

# USER GUIDE

## CONTAINER CODE RECOGNITION

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### Table of Contents

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CHAPTER 1 PRESENTATION.....	2
CHAPTER 2 CENTOS 7 INSTALL.....	4
2.1 KICKSTART CENTOS INSTALLATION.....	5
CHAPTER 3 FIRST SETTINGS AFTER REBOOT.....	7
CHAPTER 4 DOWNLOAD AND INSTALL METRICI CCR.....	9
CHAPTER 5 CCR FIRST MANDATORY SETTINGS.....	13
5.1 CCR- INITIATING.....	13
5.2 APPLICATION SETTINGS.....	14
5.3 USERS ADMINISTRATION.....	15
5.4 LOCATIONS & CAMERAS.....	16
CHAPTER 6 METRICI CONTROL PANEL SETTING AND USING.....	20
6.0 Add cameras.....	21
6.1 License activation.....	22
6.2 CCR engine working mode and Trigger in.....	24
6.3 CCR Input Stream.....	25
6.4 Companion Stream.....	26
6.5 Detection Window.....	26
6.6 Live view.....	27
6.7 Reporting, check action and Trigger out.....	28
6.8 CCR.....	30
6.9 CCR tracking.....	31

6.10 Barrier opening and traffic light.....	31
6.11 GPS.....	32
6.12 Weight Scale.....	32
6.13 Radar.....	32
CHAPTER 7 GLOBAL SETTINGS OTHER INTERFACE SETTINGS.....	33
7.0 CRON JOBS.....	33
7.1 TIME TABLES.....	33
7.2 LICENSES.....	34
7.3 BACKUP AND RESTORE.....	34
7.4 LOGS.....	35
CHAPTER 8 CCR INTERFACE FEATURES.....	35
8.1 CONTAINERS.....	35
8.2 CONTAINERS FLOW.....	36
8.3 LIVE VIEW.....	36
8.4 REPORTS.....	37
8.5 ACTIONS.....	38
8.6 GROUPS.....	40

## **CHAPTER 1 PRESENTATION**

**If your installation is from scratch, read the entire manual.**

**If you have CentOS/ Redhat installed, go to Chapter 4**

**If the system is delivered by Metrici, it has all you need and go to Settings-  
Chapter5**

Metrici CCR is a dedicated tool developed by Metrici to capture container codes with IP cameras.

As any software solution from Metricí, CCR is based on analyzing the video stream from IP cameras and recognizing different objects in the frames – in this case characters.

- It works in 'free flow', which means analyzing the video streams from IP cameras in real time, on trigger (when receives command), or a combination of the two.
- The system can recognize an unlimited number of container codes in the same frame;
- Distributed operation (multiple cameras in multiple locations), with centralized reporting and administration;
- Predefined actions for each recognized container codes: open barrier, send warning e-mail, pop-up display on screen, change traffic lights, send SMS;
- Multi-user reporting and administration interface with secure access and viewing rights for each location and user;
- Multi-threading operation with auto ranging based on the number of cores/threads available.

**Metricí CCR** can be used for traffic monitoring systems, tolling and vignette control systems, , border monitoring, industrial weighing systems etc.

The user must be aware that this software includes two solutions: one for container codes detection and recognition – the **Metricí detection engines (managed in Metricí Control Panel)** and the second one- a interface for managing one or more locations - **Metricí Web Interface**.

**Remember that for the system to work you will make settings both in Metricí Control Panel, as well as in the Metricí Interface. So please read carefully this user guide.**

The whole detection and analysis system is a three steps flow.

The **ACQUISITION** block consists of one or more IP cameras and auxiliary equipment (IR illuminators, PoE switches etc).

The **PROCESSING** block consists of one or more computers containing Metricí software for real-time analysis of incoming video streams received from the IP cameras. Each camera needs its own Metricí analysis application, or detection engines as they

are also called by Metrici. They are multi-threading and, therefore, they work faster on multi core and/or multiprocessor systems. Multiple analysis applications can be used simultaneously on the same computer. You can use more analysis applications in the same time on the same computer. This is the **CONTROL PANEL**.

The **ADMINISTRATION and REPORTING** block is in fact a web interface application that receives data from the analysis application and can display them in a user friendly way. This application can be located on one of the computers for ANALYSIS or a completely independent computer. Between the PROCESSING and ADMINISTRATION AND REPORTING steps there is no need to have IP connectivity on the local network; it is sufficient to have a public network allowing traffic on port 80- **This is the INTERFACE**.

For the software **Metrici CCR** to run, it needs a computer with 64 bits Linux OS. We will describe the process of installing CentOS7 operating system followed by Metrici.

**Note: In case you already have a computer running on CentOS 7, you will begin installation process with Metrici Install.**

**Note2: In case the system is purchased from Metrici, it is already installed and you only need to set it, so go from Chapter 5 and on.**



## CHAPTER 2

### CENTOS 7 INSTALL

The procedure for installing Metrici is the same no matter what module or what engine you are using. The first step is to install CentOS 7 operating software, under which Metrici works.

## 2.1 KICKSTART CENTOS INSTALLATION

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The indicated method to install CentOS7 and Metrici is the kickstart one- this is a completely automatic option and will result in creating new partitions on your system: 8 GB for SWAP and the rest of the disk reserved for ROOT.

**CAUTION!** In case the system isn't new and has already some data written on it, the installation will delete everything on this computer when installing the operating system.

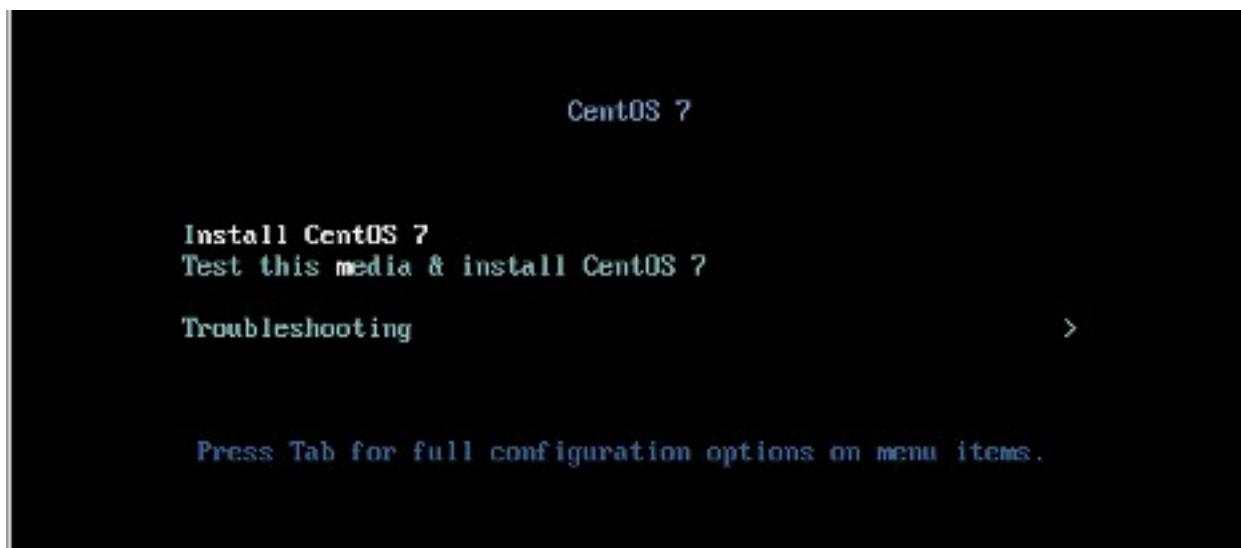
**NOTE!** For installing CentOS 7 and Metrici CCR, it is mandatory to have internet access, but only during install. After that, the web access is no longer mandatory and Metrici can work offline.

Download the image for CentOS: you can find the operating system on Metrici site at [http://support.metrici.ro/operating\\_systems/](http://support.metrici.ro/operating_systems/)

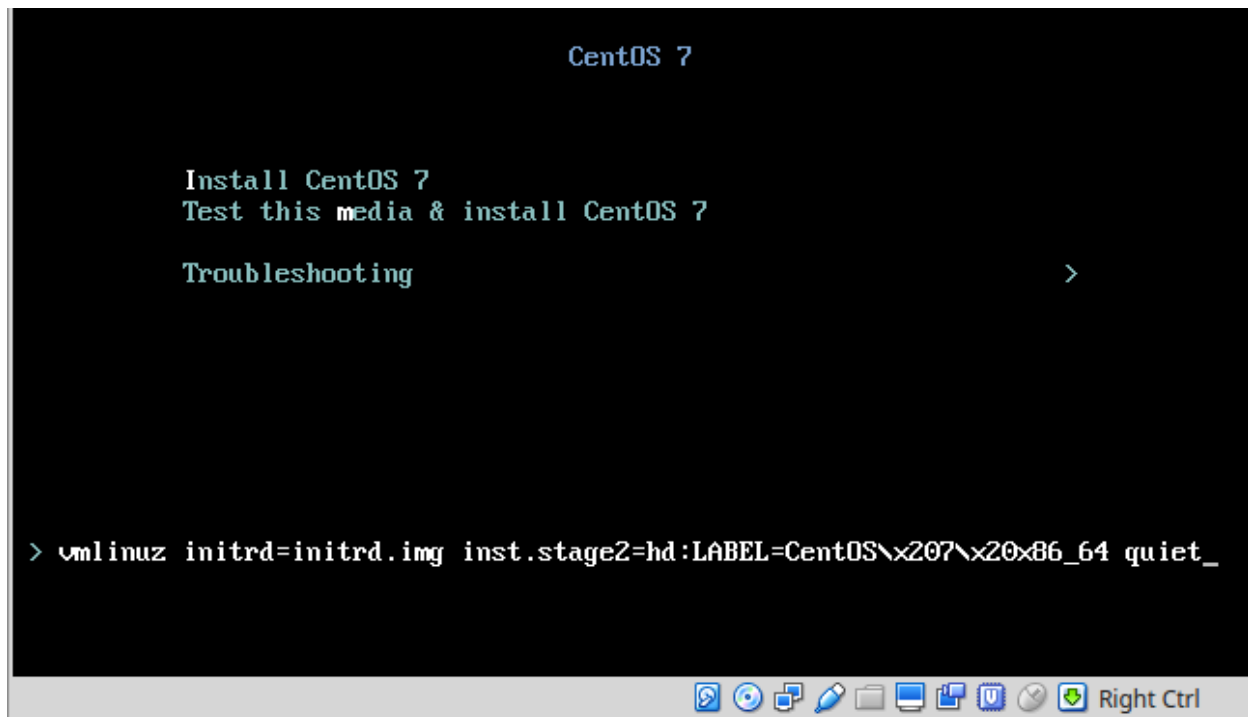
Download the Operating System and make a bootable stick or DVD.

**NOTE!** Before the installation, go to BIOS and make sure the PC will NOT BOOT in UEFI mode and will make the first boot from your stick.

At the first option screen, as in the next image, using the keyboard go to option Install CentOS, but **DO NOT PRESS ENTER!**



**Press Tab** instead. You will notice some parameters on the bottom of the screen. See next image.



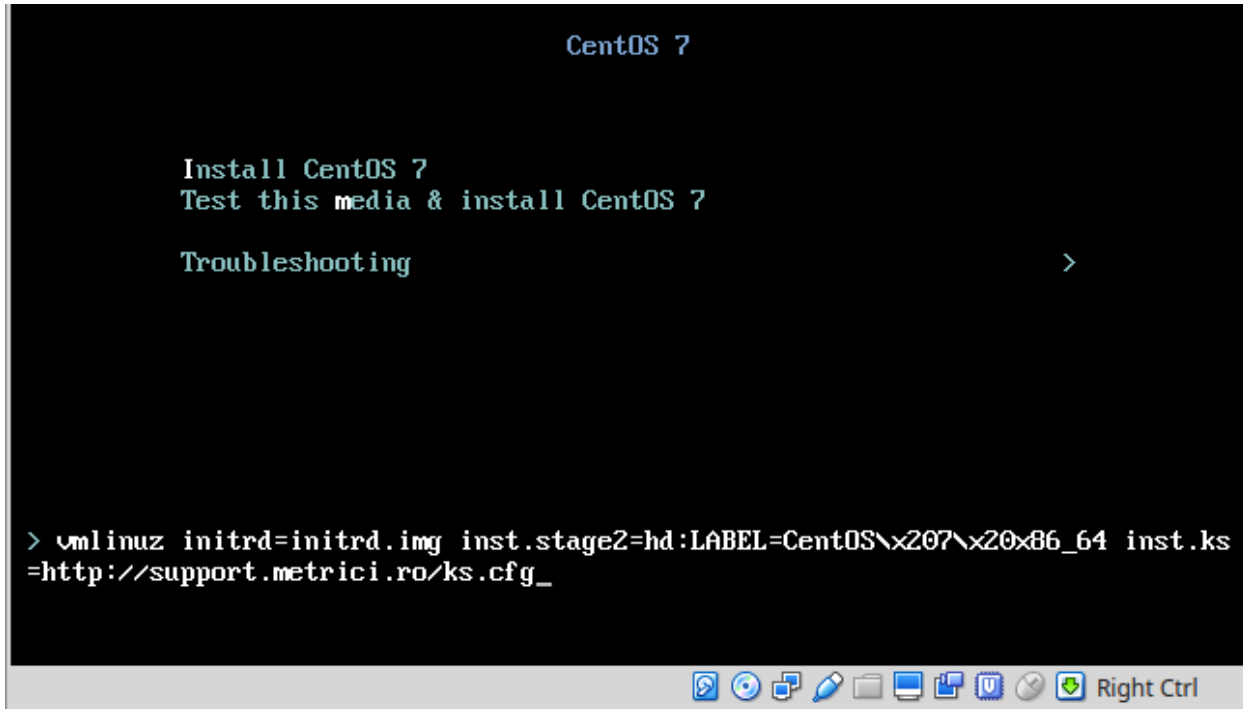
Add a space and then type **inst.ks=**<http://support.metrici.ro/ks.cfg> at the end of the code and then press Enter. See the next image.

**ATTENTION! If the storage is NVMe type, then you will have to type instead the following text**

**inst.ks=**<http://support.metrici.ro/ks-nvme.cfg>

CentOS will be installed and all the settings made. This will create a user with the name "**metrici**" and a root password "**metriciadmin**".

Reboot the machine if it doesn't do it automatically.



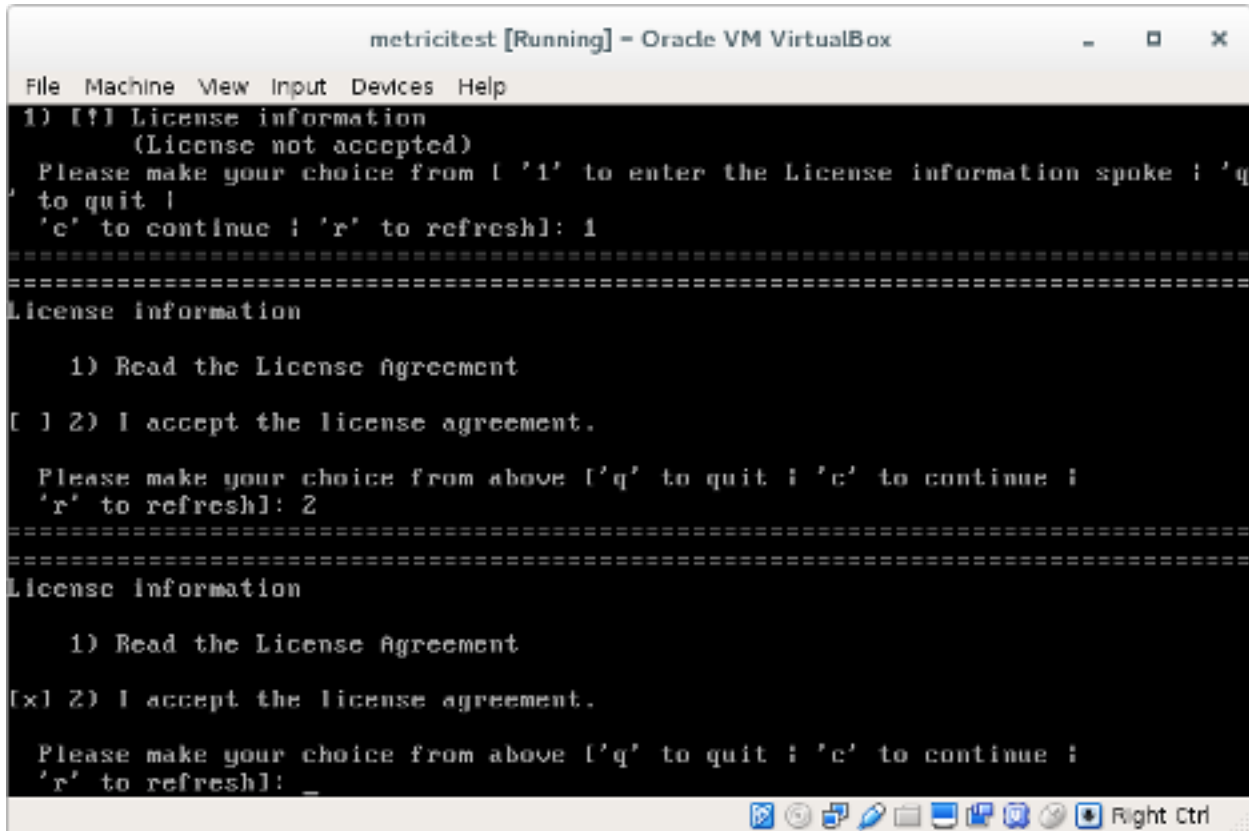
## CHAPTER 3

### FIRST SETTINGS AFTER REBOOT

After the first boot, the system will ask for you to read the license agreement. You complete this task by choosing **LICENSE INFORMATION**. In case you accept the terms, confirm by checking option **I accept the license agreement**. You may continue after you click **FINISH CONFIGURATION** button, on the lower right.

#### NOTE

It is possible that during the reboot, the system to ask for license agreement in a written text as in image bellow. In this case the steps explained above will be ignored.



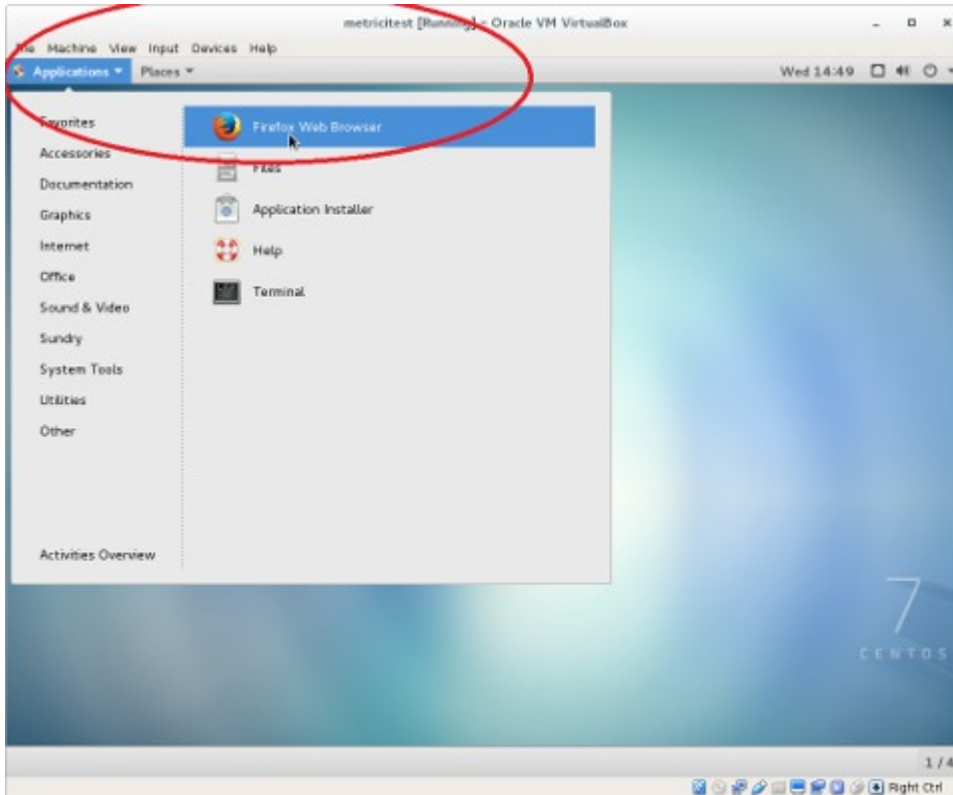
After the reboot, you can authenticate by using the user and password defined during installation- case of kickstart installation **metrici** with **metriciadmin**.

You navigate through the last settings, click Next.

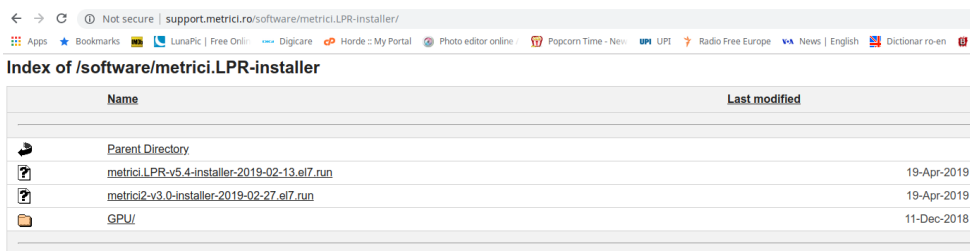


## CHAPTER 4

# DOWNLOAD AND INSTALL METRICI CCR



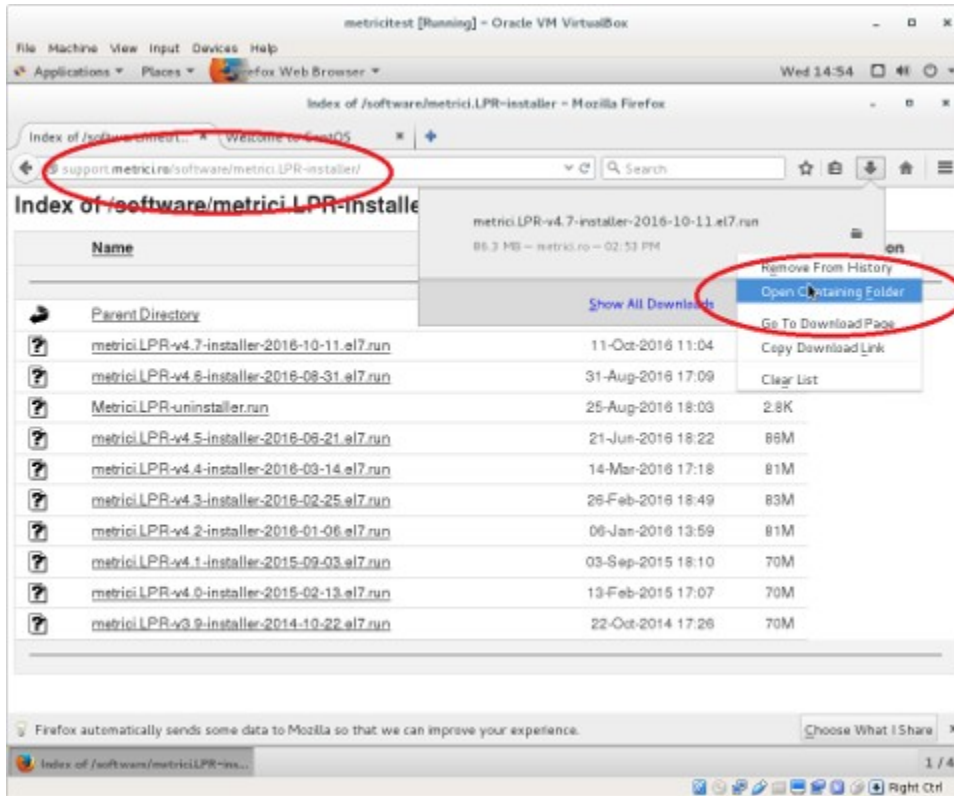
For **Metrici** kit to be downloaded, open Firefox browser from **Applications** menu, upper left.



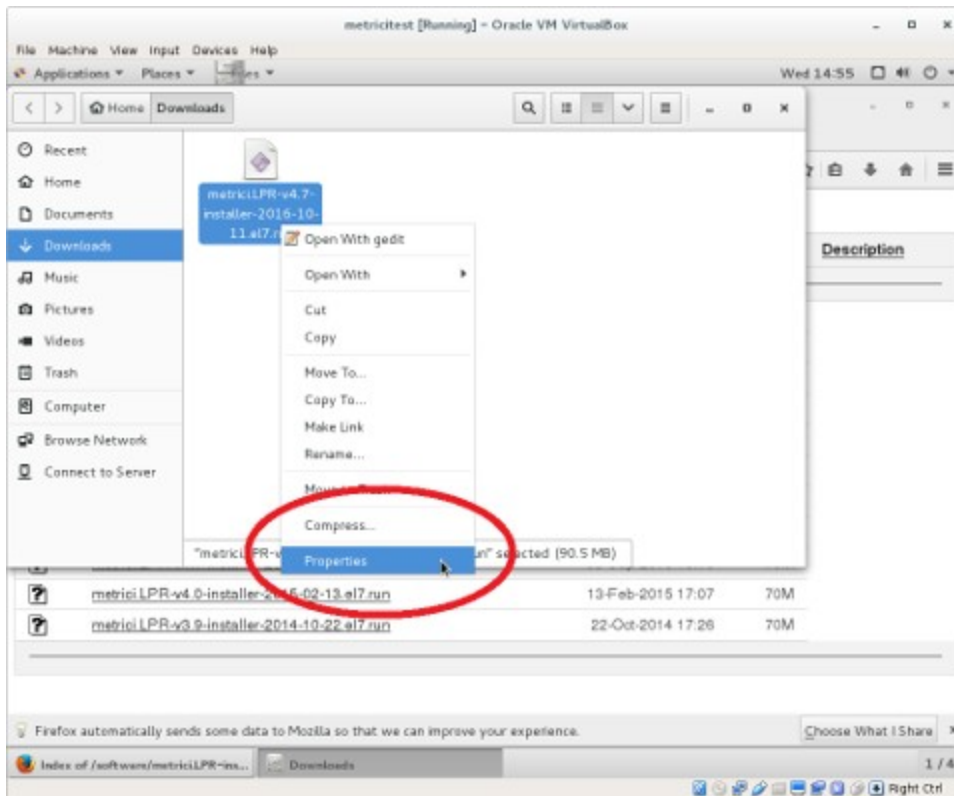
Access the address <http://support.metrici.ro/software/metrici-installer/>

Download **metrici2-v3.7-installer-2022-06-16.el7.run**, or the latest version of the software, with the suffix **el7.run**

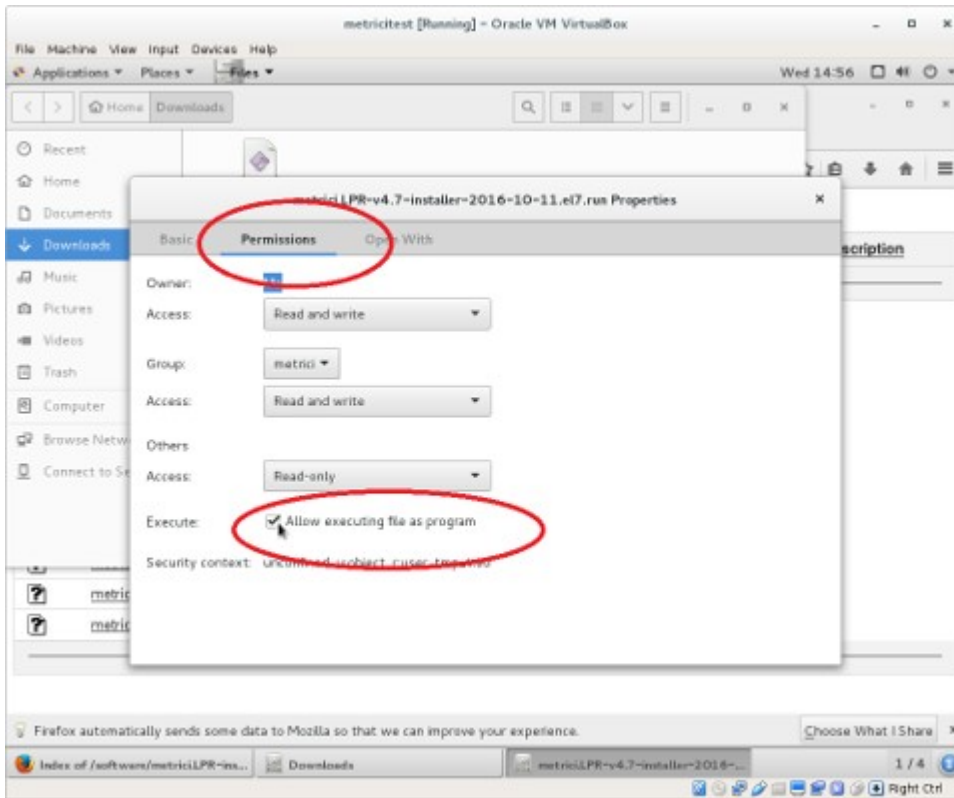
Save it on local disk



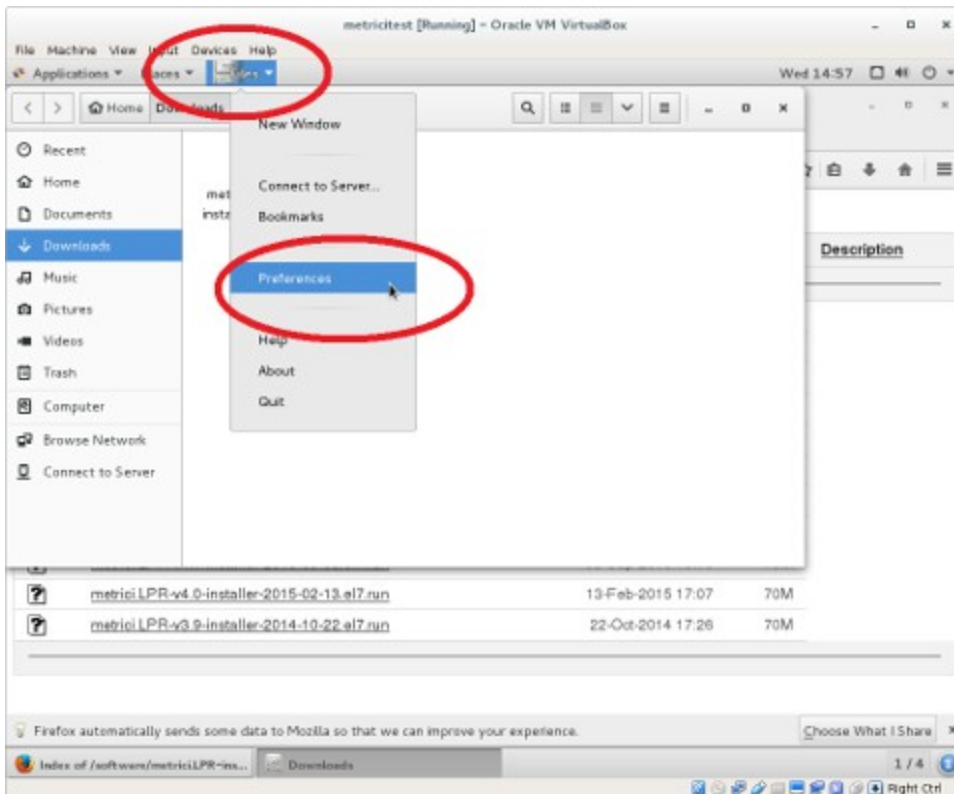
Open the folder where the file was saved. (Mouse right click and choose- Open Containing Folder).



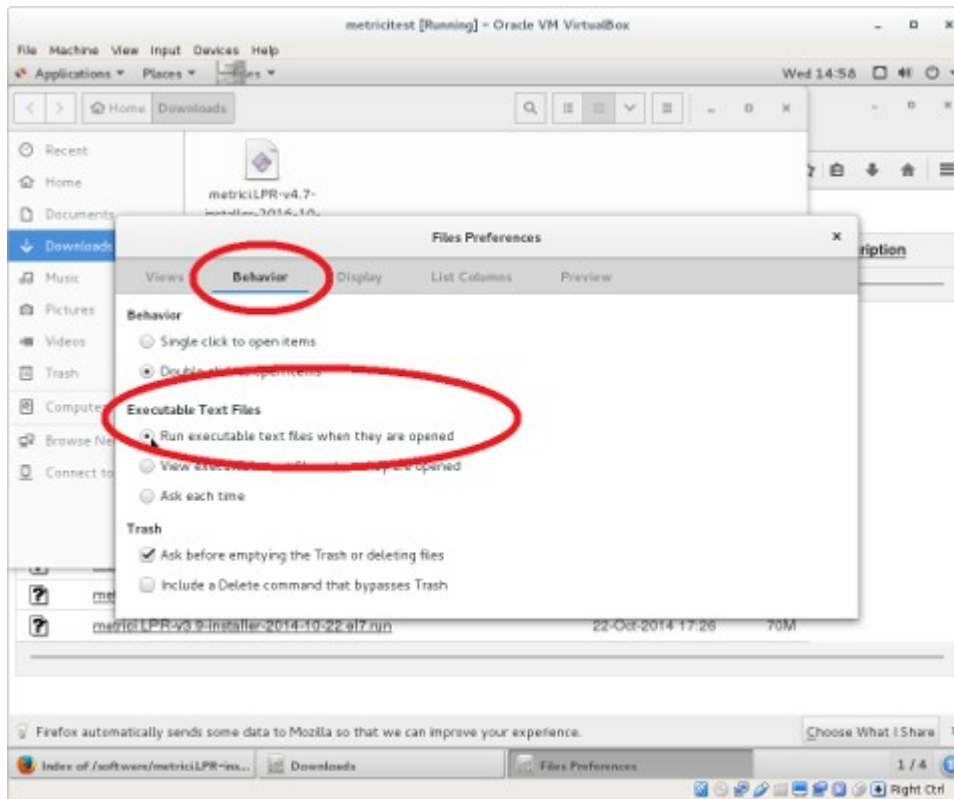
You need to change the administration rights for the file (right click on the file name-choose **Properties** menu).



In the **Permissions** tab, check the option **Allow executing file as program**.



You access the menu **Files**, submenu **Preferences**, on the Operating system menu bar



In the **Behavior** tab, check the option **Run executable text files when they are opened**.

Double click on the installation program to launch Metrici. When asked, write the password for the user you are logged in CentOS7.

**Wait for the installation to end and after that, reboot the PC.**

## CHAPTER 5 CCR FIRST MANDATORY SETTINGS

### IMPORTANT!

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For a perfect setup, a user will have to do settings both in The Metrici Interface (where the data are sent and collected) as well as in Metrici Control Panel, where the detection is made.

All settings in the following chapters are mandatory to be addressed for the system to work!!!

5.1 Initiating

5.3 Users Administration

5.4 Locations and Cameras

6.1 CCR Engine Working Mode

6.2 CCR Input Stream

6.4 Detection Window (if necessary)

6.6 Reporting, Check Action and Trigger Out

## 5.1 CCR- INITIATING

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At the first log in to the Interface on localhost or on a remote server you will use the following credentials:

User: [metrici@metrici.ro](mailto:metrici@metrici.ro)

Password: metriciadmin

Metrici recommends changing this credentials after log in.

When login to Metrici Interface, you will see a list of all Metrici Modules. You will only have access to the modules you bought. The others will be blocked.

After that any number of users and passwords can be added, deleted or modified.

**NOTE!**

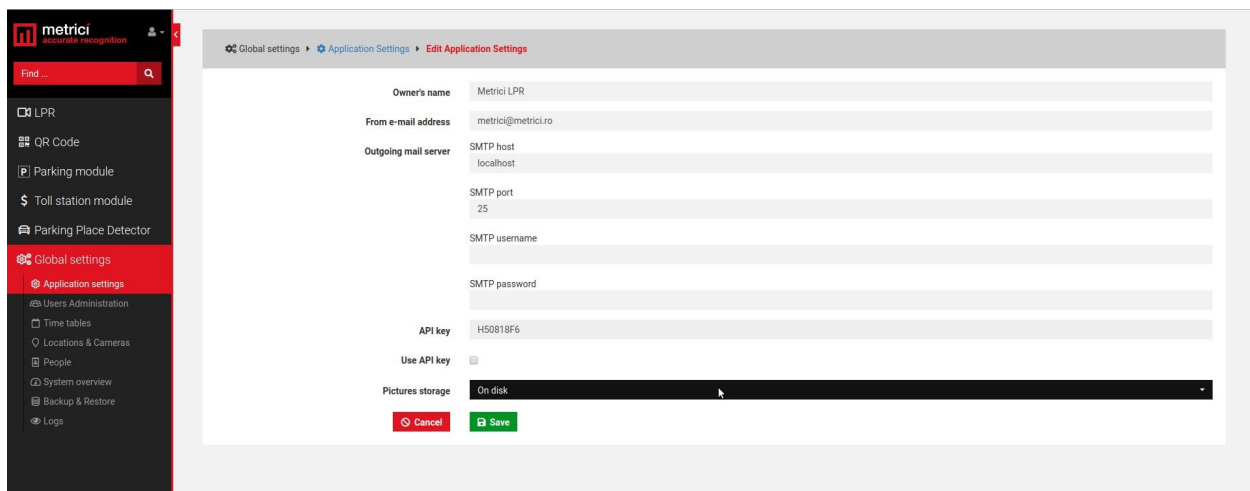
**No matter what module you manage, the first settings will be made in Global Settings.**

## 5.2 APPLICATION SETTINGS

In this menu you set the name of the owner. Also, you add the email address from which the alarm methods are sent.



After you click the green button upper right, a menu like next one is opened.



Owner's name is the name of the company or person who owns the Metricí system and has administration rights for it. "From email address" field is the address from which an email is sent when set in the Interface. This has to be a valid e-mail address.

Outgoing email services and SMTP ports are filled as they are known by the owner.

**Outgoing mail server: localhost**

SMTP host: set to 25

Metrici knows natively to send emails from localhost, but there are servers who refuse to receive mail without authentication. In that case you have the options to send mails via SMTP. You will fill in the data of the remote mail server as they were set.

SMTP port

SMTP username

SMTP password

API Key is an auto generated one. You will need this in case of a third application integration.

## 5.3 USERS ADMINISTRATION

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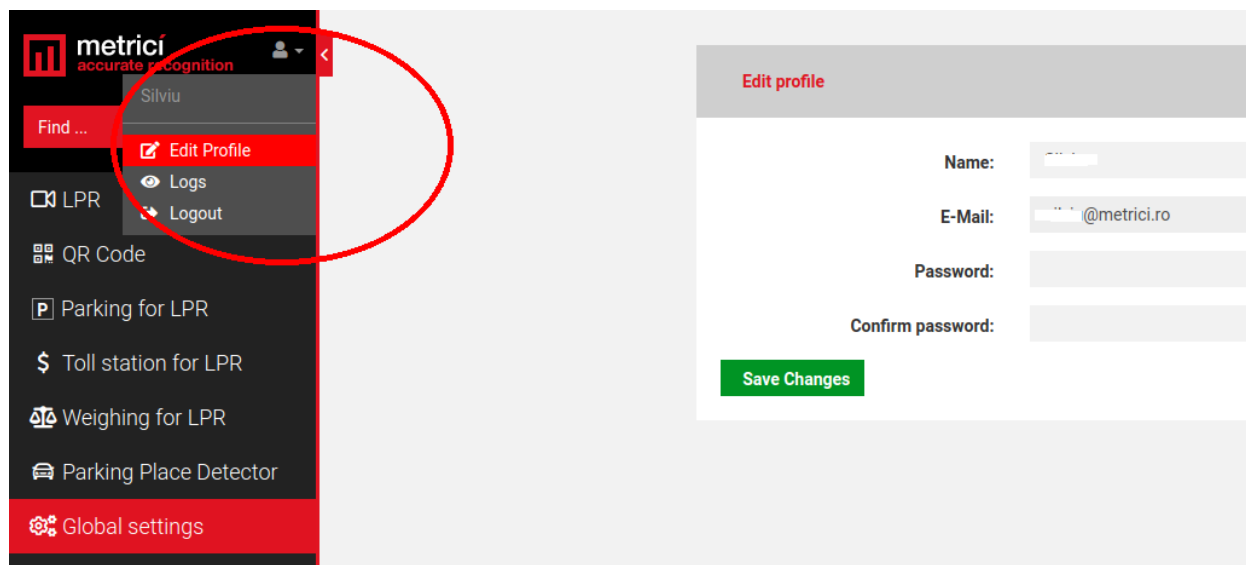
Any number of users can be added to the system. Each one of them can have its own administration rights. When a user is inactive, he will not be able to log in any more in Metrici Interface. However, it may be made active again by another user with administration rights.

When a new user is added, choose a name for it, designate an email address, choose the language in which the menu is displayed, set a password and confirm it. These data will be used when login by that particular user.

Finally click on the sections for which this user has administration and viewing rights, or just viewing rights.

At the default first page, choose on what menu or sub-menu you want this user to see first every time he logs in to Metrici Web Interface.

You will also set here on what location, camera and menu in the Interface the user has access to.



If a user wants to change his password, when in Interface, click on human symbol upper left and choose edit profile. Enter a new password and Save.

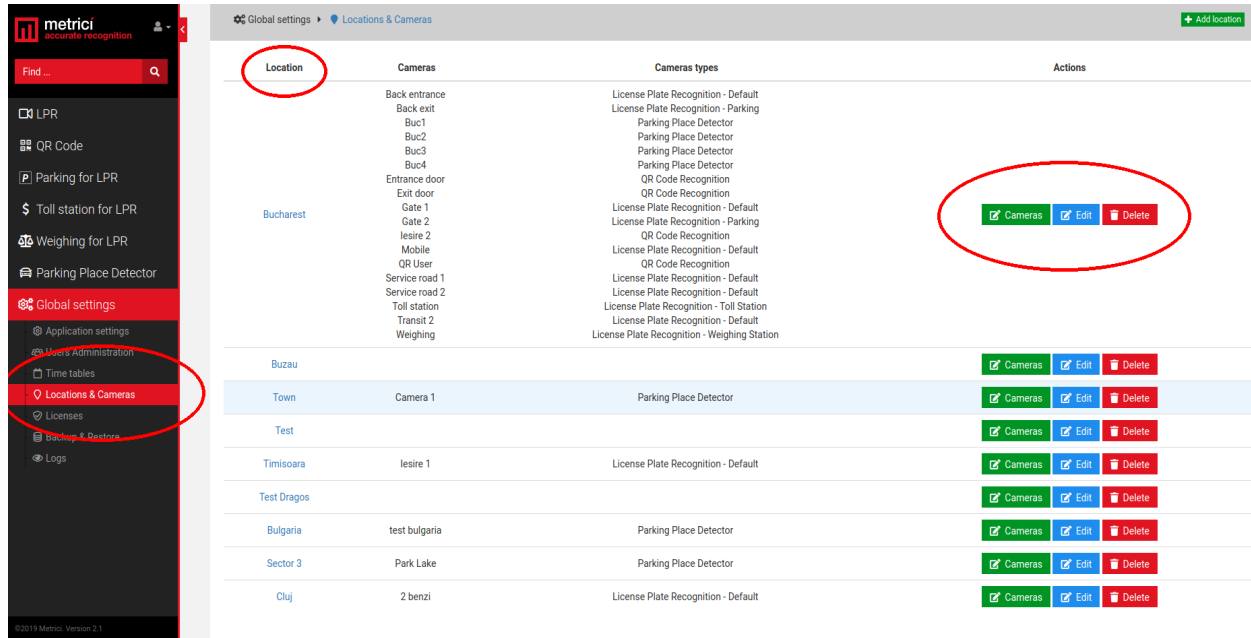
## 5.4 LOCATIONS & CAMERAS




























**No matter what module you manage, it is mandatory to set a location and add at least one camera to it for the system to properly work.**

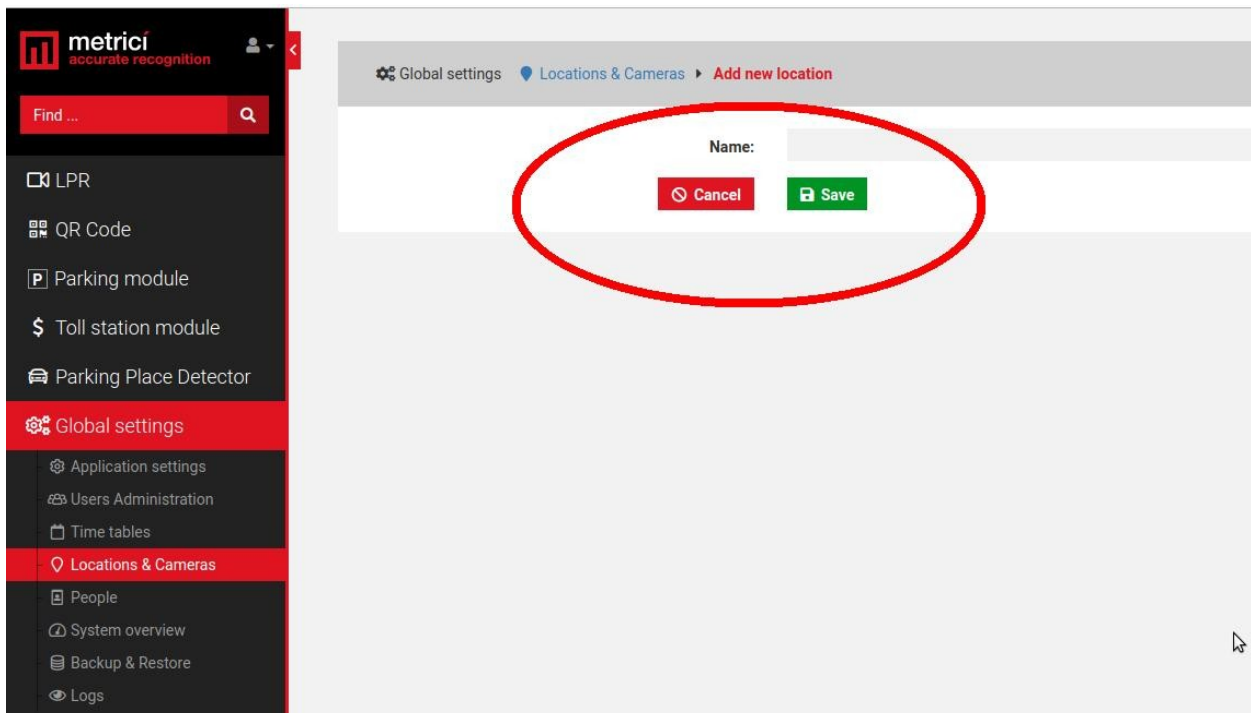
For a new location to be created, choose sub-menu Locations&Cameras and add a new location, click on the green button, upper right of the screen. Choose a name for it and Save. You can also set **Seconds to suppress action, which** is a time interval for a location in which an action will not be executed, even if set in the interface. It is in fact a time interval in which a CCR is ignored .



# METRICI CCR v 1.0 User Guide





Location	Cameras	Cameras types	Actions
Bucharest	Back entrance	License Plate Recognition - Default	  
	Back exit	License Plate Recognition - Parking	
	Buc1	Parking Place Detector	
	Buc2	Parking Place Detector	
	Buc3	Parking Place Detector	
	Buc4	Parking Place Detector	
	Entrance door	QR Code Recognition	
	Exit door	QR Code Recognition	
	Gate 1	License Plate Recognition - Default	
	Gate 2	License Plate Recognition - Parking	
	Iesire 2	QR Code Recognition	
	Mobile	License Plate Recognition - Default	
	QR User	QR Code Recognition	
	Service road 1	License Plate Recognition - Default	
Service road 2	License Plate Recognition - Default		
Toll station	License Plate Recognition - Toll Station		
Transit 2	License Plate Recognition - Default		
Weighing	License Plate Recognition - Weighing Station		
Buzau			  
Town	Camera 1	Parking Place Detector	  
Test			  
Timisoara	Iesire 1	License Plate Recognition - Default	  
Test Dragos			  
Bulgaria	test bulgaria	Parking Place Detector	  
Sector 3	Park Lake	Parking Place Detector	  
Cluj	2 benzi	License Plate Recognition - Default	  



Global settings Locations & Cameras Add new location

Name:

After a location has been created, click on its name or on the “Cameras” green button to add new cameras and edit it. The Edit button will only let you change its name.

Add a new camera or cameras to a location, by click on the Add Camera button on the upper right. Each camera you add to the system has some features.

Name: Choose a name for this camera to easily identify it and locate it

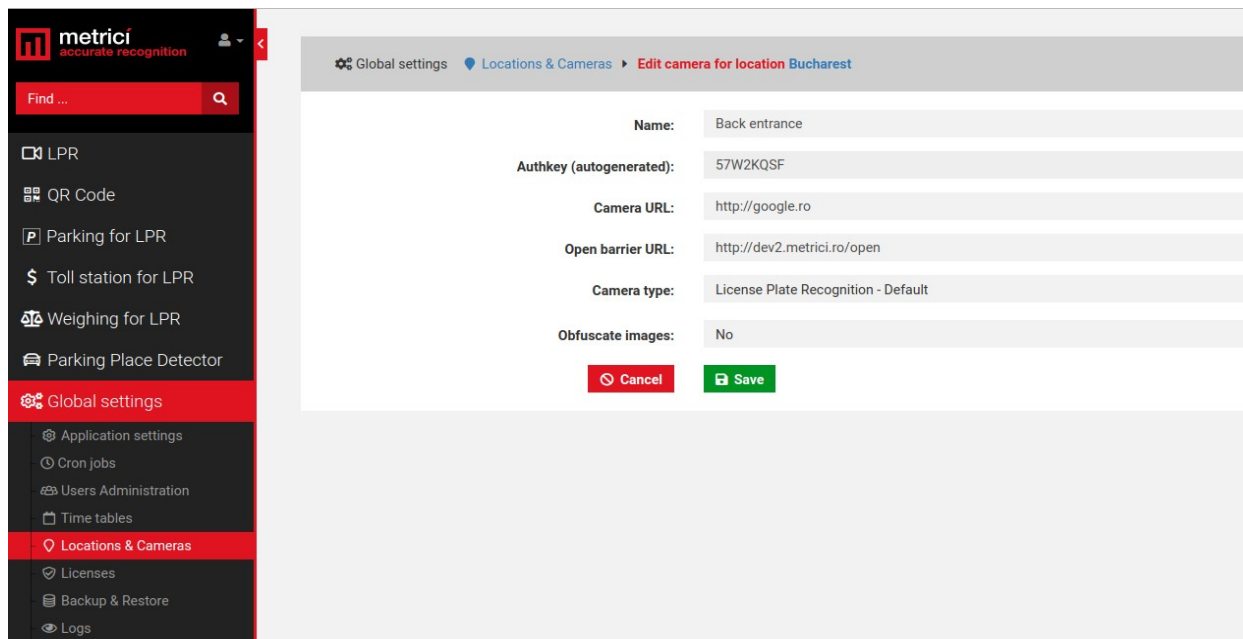
**IMPORTANT!**

**Authkey** (autogenerated): This field is automatically filled by the Metricí software when a camera is introduced in the system. You will need this key and the id in the Metricí Control Panel to integrate the camera with the Web Interface and to have the videostream in live view and other functionalities.

**Camera URL:** Is the IP address of the camera from which the video stream is received.

**Camera barrier URL:** is useful for LPR applications to open a barrier from live view, with a click on the screen. This is the IP address of the barrier connected to this particular camera. A camera can command only one barrier.

**Camera Type** is the Metricí application for which this camera is used for. Choose the appropriate one- container code recognition, license plate recognition, Parking Place Detector, QR code recognition etc. **Keep in mind that if you don't select the correct application, you won't see that camera and settings in your module and the system will not work at all.**



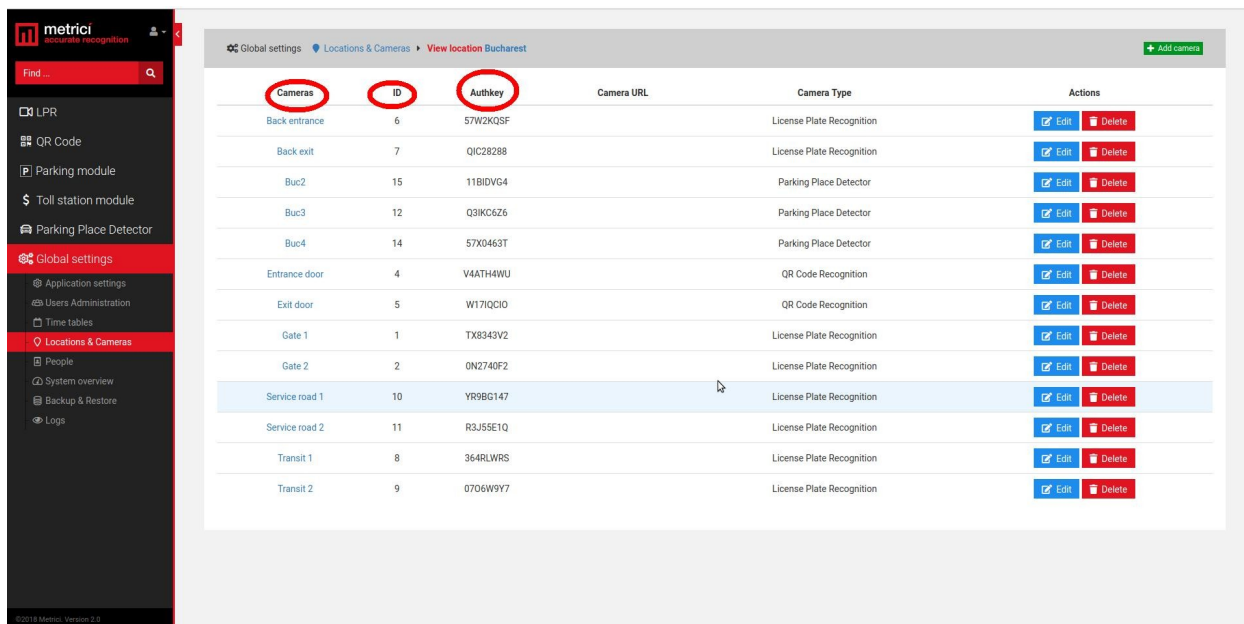
**Obfuscate images:** Is the Metricí feature that enables you to be GDPR compliant. For each camera in a location you can choose to blur the event photo recorded by Metricí. From the moment this option is checked, all photos for that camera will be blurred. The option can be unchecked at any given time, but the already altered images will remain as such.

After all the cameras were added to the system you will see a list like in the next image.

**IMPORTANT!**

The ID and the authkey for each camera are mandatory to be added to the Metricí Control Panel - where detection engines are installed, on the server which runs the software. This can be on the same machine or other one.

When the ID and the cameras are added to the Metricí engines in Contro Panel, this will facilitate the communication between the engines and the Web Interface. If this step is omitted, no data will be recorded in database and the system will not work. See next chapter.



All cameras on the system can be later edited or deleted, as the user chooses.

## CHAPTER 6

### METRICI CONTROL PANEL SETTING AND USING

**Metrici Control Panel** application is in fact the "place" where detection engines are processing and analyze the video stream.

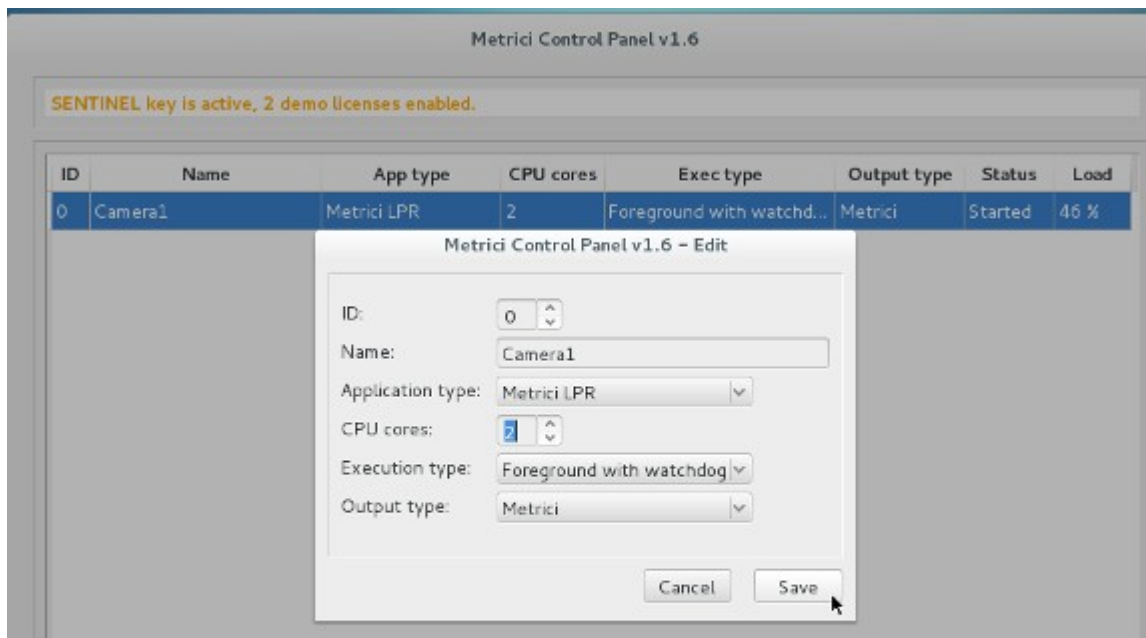
A setup Metrici may include one Interface and one Control Panel on same localhost (same server), or more Control Panels, on several machines, depending on how many cameras and detection engines are used, as the hardware has a maximum supported engines, depending on specifications: CPU, GPU, RAM etc and one central Interface.

The data processed in these servers will be send for recording and reporting towards the **Metrici Interface**, where they can be easily accessed in a friendly format. The detection application can work independently, but **Metrici Control Panel** makes sure that the engines are not jamming and are working as they are meant to do. Also, this is where you can set, change or later execute many useful options, as we are about to explain in this chapter.

**Metrici Control Panel** application will launch automatically each time the computer is on.

## 6.0 Add cameras

You can add a new detection engine by using the **Add** button. When adding a new application, you set the CPU and the number of **processing cores** for each camera and it is to run on processor or GPU. The more processing power for each camera, the better the detection, and the application will operate more frames in real time.



After adding a camera and a **application type (choose the appropriate one- in this case Metricí CCR)**, for a complete setup, such as connectivity, actions to be executed, enter in **Execution type dropdown menu and choose Foreground with watchdog** working mode.

**At a later date, this working mode can be changed. The four possible settings for this mode are:**

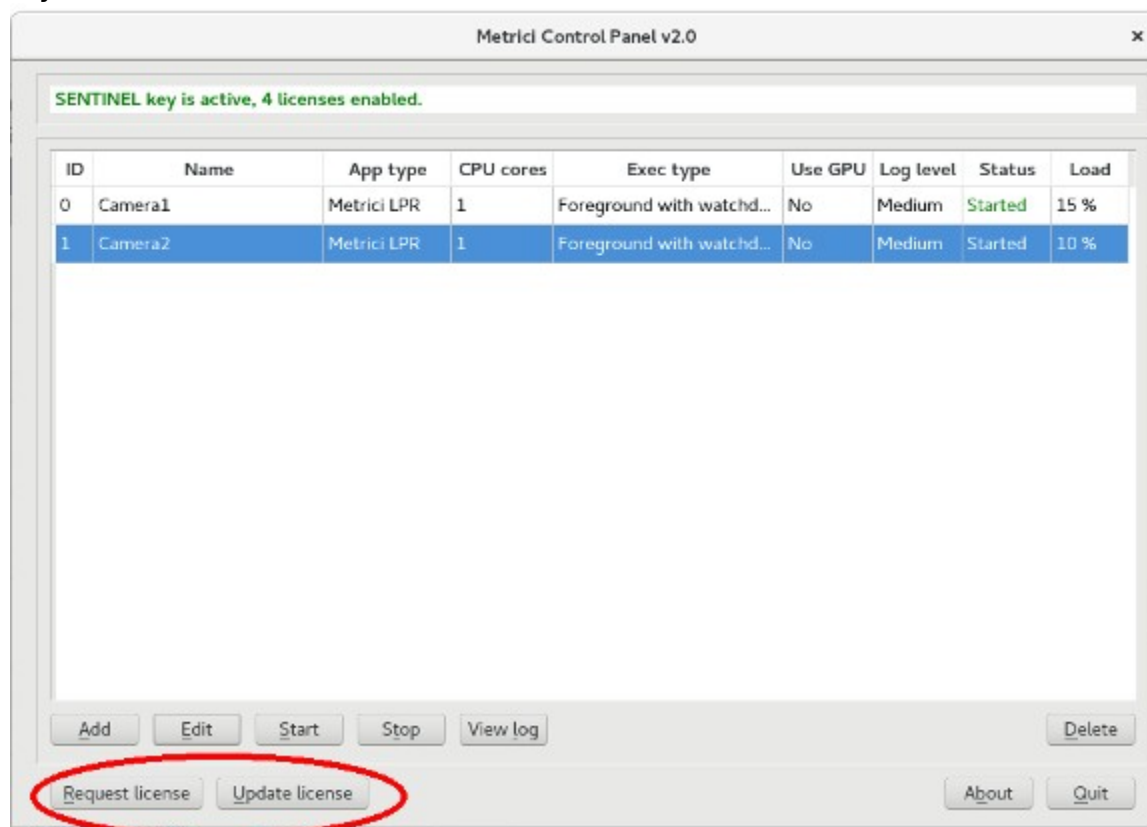
- ✦ **Background:** the application will operate without showing the results of the detection on screen, but will send the data to **Metricí Interface**. This mode saves processing power.
- ✦ **Background with watchdog:** is the same way as Background, but the application will automatically restart in case of reboot or in case the computer is shut down.
- ✦ **Foreground:** the application detection is visible. This mode is especially used when installing the system to check the position of the camera, settings etc.
- ✦ **Foreground with watchdog:** the same as Foreground, but the application will automatically restart when shut down.

Metrici recommends a working mode set at **Background with watchdog after installation**.

In case that more cameras will be connected to Control Panel, the settings in this chapter will be applied for each one of them.

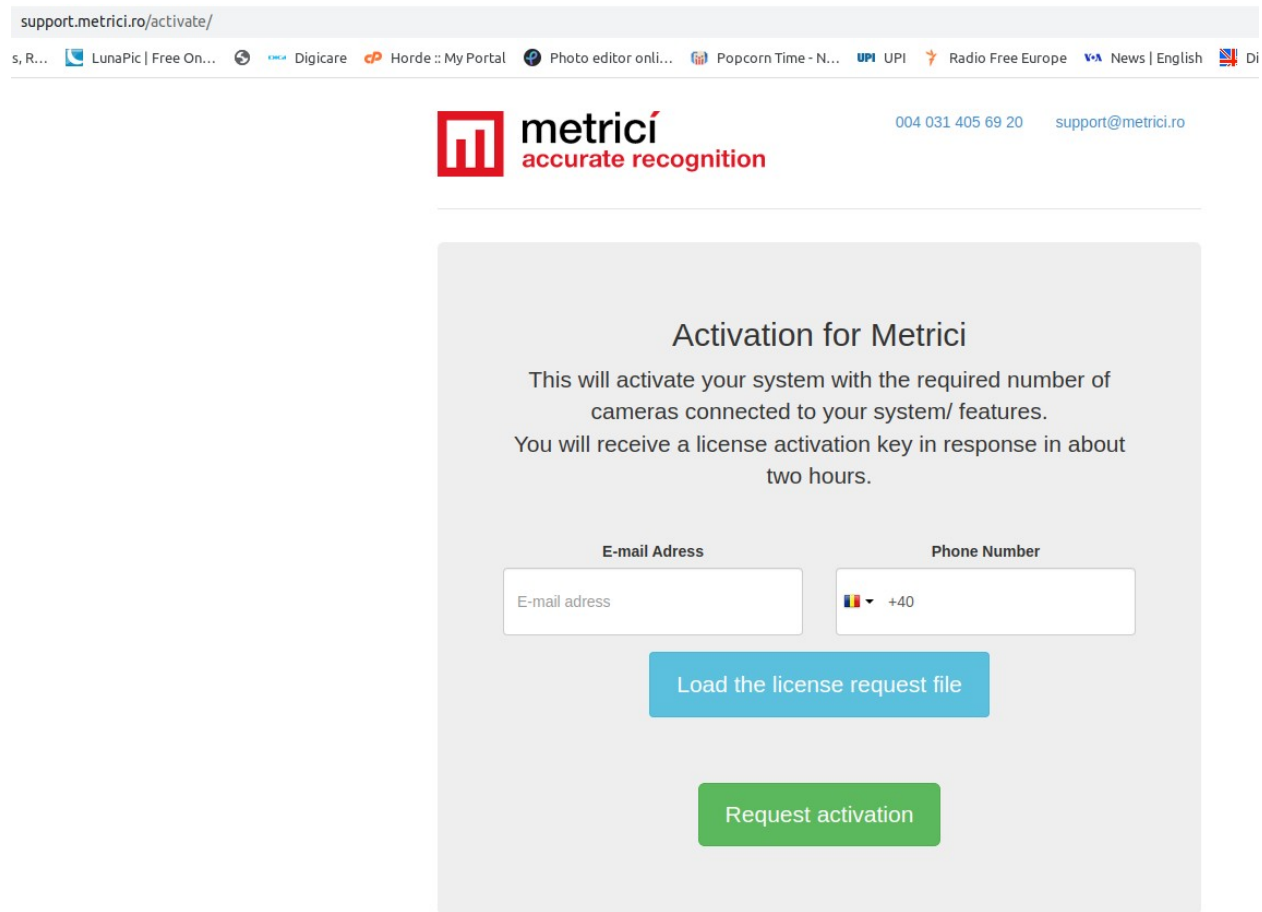
## 6.1 License activation

At the Beginning of the installation, you may want to activate your license. In Metrici Control Panel, click on Request license. In the new window fill in the product key that is written on the license certificate received from Metrici. Press OK.



This will generate a c2v file that will be saved on computer, usually on desktop.

Go to <http://support.metrici.ro/activate/> . In the designated fields write a valid e-mail address to which you have access and a phone number. Load the previously generated c2v file by pressing “Load the license request file”. In the end press “Request activation”.



**It is important that you have access to the mail you provided because you will receive there the info for activation.**

In about a two hour interval you will receive an email answer from Metricí such as

### **Activation license for Metricí**

Hello, you can download the activation file at:

<http://support.metrici.ro/activate/keys/8457847584788928ks.v2c>

**Product code: 7866869\_df93mo398-4k12e9i-29038-a9879-876nmcu6687.**

You will download the file from that link, save it on computer and click on “Update license” in Metricí Control Panel. You will load there this file received from Metricí and Open.

## 6.2 CCR engine working mode and Trigger in

Keep in mind that a user must set each detection engine individually, as every camera has its own application/engine.

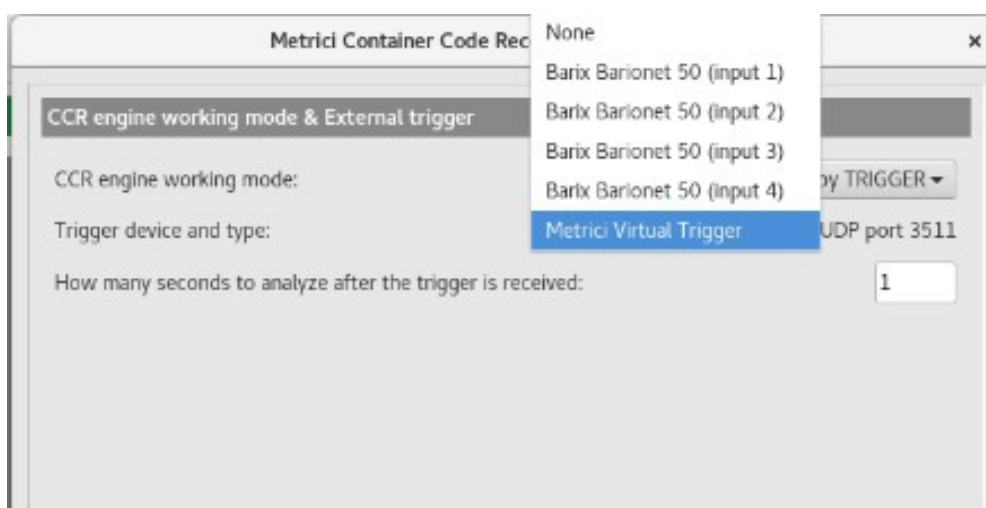
By pressing the **Settings** button, the first option is **CCR engine working mode & Trigger in** which will set the working mode for the detection software.

Trigger in refers to an external signal sent toward Metrici to start detection.

**Metrici CCR** can be active in continuous mode and try to code numbers around the clock or if it receives a command/ trigger from a compatible device, such as Barix Barionet, LAN Controller connected to an inductive loop or a sensor etc, or from another Metrici engine-LPR for example. Or the other way around: when a container is detected, a LPR reading can be done. If you want to use continuous mode, skip to next point in this chapter. If you want to use trigger facility, keep reading below.

Metrici Virtual Trigger is useful in applications where a cross checking is used. This detection engine is receiving a signal to start detection from another engine - can be one of same type- in our case CCR, or different such as LPR, QR, or PPD.

For example a LPR detection triggers a Qr code recognition which triggers a Container Code Recognition. From here, in Metrici Interface you can set different actions when one, two, or as many conditions you want are satisfied for an action to be made. Or you just want these three events to be linked in database and visible. The first rule is the events have each one a rule established in database and the detection to be triggered, as there is a unique verification key for every detection.





In this menu, if we choose Metricí Virtual Trigger, we inform the application that will **receive** a signal to start detection from another one.

To learn how to set a different engine to **send** the trigger see Chapter **Reporting, Check action and Trigger out**.

Keep in mind that when setting the detection with trigger you can also choose how many seconds the CCR engine is trying to detect a container code.

When setting another Metricí engine to send a trigger to this one, you set the port for the second one as the one generated by Metricí when you choose Metricí Virtual Trigger. For example, in the image you will see port 3511. So the second engine, the one which sends the trigger will send the trigger to this port.

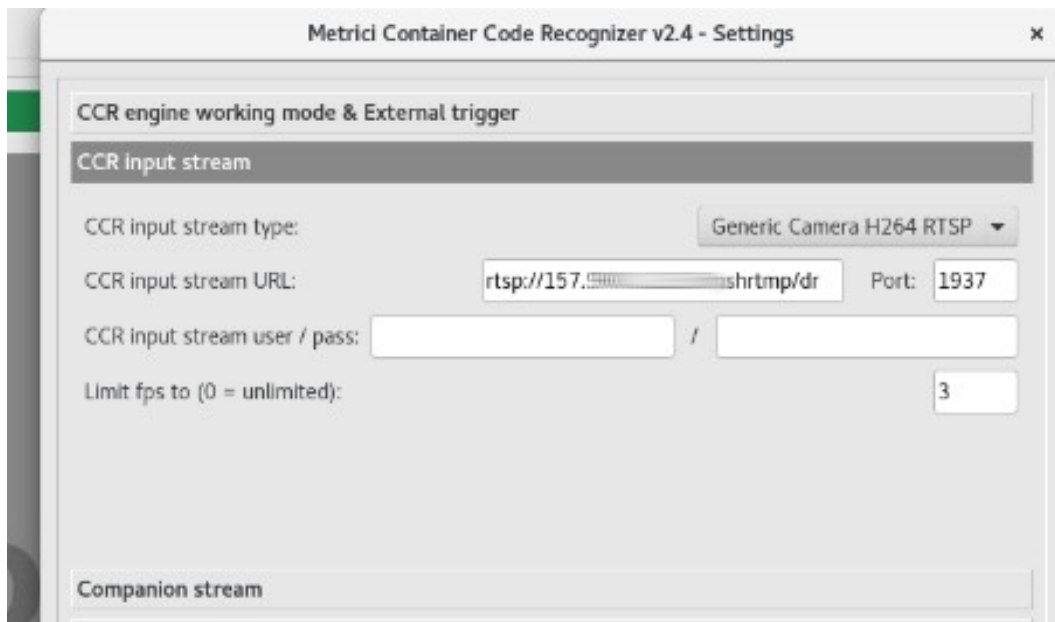
You first set the receiver – choose Metricí Virtual Trigger. Remember the port and you copy this in the second engine (the sender) at Reporting, Check action and Trigger out menu.

In case a trigger is received, no matter which one (virtual or from external device), and there is no container code or this is not visible, dirty, partial etc., Metricí CCR engine will generate an event and will be added to database with the ID UNKNOWN. This will be accompanied by a still frame that you can check and see if there was a container or not.

## 6.3 CCR Input Stream

Section **CCR Input stream** will be filled with connectivity data of the camera: camera's IP, as well as the **user** and **password** as they were established when installing the camera.

Be careful to choose the correct camera name and the video stream type: Mjpeg, H.264, H.265 as was set in the camera. If you don't set the correct type, you will not see images live and the detection will not work also. If your model of camera isn't on Metricí list, just choose Generic camera and the video stream type.



## 6.4 Companion Stream

---

**Companion Stream** This option allows the user to set a new camera that will record an image along the one that captures the container code. The images from the two cameras will be saved together on web interface. You will fill the IP of the camera, the user and the password. This particular camera is just linked to this one and can have a wider angle or a different perspective

**Companion Stream Type:** Choose the model of the second camera. In case this model is not on the list, choose Generic camera and the video format it uses.

**Companion Stream IP address** is the IP address of the second camera as was set when installed.

**Companion stream user /pass** - user and password of the camera as were set when installed.

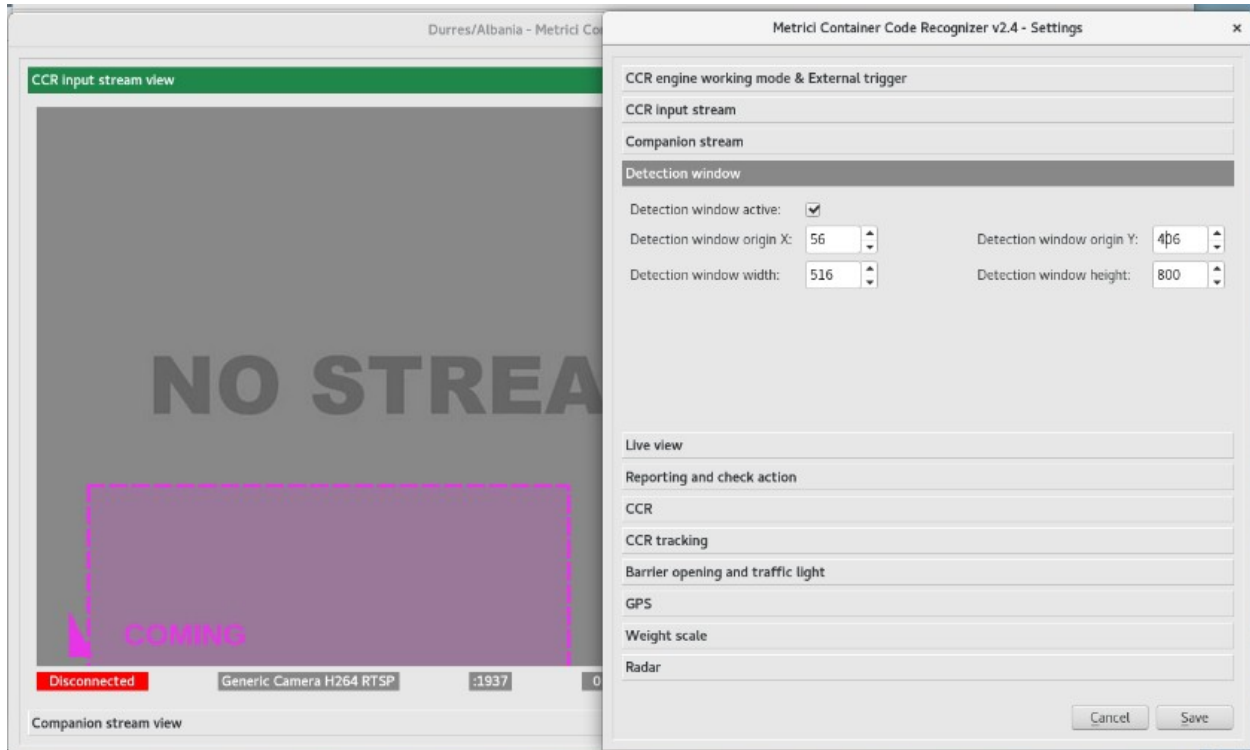
## 6.5 Detection Window

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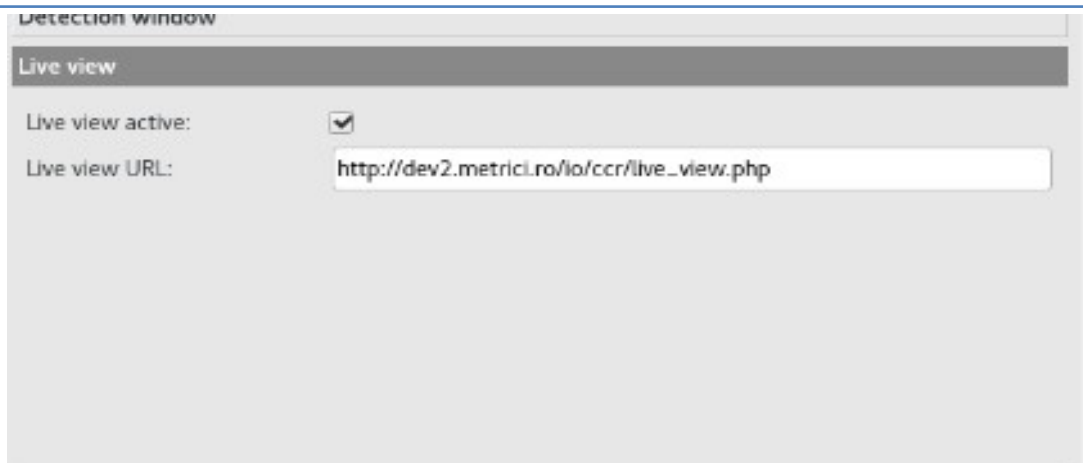
**Detection window** tab, when checked, will reduce the area scanned for container codes. This will allow a greater speed of detection, a smaller need of computer resources and faster processing. This option can be used for barriers, or in other

areas where codes can only be seen in a space smaller than the entire view field of the camera.

By changing the values from this function, you can modify the zone where the detection soft to look for codes. Detection window can also manually be set, with “click and drag” from the corners of the pink square.



## 6.6 Live view



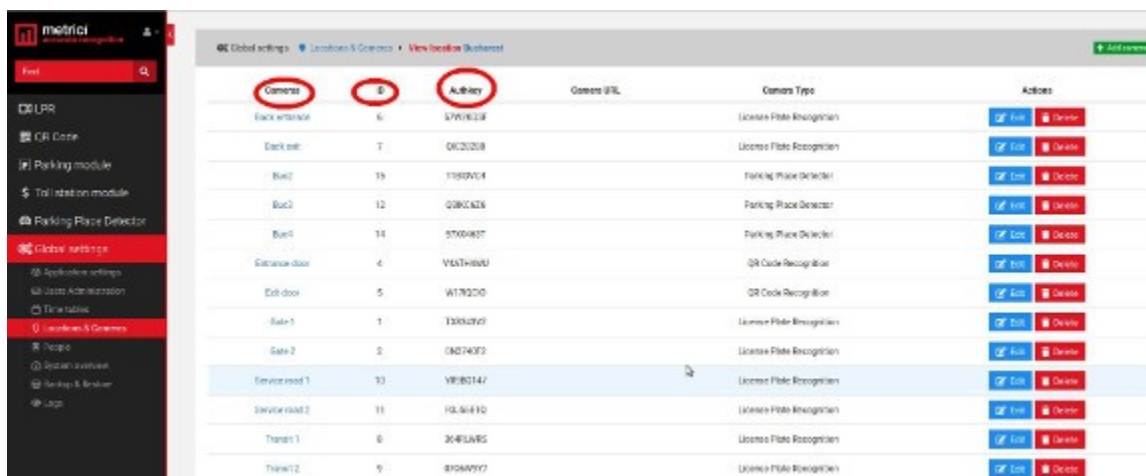
**Live view active.** By checking this button, images from detection camera will be “broadcasted” to the web interface or to an IP address. If it is not checked, no live view will be displayed in Metrici Interface.

In order to have access to live view functions in web interface you click on Live view active and fill in the data for url. If the access is only on localhost you will write an URL such as [http://localhost/io/live\\_view.php](http://localhost/io/live_view.php). If the access is web based you will write an address such as [http://IP\\_ADDRESS/io/live\\_view.php](http://IP_ADDRESS/io/live_view.php) and result a formula like [http://192.1.1.1/io/live\\_view.php](http://192.1.1.1/io/live_view.php), or one like in the image above.

## 6.7 Reporting, check action and Trigger out

In this menu you will fill in the data from **authkey / id** generated by **Metrici Interface**. These values were automatically set by **Metrici Interface** when a camera was introduced in the system. This is the only way in which you integrate the communication between the detection unit – meaning the engine application and analysis centre- the interface. If you will not fill these data, you will not have access to Live View and Codes Flow functions in Web Interface, it will not build a database and it will not create reports and statistics. The detection itself will work, but will keep all data on a local buffer, where you don't have access to and they will not be sent to the database.

**NOTE:** ID and Authkey can be viewed in in **Metrici Interface** on Global Settings **menu, Locations&Cameras** submenu and choose a location to view all the cameras set in. As in the next image. Each camera introduced has a unique ID and authkey - **See chapter 5.5.**



Camera ID	ID	Authkey	Camera URL	Camera Type	Actions
Back entrance	6	17707633		License Plate Recognition	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Back exit	7	0623208		License Plate Recognition	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Bus1	19	11889704		Parking Place Detector	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Bus2	12	0380626		Parking Place Detector	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Bus3	14	57004807		Parking Place Detector	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Entrance door	4	V6374680		QR Code Recognition	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Exit door	5	W179200		QR Code Recognition	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Gate 1	1	1333290		License Plate Recognition	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Gate 2	3	0607403		License Plate Recognition	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Service road 1	10	VF80147		License Plate Recognition	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Service road 2	11	HS36410		License Plate Recognition	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Tram1	8	3648185		License Plate Recognition	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete
Tram2	9	8706977		License Plate Recognition	<input checked="" type="checkbox"/> Live <input type="checkbox"/> Delete

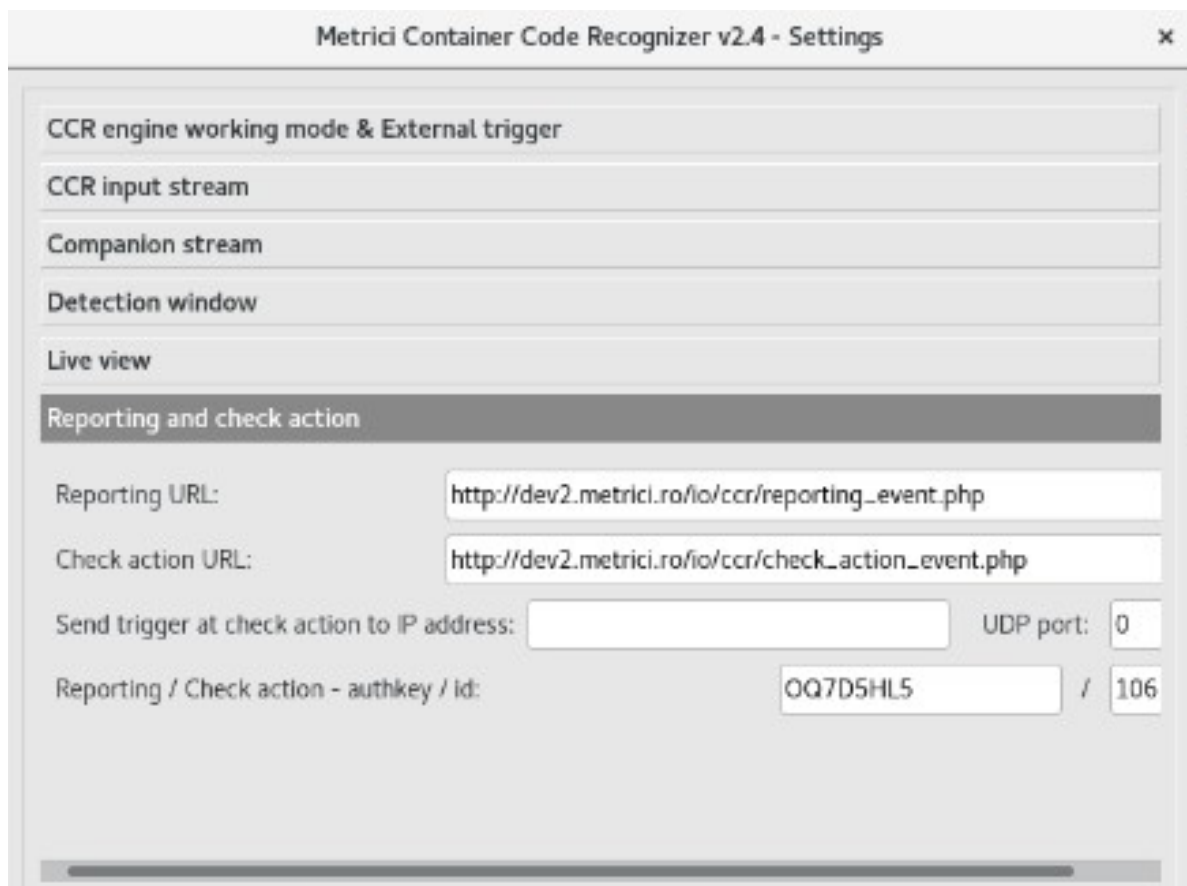
**Reporting URL** - the virtual address where the system will send the data of recognized container codes and the images from the cameras. This will be as [http://IP\\_ADDRESS/io/new\\_plate\\_event.php](http://IP_ADDRESS/io/new_plate_event.php). In case that reporting and administration interface is installed on the same computer with the analysis application, IP\_ADDRESS will take the form 127.0.0.1.

The system tries to send the reporting event until a receiving confirmation comes from the server.

**Check action URL** - the address of the unit for checking the actions to be executed if a container code is recognized. The actions can be set in **Metrici Web Interface** and take a form such as: open barrier, send e-mail, popup on screen, change traffic light. See chapter CCR/Actions.

It will have a form like: [http://IP\\_ADDRESS/io/check\\_action.php](http://IP_ADDRESS/io/check_action.php). In case that reporting and administration interface is installed on same computer with the analysis application, IP\_ADDRESS will be 127.0.0.1.

Reporting address and check action addresses can be different as check action is the first one to execute when a code is detected, afterwards reporting when a code exits from the field of view of the camera.



Metrici Container Code Recognizer v2.4 - Settings

CCR engine working mode & External trigger

CCR input stream

Companion stream

Detection window

Live view

**Reporting and check action**

Reporting URL:

Check action URL:

Send trigger at check action to IP address:  UDP port:

Reporting / Check action - authkey / Id:  /

**Send trigger at check action to IP address** is useful in cross checking situations, detection on trigger, or when you want two events to be registered

together in database. For example at a weighing station a LPR detection in front of truck triggers a CCR detection for the back of the truck.

You will fill in here the IP address of the Metricí server or the address of a server on which another Metricí engine is installed. If more Metricí engines are on the same server you will fill in an address such as 127.0.0.1, with the UDP port as in the one allocated in “CCR engine working mode and Trigger in” menu explained in the beginning of the chapter.

## 6.8 CCR

For **CCR** tab, the optimum value of **CCR min. length** and **Plate max. length** will be set only after placing the camera and choosing an appropriate resolution, depending on results. You can start with a CCR min. length = 120 and Plate max. length = 1000. Metricí recommends that a CCR has a minimum width of 200 pixels. So be sure to place and set the camera accordingly, to achieve such a result.



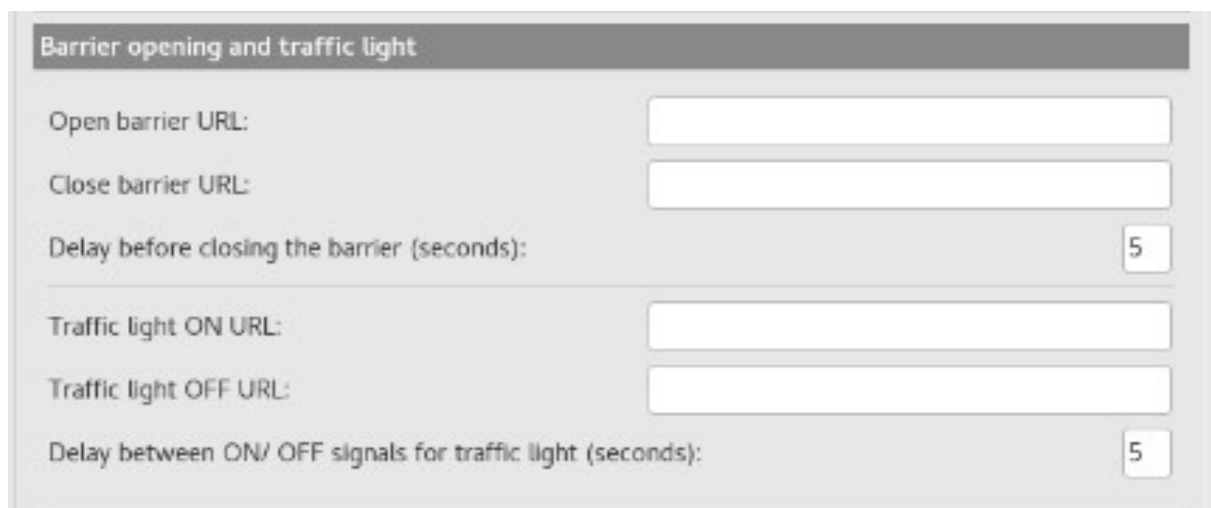
The option **Same CCR delay (seconds)** will set how many seconds the program to wait for a CCR to be back in sight for reporting a new detection. For example, if we set this value at 5 seconds, the software will record a new event for a CCR if it gets more than 5 seconds between the time when a CCR plate exits the camera view and a new entry in the view field.

**Single CCR mode** button, when activated, it assumes there is only one code in frame, any given moment. This mode will reduce the number of “false positive” detections in case a code stays for a longer period of time in the same position.

## 6.9 CCR tracking

**CCR tracking** will establish the direction of movement for the codes. The data from this option can later be accessed in the **Metricí Web Interface**. Be careful to set the arrows correctly. **The direction is the movement (coming or leaving) of the container in relation to the location not to the camera view.** For example, if a vehicle approaches the camera, but in fact it is leaving a location, the set in Metricí will be for LEAVING. An example could be at the exit from a parking with the camera looking towards the interior. So the containers coming towards the camera are in fact leaving and this is how you set it in this menu.

## 6.10 Barrier opening and traffic light



Barrier opening and traffic light

Open barrier URL:

Close barrier URL:

Delay before closing the barrier (seconds):

Traffic light ON URL:

Traffic light OFF URL:

Delay between ON/ OFF signals for traffic light (seconds):

Will set the parameters for closing and opening a barrier when a container code is recognized.

You will fill in here the URL address of the device.

**Instead of a barrier it can be any device that takes commands by HTTP protocol.**

**Delay before closing barrier** will set the time interval, in seconds, the system waits before closing the barrier after it opened it for a recognized code.

**Traffic light ON** URL will be filled in case a traffic light is installed, which will commute when a container code is detected if this option is checked for that particular code in Action list.

All the settings from **Barrier and traffic light** menu will be correlated with the **Metrici Web Interface** menu for each code that is in action lists.

## 6.11 GPS

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In case you will set a GPS device, this will save the data together with the image from the cameras.

## 6.12 Weight Scale

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When integrating a weight scale, an IP address will be saved in the dedicated box. Metrici developed special firmware for communicating with industrial weighing scales. Each detected code will be recorded in database together with the weight of the vehicle. TCP Port can be changed manually accordingly to the data on set. See the Weighing Station Module user guide for more info.

## 6.13 Radar

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When Metrici Observer Radar is connected, after filling the required data (IP address and TCP Port), the image of the code detected by Metrici will be saved together with the recorded speed of the vehicle. TCP Port can be changed and manually saved, depending on Barix settings on location.

**NOTE:** The detection system **Metrici Control Panel** can work independently of internet connection, records the data in a local buffer and will later save the information on server and on **Metrici Web Interface**, when a connection at internet /network is set.



## CHAPTER 7

### GLOBAL SETTINGS OTHER INTERFACE SETTINGS

## 7.0 CRON JOBS

---

A user can set to receive reports by mail at a established time interval. You can select here from what application (LPR, CCR, Area Counter, Line Counter etc) what type of report to receive, where to send it, on what time interval: hourly, daily, weekly, monthly or once a year.

## 7.1 TIME TABLES

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A time table is designated to apply some rules or settings on a specific hourly/daily/weekly program. To be more flexible in setting, a user can choose to have alarms or actions made only when special conditions are met.

This setting is applied for now at any Metrici module, **except** Parking Place Detector.

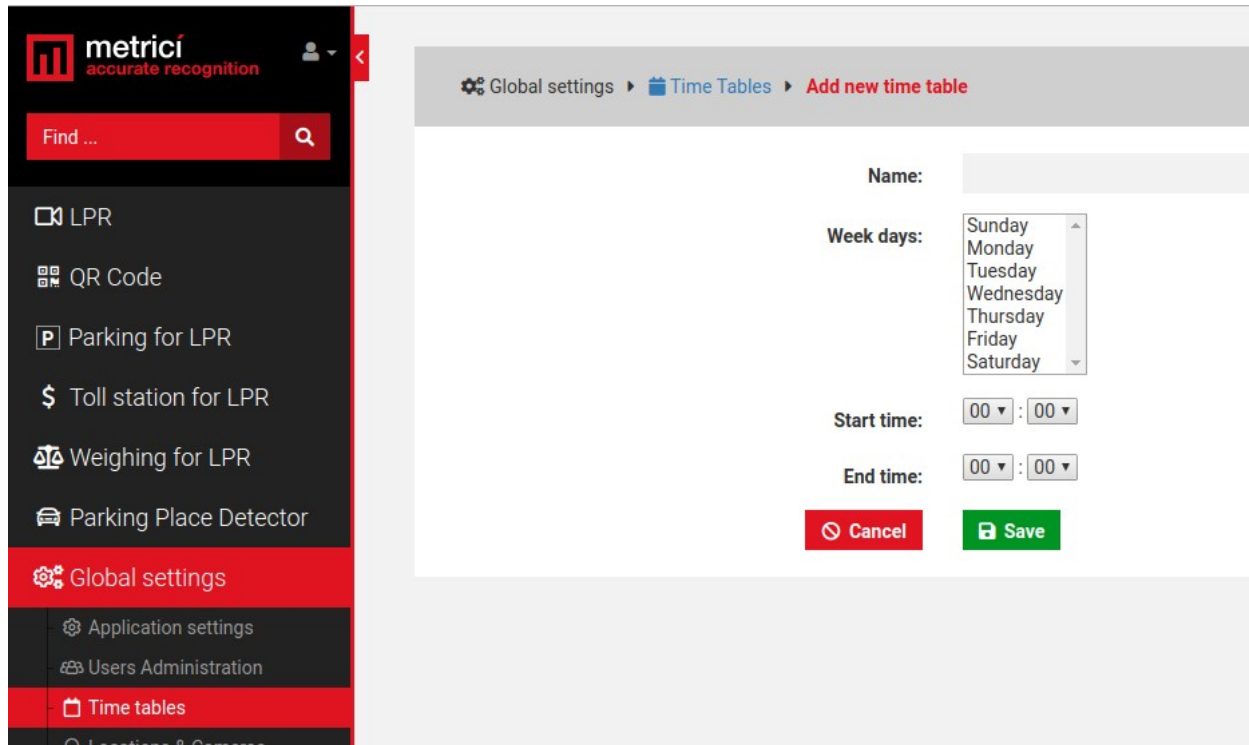
For example, a user can set to receive an alert email only when certain conditions are met.

Generally, the time table is used in Parking module, also, for toll stations, but also for QR code recognition engine or CCR.

Metrici has a default time table “All the time” which is valid 24/7. But customized time tables can be made that to be used in action settings.

Click on the green “Add time table” button upper right. Choose the days of the week for which you want to set a time table. You can choose as many as you want from one to all week and choose an hour interval, also and Save.

This will create a time table for that period.



Customized time tables can be as specific as to complete a action or not only on Mondays, for example, from 8 till 9 a.m.

## 7.2 LICENSES

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You can see here what type of licenses you have activated on your interface. The ones you don't have access to are crossed out. You can update your license anytime with new modules and engines.

## 7.3 BACKUP AND RESTORE

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You have two options for backup:

### 1. Export general settings

In this case you will save all the data set in Metrici Interface, but without the events. You will be able to save this way info about all the users, their administration rights, the locations name and settings of the cameras etc.

2. **Full export** (entire database) will save an SQL file with all the data as the first one plus the events, but without the detection photos.

In case of backup click on restore button, browse to a folder and choose an SQL file saved as the steps described before and click on Save.

## 7.4 LOGS

The user with administration rights can view here all the logins of any user and the changes one made within the system or menus. You can search events by date, user or time interval. You can export in excel format the search results.

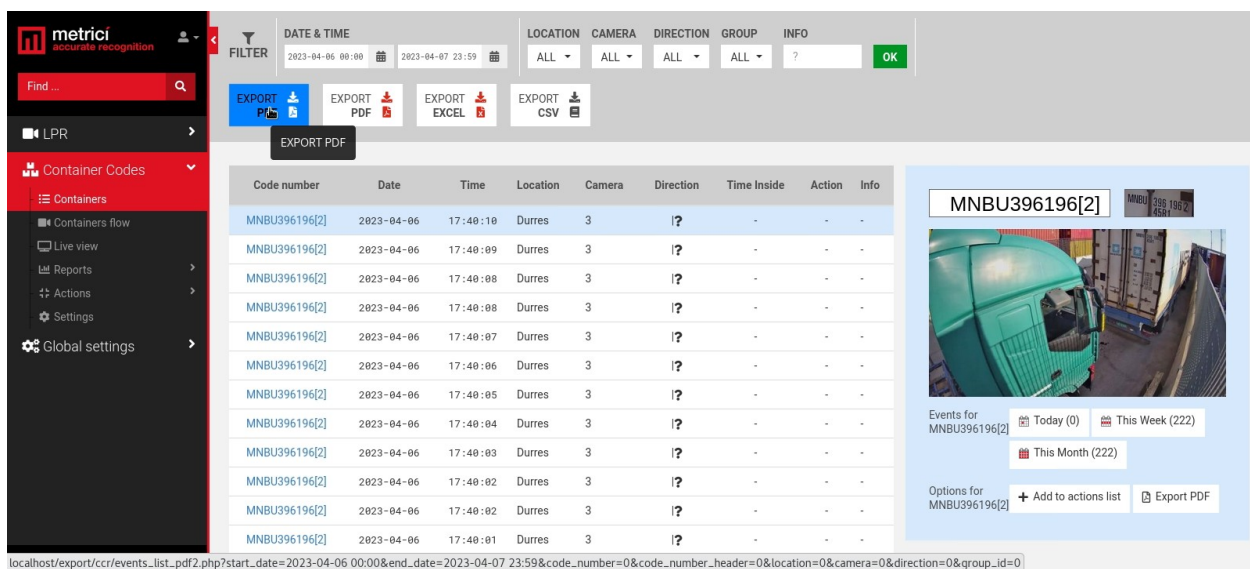
## CHAPTER 8 CCR INTERFACE FEATURES

### 8.1 CONTAINERS

In this menu you see all the details of detections. All detected codes will be displayed here.

You see a list of events and you have a top bar where a search can be filtered,

The available options for the filters are date and time, location, camera, direction, group or info (which is a field where each code introduced in database can have some additional info).



Code number	Date	Time	Location	Camera	Direction	Time Inside	Action	Info
MNBU396196[2]	2023-04-06	17:40:10	Durres	3	! ?</td <td>-</td> <td>-</td> <td>-</td>	-	-	-
MNBU396196[2]	2023-04-06	17:40:09	Durres	3	! ?</td <td>-</td> <td>-</td> <td>-</td>	-	-	-
MNBU396196[2]	2023-04-06	17:40:08	Durres	3	!\?	-	-	-
MNBU396196[2]	2023-04-06	17:40:08	Durres	3	!\?	-	-	-
MNBU396196[2]	2023-04-06	17:40:07	Durres	3	!\?	-	-	-
MNBU396196[2]	2023-04-06	17:40:06	Durres	3	!\?	-	-	-
MNBU396196[2]	2023-04-06	17:40:05	Durres	3	!\?	-	-	-
MNBU396196[2]	2023-04-06	17:40:04	Durres	3	!\?	-	-	-
MNBU396196[2]	2023-04-06	17:40:03	Durres	3	!\?	-	-	-
MNBU396196[2]	2023-04-06	17:40:02	Durres	3	!\?	-	-	-
MNBU396196[2]	2023-04-06	17:40:02	Durres	3	!\?	-	-	-
MNBU396196[2]	2023-04-06	17:40:01	Durres	3	!\?	-	-	-

The events list include a time stamp for the detected codes, hour, location in which the number was seen, the camera which detected it, direction of moving (as set in Metricí Control Panel) time inside , if a action is set for that particular code and info.

On the right side of the screen, there are several more information for the selected code from the list.

The photo from the moment of detection is accompanied by data about number of events for that code on that day/week and month

There is also a button to add that number to an action list (See Action list chapter) and one button to export that event in PDF format.

## 8.2 CONTAINERS FLOW

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This is a method to generate alarms for certain events for the user who runs Metricí Interface. You have two options for the alerts: the alert consists of a beep sound when a detection is made. This is a format similar to liveview but not all the video stream is viewed, but only the last detection.

The available options are alerts for the **codes on the action list** (that are included in Metricí database- whitelist or blacklist ) or **codes not on the list**. When you select an alert method, the list will be filled only with detection of our selection. If None is selected then all the detection will be listed as they happen.

A user can also choose for which locations and which camera to see the results. If one manages more locations and only one is chosen, the alerts will only display detection in the selected location.

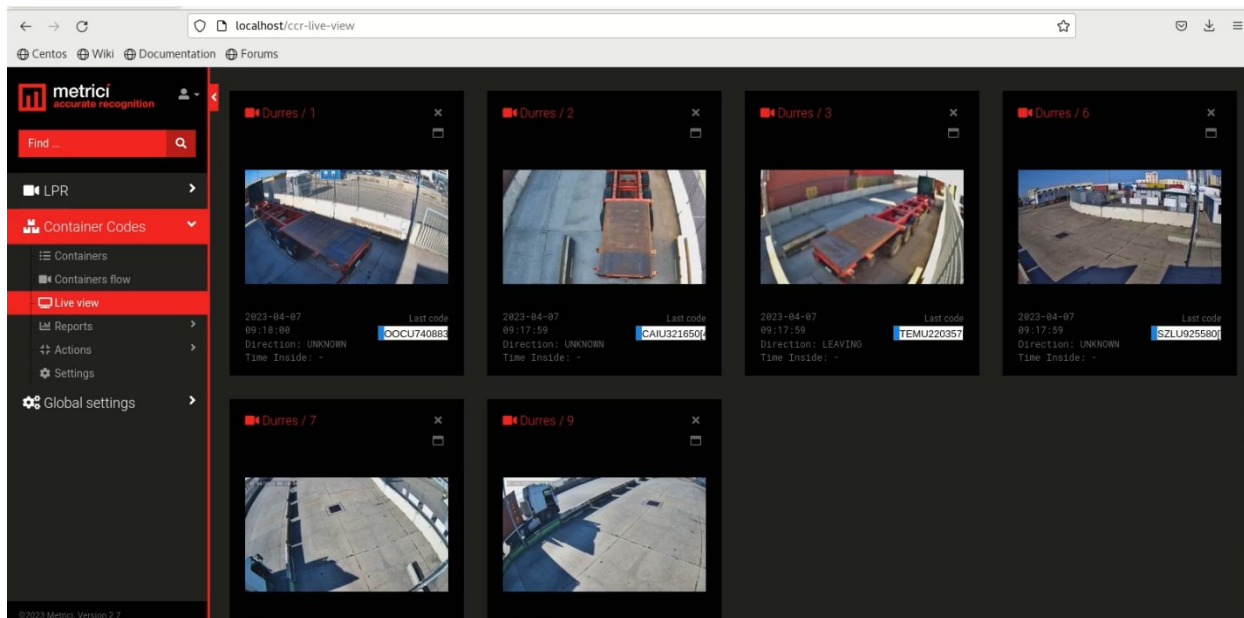
A click on the detected ode or on the photo will maximize the picture from the moment of detection.

## 8.3 LIVE VIEW

---

From the drop down list of available cameras choose one by one the cameras you want from the drop down menu and click on blue button “Add live view”.

A view can be made full screen by click on the monitor icon. You can delete a camera from live view with a click on the “x”. After a full screen camera, to return to all cameras, click on the “\_” sign.



By default the live view is automatically filled in on Metricí Control Panel with a URL as [http://localhost/io/lpr/live\\_view.php](http://localhost/io/lpr/live_view.php). If the video is sent to another URL, replace localhost with it. For example [http://metrici.ro/io/lpr/live\\_view.php](http://metrici.ro/io/lpr/live_view.php).

## 8.4 REPORTS

Several reports are automatically generated by Metricí. Each report can be exported in XLS file.

- **Codes each hour** will display number of recognized codes (number of detections) as well as unique codes (as it is possible a code to be detected more times as it travels more often in a location or in front of a camera).

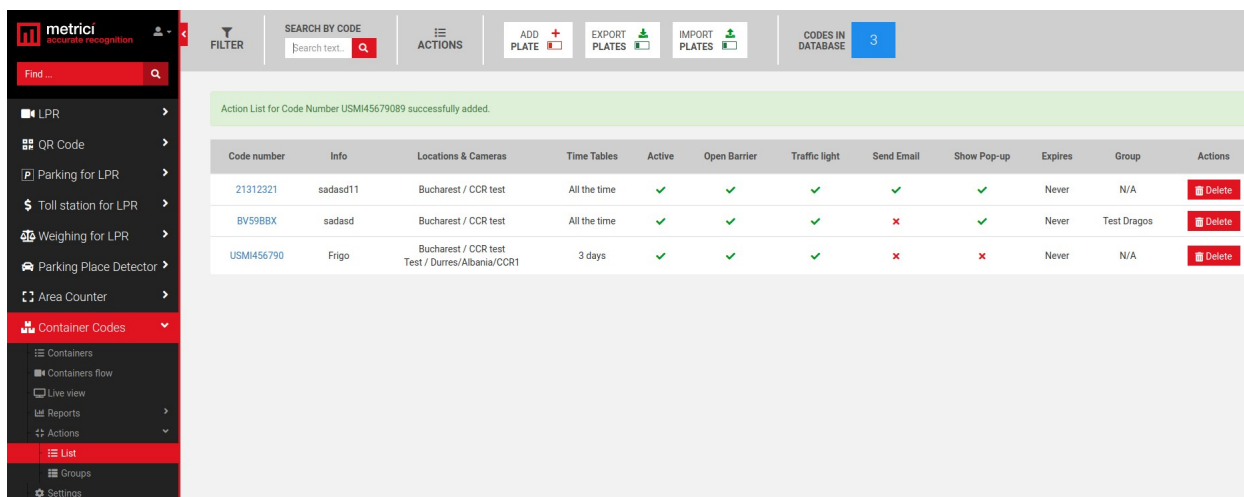
The reports can display a total sum for each hour for that location or an average by days. The average report will make a calculation for each hour of the day for all the days that we filter. The sum will display total number of detections for each hour, by adding the detections of each hour of the day for all the days that we filter. In top bar menu you can choose for what location or which camera you want to see the report.

- **Codes each day** will generate by default a report for all the days of the current month, but more days can be filtered from top bar menu.
- **Codes each month** will generate by default a report with all the months of the current year, but more months can be chosen for a report to be created.
- **Codes each camera** will generate a report with all the detections seen by each camera in a location
- **Top container codes** will generate a list with the codes that were detected more often. From top bar menu you can choose how long the list to be from 10/page to 100/page. For each event, when clicked you will see a list with all the detection for that particular number in the current month

## 8.5 ACTIONS

In this menu you add codes to action lists or delete others. You can create groups, also. We'll explain later what these groups are used for.

Actions list will display a list with all the codes introduced in database, with the settings for each one.



The screenshot shows the METRICI CCR v 1.0 interface. The top bar includes a search function, a filter, and buttons for 'ADD PLATE', 'EXPORT PLATES', and 'IMPORT PLATES'. The 'ACTIONS' menu is open, showing a list of codes with columns for Code number, Info, Locations & Cameras, Time Tables, Active, Open Barrier, Traffic light, Send Email, Show Pop-up, Expires, Group, and Actions. A green notification bar at the top of the table states 'Action List for Code Number USMI45679089 successfully added.'

Code number	Info	Locations & Cameras	Time Tables	Active	Open Barrier	Traffic light	Send Email	Show Pop-up	Expires	Group	Actions
21312321	sadasd11	Bucharest / CCR test	All the time	✓	✓	✓	✓	✓	Never	N/A	Delete
BV59BBX	sadasd	Bucharest / CCR test	All the time	✓	✓	✓	✗	✓	Never	Test Dragos	Delete
USMI456790	Frijo	Bucharest / CCR test Test / Durres/Albania/CCR1	3 days	✓	✓	✓	✗	✗	Never	N/A	Delete

On top bar menu, one can search for a code in database. Also can Add codes, export or import lists.

## METRICI CCR v 1.0 User Guide

The codes list will include the number, info, Locations and Cameras for which that code has some settings set, time tables, whether this is active or not, which barriers to open (from 1 to unlimited), whether to send email, show popup, if it expires, if it belongs to a group or not.

When adding a new code to the lists, one of the fields to be filled require more attention.

First of all, write the code and info (if any). If this code belongs to a group you've created, select one. Be aware that a code introduced in a group will automatically copy all the settings of that group, for actions, time tables, location etc.

Locations and Camera: Choose for what location and for what camera that code has an action rule. One can choose that a code has only rights for one barrier, for example, in a location and not to all of them.

Choose a time table that you've created before if that code is assigned to one. The actions set in this menu will only work during that time table. For example, if you've created a time table Work Hours (Monday to Friday from 8 am to 8 pm) a barrier will be opened only in that time interval.

Check **Active** button and choose what action to be made when this code is detected.

**Action URL** is the address of the hardware device that will be commanded when this code is detected: barrier, traffic light etc- usually is the address of the LAN Controller.

**Cross Check** is a special copyright feature of Metrici when an action is completed only when a series of conditions are met. Metrici checks in the all database and in all the Metrici engines if a unique key is to be found. Zero, by default, it means only one condition is met. If cross check is 1, then two conditions must be met simultaneously. For example, if for access control one uses container code and LPR, one might set a rule that an action to be made when both a code and a plate number are correct and linked in database. A Metrici engine detects a code and will triggers a LPR detection. If the two conditions are met and the number plate is connected in database to that code, the access will be granted.

The first rule is that the events have each one a rule established in database for that action and the detection to be triggered because there is a unique verification key for every detection. This means you have one detection that is triggered by Metrici Virtual Trigger in Control Panel settings.

The interconnection might be also between LPR and car classification or any other combinations.

### IMPORTANT!

For all Metricí interface, whether we talk about searches, action lists or other data, the “\_” sign replaces a letter or a number, and the “%” sign replaces as many letters and numbers.

So you can create an action list for codes beginning with UNSM, for example, and you will set a rule such as code UNSM%, you tell the system to initiate an alarm or open a barrier for any vehicle with codes beginning with UNSM followed by at least one other letter or number.

Also you can perform a search in database using the same special sign.

## 8.6 GROUPS

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The groups options are introduced so to make things more easy for the users. When creating a group, keep in mind that all the settings set for this will be assigned to the codes that are introduced in, so the users doesn't have to manually introduce actions for each code individually.

When a group is formed, be aware to correctly set the rules for that group, the locations and the camera where the action takes place, the time table, if it is has an expiration date etc.

All these settings will be transferred to a code if this is allocated to the group. When introducing a new code in the action list, you just fill in the **number** and choose to what group it belongs to, leaving the other field as they are. The code will copy the group's settings.

In this menu you will see a list of all the groups you have created. When a name is clicked you will see a list with all code numbers assigned to that group and the actions to be made as well as the locations and cameras where these actions are active.

You have the option to import lists with codes in CSV format.

For this click the IMPORT CODES button on upper menu. If you use a third party management program or an external file that is always updated keep in mind to check the option EMPTY GROUP BEFORE IMPORT for not to double the codes in your list every time you import.

If a new import does not contain old codes, but only new ones, this option will NOT be checked.



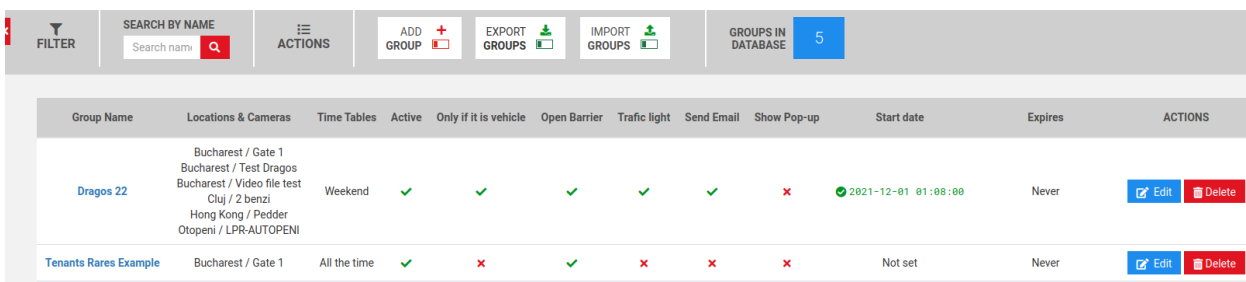
Each group can receive a new code one by one with click on ADD CODE button, upper menu. You will fill in the code and the INFO field if you wish. It will get all the settings for

Upload file:

Allowed file format: CSV.

Empty group before import:

that group.



Group Name	Locations & Cameras	Time Tables	Active	Only if it is vehicle	Open Barrier	Traffic light	Send Email	Show Pop-up	Start date	Expires	ACTIONS
Dragos 22	Bucharest / Gate 1 Bucharest / Test Dragos Bucharest / Video file test Cluj / 2 benzi Hong Kong / Pedder Otopeni / LPR-AUTOPENI	Weekend	✓	✓	✓	✓	✓	✗	2021-12-01 01:00:00	Never	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Tenants Rares Example	Bucharest / Gate 1	All the time	✓	✗	✓	✗	✗	✗	Not set	Never	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

At any time after groups were created, you can export their settings as a csv file or you can import one.

For an export with the codes belonging to a group, you click on its name, and choose option export .