

# Manual

## MOBOTIX SYNC

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# MOBOTIX SYNC

The **Intelligent** Data Center

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# About the Manual

This manual is intended for administrators and users of the MOBOTIX SYNC application.

The most recent version of this document is available at [www.mobotix.com](http://www.mobotix.com).

Before using SYNC it is recommended that you read through the entire manual at least once.

# About MOBOTIX SYNC

MOBOTIX SYNC is a Back Office application which can centrally manage ANPR reads transmitted from ALPR cameras performing access control, parking or traffic applications in any environment. Once set up, ALPR reads will be received and processed (e.g. checking for White lists, generating alarms, controlling barriers etc.) .

SYNC provides total control of vehicle traffic not only by recording vehicle movements through established control points, but also by automating access to restricted areas, issuing alerts for selected vehicles (using blacklists), generating reports with images and acting as the main application for real-time monitoring and control of vehicles across a site.

From the most basic management of a private car park to the control of traffic across a city, SYNC facilitates enforcement management, access control to restricted areas, average speed control of a vehicle between two points and average speed data transmission to LED Signs, etc.

# Order Information

Product Name	Order Code
MOBOTIX SYNC Server	Mx-SYNC-S-BAS
MOBOTIX SYNC Camera Device License	Mx-SYNC-S-DEV
MOBOTIX SYNC Client	Mx-SYNC-S-CLI
MOBOTIX SYNC Grafana Plug-In	Mx-SYNC-P-GRA

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# Technical Requirements

## Minimum PC Requirements

- Windows 7 or higher
- 64 bits (x64) processor at 1GHz or higher
- 4GB Ram
- 20GB HDD Space
- Microsoft.NET Framework 4.5.2 or higher

## Database Requirements

- Postgres (included)
- SQL (to be utilized in large scale deployments, license not included)

**NOTE!** Postgres is the included database manager and does not need any additional components.

# Product Features

## Supported Products

The following MOBOTIX products support MOBOTIX SYNC meta-data reporting:

### Certified Apps

- VaxALPR
- VaxALPR MMC
- VaxALPR ADR
- VaxOCR Container
- VaxOCR AIN
- VaxOCR UIC
- VaxOCR Genesis

### MOBOTIX MOVE

- All MOBOTIX MOVE models equipped with VaxALPR support MOBOTIX SYNC meta data reporting.

## MOBOTIX SYNC Server

- Store meta-data and attached images generated by MOBOTIX Certified Apps (e.g. Vaxtor ALPR / OCR Apps) or other compatible data sources
- 4 camera device licenses included
  - additional camera device licenses via additional license on demand
- Monitor incoming license plates / meta-data (e.g. plate reads) in real time
- Search and filter existing license plates / meta-data based on content such as Plate, Country, Camera, Zone, Make, Model, Color, Direction, etc.
- Download and export customized license plate lists and search results

- Management of cameras includes:
  - camera zones
  - manage and synchronize denied & granted license plate list
- assign actuators (incl. camera I/Os)
- manage data retention policies separately for images and meta-data
- supports GDPR measures with dedicated reports and data deletion
- granular user and group permissions
- login management including LDAP integration
- audit trail of all interactions on the system including actions made by cameras
- Send notifications (e.g. via E-Mail)

## **MOBOTIX SYNC Camera Device License**

- 1 camera device license per additional camera device
- Enables adding camera devices to the server/client on demand

**NOTE!** \*4 camera device licenses included in the server base license

## **MOBOTIX SYNC Client**

- redundant operation and data storage for applications with discontinuous connection to the server (e.g. mobile applications)
- active server connection enables continuous data synchronization
- licensed camera devices assigned to the server

## MOBOTIX SYNC Grafana Plug-In

- visualization and consolidation of incoming meta-data in customized dashboards including:
  - statistic insights
  - data queries
  - annotations
  - create and manage alerts / post-actions
  - exports

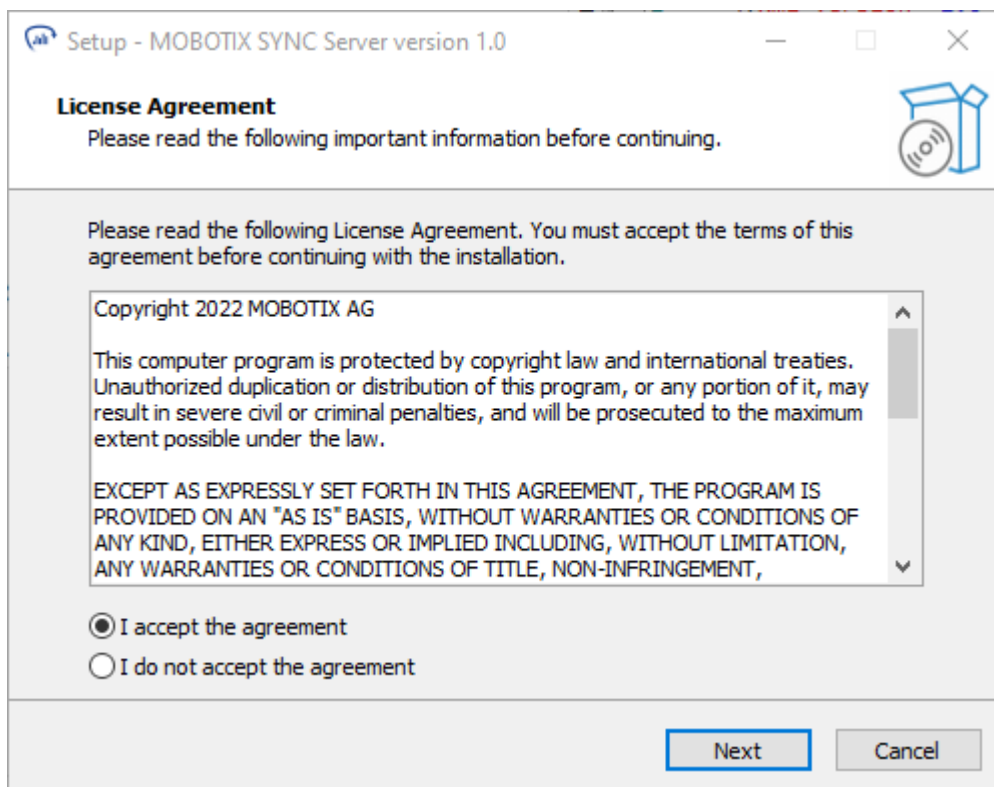
# Software installation

**NOTE!**

In case of an update installation, all previously installed components are uninstalled before their current version is installed.

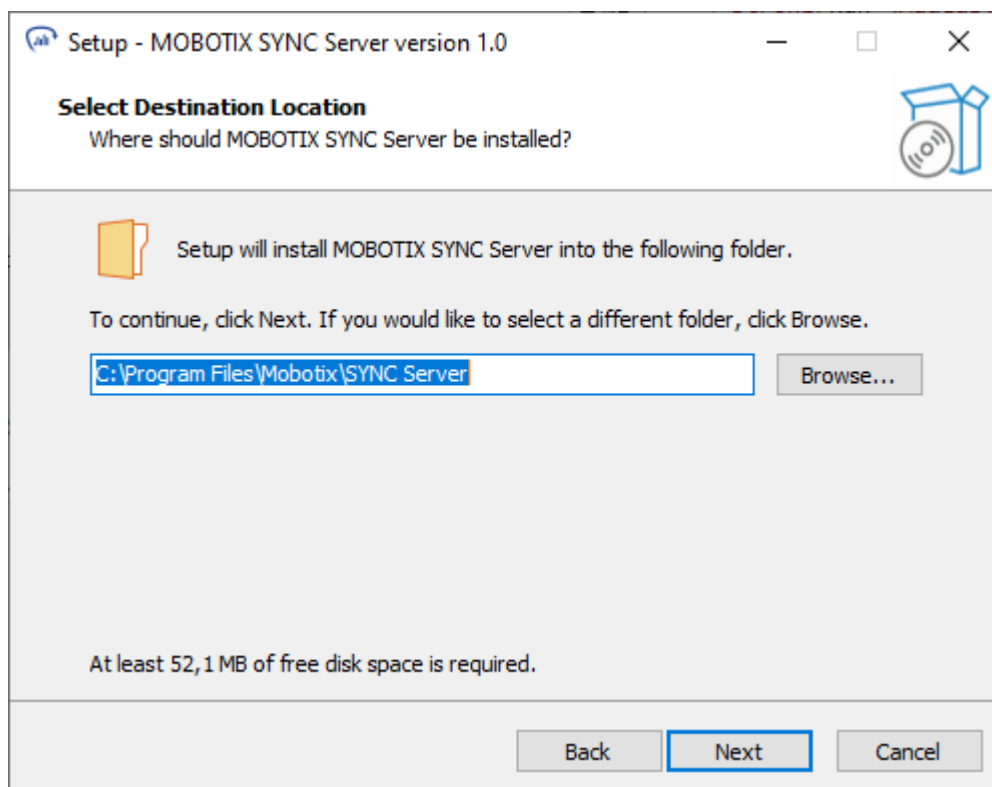
Therefore it's strongly recommended not to deselect the previous installed components.

- Run **MOBOTIX\_SyncServer\_64-setup.exe** as an administrator. In the first window accept MOBOTIX's License Agreement and click **Next**.



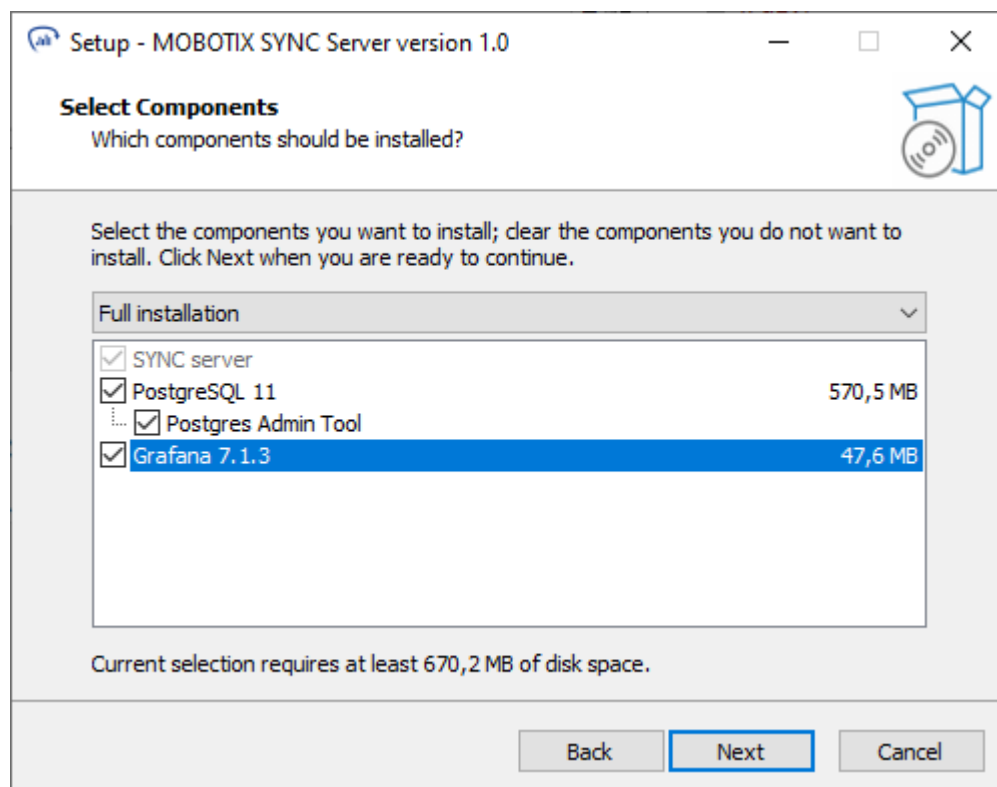
- Within the next dialog you can define where to install the application. Click **Next**.

**NOTE!** If you do not have to apply internal rules, we recommend to use the default path to minimize the risk of duplicate data storage (e.g. in case of new installations / updates).

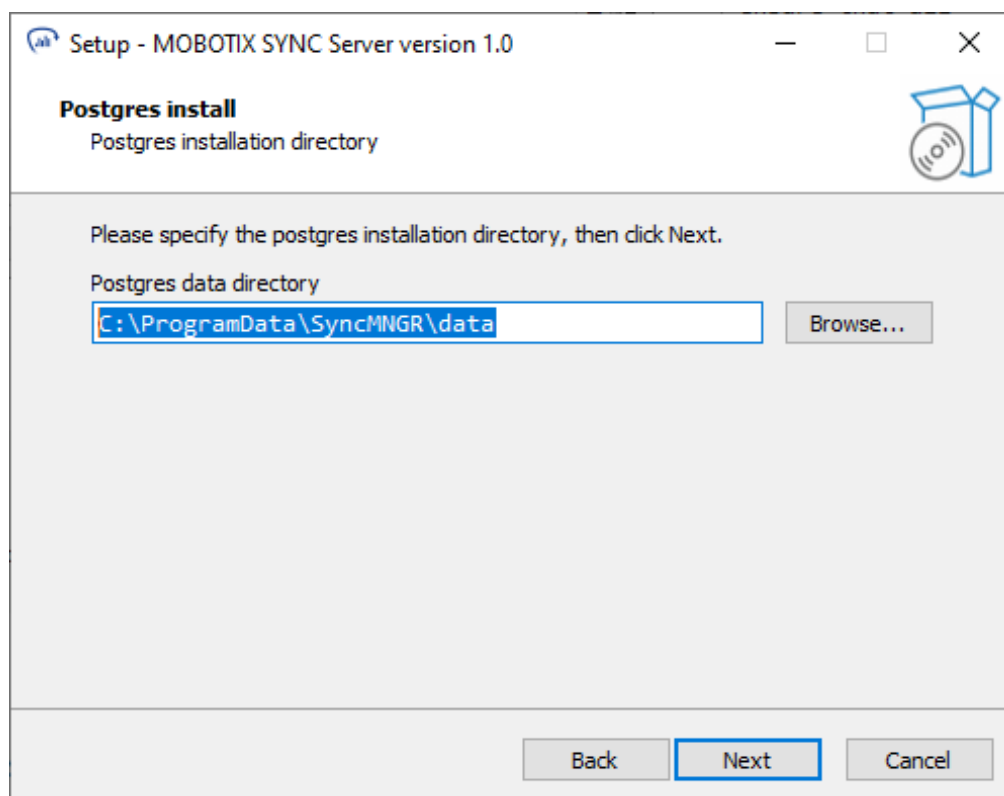


- Select the required software components and click **Next**.

**NOTE!** We strongly recommend to select the “Full Installation” profile. This way you ensure that all components required for the complete function of MOBOTIX SYNC are available at any time.



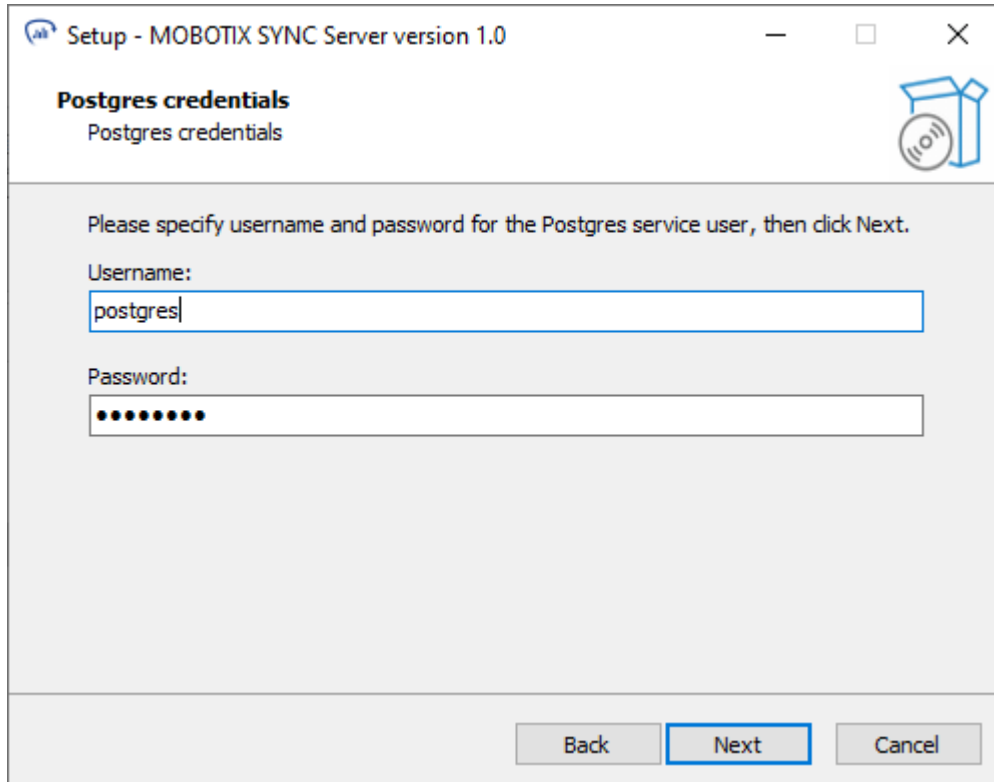
- Leave the default postgres installation path and click **Next**.





- **CAUTION!** Make sure that you can remember the Username and Password at any time. These data are needed in case of a new installation of the MOBOTIX SYNC (e.g. for troubleshooting purposes) and possibly also for updates in order to be able to continue using the already existing database.

Enter Username and Password for the Postgres service user. Click **Next**:



Setup - MOBOTIX SYNC Server version 1.0

**Postgres credentials**  
Postgres credentials

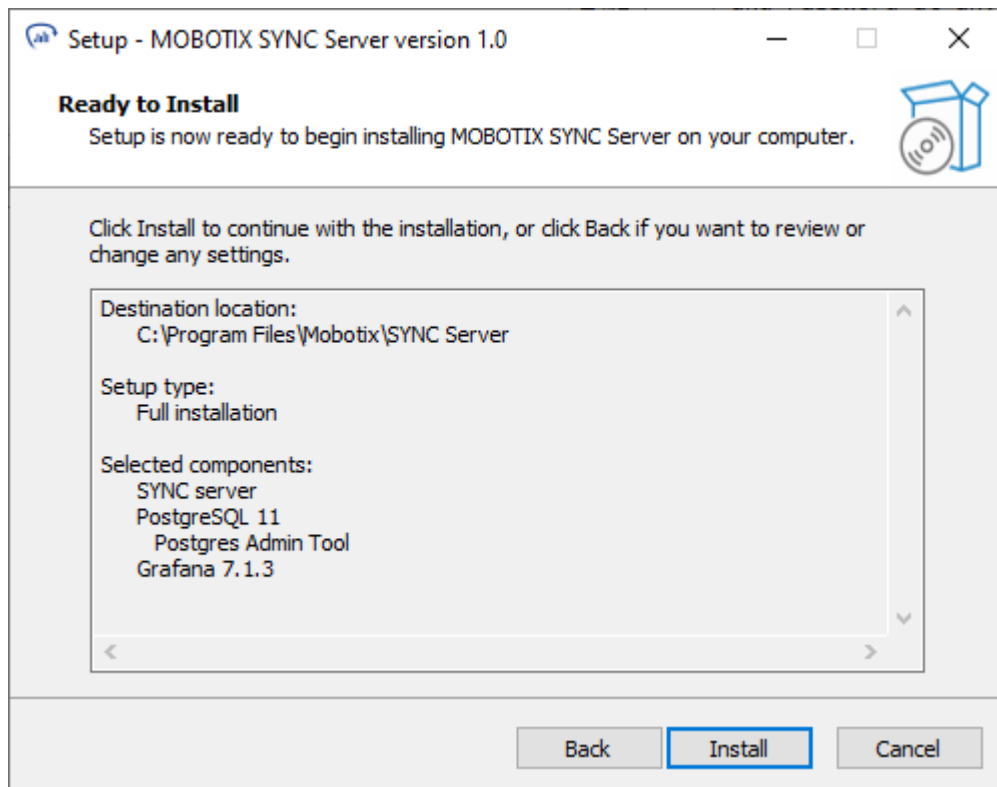
Please specify username and password for the Postgres service user, then click Next.

Username:  
postgres

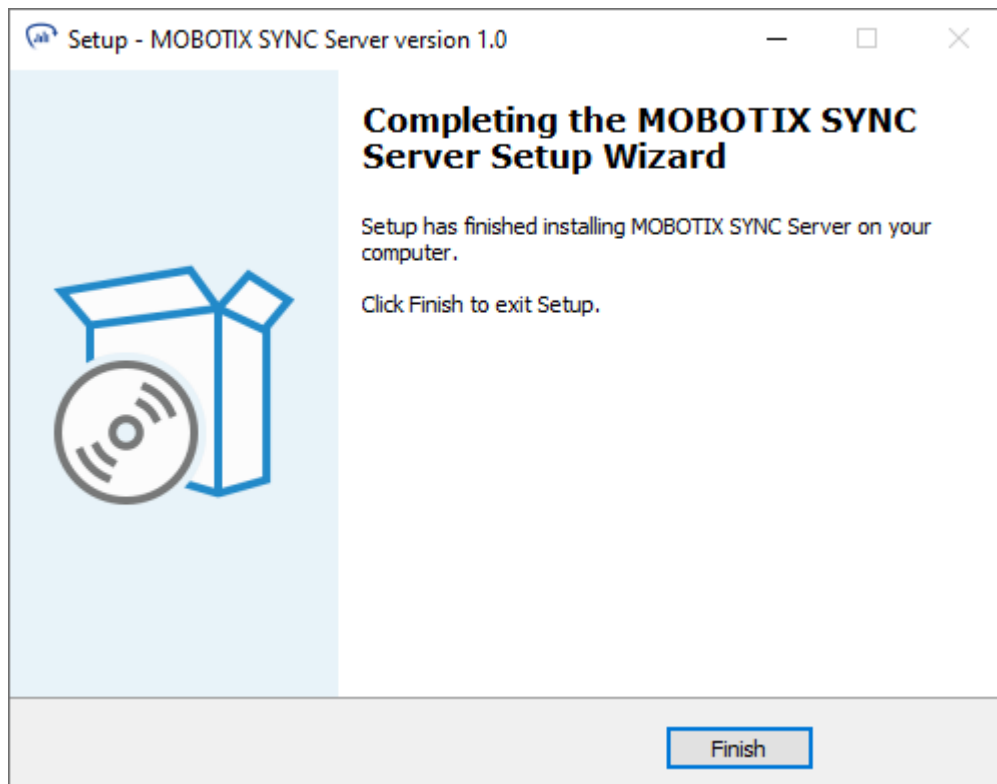
Password:  
●●●●●●●●

Back Next Cancel

- Click **Install** to start the installation:



- Once the installation is complete, click Finish.



A new service called **SyncMNGR** will be installed and automatically started.

**NOTE!** If you want to start the **SyncMNGR** service and thus also the MOBOTIX SYNC application manually, you can adjust the behavior of the service in the services settings of the Windows operating system.

# The Application

After installation, MOBOTIX SYNC can be accessed by the URL <http://serverip:8080/SYNC>, where serverip is the IP address of the machine where SYNC is installed.

**NOTE!** If the server is running on your local machine use 127.0.0.1/8080/SYNC or localhost:8080/SYNC

## Basic Configuration

**NOTE!** You must restart the service to apply any changes.

This configuration can be changed by editing the file config.xml stored in the directory C:\ProgramData\SynchMNGR and adding to it a new SYNC Port tag.

**Example (using SQLite database):**

```
<Config>
  <SslPort>9898</SslPort>
  <BindAddress>*</BindAddress>
  <EnableSsl>False</EnableSsl>
  <ApiKey>29bb7fac5eed46edb4fb2833db89ecec</ApiKey>
  <AuthenticationMethod>Forms</AuthenticationMethod>
  <Helix6Port>30000</Helix6Port>
</Config>
```

## Valid tags and values for config.xml file

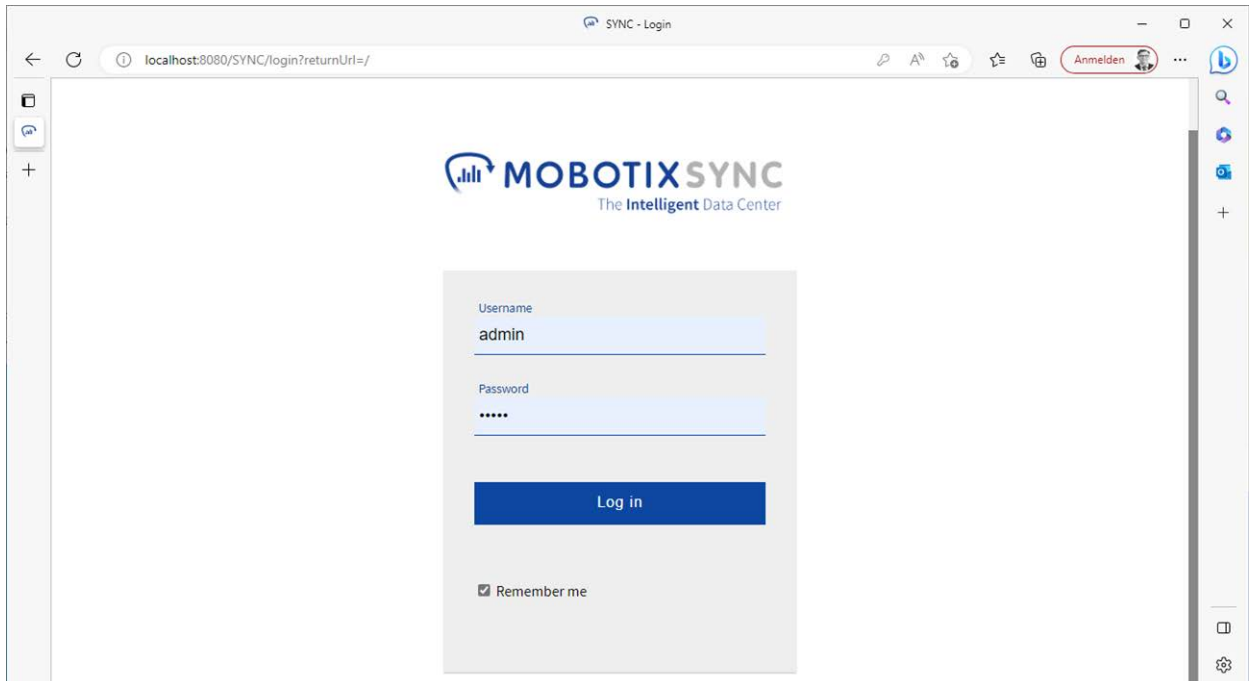
Field	Description	Mandatory
BindAddress	Default value: *	M
Helix6BaseUrl	Default value: /SYNC	Op

Field	Description	Mandatory
Helix6BasePort	Default value: 8080	Op
Helix6BaseEnvironment	Default value: MOBOTIX	Op
Helix6BaseDB	Valid values: SQLserver   Postgres   SQLite. Default value: SQLite	Op
<b>if Helix6BaseDB equal SQLite</b>		
DBAdminUser	Default value: ""	Op
DBAdminPassword	Default value: ""	Op
<b>if Helix6BaseDB equal Postgres</b>		
PostgresDBName	Example: mxmetavision	M
PostgresDBHost	Example: 127.0.0.1	M
PostgresDBUser	Example: admin	M
PostgresDBPassword	Example: MOBOTIX	M
<b>if Helix6BaseDB equal sqlserver</b>		
SQLServerDataSource	Example: 192.168.0.236	M
SQLServerUserId	Example: admin	M
SQLServerPassword	Example: mobotix	M
SQLServerInitialCatalog	Example: SYNC	M
SQLServerIntegratedSecurity	Default value: false	M
<b>If Helix6BaseDB equal to sqlite does not have any additional configuration parameters</b>		
ApiKey	Valid API key	M
EnableSsl	default value: False	M
<b>NOTE!</b> If EnableSsl is True, review this article: <a href="https://docs.microsoft.com/en-us/dotnet/framework/wcf/feature-details/how-to-configure-a-port-with-an-ssl-certificate">https://docs.microsoft.com/en-us/dotnet/framework/wcf/feature-details/how-to-configure-a-port-with-an-ssl-certificate</a>		
AuthenticationMethod	Valid values none Basic Forms Default value: Forms	M
LogLevel	Valid values: Info   Debug   Trace. Default value Info	Op

**NOTE!** To apply your changes the "SyncMNGR" service must be restarted.

# Login

After you have connected to the SYNC in your browser application, the login screen will be displayed.



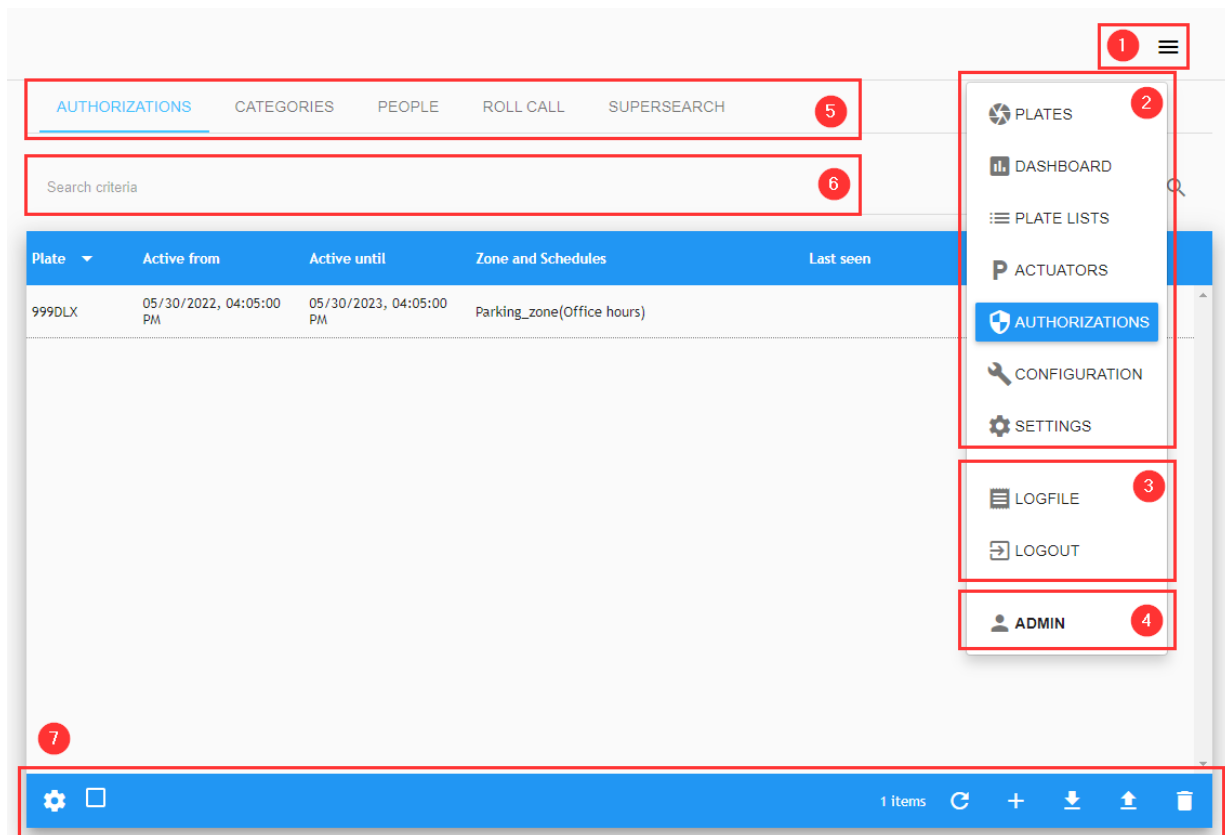
**NOTE!** The default username is **admin** with password **meinsm** when no other users have been added to the system.

We recommend to change the default login data as soon as possible to protect yourself from unauthorized access.

If you have already been given personalized access by an admin, use your personal login data to log in.

Optionally select the **Remember me** option so that the system saves your credentials for one week.

# SYNC Application Layout



## Main Menu

To access the main menu, click the main menu button ① .

- Here you can access the following features ② :
  - PLATES
  - DASHBOARD
  - PLATE LISTS
  - ACTUATORS
  - CONFIGURATION
  - SETTINGS
- Tools ③ :
  - LOGFILE (Click to view the SYNC log file(s).)

- LOGOUT
- Current user ④ (default: ADMIN)

## Secondary Menus

The Secondary Menus ⑤ show more options for each Main Menu option:

- **DASHBOARD**
  - Dashboard
  - Dashboard Setup
- **PLATE LISTS**
  - Plates
  - List
- **ACTUATORS**
  - Actuators
  - Actuator Links
- **CONFIGURATION**
  - Zones
  - Cameras
  - Schedule
  - Sections
  - Capacity
- **SETTINGS**
  - Settings
  - Users
  - Audit
  - GDPR

## Search area

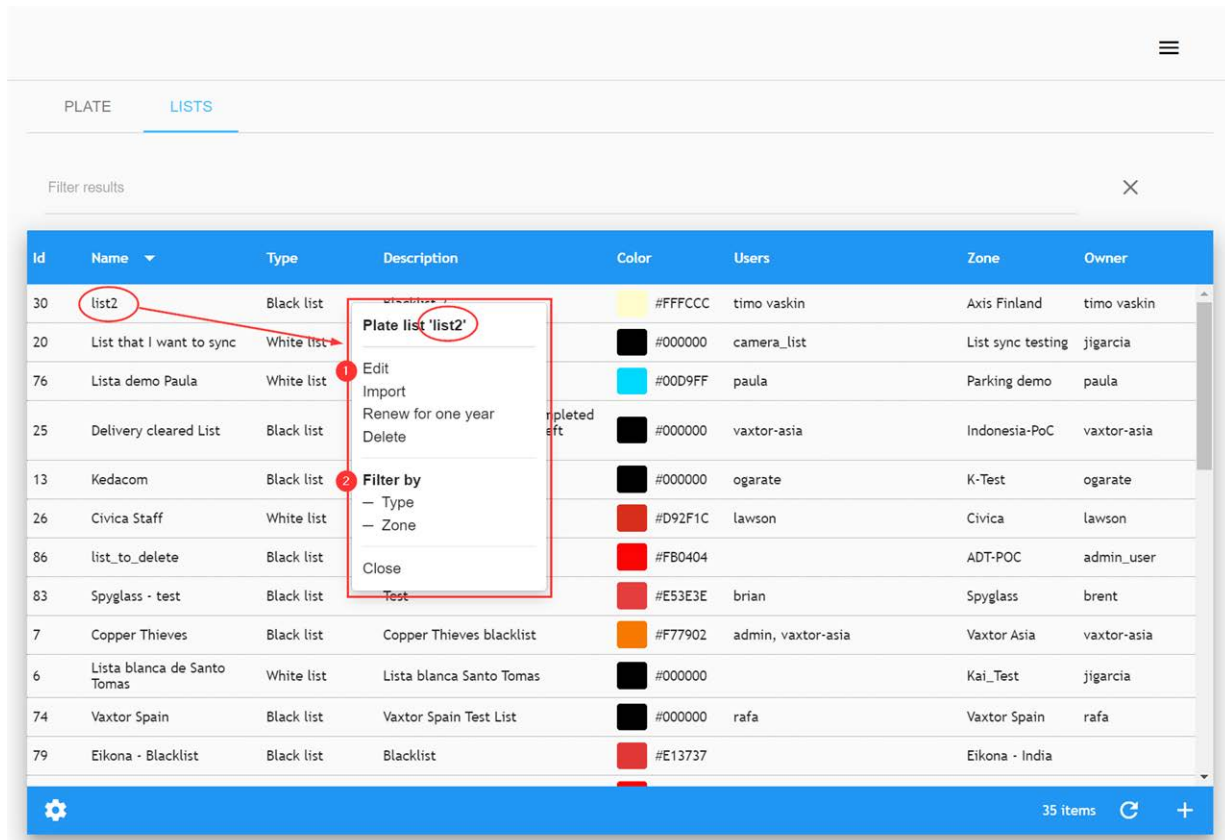
Some features have a search criteria ⑥ area where various fields can be searched.



## Toolbar

Some menus have additional tools such as columns configuration, reload, create, download file, upload file, delete etc. These tools are displayed in the Toolbar ⑦ .

## Contextual menu



To access the features associated with each list item, you can use the contextual menu by clicking the mouse over each list item.

**The contextual menu has two areas:**



- The actions area ① which includes item actions such as Edit, Delete etc.
- The filter area ② which includes a comprehensive list of specific filters.

## Example of the List Management secondary menu:

**NOTE!** Search options are available for PLATES, LIST/Plates and SETTINGS/Audit.

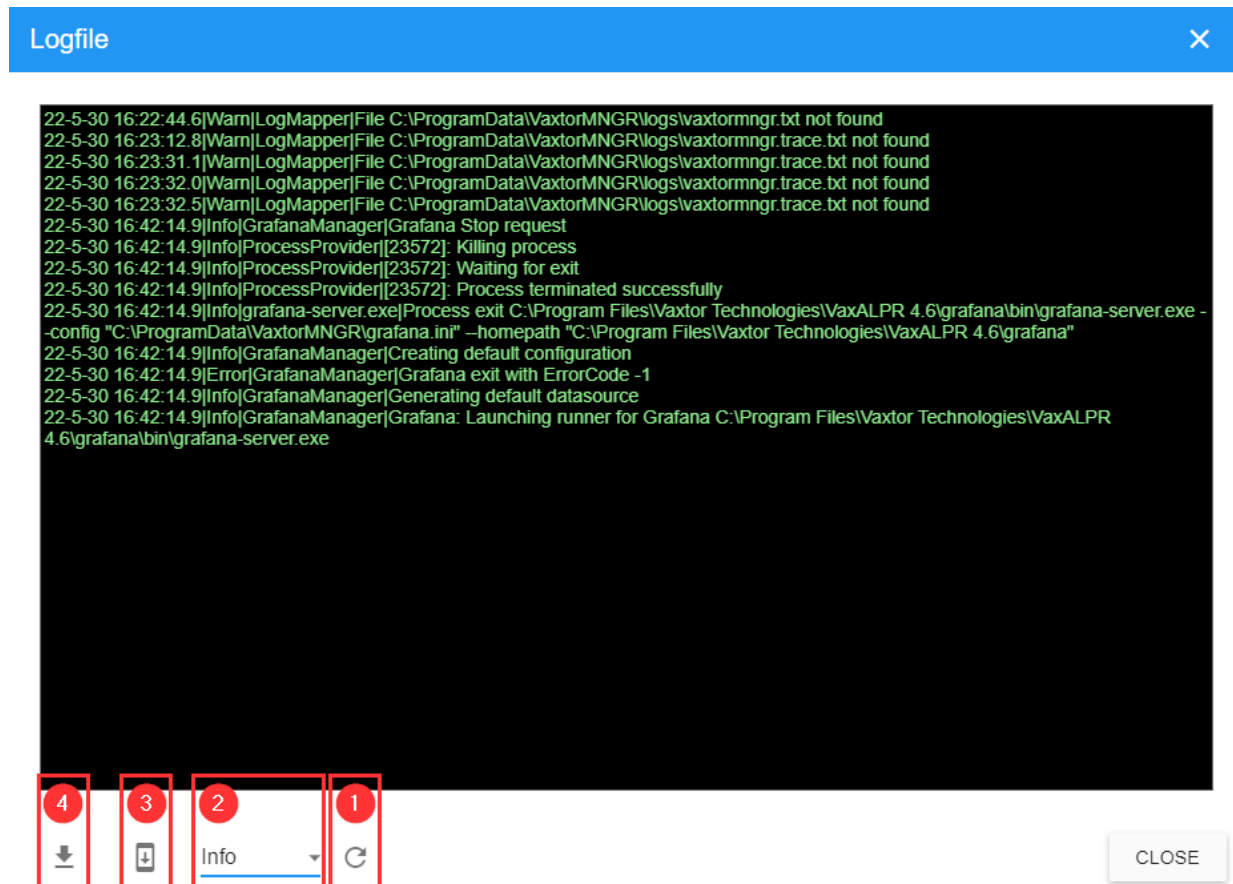
The screenshot shows a web application interface for managing a list of items. The interface includes a search bar at the top with a search button (1) and a clear button (3). Below the search bar is a table with columns: Plate, List, Active from, Active until, Description, Last detection, and Hit count. A table header (4) is highlighted. A table data area (5) contains several rows of data. A contextual menu (8) is open over the first row, showing options: List item 'YVY480', Edit, Delete, Filter by (with sub-options Plate and List), and Close. At the bottom, there is a list view configuration button (6) and a list tools area (7) containing an items counter (4 items), a reload button, an add item (+) button, and a download button.

### Description:

- Search button ① .  
This button opens the Search dialogue box.
- Search Filters area ②  
This search area allows you to quickly add search criteria. It includes a Clear search options button ③ .
- Table header ④ .
- Table data area ⑤ .
- List view configuration button ⑥ .  
(see [How to customize screens for each user](#), p. 27)
- List tools area ⑦ . This could include:
  - An items counter **4 items** ,
  - Reload button  ,
  - Add item **+** button
  - Download button 
- Contextual Menu ⑧

## Show Logfile Option

Users with administration rights, can review the MOBOTIX SYNC log file. To do this, click the LOGFILE menu option in the menu (see ③ in the [Main Menu](#), p. 23).




### Description:





























- Reload the latest log file ①
- Select file type ② . This depends on what you have configured (see [Configuration of Server](#), p. 102).
- Scroll to the end of the file ③
- Download the log file ④




## How to customize screens for each user

The SYNC GUI can be configured to show only the data that each user wants to see.

To do this, in most tables you will see a settings icon  at the bottom left of the screen which allows you to configure the fields that you want to display. Click on the icon and a pop-up window will appear as shown below. In this example the Plate Lists/Plate column configuration is shown :

### Config list columns - List item

Name	Show	Export	Width	Position
Id	 ④	 ③	 ②	 ①
Plate			<input type="text" value="10"/>	
List			<input type="text" value="10"/>	
Active from			<input type="text" value="15"/>	
Active until			<input type="text" value="15"/>	
Comments			<input type="text" value="20"/>	
Description			<input type="text" value="20"/>	
Last detection			<input type="text" value="15"/>	
Hit count			<input type="text" value="10"/>	

 ⑦ ⑥ ⑤


SAVE

### Description:

- Shows each item in the list display ④ ,
- Includes item in the export file ③  
This column will be included only in tables with the export file option.
- Set column width ② ,
- Set column position ① ,
- Reload default configuration ⑦ ,
- Select all columns ⑥ ,
- Select all columns for Export ⑤ ,

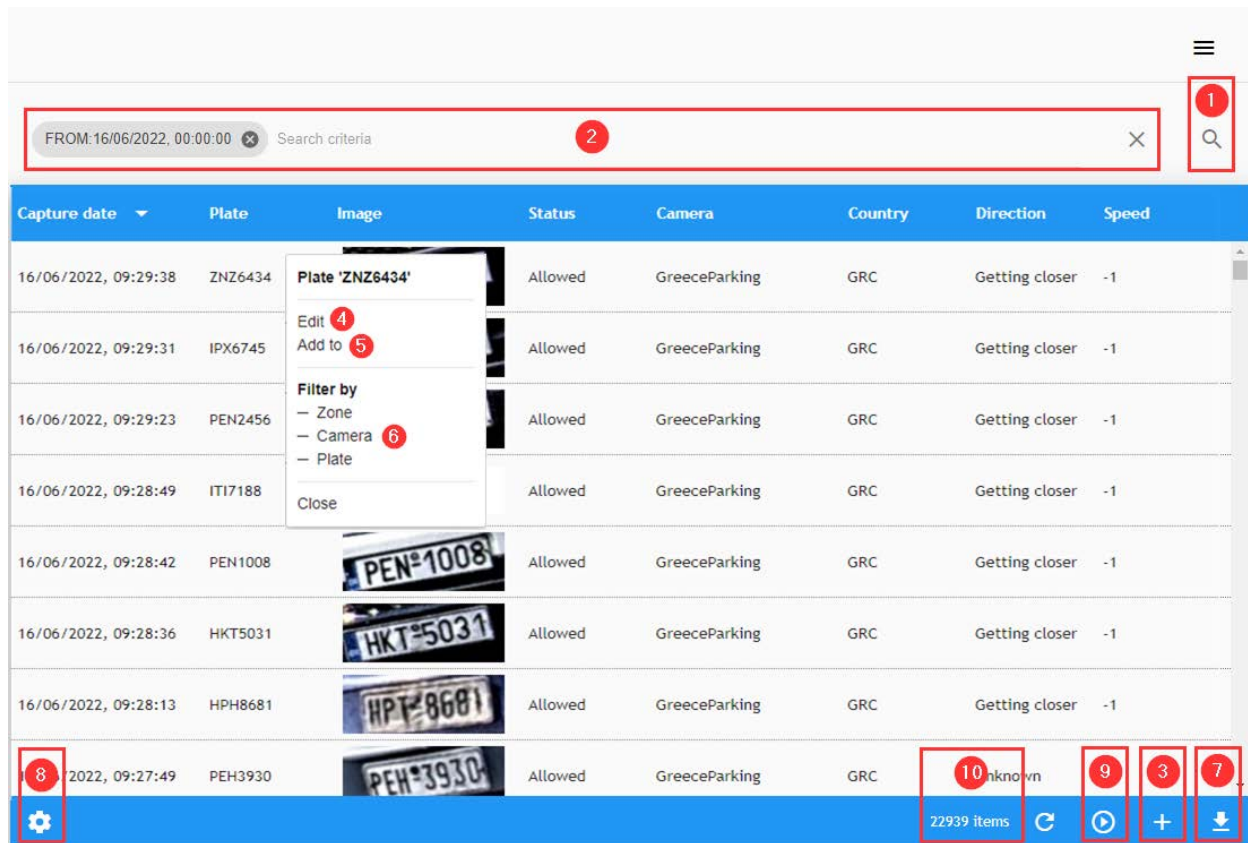
The user can simply enable or disable any of the fields as required by using the sliders. These can be used for the PC web environment or when being accessed from tablet or mobile devices.

You can adjust the width of each column and modify its position on the grid.

At the bottom of the pop-up window you can restore the default values by clicking on the Default config  button or save your new configuration by pressing the Save button.

# Plates Table

Click **PLATES** to display a list of license plates recently received.



Capture date	Plate	Image	Status	Camera	Country	Direction	Speed
16/06/2022, 09:29:38	ZNZ6434		Allowed	GreeceParking	GRC	Getting closer	-1
16/06/2022, 09:29:31	IPX6745		Allowed	GreeceParking	GRC	Getting closer	-1
16/06/2022, 09:29:23	PEN2456		Allowed	GreeceParking	GRC	Getting closer	-1
16/06/2022, 09:28:49	ITI7188		Allowed	GreeceParking	GRC	Getting closer	-1
16/06/2022, 09:28:42	PEN1008		Allowed	GreeceParking	GRC	Getting closer	-1
16/06/2022, 09:28:36	HKT5031		Allowed	GreeceParking	GRC	Getting closer	-1
16/06/2022, 09:28:13	HPH8681		Allowed	GreeceParking	GRC	Getting closer	-1
2022, 09:27:49	PEH3930		Allowed	GreeceParking	GRC	Unknown	-1

**NOTE!** Any new plates received will NOT be displayed until you press the Play icon ⑨, bottom right (See [Real-Time View](#), p. 41).

This is where plate reads from remote VaxALPR recognition systems appear showing the following default fields:

- **Capture:** Date and time that the plate was captured.
- **Plate:** The ASCII interpretation of the license plate.
- **Image:** The image of the license plate. (The 'Plate Patch')
- **Status:** This indicates whether the vehicle is "Authorized", "Pending", "Confirmed" or "Canceled". (These states are discussed later in the manual.)
- **Camera:** The name of the camera that detected the license plate.
- **Country:** Indicates the country of origin of the recognized plate (if known).
- **Direction:** Indicates the direction the vehicle was traveling. This can be: **Getting closer**, **Getting farther**", **Unknown** or **Stopped**.

- **Speed:** This field displays the instant speed or the average speed of the detected vehicle if available. If both measurements are available, the **instant speed** will be used (if known and configured).
- ... and various other configurable options such as OCR processing time, Multiplate rate etc.

## Licence Plate Details

If you click on any of the plates in the list, the small associated [Contextual menu, p. 25](#) will appear.

If you then click the action Edit of the context menu (see ④ of the [Plates Table, p. 30](#)), the following pop-up window will appear with the associated meta-data of the reading including the source image and a small zoom tool to view the image in more detail.

Plates

Capture date

09/05/2022, 10:24:32

Camera

GreeceParking

Original plate

HKX2587


Original country





GRC

PLATE IMAGES

DETAILS

ADD TO ...





SAVE

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This pop-up window includes the tabs PLATE IMAGES, DETAILS and ADD TO, and a common header with the with the most relevant data of the capture:

Plates

Capture date

09/05/2022, 11:44:55

Camera

GreeceParking

Original plate

ANZ8799

Original country

GRC



## Plate Images Tab

PLATE IMAGES allows you to view the different images provided by the cameras. (Some ALPR cameras can send both an ALPR image AND an environment/contextual image to MOBOTIX SYNC). These can be downloaded and locked to prevent them from being deleted by SYNC housekeeping tasks.



### Description:

- Select the Main ALPR camera ① ,
- Select the Environment camera if present ② ,
- Download images ③ ,
- Lock current image ④ .
- To use the zoom ⑤ tool simply move the cursor over the image and the image will automatically zoom in on the area you are focusing on.

## Details Tab

The screenshot shows a mobile application interface with a 'Plates' pop-up window. The window has a blue header with the title 'Plates' and a close button. Below the header, there are four tabs: 'Capture date', 'Camera', 'Original plate', and 'Original country'. The 'DETAILS' tab is selected. The main content area shows a table with the following data:

Plate *	Country *
ANZ8799	GRC - Greece

Below the table, there is a configuration gear icon (3). At the bottom left, there is a 'SAVE' button (2). At the bottom right, there are navigation buttons (4): '<<', '<', '>', and '>>'. The background shows a list of plates with columns for 'Capture date' and 'Plate'.

In the DETAILS tab you can make changes or correct the fields Plate and Original Country ① . Click the Save button ② to store the change.

Click the configuration button ③ to configure what fields to show.

In the lower right area of the pop-up there are navigation buttons ④ to move through the different records without leaving the pop-up window.

## ‘Add to’ Tab

In the tab ADD TO... you can:

- Associated the plate with a Owner (see Authorization section):

The screenshot shows a 'Plates' window with a blue header and a close button. Below the header, there are four fields: 'Capture date' (09/05/2022, 11:44:55), 'Camera' (GreeceParking), 'Original plate' (ANZ8799), and 'Original country' (GRC). Below these fields are three tabs: 'PLATE IMAGES', 'DETAILS', and 'ADD TO ...'. The 'ADD TO ...' tab is selected and highlighted with a blue underline. Below the tabs, there is a section titled 'Add the plate 'ANZ8799' to...'. Inside this section, there are two tabs: 'AUTHORIZATIONS' (which is circled in red) and 'LISTS'. Below the 'AUTHORIZATIONS' tab, there is a text prompt 'Select a vehicle Owner and click [Add]'. Below this prompt, there is a dropdown menu labeled 'Owner' with the value 'U' selected. The dropdown menu is open, showing a list of options: 'Demo, User'. To the right of the dropdown menu, there is an 'ADD' button.

- Add the Plate to a Black or White list (see List section):

The screenshot shows the same 'Plates' window as the previous one, but with the 'LISTS' tab selected and highlighted with a blue underline. The 'AUTHORIZATIONS' tab is now unselected. Below the 'LISTS' tab, there is a text prompt 'Select a Plate list and click [Add]'. Below this prompt, there is a dropdown menu with a list of options: 'Civic 3', 'Copper Thieves', 'Delivery cleared List', 'Eikona - Blacklist', 'Eikona - Whitelist', and 'ISOBlackList'. To the right of the dropdown menu, there is an 'ADD' button.

**NOTE!** To fast access to the Add to... click the action Add to in the context menu (see ⑤ of the [Plates table](#)).

## Search Plates

In the upper right corner of the table there is a small magnifying glass icon (see ① of [Plate table](#)). When clicked, a popup window appears where you can define search criteria by selecting from various search filters.

The screenshot shows a 'Search criteria' popup window with a blue header and a close button (X). The window is divided into four sections: DETAILS, ALARMS, LOCATION, and INFO. The DETAILS section is active and contains the following search filters:

Filter	Value
Plate	
Country	
Date from	09/05/2022, 00:00:00
Date to	
Capturer Type	
Capturer Id	
Camera	
Zone	
Status	
Direction	
Speed	
Signal ID	

At the bottom of the popup are 'CLEAR' and 'SEARCH' buttons. The background shows a table with columns 'Capture date' and 'Plate', containing data for various plates like HZZ6883, ANZ8799, IYH3745, HKN2502, IBM2844, AF64BVX, DK16YZS, and EK70ULC. A 'Speed' column is also visible on the right. The bottom status bar indicates '14711 items' and has icons for refresh, play, add, and download.

The Search criteria window is divided into four sections:

- DETAILS
- ALARMS
- LOCATION
- INFO

## DETAILS Search Tab

Search criteria	Description
Plate	<p>Here you can search through all the plates using the wildcards "*" and "?" to refine the search (you can also use _ in place of ? and % in place of *):</p> <ul style="list-style-type: none"><li>■ "*" replaces any number of characters (including no characters).</li><li>■ "?" replaces a single character in the search</li></ul>
Country	<p>Filter the results by the country of origin of the plate selected from a combo box from the configured countries.</p>
Date from	<p>In this field, you can search from any date simply by clicking in the field. A pop-up window appears where you can select the start date + time of the search.</p>
Date to	<p>As in the previous field, you can search for plates up to a specific date again by clicking in the field. The pop-up window appears where you can select the <b>To</b> date + time and then press [OK]</p>
Capture Type	<p>Filter the results by a specific Capturer type</p>
Camera ID	<p>Filter the results by a specific Camera ID.</p>

Search criteria	Description
Camera	Filter the results by a particular camera selected from a combo box from the configured cameras for the current user.
Zone	Filter the results by zone from a combo box from the configured zones for the current user. NOTE: Cameras can be allocated to a zone – e.g. a car park with several entrances so a search would produce a list of vehicles currently in that zone.
Status	<b>Filter the results by the selected vehicle status from a combo box including:</b> OK, Pending, Confirmed, Cancelled, Exported, Prescribed, NoAuth, SanctionPending, NoAuthExceed, Ignored
Direction	Filter the results by the selected vehicle direction from a combo box including Unknown, GettingCloser, GettingFarther, Stopped
Speed	Available as an add-on. Only vehicles moving faster than the selected speed will be shown.
Signal ID	Filter the results by a specific Signal ID.

## ALARMS Search Tab

### Search criteria Description

Filter by alarm	Filter the results if plates have triggered an alarm, not triggered an alarm or Both
Exit filter	Filter the result if Vehicle has exited, not exited, or Both

## LOCATION Search Tab

Search criteria	Description
Minimum latitude	Filter the results if the capture latitude is great or equal than the value
Maximum latitude	Filter the results if the capture latitude is less or equal than the value
Minimum longitude	Filter the results if the capture longitude is great or equal than the value
Maximum longitude	Filter the results if the capture longitude is less or equal than the value

## INFO Search Tab

Search criteria	Description
Make *	Filter the results by vehicle Make
Model *	Filter the results by vehicle Model
Colour *	Filter the results by vehicle Colour
Category	Filter the results by the specified vehicle Category
Classification	Filter the results by the specified vehicle Classification
Region	Filter the results by the specified Camera ROI

(\*) These are only available with the optional MMC add-on which attempts to analyze images and report the Make, Model & Colour.

## Filter Plates

The SYNC PLATES page includes a quick way to use filters by adding your own search criteria as a text string (area ② of the [Lists Table, p. 48](#)) into the search filter bar. You can add or remove search filters, also you can use the Filter by option in the context menu (see ⑨ of the [Lists Table, p. 48](#)). The search filter syntax is: Token:FilterValue, where:

Token	filterKey	filterValue
CAMERA	camera	Camera ID or camera name
COUNTRY	country	Three letter Country code
DIRECTION DIR	direction	Unknown, GettingCloser, GettingFarther, Stopped

## Plates Table

Token	filterKey	filterValue
PLATE	plate	p.e. M4616WZ
STATUS	status	OK, Pending, Confirmed, Cancelled, Exported, Prescribed, NoAuth, SanctionPending, NoAuthExceed, Ignored
ZONE	zone	Zone ID or Zone name
CAPTURERID	capturerId	Capturer ID
CAPID		
CAPTURERTYPE	capturerType	Capturer Type
CAPTYPE		
ALARM	alarm	true or false
MAXLATITUDE	maxlatitude	Max latitude (double)
MAXLAT		
MINLATITUDE	minlatitude	Min latitude (double)
MINLAT		
MAXLONGITUDE	maxlongitude	Max longitude (double)
MAXLON		
MINLONGITUDE	minlongitude	Min longitude (double)
MINLON		
DATEFROM	dateFrom	<b>DateTime format dd/MM/yyyy hh:mm:ss</b> , example: 08/01/2018 10:22:29
FROM		
DATETO	dateTo	<b>DateTime format dd/MM/yyyy hh:mm:ss</b> , example: 08/01/2018 10:22:29
TO		
SPEED	speed	Speed (integer)
SIGNALID	signalId	Signal ID (integer)
VEHICLEMAKER	vehicleMaker	Vehicle marker (text)
VEHICLEMODEL	vehicleModel	Vehicle model (text)
VEHICLECOLOR	vehicleColor	Vehicle colour (text)
VEHICLECLASS	vehicleClass	Vehicle class
CATEGORY	category	Category
REGION	region	Region



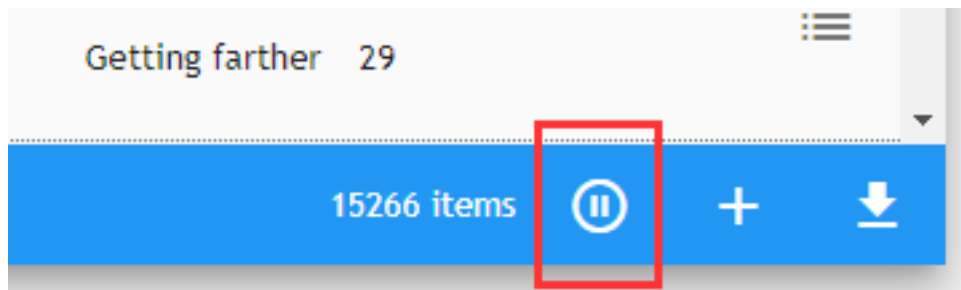
Token	filterKey	filterValue
ALARM	alarm	If it is an alarm (boolean)
EXIT	exit	If it is an exit (boolean)

**NOTE!** To clear the search criteria use button [X] located at the right of the Filter bar.

## Real-Time View

Click the Play button (button ⑨ of [Plates Table, p. 30](#)) to see plate reads as they arrive in real time. When this option is enabled all the plate reads received from the ALPR readers will be displayed immediately in the main screen with the most recent at the top.

If you want to stop the real time view, you must click the pause button that replaced the play button. This can be useful if you want to search or examine plates received without them scrolling as new plates arrive..



**NOTE!** This only works if the current user has been authorized.

Do this by selecting CONFIGURATION then select the ZONES main Tab. Click on the appropriate zone and select which users receive real time events for this zone. Do this by selecting the appropriate user from the users list and double click on the user name to move it across to the right-hand box (assigned users). This user now can see the view with real-time information. Alternatively, single click and use the arrow icons in the center.

**NOTE!** The reason this is not set as a default is there may be a massive amount of information being received from many readers which would overload the system.

## Download Plates

To download a Plate list, click the download button (button ⑦ of [Plates Table, p. 30](#)) at the bottom-right of the plate list page:

**Before downloading consider:**

- The columns to include into the .csv file. Using the columns configurator (button ⑧ of [Plates Table, p. 30](#)) you can select which columns to be included (for additional details, see [How to customize screens for each user, p. 27](#)).
- The number of plates in your current search (area ⑩ of [Plates Table](#)), in this example nearly 15,300. Keep this to a reasonable number by using more Search Filters to avoid a massive download that could lock your system up.

**Two files are downloaded:** a .csv file containing a list of plates from the search results and a corresponding .zip file containing all of the images of the vehicles. The files appear at the bottom of the screen and are downloaded to your Windows download directory.

The Downloaded file is a CSV format file (with ; as a separator). It includes a header and selected columns from this list:

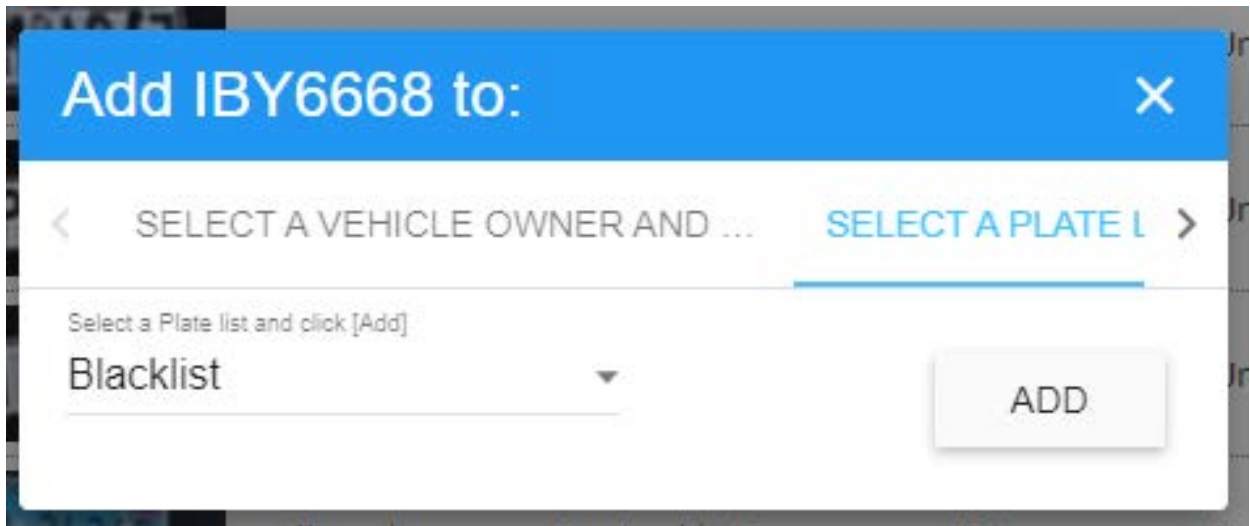
Field	Type	Example
id	Integer	1
camerald	Integer	1
zoneld	Integer	1
cameraName	String	<b>Camera #1</b>
latitude	Float	12.1234
longitude	Float	12.1234
plateNumber	String	<b>M4616WZ</b>
originalPlateNumber	String	<b>M4616WZ</b>
country	String	<b>ESP</b>
originalCountry	String	<b>ESP</b>
takenOn	DateTime as String	<b>2017-12-19T11:38:33.12Z</b>
status	Status	OK, Pending, Confirmed, Canceled, Exported, Prescribed, NoAuth, SanctionPending, NoAuthExceed, Ignored
direction	VehicleDirection	Unknown, GettingCloser, GettingFarther, Stopped

Field	Type	Example
speed	Integer	0
confidence	Integer	89
envlImageIds	List of Integer	[ 12300, 12302, 12303 ]
ocrImageId	Integer	12301
signaled	Boolean	false
avgDigitsHeight	Integer	16
multiplateRate	Integer	2
processingTimeOCR	Float	72.817330121994019
capturerId	Integer	1
capturerType	String	
isAlarm	Boolean	false
kamikazeAlarm	Boolean	false
timeInZoneAlarm	Boolean	false
blacklistAlarm	Boolean	true
alarmListIds	List of Integer	[ 20, 21 ]
speedAlarm	Boolean	false
prowlingAlarm	Boolean	false
vehicleMaker	String	<b>BMW</b>
vehicleModel	String	<b>M5</b>
vehicleColor	String	<b>UNKNOWN</b>
crosstime	Float	0
hasExit	Boolean	false
signalId	String	1
authorized	Boolean	false
category	String	
vehicleClass	String	
region	String	

## Add a Plate to a List

If you are working with Lists, you can associate the current Plate to a List (see [LISTS: Black and White Lists, p. 48](#)), simply click on the action Add to of the context menu (see ⑤ of [Plate Table, p. 56](#)).

Then, the following popup window will appear:

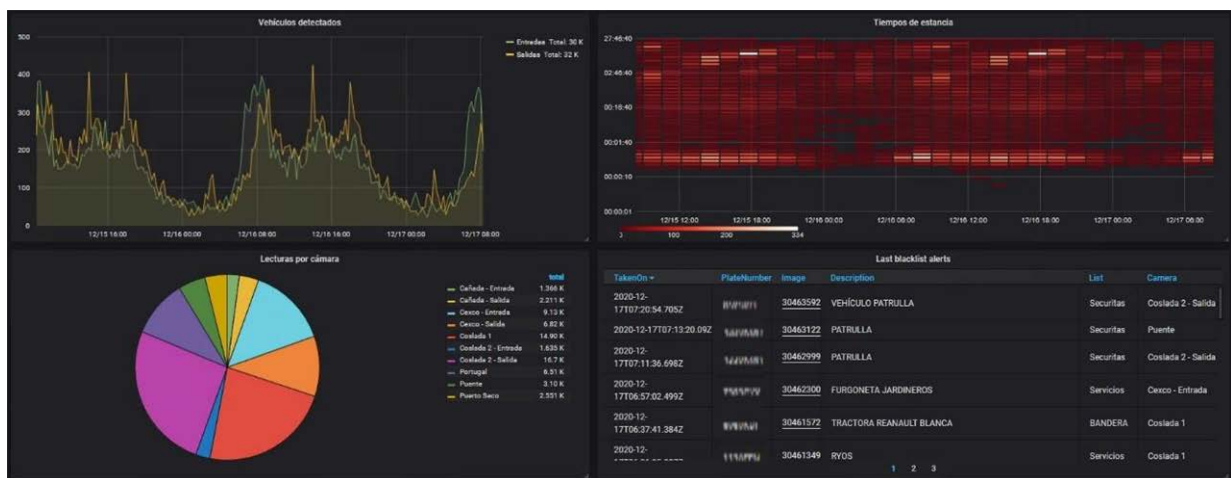


For additional information, see [‘Add to’ Tab, p. 34](#).

# DASHBOARD: Grafana Plugin

MOBOTIX SYNC fully integrates Grafana Dashboards, an open-source analytics and monitoring solution for databases. The Dashboard allows you to query and visualize the metrics of your applications and also, depending on your requirements, issue messages to a selection of pre-defined messenger services as a post-process.

It works with the data stored within MOBOTIX SYNC to provide tailored reports like traffic volume, area capacities and many more incorporating map views in case the data set was accompanied by GPS data.



MOBOTIX offers you the possibility to design dashboards according to your individual requirements and make them available to you through its Professional Service. For further information contact your local MOBOTIX contact or visit the MOBOTIX homepage ([www.mobotix.com](http://www.mobotix.com)).

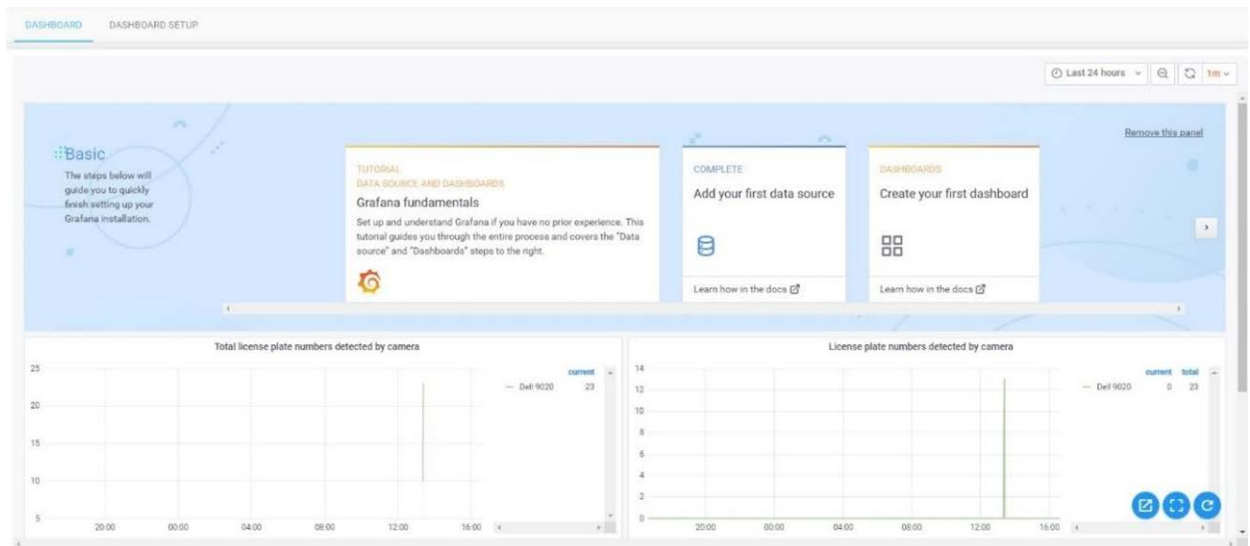
After switching to the Dashboard view, you will see a default dashboard.

Furthermore, we refer to helpful tutorials and application help for the successful design of your own dashboards.

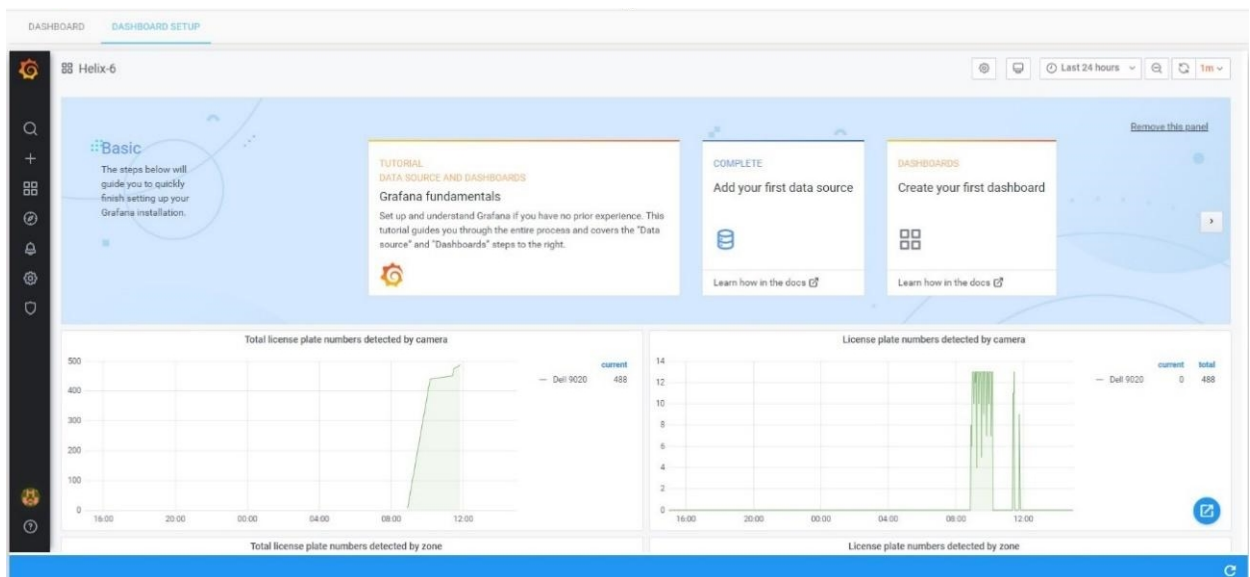
These are external contents, which are provided by Grafana free of charge and are continuously extended and maintained.

**Selecting DASHBOARD causes the main menu to be displayed:**

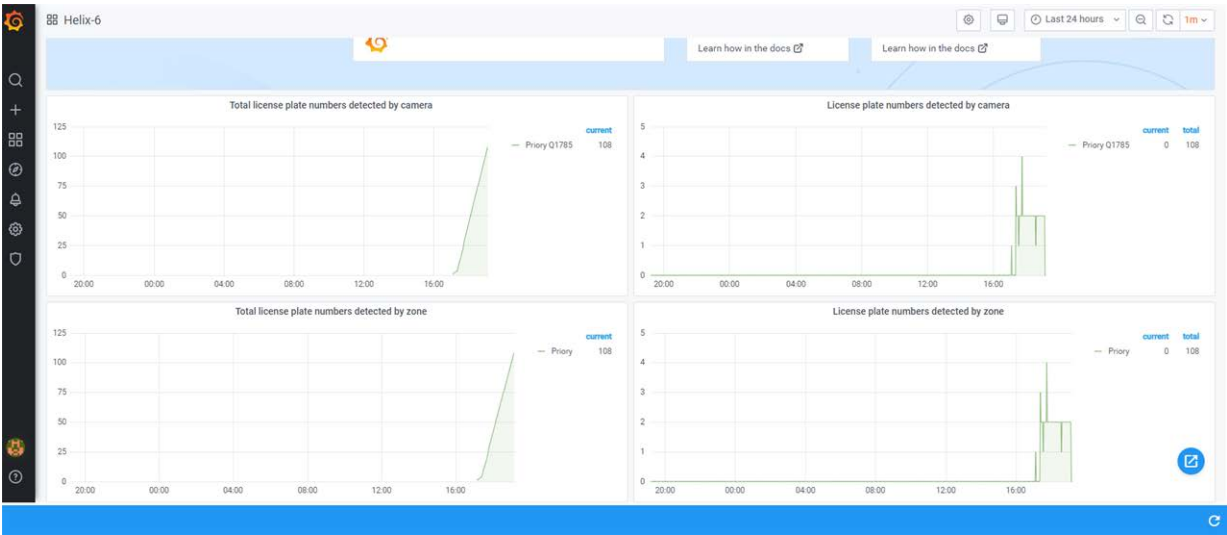
## DASHBOARD: Grafana Plugin



Click on **DASHBOARD SETUP** to start connecting your data.

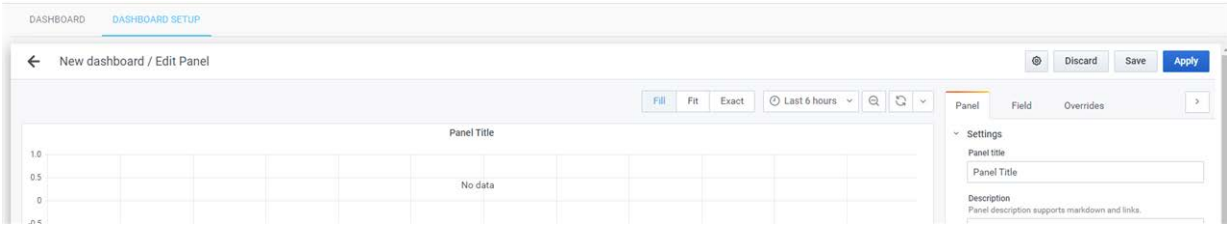


A default dashboard will be loaded with four simple graphs from your connected ALPR cameras.



Click on the **[+]** in the left hand column to create a new folder if required, to save your dashboards into.

Next create a dashboard and add a new panel. The new blank panel will appear:



# LISTS: Black and White Lists

Selecting LISTS from the Main dropdown Menu allows the user to create multiple whitelists or blacklists. Vehicles (plates) that appear on a whitelist are always authorized to enter an associated zone and can trigger an Actuator (relay). Vehicles on a blacklist will create an alarm in the system if the plate is detected in an associated zone. When a zone is a parent of another zone, the lists are always inherited.

Note that when setting up Actuator Links (see later), you can select the Event Type which includes Authorized and Blacklist. A vehicle in a Blacklist can therefore trigger a relay ( e.g. to sound an audible alarm). A Whitelist plate is always authorized and so you should select **Authorized** to trigger the actuator in this case.

## Lists Table

This area shows all lists created. You can add, edit or delete any of them.

Id	Name	Type	Description	Color	Users	Zone	Owner
6	Lista blanca de Santo Tomas	White list	Lista blanca Santo Tomas	#000000		Kai_Test	jigarcia
69	OvationTest	Black list		#FF0000	fb4, ovation	Kai_Test	
2	Blacklist	Black		#F70202	admin, dan, demo, mobotix	Kai_Test	demo
12	TestListKai	Black		#1EF12C	jason	Kai_Test	
21	Test Actuator List Kai	White	Park 1	#33DD27	kaicamera65	Kai_Test	

In the main window of this menu you can see the name of the list, the type of list, description, a color marker code of the list, the user and zone associated with it and also the owner.



There are toolbar icons to import the list from a file, to renew the from-to dates of the list and finally an icon to delete the list (see below for more details).

Note that the Columns displayed can be configured by pressing the Settings icon (bottom left).

## Search Filters

SYNC includes a fast way to search a List by adding search criteria as a text string (see ⑥ of the [Lists Table, p. 48](#)). To enable this, a Filter to the Results can be added or removed. You can also use the Filter by option in the context menu (see ⑦ of the [Lists Table, p. 48](#)). Search filter syntax is: Token:FilterValue, where:

Token	filterKey	filterValue
ID	id	List ID
NAME	name	List name
TYPE	type	blacklist   whitelist
DESCRIPTION DESC	description	Description
ZONE	zone	Zone ID or list name

### NOTE!

To clear the search criteria use button [X] located at right of the filter bar.

The ZONE filter must include an exact value (ID or list name) because it is a relation, not a List attribute.

## Add a new list

At the bottom right of the screen there is a [+] button (see ① of [Lists Table, p. 48](#)) to add a new list to the system.

**This opens a pop-up window with various options listed below:**

The screenshot shows a 'Plate list' form with the following fields and annotations:

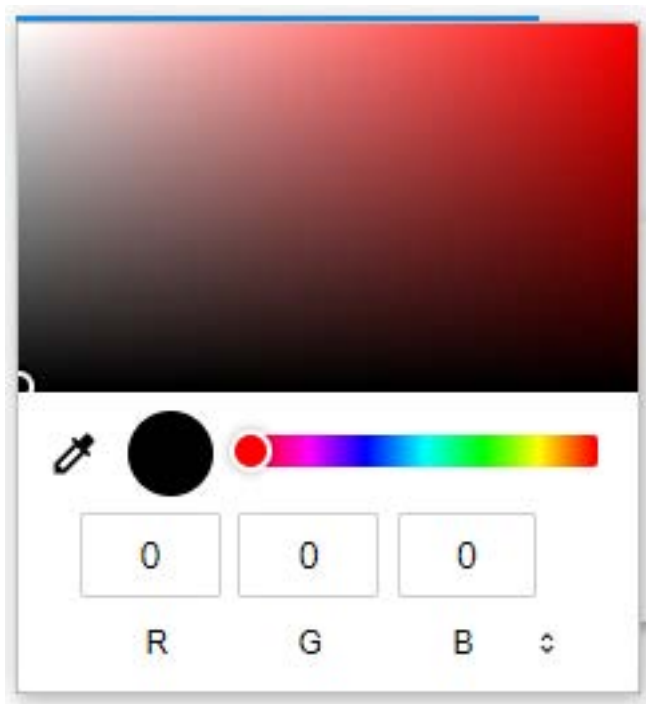
- 1** Name \*
- 2** Description \*
- 3** Zone \*
- 4** Is Virtual (toggle switch)
- 5** Type \*
- 6** Color (color picker)
- 7** Users (list of available users: adaking, admin, admin\_user, adt-poc, adtel, agdcamera, agustin, ahack, etc.)
- 8** Owner (dropdown menu)

A 'SAVE' button is located at the bottom right of the form.

### Description:

- **Name ①** : Insert a name for the list.
- **Description ②** : Insert a description of the list.
- **Zone ③** : Insert the zone associated with the list.
- **Is Virtual ④** : This kind of list will just be stored in memory, not into the database. If the application is stopped, this list will be removed from memory.
- **Type ⑤** : Set the list to be a blacklist or whitelist.

■ **Color** ⑥ :



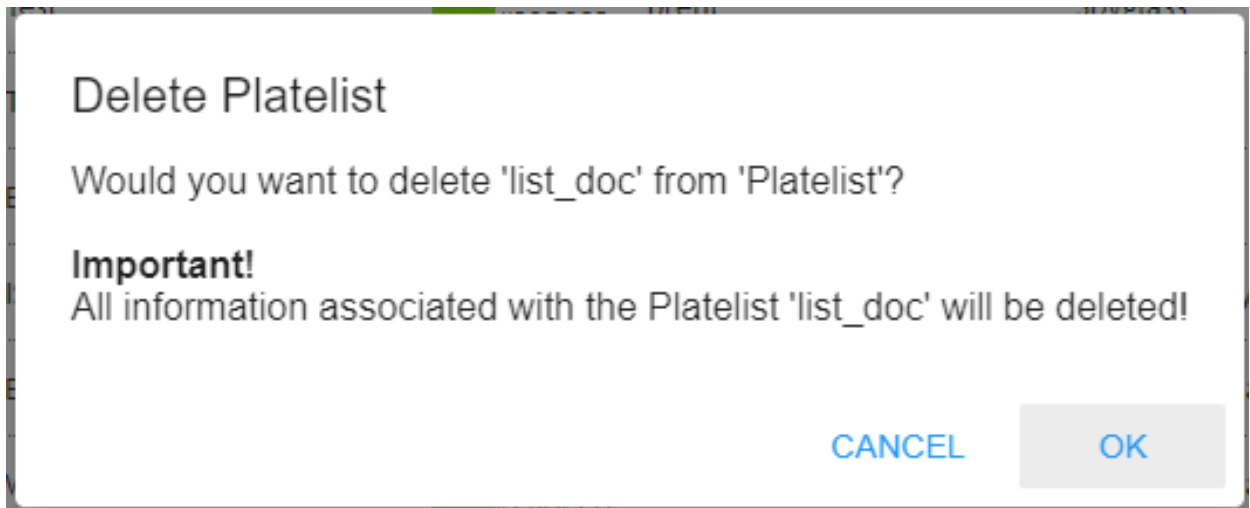
Choose a reference color for the new list. Once clicked, you will see a color palette where you can select a color using the cursor. The field will automatically display the associated RGB hexadecimal color code.

- **Users** ⑦ : Defines the user who will receive events linked to the list.
- **Owner** ⑧ : This field is automatically filled with the user who created the list.

## Delete a list

To delete a list, simply click on the action Delete in the contextual menu (see ② of [Lists Table](#), p. 48).

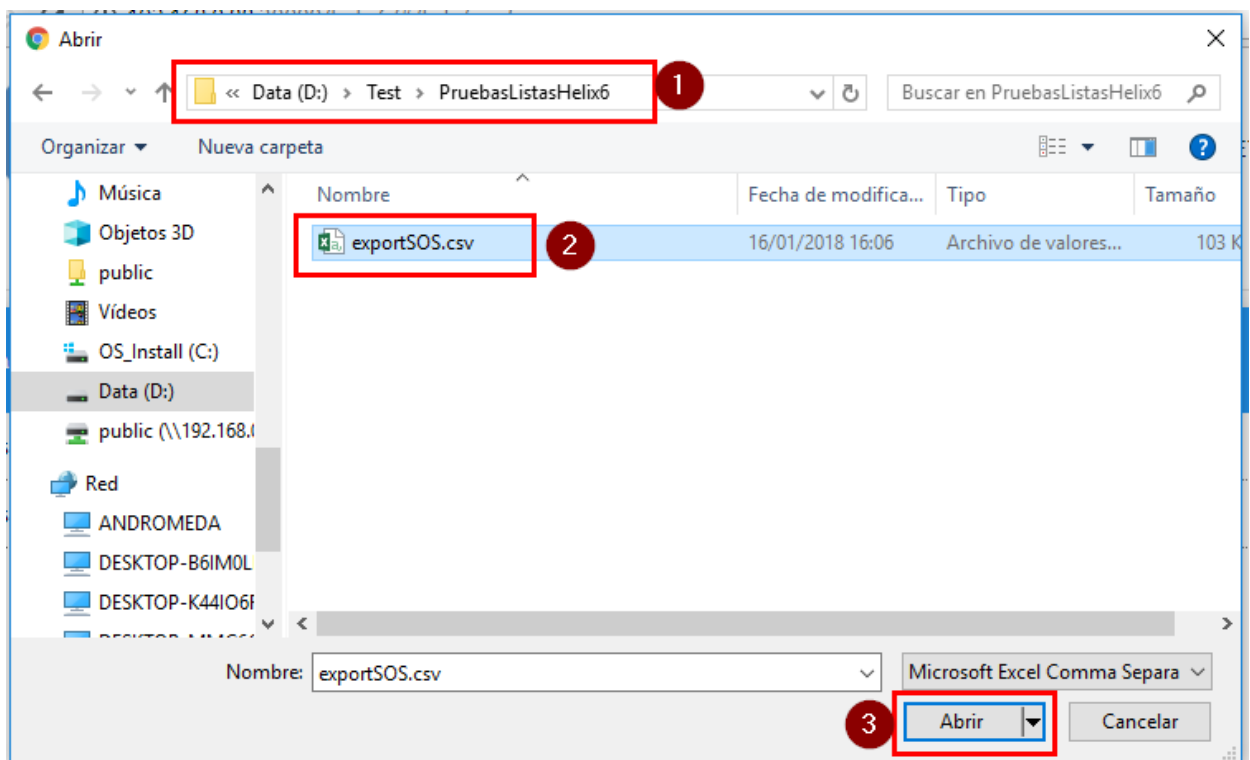
Once this button is pressed, a confirmation window will appear asking you if you want to delete the list.



If you are sure, press the "OK" button and the list will then be deleted, otherwise Cancel.

## Import a Plate List from a CSV file

To import a plate list from a CSV file, simply click the action Import in the contextual menu (see ④ of [Lists Table, p. 48](#)). A selection file window is opened:



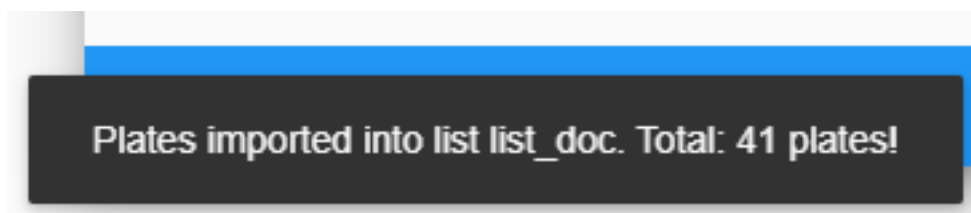
### Description

- Select folder ①
- Select file ②
- Open file ③

Select a folder and file and click Open. File opening times will vary depending on the size of the files.

Id	Name	Type	Description	Color	Users	Zone	Owner
85	list_doc	Black list	List doc	#F4E801		Vaxtor Spain	
84	Spyglass - test	White list	Test	#83D902	brent	Spyglass	
83	Spyglass - test	Black list	Test	#E53E3E	brian	Spyglass	
82	Wegmans	Black list	Ex-employees	#F17109	admin, steve	Westwood Store	
81	ISOBlacklist	Black list	ISOBlacklist	#000000	isosmartcity	ISOSmartCity	
79	Eikona - Blacklist	Black list	Blacklist	#E13737		Eikona - India	
78	Eikona - Whitelist	White list	Whitelist for Eikona PoC	#25AFAE		Eikona - India	
77	SPG Test list	Black list	First test list	#000000	brent	Spyglass	
76	Lista demo Paula	White list	Lista demo Paula	#00D9FF	paula	Parking demo	
74	Vaxtor Spain	Black list	Vaxtor Spain Test List	#000000	rafa	Vaxtor Spain	
71	Lista Blanca	White list	White list of employees	#0077FF	jaime	Omnichoud MX	
69	OvationTest	Black list		#FF0000	fb4, kai, ovation	Kai_Test	
34	CG_TESTLIST	White list	TEST PLATE IMPORTANT	#05D9F5	admin	Australia-ISpeed Project Doc	

Finally, a Toast message (one that will automatically disappear) is displayed (at the bottom left corner of the window) showing how many Plates have been imported:



**NOTE!** You can then review the imported data in the List list items screen (see next section).

The CSV file format is defined as follows:

Field	Type	Example
plate *	String	0933BFF
activefrom *	DateTime as String	2017-01-01T00:00:00.00Z

Field	Type	Example
activeuntil *	DateTime as String	<b>2017-12-31T23:59:59.00Z</b>
Comments *	String	<b>Comments</b>
Description *	String	<b>Description</b>
Hitcount	Integer( \$int32 )	5
lastDetection	DateTime as String	<b>2017-12-19T11:38:33.12Z</b>

(\*) Required

**So, for example, a file might contain the following data:**

plate;activefrom;activeuntil;comments;description

ABC123;2019-01-01T00:00:00.00Z;2020-01-01T00:00:00.00Z;Comment 1;description 1

XYZ234;2019-01-01T00:00:00.00Z;2020-01-01T00:00:00.00Z;Comment 2;description 1

LAW345;2019-01-01T00:00:00.00Z;2020-01-01T00:00:00.00Z;Comment 3;description 1

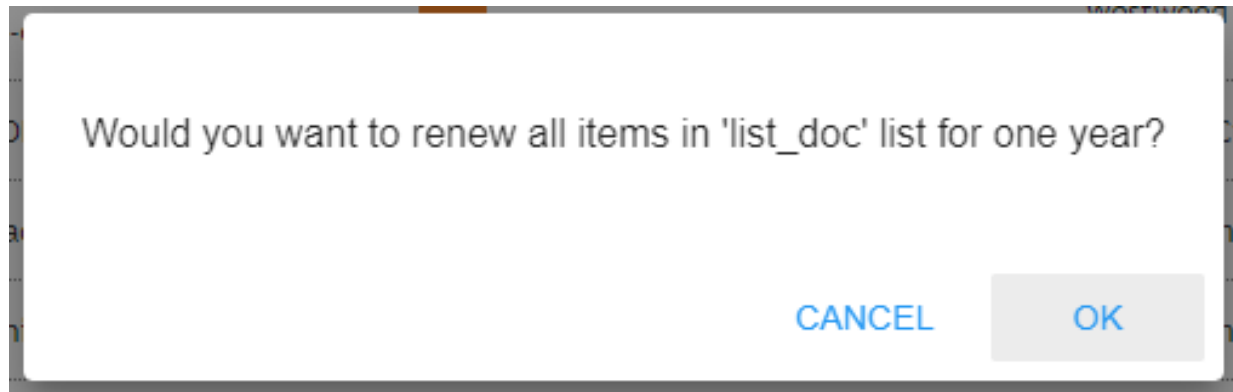
### NOTE!

- The CSV file must include a header with column names.
- The CSV file uses a semicolon (;) as a column field separator.
- The CSV header must include plate, activefrom, activeuntil, Comments and Description columns.
- **DateTime fields are UTC time in ISO-8601 format - encapsulated in the String format:** "YYYY-MM-DDTHH:MI:SS.SSZ" with HH in 24h format.

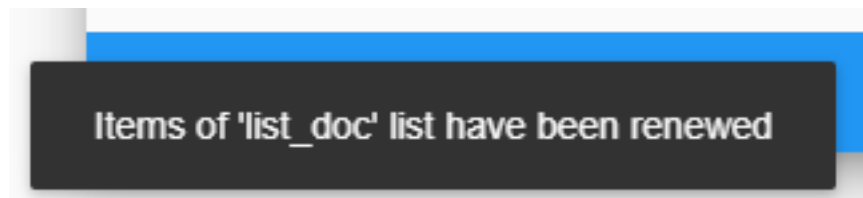
**NOTE!** Fields hitCount and lastDetection help when exporting or importing lists from different SYNC installations.

## Renew the List

To renew the list for one year, click the action Renew for one year in the contextual menu (see ③ of [Lists Table, p. 48](#)). Then, this pop-up windows is opened:



If you are sure, press the [OK] button and the list will then be renewed, otherwise Cancel.  
Finally, a Toast message is displayed (at the bottom left corner of the window) showing the renewing confirmation:



## Edit a List Item

To edit a list, simply click the action Edit in the contextual menu it (see ⑤ of [Plate Table, p. 56](#)), this pop-up window is opened:

Plate list

Name \*

TestListKai

Description \*

Test

Zone \*

Kai\_Test

Type \*

Black list

Is Virtual

☐

Color

Users

Availables

adaking  
admin  
admin\_user  
adt-poc  
adtel  
agdcamera  
agustin  
ahack  
alea

Assigned

jason  
kai

Owner

kai

SAVE

**NOTE!** For more details, see section [Add a new list, p. 49](#).

## Plate Table

In LISTS, PLATES, you can see all of the individual plates and their associated lists that have been setup.

You can see each list's details, when it was added and its validity period, the vehicle plate, how many times it has been detected in the validity period, the last sighting, the description of the list and also a small trash can icon to delete individual plates.



PLATE

LISTS

LIST:Policia

Search criteria

×

🔍

Plate	List	Active from	Active until	Description	Last detection	Hit count	
7590JVJ	Policia	06/10/2020, 12:00:00 AM	06/10/2021, 12:00:00 AM	Delta 2		0	6
7590JVJ	Policia	06/10/2020, 12:00:00	List item '7590JVJ'		0 AM	Delta 2	0
7590JVJ	Policia	06/10/2020, 12:00:00	Edit		0 AM	Delta 2	0
7590JVJ	Policia	06/10/2020, 12:00:00	Delete		0 AM	Delta 2	0
6564HZR	Policia	06/12/2020, 11:46:57	Filter by		7 AM	Detectado en 12/06/2020 10:35:55 por la cámara Calafell 2	0
6564HZR	Policia	06/12/2020, 11:46:57	- Plate		7 AM	Detectado en 12/06/2020 10:35:55 por la cámara Calafell 2	0
6564HZR	Policia	06/12/2020, 11:46:57	- List		7 AM	Detectado en 12/06/2020 10:35:55 por la cámara Calafell 2	0
6564HZR	Policia	06/12/2020, 11:46:57	Close		7 AM	Detectado en 12/06/2020 10:35:55 por la cámara Calafell 2	0
1111BBB	Policia	09/24/2020, 12:00:00 AM	09/25/2020, 12:00:00 AM	hhkjh		0	
1111BBB	Policia	09/24/2020, 12:00:00 AM	09/25/2020, 12:00:00 AM	hhkjh		0	
1111BBB	Policia	09/24/2020, 12:00:00 AM	09/25/2020, 12:00:00 AM	hhkjh		0	

⚙️

9 items

↺

+

↓

🗑️

## Search Criteria

In the upper right corner of the table there is a small magnifying glass icon ① . If you click on it a popup window will appear where you can select from the following search criteria:

The screenshot shows a 'Search criteria' dialog box with a blue header and a close button (X) in the top right corner. The dialog contains the following fields and options, each marked with a red circle and a number:

- 1** List type: A text input field.
- 2** List: A dropdown menu showing 'list\_doc (id: 85)'.
- 3** Date from: A text input field.
- 4** Date to: A text input field.
- 5** Plate: A text input field.
- 6** Description: A text input field.
- 7** Active: A section with three radio button options: 'Active', 'Not active', and 'Both'.
- 8** Located: A section with three radio button options: 'Located', 'Not located', and 'Both'.

At the bottom of the dialog, there are two buttons: 'CLEAR' on the left and 'SEARCH' on the right. The background shows a table with columns for date, time, and description, with some rows visible.

**Description:**

- **List type** ① : This option limits the search to the selected list type: Blacklist or Whitelist
- **List** ② : the results by list or multiple lists.
- **Date from** ③ : Shows only the plates detected since the selected date.
- **Date until** ④ : Shows only the plates detected up until the selected date.
- **Plates** ⑤ : The plate number of a specific vehicle. \*
- **Description** ⑥ : Filter by the description. \*
- **Active** ⑦ : Show only the plates that are active, inactive or both at this moment.
- **Located** ⑧ : Show plates that have been detected at least once, never detected or both.

\* Wildcards are allowed.

## Search Filter

SYNC includes a fast way to search a List by adding search criteria as a text string (see ② of [Plate Table, p. 56](#)). To enable this, includes a Search Filter where Search Filters can be added or removed, also you can use the Filter by option in the context menu (see ⑨ of [Plate Table, p. 56](#)). The Search filter syntax is: Token:FilterValue, where:

Token	filterKey	filterValue
LISTIDS LIST	listIds	List ID or List name, separated with comma (,)
TYPE	type	blacklist or whitelist
ACTIVE	active	true or false
PLATE	plate	p.e. M4616WZ
LOCATED	located	true or false
DATEFROM FROM	dateFrom	<b>DateTime format dd/MM/yyyy hh:mm:ss</b> , example: 08/01/2018 10:22:29
DATETO TO	dateTo	<b>DateTime format dd/MM/yyyy hh:mm:ss</b> , example: 08/01/2018 10:22:29
DESCRIPTION DESC	description	Description

**NOTE!** To clear the search criteria use button [X] located at right of the filter bar.

## Add a Licence Plate to a List

Click on the [+] symbol located at the bottom right corner of the screen (see ③).

The screenshot shows the 'HelixServer - Plate lists' application. A 'List item' pop-up form is open, overlaying a table of plate lists. The form contains the following fields, each marked with a red circle and a number:

- 1 Plate \*
- 2 Description \*
- 3 List \*
- 4 Active from \*
- 5 Active until \*
- 6 Comments

A 'SAVE' button is located at the bottom right of the form. The background table shows columns for Plate, List, Active from, Active until, Description, and a status column. The bottom of the interface shows '41 items' and navigation icons.

### Description:

- Plate ①  
The licence plate to add to the list.
- Description ②  
Add a description in this field.
- List ③  
Select a list to add the plate to.
- Active from ④  
Starting date of the plate in the list. (validity period)
- Active until ⑤  
Finish date of the plate in the list.
- Comments ⑥  
Freeform text comment to be associated with the plate.

**NOTE!** All fields in this pop-up menu marked with an asterisk are required.

To add a record, press the [Save] button. The window will close automatically and the record will be added.

## Edit Plate a List Item

To edit a list, simply click on the action Edit of the context menu (see ④ of [Plate Table](#), p. 56), this pop-up window is opened:

List item

Plate \*

OSI659

Hit count

256

Description \*

Test description

List

list\_doc

Active from \*

06/07/2021, 23:00:00

Active until \*

30/07/2021, 23:00:00

Last detection

22/07/2021, 06:49:26

Comments

SAVE

I<

<

>

>I

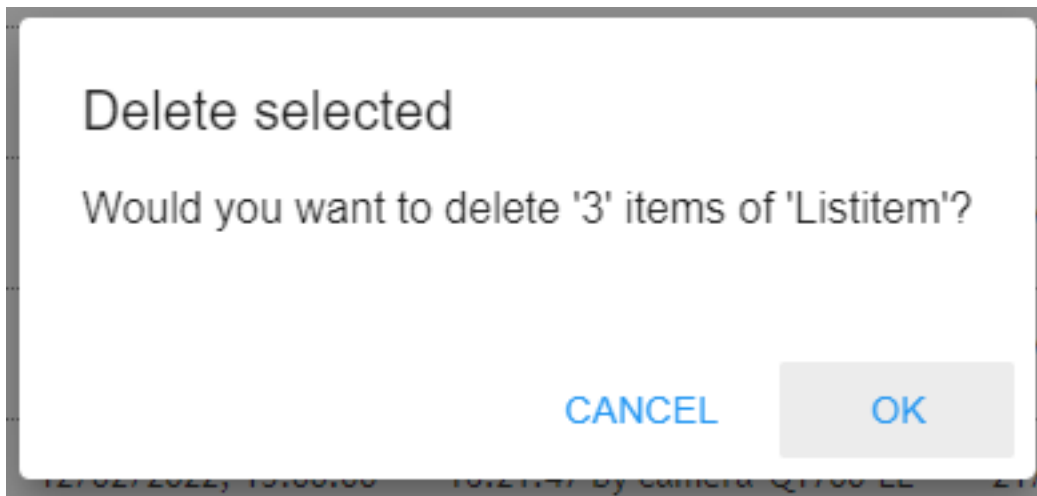
**NOTE!** For more details see [Add a Licence Plate to a List](#), p. 59.

## Delete a Plates Item

To delete Plate list items, the action Delete of the context menu or use the multiple delete option, selecting the associated checkbox (see ⑤ of [Plate Table](#), p. 56).

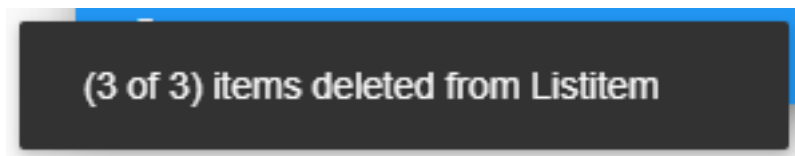
Plate	List	Active from	Active until	Description	Last detection	Hit count	
KPG133	list_doc	06/07/2021, 23:00:00	11/05/2023, 11:24:31	Test description	30/07/2021, 10:55:45	38	<input type="checkbox"/>
IKT498	list_doc	07/09/2021, 02:00:00	11/05/2023, 11:24:31	Interesting plate	29/09/2021, 20:30:53	78	<input checked="" type="checkbox"/>
HNK633	list_doc	06/09/2021, 23:00:00	11/05/2023, 11:24:31	auto	07/09/2021, 12:06:09	1	<input checked="" type="checkbox"/>
GZX505	list_doc	06/07/2021, 23:00:00	11/05/2023, 11:24:31	Test description	30/07/2021, 16:27:45	65	<input checked="" type="checkbox"/>
GKI924	list_doc	06/07/2021, 23:00:00	11/05/2023, 11:24:31	Test description	24/07/2021, 01:04:07	7	<input type="checkbox"/>

Once the checkbox or checkboxes are selected, press the delete button ⑤ of [Plate Table, p. 56](#) and a confirmation window will appear asking you if you want to delete the list items.



If you are sure, press the [OK] button and the list will then be deleted, otherwise Cancel.

Finally, a Toast message is displayed (at bottom left corner of the window) showing the deleting confirmation:



## Export all Plates in Lists

To export all of the plates, first choose which fields are to be exported by pressing the Settings icon ⑩ of [Plate Table, p. 56](#)). You will see a list of available fields and as we have already seen, we can select which should be displayed on the screen, – but we can also use the 'Export' slider to add them to the .csv output file.

Config list columns - List item

Name	Show	Export	Width	Position
Id	<input type="checkbox"/>	<input type="checkbox"/>	5	▼ ^ ▼
Plate	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10	▼ ^ ▼
List	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10	▼ ^ ▼
Active from	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	15	▼ ^ ▼
Active until	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	15	▼ ^ ▼
Comments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	20	▼ ^ ▼
Description	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20	▼ ^ ▼
Last detection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	15	▼ ^ ▼
Hit count	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10	▼ ^ ▼

↺

✓

✓

SAVE

Select the CSV File Download icon (see ③ of [Plate Table](#), p. 56) to start the export.

**NOTE!** For more details about available columns to download, see section [Export all Plates in Lists](#), p. 62.

The exporter tool will use the active search filters, in order to download just the required list items. The exported file, named exportListitem.csv, will be saved to the standard Download folder – and is shown at the bottom of your screen.

**Opening as flat text shows the file:**

Plate;ActiveFrom;ActiveUntil;Comments;Description;HitCount;LastDetection

**YVY480;2021-07-06T21:00:00.000+00:00;2022-07-30T21:00:00.000+00:00;**this is where we would put more information about this plate.;Test description;388;2022-05-10T07:10:51.946+00:00

**YKE862;2021-07-06T21:00:00.000+00:00;2021-07-30T21:00:00.000+00:00;;**Test description;4;2021-07-27T17:37:35.847+00:00

## LISTS: Black and White Lists

---

**OYT729;2021-07-06T21:00:00.000+00:00;2021-07-30T21:00:00.000+00:00;Unpaid parking ticket.;Test description;30;2021-07-30T09:50:31.810+00:00**

...



# ACTUATORS

An actuator, otherwise known as a relay, is normally an opto-isolated device used for triggering external devices such as car park barriers or traffic lights.

MOBOTIX MOBOTIX SYNC can be configured to trigger an actuator on various conditions such as a plate being in a Blacklist, – or a plate being authorized (see later).

**NOTE!** When setting up Actuator Links (see later) you can select the Event Type which includes Authorised and Blacklist. A vehicle in a Blacklist can therefore trigger a relay. A Whitelist plate is always authorized and so you should select **Authorised** to trigger the actuator in this case.

Various standard devices are supported but the most common is the ADAM 6000 series from Advantech. The 6266 model for example is IP controlled and has four separate output channels meaning that four devices can be controlled from each unit. The advantage of an IP relay device is that it can be sited remotely from SYNC. It could even be in a different City and a centralized SYNC Back Office is then able to remotely open barriers.

**NOTE!** If the device is not on the same local network then a fixed IP should be used to remotely address it.

# ACTUATORS Table

The screenshot shows a web interface for managing actuators. At the top, there are two tabs: 'ACTUATORS' (selected) and 'ACTUATOR LINKS'. Below the tabs is a search bar labeled 'Filter results' with a red circle 6 around it. The main area contains a table with columns: ID, Description, Type, IP, Port, User, Channel, State, Period, and two action columns. The table has three rows. The second row (ID 12) is highlighted with a red circle 5. The first and third rows have red circles 4 and 2 around their respective action icons. At the bottom right, there are three icons: a gear (red circle 1), a plus sign (red circle 3), and a trash can (red circle 3). The bottom status bar shows '3 items' and a refresh icon.

ID	Description	Type	IP	Port	User	Channel	State	Period		
15	actuator_2	SkydataController	1.1.1.1	1	1	1	1	1	!	□
12	Actuator_demo	Adam6050Controller	1.1.1.1	1	admin	1	1	1	!	□
14	actuator_1	AxisController	1.1.1.1	1	a	1	1	1	!	□

Before attempting to add an actuator to the system, check by using the relay manufacturer’s software that it is connected and functioning correctly.

## Filter Actuators

The Filter result area (see ④ of the [Filter Actuators, p. 66](#)) allows you to filter the current listed Actuators. To enable this, a Filter to the Results can be added or removed. In addition you can use the Filter by option in the context menu (see ③ of the [Filter Actuators, p. 66](#)). The filter syntax is:

Token:FilterValue where:

Token	filterKey	filterValue
ID	id	List ID
DESC	description	Actuator description
DESCRIPTION		
TYPE	type	Based on/actuator/validtypes

## Add a new Actuator

Click Edit ① of the context menu of the [Add a new Actuator, p. 67](#), to add a new actuator. A window will appear where you can set up the device.

The screenshot shows a configuration window titled "Actuator". It contains the following fields:

- 1** Description \*
- 2** Type \*
- 3** IP \*
- 4** Port \*
- 5** User \*
- 6** Password \*
- 7** State \*
- 8** Period \*
- 9** Channel \*

A "SAVE" button is located at the bottom right. A red exclamation mark icon is next to the "Password \*" field.

### Description:

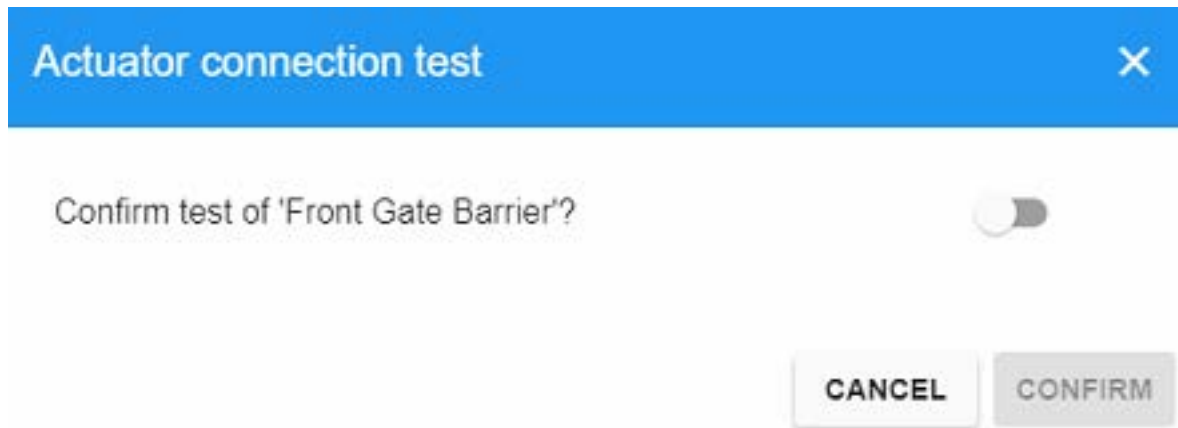
- Enter a descriptive name ① for the device being controlled
- Select the type of device ② from the dropdown list of supported actuators.
- IP address ③
- Port number ④
- Username ⑤ \*
- Password ⑥ \*
- State ⑦ : 0 or 1, this is what you want the device to be switched to
- Period ⑧ : in Milliseconds is the relay latch time. (the time that the relay is closed for). In the case of the Adam relay you can set this time directly by accessing the relay via its IP address or utility software. Most barriers operate on a minimum pulse time of 200ms
- Channel ⑨ : is the relay number within the device. In the case of the 6266 it can be set from 1 to 4 to trigger each relay within the device.

**NOTE!** (\*) Username and Password to access the device. The default Adam password is: 00000000

## Test an Actuator

Once added you can test the relay by clicking Actuator connection text ⑥ of the context menu of the [ACTUATORS Table, p. 66](#).

A window appears asking you to confirm the test. Use the slider and then click CONFIRM. A success or failure message is then displayed.



## Edit an Actuator

To edit an Actuator, simply click Edit ⑤ of the context menu of [Edit an Actuator, p. 68](#), this pop-up window is opened:

Actuator

Description \*

1234ABC

Type \*

Adam6052Controller

IP \*

192.168.0.49

Port \*

80

User \*

admin

Password

...

State \*

1

Period \*

1

Channel \*

1

SAVE

For more details see [Add a new Actuator, p. 67](#).

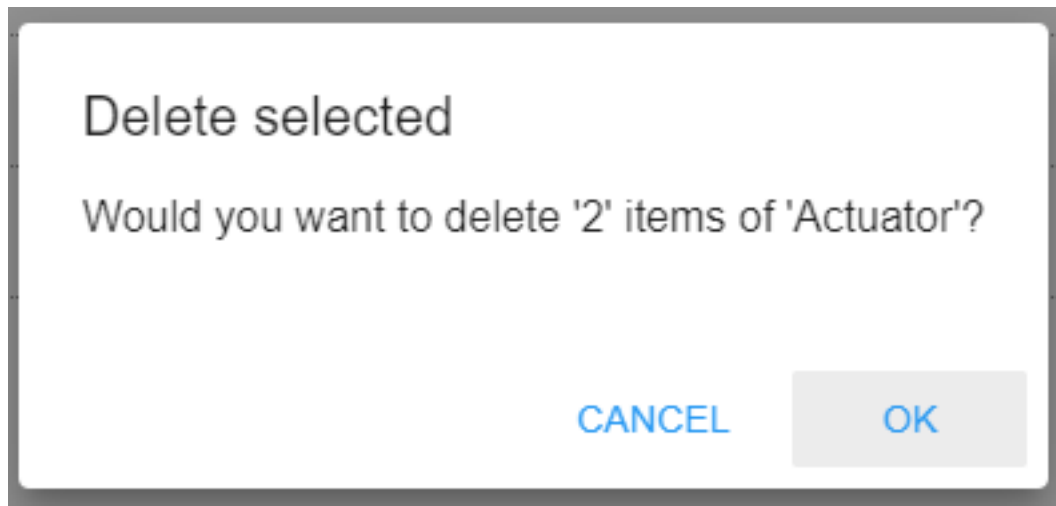
## Delete an Actuator

To delete an Actuator, click Delete ⑦ of the context menu of the [ACTUATORS Table, p. 66](#)

Alternatively use the multiple delete selecting the actuator to delete, a confirmation window will appear asking you if you want to delete the actuator:

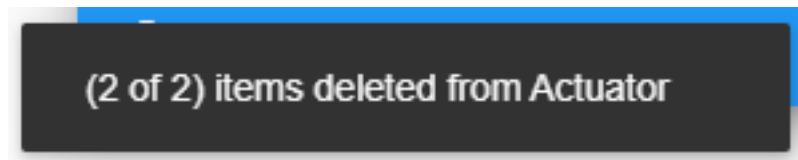
ID	Description ▾	Type	IP	Port	User	Channel	State	Period		
15	actuator_2	SkydataController	1.1.1.1	1	1	1	1	1	ⓘ	☑
12	Actuator_demo	Adam6050Controller	1.1.1.1	1	admin	1	1	1	ⓘ	☐
14	actuator_1	AxisController	1.1.1.1	1	a	1	1	1	ⓘ	☑

And click the ③ button of the [ACTUATORS Table, p. 66](#). Then a confirmation window is opened:

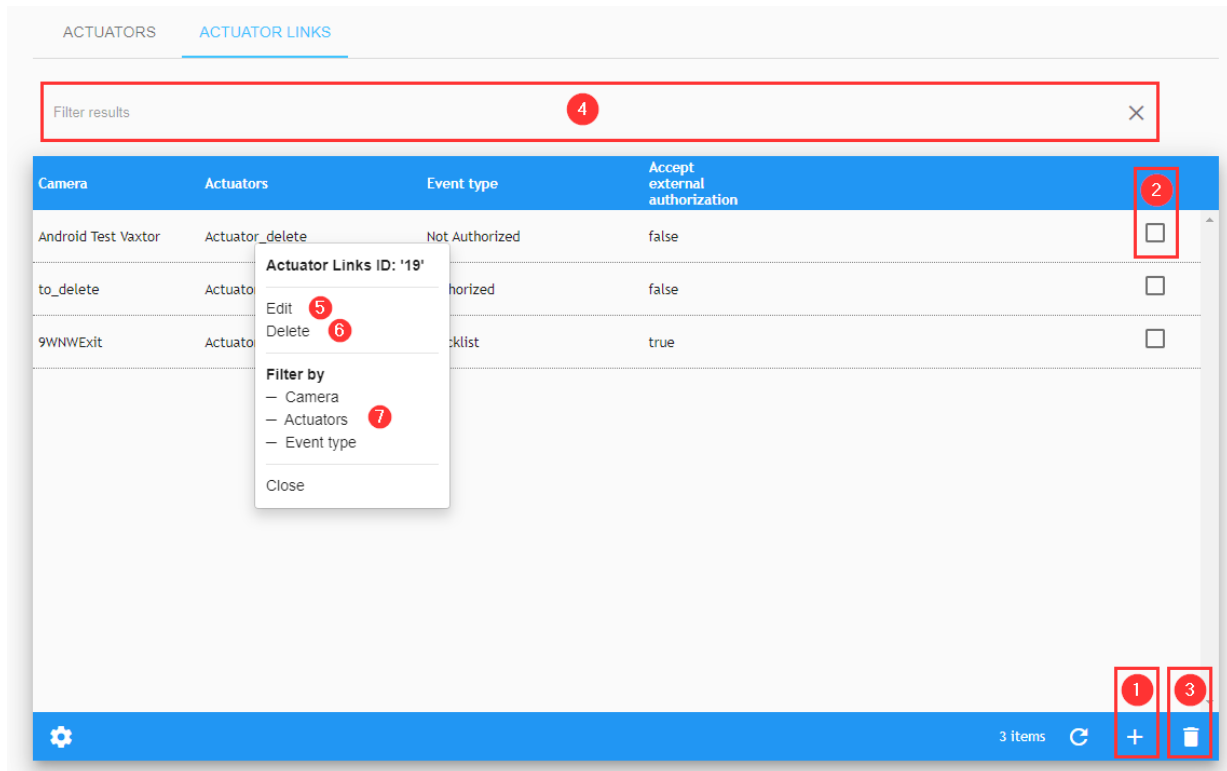


If you are sure, press the [OK] button and the Actuator will then be deleted, otherwise Cancel.

Finally, a Toast message is displayed (at bottom left corner of the window) showing the deleting confirmation:



# ACTUATOR LINKS tab



## Filter Actuator links

The Filter result area (see ④ of the [ACTUATOR LINKS tab, p. 71](#)) allows users to filter current listed Actuator links. To enable this, a Filter to the Results can be added or removed, also you can use the Filter by option in the context menu (see ⑦ of the [ACTUATORS Table, p. 66](#)). The filter syntax is: Token:FilterValue where:

Token	filterKey	filterValue
ID	id	Actuator link id
CAMERA	camera	Camera id or Camera name
ACTUATOR	actuator	Actuator id or Actuator name
EVENT EVENTYPE	eventtype	Event type

## Add a new Actuator link

Click on the plus icon (see ① of the [ACTUATOR LINKS tab](#), p. 71), to add a new actuator link. A window will appear where you can set up the device.

### Description

- Camera ① : select from the configured Cameras (see [CAMERAS Tab](#), p. 80)
- Actuator ② : select from the configured Actuators (see [ACTUATORS](#), p. 65)
- Event type ③ \*
- Accept an external authorization ④

(\*) Event type could be:

- Authorized
- Blacklist
- Not Authorized +
- Not Authorized - Capacity Exceed +
- Capacity is full +
- Capacity not full +

(+) if Access Control is licensed)

## Edit an Actuator link

To edit an Actuator, simply click the action Edit ⑤ of the context menu (see [Edit an Actuator](#), p. 68).



### Actuator Links

Camera \*

9WNWExit

Actuators \*

Actuator\_demo

Event type \*

Authorized

☒ Accept external authorization

SAVE

## Delete an Actuator link

To delete an Actuator, click the action Delete ② of the context menu of [ACTUATOR LINKS tab, p. 71](#) or use the multiple Actuator links delete option.

Camera	Actuators	Event type	Accept external authorization	
9WNWExit	Actuator_demo	Capacity not full	false	<input checked="" type="checkbox"/>
9WNWExit	Actuator_demo	Authorized	true	<input type="checkbox"/>
Android Test Nacho	Actuator_demo	Capacity is full	false	<input checked="" type="checkbox"/>

## ZONES tab

For samples see [Configuration Examples](#).

## Zones Table

74 / 116

# Filter Zones

SYNC includes a quick way to search a Zone by adding search criteria as a text string (see ④ of the [Zones Table, p. 74](#)). To enable this, a Filter to the Results can be added or removed, also you can use the Filter by option in the context menu (see ⑦ of the [Zones Table, p. 74](#)). Search filter syntax is: **Token:FilterValue**, where:

Token	filterKey	filterValue
ID	id	Zone ID
NAME	name	Zone name

**NOTE!** To clear the search criteria use button [X] located at right of the filter bar.

# Create a Zone

To add a new Zone, press the button ① of the [Zones Table, p. 74](#). A pop-up window will appear in which you can define the following parameters.

The screenshot shows a 'Zones' configuration window with the following elements and numbered callouts:

- 1**: Name \*
- 2**: Use authorization rules (toggle)
- 3**: Parent (dropdown menu, currently 'No parent')
- 4**: Schedules
- 5**: Town Code
- 6**: Users
  - Available users list: admin, q1700-le-uk-off, demo, q1700-le-ny, jigaracia, xtivity, jaime, dan
  - Assigned users list (empty)
- 7**: Speed limit \*
- 8**: Prowling minutes \*
- 9**: Prowling times detected \*
- 10**: Alarm settings (grouped in a red box)
  - Speeding alarm (toggle)
  - Prowling alarm (toggle)
  - Kamikaze alarm (toggle)
  - ADR (Dangerous Goods) alarm (toggle)

A 'SAVE' button is located at the bottom right of the window.

### Description:

- **Name** ① : Name for the zone.
- Use Authorization rules ② :
- **Parent** ③ : Select the parent zone (if any). Once a parent zone is selected it can inherit any schedule set.
- **Schedules** ④ : Select the schedules that apply to this zone. If a zone has no schedules associated with it, then all the vehicles are authorized by default.
- **Town code** ⑤
- **Users** ⑥ : Select which users can see this zone and receive real time events generated by it. \*
- **Speed limit** ⑦
- **Prowling minutes** ⑧

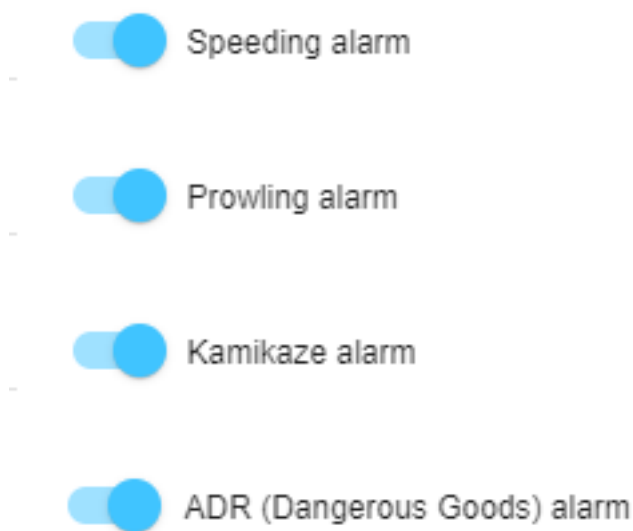
- **Prowling times detected** ⑨

- **Alarms** ⑩ \*\*

**(\*) Users:**

- Enable users to view cameras in a zone or receive alarms for that zone etc. by selecting the appropriate user from the users list and double clicking on the user to move it across to the right-hand box (assigned users).
- This user can now view any real-time information for that zone.
- The reason this is not set as a default is there may be a massive amount of information being received from many readers which would overload the system.

**(\*\*) Alarms:**



- **Speeding alarm:** If activated, an alarm will be generated if a vehicle goes over the preset speed limit.
- **Prowling alarm:** (Frequent Visitors) If activated, an alarm will be generated if the same vehicle is detected x times in that zone within y minutes/hours/days (where x & y are user defined).
- **Kamikaze alarm:** If activated, an alarm will be generated if a vehicle is travelling in the opposite direction to that specified. (see 9.2.1 Add a camera where you can enter the expected direction)
- **ADR (Dangerous Goods) alarm:** If activated, an alarm will be generated if the detected vehicle includes an ADR tag.

## Edit a zone

To edit a Category, simply click to the action Edit ⑤ of the context menu of the [Zones Table](#), p. 74.

Zones

Name \*

Kai\_Test

Use authorization rules

Parent

No parent

Schedules

24 x 7 , Estado Alarma - 0 y 1 , Office hours

Town Code

Users

Availables

adaking  
admin\_user  
adt-poc  
adtel  
agdcamera  
agustin  
ahack  
alan  
alex

Assigned

admin  
fb4  
georgios  
jigarcia  
kai  
kaicamera65  
ogarate  
ovation  
providencia

Speed limit \*

100

Speeding alarm

Prowling minutes \*

0

Prowling alarm

Prowling times detected \*

0

Kamikaze alarm

ADR (Dangerous Goods) alarm

SAVE

|<

<

>

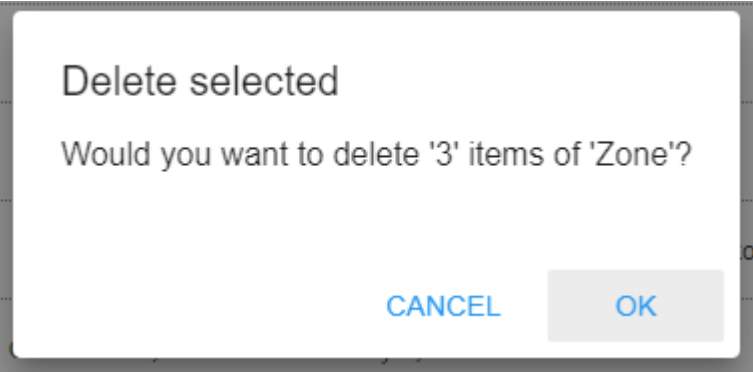
>|

## Delete a Zone

To delete a Zone, simply click to the action Delete ⑦ of the context menu of the [Zones Table](#), p. 74, or use the multiple Zone delete option:

Name	Parent	Inherit Schedules?	Schedules	Users	
Office		No	Office hours, 24 x 7	vaxtor-asia	<input type="checkbox"/>
Trigg Industries		No		rafa, sam7007	<input type="checkbox"/>
to_delete_3		No			<input checked="" type="checkbox"/>
to_delete_2		No			<input checked="" type="checkbox"/>
to_delete_1		No			<input checked="" type="checkbox"/>
Test-ALPR India		No		rafa, startologic, vaxtor-asia	<input type="checkbox"/>

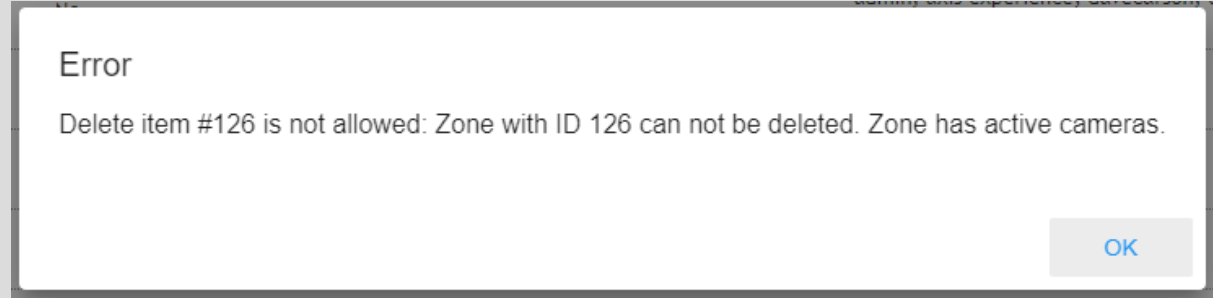
Once the checkbox or checkboxes are selected, press the delete button (see ③ of the [Zones Table](#), p. 74), and a confirmation window will appear asking you if you want to delete the list items:



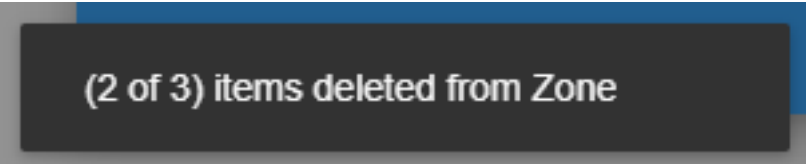
If you are sure, press the [OK] button and the list will then be deleted, otherwise Cancel.

**NOTE!**

If a zone has a camera associated, an error message is displayed:



Finally, a Toast message is displayed (at bottom left corner of the window) showing the deleting confirmation. In this case, two Zones have been deleted:



# CAMERAS Tab

This area shows all active cameras defined in MOBOTIX SYNC including environment (color contextual) cameras.

## Cameras Table

ZONESCAMERASCHEDULESECTIONSCAPACITY

ZONE:Kai\_TestFilter results

Id	Type	Image	Name	Zone	Time sync	Hardware	Serial number	Version	Queue	Reset count	Last ping	
128			Camera 'ProvidenceAndroid'	roid Kai_Test	✓					✓	206 days, 1 hour 10 minutes, 23 seconds ago	
129				Kai_Test	✓					✓	27 seconds ago	
127				era Kai_Test	✓					✓	--	

Filter by

- Type
- Zone

Close

3 items

+

## Filter Cameras

SYNC includes a quick way to filter a Camera by adding search criteria as a text string (see ② of the Cameras Table, p. 80) or using the fast Filter by options in the context menu (see ⑦ of the Cameras Table, p. 80). To enable this, a Filter to the Results can be added or removed. Search filter syntax is: **Token:FilterValue**, where:



Token	filterKey	filterValue
ID	id	Camera ID
CAMERA NAME	name	Camera name
TYPE	type	Camera type
ZONE	zoneld	Zone ID or Zone name

**NOTE!**

1. To clear the search criteria use button [X] located at right of the filter bar.
2. The ZONE filter must include an exact value (ID or list name) because it is a relation, not a camera attribute.

## Add a Camera

To add a new camera to the system, press the button ① of the [Cameras Table](#), p. 80.

Camera

×

DETAILS

SYNCED INFORMATION

1

Plate Reader Id \*

2

Region of Interest Id \*

0

3

Name \*

4

Type \*

Reader

5

Zone \*

6

Address

7

Overlay

8

Capturer

9

Grace hours

0

10

Report type

Both

11

Expected vehicle direction \*

Unknown

SAVE

**Description:**

- Plate Reader Id ① This is a unique identifier defined by the plate reading software (VaxALPR On Camera, VaxALPR for PC, VaxALPR for Android etc.).
- Region of interest ID ②
- Name ③ User defined name to help identify the camera.
- Type ④ Camera type:
  - **Reader:** Select this option if the camera is an ANPR camera.
  - **Environment:** Select this option if the camera is linked to a plate reader but is not the camera capturing the plate. i.e. this is a (color) contextual camera.  
(Use the same Plate Reader Id as this is the associated color contextual camera for the IR camera setup in VaxALPR )
- Zone ⑤ Select the area in which you want to register the camera.
- Address ⑥ User defined address of the camera.

- Overlay ⑦ User defined text to appear as a watermark on the saved image ( top left)
- Capturer ⑧ User defined name for this server. This field is used in the replication process (when servers are being linked).
- Grace hours ⑨ This is the time interval between camera health checks.
- Report type (10) Select when SYNC should store the result.
  - **Freeflow:** Store the plate only if it has been detected in freeflow mode.
  - **Signaled (Triggered):** Store the plate only if it has been detected due to an external trigger.
  - **Both:** Store the plate if either of the above occur ( so always store the plate).
- Expected Vehicle Direction (11) Alarms can be generated if a plate is traveling the wrong way. VaxALPR attempts to determine the direction of each plate read and passes this onto SYNC. Values can be:
  - Getting closer. Plates are expected to approach the camera.
  - Getting farther. Plates are expected to be moving away from the camera.

Note that if the camera is positioned very low for example, i.e. below the height of a plate, then the direction can be misreported.

## Synced Information Tab

Remote cameras can be monitored by MOBOTIX MOBOTIX SYNC and certain information can be synchronized between the camera and the SYNC.

Camera

DETAILS

SYNCED INFORMATION

12

Longitude

13

Latitude

14

Serial number

15

Camera brand

16

Camera model

17

Remarks

18

Reset count \*

0

19

Download config

20

Update frame timeout \*

43200

21

Update frame quality \*

20

22

Enable maintenance alarms

SAVE

- Longitude (12) and latitude (13) The GPS coordinates where the camera is located. If defined on the camera, all the plates read by this camera will be assigned to this location.
- Serial number (14) Camera serial number.
- Camera brand (15) Camera brand
- Camera model (16) Camera model
- Remarks (17) Additional remarks
- Reset count (18) This shows how many times the cameras or software has restarted. This can be reset to zero here.
- Download config (19)
- Update frame timeout(20)
- Update frame quality(21)
- Enable maintenance alarms (22)

Fields marked with an asterisk are required. Once you have filled in all the data click the "Save" button to save the changes.

## Edit a Camera

To edit a Camera, simply click to the action Edit ⑤ of the context menu of the [Cameras Table](#), p. 80.

Camera ProvidenceAndroid

STATUS

DETAILS

SYNCED INFORMATION

Plate Reader Id \*

128

Region of Interest Id \*

0

Name \*

ProvidenceAndroid

Type \*

Reader

Zone \*

Kai\_Test

Address

Overlay

Capturer

Grace hours

0

Report type

Both

Expected vehicle direction \*

Unknown

SAVE

I<

<

>

>I

## Delete a Camera

To delete a Camera, simply click to the action Delete ⑥ of the context menu of the [Cameras Table](#), p. 80. Or use the multiple Cameras delete option.

## SCHEDULE Tab

A schedule defines the authorized date ranges for each plate captured.

If the capture date of the plate is within a schedule, then the authorization rules defined for that schedule are applied.

**Only three exceptions are applied:**

- If a zone has no schedules linked to it, then all the vehicles are authorized.
- If a vehicle is on a whitelist linked to the zone, then that vehicle is always authorized in that zone.
- If a schedule is global, then all the vehicles detected in that schedule are authorized.

## Schedule Table

ZONES   CAMERAS <b>SCHEDULE</b> SECTIONS   CAPACITY					
Description	Active from	Active until	Global	Time frames	Regular expressions
Office hours	01/19/2020	01/21/2025	Global	Office	
Estado Alarma - 0 y 1		21/2021	Not global	Circulación 0 y 1	Plate number is odd
24 x 7		31/2021	Not global		

**Schedule 'Office hours'**

Edit ②

Time frames ③

Regular expressions ④

Delete ⑤

Close

3 items

+

## Edit or Create a new Schedule

Press the add (+) button ① at the bottom right of the [Edit or Create a new Schedule, p. 86](#). A pop-up window will appear in which you can define the following parameters.

**Schedule** [X]

Description \* ①

Active from \* ② Date from

Active until \* ③ Date to

Global ☐ Not global ④

SAVE

- Description ① : User defined description for the schedule.
- Active from ② : Enter the date from which the schedule will be activated.
- Active until ③ : Enter the end date for the active schedule.
- Global ④ : Indicate whether the schedule is global or not.

**NOTE!** To edit a Schedule, click the action Edit ② in the context menu

## Delete a Schedule

To delete a Schedule, click on the action Delete ⑤ in the context menu of the [Schedule Table, p. 86](#). Once pressed, a confirmation window will appear. A schedule cannot be deleted if it has been associated with a zone.

## Linking Time Frames to a Schedule

Usually schedules need to be more flexible than just a start and end date. Different times frames can be defined and associated with a schedule.

Once you have created your schedule, click the action Timeframe ③ in the context menu of the [Schedule Table, p. 86](#) to access the Time frames window.

Here you can select the different preconfigured Time frames, or create a new one by pressing the add button (+) located at the bottom right of the window.

## Time Frame Table

The screenshot shows the 'SCHEDULE' tab in a configuration interface. At the top, there are tabs for ZONES, CAMERAS, SCHEDULE, SECTIONS, and CAPACITY. Below these is a header for 'Time frames of 'Office hours':'. On the right side of this header, there are two buttons: a refresh button (6) and a 'SAVE' button (5). The main area is a table with columns: Description, Start, Stop, Days of week, and Months. The table contains four rows: 'Office' (checked), 'First seven days of each month', 'Circulación 0 y 1', and 'Always'. A context menu is open over the 'Office' row, showing 'Edit' (2), 'Delete' (3), and 'Close' options. At the bottom right, there is a '+ ' button (1) to add new frames. The bottom bar shows '4 items' and a refresh icon.

Description	Start	Stop	Days of week	Months
<input checked="" type="checkbox"/> Office	07:00	18:59	-MTWTF-	JFMAMJJASOND
<input type="checkbox"/> First seven days of each month	00:00	23:59	SMTWTFS	JFMAMJJASOND
<input type="checkbox"/> Circulación 0 y 1	00:00	23:59	-MT----	JFMAMJJASOND
<input type="checkbox"/> Always	01:00:00	23:59	SMTWTFS	JFMAMJJASOND

## Add or Modify Time Frames

Press the add (+) button ① at the bottom right of the [Add or Modify Time Frames](#), p. 88. A pop-up window will appear in which you can define the following parameters.



Time frames
×

Description \* ①

---

☐ Ignore year: No ②

Start ③

Year \* ▾ Day ▾ Hour ▾ Minute ▾

Stop ④

Year \* ▾ Day ▾ Hour ▾ Minute ▾

Days of week ⑤

☒ All

Months

☒ All ⑥

SAVE

**Description:**

- Description ① : User defined description.
- Ignore year ② : Select this option if you want the timeframe to be valid for any year.
- Start ③ : Start values for the time frame.
- Stop ④ : Finish values for the time frame.
- Day of the week ⑤ : Days of the week when this timeframe will be active.
- Months ⑥ : Months when this timeframe will be active.

**NOTE!**

When you have finished setting the new Time frame press the "Save" button and you will return to the list.

Modifying preconfigured Time Frames is NOT recommended.

To modify a Time frame, click the action Edit ② in the context menu.

## Assign a Time Frame

To assign the new timeframe to the schedule (see the [Time Frame Table, p. 88](#)): enable it ④ and press **Save** ⑤ . Otherwise, click ⑥ to return without changes.

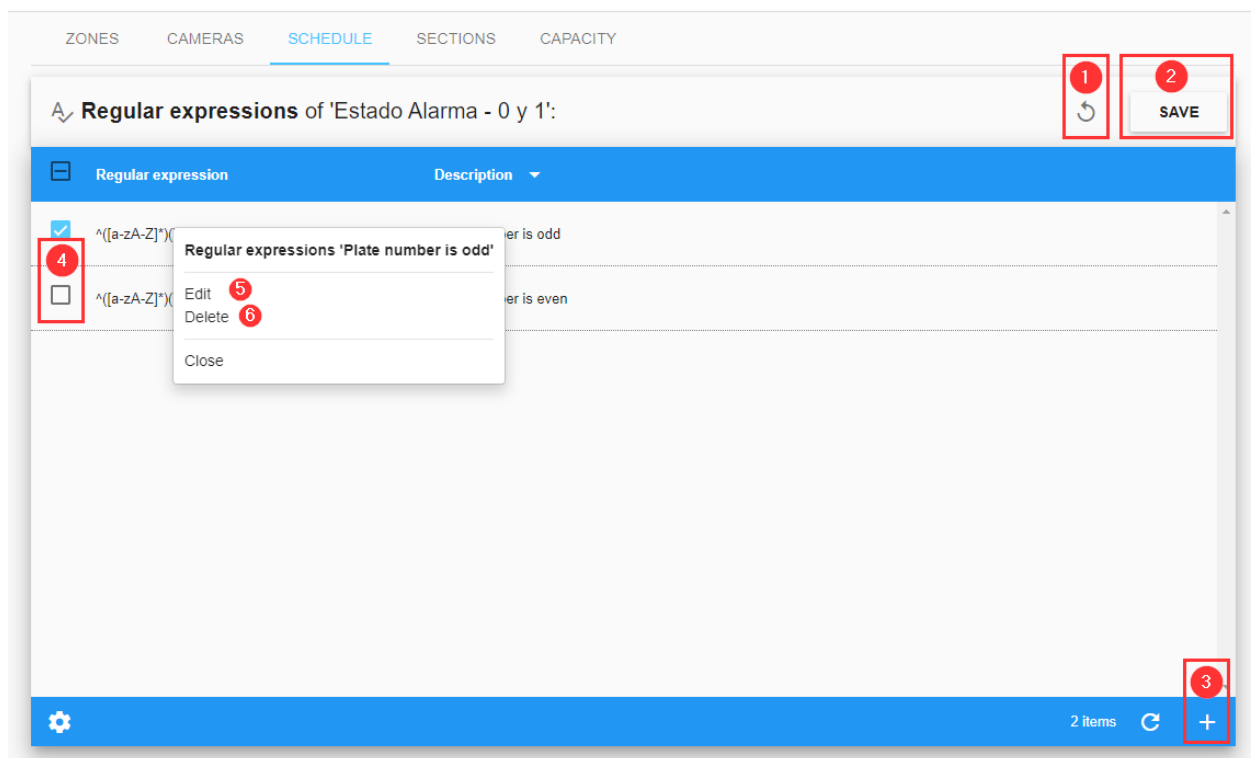
## Delete a Time Frame

To delete a Time frame, click on the action Delete of the context menu. A confirmation window will appear to delete the selected entry. A Time frame cannot be deleted if it is associated with a Schedule.

## Linking Regular Expressions to a Schedule

Once you have created your schedule, click the action Regular Expressions ③ in the context menu of the [Regular Expressions Table, p. 90](#) to access the Regular Expressions window.

### Regular Expressions Table



Once inside this menu, you can select previously configured Regular expressions, or create a new one by pressing the add button (+) ③ at the bottom right of the [Regular Expressions Table, p. 90](#).

## Add or Modify Regular Expressions

Regular expressions

×

Description \*

Plate number is odd

1

Regular expression \*

`^([a-zA-Z]*) (\d*) (0|1) $`

2

SAVE

A Regular Expression is a mathematical formula or logic expression used for say selecting odd plates ( sometimes used in city congestion schemes) or ones containing certain character combinations.

### To edit fields:

- Description ① : User defined description.
- Regular Expression ② : Fill with an appropriate Regular Expression formula.

**NOTE!** To modify a Regular expression, click the action Edit ⑤ in the context menu

## Assign a Regular Expression.

When you have finished setting the new 'Regular Expression', press the "Save" button ② , you will return to the list.

To assign the new 'Regular Expression' to the Schedule (see the [Regular Expressions Table, p. 90](#)) enable it ④ and press **Save** ② . Otherwise, click ① to return without changes.

## Delete a Regular Expression

To delete a 'Regular Expression', click the action Delete ⑥ in the context menu of the [Regular Expressions Table, p. 90](#). Once pressed, a confirmation window will appear. A Regular expression cannot be deleted if it is associated with a Schedule.

## SECTIONS Tab and Average Speed Alerts

Lengths of road between any two cameras may be defined as a section. This could be part of a road network, part of a large car park or even a long entrance lane into an industrial estate where speed is to be monitored.

### Section Table

Id	Name	Distance (m)	Maximum (Sec)	Entrance camera	Exit camera
5	Section Test	500	300	Vaxtor Test Entry	Vaxtor Test Exit
4	Indonesia - J		300	Indonesia - Camera 1 - Incoming	Indonesia - Camera 2 - Outgoing
7	HYT - Taiwan		60	HYT - Taiwan - Back Camera	HYT - Taiwan - Front Camera
6	HYT - Taiwan		60	HYT - Taiwan - Front Camera	HYT - Taiwan - Back Camera
1	HK Section C		400		

### Filter Sections

SYNC includes a quick way to filter a Section by adding search criteria as a text string (see ② of the [Section Table](#), p. 92). To enable this, a Filter to the Results can be added or removed. Search filter syntax is: **Token:FilterValue**, where:

Token	filterKey	filterValue
ID	id	Section ID
NAME	name	Section name

Token	filterKey	filterValue
ENTRANCE	entranceCameraId	Section entrance camera
EXIT	exitCameraId	Section exit camera

## Add a Section

Press the add (+) button (see ① of the [Section Table, p. 92](#)) at the bottom right of the menu.

Section
×

Name \*

1

Distance (m) \*

2

Maximum (Sec) \*

3

Entrance camera \*

4

Exit camera \*

5

SAVE

### Description:

- Name ① : User defined name for the section of road.
- Distance ② : Distance between the entry camera and the exit camera of that section.
- Maximum ③ : Number of seconds to abort the calculation. If a vehicle takes longer than the specified number of seconds then the speed is not calculated. This can remove outliers.
- Entrance camera ④ : Entrance camera for the section.
- Exit Camera ⑤ : Exit camera for the section

**NOTE!**

- The length of the section (the distance between the two cameras) may be defined in meters and the maximum target time to complete the journey is in seconds. This can be considered as the average speed limit for the section. By setting these parameters then when a vehicle passes between the two defined cameras in less than the set time - an alert is generated and displayed on the user screen.
- The speed is stored against every vehicle passing the second camera and can be seen using the PLATES/SEARCH facility.
- Plates read by the first camera are shown with a speed of -1. Plates read can be searched by those generating alerts and these alerts can also be sent by email – see later in this guide.

## Delete a Section

To delete a Section, click the action Delete ⑥ in the context menu of the [Section Table, p. 92](#). Once pressed, a confirmation window will appear. Also, you can use the multiple Sections delete option.

NAME:section <span>✕</span> Filter results <span>✕</span>					
Name ▾	Distance (m)	Maximum (Sec)	Entrance camera	Exit camera	
section_2	2	2	Axis Embarcado	Axis Finland - Timo1	<input checked="" type="checkbox"/>
section_1	12	12	9WNWExit	9WWSEntry	<input checked="" type="checkbox"/>
Section Test	500	300	Vaxtor Test Entry	Vaxtor Test Exit	<input type="checkbox"/>

## CAPACITY Tab - Vehicle Count

SYNC can track the capacity (vehicle count) within a defined area.

## Capacity Table

The screenshot shows the 'CAPACITY' tab in the configuration interface. At the top, there are tabs for ZONES, CAMERAS, SCHEDULE, SECTIONS, and CAPACITY. Below the tabs is a search bar with the text 'CAT:Not assigned' and a 'Filter results' button. A red box labeled '2' highlights the search bar. Below the search bar is a table with columns: Id, Count, Name, Entrance cameras, Exit Cameras, Category, Max capacity, Ignore car direction, Reset time, Crosstime, and Virtual?. A red box labeled '3' highlights the 'Virtual?' column. A context menu is open over the table, showing options: 'Capacity "Visitas Sur"', 'Edit' (labeled '5'), 'Delete' (labeled '6'), 'Filter by' (with sub-options: 'Entrance cameras', 'Exit Cameras' (labeled '7'), and 'Category'), and 'Close'. At the bottom of the table, there is a blue bar with a gear icon, '8 items', a refresh icon, and two buttons: a plus sign (labeled '1') and a trash icon (labeled '4').

Id	Count	Name	Entrance cameras	Exit Cameras	Category	Max capacity	Ignore car direction	Reset time	Crosstime	Virtual?
2	12/38	Visitas Sur	Lawson -	Q-1700-LE North Carolina	Not assigned	38	Ignore	02/04/2020, 12:00:00 AM		False
7	0/0	Ind JM		Vaxtor - Asia Camera 2	Not assigned	0	Ignore	12/03/2020, 06:00:00 PM		False
8	0/0	Ind Hig		Indonesia - Camera 2 - Outgoing	Not assigned	0	Ignore	12/14/2020, 05:00:00 PM		False
12	10/25	AX		SO Demo	Not assigned	25	Does not ignore	10/22/2021, 12:00:00 AM		False
13	0/50	ME			Not assigned	50	Does not ignore	12/13/2021, 12:00:00 AM		False
14	0/10	Vaxtor Test	Vaxtor Test Entry	Vaxtor Test Exit	Not assigned	10	Does not ignore	03/25/2022, 12:00:00 AM		False
9	0/1000	Parking demo	Parking demo entrada	Parking demo salida	Not assigned	1000	Ignore	05/07/2021, 12:00:00 AM		False
4	0/1552	Campus1	CP 02 Entry	CP 01 Exit	Not assigned	1552	Ignore	03/31/2020, 06:00:00 AM		False

## Filter Capacity

SYNC includes a quick way to filter Capacity by adding search criteria as a text string (see ② of the [Capacity Table](#), p. 95) or using the fast Filter by options in the context menu (see ⑦ of the [Capacity Table](#), p. 95). To enable this, a Filter to the Results can be added or removed. Search filter syntax is: **Token:FilterValue**, where:

Token	filterKey	filterValue
ID	id	Aforo ID
NAME	name	Aforo name
ENTRANCE	entranceCameraIds	Aforo entranceCameraIds
EXIT	exitCameraIds	Aforo exitCameraIds
CATEGORY	categoryId	Category ID or Category name

## Create a Capacity (Count) Area

Press the add (+) button (see ② of the [Capacity Table](#), p. 95) at the bottom right of the menu.

A pop-up window will appear where you can define the area:

Capacity

Name \*

1

Entrance cameras \*

2

Exit Cameras

3

Max capacity \*

4

Reset time \*

5

Maximum time allowed (minutes) \*

6

Max search time \*

7

Count \*

8

Virtual?

9

Ignore car direction

10

Fire an alarm if maximum time is exceeded

Crosstime

Reset capacity

Deny if full

Ignore if not authorized

Category

11

Not assigned

SAVE

### Description:

- Name ① : User defined name for the Capacity/Count area.
- Entrance camera ② : Entrance camera for the section.
- Exit Camera ③ : Exit camera for the section
- Max Capacity ④ : The maximum number of vehicles allowed in the Capacity/Count area.
- Reset time ⑤ : The time at which the count is automatically reset to zero. E.g. 23:00.
- Maximum time allowed ⑥ : by vehicle.
- Maximum search time ⑦ : by vehicle.






- Count ⑧ : Vehicles inside Capacity/Count area.
- Virtual? ⑨
- Flags ⑩
  - **Ignore Car direction:** The user can choose to ignore the direction of travel.
  - Fire an alarm if maximum time is exceeded.
  - Crosstime.
  - Reset capacity.
  - Deny if full.
  - Ignore if not authorized.
- Category ⑪

## Delete a Capacity

To delete a Capacity, click the action Delete ⑥ in the context menu of the [Capacity Table](#), p. 95.

Once pressed, a confirmation window will appear.

Also, a multiple Capacity delete option is available.

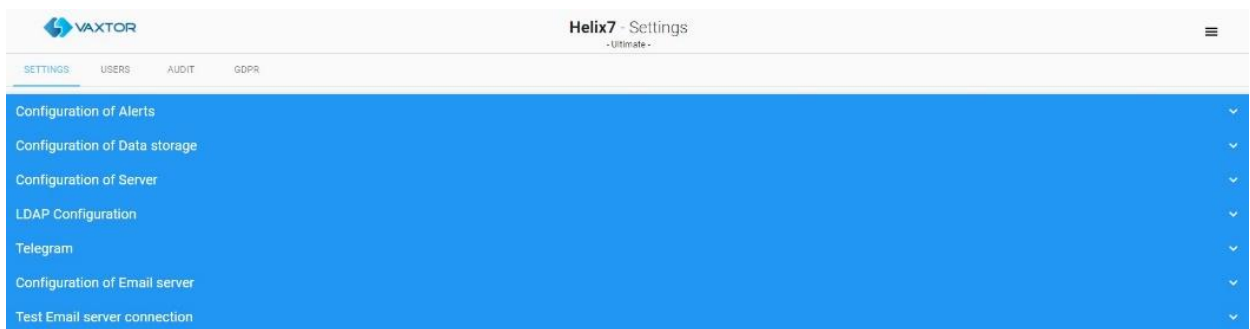
Id	Count	Name	Entrance cameras	Exit Cameras	Category	Max capacity	Ignore car direction	Reset time	Crosstime	Virtual?
2	 12/38	Visitas Sur	Lawson - P1455-LE 29mm	Q-1700-LE North Carolina	Not assigned	38	Ignore	02/04/2020, 12:00:00 AM		False <input type="checkbox"/>
5	 0/5	ADR Capacity	CP 02 Entry	CP 01 Exit	ADR	5	Does not ignore	04/03/2020, 12:00:00 AM		False <input checked="" type="checkbox"/>
7	 0/0	Indonesia - JMTO PoC	Vaxtor - Asia Camera 1 -	Vaxtor - Asia Camera 2	Not assigned	0	Ignore	12/03/2020, 06:00:00 PM		False <input checked="" type="checkbox"/>

# SETTINGS

The settings area is only available for administrators. In this section, it is possible to view and modify the main settings for the server.

Do not modify the values in this section if you have not read and fully understood this manual.

## SETTINGS Tab



## Configuration of Alerts

SETTINGS
USERS
AUDIT

Configuration of Alerts

Time between alert for the same vehicle (seconds)
0

Send alerts by email
☐

Email sender address
username@server.com

Email sender name
Helix-6

Blacklist alert email subject
Helix-6 Blacklist alert \$platenumber\$ - \$zone\$

Blacklist alert email body
Blacklist plate \$platenumber\$ detected by camera \$cameraname\$ in zone \$zone\$ at \$timestamp\$.Hitcount \$

Speed alert email subject
Helix-6 Speed alert \$platenumber\$ - \$zone\$

Speed alert email body
Plate \$platenumber\$ detected by camera \$cameraname\$ in zone \$zone\$ at \$timestamp\$.Speed \$speed\$

Prowling alert email subject
Helix-6 Prowling alert \$platenumber\$ - \$zone\$

Prowling alert email body
Prowling plate \$platenumber\$ detected by camera \$cameraname\$ in zone \$zone\$ at \$timestamp\$.Count \$cr

Kamikaze alert email subject
Helix-6 Kamikaze alert \$platenumber\$ - \$zone\$

Kamikaze alert email body
Kamikaze plate \$platenumber\$ detected by camera \$cameraname\$ in zone \$zone\$ at \$timestamp\$.

Time in zone alert email subject
Helix-6 Time in zone alert \$platenumber\$ - \$timestamp\$ - \$zone\$

Time in zone alert email body
Plate \$platenumber\$ detected by camera \$cameraname\$ in zone \$zone\$ at \$timestamp\$.

Must send OCR image
☒

Must send environment images
☐

Blacklist Levenshtein distance used
1

CANCEL
SAVE

Click on the blue bars to show or hide the options.

- Time between alerts for the same vehicle (seconds): Set the minimum time between blacklist alerts for the same vehicle.
- **Send alerts by email:** Enable this option to send emails to specified users when an alert is triggered by the system.
- **Email sender address:** Insert the sender's email address for all the alerts.  
This is how it should appear in the received email message – and needn't be the actual email address used (smtp) as set up below.

- **Email sender name:** Enter the name of the sender that will appear in the sent emails.
- **Blacklist alert email subject:** Set the email subject for blacklist alerts. It is possible to use special words that will be replaced by the real-time information in the email. The allowed values are described in the appendix of this document.
- **Blacklist alert email body:** Set the email body for blacklist alerts. It is possible to use special words that will be replaced by the real-time information in the email. The allowed values are described in the appendix of this document.
- **Speed alert email subject:** Set the email subject for overspeed alerts. It is possible to use special words that will be replaced by the real-time information in the email. The allowed values are described in the appendix of this document.
- **Speed alert email body:** Set the email body for overspeed alerts. It is possible to use special words that will be replaced by the real-time information in the email. The allowed values are described in the appendix of this document.
- **Prowling alert email subject:** Set the email subject for prowling alerts. It is possible to use special words that will be replaced by the real-time information in the email. The allowed values are described in the appendix of this document.
- **Prowling alert email body:** Set the email body for prowling alerts. It is possible to use special words that will be replaced by the real-time information in the email. The allowed values are described in the appendix of this document.
- **Kamikaze alert email subject:** Set the email subject for Kamikaze alerts. It is possible to use special words that will be replaced by real-time information in the email. The allowed values are described in the appendix of this document.
- **Kamikaze alert email body:** Set the email body for Kamikazee alerts. It is possible to use special words that will be replaced by real-time information in the email. The allowed values are described in the appendix of this document.
- **Time in zone alert email subject:** Set the email subject for time in zone alerts. It is possible to use special words that will be replaced by real-time information in the email. The allowed values are described in the appendix of this document.
- **Time in zone alert email body:** Set the email body for time in zone alerts. It is possible to use special words that will be replaced by real-time information in the email. The allowed values are described in the appendix of this document.
- **Time in zone plate distance:** This is the plate match accuracy (Levenshtein distance) of a plate entering and leaving a zone for them to be considered the same plate.  
Example: if the reader at the entrance reports 1234ABC and the reader at the exit reports 1235ABC and the distance is 1, then system will mark 1234ABC as out.
- **Must send OCR image:** Enable this option to append the OCR image to the emails.

- **Must send environment images:** Enable this option to append the environment images to the emails.
- **Blacklist Levenshtein distance used:** This is the Blacklist Match Accuracy which is the number of characters that may differ between the plate read and the plate on the blacklist to trigger an alert.

## Configuration of Data Storage

SETTINGS   USERS   AUDIT

Configuration of Alerts

Configuration of Data storage

Storage folder for images

Must save images ☒

Delete images after (days)

Process local plates ☒

Delete plates after (days)

Configuration of Server

- **Storage folder for images:** SYNC will store all the images in the directory specified. The directory MUST already exist.
- **Must save images:** Enable this option if you want to save the images.
- **Delete images after (days):** SYNC will remove (purge) any image older than the amount of days selected here. Set this value to 0 if you want to disable this feature.
- **Process local plates:** Usually this option should be enabled. Disable this option only if SYNC should only process new plates inserted by the REST API.

## Configuration of Server

Configuration of Server

API key

Reset API key ☐

Maximum login tries (0 for unlimited)

Login disable time (minutes)

Audit days stored

Audit all users ☒

Logout automatically after (minutes)

Encrypt local lists ☐

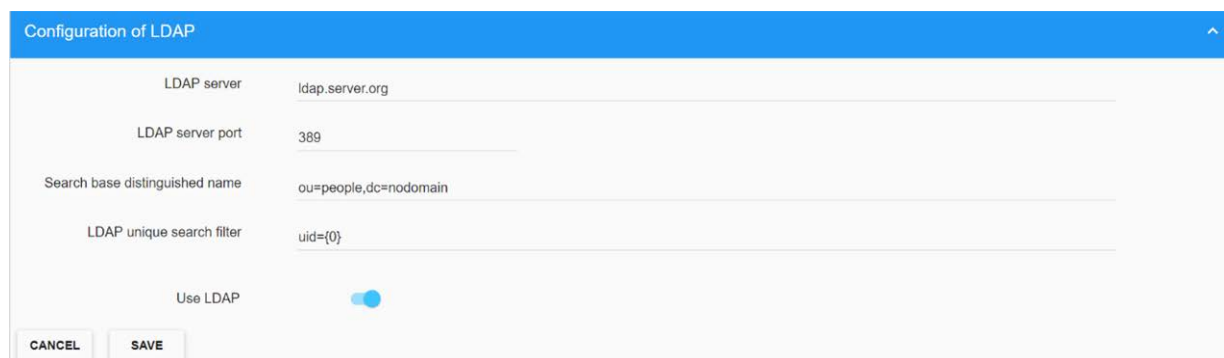
- **API Key:** Displays the master API Key assigned to the system.
- **Reset API key:** Enable this option to generate a new random API Key for the server.
- **Maximum login tries:** The maximum number of attempts to access SYNC before the account is locked. (incorrect login credentials)
- **Login disable time:** Set the number of minutes that an account is locked for after the maximum number of login tries has been exceeded.
- **Audit days stored:** Enter how many days the audit trail logs will be stored on the system.
- **Audit all users:** When enabled, all the actions of all the users are stored in the audit system. When disabled, only the actions of the users that have been selected for audit are stored.
- **Logout automatically after:** Set the number of minutes that a user can be idle before SYNC logs them out and they are requested to login again.
- **Encrypt local lists:** Select this option to encrypt all lists on the system using RSA 256 bit encryption. Note that the program currently uses a Postgres database which is already encrypted so this extra layer is not needed.
- **Password expiration:** Set the number of days before the user is requested to change their password.
- **Default time for quick add to list (hours):** There is a button to quickly authorize a plate on the system for an extra 2 hours. Set this value here - normally 24 hours.

## Configuration of LDAP

SYNC can use a LDAP server (version 3) to authenticate users. When LDAP integration is active the user login is performed on the LDAP server.

If the authentication fails, the user will not be allowed to login to the system.

Only users with **Admin** rights will be logged in using the local credentials in cases where the LDAP authentication fails.



Configuration of LDAP

LDAP server: ldap.server.org

LDAP server port: 389

Search base distinguished name: ou=people,dc=nodomain

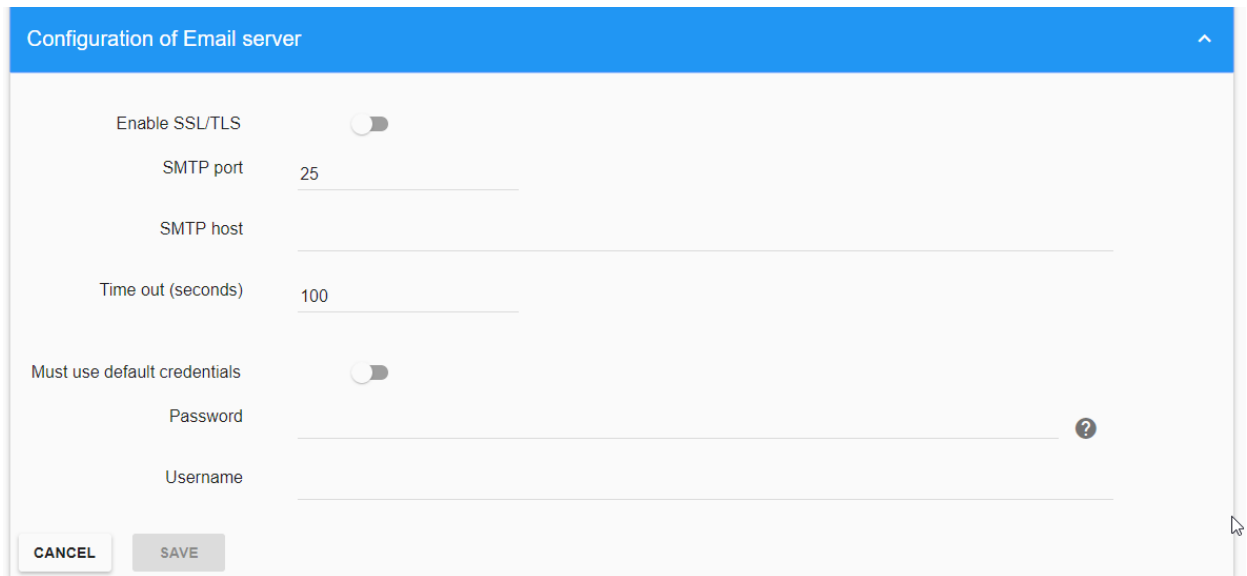
LDAP unique search filter: uid={0}

Use LDAP: ☒

CANCEL SAVE

- **LDAP server:** LDAP server domain name or IP address.
- **LDAP server port:** LDAP server port. 389 by default.
- **Search base distinguished name:** LDAP base search storage to be used when searching for users on the LDAP server.
- **LDAP unique search filter:** Filter used to find the desired user. This filter must find unique users based on the LDAP configuration.
- **Use LDAP:** Activate the LDAP integration

## Configuration of Email server



Configuration of Email server

Enable SSL/TLS ☐

SMTP port 25

SMTP host

Time out (seconds) 100

Must use default credentials ☐

Password ?

Username

CANCEL SAVE

If you require the system to send out email alerts (as defined above for various alarm conditions) then you must set up and configure an email account for the system to use.

- **Enable SSL/TLS:** Enable this option if you want to enable SSL or TLS protocol.
- **SMTP port:** Enter the port number to use to connect to the server, default: 25.
- **SMTP host:** Enter the IP address or the host name of the SMTP server.
- **Time out:** Set the maximum time for sending the email, if the response to the request exceeds that time the system will not send the information.
- **Must use default credentials:** Enable this option to use the windows user credentials with the SMTP server.
- **Password:** SMTP user password.
- **Username:** SMTP username.

After enabling and completing all email configuration parameters, click the **Save** button and you will be asked to confirm the password:

The button changes from **Cancel** to **Confirm** when the password has been input correctly.

Remember to set up the receiving email address. This can be setup for each user – see [USERS Tab, p. 105](#).

## Test Email server connection

To test the email server connection, enter a valid email address and click the **Save** button. If your configuration is correct then you will receive an email in your mailbox.



**Test Email server connection**

Email to send a test

**NOTE!** Remember to set the permanent target email address up when you set up users (see [USERS Tab](#), p. 105). Even the admin account should have one.

## USERS Tab

This area shows the active users defined in SYNC.  
It is possible to view, add, modify or delete any user.

## Users Table

SETTINGS **USERS** AUDIT GDPR

CLAIMS:Plates,Basic

Id	User name	First name	Last name	Privileges	Email	
2	q1700-le			Plates, Basic		<input type="checkbox"/>
4	demo		Cabrera	Basic, Lists, Authorizations	sergi@sanserg.com	<input type="checkbox"/>
5	q1700-le			Basic, Plates		<input type="checkbox"/>
7	xtivity		Gradert	Basic, Authorizations, Lists, Cameras	rgradert@xtivitysolutions.com	<input type="checkbox"/>
12	dan		Herdenson	Basic, Plates	dhenderson@griffonsecurity.com	<input type="checkbox"/>
18	q1798-le-argent			Basic, Plates		<input type="checkbox"/>
19	jbayona			Basic, Lists, Plates		<input type="checkbox"/>
21	karen	Karen	Hartley	Basic, Plates, Lists	KHartley@campusparc.com	<input type="checkbox"/>
22	veronica			Basic, Lists, Plates, Authorizations		<input type="checkbox"/>

130 items

## Filter Users

SYNC includes a quick way to filter the User list by adding filter criteria as a text string (see ④ of the [Users Table, p. 105](#)) or using the fast Filter by options in the context menu (see ⑦ of the [Users Table, p. 105](#)). To enable this, a Filter to the Results can be added or removed. Search filter syntax is:

**Token:FilterValue**, where:

Token	filterKey	filterValue
ID	id	User ID
USER USERNAME	username	User username
FIRST FIRSTNAME	firstName	User firstname
LAST LASTNAME	lastName	User lastname
EMAIL	email	User email

## Create a New User

Press the add (+) button (see ① of the [Users Table, p. 105](#)). A popup window will appear to create a new user.

Users

User name \*

1

Empty password

2

Password \*

!

Email

3

Audited

4

Privileges

5

Available

Actuators  
Admin  
AdminAuthorizations  
AdminLists  
Authorizations  
Cameras  
Lists  
Maintenance  
Plots

Assigned

Basic

First name

6

Last name

7

Language

English

8

User ID

9

Pushbullet notifications

10

Pushbullet Api Key

GET DEVICES

SAVE

### Description:

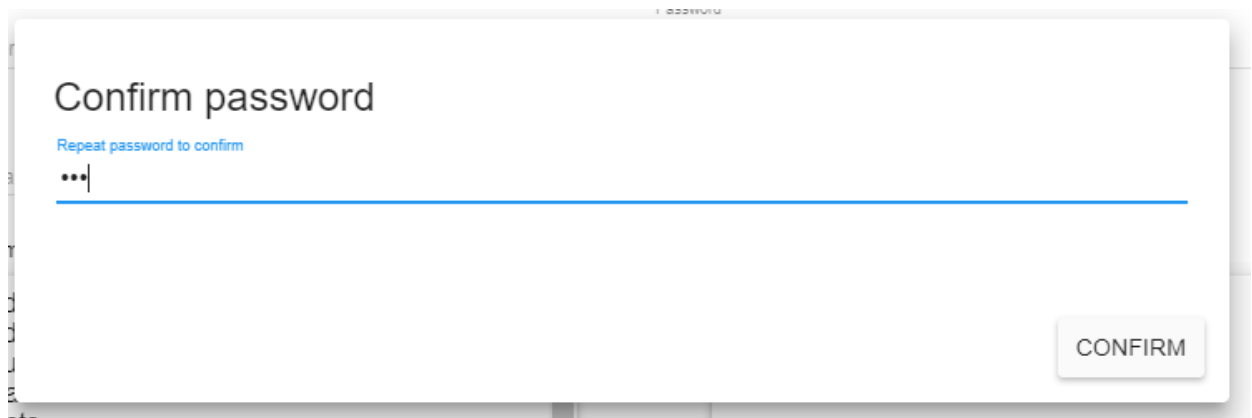
- Username ① : Username for the new user.
- Empty password ②
  - If enabled the user will not be able to login in the system and his password will be deleted. Apikey access will still work. This option has no effect if LDAP is enabled.
  - **Password:** Default password for the new user.
- Email ③ : Enter the user's email address. This email is used to receive system alerts and allows each user to receive their own email alerts.
- Audited ④ : Activate this option to add this user to the audit trail.

- Claims ⑤ : Set the privileges assigned to the user. Do this by double clicking on an item in the list to move it over to the user column (on the right)

Allowed privileges are:

- **Actuators:** The user can set up and configure actuators (relays).
  - **Admin:** Full privileges.
  - **Admin Lists:** The user can create, modify and delete any lists in the system.
  - **Authorizations:** The user can view, create, modify or delete authorizations.
  - **Basic:** The user can view data for zones, cameras, calendars, license plates and images. The user will only be able to see the information if it is also added for a user in the desired zone.
  - **Cameras:** The user can create and modify cameras.
  - **Lists:** The user can create, modify and delete only his own lists.
  - **Plates:** The user can modify plates read and protect images.
  - **Schedules:** The user can create, modify and delete schedules and time frames.
  - **Users:** The user can create, modify and delete users.
  - **Zones:** The user can create, delete and modify zones.
- First Name ⑥ : First name of the user.
  - Last Name ⑦ : Last name of the user.
  - Language ⑧ : User interface language.
  - User ID ⑨ : An optional ID normally used by the Police when plates are exported.
  - Pushbullet API Key ⑤ : Used with the Pushbullet software which is used for communicating with mobile devices. The system can be set up to send alarms to such a mobile device.

To create (or change) a new password, see below:



Confirm password


Repeat password to confirm

...

CONFIRM

**NOTE!** The button changes from **Cancel** to **Confirm** when the password has been entered correctly.

## Delete a User

To delete a user, click the action Delete  in the context menu of the [Users Table, p. 105](#). Once pressed, a confirmation window will appear.

Also, a multiple User option is available.

Id	User name ▼	First name	Last name	Privileges	Email	
2	q1700-le-uk-off			Plates, Basic		<input checked="" type="checkbox"/>
4	demo	Sergio	Cabrera	Basic, Lists, Authorizations	sergi@sanserg.com	<input type="checkbox"/>
5	q1700-le-ny			Basic, Plates		<input checked="" type="checkbox"/>

## AUDIT Tab

All the actions performed on the system are stored by default in the audit trail log. You can monitor exactly what each user is using the system for.

## Audit Table

SETTINGS

USERS

AUDIT

GDPR

USER:admin\_user

Search criteria

X

1

2

3

4

5

Id	Timestamp	Source address	Action	Failed	User	
51937293	06/17/22	Audit 'GET /api/audit' admin_user	13	GET /api/audit	No	admin_user
51937280	06/17/22	Show	19	GET /api/user/all	No	admin_user
51937276	06/17/22	Filter by	13	GET /api/user/all	No	admin_user
51936947	06/17/22	— Action	13	GET /api/audit	No	admin_user
51936917	06/17/22	— Failed	13	GET /api/user/all	No	admin_user
51936911	06/17/22	— User	19	GET /api/config/telegram	No	admin_user
51936908	06/17/22	— Source address	13	GET /api/config/dgl	Yes	admin_user
51936907	06/17/2022, 01:22:25 PM	— Date from	79.116.77.213	GET /api/config/spf	Yes	admin_user
51936906	06/17/2022, 01:22:25 PM	— Date to	79.116.67.213	GET /api/config/smtptest	No	admin_user
51936905	06/17/2022, 01:22:25 PM	Close	79.116.65.213	GET /api/config/smtp	No	admin_user
51936902	06/17/2022, 01:22:25 PM		79.116.77.213	GET /api/config/alert	No	admin_user

66745 items

Refresh

Download

## Search Audit Records

In the upper left corner (see ① of the [Audit Table](#), p. 110). When clicked, a pop-up window appears where you can choose from the following search filters:

Search criteria

×

Action

1

Details

2

Date from

3

Date to

4

Source address

5

User

admin\_user

6

Failed

☐

Yes

☐

No

☐

All

7

CLEAR

SEARCH

### Description

- Action ① : SYNC action recorded.
- Details ② : Text details of the action are recorded.
- Date from ③ : Will show only the activity since the selected date + time.
- Date to ④ : Will show only the activity until the selected date + time.
- Source address ⑤ : IP address of the user that has performed a SYNC action.
- User ⑥ : User who has performed the SYNC action
- Failed ⑦ : Shows if the action failed or not.

### Search Filters

SYNC includes a quick way to filter the Audit list by adding search criteria as a text string (see ④ of the [Audit Table, p. 110](#)) or using the fast Filter by options in the context menu (see ⑦ of the [Audit Table, p. 110](#)). To enable this, a Filter to the Results can be added or removed. Search filter syntax is: **Token:FilterValue**, where:

Token	filterKey	filterValue
ACTION	action	Action <b>Example:</b> ACTION:GET/api/user/all
DETAILS	details	Text included in the Details attribute.

## SETTINGS

---

Token	filterKey	filterValue
FROM DATEFROM	dateFrom	<b>DateTime format dd/MM/yyyy hh:mm:ss</b> , example: 08/01/2018 10:22:29
TO DATETO	dateTo	<b>DateTime format dd/MM/yyyy hh:mm:ss</b> , example: 08/01/2018 10:22:29
FAILED	failed	True or False
USER USERID	userId	User id or Username
SOURCE	sourceAddress	Source address

**NOTE!** To clear search criteria use button x located at the right of the Search Filter bar.



# REST API

It is possible to communicate directly with MOBOTIX MOBOTIX SYNC via the REST API which facilitates functions such as pushing Blacklists or Whitelists directly into the Helix SQL databases (PUT) or receiving plate reads or images back (GET).

## Definitions

**API:** Application Programming Interface.

This allows an external or remote piece of software to communicate directly with MOBOTIX SYNC.

**REST** - Representational State Transfer (sometimes written as ReST)

REST is an architectural style for providing standards between computer systems on the web., making it easier for systems to communicate with each other. REST-compliant systems, often called RESTful systems, are characterised by how they are stateless and separate the concerns of client and server.

So, a REST API defines a set of functions which developers can use to perform requests and receive responses via HTTP protocol such as GET and POST.

Because REST APIs use HTTP, they can be used by practically any programming language and are easy to test. It is a requirement of a REST API that the client and server are independent of each other allowing either to be coded in any language.

## REST API

**See separate manual:** MOBOTIX MOBOTIX SYNC – API Definition – v1.7.1 or later.

The API documentation is available on the MOBOTIX Community website at <https://community.mobotix.com/t/mobotix-sync-server-api-definition/7244>.

# APPENDIX

When configuring the alerts via email, there are several reserved words allowing you to customize the message:

<b>\$timestamp\$</b>	<b>Sequence of characters denoting the time and date the reading event occurred, the format is "yyyy-MM-ddTHH:mm:sszzz"</b>
\$platenumber\$	Returns the license plate number read.
\$cameraname\$	Indicates the name of the camera that made the recognition.
\$cameraid\$	Returns camera ID.
\$confidence\$	Provides the trust data of the read-in license plate.
\$charheight\$	Indicates the height of the character on the license plate.
\$latitude\$	Returns the latitude coordinates of the read plate.
\$longitude\$	Returns the longitude coordinates of the read plate.
\$speed\$	It returns the speed of the vehicle registered by the recognition system.
\$zone\$	Returns the area in which the plate was read.
\$zoneid\$	Return zone ID in which the plate was read.
\$description\$	Adds the alarm description in case of a blacklist trigger.
\$comments\$	Adds the comments of the alarm from a blacklist trigger.
\$hitcount\$	Shows the number of the hits for this plate on the blacklist.





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