

USER MANUAL  
FOR ZKTECO CAMERAS  
VERSION 4.1



Brief Description:  
User Manual for ZKTeco Cameras

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## History:

Date	Creator	Details
11.03.2020	Luis Rodríguez	Initial Document
07.05.2021	Samuel Muñoz	Audit
07.03.2024	Eylan Zhang	New elements and adjustment for current UI

# 1. Overview

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ZKTeco is a powerful LPR application developed, embedded in the cameras.

ZKTeco is the all in one product to plug and play, ready to read plates just out of the box.

It Includes an interface web application that allows you to manage different scenarios, avoiding extra hardware and software installations.

## 2. Installation Requirements

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### 2.1. Camera requirements

It is recommended to have a minimum of 2GB of free space in the camera.

If this space is not available, it must be completed with a Micro SD.

The micro-SD should be formatted in **EXT4 format**.

SD requirements:

- Class: 10
- Read speed: 100MB/S
- Write speed: 60MB/S

List of compatible cameras:

DL-852Q28B-LP

BL-852Q38A-LP

## 2.2. Storage requirement

The preset values are supposed to have **40% JPEG compression** (the default system value).  
In the following table, we can find an **estimation of size** requirements:

Size/Registers	1	1000	5000	10000	100000
640x480	13KB	12.7 MB	63.5 MB	127 MB	1.24 GB
800x600	20KB	19.5 MB	97.7 MB	195.3 MB	1.9 GB
1280x720	25KB	24.4 MB	122 MB	244.14 MB	2.38 GB
1600x904	70KB	68.35 MB	341.8 MB	683.6 MB	6.68 GB
1920x1080	110KB	107.4 MB	537,1 MB	1.05 GB	10.5 GB

*Estimation* with an affluence of 100 cars per day.

Size/GB	2	8	16	32	64
640x480	4.4 years	17.6 years	30.53 years	70 years	140 years
800x600	2.8 years	11.5 years	20.3 years	40.5 years	90 years
1280x720	2.27 years	9.1 years	10.8 years	30.7 years	70.3 years
1600x904	290 days	3.2 years	6.5 years	10.3 years	20.6 years
1920x1080	190 days	2 years	4.16 years	8.3 years	10.6 years

*Estimation* with an affluence of 1000 cars per day.

Size/GB	2	8	16	32	64
640x480	161 days	645 days	3.53 years	7 years	14 years
800x600	105 days	420 days	2.3 years	4.5 years	9 years
1280x720	83 days	335 days	1.8 years	3.7 years	7.3 years
1600x904	29 days	119 days	239 days	1.3 years	2.6 years
1920x1080	19 days	76 days	152 days	305 days	1.6 years

*Estimation* with an affluence of 10000 cars per day.

<b>Size/GB</b>	<b>2</b>	<b>8</b>	<b>16</b>	<b>32</b>	<b>64</b>
<b>640x480</b>	16 days	64 days	128 days	256 days	512 days
<b>800x600</b>	10 days	42 days	84 days	168 days	336 days
<b>1280x720</b>	8 days	33 days	66 days	132 days	264 days
<b>1600x904</b>	2 days	11 days	23 days	46 days	92 days
<b>1920x1080</b>	1 days	7 days	15 days	30 days	60 Days



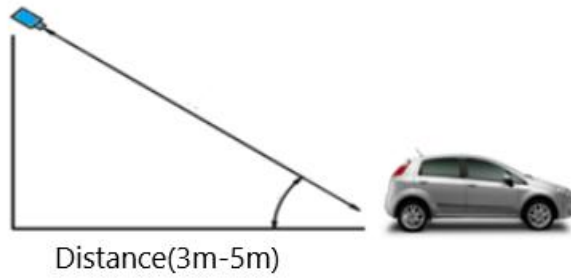
### 2.3. License Plate Character size

Characters on license plates must have an average height between 20 and 80 pixels, with 25 pixels being a good reference value. Less resolution may lead to character confusion in some countries. In addition, camera sensitivity affects it too. For countries in which there are different character sizes on their license plates, this fact must be kept in mind, so the small characters are included in the detection range.

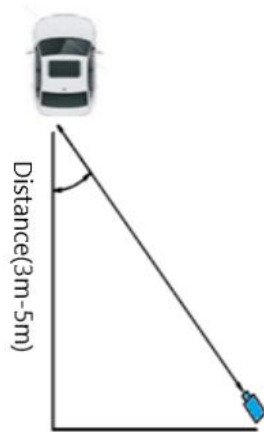


## 2.4. Camera Positioning

Recommended vertical angles are approximately  $20^\circ$ . The maximum recommended value is  $35^\circ$ .



Recommended horizontal angles are approximately  $20^\circ$ . The maximum recommended value is  $35^\circ$ .



The angle between the plates and the X axis of the scene must be inferior to  $25^\circ$ .



**Recommended Parametrization**

It should be mentioned that the following recommendations and specifications are general and may vary depending on the brand and model of the selected camera and the country in which it is to be installed.

**Common Scenario**

Common scenario: 1 lane

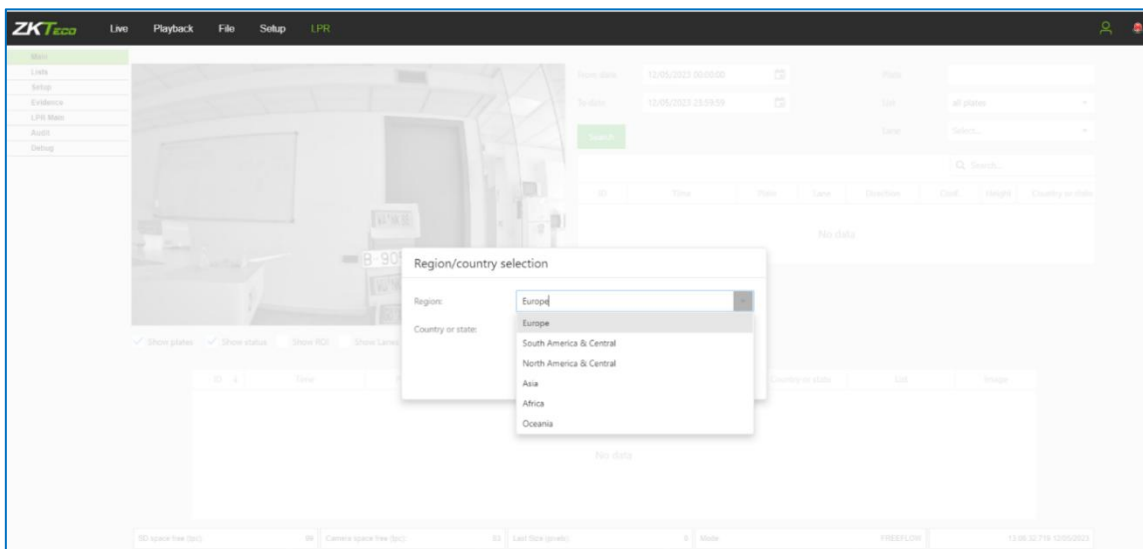
Sensor size: VGA o 1 MP

Height of camera on pole: 1 - 1.5meters

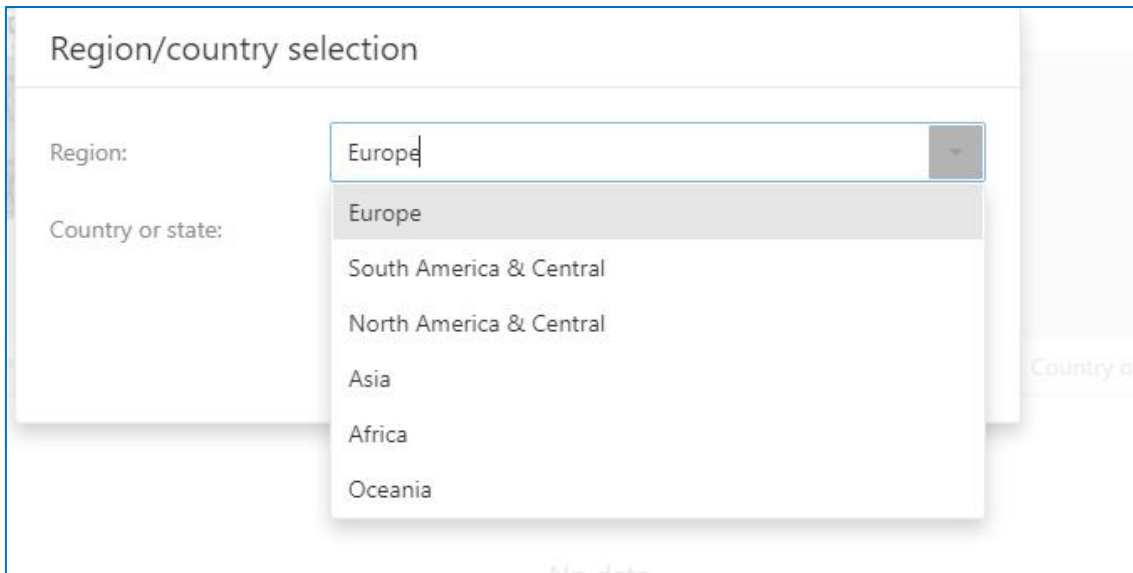
## 3. Access to ZKTeco

### 3.1. First access (selection country)

Upon first access to the web ZKTeco, the system will ask us for the region and country. The country selection is mandatory to define the country(ies) of license plates to read.



First select the Region:



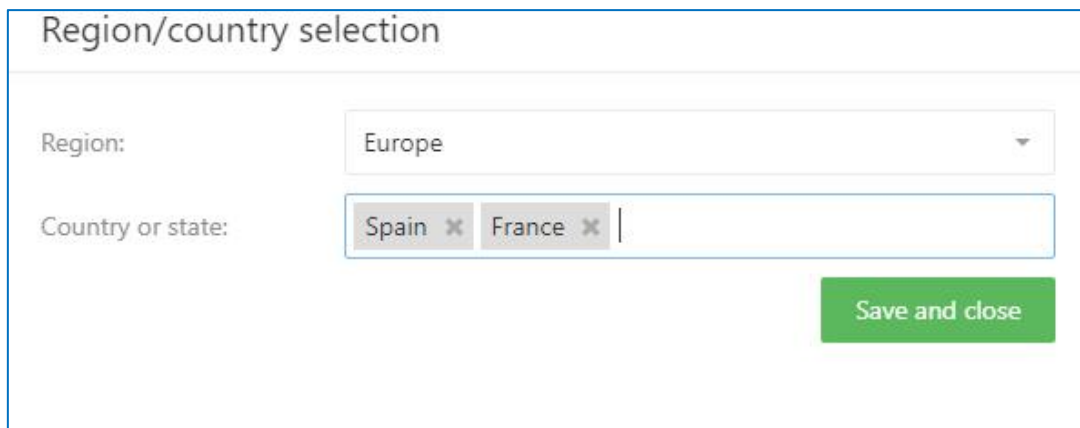
Region/country selection

Region: Europe

Country or state:

- Europe
- South America & Central
- North America & Central
- Asia
- Africa
- Oceania

Now select the countries in the region. Multiple selection is available.



Region/country selection

Region: Europe

Country or state: Spain x France x

Save and close

## 4. Web View

### 4.1. Tab

The top left of the screen has a tab menu marked with a red rectangle, which is the MENU toolbar with all the available options.

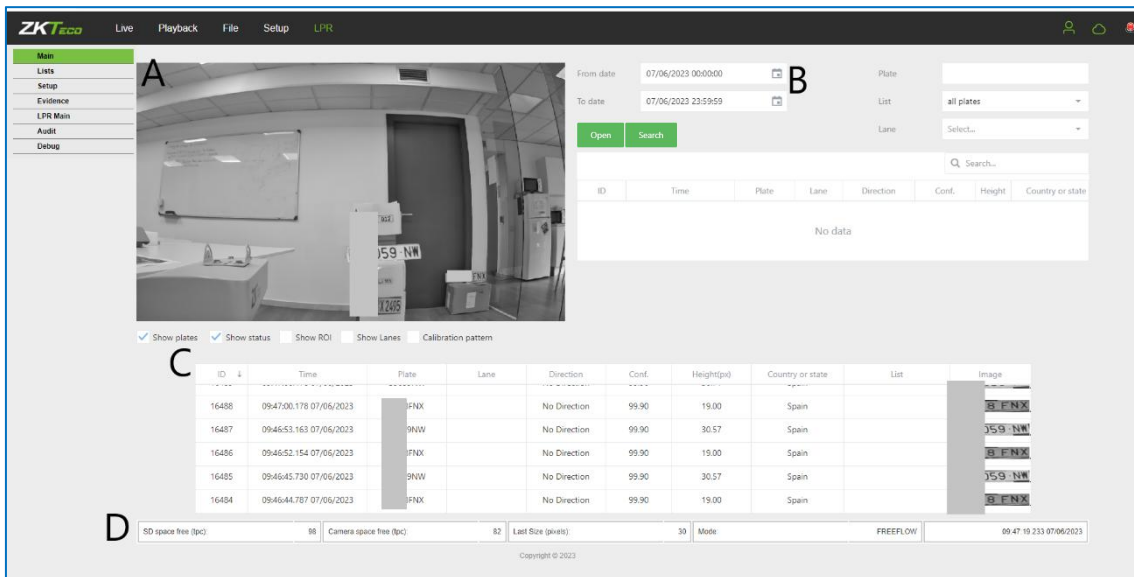
The screenshot shows the ZKTeco web interface. At the top left, a menu toolbar is highlighted with a red rectangle, containing options: Main, Lists, Setup, Evidence, LPR Main, Audit, and Debug. The main area displays a live video feed of a license plate 'A 009 KY 124'. To the right, there are search filters for 'From date' (05/09/2024 00:00:00), 'To date' (05/09/2024 23:59:59), 'Plate', 'List' (all plates), and 'Lane' (Select...). Below the video feed are checkboxes for 'Show plates', 'Show status', 'Show ROI', 'Show lanes', and 'Calibration pattern'. A data table is shown below with the following columns: ID, Time, Plate, Lane, Direction, Conf., Height(px), Country or state, List, and Image.

ID	Time	Plate	Lane	Direction	Conf.	Height(px)	Country or state	List	Image
7	11:57:35.870 05/09/2024	K291VH19		No Direction	94.83	19.00	Russia		
6	11:57:28.563 05/09/2024	A009KY124		No Direction	96.90	18.17	Russia		
5	17:19:36.519 27/08/2024	K291KH19		No Direction	99.82	56.50	Russia		
4	17:19:27.136 27/08/2024	B555PX47		No Direction	84.10	42.74	Russia		
3	16:37:05.945 27/08/2024	A009KY124		No Direction	98.32	46.50	Russia		
2	16:36:49.486 27/08/2024	VH19ED3C		No Direction	95.19	43.75	Russia		

At the bottom of the interface, there are status indicators: 'SD space free (tbc): 99', 'Camera space free (tbc): 90', 'Last Size (pixels): 19', 'Mode: FREEFLOW', and '11:57:47.356 05/09/2024'. A copyright notice 'Copyright © 2024' is also present.

## 4.2. Main Tab

The main tab shows the camera's live view. (This tab is divided into 4 different areas.) We have divided it into 4 parts: the Monitor Panel (labeled A), the Review Panel (labeled B), the Results Panel (labeled C), and the Info Panel (labeled D).



**Monitor Panel:** Live image what the camera is streaming. Under the live streaming image, there are five checks:

**Show plates:** When this option is selected and the info panel is active, it shows all the information of saved plates.

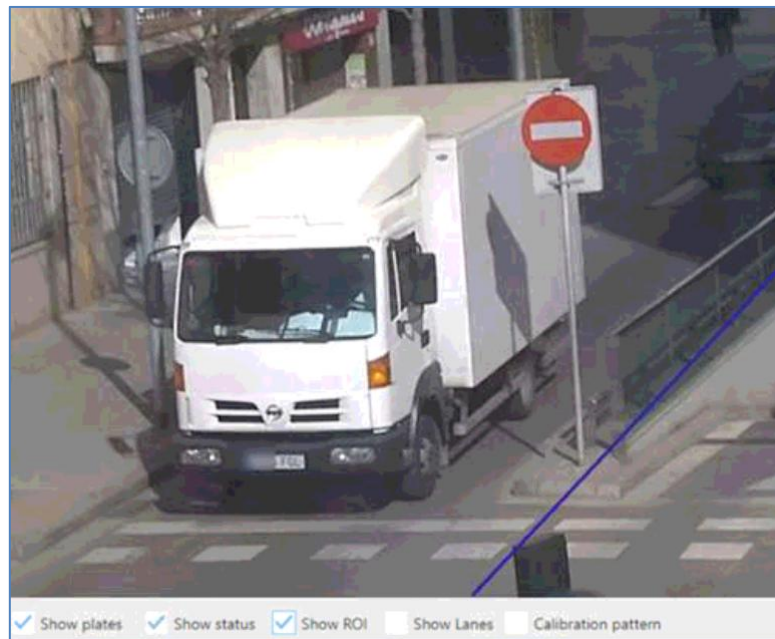
**Show status:** When this option is selected and the result panel is active, it shows the total results of attributes.

**Show ROI:** When you select this check box, you can see a red square indicating the ROI (region of interest) defined in the parameters. This area is the only section of the image where the engine will try to find plates.





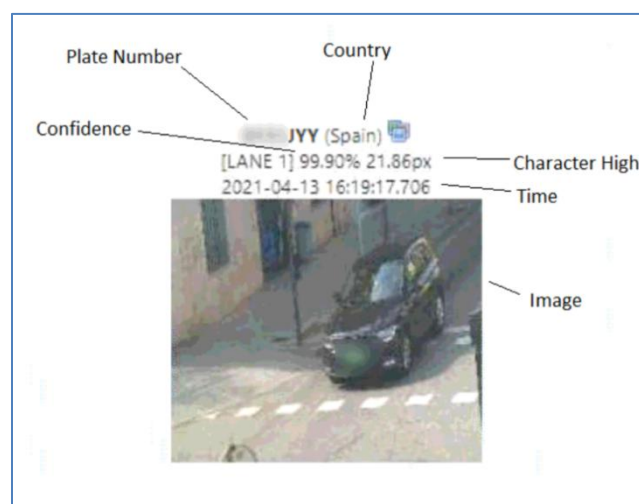
**Show lanes:** When you select this check box, you can see a blue line defining the lanes we have configured in the parameters. The plates on the left side of the screen are captured in lane 1, and the plates on the right side of the screen are captured in lane 2.



**Calibration pattern:** When you select this check box, you can see white lines indicating the minimum character size. The vertical space between lines is 25 pixels; the plate number must be higher than this space.



**Results Panel:** It shows the latest results; we highlight the last result with a blue outline. The results will provide:



The results can be seen in list mode above.

ID ↓	Time	Plate	Lane	Direction	Conf.	Height(px)	Country or state	List	Image
16669	09:58:25.566 07/06/2023	059NW		No Direction	99.90	30.43	Spain		
16668	09:58:23.377 07/06/2023	68FNX		No Direction	99.90	19.00	Spain		
16667	09:58:17.495 07/06/2023	059NW		No Direction	99.90	30.57	Spain		
16666	09:58:16.287 07/06/2023	68FNX		No Direction	99.90	19.14	Spain		
16665	09:58:09.525 07/06/2023	059NW		No Direction	99.90	30.57	Spain		
16664	09:58:08.300 07/06/2023	68FNX		No Direction	99.90	19.00	Spain		

**Info Panel:** Information on the system status. The columns with the last change are those with the last updated value.

- SD space free (%): Percent of free space in the SD card.
- Camera free space (%): Percentage of free space in the camera.
- Last Size (pixels): Pixel size in the last result license plate captured.
- Mode: Mode of functionality. Values:
  - NO LICENSE: There is no license in the system.
  - STOPPED: The service is stopped.
  - MOTION: The service works in Motion Detection mode.
  - FREEFLOW: The service works in Free flow mode.
  - TRIGGER: The service works in Trigger mode

**Review Panel:** The review panel allows us to search, filter, and consult the results.

The screenshot shows the Review Panel interface with the following elements:

- Search Filters:**
  - From date: 11/05/2023 00:00:00
  - To date: 11/05/2023 23:59:59
  - Plate: [Empty text input]
  - Lane: Select... (dropdown menu)
- Buttons:** Open, Search
- Table:**

ID	Time	Plate	Lane	Direction	Country or state	Image
225	11:59:53.286 11/05/2023	NW	LANE1	No Direction	Spain	
224	11:59:42.824 11/05/2023	NW	LANE1	No Direction	Spain	
223	11:59:31.364 11/05/2023	NW	LANE1	No Direction	Spain	
222	11:59:21.062 11/05/2023	NW	LANE1	No Direction	Spain	
221	11:59:09.939 11/05/2023	NW	LANE1	No Direction	Spain	
- Page Navigation:** Pag. 1/45, Search..., First page, << Previous, Next >>, Last page, Export

**From Date:** Select the date when you want to initiate the search.

**To Date:** Select the date when you wish to stop searching.

**Plate:** It allows users to search partially by entering a few numbers or letters on the license plate. This option will search all plates that coincide with the desired query.

**List:** It allows users to filter by lists, meaning it will show you all plates that belong to a list.

**Direction:** This filter allows you to select the direction of the vehicles, whether they're coming, going, or not.

**Lane:** This filter allows users to select the lane of the road (Lane 1 and Lane 2) if it is configured under LPR configuration.

For example, if you wish to search for a specific plate by date, from 02/10 to 02/12.

**From Date:**

From date: 23/09/2019 00:00:00

To date: [Search]

Calendar: SEPTEMBER 2019

SUN	MON	TUE	WED	THU	FRI	SAT
25	26	27	28	29	30	31
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

Time: 00 : 00

Buttons: Today, Done, Cancel

**To Date:**

From date: 23/09/2019 00:00:00

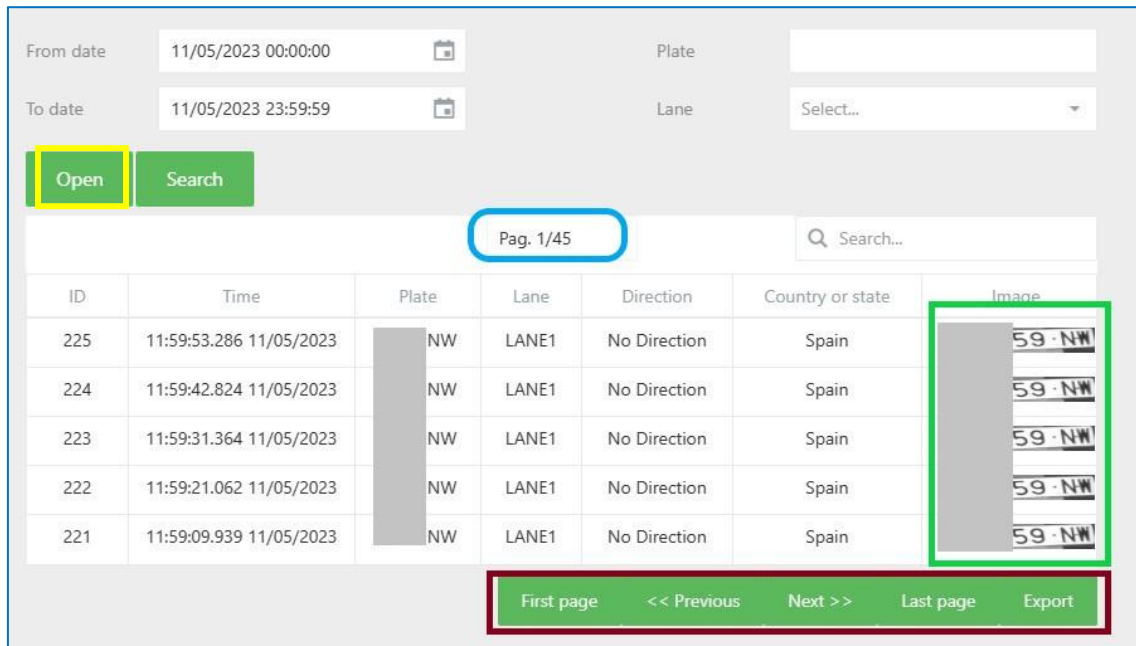
To date: 23/09/2019 23:59:59 [Search]

Calendar: SEPTEMBER 2019

SUN	MON	TUE	WED	THU	FRI	SAT
25	26	27	28	29	30	31
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

Time: 23 : 59

Buttons: Today, Done, Cancel

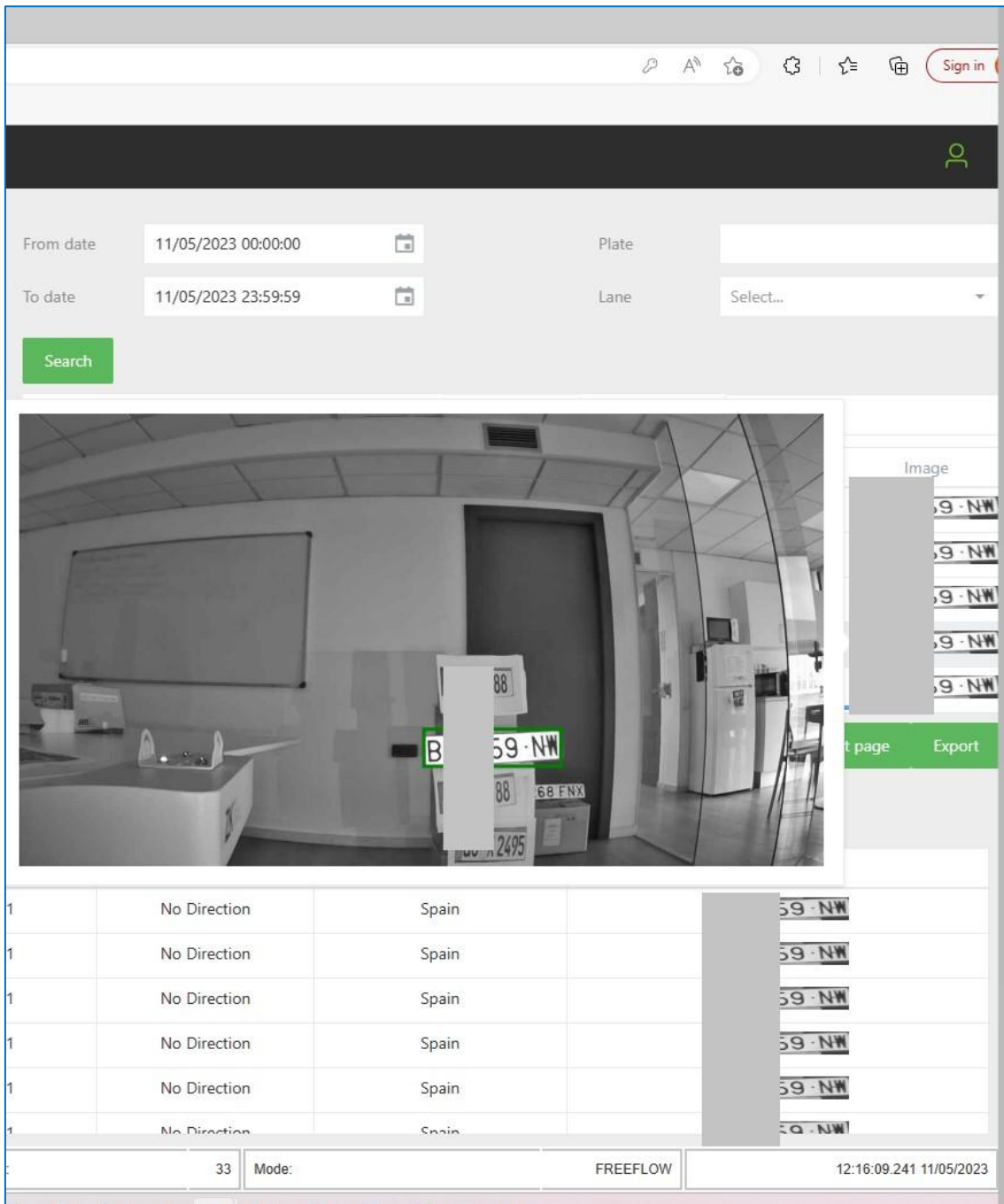


The red box corresponds to navigating between pages.

The blue box indicates the number of pages you are on.

The green box shows the license plate number images. If you move the mouse cursor over any image, you can obtain a larger image.

The yellow box, the relay signals can be output remotely from the web page by clicking on this “open” button.



There is a download image option.

Searching for a license plate which we only remember a few letters or numbers. In this case, all you need to do is enter a part of the plate in the PLATE filter and search.

From date: 11/05/2023 00:00:00  
To date: 11/05/2023 23:59:59  
Plate: B9  
Lane: Select...  
Search

Pag. 1/92 Search...

ID	Time	Plate	Lane	Direction	Country or state	Image
413	12:33:07.530 11/05/2023	B90	LANE1	No Direction	Spain	
412	12:32:57.173 11/05/2023	B90	LANE1	No Direction	Spain	
411	12:32:46.785 11/05/2023	B90	LANE1	No Direction	Spain	
410	12:32:36.199 11/05/2023	B90	LANE1	No Direction	Spain	
409	12:32:24.546 11/05/2023	B90	LANE1	No Direction	Spain	

First page << Previous Next >> Last page Export

You can also search for license plates that are in a list.

1503	11:21:43.254 28/02/2019			99.10	Spain	BLACKLIST
1504	11:22:20.612 28/02/2019			93.55	Spain	
1505	11:22:34.864 28/02/2019			99.90	Spain	
1506	11:23:27.830 28/02/2019			95.53	Spain	
1507	11:24:47.292 28/02/2019			86.34	Spain	BLACKLIST

You can use the Search filter to find a value inside the table:



From date: 24/08/2022 00:00:00 | Plate: 99K  
 To date: 24/08/2022 23:59:59 | List: all plates  
 Show num registers: 10 | Direction: (All Directions)

**Search** **Export**

Q 44

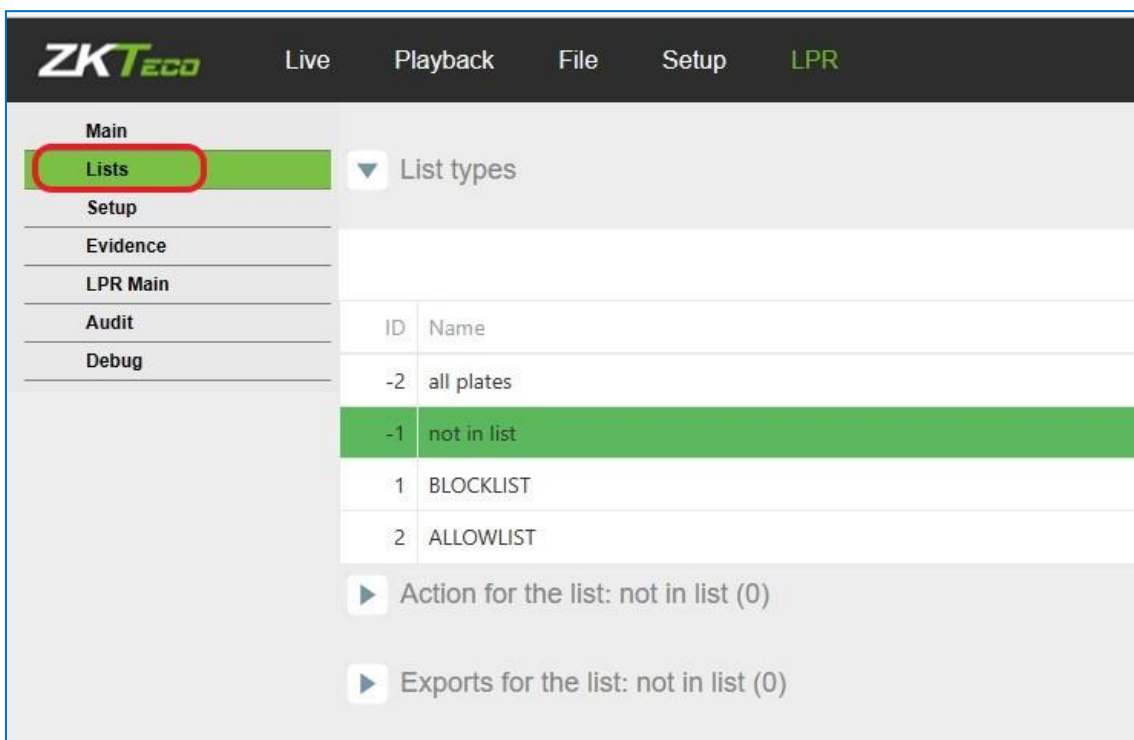
ID	Time	Plate	Lane	Direction	Conf.	Hei...	Country or state	List	Image	Image
8301	07:01:57.325 24/08/2022	449		Coming	92.04	18.71	Spain			LPR
8691	10:03:46.683 24/08/2022	449		No Direction	99.90	20.14	Spain			LPR
9075	11:56:56.625 24/08/2022	449		Coming	99.73	18.50	Spain			LPR

### 4.3. Lists Tab

In this tab, you can create lists. A list is a group of license plates that will trigger an action. Neural Edge allows you to perform different actions on any list.

By default, there are four lists created: ALL PLATES, NOT IN LIST, BLOCKLIST, and ALLOWLIST. You can edit, delete, or add more lists.

After creating the name of the list, you can decide the Levenshtein distance of the list.





In the lists tab, we have the following options:

*List:* It shows all the lists created.

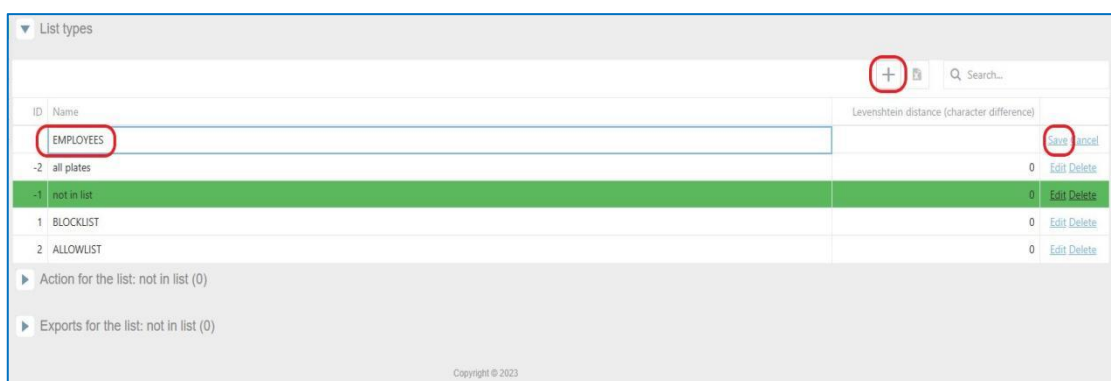
*Action:* It shows all the actions created by the list.

*Export:* It allows you to export a single list, or if all plates are selected, it creates a unique file with all the license plates that belong to that list.

*Import:* It allows you to import a single list, or if all plates are selected, it creates a unique file with all the license plates that belong to that list.

Let's create a new list and call it "EMPLOYEES".

Click on the "+" button, enter the list name, and click on "Save".



Now we are going to configure an action for this list, in other words, what we expect to happen if we read a license plate.

Click on “EMPLOYEES” list to see the options.

▼ List types

+ 🗑️

ID	Name	Levenshtein distance (character difference)	
-2	all plates	0	<a href="#">Edit</a> <a href="#">Delete</a>
-1	not in list	0	<a href="#">Edit</a> <a href="#">Delete</a>
1	BLOCKLIST	0	<a href="#">Edit</a> <a href="#">Delete</a>
2	ALLOWLIST	0	<a href="#">Edit</a> <a href="#">Delete</a>
3	EMPLOYEES	0	<a href="#">Edit</a> <a href="#">Delete</a>

▶ List of license plates: EMPLOYEES (0)

▶ Action for the list: EMPLOYEES (0)

▶ Exports for the list: EMPLOYEES (0)

▶ Imports for the list: EMPLOYEES (0)

Copyright © 2023

### List of the license plates: EMPLOYEES

Add a new license plate, click on the “+” button and fill in the grid.

+ 🗑️

Plate	Description	Insert Date	Start validity date	End validity date	
005OCR	NAME LASTNBAME	01/04/2019 13:33:23	01/04/2019 13:33:23	01/01/3000 00:00:00	<a href="#">Save</a> <a href="#">Cancel</a>

To edit or delete a license plate in that list, just click on the plate and then:

+ 🗑️

Plate	Description	Insert Date	Start validity date	End validity date	
005OCR	NAME LASTNBAME	01/04/2019 13:33:23	01/04/2019 13:33:23	01/01/3000 00:00:00	<a href="#">Edit</a> <a href="#">Delete</a>

\* In case the system works in trigger mode, and we want to execute a no-plate action, we must add NO\_PLATE to the list.

**Action for the list:** Here are all the actions we can configure for each list:

- **Socket Client:** Enables a socket connection to send messages as XML or JSON.
- **Socket Server:** Opens a port in the camera to listen to hosts for sending messages as XML or JSON.
- **IO:** Enables inbound and outbound digital signals in the camera.
- **FTP:** Stores the results in an FTP server.
- **HTTP:** Sends a request using HTTP or HTTPS protocols to a server.
- **MILESTONE:** Sends an analytic event to Milestone VMS.
- **WIEGAND:** Sends a signal to Wiegand middleware board.
- **Trigger Server:** Enables a port that sends the read response when a trigger message arrives.
- **Wiegand 1D:** Sends a request using this protocol to a server.
- **Email:** Sends an email.
- **ZK BioSecurity:** Sends an HTTP message with the plate information and image to a ZKTeco BioSecurity server.
- **ZK LED Screen (RS485):** Interacts with a ZKTeco LED Screen of 2 or 4 lines.
- **ZK Reader (RS485):** Interacts with a ZKTeco inBio controller (using RS-485 Bus).
- **Twin Camera:** Filters actions depending on the twin camera information.

A list can perform several actions, depending on the scenario and needs.

Having the Employees list selected, click on “Action for the list” and then click on the + button.

▼ List types

+ [icon] Q Search...

ID	Name	Levenshtein distance (character difference)	
-2	all plates	0	<a href="#">Edit</a> <a href="#">Delete</a>
-1	not in list	0	<a href="#">Edit</a> <a href="#">Delete</a>
1	BLOCKLIST	0	<a href="#">Edit</a> <a href="#">Delete</a>
2	ALLOWLIST	0	<a href="#">Edit</a> <a href="#">Delete</a>
3	EMPLOYEES	0	<a href="#">Edit</a> <a href="#">Delete</a>

▶ List of license plates: EMPLOYEES (0)

▼ Action for the list: EMPLOYEES (0)

[Export to CSV file](#) [Export to XML file](#)

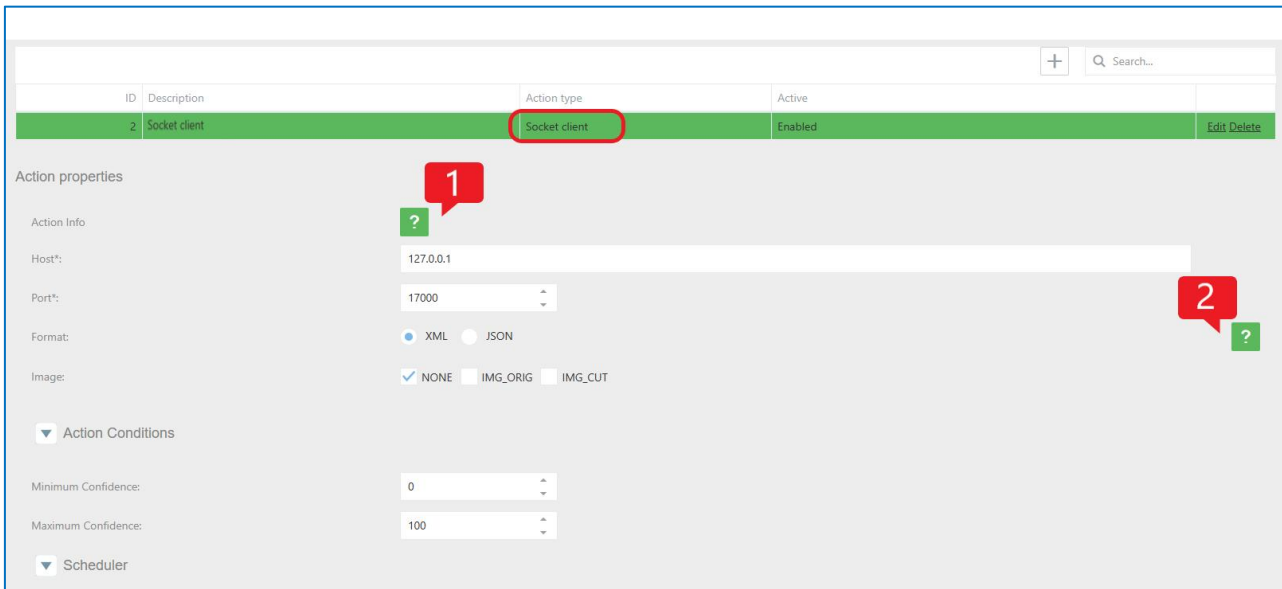
[Select import XML/CSV file](#) or Drop import XML/CSV file here

Delete the list elements at import

- Socket client
- Socket server
- IO
- FTP
- HTTP
- MILESTONE
- WIEGAND
- Trigger server
- Wiegand 1D
- EMAIL
- ZK BioSecurity
- ZK LED Screen (RS485)
- ZK Reader (RS485)
- Select...

ID	Description	Active	
			<div style="display: flex; justify-content: space-between; align-items: center;"> <span>+ Q Search...</span> <span><a href="#">Save</a> <a href="#">Cancel</a></span> </div>

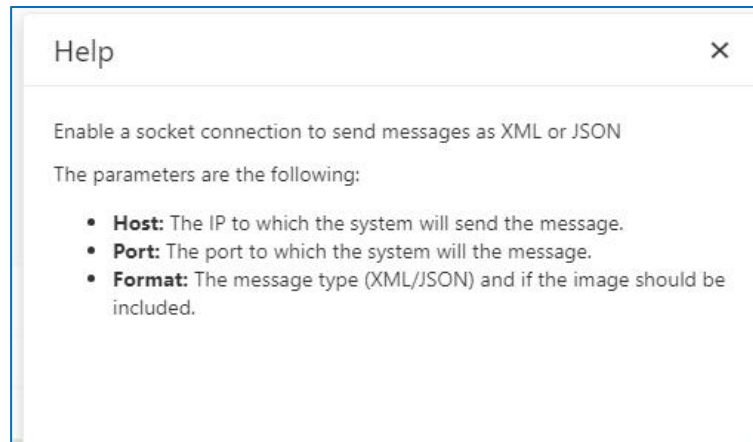
1. Configuring the **Socket Client** action because you want to send the results to another device, under the EMPLOYEES list, click on "Action for the list" and add a new action by pressing "+," and then select "Action type = Socket Client."




Action Conditions: Set the minimum and maximum confidence filter to do the socket client action.

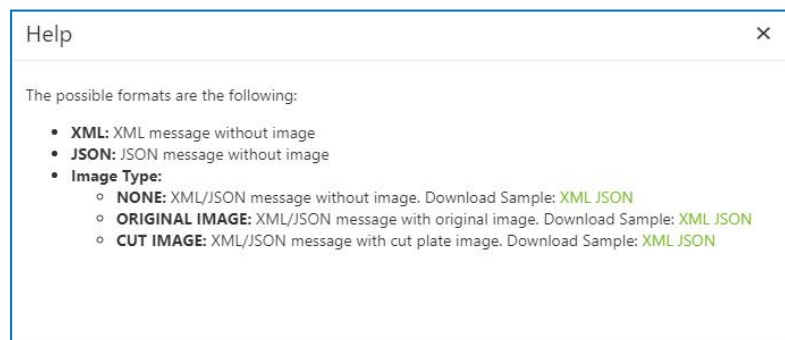
Schedule: Set the scheduler as needed and click on "SAVE SCHEDULER".

Action Info: Click on  for more information.



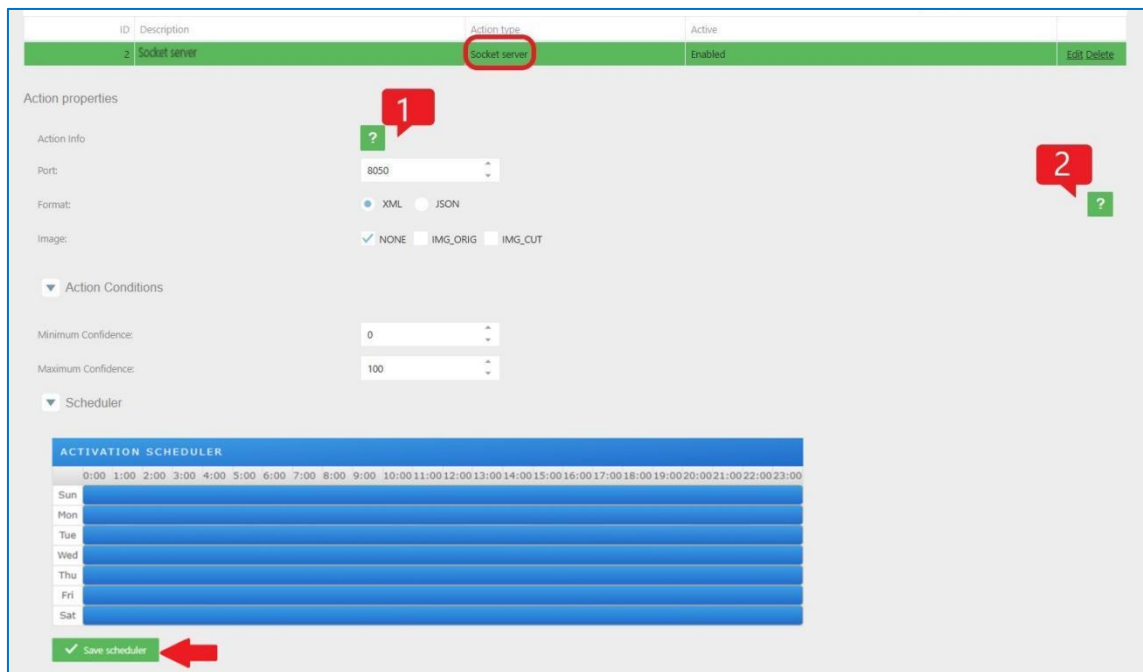
Select which message format you will use to send the information.

Click on  for more information about format type.






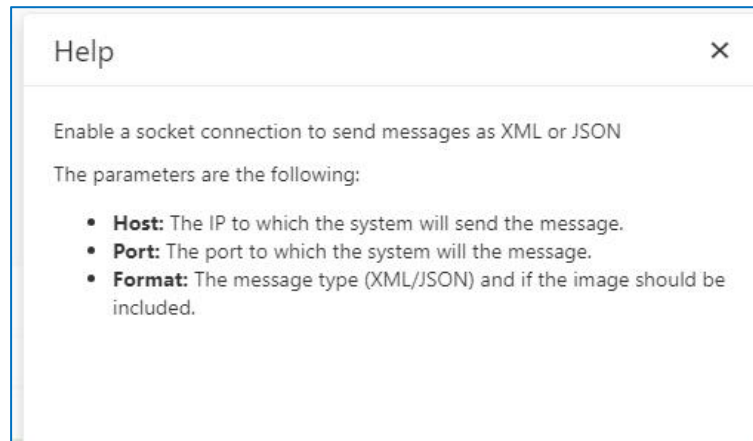
2. Configuring the **Socket Server** action will use the camera to receive messages from other devices. Click on “Action for the list” and add a new action pressing “+” and then select in “Action type = Socket Server”




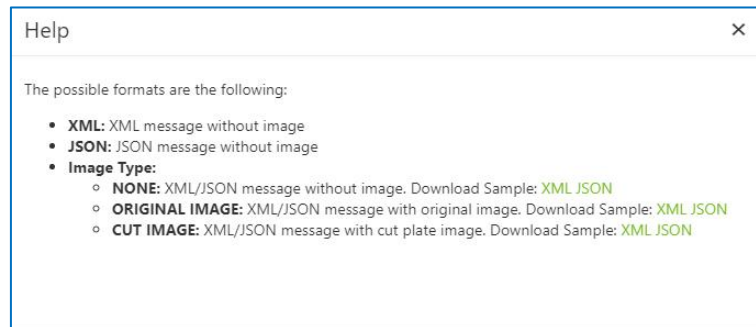
Action Conditions: Set the minimum and maximum confidence filter to do the socket server action.

Schedule: Set the scheduler as needed and click on “SAVE SCHEDULER”.

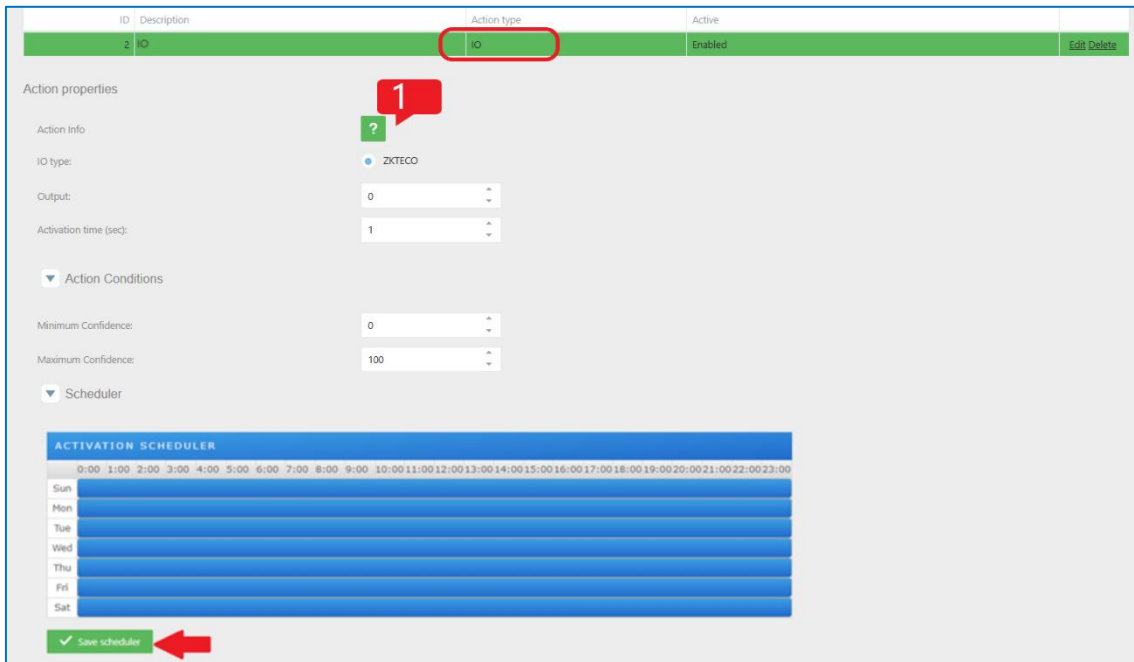
Action Info: Click on  for more information.



Click on  for more information about format type.




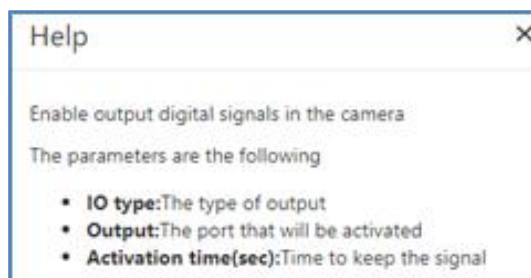
3. Configuring the **IO** action to open a gate for those plates that belong to the list EMPLOYEES  
Click on "Action for the list" and add a new action by pressing "+," and then select "Action type = IO."



Action Conditions: Set the minimum and maximum confidence filter to do the IO action.

Schedule: Set the scheduler as needed and click on "SAVE SCHEDULER".

Click on  for more information about how to configure.




In this case, every time we read a license plate that is in the EMPLOYEES list, we send a signal to the camera I/O to open the gate.

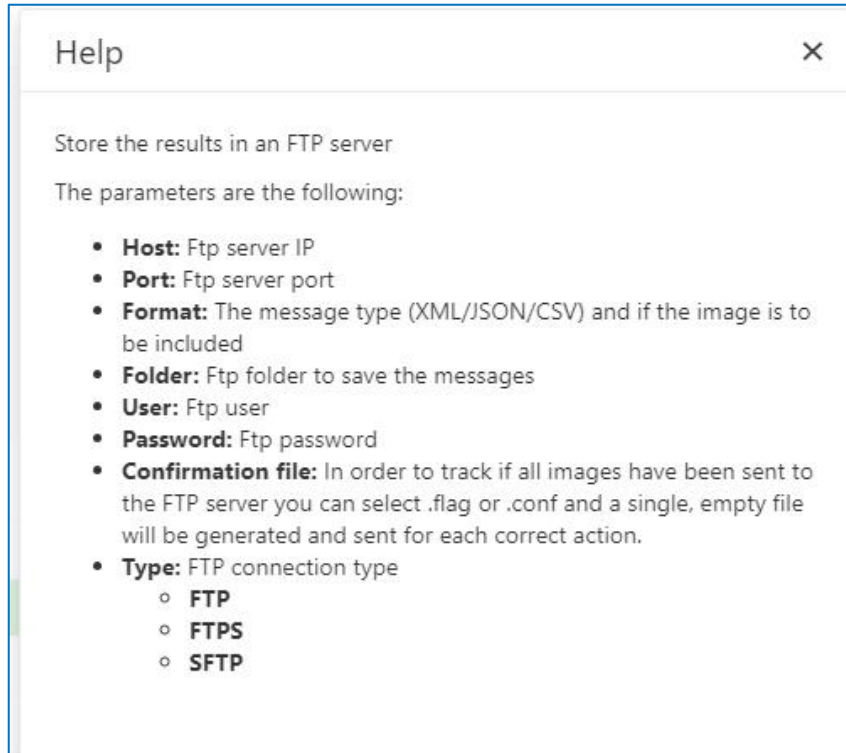
4. Configuring the **FTP** action to send an XML, JSON, or image to an FTP server under the EMPLOYEES list, click on "Action for the list" and add a new action by pressing "+" and then selecting "Action type = FTP".

The screenshot displays the configuration interface for an FTP action. At the top, a table lists actions with columns for ID, Description, Action type, Active, and Edit/Delete. The first row shows ID '2', Description 'FTP', Action type 'FTP', and Active 'Enabled'. Below this, the 'Action properties' section is visible. A red callout '1' points to a green question mark icon next to the 'Action Info' section. The 'Host\*' field is set to '127.0.0.1'. The 'Port\*' field is set to '21'. The 'Format' section has radio buttons for XML, JSON, and IMAGE. The 'Image\*' section has checkboxes for NONE (checked), IMG\_ORIG, and IMG\_CUT. The 'Folder\*', 'User\*', and 'Password\*' fields are empty. The 'Confirmation file\*' section has radio buttons for NONE, .FLAG, and .CONF. The 'Type\*' section has radio buttons for FTP (checked), FTPS, and SFTP. Below this, the 'Action Conditions' section is expanded, showing 'Minimum Confidence' set to 0 and 'Maximum Confidence' set to 100. At the bottom, the 'Scheduler' section is expanded, showing an 'ACTIVATION SCHEDULER' grid. The grid has columns for hours from 0:00 to 23:00 and rows for days of the week (Sun to Sat). All cells in the grid are filled with blue, indicating the action is scheduled for all days and times. A red arrow points to a green 'Save scheduler' button at the bottom left of the scheduler section.

Action Conditions: Set the minimum and maximum confidence filter to do the FTP action.

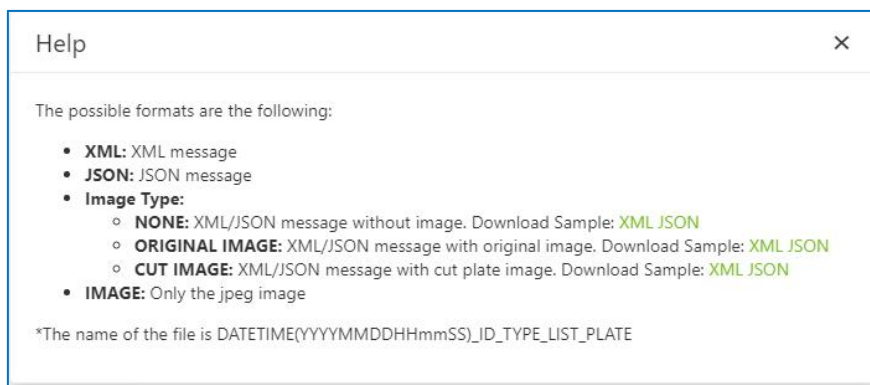
Schedule: Set the scheduler as needed and click on "SAVE SCHEDULER".

Click on  for more information about how to configure.



Select which message format you will use to send the information.

Click on  for more information about format type.



5. Configuring the **HTTP** action to send analytic events to a VMS under the EMPLOYEES list, click on "Action for the list" and add a new action by pressing +," and then select "Action type = HTTP."

You can use wildcards in the "Url" param to include some information in the http petition:

#IDCOMP# Computer ID

#IDRESULT# Result ID

#IDCAM# Camera identifier

#PLT# Plate number

#DTE# Time stamp of the image captured.

#CNF# Global confidence

#IDLIST# List of list identifiers separated by []. [-1] not in list

#IDNAME# List names

#IDLAN# Lane identifier (1 or 2)

#ENDLN# New line

Examples:

`http://192.168.1.23:80?plate=#PLT#&time=#DTE#`

`http://192.168.1.23:80?plate=0715GYC&time=2019-09-27T18:49:19.912`


`http://192.168.1.34:8090?plate=#PLT#&cam=#IDCAM#&time=#DTE#&conf=#CNF#  
&lane=#IDLAN#&list=#IDLIST#`

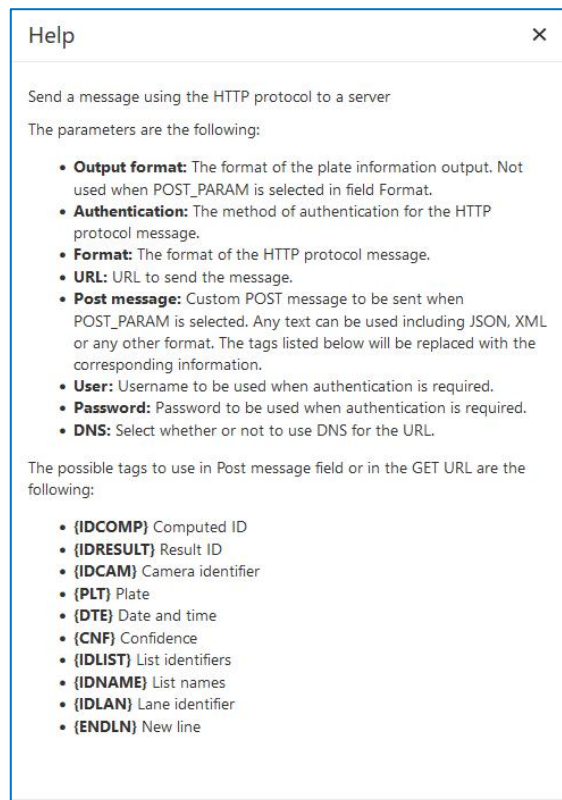
`http://192.168.1.34:8090?plate=0715GYC&cam=1&time=2019-09-27T18:52:49.929&conf=99.90&lane=2&list=[-1]`

The screenshot displays the configuration page for an HTTP action. At the top, a table lists the action with ID 2, description HTTP, and status Enabled. The 'Action type' column is circled in red. Below the table, the 'Action properties' section includes fields for Output format (XML, JSON), Authentication (NONE, BASIC, DIGEST), Format (GET, POST, POST\_PARAM), Image (NONE, IMG\_ORIG, IMG\_CUT), and a URL field containing 'http://127.0.0.1:80'. A red callout '1' points to a help icon. The 'Action Conditions' section has dropdowns for Minimum Confidence (0) and Maximum Confidence (100). Below this is the 'Scheduler' section, titled 'ACTIVATION SCHEDULER', which shows a grid for scheduling by day and time. A red callout '2' points to a help icon in the scheduler area. At the bottom left of the scheduler, a green 'Save scheduler' button is highlighted with a red arrow.

**Action Conditions:** Set the minimum and maximum confidence filter to do the HTTP action.

**Schedule:** Set the scheduler as needed and click on “SAVE SCHEDULER”.

Click on  for more information about how to configure.



Click on  for more information about format type.




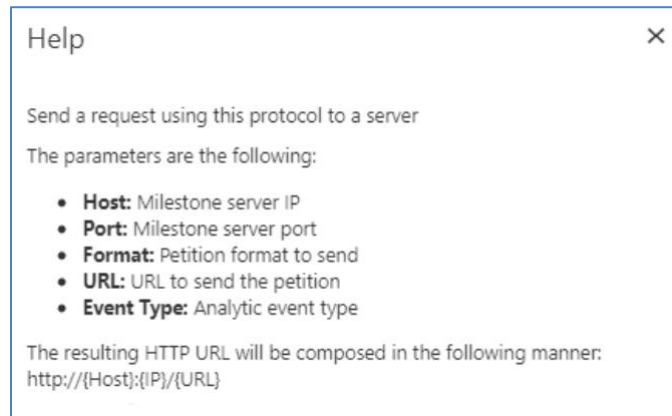



6. Configuring the **MILESTONE** action to send analytic events to a Milestone VMS under the EMPLOYEES list, click on "Action for the list" and add a new action by pressing "+" and then selecting "Action type = Milestone."

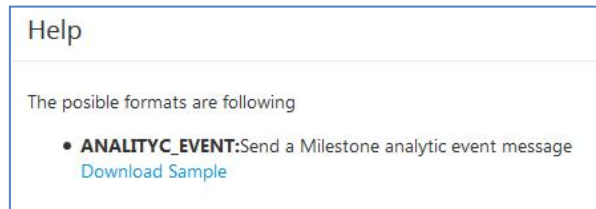
Action Conditions: Set the minimum and maximum confidence filter to do the Milestone action.

Schedule: Set the scheduler as needed and click on "SAVE SCHEDULER".

Click on  for more information about how to configure.

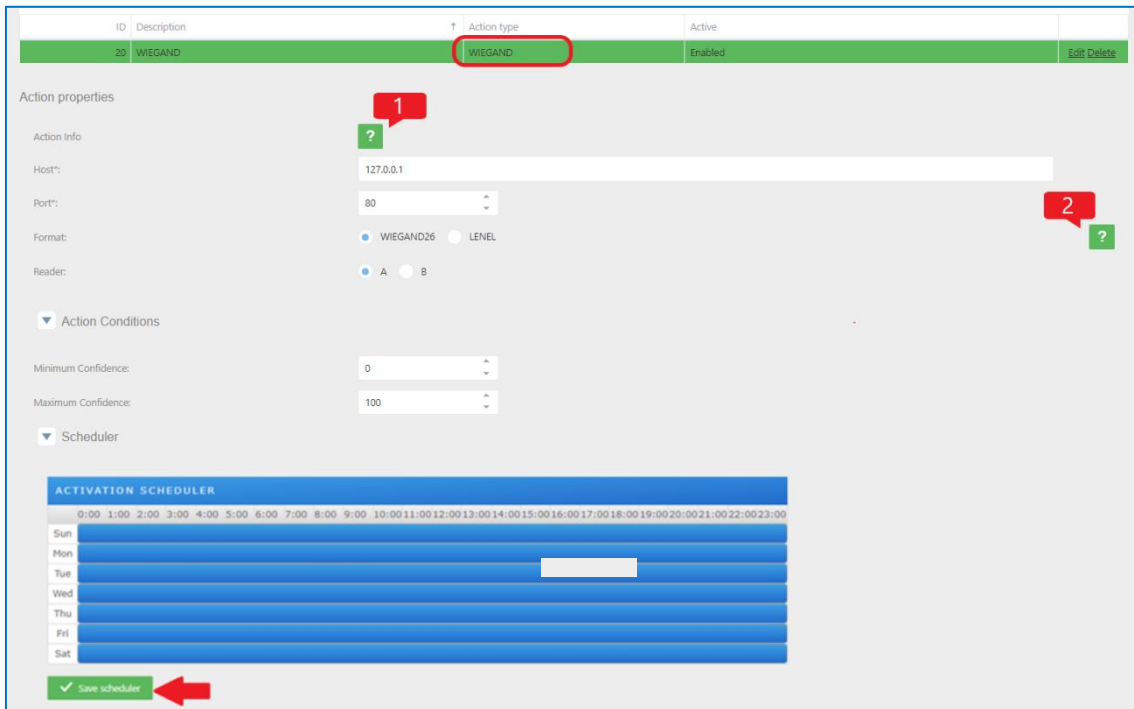


Click on  for more information about format type.



**See chapter 4.4.1 to know more information about how to configure Milestone.**

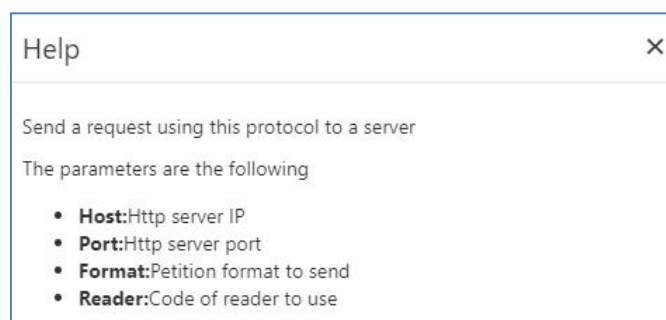
7. Configuring the **WIEGAND** action to send analytic events to a Wiegand middleware board under the EMPLOYEES list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = WIEGAND”




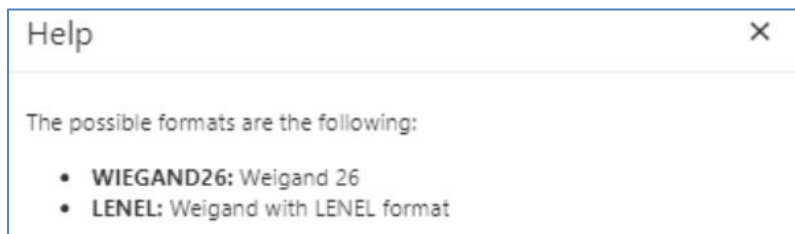
Action Conditions: Set the minimum and maximum confidence filter to do the Wiegand action.

Schedule: Set the scheduler as needed and click on “SAVE SCHEDULER”.

Click on  for more information about how to configure.



Click on  for more information about format type.



8. Configuring the **Trigger Server** action will use the camera to receive triggers from other devices and send a message under the EMPLOYEES list, click on "Action for the list" and add a new action pressing "+" and then select in "Action type = Trigger Server".

This mode is designed to work with trigger mode. The client connects to the server socket and sends the message specified for "Trigger mode", Upon receiving this message (another message is discarded), it makes a trigger to the camera and takes a picture to process the engine. After the engine is processed, send a message with the format specified in the "Format response."

SIMPLE: Just the plate number

XML a message in format XML

XML\_IMG a message in XML format including the image in base64 format


JSON a message in format JSON

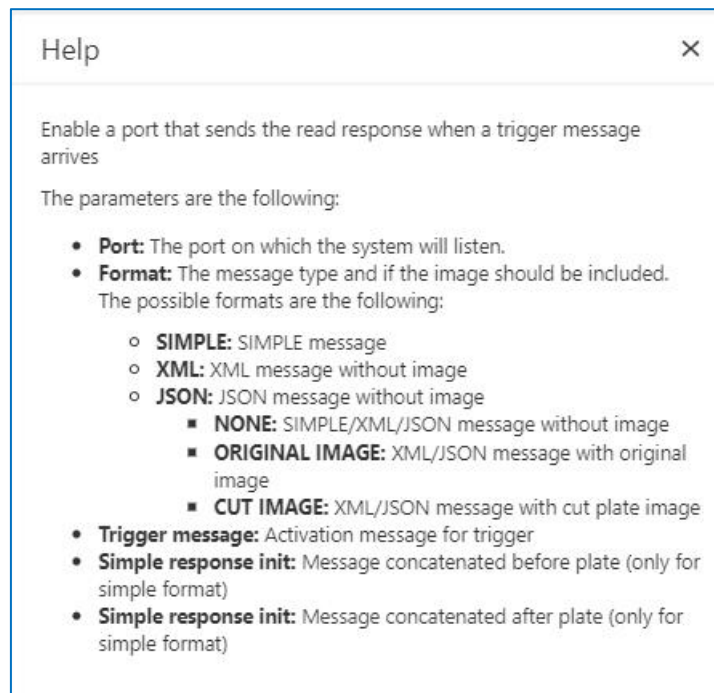
JSON\_IMG a message in JSON format including the image in base64 format


The screenshot displays the configuration page for a 'Trigger server' action. At the top, a table lists the action with ID 21, description 'Trigger server', action type 'Trigger server' (circled in red), and status 'Enabled'. Below this, the 'Action properties' section includes fields for 'Port' (8060), 'Format' (SIMPLE selected), 'Image' (NONE selected), 'Trigger message' (\$), and 'Action Conditions' (Minimum Confidence: 0, Maximum Confidence: 100). A red callout '1' points to a help icon in the 'Action Info' section. The 'ACTIVATION SCHEDULER' section shows a grid for days of the week (Sun-Sat) and time slots (0:00-23:00). A red callout '2' points to a help icon in the 'Format' section. A red arrow points to the 'Save scheduler' button.

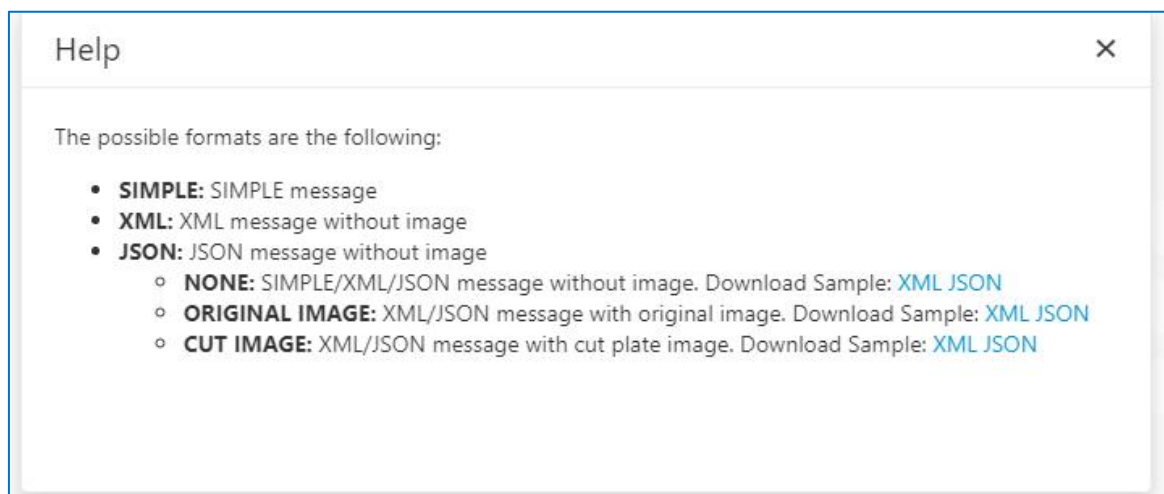
**Action Conditions:** Set the minimum and maximum confidence filter to do the Trigger Server action.

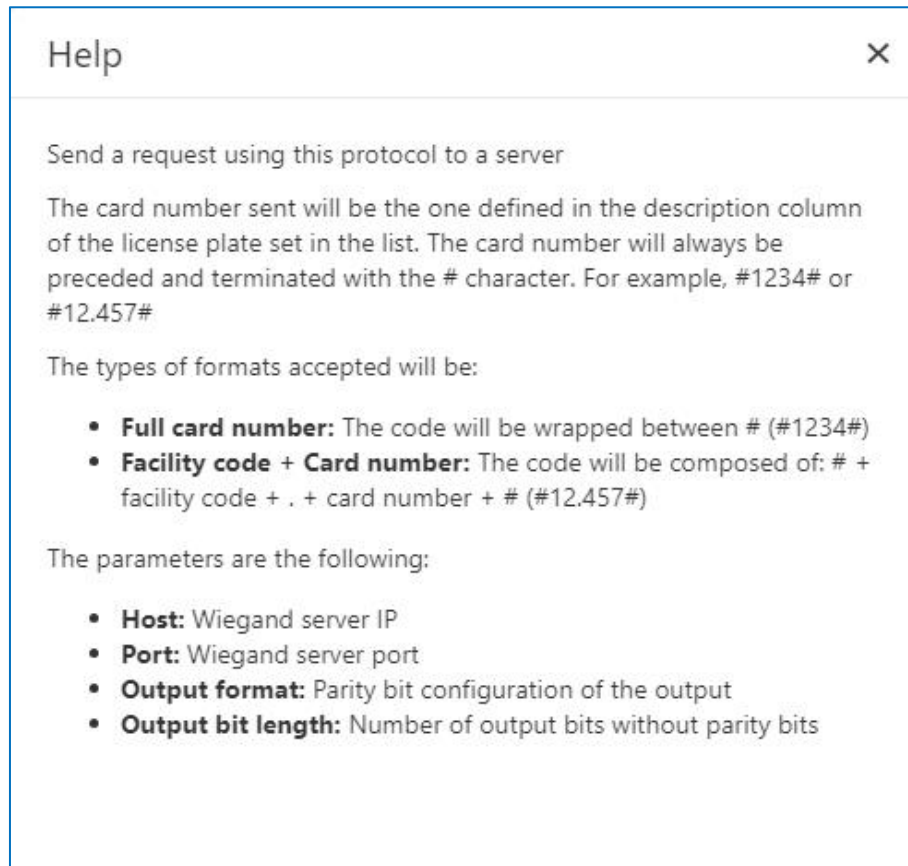
**Schedule:** Set the scheduler as needed and click on “SAVE SCHEDULER”.

Click on  for more information about how to configure.



Click on  for more information about format type.





**\*Note:** Max 3 simultaneous connections are allowed.

**\*Recommended way of work:** Establish connection, send trigger message, read LPR result, and close connection.

9. Configuring the **Wiegand 1D** action to send a request using this protocol to a server under the EMPLOYEES list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = **Wiegand 1D**”.

ID	Description	Action type	Active	
2	Wiegand 1D	Wiegand 1D	Enabled	Edit Delete

**Action properties**

Action Info

Host\*: 192.168.1.127

Port\*: 1601

Output format:  Bypass data bits  Even/Odd parity bits  Odd/Even parity bits

Output bit length:  24 bits  32 bits

**Action Conditions**

Minimum Confidence: 0

Maximum Confidence: 100

**Scheduler**

**ACTIVATION SCHEDULER**

	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Sun	[Active]																							
Mon	[Active]																							
Tue	[Active]																							
Wed	[Active]																							
Thu	[Active]																							
Fri	[Active]																							
Sat	[Active]																							


Save scheduler

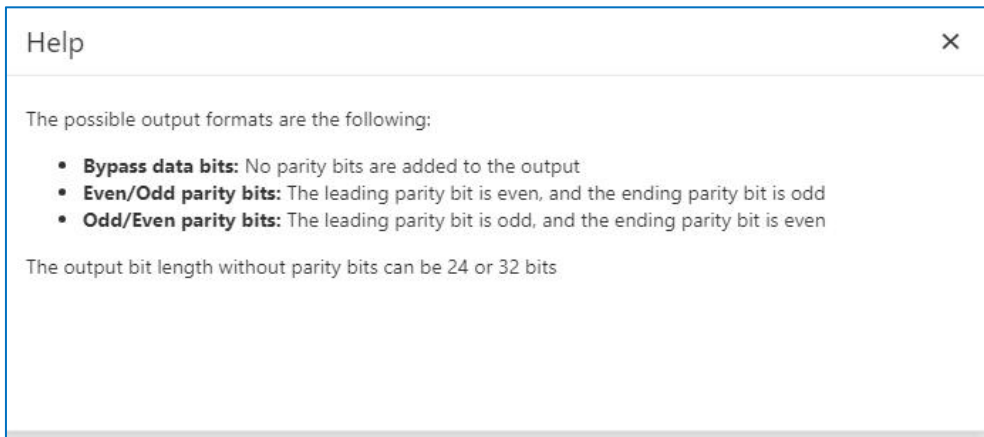
Action Conditions: Set the minimum and maximum confidence filter to do the action email.

Schedule: Set the scheduler as needed and click on “SAVE SCHEDULER”.

Click on for more information about how to configure.



Click on  for more information about format type.



**10.** Configuring the **EMAIL** action to send messages under the EMPLOYEES list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = EMAIL”.

ID	Description	Action type	Active
22	EMAIL	EMAIL	Enabled

**Action properties**

**Action Info**

Server:

Port: 587

Server type and format:  SMTP-SSL  SMTP

From: example@mail.com

User: example@mail.com

Password:

To: example@mail.com

Subject:

Message:

**Action Conditions**

Minimum Confidence: 0

Maximum Confidence: 100

**Scheduler**

**ACTIVATION SCHEDULER**

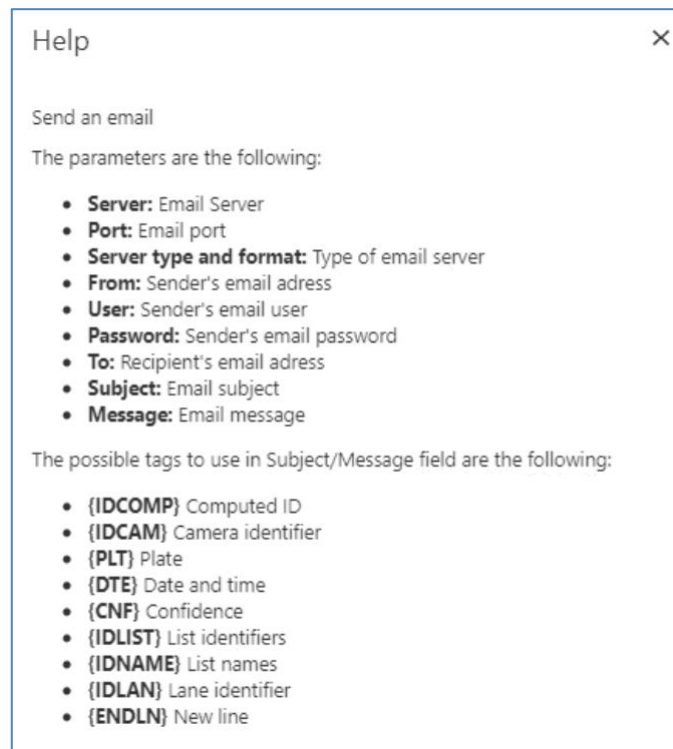
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Sun	[Active]																							
Mon	[Active]																							
Tue	[Active]																							
Wed	[Active]																							
Thu	[Active]																							
Fri	[Active]																							
Sat	[Active]																							


Save scheduler

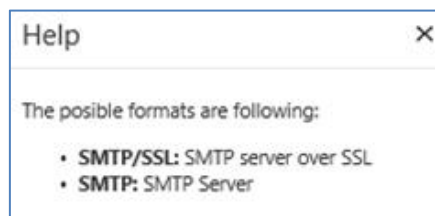
**Action Conditions:** Set the minimum and maximum confidence filter to do the email action.

**Schedule:** Set the scheduler as needed and click on “SAVE SCHEDULER”.

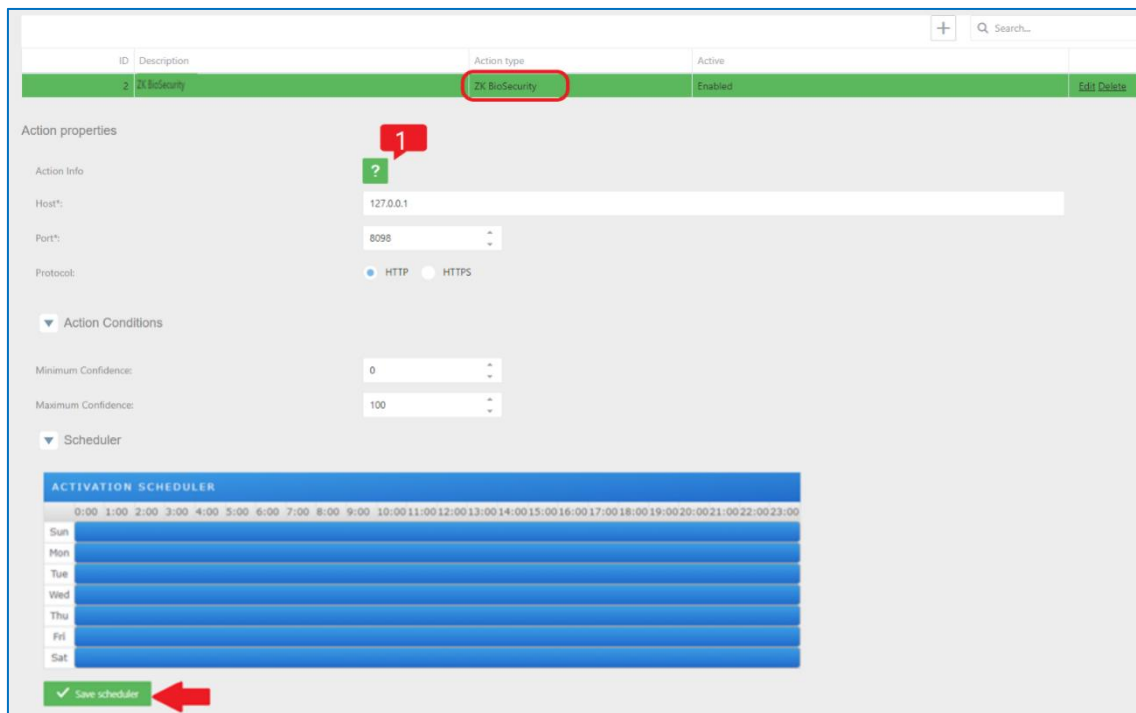
Click on for more information about how to configure.



Click on  for more information about format type.



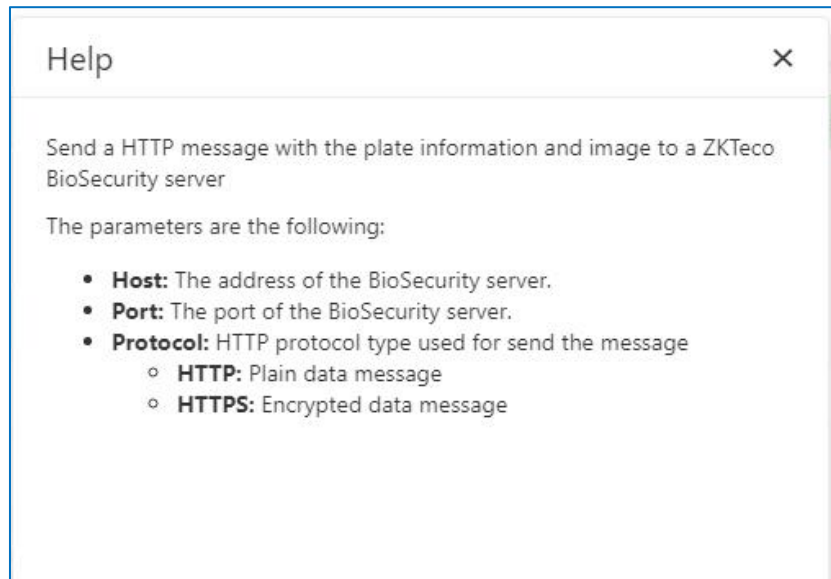
**11. Configuring the ZKTeco BioSecurity** action sends a HTTP message with the plate information and image to a ZKTeco BioSecurity server under the EMPLOYEES list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = ZKTeco BioSecurity”.



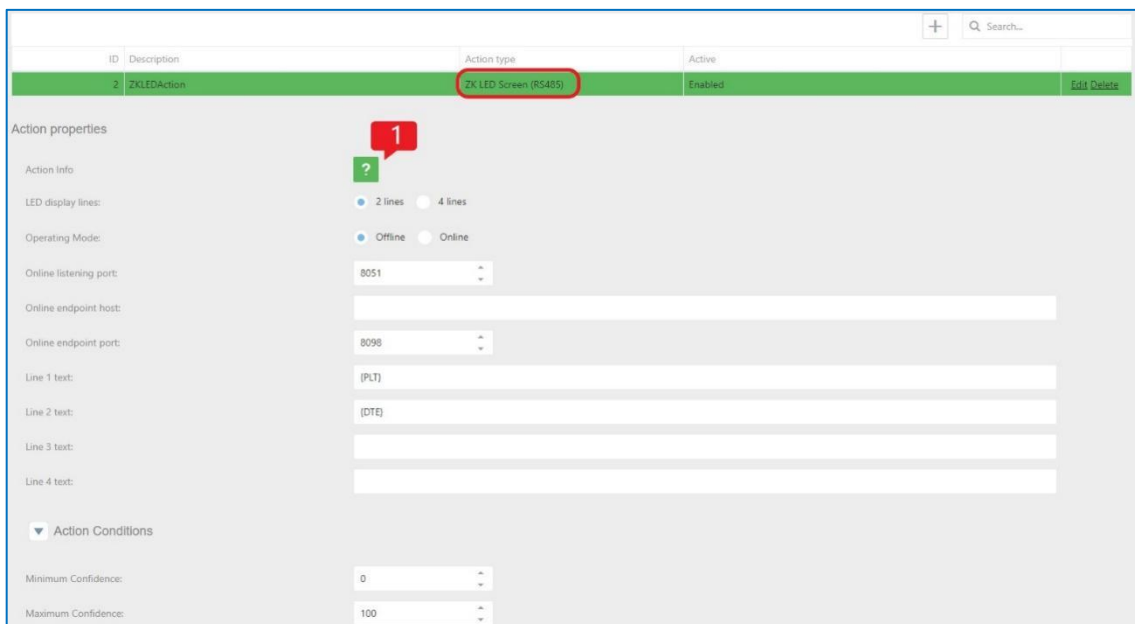
Action Conditions: Set the minimum and maximum confidence filter to do Came Protocol action.

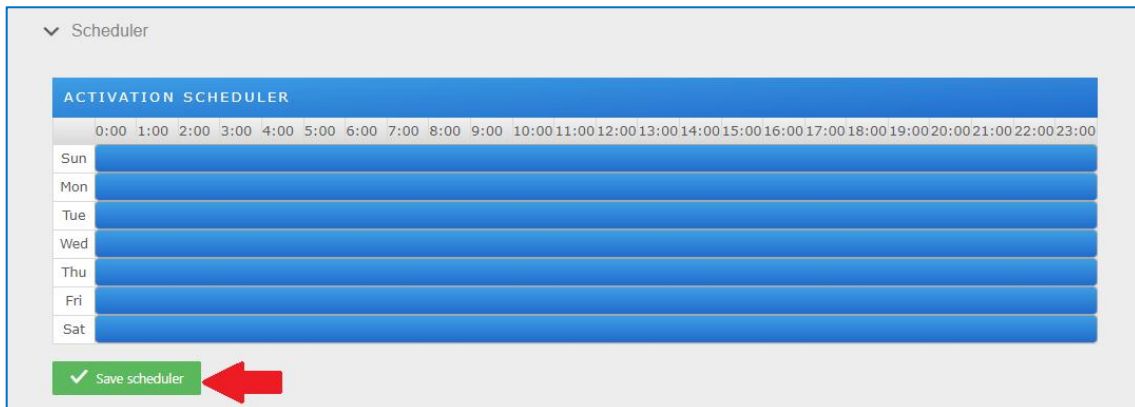
Schedule: Set the scheduler as needed and click on “SAVE SCHEDULER”.

Click on  for more information about how to configure.




12. Configuring the **ZK LED Screen (RS485)** interact with a ZKTeco LED Screen of 2 or 4 lines under the EMPLOYEES list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = ZK LED Screen (RS485)”.





**Action Conditions:** Set the minimum and maximum confidence filter to do Came Protocol action.

**Schedule:** Set the scheduler as needed and click on "SAVE SCHEDULER".

Click on  for more information about how to configure.

## Help ×

Interact with a ZKTeco LED Screen of 2 or 4 lines.

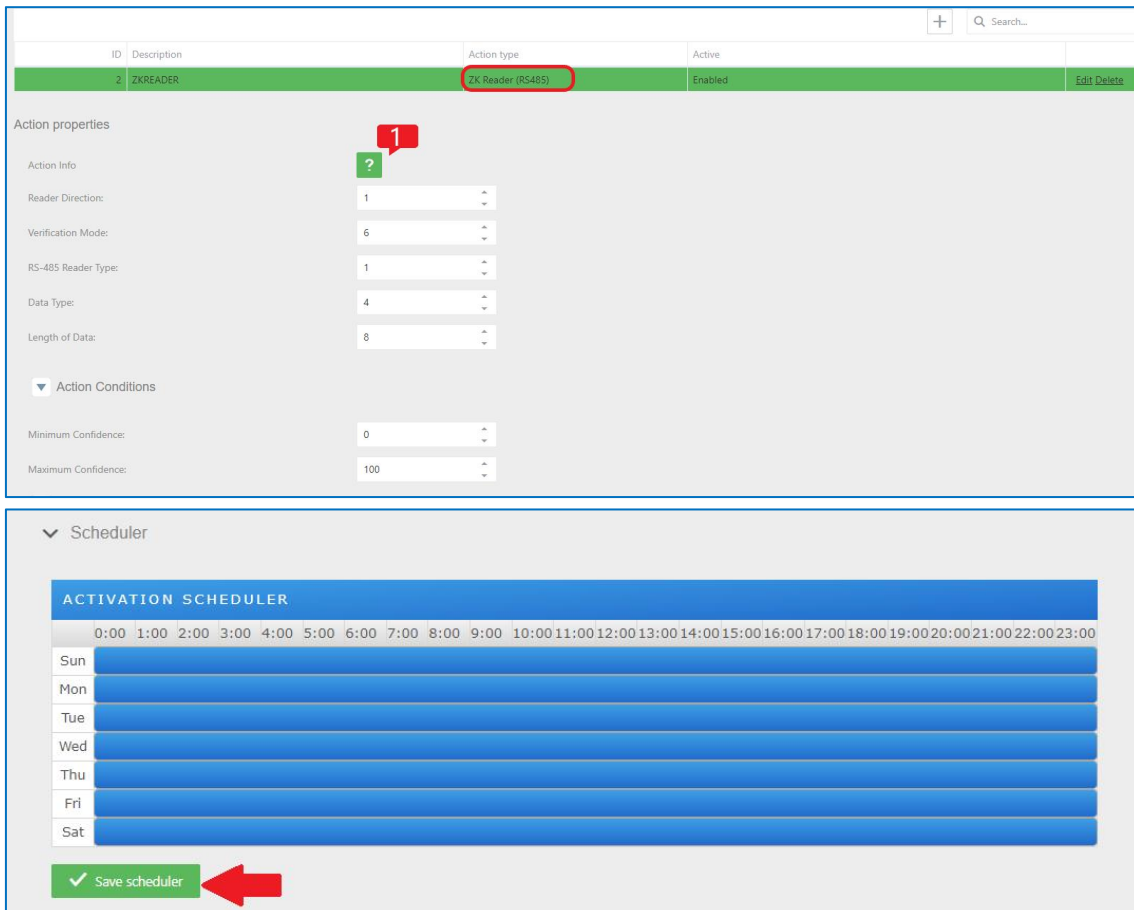
The parameters are the following:

- **LED display lines:** Indicates if the connected panel is a 2 or a 4-line panel.
- **Operating Mode:** Selects online or offline functionality - offline mode sends the configurable text lines below directly to the panel, online mode instead sends the results to a ZKBioSecurity endpoint and opens a listening socket to receive data to send to the panel.
- **Online listening port:** The port at which the LPR service will listen for data strings to send to the panel - only in online mode.
- **Online endpoint host:** The IP/hostname of the ZKBioSecurity endpoint to send results - only in online mode.
- **Online endpoint port:** The port of the ZKBioSecurity endpoint to send results - only in online mode.
- **Line x text:** These four lines are only used in offline mode to send messages directly to the panel when a number plate is read. Various tags can be used to input information about the reading, as per the below.

The possible tags to use in offline text lines are as follows:


- **{PLT}** Plate
- **{DTE}** Date and time
- **{IDCOMP}** Computed ID
- **{IDCAM}** Camera identifier
- **{CNF}** Confidence
- **{IDLIST}** List identifiers
- **{IDNAME}** List names
- **{IDLAN}** Lane identifier

**13. Configuring the ZK Reader (RS485) action to interact with a ZKTeco inBio controller (using RS-485 Bus) under the EMPLOYEES list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = ZK Reader (RS485)”.**

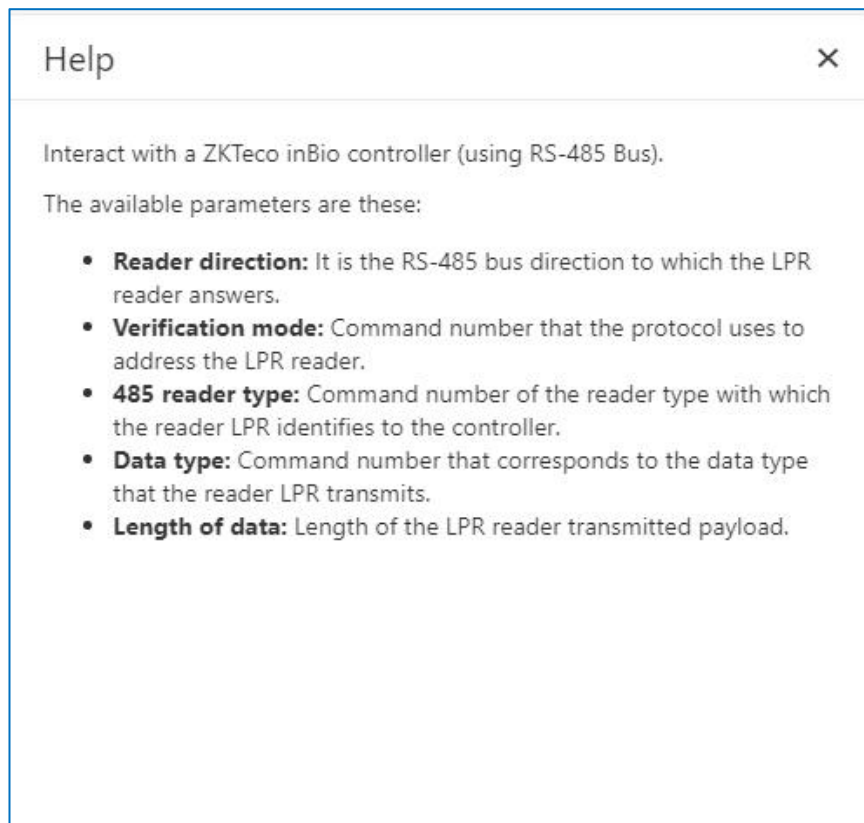


**Action Conditions:** Set the minimum and maximum confidence filter to do Came Protocol action.

**Schedule:** Set the scheduler as needed and click on “SAVE SCHEDULER”.

Click on  for more information about how to configure.





- 14.** Configuring the action **Twin Cameras action** to filter results depending on the results provided by Twin camera under the EMPLOYEES list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = Twin Camera”.

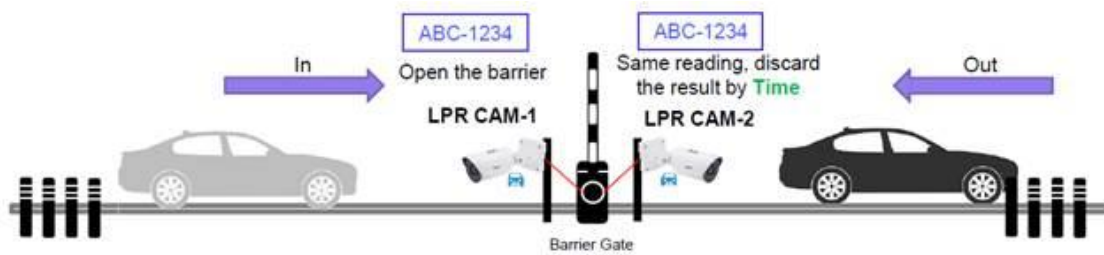
Filtering by twin cameras feature.  
Design for one roadway with one gate.

User Scenario:

- Both directions are used alternatively
- It is necessary to open the barrier only for the direction, from where the vehicle comes.

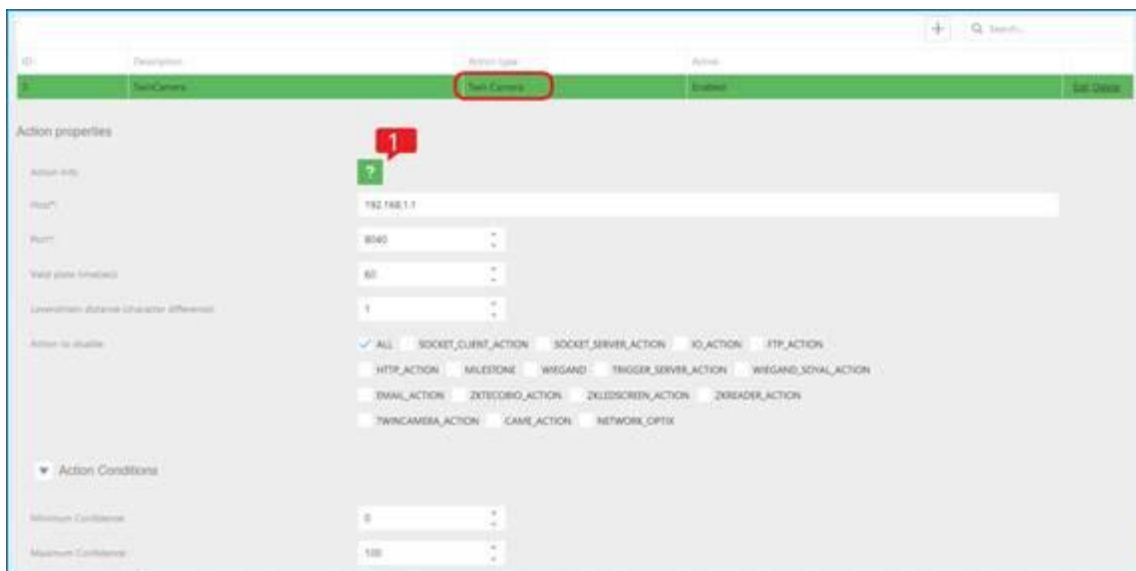
Expected Result:

- Vehicle is coming “in” the barrier will be opened by the LPR CAM 1 (triggered by output from Camera no other logic). After the vehicle passes the barrier, the barrier should close.
- When the vehicle passes the LPR CAM 2, the LPR reading taken by LPR CAM 2 should be discarded, no longer trigger barrier open again.



Configuration:

- Host: IP address of the other Twin camera.
- Port: 8040, always use this value.
- Valid plate time (sec): Time period within the result won't be published.
- Levenshtein distance: Difference between license plate strings recognized to apply this filter.
- Actions to filter: Selector to indicate what action should be filtered.

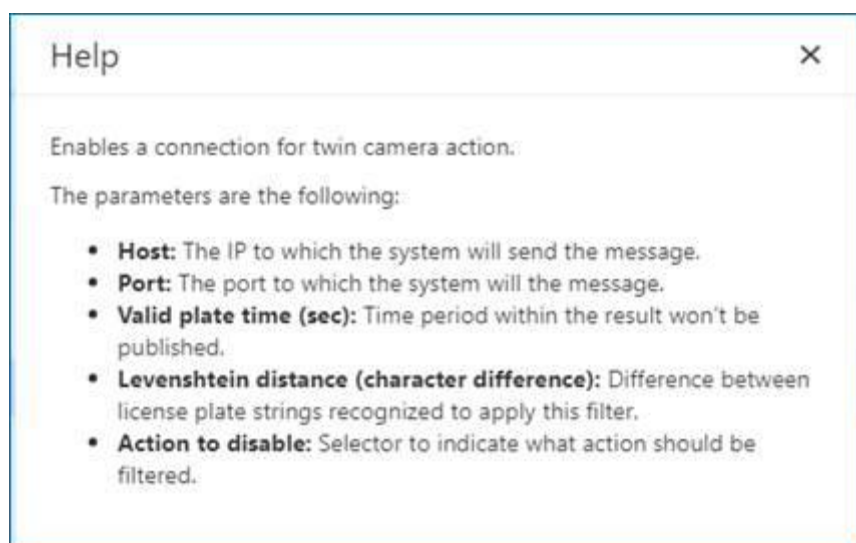




Action Conditions: Set the minimum and maximum confidence filter to do TWIN Camera action.

Schedule: Set the scheduler as needed and click on “SAVE SCHEDULER”.

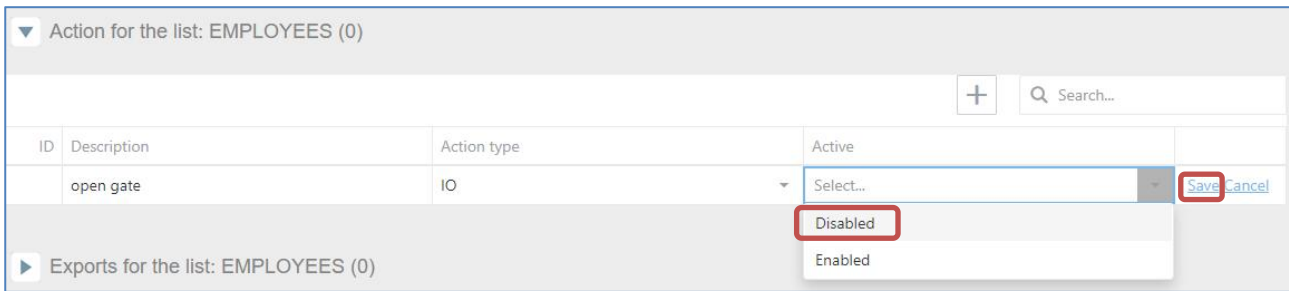
Click on  for more information about how to configure.



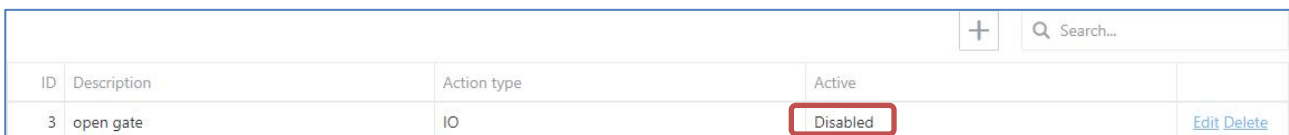
In case you don't want to continue using an action in a list, you can modify it to disable or delete the action.

To disable it, click on the list, select the action, and then click on the edit option.

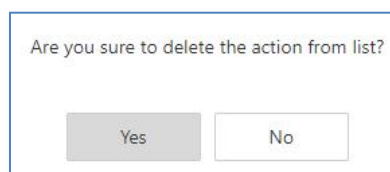
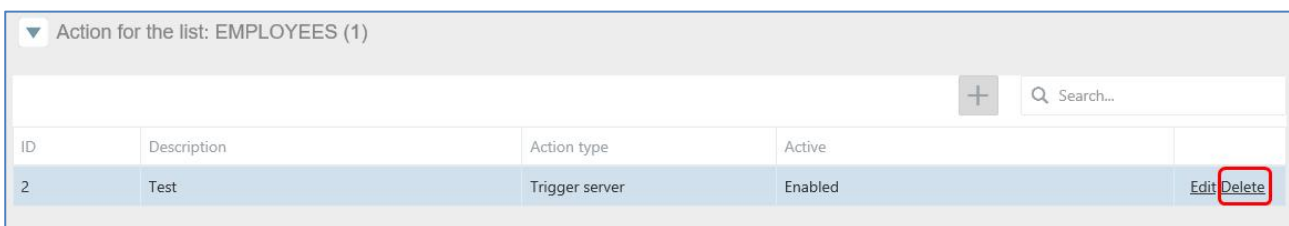
In Active, change it to Disabled, and then click on Save.



After this change, you will have the action disabled in case you need to use it later.



To delete an action, click on the action, click on the DELETE button, and then click on YES.



**Exports for the list:** Here are all the automatic exports we can configure for each list.

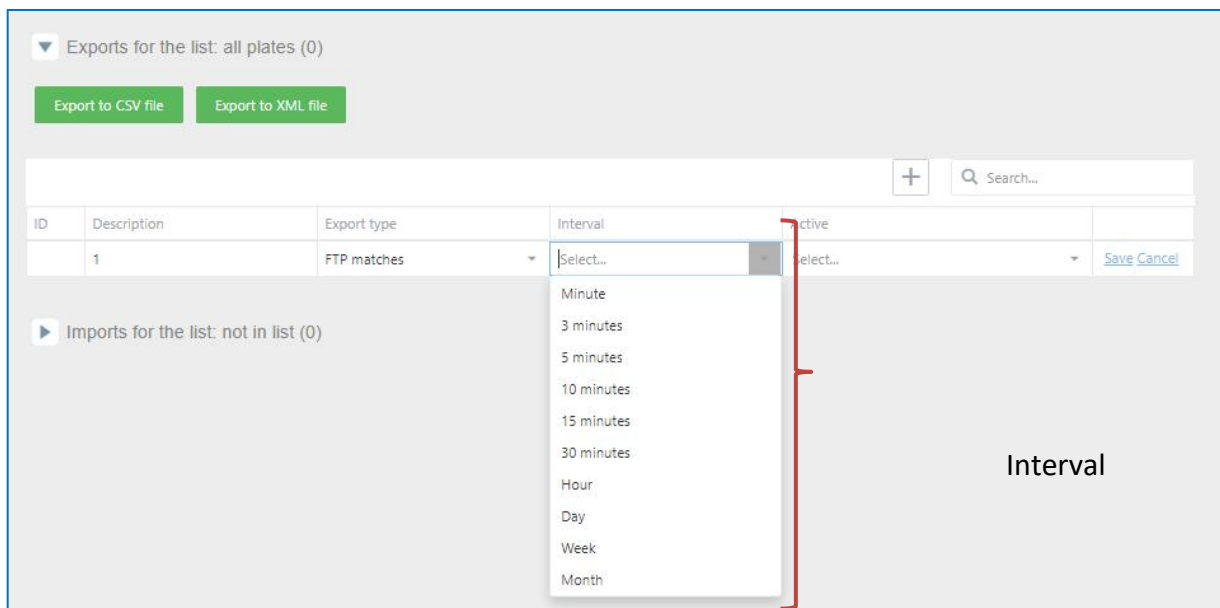
- FTP matches: Exports the matches of results to an FTP server.
- FTP list: Export the list to an FTP server.

You can also download the selected list by pressing the button "Export to XML file" or "Export to CSV file."

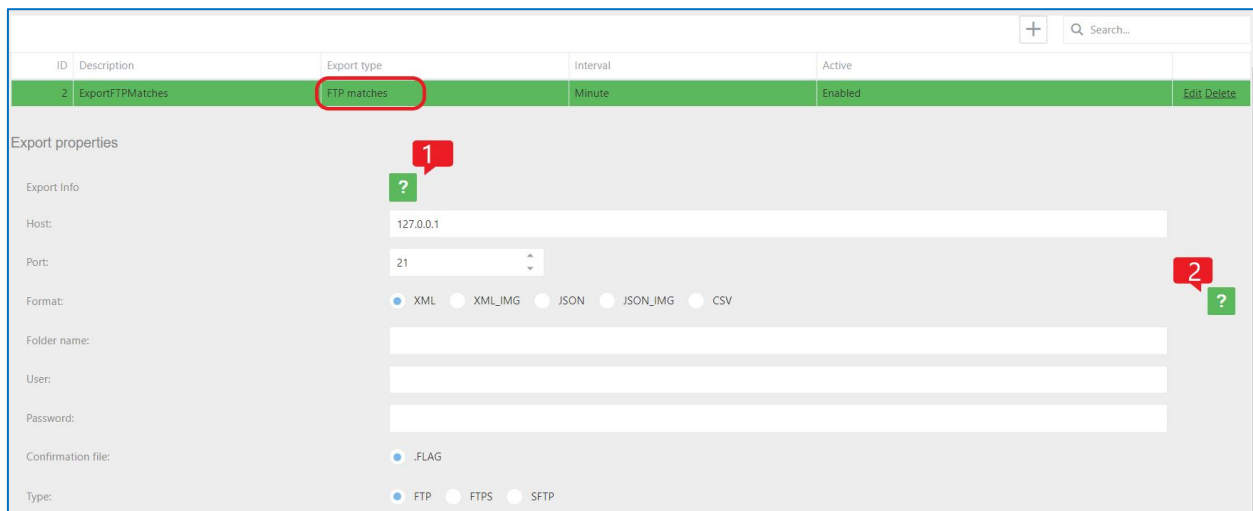



A list can perform several exports, depending on the scenario and needs. Having the Employees list selected, click on "Exports for the list" and then click on the + button to define the type and interval. The interval can be set as follows:

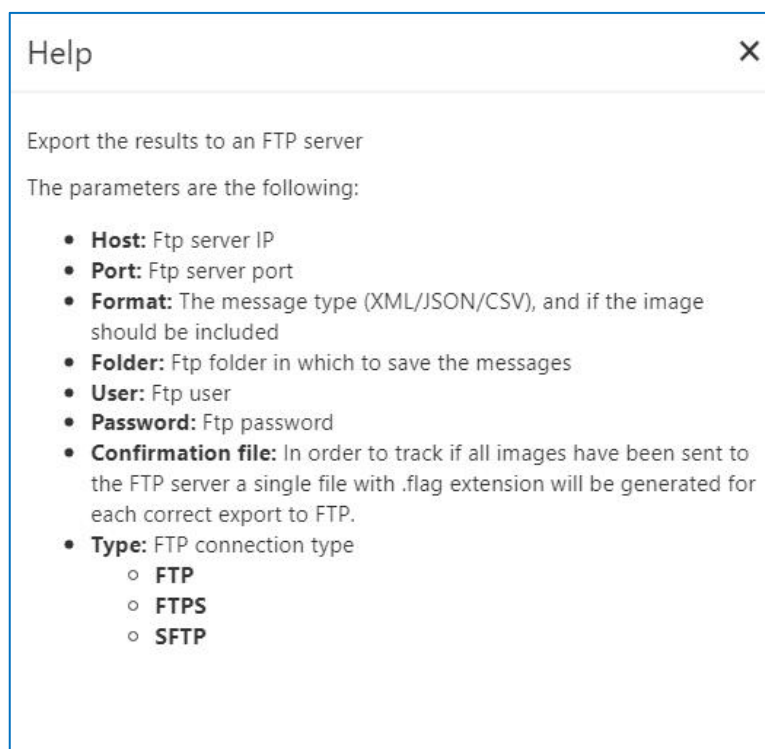
- *Minute*: Executes the task every minute.
- *Hour*: Executes the task every hour.
- *Day*: Executes the task once a day at 23:59:59.
- *Week*: Executes the task once a week, every Monday at 00:00:00.
- *Month*: Executes the task once a month, the first day of the month at 23:59:59.



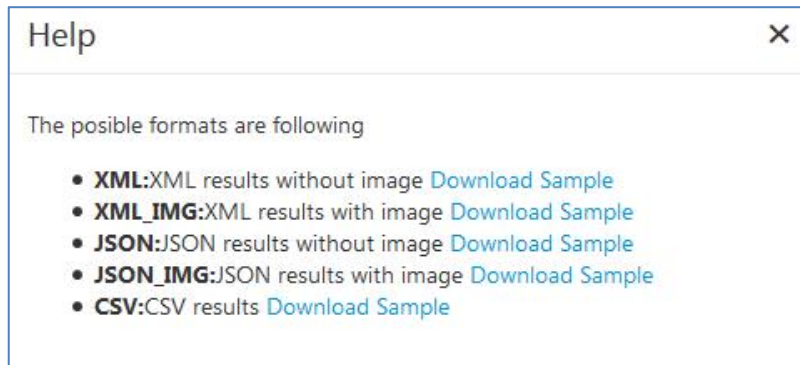
1. Configuring the export **FTP matches** to export the results to an FTP result under the EMPLOYEES list, click on "Export for the list" and add a new export by pressing "+" and then select "Export type = FTP matches".



Click on  for more information about how to configure.



Click on  for more information about format type.



2. Configuring the export **FTP lists** to export the list locally under the EMPLOYEES list, click on "Export for the list" and add a new export by pressing "+" and then select "Export type = FTP list".

Exports for the list: all plates (1)

Export to CSV file Export to XML file

ID	Description	Export type	Interval	Active	
2	FTP LIST	FTP list	Minute	Enabled	Edit Delete

Export properties

Export Info

Host: 127.0.0.1

Port: 21

Format:  XML  CSV


Folder name:

User:

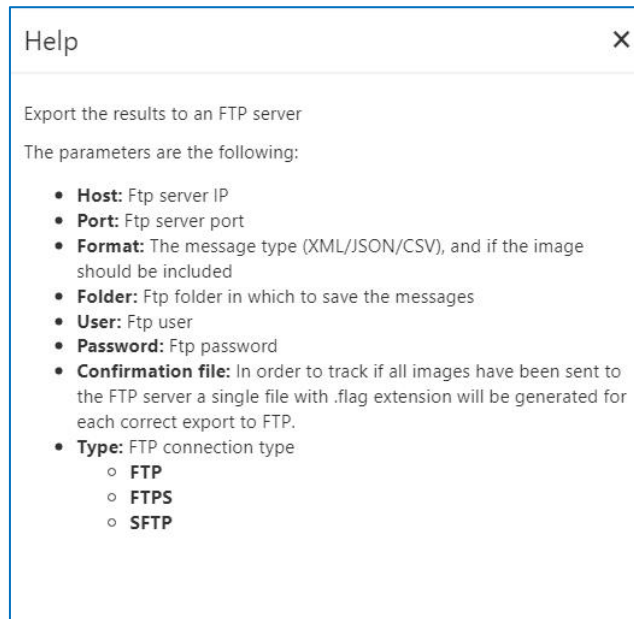
Password:


Confirmation file:  .FLAG

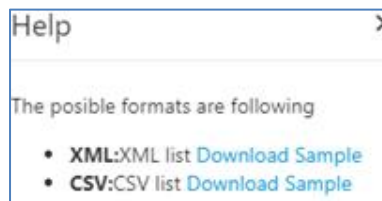
Type:  FTP  FTPS  SFTP

Click on  for more information about how to configure.



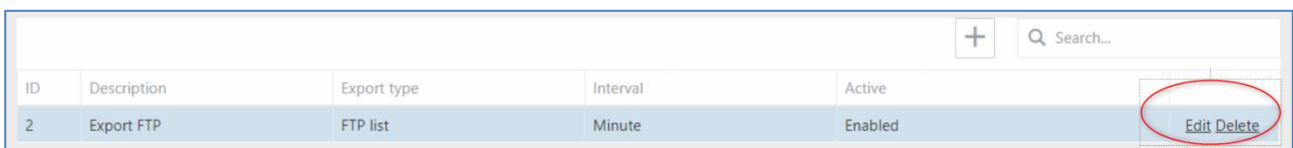


Click on  for more information about format type.



In case you don't want to continue to use export in a list, you are able to disable or delete the action.

To delete, click on the list, select export, and then click on the delete option.



To disable it, click on the list, select the action, and then click on the edit option. In Active, change it to Disabled, and then click on Save.

ID	Description	Export type	Interval	Active	
2	Export FTP	FTP list	Minute	Disabled	<a href="#">Edit</a> <a href="#">Delete</a>

After this change, the action is disabled in case you need to use it later. In the "Enable if change" state, only do the export if the export type is "Local list" or "FTP list" and export the list only if there is any change.

ID	Description	Export type	Interval	Active	
2	Export FTP	FTP list	Minute	Enabled if change	<a href="#">Edit</a> <a href="#">Delete</a>

To delete an action, click on the action and click on the DELETE button and then YES.

ID	Description	Export type	Interval	Active	
2	Export FTP	FTP list	Minute	Enabled if change	<a href="#">Edit</a> <a href="#">Delete</a>

**Import for the list:** Here are all the automatic imports we can configure for each list:

- FTP list: Import the list to an FTP server.
- SINCRO camera: Import the list from another camera.

You can also import the list manually by uploading an xml list file.

Select import XML/CSV file

or Drop import XML/CSV file here

Delete the list elements at import

The format of the XML is the following:

---

```
<?xml version = "1.0" encoding = "utf-8" ?>
<grouplist>
<nllists>
    <nllist id="3" sendserver="0" dateserver="" reserve="" description="EMPLOYEES"
color=""/>
</nllists>
<nlelemlists>
<nlelemlist id="1" sendserver="0" dateserver="" reserve="" numberplate="AAA123" listid="3"
timestamp="" description="EMP 1" startvaliditydate="2000-01-01T00:00:00.000"
endvaliditydate="3000-01-01T00:00:00.000"/>

<nlelemlist id="2" sendserver="0" dateserver="" reserve="" numberplate="BBB321" listid="3"
timestamp="" description="EMP 2" startvaliditydate="2000-01-01T00:00:00.000"
endvaliditydate="3000-01-01T00:00:00.000"/>

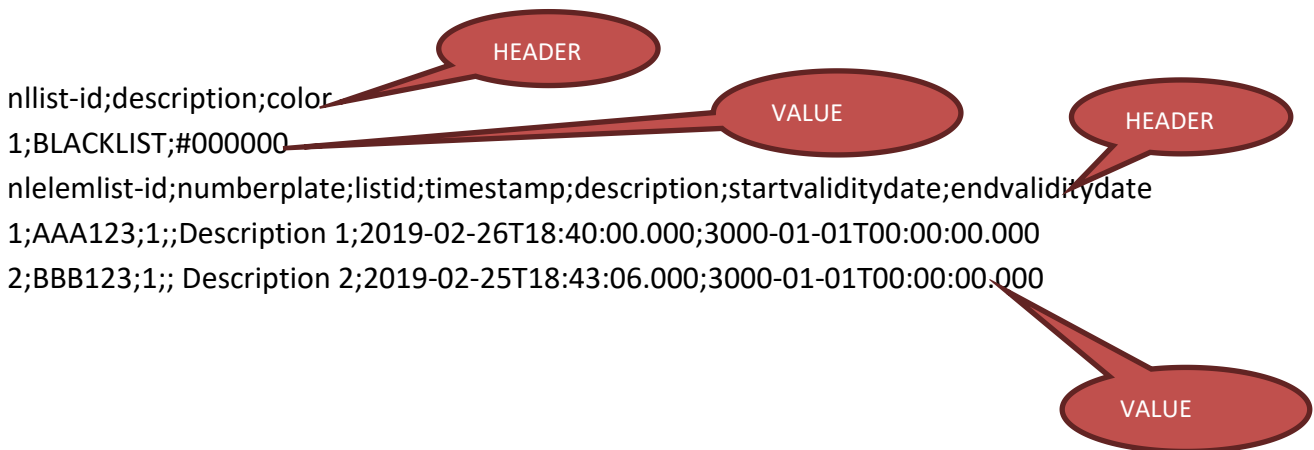
</nlelemlists>
</grouplist>
```

---

- Grouplist: the main element of the xml
- Nllists: The group of type of lists
- Nlist: The list type element, on:
  - Id= Id of the list
  - Sendserver = Always 0
  - Dateserver= Always ""
  - Reserve = Always ""
  - Description= The name of the list
  - Color = Always ""
- Nlelemlists: the group of the elements of the list
- Nlelemlist: the element in list, on:
  - Id= Id of the element
  - Sendserver = Always 0
  - Dateserver= Always ""

- Reserve = Always ""
- Numberplate= Plate number of the element
- Listid= Id of the list
- Timestamp= Always ""
- Description= Description of the plate number
- Startvaliditydate= Start date of validity period
- Endvaliditydate= End date of validity period

The format of CSV is the following:



The first block of HEADER-VALUE is the type of list which values are:

- nlist-id: Id of the list
- description: Description of the list
- color: Color of the list (NOT IN USE)

The second block of HEADER-VALUE are the elements of list which values are:

- nlemlist-id: Id of the list element
- numberplate: Plate number
- listid: Id of list type

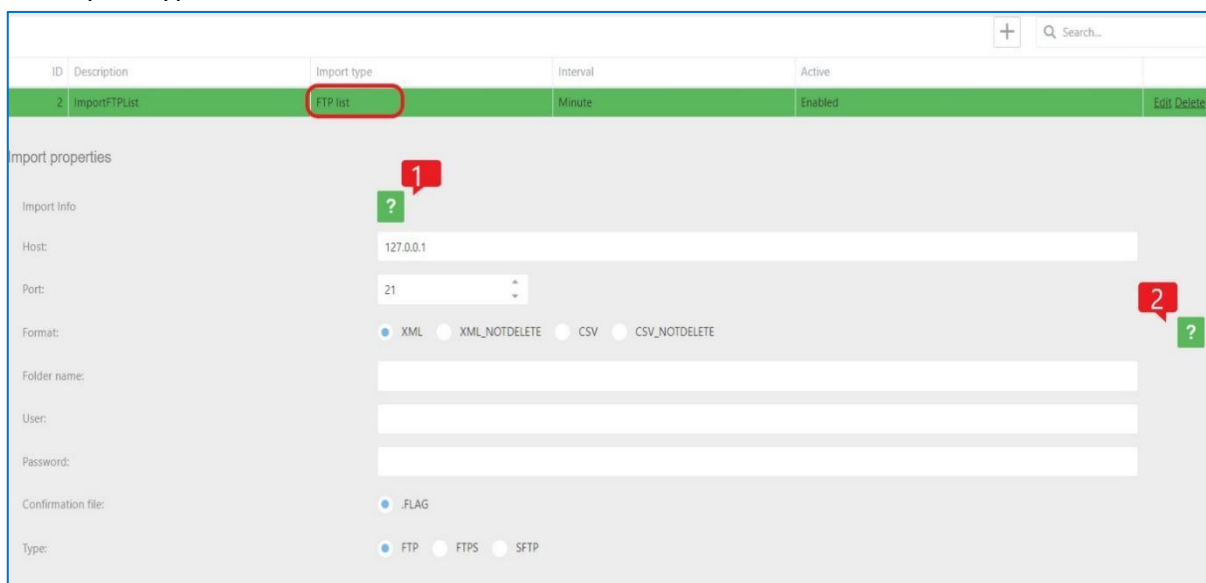
- timestamp: Always ""
- description: Description of the number plate.
- Startvaliditydate: Start validity date of the number plate.
- Endvaliditydate: End validity date of the number plate.

A list can perform several imports, depending on the scenario and needs.

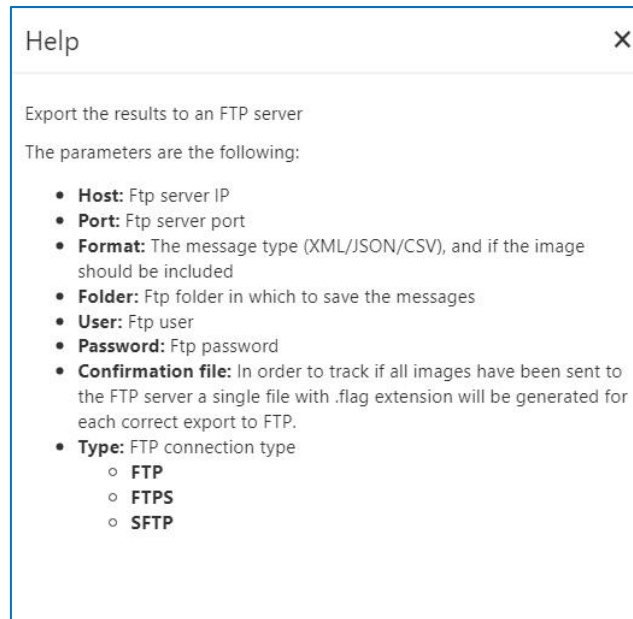
Having the Employees list selected, click on "Imports for the list" and then click on the + button to define the type and interval. The interval can be set as follows:


- *Minute*: Executes the task every minute.
- *Hour*: Executes the task every hour.
- *Day*: Executes the task once a day at 23:59:59.
- *Week*: Executes the task once a week, every Monday at 00:00:00.
- *Month*: Executes the task once a month, the first day of the month at 23:59:59.

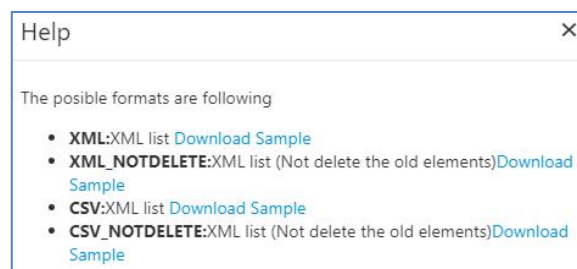
1. Configuring the import **FTP list** to import the list from an FTP result, under the EMPLOYEES list, click on "Import for the list" and add a new import by pressing "+" and then select "Import type = FTP list".



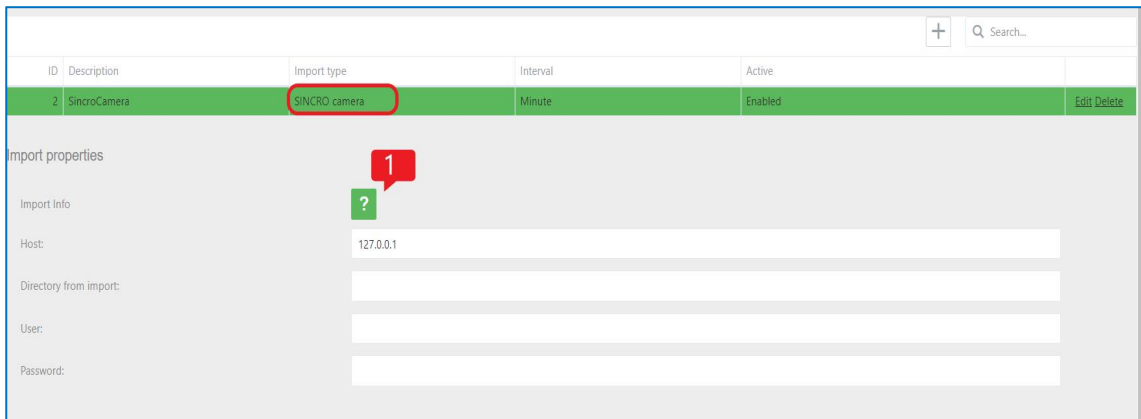
Click on for more information about how to configure.




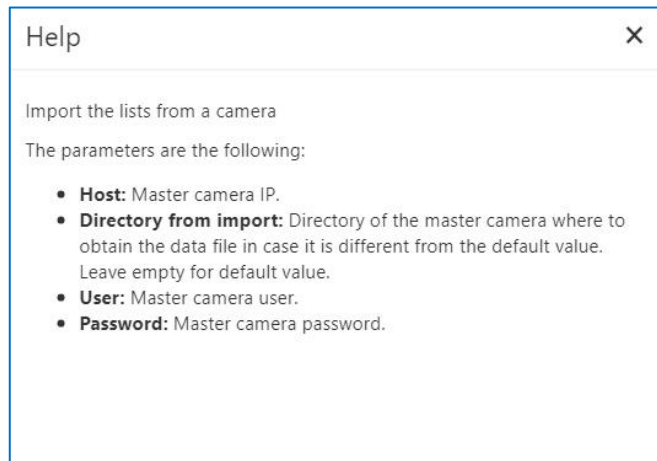
Click on  for more information about format type.



2. Configuring the import **SINCRO camera** to import the list from another camera, under the EMPLOYEES list, click on "Import for the list" and add a new import by pressing "+" and then select "Import type = SINCRO Camera".



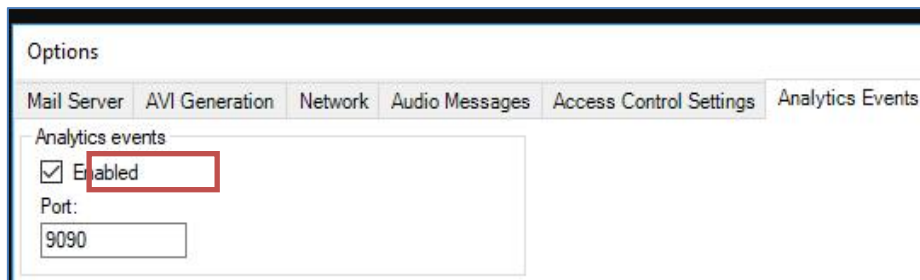
Click on  for more information about how to configure.



### 4.3.1 Configure Milestone

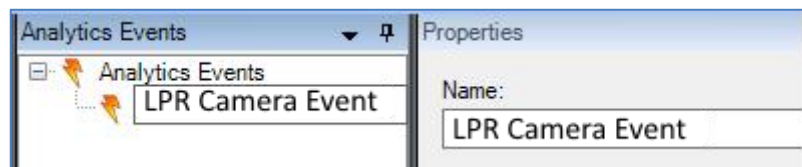
Once the Milestone action is configured, we need to set up the Milestone server to process our action. To do this, we follow the next steps:

- 1- Enable analytic events.
  - a. We click on Tool -> Options and select the "Analytics Event" tab. On this tab, we will activate the Analytics events.



2- Create an analytic event.

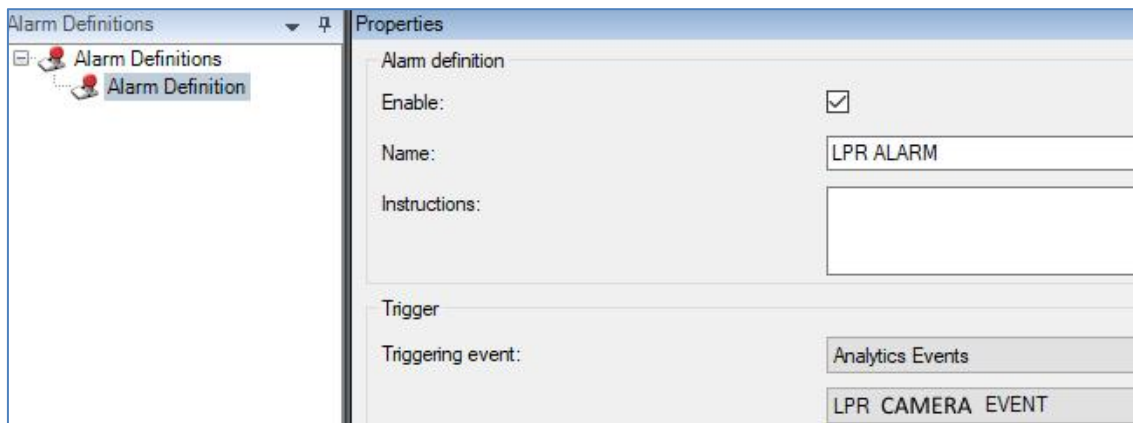
- a. We do a click at Rules and Events -> Analytics Events. And then press the right button to create a new analytic event. The name must be the same as that defined at Event Type of Action.



3- Create an alarm definition.

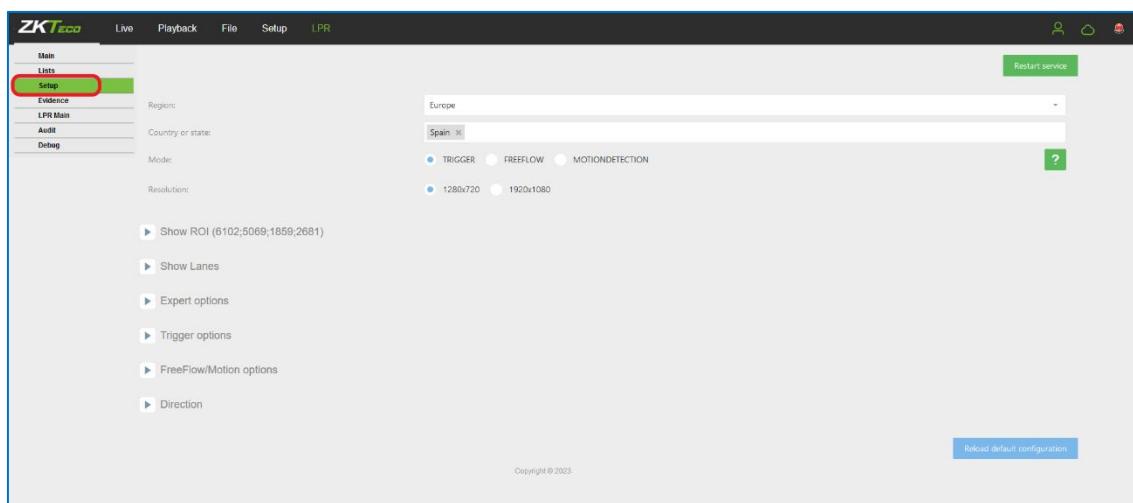
- a. We do a right-click at Alarm definition, and we create a new alarm definition on:
  - i. Enable: This alarm is enabled on the system.
  - ii. Name: The alarm name
  - iii. Triggering event: We must select Analytic Events.
  - iv. Triggering event source: We must select the before created analytic event.
  - v. Source: We must select the camera on milestone system.





## 4.4. SETUP

In this tab, we set the proper configuration for the camera depending on the scenario, where it will be located (indoor or outdoor), and the necessity (parking, control of access points, security, tolls, road offenses, etc.).



All the options after being modified require a service reset.

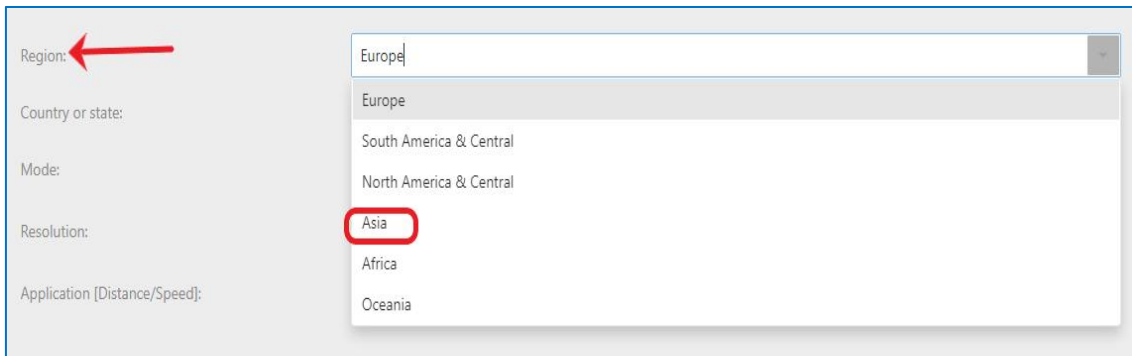
Depending on which region you select it will list the countries in that region. If the country you are searching for isn't listed, please contact Neural Labs.

Let's configure Neural Edge to read plates from Malaysia and Singapore.

+34 916 532 891

[www.zkteco.eu](http://www.zkteco.eu)

In Region, list and select ASIA.



Region:

Country or state:

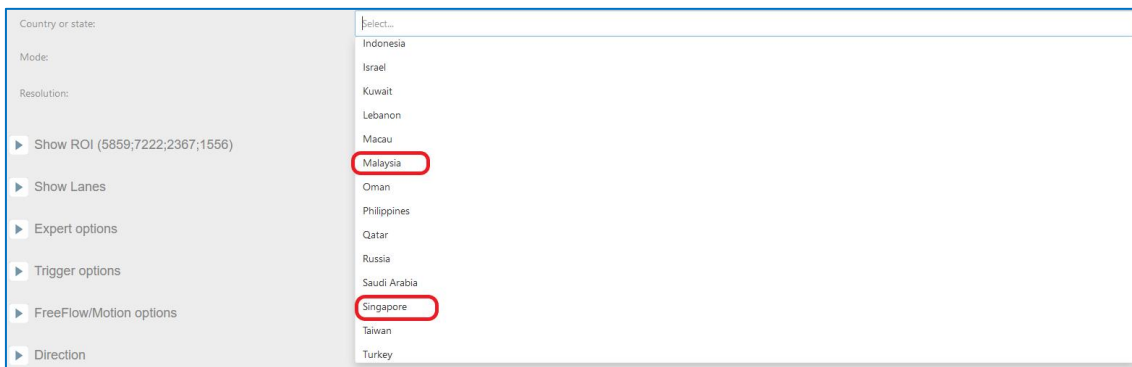
Mode:

Resolution:

Application [Distance/Speed]:

- Europe
- South America & Central
- North America & Central
- Asia
- Africa
- Oceania

In countries, search and select one by one the countries.



Country or state:

Mode:

Resolution:

▶ Show ROI (5859;7222;2367;1556)

▶ Show Lanes

▶ Expert options

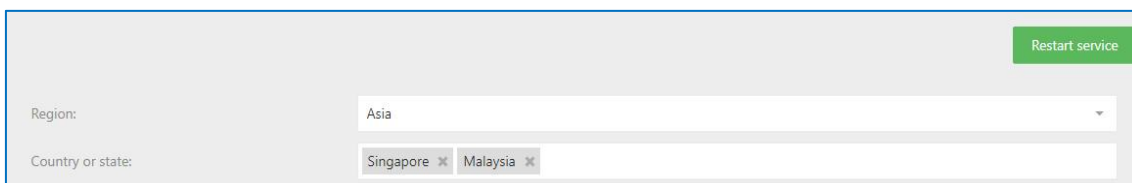
▶ Trigger options

▶ FreeFlow/Motion options

▶ Direction

- Indonesia
- Israel
- Kuwait
- Lebanon
- Macau
- Malaysia
- Oman
- Philippines
- Qatar
- Russia
- Saudi Arabia
- Singapore
- Taiwan
- Turkey

After selecting the countries, restart service by  clicking on  button.  
Now you are ready to read license plates for these two countries.



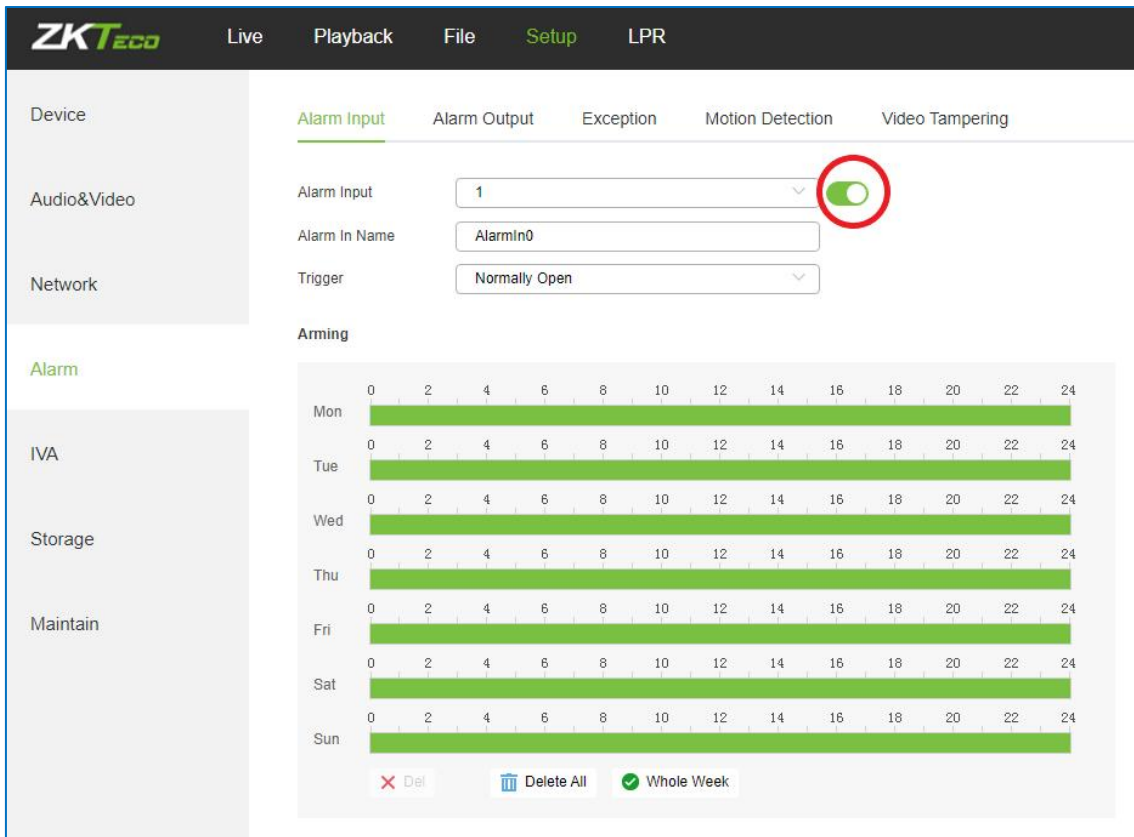
Region:

Country or state:

Next you need to select the camera function mode:

**Trigger:** The camera will read if a trigger is active, such as induction loop, laser, etc.

Trigger configuration prerequisites: The alarm input option should be enabled from the camera alarm configuration before sending digital input signal to the camera.



**Free Flow:** The camera is continuously processing all the images, which is not recommended unless there is a constant flow of vehicles.

**Motion Detection (Set by default):** The camera will read if it detects any change in the image.

You need to configure the camera resolution, which image size you need to process. This will depend on the distance from where you will read the license plate. This set up doesn't affect the camera resolution configuration because they are independent from each other.

Camera resolution set by default is: 1280x720

Resolution:  1280x720  1920x1080

**Show ROI:** It lets you draw a *region of interest* in the image that part of the image you want to process and read.



Click on “Show ROI”, the wizard will guide you on how to draw it.

Draw 2 points into the road following the steps:

- 1.- Draw top left point.
- 2.- Draw bottom right point.

To reset ROI, click on “RESET ROI” button.

Click on the “RESTART SERVICE” button to take



effect.

**Show Lanes:** It lets you draw a line to configure two lanes. Depending on how you draw the line, Neural Edge will consider which lanes are going to be.



Click on “Show Lanes”, the wizard will guide you on how to draw it.

Draw 2 points into the road following the steps:

1.- Draw top point.

2.- Draw bottom point.

To reset ROI, click on “Delete Lanes” button.

Click on the “RESTART SERVICE” button to take effect.

Restart service



Neural Edge will read the license plate and indicate in which lane it was detected.

**Expert Options:** Here is the recommended configuration for best performance if Motion Detection (default configuration) is selected.

Expert options	
Info:	<input type="checkbox"/>
Minimum character height:	20
Maximum character height:	80
Minimum confidence (tpc):	80
Fps:	4
Minimum plate characters:	0
Camera-focused lanes:	<input checked="" type="radio"/> 1 <input type="radio"/> 2
Enable Angle Filter	<input type="checkbox"/>
Angle Filter Minimum:	0
Angle Filter Maximum:	0
Camera Rotation:	<input checked="" type="radio"/> Horizontal <input type="radio"/> Vertical
RegEx:	

**Minimum character height:** Minimum character size in the reading of a license plate to consider it valid.

**Maximum character height:** Maximum character size in the reading of a license plate to consider it valid.

**Minimum Confidence (%):** Minimum reliability in the reading of a license plate to consider it valid. Reliability is a parameter returned by the engine for recognizing license plates (a value of 1–100, where 100 is the most reliable). The recommended value is 80.

**Fps:** Frames per second.

**Minimum plate characters:** Minimum number of characters in the reading of a license plate to consider it valid.

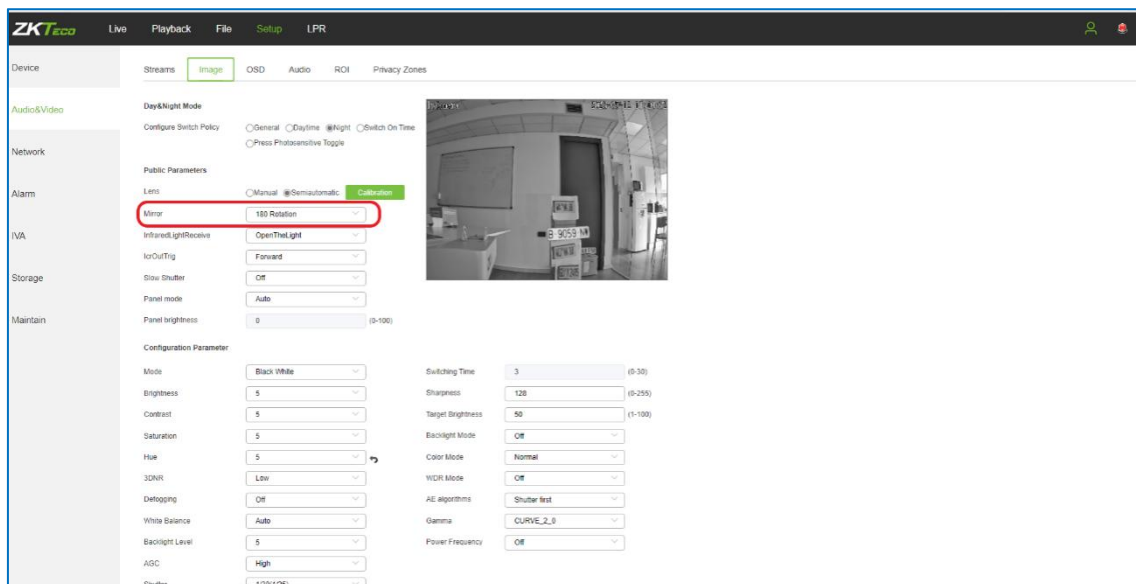
**Camera-focused lanes:** The number of lanes which traffic direction will be focused on to calculate.

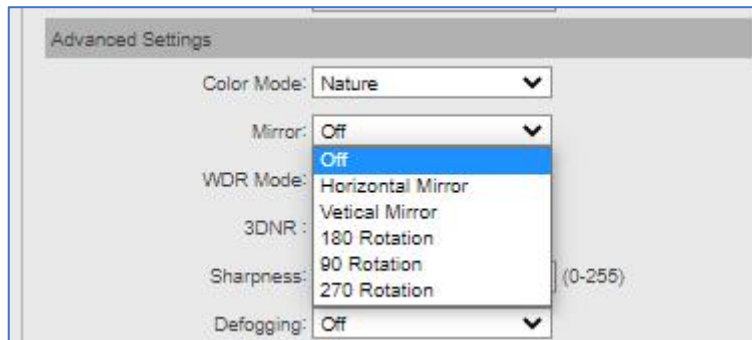
**Enable angle filter:** it is the option to filter by maximum - minimum angle, if the angle is not in between the range, the reading is discarded. Its values can be negative.

**Angle Filter Minimum:** it is the maximum number of angle in reading that is accepted.

**Angle Filter Maximum:** it is the minimum number of angle in reading that is accepted.

**Camera Rotation:** it is an option to rotate the image of the camera. In this tab, Setup – Image Parameters you can choose the option that you need.



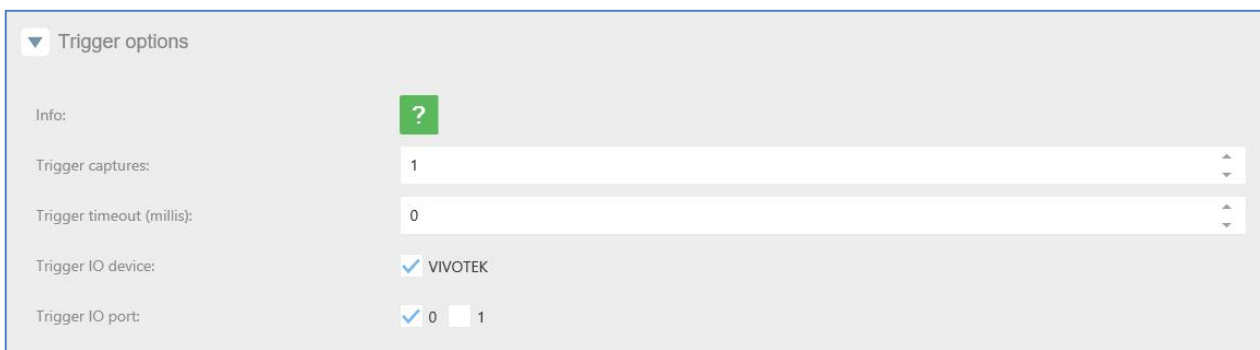


**Regex:** Plate exclusion filter. Discard a plate number result if it matches the regular expression.

Click on the “RESTART SERVICE” button to take effect.



**Trigger Mode:** Neural Edge is normally in an idle state. When a trigger command is received, it performs a variable number of captures, depending on configuration, and returns a result. Results from different triggering events are independent of one another; that is, if the same vehicle is still present on a second trigger command, the same license plate will be returned a second time. On every trigger, it performs captures until the number exceeds N Captures or the time exceeds Timeout.



Trigger Captures: How many images do you want to process and read license plates to stop? In order to use the capture option, the trigger timeout must be 0.

Trigger Timeout: How many seconds do you want to process and read license plates to stop? In order to use the timeout option, the trigger captures must be 50.



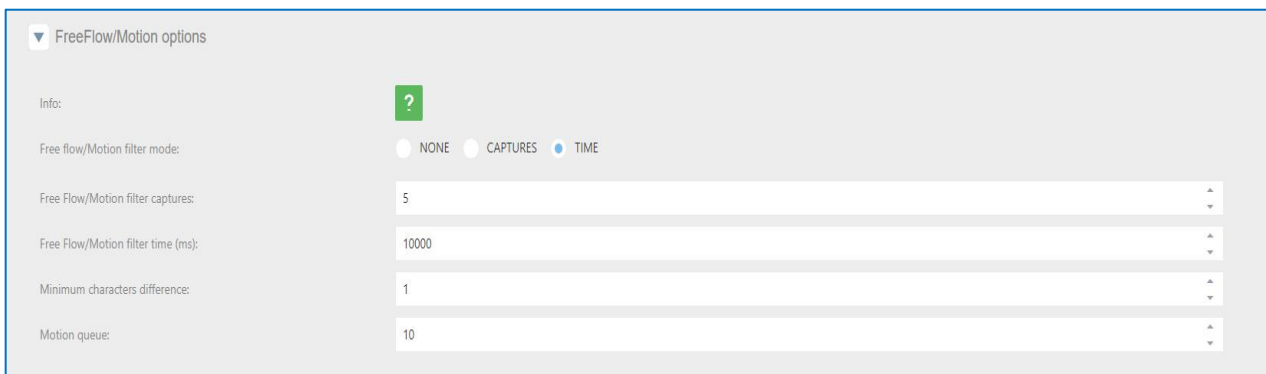
Trigger IO Device: If selected, the Digital Input ports will be activated.

Trigger IO Port: Choose which digital input port you will use.

Click on the “RESTART SERVICE” button to take effect.



**FreeFlow/Motion options:** Neural Edge continuously runs OCR on the receiving frames. Whenever a new vehicle enters the scene, a new result is sent through the notification socket.



In the FreeFlow/Motion option you can define repetition filters.

**Free Flow/Motion filter captures:** For a result to be considered valid, the last license plate read must not be among the last N recognized as valid. This filter is useful for traffic jams, where the cameras may be reading N license plates continually in a closed cycle.

**Free Flow/Motion filter time (millis):** Minimum time elapsed from the detection of the same license plate to it being accepted again in the system.

**Minimum characters difference:** The number of different characters to consider two plates different.

**Motion queue:** Is the number of images stored in a queue to process in MOTION mode.

For example, if you have the camera in a parking lot and there is a traffic jam, you don't want to read the same license plate over and over. In that case, the best filter is for captures. Please do the following:

Having selected Free Flow mode, click on "Free Flow Options," click on "Free Flow Filter Mode," and select the filter "Captures".

FreeFlow/Motion options

Info: ?

Free flow/Motion filter mode:  NONE  CAPTURES  TIME

Free Flow/Motion filter captures: 5

Free Flow/Motion filter time (ms): 7000

Minimum characters difference: 1

Motion queue: 10

With this configuration, once a license plate is read, it won't be read again until another five different license plates have been read. The difference between plates must be greater than 1.

**Direction:** By enabling direction option under direction section, it shows vehicles directions. The direction of the vehicles can be filtered as “no direction”, “coming” and “going”. If this is option is disabled, every time directions of the vehicles are “no direction”.

After all, changes are made, remember always to restart service, clicking on “restart service” button button.

If you need to restart all configuration for this section, click [Restart default configuration](#) on button.

Direction

Compute traffic direction:

Reload default configuration

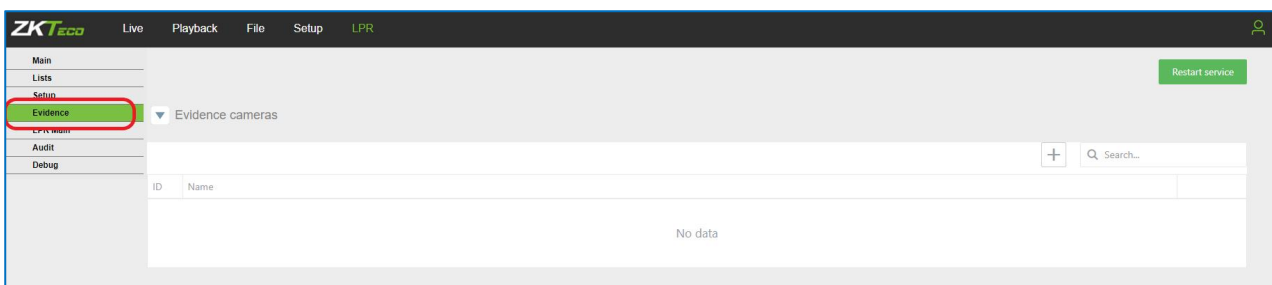
Copyright © 2023

## 4.5. Evidence

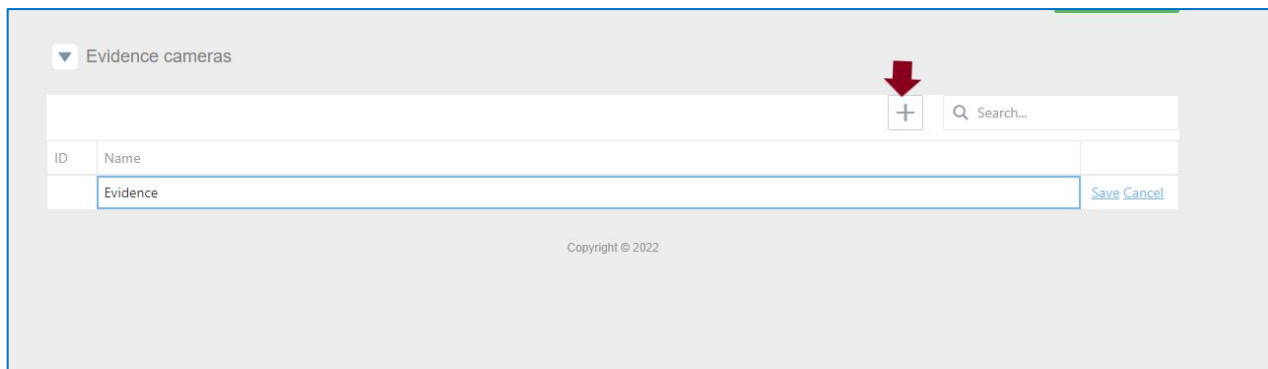
This feature allows users to capture evidence images in addition to the LPR image.

Therefore, the camera will capture 1 synchronized evidence snapshot for each evidence camera when a license plate is captured.

In this tab, configure the Evidence Camera:



To add new evidence camera, click on “+” button, give it a name and click on “Save”.



**Details:** here we set up the connection parameters to the evidence camera

*Connection type:* for the moment only HTTP connection.

*Login:* login user of camera.

*Password:* Password of camera.

**Authentication:** None, basic Digest

**URL:** URL in **jpg** format of the camera.

**FPS:** Maximum frames per second to process.

The screenshot shows a web interface for configuring evidence cameras. At the top, there is a section titled "Evidence cameras" with a search bar. Below it is a table with columns "ID" and "Name". A single row is visible with "Evidence" in the "Name" column and "Edit Delete" buttons. Below the table is a "Details" section with the following fields:

- Connection type:  HTTP
- Login:
- Password:
- Authentication:  NONE  BASIC  DIGEST
- Uri:
- Fps:

Below the fields, there is a note: "The maximum resolution for the provided JPEG stream must be between 1 and 2 megapixels". At the bottom, it says "Copyright © 2022".

## **Real scenarios**

### **Access control**

Capture the state of a car when entering a car park to avoid fraud. By adding several evidence cameras on both sides of the entrance. (audit)

Capture the face of the driver for security reasons.

Capture the number of wheels in tooling for auditing.

### **How it works**

The camera keeps capturing snapshots from the evidence cameras all the time.

When the camera reads a license plate, it takes the last captured image from each evidence camera. This way, evidence images are synchronized with the LPR image.

## Suggestions

Limit the size of the snapshot image in the evidence camera setup. NOT in the URL with parameters.

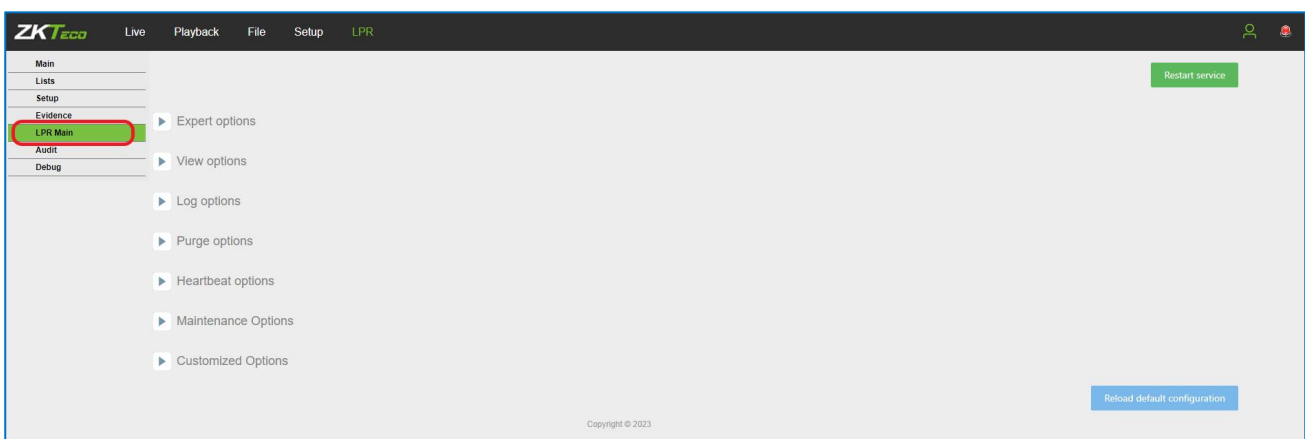
Typically, you must look for the jpeg streams and reduce it to 1 megapixel.

Do no setup more that 2 or 3 evidence cameras.

Click on the “RESTART SERVICE” button to take effect.

## 4.6. LPR MAIN

In this tab, configure general parameters:



### Expert Options:

*Save the image:* If selected, it stores the full image in a folder.

*Save the plate image:* If selected, it stores only the license plate image in a folder.

*Image quality:* It stores the image with the configured compression here.

*Store image on:* It stores the image with the configured compression here.

*Store image on:* It stores data on an SD card or in the camera. We strongly recommend adding an SD card to the camera.

*Trigger Socket Port:* It enters the port we want to use for sending XML/JSON messages.

*Action time:*

- Immediate: The action will be queued in memory and executed.
- Persistent: The action will save in DB and will be execute it.

*Retry period for failed actions (hours):* If an action can be retried and it fails, the system will do it every minute until the Retry period is completed or the action succeeds. (Example of an action that can be retried: Email, other actions that can't be retried: IO  
*Save data / Time overlay:* If selected, will overlay date and time in the image.

**Expert options**

Info: ?

Save the image:

Save the plate image:

Image quality:

Store image on:  SD

Trigger Socket port:

Action time:  IMMEDIATE  PERSISTENT

Retry period for failed actions (hours):

Save date/time overlay:

### View Options:

*View Type:* It displays each detected vehicle in table or square view.

*Date format:* The date can be seen in three different formats on result and info panel of live page.

*Time format:* The time can be seen in two different formats on result and info panel of live page.

*List field:* The columns on result panel of live page can be filtered by these options.

*Review field.* The columns on result panel of the review page can be filtered by these options.

View options

Info: ?

View type:  LIST  SQUARE

Date format:  dd/mm/yyyy  mm/dd/yyyy  yyyy/mm/dd

Time format:  12h  24h

List field:  Lane  Direction  Conf  Height  Country  List

Review field:  Lane  Direction  Conf  Height  Country  List

### Log Options:

*Log Level service:* Let you determine the log level to register what is going on with Neural Edge. By default, is set to 2. Level 3 and 4 are for experts and debugging team.

*Enable Engine log:* Select only if debugging mode is necessary, only for expert technicians.

*Log Level manager:* Let you determine the log level to register what is going on with the CGI. By default, is set to 2. Level 3 and 4 are for experts and debugging team.

*Enable log server:* It Activate or deactivate the sending of logs to a server.

*Log server host:* IP to which the system will send the message.

*Log server port:* Port to which the system will send the message.

**▼ Log options**

Info: ?

Log level service:

Enable engine log:

Log level manager:

Enable log server:

Log server host:

Log server port:

**Purge Options:** Here we will determine how many days or register of data we need to keep.

**▼ Purge options**

Purge Interval:  HOUR  DAY  WEEK  MONTH ?

Type of purge:  DISABLED  DAYS  FREESPACE ?

Days to preserve in storage:

Minimum percentage of free space on SD:

Minimum percentage of free space on CAMERA:

**Purge Interval:** Schedule when do you want to execute the purge.

*Hour:* It executes the task every hour.

*Day:* It executes the task once a day at 23:59:59.

*Week:* It executes the task once a week, every Monday at 00:00:00.

*Month:* It executes the task once a month, the first day of the month at 23:59:59.

**Type of purge in database:** Set how and what do you want to purge.



*Disabled:* It does not execute any purge.

*Days:* It purges by days, keeping data for the last days.

*Freespace:* It purges depending on the free space in the SD or in the camera.

Once you have defined when and what do you want to purge, you need to set the variables to execute the task.

Purge by days:

Delete database before (days): It keeps data from the last (XX) days and purges the rest.

Delete files before (days): It keeps files from last (XX) days and purge the rest.

Purge by Free Space:

Delete files and database on SD below (percent): It deletes data in the database and files stored until free space on the SD is lower than configured.

Delete files and database on CAMERA below (percent): It deletes data in the database and files stored until free space in the camera is lower than configured.

**Heartbeat options:**

With this option we ensure the camera is alive and answering requests.

*Send Heartbeat:* This option toggles if the camera is sending heartbeats or not.

*ID:* You can set it for camera id. As a default the id is the name of the camera.


*Seconds:* Interval of second between heartbeats.

*IP:* Destination of message sent.

*Port:* Port destination (this port needs to be open on the destination computer).

*Type:* With this option you can select sending an XML or JSON message.

▼ Heartbeat options

Info: 

Send Heartbeat:

ID:

Seconds:

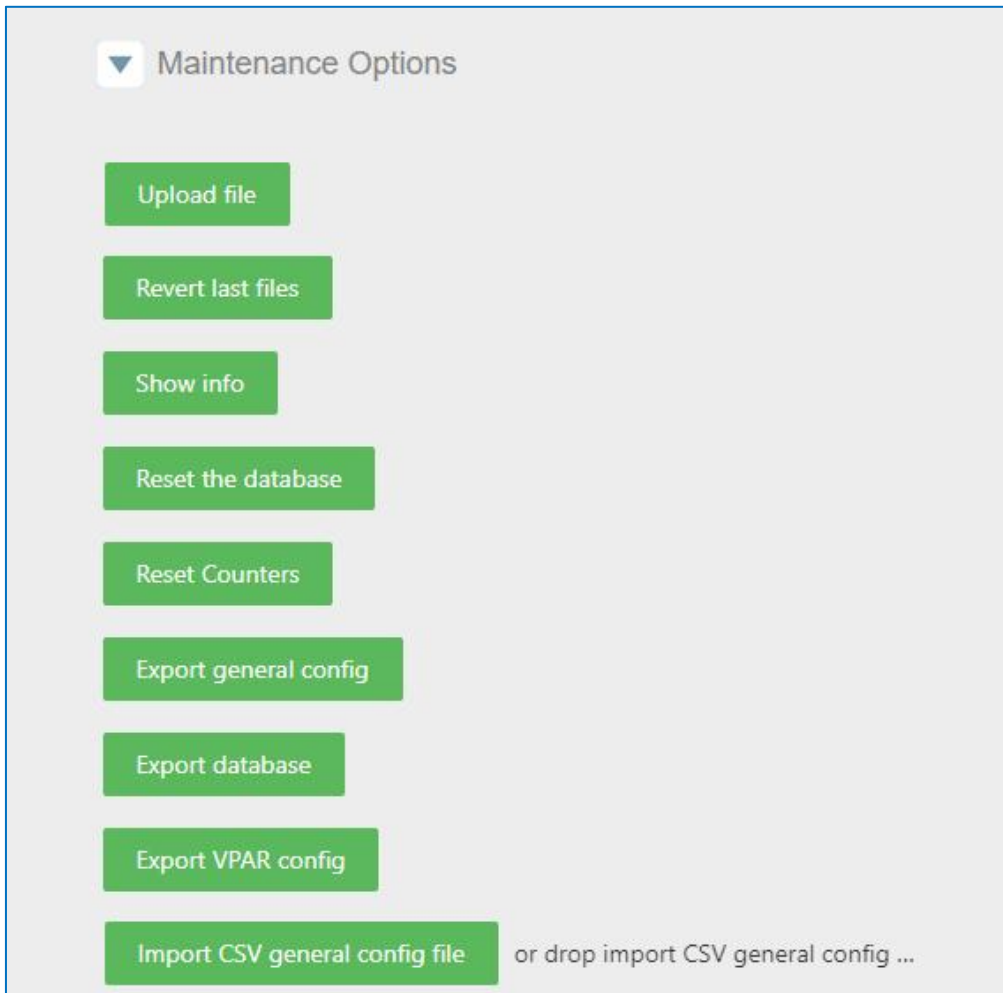
IP:

Port:

Type:  XML  JSON

**Maintenance Options:**

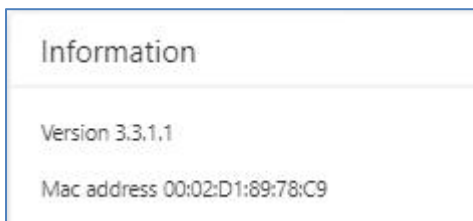
In this section, you can upload files for camera configuration, licensing, update Neural Edge version, change the logo, and upload images for the path option shown in the Camera Configuration tab.



Upload File: It lets you upload a file.

Revert last files: After applying changes with the uploaded files, if it doesn't work correctly, you can revert changes.

Show Info: It shows information about the version and camera MAC ADDRESS.



Reset the database: It allows us to clear the database.

Reset Counters: It allows us to reset all ANPR counters including Triggers Received, Frames Processed, Frames Discarded, Motion Detection and No Plates.

Export general config: It allows us to export(download) general configurations as CSV file.

Export database: It allows us to export(download) database.

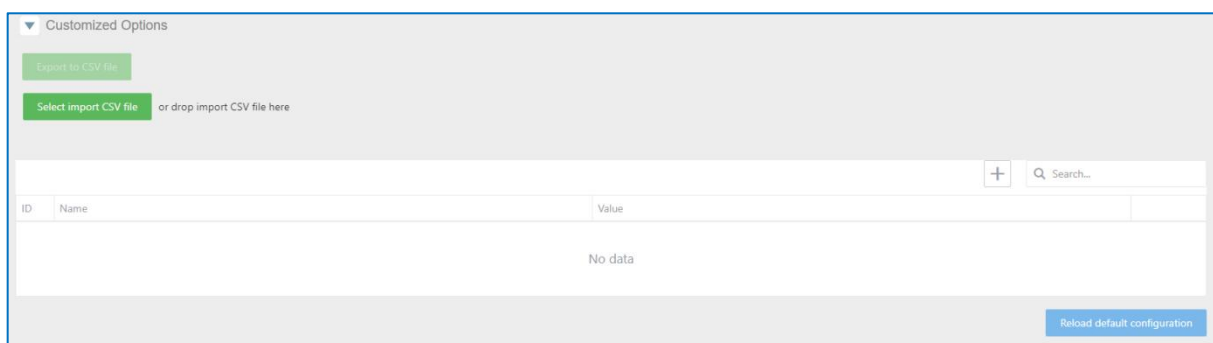
Export VPAR Configuration: It allows us to export(download) VPAR configuration as zip file.

Import CSV General configuration: It helps us to import any general config CSV file.

**Customized Options:**

In this section you can add new fields, export, and import lists (The maximum number of fields is 10).

You can search by dates information the field you want.



In case you want to revert, all changes are done, and want to get back to the default configuration, click on button.

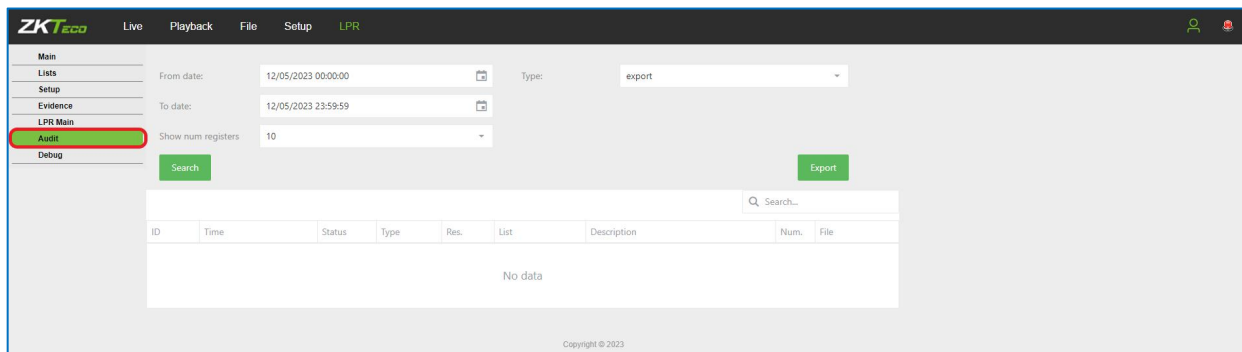


(Note: you cannot add only number as name, and you cannot add field with space as character either).

## 4.7. Audit Tab

The camera registers actions like export and import lists and actions executed depending on the list configurations.

In the Audit tab, you can search by dates for information related to these actions.



You can search in the stored actions by dates and by type of action.

Export: It shows automatic exports done

Import: It shows automatic imports done.

Action: It shows automatic actions triggered on the lists.

The result of the search can be exported and downloaded.

Exports example:

From date: 09/08/2023 00:00:00 Type: export

To date: 09/08/2023 23:59:59

Show num registers: 10

Search Export

ID	Time	Status	Type	List	Description	Num.	File
1	11:33:00.134 09/08/2023	DONE	FTP list	all plates	Export [Local list] time [from:20000101T00...	5	<a href="#">Get file</a>
2	11:34:00.292 09/08/2023	DONE	FTP list	all plates	Export [Local list] time [from:20000101T00...	5	<a href="#">Get file</a>
3	11:34:00.292 09/08/2023	DONE	FTP list	Teast	Export [ImportList] time [from:20000101T0...	1	<a href="#">Get file</a>
4	11:35:00.018 09/08/2023	DONE	FTP list	all plates	Export [Local list] time [from:20000101T00...	5	<a href="#">Get file</a>
5	11:35:00.018 09/08/2023	DONE	FTP list	Teast	Export [ImportList] time [from:20000101T0...	1	<a href="#">Get file</a>
6	11:36:00.023 09/08/2023	DONE	FTP list	all plates	Export [Local list] time [from:20000101T00...	5	<a href="#">Get file</a>
7	11:37:00.261 09/08/2023	DONE	FTP list	all plates	Export [Local list] time [from:20000101T00...	5	<a href="#">Get file</a>
8	11:38:00.209 09/08/2023	DONE	FTP list	all plates	Export [Local list] time [from:20000101T00...	5	<a href="#">Get file</a>
9	11:39:00.110 09/08/2023	DONE	FTP list	all plates	Export [Local list] time [from:20000101T00...	5	<a href="#">Get file</a>
10	11:40:00.274 09/08/2023	DONE	FTP list	all plates	Export [Local list] time [from:20000101T00...	5	<a href="#">Get file</a>

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Imports example:

From date: 09/08/2023 00:00:00 Type: import

To date: 09/08/2023 23:59:59

Show num registers: 10

Search Export

ID	Time	Status	Type	List	Description	Num.	File
1	11:45:00.162 09/08/2023	FAILED	FTP list	Teast	Import [3453] time [from:20000101T000000...	0	
2	11:46:00.023 09/08/2023	DONE	FTP list	Teast	Import [3453] time [from:20000101T000000...	2	<a href="#">Get file</a>
3	11:47:00.176 09/08/2023	DONE	FTP list	Teast	Import [3453] time [from:20000101T000000...	2	<a href="#">Get file</a>

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Actions example:

From date:   Type:

To date:

Show num registers:

ID	Time	Status	Type	Res.	List	Description	File
251	11:37:05.476 09/08/2023	DONE	FTP	152	all plates	Action [Socketserver] plate [4268FNX]	<a href="#">Get file</a>
252	11:37:06.597 09/08/2023	DONE	FTP	153	all plates	Action [Socketserver] plate [4268FNX]	<a href="#">Get file</a>
253	11:37:07.867 09/08/2023	DONE	FTP	154	all plates	Action [Socketserver] plate [4268FNX]	<a href="#">Get file</a>
254	11:37:08.950 09/08/2023	DONE	FTP	155	all plates	Action [Socketserver] plate [4268FNX]	<a href="#">Get file</a>
255	11:37:10.055 09/08/2023	DONE	FTP	156	all plates	Action [Socketserver] plate [4268FNX]	<a href="#">Get file</a>
256	11:37:11.187 09/08/2023	DONE	FTP	157	all plates	Action [Socketserver] plate [4268FNX]	<a href="#">Get file</a>
257	11:37:12.272 09/08/2023	DONE	FTP	158	all plates	Action [Socketserver] plate [4268FNX]	<a href="#">Get file</a>
258	11:37:13.383 09/08/2023	DONE	FTP	159	all plates	Action [Socketserver] plate [4268FNX]	<a href="#">Get file</a>
259	11:37:14.544 09/08/2023	DONE	FTP	160	all plates	Action [Socketserver] plate [4268FNX]	<a href="#">Get file</a>
260	11:37:14.544 09/08/2023	DONE	FTP	161	all plates	Action [Socketserver] plate [B9059NW]	<a href="#">Get file</a>

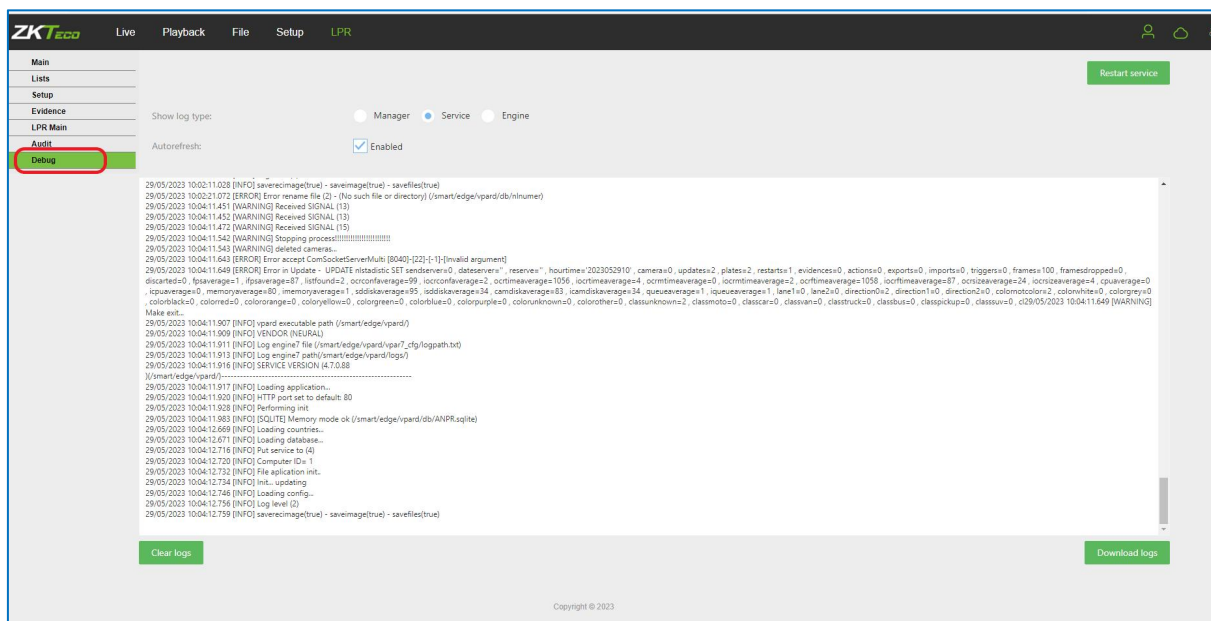
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## 4.8. Debug Tab

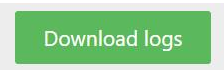
In this TAB, the user can see /download different logs. Logs are activated and setup in General Configuration TAB.

These logs can be useful to help our technical team diagnose and solve application problems.



The type of log that the user wants to see must be selected by either the manager, service, or Engine.

By checking auto update, the application will refresh the selected log type.

Sending logs to technical support may be needed. To do that click  in the bottom of the page.

Selected logs will be downloaded in compressed txt format.



## 5. Camera list synchronization

---

The ZKTeco Edge system allows a list system synchronized.

One of the cameras works like a master and the other cameras works like a slave.

The master camera uploads the file with the list content and the slave cameras download the file.

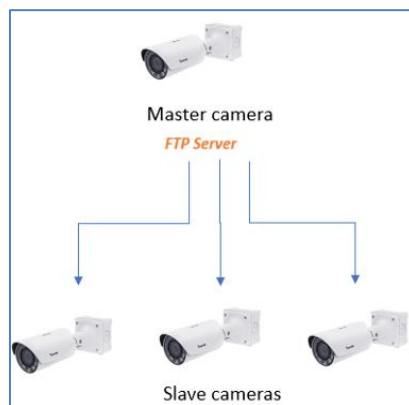
All the list and elements must be modified in the master camera, the changes will be updated automatically in the slave following the next instructions to configure the master and the slaves.

There is no limit for the number of slave cameras, the limit is on the FTP server and depends on the number of connections.

Can be synchronized all the lists or only one list.

### 5.1. Architecture 1

The camera is the FTP server. Must be activated (by default is disable the FTP server).



#### 5.1.1. Master configuration

Activate the FTP server.

Access to the camera web interface:

Configuration/Network/FTP

Check "Enable FTP server" and click Save.

## 5.1.2. Slave configuration

Access the List Tab.

To configure only one list, select the list and make the import in the list.

The screenshot shows the 'List types' configuration interface. At the top, there are controls for adding (+), deleting (trash), and searching (magnifying glass). Below is a table with columns for ID, Name, and Levenshtein distance (character difference). The table contains four rows: '-2 all plates', '-1 not in list', '1 BLOCKLIST', and '2 ALLOWLIST'. The 'BLOCKLIST' row is highlighted in green. Below the table, there are expandable sections for 'List of license plates: BLOCKLIST (0)', 'Action for the list: BLOCKLIST (0)', 'Exports for the list: BLOCKLIST (0)', and 'Imports for the list: BLOCKLIST (0)'. The 'Imports' section includes a 'Select import XML/CSV file' button and a 'Delete the list elements at import' checkbox. At the bottom, there is another table with columns for ID, Description, Import type, Interval, and Active, which is currently empty. A red circle highlights the '+' icon in the bottom right corner of the configuration area.

To configure all the list selects all plates.

The screenshot shows the 'List types' configuration interface. At the top, there are controls for adding (+), deleting (trash), and searching (magnifying glass). Below is a table with columns for ID, Name, and Levenshtein distance (character difference). The table contains four rows: '-2 all plates', '-1 not in list', '1 BLOCKLIST', and '2 ALLOWLIST'. The 'all plates' row is highlighted in green. Below the table, there are expandable sections for 'Action for the list: all plates (0)', 'Exports for the list: all plates (0)', and 'Imports for the list: all plates (0)'. The 'Imports' section includes a 'Select import XML/CSV file' button and a 'Delete the list elements at import' checkbox. At the bottom, there is another table with columns for ID, Description, Import type, Interval, and Active, which is currently empty. A red circle highlights the '+' icon in the bottom right corner of the configuration area.

Select an import for each minute (or desirable time) select the time enabled with the type SINCRO Camera and click Save.

ID	Description	Import type	Interval	Active	
2	import	SINCRO camera	Minute	Enabled if change	<a href="#">Edit</a> <a href="#">Delete</a>

Configure the master camera credentials.

ID	Description	Import type	Interval	Active	
2	Import	SINCRO camera	Minute	Enabled	Edit Delete

Import properties

Import Info

Host: 127.0.0.1

Directory from import:

User: root

Password: \*\*\*\*\*

Host: Camera master IP

Directory from import: Directory of the master camera where to obtain the data file in case it is different from the default value.

User: Camera master user

Password: Camera master password

Can be checked in the Audit Tab.

From date: 08/04/2019 13:25:00

To date: 08/04/2019 23:59:59

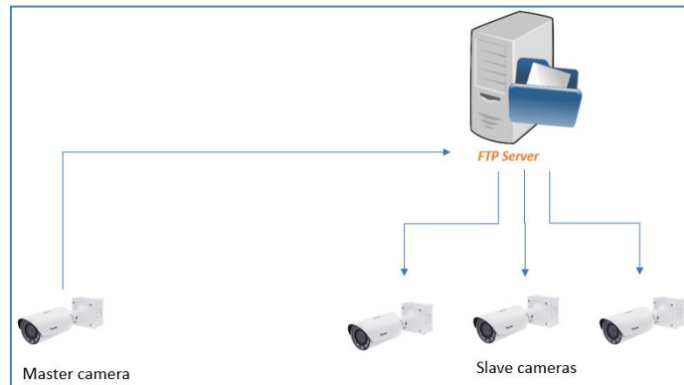
Type: import

Search

ID	Time	Status	Type	List	Description	Num.	File
21	13:25:00.136 08/04/2019	DONE			Import [import slave] time [f]	1	<a href="#">Get file</a>

## 5.2. Architecture 2

Using FTP server where store the list.



### 5.2.1. Master configuration

Access the List Tab.

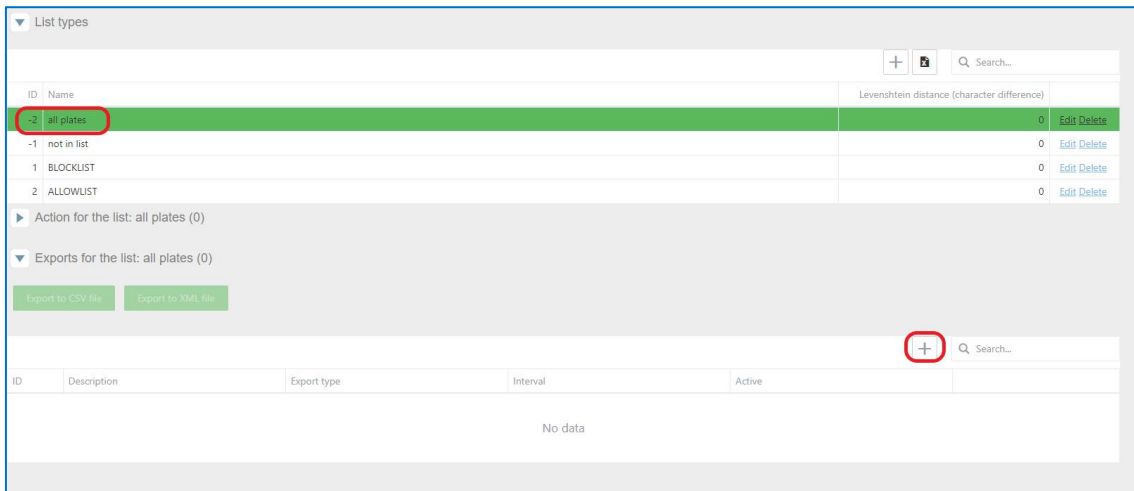
To configure only one list, select the list and make the export in the list.

The screenshot shows the 'List types' configuration page. It features a table with the following data:

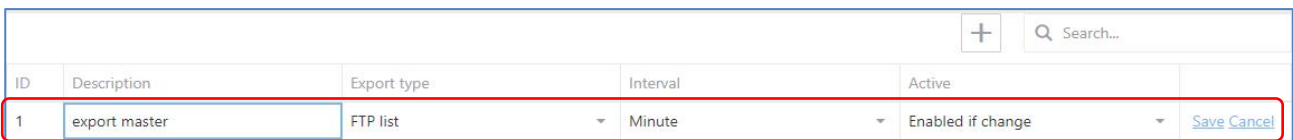
ID	Name	Levenshtein distance (character difference)	
-2	all plates	0	<a href="#">Edit</a> <a href="#">Delete</a>
-1	not in list	0	<a href="#">Edit</a> <a href="#">Delete</a>
1	BLOCKLIST	0	<a href="#">Edit</a> <a href="#">Delete</a>
2	ALLOWLIST	0	<a href="#">Edit</a> <a href="#">Delete</a>

Below the table, there are sections for 'List of license plates: BLOCKLIST (0)', 'Action for the list: BLOCKLIST (0)', and 'Exports for the list: BLOCKLIST (0)'. The 'Exports' section contains two buttons: 'Export to CSV file' and 'Export to XML file'. At the bottom of the page, there is a search bar with a '+' icon circled in red.

To configure all the list, select all plates.



Create an export each minute enabled if change with the type of FTP list and click Save.



Configure the credentials of the FTP server and the format CSV or XML, which can be in the booth but must be the same in the slaves.

Just configured, the camera master is sending the file to the FTP server.

ID	Description	Export type	Interval	Active	
2	export master	FTP list	Minute	Enabled if change	<a href="#">Edit</a> <a href="#">Delete</a>

Export properties

Export Info

Host: 127.0.0.1

Port: 21

Format:  XML  CSV

Folder name: EXPORT

User: user

Password: .....

Confirmation file:  .FLAG

Type:  FTP  FTPS  SFTP

Can be checked in the Audit Tab.

From date: 08/04/2019 00:00:00

To date: 08/04/2019 23:59:59

Type: export

[Search](#)

ID	Time	Status	Type	List	Description	Num.	File
1	12:55:00.010 08/04/2019	DONE	FTP list	BLACKLIST	Export [export master] time [from:2000010...	1	<a href="#">Get file</a>

## 5.2.2. Slave configuration

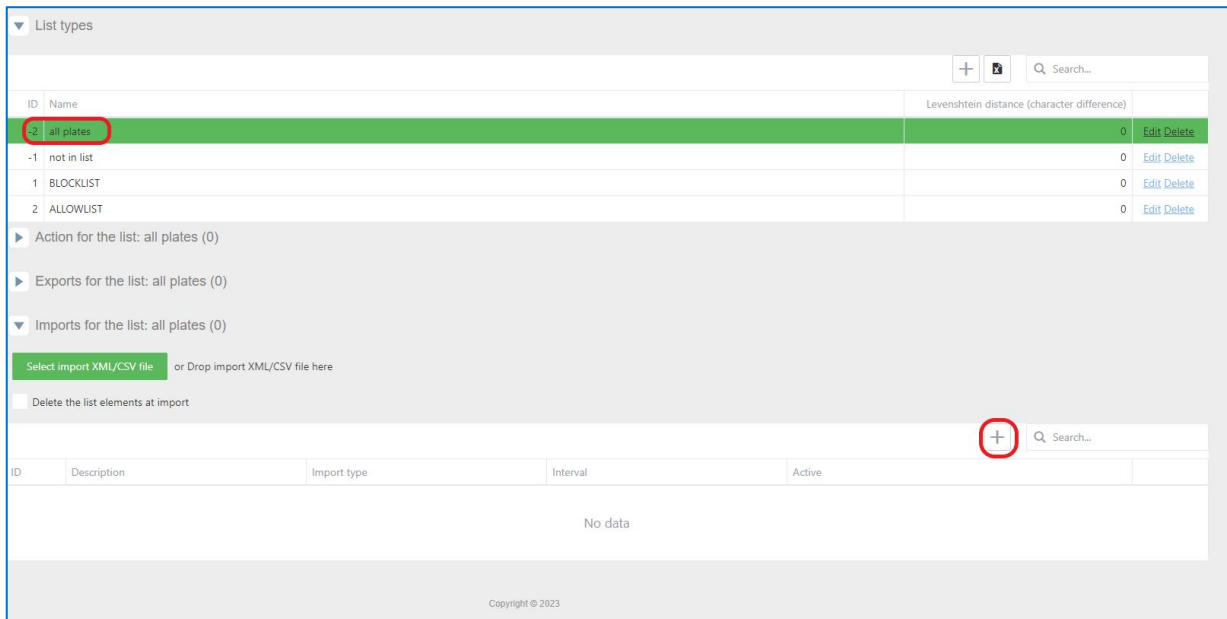
Access the List Tab.

To configure only one list, select the list and make the import in the list.

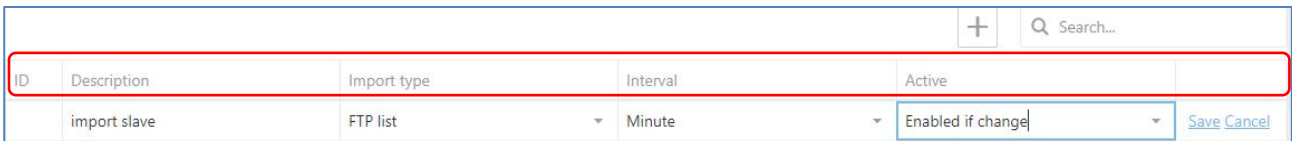
The screenshot shows the 'List types' configuration page. At the top, there is a search bar with a '+' icon and a search icon. Below it is a table with columns 'ID', 'Name', and 'Levenshtein distance (character difference)'. The table contains three rows: '-2 all plates', '-1 not in list', and '1 BLOCKLIST' (highlighted in green). Below the table, there are expandable sections for 'List of license plates: BLOCKLIST (0)', 'Action for the list: BLOCKLIST (0)', 'Exports for the list: BLOCKLIST (0)', and 'Imports for the list: BLOCKLIST (0)'. The 'Imports' section has a green button 'Select import XML/CSV file' and a checkbox 'Delete the list elements at import'. At the bottom, there is another table with columns 'ID', 'Description', 'Import type', 'Interval', and 'Active', which is currently empty. A red circle highlights the '+' icon in the bottom right corner of the interface.

To configure all the list, select all plates.





Create an import for each minute (or desirable time), the time enabled if changed, with the type of FTP list, and click Save.



Configure the same credentials of the FTP server and the same format CSV or XML than the master configuration.

ID	Description	Import type	Interval	Active
2	import slave	FTP list	Minute	Enabled if change

Import properties

Import Info

Host: 127.0.0.1

Port: 21

Format:  XML  XML\_NOTDELETE  CSV  CSV\_NOTDELETE

Folder name: EXPORT

User: user

Password: .....

Confirmation file:  .FLAG

Type:  FTP  FTPS  SFTP

If the master selection type is XML, it can be selected as XML or XML\_NOTDELETE. If your selection is XML, all the elements not included in each file downloaded will be deleted. Just configured, the camera master is downloading the file from the FTP server.

Can be checked in the Audit Tab.

From date: 08/04/2019 13:25:00

To date: 08/04/2019 23:59:59

Type: import

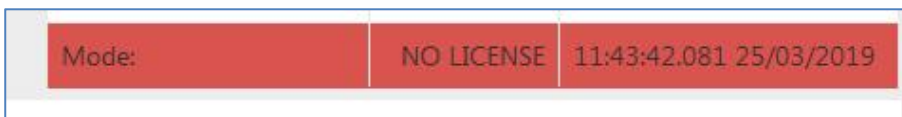
Search

ID	Time	Status	Type	List	Description	Num.	File
21	13:25:00.136 08/04/2019	DONE			Import [import slave] time [f	1	<a href="#">Get file</a>

## 6. Troubleshooting

### 6.1 Mode: NO LICENSE

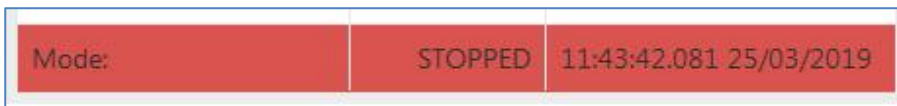
If the camera is not licensed, we find that the mode will be “NO LICENSE” on live page.



To solve this problem, please get in touch with support.

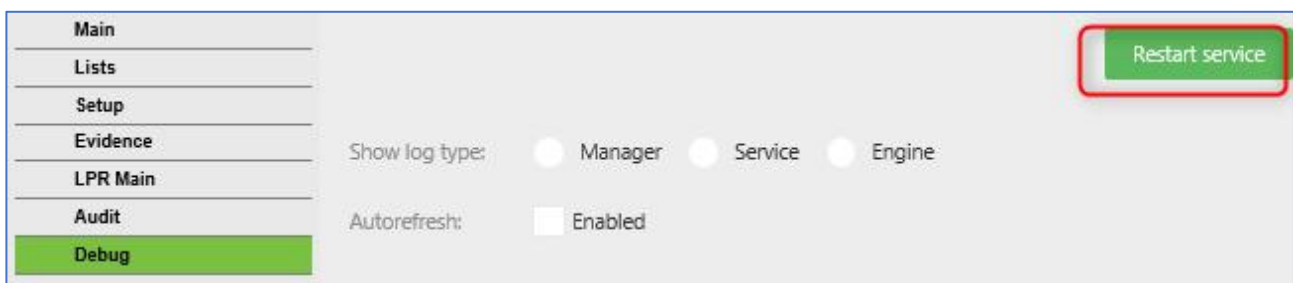
### 6.2 Mode: STOPPED

If the LPR service is stopped, we find that the mode will be “STOPPED” in live page.



To solve this problem, we will have to reboot the service. You can reboot the service at:

- Logs page:



## 6.3 Not enough space on Camera or SD

If the camera or SD card does not have enough space, the system could fail.

SD space free (%):	0	00:00:00.000 01/01/2018
Camera space free (%):	0	00:00:00.000 01/01/2018

If the space is below 20%, please review the [purge option section](#).

## 6.4 The system does not recognize license plates.

If the system does not recognize license plate, please verify the following steps:

1. The region and country are the right ones. You can check this configuration at [LPR configuration](#).
2. The license plate has a minimum size of 25 pixels. The user can use the calibration pattern on the live page to adjust the size of the license plate. The license plate must be between two lines.
3. If you the system has a defined ROI, verify that the license plate is inside the [ROI area](#).
4. If the system is configured for motion detection mode, please make sure there is a movement inside the image.
5. If the system has read a license plate and does not read it anymore, check [the filters](#).
6. If the system is configured for trigger mode, please check the following points:
  - a. Check the mode of the camera ([LPR CONFIGURATION](#)):

Function mode:  TRIGGER

- b. Check the trigger socket port (GENERAL CONFIGURATION):

Trigger Socket port: 8040

- c. Check that the sender device has TCP/IP connection to the camera at the defined port. It can be checked via telnet.  
d. If the message is received correctly, the system log must show the line:

Show log type:  Manager  Service  Engine

## 6.5 Problem with ACTIONS

If the action is not executed, verify the following points:

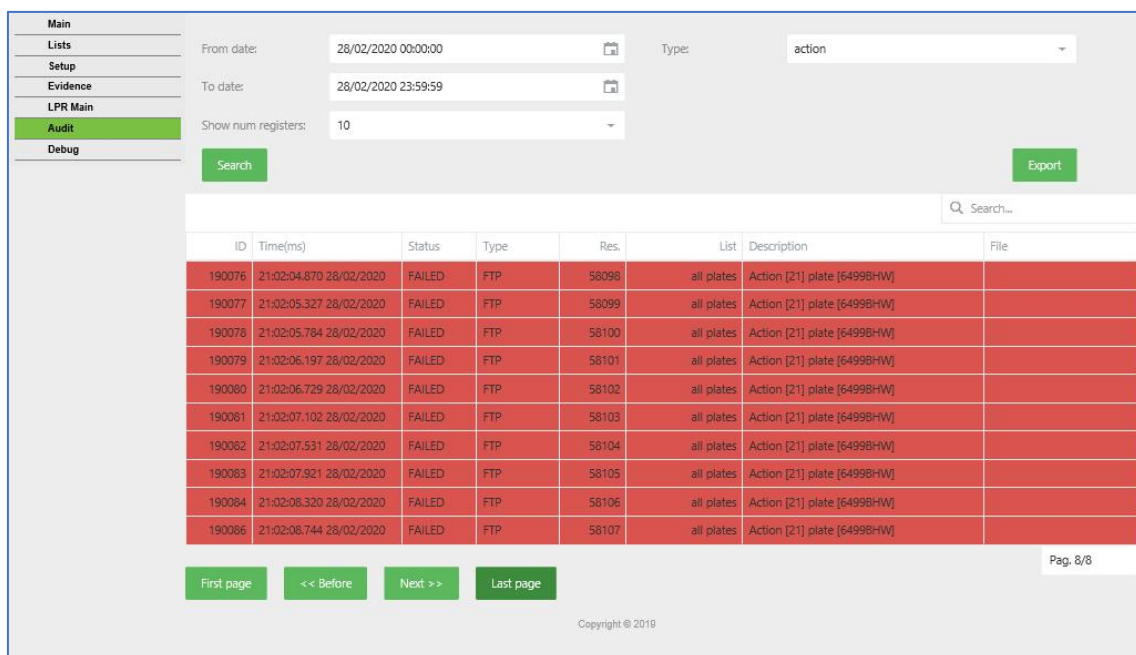
- 1) The action is enabled.

ID	Description	Action type	Active
1	Action 1	Socket client	Enabled

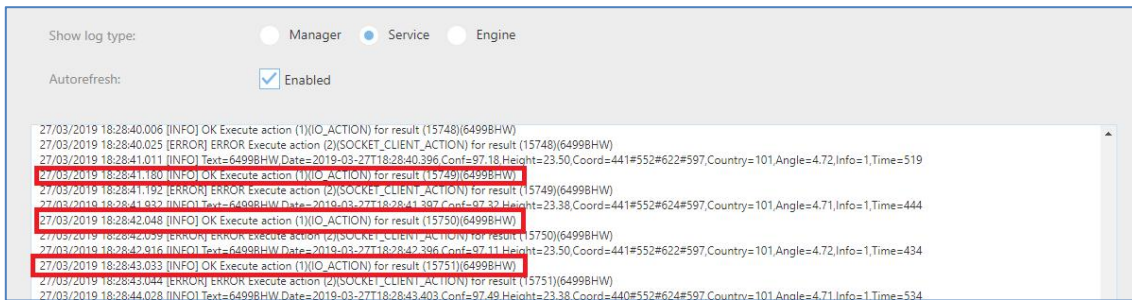
- 2) The detected plate is in the list that is defined in the action.  
3) There is a defined action to “all plate” list.  
4) The detected plate is not in any list, there is an action defined in “not in list” list.  
5) The date of the detection corresponds to a valid time defined in the scheduler.



6) Check in Tab Audit if the action has been executed. If it is in red, an error was sent.



7) Check the logs to see if the action has been executed or not. Active Service and Enabled.



8) Check the connection with the host with a ping command.

```

C:\Users\Administrador>ping 192.168.1.1

Haciendo ping a 192.168.1.1 con 32 bytes de datos:
Respuesta desde 192.168.1.1: bytes=32 tiempo<1m TTL=64
Respuesta desde 192.168.1.1: bytes=32 tiempo<1m TTL=64
Respuesta desde 192.168.1.1: bytes=32 tiempo<1m TTL=64
Respuesta desde 192.168.1.1: bytes=32 tiempo<1m TTL=64

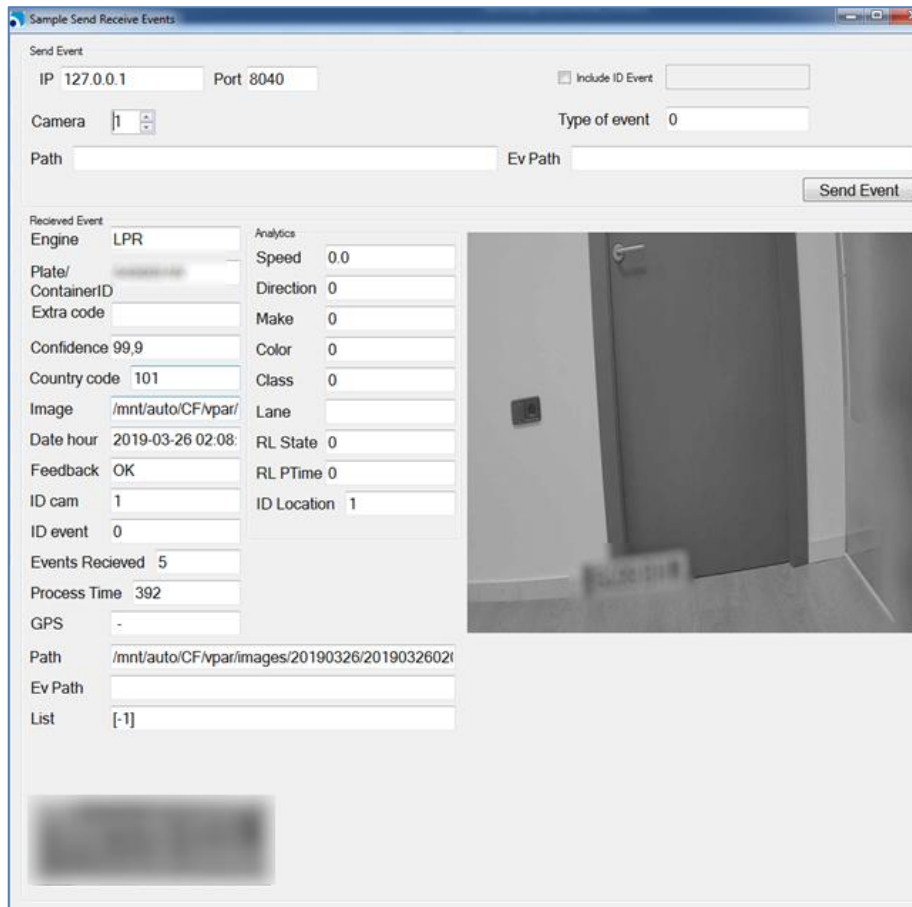
Estadísticas de ping para 192.168.1.1:
    Paquetes: enviados = 4, recibidos = 4, perdidos = 0
              (0% perdidos),
    Tiempos aproximados de ida y vuelta en milisegundos:
    Mínimo = 0ms, Máximo = 0ms, Media = 0ms

C:\Users\Administrador>
    
```

## 6.5.1 Socket client

If the socket client action does not send the message, please check the following points:

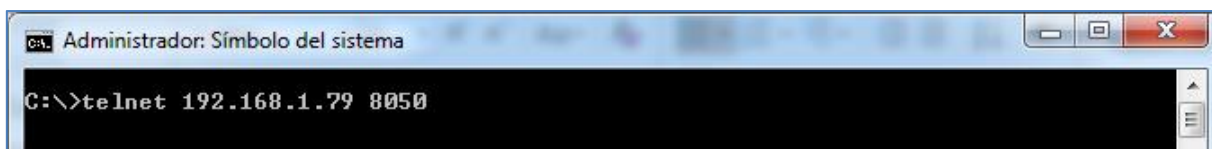
- 1) Check HOST and Port of defined action.
- 2) Check the HOST/PORT connection that the camera has connection to.
- 3) Check the new options for the image selection.
- 4) Download, install and open the sample test program on the client computer.
  - [www.neurallabs.net/SendReceiveEvents/SendReceiveEvents\\_x64.zip](http://www.neurallabs.net/SendReceiveEvents/SendReceiveEvents_x64.zip)
  - [www.neurallabs.net/SendReceiveEvents/SendReceiveEvents\\_x86.zip](http://www.neurallabs.net/SendReceiveEvents/SendReceiveEvents_x86.zip)
- 5) Check the IP from client computer, set port 17000 and read a plate.



## 6.5.2 Socket server / Trigger server

If the socket server action does not send the message, please check the following points:

- 1) Check the defined port.
- 2) Check the new options for the image selection.
- 3) Reboot the service if you have defined a new socket server action.
- 4) Open a telnet client to Camera IP and defined port, and check that the message is received.





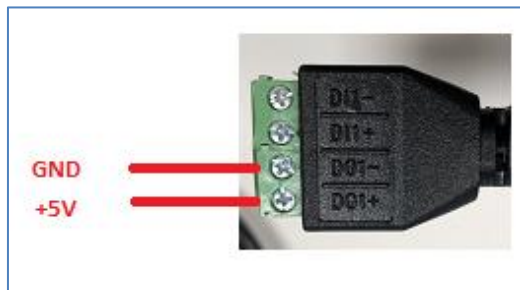
```

Telnet 192.168.1.79
NEURALX<?xml version = "1.0" encoding = "utf-8" ?><infoplate><DateHour>2019-03-26 17:13:13.699</DateHour><Engine>LPR</Engine><Plate> </Plate><Container></Container><ExtraInfo></ExtraInfo><Confidence>99.90</Confidence><Country>Spain</Country><CountryID>101</CountryID><ProcTime>458</ProcTime><CharHeight>44.00</CharHeight><CamID>1</CamID><CamName>vivotek</CamName><ImageLeft>355</ImageLeft><ImageTop>577</ImageTop><ImageWidth>257</ImageWidth><ImageHeight>77</ImageHeight><Path>/mnt/auto/CF/vpar/images/20190326/20190326171313699_1_1_6499BHW.jpg</Path><DirectionVector>0</DirectionVector><imgSize>0</imgSize><img></img><ComputerID>1</ComputerID><Feedback>OK</Feedback><EventID>0</EventID><IncidenceID>118430</IncidenceID><nFrame>0</nFrame><aviFileName></aviFileName><Code>1</Code><Speed>0.0</Speed><GPSLat></GPSLat><GPSLon></GPSLon><List>[-1]</List><CharConfidence></CharConfidence><VehicleMake>0</VehicleMake><VehicleClass>0</VehicleClass><VehicleColor>0</VehicleColor><LaneName></LaneName><LaneID>0</LaneID><RedLightState>0</RedLightState><RedLightPostime>0</RedLightPostime><LocationID>1</LocationID></infoplate>
    
```

### 6.5.3 IO

If the IO action does not send the message, please check the following points:

- 1) Check the defined port.
- 2) Check the defined time.
- 3) With a multimeter, connect to the selected port and check that the voltage changes from 0 to 5 V.



## 6.5.4 FTP

If the FTP action does not send the message, please check the following points:

- 1) Check the defined parameter.
- 2) Check the credentials and access with FTP client.
  - <https://filezilla-project.org/download.php?type=client>
- 3) Install FTP server like the FileZilla server and check the logs.
  - [https://dl2.cdn.filezilla-project.org/server/FileZilla\\_Server-0\\_9\\_60\\_2.exe?h=Fjvi4wvZmA-MDcp3K9v0Q&x=1553712290](https://dl2.cdn.filezilla-project.org/server/FileZilla_Server-0_9_60_2.exe?h=Fjvi4wvZmA-MDcp3K9v0Q&x=1553712290)

```

File Server Edit ?
/C:/ C:\
(007504)27/03/2019 18:46:45 -root (192.168.1.68)> QUIT
(007504)27/03/2019 18:46:45 -root (192.168.1.68)> 221 Goodbye
(007504)27/03/2019 18:46:45 -root (192.168.1.68)> disconnected.
(007505)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> Connected on port 21, sending welcome message...
(007505)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 220-File.Zilla Server 0.9.60 beta
(007505)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 220-written by Tim Kosse (tim.kosse@filezilla-project.org)
(007505)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 220 Please visit https://filezilla-project.org/
(007505)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> USER root
(007505)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 331 Password required for root
(007505)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> PASS *****
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> 230 Logged on
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> CWD EXPORTS
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> 250 CWD successful. "/EXPORTS" is current directory.
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> TYPE I
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> 200 Type set to I
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> PASV
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> 227 Entering Passive Mode (192.168.1.54,206,32)
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> STOR 20190327184642_2_FTP_ACTION_XML_ALLLIST_6499BHW.xml
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> 150 Opening data channel for file upload to server of "/EXPORTS/20190327184642_2_FTP_ACTION_XML_ALLLIST_6499BHW.xml"
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> 226 Successfully transferred "/EXPORTS/20190327184642_2_FTP_ACTION_XML_ALLLIST_6499BHW.xml"
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> QUIT
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> 221 Goodbye
(007505)27/03/2019 18:46:45 -root (192.168.1.68)> disconnected.
(007506)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> Connected on port 21, sending welcome message...
(007506)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 220-File.Zilla Server 0.9.60 beta
(007506)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 220-written by Tim Kosse (tim.kosse@filezilla-project.org)
(007506)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 220 Please visit https://filezilla-project.org/
(007506)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> USER root
(007506)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 331 Password required for root
(007506)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> PASS *****
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> 230 Logged on
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> CWD EXPORTS
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> 250 CWD successful. "/EXPORTS" is current directory.
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> TYPE I
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> 200 Type set to I
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> PASV
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> 227 Entering Passive Mode (192.168.1.54,202,30)
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> STOR 20190327184642_2_FTP_ACTION_XML_ALLLIST_6499BHW.xml
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> 150 Opening data channel for file upload to server of "/EXPORTS/20190327184642_2_FTP_ACTION_XML_ALLLIST_6499BHW.xml"
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> 226 Successfully transferred "/EXPORTS/20190327184642_2_FTP_ACTION_XML_ALLLIST_6499BHW.xml"
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> QUIT
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> 221 Goodbye
(007506)27/03/2019 18:46:45 -root (192.168.1.68)> disconnected.
(007507)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> Connected on port 21, sending welcome message...
(007507)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 220-File.Zilla Server 0.9.60 beta
(007507)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 220-written by Tim Kosse (tim.kosse@filezilla-project.org)
(007507)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 220 Please visit https://filezilla-project.org/
(007507)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> USER root
(007507)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> 331 Password required for root
(007507)27/03/2019 18:46:45 - (not logged in) (192.168.1.68)> PASS *****
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> 230 Logged on
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> CWD EXPORTS
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> 250 CWD successful. "/EXPORTS" is current directory.
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> TYPE I
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> 200 Type set to I
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> PASV
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> 227 Entering Passive Mode (192.168.1.54,199,209)
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> STOR 20190327184642_2_FTP_ACTION_XML_ALLLIST_6499BHW.xml
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> 150 Opening data channel for file upload to server of "/EXPORTS/20190327184642_2_FTP_ACTION_XML_ALLLIST_6499BHW.xml"
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> 226 Successfully transferred "/EXPORTS/20190327184642_2_FTP_ACTION_XML_ALLLIST_6499BHW.xml"
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> QUIT
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> 221 Goodbye
(007507)27/03/2019 18:46:45 -root (192.168.1.68)> disconnected.
(007508)27/03/2019 18:46:46 - (not logged in) (192.168.1.68)> Connected on port 21, sending welcome message...

```

ID	Account	IP	Transfer	Progress	Speed
Ready					

### 6.5.5 HTTP/MILESTONE/WIEGAND

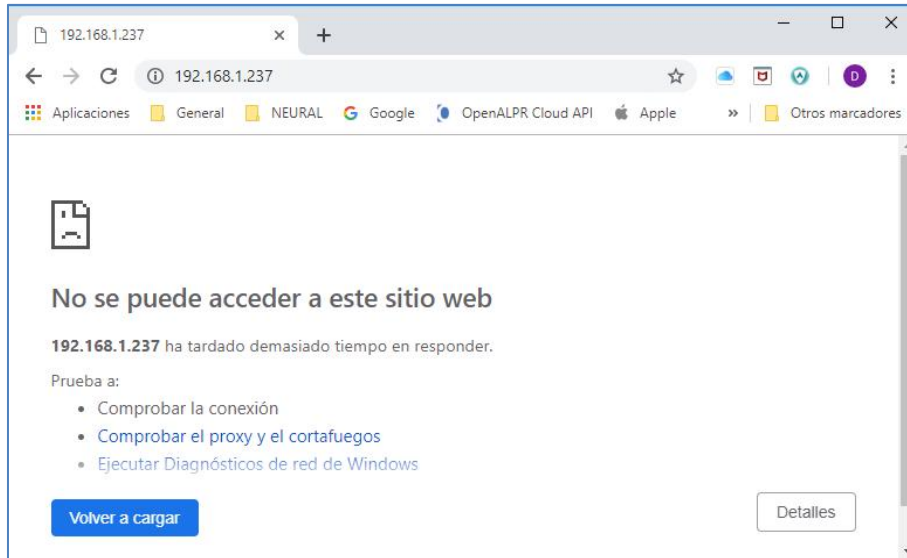
If the HTTP action does not send the message, please check the following points:

+34 916 532 891

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- 1) Check the defined parameter.
- 2) With an explorer (Internet explorer, Firefox, Chrome) do a request to defined URL and check that the URL respond.

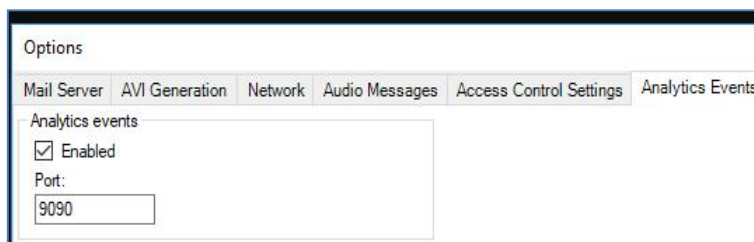
In this case it does not respond.



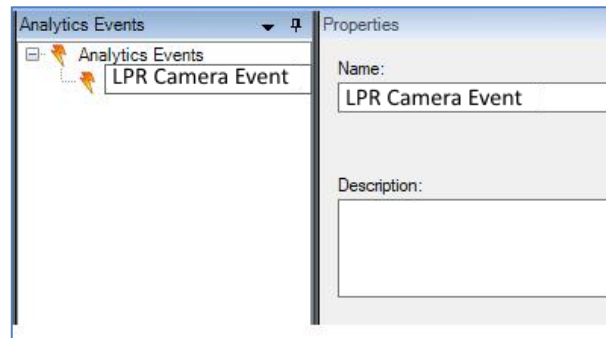
### 6.5.6 MILESTONE

If the MILESTONE action does not send the message, please check the following points:

- 3) Check the defined parameter.
- 4) Check in Milestone system that the analytics events are enabled.



- 5) Check in Milestone system that the analytic event name is "LPR Camera Event".



Check in Milestone system that the created alarm uses the before analytic event and related camera.