



6SS EDGE LPR

ARH Integration Guide



6SS

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1. INTRODUCTION

This document is intended to provide a full installation guide of ARH Smart Camera and its integration with Milestone XProtect. ARH Smart Camera is an all-in-one digital IP camera for traffic systems that combines high quality imaging with onboard plate recognition. In this integration we are getting the streams directly from ARH camera, saving the data into the database and displaying LPR results in Milestone XProtect Smart Client.

ARH LPR Main Features

- Supports all camera types that are compatible with Milestone VMS (approximately 8351)
- Fully integrated with All Milestone XProtect versions
- Accessed from the Smart Client interface
- Fully integrated with Maps
- Parallel handling and processing of unlimited camera inputs
- Multi-language support: Latin, Arabic, Cyrillic, Chinese, Korean, Thai and many more
- Country-Independent
- State and Country detection
- Color coding for faster search
- Compatible with any image source: analog, digital, still images and MPEG video streams
- Server side LPR processing
- Compatible with reflective, non-reflective, personalized and special interest plates
- Can handle distorted plate images
- Can detect the license plate number regardless of the speed
- High accuracy and recognition of license plate number
- Very fast processing speed
- Filter through LPR history based on various criteria
- Flexible search functionality by from-to date, plate number, country and license type
- List of all captured plate numbers including plate type, color, country, state, confidence level, image, camera name and date.
- Option to view a playback video for the period when the plate number was detected
- Rotated license plates option
- Scheduled reports on a daily, weekly or monthly basis
- Customizable dashboards and statistics
- Alarming capabilities (Email, SMS)
- Regular expression alerting
- Configurable actions in case of license plate recognition
- Option to save the license plate as Blacklisted or Whitelisted
- Can read the blacklisted file in various formats (DB Table, Excel or CSV)
- Hotlist alarming capabilities

- One click data export in Excel format
- Automatic data retention period handling
- Easy installation and operation
- Customizable upon request

2. GETTING STARTED

2.1. System Requirements

- Windows OS 8.1 or above
- SQL Server 2012 SP1 or above
- ARH Configuration Application v1.0 or above
- Milestone XProtect Management Client (2016 or above)
- Milestone XProtect Smart Client (2016 or above)

2.2. System Introduction

The server part of the system consists of 2 main components: Management and LPR servers. Each LPR system contains only one Management server, and one or more LPR servers, depending on the project size and the system's distributed architecture. Both processes can be installed and ran on the same server, but each with its own configuration. The machine has to be licensed first before doing anything on the LPR system after the installation.

Below is a figure describing the architecture of the system.

3. ARH EDGE LPR CONFIGURATION & INSTALLATION

3.1. SQL Server Configuration

The configuration for ARH database needs to be done on the server where Microsoft SQL server is installed.

Double click the given SQL script in order to create ARH Database and click the execute button to run the query.

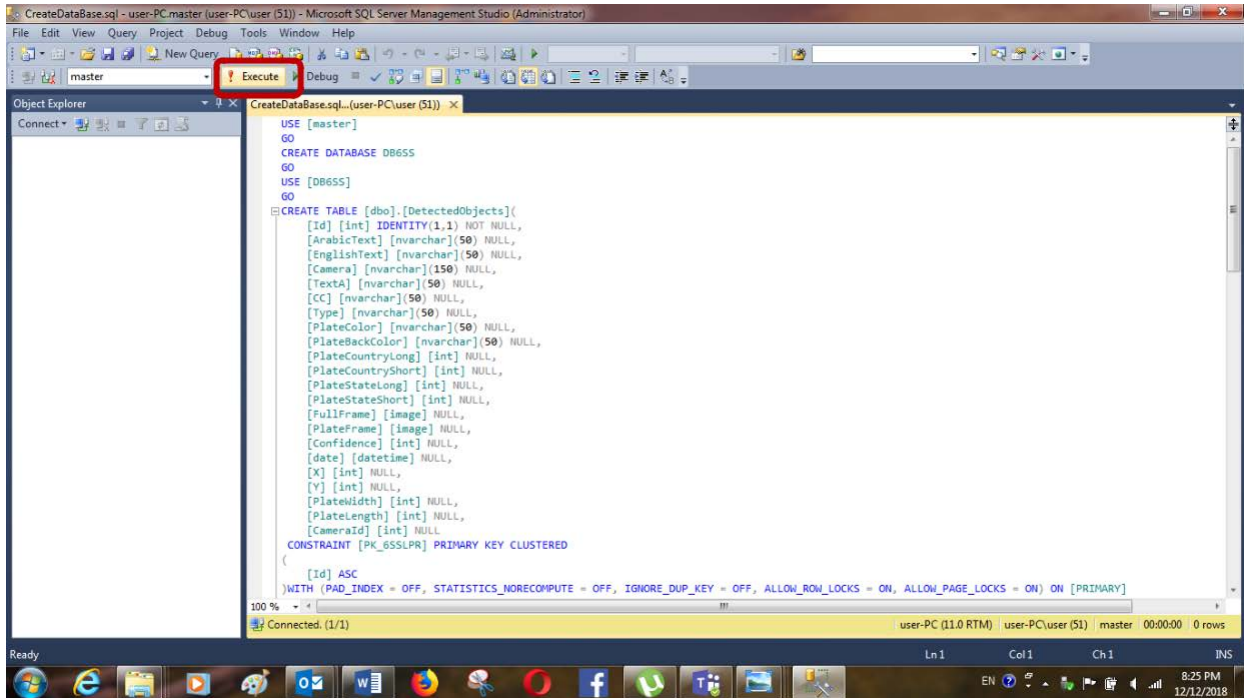


FIGURE 1: CREATE ARH DATABASE USING SQL QUERY

3.2. ARH Edge LPR Plugin

3.2.1. Setup Wizard

Unzip the Release folder and open to run the setup wizard for the LPR plugin.

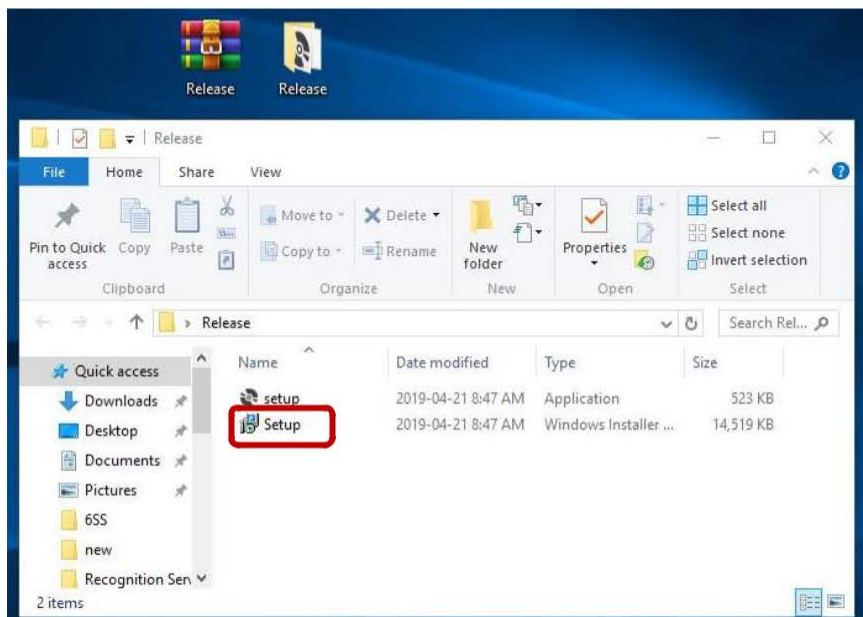


FIGURE 2: LPR PLUGIN SETUP FOLDER

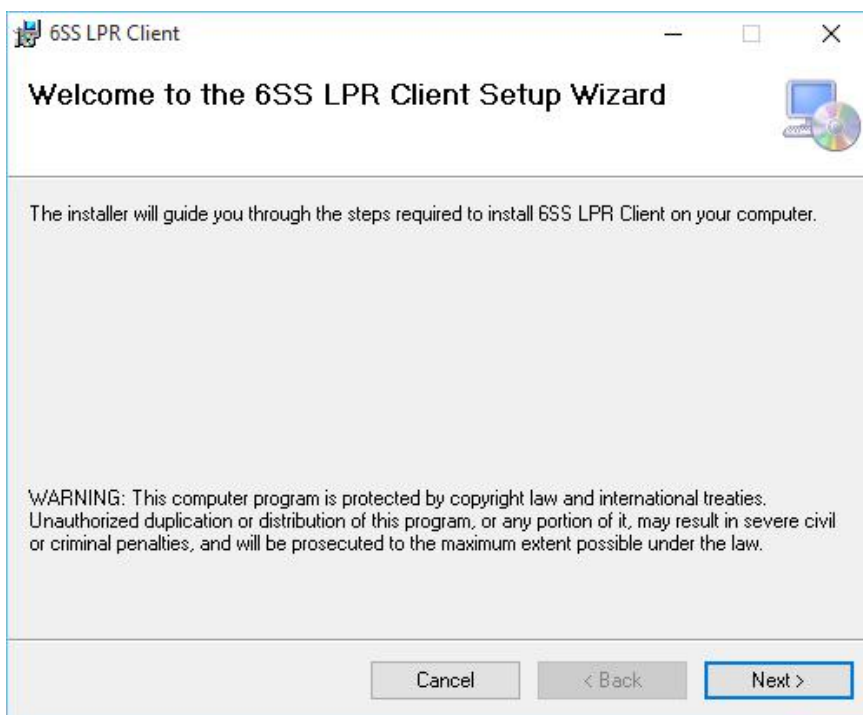


FIGURE 3: LPR SETUP WIZARD

Choose the path to where the LPR plugin folder will be created as shown in **Figure 5**. Click next to continue and the setup will be installed as shown in **Figure 6**.

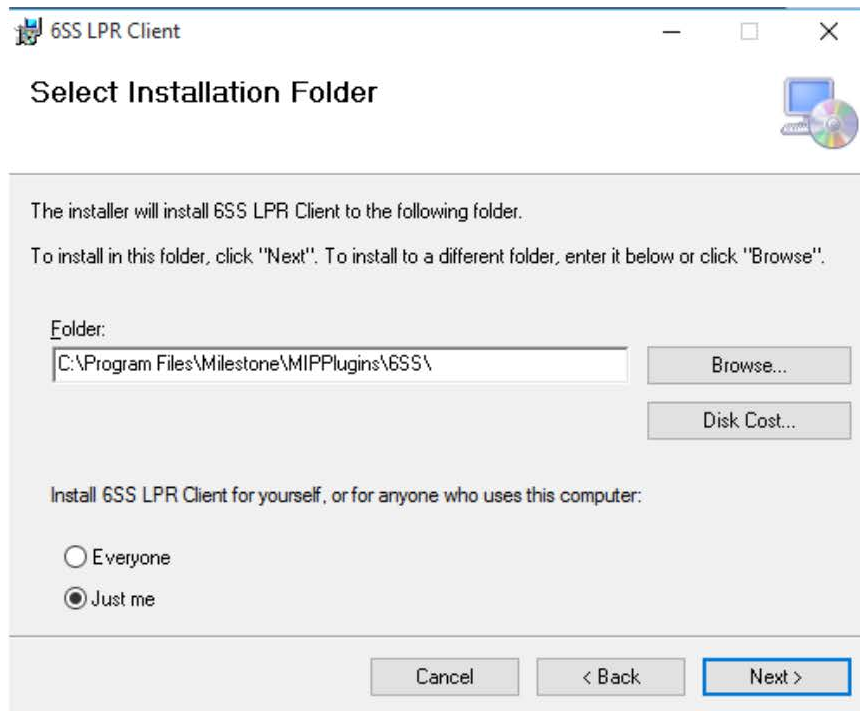


FIGURE 4: 6SS LPR CLIENT INSTALLATION FOLDER

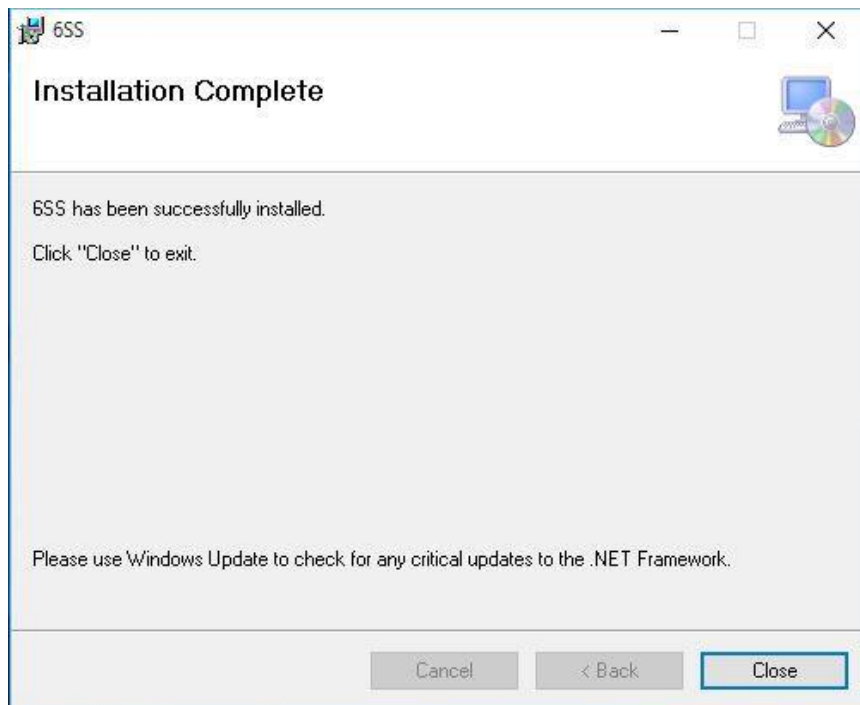


FIGURE 5: 6SS LPR CLIENT INSTALLATION SETUP

3.2.2. Smart Client Interface

Once the installation completes, navigate to Milestone XProtect Smart Client, click connect after entering your credentials and specify the SQL server host name or IP address for first time use only.

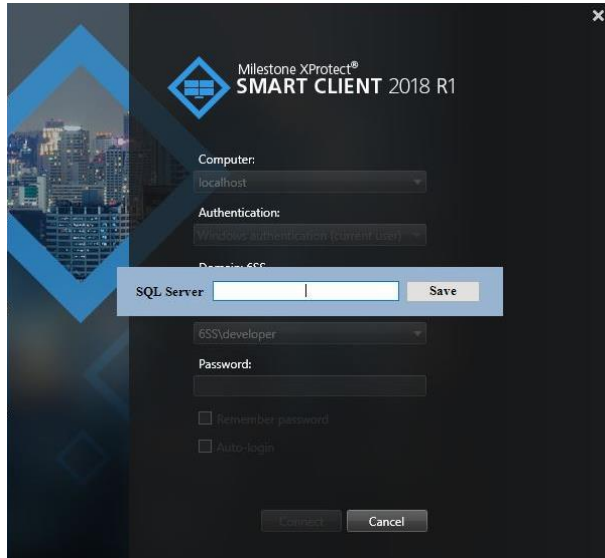


FIGURE 6: SQL SERVER NAME

Once connected click on **Setup** button, create a view and drag and drop “Live LPR” under **System Overview**, as shown in **Figure 8**, into the created view.

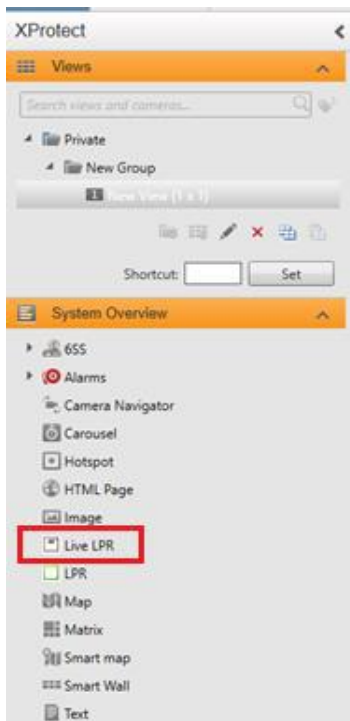


FIGURE 7: ADD THE PLUGIN

Click again on **Setup** to view the Live plugin by selecting a camera using the button “Select Camera” in the bottom right corner. The button will be renamed by the camera’s name. Each captured plate number by the specified camera will be shown in the right panel.

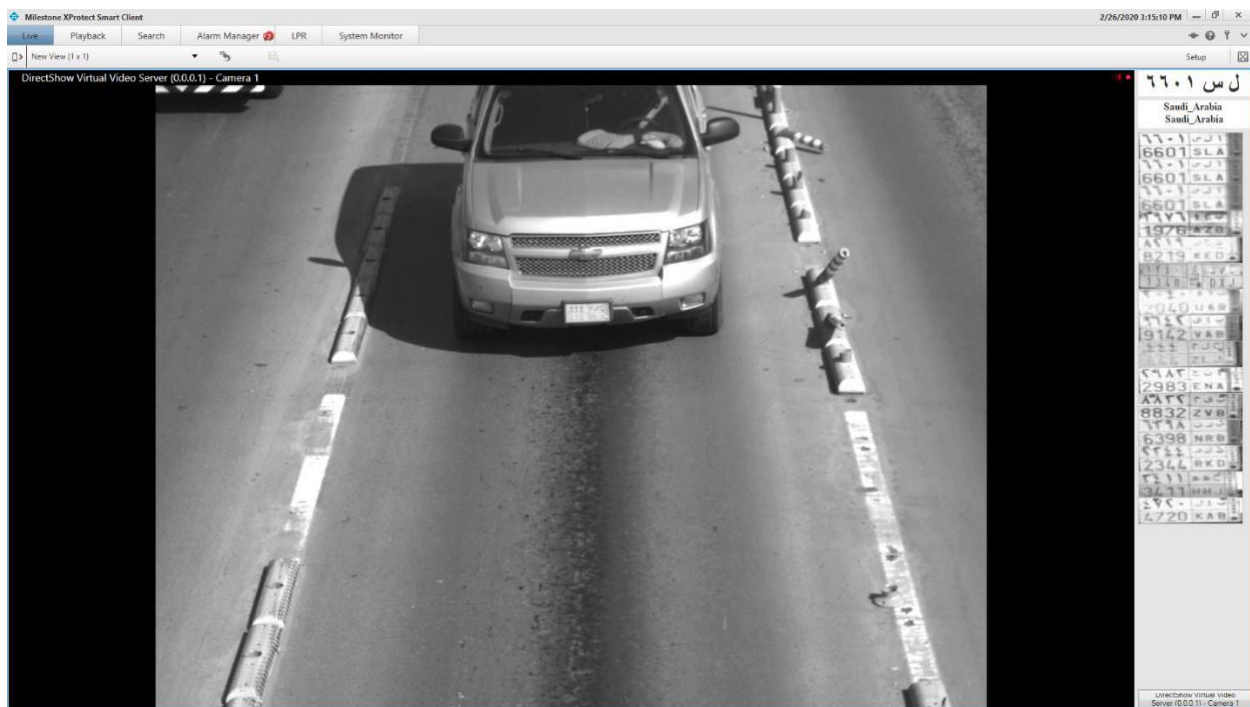


FIGURE 8: VIEW LIVE PLUGIN

After installing the LPR plugin setup you will notice that an additional tab named “LPR” has been added next to the **Alarm Manager** tab.

In this tab you can easily find the list of all captured plate numbers with its relevant plate type, color, country, confidence level, speed, speed limits, screenshot image of the plate number, along with the camera’s name.

Use the filters in the right panel to filter the LPR list as convenient and click on “Refresh” button to update the LPR table. You can anytime generate an excel file (**Figure 10**) and a pdf document (**Figure**) for your evidence proof or later investigation.

Milestone XProtect Smart Client

2/26/2020 3:15:43 PM

Live Playback Search Alarm Manager LPR System Monitor

Smart Camera

Camera	Country	Plate	Bg Color	Color	Date	Confidence	Speed	Speed Limit	Direction	Category	GPS lat	GPS lon	Image
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٠٠١	WHITE	WHITE	2020.02.26 11:11:AM	32	89	120					6601 SLA
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٠٠١	WHITE	WHITE	2020.02.26 11:11:AM	29	89	120					6601 SLA
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٠٠١	WHITE	WHITE	2020.02.26 11:11:AM	19	66	120					6601 SLA
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	10	66	120					1976 KZB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٨٦١٨	WHITE	WHITE	2020.02.26 11:11:AM	6	89	120					8219 RED
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٠٠١	WHITE	WHITE	2020.02.26 11:11:AM	5	79	120					0118 JOT
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٠٠٠٠	WHITE	WHITE	2020.02.26 11:11:AM	0	66	120					0040 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٩١١٩	WHITE	WHITE	2020.02.26 11:11:AM	6	97	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	1	79	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	32	89	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٨٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	44	99	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	7	66	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	10	97	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	6	89	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	18	68	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	0	57	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	0	56	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	16	76	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	United_Arab_Emirates	221460	WHITE	WHITE	2020.02.26 11:11:AM	44	69	120					21460
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	12	98	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	13	97	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	18	78	120					0122 VAB
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	Saudi_Arabia	٦٦٦٦٦	WHITE	WHITE	2020.02.26 11:11:AM	2	98	120					0122 VAB

Country: Saudi_Arabia State: Confidence: 0 Type: Camera From: 2020.02.26 00:00:00 Till: 2020.02.26 23:59:59

Refresh Excel PDF

FIGURE 9: LPR HISTORY

File Home Insert Page Layout Formulas Data Review View Team

Calibri 11 A A Wrap Text

General

Clipboard Font Alignment Number Styles Cells Editing

	A	B	C	D	E	F	G	H	I
1	6SS LPR								
2				From	2019-06-06				
3				Till	2019-06-07				
4									
5	Camera	Plate Number	Country	State	Confidence	Date	Plate Color		Image
6	DirectShow Virtual Video Server (0.0.0.1) - Camera 1	288297	United_Arab_Emirates	SHJ	82	2019-06-06 15:14	WHITE		288297
7	DirectShow Virtual Video Server (0.0.0.1) - Camera 1	P38794	United_Arab_Emirates	Dubai	61	2019-06-06 15:14	WHITE		P 38794
8	DirectShow Virtual Video Server (0.0.0.1) - Camera 1	N30197	United_Arab_Emirates	Dubai	76	2019-06-06 15:13	WHITE		N 30197
9	DirectShow Virtual Video Server (0.0.0.1) - Camera 1	A41786	United_Arab_Emirates	RAK	78	2019-06-06 15:13	WHITE		A 41786
10	DirectShow Virtual Video Server (0.0.0.1) - Camera 1	G43125	United_Arab_Emirates	Dubai	80	2019-06-06 15:13	WHITE		G 43125
11	DirectShow Virtual Video Server (0.0.0.1) - Camera 1	44381B	United_Arab_Emirates	RAK	71	2019-06-06 15:13	WHITE		44381B

Sheet1 Sheet2 Sheet3

FIGURE 10: LPR EXCEL FILE

LPR.pdf

file:///C:/LPR/LPR.pdf

6SS LPR Report From :2019-08-07 12:00:00 AM To :2019-08-07 11:59:59 PM

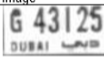
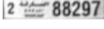
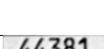
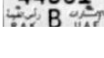
Camera	Plate Number	State	Confidence	Date	Plate Color	Id	Image	Type	Country
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	G43125	Dubai	78	2019-08-07 10:32:20 AM	WHITE	86990		G	United_Arab_Emirates
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	288297	SHJ	80	2019-08-07 10:32:19 AM	WHITE	86987			United_Arab_Emirates
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	A41786	RAK	76	2019-08-07 10:32:13 AM	WHITE	86977		A	United_Arab_Emirates
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	44381B	RAK	78	2019-08-07 10:32:13 AM	WHITE	86976		B	United_Arab_Emirates
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	N30197	Dubai	78	2019-08-07 10:31:55 AM	WHITE	86972		N	United_Arab_Emirates
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	G43125	Dubai	78	2019-08-07 10:31:53 AM	WHITE	86969		G	United_Arab_Emirates
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	288297	SHJ	82	2019-08-07 10:31:52 AM	WHITE	86964			United_Arab_Emirates
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	P38794	Dubai	74	2019-08-07 10:31:51 AM	WHITE	86962		P	United_Arab_Emirates
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	A41786	RAK	76	2019-08-07 10:31:46 AM	WHITE	86955		A	United_Arab_Emirates
DirectShow Virtual Video Server (0.0.0.1) - Camera 1	44381B	RAK	75	2019-08-07 10:31:45 AM	WHITE	86954		B	United_Arab_Emirates

FIGURE 11: LPR PDF FILE

3.2.3. Management Client Interface

Open Milestone XProtect Management Client, click connect after entering your credentials and navigate to MIP Plug-ins- LPR- LPR under **Site Navigation**.



The LPR Hotlist is mainly used to alert users when a specific plate number is detected by the camera. Specify the plate number, plate type (blacklisted or whitelisted), status (enabled/disabled), and the event/action that may be attached to this plate number as shown in the below figure. Click **Update Status** if you need to change the Alarm Status and click **Delete Alert** button to delete the Alert from the list.

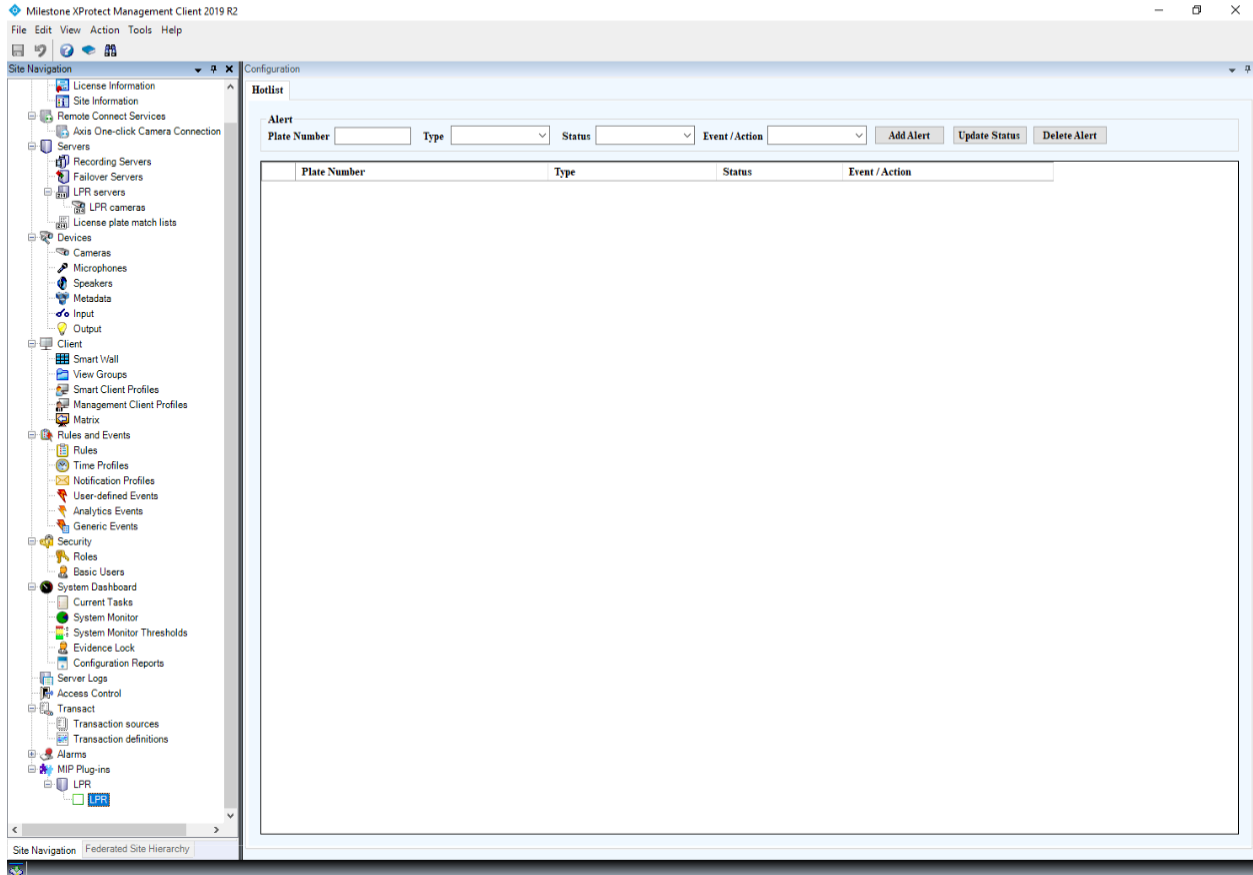


FIGURE 12: ARH EDGE LPR HOTLIST