace on time, and the cash register area has been unattended for 5 minutes already. Timely response to personnel absence enables management to take measures to ensure a constant presence of cashiers at their workplaces, plan work schedules, improve the customer service process, and prevent possible financial losses.

Case 2: Ensuring Car Security on Private Property

For example, it is necessary to enhance car surveillance on the premises of a private residence during the owner's prolonged absence.

To track attempts of car theft, it is required to set up 24/7 video surveillance over the parking zone of each car and configure Object Detection analytics with the following parameters:

- An individual rule should be created for each car in the surveillance zone
- The detection zone should be set to fully capture the dimensions of the car
- The object type should be set to Car

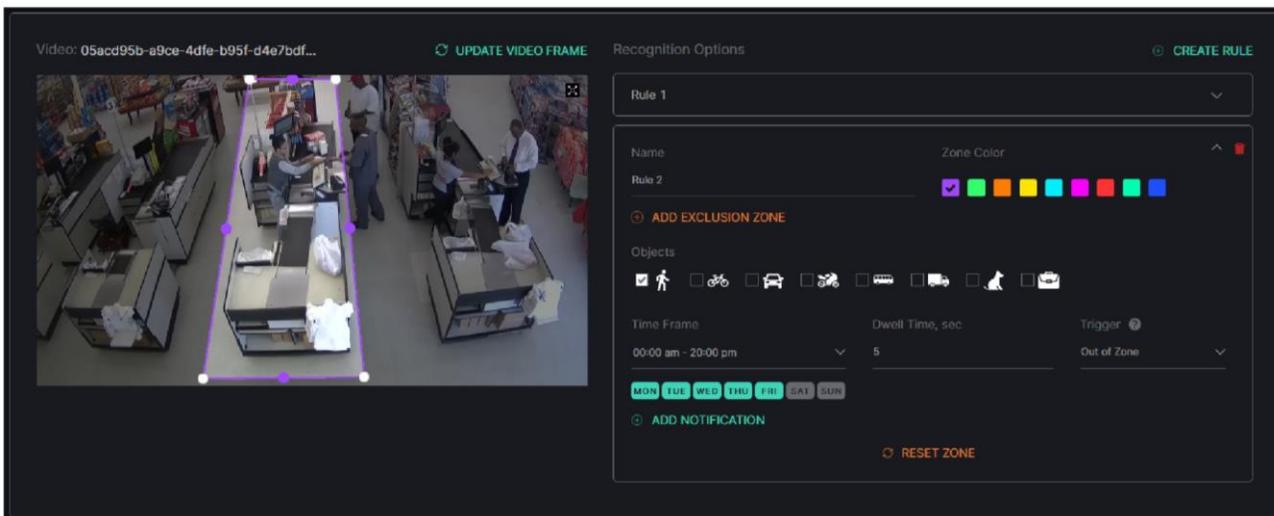
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- The trigger type should be set to Out of Zone
- The dwell time should be set to 1 second
- The detection time frame should be set from 12:00 am to 11:59 pm, with all days of the week selected

With these settings, if a car leaves the detection zone at any time of the day, and the zone remains empty for at least 1 second, the system will send a notification with a frame of the event indicating a potential car theft threat on the secured property. In case of confirmed car theft, this will allow the security company to react quickly and take appropriate measures.

Use the Out of Zone trigger type to receive event notifications during the specified time frame on each selected day of the week about the detection zone being empty for at least a specified time in seconds after all objects of the selected type, which were noticed inside the zone, have left it.

For example, set the parameters:



- Select the required video stream
- Modify the detection zone by clicking and dragging the handles
- Check the Person object type box
- Set the Time Frame parameter to 00:00-20:00
- Enter the value 5 in the Dwell Time, sec field
- Select Out of Zone from the Trigger drop-down list
- Deselect the Saturday and Sunday buttons on the days of the week

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After the settings are saved and analytics is started, wait for detection. Once the analytics notices the empty detection zone, the system will send an event notification with results as shown in this example:

Event Information

Camera: 05acd95b-a9c...

Date and Time: 06-28-2022 7:26:15 pm

Dwell Time: 00:00:05

Trigger: Out of Zone

Object Type: Person

Event Details: Trigger Object Type Zone

- Date is 06-28-2022 (Tuesday)
- Time is 7:26:15 pm
- Dwell time is 5 seconds
- Out of Zone trigger
- Person object type

At 7:26:15 pm on Tuesday, June 28th, 2022, the selected camera identified the required detection zone as empty. At this point, the person, who was inside the detection zone, left and was outside for 5 seconds while the detection zone was completely empty.

 The trigger does not execute if an object of the selected type leaves the zone, but at least one more object of the selected type remains inside it.

Object Counter

The Object Counter trigger is designed for use in situations where it is necessary to obtain data on the number of objects filling the area of interest.

It is useful in a variety of situations, such as:

- Monitoring passenger flow in urban transport systems
- Analyzing attendance in retail stores and shopping centers
- Control of the presence of people in production facilities and construction sites
- Monitoring traffic density on roads
- Monitoring vehicle queues at product/order delivery areas, gas stations, and car washes
- Monitoring the presence of stray animals in residential areas to prevent potential threats to public safety and health
- Monitoring baggage belt usage at airports
- Monitoring the presence of bags and suitcases at bus stops and train stations

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Case 1: Passenger Flow Monitoring for Improving Public Transportation System in the City

For example, it is necessary to collect data daily to analyze passenger flow at public transportation stops during the period from 5:00 am to 11:00 pm.

To automatically figure out the number of people waiting for transportation at each public transportation stop, it is necessary to set video surveillance and configure Object Detection analytics with the following parameters:

- The detection zone should cover the full area of the public transportation stop, including seating areas
- The object type should be set to Person
- The trigger type should be set to Object Counter
- The number of objects should be set to 3
- The dwell time should be set to 0 seconds
- The detection time frame should be set from 5:00 am to 11:00 pm, with all days of the week selected

With these settings, the analytics will calculate the number of people at the stop from 5:00 am to 11:00 pm. If there are 1-2 people or no one at the stop, no notification will be sent. However, if three or more people are detected waiting for transportation at the stop, the system will send a notification with the event frame and the total number of people detected. The collected data can help in improving the public transportation system by taking measures such as increasing the number of vehicles on the busiest routes at different times of the day and days of the week, changing the transportation schedule, or redirecting the routes. Furthermore, the data can also be used to install more comfortable stops or update the transport fleet.

Case 2: Monitoring Vehicle Queues to Optimize Service Speed

For example, it is necessary to monitor the drive-thru lane of a fast-food restaurant in real-time to observe the formation of a large queue of vehicles.

To automatically determine the number of vehicles waiting for service, it is necessary to set up 24/7 video surveillance and configure Object Detection analytics with the following parameters:

- The detection zone should cover the entire drive-thru lane and adjacent building walls, as well as the adjacent section of the access road where the queue may continue
- The object types should include Car and Motorcycle
- The trigger type should be set to Object Counter
- The number of objects should be set to 4
- The dwell time should be set to 10 seconds
- The detection time frame should be set from 12:00 am to 11:59 pm, with all days of the week selected

With these settings, the analytics will calculate the number of cars and motorcycles in the drive-thru lane on a daily basis. If there are 1-3 vehicles or none at all, no notification will be sent. However, if analytics detects 4 or more vehicles of the selected types waiting simultaneously for service for 10 seconds in the drive-thru lane, the system will send a notification with the event frame and the total number of vehicles detected in the queue. Each next event notification will be sent after the current queue has been cleared and the number of vehicles decreases below the set value, and then becomes equal to or greater than the set number again when a new queue forms. This allows for prompt reaction and appropriate measures to speed up the service, such as turning on additional kitchen equipment or engaging more staff for order collection and delivery.

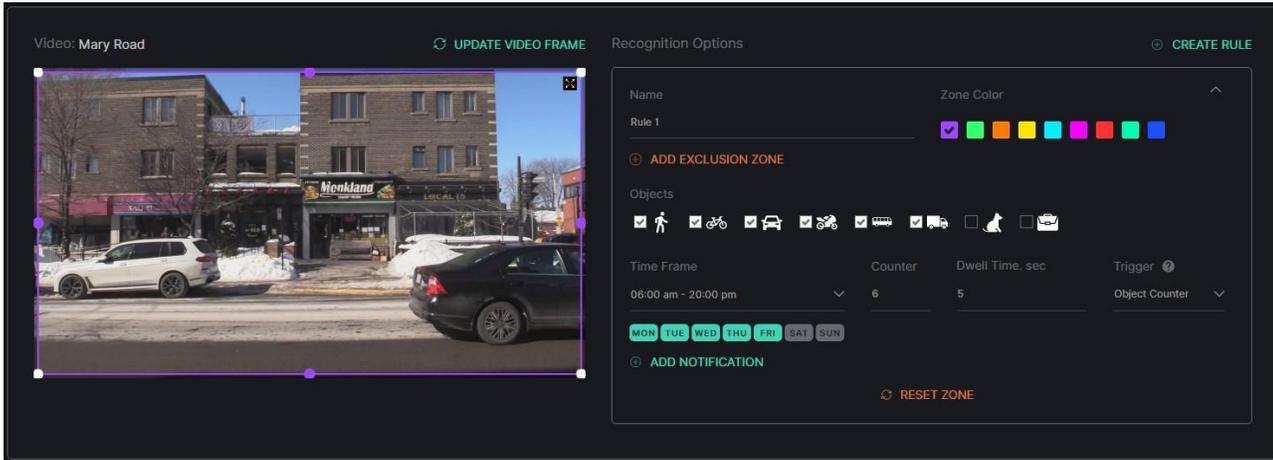
Furthermore, analyzing the collected data at different times of the day and days of the week can help predict peak loading times in advance. This information can be used to optimize the menu, train staff, and open additional order collection and delivery windows, which can help speed up the service process and increase customer satisfaction.

Use the Object Counter trigger type to count the total number of objects of the selected types in the detection zone for the required time frame during each selected day of the week and receive event notifications, provided that the total number of objects in the detection zone is greater than or equal to the specified counter parameter simultaneously or during the specified dwell time.

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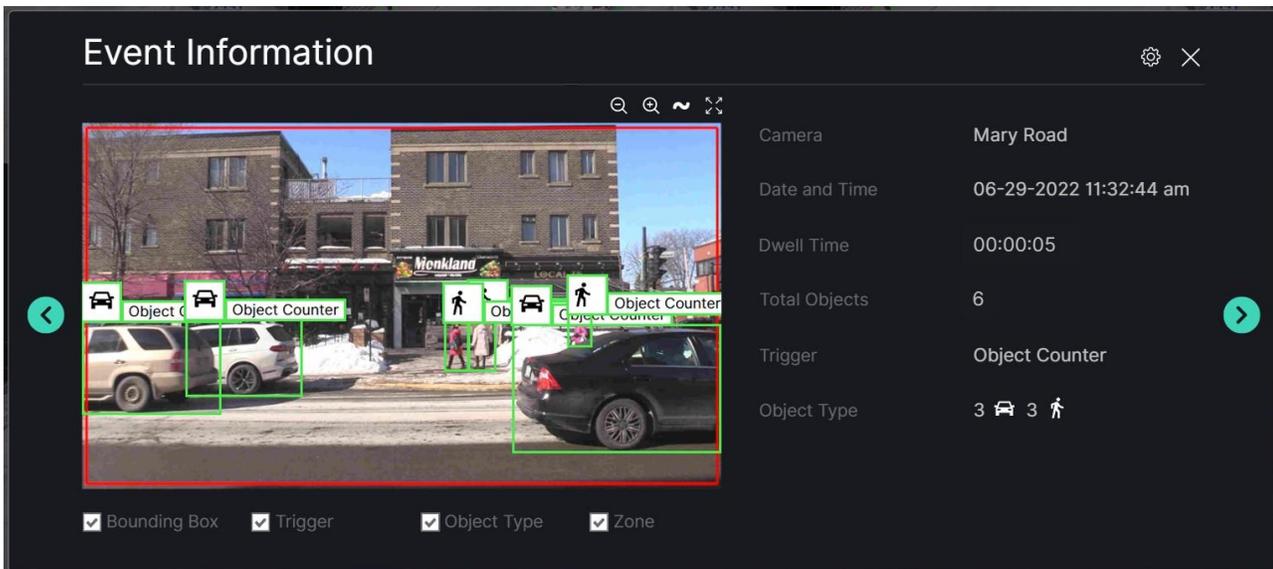
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For example, set the parameters:



- Select the required video stream
- Modify the detection zone by clicking and dragging the handles
- Check the Person, Bicycle, Car, Motorcycle, Bus, and Truck object type boxes
- Set the Time Frame parameter to 06:00-20:00
- Select Object Counter from the Trigger drop-down list
- Enter the value 6 in the Counter field
- Enter the value 5 in the Dwell Time, sec field
- Deselect the Saturday and Sunday buttons on the days of the week

After the settings are saved and the analytics is started, wait for detection. Once the analytics detects the set number of selected objects simultaneously in the detection zone and meets all the specified conditions, the system will send an event notification with results as shown in this example:



- Date is 06-29-2022 (Wednesday)
- Time is 11:32:44 am
- Dwell time is 5 seconds
- Total objects number is 6

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- Object Counter trigger
- Car and Person object types

At 11:32:44 am on Wednesday the 29th of June, 2022, the selected camera found three people and three cars (total 6, as a set Counter parameter) simultaneously present in the required detection zone for 5 seconds.

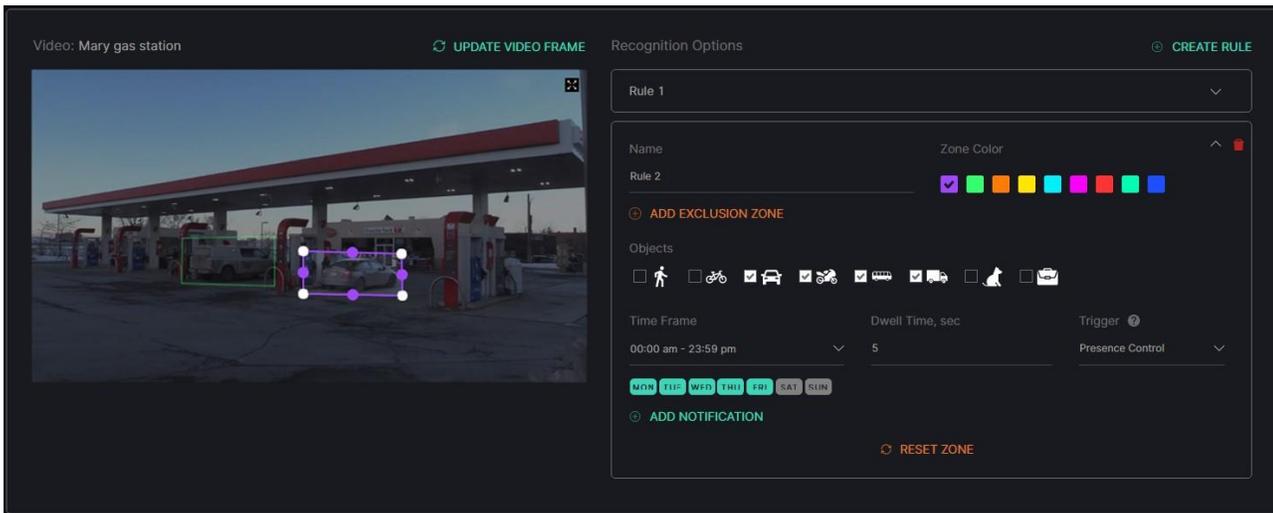
💡 If the Dwell Time parameter is set to 0 seconds, the system sends notifications every second if there are enough objects in the frame. However, if the parameter is set to 1 second or more, the notification will be sent when enough objects have been detected for a specified time in seconds, and the next notification will only be sent after the number of objects decreases below the set value and then becomes equal to or greater than the set number again.

Presence Control

Use the Presence Control trigger type to receive event notifications during each selected day of the week for the specified time frame about the detection zone, which:

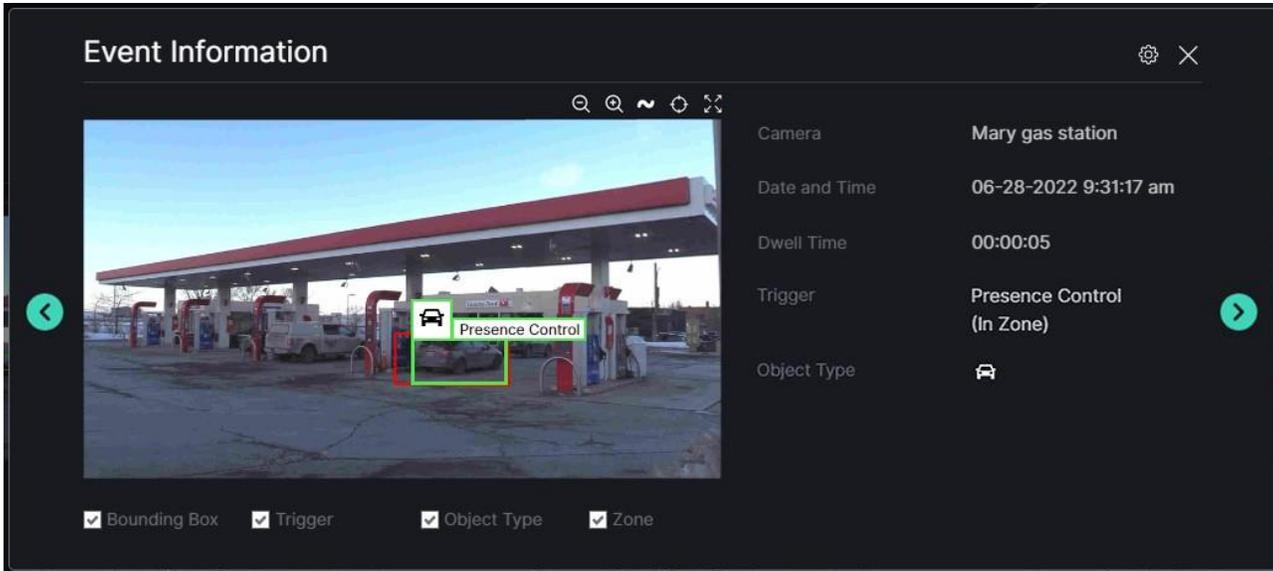
1. Was occupied by objects of the selected type for the specified time in seconds. The detection zone must be previously empty or initially occupied by the object of the selected type. The notifications will inform you about the zone occupation with the In Zone tag.
2. Was abandoned by all objects of the selected type and became empty for at least a specified time in seconds. The notifications will inform you about the zone release with the Out of Zone tag.

For example, set the parameters:



- Select the required video stream
- Modify the detection zone by clicking and dragging the handles
- Check the Car, Motorcycle, Bus, and Truck object type boxes
- Set the Time Frame parameter to 00:00-23:59
- Enter the value 5 in the Dwell Time, sec field
- Select Presence Control from the Trigger drop-down list
- Deselect the Saturday and Sunday buttons on the days of the week

After the settings are saved and analytics is started, wait for detection. Once the analytics detects that the zone has been occupied for a specified time and all the conditions of the rule are met, the system will send an event notification with results as shown in this example:



- Date is 06-28-2022 (Tuesday)
- Time is 9:31:17 am
- Dwell time is 5 seconds
- Presence Control trigger with the In Zone tag
- Car object type

At 9:31:17 am on Tuesday the 28th of June, 2022, the selected camera detected a car in the required detection zone. At this moment, the car initially occupied the detection zone and remained inside it for 5 seconds.

Once all objects have completely left the detection zone and it stays empty for the specified time, the system sends the next event notification with results as shown in this example:

- Date is 06-28-2022 (Tuesday)
- Time is 9:34:00 am
- Dwell time is 6 seconds
- Presence Control trigger with the Out of Zone tag
- Car object type

At 9:34:00 am on Tuesday the 28th of June, 2022, the selected camera determined that the car had exited the required detection zone. At this point, the detection zone remained completely empty for 6 seconds after the car had left.

- The event frame displays the last moment when the object was still inside the detection zone before leaving it.
- The Presence Control trigger with the In Zone tag does not execute if an object of the selected type enters the zone previously occupied by another one.
- The Presence Control trigger with the Out of Zone tag does not execute if an object of the selected type leaves the zone, at least one other object of the selected type still occupies it.

Intrusion

The Intrusion trigger is designed to alert about every object present in the control zone.

This can help with solving tasks such as:

- Detecting car parking on sidewalks, bike lanes, green areas, and other prohibited locations
- Detecting violations of temporary parking/standing rules for vehicles
- Detecting traffic rules violations for vehicles on bus/ambulance lanes
- Controlling compliance with the schedule for truck traffic on city roads
- Detecting the presence of animals in prohibited areas, such as shopping centers, hotels, playgrounds, schools, and kindergartens
- Detecting the presence of people, bicycles, or animals on the roadway
- Securing the enterprise territory during non-working hours and preventing unauthorized access
- Protecting private property from trespassing and unauthorized entry
- Notifying about arriving visitors at retail or service locations, such as shops, cafes, restaurants, gas stations, etc.

Case 1: Tracking Vehicle Arrival at a Gas Station for Prompt Service Provision

For example, it is necessary to ensure prompt vehicle service at a gas station on a daily basis.

To automatically detect when new vehicles arrive for service, it is necessary to set up 24/7 video surveillance near each refueling column and configure Object Detection analytics with the following parameters:

- The detection zone should cover the entire refueling area, taking into account the maximum dimensions of the vehicle
- The object types should include Car, Motorcycle, Truck, Bus
- The trigger type should be set to Intrusion
- The dwell time should be set to 10 seconds
- The detection time frame should be set from 12:00 am to 11:59 pm, with all days of the week selected

With these settings, if a car, motorcycle, truck, or bus enters the detection zone at any time of the day, the time countdown starts. If the vehicle leaves the detection zone in less than 10 seconds (for example, it drives through the refueling area to exit without stopping), the time counter resets and no notification is sent. However, if the vehicle does not leave the detection zone within 10 seconds, the system sends a notification with an event frame, clearly showing the vehicle that entered the refueling area. This allows the gas station staff to efficiently track every vehicle that arrives at the refueling area, enabling them to react promptly and provide quick service.

Case 2: Control of Unauthorized Intrusion into Enterprise Premises during Non-Working Hour

For example, it is necessary to strengthen surveillance of the production enterprise perimeter during non-working hours from 8:00 pm to 7:00 am on weekdays and around the clock on weekends.

To monitor attempts of unauthorized access to the premises, it is necessary to set up video surveillance at vulnerable areas of the perimeter through which intruders may enter the enterprise premises (for example, checkpoint, fence, gate, etc.), and configure Object Detection analytics with the following parameters:

- The detection zone should cover the entire vulnerable area, including the inner premises that intruders can access
- The object type should be set to Person
- The first set of notification parameters:
 - The dwell time should be set to 1 second
 - The trigger type should be set to Intrusion
 - The detection time frame should be set from 8:00 pm to 11:59 pm, with Monday through Friday selected
 - Friday selected
- The second set of notification parameters:
 - The dwell time should be set to 1 second
 - The trigger type should be set to Intrusion
 - The detection time frame should be set from 12:00 am to 7:00 am, with Monday through Friday selected

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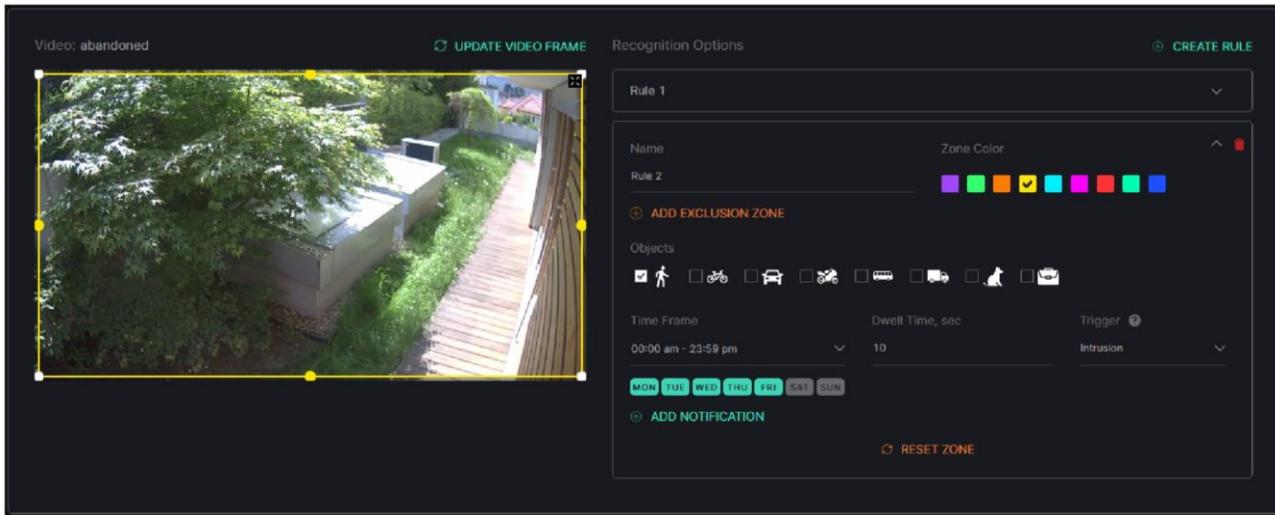
- The third set of notification parameters:
 - The dwell time should be set to 1 second
 - The trigger type should be set to Intrusion
 - The detection time frame should be set from 12:00 am to 11:59 pm, with Saturday and Sunday selected

💡 Additional sets of notification parameters can be added by clicking the Add Notification button.

With these settings, if a person enters the detection zone during weekdays from 8:00 pm to 7:00 am or at any time during weekends and stays within the zone for at least 1 second, the system sends a notification with an event frame about a suspicious object present in the secured premises. In case of a security threat, this allows for a quick reaction and appropriate measures to be taken.

Use the Intrusion trigger type to receive event notifications during the selected days of the week for the required time frame about an object of the selected type that has entered the detection zone and remained inside it for a specified time in seconds.

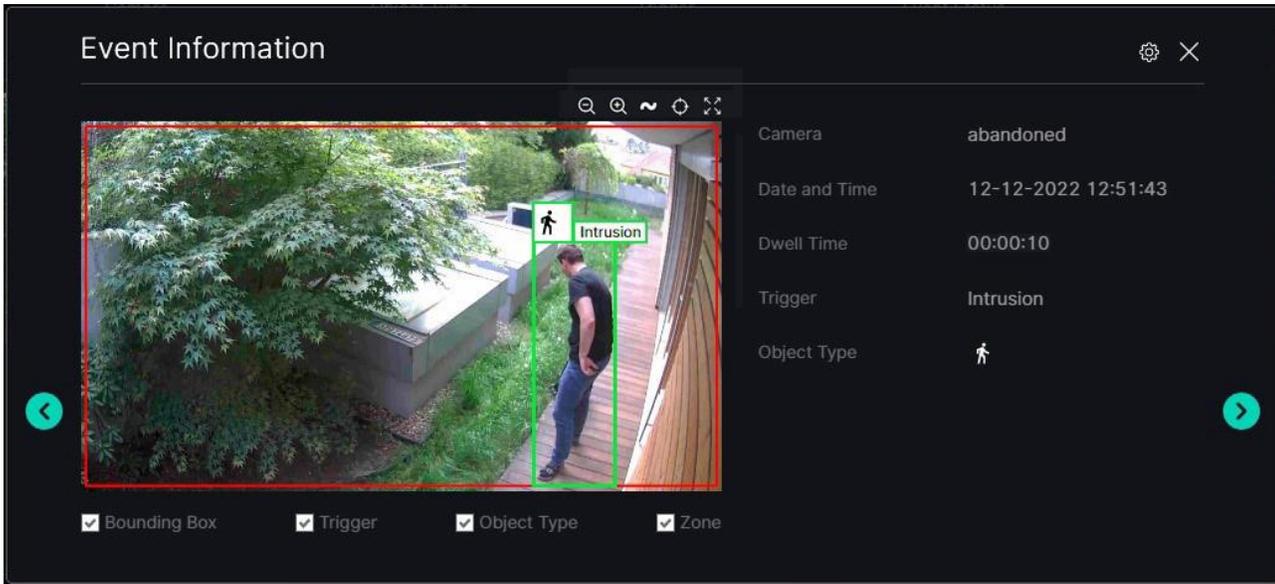
For example, set the parameters:



- Select the required video stream
- Modify the detection zone by clicking and dragging the handles
- Check the Person object type box
- Set the Time Frame parameter to 00:00-23:59
- Enter the value 10 in the Dwell Time, sec field
- Select Intrusion from the Trigger drop-down list
- Deselect the Saturday and Sunday buttons on the days of the week

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After the settings are saved and analytics is started, wait for detection. Once the analytics detects the object that meets all specified conditions, the system will send an event notification with results as shown in this example:



The screenshot displays the 'Event Information' window. On the left, a video frame shows a person walking on a wooden path, with a green bounding box and an 'Intrusion' label. Below the video are four checked checkboxes: Bounding Box, Trigger, Object Type, and Zone. On the right, a table lists event details:

Camera	abandoned
Date and Time	12-12-2022 12:51:43
Dwell Time	00:00:10
Trigger	Intrusion
Object Type	Person

- Date is 12-12-2022 (Monday)
- Time is 12:51:43
- Dwell time is 10 seconds
- Intrusion trigger
- Person object type

At 12:51:43 on Monday the 12th of December, 2022, the selected camera detected a person in the required detection zone. At this point, the detected person appeared in the detection zone and stayed in it for 10 seconds.

Object Detection: Advanced Settings

i This page describes the Advanced Settings tab parameters of the Object Detection plugin and examples of their usage.

Tracker Sensitivity

With a high Tracker Sensitivity setting:

Different static objects, even if they have a similar appearance, can be recognized by the analytics as distinct objects.



However, dynamic objects may be identified as new objects in some cases due to variations in their shape (such as changes in the posture of a person or the turn of a car).



With a low Tracker Sensitivity setting:

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Similar static objects may not be accurately recognized by the analytics since the system alternately treats them as the same object.



However, dynamic objects that have different appearances can be accurately recognized as distinct by the analytics, but there may be instances of false recognition of the same object as a new one when there are numerous similar objects in the frame.



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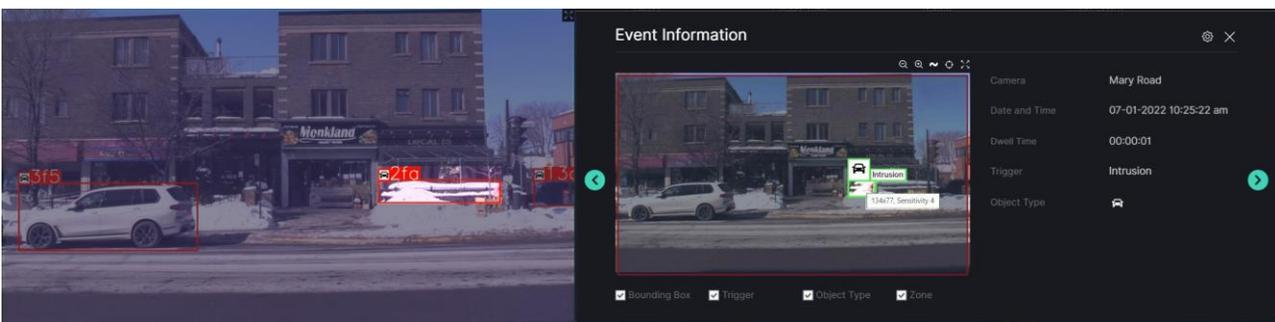
Detector Sensitivity

Increase the Detector Sensitivity parameter value in case the analytics skips the selected objects.

In this example, the analytics has not detected the second person in the detection zone with the Detector Sensitivity parameter value set to 9:



Decrease the Detector Sensitivity parameter value in case the analytics recognizes inappropriate objects as required ones. In this example, the analytics has identified an inappropriate object in the detection zone as a Car with the Detector Sensitivity parameter value set to 4:

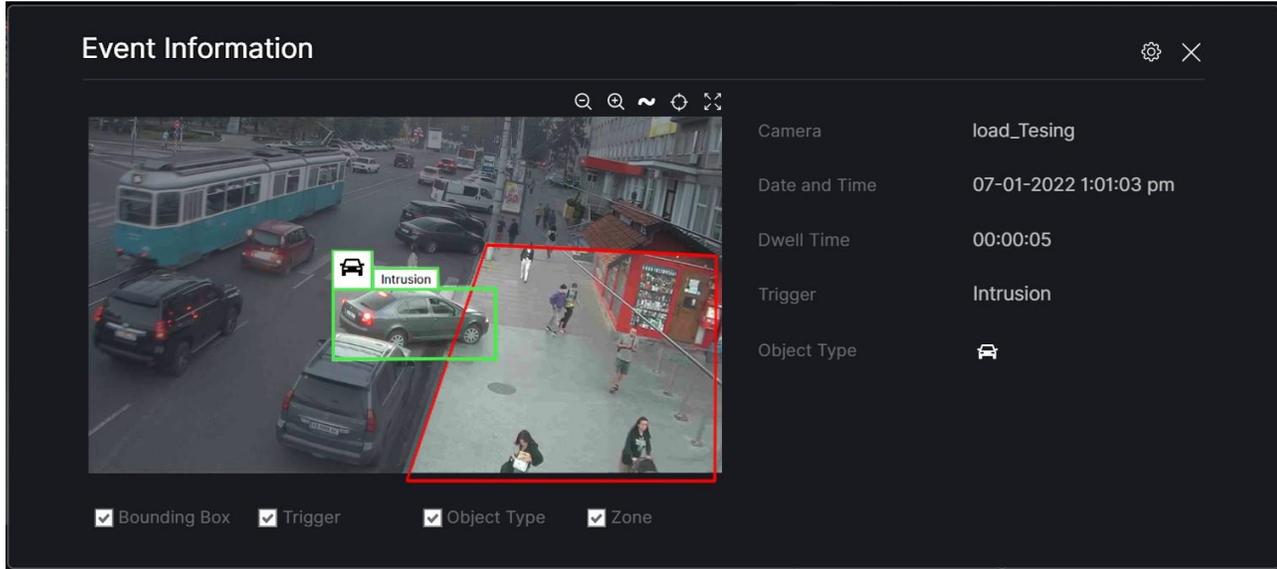


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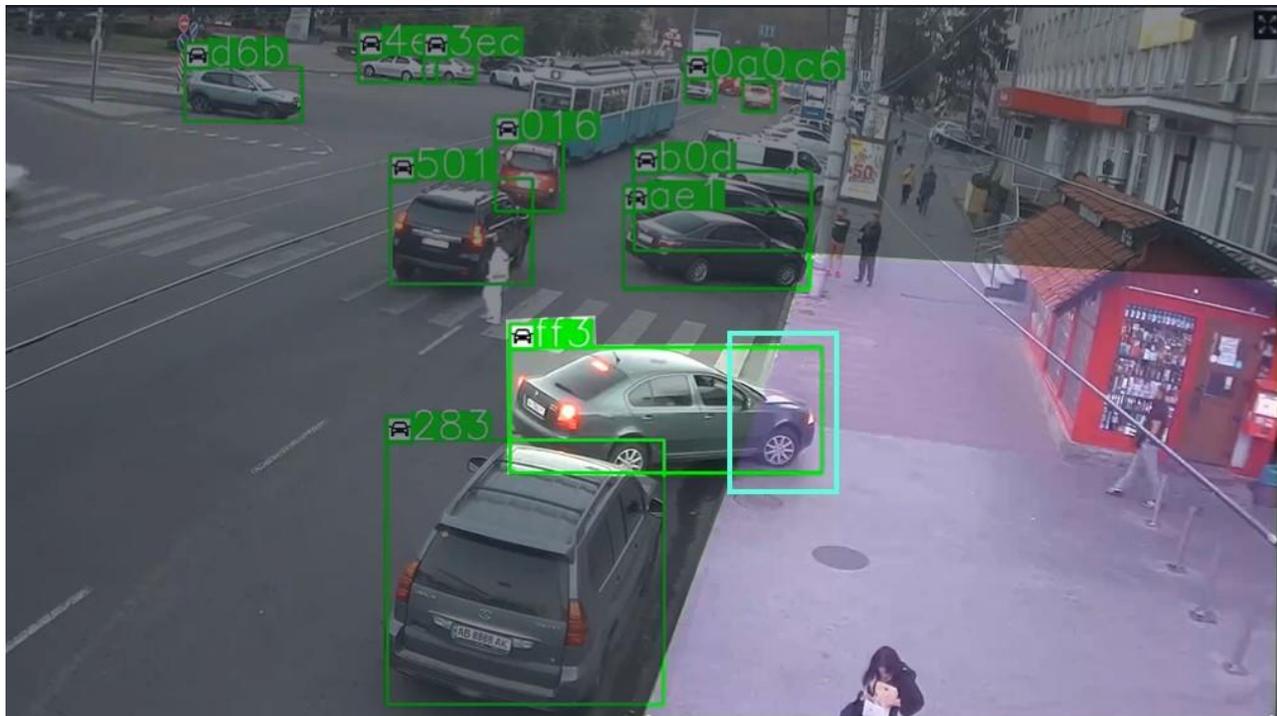
Object in Zone Percentage

Decrease the value of the Object in Zone Percentage parameter when the analytics has to recognize objects that only partially intersect with the zone.

For example, set the Object in Zone Percentage value as 20%. When the selected object intersects with the detection zone for 20% or more and meets all the specified conditions, the system sends the event notification as shown in the picture:



Increase the value of the Object in Zone Percentage parameter if objects partially get into the zone should not be recognized. For example, set the Object in Zone Percentage value as 70%. When the selected object intersects with the detection zone for less than 70%, the system does not send the event notification as it doesn't meet the specified conditions as shown in the picture:

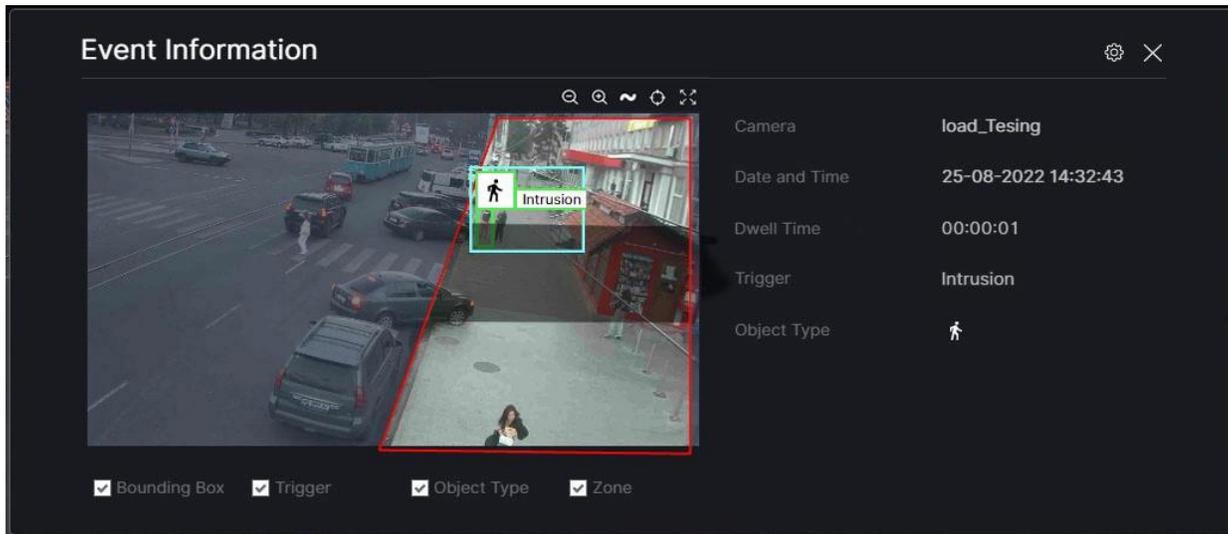


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Object in Exclusion Zone Percentage

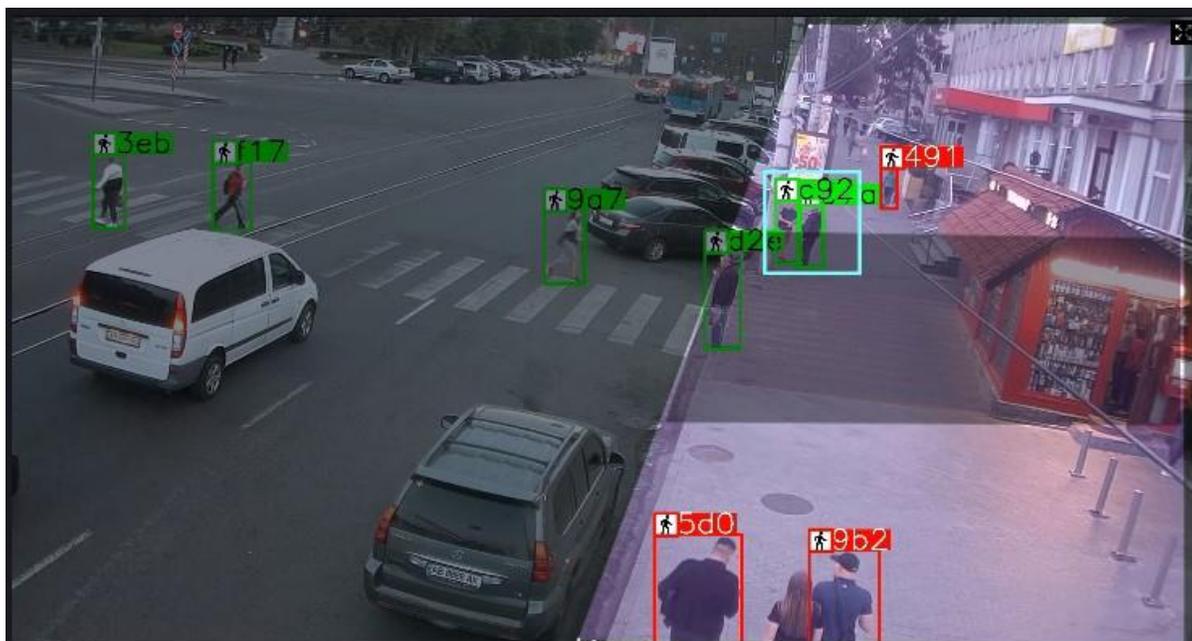
Decrease the value of the Object in Exclusion Zone Percentage parameter when the analytics has to recognize objects that intersect with the exclusion zone for less than a set percentage.

For example, set the Object in Exclusion Zone Percentage value as 70%. When the selected object in the detection zone intersects with the exclusion zone for less than 70% and meets all the specified conditions, the system sends the event notification as shown in the picture:



Increase the value of the Object in Exclusion Zone Percentage parameter when the analytics has to avoid detecting objects that intersect with the exclusion zone for a set percentage or more.

For example, set the Object in Exclusion Zone Percentage value as 20%. When the selected object in the detection zone intersects with the exclusion zone for more than 20%, the system does not send the event notification as it doesn't meet the specified conditions as shown in the picture:



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Model

Choose the most appropriate analytics model:

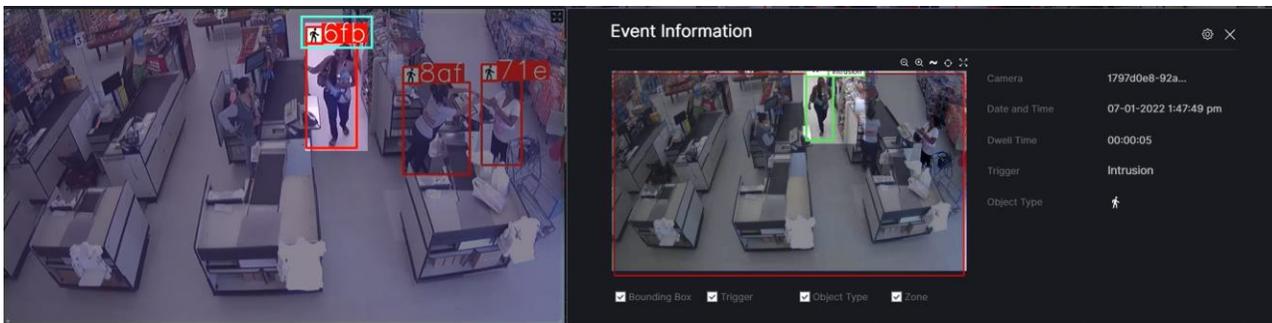
- The Quality model consumes three times more resources than the Performance model but provides better results.
- The Performance model is preferable to use when there are not enough resources to process the Quality model, but in this case, the quality of the provided results is significantly reduced.

 To calculate the required number of resources consumed by the model, use Calculator in Partners Portal.

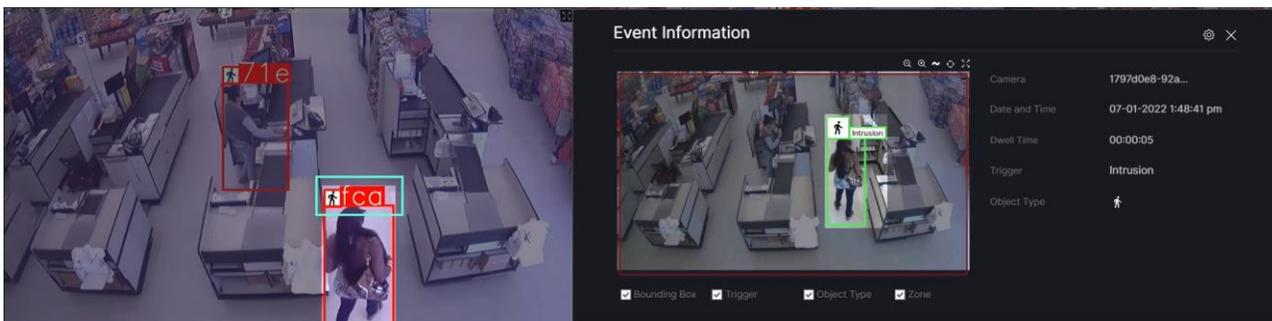
Tracker Buffer Time

The Tracker Buffer Time parameter means the time the recognized object is stored in the buffer. If an object was recognized, but later disappeared from the surveillance area, then this object is sent to the buffer and stays there for a specified amount of time in seconds. If during the specified time the same object returned to the surveillance area, it is removed from the buffer, and the analytics does not react to this object again.

Example 1: The Tracker Buffer Time value is set as 10 seconds. An object that meets all conditions entered the detection zone for the first time, so the system sends an event notification, and the object is buffered.

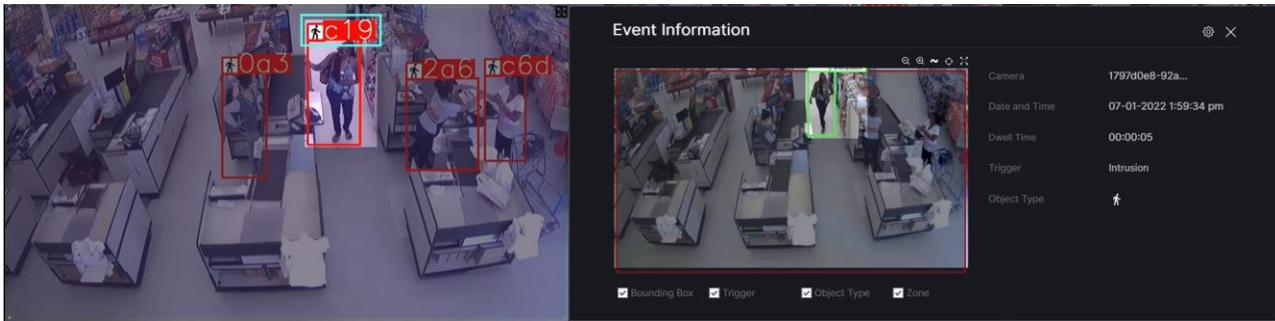


After some time, the object leaves the detection zone for more than 10 seconds and therefore is removed from the buffer after the specified time has elapsed. When the same object returns to the detection zone, the analytics perceives it as a new unique object and sends a new event notification.



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Example 2: The Tracker Buffer Time value is set as 200 seconds. An object that meets all conditions entered the detection zone for the first time, so the system sends an event notification, and the object is buffered.



After some time, the object leaves the detection zone for less than 200 seconds, and therefore it is not removed from the buffer. When the same object returns to the detection zone, the analytics perceives it as an object that has previously entered the detection zone, and therefore it does not send a new event notification.



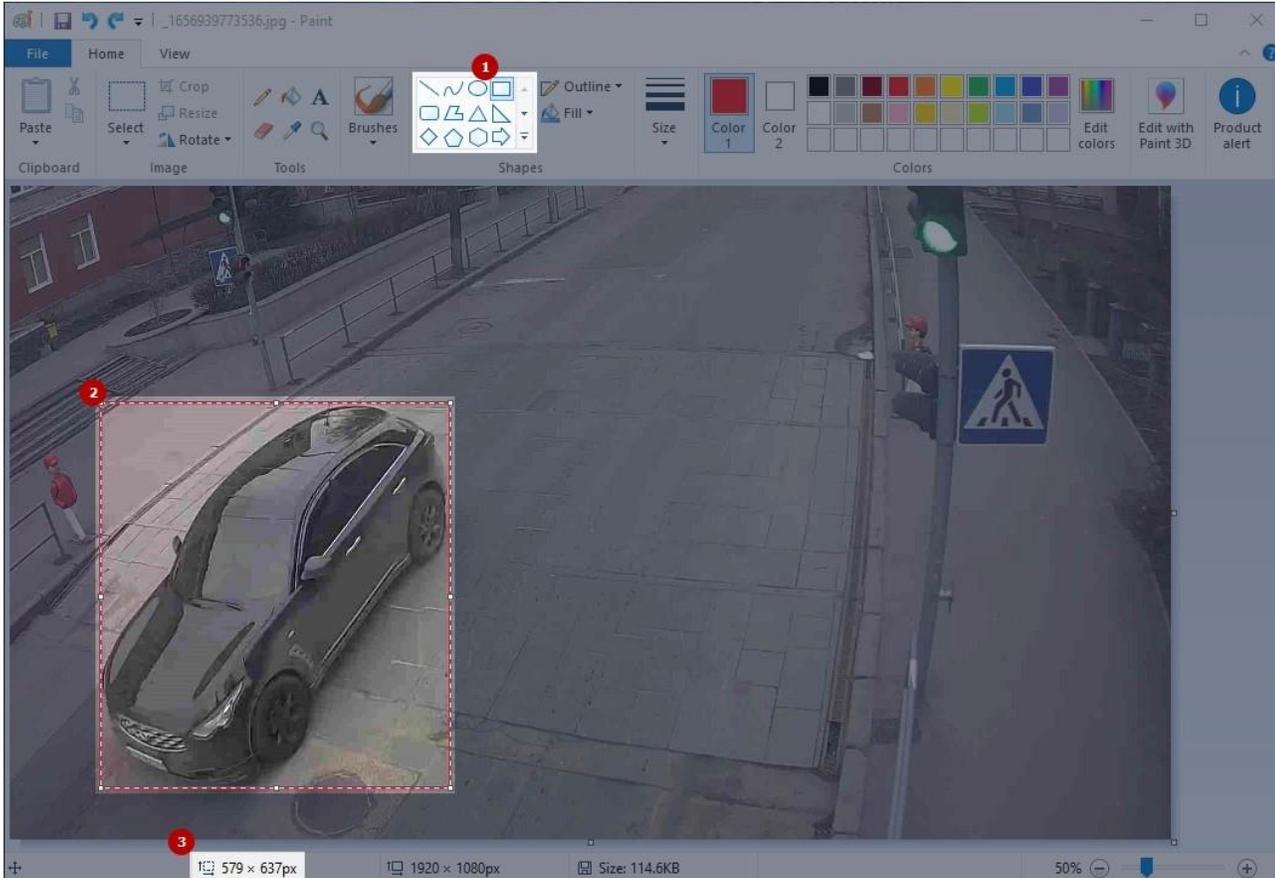
Minimum Object Width and Height

The minimum width and height of the object is preferably at least 25 px. Otherwise, the image quality is insufficient for correct object recognition.

- The object size (WxH) upon camera resolution 2MPx supported for:
- Person size for detection: minimum is 25x40 px, recommended is 50x125 px
- Car size for detection: minimum is 25x25 px, recommended is 150x100 px
- Bicycle size for detection: minimum is 40x70 px, recommended is 90x100 px
- Motorcycle size for detection: minimum is 25x30 px, recommended is 70x90 px
- Bus size for detection: minimum is 90x75 px, recommended is 200x150 px
- Truck size for detection: minimum is 80x70 px, recommended is 180x150 px
- Animal size for detection: minimum is 30x40 px, recommended is 120x140 px
- Item size for detection: minimum is 30x40 px, recommended is 100x150 px

💡 Determine the object's width and height in pixels using a graphics editor (e.g. Paint).

Save a frame from the video and open it in Paint:



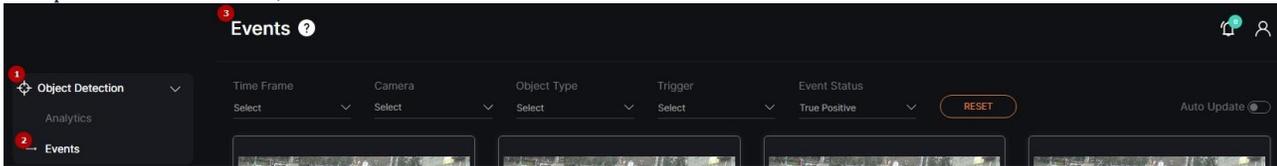
1. Select the Rectangle shape in the Shapes toolbox
2. Select the object by its extreme points with a rectangle
3. View the object's width and height in pixels

Object Detection: Events

i This page comprises the Events item overview and functionality description. The item displays the event notifications including a frame, camera, date and time of the event, event duration time, object and trigger type.

Overview

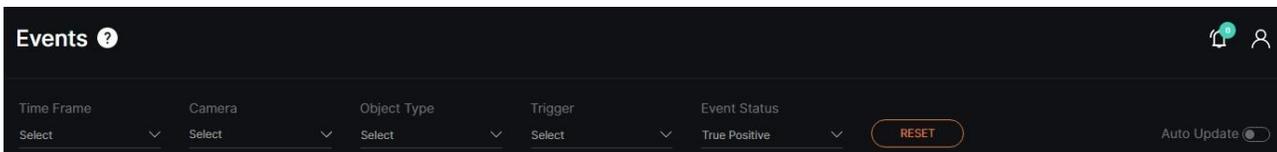
To open the Events item, in the left menu:



1. Select the Object Detection section
2. Choose the Events item
3. See event notifications

Use and Functionality

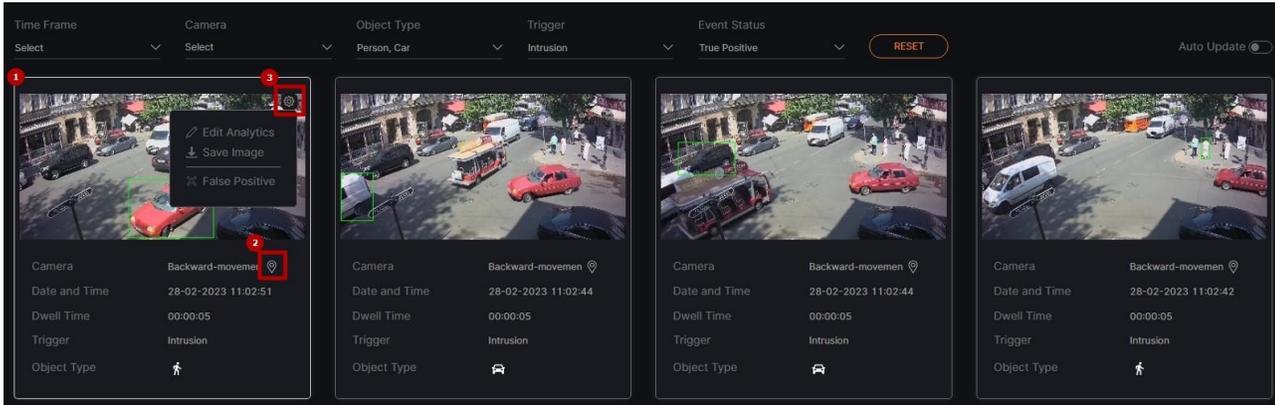
The Events functional menu allows to:



- Select the required events time frame
- Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Select multiple object types:
 - Person
 - Bicycle
 - Car
 - Motorbike
 - Bus
 - Truck
 - Animal
 - Bags
- Select multiple triggers:
 - In Zone
 - Out of Zone
 - Object Counter
 - Presence Control
 - Intrusion
- Select the event status:
 - True Positive to view only valid event notifications
 - False Positive to view only event notifications marked by the user as false
- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable the auto update of the event notifications

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Once selected and filtered, in the events:

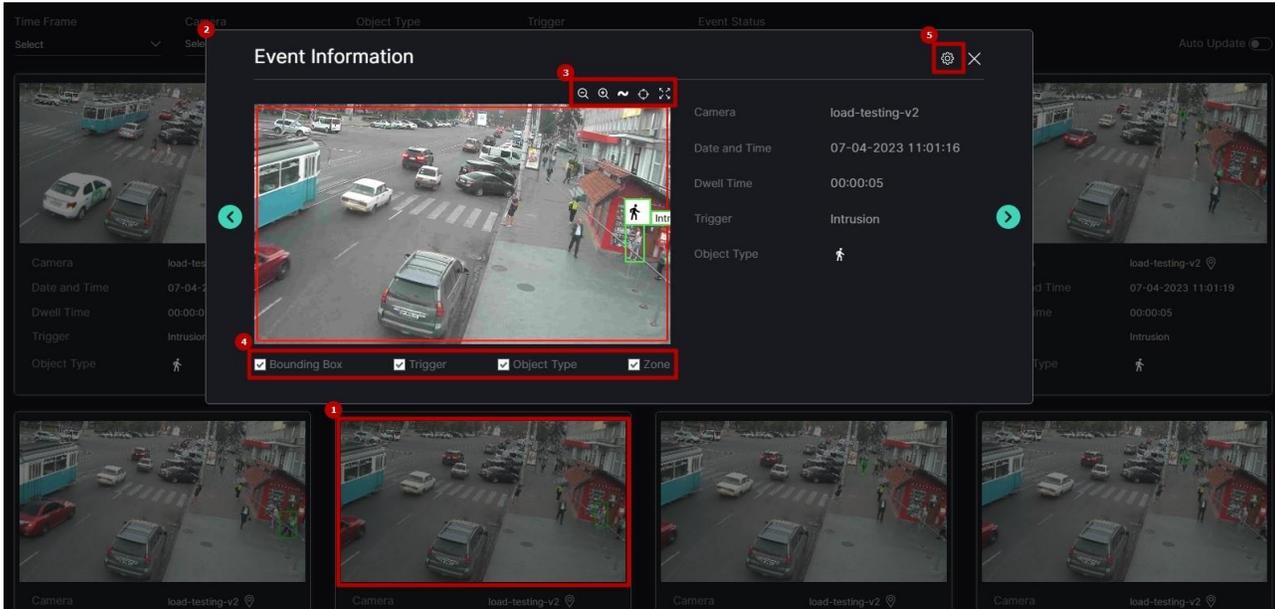


1. View the frame preview and information about the event. To filter events by the recognized data, in the required event block:
 - a. Click the camera name to filter events only by the camera related to the event
 - b. Click the date to filter events only by the date related to the event
 - c. Click the trigger name to filter events only by the trigger related to the event
 - d. Click the object type icon to filter events only by the selected object type related to the event
2. View the camera location on the map by clicking the View Geolocation icon in the event block
3. Hover the mouse over the event block and select the Extra Options icon. In the drop-down menu:
 - a. Click the Edit Analytics button to make changes to the settings of the analytics which is related to the selected event
 - b. Click the Save Image button to download the event frame in full size
4. Click the False Positive or True Positive button and confirm the intention to change the event status and move the selected event to the appropriate set of filtered events

- 💡 • The False Positive button is available in the settings drop-down list only if the True Positive event status has been previously selected in filters.
- The True Positive button is available in the settings drop-down list only if the False Positive event status has been previously selected in filters.
- The selected Presence Control trigger divides filtered events into two types:
- Presence Control (In Zone) in case the object has entered the set zone and stayed there for the specified time
- Presence Control (Out of Zone) in case the object left the set zone, after which the zone was empty for a certain period of time

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To view the required event:



1. Click the frame preview
2. See the event's pop-up window
3. Use frame view tools:
 - a. Zoom Out icon (-) to zoom out from a specific area of the frame
 - b. Zoom In icon (+) to zoom in on a specific area of the frame
 - c. Reset View icon (~) to reset the frame to its original size and position
 - d. Target icon to zoom in on the detected object in the frame (available for the Presence Control and Intrusion trigger types)
 - e. Enlargement icon to open the frame in full-screen (in the full-screen press the Esc button to return to default view)
4. Check the required boxes to enable or disable the display elements on the frame:
 - a. Bounding Box
 - b. Trigger
 - c. Object Type
 - d. Zone
5. Hover the mouse over the Extra Options icon. In the drop-down menu:
 - a. Click the Edit Analytics button to make changes to the settings of the analytics which is related to the selected event
 - b. Click the Save Image button to download the event frame in full size
 - c. Click the False Positive or True Positive button and confirm the intention to change the event status and move the selected event to the appropriate set of filtered events



- Hover the mouse over the bounding box in the frame to see its width and height parameters in pixels and analytics sensitivity value.
- Click and drag the image across the zoomed-in frame in order to view different parts of it.

Smart Parking

Introduction

Use this guide to understand the interface and features of the Smart Parking plugin and learn how to utilize it for the best result.

What Is Smart Parking?

Smart Parking includes effective recognition of license plates, territory zoning, parking management, monitoring compliance with parking rules, smart search, as well as a customizable notification system.

Primary Capabilities

Smart Parking is capable to:

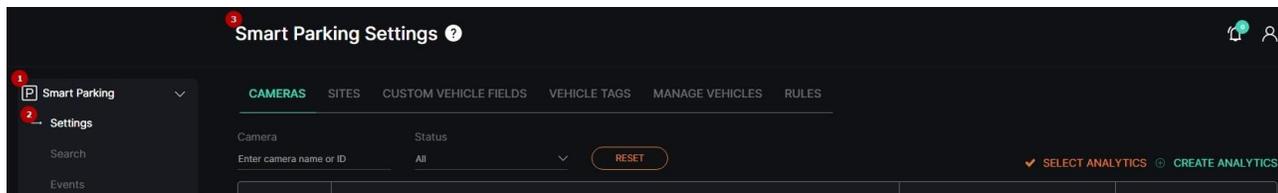
- Recognize license plate numbers with up to 99.9% accuracy, regardless of the weather conditions (dirty, blurred, out of focus, dark or light)
- Identify the make, model, color of the vehicle, and country (state)
- Manage vehicle attendance time with the flexible pass system
- Set the unlimited number of tag-based parking notification rules
- Divide the parking area into sites for better entry/exit control by linked cameras

Smart Parking: Settings

i This section describes the Settings item that allows managing cameras, sites, custom vehicle fields, vehicle tags, vehicle cards, and parking rules.

Overview

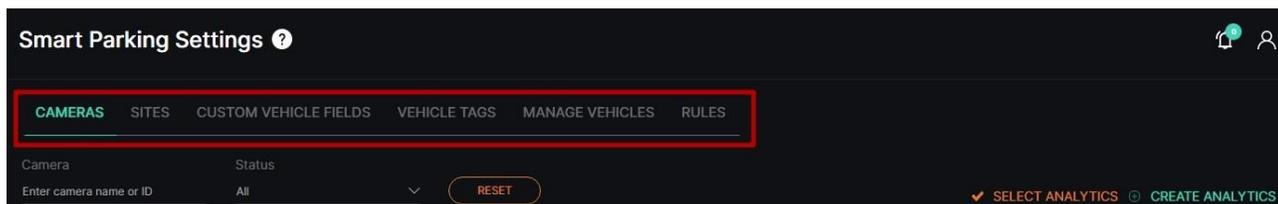
To open the Settings item, in the left menu:



1. Select the Smart Parking section
2. Choose the Settings item
3. See settings navigational menu

Use and Functionality

The settings navigational menu consists of 6 tabs:



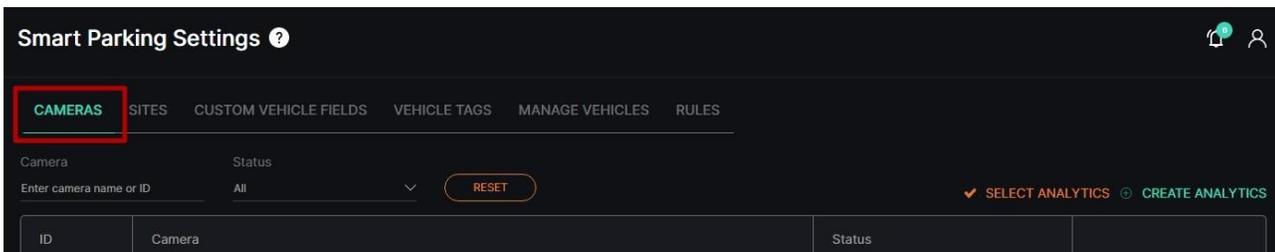
- The Settings item opens with the Cameras tab by default.
- The selected tab is always highlighted.

Settings: Cameras

i This page comprises the Cameras tab overview and options to customize analytics. The tab displays a list of analytics including status and the ability to manage analytics.

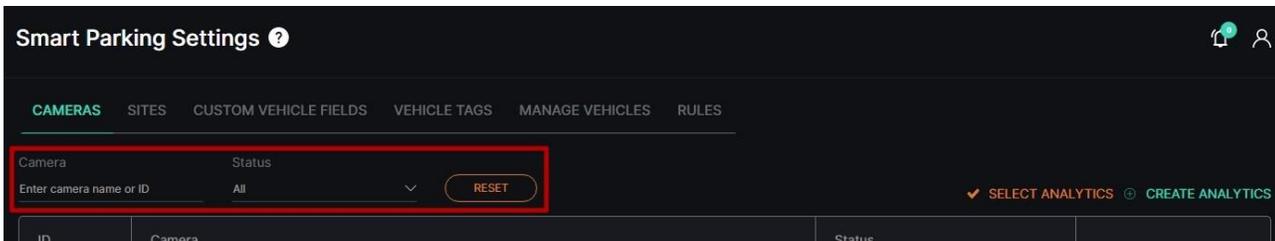
Overview

Select the Cameras tab in the tabs menu:



Use and Functionality

The Smart Parking Cameras functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

💡 The status options comprise All, Active, and Stopped.

See the list of analytics in the table below. It contains:

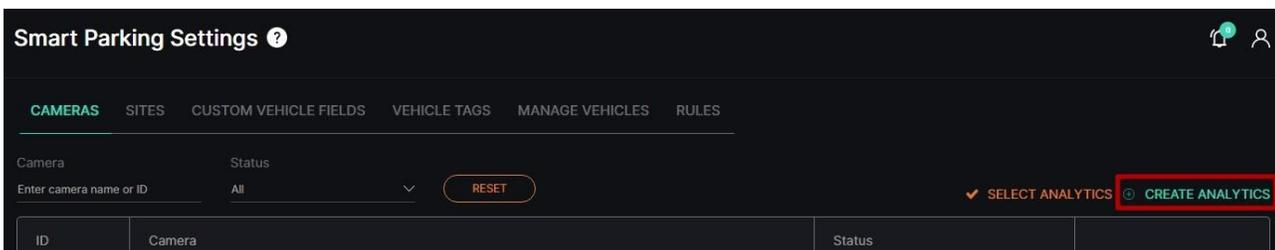
ID	Camera	Status	
2	▼ Anastasia		
939	LPR FOG GPU H.264 - CPU 25 FPS	Stopped	START
905	LPR FOG GPU H.264 - NVDEC 25 FPS	Active (25s / 3)	STOP
594	LPR31 GPU H.264 - NVDEC 25 FPS	Stopped	START

- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - Additional hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Search Results
 - View
 - Delete

- To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).
- To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

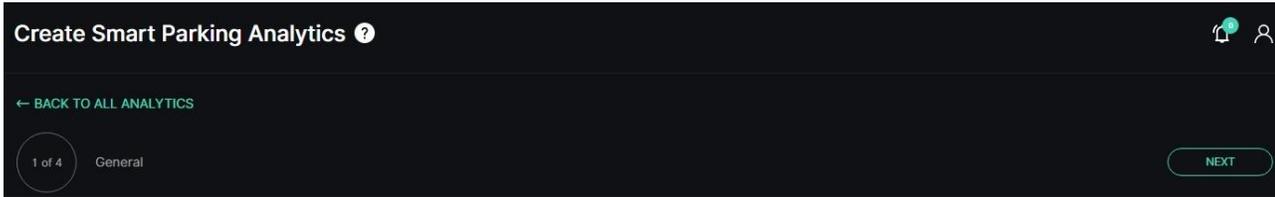
Create Analytics

To create new analytics, click the Create Analytics button:



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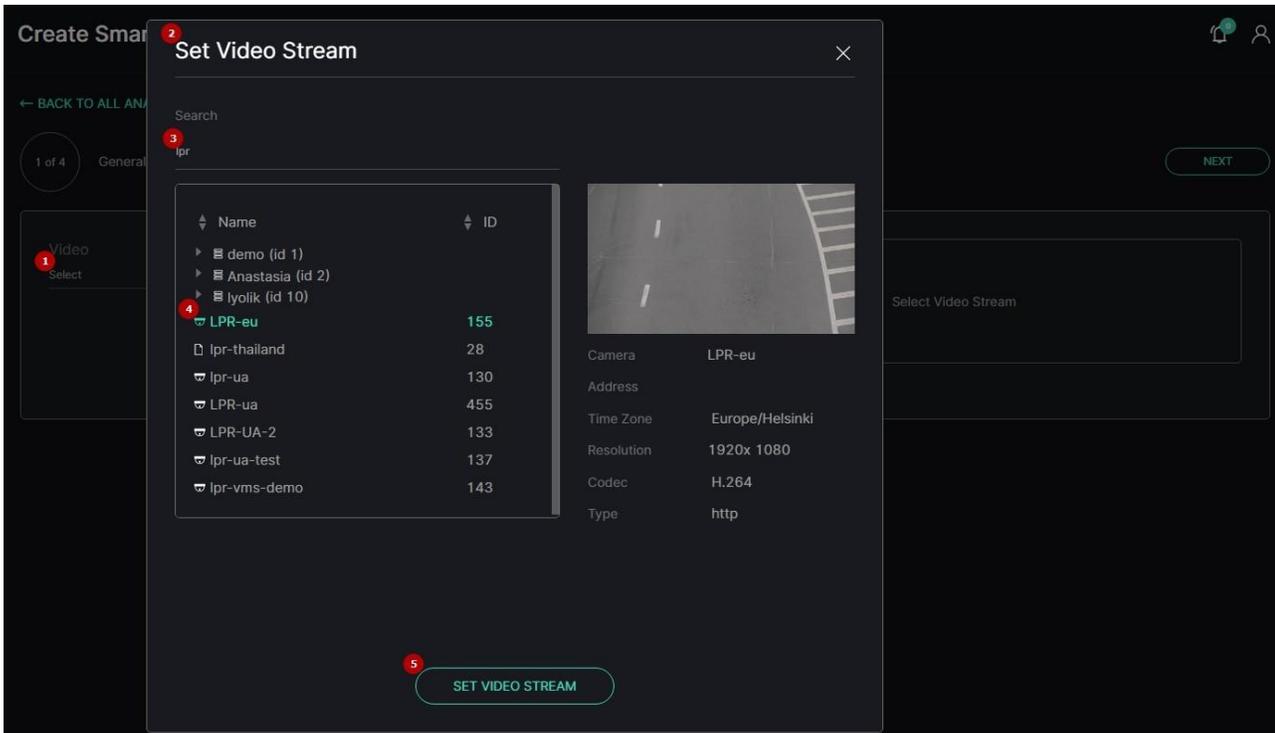
The Create Smart Parking Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters. To set a video stream:

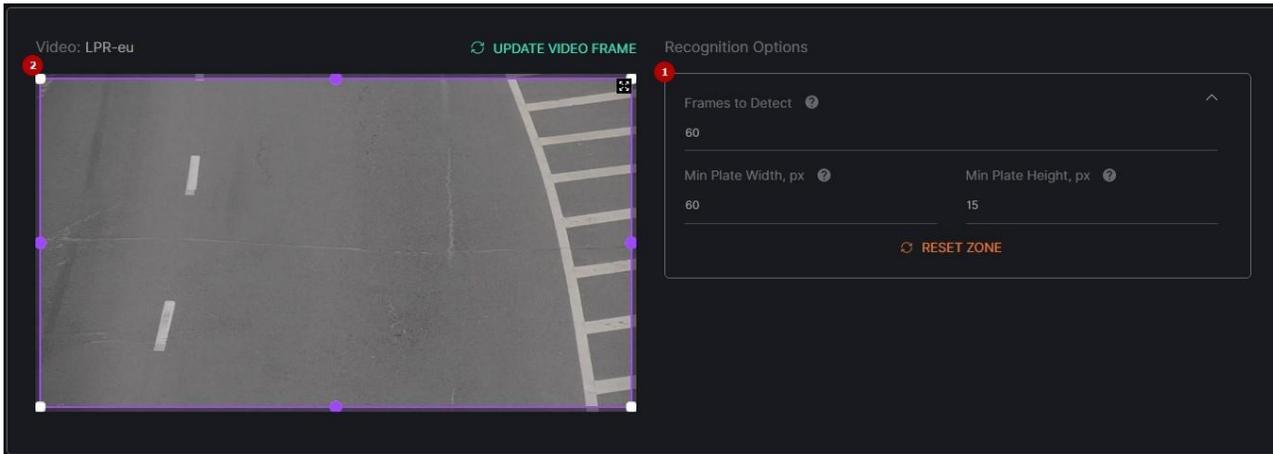


1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

To perform the recognition, apply these recognition options:

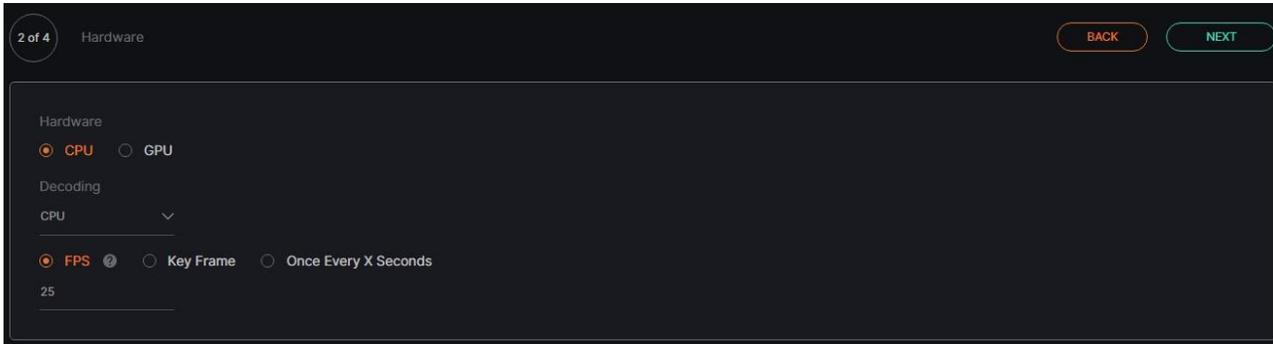


1. Set the parameters:
 - a. Set the number of frames for the sample from which the best frame is selected for vehicle detection
 - b. Set the minimum plate width for recognition (in pixels)
 - c. Set the minimum plate height for recognition (in pixels)
2. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to delete it
 - d. Click the Reset Zone button to return the detection zone borders to their original position

-  • The possible range for the Frames to Detect parameter is from 1 to 100 frames. If a license plate is clearly visible in the frame, it is possible to significantly lower the parameter value to save hardware resources without detection quality loss (e.g. set the value to 5 frames, and set the FPS parameter to 1 in the Hardware tab. The system collects 5 frames within 5 seconds and selects the best one for recognition).
- The minimum value for the Min Plate Width, px parameter is 60 pixels.
 - The minimum value for the Min Plate Height, px parameter is 15 pixels.
 - The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:

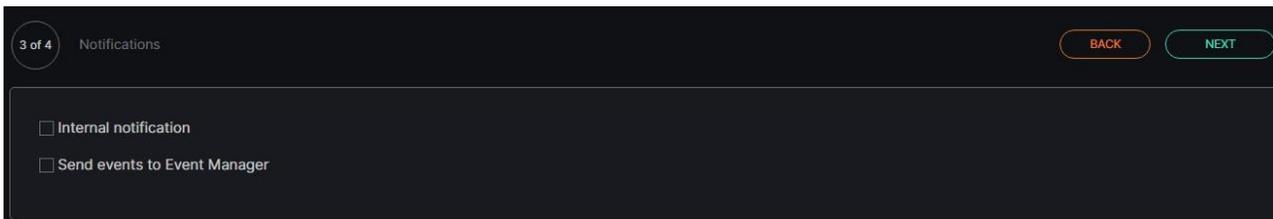


- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

- 💡 • The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as required.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Notifications Tab

The Notifications tab allows managing the events notifications:

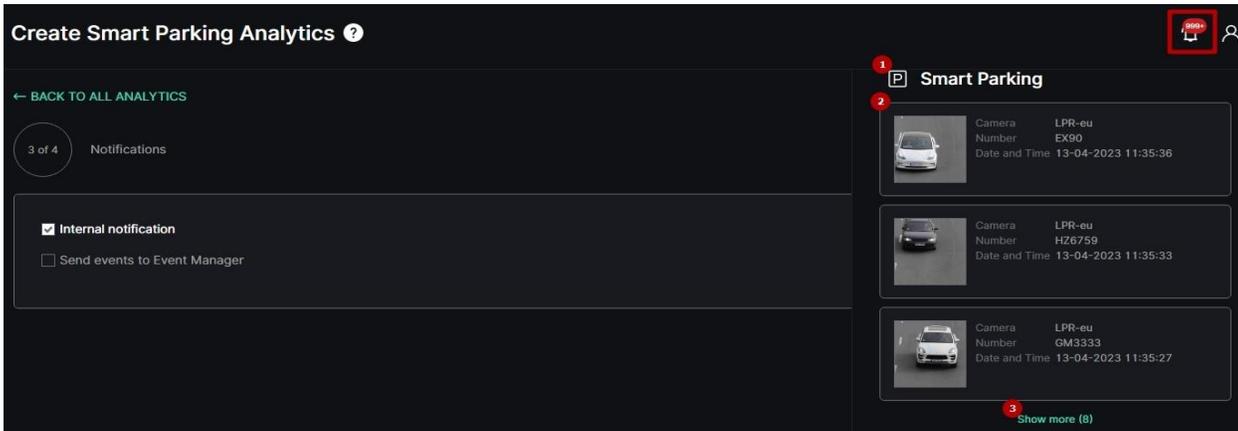


- Check the Internal Notification box to allow the system to send all notifications to the Events section
- Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources

- 💡 The default parameters allow the production of analytics. To customize the analytics, set parameters as required: Check one of them or use both simultaneously.

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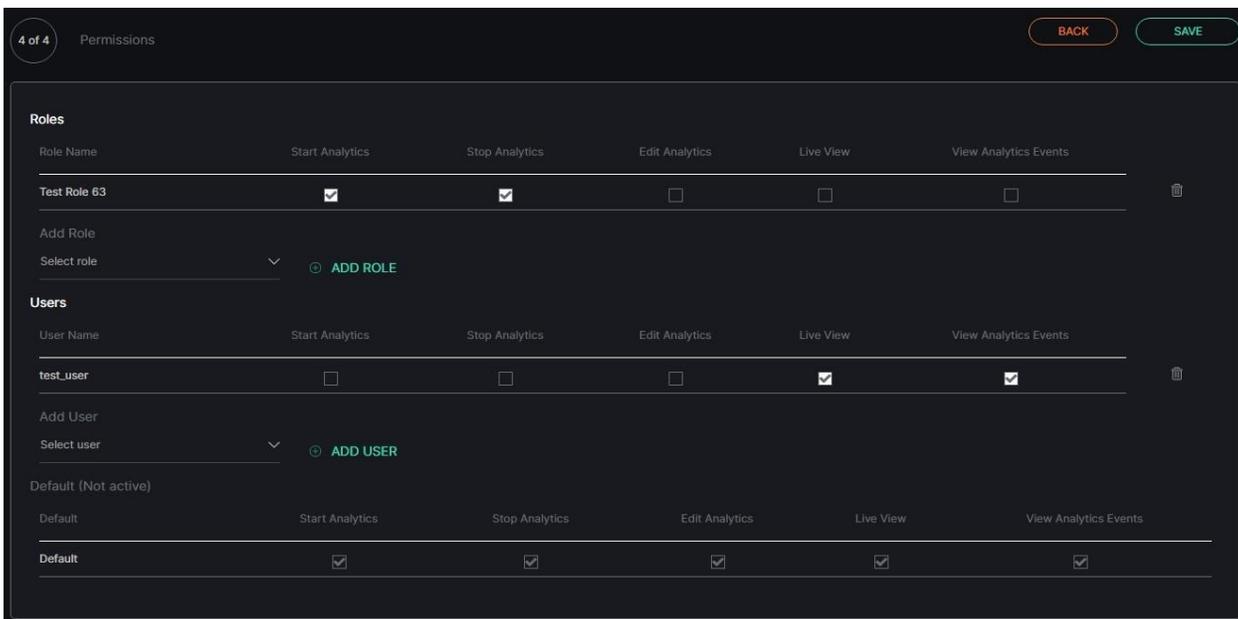
Once the Internal Notification box is checked, and the analytics is created and enabled, the Notification icon signals about each new event notification. Click the Notification icon to open the Notification Panel. It comprises:



1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
 - b. Clear all plugin event notifications at once from the Notification Panel by clicking the Close button (this action doesn't affect events in the Events item)
2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
3. Show More button with the total events number to open the Events item and view all events

Permissions Tab

The Permissions tab provides the ability to:



- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu

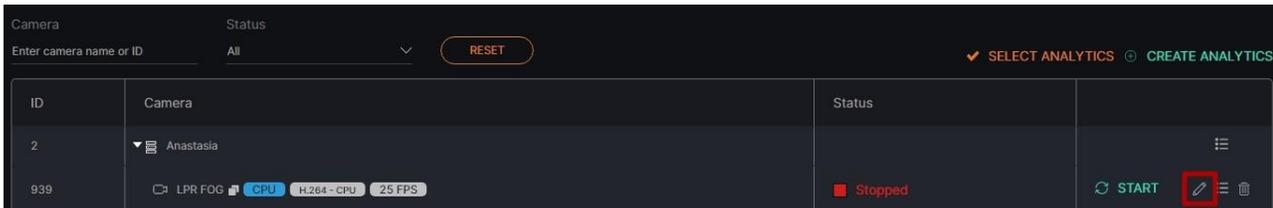
- 💡 • Default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users is not limited.

Once saved, the Smart Parking Analytics editor opens to allow the users to:

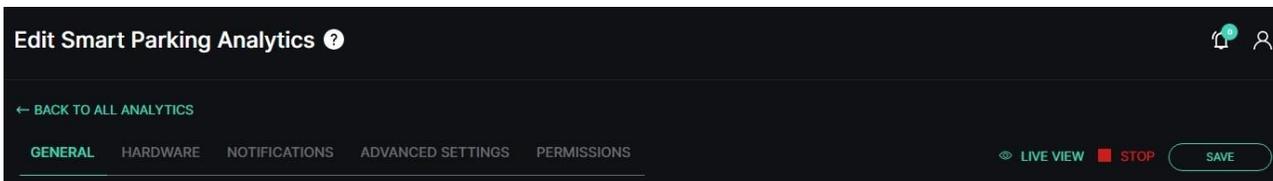
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Smart Parking Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window

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- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the selected analytics

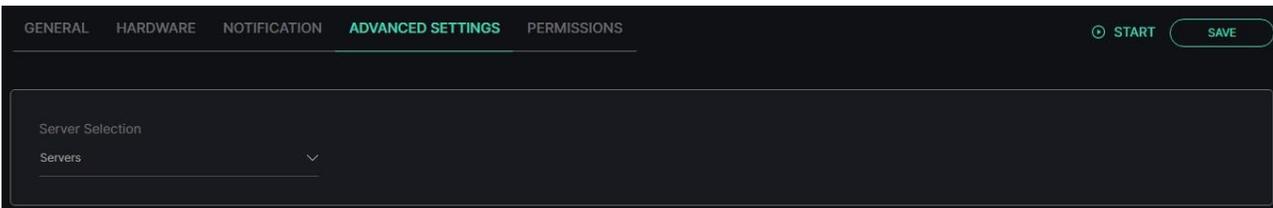
 • The current tab is always highlighted.

- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.
- The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics](#).

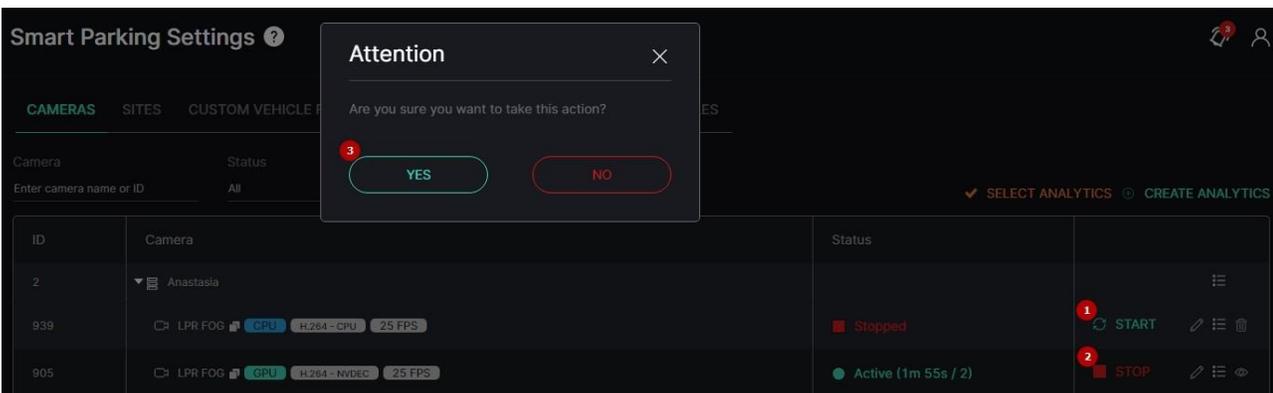
Advanced Settings Tab

The Advanced Settings tab allows the users to select a server from the drop-down list to run the analytics:



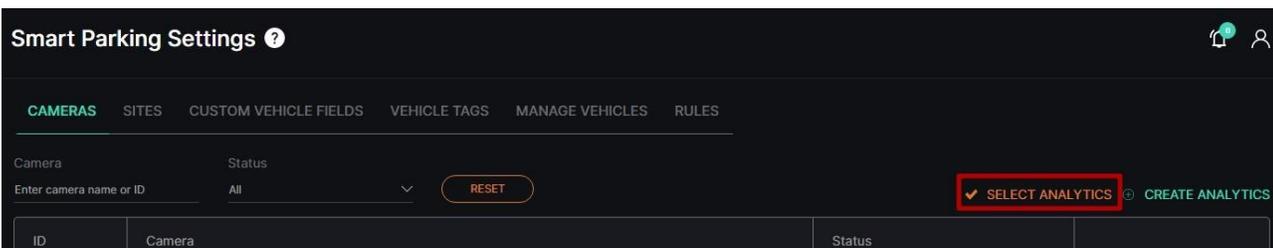
Analytics Status

To enable or disable the analytics and view the change of the analytics status:



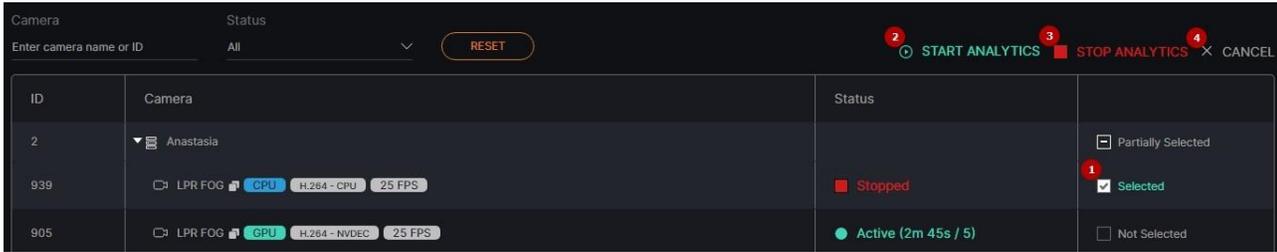
1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



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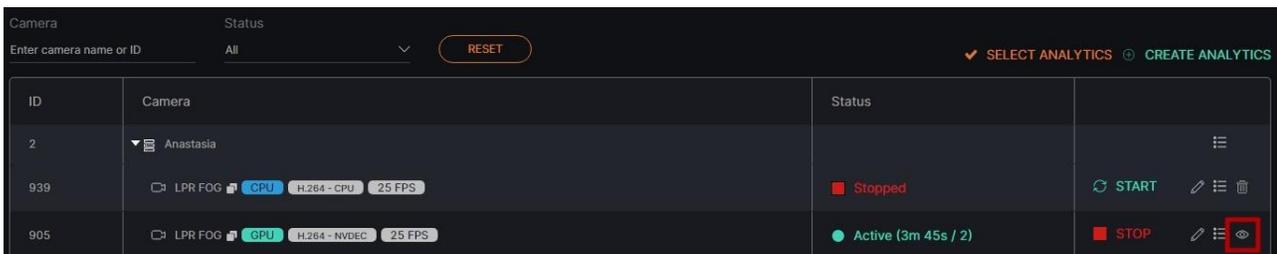
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics selection

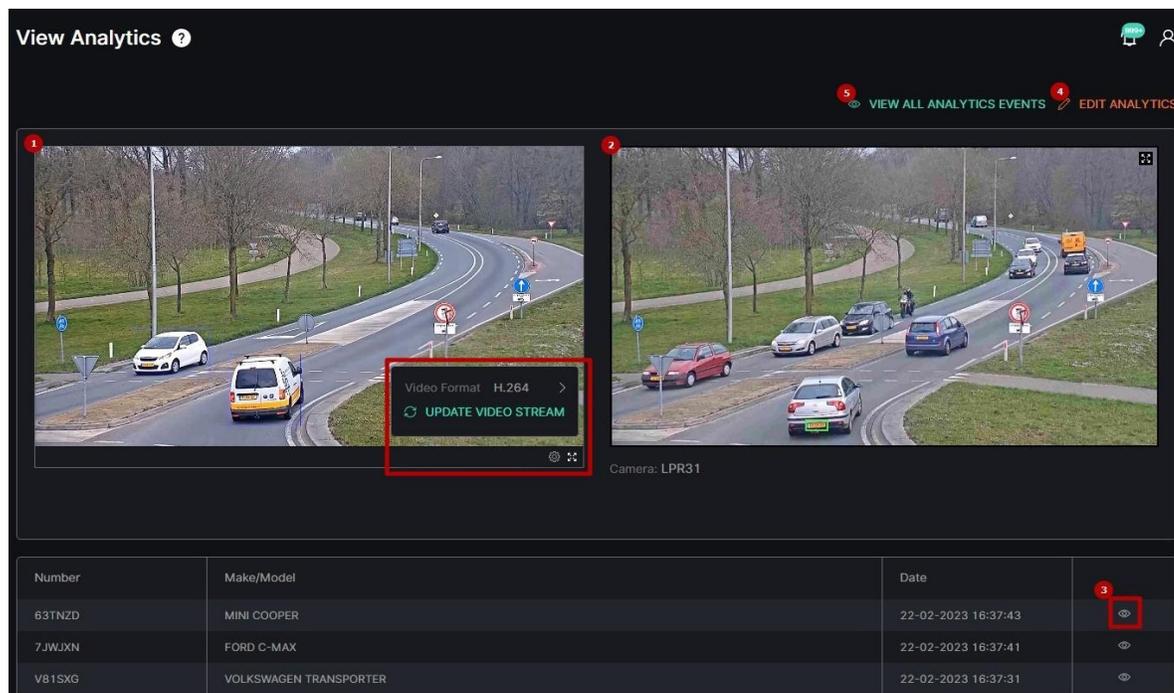
View Analytics

To see the selected analytics in real-time, click the View icon on the toolbox:



The View icon becomes available only when selected analytics is active.

Live view analytics mode allows to:



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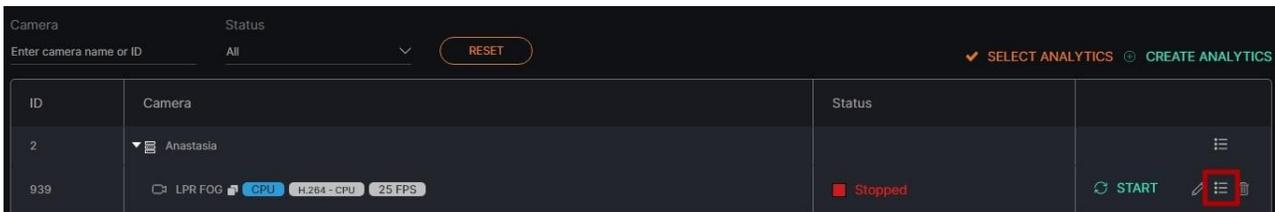
1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View the frame preview with the recognized license plate number
3. Select the View icon in the table below to view the additional information. In the pop-up window:
 - a. See the extended vehicle data
 - b. Save the image in the full-size
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics



Click the enlargement icon in the upper-right corner of the frame preview to open the full screen view mode.

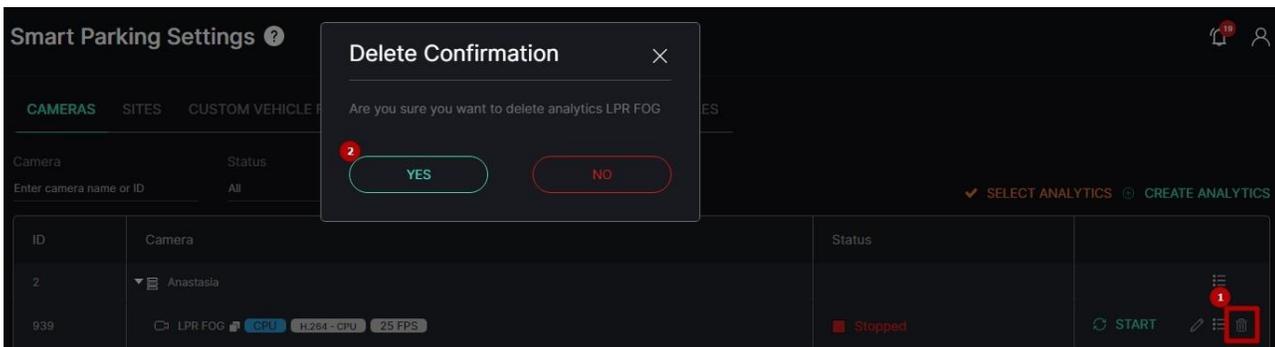
View Search Results

To view selected analytics search results in the Analytics item, click the Search Results icon on the toolbox:



Delete Analytics

To delete the analytics:



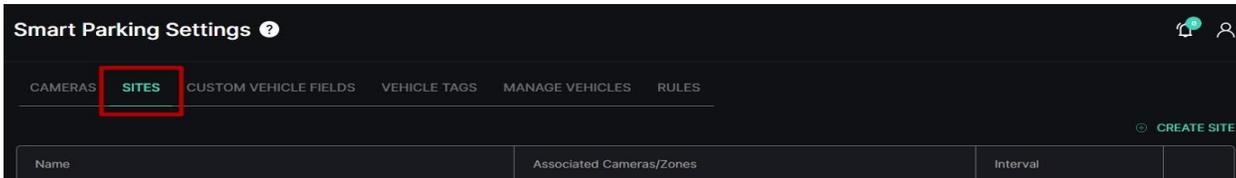
1. Select the Delete icon on the toolbox
2. Confirm the intention

Settings: Sites

i This page comprises the Sites tab overview and options to manage cameras associated with the parking territory zones.

Overview

Select the Sites tab in the tabs menu:



Use and Functionality

See the list of sites in the table. It contains:

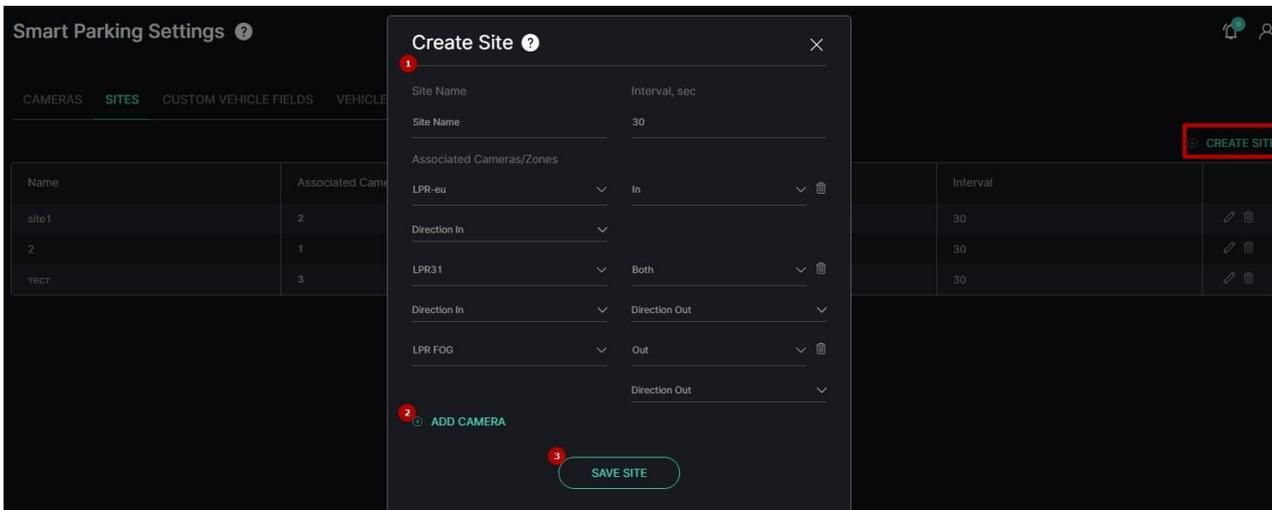
The screenshot shows the 'SITES' tab with a table listing site configurations. The table has four columns: 'Name', 'Associated Cameras/Zones', 'Interval', and a 'Toolbox' column with edit and delete icons. The data rows are as follows:

Name	Associated Cameras/Zones	Interval	Toolbox
site11	1	30	[edit] [delete]
site2	1	30	[edit] [delete]
site3	2	50	[edit] [delete]
test	1	30	[edit] [delete]
Mary site 1	1	30	[edit] [delete]

- Site name
- Number of cameras associated with the site
- Time interval between repeated license plate recognition in seconds
- Toolbox comprises:
 - Edit
 - Delete

Create Site

To create a new site, click the Create Site button. In the Create Site pop-up window:



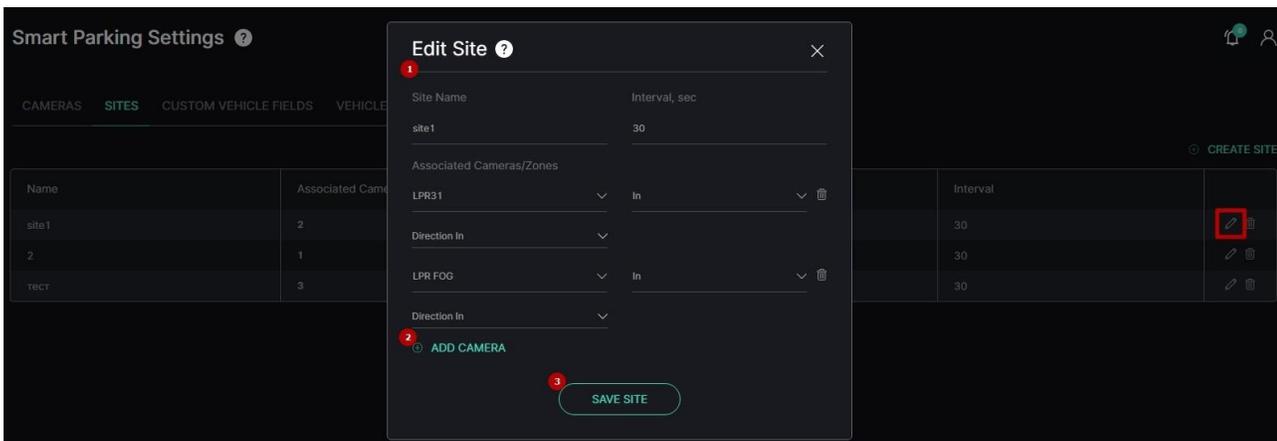
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1. Fill in the required fields:
 - a. Enter the site name
 - b. Enter the time interval between repeated license plate recognition in seconds
 - c. Select the camera name from the drop-down list
 - d. Select the direction of the vehicle movement from the drop-down list:
 - e. In
 - f. Out
 - g. Both
 - h. Choose the desired direction of movement for the previous parameter
2. Click the Add Camera button to add more cameras with their own parameters to the new site
3. Click the Save Site button

 Click the Delete icon next to the undesired camera to delete it from the new site.

Edit Site

To edit a site, click the Edit Site button. In the Edit Site pop-up window:

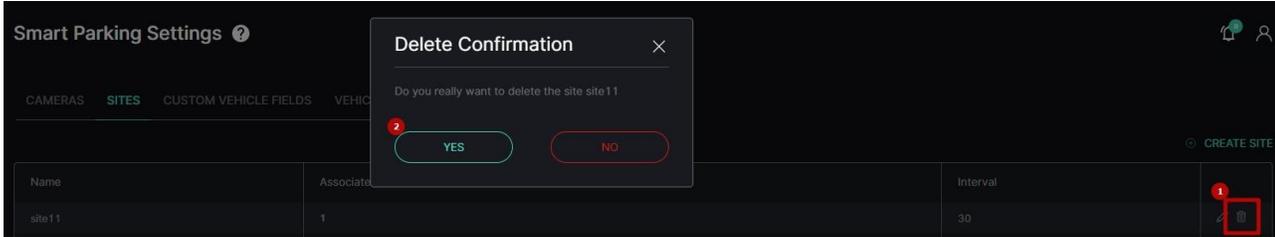


1. Change the information in the required fields:
 - a. Enter the site name
 - b. Enter the time interval between repeated license plate recognition in seconds
 - c. Select the camera name from the drop-down list
 - d. Select the direction of the vehicle movement from the drop-down list:
 - i. In
 - ii. Out
 - iii. Both
 - e. Choose the desired direction of movement for the previous parameter
2. Click the Add Camera button to add more cameras with their own parameters to the site
3. Click the Save Site button

 Click the Delete icon next to the undesired camera to delete it from the selected site.

Delete Site

To delete a site:



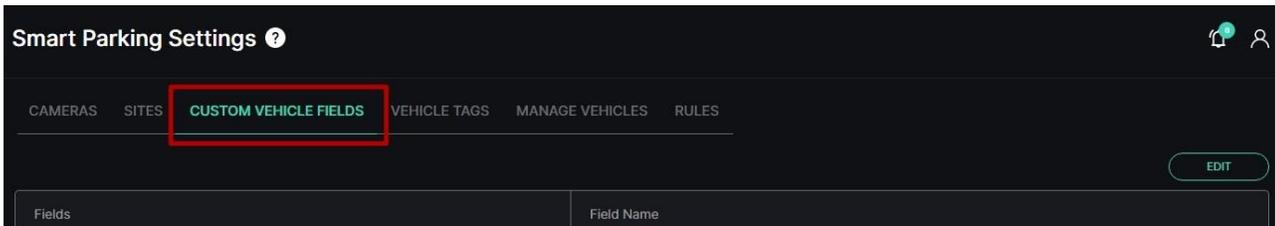
1. Select the Delete icon on the toolbox
2. Confirm the intention

Settings: Custom Vehicle Fields

i This page includes the Custom Vehicle Fields tab overview and options to customize vehicle field names for further use as parameters for each specific vehicle description.

Overview

Select the Custom Vehicle Fields tab in the tabs menu:



Use and Functionality

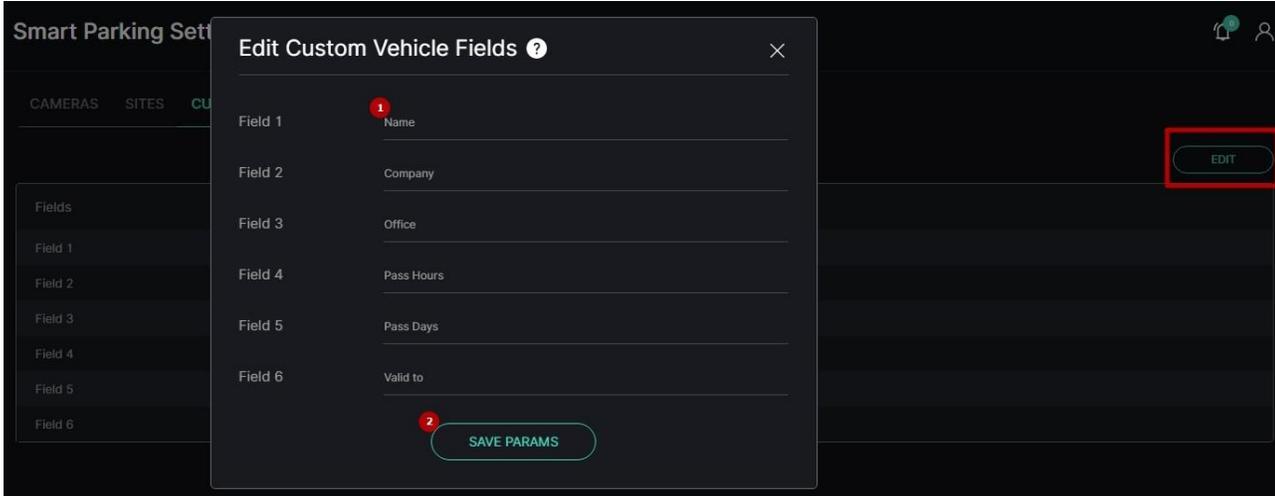
See the list of fields in the table. It contains 6 field slots with a custom name for each:

The screenshot shows the 'CUSTOM VEHICLE FIELDS' table with 6 rows. Each row has a 'Fields' column and a 'Field Name' column. The 'Fields' column contains 'Field 1' through 'Field 6'. The 'Field Name' column contains 'Custom field 1' through 'Custom field 6'. An 'EDIT' button is visible in the top right corner.

Fields	Field Name
Field 1	Custom field 1
Field 2	Custom field 2
Field 3	Custom field 3
Field 4	Custom field 4
Field 5	Custom field 5
Field 6	Custom field 6

Edit Fields

To edit field names, click the Edit button. In the Edit Custom Vehicle Fields pop-up window:



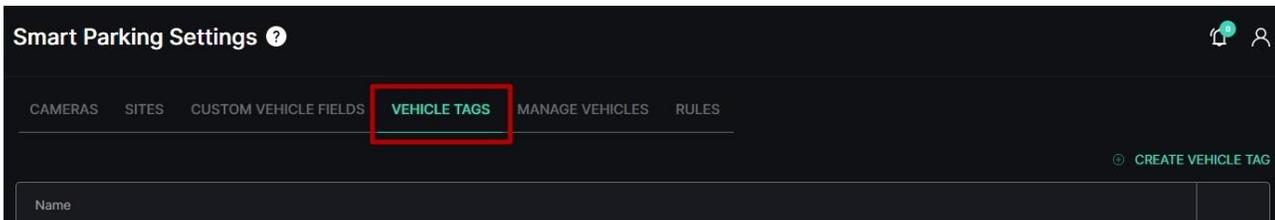
1. Fill in the fields as required
2. Click the Save Params button to apply changes

Settings: Vehicle Tags

i This page comprises the Vehicle Tags tab overview and options to create different tags for further connecting vehicles to rules and to divide staff rights for parking usage.

Overview

Select the Vehicle Tags tab in the tabs menu:



Use and Functionality

See the list of tags in the table. It contains:

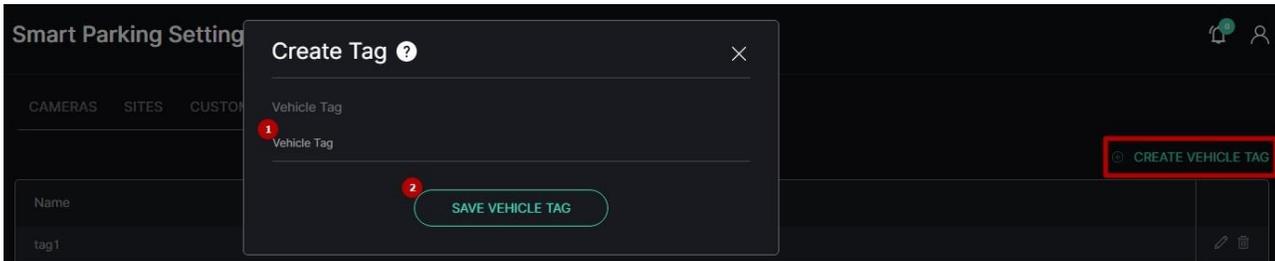
Name	
test	
test1	
tag	
Mary tag	

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- Tag name
- Toolbox comprises:
 - Edit
 - Delete

Create Tag

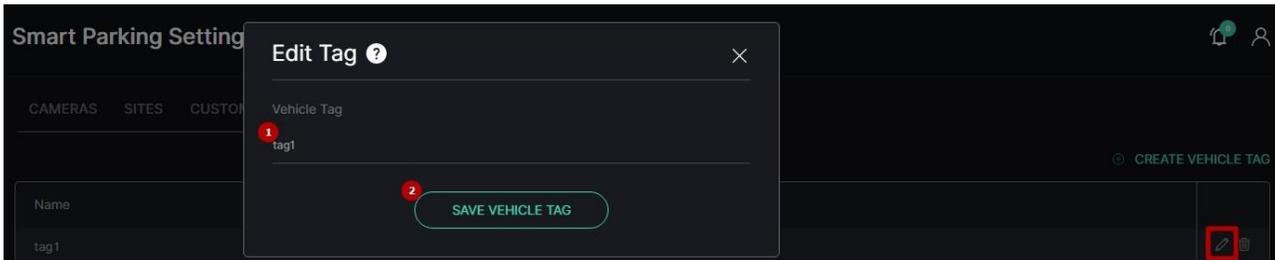
To create a new tag, click the Create Vehicle Tag button. In the Create Tag pop-up window:



1. Enter the vehicle tag name
2. Click the Save Vehicle Tag button

Edit Tag

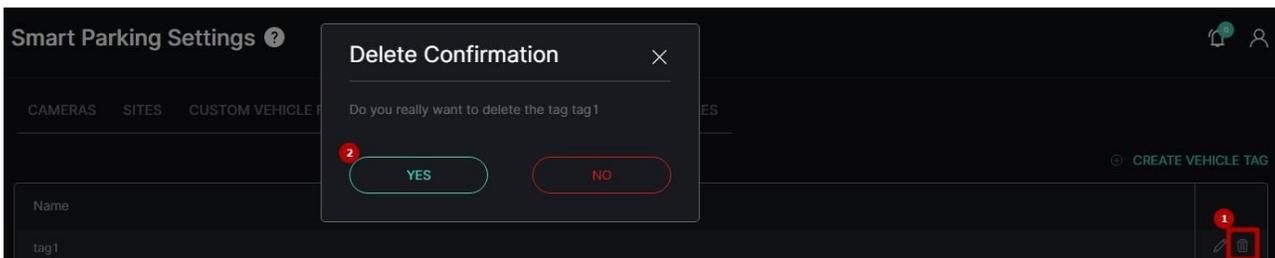
To edit the name of the selected tag, click the Edit icon on the toolbox. In the Edit Tag pop-up window:



1. Enter another vehicle tag name
2. Click the Save Vehicle Tag button

Delete Tag

To delete the tag:



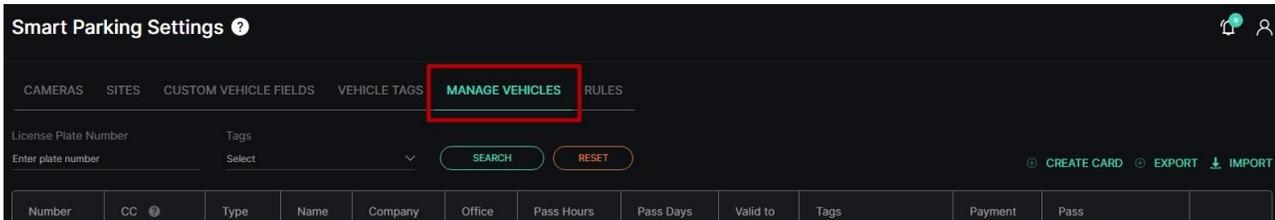
1. Select the Delete icon on the toolbox
2. Confirm the intention

Settings: Manage Vehicles

i This page comprises the Manage Vehicles tab overview and options to manage vehicle cards. This tab allows linking the vehicle to the company structure, to let each vehicle be assigned a parking space in a predetermined zone.

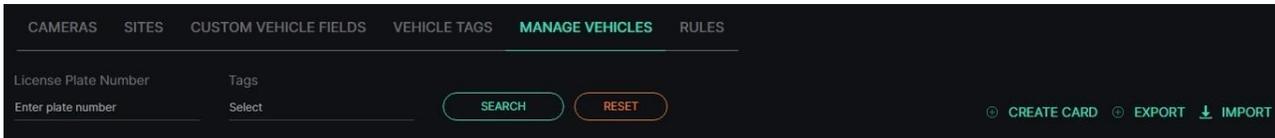
Overview

Select the Manage Vehicles tab in the tab's menu:



Use and Functionality

The Manage Vehicles functional menu allows to:



- Enter the license plate number to filter vehicles
- Select multiple tags from the drop-down list
- Click the Find button to start filtering
- Click the Reset button to clear the filters
- Click the Export button to download the list of added vehicles in the CSV
- Click the Import button to upload the CSV file with multiple vehicle numbers

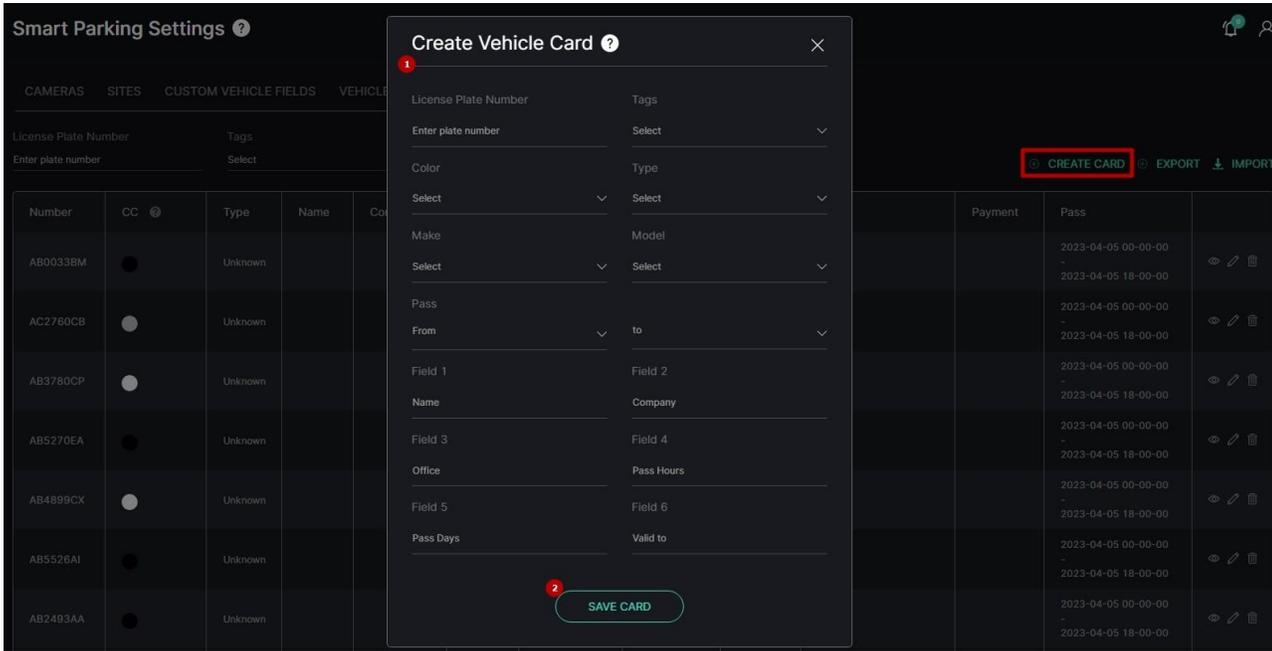
See the filtered vehicle cards in the table below. It contains:

Number	CC	Type	Custom field 1	Custom field 2	Custom field 3	Custom field 4	Custom field 5	Custom field 6	Tags	Payment	Pass	
GM3333	●	SUV							test Mary tag 2 test 1		2023-01-08 00:00:00 - 2023-01-10 23:59:59	👁️ ✎️ 🗑️
FM181	●	SUV							Mary tag 2		-	👁️ ✎️ 🗑️

- License plate number
- Country of registration, color, and type of the vehicle
- Custom vehicle fields
- Vehicle tags
- Payment for the vehicle
- Time frame for which the vehicle has a pass to the territory
- Toolbox comprises:
 - View Card
 - Edit Card
 - Delete Card

Create Vehicle Card

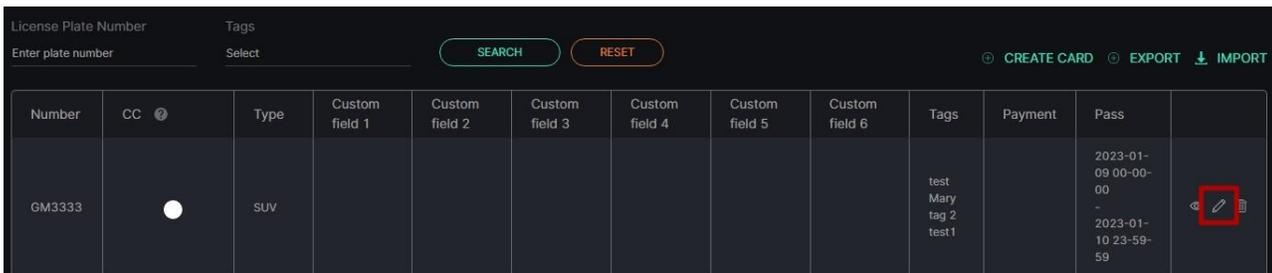
To create a new vehicle card, select the Create Card button. In the Create Vehicle Card pop-up window:



1. Fill in the fields:
 - a. Enter the license plate number
 - b. Select from the drop-down lists:
 - c. Multiple vehicle tags
 - d. Color
 - e. Type
 - f. Make and Model
 - g. Select pass time frames
 - h. Enter required vehicle information in the custom vehicle fields
2. Click the Save Card button

Edit Vehicle Card

To edit the vehicle card, click the Edit icon on the toolbox:



All parameters configured during the creation of a vehicle card are editable.

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View Vehicle Card

To view the required vehicle card, select the View icon on the toolbox:

Number	CC	Type	Custom field 1	Custom field 2	Custom field 3	Custom field 4	Custom field 5	Custom field 6	Tags	Payment	Pass	
GM3333	●	SUV							test Mary tag 2 test1		2023-01-09 00:00-00 - 2023-01-10 23:59-59	

The Vehicle Information view mode comprises:

Vehicle Information

GM3333 Activity

GM3333

Type: SUV
Make: PORSCHE
Model: MACAN
Color: White

Custom field 1
Custom field 2
Custom field 3
Custom field 4
Custom field 5
Custom field 6

Tags: test test1 tag Mary tag Mary tag 2 Mary tag.tag

Pass: From 2023-01-09 to 2023-01-10

Image	Camera	Site	Date
	LPR-eu		05-01-2023 12:18:48

Comments

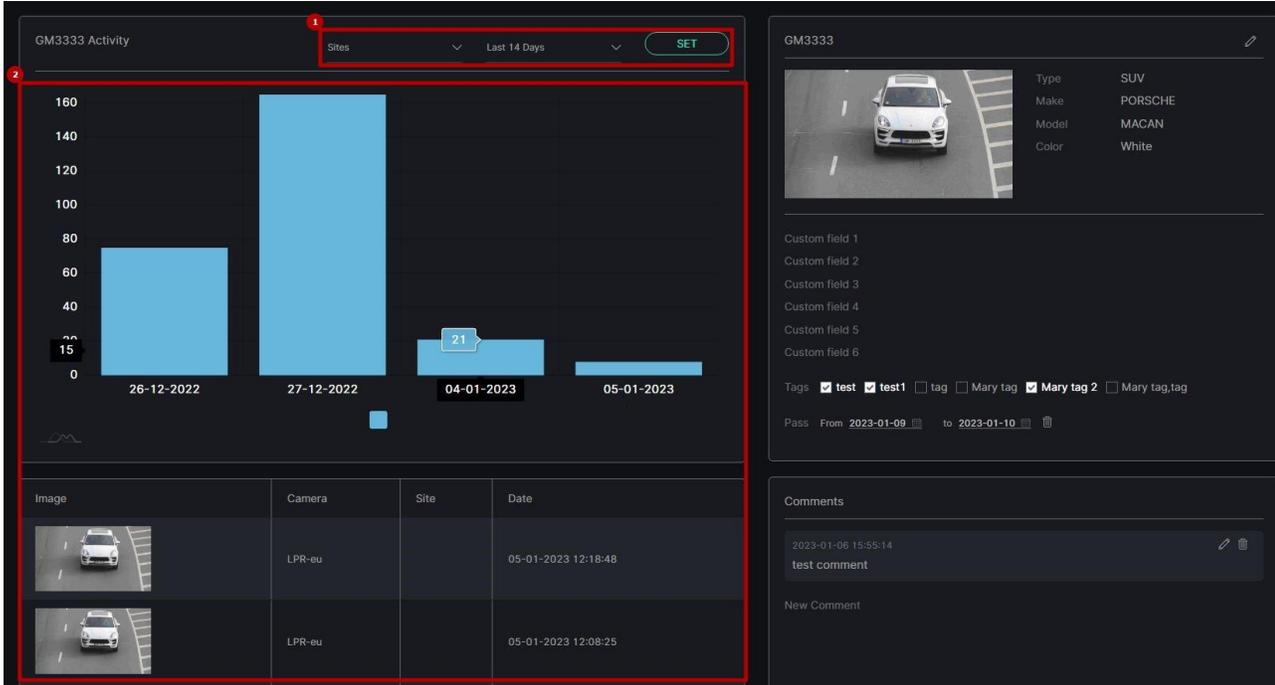
2023-01-06 15:55:14
test comment

1. Activity block
2. Vehicle Data block
3. Comments block

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Activity Block

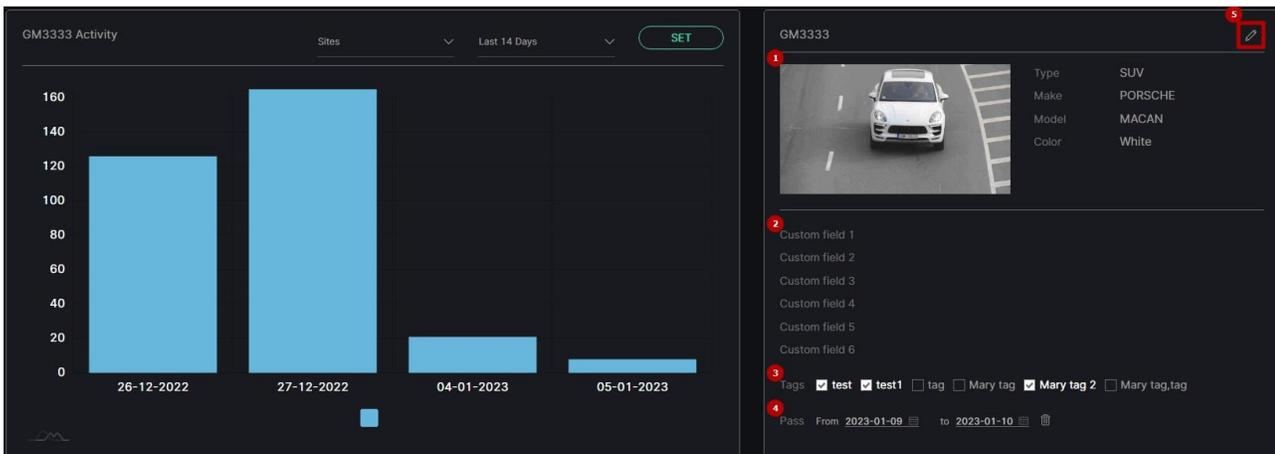
The Activity block allows to:



- Set filters:
 - Select multiple sites from the drop-down list
 - Select the required time frame from the drop-down list (up to the last 14 days)
 - Click the Set button to start filtering
- View vehicle activity statistics:
 - View the column chart with the date and vehicle detection quantity upon selected sites
 - Hover the mouse over the desired column to view the exact vehicle detection quantity
 - for the required date
 - Take a closer look at each vehicle detection in the table below

Vehicle Data Block

The Vehicle Data block allows to:

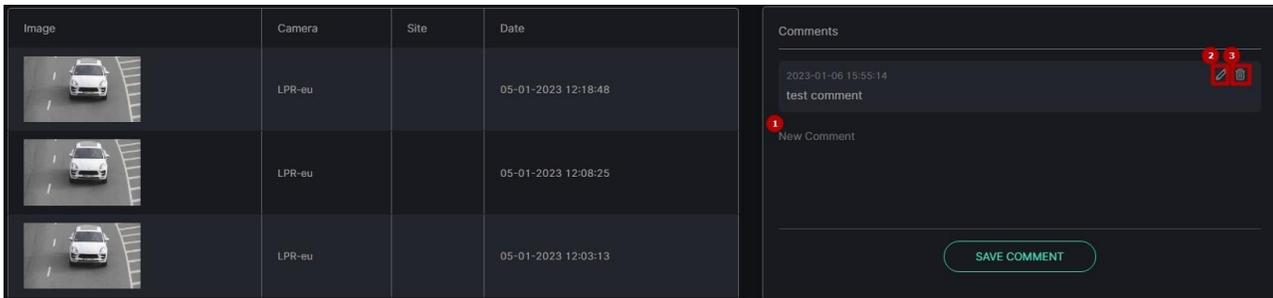


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1. View the vehicle data including:
 - a. Frame with the vehicle
 - b. Color
 - c. Make and model
 - d. Type
2. View custom vehicle fields
3. View vehicle tags and manage them manually by checking the boxes
4. Manage vehicle pass:
 - a. To create a pass:
 - i. Click the Create Pass button
 - ii. Select the required time frame in the pop-up window
 - iii. Click the Save Pass button
 - b. To delete the pass:
 - i. Click the delete icon next to the pass time frame
 - ii. Confirm the intention in the pop-up window
5. Edit the Vehicle Card data by clicking the Edit icon in the upper-right corner of the block

Comments Block

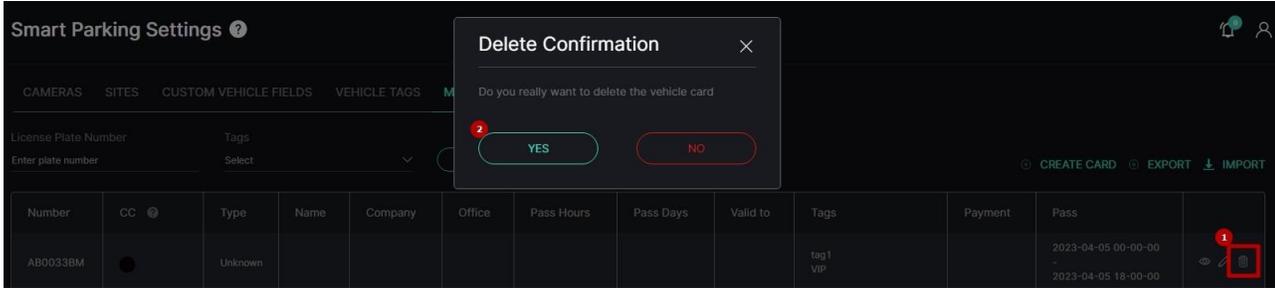
The Comments block allows to:



1. Add a new comment to the vehicle:
 - a. Type a comment in the text field
 - b. Click the Save Comment button
2. Edit the existing comment:
 - a. Select the Edit icon next to the required comment
 - b. Type another comment
 - c. Click the Edit button to save changes
3. Delete the comment:
 - a. Select the Delete icon next to the required comment
 - b. Confirm the intention in the pop-up window

Delete Vehicle Card

To delete the vehicle card:



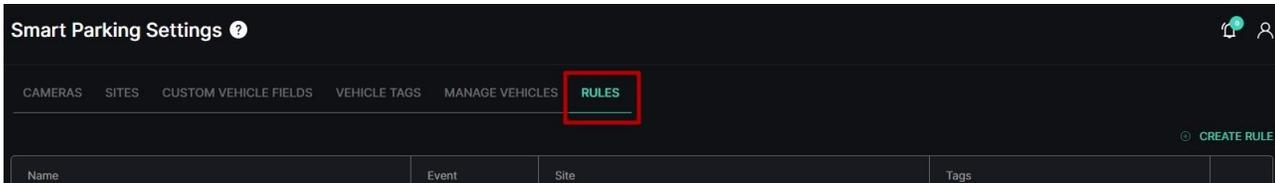
1. Select the Delete icon on the toolbox
2. Confirm the intention

Settings: Rules

i This page comprises the Rules tab overview and options to set the rules for sending event notifications.

Overview

Select the Rules tab in the tab's menu:



Use and Functionality

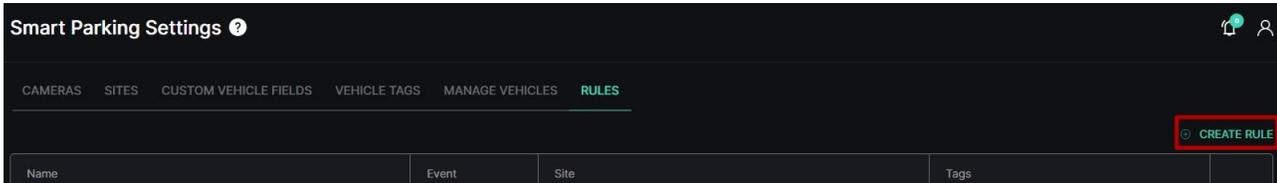
See the list of rules in the table. It contains:

Name	Event	Site	Tags
New Rule		site1	
Rule 123		copy_control-1	
5678		copy_control-1	

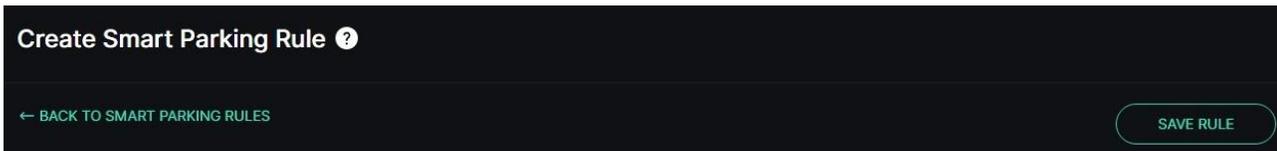
- Rule name
- Selected event
- Chosen site
- Corresponding vehicle tags
- Toolbox comprises:
 - Edit
 - Delete

Create Rule

To create a new rule, click the Create Rule button:

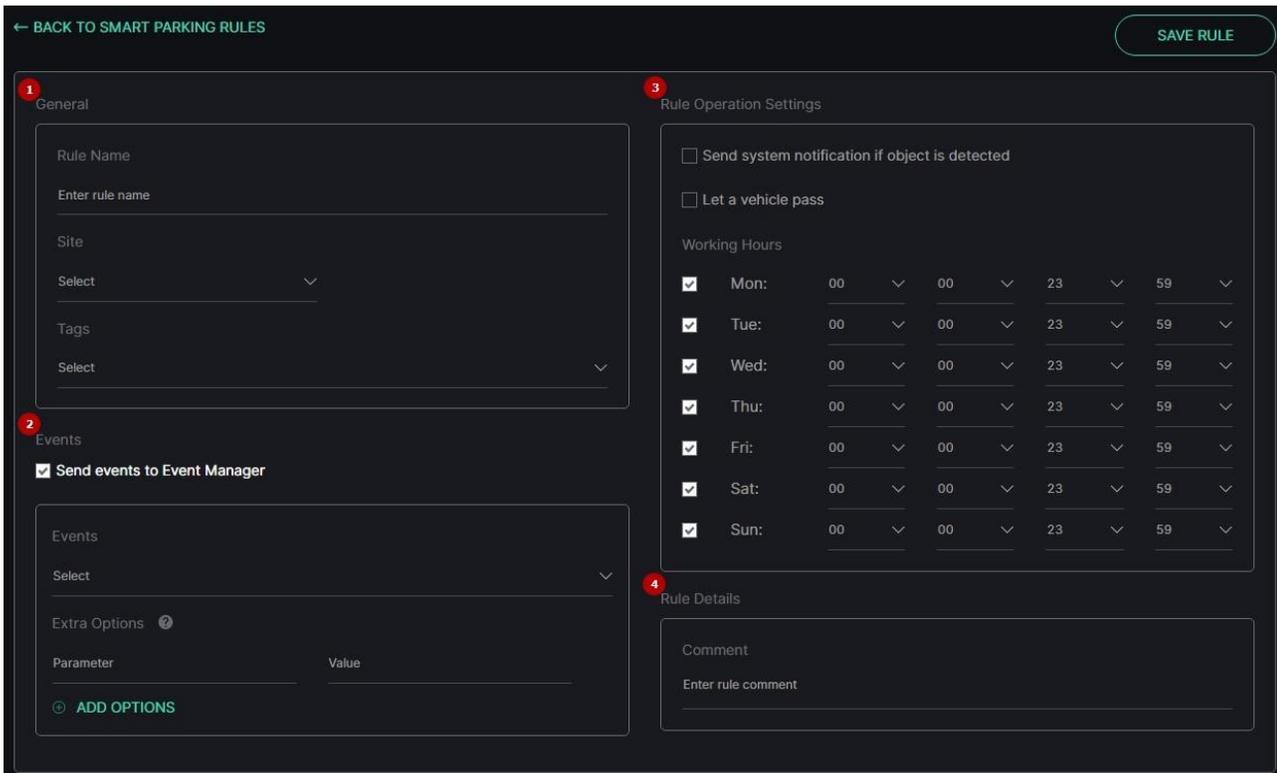


The Create Smart Parking Rule navigation menu allows to:



- Select the Back to Smart Parking Rules button to return to the main Rules tab
- Click the Save button to apply the changes

Rule settings allow to customize:



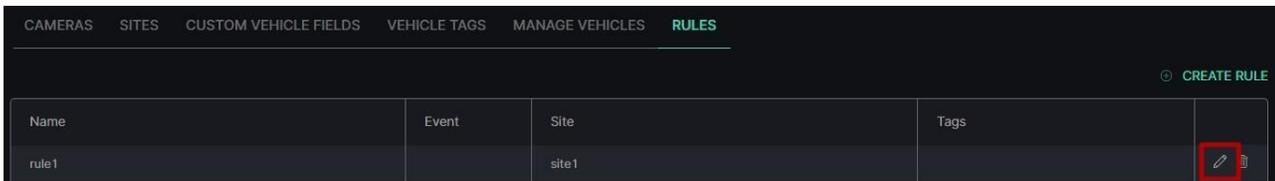
1. General parameters:
 - a. Enter the rule name
 - b. Select the site
 - c. Choose multiple vehicle tags

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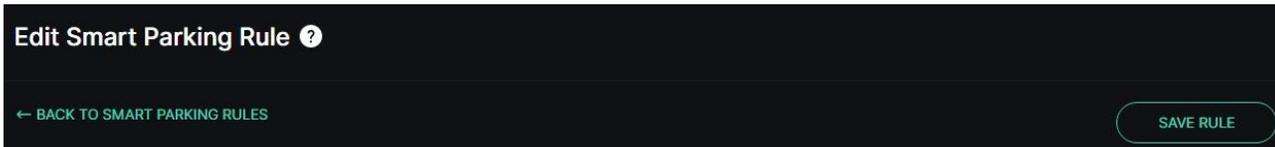
2. Events parameters:
 - a. Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources
 - b. Select the desired preset event
 - c. Set parameters as required
3. Rule Operation Settings:
 - a. Check the Send System Notification if Object is Detected box to receive the system notifications
 - b. Check the Let a Vehicle Pass box to allow the vehicles to pass
 - c. Check the box next to the required workdays and set the working hours for each workday
4. Rule Details: Enter a comment to the rule in the appropriate field

Edit Rule

To edit settings in the selected rule, click the Edit icon on the toolbox:



The Edit Smart Parking Rule navigation menu allows to:

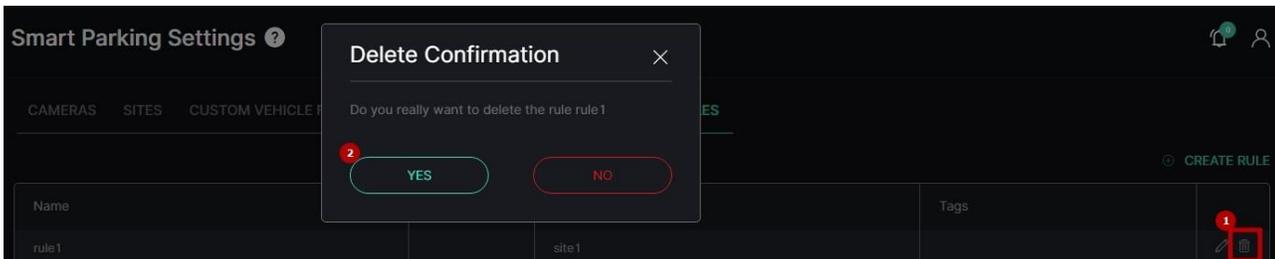


- Select the Back to Smart Parking Rules button to return to the main Rules tab
- Click the Save button to apply the changes to the selected rule

To view editing parameters for the Smart Parking Rule, read [Create Rule229](#).

Delete Rule

To delete the rule:



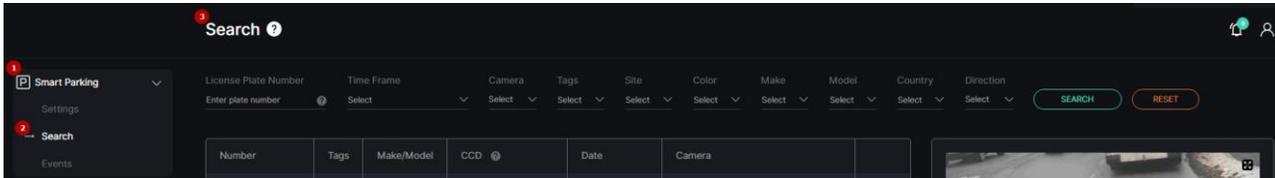
1. Select the Delete icon on the toolbox
2. Confirm the intention

Smart Parking: Search

i This page comprises the Search item overview and functionality description. The item displays the vehicle search results including a license plate number, tags, make and model, date and time, camera data, and frame with a vehicle.

Overview

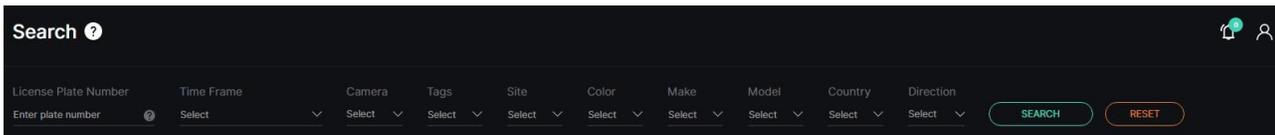
To open the Search item, in the left menu:



1. Select the Smart Parking section
2. Choose the Search item
3. See vehicle search

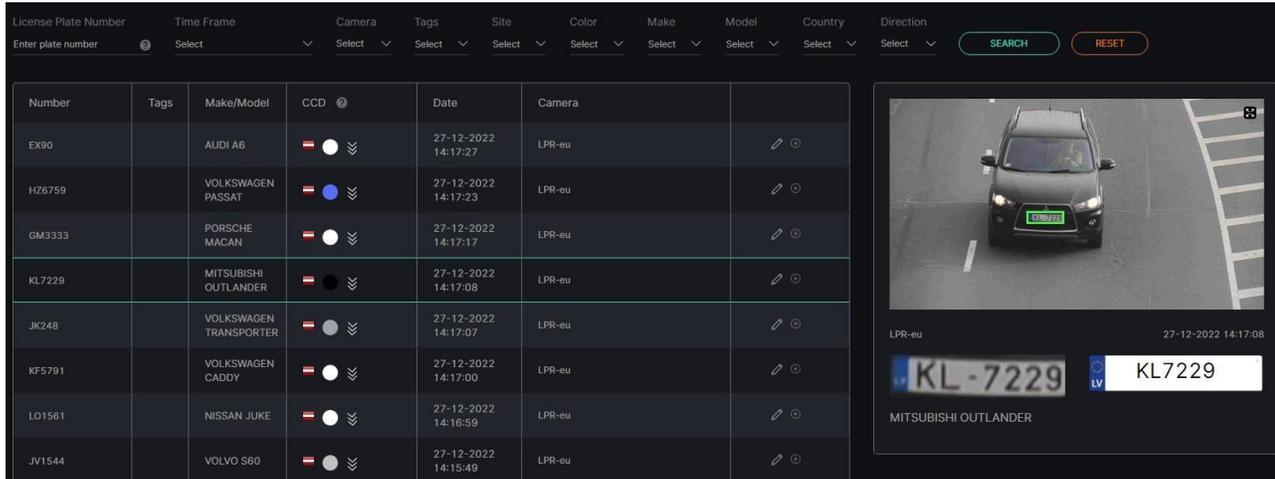
Use and Functionality

The Search functional menu allows to:



- Enter the license plate number to filter vehicles
- Select the required time frame
- Click the Camera parameter to choose the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Select multiple tags
- Select multiple sites
- Select from the drop-down lists the estimated vehicle's:
 - Color
 - Make
 - Model
 - Country of registration
 - Direction of movement
- Click the Search button to start filtering
- Click the Reset button to clear the filters

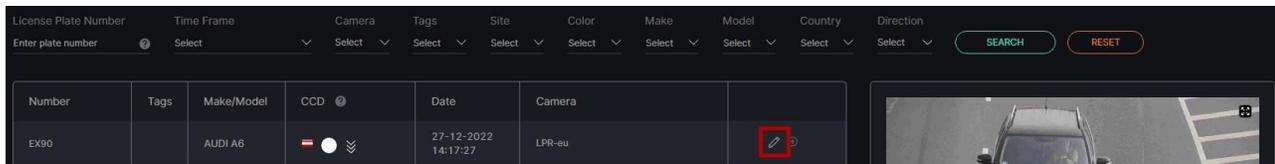
Once selected and filtered, in the search results:



- View recognized vehicle data, tags, date, and time the selected analytics has recognized the license plate number
- Click the row in the table with the desired license plate number to see the frame with a vehicle preview
- Select the enlargement icon in the upper-right corner of the frame preview to view the additional information. In the pop-up window:
 - See the vehicle data
 - Save the image in the full-size
- Use extra tools:
 - Edit Vehicle tool
 - Create Vehicle Card tool

Edit Vehicle Data

To manually edit the vehicle data, select the Edit icon on the toolbox:

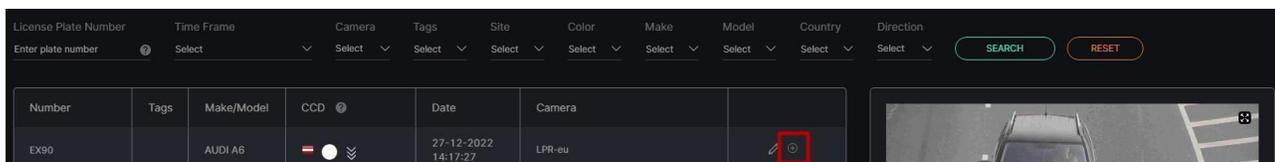


In the Edit Vehicle pop-up window:

- Enter the required license plate number
- Select the vehicle color from the drop-down list
- Select the vehicle make and model from the drop-down lists
- Click the Edit Plate button to apply changes

Create Vehicle Card

To create a Vehicle Card and add it to the Smart Parking system, select the Create Vehicle Card icon on the toolbox:
In the Create Vehicle Card pop-up window fill in the fields:



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1. Enter the license plate number
2. Select the vehicle color from the drop-down list
3. Select the required vehicle type from the drop-down list:
 - a. SUV
 - b. Bus
 - c. Sedan
 - d. Motorcycle
 - e. Pickup
 - f. Truck
 - g. Van
4. Select the vehicle make and model from the drop-down lists
5. Select a time frame for which the vehicle has a pass to the parking territory
6. Select multiple tags from the drop-down list
7. Enter the required information about the vehicle in the custom vehicle fields
8. Click the Save Card button to confirm the intention

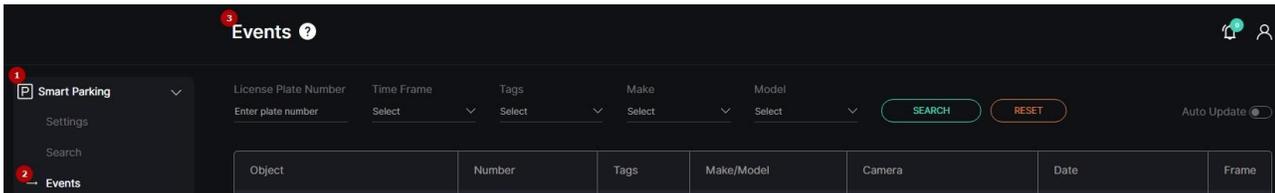
 Some fields in the Create Vehicle Card pop-up window are already filled in with the vehicle data recognized by the analytics. Check the correctness of the data and change it if needed

Smart Parking: Events

 This page comprises the Events item overview and functionality description. The item displays the event notifications including vehicle and camera data, tags, date and time, and frame with a vehicle.

Overview

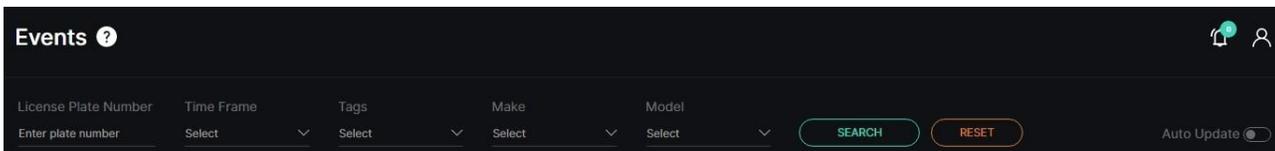
To open the Events item, in the left menu:



1. Select the Smart Parking section
2. Choose the Events item
3. See event notifications

Use and Functionality

The Events functional menu allows to:

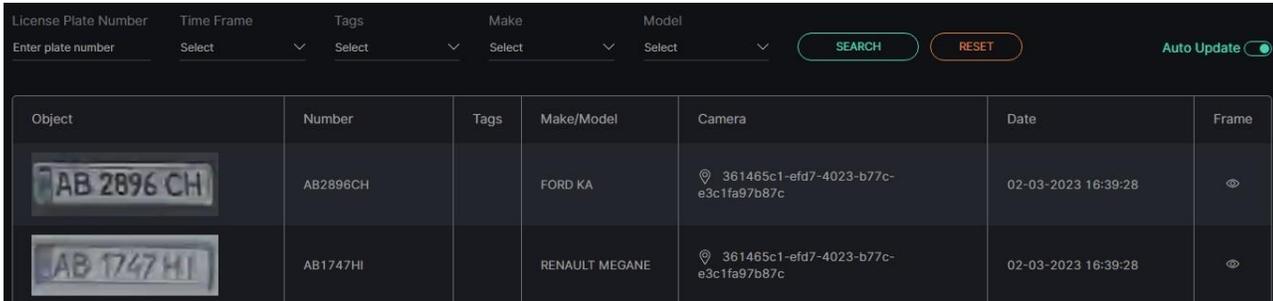


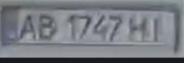
- Enter the license plate number
- Select the required time frame
- Choose desired tags
- Select the required make and model
- Click the Search button to start filtering

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- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable the events auto update

Once selected and filtered, in the event notifications:



License Plate Number	Time Frame	Tags	Make	Model			
Enter plate number	Select	Select	Select	Select	SEARCH	RESET	Auto Update <input type="checkbox"/>
Object	Number	Tags	Make/Model	Camera	Date	Frame	
	AB2896CH		FORD KA	 361465c1-efd7-4023-b77c-e3c1fa97b87c	02-03-2023 16:39:28		
	AB1747HI		RENAULT MEGANE	 361465c1-efd7-4023-b77c-e3c1fa97b87c	02-03-2023 16:39:28		

- View vehicle data, date, and time the camera has recognized the license plate number
- View the camera location on the map by clicking the Location icon in the Camera column
- Select the View icon to open the frame with the vehicle. To save the frame in full size click the Save Image button in the pop-up window

Smart Tracking System

Introduction

Use this guide to understand the interface and features of the Smart Tracking System plugin and learn how to utilize it for the best result.

What is a Smart Tracking System?

Smart Tracking System uses the human multi-tracking smart mathematical mode to search for wanted or lost people in the video surveillance area and personal search based on appearance attributes.

Primary Capabilities

Smart Tracking System is capable to:

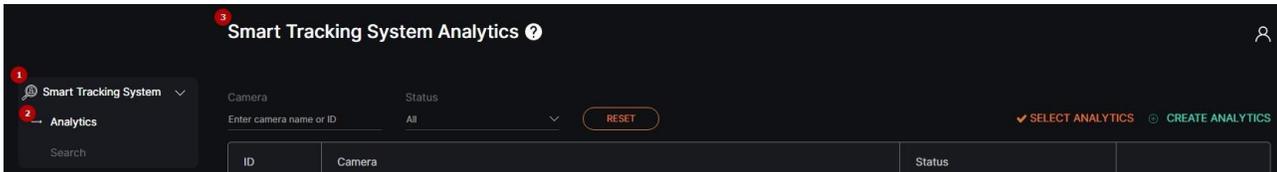
- Search for a person from different cameras
- Search for a person by more than 50 appearance attributes
- Determine the locations and movements of wanted people
- Search for lost children in crowded malls and public places

Smart Tracking System: Analytics

i This page comprises the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

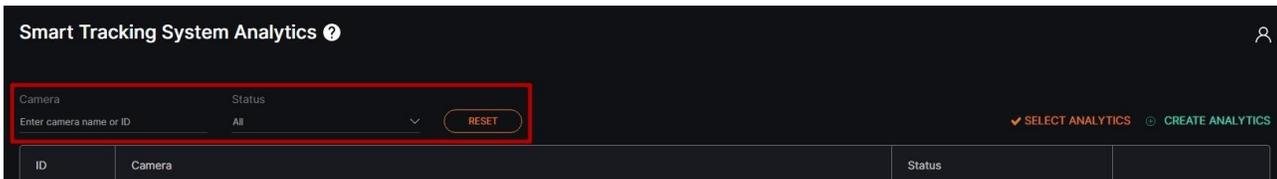
To open the Analytics item, in the left menu:



1. Select the Smart Tracking System section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Smart Tracking System Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

💡 The status options comprise All, Active, and Stopped.

See the list of analytics in the table below. It contains:

ID	Camera	Status	
1	demo		
1211	demo-cashier GPU H.264 - NVDEC 25 FPS	Active (19s / 1)	STOP
900	demo-smart-tracking-system GPU H.264 - NVDEC 25 FPS	Stopped	START

- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names

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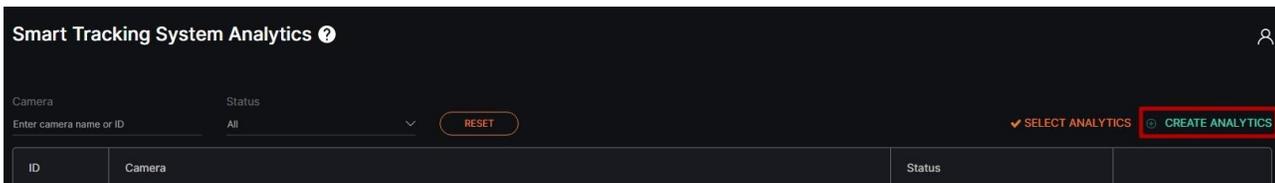
CEVA v1.0.0

- Copy Name icon to copy the video stream name
- Video source type
- Additional hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Search Results
 - Delete

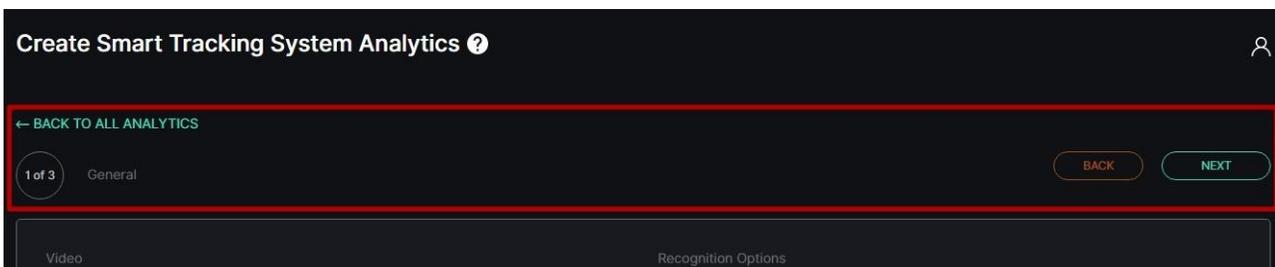
- 💡 ● To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).
- To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

Create Analytics

To create new analytics, click the Create Analytics button:



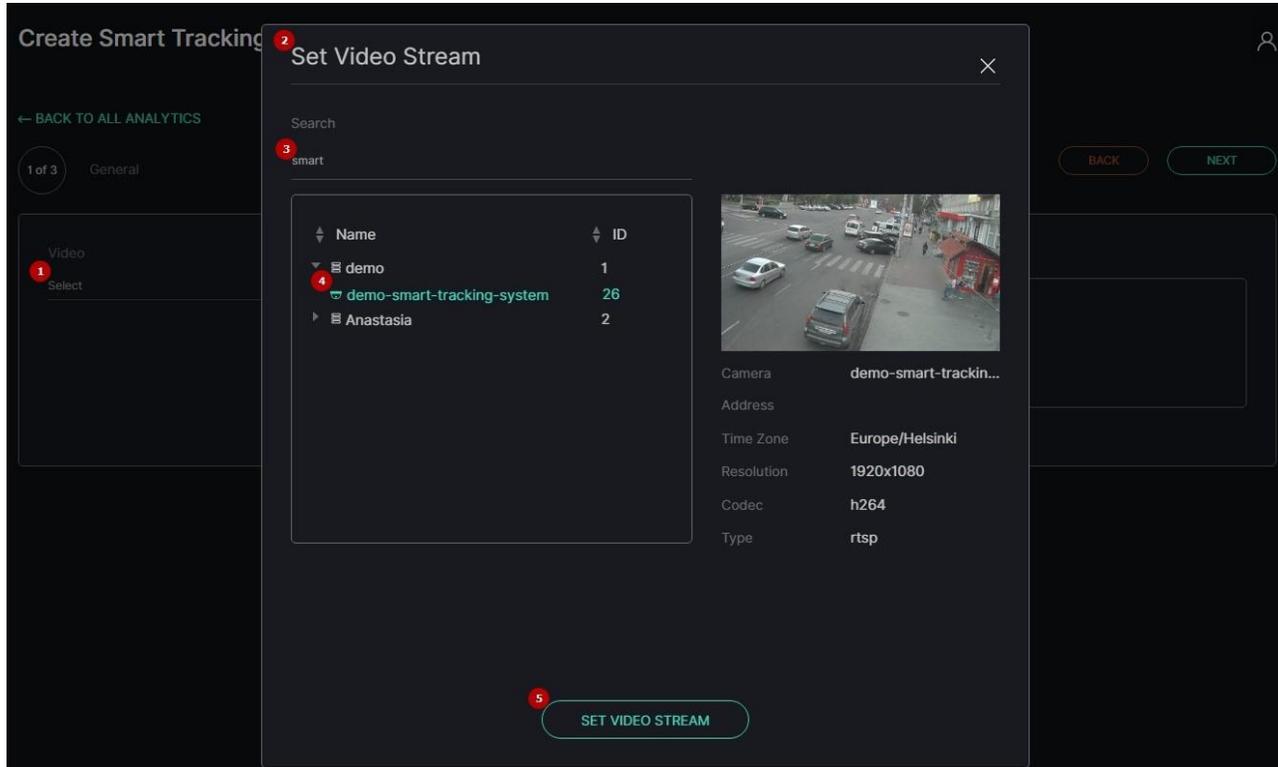
The Create Smart Tracking System Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters.
To set a video stream:

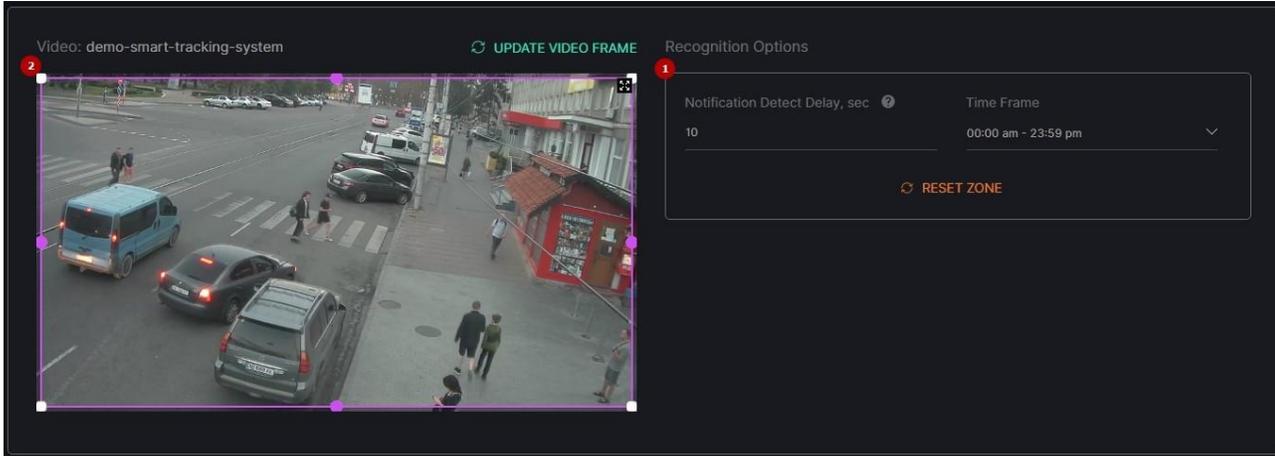


1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

To perform the recognition, apply these recognition options:



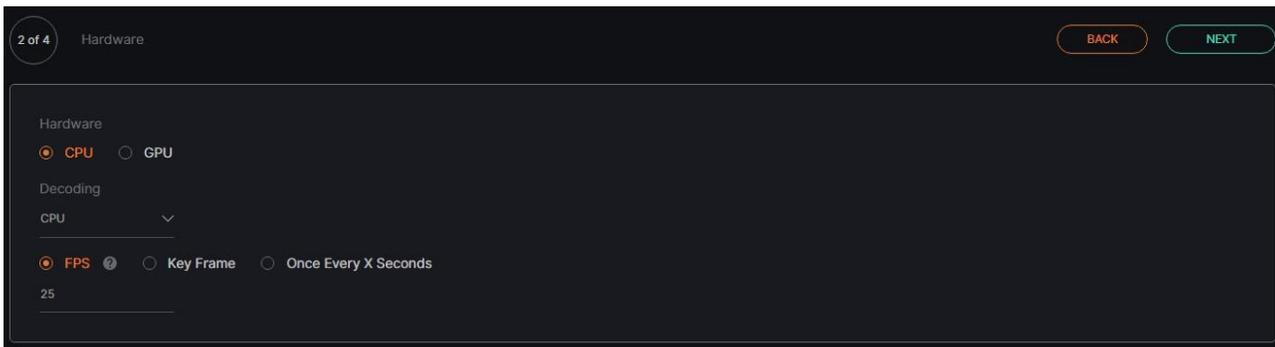
1. Set the notification parameters:
 - a. Set the delay in seconds between detection notifications
 - b. Select the required time frame
2. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to delete it
 - d. Click the Reset Zone button to return the detection zone borders to their original position



The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:



- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC

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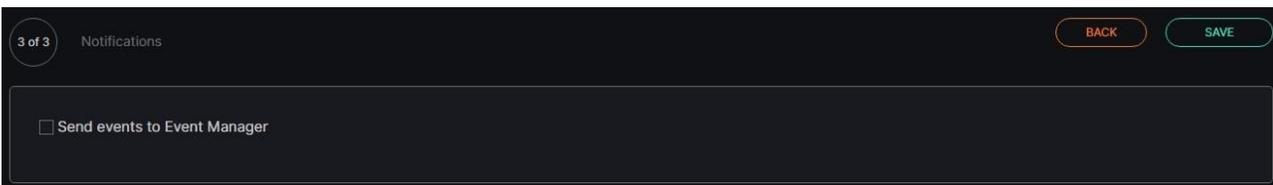
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

💡

- The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as required.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Notifications Tab

The Notifications tab allows managing the events notifications:



- Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources
- Select the Save button to confirm the intention in the navigation menu

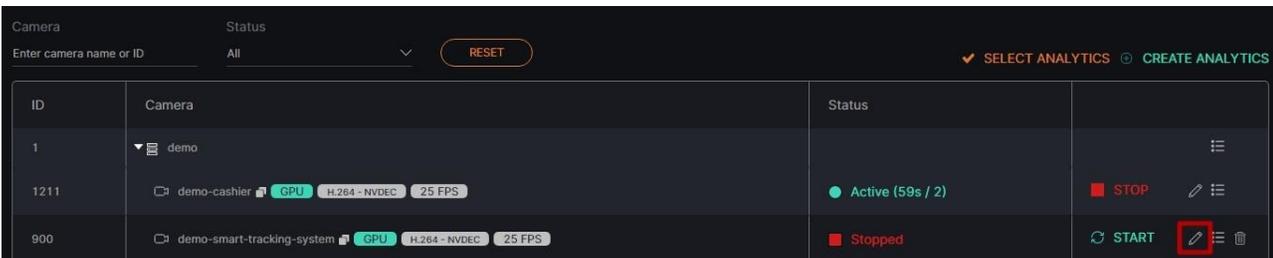
💡 The default parameters allow the production of analytics. To customize the analytics, set parameters as required.

Once saved, the Smart Tracking System Analytics editor opens to allow the users to:

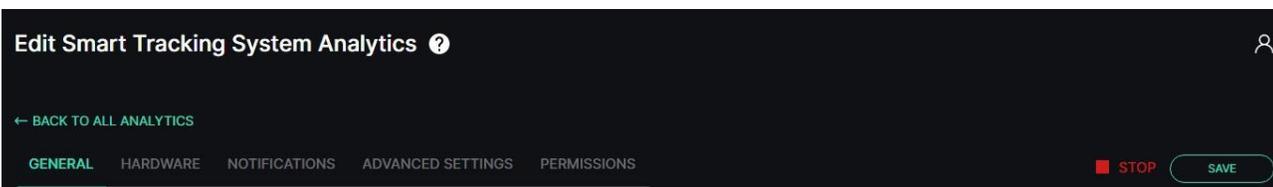
- Modify parameters
- Set parameters
- Run the created analytics

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Smart Tracking System Analytics navigation menu allows to:



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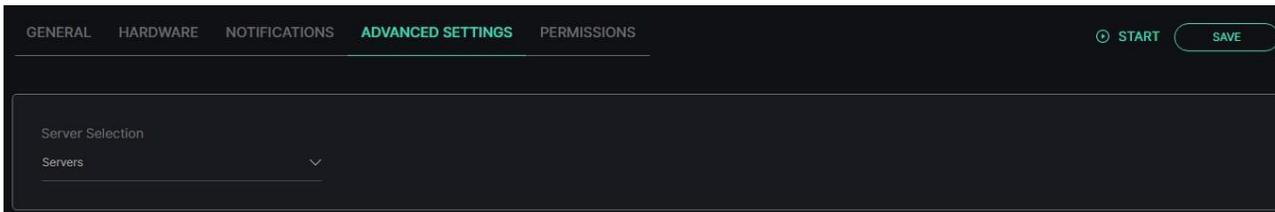
- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Select the Save button to apply the changes to the selected analytics

- 💡 • The current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.

To view editing parameters for the General, Hardware, and Notifications tabs, read [Create Analytics](#).

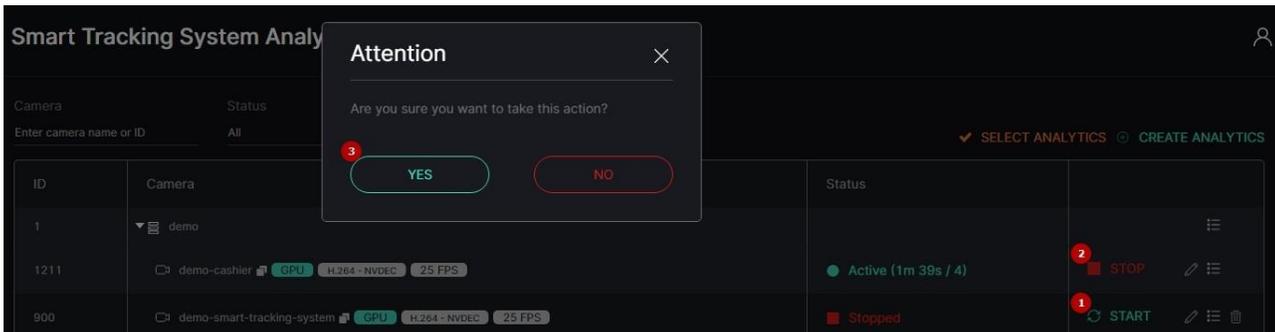
Advanced Settings Tab

The Advanced Settings tab allows the users to select a server from the drop-down list to run the analytics:



Analytics Status

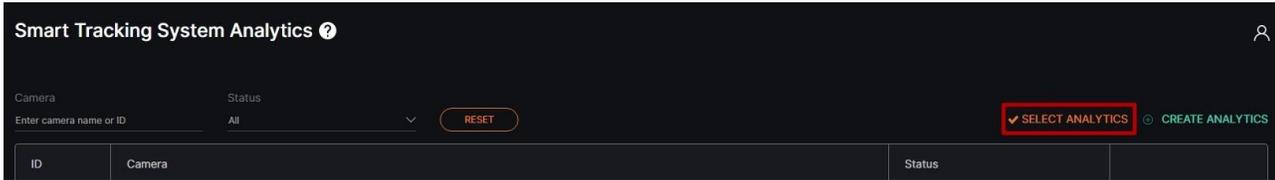
To enable or disable the analytics and view the change of the analytics status:



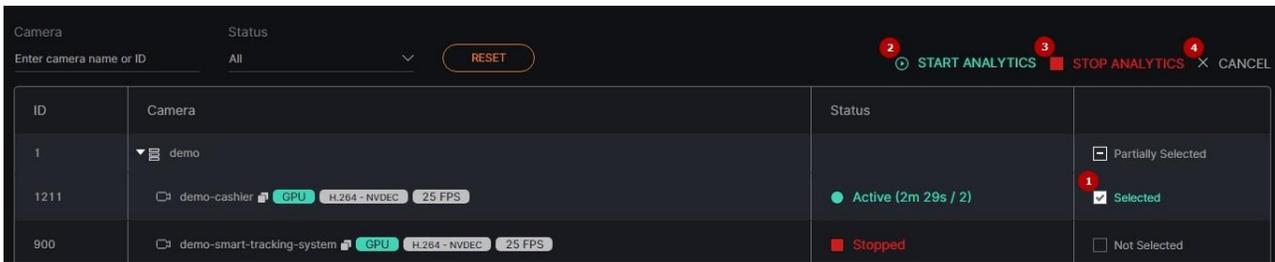
1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

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To enable or disable multiple analytics at once, click the Select Analytics button:



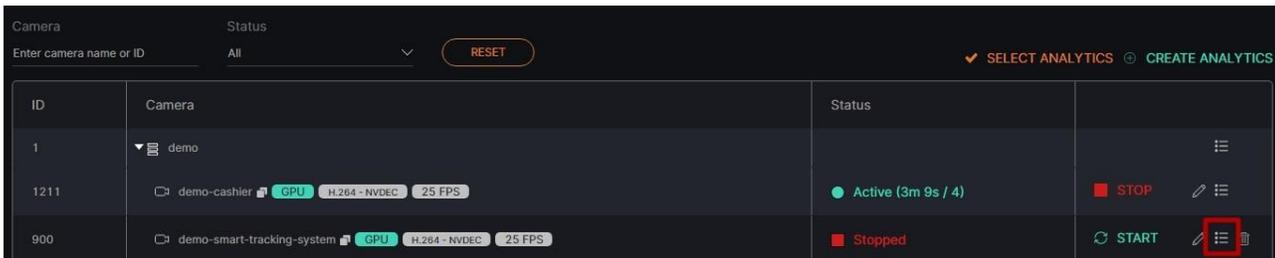
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics selection

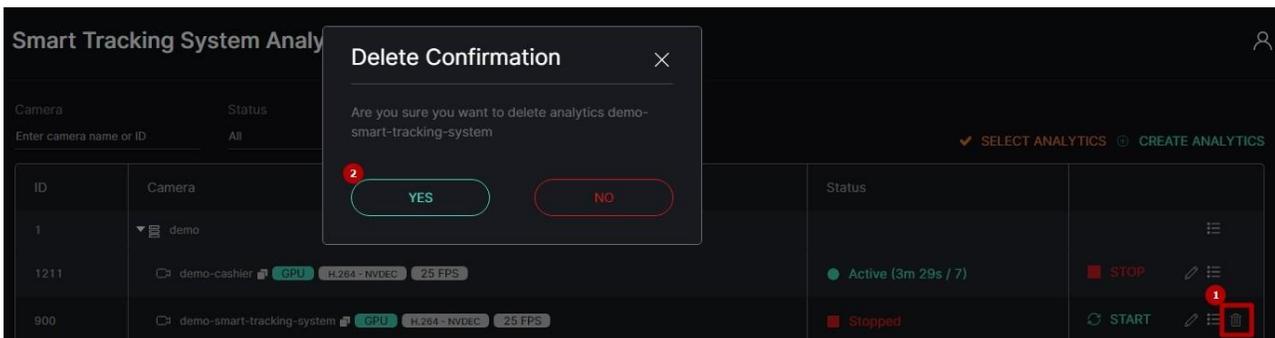
View Search Results

To view selected analytics search results in the Analytics item, click the Search Results icon on the toolbox:



Delete Analytics

To delete the analytics:



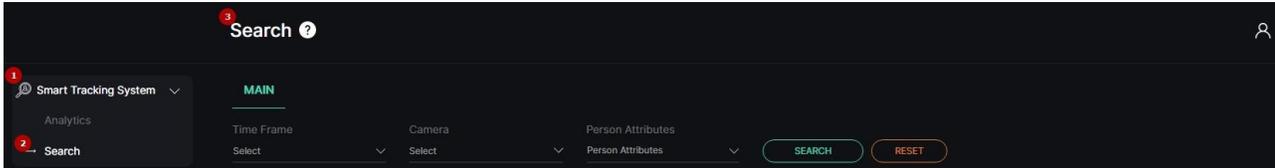
1. Select the Delete icon on the toolbox
2. Confirm the intention

Smart Tracking System: Search

i This page comprises the Search item overview and functionality description. The item displays the search results for appearance attributes from multiple cameras for a selected period of time.

Overview

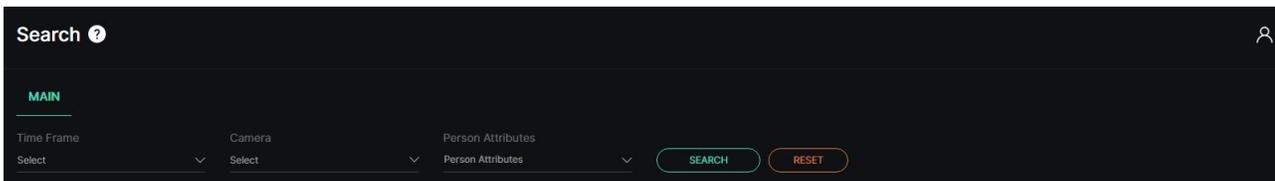
To open the Search item, in the left menu:



1. Select the Smart Tracking System section
2. Choose the Search item
3. See the search functional menu

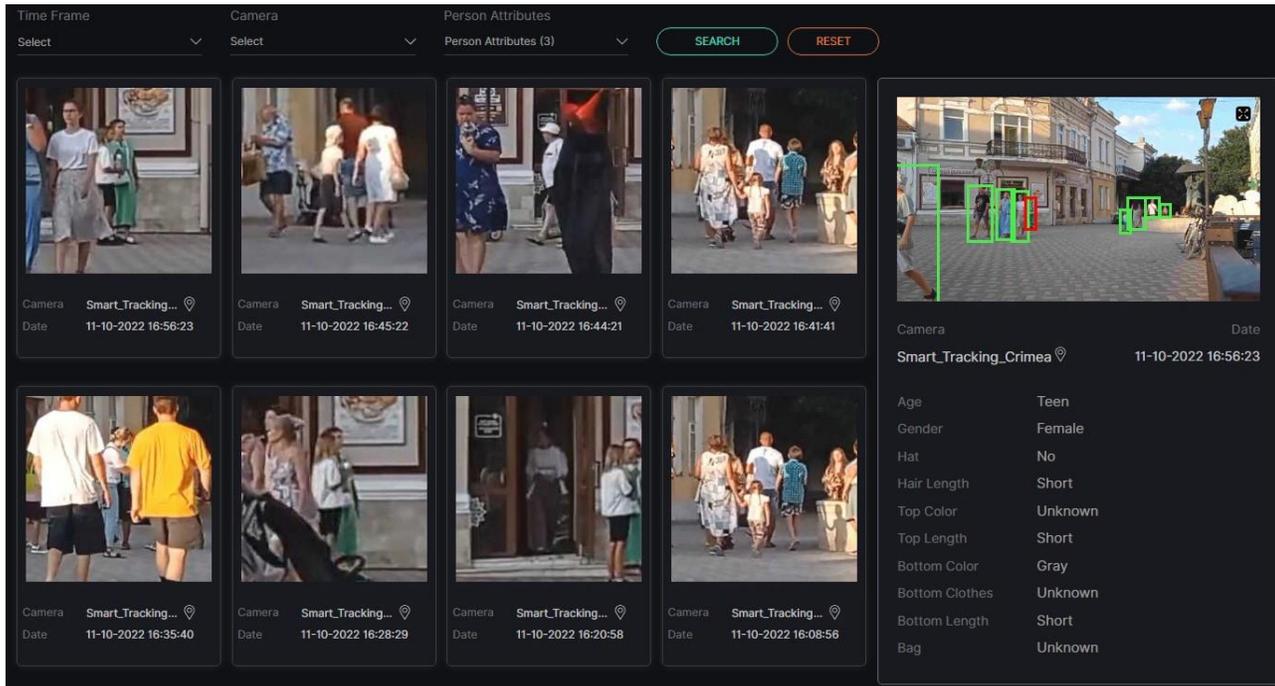
Use and Functionality

The Search functional menu allows to:



- Select the required time frame. In the Time Frame drop-down menu:
 - Set the Starting Point date and time
 - Set the End Point date and time
 - Click the Reset button at the bottom of the menu to clear the parameters
- Click the Camera parameter to choose the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Choose multiple appearance attributes in the Person Attributes drop-down menu:
 - Gender
 - Top Length (and Color)
 - Bottom Length (and Color)
 - Bottom Clothes
 - Hat
 - Hair Length
 - Bag
 - Age
 - Click the Reset button at the bottom of the menu to clear the parameters
- Click the Search button to start filtering
- Click the Reset button to clear all filters

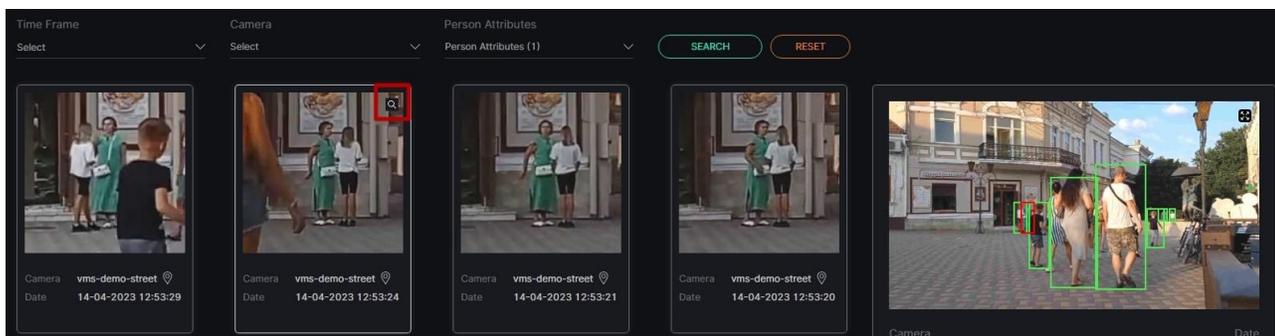
Once selected and filtered, in the search results:



- View the exact date and time the required person was detected
- View the camera location on the map by clicking the corresponding icon next to the camera's name
- Click the desired tile to see the frame with detected people preview and recognized appearance attributes
- Select the enlargement icon in the upper-right corner of the frame preview to view the additional information. In the pop-up window:
 - See the extended person's attributes data
 - Save the image in the full-size

Particular Search Results

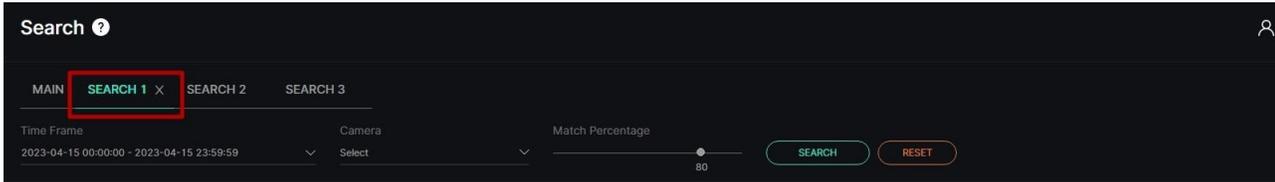
Hover the mouse over the tile with the required person and click the Magnifying Glass icon in the upper-right corner to view other search results with the selected person:



 This option is also available by clicking the required person bounding box on the frame preview or in the pop-up window.

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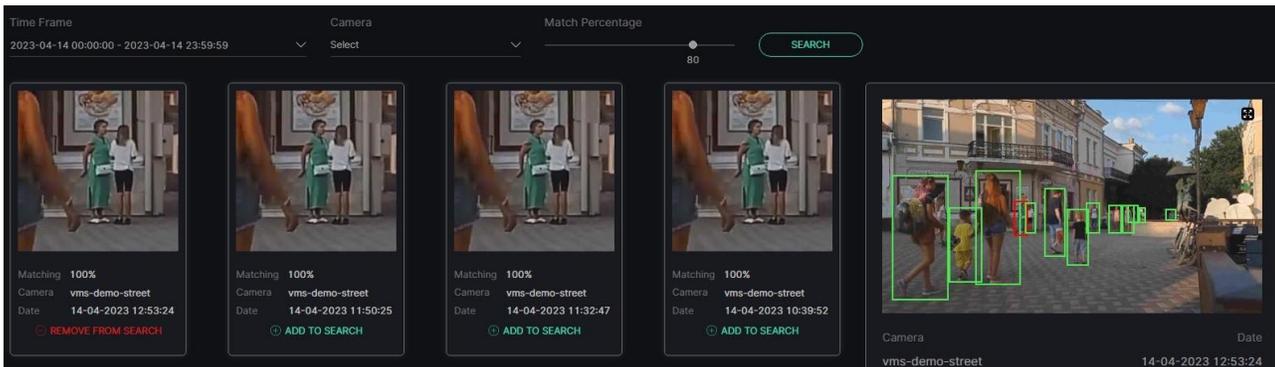
Search results similar to the selected person are displayed in the Search tabs:



- Select the required Search tab to view similar search results
- Click the Close icon next to the required Search tab to close it
- Select the Main tab to return to the general search results

 The selected tab is always highlighted.

To filter search results with the selected person:



- Select the required time frame
 - Click the Camera parameter to choose the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
- Click the Select Video Analytics button
- Move the sliders to set the range of confidence in the percentage
- Click the Search button to start filtering
- Click the Add to Search button to add the selected detection to the general search results
- Click the Remove from Search button to remove the selected detection from the general search results

Smoke & Fire Detection

Introduction

Use this guide to understand the interface and features of the Smoke & Fire Detection plugin and learn how to utilize it for the best result.

What Is Smoke & Fire Detection?

Smoke & Fire Detection rapidly identifies smoke and fire sources at an early stage in the territories or inside objects under surveillance.

Primary Capabilities

Smoke & Fire Detection is capable to:

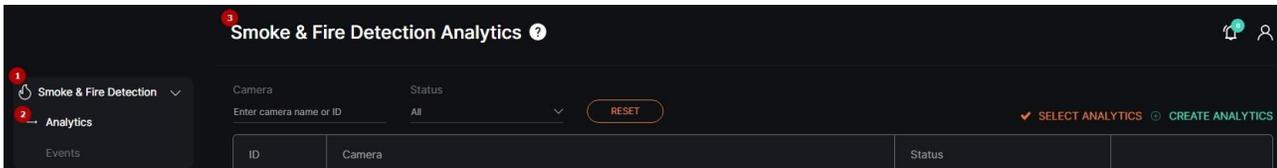
- Identify signs of smoke and fire in the early stages
- Determine the sources of smoke and fire on the territories under surveillance indoors and outdoors

Smoke & Fire Detection: Analytics

i This page comprises the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

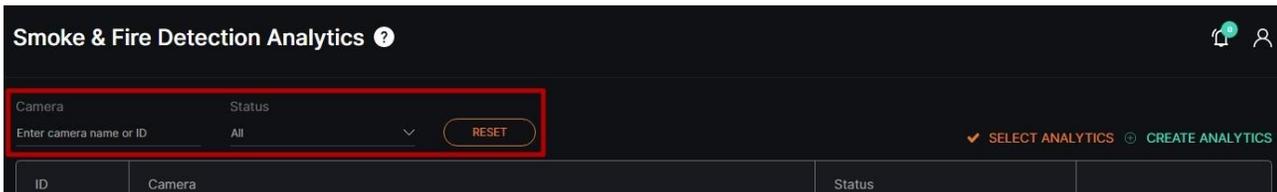
To open the Analytics item, in the left menu:



1. Select the Smoke & Fire Detection section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Smoke & Fire Detection Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

💡 The status options comprise All, Active, and Stopped.

See the list of analytics in the table below. It contains:

ID	Camera	Status	
1	demo		
957	demo-smoke-fire CPU H.264 - CPU 25 FPS	Stopped	START
909	demo-smoke-fire GPU H.264 - NVDEC 25 FPS	Stopped	START
209	demo-smoke-fire GPU H.264 - NVDEC 1 FPS	Active (00:00:05 / 15) Server: 1, GPU: 0	STOP
79	demo-smoke-fire GPU H.264 - NVDEC 1 FPS	Stopped	START

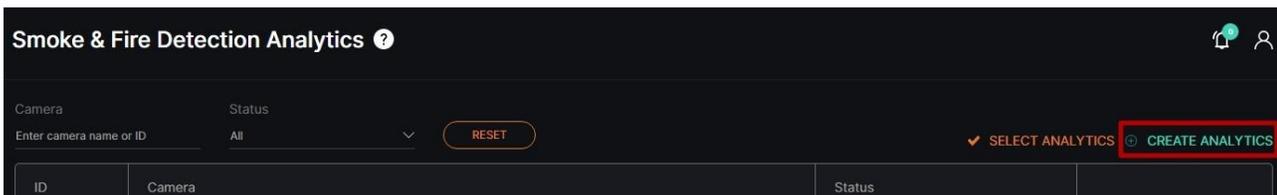
- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - Additional hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Events
 - View
 - Delete

💡

- To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).
- To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

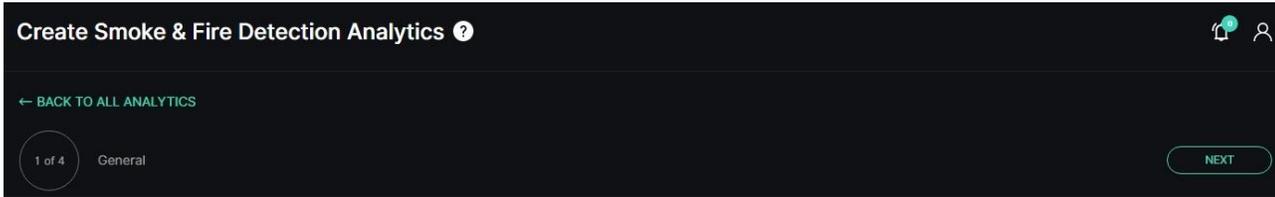
Create Analytics

To create new analytics, click the Create Analytics button:



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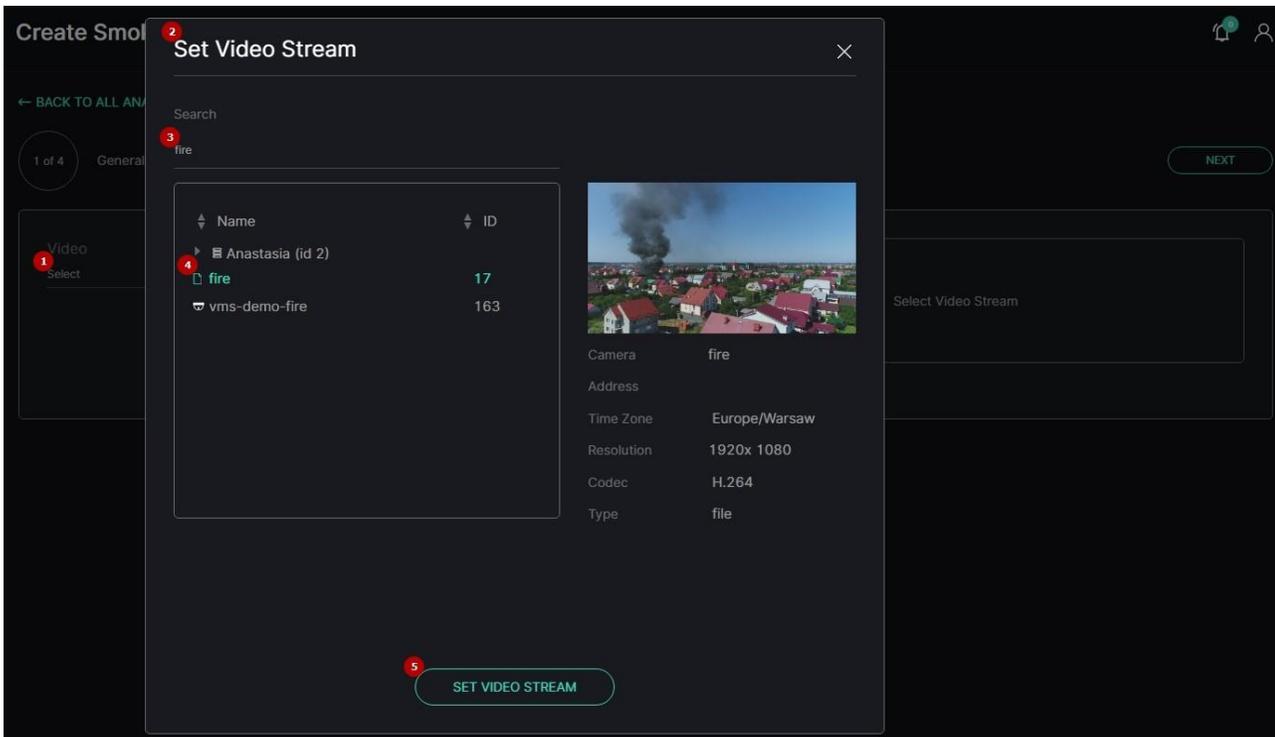
The Create Smoke & Fire Detection Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters. To set a video stream:



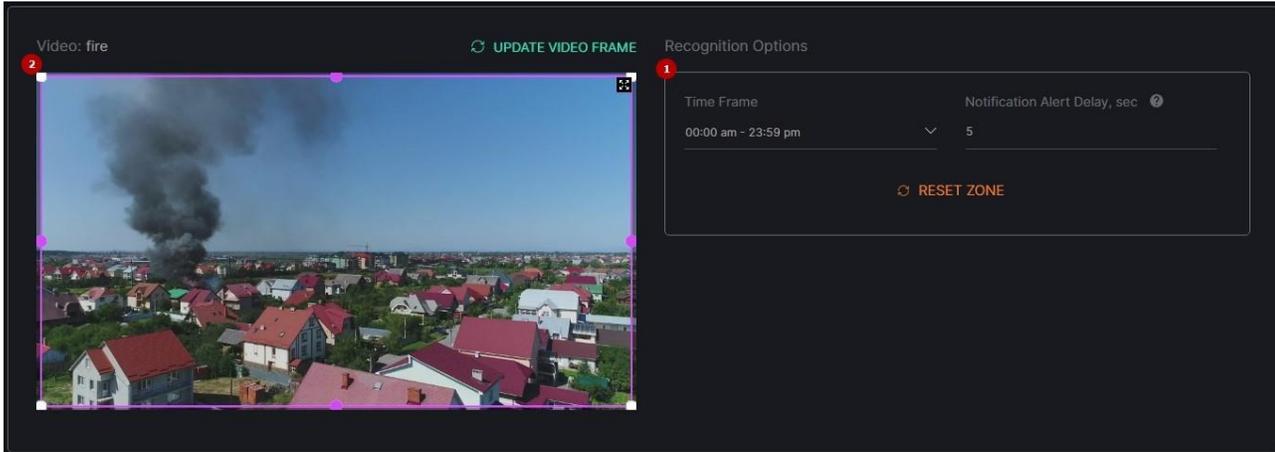
1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

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 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Recognition Options

To perform the recognition, apply these recognition options:

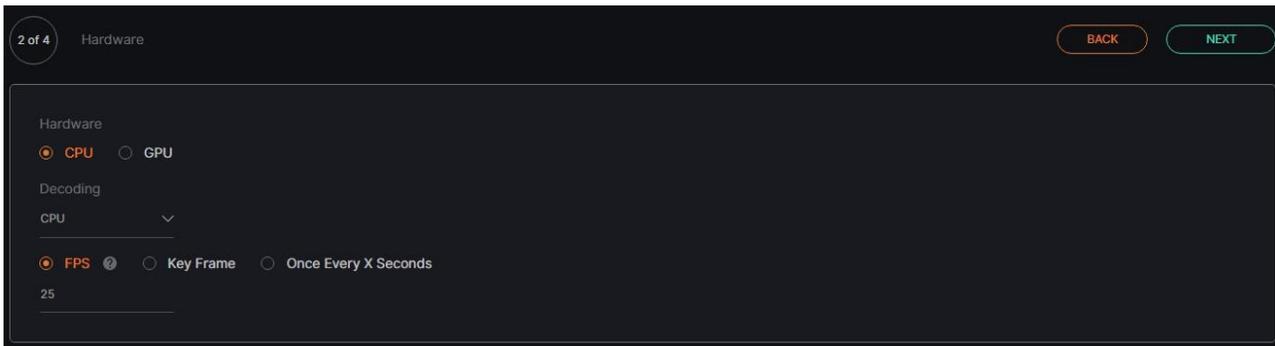


1. Set the parameters:
 - a. Set the required time frame for territory scanning
 - b. Enter the notification alert delay in seconds
2. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to delete it
 - d. Click the Reset Zone button to return the detection zone borders to their original position

-  • The Notification Alert Delay, sec parameter is responsible for the frequency with which the system sends notifications. The possible range is from 1 to 300 sec.
- The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:



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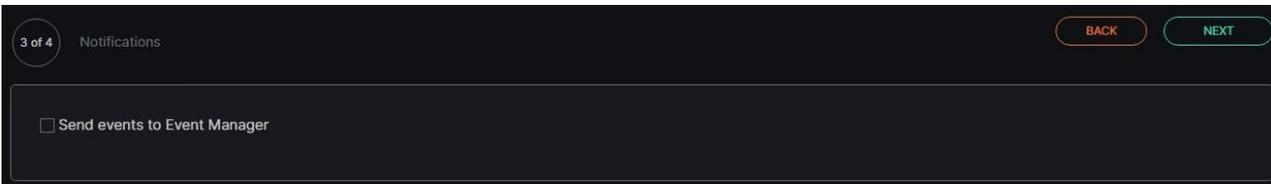
CEVA v1.0.0

- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

 • The recommended value for the FPS mode is 25.
• The default parameters allow the production of analytics. To customize the analytics, set parameters as required.
• To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

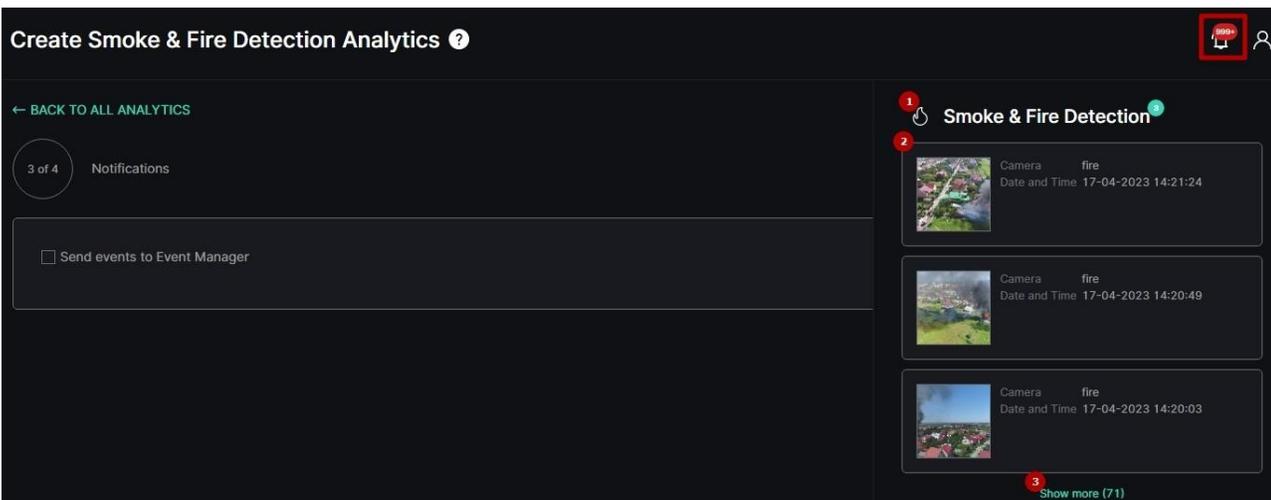
Notifications Tab

The Notifications tab allows managing the events notifications. Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources:



 The default parameters allow the production of analytics. To customize the analytics, set parameters as required.

Once the analytics is created and enabled, the Notification icon signals about each new event notification. Click the Notification icon to open the Notification Panel. It comprises:

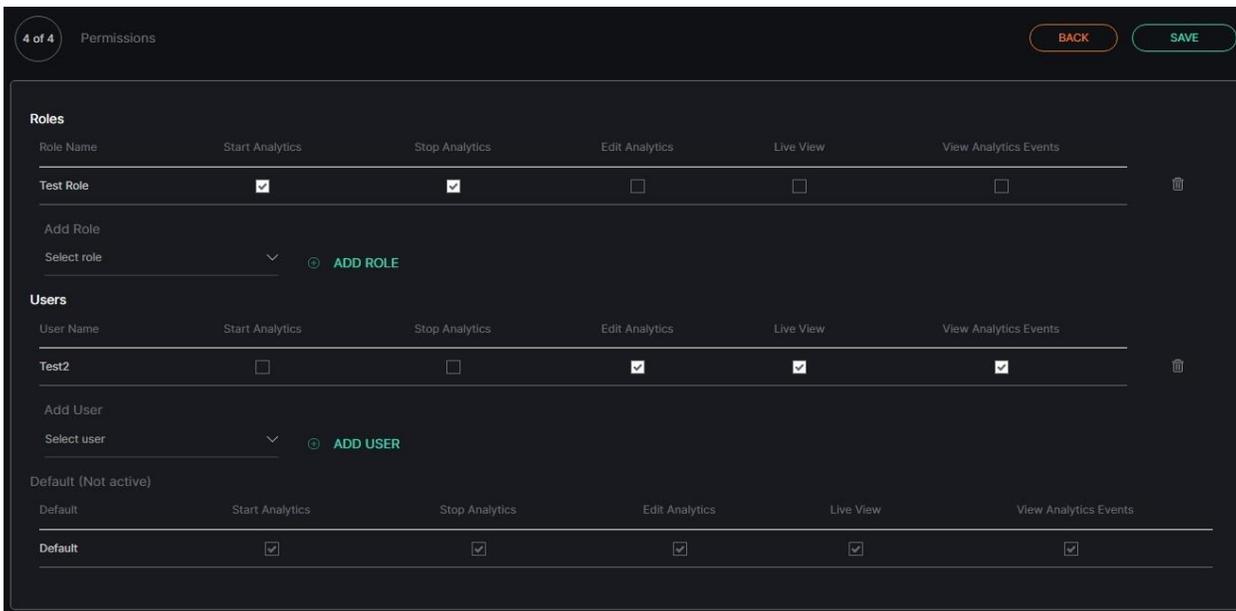


1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
 - b. Clear all plugin event notifications at once from the Notification Panel by clicking the Close button (this action doesn't affect events in the Events item)

2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
3. Show More button with the total events number to open the Events item and view all events

Permissions Tab

The Permissions tab provides the ability to:



- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu

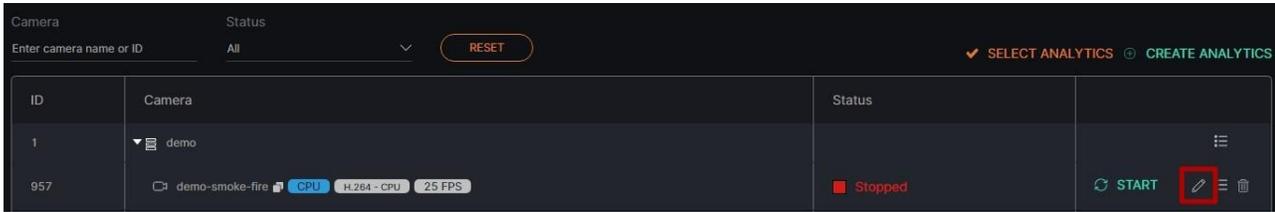
- 💡 • The default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users is not limited.

Once saved, the Smoke & Fire Detection Analytics editor opens to allow the users to:

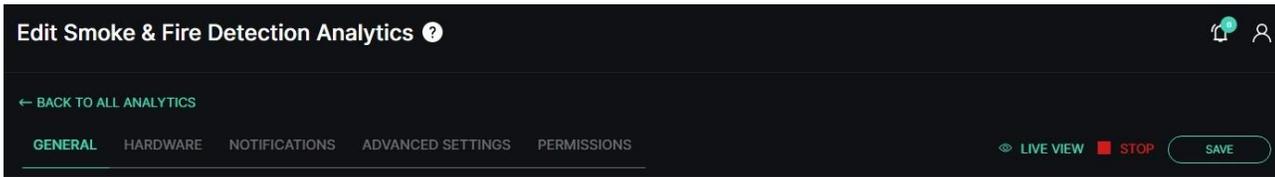
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Smoke & Fire Detection Analytics navigation menu allows to:



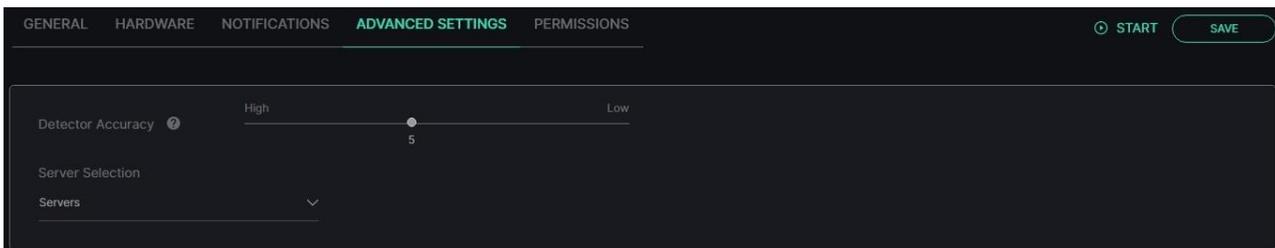
- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the chosen analytics

- 💡 • The current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.
- The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics](#).

Advanced Settings Tab

The Advanced Settings tab allows the users to:



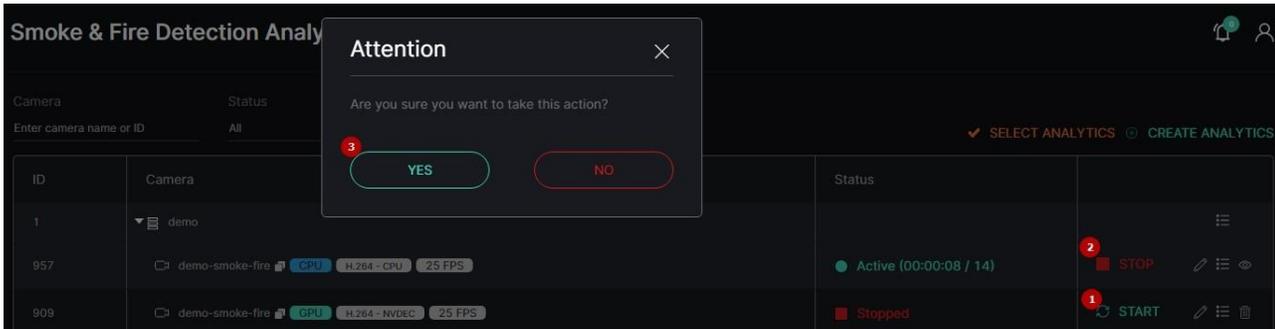
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- Move the slider to the left (to increase) or to the right (to decrease) the detector accuracy
- Select a server from the drop-down list to run the analytics

 The Detector Accuracy setting is determined by the parameters of the original image. A High value is recommended for a low-quality image to increase the detection probability, and a Low value is better for a high-quality image to avoid false detection. The possible range is 1 to 10, the value is 5 by default.

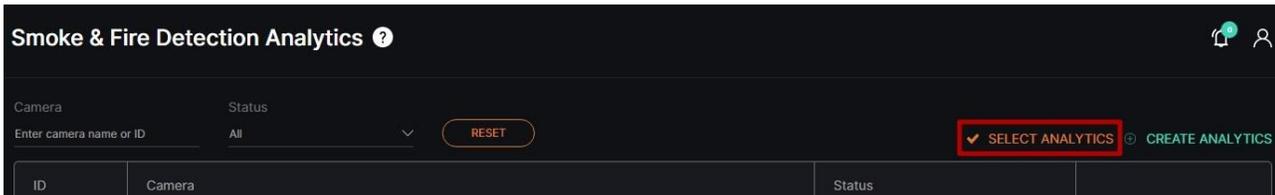
Analytics Status

To enable or disable the analytics and view the change in the analytics status:

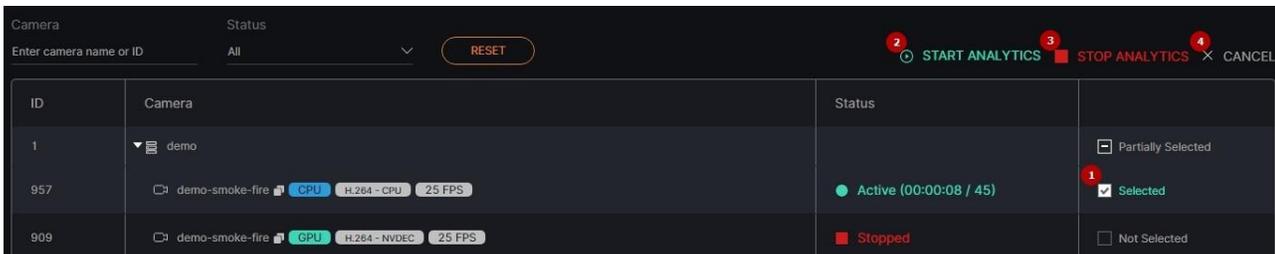


1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



The Select Analytics functional menu allows to:

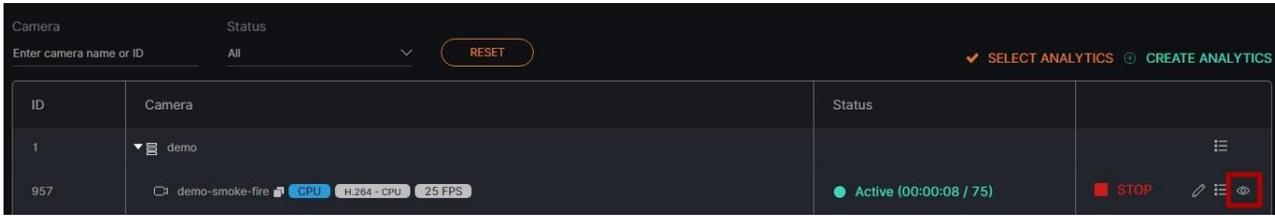


1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics selection

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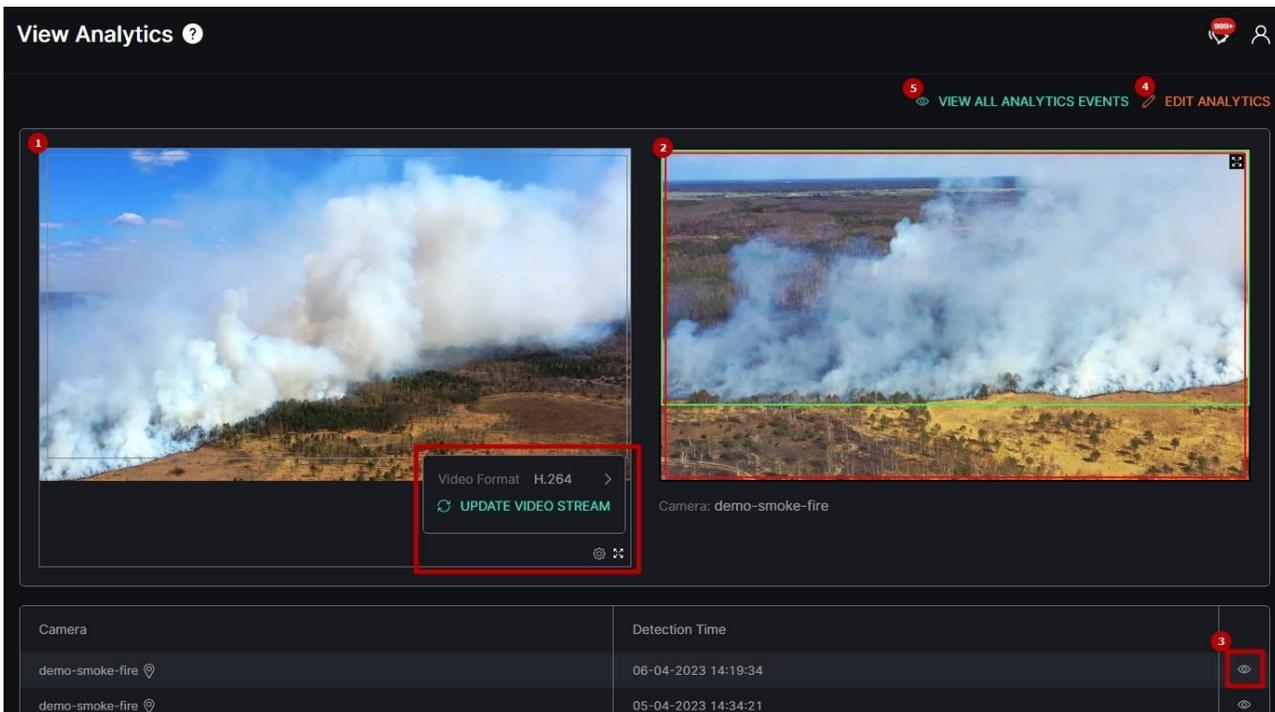
View Analytics

To see the selected analytics in real-time, click the View icon on the toolbox:



 The View icon becomes available only when selected analytics is active.

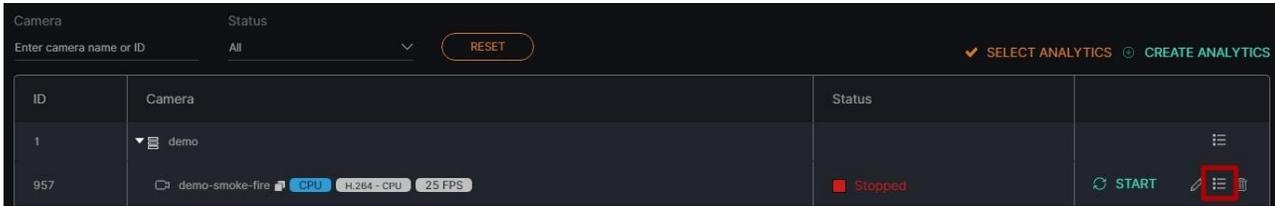
Live view analytics mode allows to:



1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View the frame preview with the detected open smoke and fire
3. Select the View icon in the table below to open the image in full size and save it
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics

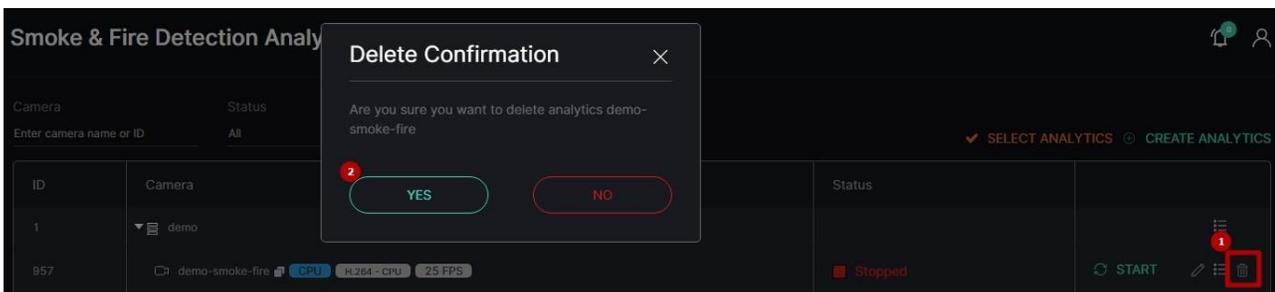
View Events

To view selected analytics events in the Analytics item, click the Events icon on the toolbox:



Delete Analytics

To delete the analytics:



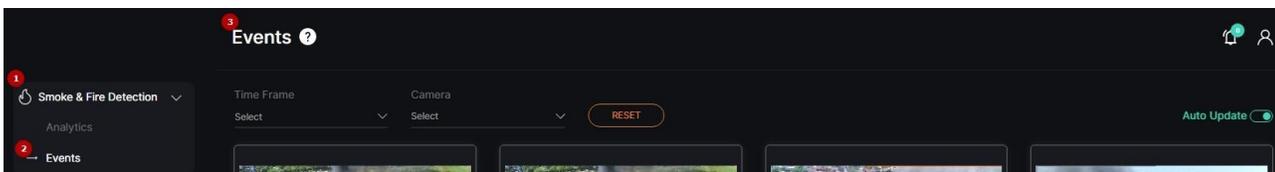
1. Select the Delete icon on the toolbox
2. Confirm the intention

Smoke & Fire Detection: Events

i This page comprises the Events item overview and functionality description. The item displays the event notifications including a frame, camera, date, time, and detected smoke and fire sources.

Overview

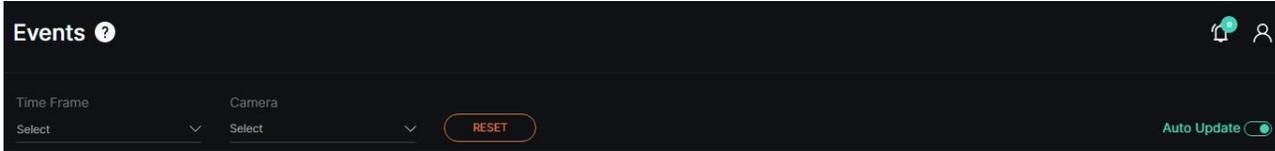
To open the Events item, in the left menu:



1. Select the Smoke & Fire Detection section
2. Choose the Events item
3. See event notifications

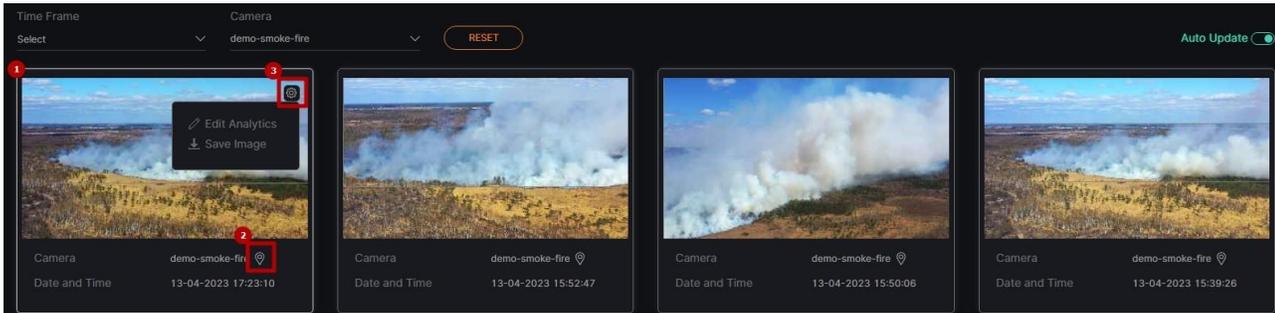
Use and Functionality

The Events functional menu allows to:



- Select the required events time frame
- Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable auto update of the event notifications

Once selected and filtered, in the events:



1. View the frame preview and information about the event. To filter events by the recognized data, in the required event block:
 - a. Click the camera name to filter events only by the camera related to the event
 - b. Click the date to filter events only by the date related to the event
2. View the camera location on the map by clicking the View Geolocation icon
3. Hover the mouse over the event block and select the Extra Options icon. In the drop-down menu:
 - a. Click the Edit Analytics button to make changes to the settings of the analytics which is related to the selected event
 - b. Click the Save Image button to download the event frame in full size



Click the frame preview to open the image and see the event information.

Smoking

Smoking – Smoker Detection Module

What the Smoking Detection module can do:

- Recognition and notification of smoking people in the control area.
- Storage and transfer of the smoking facts data.

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Contents:

- Smoking – Product Description
- Smoking - Analytics
- Smoking - Events

Smoking – Product Description

The Smoking module is designed to promptly respond to the facts about smoking.

The Smoking module can be used for:

- Prevention of smoking in non-intended areas.
- Monitoring of the labor discipline rules compliance.
- Control of fire safety in places of storage of flammable and explosive substances.

The main functionality of the Smoking module:

- Recognition of smokers.
- Notification of smoking people in the control area.

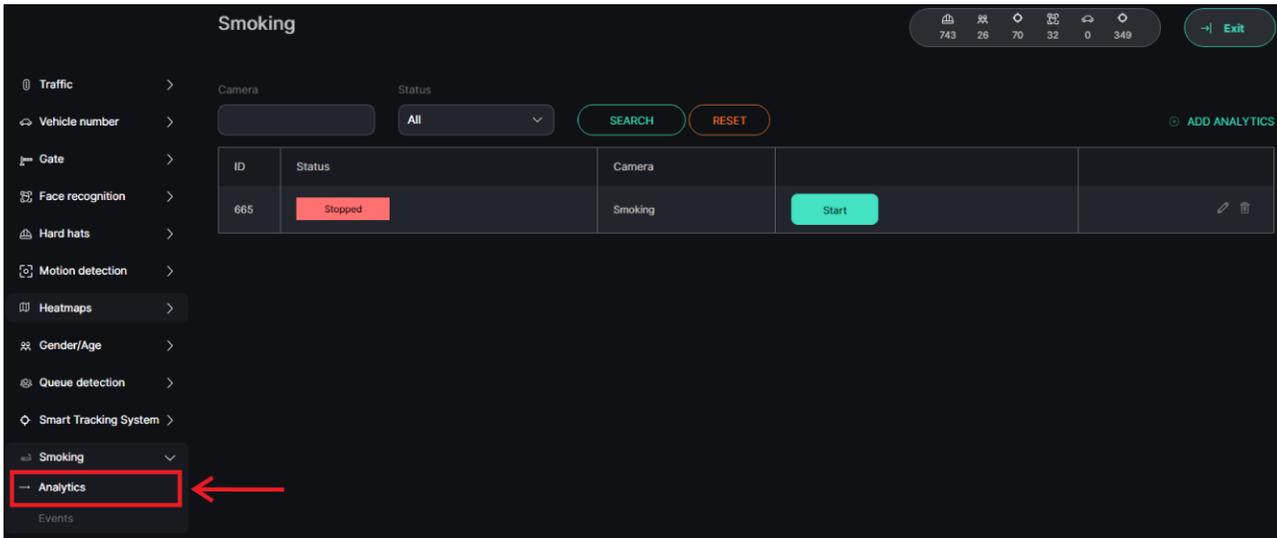
When a smoking person is detected in the frame, the system instantly sends a notification and records information about the violation in the log: frame, time, and camera.

System requirements

It is necessary to have the minimum system requirements for one video stream for the Smoking module installation on GPU as in the table below. For more information on a bigger quantity of video streams, please contact the official distributor of products.

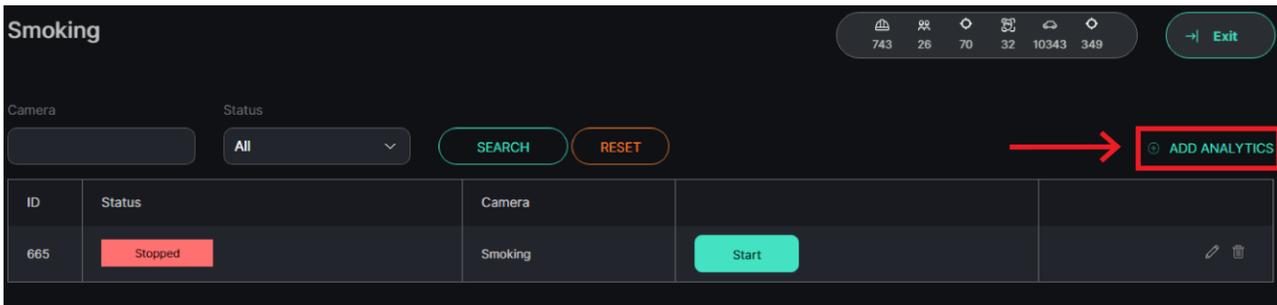
PARAMETER	RECOMMENDED VALUE
CPU	Intel Core i5-5575 or higher
RAM	2 GB RAM
GPU	NVIDIA 1030
Places for archive	up to 3GB per day (~4.5k detections)
Operating system	Windows 10 / Ubuntu 18.04.3 LTS (Bionic Beaver)

Smoking - Analytics

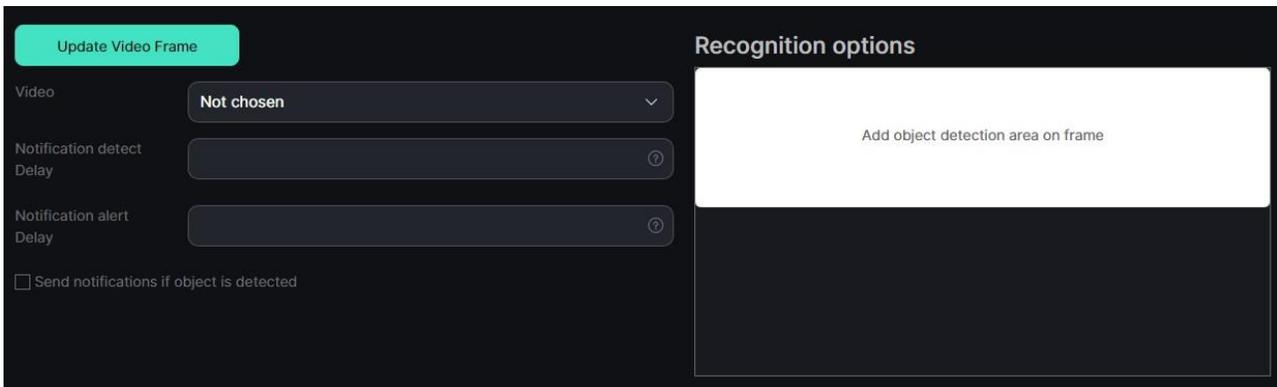


Analytics adding

To add new Smoking analytics, click Add Analytics in the upper right corner of the screen.



By clicking the Add Analytics button, the next form opens:



When you click on the Update Video Frame button, you can see the frame in real-time in the frame adding area. It is possible if a video stream was selected.

To add analytics, you need to fill in the following fields:

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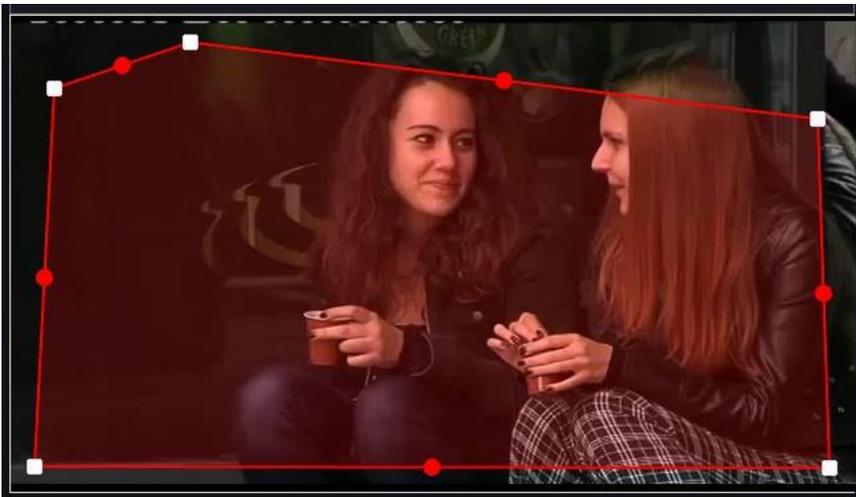
FIELD NAME	DESCRIPTION
Video	Click on the field and select the name of the camera from the drop-down list. The video stream will be used to create analytics.
Notification detect Delay	The frequency with which the system will check for smokers. Possible range from 1 to 60 sec. Recommended value – 1 sec.
Notification alert Delay	The frequency with which the system will send notifications. Possible range from 1 to 300 sec. Recommended value – 1 sec.
Send notifications if object is detected	To send notifications about smoking rules violations to external resources, click on the field and select the event, according to the parameters of which notifications will be received from the drop-down list.
Event	Select the event from the dropdown list for which notifications will be sent.
Extra options	If necessary, it is possible to add extra options for further use when an event is being created. Fill in the parameter fields. To add parameters, press the "+" button. To remove parameters, press the "-" button.

To accept changes, click on the Save button.

Adding a smoking detection area

- Add a camera to the Video field.
- A frame from the added camera will appear below the fields.
- Add a detection area to the frame.

a) When you click on a frame, a point appears. When you move the mouse cursor, a line appears. When you click on the frame again, a second point appears, which is connected by a line to the first point. In order to create an area, three or more points need to be connected. To close the area, you have to double-click in the same place.



The display area contains starting points as white squares, and points in the middle of lines as red circles. If you hold down the left mouse button on the white point, you can change the shape of the zone by moving the mouse cursor. When you hold down the red point, you can stretch or shrink the area strictly along the line on which the point is located. If you double-click on the red point with the left mouse button, the red point will turn white.

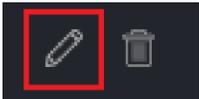
b) A form will appear on the right side of the screen. Fill in the form field:

FIELD NAME	DESCRIPTION
Time period	Select the period in which the analytics should record smoking

To create analytics, click on the Save button.

Analytics editing

To open the Smoking analytics editing window, click the Editor button on the right side of the analytics.



By clicking the Editor button, the Smoking analytics editing form opens.

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Analytics can be changed if it is not running. When you click on the Update Video Frame button, you can see the frame in real-time in the frame adding area. To stop the analytics, click on the Stop button. To start the analytics, click on the Start button.

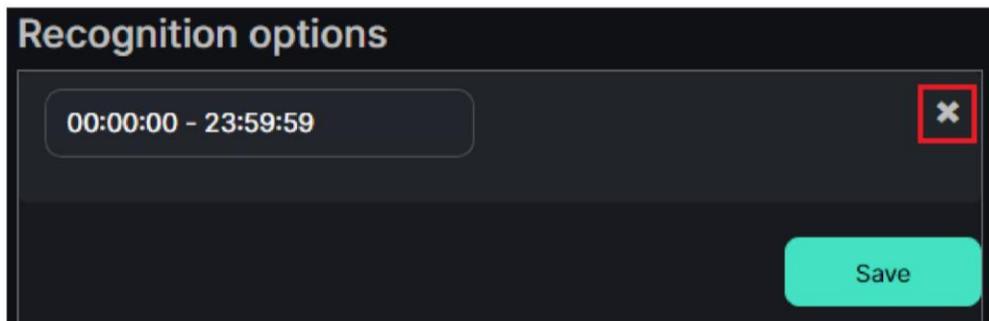
The system user can change the following fields:

FIELD NAME	DESCRIPTION
Notification detect Delay	The frequency with which the system will check for smokers. Possible range from 1 to 60 sec. Recommended value – 1 sec.
Notification alert Delay	The frequency with which the system will send notifications. Possible range from 1 to 300 sec. Recommended value – 1 sec.
Send notifications if object is detected	To send notifications about smoking rules violations to external resources, click on the field and select the event, according to the parameters of which notifications will be received from the drop-down list.
Events	Select the event from the dropdown list for which notifications will be sent.

FIELD NAME	DESCRIPTION
Extra options	If necessary, it is possible to add extra options for further use when an event is creating. Fill in the parameter fields. To add parameters, press the "+" button. To remove parameters, press the "-" button.

Changing the detection area:

- You can delete the detection area by clicking on the corresponding icon and then re-create the area.



When you click on a frame, a point appears. When you move the mouse cursor, a line appears. When you click on the frame again, a second point appears, which is connected by a line to the first point. In order to create an area, three or more points need to be connected. To close the area, you have to double-click in the same place.

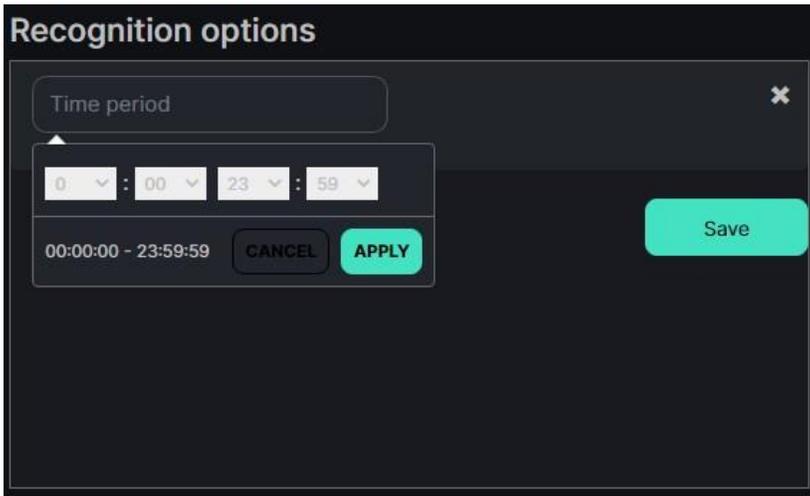
- You can change the parameters of an already created area.

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The display area contains starting points as white squares, and points in the middle of lines as red circles. If you hold down the left mouse button on the white point, you can change the shape of the zone by moving the mouse cursor. When you hold down the red point, you can stretch or shrink the area strictly along the line on which the point is located. If you double-click on the red point with the left mouse button, the red point will turn white

You can edit the time of the detection on the right side of the screen:



FIELD NAME	DESCRIPTION
Time period	Select the time period in which the analytics should perform detection.

To accept changes, click on the Save button.

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Analytics viewing

To view Smoking analytics, press the View icon on the right side of the Video stream field.

ID	Camera	Status	Actions
1779	TEST_30_06	Stopped	START, Edit, Delete
1705	TEST_01_Test_Smoking	Stopped	START, Edit, Delete
1678	TEST_01_Test_Smoking	Stopped	START, Edit, Delete
1633	TEST_02_Test_Smoking	Active	STOP, View , Edit, Delete
1584	Test_Smoking	Stopped	START, Edit, Delete
716	Smoke&Fire_test	Stopped	START, Edit, Delete
715	Smoking_test	Stopped	START, Edit, Delete

It is possible to view only active video streams.

In the opened window you can view the video from the camera in real-time.

Camera	Violation time	Accepted by
Smoking_test	18-06-2021 18:20:38	ACCEPT
Smoking_test	18-06-2021 18:20:24	ACCEPT
Smoking_test	18-06-2021 18:20:24	pavel.lomachenko@incoresoft.com
Smoking_test	18-06-2021 18:07:05	ACCEPT
Smoking_test	18-06-2021 18:07:05	ACCEPT
Smoking_test	18-06-2021 18:06:44	ACCEPT

There are records of detected smoking facts in the table below, which includes Camera, Violation time, and Accepted by columns.

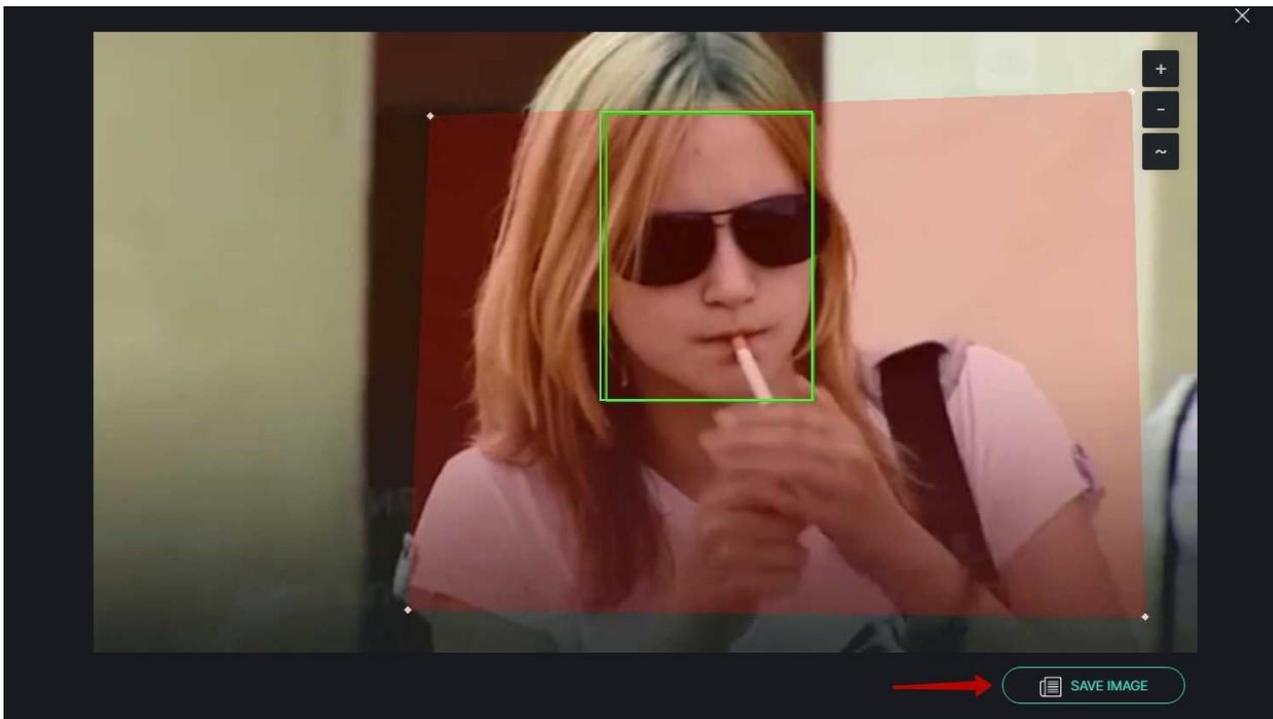
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COLUMN NAME	DESCRIPTION
Camera	Here you can look at the camera location and a frame of a smoking fact
Violation time	The time the camera detects a smoking fact
Accepted by	Press on the ACCEPT button to accept the notification. After that, an username will appear in this field instead of the button

Press on the Frame icon to look closer at the detected smoking fact.

Camera	Violation time	Accepted by
 Smoking_test	18-06-2021 18:20:38	ACCEPT
 Smoking_test	18-06-2021 18:20:24	ACCEPT
 Smoking_test	18-06-2021 18:20:24	pavel.lomachenko@incoresoft.com
 Smoking_test	18-06-2021 18:07:05	ACCEPT
 Smoking_test	18-06-2021 18:07:05	ACCEPT
 Smoking_test	18-06-2021 18:06:44	ACCEPT

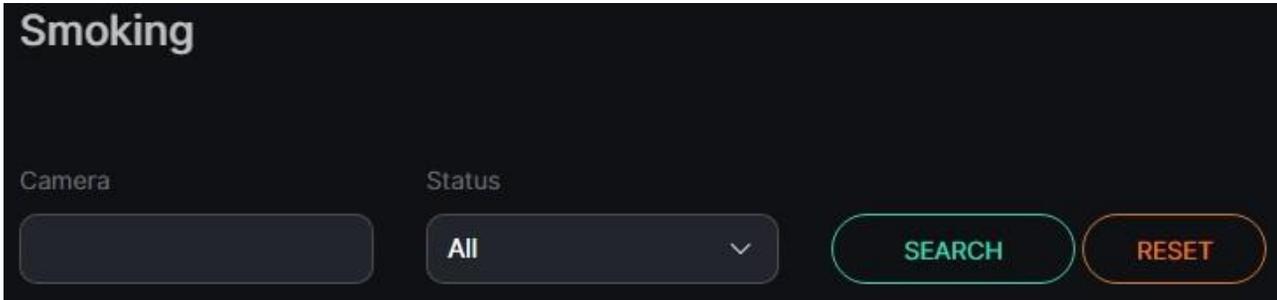
To download an image of a detected smoking violation, press Save image.



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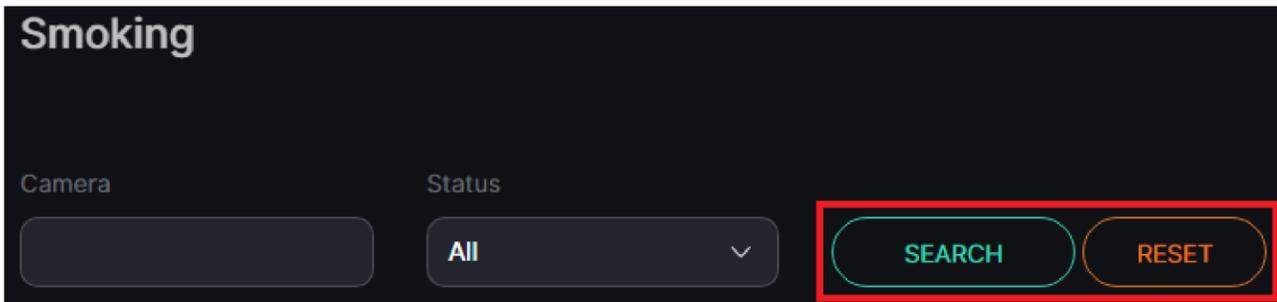
Analytics search

Analytics search fields are at the top of the screen.



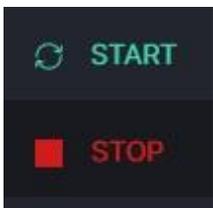
SEARCH FIELD	PARAMETERS
Camera	You can enter the name of the camera or part of the name in this field
Status	You can select analytics status in this field

Click on the Search button to display the search results. Click on the Reset button to clear input fields.



Analytics start and stop

To start the Smoking analytics, click on the Start button on the right side of the record. To stop the analytics, click on the Stop button.



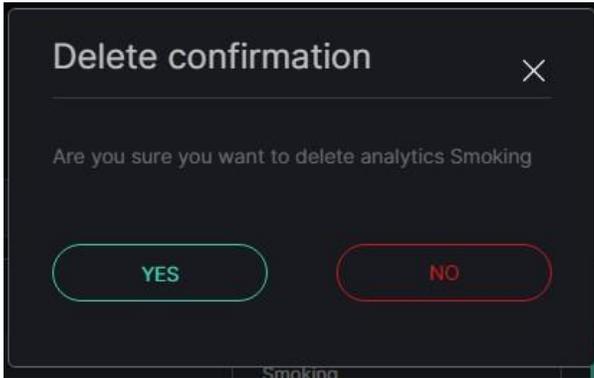
Analytics deletion

To delete the Smoking analytics, click on the delete icon on the right side of the entry.



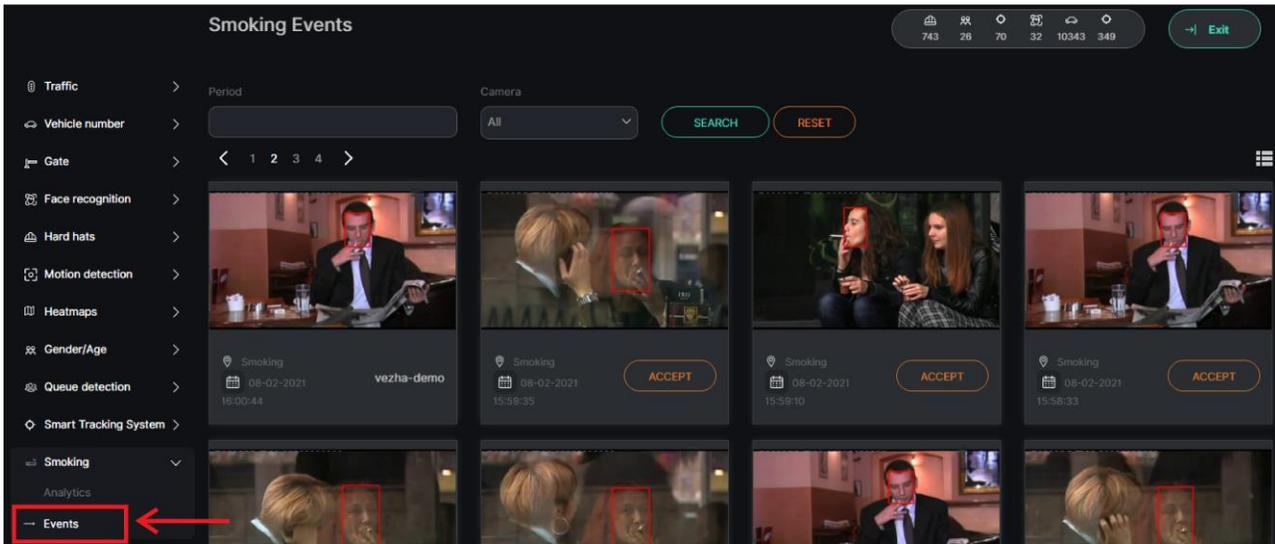
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

In the following window, click Yes to confirm the deletion or No to cancel the deletion.



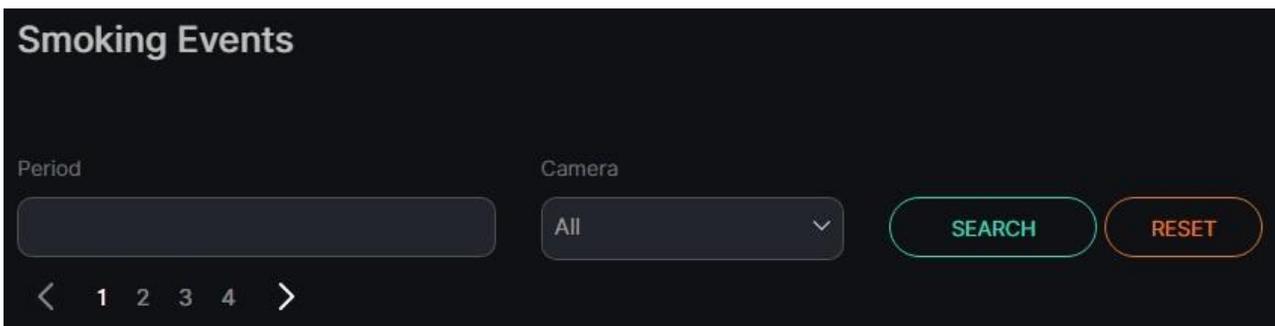
Smoking - Events

In order to view the smoking history, select the Smoking module in the menu on the left and then select the Events section.



Search

There is a search box at the top of the screen.

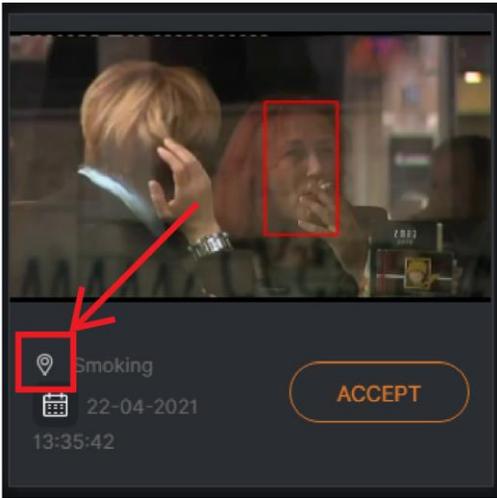


CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

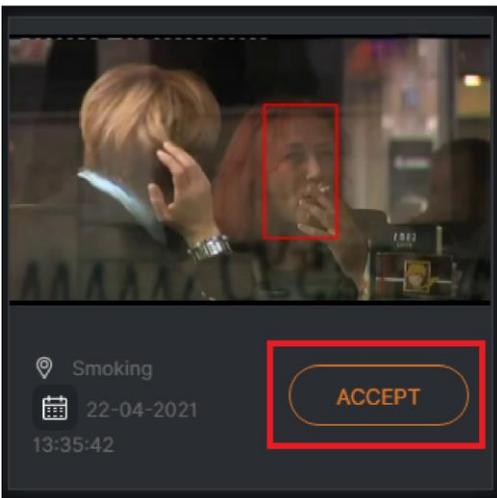
SEARCH FIELD	PARAMETERS
Period	Click on the field and select the desired time period
Camera	Click on the field and select the camera by which you want to view the events from the drop-down list

Click on the Find button to display the search results. Click on the Reset button to clear the input fields.

To view the location and direction of the camera, click:



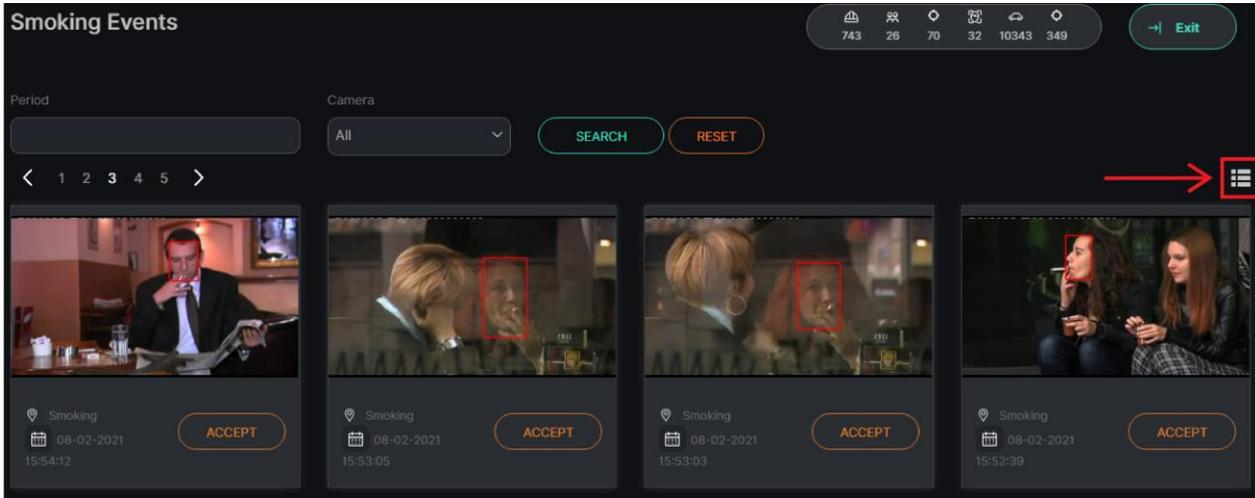
To accept the notification, click on the Accept button.



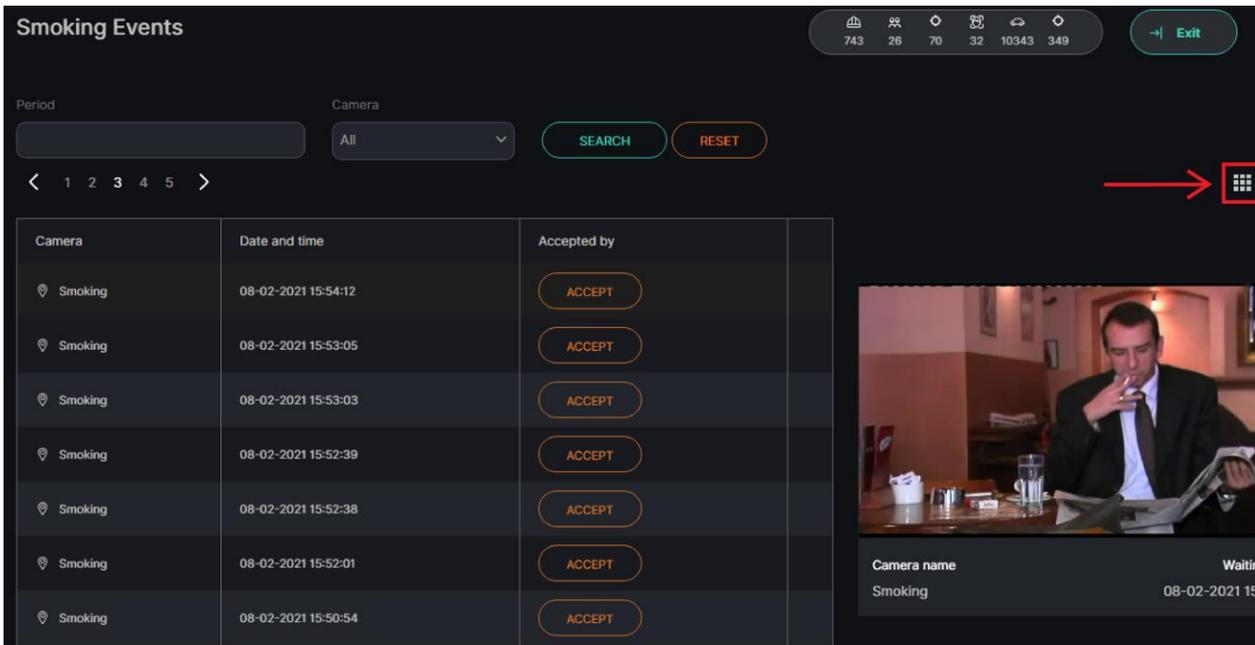
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

Working with notification records

In order to go to the list view of records, click on the icon in the upper right corner.

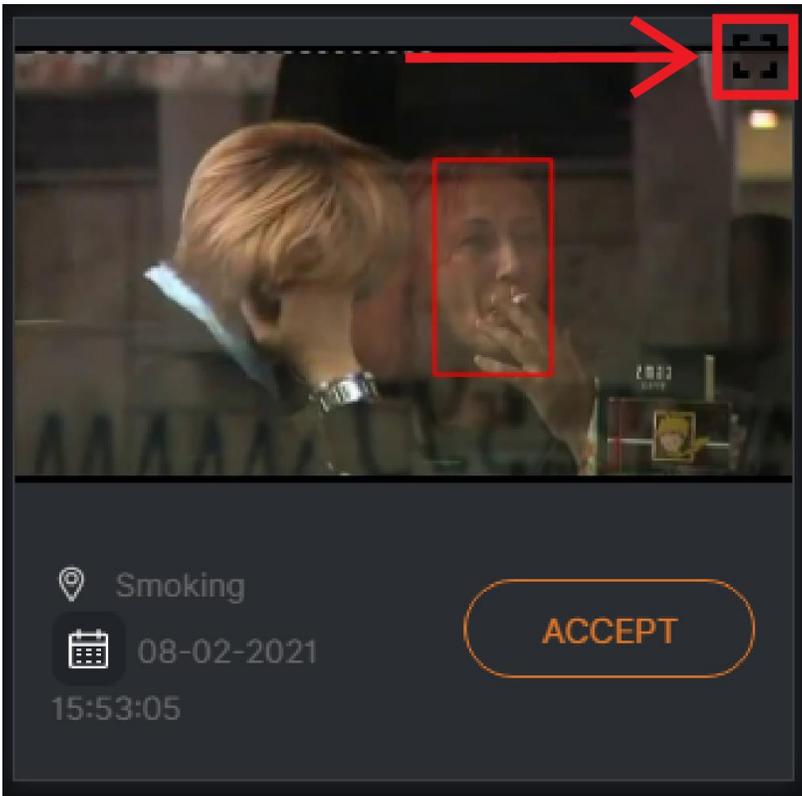


To return to the grid view, click on the icon

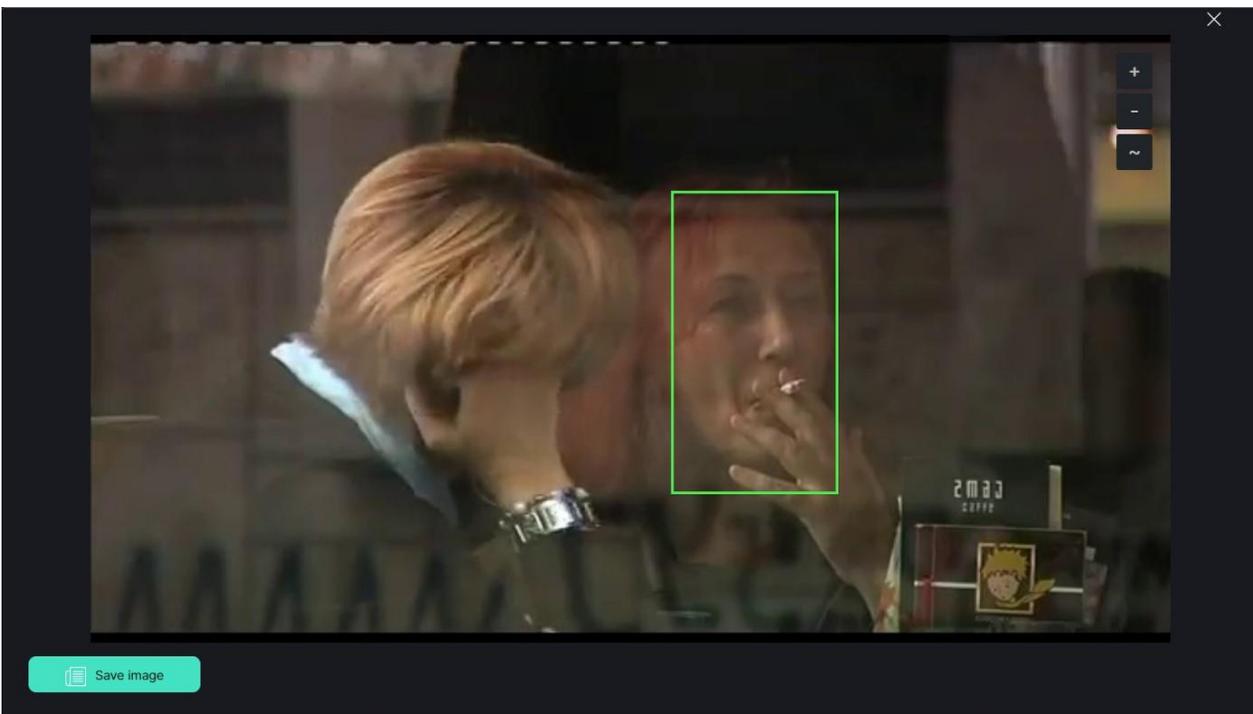


CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

In order to enlarge the frame, click on the photo of interest (when using the grid view) or click on the enlargement icon when using the list view.



You can save the image by pressing the Save Image button if desired.



Traffic Analytics

Introduction

Use this guide to understand the interface and features of the Traffic Analytics plugin and learn how to utilize it for the best result.

What Is Traffic Analytics?

Traffic Analytics determines the intensity, quantity, and composition of the vehicle and people traffic. From tracking flow to identifying road incidents as soon as they occur, this video analytics plugin is perfect for controlled access roadways and urban traffic management.

Primary Capabilities

Traffic Analytics is capable to:

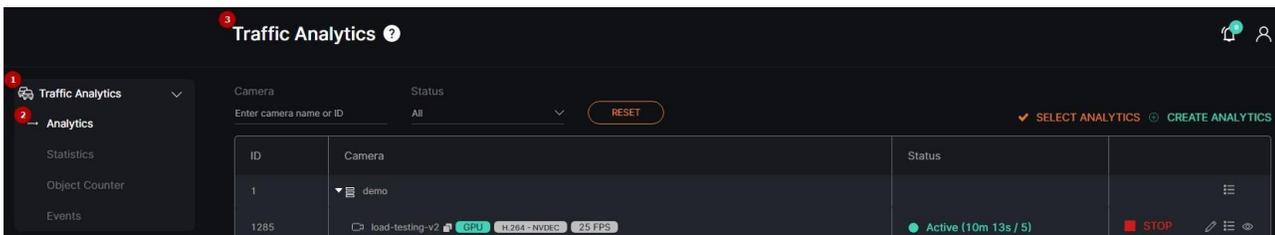
- Determinate the level of carriageway and sidewalks load at different times of day
- Determinate the traffic intensity with reference to the type of the vehicle (passenger car, truck, bus, etc.)
- Monitor the traffic in public places: shops, shopping malls, crowded places

Traffic Analytics: Analytics

i This page comprises the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

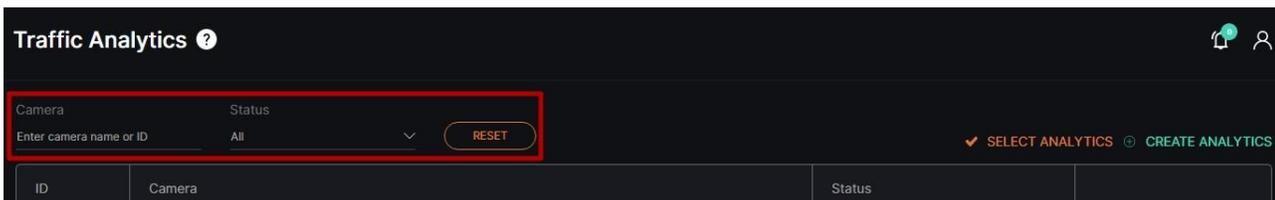
To open the Analytics item, in the left menu:



1. Select the Traffic Analytics section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Traffic Analytics functional menu allows to:



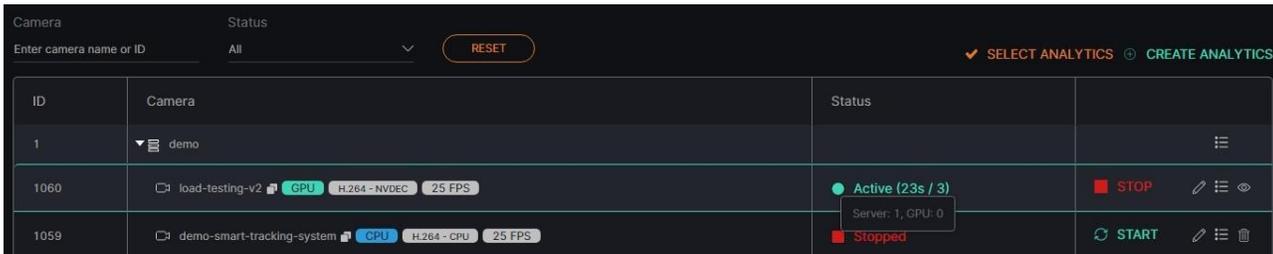
CORTROL CVA *(Extended Video Analytics)*

CEVA v1.0.0

- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

 The status options comprise All, Active, and Stopped.

See the list of analytics in the table below. It contains:



ID	Camera	Status
1	demo	Active (23s / 3)
1060	load-testing-v2 GPU H.264 - NVDEC 25 FPS	Active (23s / 3) Server: 1, GPU: 0
1059	demo-smart-tracking-system CPU H.264 - CPU 25 FPS	Stopped

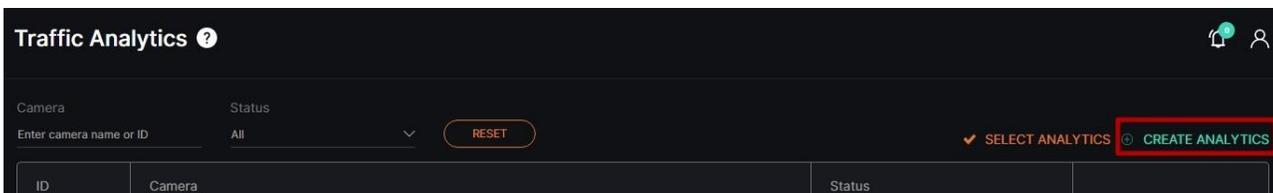
- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - Additional hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Events
 - View
 - Delete

 • To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).

• To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

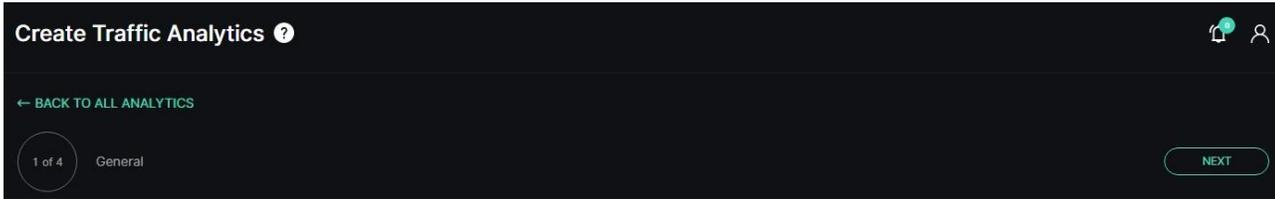
Create Analytics

To create new analytics, click the Create Analytics button:



CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

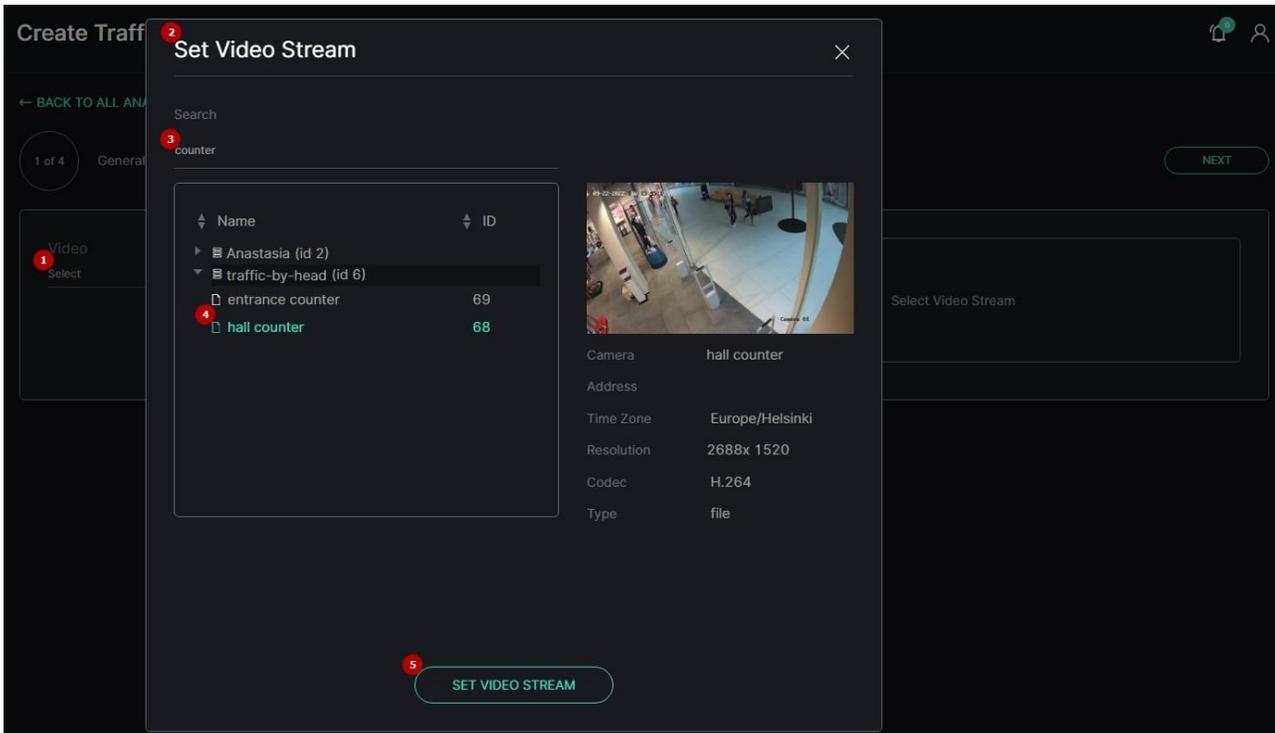
The Create Traffic Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters. To set a video stream:

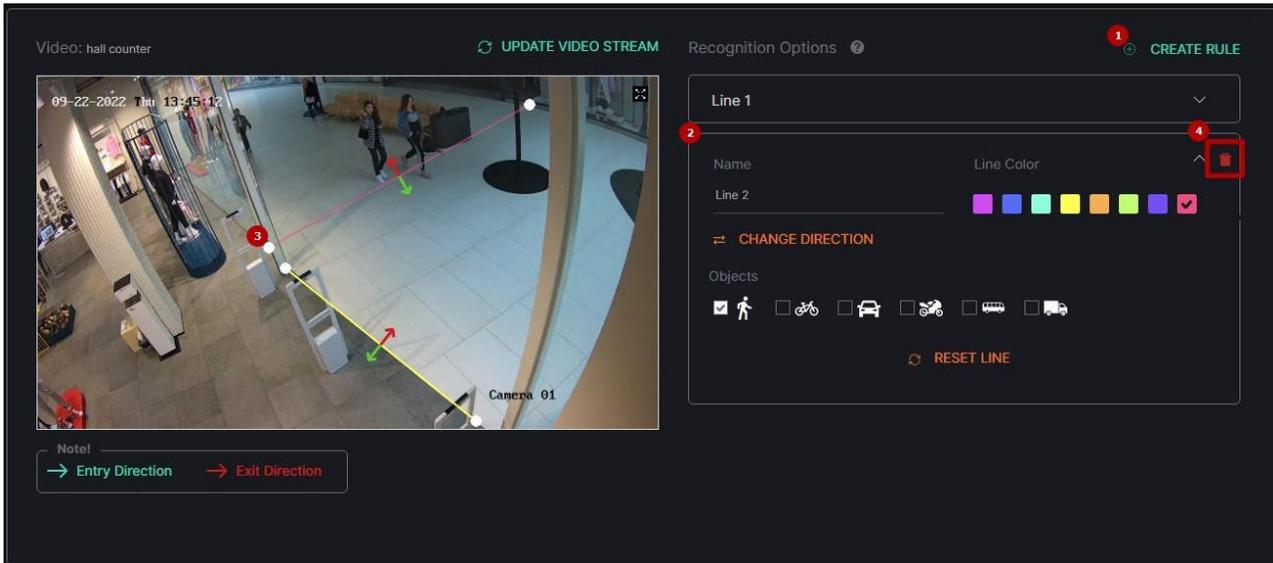


1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Stream button above the frame. This button is available upon adding the video stream.

Recognition Options

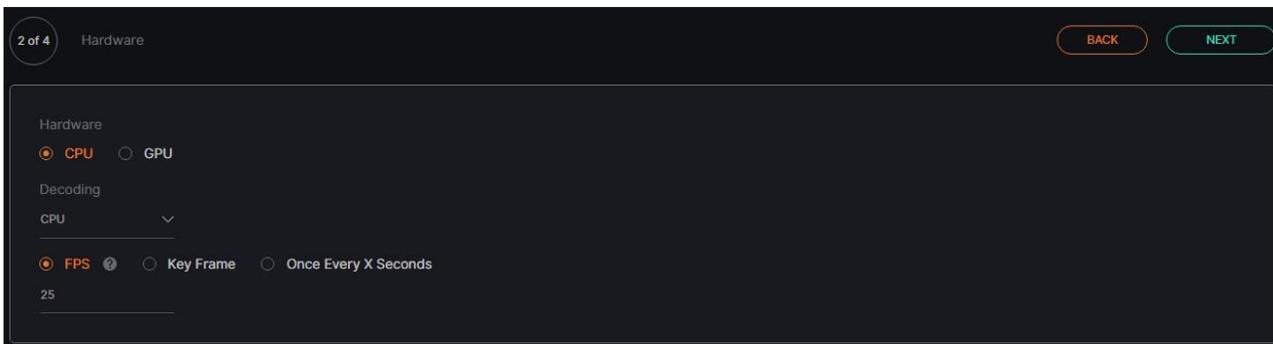
To perform the recognition, apply these recognition options:



1. Select the Create Rule button to create a new rule
2. Set the parameters:
 - a. Enter the line name
 - b. Select the line color
 - c. Redirect the traffic by clicking the Change Direction button
 - d. Select the required checkboxes to set objects
3. Modify the line:
 - a. Click and drag the handles with LMB to set the line size and location
 - b. Click and drag the line with LMB to move the whole line
 - c. Click the Reset Line button to return the line to its original position
4. Select the red Delete icon to delete the required rule section

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:



CORTRON CVA (Extended Video Analytics)

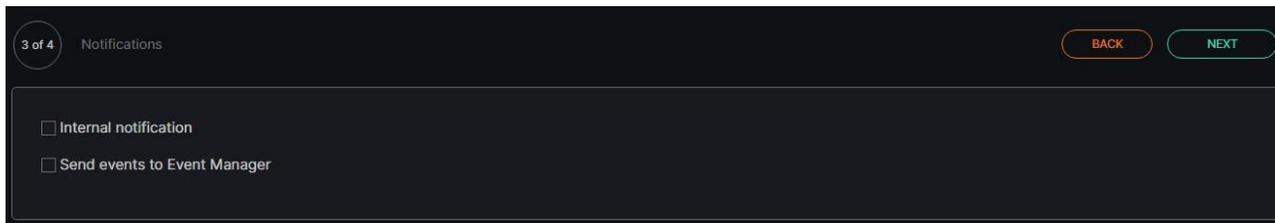
CEVA v1.0.0

- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

• The recommended value for the FPS mode is 25.
• The default parameters allow the production of analytics. To customize the analytics, set parameters as required.
• To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Notifications Tab

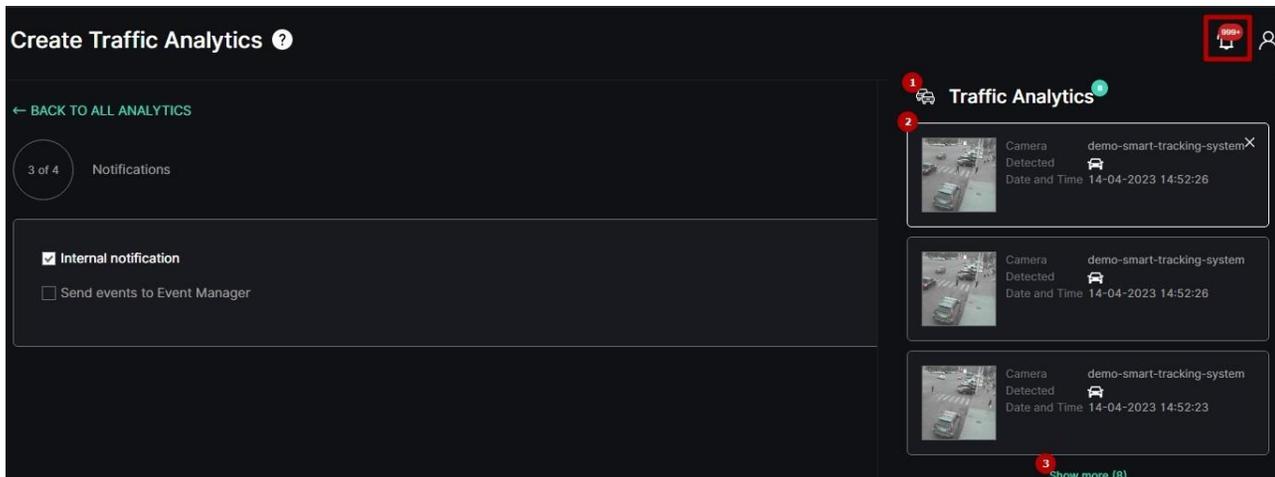
The Notifications tab allows managing the events notifications:



- Check the Internal Notification box to allow the system to send all notifications to the Events section
- Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources

• The default parameters allow the production of analytics. To customize the analytics, set parameters as required: Check one of them or use both simultaneously.

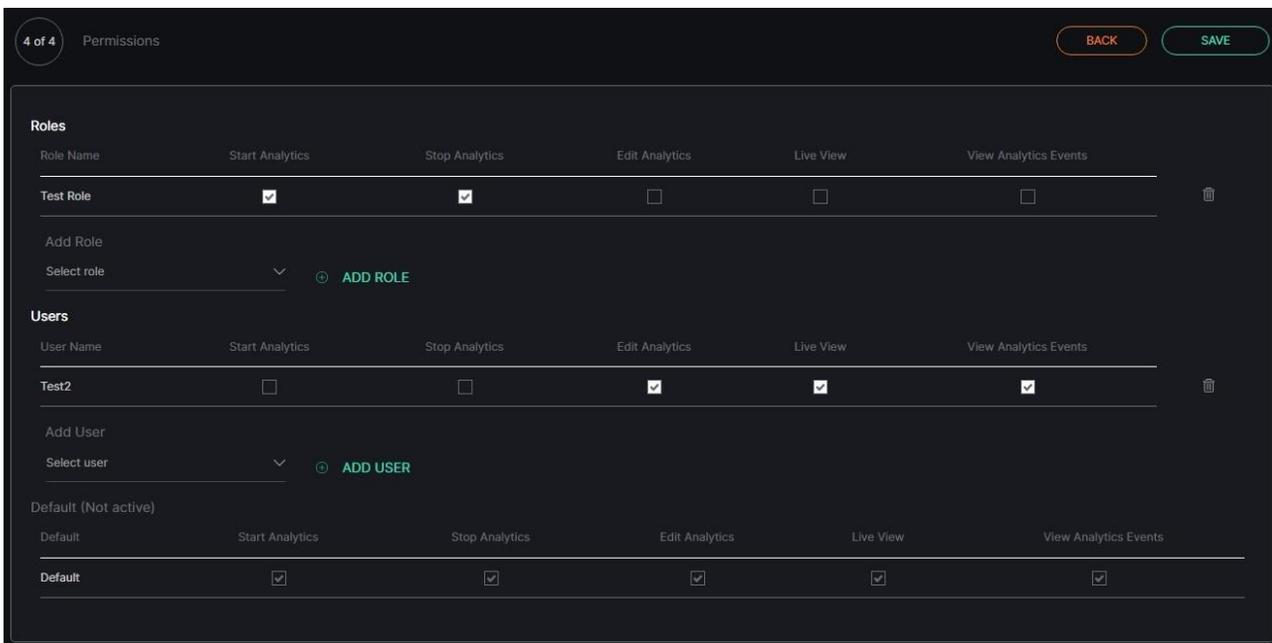
Once the Internal Notification box is checked, and the analytics is created and enabled, the Notification icon signals about each new event notification. Click the Notification icon to open the Notification Panel. It comprises:



1. Plugin name box to:
 - a. Collapse/expand the list of event notifications by clicking the plugin name
2. Clear all plugin event notifications at once from the Notification Panel by clicking the Close button (this action doesn't affect events in the Events item)
3. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired event notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
4. Show More button with the total events number to open the Events item and view all events

Permissions Tab

The Permissions tab provides the ability to:



- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu



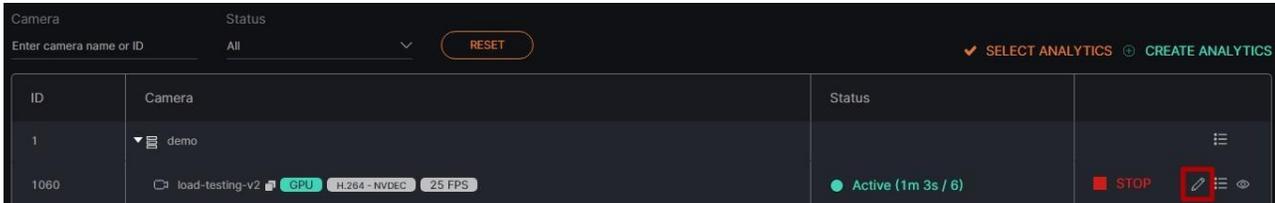
- The default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users is not limited.

Once saved, the Traffic Analytics editor opens to allow the users to:

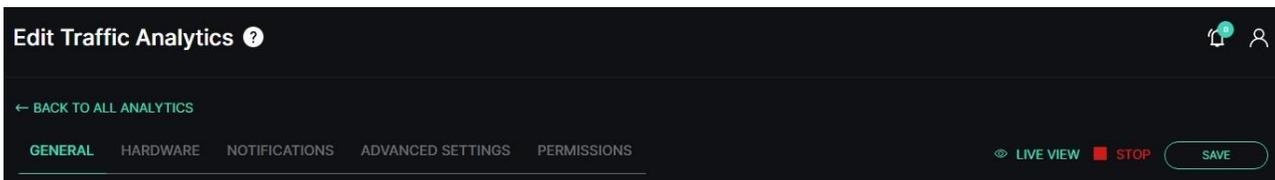
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Traffic Analytics navigation menu allows to:



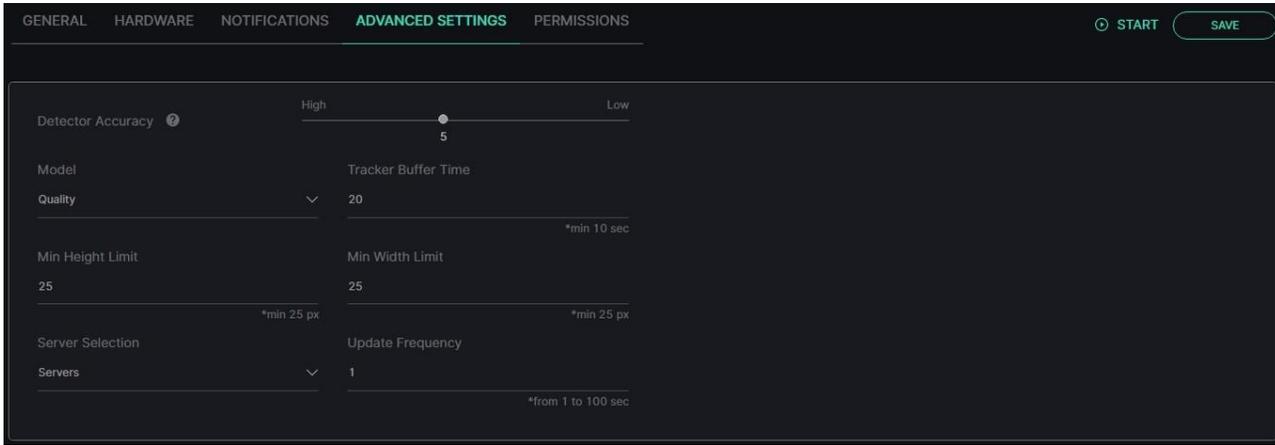
- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the selected analytics

- 💡 • The current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.
- The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics238](#).

Advanced Settings Tab

The Advanced Settings tab allows the users to:



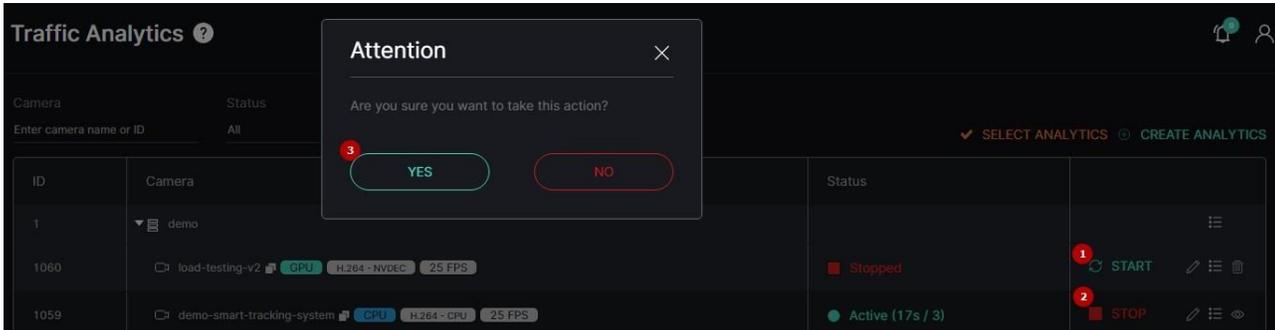
- Move the slider to the left (to increase) or to the right (to decrease) the detector accuracy
- Select an analytics model:
 - Quality
 - Performance
 - Head Recognition
- Enter the recognized object storage time in the buffer (in seconds)
- Set the minimum height of an object for recognition (in pixels)
- Set the minimum width of an object for recognition (in pixels)
- Select a server from the drop-down list to run the analytics
- Enter the interval between analytics value updates in seconds

- 💡 • The Detector Accuracy setting is determined by the parameters of the original image.
- A High value is recommended for a low-quality image to increase the detection probability, and a Low value is better for a high-quality image to avoid false detection. The possible range is 1 to 10, the value is 5 by default.
- The Quality model provides exceptional detection quality at the expense of analytics performance.
- The Performance model provides exceptional analytics performance at the expense of detection quality.
- The Head Recognition model uses the head detector, as opposed to the Quality and Performance models which use the body detector.
- The minimum value for the Tracker Buffer Time parameter is 10 sec. The default value is 20 sec.
- The minimum value for the Min Height Limit is 25 pixels. The default value is 25 pixels.
- The maximum value is limited by the frame height.
- The minimum value for the Min Width Limit is 25 pixels. The default value is 25 pixels.
- The maximum value is limited by the frame width.
- The possible range for the Update Frequency parameter is 1 to 100 sec.
- Default parameters allow the production of analytics. To customize the analytics, set parameters as required.

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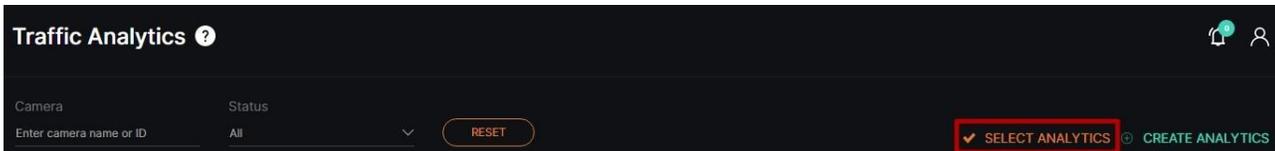
Analytics Status

To enable or disable the analytics and view the change in the analytics status:

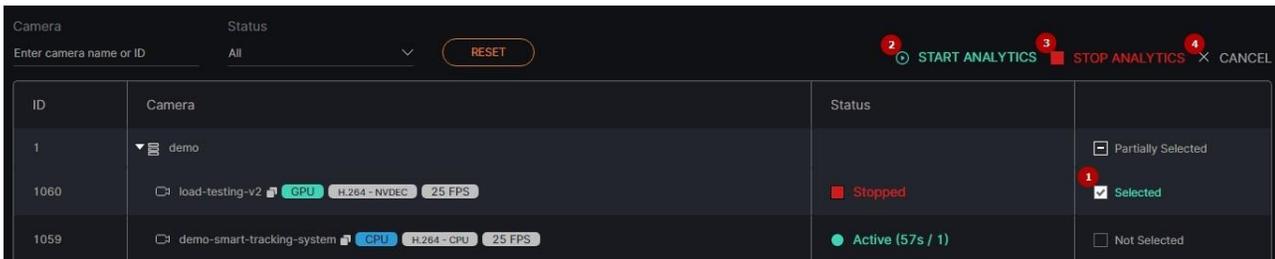


1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



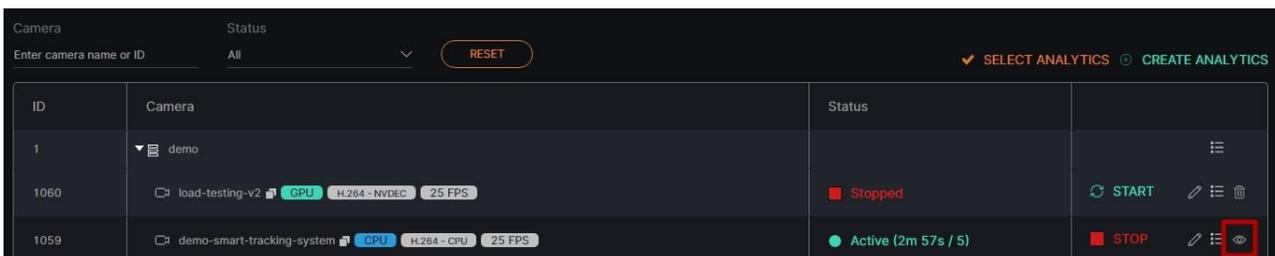
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics selection

View Analytics

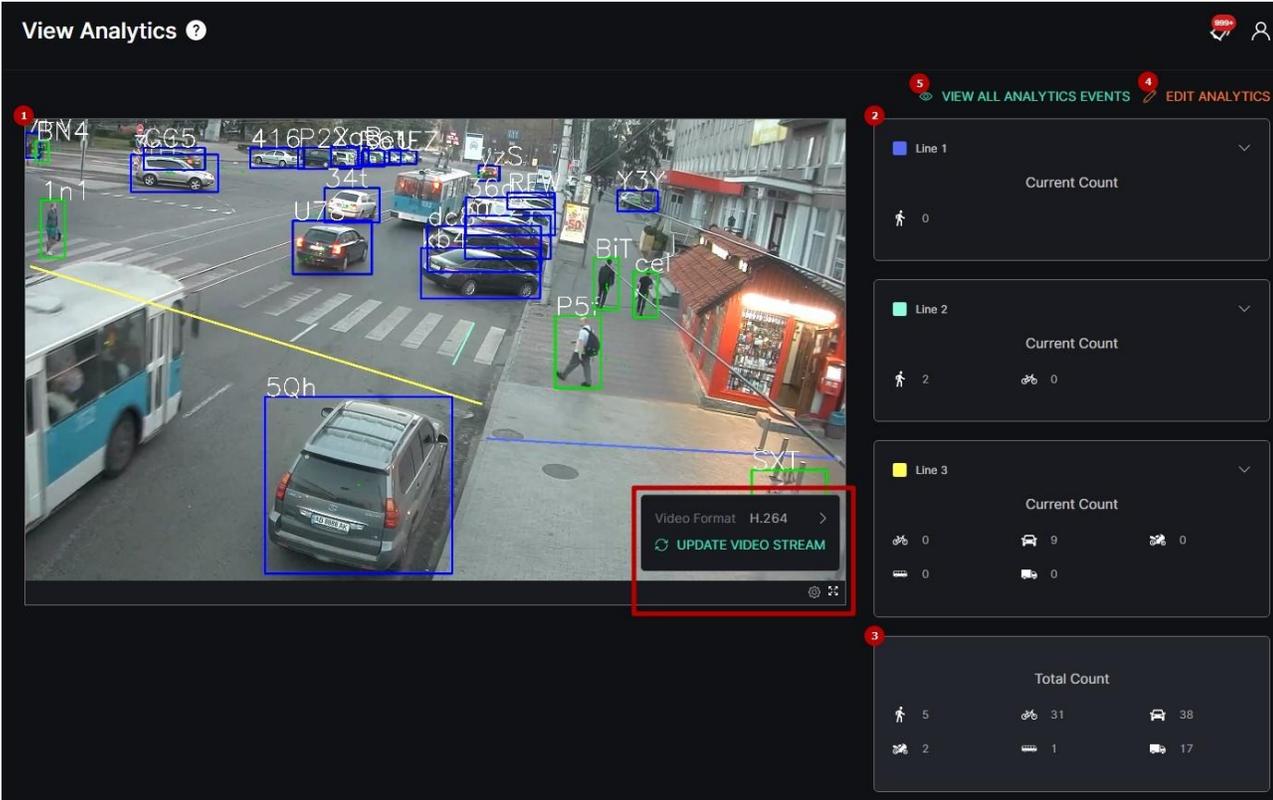
To see the selected analytics in real-time, click the View icon on the toolbox:



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 The View icon becomes available only when selected analytics is active.

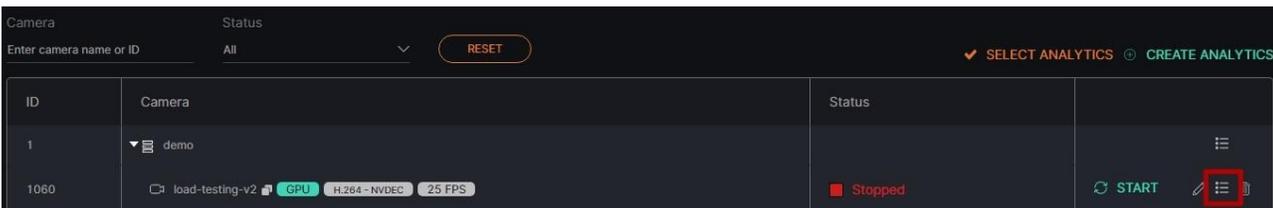
Live view analytics mode allows to:



1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. See the current object count for each set line
3. See the total amount of objects counted during the time the analytics runs
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics

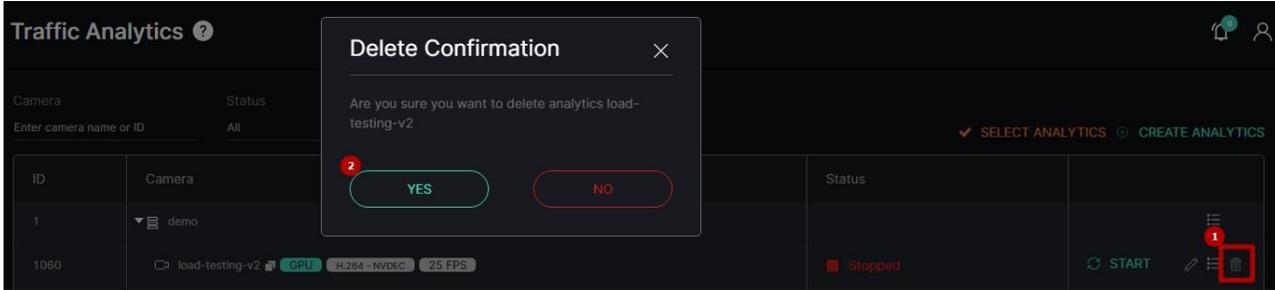
View Events

To view selected analytics events in the Analytics item, click the Events icon on the toolbox:



Delete Analytics

To delete the analytics:



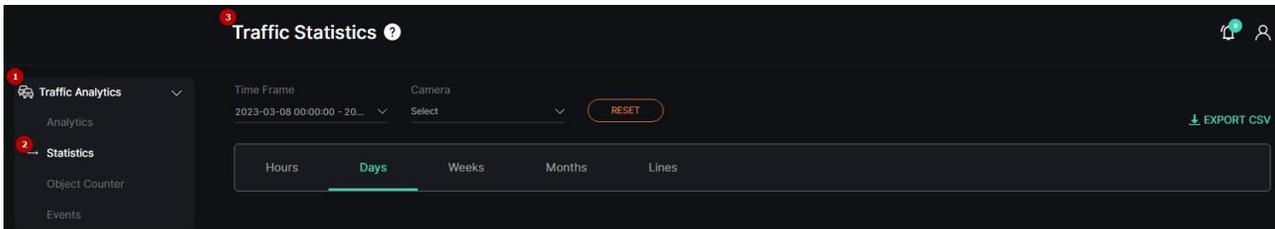
1. Select the Delete icon on the toolbox
2. Confirm the intention

Traffic Analytics: Statistics

i This page describes the Statistics item that allows viewing statistics from the selected video stream.

Overview

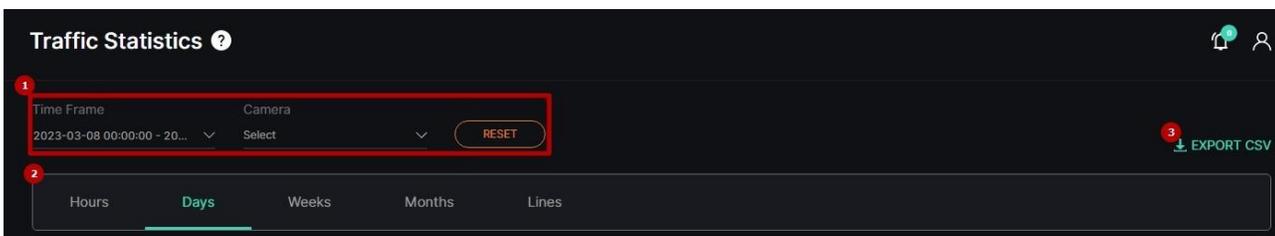
To open the Statistics item, in the left menu:



1. Select the Traffic Analytics section
2. Choose the Statistics item
3. See statistics

Use and Functionality

The Traffic Statistics functional menu comprises:



CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

1. Filters to:
 - a. Select the desired time frame to produce statistics
 - b. Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - i. Check the boxes next to the required video analytics and folders
 - ii. Click the Select Video Analytics button
 - c. Click the Reset button to clear the filters
2. Tabs to filter statistics data by:
 - a. Hours
 - b. Days
 - c. Weeks
 - d. Months
 - e. Lines
3. Export option to download the statistics report in the CSV format

 The Statistics item opens with the Days tab by default.

Hours Tab

The Hours tab shows:



- Checkpoints on the graphs by object quantity and hours
- Slices on the donut chart with the amount of the recognized objects in percentage
- Table columns by hours and object types

 Hover the mouse over the graphs to see the object quantity and amount.

Each object type column is divided into 3 sub columns by direction:

- Green for entry direction
- Red for exit direction
- Grey for the sum of both directions

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Days, Weeks, and Months Tabs

The Days tab shows:



- Checkpoints on the graphs by object quantity and date
- Slices on the donut chart with the amount of the recognized objects in percentage
- Table columns by date and object types

- Hover the mouse over the graphs to see the object quantity and amount.
- The Weeks and Months tabs' content differs with the usage of week and month time intervals instead of days.

Lines Tab

The Lines tab shows the tables per selected dates that comprise:

18-10-2022																					
Camera	Line	People			Bicycles		Cars			Motorcycles		Buses		Trucks		Total					
demo-lpr-ua	Left Line	-	111	111	-	9	9	-	7286	7286	-	3	3	-	6	6	-	575	575	7990	
demo-lpr-ua	Right Line	-	128	128	-	10	10	-	3325	3325	-	5	5	-	961	961	-	585	585	5014	
demo-lpr-ua	Line 1	-	-	-	-	-	-	-	7830	-	-	-	-	4	-	4	-	1696	-	1696	9530
Total Number by Camera		0	239	239	0	19	19	7830	10611	18441	0	8	8	4	967	971	1696	1160	2856	22534	

19-10-2022																					
Camera	Line	People			Bicycles		Cars			Motorcycles		Buses		Trucks		Total					
demo-lpr-ua	Left Line	-	183	183	-	10	10	-	9407	9407	-	5	5	-	3	3	-	735	735	10343	
demo-lpr-ua	Right Line	-	230	230	-	10	10	-	4243	4243	-	6	6	-	1172	1172	-	772	772	6433	
demo-lpr-ua	Line 1	-	-	-	-	-	-	-	10312	-	-	-	-	3	-	3	-	2229	-	2229	12544
Total Number by Camera		0	413	413	0	20	20	10312	13650	23962	0	11	11	3	1175	1178	2229	1507	3736	29320	

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

- Camera column with the video stream name(s)
- Line column with the line (rule) name(s)
- Object type columns with the preselected objects

Each object type column is divided into 3 sub columns by direction:

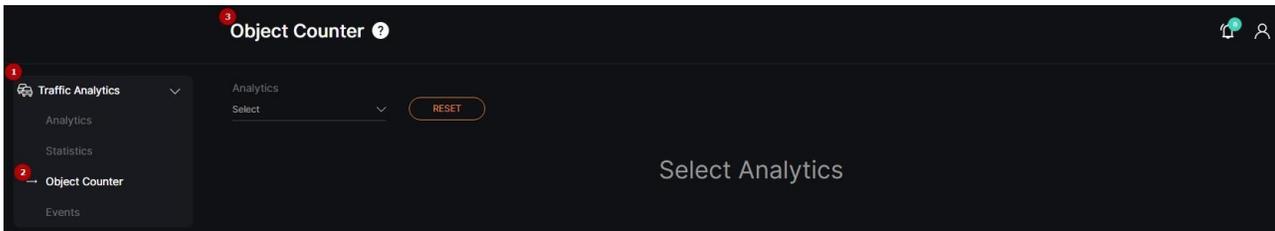
- Green for entry direction
- Red for exit direction
- Grey for the sum of both directions

Traffic Analytics: Object Counter

 This page describes the Object Counter item that allows viewing detailed statistics on objects from each video stream.

Overview

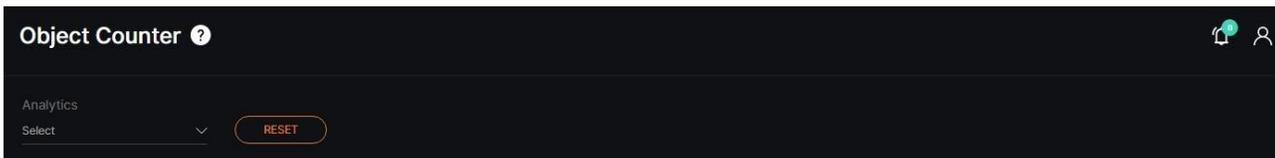
To open the Object Counter item, in the left menu:



- Select the Traffic Analytics section
- Choose the Object Counter item
- See object counter

Use and Functionality

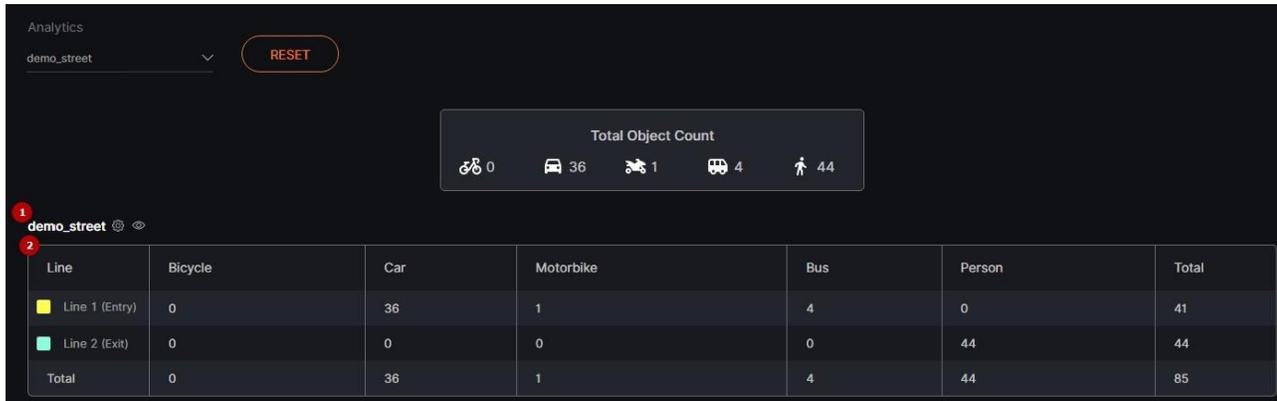
The Object Counter functional menu allows to:



- Click the Analytics parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Click the Reset button to clear the filters

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

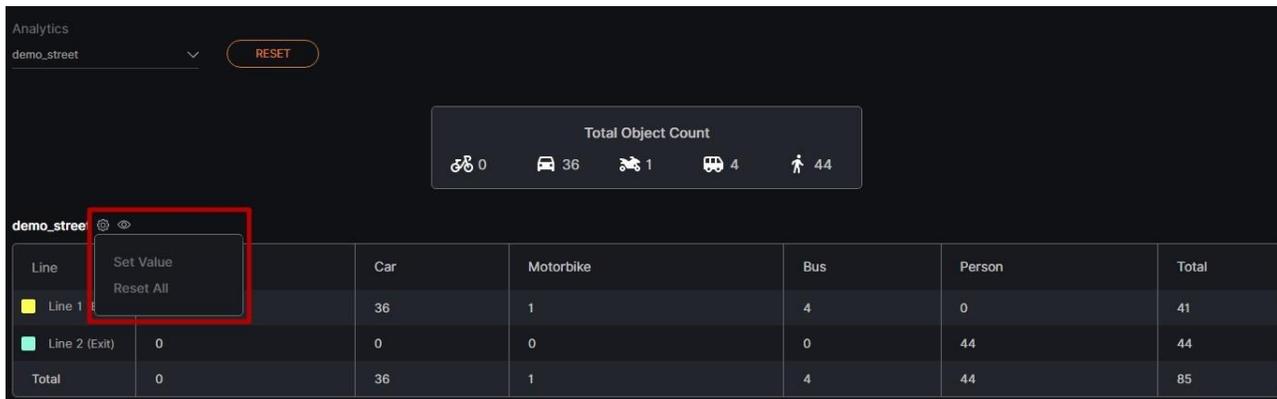
Once selected and filtered, see the Total Object Count block with objects number for all selected analytics, and separate statistics data blocks for each selected analytics. Each separate block comprises:



1. Camera name, settings, and Live View option
2. Tables per selected camera that comprise:
 - a. Line column with the line name and direction
 - b. Object type columns with the preselected objects

Settings

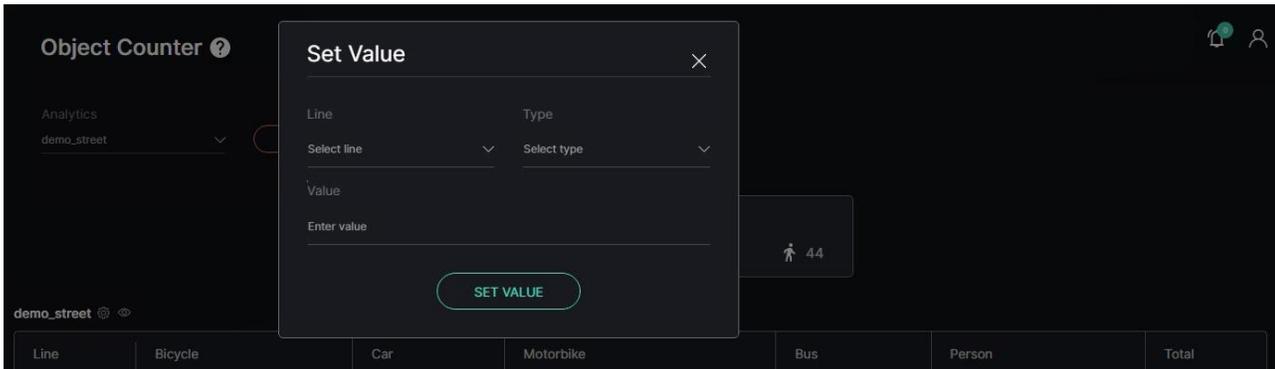
The settings drop-down menu comprises:



- Set Value option to manually change the number of counted objects
- Reset All option to reset all values to 0 in the selected block
- Live View option to view the video stream in real-time, as well as objects number in total and separate for each line

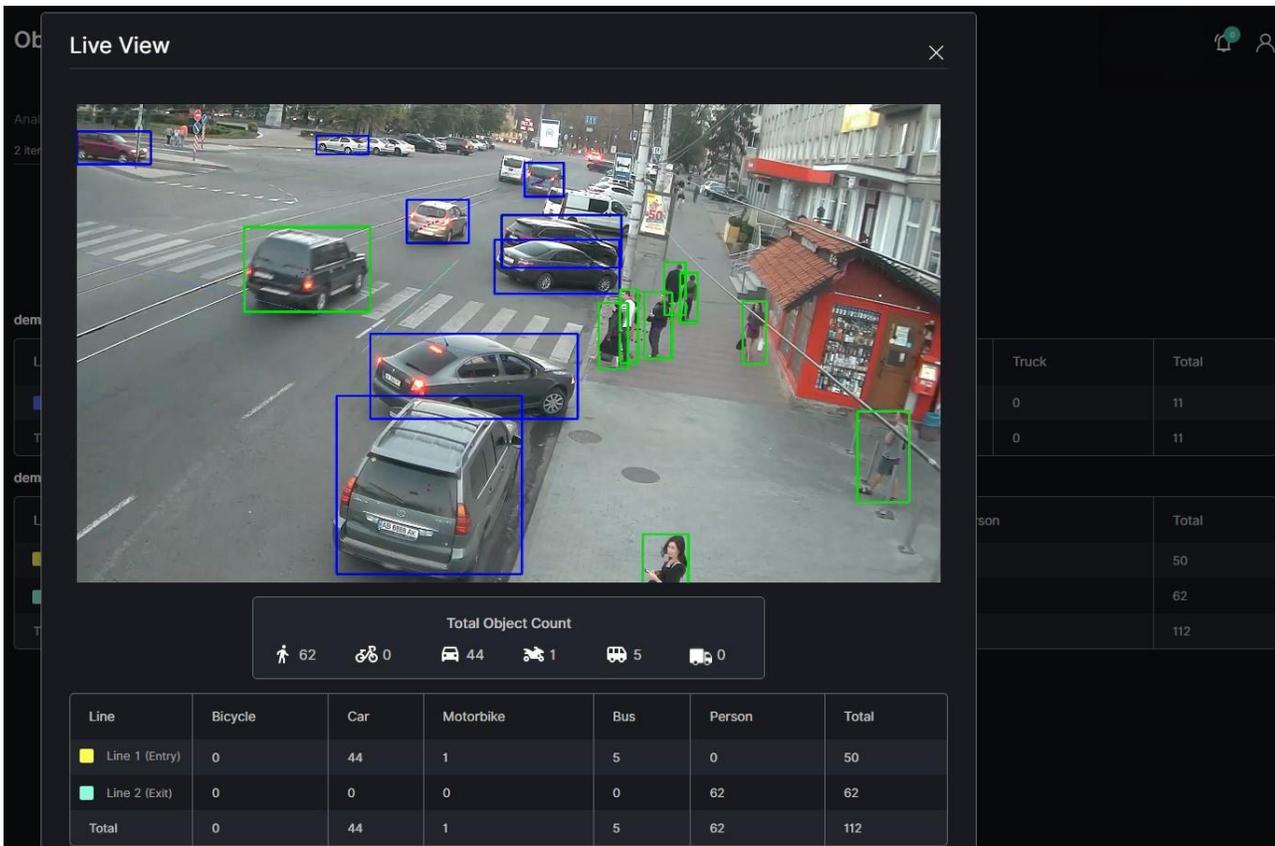
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

In the Set Value pop-up window:



1. Select the required line from the drop-down list
2. Select the desired object type from the drop-down list
3. Enter the proper value
4. Click the Set Value button to save changes and refresh the values

In the Live View pop-up window:



1. View the video stream in real-time
2. See the total number of counted preselected objects for the selected video stream
3. See the detailed number of counted preselected objects for each separate line of the selected video stream

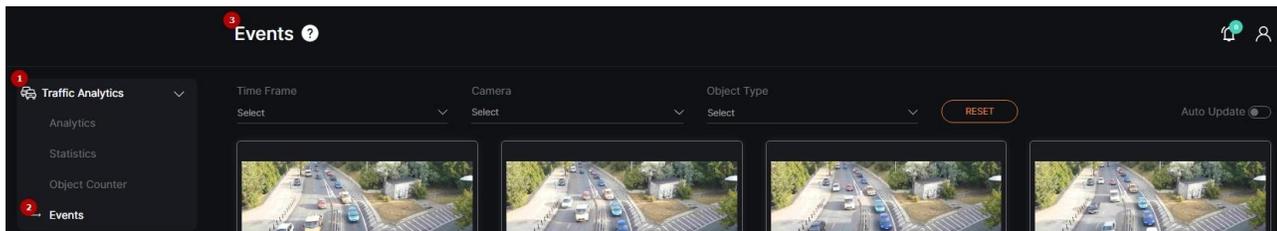
 The frame with the live video stream is available only when the selected analytics is active.

Traffic Analytics: Events

 This page comprises the Events item overview and functionality description. The item displays the event notifications including a frame, camera, date, time, and object type.

Overview

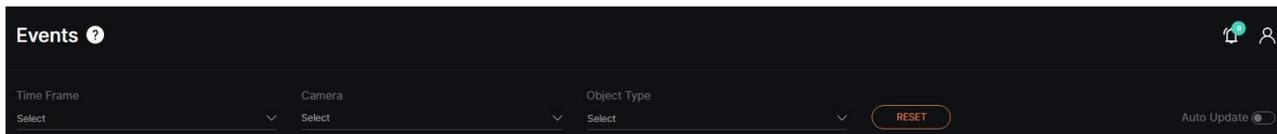
To open the Events item, in the left menu:



1. Select the Traffic Analytics section
2. Choose the Events item
3. See event notifications

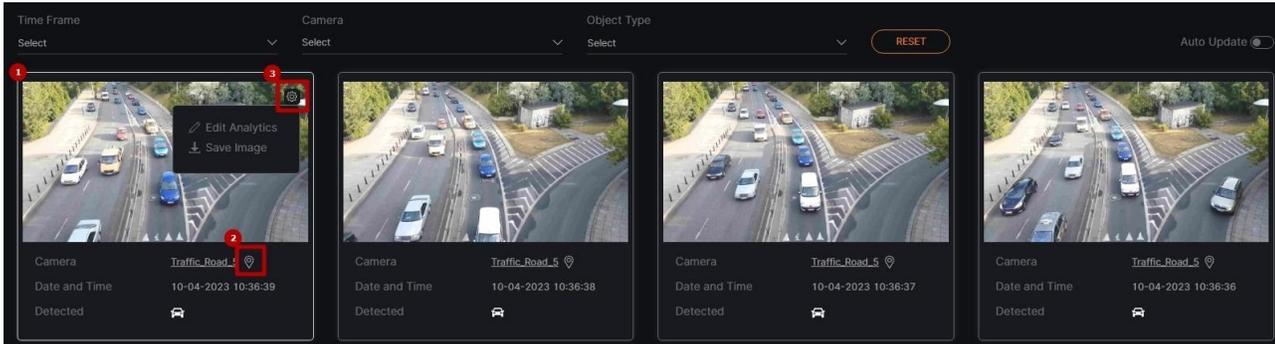
Use and Functionality

The Events functional menu allows to:



- Select the required events time frame
- Click the Camera parameter to select the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Select object type:
 - Person
 - Bicycle
 - Car
 - Motorbike
 - Bus
 - Truck
- Click the Reset button to clear the filters
- Select the Auto Update toggle to enable or disable auto update of the event notifications

Once selected and filtered, in the events:



1. View the frame preview and information about the event. To filter events by the recognized data, in the required event block:
 - a. Click the camera name to filter events only by the camera related to the event
 - b. Click the date to filter events only by the date related to the event
 - c. Click the object type icon to filter events only by the selected object type related to the event
2. View the camera location on the map by clicking the View Geolocation icon
3. Hover the mouse over the event block and select the Extra Options icon. In the drop-down menu:
 - a. Click the Edit Analytics button to make changes to the settings of the analytics which is related to the selected event
 - b. Click the Save Image button to download the event frame in full size



Click the frame preview to open the image and see the event information.

Red Light Violation

Introduction

Use this guide to understand the interface and features of the Red Light Violation plugin and learn how to utilize it for the best result.

What Is Red Light Violation?

Red Light Violation determines vehicles passing through a red traffic light and sends alerts with the recognized vehicle data and evidence frame of the traffic violation.

Primary Capabilities

Red Light Violation is capable to:

Detect the status of the traffic light (red, yellow, and green signals) without a physical connection between the analytics system and traffic lights

Determine the vehicle passing through a red traffic light

Capture and recognize the license plate within 8-30 milliseconds

Support license plate recognition at speeds up to 250 km/h

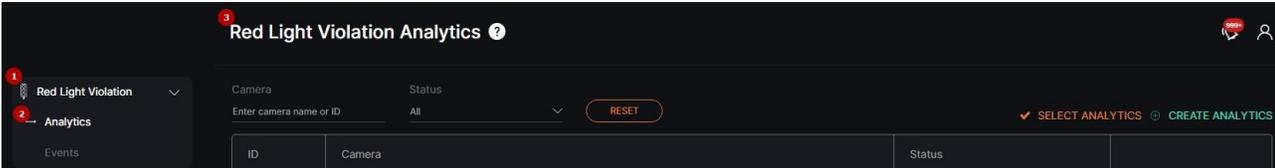
Recognize the make, model, type, and color of the vehicle, its direction of movement, as well as the country identifier with 95% accuracy

Red Light Violation: Analytics

i This page comprises the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics

Overview

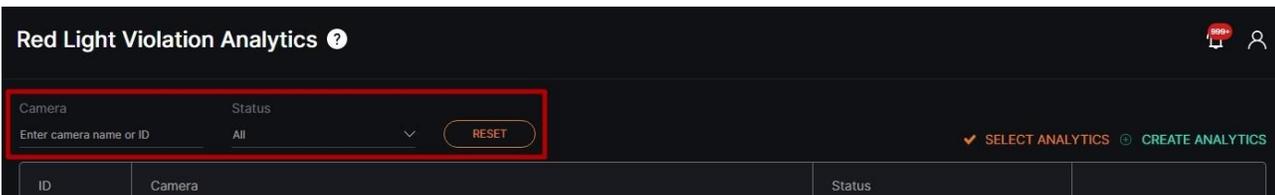
To open the Analytics item, in the left menu:



1. Select the Red Light Violation section
2. Choose the Analytics item
3. See analytics

Use and Functionality

The Red Light Violation Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

💡 The status options comprise All, Active, and Stopped.

See the list of analytics in the table below. It contains:

ID	Camera	Status	
1	demo		
997	demo-lpr-mv GPU H.264 - NVDEC 25 FPS	Active (39s / 3)	STOP
2	Anastasia	Server: 1, GPU: 0	

- Analytics and folders ID
- Camera comprises:
 - Folders' and separate video streams' names

CORTROL CVA *(Extended Video Analytics)*

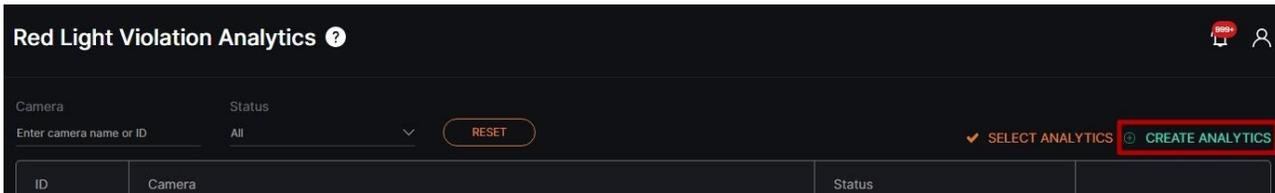
CEVA v1.0.0

- Copy Name icon to copy the video stream name
- Video source type
- Additional hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox comprises:
 - Start/Stop
 - Edit
 - Events
 - View
 - Delete

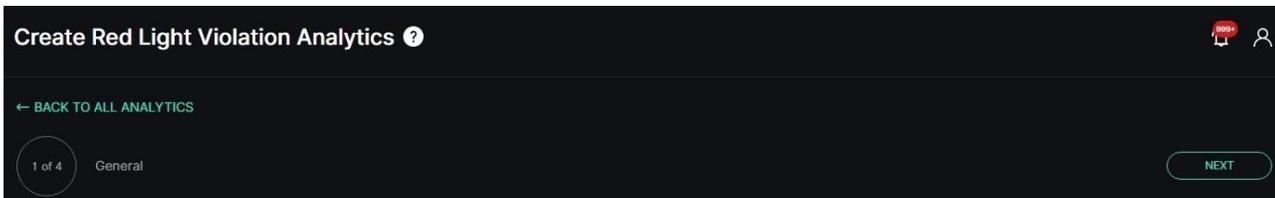
- 💡 • To learn more about grouping video streams into folders and making the appropriate changes in the Video Streams item, read [Video Streams](#).
- To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

Create Analytics

To create new analytics, click the Create Analytics button:



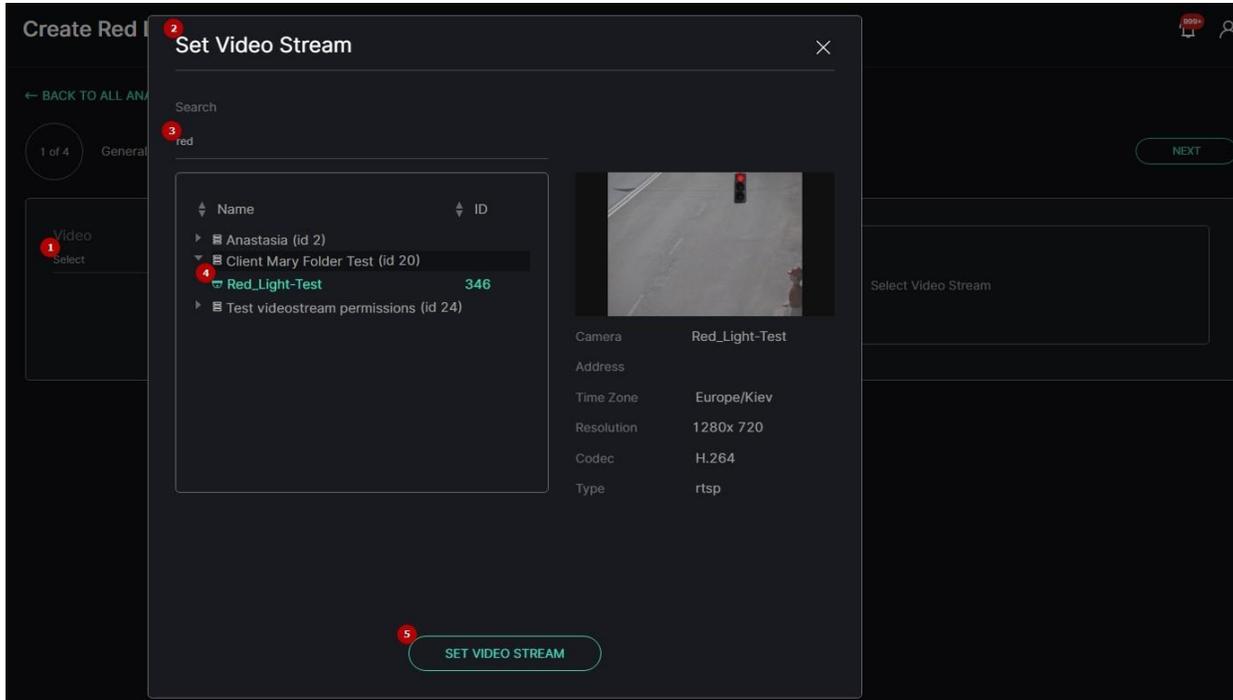
The Create Red Light Violation Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications
 - Permissions

General Tab

The General tab provides the ability to set a video stream and customize analytics parameters. To set a video stream:

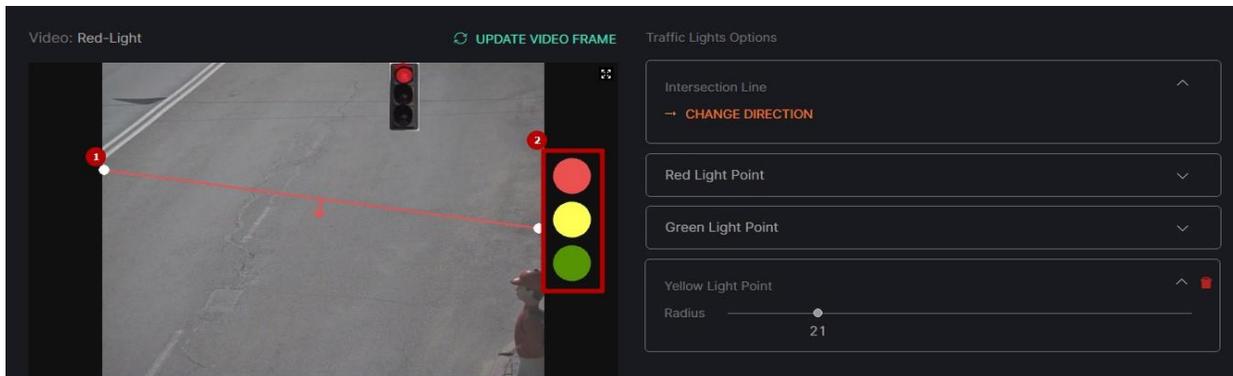


1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

Traffic Lights Options

To perform the recognition, apply these options:

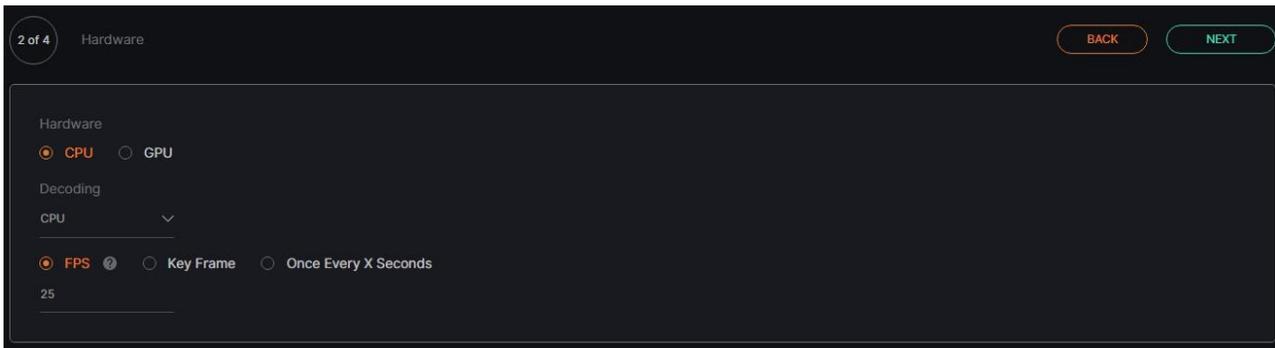


1. Set the intersection line:
 - a. Click and drag the handles with LMB to set the line size and location
 - b. Click and drag the line with LMB to move the whole line
 - c. Click the Change Direction button in the Intersection Line block to redirect the movement
2. Set traffic lights:
 - a. Click and drag each color circle to the location of the corresponding traffic signal in the recognition area
 - b. Move the Radius slider in the Red, Yellow, and Green Color Point blocks to fit the size of the existing traffic light

- The Yellow Color Point is an optional parameter:
- To delete the yellow block, click the red Delete icon in the upper-right corner of the block
- To add the yellow block, click the Add Yellow Light button at the bottom of the Traffic Lights Options block

Hardware Tab

The Hardware tab provides the ability to customize hardware parameters:



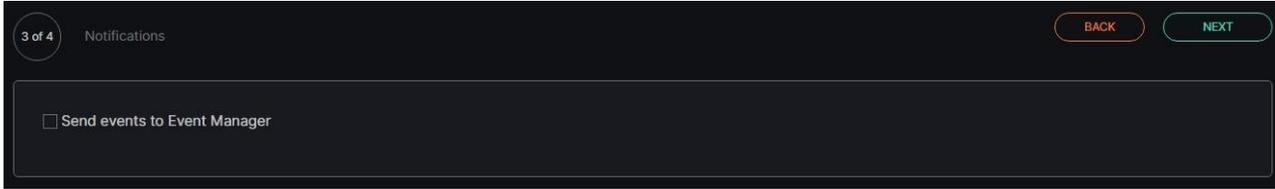
- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
 - FPS to set the desired number of frames per second
 - Key Frame to set the frame processing only by keyframes
 - Once Every X Seconds to set intervals in seconds between frame processing

- The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as required.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

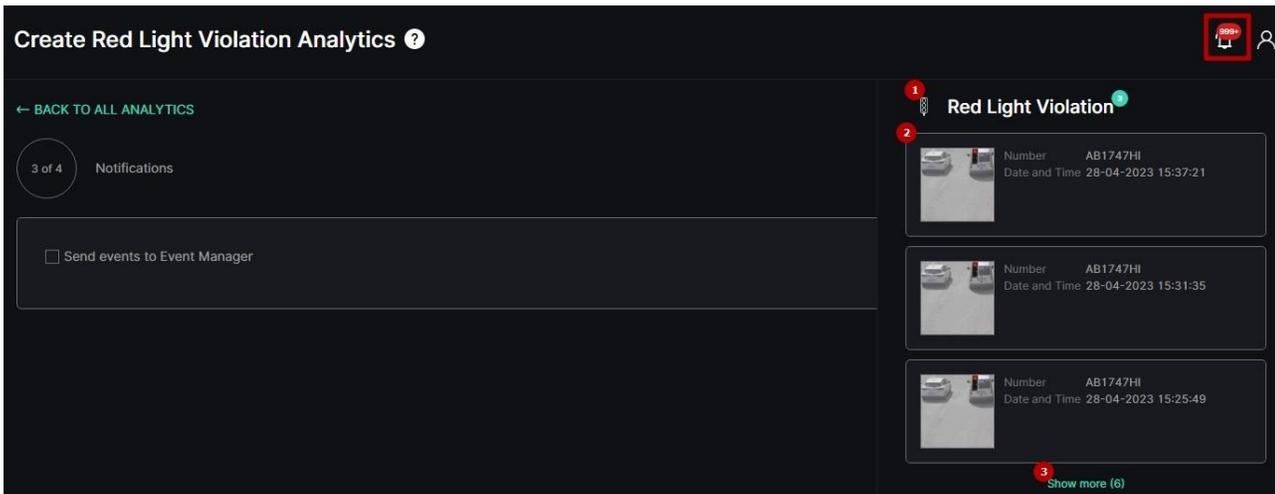
Notifications Tab

The Notifications tab allows managing the events notifications. Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources:



 The default parameters allow the production of analytics. To customize the analytics, set parameters as required

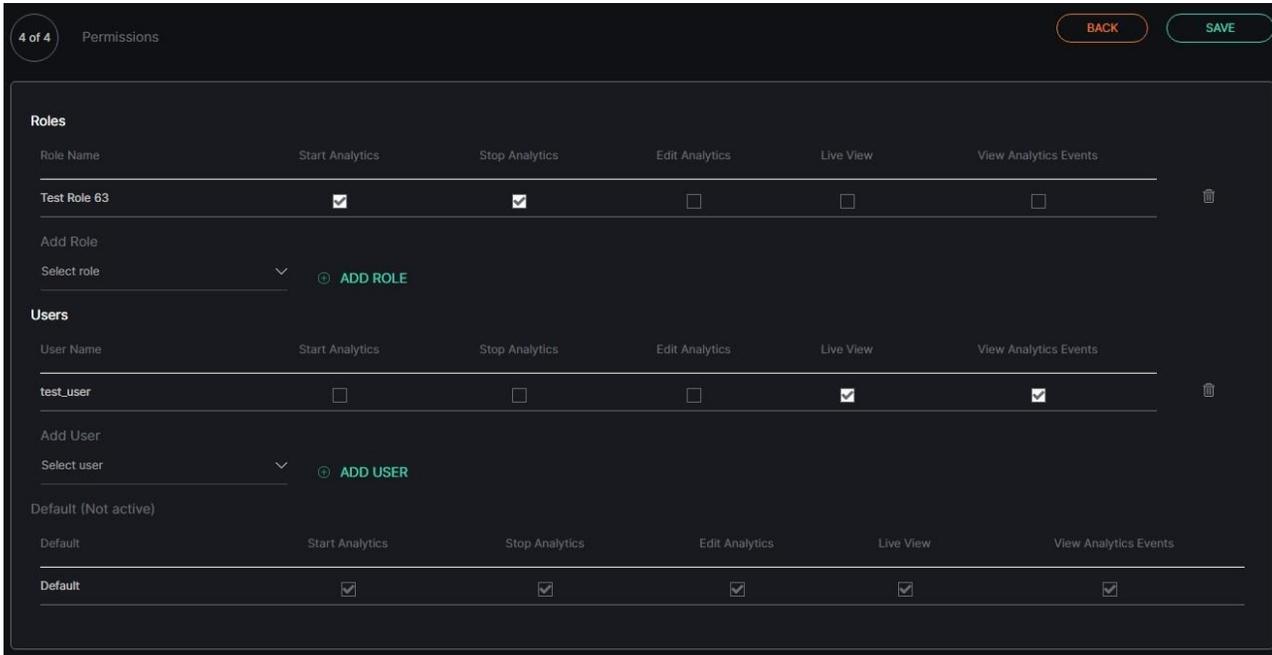
Once the analytics is created and enabled, the Notification icon signals about each new event notification. Click the Notification icon to open the Notification Panel. It comprises:



1. Plugin name box to:
 - a. Collapse the list of notifications by clicking the plugin name
 - b. Expand the list of notifications by clicking the plugin name once again
 - c. Clear all plugin notifications at once from the Notification Panel by clicking the Close button (this action doesn't affect events in the Events item)
2. Event notification box to:
 - a. View short event information and frame preview for up to 3 last notifications
 - b. Open the event pop-up window by clicking the required notification
 - c. Clear the desired notification from the notification list by clicking the Close button inside the box (this action doesn't affect the event in the Events item)
3. Show More button with the total events number to open the Events item and view all events

Permissions Tab

The Permissions tab provides the ability to:



- Assign analytics access rights for Roles:
 - Select the required role from the drop-down list
 - Click the Add Role button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary role
- Assign analytics access rights for Users:
 - Select the required user from the drop-down list
 - Click the Add User button
 - Select the checkboxes for the required access rights
 - Click the Delete icon to remove the unnecessary user
- Select the checkboxes for the required analytics access rights by default
- Select the Save button to confirm the intention in the navigation menu

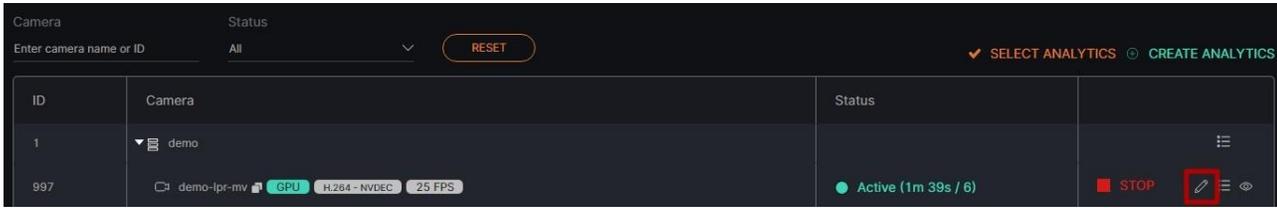
- 💡 • Default parameters are active only if no Roles or Users are added.
- The quantity of added Roles and Users is not limited.

Once saved, the Red-Light Violation Analytics editor opens to allow the users to:

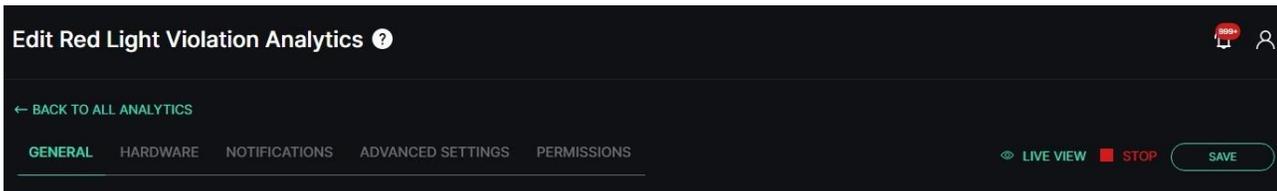
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit Red Light Violation Analytics navigation menu allows to:



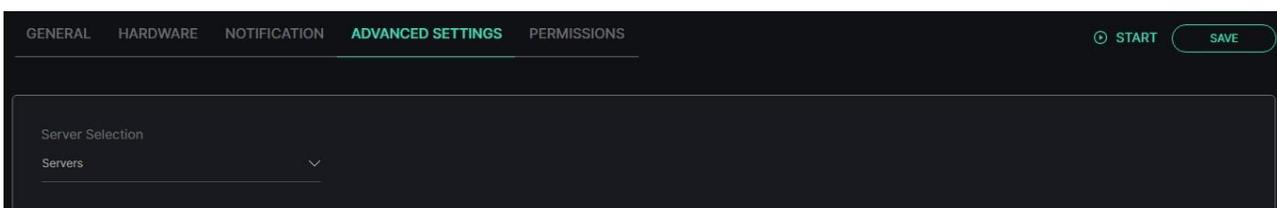
- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
 - Permissions
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the selected analytics

- 💡 • The current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.
- The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, Notifications, and Permissions tabs, read [Create Analytics](#).

Advanced Settings Tab

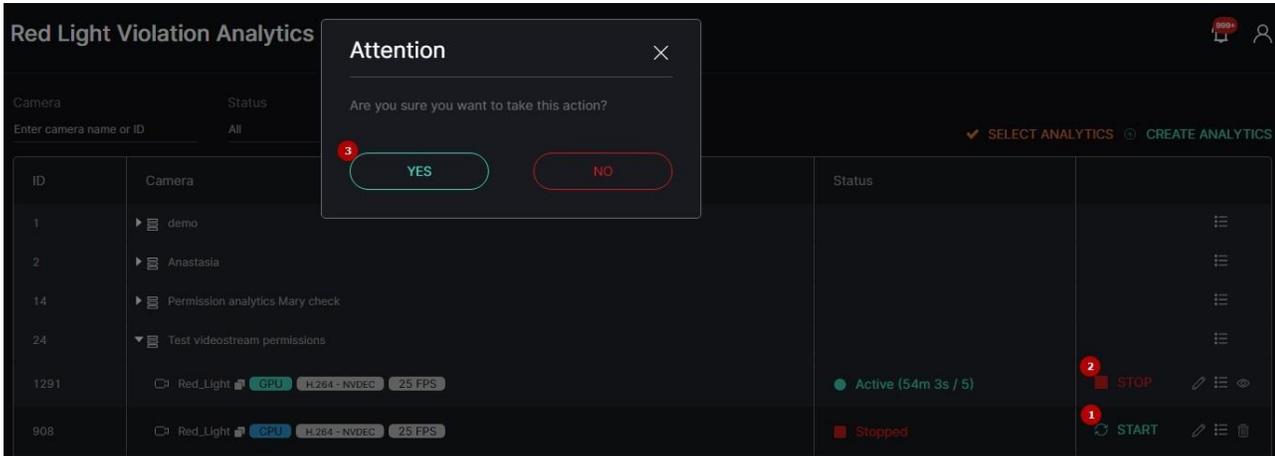
The Advanced Settings tab allows the users to select a server from the drop-down list to run the analytics:



CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

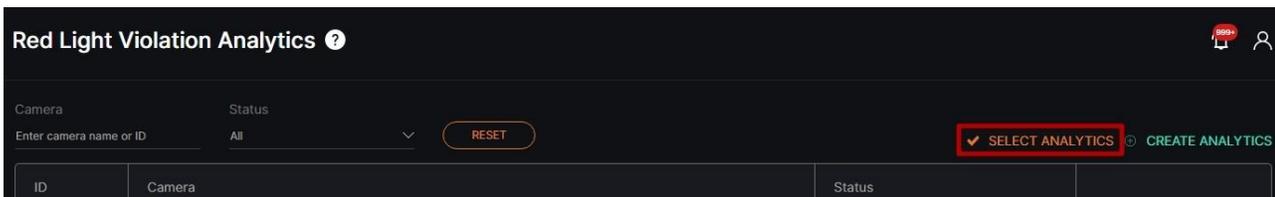
Analytics Status

To enable or disable the analytics and view the change of the analytics status:

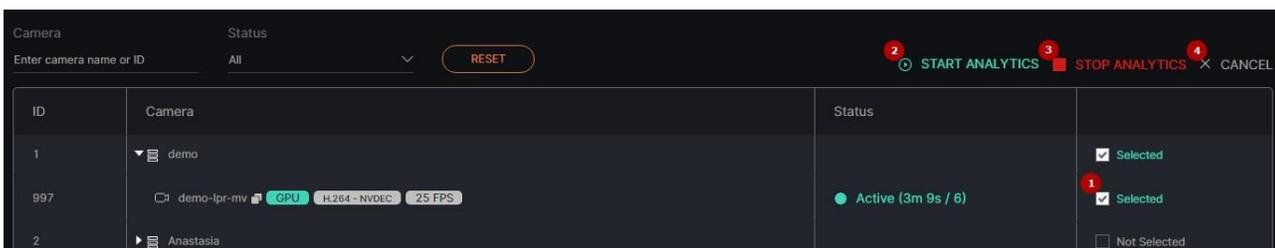


1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



The Select Analytics functional menu allows to:

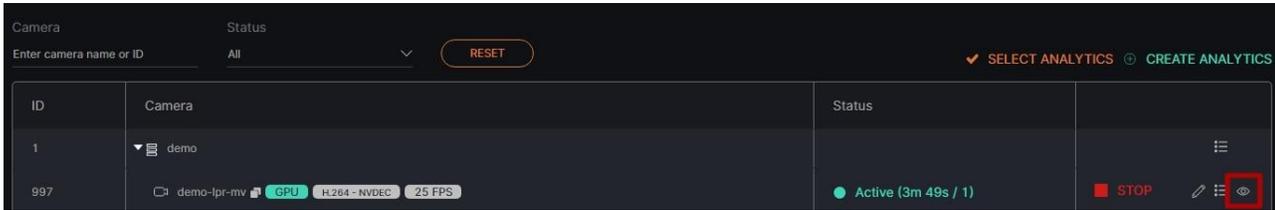


1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics selection

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

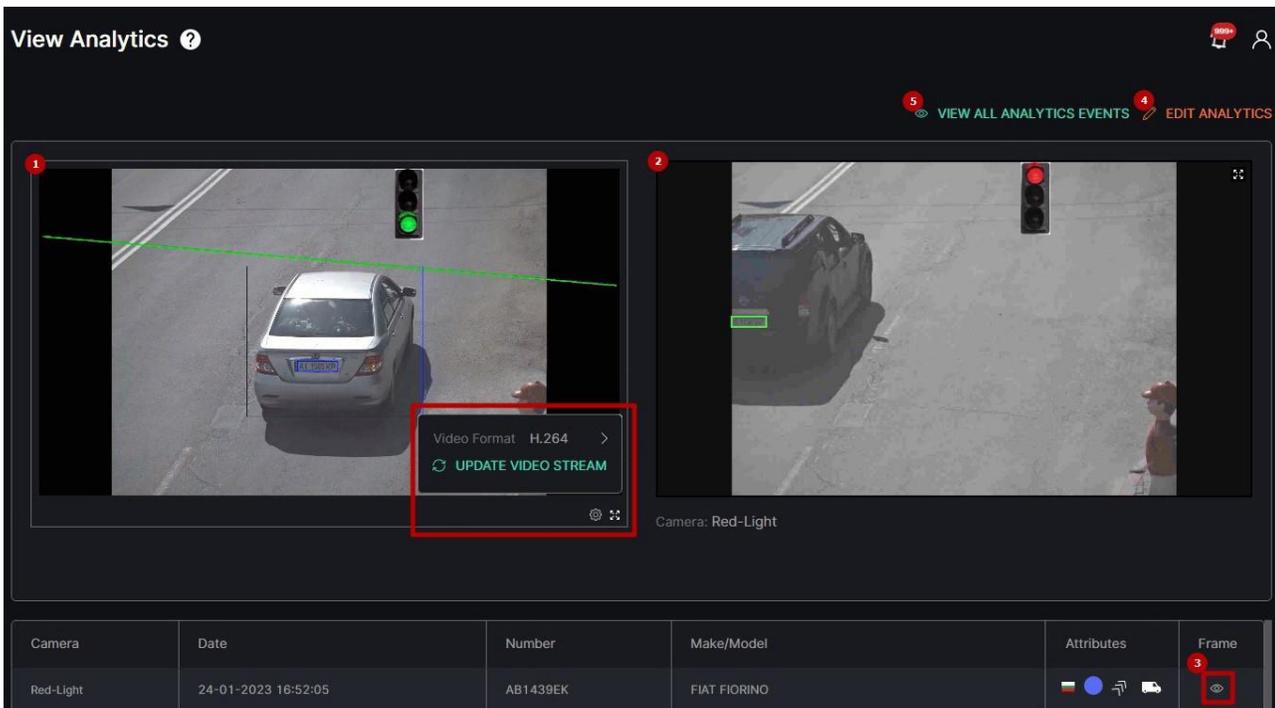
View Analytics

To see the selected analytics in real-time, click the View icon on the toolbox:



 The View icon becomes available only when selected analytics is active.

Live view analytics mode allows to:

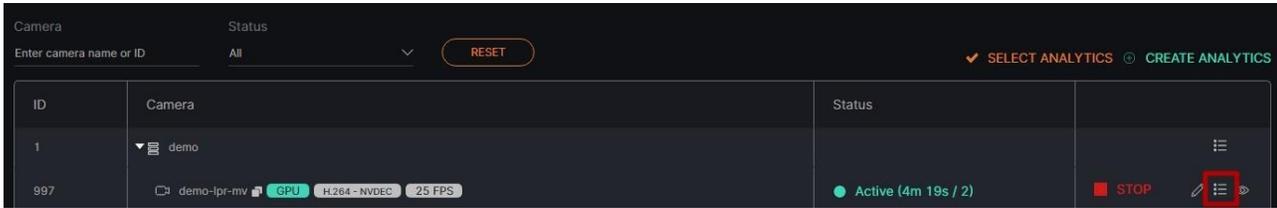


1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View the frame preview with the recognized license plate number
3. Select the View icon in the table below to open the image in full size and save it
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all events from the selected analytics

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

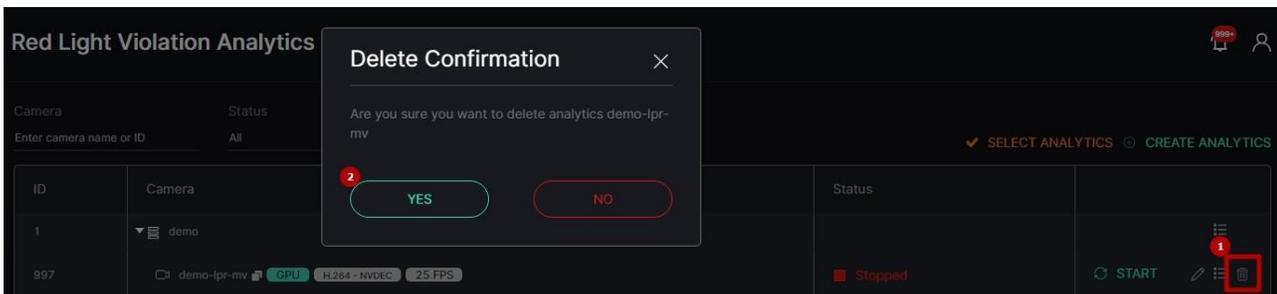
View Events

To view selected analytics events in the Analytics item, click the Events icon on the toolbox:



Delete Analytics

To delete the analytics:



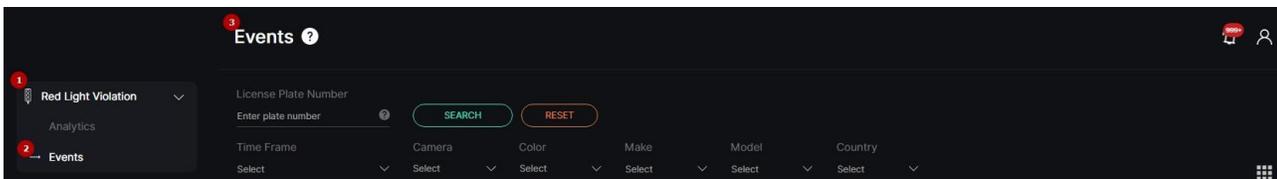
1. Select the Delete icon on the toolbox
2. Confirm the intention

Red Light Violation: Events

i This page comprises the Events item overview and functionality description. The item displays the event notifications including vehicle and camera data, date and time, and frame with a vehicle.

Overview

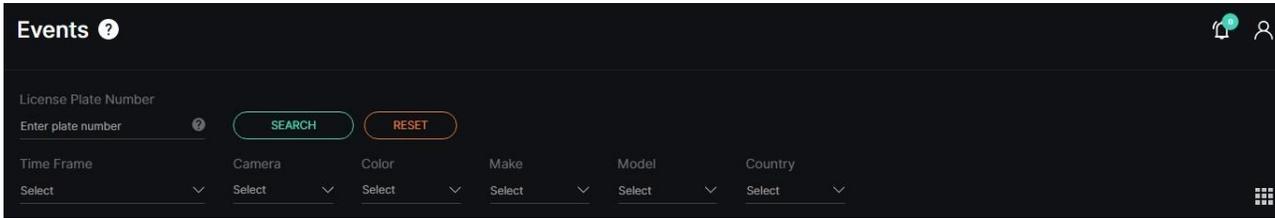
To open the Events item, in the left menu:



1. Select the Red Light Violation section
2. Choose the Events item
3. See event notifications

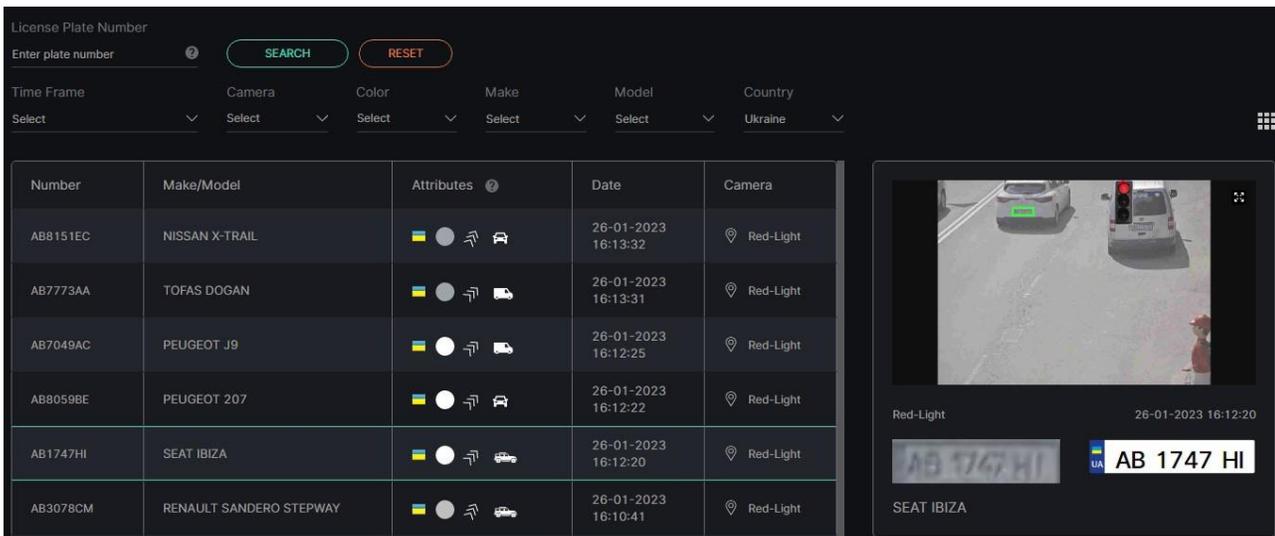
Use and Functionality

The Events functional menu allows to:



- Enter the license plate number
- Select the required time frame
- Select the required color
- Select the required make and model
- Select the country of registration
- Click the Search button to start filtering
- Click the Reset button to clear the filters
- Move between List and Grid view modes by clicking the corresponding toggle

Once selected and filtered, in the event notifications:



- View recognized vehicle data, date and time the license plate number has been recognized by the selected analytics
- View recognized vehicle attributes:
 - Country of registration
 - Color of the vehicle
 - Direction of movement
 - Vehicle type:
 - Car
 - Motorbike
 - Bus
 - Truck
 - Van
 - Pickup
 - SUV

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

- View the camera location on the map by clicking the corresponding icon in the Camera column
- Click the row in the table with the desired license plate number to see the frame with a vehicle preview
- Select the enlargement icon in the upper-right corner of the frame preview to view the additional information. In the pop-up window:
 - See the extended vehicle data
 - Save the image in the full-size

 The same options are available in the grid view mode.

UIC & Container

Introduction

Use this guide to understand the interface and features of the UIC & Container plugin and learn how to utilize it for the best result.

What is UIC & Container?

UIC & Container detects and recognizes UIC wagon numbers. It supports 24/7 recognition of numbers on all types of trains, locomotives, passenger wagons, freight wagons, platforms, and tank cars in a broad range of external conditions.

Primary Capabilities

UIC & Container is capable to:

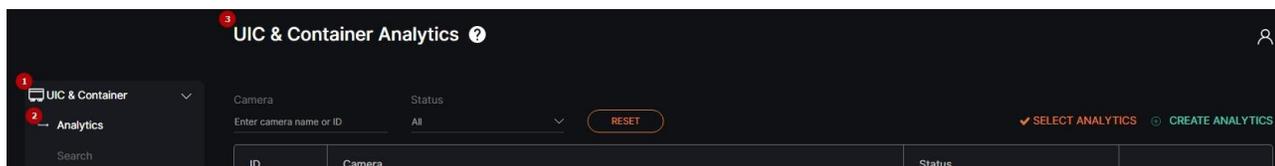
- Provide a flexible search by the UIC number in a certain timeframe
- Identify UIC numbers in motion
- Support multiple wagon types
- Support various types of UIC numbers: single-line, two-line, three-line

UIC & Container: Analytics

 This page includes the Analytics item overview and options to customize analytics. The item displays a list of analytics including status and the ability to manage analytics.

Overview

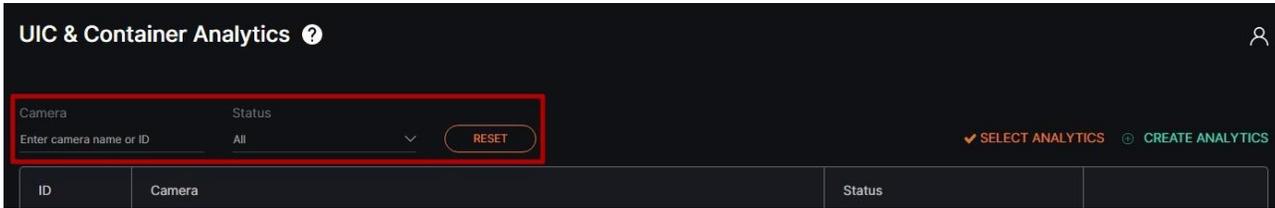
To open the Analytics item, in the left menu:



1. Select the UIC & Container section
2. Choose the Analytics item
3. See analytics

Use and Functionality

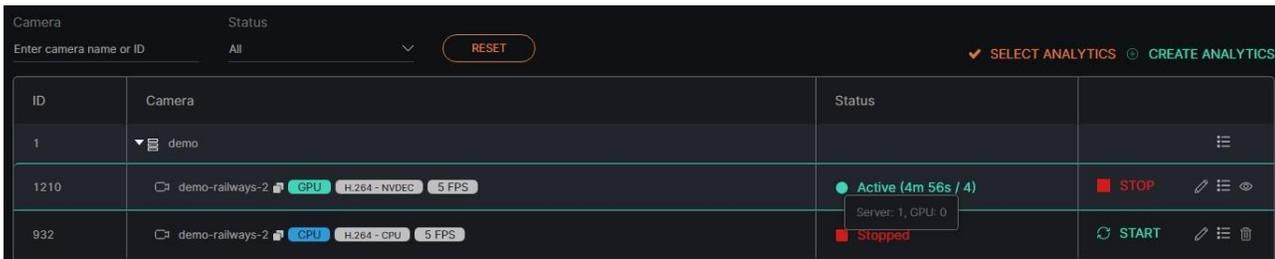
The UIC & Container Analytics functional menu allows to:



- Fill in the Camera field with:
 - Camera name or characters in the name
 - Analytics ID
 - Video stream ID
- Select the required analytics status
- Click the Reset button to clear the filters

 The status options include All, Active, and Stopped.

See the list of analytics in the table below. It holds:



ID	Camera	Status	
1	demo		
1210	demo-railways-2 GPU H.264 - NVDEC 5 FPS	Active (4m 56s / 4)	STOP
932	demo-railways-2 CPU H.264 - CPU 5 FPS	Stopped	START

- Analytics and folders ID
- Camera includes:
 - Folders' and separate video streams' names
 - Copy Name icon to copy the video stream name
 - Video source type
 - More hardware parameters
- Video stream or video file playback status. For the Active and Offline statuses, the system also displays:
 - Countdown since analytics launch
 - Last server connection to analytics (seconds ago)
- Toolbox includes:
 - Start/Stop
 - Edit
 - Search Results
 - View
 - Delete

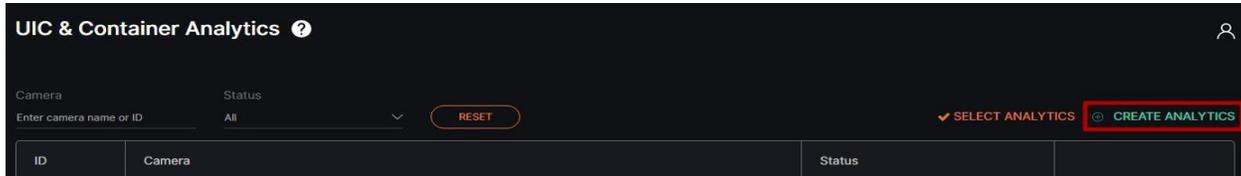
 • To learn more about grouping video streams into folders and making the proper changes in the Video Streams item, read [Video Streams](#).

• To find out the ID of the CPU/GPU and the server running the video stream, hover the mouse over the circle next to the status of the running analytics.

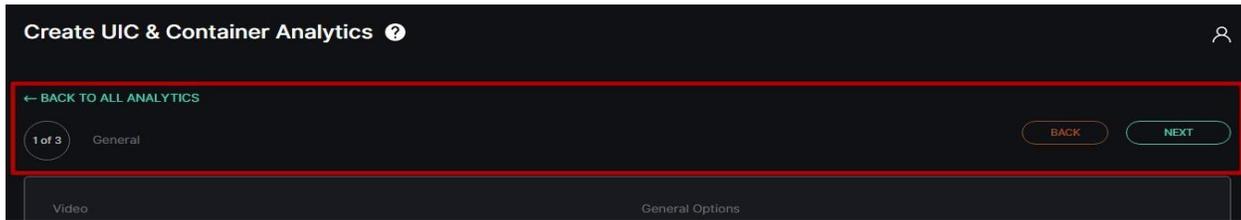
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

Create Analytics

To create new analytics, click the Create Analytics button:



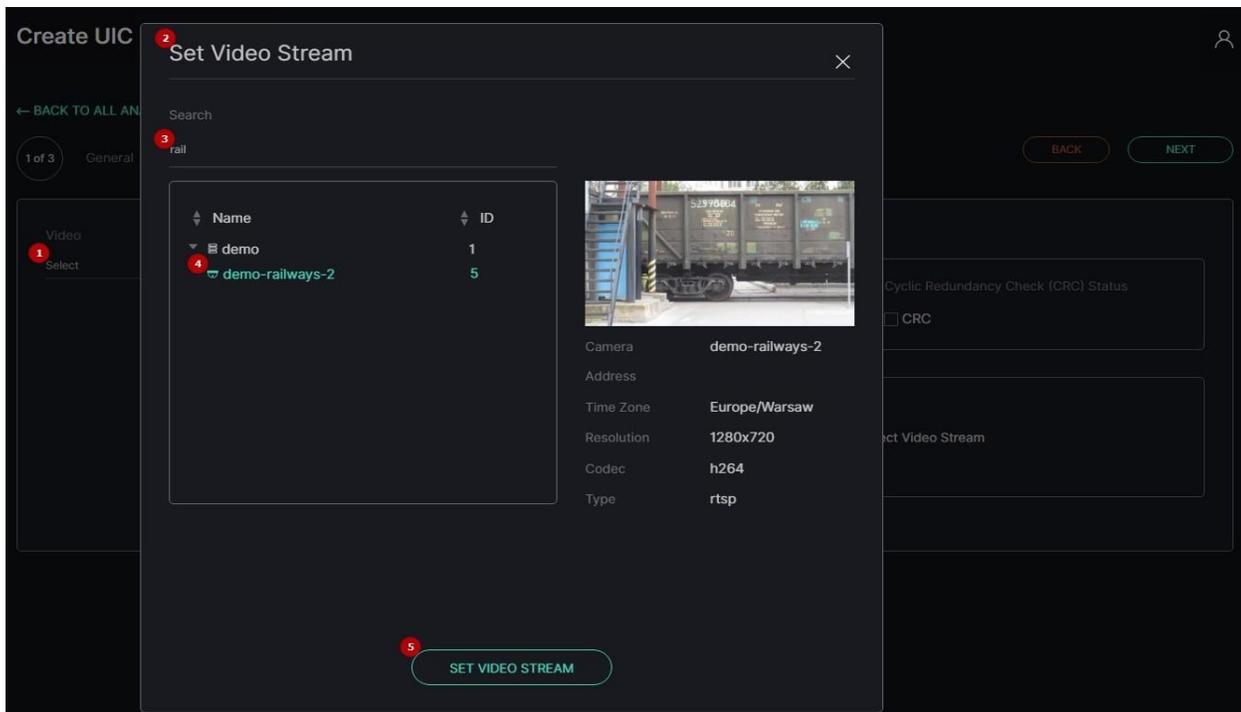
The Create UIC & Container Analytics navigation menu allows to:



- Click the Back to All Analytics button to return to the main Analytics item
- See the title and serial number of the current tab
- Click the Back or Next button to move among tabs:
 - General
 - Hardware
 - Notifications

General Tab

The General tab supplies the ability to set a video stream and customize analytics parameters. To set a video stream:



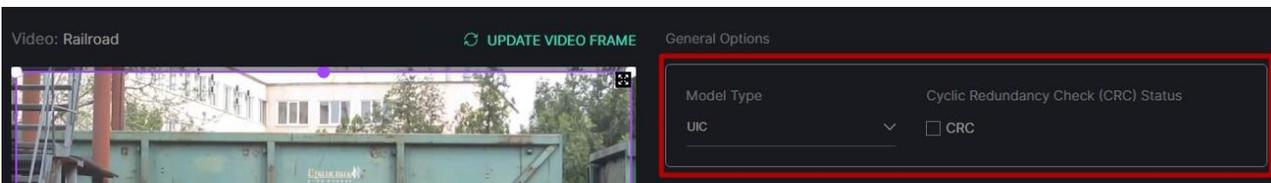
CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

1. Click the Video field
2. See the Set Video Stream pop-up window
3. Fill in the Search field with:
 - a. Camera name or characters in the name
 - b. Video stream ID
4. Select the required camera from the filtered list
5. Click the Set Video Stream button to confirm the intention

 To refresh the video preview, upon selecting the Set Video Stream button, click the Update Video Frame button above the frame. This button is available upon adding the video stream.

General Options

The General Options block decides the parameters of all rules:



- Select the model type from the drop-down list:
 - Wagon model for deciding wagon numbers
 - UIC model for deciding UIC numbers
 - Container model for deciding container numbers
- Check the Cyclic Redundancy Check (CRC) Status box to enable the checksum calculation and verification



UIC
Number

Container Number
Horizontal
Vertical

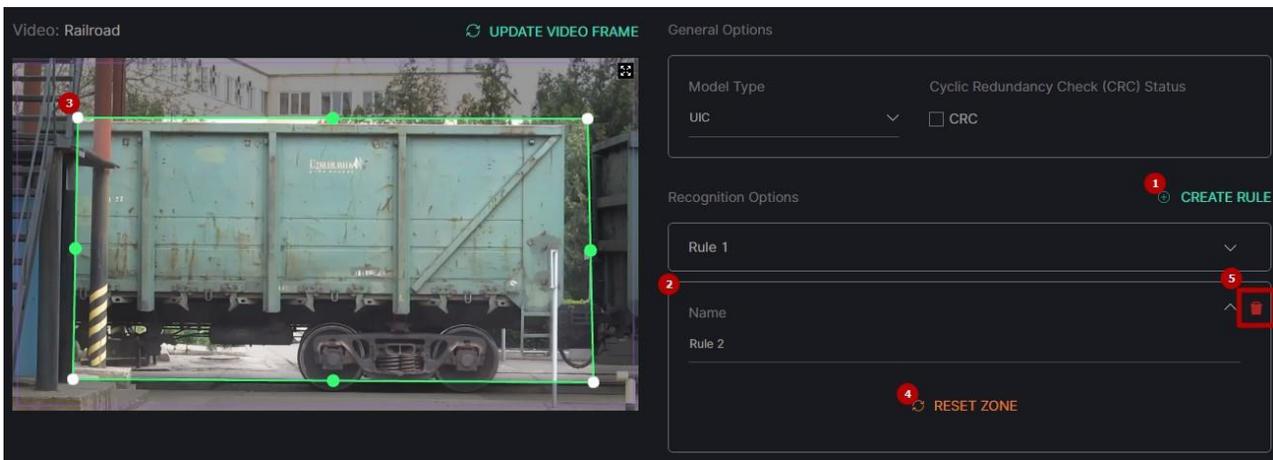
Wagon
Number

CORTROL CVA (Extended Video Analytics) CEVA v1.0.0

1. The differences between a wagon, UIC, and container numbers are:
2. Digits in a wagon number are arranged in one continuous line from left to right, while in a UIC and container numbers of digits can be arranged in several lines.
3. A wagon number holds only digits, while a UIC number consists of digits, spaces, and hyphens, and a container number consists of digits and letters.
4. A wagon and UIC numbers are found only horizontally, while the container number can be located horizontally or vertically.
5. A wagon number differs by font type from UIC and container numbers.
6. All types of numbers differ by the location on the wagon body.
7. All types of numbers differ by the added control information (checksum).

Recognition Options

To perform the recognition, apply these recognition options:



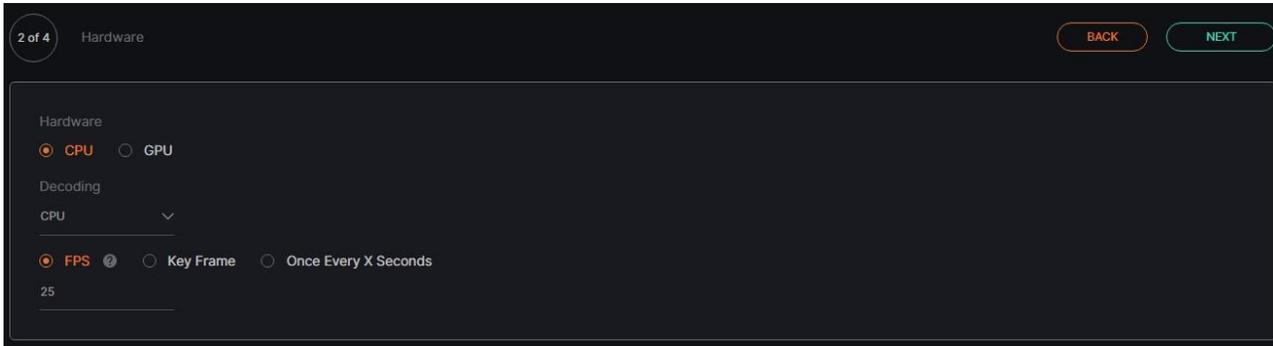
1. Select the Create Rule button to create a new rule
2. Enter the rule name
3. Modify the detection zone:
 - a. Click and drag the handles with LMB to set the zone borders
 - b. Click and drag the area inside the zone with LMB to move the whole zone
 - c. Click the handle with RMB to delete it
4. Click the Reset Zone button to return the recognition area borders to their original position
5. Click the red Delete Rule icon to delete the rule section



The detection zone is based on at least 3 handles.

Hardware Tab

The Hardware tab supplies the ability to customize hardware parameters:

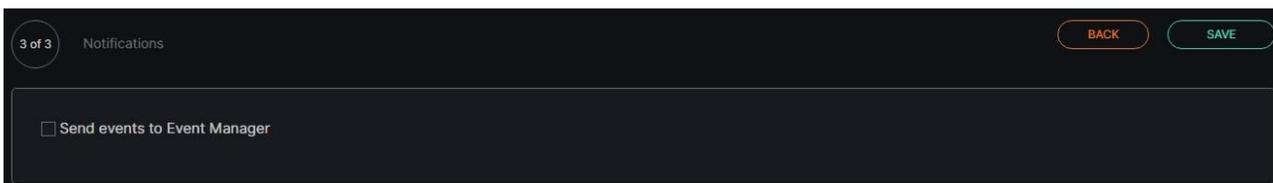


- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
 - CPU
 - Intel
 - NVDEC
- Select the frame processing mode:
- FPS to set the desired number of frames per second
- Key Frame to set the frame processing only by keyframes
- Once Every X Seconds to set intervals in seconds between frame processing

- 💡 • The recommended value for the FPS mode is 25.
- The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.
- To learn more about hardware settings, read [How to Configure the Hardware Tab Settings](#).

Notifications Tab

The Notifications tab allows managing the events notifications:



Check the Send Events to Event Manager box to allow the system to send all notifications to the Event Manager and then to external resources

Select the Save button to confirm the intention in the navigation menu

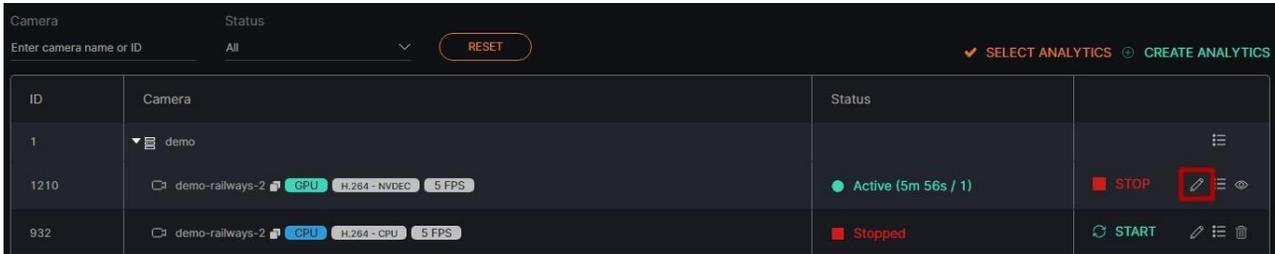
- 💡 • The default parameters allow the production of analytics. To customize the analytics, set parameters as needed.

Once saved, the UIC & Container Analytics editor opens to allow the users to:

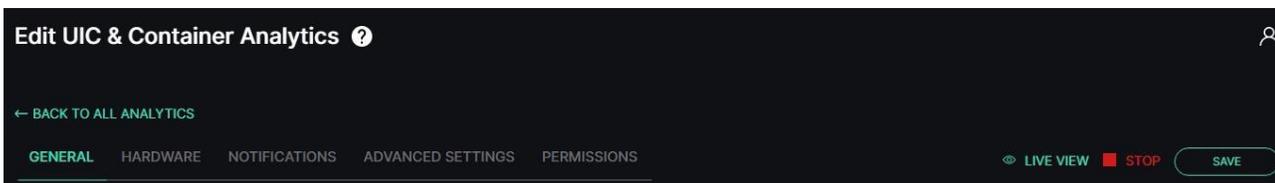
- Modify parameters
- Set parameters
- Run the created analytics
- Proceed to live view mode

Edit Analytics

To edit settings in the selected analytics, click the Edit icon on the toolbox:



The Edit UIC & Container Analytics navigation menu allows to:



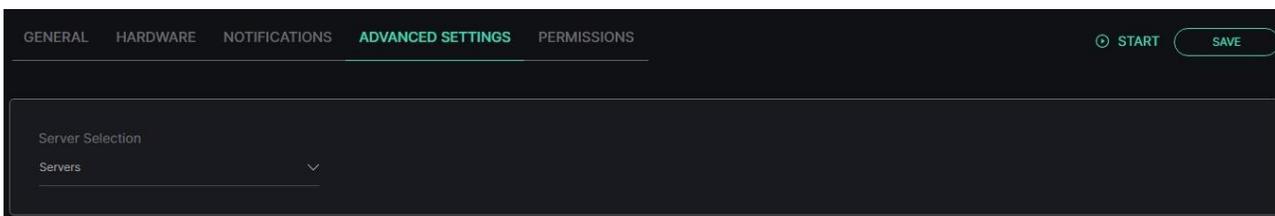
- Click the Back to All Analytics button to return to the main Analytics item
- See the setting tabs and move among them by clicking their titles:
 - General
 - Hardware
 - Notifications
 - Advanced Settings
- Select the Stop button to disable the analytics:
 - Yes, to confirm the analytics disabling
 - No to cancel the intention or close the pop-up window
- Select the Start button to enable the analytics
- Click the Live View button to see the selected analytics process in real-time
- Select the Save button to apply the changes to the chosen analytics

- 💡 • The current tab is always highlighted.
- Analytics editing is available only when selected analytics is disabled.
- The Stop button is available only when the current analytics is active.
- The Start button is available only when the current analytics is stopped.
- The Live View button is available only when the current analytics is active.

To view editing parameters for the General, Hardware, and Notifications tabs, read [Create Analytics](#).

Advanced Settings Tab

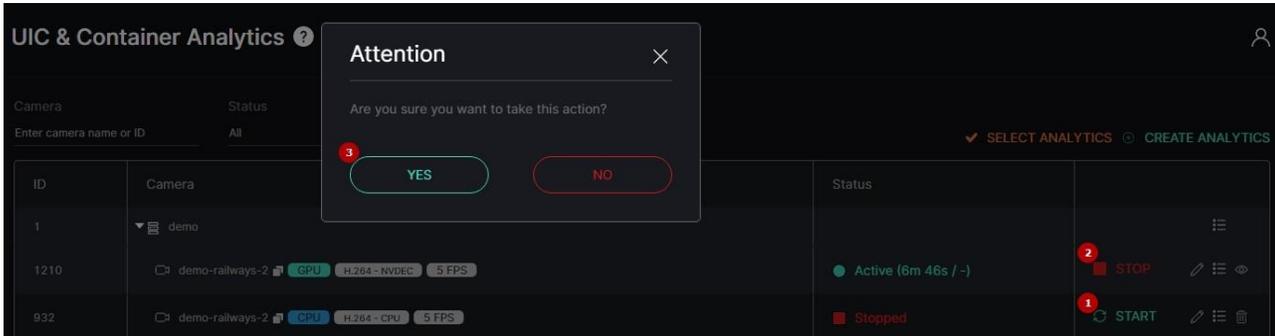
The Advanced Settings tab allows the users to select a server from the drop-down list to run the analytics:



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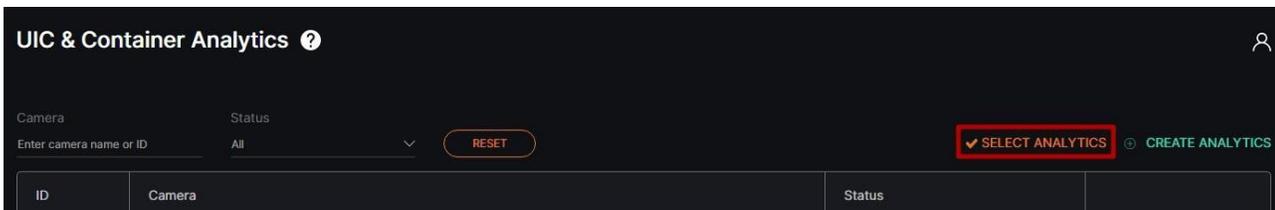
Analytics Status

To enable or disable the analytics and view the change of the analytics status:

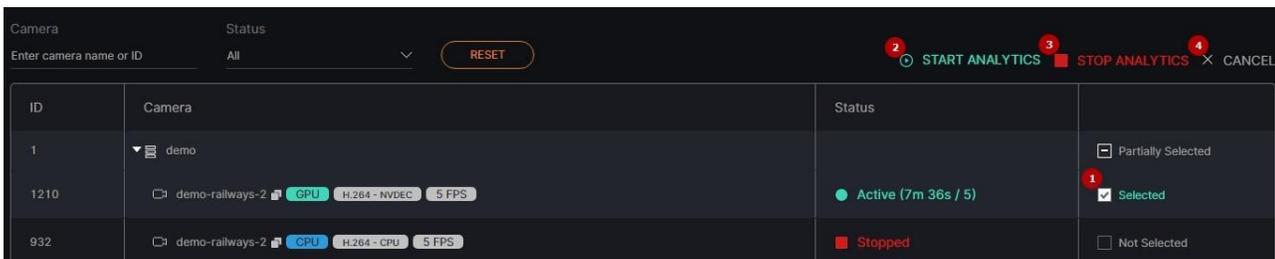


1. Select the Start button to enable the analytics
2. Click the Stop button to disable the analytics process
3. Confirm the intention

To enable or disable multiple analytics at once, click the Select Analytics button:



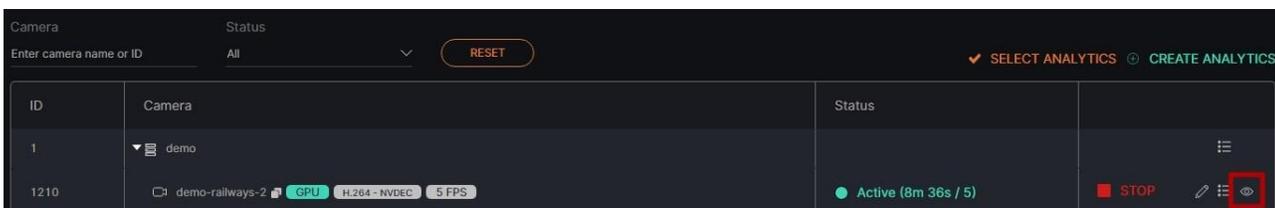
The Select Analytics functional menu allows to:



1. Check the boxes next to the required folders or separate analytics to select them
2. Click the Start Analytics button and confirm the intention in the pop-up window to enable all selected analytics
3. Click the Stop Analytics button and confirm the intention in the pop-up window to disable all selected analytics
4. Click the Cancel button to quit the analytics choice

View Analytics

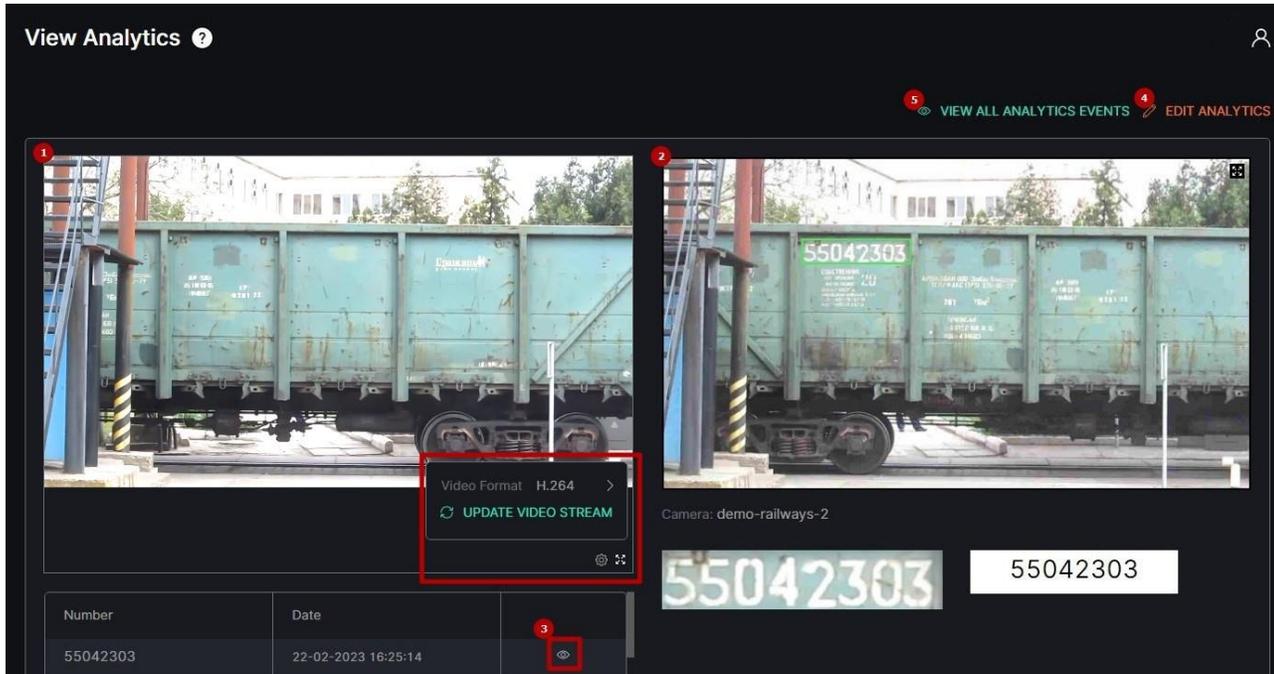
To see the selected analytics in real-time, click the View icon on the toolbox:



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 The View icon becomes available only when selected analytics is active.

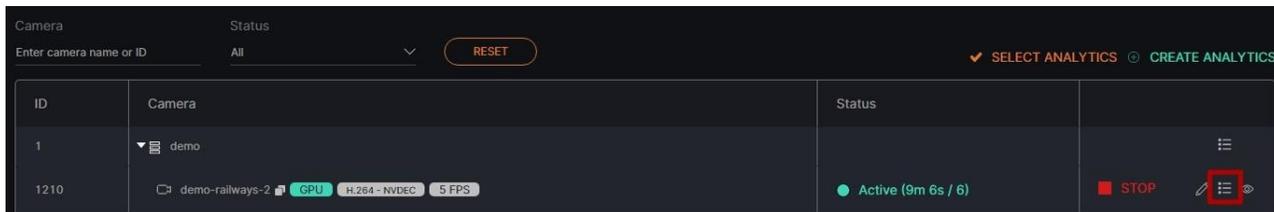
Live view analytics mode allows to:



1. View the video from the camera in real-time mode. At the bottom of the block:
 - a. Hover the mouse over the Settings icon to:
 - i. Select the desired video format
 - ii. Click the Update Video Stream button to manually update the video
 - b. Click the Enlargement icon to expand the video to full screen
2. View the frame preview with the recognized UIC number
3. Select the View icon in the table below to open the image in full size and save it
4. Click the Edit Analytics button to make changes to the current analytics settings
5. Click the View All Analytics Events button to see all search results from the selected analytics

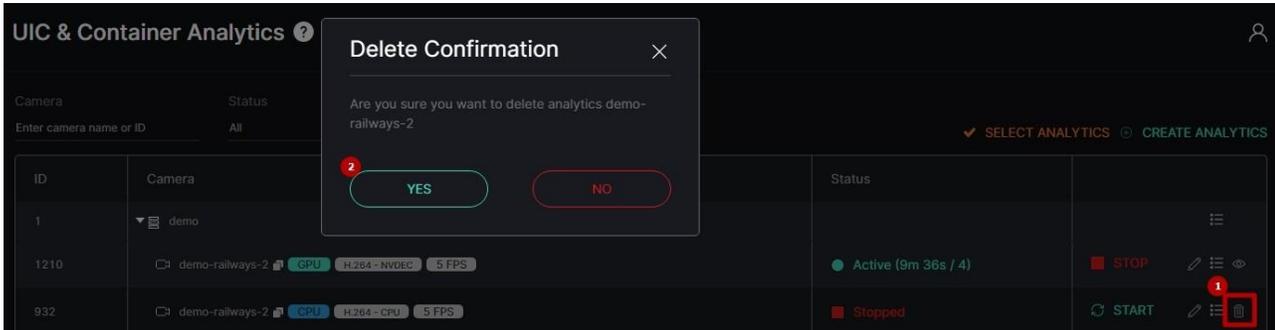
View Search Results

To view selected analytics search results in the Analytics item, click the Search Results icon on the toolbox:



Delete Analytics

To remove the analytics:



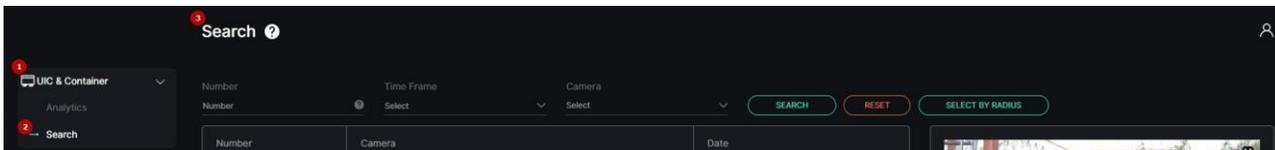
Select the Delete icon on the toolbox Confirm the intention

UIC & Container: Search

i This page includes the Search item overview and functionality description. The item displays the wagon search results including a UIC number, date and time, camera data, and a frame with a wagon.

Overview

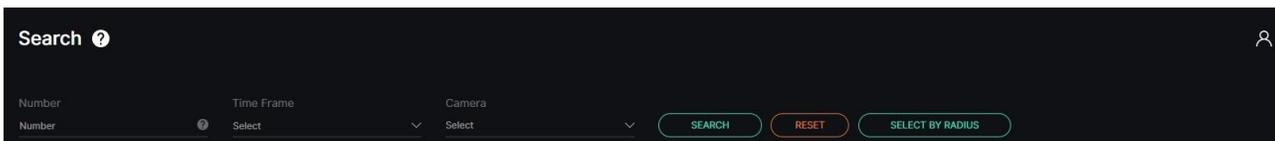
To open the Search item, in the left menu:



1. Select the UIC & Container section
2. Choose the Search item
3. See UIC numbers search

Use and Functionality

The Search functional menu allows to:



- Enter the UIC number to filter wagons
- Select the required time frame
- Click the Camera parameter to choose the desired video analytics. In the pop-up window:
 - Check the boxes next to the required video analytics and folders
 - Click the Select Video Analytics button
- Click the Search button to start filtering
- Click the Reset button to clear the filters
- Click the Select by Radius button to set the area for search. In the pop-up window:
 - Enter the radius in kilometers

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- Click the map at the desired spot to set the center of the search circle
- Select the Search button

Once selected and filtered, in the search results:

The screenshot shows the CORTROL CVA interface. At the top, there are filters for 'Number', 'Time Frame', and 'Camera', each with a 'Select' dropdown. To the right are buttons for 'SEARCH', 'RESET', and 'SELECT BY RADIUS'. Below the filters is a table with the following data:

Number	Camera	Date
95525085	demo-wagon-ua	15-02-2023 13:10:57
58519356	demo-wagon-ua	15-02-2023 13:10:54
95338414	demo-wagon-ua	14-02-2023 16:05:25
68526433	demo-wagon-ua	14-02-2023 16:05:25
55015242	demo-wagon-ua	14-02-2023 16:05:24
55250856	demo-wagon-ua	14-02-2023 16:05:22
95525085	demo-wagon-ua	14-02-2023 16:05:21
65336414	demo-wagon-ua	14-02-2023 16:05:21
58563529	demo-wagon-ua	14-02-2023 16:05:18

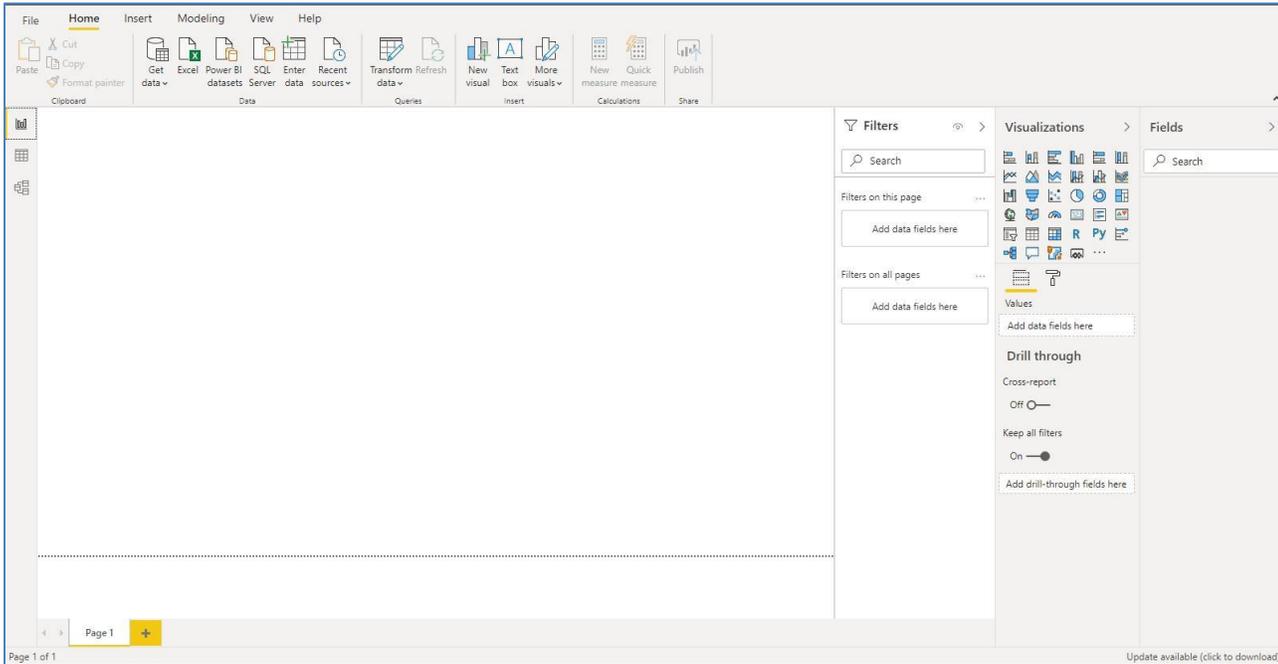
To the right of the table is a video frame preview showing a red wagon with a green bounding box around the UIC number '9552 5085'. Below the frame, the camera name 'demo-wagon-ua' and the date '15-02-2023 13:10:57' are displayed. At the bottom of the preview, there are two boxes: one with the UIC number '9552 5085' and another with the number '95525085'.

- View the recognized UIC number, and the exact time the wagon has been identified by the selected camera
- View the camera location on the map by clicking the corresponding icon in the Camera column
- Click the row in the table with the desired UIC number to see the frame with a wagon preview
- Select the enlargement icon in the upper-right corner of the frame preview to open the image in full size and save it

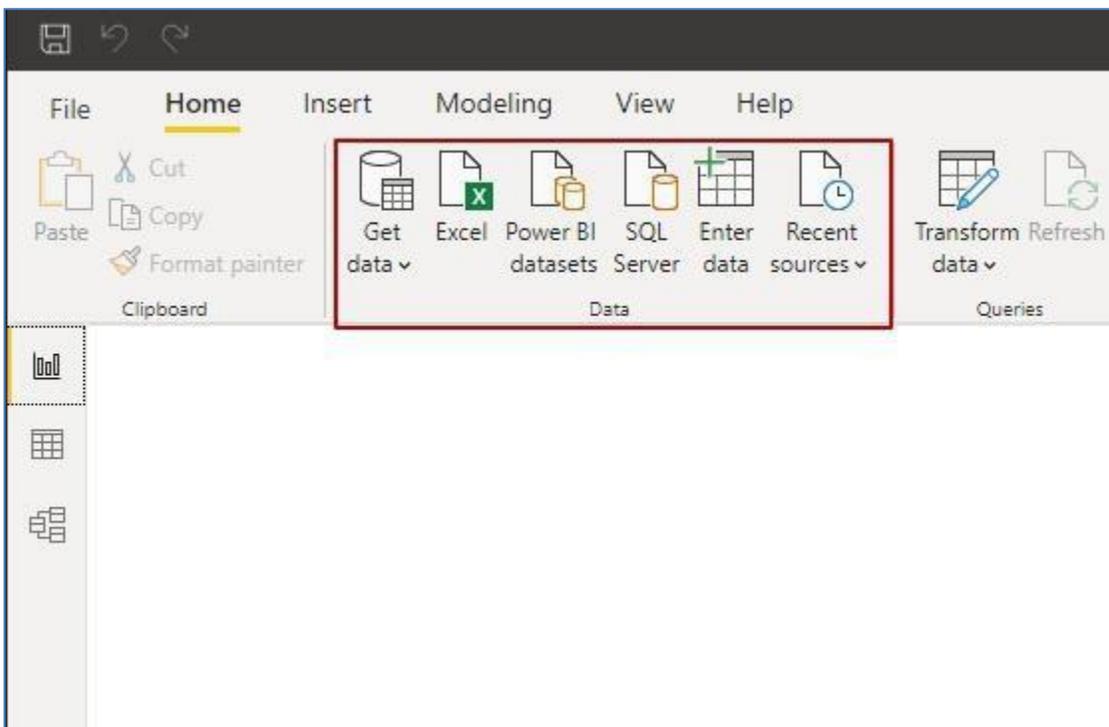
Microsoft Power BI

Data Acquisition

To start working with Power BI you need to load data according to which it will be possible to create reports.

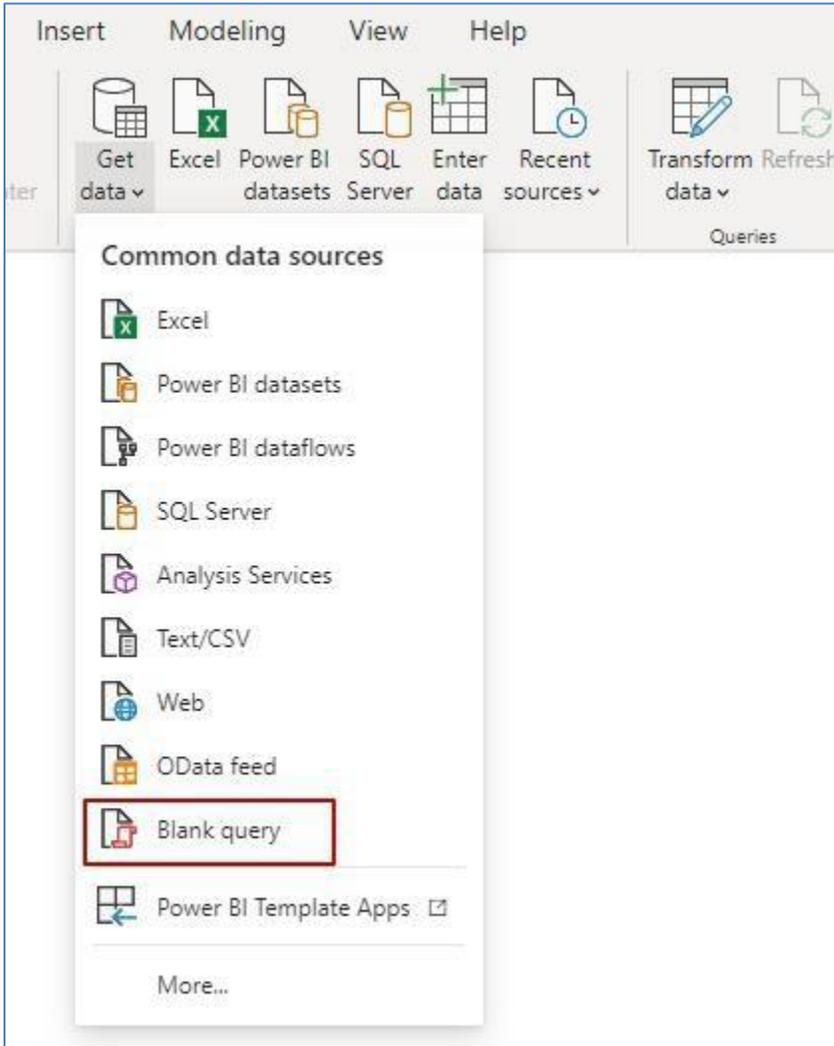


For this purpose find the section "Data" in the toolbar.

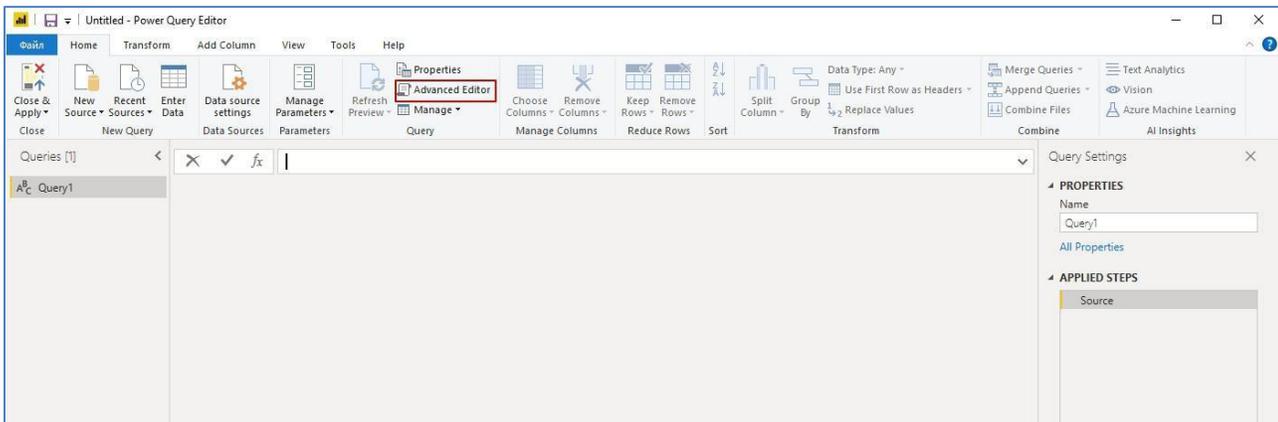


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Press on "Obtain data" and choose "Empty request".



In the opened window press "Advanced Editor".



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It is necessary to specify by the first argument of this function the resource from which data will be loaded. The template looks so:

```
"http://<server_address>:<port_number>/api/graphql"
```

On the screenshot, the example of input of the address is shown above.

```
Headers=[  
  # "Method" = "POST",  
  # "Content-Type" = "application/json",  
  # "Authorization" = "Bearer [REDACTED]"  
],
```

The following argument which we give to functions is in braces "[]" after the comma.

In the beginning, it is necessary to prescribe Headers of HTTP of requests:

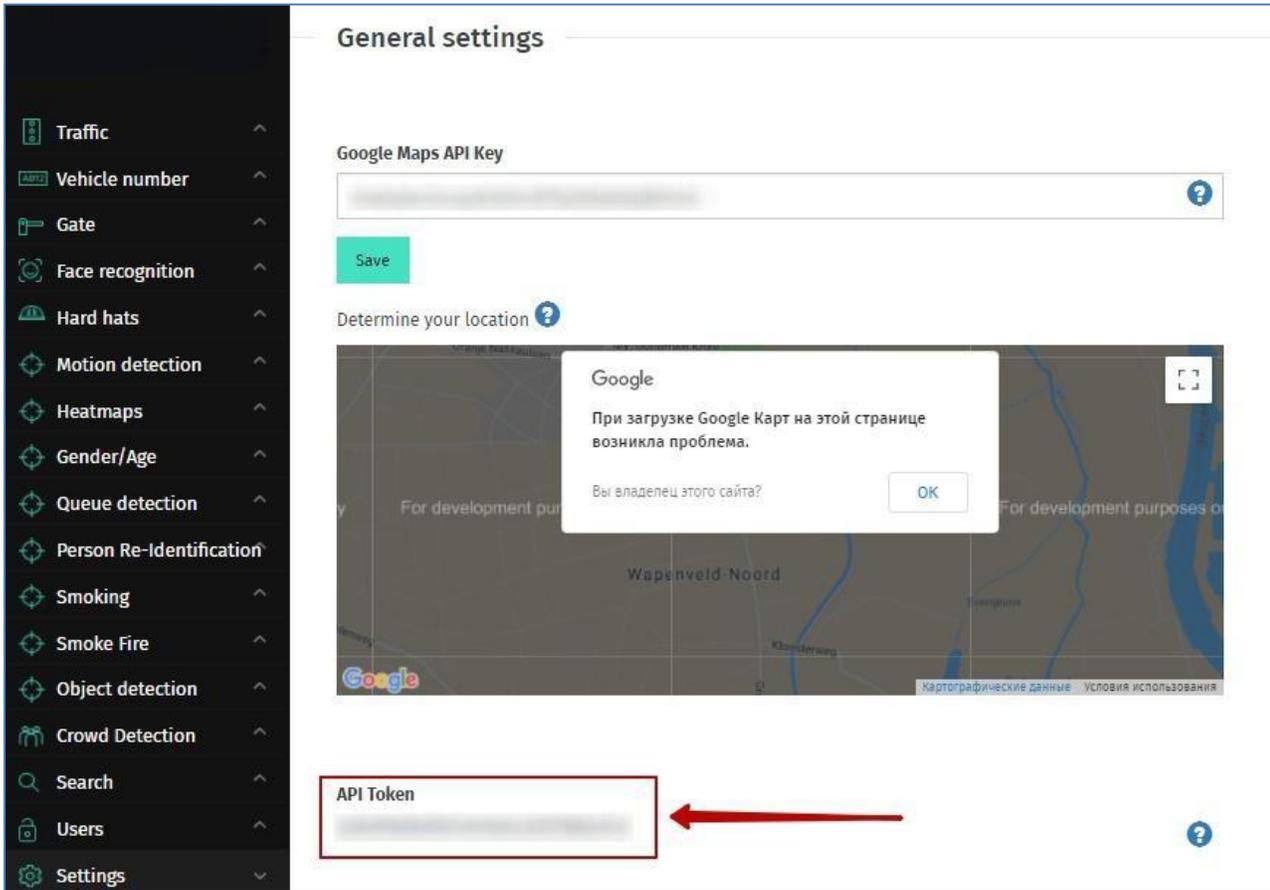
"Method" – this field needs to appropriate POST value

"Content-Type" – this field needs to appropriate application/json value.

"Authorization" – for authorization is used by Bearer authorization, the token can be received

it is possible in the system. For this purpose come into Settings-> the General and copy API Token, then it needs to be entered.

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```
Content=Text.ToBinary("{
  \"\"query\"\": \"\"query {
    traffic(start: \"\"24-05-2020 00:00:00\"\", end: \"\"24-06-2020 00:00:00\"\", vaId: 0) {
      date\n
      count\n
      type\n
    }\n
  }\"\"
}")
```

Further, it is necessary to create a request. The problem of the request is to choose the necessary data for work. The request is written in the GraphQL language. The template of the request looks so:

```
Content=Text.ToBinary (" {
  \"\"query\"\": \"\"query { <type of request> {
    <pole1>/n
    <pole2>/n
    .....
  }\"\"
}")
```

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Parameters:

PARAMETERS	DESCRIPTION
start	is the beginning of the temporary period on which selection of records undertakes. Accepts the Date type start registers in the format ": \\"DD-MM-GGGG of ChCh: MM: CC \\""
end	is the end of the temporary period on which selection undertakes. Accepts the Date type start registers in the format ": \\"DD-MM-GGGG of ChCh: MM: CC \\""
vald	is an analytics number. To choose everything analysts it is possible to specify 0 value or not to specify this parameter. Accepts the Int type and vald registers in the format ": <id of analytics (stream)>".
streamId	is a number of the camera. To choose all cameras it is possible to specify 0 value or not to specify this parameter. Accepts the Int type and streamId registers in the format ": <id of the stream>".
alerted	accepts Boolean values. In the case of exposure of true value, only records of persons on which there were notices recover (those in the Events tab in the system). At the exposure of false values, all records of persons will be sent. alerted registers in the format ": <Boolean value>".
limit	is used for the restriction of a records number. In this parameter, the maximum number of records which will be returned by request is entered. If to pass this parameter, then will return 100 records. Accepts the int type and limit registers in the format ": <number of records>"
offset	allows passing the specified quantity of lines before removing the results of the request. Accepts the int type and offset registers in the format ": <the number of the missed records>".

Types of requests are given below:

```

type Query {
  traffic (start: Date, end: Date, vald: Int = 0): [Traffic]
  alpr (start: Date, end: Date, streamId: Int = 0): [PlateStat]
  alprAlerts (start: Date, end: Date, streamId: Int = 0): [AlertStat]
  person (start: Date, end: Date, streamId: Int = 0, alerted: Boolean = false, limit: Int = 100, offset: Int = 0): [Person]
  personNotification (start: Date, end: Date, limit: Int = 100, offset: Int = 0): [PersonNotification]
}

```

In Square brackets after each type of request types which this request addresses are shown. In each type the set of fields that can be used. To choose the necessary fields it is necessary to specify them by the principle that is stated above.

Available fields by types of request are given below:

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```
scalar Date
enum TrafficType {
  people
  bike
  car
  motorcycle
  bus
  truck
}
```

```
enum Gender {
  male
  female
}
```

```
enum Gender {
  male
  female
}
```

```
type Traffic {
  va_id: Int
  date: Date
  line: Int
  count: Int
  type: TrafficType
  direction: Int
  directionOne: Int
  directionTwo: Int
}
```

```
type PlateStat {
  stream_id: Int
  date: Date
  total: Int
  countNumbers: Int
  countMakeModel: Int
  countBoth: Int
}
```

```
type AlertStat {
  key: String
  total: Int
  createdCount: Int
  foundUnique: Int
  foundCount: Int
  closedCount: Int
}
```

```
type Person {
  alerted: Boolean
  streamId: Int
  date: Date
  age: String
  gender: Gender
  faceImage: String
  frameImage: String
  box: String
}
```

```
type PersonNotification {
  name: String
  age: String
  gender: Int
  distance: Float
  date: Date
  status: Int
  box: String
  streamId: Int
  detected: String
  detectedFrame: String
  detectedObject: String
}
```

```
#"JSON" = Json.Document(Source),
data = JSON[data],
traffic = data[traffic],
#"Converted to Table" = Table.FromList(traffic, Splitter.SplitByNothing(), null, null, ExtraValues.Error),
#"Expanded Column1" = Table.ExpandRecordColumn("#Converted to Table", "Column1", {"date", "count", "type"}, {"date", "count", "type"}),
#"Calculated Absolute Value" = Table.TransformColumns("#Expanded Column1",{{"count", Number.Abs, type number}}),
#"Reordered Columns" = Table.ReorderColumns("#Calculated Absolute Value",{"date", "type", "count"}),
#"Grouped Rows" = Table.Group("#Reordered Columns", {"date", "type"}, {"Count", each List.Sum([count]), type number}},
#"Changed Type" = Table.TransformColumnTypes("#Grouped Rows",{{"date", type datetime}})
in
#"Changed Type"
```

In the following part, it is necessary to create the received JSON in the table with which Power will be ready to work. The code is written in the Power Query M language. The Power Query M language

User Guide you can find following the link: <https://docs.microsoft.com/ruru/powerquery-m/>

Principle of writing:

#"<name" – the name of the field is written in such format. The name can be any, but it is desirable that it somehow described content. Everything written in such a format influences the final table. The value after the sign "=" is appropriated to Paul. For values it is possible to use ready functions of the Power Query M language.

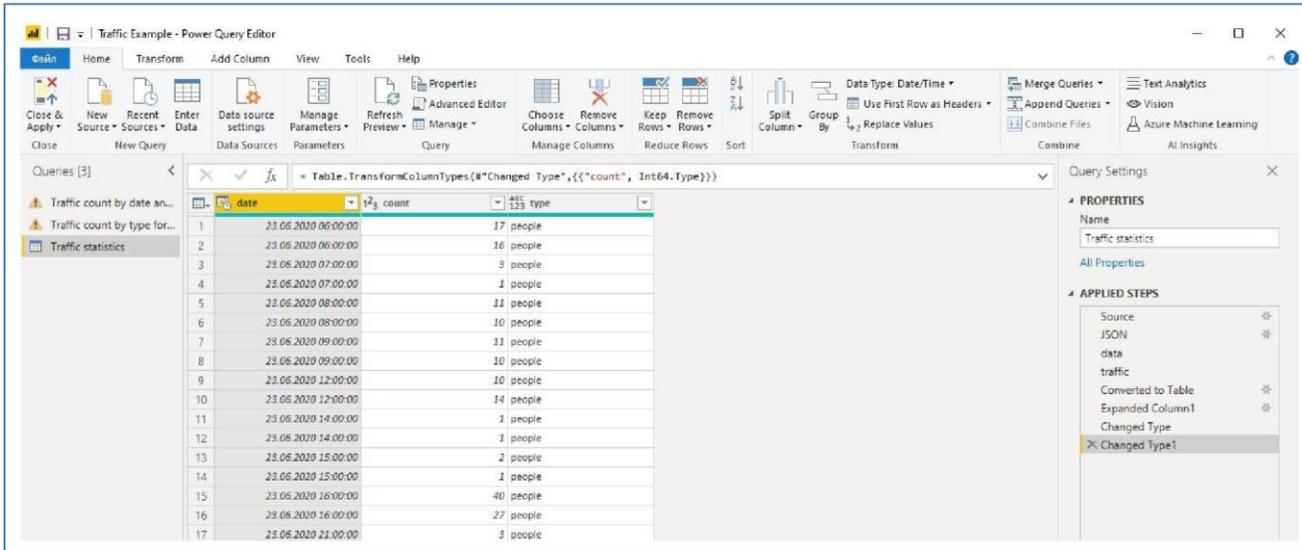
```
#"JSON" = Json.Document(Source),
Data = (JSONdata)
traffic = data(traffic)
```

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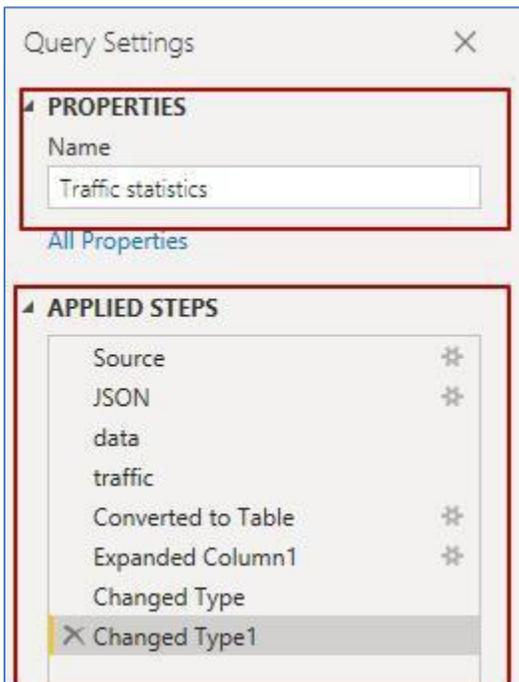
In the code above, the converted to the JSON document is described.

Everything that goes below is forming of the table with which Power bi can work. After input of request press the button "Ready".

In the editor, the table with data will appear.

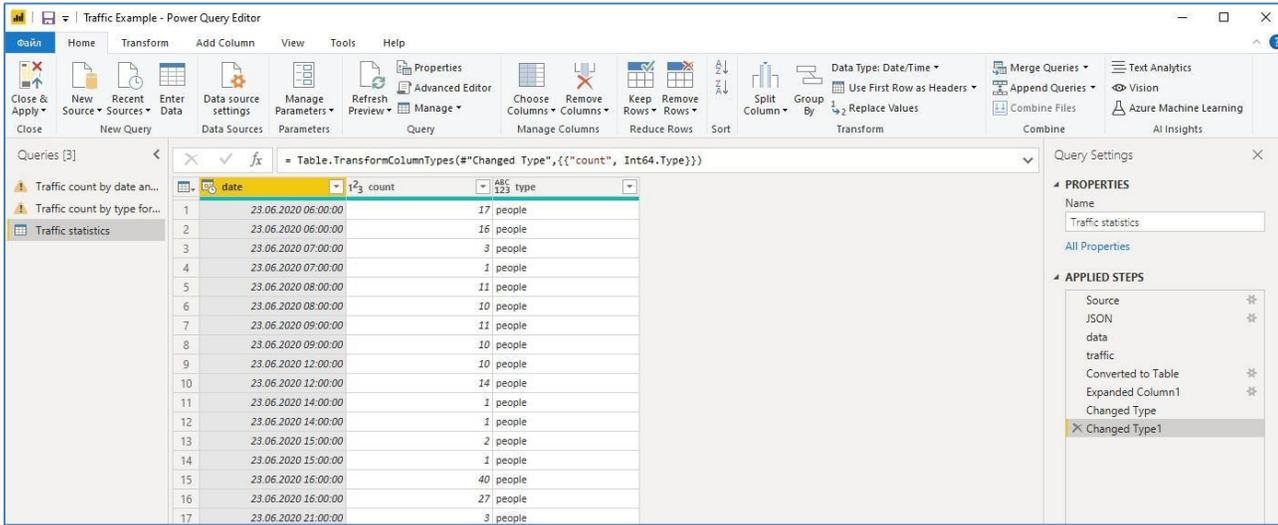


In the right part, you can change the parameters of the request. In Properties, you can change the name. To add the description of the request press "All properties". In "The applied steps" you can see all changes that happened to the table. For this purpose that you will see the condition of the table on the certain step press it.



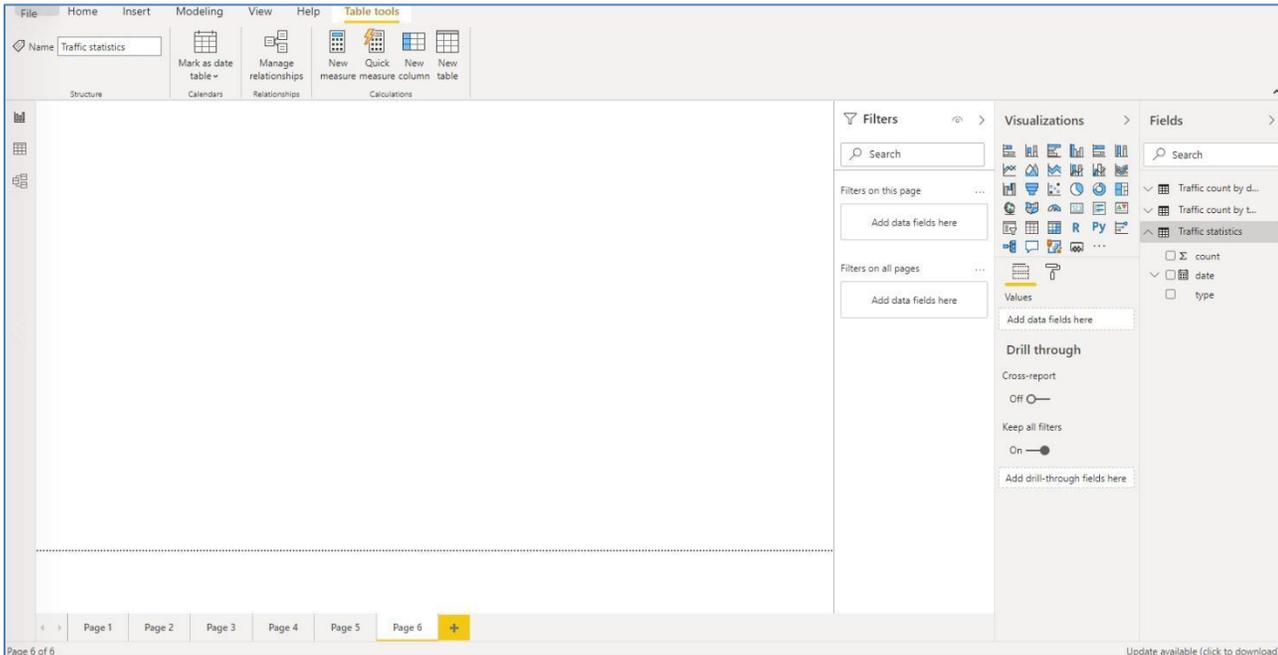
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To keep the obtained data, press "Close and Apply" in the toolbar:



Creation of Visual Elements

After closing the editor you will pass to the page of creation of the report. After the successful request fields will be displayed in the right part of the area.



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For the creation of the chart, it is necessary to choose in the section visualization the visual element (the chart, the schedule, the histogram) and to note fields that shall be displayed in the visual element. Undressed filters create the condition for the choice of elements – it allows to reduce the number of elements for display.

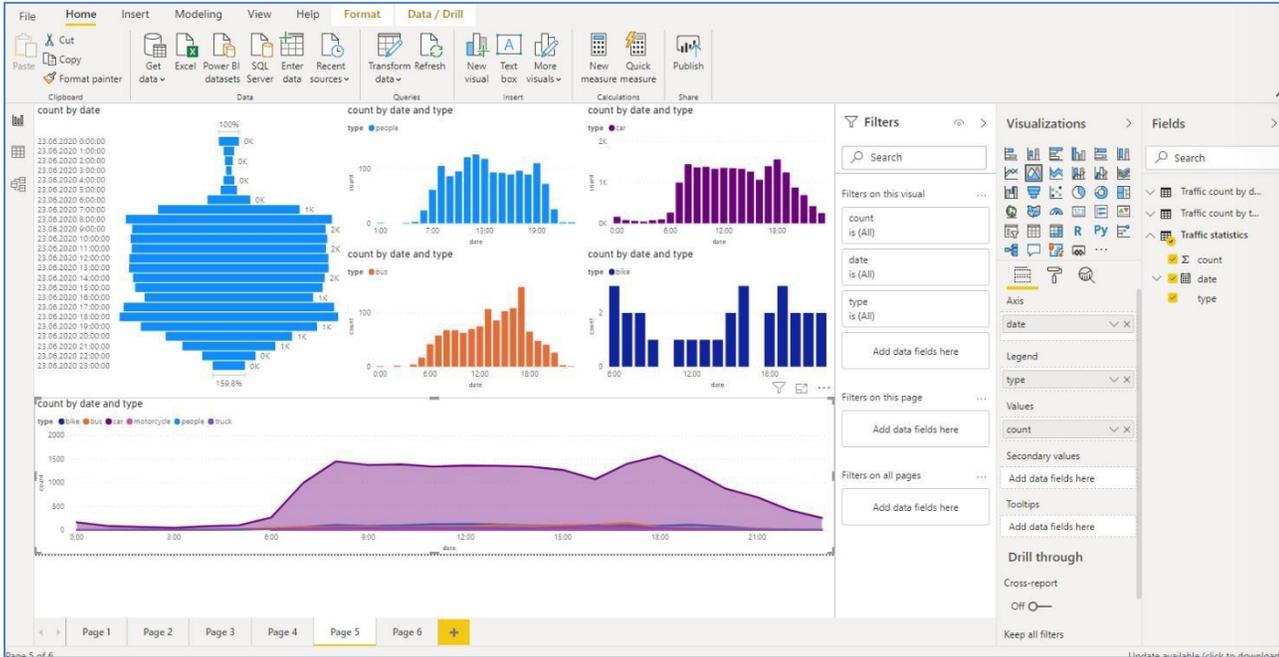
The screenshot displays the configuration interface for a chart, divided into three main panels:

- Filters:** Contains search bars for "Filters on this page" and "Filters on all pages", each with an "Add data fields here" button.
- Visualizations:** A grid of various chart types (line, bar, pie, etc.) and a "Values" section with an "Add data fields here" button.
- Fields:** A list of available data fields with checkboxes for selection. The selected fields are:
 - Traffic count by d...
 - Traffic count by t...
 - Traffic statistics
 - Σ count
 - date
 - type

Below the Visualizations panel, there is a "Drill through" section with a "Cross-report" toggle set to "Off" and a "Keep all filters" toggle set to "On". An "Add drill-through fields here" button is located at the bottom of this section.

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After the choice of the visual element, it will appear in the working area. After the selection of fields and filtration, the visual element will display data in the necessary format.



For data table viewing, execute the transition to the page of data having pressed the badge in the left part of the screen:

The screenshot shows the 'Table tools' panel with a data table. The table has three columns: 'date', 'count', and 'type'. A red box highlights a grid icon on the left side of the table, which is used to toggle between visualization and table views.

date	count	type
23.06.2020 00:00:00	34	car
23.06.2020 00:00:00	128	car
23.06.2020 00:00:00	1	bus
23.06.2020 00:00:00	1	truck
23.06.2020 01:00:00	15	car
23.06.2020 01:00:00	68	car
23.06.2020 01:00:00	1	truck
23.06.2020 01:00:00	1	people
23.06.2020 02:00:00	10	car
23.06.2020 02:00:00	53	car
23.06.2020 02:00:00	1	bus

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Having pressed icons opening of the list in the name of fields you can choose necessary data and sort them.

date	type	count
23.06.2020 00:00:00	car	34
23.06.2020 00:00:00	car	128
23.06.2020 00:00:00	bus	1
23.06.2020 00:00:00	truck	1
23.06.2020 01:00:00	car	15
23.06.2020 01:00:00	car	68
23.06.2020 01:00:00	truck	1
23.06.2020 01:00:00	people	1
23.06.2020 02:00:00	car	10
23.06.2020 02:00:00	car	53
23.06.2020 02:00:00	bus	2
23.06.2020 03:00:00	car	9
23.06.2020 03:00:00	car	36
23.06.2020 03:00:00	truck	1

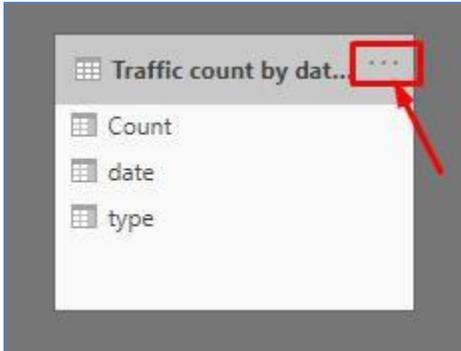
To prescribe communication between tables, pass to the page of model, having pressed the icon in the left part:



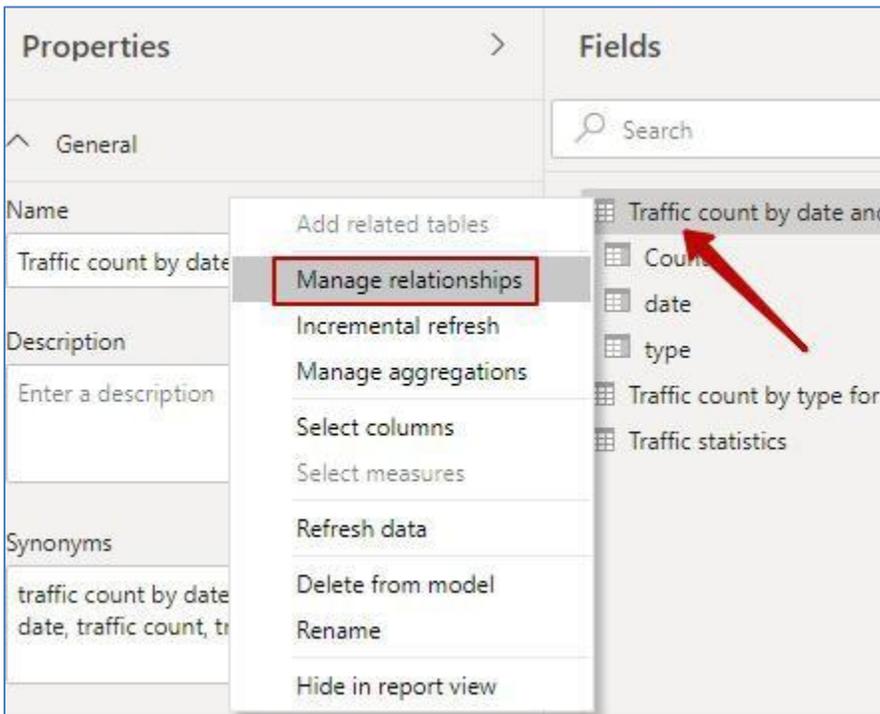
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To open the window creation of communication:

- 1) Press the badge at the top of the table or in the partition of the field to right-click on the name of the table.
- 2)

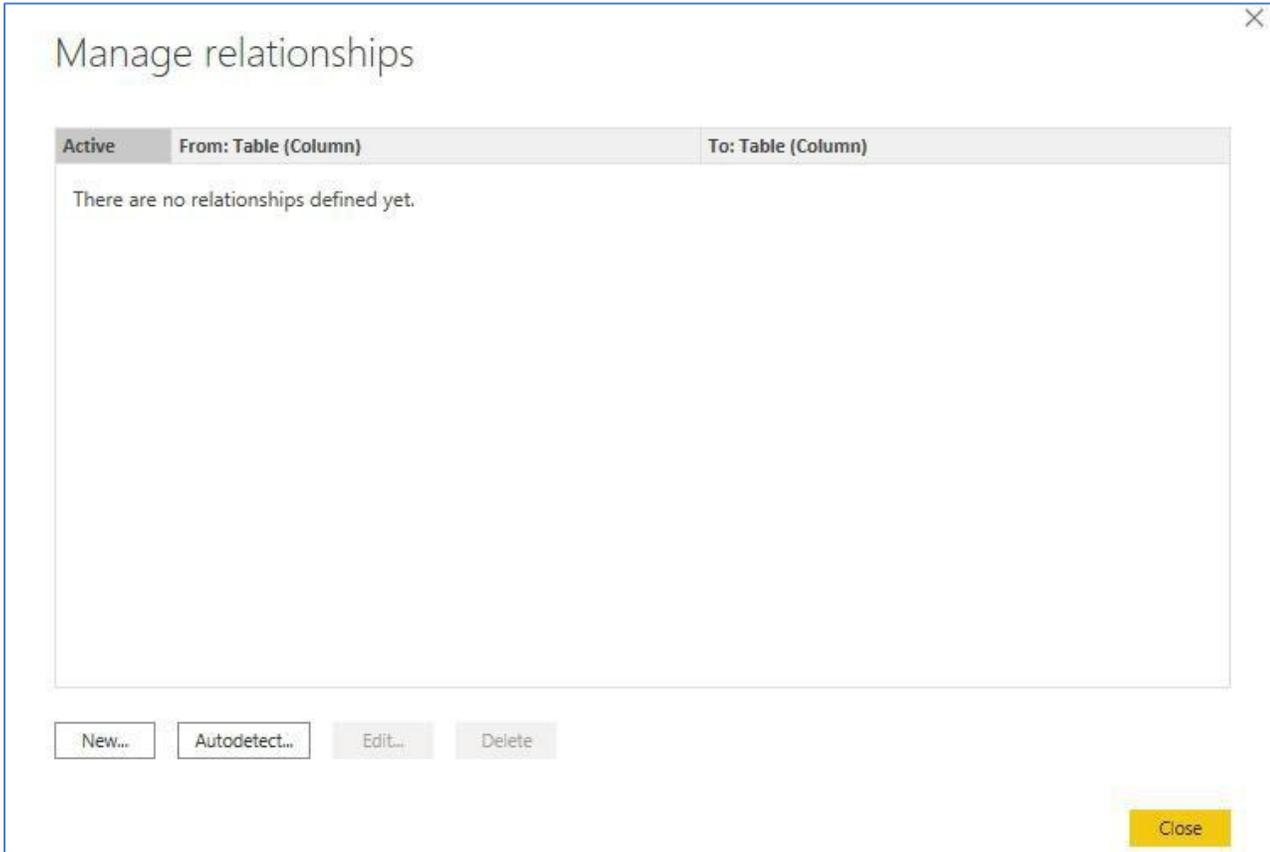


2) Press "Manage relationships".



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3) In the opened window press "Create communication". In this window, all existing communications will be shown.



4) Choose necessary tables, specify fields and frequency rate. Press "Ok".

Create relationship

Select tables and columns that are related.

Traffic count by date and type

date	type	Count
24.05.2020 05:00:00	people	4
25.05.2020 06:00:00	people	2
25.05.2020 07:00:00	people	3

Traffic statistics

date	count	type
23.06.2020 00:00:00	34	car
23.06.2020 00:00:00	128	car
23.06.2020 00:00:00	1	bus

Cardinality: Many to Many (*:*)
Cross filter direction: Both

Make this relationship active
 Assume referential integrity
 Apply security filter in both directions

! This relationship has cardinality Many-Many. This should only be used if it is expected that neither column (type and count) contains unique values, and that the significantly different behavior of Many-many relationships is understood. [Learn more](#)

OK Cancel

If everything is made correctly, then communication between tables will appear.