

Manual

Milestone LPR Alarms v1.0

Table of Content

Target audience for this document	3
Copyright, trademarks & disclaimer	3
Copyright	3
Trademarks	3
Disclaimer	3
General description	4
Introduction	4
Solution overview	4
Installation	5
Prerequisites	5
Plug-in installer	5
Installation steps	5
License	8
Configuration - Management Client	10
Analytic Events	10
Alarms based on Analytic Events	11
Add Configuration	14
Operation	17
Management Client	17
Smart Client	19
Troubleshooting	21
Limitations	23
Known issues	23

Target audience for this document

This document is aimed at system operators with some experience with Milestone XProtect® Corporate 2019 R1 and provides a description of how to install and use the Milestone LPR Alarms plug-in.

Copyright, trademarks & disclaimer

Copyright

© 2019 Milestone Systems A/S.

Trademarks

XProtect is a registered trademark of Milestone Systems A/S.

Microsoft and Windows are registered trademarks of Microsoft Corporation.

All other trademarks mentioned in this document are trademarks of their respective owners.

Disclaimer

This document is intended for general information purposes only, and due care has been taken in its preparation.

Any risk arising from the use of this information rests with the recipient, and nothing herein should be construed as constituting any kind of warranty.

Milestone Systems A/S reserve the right to make adjustments without prior notification.

All names of people and organizations used in this document's examples are fictitious. Any resemblance to any actual organization or person, living or dead, is purely coincidental and unintended.

This product may make use of third party software for which specific terms and conditions may apply. When that is the case, you can find more information in the file *3rd_party_software_terms_and_conditions.txt* located in your Milestone surveillance system installation folder.

General description

Introduction

Milestone LPR Alarms plug-in makes it possible to get alarm indication based on three events:

- Downtime elapsed for specific registered license plate
- A license plate is already registered, and it is detected by a defined entry camera
- A license plate is not registered, but it is detected by a defined exit camera

In order to get this kind of information a configuration for each parking must be added. Additionally, the list with the license plates can be revised if needed.

Solution overview

Once the Event Server has loaded the plug-in, a configuration for a parking with entry and exit cameras must be added. A license plate is added in the Parking Information list when it is registered by the defined entry camera. Usually a registered license plate is removed from the list when it is detected by the defined exit camera. Three types of alarms can be generated if they are configured for the parking as described in chapter [Configuration – Management Client](#). It is also possible to change some of registered license plate properties as described in chapter [Operation – Management Client](#).

Following prerequisites must be in place:

- LPR Plugin and Server must be installed

Note: Currently it is not covered in this manual. For detailed description on how to install LPR do consult the XProtect VMS help.

- Entry and exit cameras must be added in the Recording Server per your requirements

Note: A proper naming convention is recommended for easier LPR Alarms plug-in configuration.

- The same cameras must be configured as LPR cameras

Note: Currently it is not covered in this manual. For detailed description on how to configure LPR do consult the XProtect VMS help.

- Smart Client view with entry and exit LRP cameras

Note: Currently it is not covered in this manual. For detailed description on how to configure Smart Client view with entry and exits LPR cameras do consult the XProtect VMS help.

- Analytic Events must be enabled and created for each parking and related event - chapter [Analytic Events](#)
- Alarms must be created based on the defined Analytic Events - chapter [Alarms based on Analytic Events](#)

Installation

Prerequisites

The Milestone LPR Alarms plug-in is compatible with Milestone XProtect® Corporate 2019 R1 or newer.

Plug-in installer

The Milestone LPR Alarms plug-in consists of one installation file supporting Windows 64-bit only:

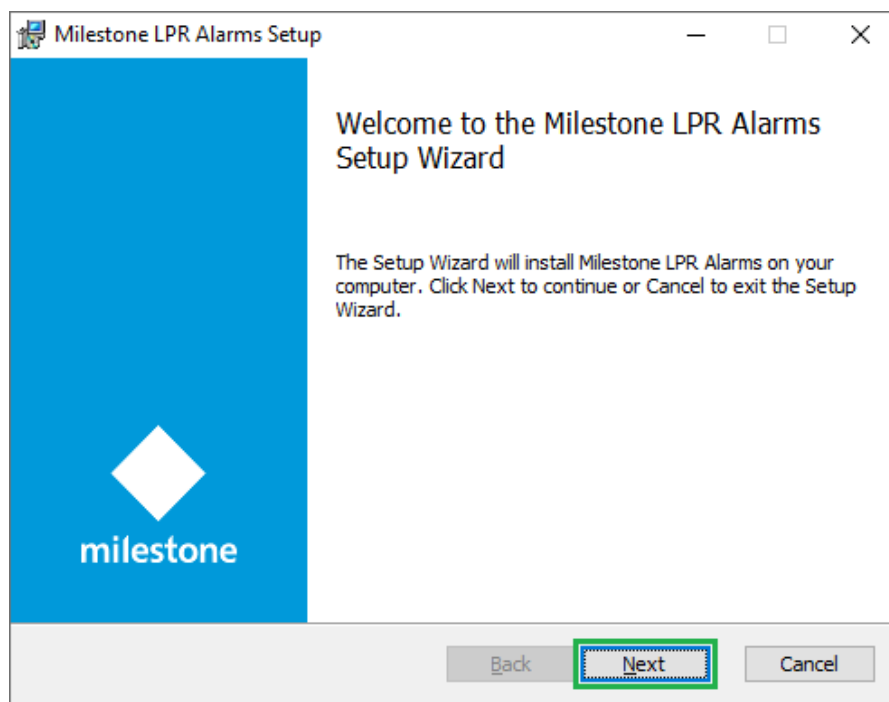
- *MilestoneLPRAlarms_x64.msi*

The Milestone LPR Alarms plug-in can be installed on the following computers:

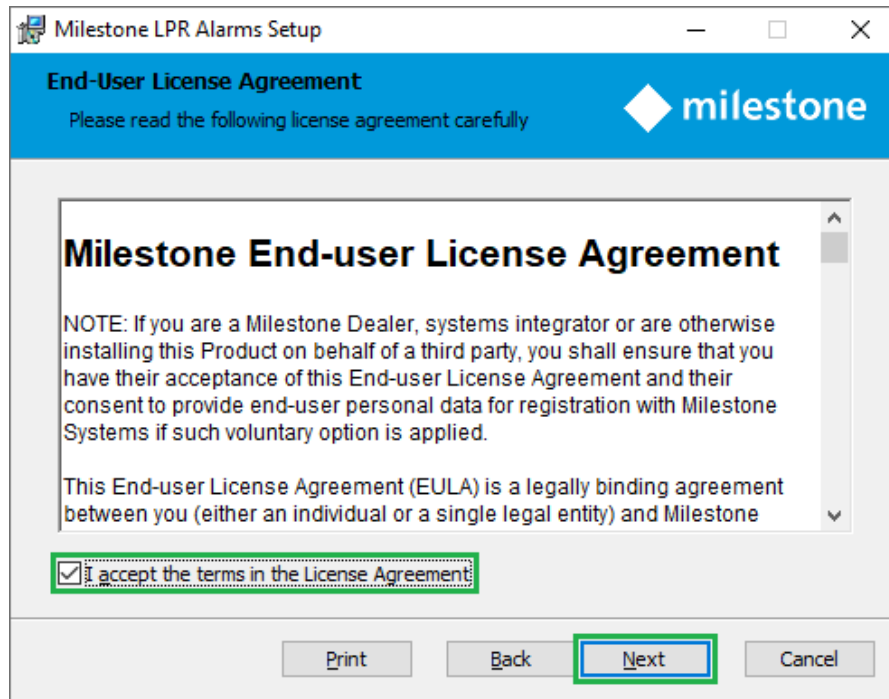
- On the computer where the Milestone Event Server is installed
- On the computer where the Milestone Management Client is installed

Installation steps

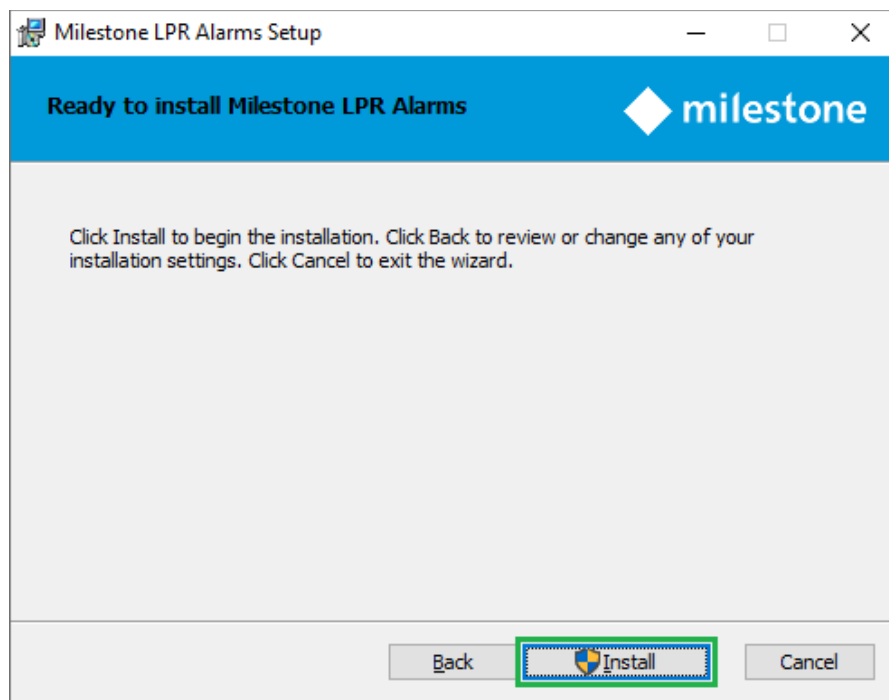
1. Start the installation by executing ***MilestoneLPRAlarms_x64.msi***.
2. Click **Next**.



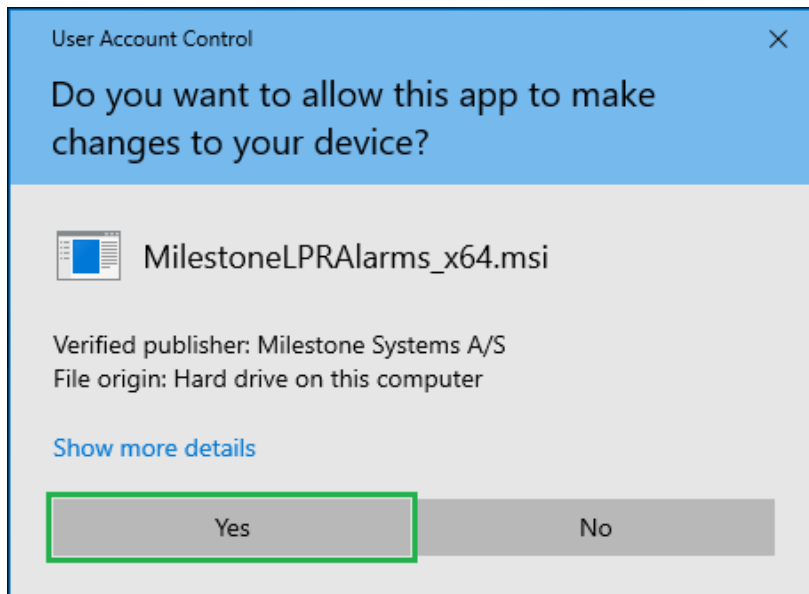
3. Read the license agreement carefully and select the **I accept the terms in the License Agreement** box. Click **Next**.



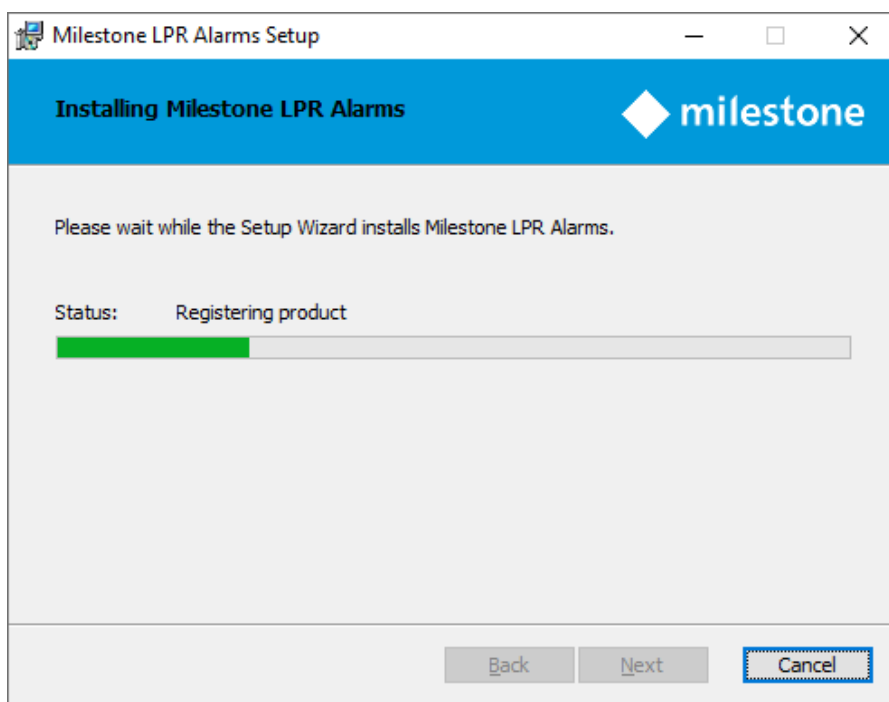
4. Click **Install**.



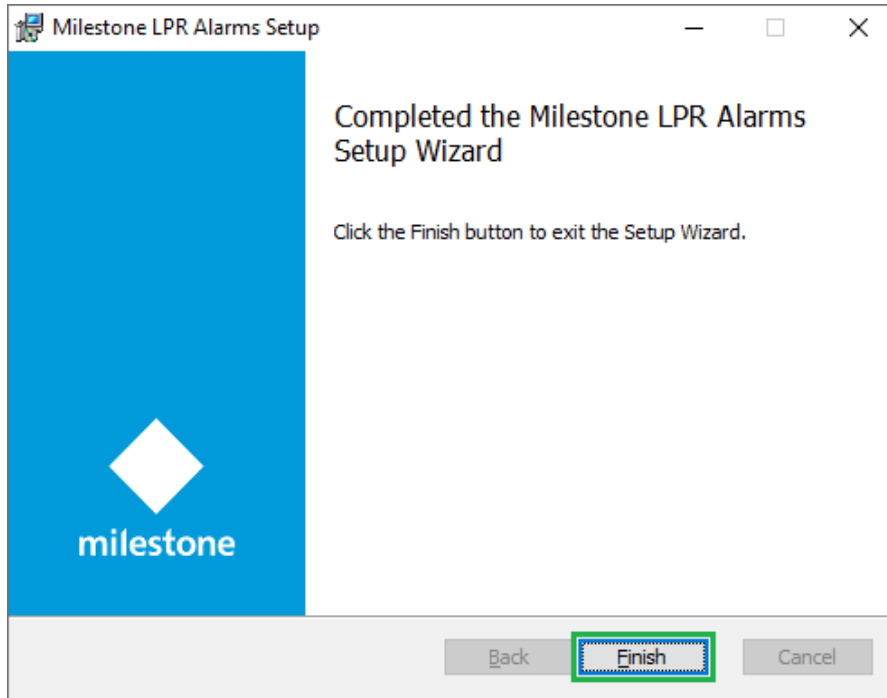
- Click **Yes**, in case the following message appears on the screen:



- The next steps are executed automatically.



7. Click **Finish**.



8. Restart the computer or restart Event Server and Management Client.

License

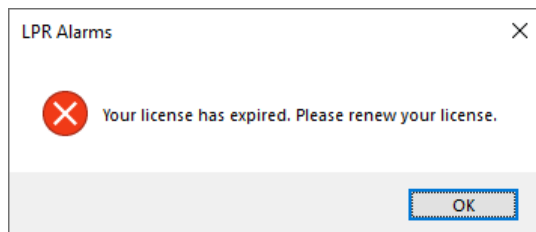
The solution has a build-in license check that is locked to the software license code (SLC) of the VMS installation of which it is part.

It automatically comes with a 30 days grace period which starts from the date the plug-in is installed. After the grace period expires, a permanent license is needed.

The permanent licenses are provided by the distributor. In order to generate a permanent license, the distributor must know the SLC of the VMS system where the solution has been installed. Collect the SLC and send it to the distributor, preferably via email.

When the permanent license is acquired, the XProtect VMS must be reactivated, either online or offline. It is recommended to restart the Event Server and Management Client after reactivation.

If license check fails, the Management Client plug-in will issue error messages and will have reduced functionality.



The license information can also be checked in the Management Client > **Site Navigation** > **Basics** > **License Information** > **Installed Products** > **LPR Alarms**.

Milestone XProtect Management Client 2019 R1

File Edit View Action Tools Help

Site Navigation (13.1a)

- Basics
 - License Information
 - Site Information
- Remote Connect Services
- Servers
- Devices
- Client
- Rules and Events
- Security
- System Dashboard
- Server Logs
- Access Control
- Transact
- Alarms
- MIP Plug-ins

Milestone Care

Your current level: N/A

Milestone Care ID: N/A

[End-user license agreement](#)

[Access Milestone Care portal...](#)

[Information about Milestone Care...](#)

Installed Products

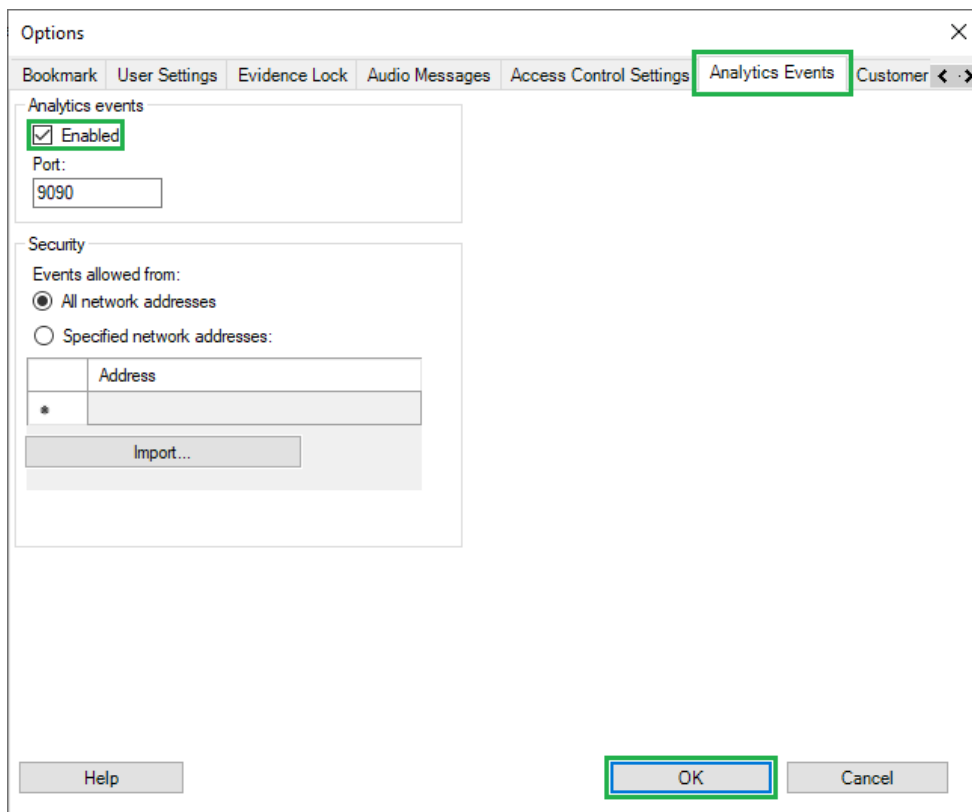
Product Version	Software License Code	Expiration Date	Milestone Care Plus	Milestone Care Premium
XProtect Corporate 2019 R1 Test		2/5/2020	N/A	N/A
Milestone XProtect Smart Wall		Unlimited	Unlimited	
LPR Alarms v1.0.127.1	N/A	7/3/2019	7/3/2019	
Milestone XProtect LPR 2019 R1	N/A	6/30/2019	6/30/2019	

Configuration - Management Client

Analytic Events

Enable Analytic Events

1. Open Management Client.
2. Navigate to menu **Tools** and open **Options** > **Analytic Events**.
3. Check **Enabled** and click **OK**.



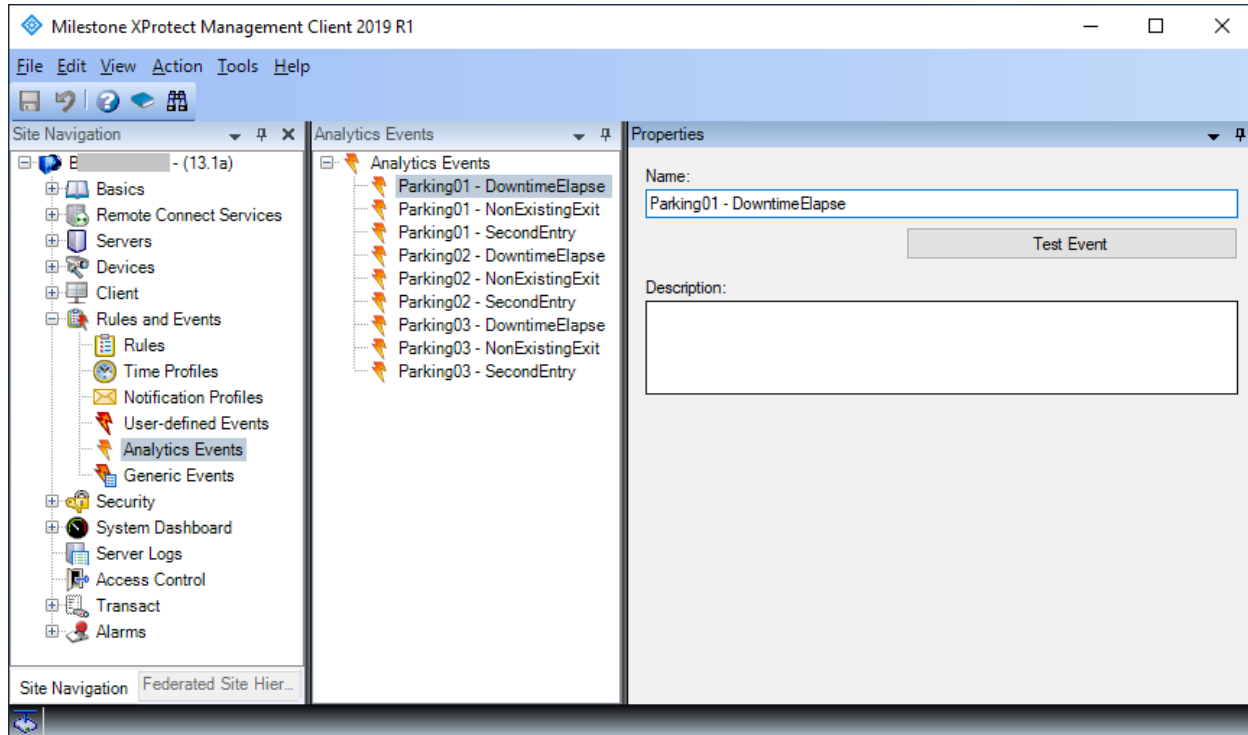
Create Analytic Events

1. Open Management Client > **Site Navigation** > **Rules and Events** > **Analytic Events**.
2. In the **Analytic Events** panel right mouse click on the **Analytic Events** node and select **Add New...**
3. On the **Properties** page insert valid **Name**.
4. Click **Save** from the toolbar to save the analytic event.

Note: It is recommended to create different analytic events for each of the three events in each parking. They will be used as triggering events for the alarms.

The same analytic events also can be used as triggering events for **Rules**. For detailed description on how to configure **Rules** do consult the XProtect VMS help.

Nine analytic events for three different parkings are created in this example.



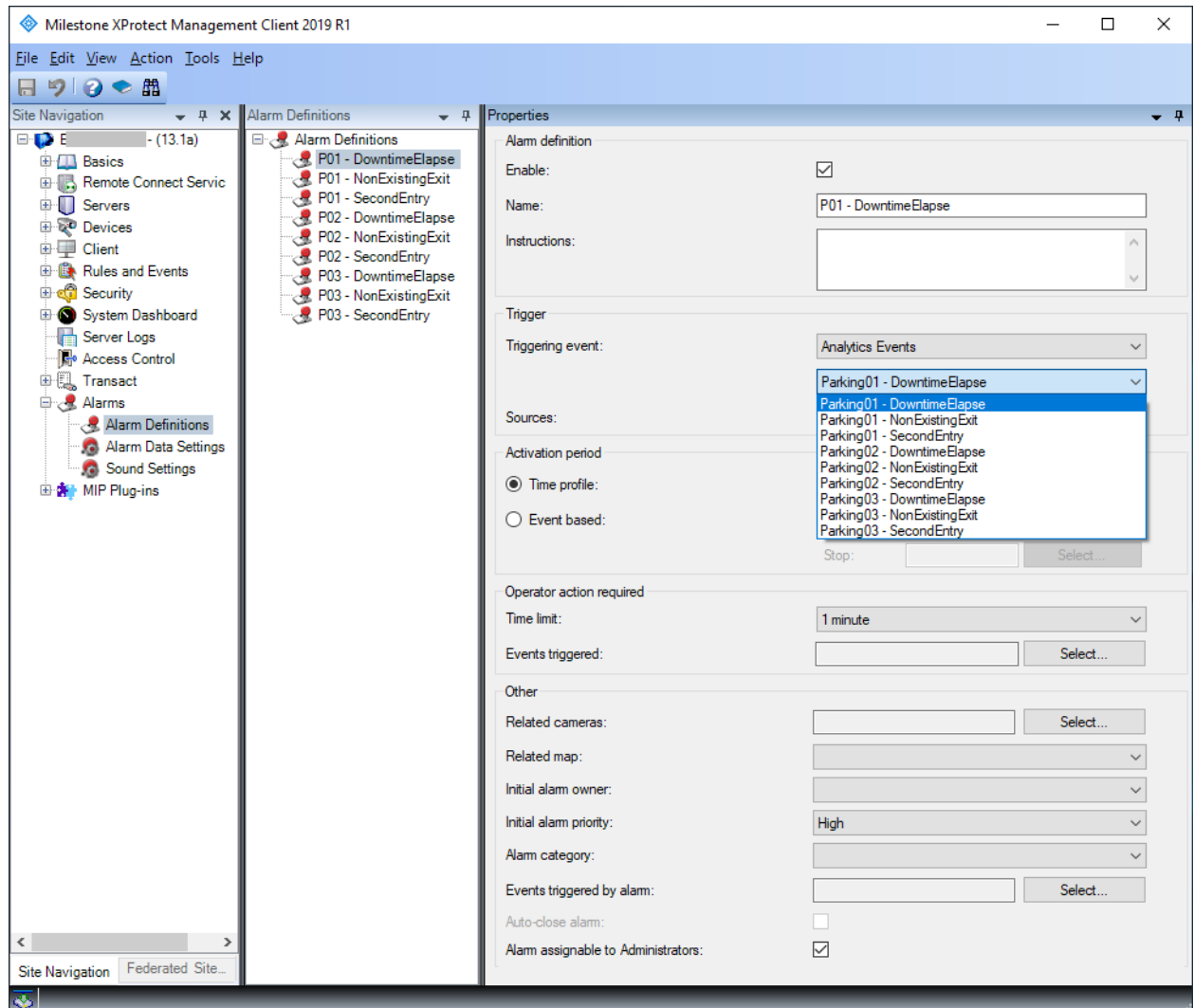
Alarms based on Analytic Events

Creating **Alarms Definitions** is a straightforward process with few important specifics described in the **step 4** and **5**.

Note: For detailed description on how to configure **Alarm Definitions** do consult the XProtect VMS help.

1. Open Management Client > **Site Navigation** > **Alarms** > **Alarm Definitions**.
2. In the **Alarm Definitions** panel right mouse click on the **Alarm Definitions** node and select **Add New...**
3. On the **Properties** page locate the group of settings called **Trigger**.
4. From the **Triggering event** dropdown menu select **Analytic Events** group at top level, and the appropriate event in the next dropdown menu.

Parking01 – DowntimeElapse is selected in this example.



- From the **Trigger** group open the **Sources** by clicking **Select...** This opens the **Select Sources** dialog. Select the preferred camera following these rules:

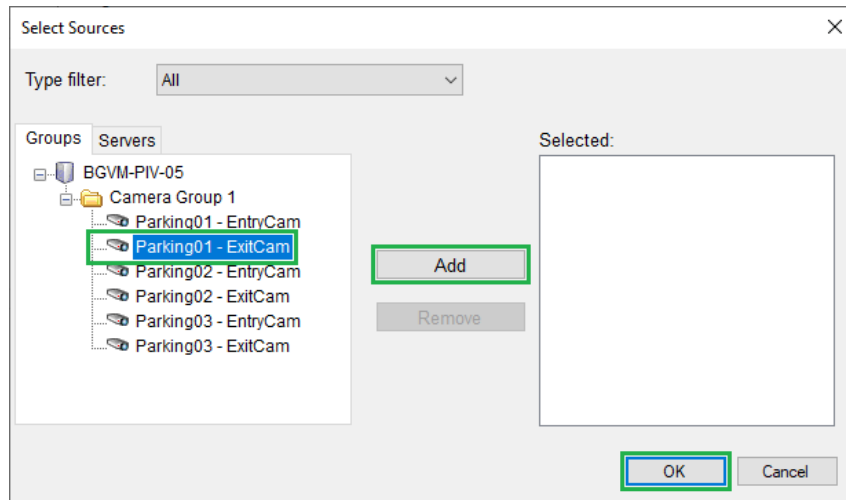
Select the **exit** camera from the specific parking for an alarm with triggering analytic event which is/will be used to **Raise event on downtime elapse** for the same parking.

Select the **entry** camera from the specific parking for an alarm with triggering analytic event which is/will be used to **Raise event when the license plate is already registered, and it is detected by entry camera** for the same parking.

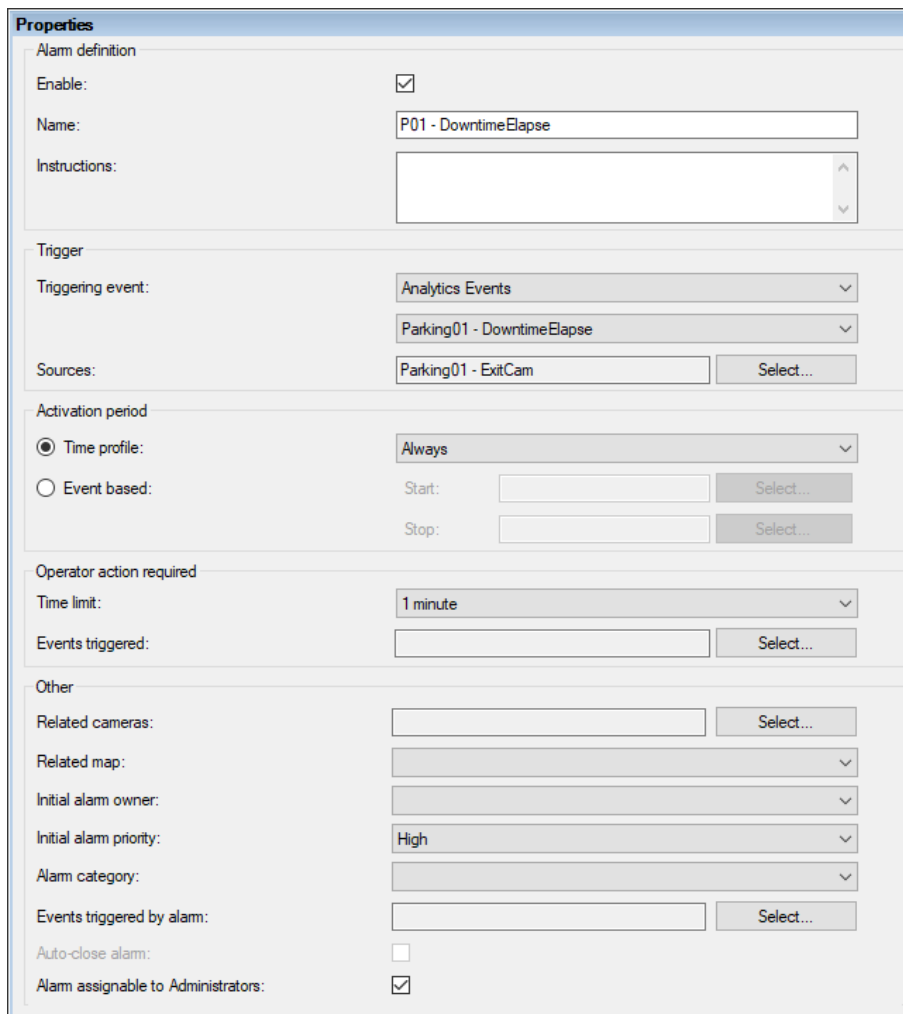
Select the **exit** camera from the specific parking for an alarm with triggering analytic event which is/will be used to **Raise event if the license plate is not registered, but it is detected by exit camera** for the same parking.

Click Add. Click **OK** when the selection is done.

Parking01 – ExitCam is selected in this example.



- Click **Save** from the toolbar to save the alarm.



Properties

Alarm definition

Enable: ☒

Name: P01 - DowntimeElapse

Instructions:

Trigger

Triggering event: Analytics Events

Sources: Parking01 - DowntimeElapse

Sources: Parking01 - ExitCam

Activation period

☒ Time profile: Always

☐ Event based: Start: Stop:

Operator action required

Time limit: 1 minute

Events triggered:

Other

Related cameras:

Related map:

Initial alarm owner:

Initial alarm priority: High

Alarm category:

Events triggered by alarm:

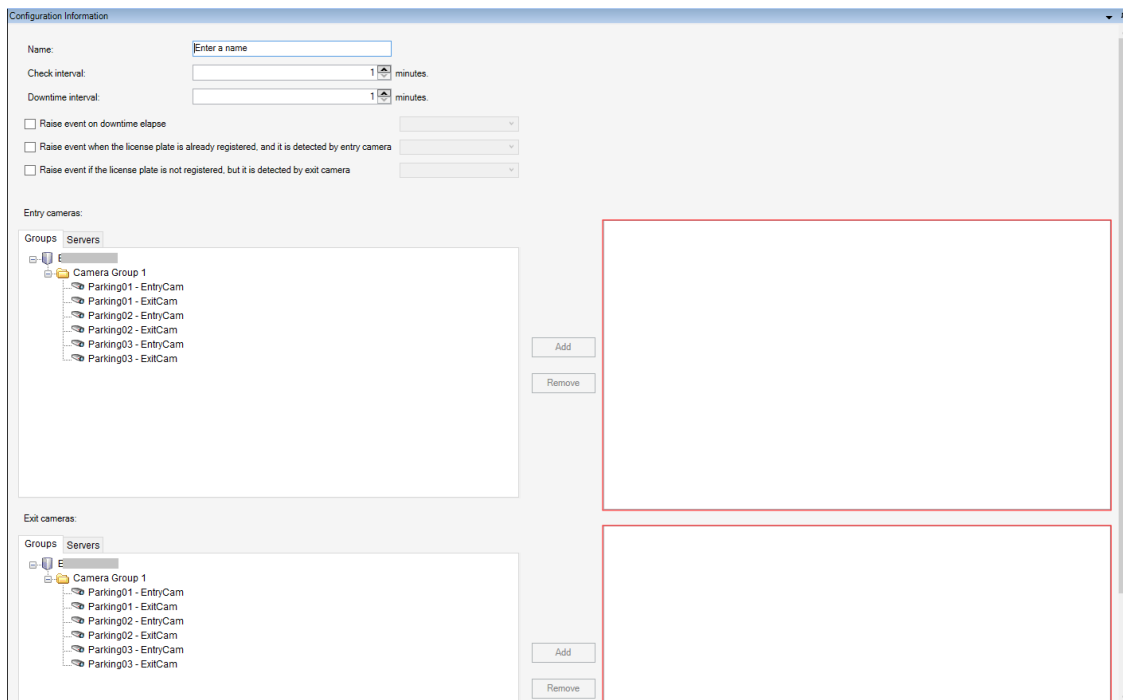
Auto-close alarm: ☐

Alarm assignable to Administrators: ☒

Add Configuration

A **Configuration** for each parking must be added in order to get alarms:

1. Open Management Client > **Site Navigation** > **MIP Plug-ins** > **LPR Alarms**.
2. Right mouse click on the **Configurations** panel and select **Add New...**.
3. Following settings must be configured:



- **Name:** Enter a name for the Configuration. It is recommended to insert a unique name, just for proper troubleshooting (although it is allowed to use also uniform names).
- **Check interval in minutes:** Select the time period in minutes where it is checked if a registered license plate exceeds the configured downtime time period or not. The default value is **1** minute.
- **Downtime interval in minutes:** Select the time period in minutes where a registered license plate is allowed to be in the parking. The default value is **1** minute. It is adjusted to **3** minutes in this example.
- **Raise event on downtime elapse:** This checkbox enables raising a specific analytic event (which can be used to trigger an alarm) when a registered license plate exceeds the configured downtime for the parking. It is mandatory to select the event if this setting is enabled. The option is enabled and **Parking01 – DowntimeElapse** event is selected in this example.
- **Raise event when the license plate is already registered, and it is detected by entry camera:** This checkbox enables raising a specific analytic event (which can be used to trigger an alarm) when a license plate is registered by the defined entry camera and is detected for a second time. It is mandatory to select the event if this setting is enabled.

Note: The license plate number will be added to the **Parking Information** list only the first time it is registered. It can happen that the license plate number is not recognized correctly. The incorrect number

will be added as another entry in the list. For more details about the Parking Information list, please check [Operation – Management Client](#).

The option is enabled and **Parking01 – SecondEntry** event is selected in this example.

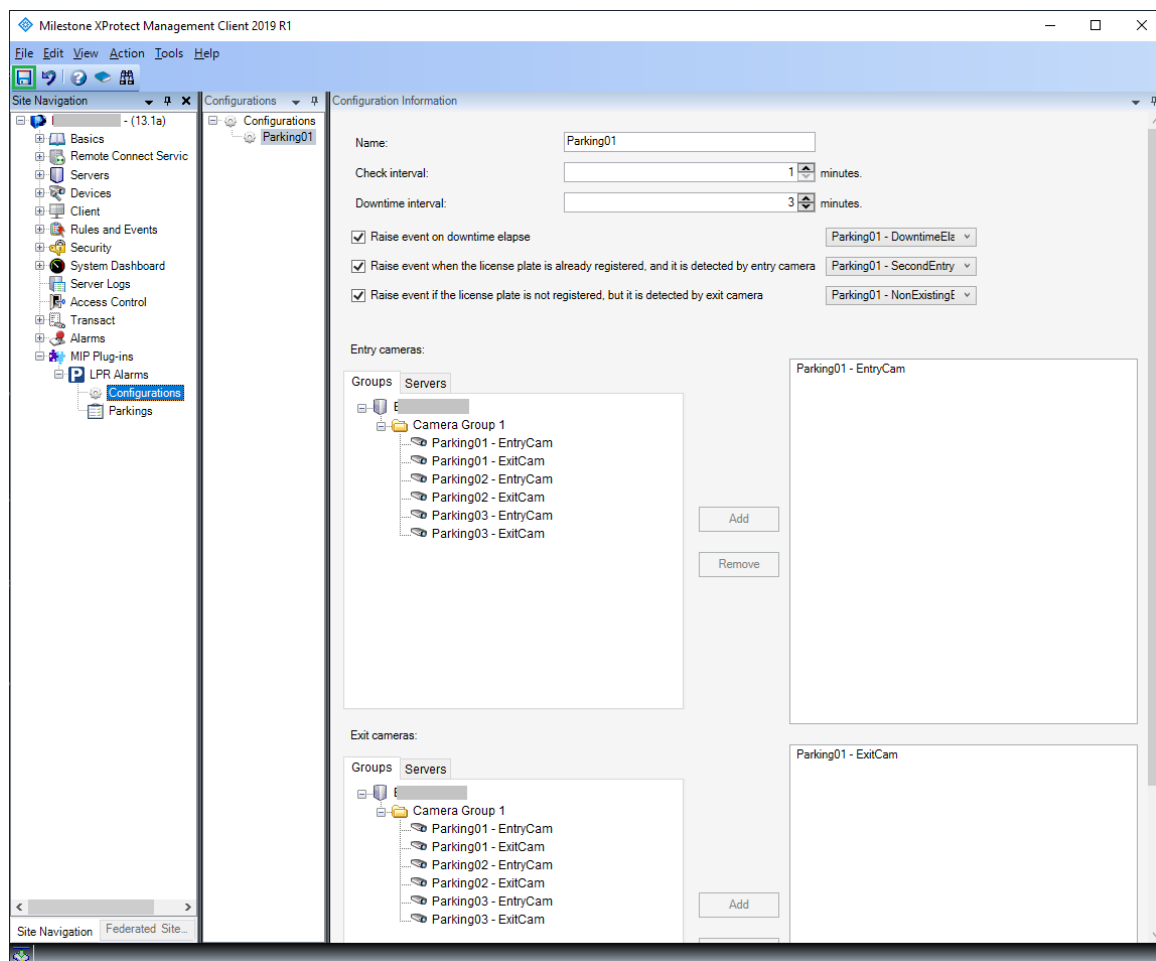
- **Raise event if the license plate is not registered, but it is detected by exit camera:** This checkbox enables raising a specific analytic event (which can be used to trigger an alarm) when a license plate is not registered by the defined entry camera but is detected by the defined exit camera. It is mandatory to select the event if this setting is enabled.

The option is enabled and **Parking01 – NonExistingExit** event is selected in this example.

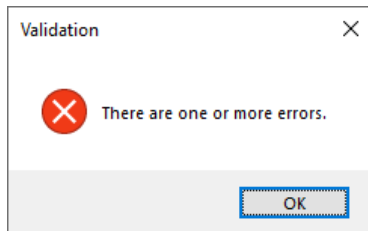
- **Entry cameras:** Select camera from the list which will be used as entry camera. Click **Add**. **Parking01 – EntryCam** is selected in this example.
- **Exit cameras:** Select camera from the list which will be used as exit camera. Click **Add**. **Parking01 – ExitCam** is selected in this example.

Note: One camera can be used in only one parking configuration as entry or exit camera.

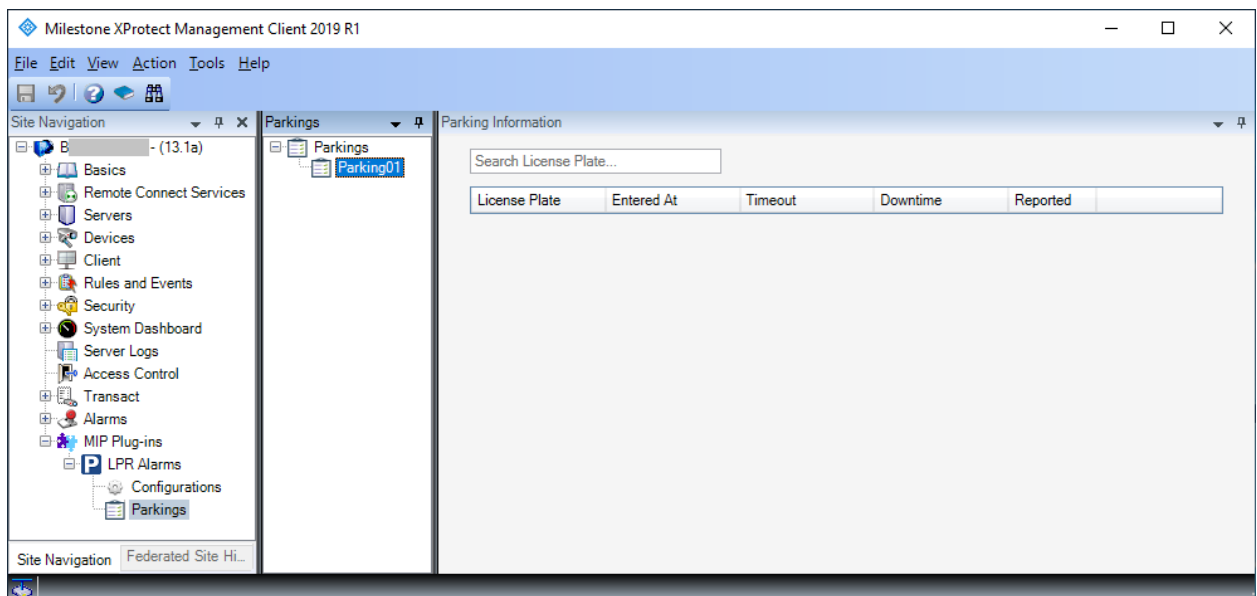
4. Click **Save** from the toolbar to save the configuration.



In case the following error message is displayed, ensure that all mandatory settings are configured (typically it should be pointed out where the issues are by enclosing the fields with red line).



The configuration for parking will appear in Management Client > **Site Navigation** > **MIP Plug-ins** > **LPR Alarms** > **Parkings** once it is saved successfully. Initially the **Parking Information** list is empty. It will start to fill out once the license plates are registered by the entry camera.



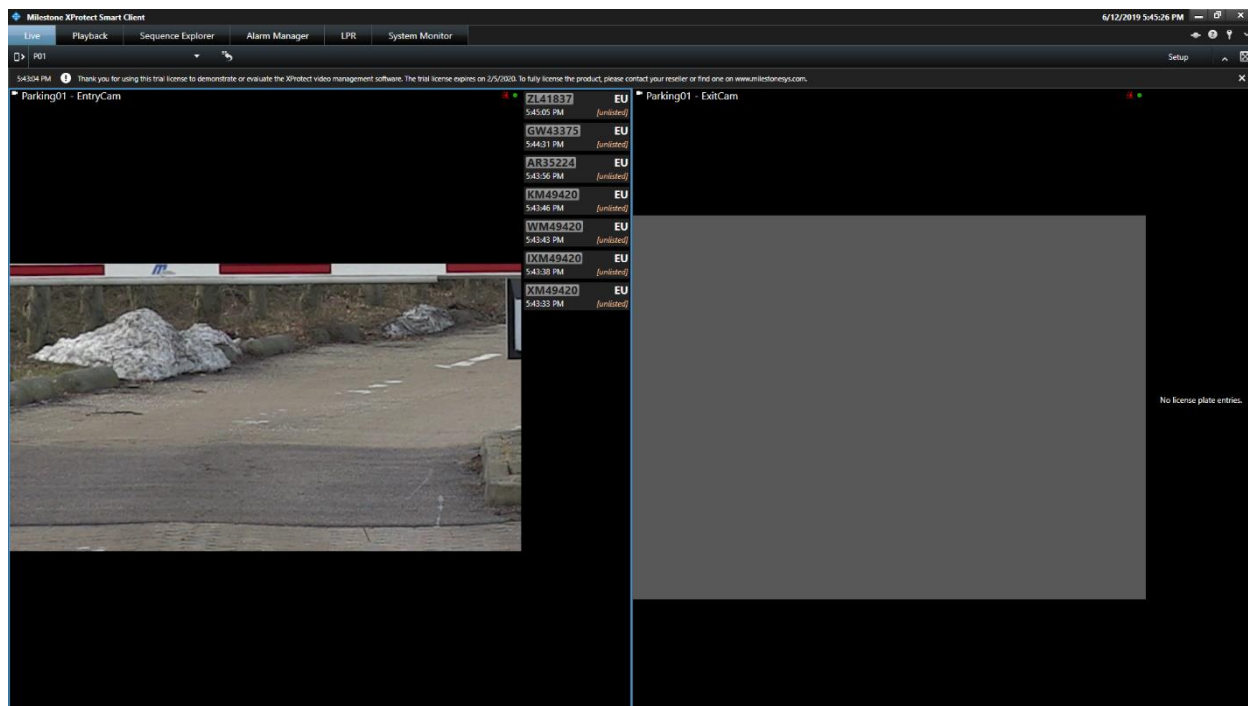
Delete Configuration

1. Open Management Client > **Site Navigation** > **MIP Plug-ins** > **LPR Alarms**.
2. Expand **Configurations** panel.
3. Right mouse click on the specific configuration and select **Remove**.
Parking01 is selected in this example.
4. Click **Yes** on the message **Sure you want to delete: Parking01?** to confirm the deletion.

Operation

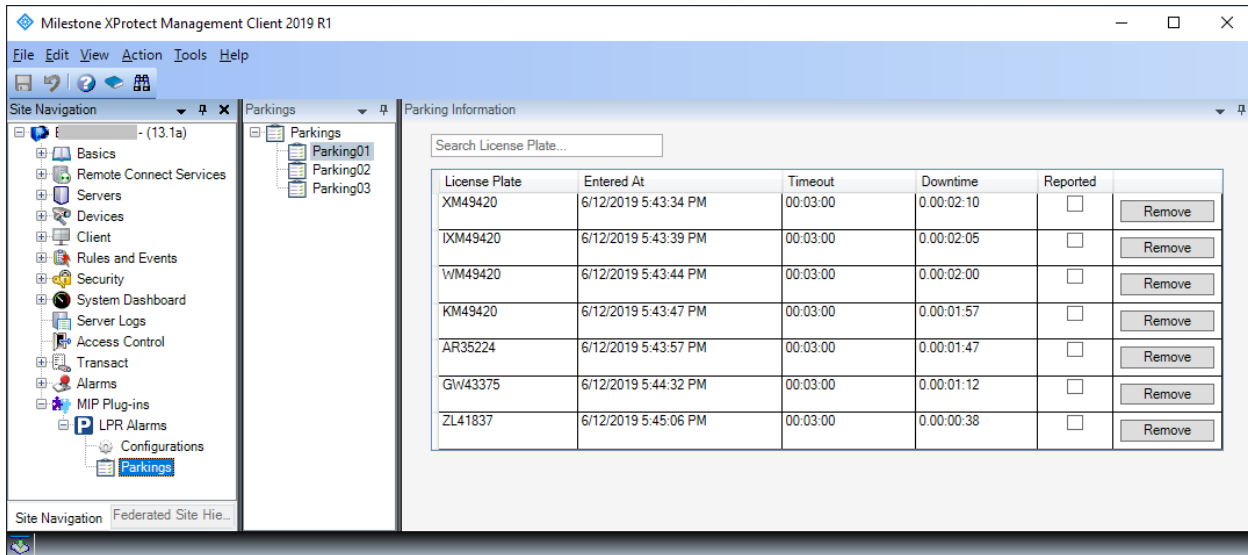
Management Client

In the example below Smart Client view with **Parking01 – EntryCam** as entry camera and **Parking01 – ExitCam** as exit camera has been created. A license plate appears in the **Parking01 – EntryCam** view list once it is registered by the entry camera.



ZL41837	EU
5:45:05 PM	[unlisted]
GW43375	EU
5:44:31 PM	[unlisted]
AR35224	EU
5:43:56 PM	[unlisted]
KM49420	EU
5:43:46 PM	[unlisted]
WM49420	EU
5:43:43 PM	[unlisted]
IXM49420	EU
5:43:38 PM	[unlisted]
XM49420	EU
5:43:33 PM	[unlisted]

All registered license plates from the entry camera (**Parking01 – EntryCam**) are listed in the Management Client > **Site Navigation** > **MIP Plug-ins** > **LPR Alarms** > **Parkings** > **Parking01** > **Parking Information**. By default the list is sorted in ascending order by column **Entered At** which represents the time when a license plate is registered from the entry camera. The list also can be sorted in ascending or descending order by each of the available columns except for the last one.



The screenshot shows the Milestone XProtect Management Client 2019 R1 interface. The 'Site Navigation' pane on the left shows the hierarchy: Basics, Remote Connect Services, Servers, Devices, Client, Rules and Events, Security, System Dashboard, Server Logs, Access Control, Transact, Alarms, MIP Plug-ins, LPR Alarms, Configurations, and Parkings. The 'Parkings' pane is expanded, showing 'Parking01', 'Parking02', and 'Parking03'. The 'Parking Information' pane displays a table with the following data:

License Plate	Entered At	Timeout	Downtime	Reported	
XM49420	6/12/2019 5:43:34 PM	00:03:00	0:00:02:10	☐	<button>Remove</button>
IXM49420	6/12/2019 5:43:39 PM	00:03:00	0:00:02:05	☐	<button>Remove</button>
WM49420	6/12/2019 5:43:44 PM	00:03:00	0:00:02:00	☐	<button>Remove</button>
KM49420	6/12/2019 5:43:47 PM	00:03:00	0:00:01:57	☐	<button>Remove</button>
AR35224	6/12/2019 5:43:57 PM	00:03:00	0:00:01:47	☐	<button>Remove</button>
GW43375	6/12/2019 5:44:32 PM	00:03:00	0:00:01:12	☐	<button>Remove</button>
ZL41837	6/12/2019 5:45:06 PM	00:03:00	0:00:00:38	☐	<button>Remove</button>

Note: The license plate number will be added to the Smart Client view list and related **Parking Information** list only the first time it is registered. It can happen that the license plate number is not recognized correctly. The incorrect number will be added as another entry in the Smart Client view list and related **Parking Information** (as it can be seen also in the example here – the last 4 numbers in the Smart Client view list/first 4 numbers in the **Parking Information** list).

Parking Information contains an option for searching a license plate and table with several columns:

- **Search License Plate...:** Type part or whole license plate number and the list will be filtered with the results.
- **License Plate:** This column contains the license plate number. The number can be changed – just double mouse click on the box, do the changes and press **Enter**.

Note: It is not recommended to have two identical license plate numbers in the list.

- **Entered At:** This column displays the time when a license plate is registered from the entry camera. The time can be changed – just double click on the box, do the changes and press **Enter**. The **Downtime** will be automatically re-calculated after the change.

Note: It is not recommended to put future time.

- **Timeout:** This column displays the configured **Downtime interval** in minutes (Management Client > **Site Navigation** > **MIP Plug-ins** > **LPR Alarms** > **Configurations** > **Parking01**) for this parking. The value can be changed – just double click on the box, do the changes and press **Enter**.
- **Downtime:** This column displays current downtime of the license plate. It starts counting once the license plate is registered. The format is **<days>. <hours>:<minutes>:<seconds>**.
- **Reported:** This check shows if the license plate is marked as **Reported** i.e. downtime has elapsed, but the license plate is not registered by the exit camera, so it is still in the list and it is marked automatically as **Reported** on the next **Check interval** (Management Client > **Site Navigation** > **MIP Plug-ins** > **LPR Alarms** > **Configurations** > **Parking01**). The license plate can be marked manually as **Reported** if it is needed.

Note: When a license plate is **automatically** marked as **Reported** – an alarm is generated only if **Raise event on downtime elapse** is enabled in the parking configuration and the alarm is configured properly i.e. the alarm does have same analytic event as triggering event and the correct exit camera as source.

When a license plate is **manually** marked as **Reported** – an alarm is not generated although it is configured properly.

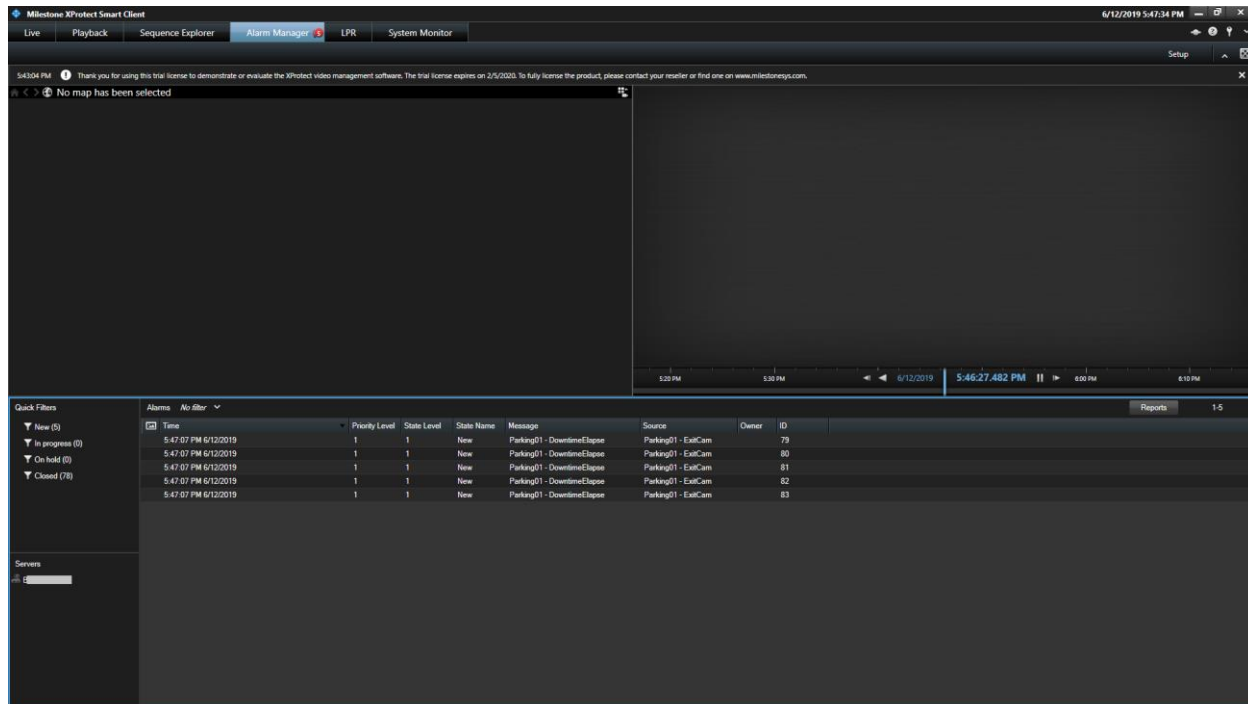
When a license plate is **automatically** marked as **Reported** and after that it is **manually** marked as **not Reported** (check is removed) – an alarm is generated on the next check interval when it is marked **automatically** as **Reported** (if the alarm is configured properly i.e. the alarm does have same analytic event as triggering event and the correct exit camera as source).

- **Remove:** This button can be used to manually remove license plate from the list if it is needed. Click **Yes** on the message **Are you sure you want to remove the selected parking entry?** to confirm the removal.

Note: Usually a registered license plate is removed from the list when it is detected by the defined exit camera.

Smart Client

All generated LPR alarms can be seen in the **Smart Client** > **Alarm Manager**. They look like standard alarms with two differences in the properties.



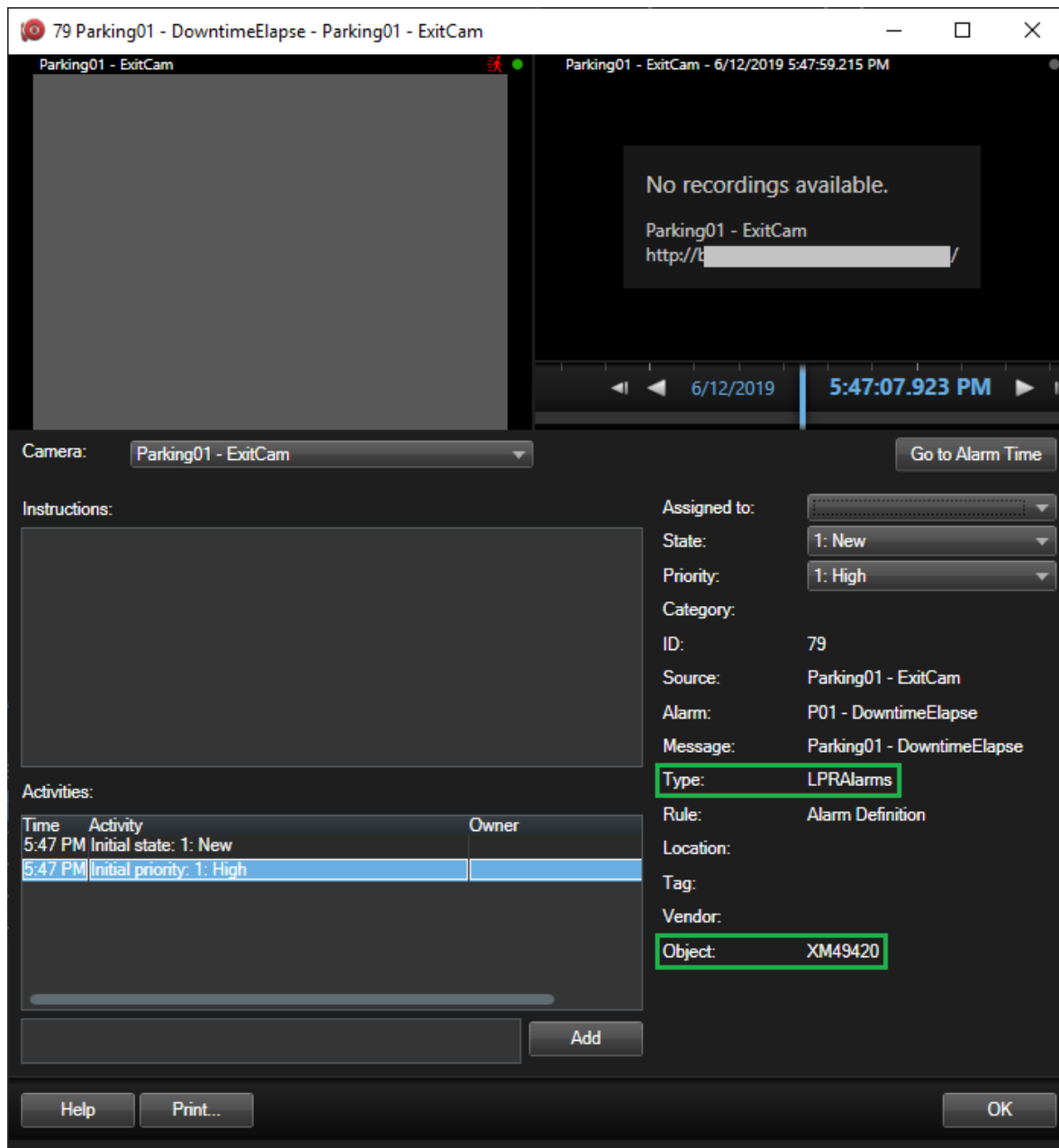
Alarms No filter								
Time	Priority Level	State Level	State Name	Message	Source	Owner	ID	
5:47:07 PM 6/12/2019	1	1	New	Parking01 - DowntimeElapse	Parking01 - ExitCam	Parking01 - ExitCam	79	
5:47:07 PM 6/12/2019	1	1	New	Parking01 - DowntimeElapse	Parking01 - ExitCam	Parking01 - ExitCam	80	
5:47:07 PM 6/12/2019	1	1	New	Parking01 - DowntimeElapse	Parking01 - ExitCam	Parking01 - ExitCam	81	
5:47:07 PM 6/12/2019	1	1	New	Parking01 - DowntimeElapse	Parking01 - ExitCam	Parking01 - ExitCam	82	
5:47:07 PM 6/12/2019	1	1	New	Parking01 - DowntimeElapse	Parking01 - ExitCam	Parking01 - ExitCam	83	

Open alarm to view its properties. The two differences are in the following fields:

Type: LPRAlarms; This field shows that the alarm is coming from LPRAlarms plug-in.

Object: This field shows the license plate number which is related to the alarm.

Note: For detailed description on how to work with Alarms in the Smart Client do consult the XProtect VMS help.



Troubleshooting

This section provides information, which helps the administrator solving cases where the plug-in fails to work.

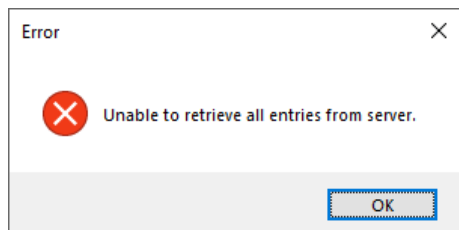
Case: LPR Alarms plug-in is not showing in the Management Client.

Cause	Action
The Event Server and the Management Client have not been restarted after installation of the plug-in.	Restart the Event Server and the Management Client after installation of the plug-in.

Case: Alarms are not detected.

Cause	Action
Event Server is not running.	Open Windows Services and check the status of Milestone XProtect Event Server. Try to start it If it is not running. Inspect the Event Server logs if it fails to start.
LPR Alarms plug-in is not loaded by the Event Server.	Inspect the Event Server log. Look for an entry resembling: "2019-06-04 9:01:15 PM UTC+03:00 Info MapPlugInManager Plugin loaded: LPR Alarms v1.0.X.1 - Milestone A/S" Note that this only occur while the Event Server is starting. If no log entries are found, then verify that the plug-in has been installed correctly. It should be typically located in: C:\Program Files\Milestone\MIPPlugins\LPRAlarms
License has expired or is not activated.	First consider re-activation of the license either online or offline. Inspect the license details in the Management Client. Restart Event Server and Management Client after reactivation. Also examine the log file of the Event Server, look for entries that contains the following: "2019-06-13 11:53:19.648 UTC+03:00 Error LPRAlarms Your license has expired. Please renew your license."
Alarms are defined but are not generated and cannot be seen in the Smart Client.	Check if you have configured properly the triggering events and the sources.

Case: Following error message appears when opening a parking in Management Client > **Site Navigation** > **MIP Plug-ins** > **LPR Alarms** > **Parkings** > <specific parking>.



Cause	Action
License has expired or is not activated.	First consider re-activation of the license either online or offline. Inspect the license details in the Management Client. Restart Event Server and Management Client after reactivation. Also examine the log file of the Event Server, look for entries that contains the following: "2019-06-13 11:53:19.648 UTC+03:00 Error LPRAlarms Your license has expired. Please renew your license."
Specific camera is added to more than one parking as entry or exit camera.	Inspect the MIP logs of the Event Server and look for entries that contains the following: "2019-06-04 22:46:34.837 UTC+03:00 Error LPRAlarms Camera Parking02 - ExitCam(1fe34397-4977-41d6-9f57-dce293268baf) is added to more than one parking as exit camera." Change the configuration at least for one of the parkings where the entry or exit camera is added. Restart Events Server and Management Client.

Limitations

Current version is tested against Milestone XProtect Corporate 2019 R1.

Known issues

There are no known issues at the time of the release.



Milestone Systems is a leading provider of open platform video management software; technology that helps the world see how to ensure safety, protect assets and increase business efficiency. Milestone enables an open platform community that drives collaboration and innovation in the development and use of network video technology, with reliable and scalable solutions that are proven in more than 150,000 sites worldwide. Founded in 1998, Milestone is a stand-alone company in the Canon Group.