




VIVOTEK ANPR software

User Manual

V1.7



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History:

Date	Version	Author	Details	Remarks
2019/6/29	V1.0	Austen	Initial version	
2019/7/12	V1.1	Vito	2 nd version	
2019/7/17	V1.2	Austen	Modify title and bookmark link	Based on v2.4.7
2020/1/16	V1.3	Austen	LPR configuration page: <ul style="list-style-type: none"> • Modify Resolution options • Modify Free-flow/Motion options • Add the description for Minimum characters difference & motion queue General Configuration: <ul style="list-style-type: none"> • Add description for view type 	based on v2.7.17
2020/2/10	V1.4	Austen	Add notice for review search limit	Based on v2.7.17
2020/3/5	V1.5	Austen	<ul style="list-style-type: none"> • Add package upgrade flow • Add purge interval "MINUTES" description 	Based on v2.x.x.x
2020/4/1	V1.6	Austen	<ul style="list-style-type: none"> • Remove purge interval "MINUTES description" • Correct the typo of resolution description • Add figure for common scenario description • Add more List action: <ul style="list-style-type: none"> - VAST2/Trigger server/Wiegand VIVOTEK - FTP JPG MTT / Email 	Based on v3.0.2.0
2020/07/15	V1.7	Aaron	<ul style="list-style-type: none"> • Resolution options • Add Reset Database feature • Update Customized Options 	Based on v3.0.2.0

1. Overview

VIVOTEK Stop-and-go LPR camera is a standalone LPR camera system, which has built-in license plate recognition system and white list, black list and wish list for license plate verification. It also offers various APIs for integration with 3rd party systems such as parking management system, toll collection system, weighbridge system...etc. The ideal applications are parking access control and stop-and-go toll system.

2. Installation Requirements

2.1 License Plate Character size

Characters in license plates must have an average height between 20 to 80 pixels, being 25 pixels a good reference value. Less resolution may lead to character confusion in some countries. In addition, camera sensitivity affects 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.

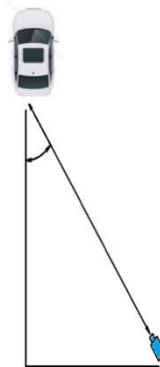


2.2 Camera Positioning

The recommended vertical angles are approximately 20° . The maximum recommended value is 35° .



The recommended horizontal angles are approximately 20° . The maximum recommended value is 35° .



The angle between the plates and the X axis of the scene must be less than 25°.



Recommended Camera Settings:

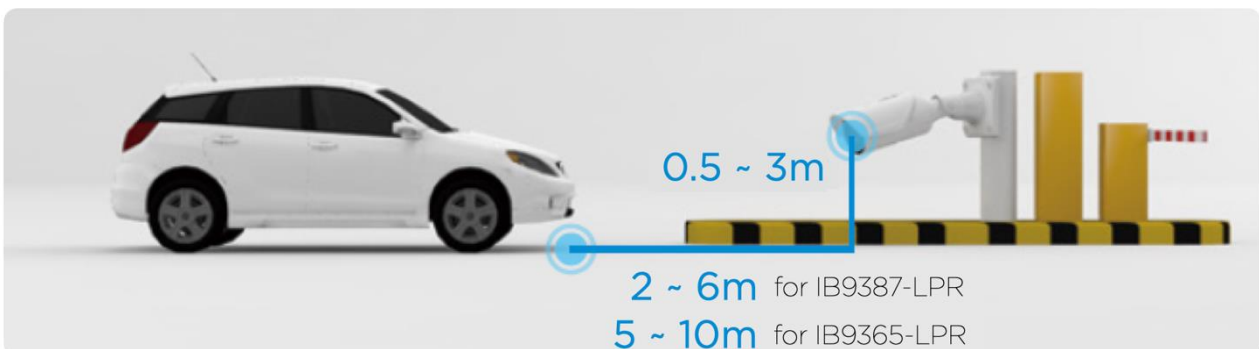
The default camera image settings on Stop and Go LPR camera are ideal for most parking access control applications, stop-and-go toll collection systems and the other use scenarios where the car is stopped or almost stopped. However, users can modify camera settings to reach the optional LPR performance according to the camera deployment in that environment. Please be noted that license plate must be seen in camera image. If no, this LPR camera won't be able to read the license plate number. Also, higher camera resolution doesn't mean higher LPR accuracy. 720P or VGA is good for these stop-and-go scenarios.

Common Scenario:

Common scenario: 1 lane

Sensor size: 1280x960

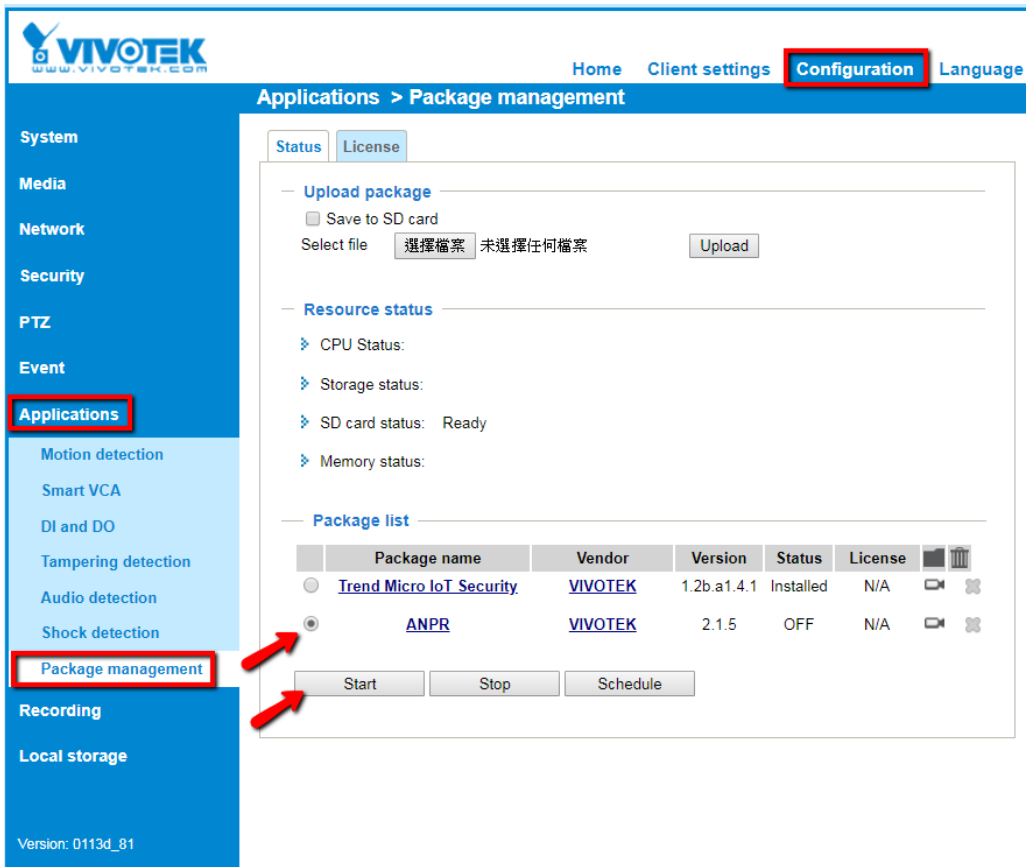
Height of camera on pole: 0.5 – 3 meters



3. LPR Configuration

3.1. Starting Service ANPR

To start a service, go to Configuration, Applications, click on Package Management, select the ANPR and then click on "Start".



Home Client settings **Configuration** Language

Applications > Package management

System
Media
Network
Security
PTZ
Event
Applications
Motion detection
Smart VCA
DI and DO
Tampering detection
Audio detection
Shock detection
Package management
Recording
Local storage

Version: 0113d_81

Status License

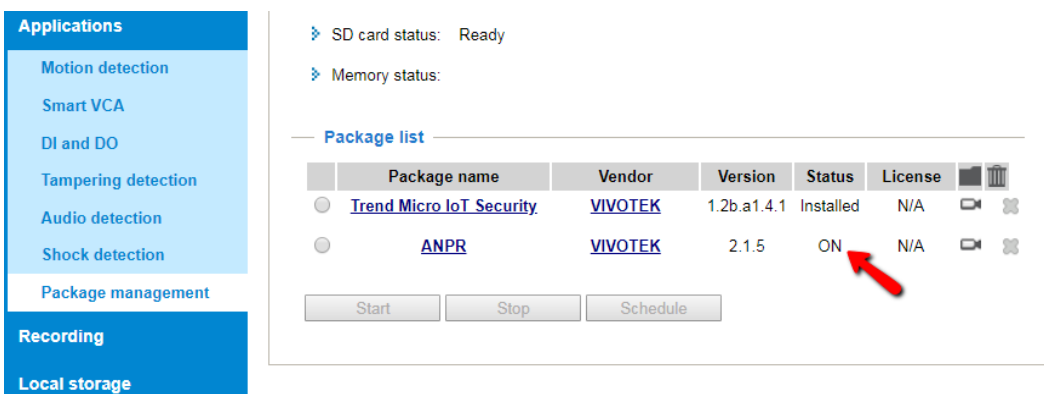
Upload package
 Save to SD card
Select file 未選擇任何檔案

Resource status
CPU Status:
Storage status:
SD card status: Ready
Memory status:

Package list

	Package name	Vendor	Version	Status	License		
<input type="radio"/>	Trend Micro IoT Security	VIVOTEK	1.2b.a1.4.1	Installed	N/A		
<input checked="" type="radio"/>	ANPR	VIVOTEK	2.1.5	OFF	N/A		

The status of this ANPR service must be ON as the picture below.



SD card status: Ready
Memory status:

Package list

	Package name	Vendor	Version	Status	License		
<input type="radio"/>	Trend Micro IoT Security	VIVOTEK	1.2b.a1.4.1	Installed	N/A		
<input checked="" type="radio"/>	ANPR	VIVOTEK	2.1.5	ON	N/A		

3.2. VIVOTEK ANPR Management Browser

Open a web browser and connect to this IP camera through its IP address. Go to “Applications”, click on “Package management” and double click on “ANPR” service.

Applications

- Motion detection
- DI and DO
- Tampering detection
- Audio detection
- Shock detection
- Package management

SD card status: Ready

Memory status:

Package list


Module name	Vendor	Version	Status	License		
ANPR	VIVOTEK	1.01	ON	N/A	SD	

Start Stop Schedule


<http://192.168.1.56/VPARD/www/index.html>

After this, you will access to VIVOTEK ANPR Browser.

English



Live
Review
Lists
LPR configuration
General configuration
Audit
Logs



Attribute	Value	Last Change
Results:	481317	11:53:46.991 09/07/2019
Actions:	295536	11:53:57.369 09/07/2019
Exports:	1	00:00:00.000 01/01/2018
Imports:	1	00:00:00.000 01/01/2018
Triggers received:	0	00:00:00.000 01/01/2018
Frames processed:	6952085	13:07:58.017 09/07/2019
FPS:	5	11:46:53.076 09/07/2019
SD space free (%):	35	13:07:38.032 09/07/2019
Camera space free (%):	40	13:07:38.045 09/07/2019
Last Size (pixels):	48	11:53:57.189 09/07/2019
Last OCR time (millis):	480	11:53:57.185 09/07/2019
Function mode:	MOTION	13:07:58.024 09/07/2019

602HTD (Taiwan)

99.73% 50.00px

2019-07-09 11:47:12.356

602HTD (Taiwan)

99.90% 49.80px

2019-07-09 11:47:13.199

602HT (Taiwan)

86.00% 49.50px

2019-07-09 11:53:35.324

602HTD (Taiwan)


99.90% 49.00px

2019-07-09 11:53:36.138


602HTD (Taiwan)

99.90% 48.88px


2019-07-09 11:53:37.196



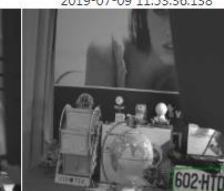
WHITELIST




WHITELIST



WHITELIST



WHITELIST



WHITELIST

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3.3. First access (selection country)

When users access to this ANPR application for the first time, selecting region and country is necessary. First select the Region:

Region/country selection

Region:

Country:

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

602H1 (Taiwan)

Now select the Countries in the region. Multiple selections in Country are allowed such as a) Singapore and Malaysia, b) Texas, Oklahoma, Louisiana and other neighboring states.

Region/country selection

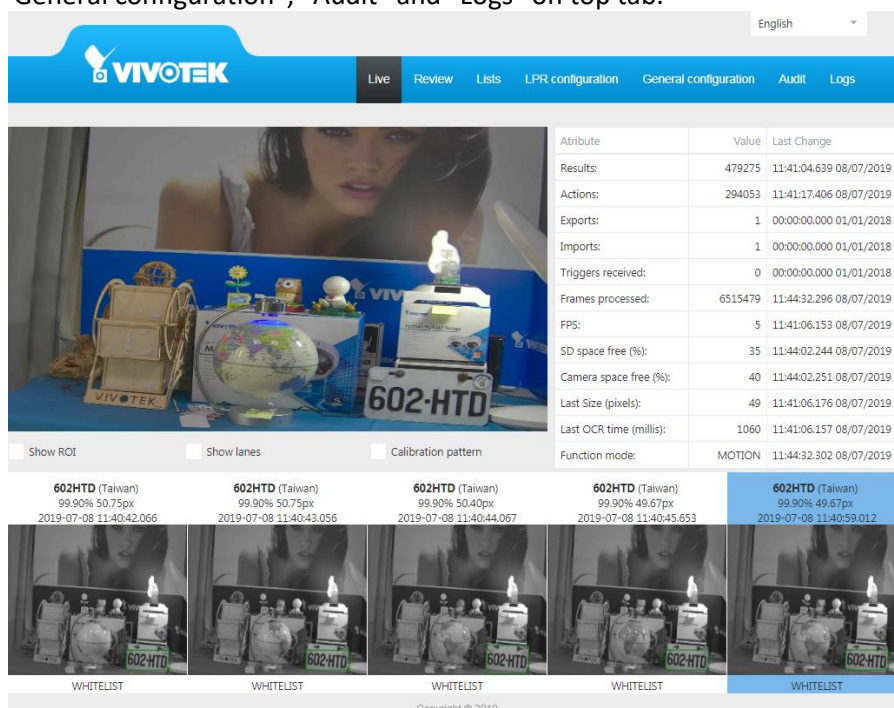
Region:

Country:

4. Web Portal

4.1. User Interface

The following image is the user interface of VIVOTEK ANPR System. There are “Live”, “Review”, “Lists”, “LPR configuration”, “General configuration”, “Audit” and “Logs” on top tab.

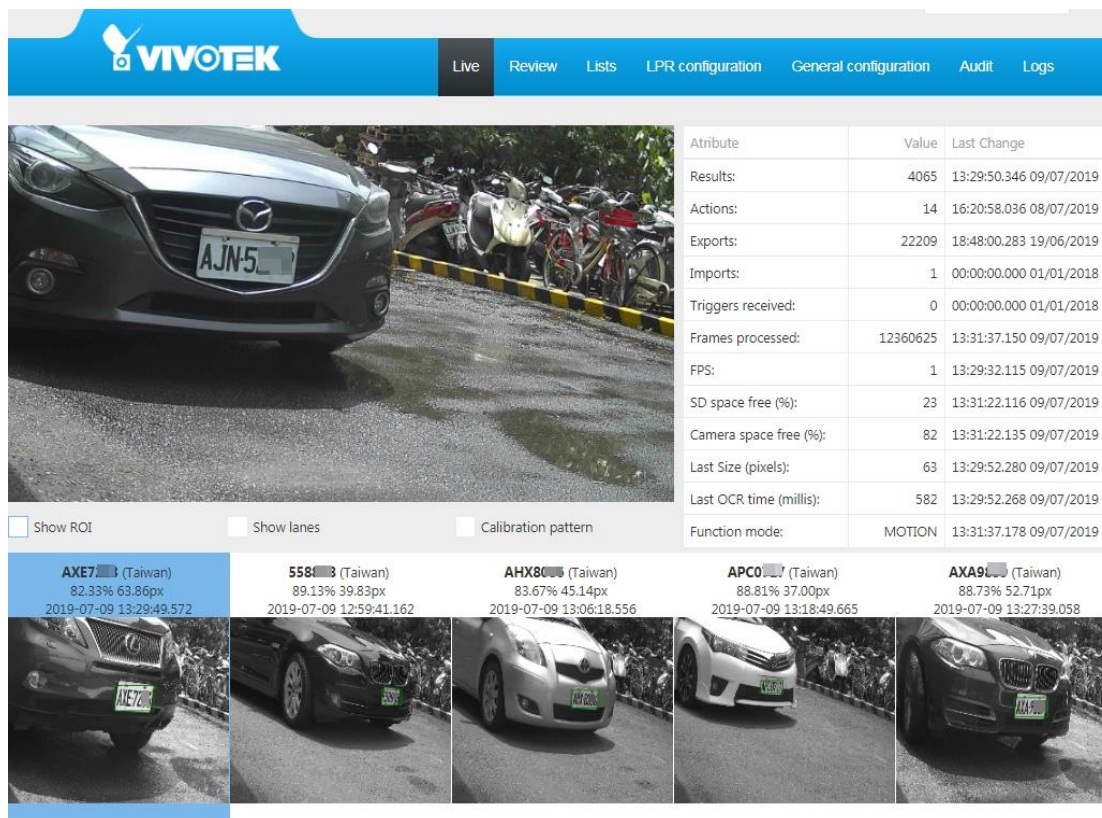


Attribute	Value	Last Change
Results:	479275	11:41:04.639 08/07/2019
Actions:	294053	11:41:17.406 08/07/2019
Exports:	1	00:00:00.000 01/01/2018
Imports:	1	00:00:00.000 01/01/2018
Triggers received:	0	00:00:00.000 01/01/2018
Frames processed:	6515479	11:44:32.296 08/07/2019
FPS:	5	11:41:06.153 08/07/2019
SD space free (%):	35	11:44:02.244 08/07/2019
Camera space free (%):	40	11:44:02.251 08/07/2019
Last Size (pixels):	49	11:41:06.176 08/07/2019
Last OCR time (millis):	1060	11:41:06.157 08/07/2019
Function mode:	MOTION	11:44:32.302 08/07/2019

602HTD (Taiwan)	602HTD (Taiwan)	602HTD (Taiwan)	602HTD (Taiwan)	602HTD (Taiwan)
99.90% 50.75px 2019-07-08 11:40:42.066	99.90% 50.75px 2019-07-08 11:40:43.056	99.90% 50.40px 2019-07-08 11:40:44.067	99.90% 49.67px 2019-07-08 11:40:45.653	99.90% 49.67px 2019-07-08 11:40:59.012

4.2. Live Tab

The “Live” tab shows three parts, including 1) the live video stream of this camera, 2) LPR results and current status, 3) LPR images.



Attribute	Value	Last Change
Results:	4065	13:29:50.346 09/07/2019
Actions:	14	16:20:58.036 08/07/2019
Exports:	22209	18:48:00.283 19/06/2019
Imports:	1	00:00:00.000 01/01/2018
Triggers received:	0	00:00:00.000 01/01/2018
Frames processed:	12360625	13:31:37.150 09/07/2019
FPS:	1	13:29:32.115 09/07/2019
SD space free (%):	23	13:31:22.116 09/07/2019
Camera space free (%):	82	13:31:22.135 09/07/2019
Last Size (pixels):	63	13:29:52.280 09/07/2019
Last OCR time (millis):	582	13:29:52.268 09/07/2019
Function mode:	MOTION	13:31:37.178 09/07/2019

Show ROI
 Show lanes
 Calibration pattern

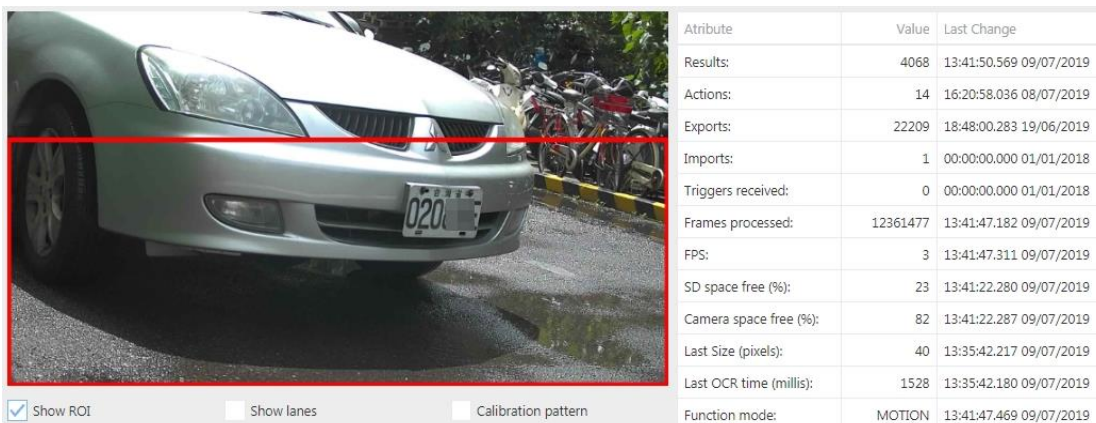
Model (Taiwan)	Confidence (%)	Coordinates (px)	Timestamp
AXE7	82.33%	63.86px	2019-07-09 13:29:49.572
558	89.13%	39.83px	2019-07-09 12:59:41.162
AHX8	83.67%	45.14px	2019-07-09 13:06:18.556
APC0	88.81%	37.00px	2019-07-09 13:18:49.665
AXA9	88.73%	52.71px	2019-07-09 13:27:39.058

Monitor Panel: It shows the current live video streaming.

Below live video streaming window, there are 3 options to show different information on video.

Show ROI: After checking “Show ROI”, you will see a red square that indicates the ROI (Region of interest) defined in the LPR configuration. This ROI is the only region of the image where the LPR engine finds and reads the license plates.

The default setting doesn’t have a ROI region.

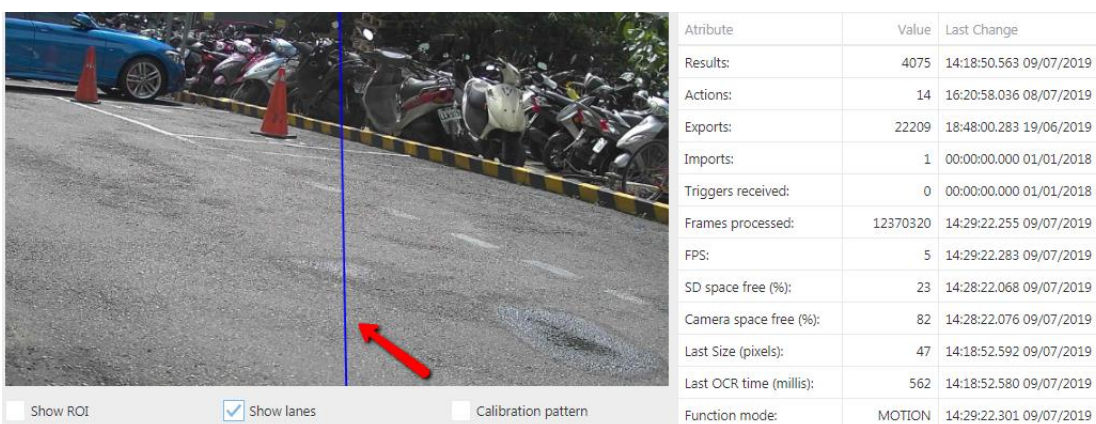


Attribute	Value	Last Change
Results:	4068	13:41:50.569 09/07/2019
Actions:	14	16:20:58.036 08/07/2019
Exports:	22209	18:48:00.283 19/06/2019
Imports:	1	00:00:00.000 01/01/2018
Triggers received:	0	00:00:00.000 01/01/2018
Frames processed:	12361477	13:41:47.182 09/07/2019
FPS:	3	13:41:47.311 09/07/2019
SD space free (%):	23	13:41:22.280 09/07/2019
Camera space free (%):	82	13:41:22.287 09/07/2019
Last Size (pixels):	40	13:35:42.217 09/07/2019
Last OCR time (millis):	1528	13:35:42.180 09/07/2019
Function mode:	MOTION	13:41:47.469 09/07/2019

Show ROI
 Show lanes
 Calibration pattern

Show lanes: After checking “show lanes”, you will see a blue line that defines the lanes you have configured in the LPR configuration. The plates in the left side of the screen are plates captured in lane 1, the plates in the right side of the screen in lane 2.

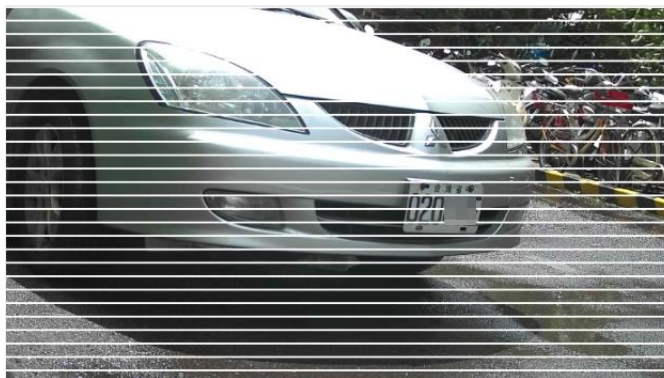
The default setting doesn't have any lanes configured.



Attribute	Value	Last Change
Results:	4075	14:18:50.563 09/07/2019
Actions:	14	16:20:58.036 08/07/2019
Exports:	22209	18:48:00.283 19/06/2019
Imports:	1	00:00:00.000 01/01/2018
Triggers received:	0	00:00:00.000 01/01/2018
Frames processed:	12370320	14:29:22.255 09/07/2019
FPS:	5	14:29:22.283 09/07/2019
SD space free (%):	23	14:28:22.068 09/07/2019
Camera space free (%):	82	14:28:22.076 09/07/2019
Last Size (pixels):	47	14:18:52.592 09/07/2019
Last OCR time (millis):	562	14:18:52.580 09/07/2019
Function mode:	MOTION	14:29:22.301 09/07/2019

Show ROI
 Show lanes
 Calibration pattern

Calibration pattern: After checking “calibration pattern”, you will see white lines indicating the minimum character size. The vertical space between three lines is 25~40 pixels, and the height of plate number must be higher than this space.



Show ROI Show lanes Calibration pattern

Attribute	Value	Last Change
Results:	4068	13:41:50.569 09/07/2019
Actions:	14	16:20:58.036 08/07/2019
Exports:	22209	18:48:00.283 19/06/2019
Imports:	1	00:00:00.000 01/01/2018
Triggers received:	0	00:00:00.000 01/01/2018
Frames processed:	12361502	13:42:12.030 09/07/2019
FPS:	1	13:41:52.096 09/07/2019
SD space free (%):	23	13:41:22.280 09/07/2019
Camera space free (%):	82	13:41:22.287 09/07/2019
Last Size (pixels):	44	13:41:52.154 09/07/2019
Last OCR time (millis):	667	13:41:52.111 09/07/2019
Function mode:	MOTION	13:42:12.299 09/07/2019



between
3 lines

Show plates Show status Show ROI Show lanes Calibration pattern

359JXQ (Colorado) 98.51% 40.00px 2020-01-16 16:42:55.034	359JXQ (Colorado) 99.90% 39.83px 2020-01-16 16:42:53.042	359JXQ (Colorado) 99.90% 39.83px 2020-01-16 16:42:53.535

LPR Image Panel: It shows the latest results, including the LPR image, number plate, confidence level, country/state information, pixel size of character or number height, date and time of this LPR reading, list information such as white list or blacklist.



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

Results: Number of license plates recognized.

Actions: Number of actions executed.

Exports: Number of automatic exports executed.

Imports: Number of automatic imports executed.

Trigger received: Number of triggers received.

Frames processed: Number of total frames processed.

FPS: Frames per second processed in the register.

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.

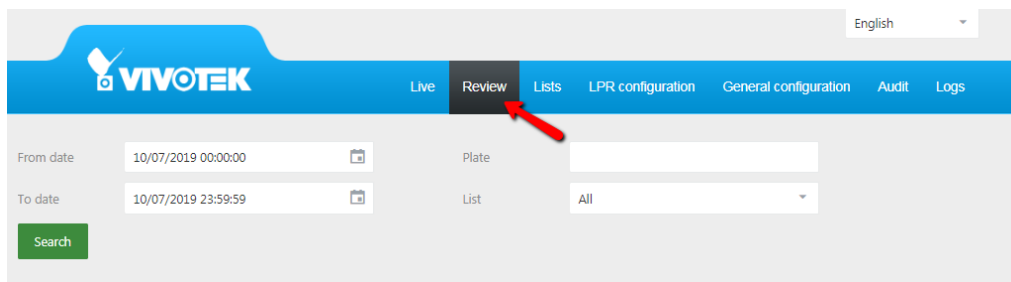
Last OCR time (milliseconds): Engine time spent on the last result plate processed.

Mode: It shows the current LPR processing mode.

- 1) **TRIGGER:** The LPR processing mode is based on Trigger. LPR engine will detect and read number plate only when receiving a trigger signal from 3rd party system such as inductive loop system, or any digital input devices.
- 2) **MOTION:** The LPR processing mode is based on Motion Detection. LPR engine will detect and read number plate only when a motion is being detected.
- 3) **FREEFLOW:** The LPR processing mode is based on Free flow, which means LPR engine always detects number plate and read its number plate.
- 4) **NO LICENSE:** No LPR license in current system.
- 5) **STOPPED:** LPR service is stopped.

4.3. Review Tab

The review tab allows us to search, filter and consult the results.



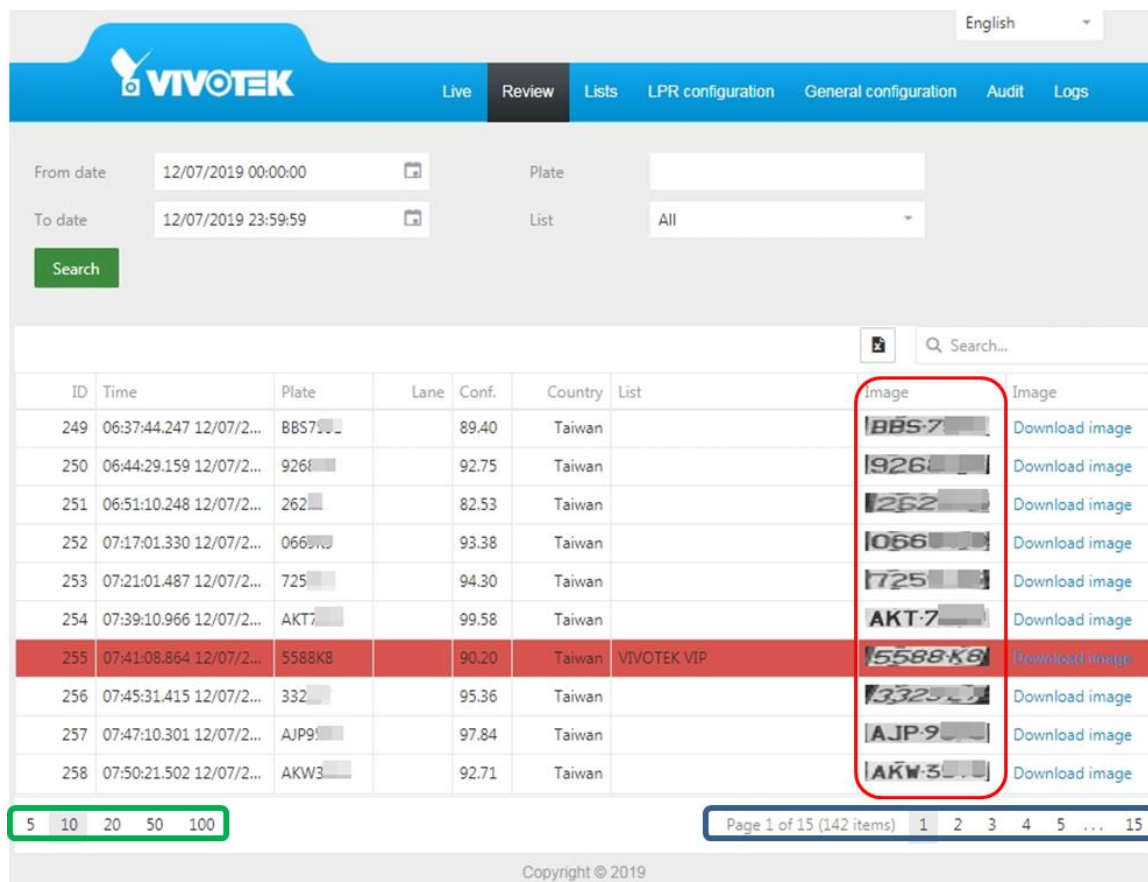
From Date: Select the starting date from which you want to initiate the search

To Date: Select the end date of your search span.

Plate: Users can either search the complete license plate number or just a partial number plate

List: Users can filter the LPR readings by lists such as white list, black list or any other pre-defined lists, and it will show all plates that belong to this list.

For example, if you wish to search for a specific plate by date, from 12/07/2019 00:00:00 to 12/07/2019 23:59:59.

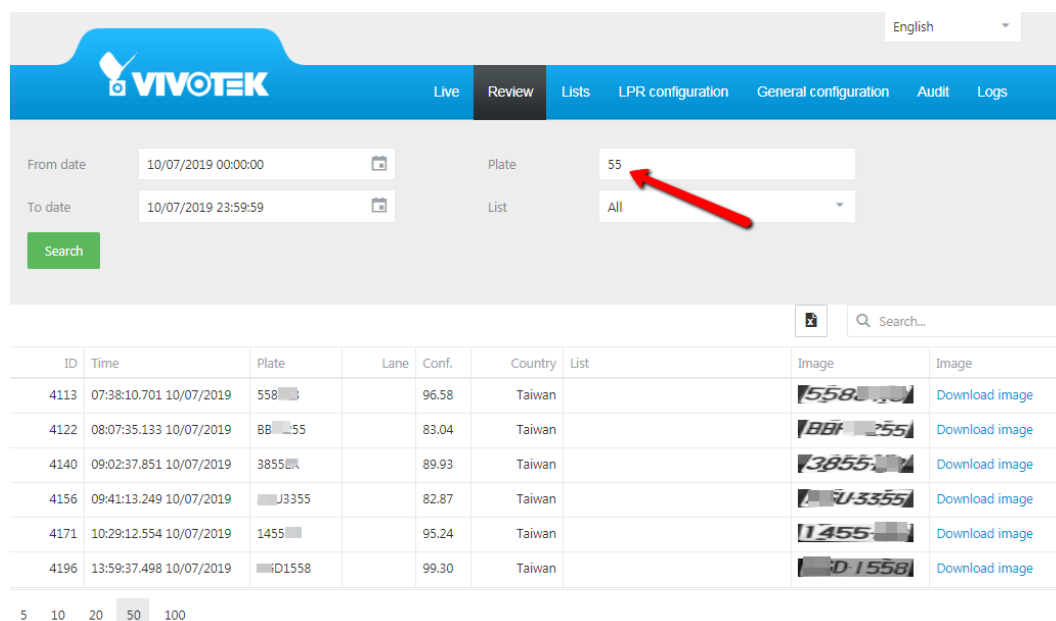


The green box corresponds to the amount of results you want to view per page.

The blue box indicates the numbers of pages available that contain the results.

The red box shows the license plate number images. If you move the mouse cursor over any image, you will obtain the LPR image with a larger image. Click on “Download image” to download this LPR image.

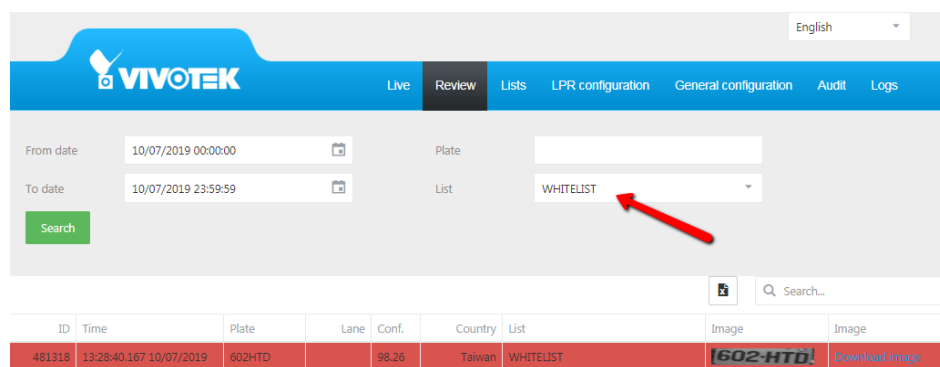
- Search by a partial license plate number



The screenshot shows the VIVOTEK interface with the 'Review' tab selected. The search criteria are: From date: 10/07/2019 00:00:00, To date: 10/07/2019 23:59:59, Plate: 55, and List: All. A red arrow points to the '55' in the Plate field. Below the search bar is a table with columns: ID, Time, Plate, Lane, Conf., Country, List, Image, and Image. The table contains 7 rows of data. At the bottom, there are pagination options: 5, 10, 20, 50, 100.

ID	Time	Plate	Lane	Conf.	Country	List	Image	Image
4113	07:38:10.701 10/07/2019	558		96.58	Taiwan			Download image
4122	08:07:35.133 10/07/2019	BB 55		83.04	Taiwan			Download image
4140	09:02:37.851 10/07/2019	3855		89.93	Taiwan			Download image
4156	09:41:13.249 10/07/2019	U3355		82.87	Taiwan			Download image
4171	10:29:12.554 10/07/2019	1455		95.24	Taiwan			Download image
4196	13:59:37.498 10/07/2019	D1558		99.30	Taiwan			Download image

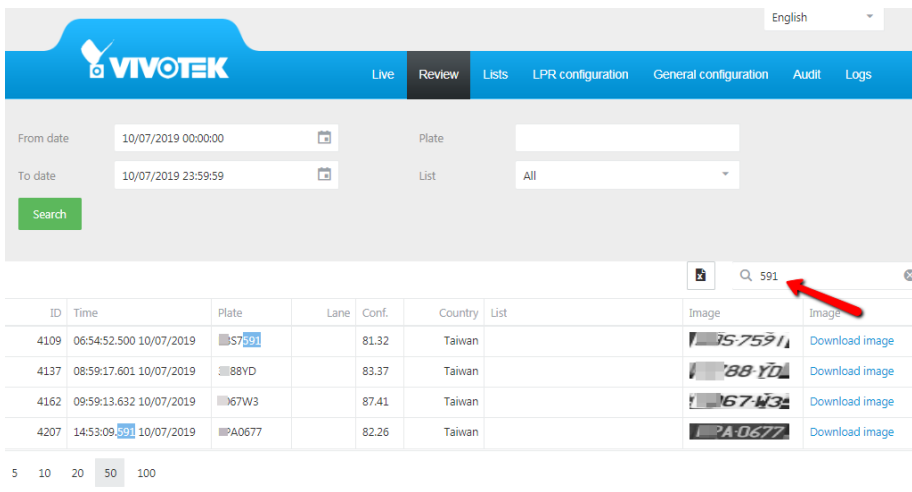
- Search by list.



The screenshot shows the VIVOTEK interface with the 'Review' tab selected. The search criteria are: From date: 10/07/2019 00:00:00, To date: 10/07/2019 23:59:59, Plate: (empty), and List: WHITELIST. A red arrow points to 'WHITELIST' in the List dropdown. Below the search bar is a table with columns: ID, Time, Plate, Lane, Conf., Country, List, Image, and Image. The table contains 1 row of data. At the bottom, there are pagination options: 5, 10, 20, 50, 100.

ID	Time	Plate	Lane	Conf.	Country	List	Image	Image
481318	13:28:40.167 10/07/2019	602HTD		98.26	Taiwan	WHITELIST		Download image

- Use the “Search filter” to find a value inside the table:



English

VIVOTEK Live Review Lists LPR configuration General configuration Audit Logs

From date: 10/07/2019 00:00:00 Plate:

To date: 10/07/2019 23:59:59 List: All

Search

Q 591

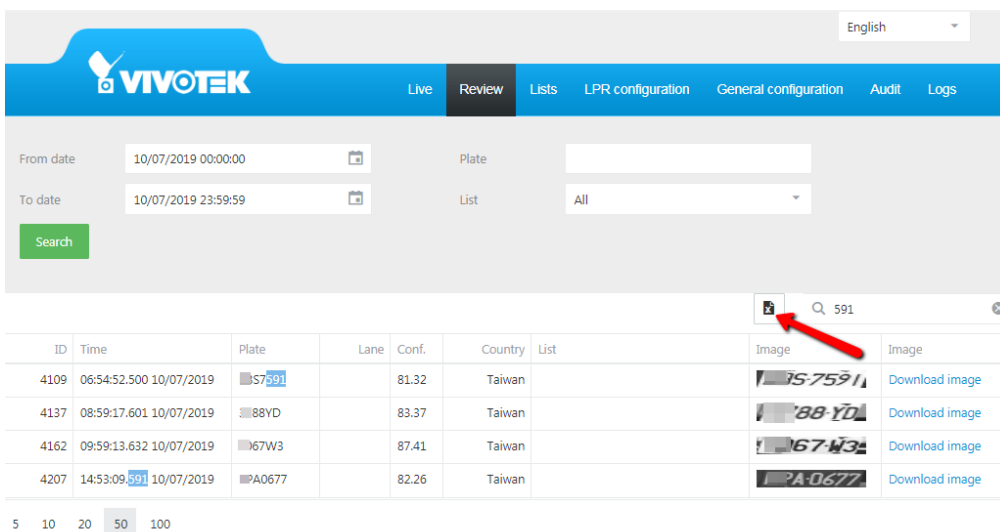
ID	Time	Plate	Lane	Conf.	Country	List	Image	Image
4109	06:54:52.500 10/07/2019	S7591		81.32	Taiwan			Download image
4137	08:59:17.601 10/07/2019	88YD		83.37	Taiwan			Download image
4162	09:59:13.632 10/07/2019	67W3		87.41	Taiwan			Download image
4207	14:53:09.591 10/07/2019	PA0677		82.26	Taiwan			Download image

5 10 20 50 100

Notice:

Considering the search time, the limit number per search is 1000, if you cannot find the number plate what you want, you need to narrow down your search criterion.

- Export the search results into a Excel file



English

VIVOTEK Live Review Lists LPR configuration General configuration Audit Logs

From date: 10/07/2019 00:00:00 Plate:

To date: 10/07/2019 23:59:59 List: All

Search

Q 591

ID	Time	Plate	Lane	Conf.	Country	List	Image	Image
4109	06:54:52.500 10/07/2019	S7591		81.32	Taiwan			Download image
4137	08:59:17.601 10/07/2019	88YD		83.37	Taiwan			Download image
4162	09:59:13.632 10/07/2019	67W3		87.41	Taiwan			Download image
4207	14:53:09.591 10/07/2019	PA0677		82.26	Taiwan			Download image

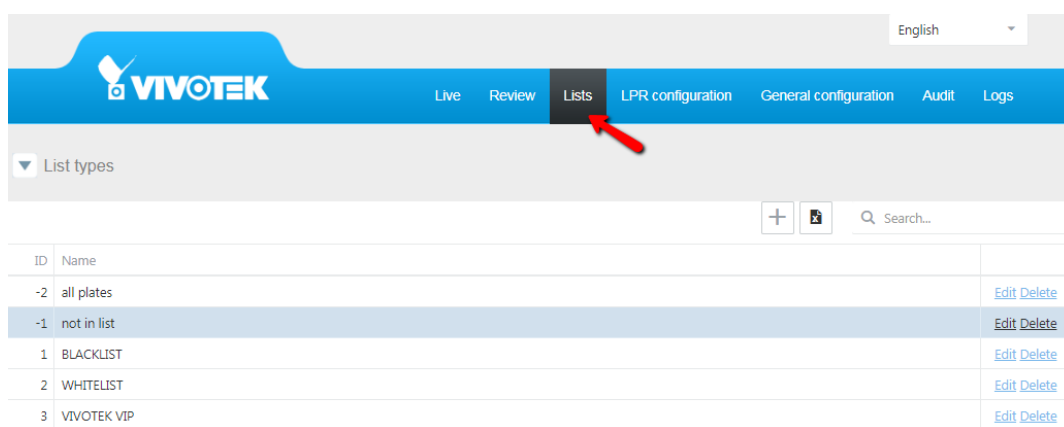
5 10 20 50 100

	A	B	C	D	E	F	G
1	ID	Time	Plate	Lane	Conf.	Country	List
2	4109	06:54:52.52 10/07/2019			81.32	Taiwan	
3	4137	08:59:17.17 10/07/2019			83.37	Taiwan	
4	4162	09:59:13.13 10/07/2019			87.41	Taiwan	
5	4207	14:53:09.09 10/07/2019			82.26	Taiwan	

4.4. List Tab

In this tab users can create lists for license plate verification. This list is a group of license plates that can be the event source, and VIVOTEK ANPR enables users to trigger different actions based on this list, e.g. when any license plate number in black list is detected, it triggers the siren to warn the security guard by sending a signal to the digital output device on this camera.

There are 4 lists by default, including all plates, not in list, blacklist and whitelist. Users can edit, delete or add more lists.



In the lists tab, the following options: are available,

List: Will show all the lists created

Action: Will show all the actions created by list.

Export: Allow users to export a single list or if all plates are selected it will create a unique file with all the licenses plates that belong to that list.

Import: Allow users to import a single list or if all plates are selected it will create a unique file with all the licenses plates that belong to that list.

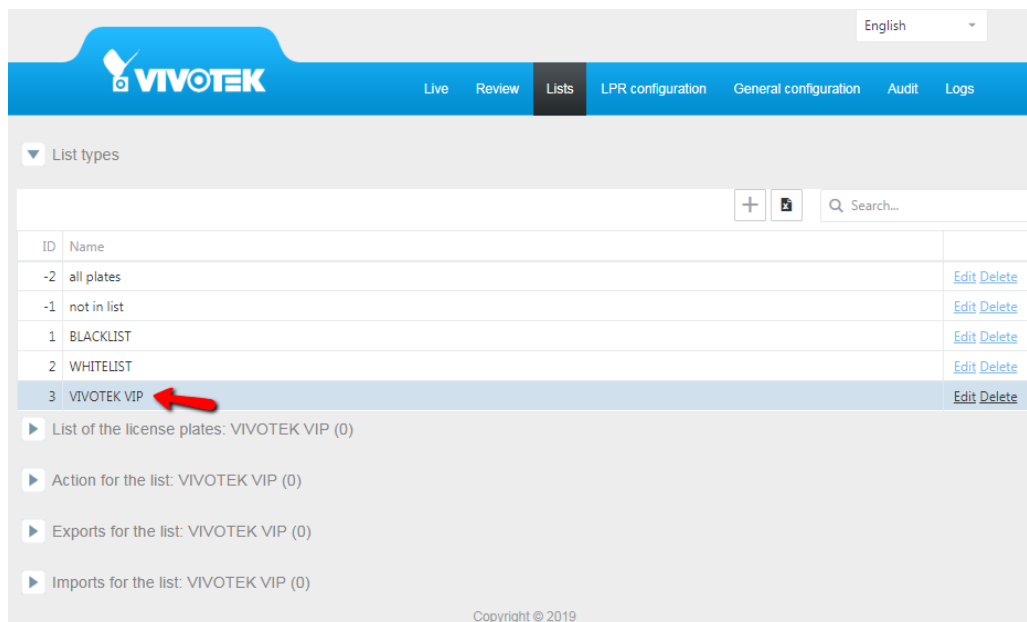
Let's create a new list and name it "VIVOTEK VIP"

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



Users can have an action for this list, which means when a license plate is recognized and matched the list, the stop-and-go LPR camera triggers an event response.

Click on “VIVOTEK VIP” list to see the options.



Copyright © 2019

List of the license plates: EMPLOYEES

Click on the “+” button, fill in the data to add a new license plate. Click on “Save” to save this license plate information.

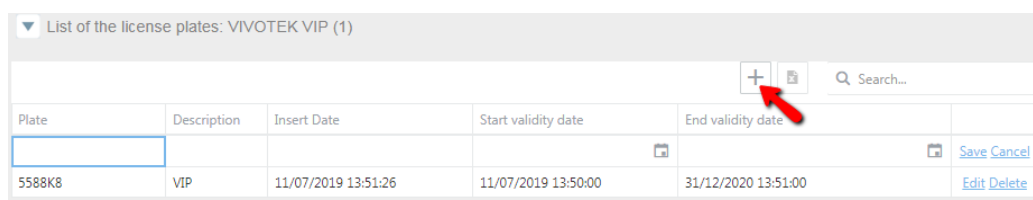


Plate	Description	Insert Date	Start validity date	End validity date	
5588K8	VIP	11/07/2019 13:51:26	11/07/2019 13:50:00	31/12/2020 13:51:00	Edit Delete

To edit or delete a license plate in that list, just click on the plate and then click on “Edit” or “Delete”.

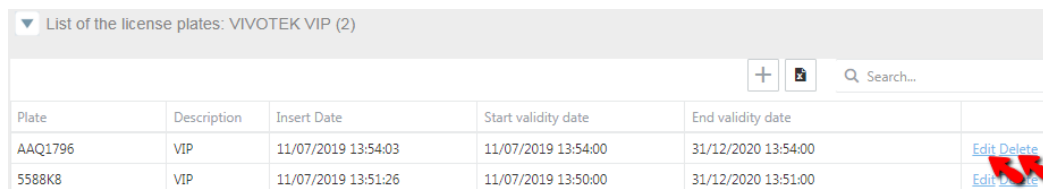


Plate	Description	Insert Date	Start validity date	End validity date	
AAQ1796	VIP	11/07/2019 13:54:03	11/07/2019 13:54:00	31/12/2020 13:54:00	Edit Delete
5588K8	VIP	11/07/2019 13:51:26	11/07/2019 13:50:00	31/12/2020 13:51:00	Edit Delete

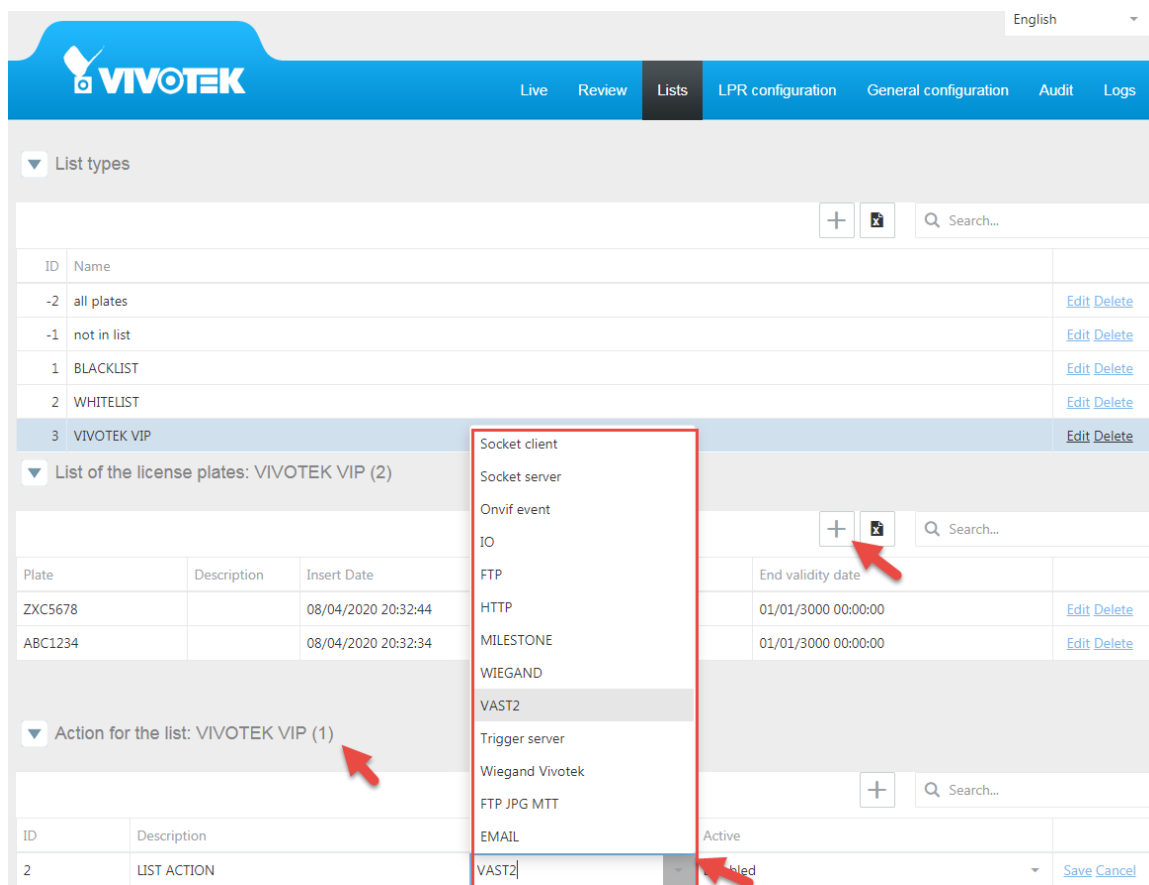
Action for the list: Here are the actions users can select for each list.

- **Socket Client:** Enable a socket connection to send messages in “XML”, “XML with LPR image”, “JSON” or “JSON with LPR image”.

- **Socket Server:** Open a port in the camera to listen to hosts to send messages in “XML”, “XML with LPR image”, “JSON” or “JSON with LPR image”.
- **Onvif Event:** Enable the Onvif event to send the license plate information using this protocol.
- **IO:** Enable inbound and outbound digital signals in the camera.
- **FTP:** store the results in a FTP server.
- **HTTP:** send a request using this protocol to a server.
- **MILESTONE:** send an analytic event to Milestone VMS.
- **WIEGAND:** send a signal to Wiegand middleware board.
- **VAST2:** Enable the connection to send lpr results and images to VAST2 VMS.
- **Trigger server:** Enable a port that sends the read response when a trigger message arrives.
- **Wiegand VIVOTEK:** send a signal to VIVOTEK Wiegand convertor.
- **FTP JPG MTT:** the functionality it’s the same one realized with FTP, with a few differences because with this one you can create a structure of subfolders, contains information like camera, year, month and day.
- **EMAIL:** send an email.

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

Selecting “Action for the list: VIVOTEK VIP”, click on “+” and then select an event response.



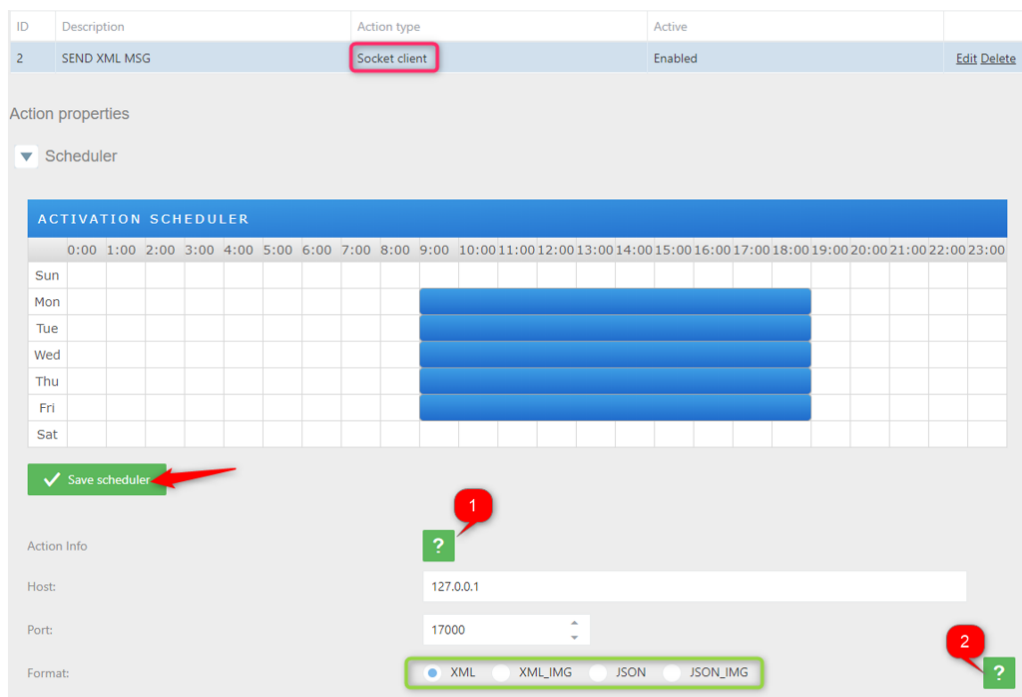
The screenshot shows the VIVOTEK web interface with the 'Lists' tab selected. It displays a table of list types and a detailed view for the 'VIVOTEK VIP' list. A dropdown menu is open, showing various event response options. Red arrows indicate the user's path: clicking the '+' icon, selecting 'Action for the list: VIVOTEK VIP (1)', and then selecting 'VAST2' from the dropdown menu.

ID	Name	
-2	all plates	Edit Delete
-1	not in list	Edit Delete
1	BLACKLIST	Edit Delete
2	WHITELIST	Edit Delete
3	VIVOTEK VIP	Edit Delete


Plate	Description	Insert Date
ZXC5678		08/04/2020 20:32:44
ABC1234		08/04/2020 20:32:34

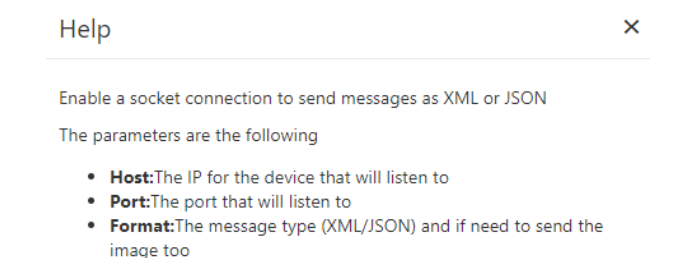
ID	Description	Active
2	LIST ACTION	Enabled

1. Configuring the action **Socket Client** if you want to send the results to another device, using the VIVOTEK VIP list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = Socket Client”




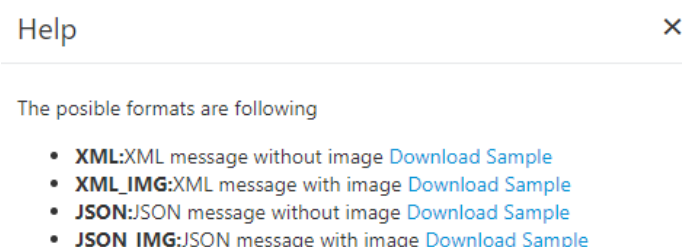
Set the scheduler as needed and click on “SAVE SCHEDULER”.

Action Info: Click on  for more information.

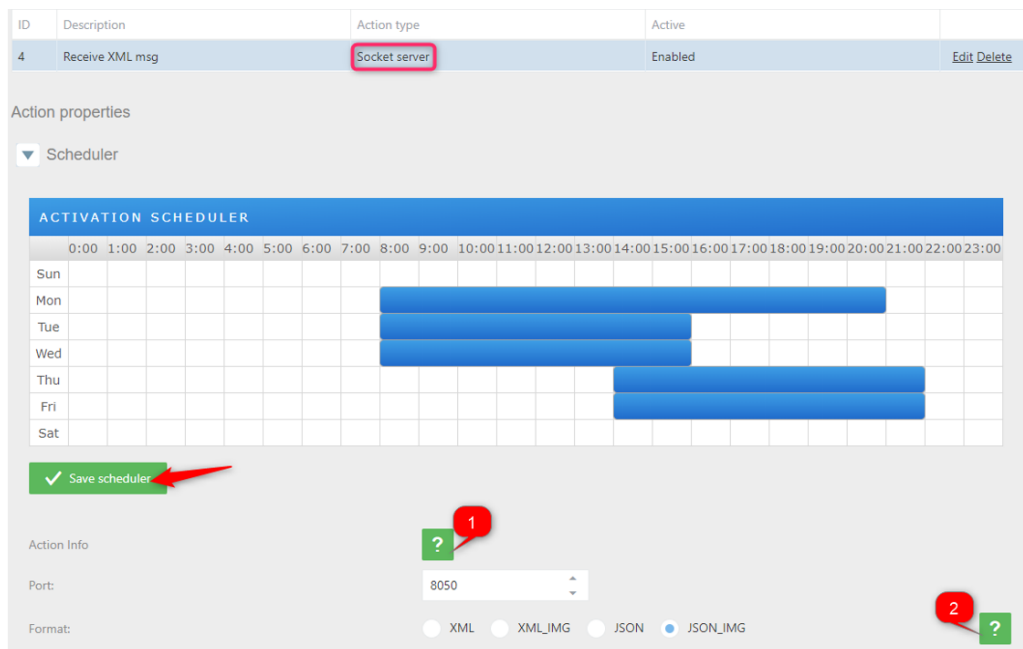


Select which message format you will use to send the information.


Click on  for more information.



2. Setting up “**Socket Server**” as an event response, this LPR camera will receive messages from other devices.



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


Action Info: Click on  for more information.

Help ×

Open a port in the camera to listen to hosts to send messages as XML or JSON

The parameters are the following

- **Port:**The port that will listen
- **Format:**The message type (XML/JSON) and if need to send the image too

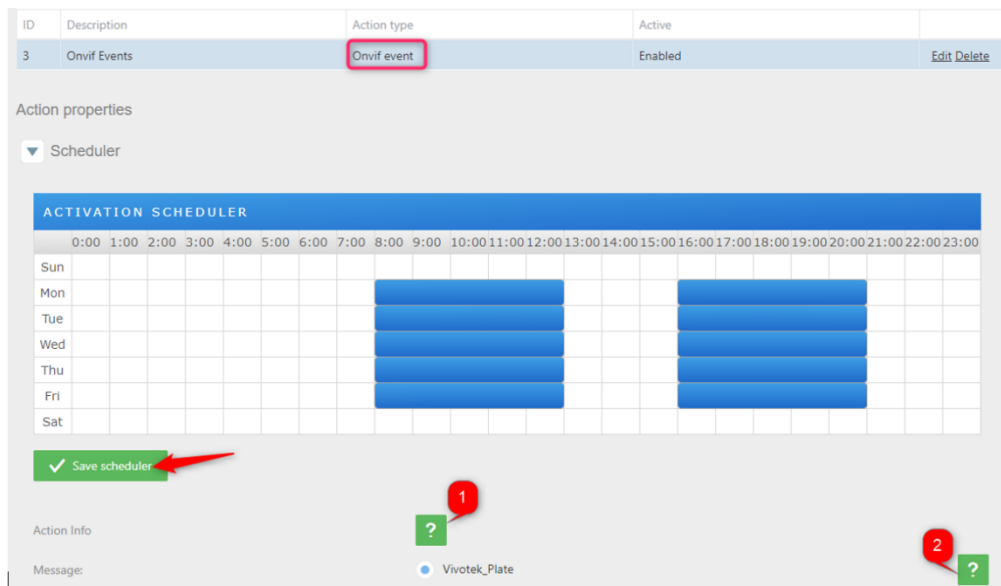
Click on  for more information.

Help


The possible formats are following

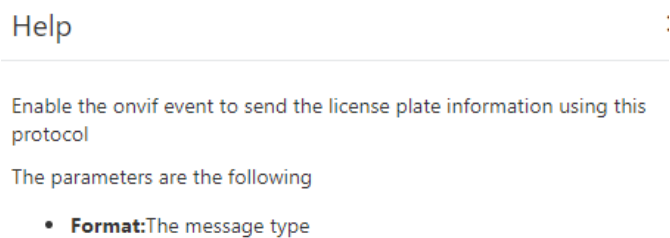
- **XML:**XML message without image [Download Sample](#)
- **XML_IMG:**XML message with image [Download Sample](#)
- **JSON:**JSON message without image [Download Sample](#)
- **JSON_IMG:**JSON message with image [Download Sample](#)


3. Configuring “**Onvif Event**” as an event response, this LPR camera will send the license plate using this protocol.

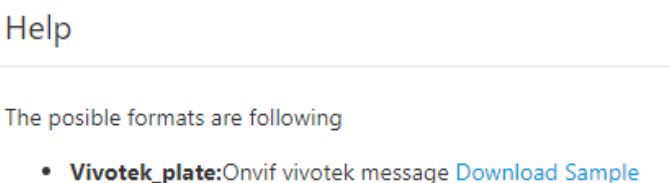


Set the scheduler as needed and click on “SAVE SCHEDULER”.

Click on  for more information.

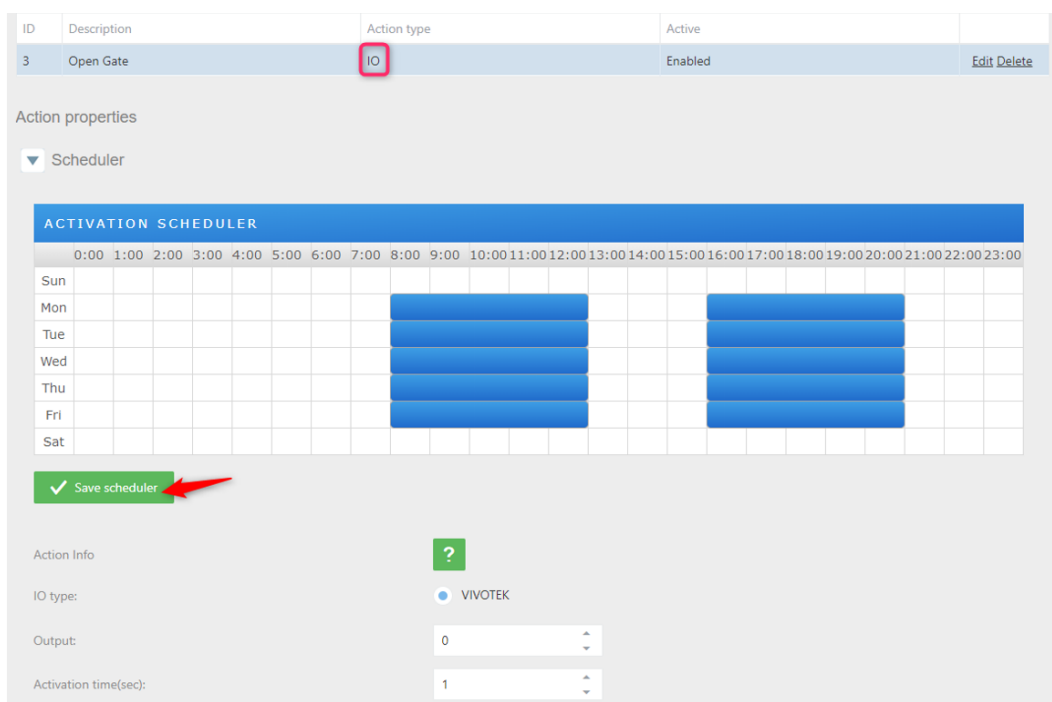


Click on  for more information.



- Configuring “IO” as an event response, the LPR camera will trigger the digital output device that is attached to this camera. This device can be a gate, a siren or other devices, e.g. when a license plate in “VIVOTEK VIP” list is detected, this LPR camera can open the gate barrier automatically.

Click on “Action for the list” and add a new action pressing “+” and then select in “Action type = IO”



ID	Description	Action type	Active	
3	Open Gate	IO	Enabled	Edit Delete

Action properties

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																								
Mon																								
Tue																								
Wed																								
Thu																								
Fri																								
Sat																								

Save scheduler


Action Info

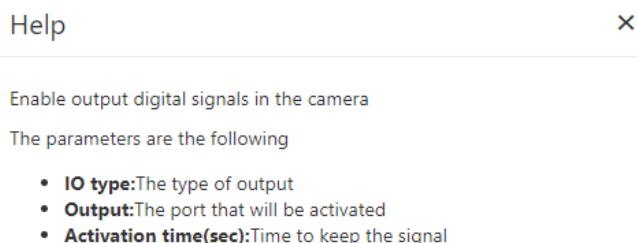
IO type: VIVOTEK

Output: 0

Activation time(sec): 1

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

Click on  for more information.



Help

Enable output digital signals in the camera

The parameters are the following

- IO type:** The type of output
- Output:** The port that will be activated
- Activation time(sec):** Time to keep the signal

- Configuring the action **FTP** to send an XML, JSON or image to an FTP server. Using the “VIVOTEK VIP” list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = FTP”

ID	Description	Action type	Active	
4	send image to FTP	FTP	Enabled	Edit Delete

Action properties

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																								
Mon																								
Tue																								
Wed																								
Thu																								
Fri																								
Sat																								

Save scheduler

Action Info

Host: 192.168.10.250

Port: 21

Format: XML XML_IMG JSON JSON_IMG IMAGE


Folder: LPR Images

User: root

Password: N3ur4L3Dg3

Confirmation file: NONE .FLAG .CONF

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

Click on  for more information about how to configure.

Help

Store the results in an FTP server

The parameters are the following

- **Host:**Ftp server IP
- **Port:**Ftp server port
- **Format:**The message type (XML/JSON/CSV) and if need to send the image too
- **Folder:**Ftp folder to save the messages
- **User:**Ftp user
- **Password:**Ftp password
- **Confirmation file:**In order to track if all images have been sent to the FTP server you can select .flag or .conf that will generate a single file per each correct action to FTP.

Click on  for more information about format type.

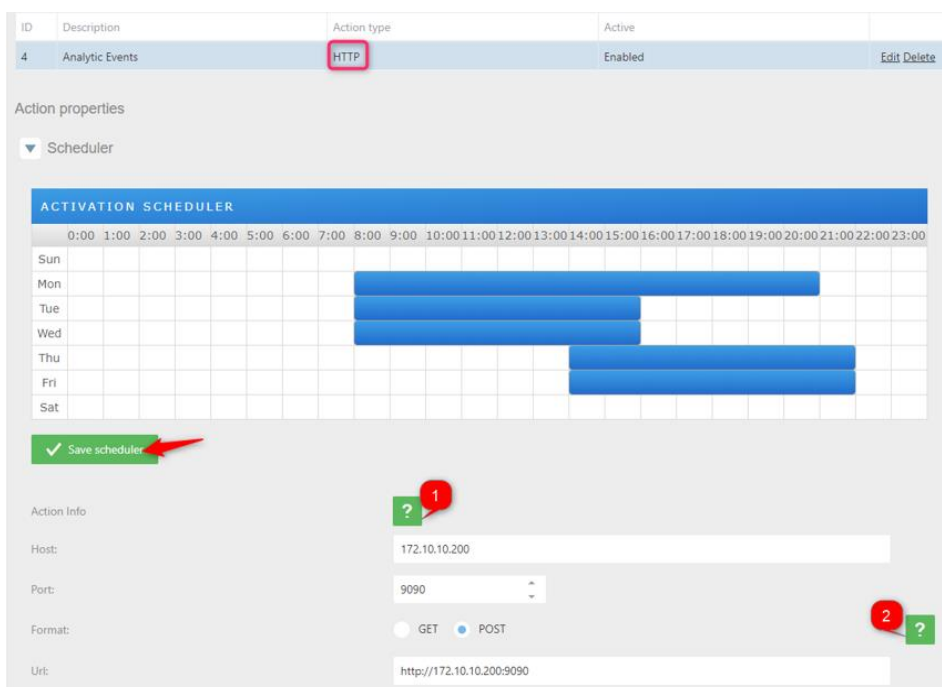
Help

The possible formats are following

- **XML:**XML message without image [Download Sample](#)
- **XML_IMG:**XML message with image [Download Sample](#)
- **JSON:**JSON message without image [Download Sample](#)
- **JSON_IMG:**JSON message with image [Download Sample](#)

*The name of the file is
DATETIME(YYYYMMDDHHmmSS)_ID_TYPE_LIST_PLATE

- Configuring “**HTTP**” as an event response, this LPR camera will send analytic events to a VMS. Using the “VIVOTEK VIP” list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = HTTP”



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

Click on  for more information about how to configure.

Help

Send a request using this protocol to a server

The parameters are the following

- **Host:**Http server IP
- **Port:**Http server port
- **Format:**Petition format to send
- **URL:**URL to send the petition

Click on  for more information about format type.

Help

×

The possible formats are following

- **GET**:Send a get petition
- **POST**:Send a post petition

7. Configuring “**MILESTONE**” as an event response, this LPR camera will send analytic events to the Milestone VMS. Using the “**VIVOTEK VIP**” list, click on “**Action for the list**” and add a new action pressing “**+**” and then select in “**Action type = MILESTONE**”

ID	Description	Action type	Active	
1	action	MILESTONE	Enabled	Edit Delete


Action properties


▼ 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
Mon
Tue
Wed
Thu
Fri
Sat

✓ Save scheduler 

Action Info 

Host: 127.0.0.1

Port: 9090

Format: ANALYTIC_EVENT 

Url: http://127.0.0.1:9090

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

Click on  for more information about how to configure.

Help

Send a request using this protocol to a server

The parameters are the following

- **Host**:Milestone server IP
- **Port**:Milestone server port
- **Format**:Petition format to send
- **URL**:URL to send the petition
- **Event Type**:Analytic event type

Click on  for more information about format type.

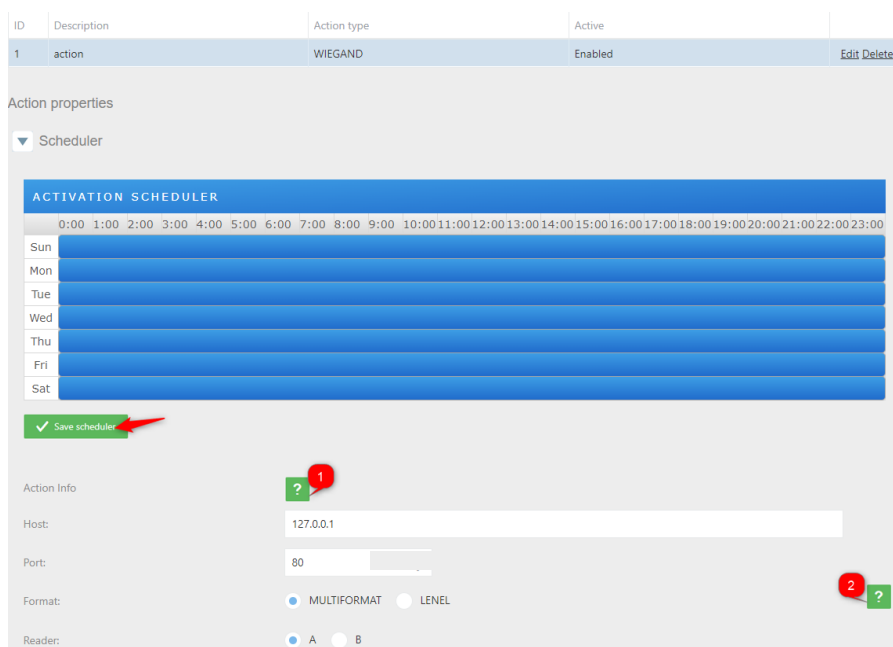
Help

The possible formats are following

- **ANALYTIC_EVENT**: Send a Milestone analytic event message
[Download Sample](#)

See chapter 4.4.1 to know more information on how to configure Milestone.

8. Configuring “WIEGAND” as an event response, this LPR camera will send analytic events to a Wiegand middleware board. Using the “VIVOTEK VIP” list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = WIEGAND”



ID	Description	Action type	Active	
1	action	WIEGAND	Enabled	Edit Delete

Action properties

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
Mon
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Thu
Fri
Sat

Save scheduler

Action Info


Host: 127.0.0.1

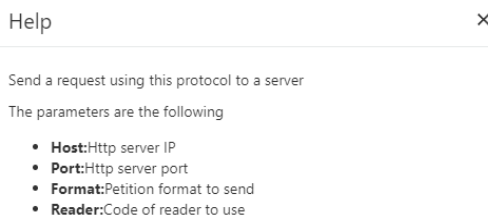
Port: 80

Format: MULTIFORMAT LENEL

Reader: A B

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

Click on  for more information about how to configure.



Help

Send a request using this protocol to a server

The parameters are the following

- **Host**: Http server IP
- **Port**: Http server port
- **Format**: Petition format to send
- **Reader**: Code of reader to use

Click on  for more information about format type.

Help

×

The possible formats are following

- **MULTIFORMAT:**Weigand with multiformat
- **LENEL:**Weigand with LENEL format

In case, you don't want to continue using an action in a list you are able to disable or delete the action. To delete, click on the list. Select the action and then click on "Delete" option.

Action for the list: EMPLOYEES (1)				
ID	Description	Action type	Active	
2	action	VAST2	Enabled	Edit Delete

To disable, click on the list, select the action, and then click on the edit option. The status of "Active" will be changed to "Disabled". Click on "Save" to save this new setting.

Action for the list: EMPLOYEES (0)				
ID	Description	Action type	Active	
open_gate		IO	Select...	Save Cancel
Exports for the list: EMPLOYEES (0)				

After this configuration, the action will be disabled. Users can enable this action again at any time they need.

ID	Description	Action type	Active	
3	open_gate	IO	Disabled	Edit Delete

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

ID	Description	Action type	Active	
3	open_gate	IO	Disabled	Edit Delete

Are you sure to delete the action from list?

Yes

No

- Configuring the action **Trigger Server** will use the camera to receive triggers from other devices and send a message. Using 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 connect to the server socket and send the message specified tin the “Trigger mode”, received this message (another message is discarded) make a trigger to the camera an take a picture to process the engine. After engine 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

ID	Description	Action type	Active	
2	1	Trigger server	Disabled	Edit Delete

Action properties

▼ 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

Mon

Tue

Wed

Thu

Fri

Sat

Save scheduler

Action Info

Port:

Format response: SIMPLE XML XML_IMG JSON JSON_IMG

Trigger message:

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

Click on  for more information about how to configure.

Help



Enable a port that sends the read response when a trigger message arrives

The parameters are the following:

- **Port:** The port that will listen/respond to.
- **Format:** The message type and if need to send the image too.
The possible formats are following:
 - **SIMPLE:** Return only the number plate
 - **XML:** XML message without image [Download Sample](#)
 - **XML_IMG:** XML message with image [Download Sample](#)
 - **JSON:** JSON message without image [Download Sample](#)
 - **JSON_IMG:** JSON message with image [Download Sample](#)
- **Trigger message:** Activation message for trigger
- **Simple response init:** Message concatenated before plate (only for simple format)
- **Simple response init:** Message concatenated after plate (only for simple format)

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

ID	Description	Action type	Active	
2	WG	Wiegand Vivotek	Enabled	Edit Delete

Action properties

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

Mon

Tue

Wed

Thu

Fri

Sat

Save scheduler

Action Info

Host:

Port:

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

Output bit length: 24 bits 32 bits

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

Click on  for more information about how to configure.

Help ×

Send a request using this protocol to a server

The parameters are the following:

- **Host:**Http server IP
- **Port:**Http server port
- **Output format:**Parity bits configuration of the output
- **Output bit length:**Number of bits of the output without parity bits

Click on  for more information about format type.

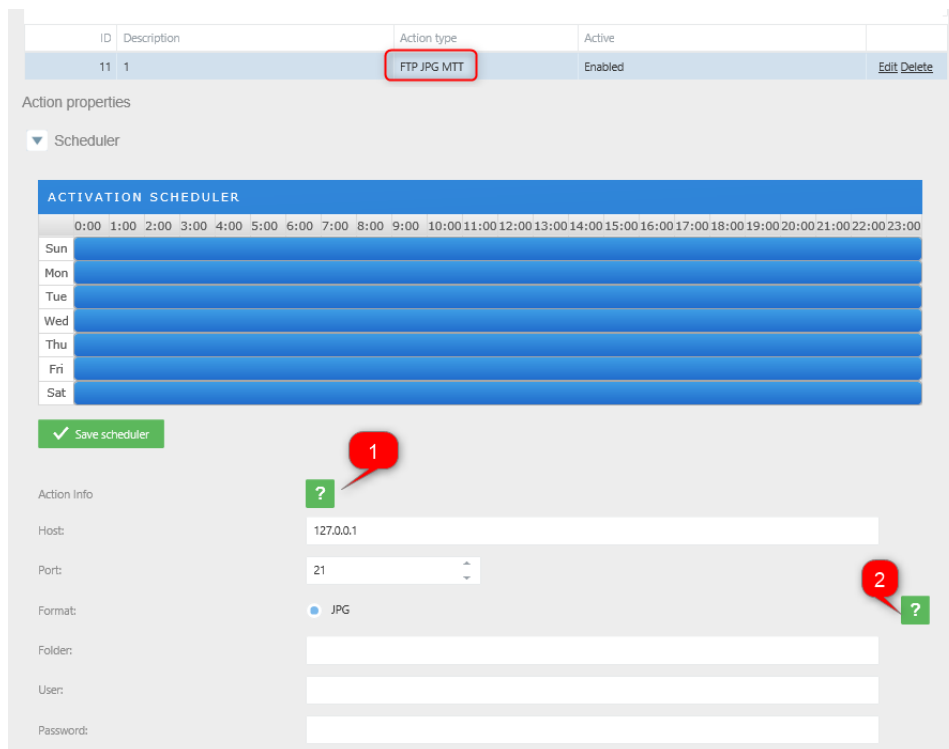
Help ×

The possible output formats are the following:

- **Bypass data bits:**No parity bits are added to the output
- **Even/Odd parity bits:**The leading parity bit is even, and the ending parity bit is odd
- **Odd/Even parity bits:**The leading parity bit is odd, and the ending parity bit is even

The output bit length without parity bits can be 24 or 32 bits

11. Configuring the action **FTP JPG MTT** using the EMPLOYEES list, click on “Action for the list” and add a new action pressing “+” and then select in “Action type = FTP JPG MTT”.



ID	Description	Action type	Active
11	1	FTP JPG MTT	Enabled

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
 Mon
 Tue
 Wed
 Thu
 Fri
 Sat

Save scheduler

Action Info
 Host: 127.0.0.1
 Port: 21
 Format: JPG
 Folder:
 User:
 Password:

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

Click on  for more information about how to configure.

Help ×

Store the JPG image of the result in a FTP server by camera ID, year, month and day

The parameters are the following

- **Host:**Ftp server IP
- **Port:**Ftp server port
- **Format:**The image format (JPG)
- **Folder:**Ftp folder where to save the image files
- **User:**Ftp user
- **Password:**Ftp password

Click on  for more information about format type.

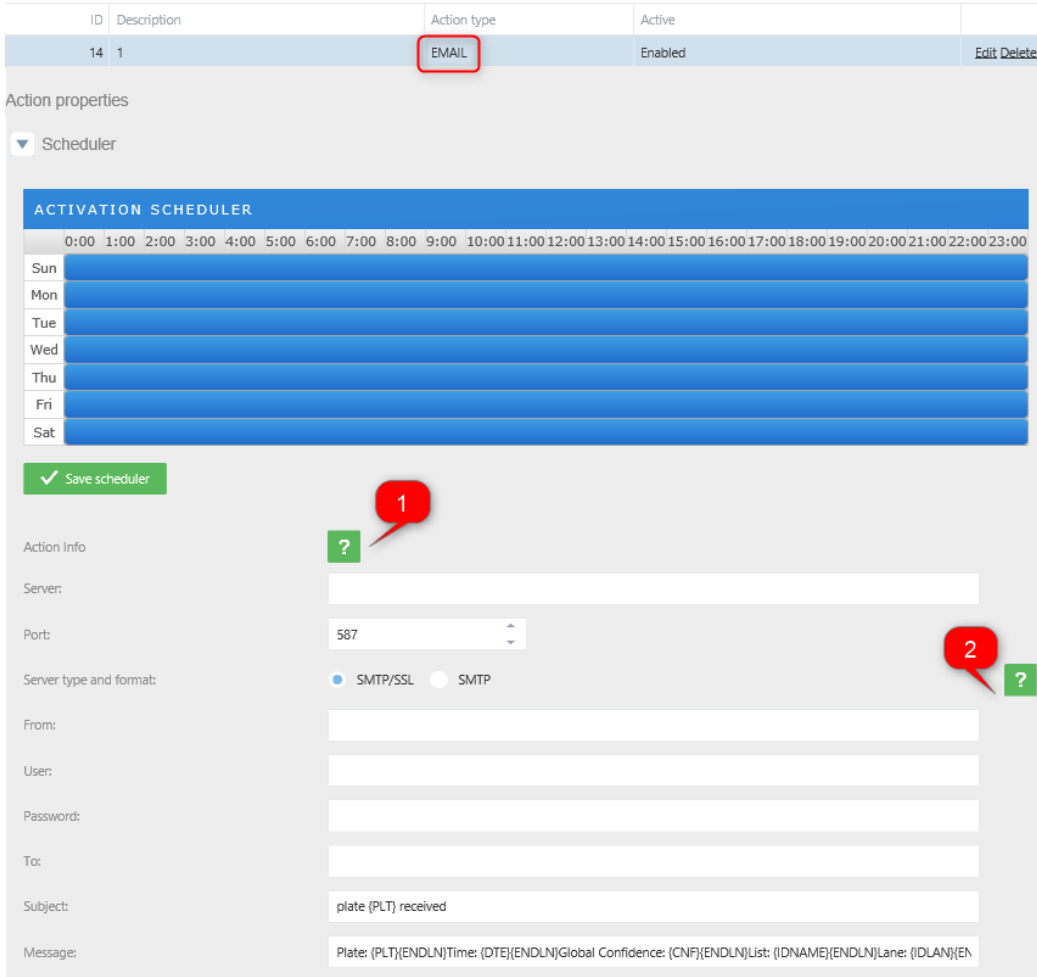
Help ×

The only supported format is JPG


The image files will be stored in the following folders structure:
cameraID/year/month/day

The image file name will follow the layout: YYYYMMDD-
hhmss_cameraID_plate.jpg

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



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

Click on  for more information about how to configure.


Help



Send an email

The parameters are the following:

- **Server:** Email Server
 - **Port:** Email port
 - **Server type and format:** Type of email server
 - **From:** From email address
 - **User:** Email user
 - **Password:** Email password
 - **To:** To email address
 - **Subject:** Email subject
 - **Message:** Email message
- *The possible tags to use in Subject/Message are {PLT};Plate, {DTE};Date, {CNF};Confidence, {IDNAME};List name, {IDLIST};List id, {IDLAN};Lane, {ENDLN}; New line

Click on  for more information about format type.

Help

×

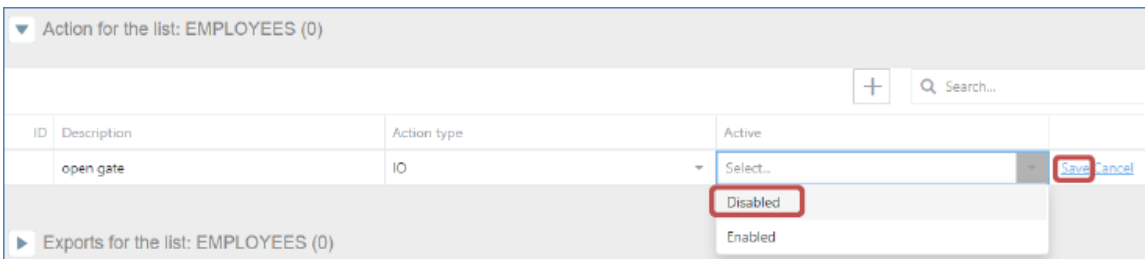
The possible formats are following:

- **SMTP/SSL:** SMTP server over SSL
- **SMTP:** SMTP Server

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

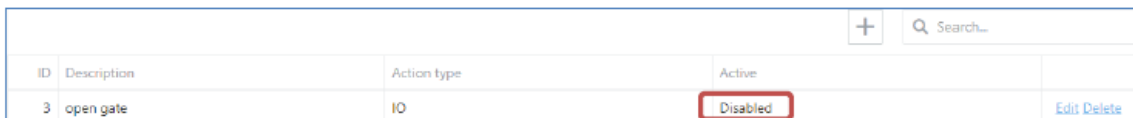
To disable click on the list, select the action and then click on edit option.

In Active change to Disabled and then click on Save.



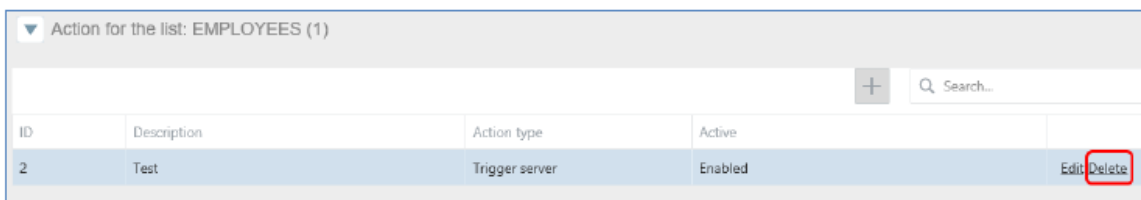
ID	Description	Action type	Active
	open gate	IO	Select...

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



ID	Description	Action type	Active
3	open gate	IO	Disabled

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



ID	Description	Action type	Active
2	Test	Trigger server	Enabled

Are you sure to delete the action from list?

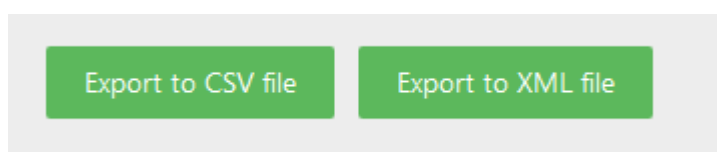
Yes

No

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

- Local matches: Exports the matches of the list locally
- FTP matches: Exports the matches of the to an FTP server
- Local list: Exports the list locally
- FTP list: Export the list to an FTP server

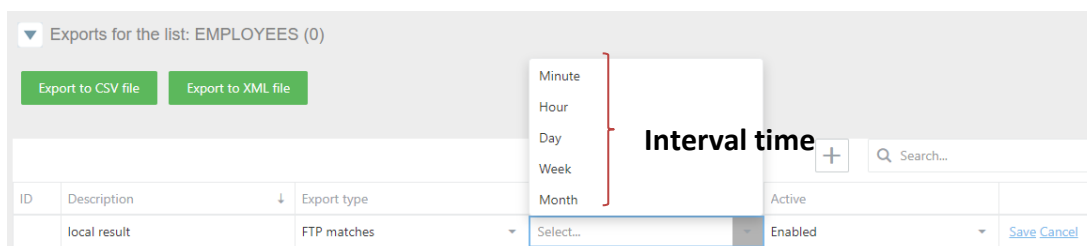
Users can also download the selected list by choosing “Export to XML file” or “Export to CSV file”.



A list can perform several exports, depending on the scenarios and needs.

Having the Employees list selected, click on “Exports for the list” and then click on the + button and define the type and interval. The interval can be set as:

- *Minute*: Will execute the task every minute.
- *Hour*: Will execute the task every hour.
- *Day*: Will execute the task once a day at 23:59:59.
- *Week*: Will execute the task once a week, every Monday at 00:00:00.
- *Month*: Will execute 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, using “VIVOTEK VIP” list, click on “Export for the list” and add a new export by clicking on “+” and then select in “Export type = FTP matches”.

ID	Description	Export type	Interval	Active	
1	local result	FTP matches	Hour	Enabled	Edit Delete

Export properties

Export Info

Host:

Port:

Format: XML XML_IMG JSON JSON_IMG CSV

Folder name:

User:

Password:

Confirmation file: NONE .FLAG .CONF

Click on  for more information about how to configure.

Help ×

Export the results in an FTP server

The parameters are the following

- **Host:**Ftp server IP
- **Port:**Ftp server port
- **Format:**The message type (XML/JSON)
- **Folder:**Ftp folder to save the messages
- **User:**Ftp user
- **Password:**Ftp password
- **Confirmation file:**In order to track if all images have been sent to the FTP server you can select .flag or .conf that will generate a single file per each correct action to FTP.

Click on  for more information about format type.

Help ×

The possible formats are following

- **XML:**XML results without image [Download Sample](#)
- **XML_IMG:**XML results with image [Download Sample](#)
- **JSON:**JSON results without image [Download Sample](#)
- **JSON_IMG:**JSON results with image [Download Sample](#)
- **CSV:**CSV results [Download Sample](#)

2. Configuring the export **FTP lists** to export the list locally, using the “VIVOTEK VIP” list, click on “Export for the list” and add a new export pressing “+” and then select in “Export type = FTP list”.

ID	Description	Export type	Interval	Active	
1	local result	FTP list	Hour	Enabled	Edit Delete

Export properties

Export Info

Host:

Port:


Format: XML CSV

Folder name:

User:

Password:

Confirmation file: .FLAG


Click on  for more information about how to configure.

Help ×

Export the lists in an FTP server

The parameters are the following

- **Host:**Ftp server IP
- **Port:**Ftp server port
- **Format:**The message type (XML)
- **Folder:**Ftp folder to save the lists
- **User:**Ftp user
- **Password:**Ftp password
- **Confirmation file:**In order to track if all files have been sent to the FTP server, it will generate a single file per each correct action to FTP.

Click on  for more information about format type.

Help ×

The possible formats are following

- **XML:**XML list [Download Sample](#)
- **CSV:**CSV list [Download Sample](#)

If users don't want to continue to use export in a list, users can disable or delete the action. To delete, click on the list. Select the export and then click on the delete option.

ID	Description	Export type	Interval	Active	
2	11111	FTP list	Minute	Enabled	Edit Delete

To disable, click on the list. Select the action, and then click on "Edit". The *Active* status will be changed to "Disabled". Click on "Save" to save this new configuration.

ID	Description	Export type	Interval	Active	
2	11111	FTP list	Minute	Disabled	Save Cancel

After this change, the action is temporarily disabled in case users need to use it later. The "Enable if change" status, 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	11111	FTP list	Minute	Enabled if change	Save Cancel

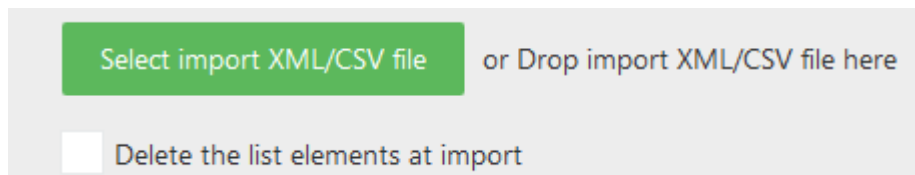
To delete an action, click on the action and click on the "delete" button and then "YES".

ID	Description	Export type	Interval	Active	
2	11111	FTP list	Minute	Enabled	Edit Delete

Import for the list: Here are all the automatic imports users can configure on 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 by manually uploading an xml list file.



The format of the XML is as follows:

```
<?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"/>

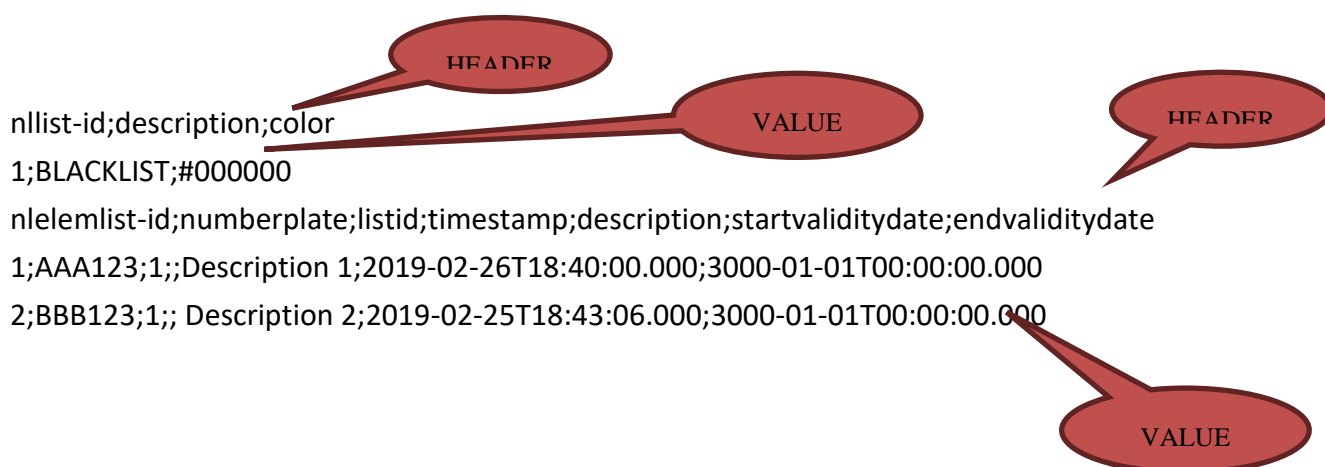
<nlelemlist id="2" sendserver="0" dateserver="" reserve="" numberplate="BBB321" listid="3" timestamp=""
description="EMP 2" startvaliditydate="2000-01-01T00:00:00.000" endvaliditydate="3000-01-01T00:00:00.000"/>

</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 ""
- Nlemlists: the group of the elements of the list
- Nlemlist: 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 and define the type and interval. The interval can be set as:

- *Minute*: Will execute the task every minute.
- *Hour*: Will execute the task every hour.
- *Day*: Will execute the task once a day at 23:59:59.
- *Week*: Will execute the task once a week, every Monday at 00:00:00.
- *Month*: Will execute 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, using the EMPLOYEES list, click on "Import for the list" and add a new import pressing "+" and then select in "Import type = FTP list".

ID	Description	Import type	Interval	Active	
1	import	FTP list	Day	Enabled	Edit Delete

Import properties

Import Info ?

Host:

Port:

Format: XML XML_NOTDELETE CSV CSV_NOTDELETE ?

Folder name:

User:

Password:

Confirmation file: .FLAG

Click on  for more information about how to configure.


Help



Import the lists from an FTP server

The parameters are the following

- **Host:**Ftp server IP
- **Port:**Ftp server port
- **Format:**The message type (XML)
- **Folder:**Ftp folder to save the lists
- **User:**Ftp user
- **Password:**Ftp password
- **Confirmation file:**In order to track if list have been receive from the FTP server.

Click on  for more information about format type.

Help



The possible formats are following


- **XML:**XML list [Download Sample](#)
- **XML_NOTDELETE:**XML list (Not delete the old elements)[Download Sample](#)
- **CSV:**XML list [Download Sample](#)
- **CSV_NOTDELETE:**XML list (Not delete the old elements)[Download Sample](#)

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

+

ID	Description	Import type	Interval	Active	
5	23232	SINCRO camera	Minute	Enabled	Edit Delete

Import properties

Import Info 

Host:

User:

Password:

Click on  for more information about how to configure.

Help



Import the lists from a Camera

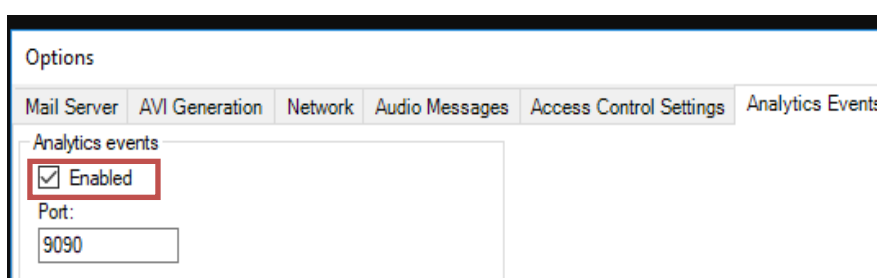
The parameters are the following

- **Host:**Camera master IP
- **User:**Camera master user
- **Password:**Camera master password

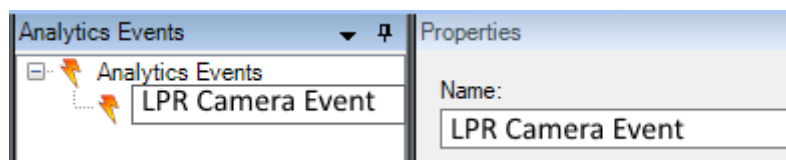
4.4.1 Configure Milestone

After the Milestone action is configured, users will need to set up Milestone VMS server to process this action. Please follow the next steps,

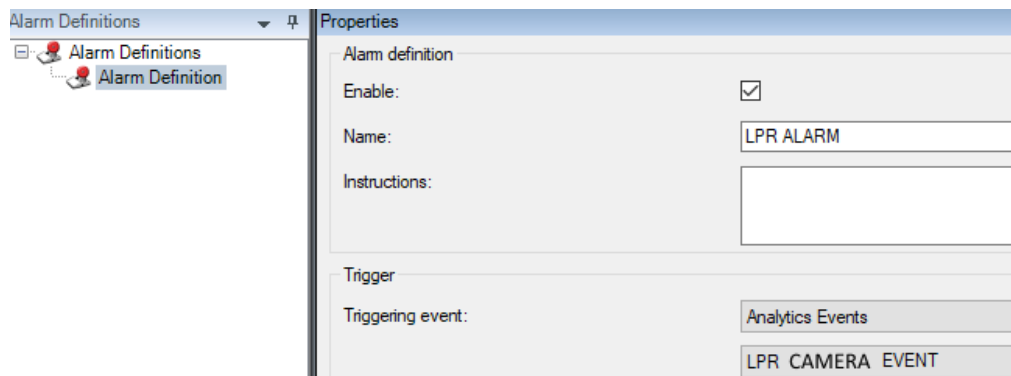
- 1- Enable analytic events.
 - a. Click on “Tool” -> “Options” and select the “Analytics Event” tab. At this tab users will activate the Analytics events.



- 2- Create the analytic event.
 - a. Click on “Rules and Events” -> “Analytics Events”. And then right-click 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. Right click on alarm definition and we create a new alarm definition on:
 - i. Enable: This alarm is enabled at system
 - ii. Name: The alarm name
 - iii. Triggering event: selecting Analytic Events is required
 - iv. Triggering event source: Selecting the source before creating an analytic event
 - v. Source: Selecting the camera at milestone system is required



4.5. LPR Configuration Tab

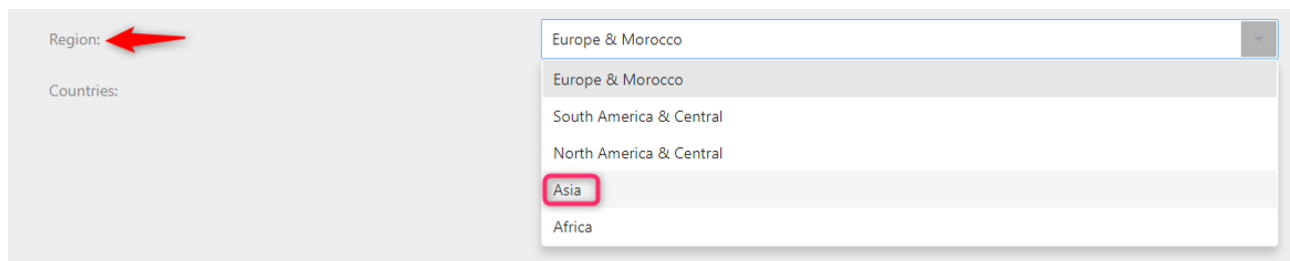
In this tab, users will set the proper configuration for the LPR camera depending on the scenario where will be located (indoor, outdoor) and the necessity (parking, control of access points, security, tolls, road offenses, etc.).

“Restart service” is required every time when users modify a setting in LPR Configuration Tab.

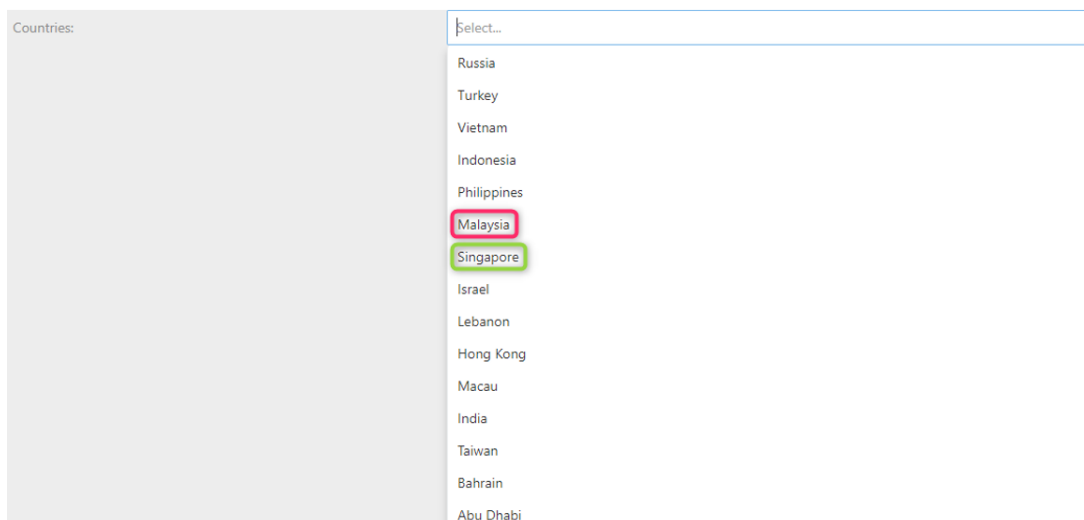
Restart service

First step is selecting a region and a country. For example, let's configure VIVOTEK ANPR to read plates from Malaysia and Singapore.

In Region, select Asia.



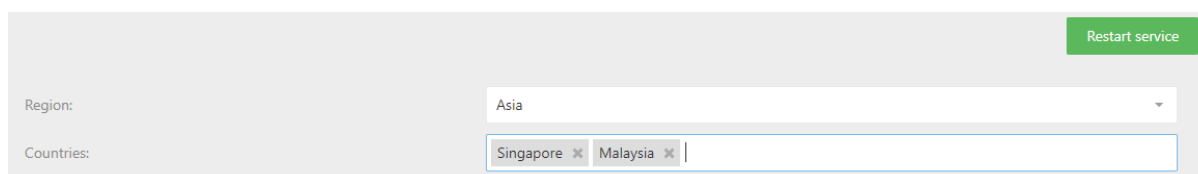
In countries, search and select one or multiple countries.



After selecting the countries, restart service by clicking the button.

Restart service

Now you are ready to read license plates for these two countries.



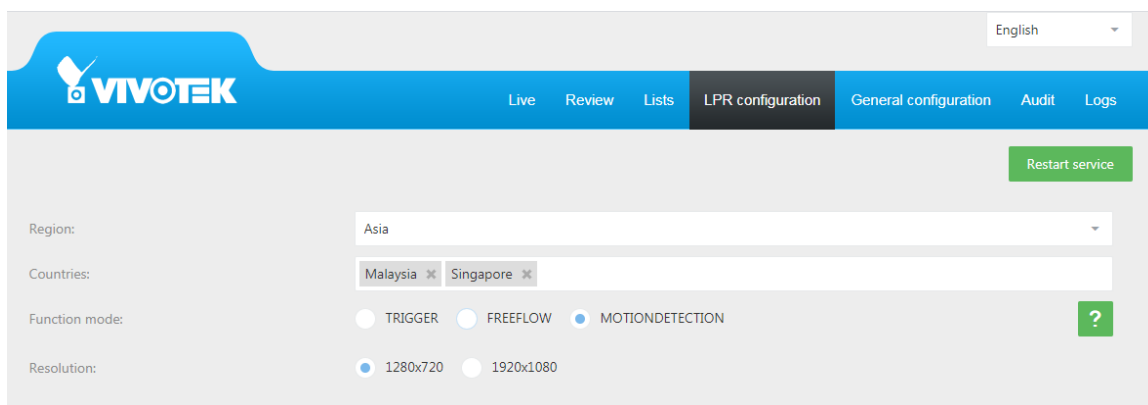
Function Mode: This LPR camera supports 3 LPR processing modes.

- **Trigger:** The camera will read license plate number only when a trigger is activated such as an induction loop, laser... etc.
- **Free Flow:** The camera is continuously processing all the frames/images. It is not recommended unless there is a constant flow of vehicles.
- **Motion Detection (Set by default):** The camera will read license plate number only when the frame difference is over the motion threshold.

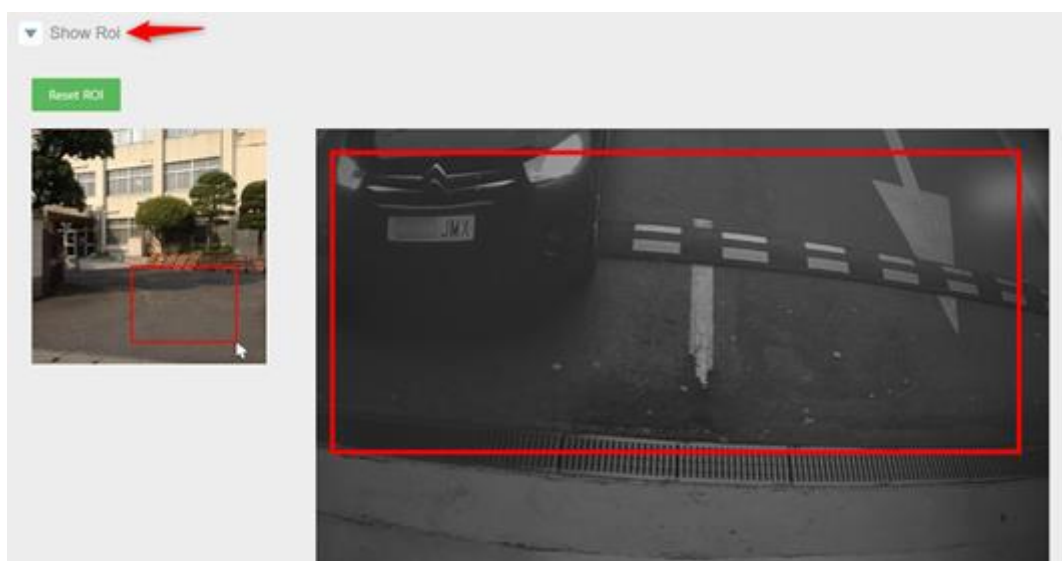
Resolution: The camera resolution by default for license plate recognition is 1280 x 960, you also can choose 1920 x 1440 to increase more pixel density of the license plate numbers, for example with 2 Lanes LPR readings.

Users can configure the camera resolution according to their installation, e.g. you might need to increase the camera resolution when the capture distance is far. Please be noted that the higher resolution doesn't mean higher LPR accuracy.

The camera resolution here is only for LPR processing, and it has nothing to do with the camera parameters in video recording. In other words, this VIVOTEK’s stop-and-go LPR camera is not only a standalone LPR camera; it is also a video surveillance camera. The maximum camera resolution and frame rate per second for video surveillance purpose are 2560x1920 (5MP) at 30fps or 1920x1080 at 60fps.



Show ROI: Users can draw a region of interest on the camera image. The LPR engine will only process and read the license plate in this region. Please be noted that license plate must be seen completely in this ROI.



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

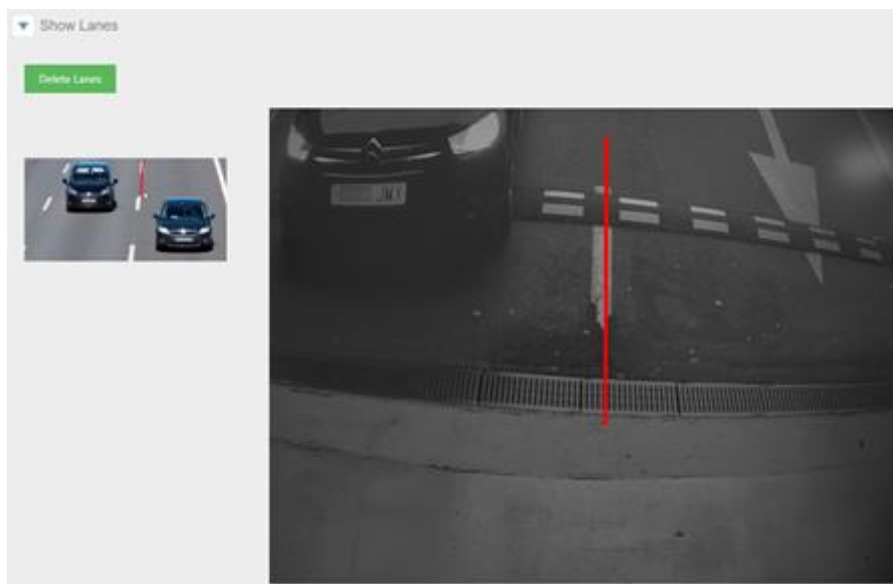
Draw 2 points into the road following the steps:

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

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

Click on the “**Restart Service**”  button for the configuration to take effect.

Show Lanes: Users can configure 2 lanes by drawing a line. The maximum number is 2.

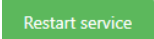


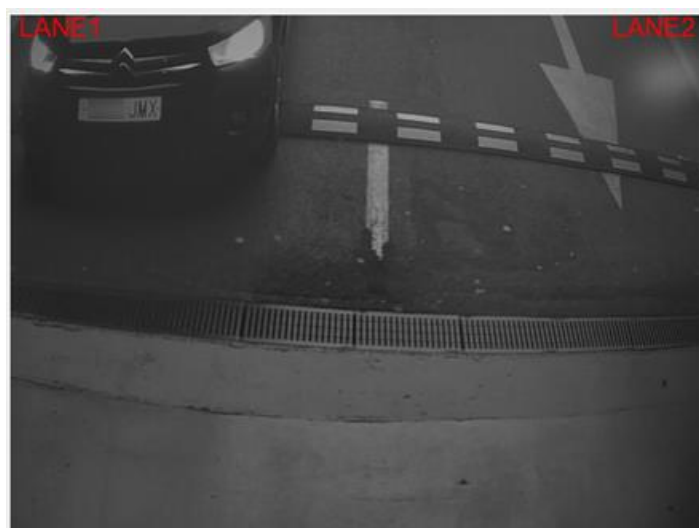
Click on “Show Lanes”, the wizard will guide you on how to draw it.

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.



VIVOTEK ANPR will read the license plate and indicate on which lane the license plate was detected.

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

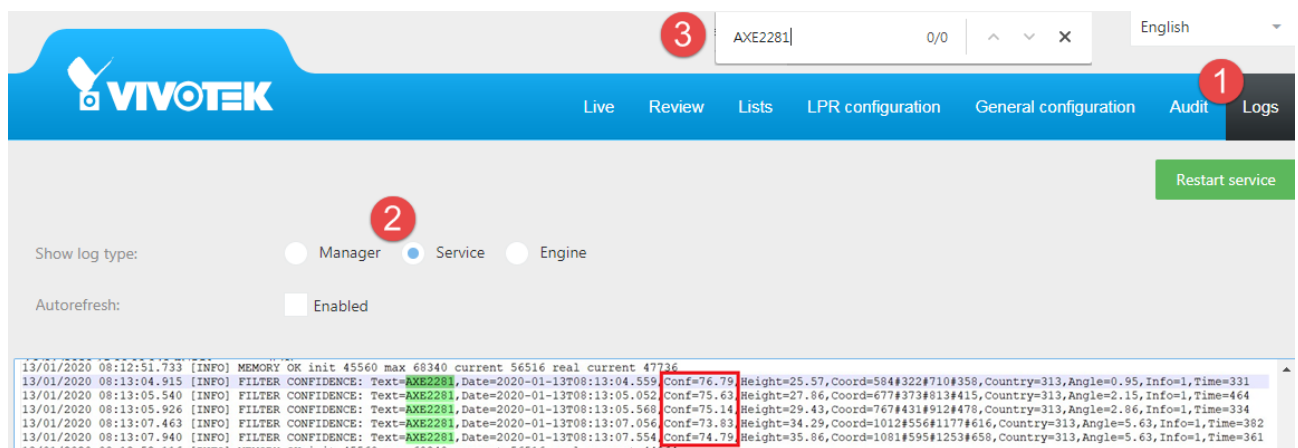
Minimum character height: Minimum character size. Very useful for cases where users want to ensure a minimum character size. 25 being the recommendation

Maximum character height: Maximum character size. Very useful for cases where users want to ensure a maximum character size.

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 (value of 1-100, where 100 is the most reliable). 80 being the recommendation

[TIPS]: if the confidence of LPR reading is lower than the confidence level, the LPR result won't show up and the engine will keep read the number plate and the result will be shown up when it reach the confidence level. If you found the LPR reading is slow for some specific plates, you can go to **log tab** to see if it filtered by the confidence level.

1. Go to Logs → check log type: Service → searches the number plates to see the reading process.
2. And you can see the reading process even the confidence lower than the level.



3 AXE2281 0/0 English

Live Review Lists LPR configuration General configuration Audit 1 Logs

Restart service

2 Show log type: Manager Service Engine

Autorefresh: Enabled

```

13/01/2020 08:12:51.733 [INFO] MEMORY OK init 45560 max 68340 current 56516 real current 47736
13/01/2020 08:13:04.915 [INFO] FILTER CONFIDENCE: Text=AXE2281,Date=2020-01-13T08:13:04.559,Conf=76.79,Height=25.57,Coord=584#322#710#358,Country=313,Angle=0.95,Info=1,Time=331
13/01/2020 08:13:05.540 [INFO] FILTER CONFIDENCE: Text=AXE2281,Date=2020-01-13T08:13:05.052,Conf=75.63,Height=27.86,Coord=677#373#813#415,Country=313,Angle=2.15,Info=1,Time=464
13/01/2020 08:13:05.926 [INFO] FILTER CONFIDENCE: Text=AXE2281,Date=2020-01-13T08:13:05.568,Conf=75.14,Height=29.43,Coord=767#431#912#478,Country=313,Angle=2.86,Info=1,Time=334
13/01/2020 08:13:07.463 [INFO] FILTER CONFIDENCE: Text=AXE2281,Date=2020-01-13T08:13:07.056,Conf=73.83,Height=34.29,Coord=1012#556#1177#616,Country=313,Angle=5.63,Info=1,Time=382
13/01/2020 08:13:07.940 [INFO] FILTER CONFIDENCE: Text=AXE2281,Date=2020-01-13T08:13:07.554,Conf=74.79,Height=35.86,Coord=1081#595#1253#658,Country=313,Angle=5.63,Info=1,Time=361
13/01/2020 08:13:09.116 [INFO] MEMORY OK init 45560 max 68340 current 56516 real current 44652

```

FPS: Maximum frames per second to process. 5 being the recommendation

Connection Type: You need to select the option, how user will get the image to process

VIVOTEK: Camera streaming.

▼ Expert Options

Info: ?

Minimum character height:

Maximum character height:

Minimum confidence (%):

Fps:

Connection type: VIVOTEK ?

Click on the **“Restart Service”** Restart service button to take effect.

Trigger Mode: VIVOTEK ANPR 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 NCaptures, or the time exceeds Timeout.

Function mode: TRIGGER FREEFLOW MOTIONDETECTION

Resolution: 640x480 800x600 1280x720 1600x904 1920x1080

▶ Show Roi

▶ Show Lanes

▶ Expert options

▼ Trigger options

Trigger captures:

Trigger timeout:

Trigger IO device: VIVOTEK

Trigger IO port: 0 1

Trigger Captures: How many images do users want to process from reading license plates to stop.

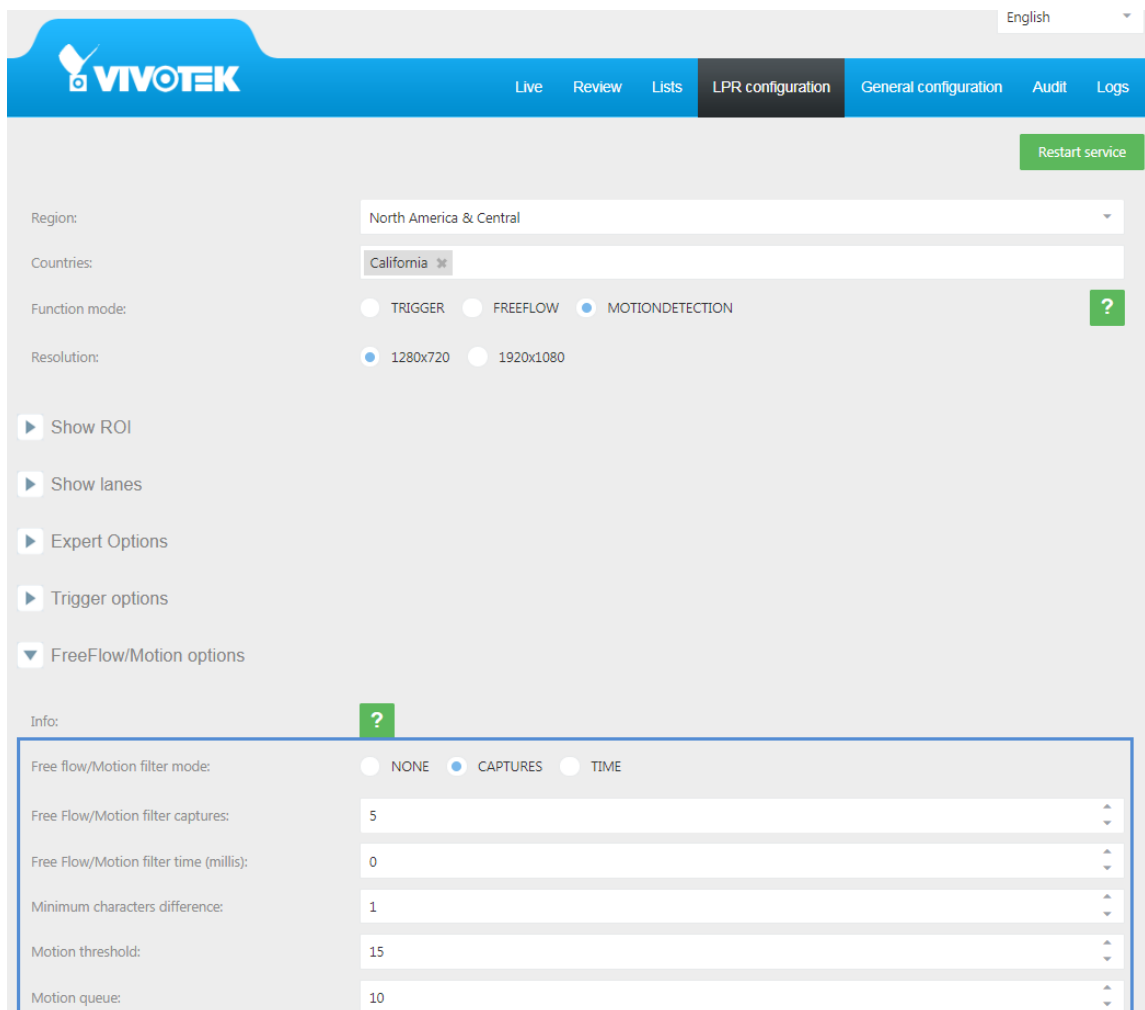
Trigger Timeout: How many seconds do users want to process from reading license plates to stop.

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

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

Click on the **“Restart Service”** Restart service button for the configuration to take effect.

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



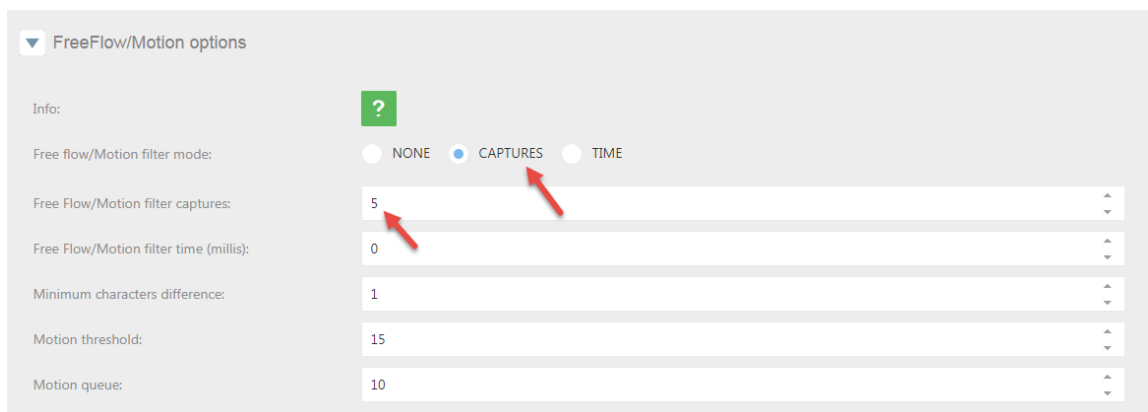
In the blue square, users can define repetition filters.

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 (millis): Minimum time elapsed from the detection of the same license plate to it being accepted again in the system.

For example, if users have the camera in a parking garage and there is a traffic jam, users don't want to read the same license plate continuously, in that case, the best filter is for captures, please do the following.

Select "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 (millis): 0

Minimum characters difference: 1

Motion threshold: 15


Motion queue: 10

With this configuration, once a license plate is read, it will not be read again until another 5 different license plates have been read.

Minimum characters difference: this faulty tolerance allows you to improve the vehicle passing flow especially for the parking usage. Some parking system will allow vehicle pass in first even with some LPR error readings, then user can choose the right one when they doing the payment.

Motion threshold: The motion threshold is the threshold to consider an image different from other image, for the motion mode. Value ranges from 0 to 100.

Motion queue: The motion queue is the number of images in an internal queue. Be careful because more images increase the LPR process memory. For the parking application, in order to open the barrier immediately after the LPR readings, the recommendation value is 1. (General reacting time from readings to action should be less than 3~5 sec.)

After all the changes are made, remember always to restart service. Click on the  button.

If users need to restart all configurations for this section, click on  the button.

4.6. General Configuration Tab

In this tab, configure general parameters:

Restart service

- ▶ Expert options
- ▶ Log options
- ▶ Purge options
- ▶ Maintenance Options
- ▶ Customized Options

Restart default configuration

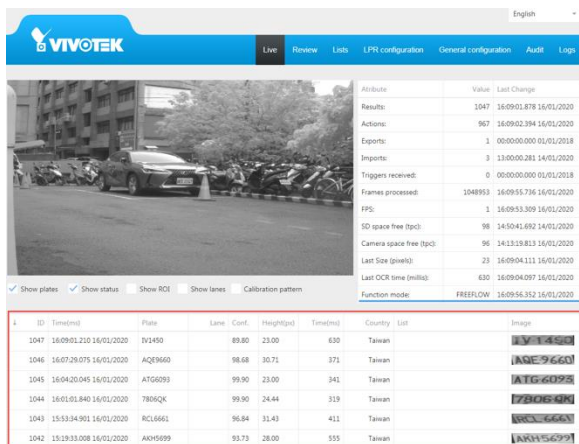
Copyright © 2020

Expert Options:

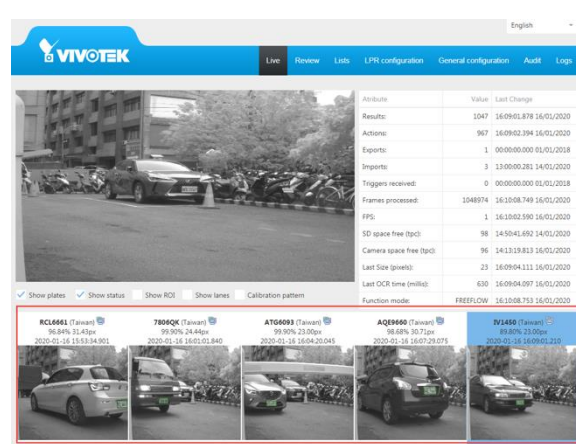
View type: user can choose the viewing type either LIST or SQUARE shown as below:

LIST:

SQUARE:



ID	Time(ms)	Plate	Lane	Conf.	Height(m)	Time(ms)	Country	List	Image
1047	16:09:01.210	DV1450	89.80	23.00	630		Taiwan		
1046	16:07:29.075	AQE9660	98.68	30.71	371		Taiwan		
1045	16:04:20.045	ATG6093	99.90	23.00	341		Taiwan		
1044	16:01:01.840	7805QK	99.90	24.44	319		Taiwan		
1043	15:53:34.901	RCL6661	96.84	31.43	411		Taiwan		
1042	15:19:33.008	AKH5699	93.73	28.00	555		Taiwan		



Save the image: will store the complete image in a folder.

Save the plate image: will only store the license plate image in a folder.

Image quality: will store the image with the compression configuration.

Store image on: will store data on an SD.

Trigger Socket Port: will enter the port we want to use for sending XML/JSON messages.

Expert Options

Info: ?

View type: LIST SQUARE

Save the image:

Save the plate image:

Image quality:

Store image on: SD

Trigger Socket port:

Action time: IMMEDIATE PERSISTENT

Log Options:

Log Level: User can determine the log level to register what is going on with VIVOTEK ANPR. By default, is set to 3. Level 4 and 5 are for experts and debugging team.

Activate log engine: Select only if debugging mode is necessary, only for expert technicians.

Log Level CGI (manager): User can determine the log level to register what is going on with the CGI. By default, is set to 3. Level 4 and 5 are for experts and debugging team.

Log options

Info: ?

Log level service:

Enable engine log:

Log level manager:

Purge Options: Users can determine how many days or free spaces of data users 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 users want to execute the purge.

Hour: Will execute the task every hour.

Day: Will execute the task once a day at 23:59:59.

Week: Will execute the task once a week, every Monday at 00:00:00.

Month: Will execute 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 users want to purge.

Disabled: Won't execute any purge.

Days: Will purge by days, keeping data for the last days.

Freespace: Will purge depending on the free space in the SD or in the camera.

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

Purge by days:

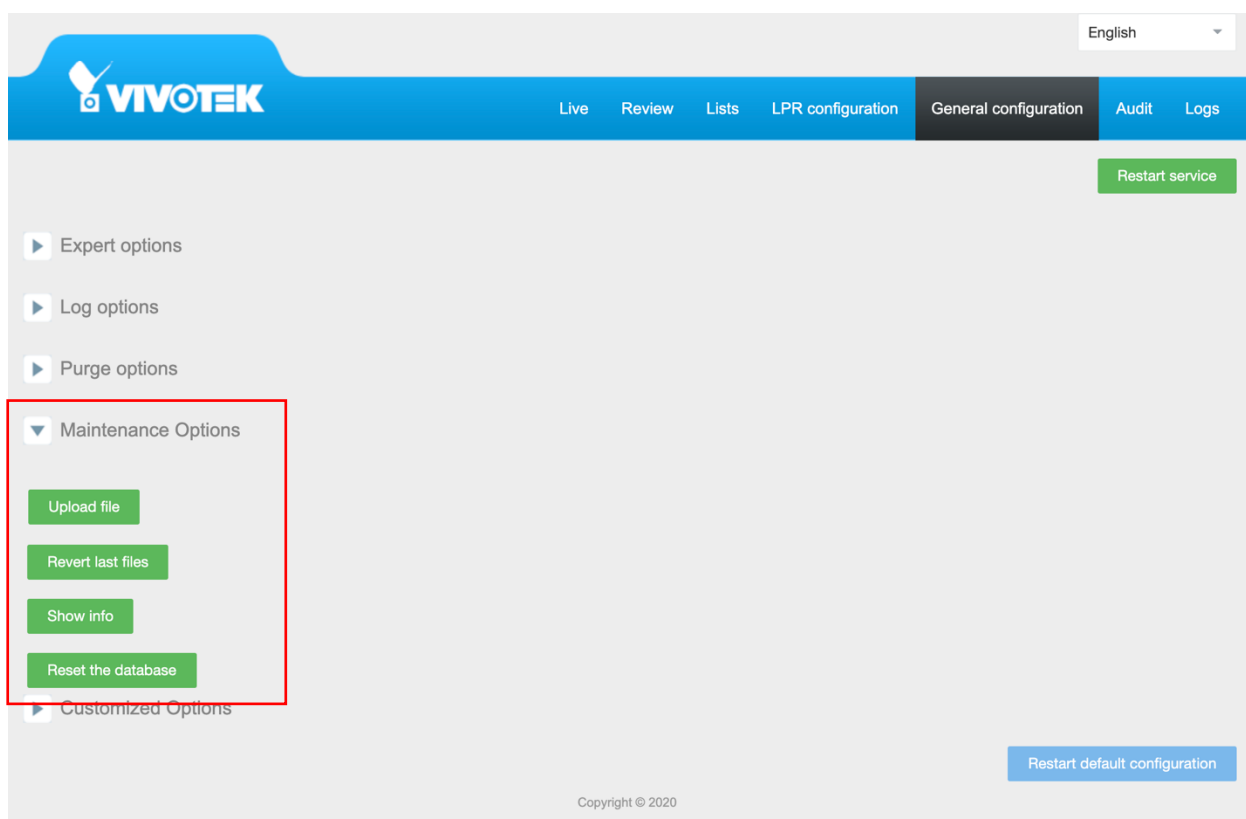
- Days to preserve in storage: Will keep LPR dates and files of the last (XX) days and purge the rest.

Purge by Free Space:

- Minimum percentage of free space on SD:
Will delete from the oldest images and files stored when the free space on the SD card is lower than configured.
- Minimum percentage of free space on CAMERA:
Will delete from the oldest LPR results of database when the free space of the camera flash is lower than configured.

Maintenance Options:

In this section you can upload files for camera configuration, licensing, update VIVOTEK ANPR version, change the logo and upload images for the path option displayed in the Camera Configuration tab. Also you can revert the configuration file to last files and reset the database.



Upload File: Users can upload a file.

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

Show Info: Show you information about the version and camera MAC address.

Information



Version 3.1.7.3

Mac address 00:02:D1:87:7D:28

Reset the database: you can reset the database, and it would require password which is your full Mac address including colon symbols. Once you reset the database you need to go to camera configuration page on Applications -> Package management to stop and start the ANPR service.

Reset the database

This process will clear all ANPR results including number plate readings, actions, exports, imports from the camera, do you want to continue?

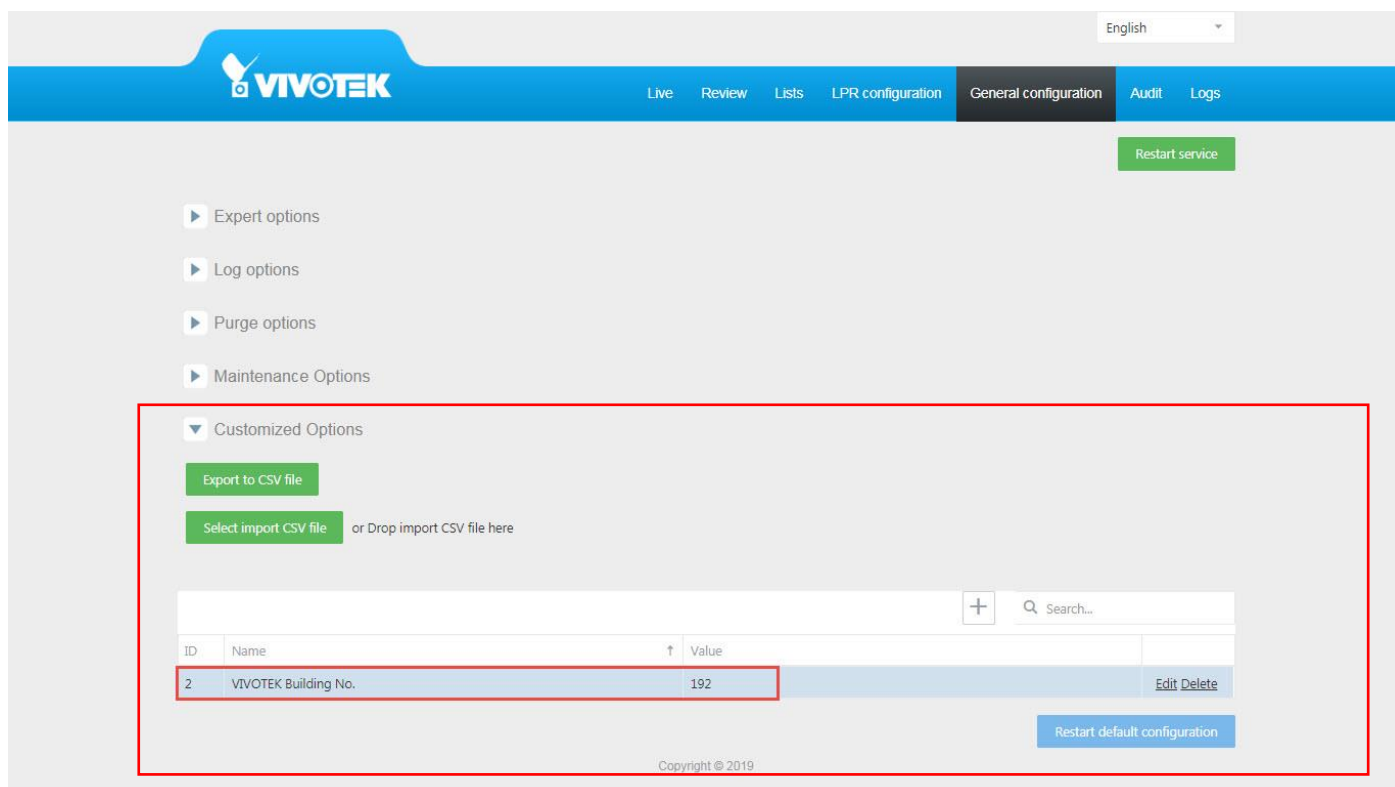
Password:

Yes

No

Customized Options:

In this section you export or import your ANPR configuration, also you can have customized columns (Name and Value) in export file.



English

VIVOTEK

Live Review Lists LPR configuration General configuration Audit Logs

Restart service

▶ Expert options

▶ Log options

▶ Purge options

▶ Maintenance Options

▼ Customized Options

Export to CSV file

Select import: CSV file or Drop import CSV file here

+ Search...

ID	Name	Value	
2	VIVOTEK Building No.	192	Edit Delete

Restart default configuration

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The export XML file example:

<infoplate>

<VIVOTEK Building No.>192</VIVOTEK Building No.>

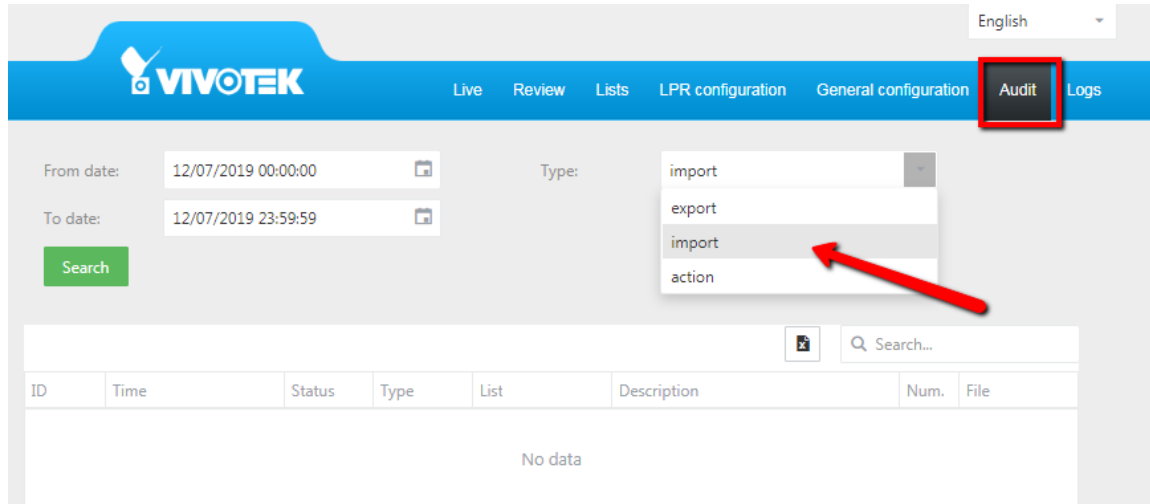
</infoplate>

In case users want to revert, all changes done, and want to get back to the default configuration, click on

[Restart default configuration](#) button.

4.7. Audit Tab

In the Audit tab, users can search by date interval and different event types such as import, export or action.



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

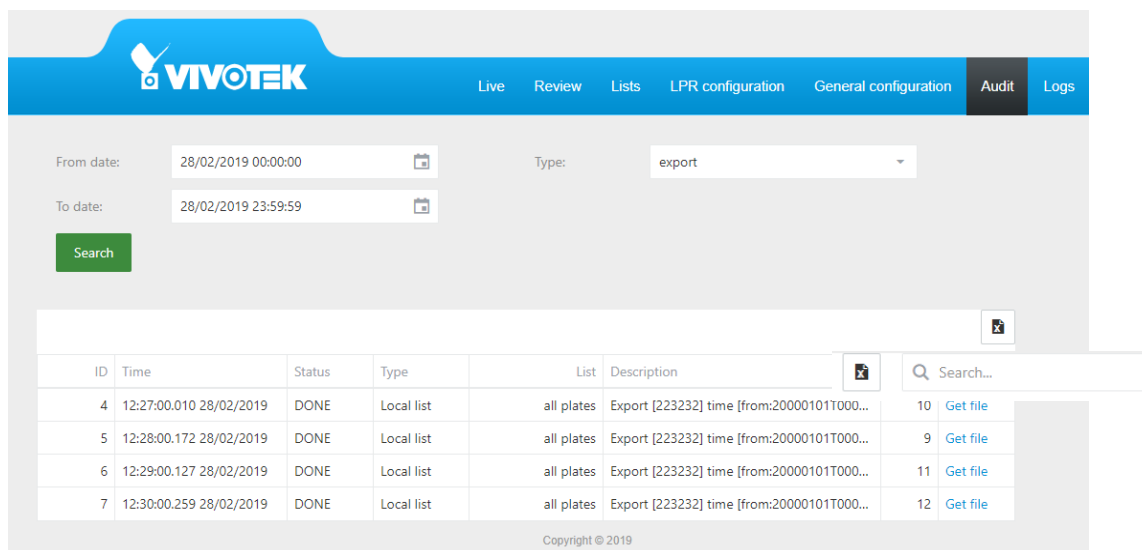
Export: Will show users automatic exports done

Import: Will show users automatic imports done.

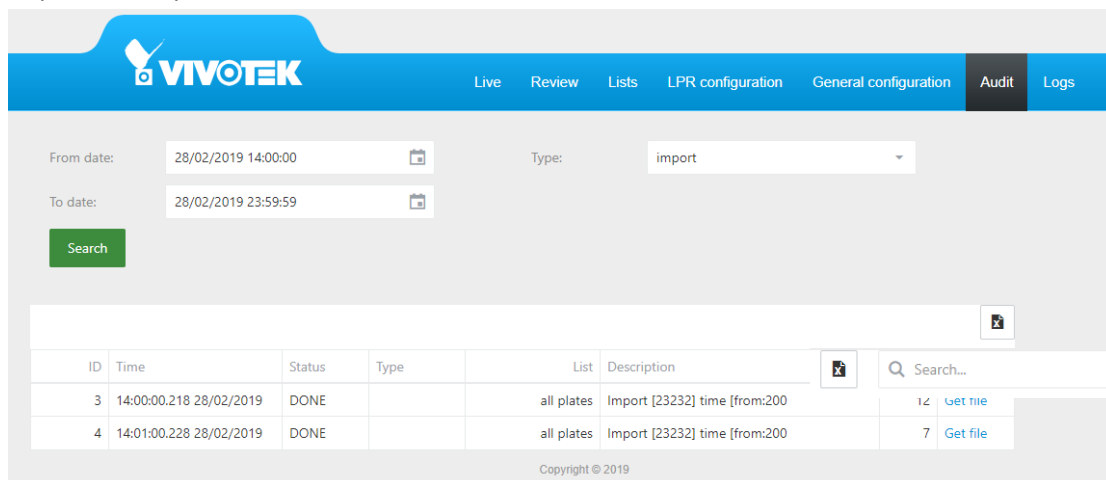
Action: Will show users automatic actions triggered on the lists.

The result of the search can be exported and downloaded.

Exports example:



Imports example:

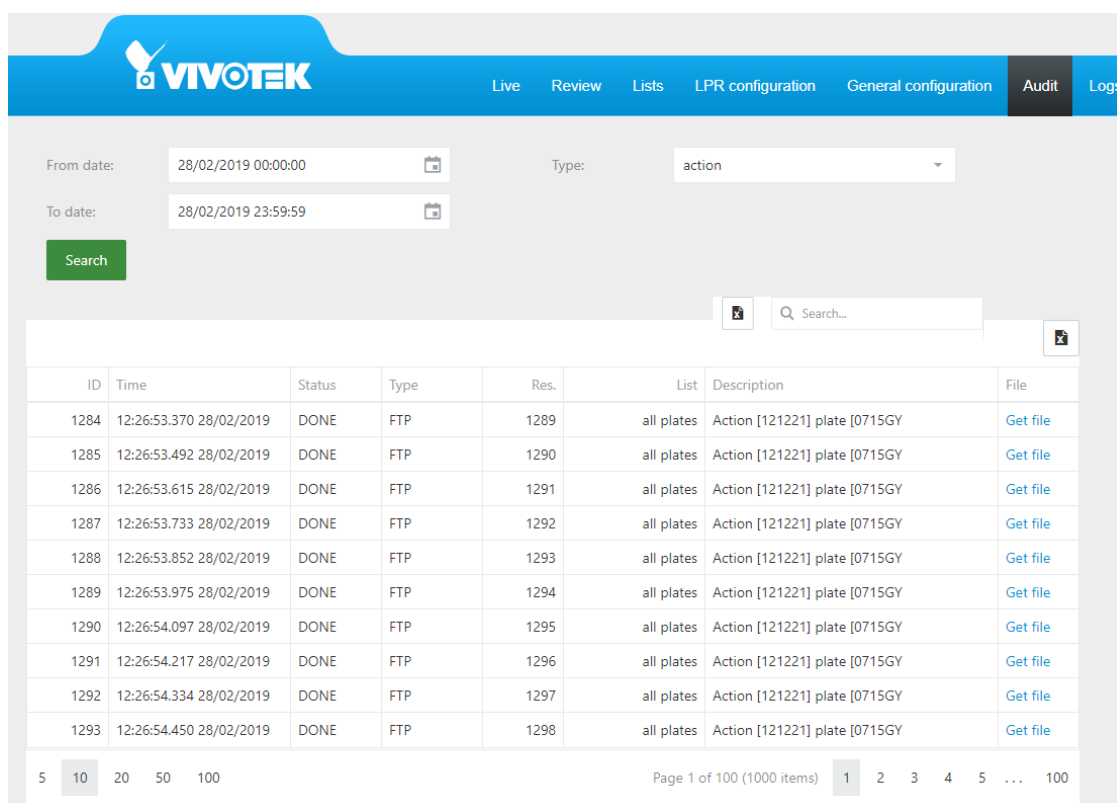


The screenshot shows the VIVOTEK IP Surveillance interface. The top navigation bar includes 'Live', 'Review', 'Lists', 'LPR configuration', 'General configuration', 'Audit', and 'Logs'. The 'Audit' tab is active. Below the navigation bar, there are search filters: 'From date' (28/02/2019 14:00:00), 'To date' (28/02/2019 23:59:59), and 'Type' (import). A green 'Search' button is present. Below the filters is a table with the following data:

ID	Time	Status	Type	List	Description	Count	Action
3	14:00:00.218 28/02/2019	DONE		all plates	Import [23232] time [from:200	12	Get file
4	14:01:00.228 28/02/2019	DONE		all plates	Import [23232] time [from:200	7	Get file

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Actions example:



The screenshot shows the VIVOTEK IP Surveillance interface. The top navigation bar includes 'Live', 'Review', 'Lists', 'LPR configuration', 'General configuration', 'Audit', and 'Logs'. The 'Audit' tab is active. Below the navigation bar, there are search filters: 'From date' (28/02/2019 00:00:00), 'To date' (28/02/2019 23:59:59), and 'Type' (action). A green 'Search' button is present. Below the filters is a table with the following data:

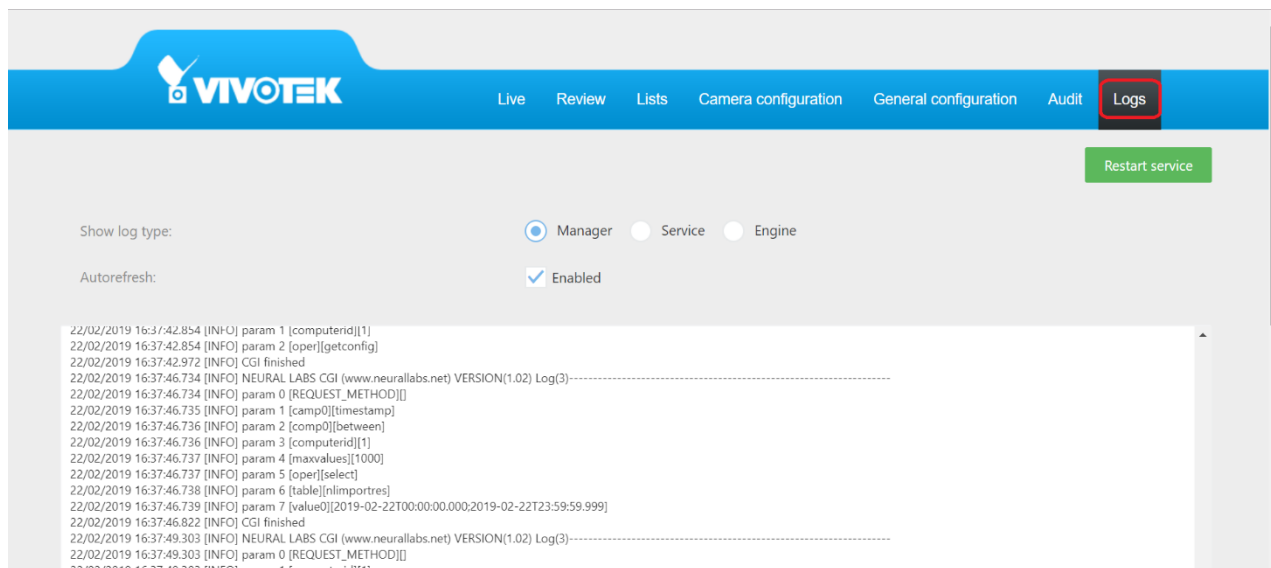
ID	Time	Status	Type	Res.	List	Description	File
1284	12:26:53.370 28/02/2019	DONE	FTP	1289	all plates	Action [121221] plate [0715GY	Get file
1285	12:26:53.492 28/02/2019	DONE	FTP	1290	all plates	Action [121221] plate [0715GY	Get file
1286	12:26:53.615 28/02/2019	DONE	FTP	1291	all plates	Action [121221] plate [0715GY	Get file
1287	12:26:53.733 28/02/2019	DONE	FTP	1292	all plates	Action [121221] plate [0715GY	Get file
1288	12:26:53.852 28/02/2019	DONE	FTP	1293	all plates	Action [121221] plate [0715GY	Get file
1289	12:26:53.975 28/02/2019	DONE	FTP	1294	all plates	Action [121221] plate [0715GY	Get file
1290	12:26:54.097 28/02/2019	DONE	FTP	1295	all plates	Action [121221] plate [0715GY	Get file
1291	12:26:54.217 28/02/2019	DONE	FTP	1296	all plates	Action [121221] plate [0715GY	Get file
1292	12:26:54.334 28/02/2019	DONE	FTP	1297	all plates	Action [121221] plate [0715GY	Get file
1293	12:26:54.450 28/02/2019	DONE	FTP	1298	all plates	Action [121221] plate [0715GY	Get file

Page 1 of 100 (1000 items) 1 2 3 4 5 ... 100

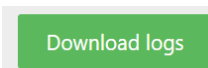
4.8. Logs Tab

In this TAB the user can see /download different logs. The configurations of “Logs” are available in “General configuration” -> “Log options” .

These logs can be useful to diagnose and solve application problems.



The type of the log that the user wants to see must be selected by either manager, Service or Engine. Checking auto update the application will refresh the selected log type.

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

Selected logs will be downloaded in a compressed txt format.



5. Camera list synchronization

The VIVOTEK ANPR system allows a list system to be synchronized.

It's master-slave architecture. One of the cameras works like a master and the other cameras works like slaves.

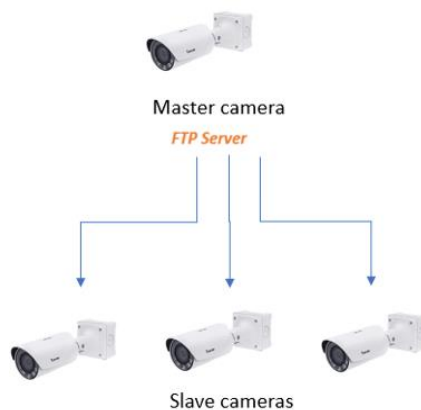
The master camera uploads the file with the list content and the slave cameras downloads the file.

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 the camera slaves; the limit is on the FTP server, depending on the number of connections.

Users can decide whether to synchronize all recorded license plate data, or to synchronize specific license plate list.

5.1. Architecture 1

The camera comes with an FTP server. The FTP service must be activated (by default the FTP server is disabled).



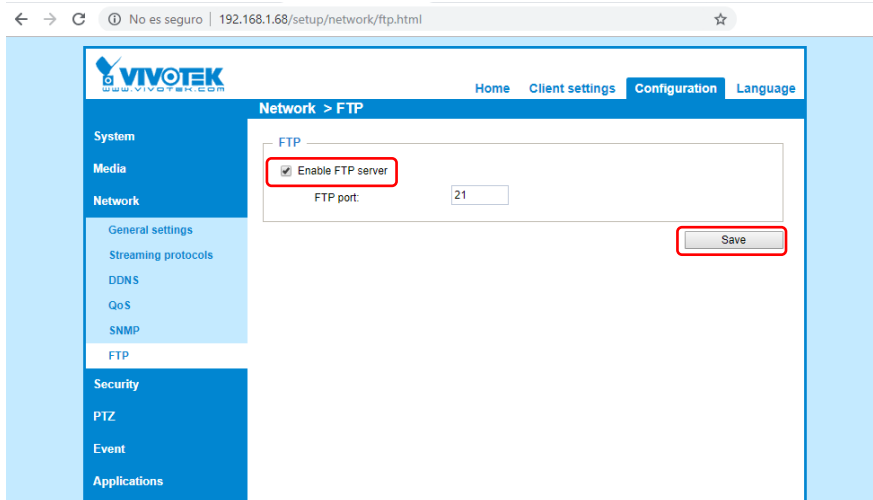
5.1.1. Master configuration

Activate the FTP server.

Access to the camera web interface:

Configuration/Network/FTP

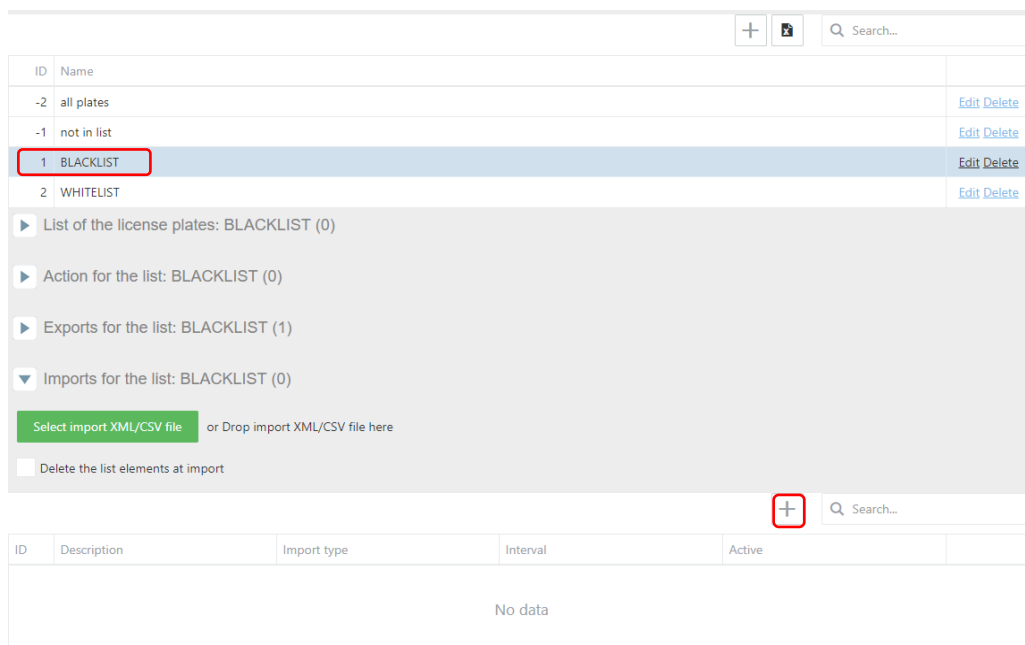
Check "Enable FTP server" and click Save.



5.1.2. Slave configuration

Access to the List Tab.

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



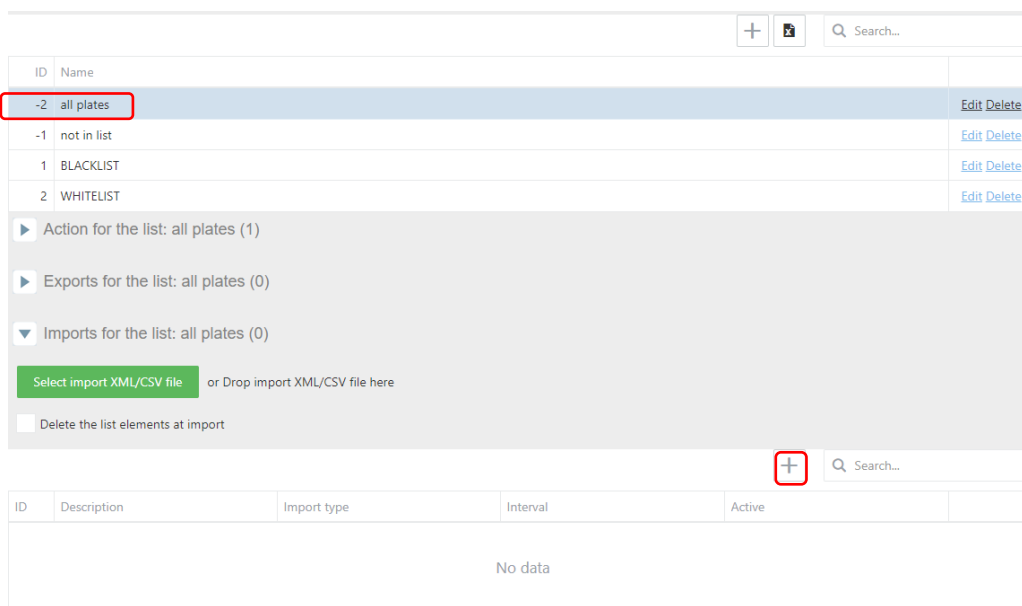
ID	Name	
-2	all plates	Edit Delete
-1	not in list	Edit Delete
1	BLACKLIST	Edit Delete
2	WHITELIST	Edit Delete

▶ List of the license plates: BLACKLIST (0)
 ▶ Action for the list: BLACKLIST (0)
 ▶ Exports for the list: BLACKLIST (1)
 ▼ Imports for the list: BLACKLIST (0)

or Drop import XML/CSV file here
 Delete the list elements at import

ID	Description	Import type	Interval	Active
No data				

To configure all the list, selects all plates.



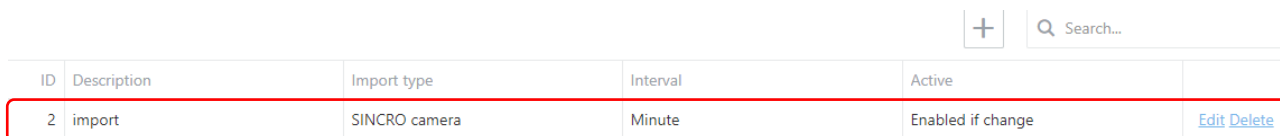
ID	Name	
-2	all plates	Edit Delete
-1	not in list	Edit Delete
1	BLACKLIST	Edit Delete
2	WHITELIST	Edit Delete

▶ Action for the list: all plates (1)
 ▶ Exports for the list: all plates (0)
 ▼ Imports for the list: all plates (0)

or Drop import XML/CSV file here
 Delete the list elements at import

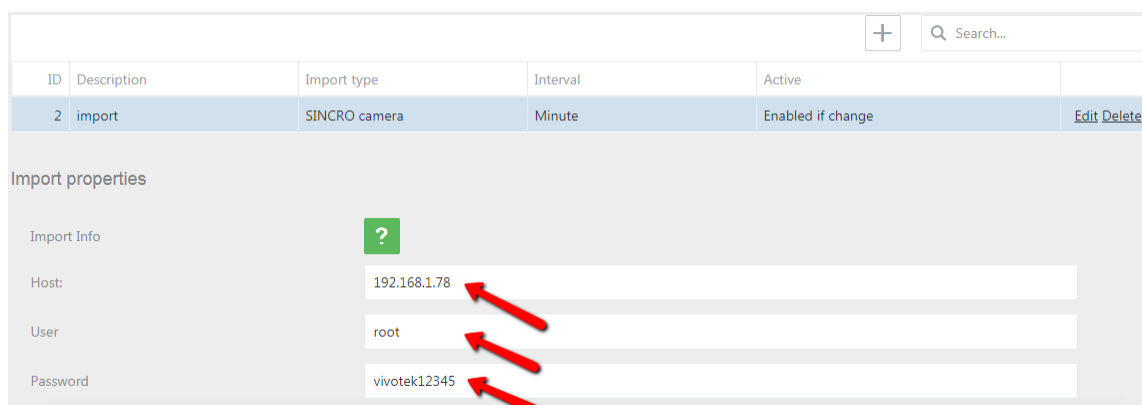
ID	Description	Import type	Interval	Active
No data				

An import configuration can be added for a slave camera's license data list. User can use the SINCRO Camera import, and determine how often the data is synchronized, or to synchronize when changes occur to the list. Create an import each minute (or other desirable time) the time enabled if change with the types SINCRO Camera and click on Save.



ID	Description	Import type	Interval	Active
2	import	SINCRO camera	Minute	Enabled if change

Configure the master camera credentials.



Import properties

Import Info ?

Host: 192.168.1.78

User: root

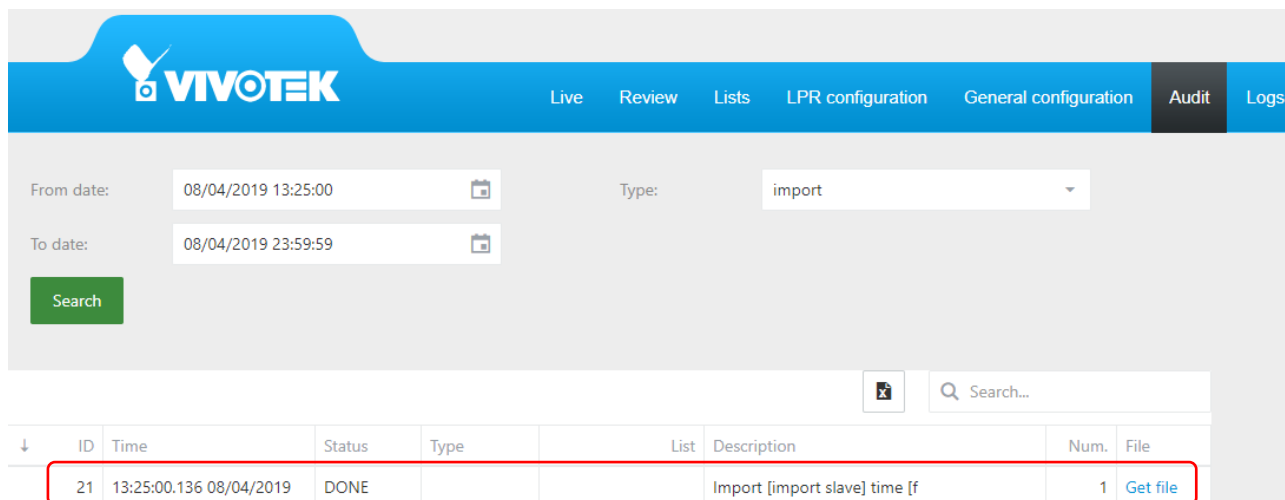
Password: vivotek12345

Host: Camera master IP

User: Camera master user

Password: Camera master password

This setting can be verified in the "Audit Tab".

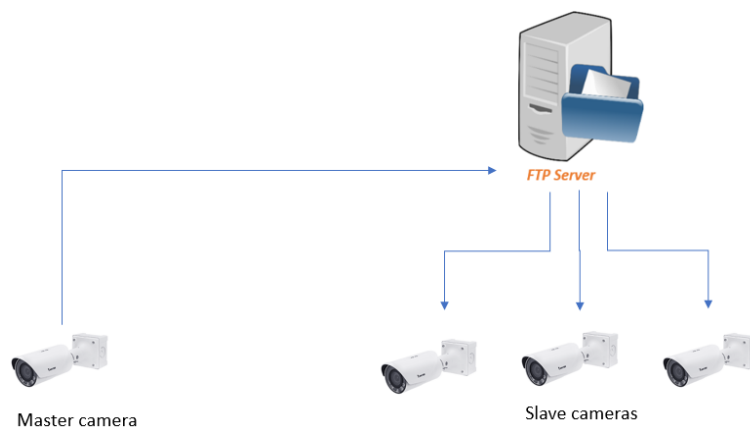


The screenshot shows the VIVOTEK IP Surveillance web interface. At the top, there are navigation tabs: Live, Review, Lists, LPR configuration, General configuration, Audit, and Logs. Below the navigation, there are search filters: 'From date' (08/04/2019 13:25:00), 'To date' (08/04/2019 23:59:59), and 'Type' (import). A green 'Search' button is present. Below the filters is a search bar with a magnifying glass icon and the text 'Search...'. A table with the following columns is displayed: ID, Time, Status, Type, List, Description, Num., and File. The table contains one row with the following data: ID: 21, Time: 13:25:00.136 08/04/2019, Status: DONE, Type: (empty), List: (empty), Description: Import [import slave] time [f, Num.: 1, File: Get file. The row is highlighted with a red border.

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

5.2. Architecture 2

Store the license plate list by using an FTP server.



5.2.1. Master configuration

Access to the List Tab.

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

+ 🗑️

ID	Name	
-2	all plates	Edit Delete
-1	not in list	Edit Delete
1	BLACKLIST	Edit Delete
2	WHITELIST	Edit Delete

▶ List of the license plates: BLACKLIST (0)

▶ Action for the list: BLACKLIST (0)

▼ Exports for the list: BLACKLIST (0)

Export to CSV file
Export to XML file

+

ID	Description	Export type	Interval	Active
No data				

To configure all the lists, select all plates.

+ 🗑️

ID	Name	
-2	all plates	Edit Delete
-1	not in list	Edit Delete
1	BLACKLIST	Edit Delete
2	WHITELIST	Edit Delete

▶ Action for the list: all plates (1)

▼ Exports for the list: all plates (0)

Export to CSV file
Export to XML file

+

ID	Description	Export type	Interval	Active
No data				

This is an export configuration for the master camera's license plate data. Users can select to export license list to an FTP server. Select the FTP list, select how often the data is synchronized, or when changes occur to the list. Creating an export each minute enabled if change with the type FTP list and then click on Save.

+

ID	Description	Export type	Interval	Active
1	export master	FTP list	Minute	Enabled if change

[Save](#) [Cancel](#)

Configure the credentials of the FTP server and the format as CSV or XML, both can be used, but must be identical for all the slaves.

This window is used to configure the parameters of the FTP server to which the master camera's export list is sent. Below is an example to for the camera master to send the file to the FTP server.

ID	Description	Export type	Interval	Active	
1	export master	FTP list	Minute	Enabled if change	Edit Delete

Export properties

Export Info ?

Host:

Port:

Format: XML CSV ?

Folder name:

User:

Password:

Confirmation file: .FLAG

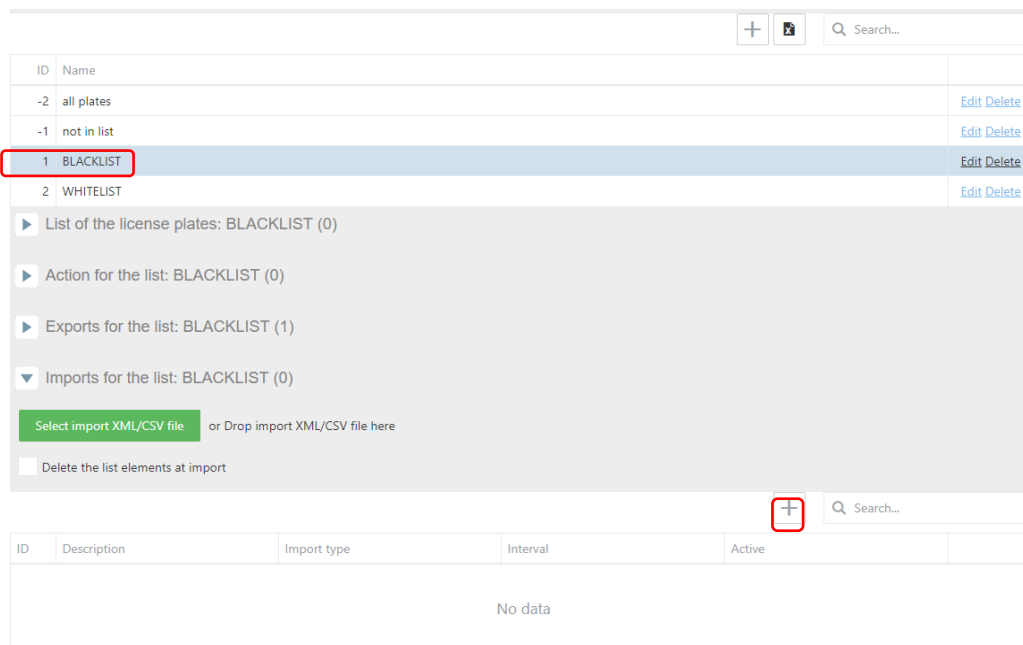
This setting can be verified in the "Audit Tab".

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	Get file

5.2.2. Slave configuration

Access to the List Tab.

This window is used to configure the import configuration for a specific license plate data list, such as a blacklist.



ID	Name	
-2	all plates	Edit Delete
-1	not in list	Edit Delete
1	BLACKLIST	Edit Delete
2	WHITELIST	Edit Delete

▶ List of the license plates: BLACKLIST (0)

▶ Action for the list: BLACKLIST (0)

▶ Exports for the list: BLACKLIST (1)

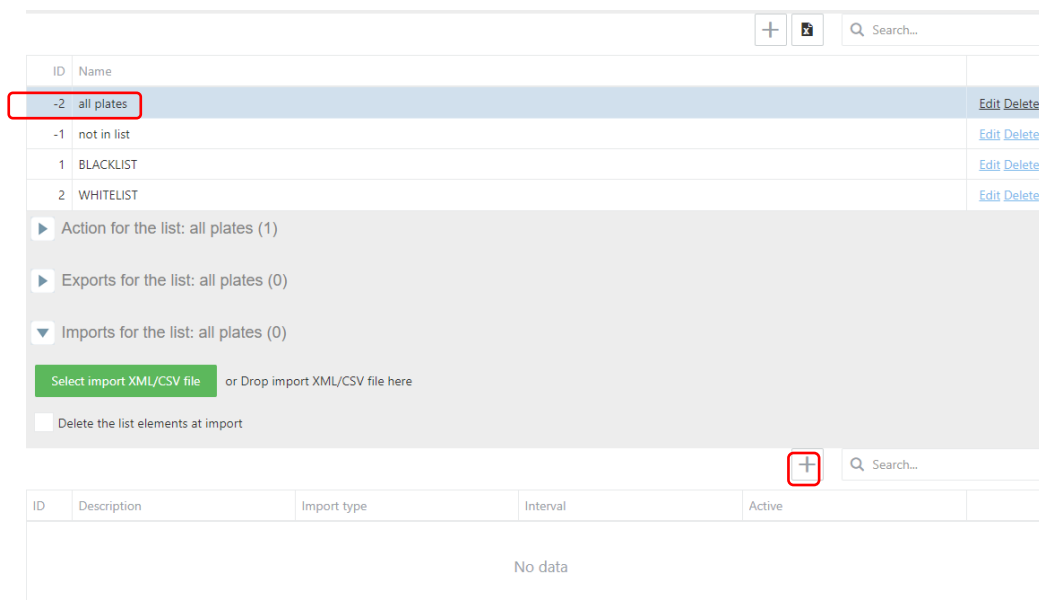
▼ Imports for the list: BLACKLIST (0)

Select import XML/CSV file or Drop import XML/CSV file here

Delete the list elements at import

ID	Description	Import type	Interval	Active
No data				

To configure all the list selects all plates.



ID	Name	
-2	all plates	Edit Delete
-1	not in list	Edit Delete
1	BLACKLIST	Edit Delete
2	WHITELIST	Edit Delete

▶ Action for the list: all plates (1)

▶ Exports for the list: all plates (0)

▼ Imports for the list: all plates (0)

Select import XML/CSV file or Drop import XML/CSV file here

Delete the list elements at import

ID	Description	Import type	Interval	Active
No data				

This window is used to create an import configuration, determining how often the list is synchronized, or when changes occur to the FTP list. Creating an import each minute (or other desirable time) the time enabled if change with the type FTP list and click "Save".

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

Users can configure FTP server related parameters, including IP, port, credentials, and the format of the imported data. Configure same credentials of the FTP server and the same format CSV or XML as the configurations of master camera.

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

Import properties

Import Info

Host: 192.168.1.21

Port: 21

Format: XML XML_NOTDELETE CSV CSV_NOTDELETE

Folder name: EXPORT

User: user

Password: password

Confirmation file: .FLAG

If the format selected for the master camera is XML, users can select XML or XML_NOTDELETE on the slave cameras. If users select XML, the list will be synchronized with those on the FTP server, which means any other added license plate data through the slave camera will be erased.

This setting can be verified in the "Audit Tab".

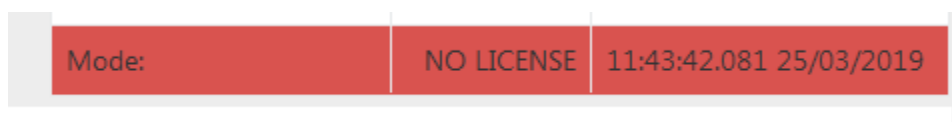
VIVOTEK									
Live Review Lists LPR configuration General configuration Audit Logs									
From date:	08/04/2019 13:25:00			Type:	import				
To date:	08/04/2019 23:59:59								
Search									
ID	Time	Status	Type	List	Description	Num.	File		
21	13:25:00.136 08/04/2019	DONE			Import [import slave] time [f	1	Get file		

6 Troubleshooting

6.1 Mode: NO LICENSE

If the camera is not licensed, the mode will show “NO LICENSE” in live page.

Please contact VIVOTEK technical support team at <https://www.vivotek.com/website/support/>



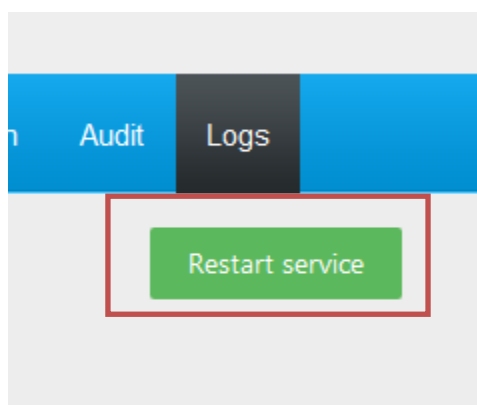
6.2 Mode: STOPPED

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





To solve this problem, users will have to reboot the service. Users can reboot the service at:

- Logs page:



- Package management

Package list

	Module name	Vendor	Version	Status	License		
<input checked="" type="radio"/>	ANPR	VIVOTEK	1.09	OFF	N/A		

6.3 No enough space at Camera or SD

If the camera or SD card has not 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](#)

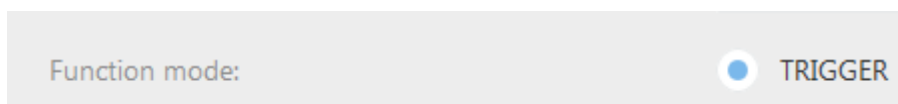
6.4 The system does not recognize license plates

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

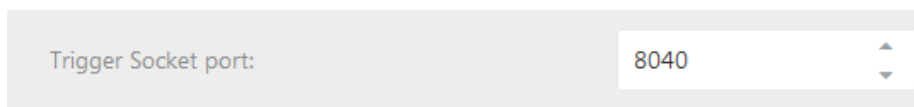
1. The region and country are the right ones. You can check this configuration at [LPR configuration](#).
2. The license plate has a minimum size of 25 pixels. The user can use the [calibration pattern](#) at live page to adjust the size of the license plate. The license plate must be between 3 lines with 25~40 recommend pixel height.



3. If your system has a defined ROI, verify that license plate is inside [ROI area](#).
4. If the system is set up as “motion detection mode”, please be sure have a movement inside the image.
5. If the system has read a license plate and it does not read anymore, check [the filters](#).
6. If the system is set up as “trigger mode”, please check the following points:
 - a. Check the mode in camera ([LPR CONFIGURATION](#)):



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



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



6.5 Problem with ACTIONS

If the action is not triggered, verify the following items:

- 1) The action is enabled.

ID	Description	Action type	Active
1	Action 1	Socket client	Enabled

- 2) The detected plate is in the list, and the list 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.

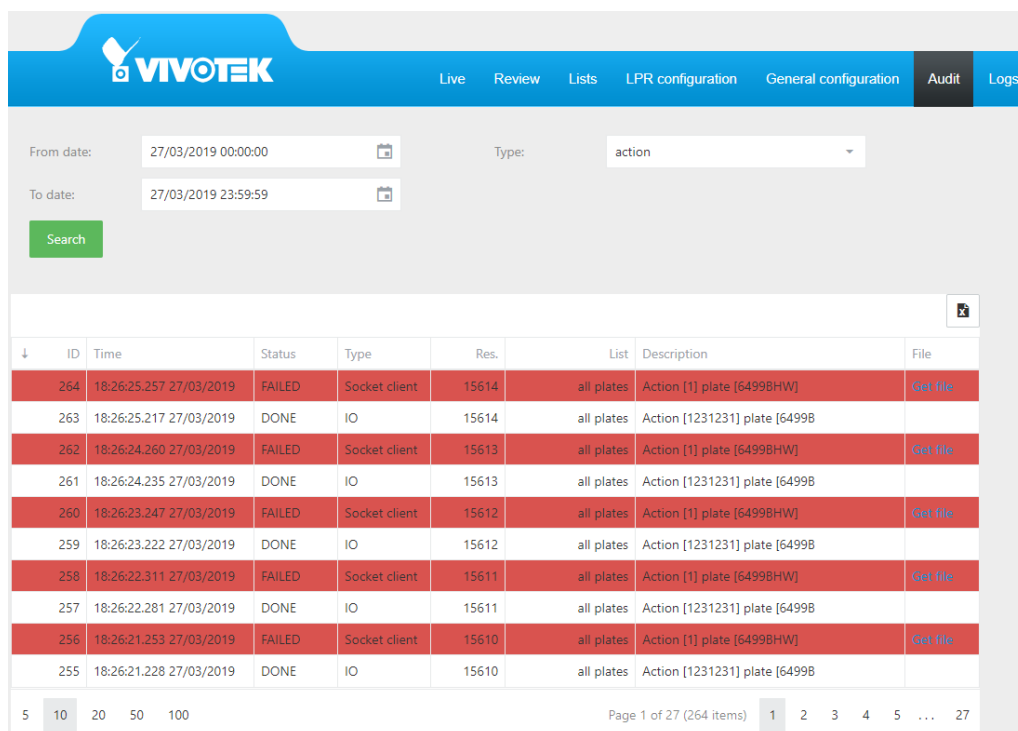
▼ Scheduler

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																								
Mon																								
Tue																								
Wed																								
Thu																								
Fri																								
Sat																								

Save scheduler

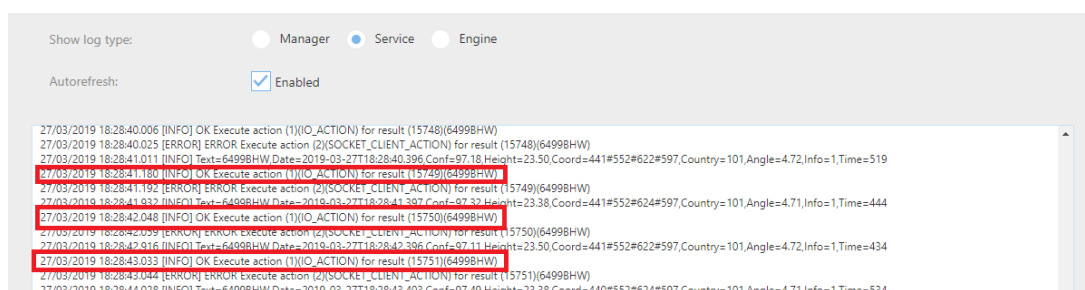
- 6) Check in “Audit” tab if the action has been triggered, and they can be found in the list of red errors that have been sent.



The screenshot shows the VIVOTEK IP Surveillance Audit Logs interface. The top navigation bar includes 'Live', 'Review', 'Lists', 'LPR configuration', 'General configuration', 'Audit', and 'Logs'. The 'Audit' tab is selected. Below the navigation bar, there are filters for 'From date' (27/03/2019 00:00:00), 'To date' (27/03/2019 23:59:59), and 'Type' (action). A 'Search' button is present. The main area displays a table of log entries with columns: ID, Time, Status, Type, Res., List, Description, and File. The table shows a sequence of actions, with some marked as 'FAILED' and others as 'DONE'. A pagination bar at the bottom indicates 'Page 1 of 27 (264 items)'.

ID	Time	Status	Type	Res.	List	Description	File
264	18:26:25.257 27/03/2019	FAILED	Socket client	15614	all plates	Action [1] plate [6499BHW]	Get file
263	18:26:25.217 27/03/2019	DONE	IO	15614	all plates	Action [1231231] plate [6499B]	
262	18:26:24.260 27/03/2019	FAILED	Socket client	15613	all plates	Action [1] plate [6499BHW]	Get file
261	18:26:24.235 27/03/2019	DONE	IO	15613	all plates	Action [1231231] plate [6499B]	
260	18:26:23.247 27/03/2019	FAILED	Socket client	15612	all plates	Action [1] plate [6499BHW]	Get file
259	18:26:23.222 27/03/2019	DONE	IO	15612	all plates	Action [1231231] plate [6499B]	
258	18:26:22.311 27/03/2019	FAILED	Socket client	15611	all plates	Action [1] plate [6499BHW]	Get file
257	18:26:22.281 27/03/2019	DONE	IO	15611	all plates	Action [1231231] plate [6499B]	
256	18:26:21.253 27/03/2019	FAILED	Socket client	15610	all plates	Action [1] plate [6499BHW]	Get file
255	18:26:21.228 27/03/2019	DONE	IO	15610	all plates	Action [1231231] plate [6499B]	

7) Check in the logs if the action has been triggered. Active Service and Enabled.



The screenshot shows the VIVOTEK IP Surveillance log viewer interface. It includes a 'Show log type:' section with radio buttons for 'Manager', 'Service', and 'Engine'. The 'Service' radio button is selected. Below this is an 'Autorefresh:' section with a checked checkbox for 'Enabled'. The main area displays a scrollable list of log entries. Several entries are highlighted with red boxes, indicating successful actions: '27/03/2019 18:28:41.180 [INFO] OK Execute action (1)(IO_ACTION) for result (15749)(6499BHW)', '27/03/2019 18:28:42.048 [INFO] OK Execute action (1)(IO_ACTION) for result (15750)(6499BHW)', and '27/03/2019 18:28:43.033 [INFO] OK Execute action (1)(IO_ACTION) for result (15751)(6499BHW)'. Other entries show errors related to socket client actions.

```

27/03/2019 18:28:40.006 [INFO] OK Execute action (1)(IO_ACTION) for result (15748)(6499BHW)
27/03/2019 18:28:40.025 [ERROR] ERROR Execute action (2)(SOCKET_CLIENT_ACTION) for result (15748)(6499BHW)
27/03/2019 18:28:41.011 [INFO] Text=6499BHW Date=2019-03-27T18:28:40.396 Conf=97.18 Height=23.50 Coord=441#552#622#597, Country=101, Angle=4.72, Info=1, Time=519
27/03/2019 18:28:41.180 [INFO] OK Execute action (1)(IO_ACTION) for result (15749)(6499BHW)
27/03/2019 18:28:41.192 [ERROR] ERROR Execute action (2)(SOCKET_CLIENT_ACTION) for result (15749)(6499BHW)
27/03/2019 18:28:41.932 [INFO] Text=6499BHW Date=2019-03-27T18:28:41.387 Conf=97.33 Height=23.38 Coord=441#552#624#597, Country=101, Angle=4.71, Info=1, Time=444
27/03/2019 18:28:42.048 [INFO] OK Execute action (1)(IO_ACTION) for result (15750)(6499BHW)
27/03/2019 18:28:42.059 [ERROR] ERROR Execute action (2)(SOCKET_CLIENT_ACTION) for result (15750)(6499BHW)
27/03/2019 18:28:42.916 [INFO] Text=6499BHW Date=2019-03-27T18:28:42.306 Conf=97.11 Height=23.50 Coord=441#552#622#597, Country=101, Angle=4.72, Info=1, Time=434
27/03/2019 18:28:43.033 [INFO] OK Execute action (1)(IO_ACTION) for result (15751)(6499BHW)
27/03/2019 18:28:43.044 [ERROR] ERROR Execute action (2)(SOCKET_CLIENT_ACTION) for result (15751)(6499BHW)
27/03/2019 18:28:44.028 [INFO] Text=6499BHW Date=2019-03-27T18:28:43.403 Conf=97.49 Height=23.38 Coord=440#552#624#597, Country=101, Angle=4.71, Info=1, Time=534
  
```

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

```
Administrator: Símbolo del sistema
Microsoft Windows [Versión 10.0.17134.648]
(c) 2018 Microsoft Corporation. Todos los derechos reservados.

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 is not sending the message, please check the following items:

- 1) Check HOST and Port of defined action.
- 2) Check the connection that the camera has the connections to the HOST/PORT.
- 3) Download, install and open the sample test program on client computer.

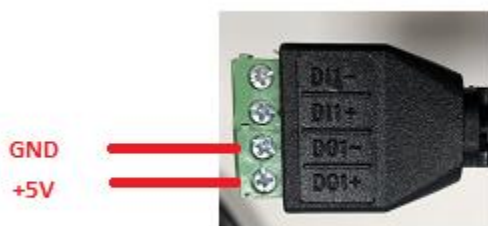
(Find a directory to place the files mentioned above.)

- 4) Check the IP from client computer, set port 17000 and read a plate.

6.5.2 IO

If the I/O action is not triggered, please check the following items:

- 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.



6.5.3 FTP

If the FTP action is not triggered, please check the following items:

- 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

```

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-FileZilla 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-FileZilla 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-FileZilla 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...

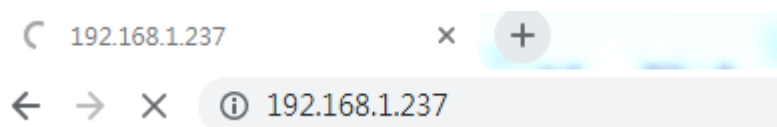
```

ID	/	Account	IP	Transfer	Progress	Speed
Ready						

6.5.4 HTTP/MILESTONE/WIEGAND

If the HTTP action is not triggered, please check the following items:

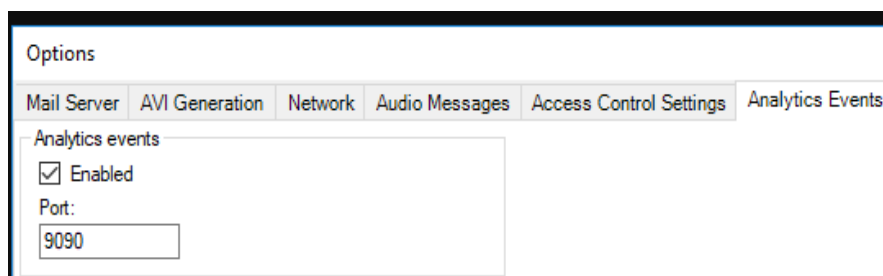
- 1) Check the defined parameter
- 2) Start an explorer (Internet explorer, Firefox, Chrome), do a request to defined URL and then check that the URL responds.



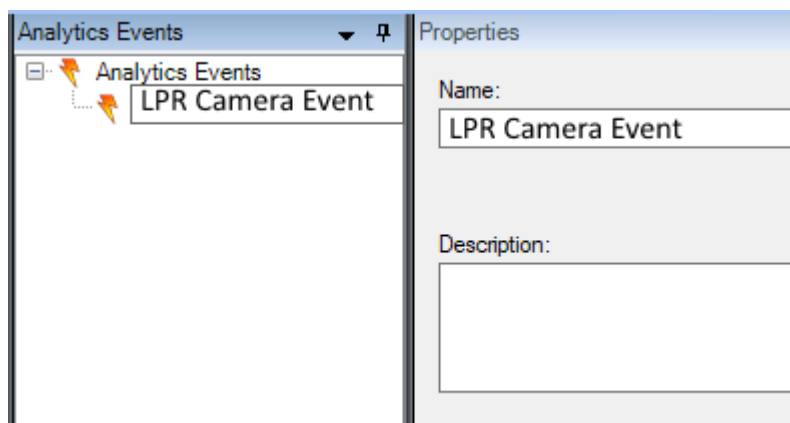
6.5.5 MILESTONE

If the MILESTONE action is not triggered, please check the following items:

- 1) Check the defined parameter
- 2) Check Milestone system and make sure the analytics events are enabled.



- 3) Check Milestone system and make sure the analytic event name is "LPR Camera Event"

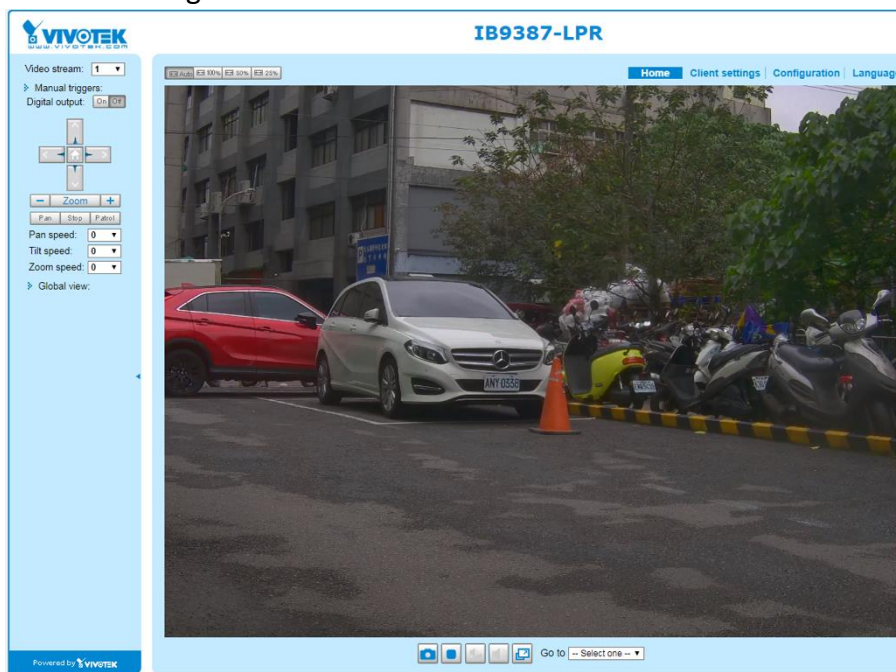


- 4) Check Milestone system and make sure the created alarm uses the existing analytic event and the related camera.

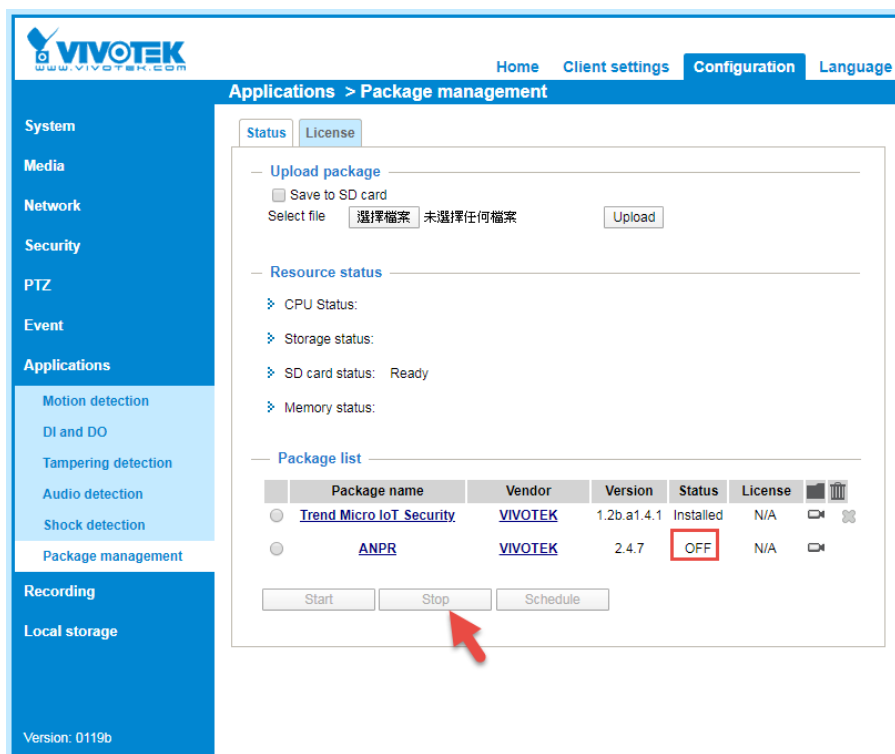
7. Upload the package

7.1 upgrade the ANPR package on VIVOTEK cameras

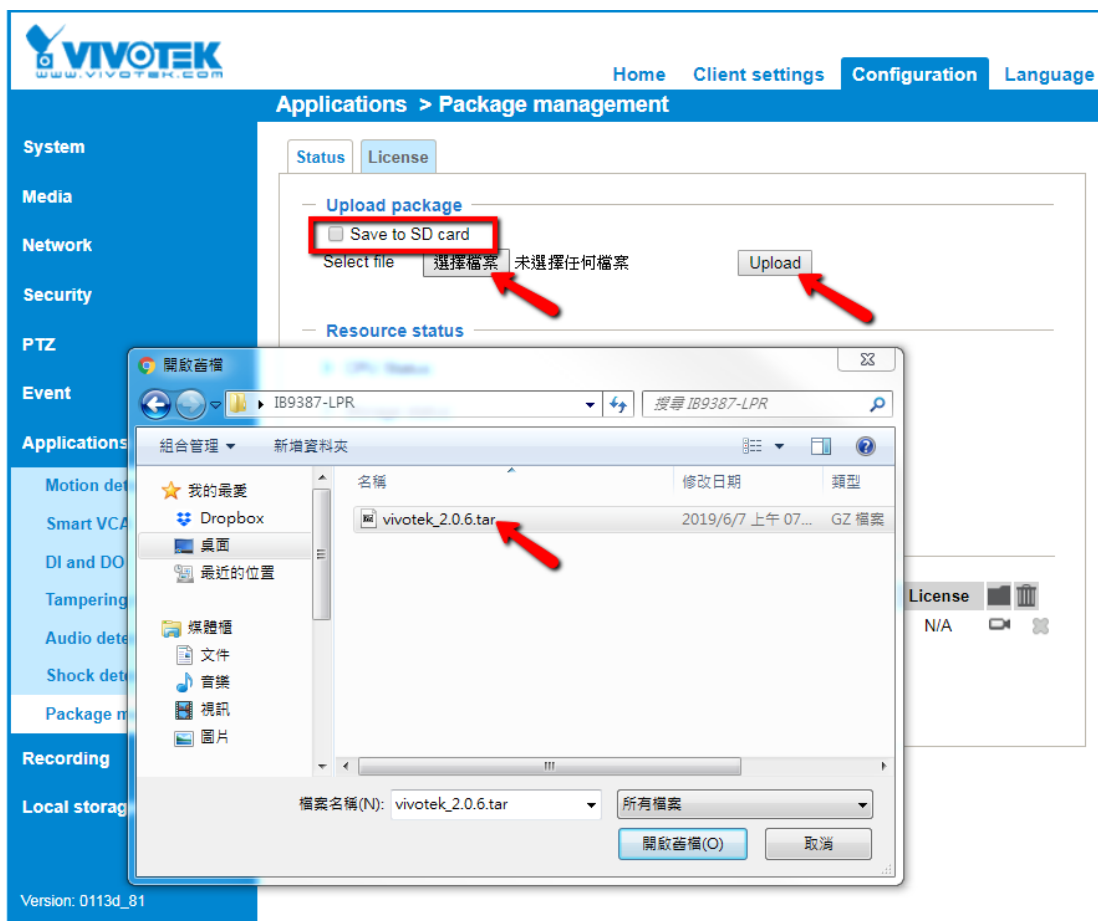
- 1) Start one Google Chrome browser and then connect to VIVOTEK LPR camera.



- 2) Go to **Configuration** → **Application** → **Package management**, and then stop the ANPR package first.



- 3) Upload the new package onto this camera.
 - a. The ANPR package was stored in camera by default, please **un-check** the “Save to SD card”.
 - b. Click “Select file”, and choose the new version you want to upgrade then click “OK”.
 - c. Click “Upload”.



- 4) VADP upload message will be popped up.

```

Starting VADP upload procedure, please wait a moment
Do not close this window before upload is completed
Uploading Module to Internal storage
.....
Uploading new module
.....
Install [ ] - [/mnt/flash2/vadp/1]
....
Reloading configuration httpd: .
.
Upload VADP package successfully
    
```

- 5) Select this new ANPR package and the “start” this application.

Appendix 1

The preset values suppose a **40% of JPEG compression** (default system value)

The following tables are estimated retention days based on different camera resolution and the estimated LPR reading per day.

Size/QTY	1	1,000	5,000	10,000	100,000
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

If the number of LPR reading is 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

If the number of LPR reading is 1,000 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

If the number of LPR reading is 10,000 cars per day,

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

Appendix 2

The camera is bundled with a **16GB** MicroSD card that is formatted in **EXT4 format**. User can remove this SD card and install any other SD card. This network camera is compliant with SD/SDHC/SDXC 16GB / 8GB / 32GB / 64GB and other preceding standard SD cards.