

CORTROL LPR v1.0.1

# LPR User Manual





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### 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

#### How to Configure the Hardware Tab Settings

Select the hardware type:

Q

- Select the CPU hardware type to run the analytics processing on the central processor.
- Select the GPU hardware type to run the analytics processing on the graphics processor.

The analytics is processed faster by the GPU than by the CPU.

Select the decoding type. Depending on the type of decoding, the video is processed on different devices:

- CPU This selection provides video decoding on the central processor.
- Intel This selection provides video decoding on the Intel Integrated Graphics Processor (Intel HD Graphics).
- NVDEC This selection provides video decoding on the NVIDIA graphics processor.

The FPS mode allows to set the number of frames per second processed by the analytics:

- A higher frame rate gives a better result if the video contains dynamic objects (e.g., people moving in a shopping center or vehicle traffic on the road).
- A lower frame rate is sufficient if the video contains static objects (e.g., vehicles in a parking lot).

The higher the frame rate, the more resources are required for analytics to process the video.

The Key Frame mode selects only keyframes from the video stream. Keyframes have the lowest compression ratio, which saves resources for decoding and processing the video stream by analytics.

Suitable for video streams with compression (e.g., h264, h265, etc.).





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The Once Every X Seconds mode processes 1 frame after a set period, while the remaining frames are skipped.

Suitable for cases where very rare frame processing (less than 1 frame per second) is required.

### **General Settings**

① This page describes the General Settings item that allows setting general system parameters.

#### **Overview**

P

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

	General S	Settings	ጸ
Settings ✓ ✓ Ceneral License Updates Clients	API Token API Token	Google Maps API Key Storage Network Storage How to use?	

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	
		How to use?

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

The selected tab is always highlighted.



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### **API Token Tab**

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

API Token	Google Maps API Key	
		How to use?

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:

eneral S	Settings				A
API Token	Google Maps API Key		work Storage		
			SAVE		
Green Le	Woodlawn				
Haw River		Mebane			
Alamance Community Google	Keyboard shortcuts Map da	ta 67025 Google Ten	Miles The Miles		

- 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





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#### How to Get Google Maps API Key?

To get the Google Maps API key, open the Google Maps Platform by the <u>link</u> and click the Get Started button:

Google Cloud							Support	English	•	Contact sales	Get started
Soogle Maps Platform	Why Google	Products ~	Solutions ~	Pricing	Resources ~						
					<b>Q</b>						
			-	We	elcome	e to					
			Goo	ogle	Maps	Platfor	m				
				i nond indig	Get started				/		

Sign into the Google account or register to continue. Once signed in, verify the Google billing account.

#### Step 1:

🛆 Try Google Clor	ud for free	/	(·
Step 1 of 3 A	CCOUNT Information	Access to all Cloud Platform Products Get everything you need to build and run your apps, websites and services, including Firebase and the Google Maps API. S300 credit for free Put Google Cloud to work with \$300 in credit to spend over the next 90 days. No autocharge after free trial ends We ask you for your credit card to make sure you are not a robot. You work to be charged unless you manually upgrade to a paid account.	
Terms of Service I have read and a Service, Supplem Service of any ap Required to continue CONTINUE	pree to the Google Cloud Platform Terms of ental Free Trial Terms of Service, and the terms of plicable services and APIs.		$\langle \rangle$
Privacy policy   FAQs			

- Select the appropriate answers from the drop-down lists
- Carefully read the Terms of Service and check the box to agree
- Click the Continue button





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Step 2:



- Enter the phone number
- Click the Send Code button

Once the verification code is obtained by SMS:

Step 2 of 3 Identity Verification and Contact Information THE HE & Bigt code THE HE & Bigt code	Try Google Cloud for free	
	Step 2 of 3 Identity Verification and Contact Information Enter the 6-digit code.	Access to all Cloud Platform Products Get everything you need to build and run your apps, websites and services, including Firebase and the Google Maps API. S300 credit for free Put Google Cloud to work with \$300 in credit to spend over the next 90 days. No autocharge after free trial ends We ask you for your credit card to make sure you are not a robot. You won't be charged unless you manually upgrade to a paid account.

- Fill in the required field with obtained verification code
- Click the Verify button





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Step 3:



- Fill in the required fields
- Click the Start My Free Trial button

The system withdraws \$1 from the specified card for verification, after which the money is returned to the specified card. Make sure to have enough funds on the account to complete the verification.





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Once the billing account is verified:



- Answer a few questions
- Click the Submit button

After the submission, a new window with generated API key opens:



- Copy the API key to the clipboard
- Click the Maybe Later button





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After redirecting to the control console, select the APIs item:

=	Google Cloud Platform	💲 My First Project 👻	Q Search Products, r	esources, docs (/)	<b>5</b> 0	2		
9	Google Maps Platform	Maps APIs and Services						
\$ 	Overview	To get started with Google Maps Platform b	rowse and enable APIs and services listed b	nable APIs and services listed below that best suit your needs.				
th	Metrics	<b>2</b>	<u>a</u>	-		<b>.</b>		
	Quotas	Geolocation API Google Enterprise API	Maps SDK for Android	Roads API Google Enterprise API	Places API Google Enterprise API	Maps JavaScript API		
07	Credentials	Location data from cell towers and	Maps for your native Android app.	Snap-to-road functionality to	Get detailed information about 100	Maps for your website		
*	Support	WiFi nodes.		accurately trace GPS breadcrumbs.	million places			
睯	Solution Library NEW							
D	Map Management	۲	<b>\$</b>		4	•		

In the APIs item, make sure the following APIs are enabled:

=	Google Cloud Platform	🕽 Vezha milestone plugins 👻	Q. Search Products, resources, docs (/)			B 1	0 : <mark>S</mark>
9	Google Maps Platform	APIs					S LEARN
♦ Ⅲ	Overview APIs	Enabled APIs					
th	Metrics	Select an API to view details. Figures are for the last 30 days.	Requests	Errors	Avg latency (ms)		
	Quotas	Geocoding API	48	9	65	Details	
0+	Credentials	Maps JavaScript API	49	3	32	Details	
+	Support	Roads API				Details	
88	Solution Library	Street View Static API		2	2	Details	
<b>D</b> ©	Map Management Map Styles	Additional APIs Select an API to view details in Marketplace					
		API					

- Geocoding API
- Maps JavaScript API
- Roads API
- Street View Static API





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### **Storage Tab**

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

Ge	eneral Se	ettings			<u>م</u>
	API Token	Google Maps API Key	Storage	Network Storage	
	Delete Metada	ata History			
	30				
	Delete Images				
	30				
	Delete System	n Notifications			
	30				
			SAVE		

- Specify the time in days during which the system stores:
  - o History of search results (Delete Metadata History field)
  - Images (Delete Images field)
  - o 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:

General S	Settings				8
API Token	Google Maps API Key	Storage	Network Storage		
ID		Shared Folder		Domain	ADD STORAGE

- ID
- Host
- Shared folder name
- Domain





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#### To add new storage:

New Storage	×
Host	Shared Folder
Enter host name	Enter shared folder name
User	Password
Enter user login	Enter user password
Domain	
Enter domain	
SAVE ST	TORAGE

- 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:

General	Settings 😧		Delete Confirmation	×		<u>م</u>
API Token			Are you sure you want to remove the storage?			
ID			YES NO		ADD STORAGE	
1						

- 1. Select the Delete icon
- 2. Confirm the intention





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### 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:

	License							٨
Settings							ISE INFORMATION 💿 ACTI	ATE LICENSE
General	License Ke		Туре	Channels	Expires	Activation Date	Status	
- License	License Ink	emition			25-06-2023	76-05-2023	Activation Completed	
Clients Users	Active: Inactive:	1 licenses for 16 channels O licenses for 0 channels						
Roles	. I		1					

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

### **Use and Functionality**

The License item shows:

License						ጸ
				· VIEW TOTAL LICEN	ISE INFORMATION 🕤 ACTIV	VATE LICENSE
License Key	Туре	Channels	Expires	Activation Date	Status	
			25-06-2023	26-05-2023	Activation Completed	
License Information Active: 1 licenses for 16 channels Inactive: 0 licenses for 0 channels						

- 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
      - 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





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### **License Online Activation**

To activate a new license online:

New License		×
Internet Activation		
xxxxx-xxxxx-xxxx		
	ACTIVATE LICENSE	

- 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)
- 4. Select the Activate License button

#### **License Offline Activation**

To activate a new license offline:

	n 💿 Manual Activation	
xxxxx-xxxxx-xxxxx-x	~~~~	
	~~~~~~~	
To obtain a License Activ partner/reseller.	vation file please send the provid	ed Hardware ID file to you
To obtain a License Acti partner/reseller. Hardware ID File	vation file please send the provid	ied Hardware ID file to you
To obtain a License Activ partner/reseller. Hardware ID File	vation file please send the provid	ed Hardware ID file to you DOWNLOAE
To obtain a License Acti partner/reseller. Hardware ID File Activation Key File	vation file please send the provic	ed Hardware ID file to you DOWNLOAE

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





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• 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:

Total Licenses Inform	nation	×
Hard Hat Detection	1	0
Crowd Detection		
Motion Detection		
Heat Map		
Wagon Identification		
Object Detection		
Traffic Analytics		
Face Recognition		
Age & Gender Detection		
LPR		
Smoke & Fire Detection		
Smoking Detection		
Smart Tracking System		
Pose Estimation		

- 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





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### **License Details**

To view the required license details:

License D	etails	×
License Key		🗗 Сору
Туре	Trial	
Heor		
USEI		
Activation Date	26-05-2023	
Support End Dat	e 25-06-2023	
Expiration Date	25-06-2023	
Hard Hat Detect	tion	
Crowd Detectio	n	
Motion Detectio	n	
Heat Map		
Wagon Identific	ation	
Object Detectio	n	
Traffic Analytics		
Face Recognitio	n	
Age & Gender D	etection	
LPR		
Smoke & Fire De	etection	
Smoking Detect	ion	
Smart Tracking	System	
Pose Estimation		

- 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





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#### **Deactivate License**

To deactivate the desired license:

	×
This action can lead to data loss. To prevent accidental actions we a you to confirm your intention.	ask
Please type deactivate to proceed or close this modal to cancel	
CONFIRM	

- 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.





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### **Updates**

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

### Overview

To open the Updates item, in the left menu:

	Updates							
Settings     General	Name	Current Version	Available Version	Update	Status			
License	Middleware-Core	23.1.10	23.1.12	€ UPDATE				
→ Updates								

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

### **Use and Functionality**

The Updates item shows the table that includes:

Updates				A
Name	Current Version	Available Version	Update	Status
Middleware-Core	23.1.10	23.1.12	⊖ 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.



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### 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:

	Clients						ጸ
Settings General						⊕ CREATE	CLIENT
	Name	Email	Phone	Country	City	ZIP Code	
Updates	Default						
→ Clients							
Sound							

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

P

- 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:

					CREATE	CLIENT
Name	Email	Phone	Country	City	ZIP Code	
Default						

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





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### **Create Client**

To create a new client:

Create Client			×
Enter client name			
Select			
Enter address		Enter ZIP code	
Enter email		Enter phone number	
	SAV	E	

- 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:

					⊕ CRE	EATE CLIENT
Name	Email	Phone	Country	City	ZIP Code	
Default						
UICC	bdenmeade@cbcamerica.com	6313324648	United States	Mebane	27302	

- 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





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### 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:

		Users					ዶ
Ø	<b>Settings</b> General	Login Enter login	Name Enter name	Role All	SEARCH RESET	💩 LDAP 🕀 C	REATE USER
		Login		Full Name	Role	Access	
_		admin		admin			
-	→ Users						
	Sound						

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

### **Use and Functionality**

The Users functional menu allows to:

Enter login	Enter name	All	SEARCH RESET	💩 LDAP 🕀 C	CREATE USER
Login		Full Name	Role	Access	
admin		admin			

- 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:

- 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
  - o Delete User tool





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#### LDAP

#### To set the LDAP parameters:

Login Enter login	Name Enter name	Role	<u> </u>	SEARCH RESET	oီး LDAP 🕂 C	REATE USER
Login		Full Name		Role	Access	
admin		admin				

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

In the LDAP Settings pop-up window:

LDAP Settings	×
Password at least six characters	
Optional	
SA	WE

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





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#### To import users from LDAP:

Login Enter login	Name Enter name			SEARCH RESET	ം LDAP 🕀 C	REATE USER
Login		Full Name		Role	Access	
admin		admin				

- 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:

Name	l T					
	M LDAP					

- 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





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### **Create User**

To create a new user:

Create User		×
Login		
example@gmail.com		
Full Name		
Full Name		
Password	Password Confirmation	
Password	Confirmation	
	Clients	
Role	Select client	
Language	First Day of Week	
English	Monday	
Date Format		
DD-MM-YYYY	HH:MM:SS	
	Metric Format	
Celsius (°C)	Kilometers (km)	

- 1. Note: Prior to creating a user, it is recommended to create Roles first.
- 2. Click the Create User button
- 3. 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
- 4. Click the Save button to confirm the intention





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### **Edit User**

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

Login test		Name test		Role	<u> </u>	SEARCH	RESET	💩 LDAP 🕀 CF	REATE USER
Lo	gin		Full Name				Role	Access	
Ma	ary permission test		Mary permission test				Mary permission test role		2 û

To view editing user parameters, except for Login editing, read Create User.

### **Delete User**

To remove the required user:

Users 🕑	Delete Confirmation	×		,899+ Lu /
	YES NO			
				1

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





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### Roles

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

### Overview

To open the Roles item, in the left menu:

	Roles	ጸ
Settings		CREATE ROLE
License	Name	
Updates		
Clients		
Users		
→ Roles		
Sound		

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

### **Use and Functionality**

The Roles item shows:

Roles	8
	⊙ CREATE ROLE
Name	

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

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



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### **Create Role**

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

0	CREATE ROLE
Name	
root	
UICC User	

In the Create Role pop-up window:

Create Role			×
Role Name			
Settings			
> 🗌 Users			
> 🗌 UIC & Container			
>  Face Recognition			
> 🗌 LPR			
	SAVE		

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

 $\mathbb{P}^{-}$  Some access rights checkboxes are disabled until the earlier primary access rights are checked.





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### **Edit Role**

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

	CREATE ROLE
Name	
root	
UICC User	

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
  - o 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:

	CREATE ROLE
Name	
root	
UICC User	

### **Delete Role**

To remove the role:

Delete Confirm	nation	×
Do you really want to del	lete the role UICC I	User
YES		

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





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### LPR: User Access Rights

(i) This page includes the LPR user access rights overview.

#### Overview

LPR permissions include:

Create Role ×
Role Name
V 🗹 LPR
View Analytics
View Vehicle Statistics
Manage Analytics
✓ View Search Results
Z Export Search Results
View Vehicle List
✓ Create Vehicle Lists
✓ Edit Vehicle Lists
✓ Delete Vehicle Lists
Add New Vehicle to List
✓ Edit Vehicle List Elements
Delete Vehicle List Elements
Export Events Data
✓ View Events
View Lists Report
View Speed Control Rules
Manage Speed Control Rules
View Speed Control Events
View Speed Control Reports
SAVE

- Primary permissions:
  - View Analytics
  - View Vehicle Statistics
  - o View Search Results
  - View Vehicle Lists
  - View Speed Control Rules
  - o View Speed Control Events
  - o View Speed Control Reports





CORTROL LPR v1.0.1

- Secondary permissions:
  - Manage Analytics
  - o Export Search Results
  - o Create Vehicle Lists
  - Edit Vehicle Lists
  - o Delete Vehicle Lists
  - Add New Vehicle to List
  - o Edit Vehicle List Elements
  - o Delete Vehicle List Elements
  - View Events
  - o View Lists Report
  - o 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.




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#### **View Vehicle Lists**

The View Vehicle Lists permission gives limited access to the Lists item of the LPR section. In the Lists61 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.





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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





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### 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:

	Sound	é	ጸ
💭 UIC & Container	UPR		
ස LPR	✓ Face Recognition		
E Face Recognition			
③ Settings			
General			
License			
Updates			
Clients			
Users			
Roles			
→ Sound			

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

#### **Use and Functionality**

The Sound item allows to:

Sound			( <b>p</b> ° 2
<b>∠</b> IPR	↓ UPLOAD MP3	▶ 0:00 / 0:00	RESET
✓ Face Recognition	↓ UPLOAD MP3	▶ 0:00 / 0:00	RESET

- 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**

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

#### Overview

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





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

#### **Use and Functionality**

The Plugin Marketplace functional menu includes:

Plugin Marketplace		<b>Ф</b> А
Marketplace Installed 10 Extra Settings 🔅		
Enter plugin name Featured	License Plate Recognition 18.46M Last Available 23.1.9 linux-x86_64,windows-x86_64	
Enter plugin name Featured	License Plate Recognition ± 18.46M Last Available 23.1.9 linux-x86_64,windows-x86_64	

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





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**EVA (Extended Video Analytics)** 

CORTROL LPR v1.0.1

- 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:

	Plugin Marketplace			٨
Settings	Marketplace Installed 9	Extra Settings 🛞		
License	Enter plugin name		VMS Connector Version 23.1.2 → 23.1.6	UPDATE 🛞
Updates	Featured	Disable all Update all	Enabled	
Clients	VMS Connector           23.1.2 → 23.1.6			

- 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:





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- 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:

	Plugin Marketplace			٨
Settings	Marketplace Installed 9	Extra Settings 🛞		
	Enter plugin name		VMS Connector	
		Disable all Update all	Version 23.1.2 → 23.1.6 Enabled	
	VMS Connector			
Clients	23.1.2 → 23.1.6			

- 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.





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#### **Overview**

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

	Video Stream	S									🖞 ዶ
💭 UIC & Container	Name Name	Stream Type		SEARCH (	RESET	г				Ŧ	IMPORT
ලි, Face Recognition	I FOLDER	CAMERA 🕀 FILE					Descrip	otion			
© Settings	► B Root			≜ Name		Туре	Codec	Resolution	Host	Port	
General				CORTROL LPR		VMS HTTP	H.264	1920x1080	192.168.2.141	8080	
License Updates			,			VMS HTTP	H.264	1280x720	192.168.2.141		
Clients				😴 ZN1A-V4FN3-1		VMS HTTP	H.264	1920x1080	192.168.2.141	8080	
Users											
Plugin Marketplace											
→ Video Streams											
Servers											
Logs											
Events											
VMS Connector											

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

#### **Use and Functionality**

The Video Streams item shows:

Video Streams									🖞 ዶ
Name	Stream Type	SEARCH	RESET		Descri			Ŧ	. IMPORT
Root		♦ Name ♥ CORTROL LP		Type VMS HTTP	Codec H.264	Resolution 1920x1080	Host 192.168.2.141	Port 8080	

- 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





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- 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:
  - 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:

Create Folder		×
Name		
Root		
	SAVE	

- 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:

⊕ FOLDER ⊕ CAMERA ⊕ FILE	Description						
► B Root	■ Name		Туре	Codec	Resolution	Host	Port
Add Camera Add File Create Folder Edit Folder Delete Folder				This	folder is empty		





CORTROL LPR v1.0.1

- 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

#### To remove a folder:

+ FOLDER + CAMERA + FILE	Description						
▶ ■ Root	∎ Name	∎D	Туре	Codec	Resolution	Host	Port
Add Camera Add File Create Folder Edit Folder Delete Folder				This	folder is empty		

- 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**

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

⊕ FOLDER ⊕ CAMERA ⊕ FILE	← BACK			Add Stream	
▶ ■ Root	GENERAL	GEOLOCATION	PERMISSIONS		SAVE
i- E LPR					

- 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





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### **EVA (Extended Video Analytics)**

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The current tab is always highlighted.

In the General tab fill in the fields:

GENERAL GEOLOCATIO	DN PERMISSIONS				SAVE
			older		
Name			PR		
RTSP		✓ Se	elect	Select	
Host	554				
Path					
Authentication:					
Video Source Address:					
rtsp://					

- 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

The Geolocation tab supplies the ability to:





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GENERAL C	BEOLOCATION	PERMISSIONS				SAVE
Camera Address			Camera Latitude		mera Longit	ude
Camera Address			49.2330829	28.	4682169	
Camera — Direction 0						
G Map Sat	tellite Eastern A High Scho Woodlawr	lamance bol 119 1921 St	Lake	Michael Park	Lebanon Rg	1342 D
ane a		Meba Spinu Spinu S	ne E-Center St Center St	Home Garden General Store	9 The Co files 1303	lorado Burr
1981 Google	Third St Ext	S 5th St Keyboard sho	1301 Petro prtcuts Map data ©2023	D Travel-Center W <sub>Ten Rd</sub> Google   Terms c	B Socce	r.cc it

- Set the camera address, latitude, and longitude by:
  - Clicking and dragging the Camera icon on the Google Map
  - o 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:





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GENERAL	GEOLOCATION	PERMISSIONS		SAVE
Roles				
Add Role				
Select role		→ ⊕ ADD ROLE		
Users				
Add User				
Select user		→ ⊕ ADD USER		
Default (Active)				
Default				
Note				
Only the ac	dministrator can ma	ke changes to permissions w	nile editing the video stream	

- Assign video stream permissions for Roles:
  - o Select the required role from the drop-down list
  - Click the Add Role button
  - Select the checkboxes for the required permissions
  - o 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
  - o 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.

To edit a camera:





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Description											
	Name	∎D	Туре	Codec	Resolution	Host	Port				
⊽	CORTROL LPR		VMS HTTP	H.264	1920x1080	192.168.2.141	8080				
₪	UIC&C		VMS HTTP	H.264	1280x720	192.168.2.141	8080				
D	ZN1A-V4FN3-1		VMS HTTP	H.264	1920x1080	192.168.2.141	8080				
							Create Video View Camero Copy Path Edit Stream Delete Strea	o Analytics a Information m			

- 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:

P

	Description											
	A Name		Туре	Codec	Resolution	Host	Port					
τ	CORTROL LPR		VMS HTTP	H.264	1920x1080	192.168.2.141	8080 🐡					
7	UIC&C		VMS HTTP	H.264	1280x720	192.168.2.141	8080 🐡					
٦	ZN1A-V4FN3-1		VMS HTTP	H.264	1920x1080	192.168.2.141	8080 @					
							Create Video Analytics View Camera Information Copy Path Edit Stream Delete Stream					

- 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:

⊕ FOLDER ⊕ CAMERA ⊕ FILE	← BACK	Add Stream
▶ ■ Root		
	Root V	
	Name	
	Select V Select V	
	Once ~	
	UPLOAD FILE	
	SAVE	

- 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
  - 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:





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DESCRIPTION										
¢	Name	≜ ID	Туре	Codec	Resolution	Host	Port			
000	in_test	48	Folder				<b>o</b> <sup>©</sup>			
	Тест_24_111	1485	file	h264	1280x720		Ø			
						đ	Add Video Analytics View File Information Copy Path Edit File Delete 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:

P

DESCRIPTION										
🔶 Nar	ne	↓ ID	Туре	Codec	Resolution	Host	Port			
g in t	est	48	Folder				a ®			
🗋 Tec	т_24_111	1485	file	h264	1280x720					
							Add Video Analytics View File Information Copy Path Edit File Delete 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

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:





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DESCRIPTION										
🔶 Name	≜ ID	Туре	Codec	Resolution	Host	Port				
⊟ in_test	48	Folder				<b>6</b>				
 🗋 Тест_24_111	1485	file	h264	1280x720		0				
						3 Add Video Analytics View File Information Copy Path Edit File Delete 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 View Camera Information (for video streams) or View File Information (for video files) button to open the information pop-up window

P 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:

DESCRIPTION										
🔶 Name	∳ ID	Туре	Codec	Resolution	Host	Port				
冒 in_test	48	Folder				o ©				
Tect_24_111	1485	file	h264	1280x720		<u></u>				
						Add Video Analytics View File Information Copy Path Edit File Delete 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

In the Add Video Analytics pop-up window:





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- 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:

DESCRIPTION										
ŧ	Name	∳ ID	Туре	Codec	Resolution	Host	Port			
00	in_test	48	Folder				<b>0</b>			
	Тест_24_111	1485	file	h264	1280x720		Ø			
							Add Video Analytics View File Information Copy Path Edit File Delete 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:





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Video Streams 🚱 🧧	Import Camera from ONVIF $ imes$	e (* 19				
			RT			
		DESCRIPTION				
▶ E Root						
-•						
-▶						
-▶冒 lpr-h265						
- на Первый порядок	GET CAMERAS					
-▶						

- 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**

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





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#### Overview

To open the Servers item, in the left menu:

		<sup>3</sup> Servers ©							ም ዶ
j.	Parking Management								
(	P Smart Parking	Name	CPU %	RAM Loaded/Total	GPU %	VRAM Loaded/Total	Activity	Analytics	
(1)	Settings	Server 9991		6.08 / 15.54	0.00%	1.03 / 7.80	832 seconds ago	P	
	→ Servers								

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

#### **Use and Functionality**

The Servers item shows:

Servers 💿							<b>ም</b> ጻ
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		

- 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:





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Servers @	<sup>2</sup> Server	Details			×			) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Analytics D							
	D	Name	Туре	Up Time			Pââ	
	2756	Test_Road	Smart Parking	3m Os				
	2873	Test_15_10	Parking Management	23h 22m 48s				
	Smart Pa	rking	1					
	Parking N	lanagement						

- 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:

Servers ③	Edit Server		×			₩ 4
Name						
Server 9991					P	
	Auto					
	8	SAVE				

- 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.





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#### Overview

To open the Logs item, in the left menu:

		0	<sup>3</sup> Logs ?					ም A
1	Settings			Period 26-05-2022 12:00:00 am - 09-06-2022 11:5	9:59 V (FIND) [1	RESET		
			✓ Login/Logout ✓ Export/Import files and reports	User management	✓ Lists management ✓ Analytics management	✓ Plugin managen ✓ Accept/Reject n	nent otifications	
			Date	User	Category		Action	Description
			09-06-2022 11:39:41 am				Login	
			09-06-2022 11:39:37 am				Logout	
			09-06-2022 11:37:45 am		Analytics management		Starting analytics	
			09-06-2022 11:37:40 am		Analytics management		Adding analytics	ID 3718
			09-06-2022 11:37:04 am		Analytics management		Stopping analytics	
2	• Logs		09-06-2022 11:37:00 am		Analytics management		Stopping analytics	
			09-06-2022 11:36:35 am		Analytics management		Starting analytics	

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

#### **Use and Functionality**

The Logs functional menu allows to:

Logs 🕐				, <mark>889+</mark> ↓↓	ጸ
	Period 26-05-2022 12:00:00 am - 09-06-2022 11:59:59 🗸	FIND			
✓ Login/Logout	✓ User management	✓ Lists management	🖌 Plugin management		
Export/Import files and reports	✓ Other logs	Analytics management	Accept/Reject notifications		

- Enter the username or characters in the name to filter users
- Select the required time frame
- Check the user action category boxes:
  - Login/Logout
  - o User Management
  - o Lists Management
  - o Plugin Management
  - o Export/Import Files and Reports
  - $\circ \quad \text{Other Logs} \quad$
  - o 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:





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U		Period 26-05-2022 12:00:00 am - 09-06-2022 11:55	9:59 Y FIND	ESET		
~	Login/Logout	🖌 User management	Lists management	🖌 Plugin managem	ent	
~	Export/Import files and reports	✓ Other logs	Analytics management	✓ Accept/Reject n	otifications	
	Date	User	Category	IP	Action	Description
	09-06-2022 11:39:41 am				Login	
	09-06-2022 11:39:37 am				Logout	
	09-06-2022 11:37:45 am		Analytics management		Starting analytics	
	09-06-2022 11:37:40 am		Analytics management		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.





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#### **Overview**

To open the Events item, in the left menu:

		<sup>8</sup> Event Lists ?		🖑 A
(1 ©	Settings 🗸 🗸			ADD EVENT
		List Name	Description	
				0/@0
		7567567	6757567	0/@8
				0/@1
		new		
		newEvent		0/@0
		SmokeFireAnalyticEvent		0/@0
		test		0/@8
		test-api-digest-auth		0/08
		test1111		0/@0
		TEST_02_01	1111	0/•1
2	Events			

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

#### **Use and Functionality**

The Events item shows:

Event Lists ?		<b>P</b> A
		ADD EVENT
List Name	Description	
		0/01
7567567	6757567	0⁄∞1

- Event list name
  - List description
- Toolbox includes:
  - Copy Event tool
  - $\circ$  Edit Event tool
  - $\circ \quad \ \ \, \text{View Event tool}$
  - o Delete Event tool

#### Add Event

To add a new event:





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Event Lists 🛛	2	Create Event ? ×	₽ A
			ADD EVENT
List Name			
2			
7567567			
777	777		

- 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:

Event Lists 😧	2	Copy Event ? ×	୍ମ
		2	
List Name			

- 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





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3. Click the Edit button to apply changes

#### **View Event**

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

List Name	Description	
		0/©i
7567567	6757567	

To learn more about events configuration in Event Manager Constructor, read Event Manager.

#### **Delete Event**

To remove the event:

Do you really want to delete event 2?	
List Name Description YES NO	

- 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.





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#### Overview

The main Constructor interface considers:

Constructor - test ?	)				<b>ም</b> ጸ
← BACK TO ALL EVENTS					
			SAVE	Internal Block @	×
Stop				Key	
	$\odot$		L <sup>1</sup> 心	Enter key	Enter value
API		6	0	Expiration Period	
$\odot$				10	
Internal Param					
Condition					
Ö					

- 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:





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

m P 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:



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:





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- 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:

Stop API	
$\odot$	Add Node
Internal Param:	Stop C API
	Internal Params
Condition	C Delay Remove
Delay	

- 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:





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- 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

 $\mathbb{C}$  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",
    "va_id": "2381",
    "stream.status": "online",
    "ms_type": "stats",
    "stream.fileName": "1635777954360GYdAb4CuApqkekYqGdFg2VG43Lz2jDot.jpg",
    "ms_type": "stats",
    "stream.fileName": "1635777954360GYdAb4CuApqkekYqGdFg2VG43Lz2jDot.jpg",
    "ms_type": "stats",
    "stream.fileName": "1635777954360GYdAb4CuApqkekYqGdFg2VG43Lz2jDot.jpg",
    "stream.fileName": "1635777954360GYdAb4CuApqkekYqGdFg2VG43Lz2jDot.jpg",
    "stream.fileName": "1635777954360GYdAb4CuApqkekYqGdFg2VG43Lz2jDot.jpg",
    "stream.fileName": "1635777954360GYdAb4CuApqkekYqGdFg2VG43Lz2jDot.jpg",
    "stream.nodules.2379.notifyEnabled": "true",
    "stream.modules.2379.notifyEnabled": "true",
    "stream.modules.2379.id": "2379",
```





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"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", "encoding": "[-0.030368655920028687,...]", "exp\_time": "1635152739",





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"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",





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"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",





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"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]" ļ

#### 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": "#fffffff",
"list.comment": ""
```





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"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": "1634804597329fmi9fSQ1BeGOdm8px8PS3YuVPoebcUrw.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",





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"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",




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"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": "[[0.0072916666977107525,0.0138888888992369175], [0.6875,0.007407407276332378],[0.5755208134651184,0.6509259343147278], [0.3765625059604645,0.5824074149131775],[0.00729166666977107525,0.9851852059364319]]", "stream.modules.2380.notifyEnabled": "false", "stream.modules.2381.id": "2381" 3

#### **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": "16357768419588lHhFSiPznO601x0qDw5rOPx025a6bcP.jpg", "check\_type": "absent", "type": "2", "client\_id": "0", "stream\_id": "1326", "zone polygon": "[[0.00729166666977107525,0.013786764815449715], [0.5296875238418579, 0.007352941203862429], [0.3921875059604645, 0.9613970518112183],[0.0072916666977107525,0.9779411554336548]]", "stream.modules.2333.enabled": "false", "stream.modules.1479.enabled": "false",





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"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** 





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{
"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": "1635778935451d0KAPlDbMhlxTQUcR8wB8ltyBBQMhb77.jpg",
1	stream.params.login": "",
	stream.location.latitude": "49.233083",
	box": "[134,100,220,337]",
	client_id": "0",
ł	Analytics System User Manual - User Manual
S	Settings - 106
1	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",
1	stream.modules.2383.type": "fallen_people",
	stream.uuid": "487199c4-3dac-40bc-9dea-82723568a159",
1	stream.id": "1465",
	'stream.type": "rtsp",
	stream.clientId": "0",
	stream.modules.2383.notifyEnabled": "true",
1	thumbnail_image": "fallen_people/2383/2021/11/1/17/1635779096852_thumbnail.jpg",
1	stream.resolution.width": "640",
	stream.modules.2383.events": "[{\"id\":\"7800c045-0a8d-4545-9ef1-1b0a3f0de6c4\", \"params\":{}}]",
	stream.resolution.height": "480",
	stream.params.password": "",
1	stream.name": "fall",
	stream.params.file_fast_speed": "0",
1	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"
٦	

#### **Event Data: Smart Tracking System**





{

# **EVA (Extended Video Analytics)**

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"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": "".





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"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": "16357768419588lHhFSiPznO601x0qDw5rOPxO25a6bcP.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/ 2021/11/1/16/1635777522.jpg\",\"crop\_images\":[\"traffic\_alerts/2377/car/ 2021/11/1/16/1635777522\_crop\_0\_jpg\"]}}",





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"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" }





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### **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:
    - o Seconds
    - o Minutes
    - $\circ$  Hours
    - o Days





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### **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:

Constructor - test ?		<del>ም</del> ጸ
← BACK TO ALL EVENTS		
SAVE	Condition Block	×
Stop		
	Var   = Val   String      • ADD CONDITION	
	To enter variables from analytics, start with a na Example: va_id = 100	ime
	Name of internal variables should start with # Example: #test_var = 10	
Condition		

- 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
  - o 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:







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### **API Block**

 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:







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

	General Settings ?		ም A
Settings	API Token Google Maps API Key Branding Storage		
<sup>2</sup> → General		4 How to use?	
License			
Clients			

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





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### **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:

Constructor - test 3			<del>گ</del> ک
← BACK TO ALL EVENTS			
	SAVE	Telegram Block @	×
Stop			
Internal Param:			
			2

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

#### **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





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#### 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).





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#### 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





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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**

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:

License Plate Recognition Analytics 🕢						<b>ም</b> ዶ				
1) دی LPR ب 2 Analytics		Carnera Enter camera name or ID		Status Al VELECT ANALYTICS © CREATE				TICS    CREATE ANALYTICS		
			Camera						Status	
Lists Mobieto Statistico			▶ 물 Mary Folde							
				ua-b264 📑 🔀 🕅 🗰 8264	NVDEC 25 FPS					

- 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
  - o Video stream ID





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- 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:

Enter camera name or ID				ET	SELECT ANALYT	ICS
ID	Camera			Status		
	▶ 뮬 Mary Folder					
		1264 🗗 GPU ( H.264 - NVDEC	25 FPS		• Active (46s / 2)	
		2 🔂 GPU H.265 - NVDEC	25 FPS			⊖ 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
  - o Edit
  - o Search Results
  - o View
  - o 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:

License Plate Recognition Analytics 😗 🥐 🦻								
Camera Enter camera name or ID				RESET		✓ SELECT #		
ID	Camera					Status		

The Create License Plate Recognition 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 title and serial number of the current tab
- Click the Back or Next button to move among tabs:
  - o General
  - o Hardware
  - o Notifications
  - o 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





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- 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





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- 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:

2 of 4 Hardware	BACK	IEXT
● CPU ○ GPU		
CPU V		
FPS @      Key Frame      Once Every X Seconds		

- Choose the CPU or GPU hardware acceleration
- Select the hardware decoder from the drop-down list:
  - o CPU
  - o Intel
  - o NVDEC
- Select the frame processing mode:
  - $\circ$  ~ FPS to set the desired number of frames per second
  - $\circ$   $\;$  Key Frame to set the frame processing only by keyframes
  - o 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 page 11.

#### **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:

3 of 4 Notifications	BACK NEXT
Send events to Event Manager	

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:





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of 4 Permissions				BACK	SAVE
Roles					
Test Role 63	2	2		Ũ.	
Select role	→ → ADD ROLE				
Jsers					
test_user			2	2	
Select user	→ ⊕ ADD USER				
Default					

- Assign analytics access rights for Roles:
  - o Select the required role from the drop-down list
  - o 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:
  - o Select the required user from the drop-down list
  - o 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:

Enter camera name or ID				RESET	✓ SELECT ANALYT	rics 💿 Cre	ATE ANALYTICS
	Camera				Status		
	▶ 믈 Mary Folder						
		h264 🗗 GPU (H.264 - NVDEC)	25 FPS		Active (1m 53s / 1)		





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The Edit License Plate Recognition Analytics navigation menu allows to:

Edit Licer	nse Plate F	Recognition /	Analytics ?		۲	ያ ጻ
← BACK TO AL	L ANALYTICS					
GENERAL		NOTIFICATIONS	ADVANCED SETTINGS	PERMISSIONS	IVE VIEW STOP	VE

- 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:
  - o 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 Analytics199.

#### **Advanced Settings Tab**

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

GENERAL	HARDWARE	NOTIFICATION	ADVANCED SETTINGS	PERMISSIONS	⊙ start (	SAVE
Servers						

#### **Analytics Status**

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





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License Pla	ate Recognition Analytics 🛛	Attention	×	ڻ <b>ٿ</b> ۾
		YES NO		
	▶			E
	Ct demo-lpr-ua-h264 🖬 GPU) H.264 - NVDEC	25 FPS		
	🖙 copy-control-2 🗗 GPU (H.265-NVDEC) 2	5 FPS		

- 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:

License Plate Reco	gnition Analytics 🕑		<mark>ሮ</mark> ዶ
Camera Enter camera name or ID	Status All v RESET		SELECT ANALYTICS © CREATE ANALYTICS
ID Camera		Status	

#### The Select Analytics functional menu allows to:

Enter camera name o	я ID		→ (RESET)			
	Camera				Status	
	▶ 믈 Mary Folder					Partially Selected
		h264 🗗 GPU H.264 - NVDEC	5 FPS		Active (4m 13s / 2)	Selected
26		2 🗗 GPU (H.265 - NVDEC ) 25 F	PS			Not Selected

- 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:

Camera Status Enter camera name or ID All		Status All		RESET	✓ SELECT ANALYT	ICS   CREATE ANALYTICS
	Camera				Status	
	Mary Folder					
29	Ca demo-lpr-ua-l	h264 🗗 GPU ( H.264 - NVDEC	25 FPS		Active (4m 46s / 5)	STOP 0 🗄 💿

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





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#### 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:

Camera Enter camera name or ID		Status All	~	RESET	SELECT ANALY	ncs 💿 create	EANALYTICS
ID	Camera				Status		
1	▶ 믈 Mary Folder						
29		-h264 🕤 GPU H.264 - NVDEC	25 FPS			C START	

#### **Delete Analytics**

#### To remove the analytics:

License Pla	ate Recognition Analytics 🕢 🗍	Delete Confirmation ×		<b>ث</b> ۹
		YES NO		
	C4 demo-lpr-ua-h264 n GPU H.264 - NVDEC	25 FPS		💭 START 🖉 🗄 🛅

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

### **LPR: Search**

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:

<b>ም</b> ጸ					arch ?	( <mark>3</mark> )	
🛓 EXPORT REPORT 🗰	Direction ✓ Select ✓	Country	SELECT BY RAU Make Mode Select V Select	SEARCH RESI Camera Color Select V Select V	nse Plate Number plate number @ Frame t		1) EPR Analytics (2) Search Lists
7		Date	Attributes @	Make/Model	umber List		

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

#### **Use and Functionality**

The Search functional menu allows to:





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Search ?								<b>P</b> A
License Plate Number Enter plate number	0	SEARCH	RESET		SELECT BY RADIUS			
Time Frame Select	~	Camera Select ∽	Color Select ✓	Make Select	Model	Country Select ✓	Direction Select V	🛓 EXPORT REPORT

- 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:
  - $\circ$  Enter the radius in kilometers
  - o 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:
  - $\circ$  ~ Check the boxes next to the required video analytics and folders
  - o Click the Select Video Analytics button
- Select from the drop-down lists the estimated vehicle's:
  - Color
    - o Make
    - o Model

0

- Country of registration
- o 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
  - o 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:

License Plate Number							
Enter plate number		SEARCH RESET	SELECT BY RADIUS				
Time Frame							
Select		demo-adr V Select V	Select V Select	Select	Select V		↓ EXPORT REPORT
Number		Make/Model	Attributes 🕜	Date	Camera		
O 27A231	Add to List		= 🔵 🗧 🖚	09-12-2022 18:08:21		OLKOP	9000
Q Y732CI15	Add to List		= • >>> 🖚 <u>30</u> 1993	09-12-2022 18:08:15			
О м627вм93	Add to List	MERCEDES-BENZ UNIMOG	■ ● <<< ■ <sup>30</sup> 1202	09-12-2022 18:08:07			
,О cgd70кx	Add to List	LAND-ROVER DEFENDER	= - >>> = 30 1202	09-12-2022 18:08:03	es 🛇 demo-adr		
Ø WND29667	Add to List		= - >>> =	09-12-2022 18:08:03		demo-adr	09-12-2022 18:08:03
Q AS46511	Add to List		# 🕘 >>> 🛤 <mark>80</mark> 3264	09-12-2022 18:07:59		WND 29667	R WND29667
O 4921	Add to List	MERCEDES-BENZ UNIMOG	= • »	09-12-2022 18:07:49		SCANIA	



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- 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:
  - $\circ$  Country of registration
  - Color of the vehicle
  - Direction of movement
  - $\circ$  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 popup 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

P

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:

		Lists ?					<i>ም</i> ጾ
Analytics Search	LISTS EVENTS REPORT List Name Enter list name RESET	SEARCH BY NUMBER				⊕ CREATE LIST	
2_,	Lists Vehicle Statistics	Name	Vehicles Quantity	Total Cameras		Date	
		test5			•		

- 1. Select the LPR section
- 2. Choose the Lists item
- 3. See lists navigational menu





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#### **Use and Functionality**

The Lists navigational menu consists of 3 tabs:

Lists ?	ም A
LISTS EVENTS REPORT	
List Name Enter list name RESET SEARCH BY NUMBER	◎ OFF THE LIST ④ CREATE LIST
<ul> <li>Lists</li> <li>Events</li> <li>Report</li> </ul>	

- 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

0

Select the Lists tab in the tabs menu:

Lists ?	ም A
LISTS EVENTS REPORT	
List Name Enter list name RESET SEARCH BY NUMBER	OFF THE LIST      O CREATE LIST

#### **Use and Functionality**

The Lists tab functional menu allows to:

LISTS EVENTS REPORT						
List Name Enter list name RESET	SEARCH BY NUMBER			© OFF	THE LIST 🛞 CRE	ATE LIST
Name	Vehicles Quantity	Total Cameras	Color	Date		



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- 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:

List Name Enter list name RESET	SEARCH BY NUMBER				OFF THE LIST	• CREATE LIST
Name	Vehicles Quantity	Total Cameras		Date		
test5						
test3				16-01-2023 09:33:58		
test2			•			

- 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
    - o 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:

Lists 🔋					<del>ም</del> ዶ
LISTS EVENTS REPORT List Name Enter list name RESET	SEARCH BY NUMBER			© OFF	THE LIST © CREATE LIST
Name	Vehicles Quantity	Total Cameras	Color	Date	

In the Off List Notification Settings pop-up window:

- Click the Camera parameter to choose the desired video analytics. In the pop-up window:
  - o Check the boxes next to the required video analytics and folders
  - o 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





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#### **Create List**

To create a new list, click the Create List button:

Lists ?					
LISTS EVENTS REPORT					
Enter list name RESET	SEARCH BY NUMBER			@ C	• CREATE LIST
Name	Vehicles Quantity	Total Cameras	Color	Date	

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
    - o 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
    - 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:





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Lists 😧	Create List	A	
	General Settings Notifications Permissions	List USA Test Number KH7652 Comment 17.04.0003 10/37/d6	
	Send events to Event Manager		List new Number KH7652 Comment Date and Time 17-04-2023 10:37:26
			List new
			Comment Date and Time 17-04-2023 10:36:43
test 555	50	0	Show more (8858)

- 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:





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sts 🛛	Create List					×		🖞 ዶ
			Permissions					
	Roles Role Name							
	Mari Role	<b>N</b>	×		✓			
	Select role Users User Name	View Vehicle List	Add New Vehicle to List	Edit Vehicle List Elements	Delete Vehicle List Elements			
	Mary 3	2						
	Add User Select user		→ ⊕ ADI	DUSER				
	Default	V	V	ĺ	~	V		
	Only the adminis	strator can m	ake changes to	permissions wh	ile editing the	list		

- 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. P
  - The sequence of access rights validation in the list by the system:
    - Global permissions
    - User permissions 0
    - **Role permissions** 0
    - Default permissions 0

#### **Edit List**

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

List Name Enter list name RESET	SEARCH BY NUMBER			CREATE LIST
Name	Vehicles Quantity	Total Cameras		
test5				

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.





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#### **Delete List**

#### To delete the list:

Lists 😧	Delete Confirmation	×				
	YES					
test5	20	0/	13-01-2023 16:37:29		• / 1	

- 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:

List Name Enter list name RESET	SEARCH BY NUMBER				Ø OFF THE LIST	• CREATE LIST
Name	Vehicles Quantity	Total Cameras		Date		
test5			•			

#### The List View functional menu comprises:

	List View 🕜								ም ጸ
	LISTS EVENTS								
	Name: a	added from se							
	Vehicles Quantity: 5			Send					
2	Number								
	Enter license plate number		RESET					ADD LICENS	SE PLATE
	Name	Mes	sage			Author	Created		

- 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





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See the list of license plate numbers in the table below. It contains:

Number Enter license plate number	RESET		ADD LICENS	E PLATE
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:

Number Enter license plate number	RESET		ADD LICENS	E PLATE
Name	Message	Author	Created	
9208YX46	htgfdc	admin	22-08-2022 18:39:08	
C4721SH		admin	22-08-2022 18:44:33	• / 1

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:

List View 🕑		Delete Confirmation	×				e 8
	n se Total Cameras: A Notifications: S	YES NO					
							0



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- 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:

Number Enter license plate number	RESET			E PLATE
Name	Message	Author	Created	
9208YX46	htgfdc	admin	22-08-2022 18:39:08	
C4721SH		admin	22-08-2022 18:44:33	

The Card Info Box holds:

Card 🕜			<b>ም</b> ጸ
	USA Test	IHQ1684	
	admin	HYUNDAI ACCENT	
	10-02-2023 14:37:27	13-02-2023 09:19:36	

- 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

The vehicle's Events Log in the table below allows users to:





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Events Log - IHQ16	84				
Object	Number	Make/Model	Camera	Date	Frame
	IHQ1684	HYUNDAI ACCENT	© demo-lpr-usa ∞£ Route		
	IHQ1684	HYUNDAI ACCENT	© demo-lpr-usa ₀g Route	13-02-2023 09:18:48	
		HYUNDALACCENT	ଡ଼ି demo-tpr-usa ଝ 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:

Lists 🥐						🖑 ጽ
LISTS EVENTS REPORT						
List Name Enter list name	T SEARCH BY NUMBER				OFF THE LIST	T 🐵 CREATE LIST
Name	Vehicles Quantity	Total Cameras	Color	Date		

The Search by Number functional menu allows to:

Search by Number 😯							
License Plate Number	SEARCH						
Name	List	Message	Author	Created			

- Enter the license plate number to filter vehicle cards
- Click the Search button to start filtering
- Click the Reset button to clear the filters

View the search results in the table below:





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License Plate Number					
A ×	SEARCH RESET				
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
      - o Delete Card
      - View Card

### Lists: Events

O 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:

Lists	9					<b>#</b> A
LISTS	EVENTS	REPORT				
License P						
Enter plate	number	Select	Select	Select	RESET	Auto Update 💽

#### **Use and Functionality**

The Events tab functional menu allows to:

LISTS EVENTS	REPORT				
Enter plate number	Select	Select	Select	RESET	Auto Update 💽

- 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
- Click the Reset button to clear the filters




## EVA (Extended Video Analytics) CORTROL LPR v1.0.1

• Select the Auto Update toggle to enable or disable the events auto update

Once selected and filtered, in the event notifications:

Enter plate numbe		Select	<u></u>	Select		RESET	Aut	o Update 🔵
Number	Comment	List	Camera	Object	Make/Model	Country	Date	Frame
AA8001KX		new	© demo-lpr-ua ୁଟ୍ର Route	AA SOB1KX	TOYOTA HIGHLANDER	-	03-04-2023 14:58:21	
RJA84337		new	ଡ଼ demo-lpr-ua ₂ടී Route	RJA 84337	VOLKSWAGEN SHARAN	-	03-04-2023 14:58:17	
61171BI		new	ଡ଼ demo-lpr-ua ଽଁ୍ଟ Route	611-71BI	VAZ 2107		03-04-2023 14:58:16	
AB2805CM		new	ଡ଼ demo-lpr-ua <sub>ହୁ</sub> ଣ୍ଟ Route	AE 2805 CM	RENAULT MEGANE	-	03-04-2023 14:58:11	

- 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:
  - $\circ\quad$  Write a comment to the license plate number in the Notes field
  - $\circ \quad \ \ \text{Select a required list}$
  - $\circ$  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:

Lists ?		ŧ	<b>?</b> ጸ
LISTS EVENTS REPORT			
2023-03-31 00:00:00 - 2023-04-07 23:59:59 ~	Select	V FILTER RESET	

### **Use and Functionality**

The Report tab functional menu includes:





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LISTS EVENTS REPORT		
Time Frame 2023-03-31 00:00:00 - 2023-04-07 23:59:59 ~	Camera Select V FILTER RESET	
Camera Days Weeks	Months	

- 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

 $egin{array}{c} & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\$ 

### **Camera Tab**

The Camera tab shows:



- 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





- CORTROL LPR v1.0.1
- 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:





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Camera	Days	Weeks	Months				
10							
8							
6							
4							
2							
0							
	21.2.2022 -	27.2.2022		28.3.2022 - 3.4.20	022	🗖 Fo	und 72.7% 📕 Unique 27.3%
Date			Added to Lis	it	Vehicle Found		Unique Found
28.3.2022 - 3.4.2022							
21.2.2022 - 27.2.2022							
Total:			3		8		3

- 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**

(i) This page describes the Vehicle Statistics item that allows viewing statistics from the selected video stream.





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### **Overview**

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

		<sup>3</sup> Vehicle Statistic	s ?		¢* ,
<mark>1</mark>	LPR Analytics	Time Frame 2023-03-30 00:00:00 - 2023-0	04-06 23:59:59	Camera Select V	PILTER RESET
		Camera H	lours Days	Weeks	
2	Vehicle Statistics Speed Control				

- 1. Select LPR section
- 2. Choose Vehicle Statistics item
- 3. See statistics

### **Use and Functionality**

The Vehicle Statistics functional menu includes:

Vehicle Statistics ?	ሮ ጸ
Time Frame         Camera           2023-03-30 00:00:00 - 2023-04-06 23:59:59         Select         FILTER         RESET	
Camera Hours Days Weeks	

- 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

P

The Camera tab shows:





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Camera	Hours	Days	Weeks					
	0	5,000	10,000	15,000	20,000	25,00		
LPR-ua								
lpr-fr-h265								
lpr-ua-h265								
lpr-usa							LPR-ua 95.5%	pr-fr-h265 2.5%
lpr-ua-2-h265							 lpr-ua-h265 1.0%	lpr-usa 0.8%
							lpr-ua-2-h265 0.2%	
Camera		Vehicle Nur	nber		Model	Model + Numbe	r	Traffic
LPR-ua		24594			18640	18640		24594
lpr-fr-h265		651			406	406		651
lpr-ua-h265		261			218	218		261
lpr-usa		207						207
lpr-ua-2-h265								
Total:		25763			19288	19288		25763

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**

P

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





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Hover the mouse over the colored squares to see the found vehicle quantity for the required time interval.

### **Days Tab**

P

The Days tab shows:



- 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:





P

## **EVA (Extended Video Analytics)**

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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**

O 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.





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### Overview

To open the Speed Control item, in the left menu:

	3	Speed Contr	ol 🕐				የ ዶ
Analytics		RULES EVENT					CREATE RULE
Search Name Lists Rule 1		Name	Camera 1		Distance	Limit	
		Rule 1					
Vehicle Statistics		Test mikhail rule some test text → cam	<sup>®</sup> 416be958-a6de-4549-8731-04	4e7aaf58-2252-4afc-9047-5e1			

- 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 🕜						
RULES EVENTS REPORT					CREATE RULE	
Name Camera 1		Camera 2	Distance	Limit		

- 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**

P

Select the Rules tab in the tab's menu:





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Speed Control ?							
Į	RULES	S REPORT				CREATE RULE	
	Name	Camera 1	Camera 2	Distance	Limit		

### **Use and Functionality**

See the list of rules in the table. It holds:

Name	Camera 1	Camera 2	Distance	Limit	
rule test	⊘ Motorbike	O London traffic	6 km	65 km/h	
rule test	S London traffic	Ø 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:
  - $\circ$  ~ View Events icon to see all events related to the selected rule
  - Edit icon to change the selected rule settings
  - o Delete icon to remove the selected rule

### **Create Rule**

#### To create a new rule:

Speed Contr	ol 🚱 🗍	Create Rule		×		🖞 ዶ
RULES EVENT		2 General Settings Notifications				
Name						
Rule 1						
Test mikhail rule some test text → cam						
212						
Mary Rule		Enter distance between cameras				
Mary Rule 2						
Test		Enter speed limit				
		Create the same rule in reverse dir	rection			
		SA	VE			

- 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



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- 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:

Speed Control 3	📌 ጸ
RULES EVENTS REPORT	
Time Frame         Rules           2023-03-08 00:00:00 - 20         Select         V         REPORT         RESET	

### **Use and Functionality**

The Events tab functional menu allows to:

RULES	EVENTS	REPO	RT				
			Rules		RESET		
Number	Make		Date	cc @	Rule	Speed	

- 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

Once selected and filtered, in the event notifications:





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				RESET			
Number	Make	Date	cc @	Rule	Speed		B
AB3070CM	RENAULT SANDERO STEPWAY	13-05-2022 15:15:21	UA		5.0 km/h	1	
AB6292HI		13-05-2022 15:14:46	UA		5.0 km/h		Sand State
AB1439EK	PEUGEOT 3008	13-05-2022 15:14:12	UA 🔵		5.0 km/h		
AB9003AM		13-05-2022 15:13:36	UA		5.0 km/h	- F	
BX7663CX		13-05-2022 15:13:03	UA		5.0 km/h		A
AB1545EH	AUDI A4	13-05-2022 15:13:01	UA 🌑		5.0 km/h	Camera: Smart Parking input	13-05-2022 15:09:36
AB8151EC	MITSUBISHI PAJERO SPORT	13-05-2022 15:12:26	UA 🔵		5.0 km/h		×
AB7773AA	BMW 5 SERIES	13-05-2022 15:12:25	UA 🌑		5.0 km/h		
KA8510BC	CHEVROLET LACETTI	13-05-2022 15:11:52	UA 🔵		5.0 km/h		-
AB7049AC	FORD ECONOLINE	13-05-2022 15:11:19	UA 🔵		5.0 km/h	Cause -	-
AB8059BE	SSANGYONG KORANDO	13-05-2022 15:11:16	UA 🔵		5.0 km/h		
AB1747HI	FORD ECOSPORT	13-05-2022 15:11:14	UA 🔵		5.0 km/h	Camera: Smart Parking output	13-05-2022 15:15:21
AM1514EB	HYUNDAI 130	13-05-2022 15:11:12	UA 🌑		5.0 km/h		

- 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:

Speed Control ?			¢	ጻ
	PORT			
2023		Select	REPORT	

### **Use and Functionality**

The Report tab functional menu includes:





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1	RULES EVENTS	REPORT			
	Year 2022	Week 53	Rules Select	~ REPORT RESET	
	2 Time Interval Report				Bxport CSV

- 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:

Time Interval F	Time Interval Report General Report 🔂 Export CSV																																
00	0:00 00:15 00:30	00:45 01	:00 (	01:15	01:30	01:4	5 02:0	30 O	2:15	02:30	02:4	5 03	:00 0	)3:15	03:30	03:4	5 04	:00 0	)4:15	04:30	04:/	15 05	:00 (	)5:15	05:30	05:4	15 06	:00 (	06:15	06:30	06:4	R.	
Mon								L																									
Tue					Thu	01:4	5																				L						
Wed			T									I	T				T					T				Γ	Τ						
Thu			Т			K		Т				Г	Ι				Т				Γ	Τ	Ι			Γ	Т						
Fri			T					T				T	T				T				Γ	Т					Т	Т					
Sat			T					T				T	T				T				Г	T				Г	T						
Sun			T				Γ	T				T	T				T	T			Г	Т	Ĩ				T						
-																																	
										-	1785																						
Period		00:00	00:15	00:3(	00:45	01:00			01:45				02:45	03:00		03:3(	03:45	04:00	04:15	04:3(	04:45	02:00	05:15		05:45	06:00	06:15	06:3(	06:45	00:20			
Mon	#Cars Avg Speed (km/h)																																
	#Cars																																
Tue	Avg Speed (km/h)																																
Wed	#Cars Avg Speed (km/h)																																
Thu	#Cars																																
	rag opood (anth)									37				36		36											36	35					36,8
	#Cars Avg Speed (km/h)									37																							
Sat	#Cars																																
	Avg Speed (km/h)																																
Sun	#Cars Avg Speed (km/h)																																

- 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





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### **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:
  - $\circ$  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





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### **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.

<b>8</b> 9 9		
File Home In	sert Modeling View Help	
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	Data	Queries
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Press on "Obtain data" and choose "Empty request".

In	sert	Modeling View Help
iter	Get data v	Excel Power BI SQL Enter Recent data sources V
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		Excel
		Power BI datasets
		Power BI dataflows
		SQL Server
	[à	Analysis Services
	[ħ	Text/CSV
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		OData feed
		Blank query
	R	Power BI Template Apps 🖾
		More

In the opened window press "Advanced Editor".

<mark>ыі</mark>   <mark>д</mark> ∓   Untitled Файл Home	- Power Query Editor ransform Add Column	View Tools	Help								× ^ ?
Close & New Re Source + Sou Close New	cent Enter rces • Data Queny Data Sources	Manage Parameters - Pre	efresh eview - Query	Choose Remove Columns + Columns + Manage Columns	Keep Remove Rows + Rows + Reduce Rows Sort	Split Column + By	Data Type: Any * Use First Row as Headers * $\frac{1}{2}$ Replace Values Transform	Append Combin Com	Queries ~ d Queries ~ ne Files bine	Text Analytics Text Analytics Vision A zure Machine Learning Al Insights	2
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d Advanced Editor	- 0	×
Query1	Display Options *	0
1 let 2 Source = "" 3 in 4 Source		
✓ No syntax errors have been detected.		
	Done Canc	el

#### Enter the request:

let	
	Source = Mab Contants()
	neaders+[
	#"Method"="POSI",
	<pre>#"Content-Type"="application/json",</pre>
	#"Authorization"="Bearer addition of the formation of the second
	1.
	Content=Text.ToBinary("(
	"Tquery": ""query (
	traffic(start: \""24-85-2020 80:00\0", end: \""24-86-2020 80:00:80\"", vaId: 0) (
	date\n
	counting
	Fundable
	A production of the second sec
	224
	1
	#"JSON" = Json.Document(Source),
	data = JSON[data],
	traffic = data[traffic],
	<pre>#"Converted to Table" = Table.FromList(traffic, Splitter.SplitByNothing(), null, null, ExtraValues.Error),</pre>
	#"Expanded Column1" = Table.ExpandRecordColumn(#"Converted to Table", "Column1", ("date", "count", "type"), ("date", "count", "type")),
	<pre>#"Calculated Absolute Value" = Table.TransformColumns(#"Expanded Column1".({"count", Number.Abs. type number})).</pre>
	#"Reordered Columns" = Table.ReorderColumns(#"Calculated Absolute Value", ("date", "type", "count")).
	#"Grouped Bows" = Table.Group(#"Reordered Columns", ("date", "type"), (("Count", each List Sum((count)), type number))).
	#"Changed Type" = Table TransformColumnTypes(#"Grouped Rous" (("date", type date(ime)))
in:	
A11.	#Phonese Treat
	+ chonges type

For the creation of request the Web.Contents function is used ()

Source = Web.Contents("	
[	۰,





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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.



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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	General settings
Traffic	Coorde Mans ADI Key
🔤 Vehicle number	
📄 Gate	^
Sace recognition	Save
Aard hats	C Determine your location 😨
Motion detection	Google
🔶 Heatmaps	При загрузке Google Карт на этой странице
🔶 Gender/Age	возникла проблема.
Queue detection	<ul> <li>У For development pur</li> <li>Bы владелец этого сайта?</li> <li>OK</li> <li>For development purposes of</li> </ul>
Person Re-Identifica	n la
Smoking	~ Wapenveld Noord
🔶 Smoke Fire	~ Summary
Object detection	<ul> <li>Картографические данные условия использования</li> </ul>
M Crowd Detection	A.
Search	API Token
🗟 Users	
💿 Settings	

""query":""query {
<pre>traffic(start: \""24-05-2020 00:00\0\"", end: \""24-06-2020 00:00\0\"", vaId: 0) {     date\n     count\n     type\n}\n }\n""</pre>
}")

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

......

}\\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 $"""$
vaId	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 vaId registers in the format ": <id (stream)="" analytics="" of="">".</id>
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="" stream="" the="">".</id>
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="">".</boolean>
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="">"</number>
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 missed="" number="" of="" records="" the="">".</the>

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 }
anum Candar (
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 }
tma DiatoCtat (
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 }





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type Person { alerted: Boolean streamId: Int date: Date age: String gender: Gender faceImage: String frameImage: String box: String }
type PersonNotification {
name: Sumg
gender: Int
distance: Float
date: Date
status: Int
box: String
streamId: Int
detected: String
detected Frame: String
detectedObject: String
}
<pre>#"JSON" = Json.Document(Source),</pre>
data = JSON[data],
traffic = data[traffic],
<pre># converted to Table = Table.FromList(traffic, Splitter.SplitbyNothing(), Hull, Hull, Extravalues.Error), #"Expanded Column1" = Table.ExpandRecordColumn(#"Converted to Table", "Column1", {"date", "count", "type"}, {"date", "count", "type"}).</pre>
<pre>#"Calculated Absolute Value" = Table.TransformColumns(#"Expanded Column1", {{"count", Number.Abs, type number}}),</pre>
<pre>#"Reordered Columns" = Table.ReorderColumns(#"Calculated Absolute Value",{"date", "type", "count"}),</pre>
<pre>#"urouped kows" = lable.uroup(#"keordered columns", {"date", "type"}, {{"Count", each List.Sum([count]), type number}}), #"Changed Type" = Table.TransformColumnTypes(#"Grouped Rows".{{"date", type datetime}})</pre>
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.

Файл Home Transform	n	Add Column	View To-	ols Help										~
Close & New Recent El Source - Sources - D Close New Query	nter Data	Data source settings Data Sources	Manage Parameters • Parameters	Refresh Preview • Query	Choose Remove Columns - Columns - Manage Columns	Keep Remove Rows * Rows * Reduce Rows	Ź↓ Z↓ Sort	Split Column	Group By	Data Type: Date/Time ▼	Appender Combin Combin	Queries + d Queries + ne Files bine	Text Analytics Vision Azure Machine Learning Al Insights	9
Queries [3] <	X	$\sqrt{f_X}$	= Table.Tr	ransformColumnTypes(#"Chang	ged Type",{{"count"	, Int64.Type}})					~	Query Se	ettings	$\times$
1. Traffic count by date an		🖳 date		1 <sup>2</sup> 3 count	sc 23 type	•						* PROPE	RTIES	
A Traffic count by type for	1	23.0	6.2020 06:00:00	17 ;	leople							Name		
Traffic statistics	2	23.0	6 2020 06:00:00	16 ;	eople							Traffic	statistics	
	3	23.0	5 2020 07:00:00	3 ;	eople							All Prop	perties	
	4	23.0	6.2020 07:00:00	1;	eople								D CTEDE	
	5	23.0	6.2020 08:00:00	; 11	eople							APPLIE	USIEPS	
	6	23.0	6 2020 08:00:00	10 ;	eople							So	urce	*
	7	28.0	6.2020 09:00:00	11 ;	eople							JSC	DN .	*
	8	23.0	5 2020 09:00:00	10 ;	eople							dat	3	
	9	23.0	6.2020 12:00:00	10 ;	eople							tra	mc	
	10	23.0	6 2020 12:00:00	14 ;	eople							CO.	nverted to Table	8
	11	23.0	6 2020 14:00:00	1;	eople							Eq.	anged Tupe	25
	12	23.0	6 2020 14:00:00	1;	eople							X Ch	anged Type1	
	13	25.0	6.2020 15:00:00	2 ;	eople							reen	angeo aper	
	14	23.0	6.2020 15:00:00	1 1	eople									
	15	23.0	6 2020 16:00:00	40 ;	eople									
	16	23.0	6 2020 16 00 00	27 ;	eople									
	17	23.0	6.2020 21:00:00	3 0	eople									

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.

PROPERTIES	
Name	
Traffic statistics	
All Properties	
Source	2
JSON	4
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
data	
data traffic	
data traffic Converted to Table	*
data traffic Converted to Table Expanded Column1	*
data traffic Converted to Table Expanded Column1 Changed Type	* *





## EVA (Extended Video Analytics) CORTROL LPR v1.0.1

To keep the obtained data, press "Close and Apply" in the toolbar:

Файл	Home Trar	nsform	Add Column	View To	ols Help									~ (
Close & Apply	New Recen Source + Source	nt Enter es • Data	Data source settings	Manage Parameters •	Refresh Preview • I Manage •	Choose Remove Columns + Columns +	Keep Remove Rows • Rows •		Split Grou	Data Type: Date/Time • Use First Row as Headers • p the Replace Values	Merge	Queries 🔻 d Queries 👻 ne Files	Text Analytics	ning
ciose	New Qu	Jery	Data Sources	Parameters	Query	Manage Columns	Reduce Rows	2011		Hansion	Con	ibine	Arinsignis	
Querie	es [3]	< 2	$\times \checkmark f_x$	= Table.T	ransformColumnTypes(#"Char	nged Type",{{"count",	<pre>Int64.Type}})</pre>				~	Query Se	ettings	×
/ Tra	ffic count by date	an	🗸 🔤 date	-	1 <sup>2</sup> 3 count	ABC 123 type						▲ PROPE	RTIES	
/ Tra	ffic count by type	for	23.0	06.2020 06:00:00	17	people	-					Name		
Tra	ffic statistics	1	23.0	06.2020 06:00:00	16	people						Traffic	statistics	
			23.0	06.2020 07:00:00	3	people						All Pro	perties	
		4	23.0	06.2020 07:00:00	1	people							Marco Marco	
			23.0	06.2020 08:00:00	11	people						APPLIE	ED STEPS	
		6	23.0	06.2020 08:00:00	10	people						So	urce	*
		7	23.0	06.2020 09:00:00	11	people						JSC	DN	*
		8	23.0	06.2020 09:00:00	10	people						da	ta	
		9	23.0	06.2020 12:00:00	10	people						tra	ffic	
		1	0 23.0	06.2020 12:00:00	14	people						Co	inverted to Table	*
		1	1 23.0	06.2020 14:00:00	1	people						Exp	panded Column1	*
		1	2 23.0	06.2020 14:00:00	1	people						Ch	anged Type	-
		1	3 23.0	06.2020 15:00:00	2	people						× Ch	anged Type I	
		1	4 23.0	06.2020 15:00:00	1	people								
		1	5 23.0	06.2020 16:00:00	40	people								
		1	6 23.0	06.2020 16:00:00	27	people								
		1	7 23.0	06.2020 21:00:00	3	people								

### **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.

File Home Insert Modeling View Help Table tools			
Name     Traffic statistics       Mark as date     Manage       New     Quick       New     Quick       New     Cuick       New <td< th=""><th></th><th></th><th></th></td<>			
Structure Calendars Relationships Calculations	57 -11		^
	Y Filters ©	> Visualizations >	Fields >
4	Filters on this page		✓
	Add data fields here	R Py E	✓ III Traffic statistics
	Filters on all pages		□Σ count ∨□菌 date
	Add data fields here	Values Add data fields berg	🗆 type
Page 1 Page 2 Page 3 Page 4 Page 5 Page 6 -+		ndo data haca net Drill through Cross-report Off O— Keep all filters On —● Add drill-through fields here	





# EVA (Extended Video Analytics)

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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.

√ Filters	Visualizations >	Fields >
O Search		
Filters on this page		✓
Add data fields here		<ul> <li>✓ Ⅲ Traffic statistics</li> </ul>
Filters on all pages		$\Box \Sigma$ count $\lor \Box \overline{\blacksquare}$ date
Add data fields here	Values	🗌 type
	Add data fields here Drill through Cross-report Off O— Keep all filters On — Add drill-through fields here	





## EVA (Extended Video Analytics) CORTROL LPR v1.0.1

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:

File	e F	lome		Help	1	Table to	ools
Ø N	ame	type				\$%	Forma
(123 D	ata type	Text				\$	~ %
		Structu	ire				
000	×	$\checkmark$					
	da	te	-	count	-	type	-
Ħ	23.06.20	20 00:0	00:00		34	car	
-68	23.06.20	20 00:0	00:00		128	car	
电音	23.06.20	20 00:0	00:00		1	bus	
	23.06.20	20 00:0	00:00		1	truck	
	23.06.20	20 01:0	00:00		15	car	
	23.06.20	20 01:0	00:00		68	car	
	23.06.20	20 01:0	00:00		1	truck	
	23.06.20	20 01:0	00:00		1	people	
	23.06.20	20 02:0	00:00		10	car	
	23.06.20	20 02:0	00:00		53	car	
	22 05 20	120.024	00-00		2	hur	





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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: <mark>0</mark> 0:00	car	9
23.06.2020 03:0 <mark>0</mark> :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:

1001		
	Traffic count by dat	III Traffic count by typ
锠	Count	Count
	III type	
		Traffic statistics
		count     date
		I type





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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.

Co	unt	
🗐 da	te	
🔳 typ	be	

2) Press "Manage relationships".







## EVA (Extended Video Analytics) CORTROL LPR v1.0.1

3) In the opened window press "Create communication". In this window, all existing communications will be shown.

Active	From: Table (Column)	To: Table (Column)	
There ar	e no relationships defined yet.		
Mour	Autodatart Edit Dalata		





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4) Choose necessary tables, specify fields and frequency rate. Press "Ok".

	e and type	e			
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			
date	count	type			
I rattic 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				Cross filter direction	
Many to Many (*:*)			×	Both	
Make this relationship active				Apply security filter in both directi	ons
THUNG ONS TELETON				- 112 2	

If everything is made correctly, then communication between tables will appear.

