6SS EDGE LPR

ARH Integration Guide

6SS

6SS L.L.C.

Bryant Ave N-Brooklyn Park-MN 55444 USA

Tel: +1-651-233-0977

E-mail: info@6ss.co

Web: www.6ss.co

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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

- On-board ANPR camera
- Fully integrated with all Milestone XProtect versions
- View Live Detection from the Camera
- Filter through LPR history based on various criteria
- One click data Excel/PDF Export
- Alarm Hotlist capabilities

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2. GETTING STARTED

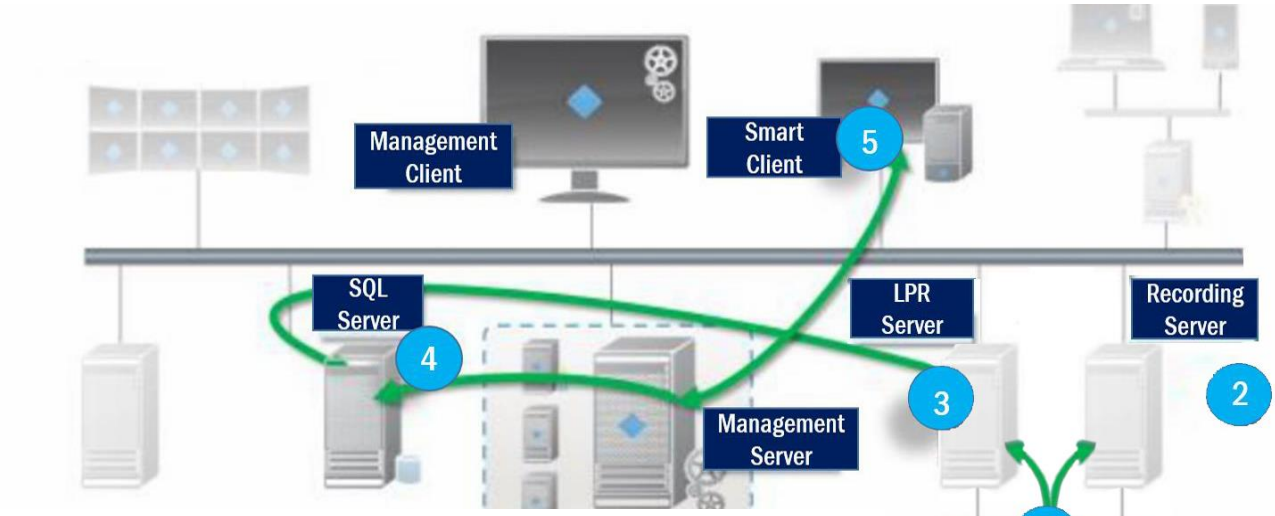
2.1. System Requirements

- Windows OS 8 or above
- SQL Server 2012 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.



1. On-Board ANPR Cameras multi-streaming to LPR server and recording servers.
2. The streaming videos will flow to the recording server.
3. The LPR server will communicate with the On-Board ANPR cameras to retrieve the recognized data, then will parse this upcoming data to the SQL server.
4. Store results in SQL or any other database, and trigger alarms if any.
5. Send results and display on Smart Client.

FIGURE 1: 6SS LPR EDGE BASE ARCHITECTURE

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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.

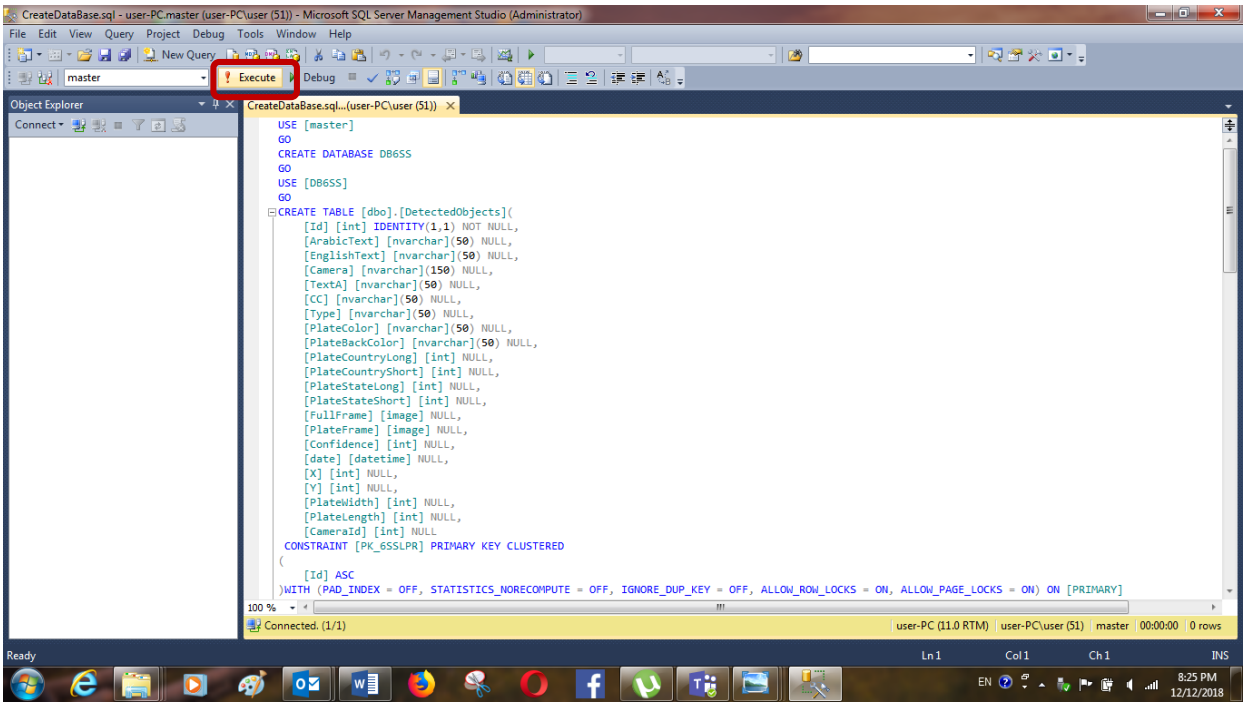

FIGURE 2: CREATE ARH DATABASE USING SQL QUERY

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.

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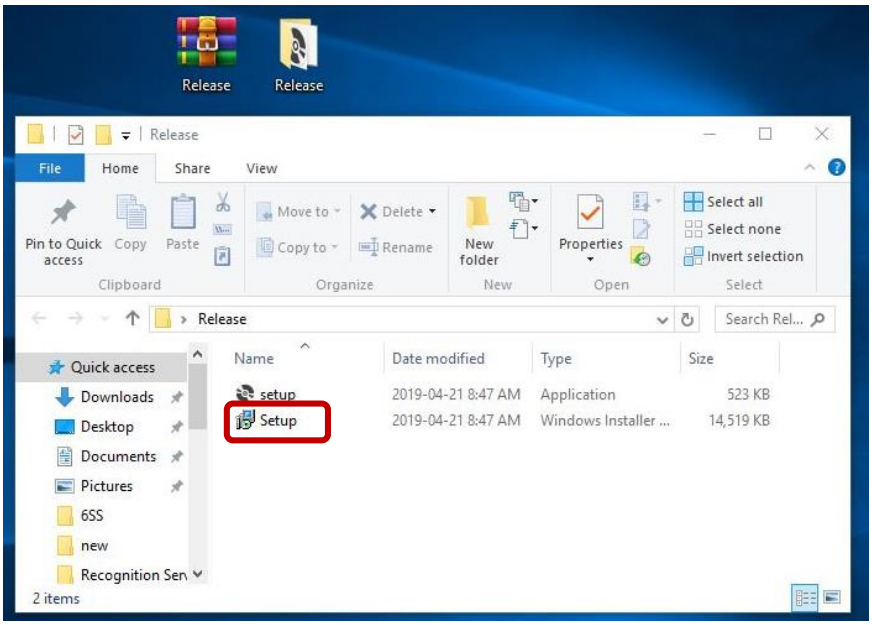

FIGURE 3: LPR PLUGIN SETUP FOLDER

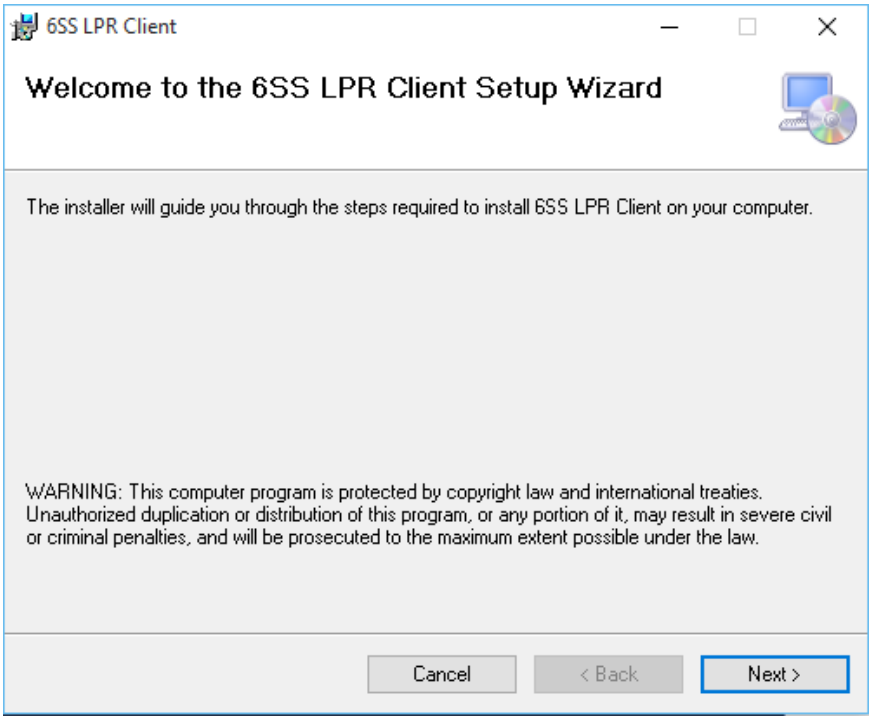

FIGURE 4: LPR SETUP WIZARD

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**.

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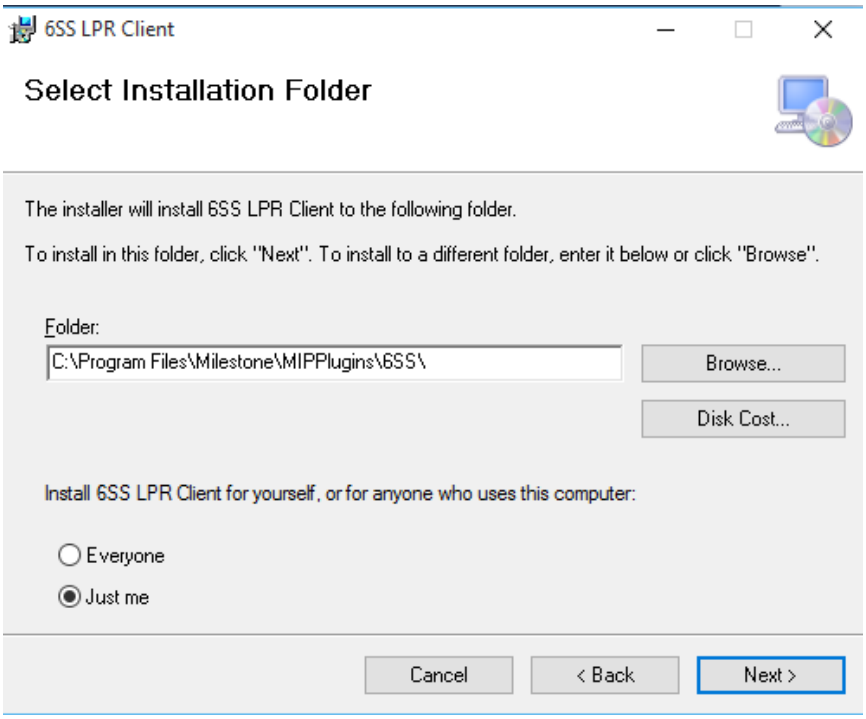

FIGURE 5: 6SS LPR CLIENT INSTALLATION FOLDER

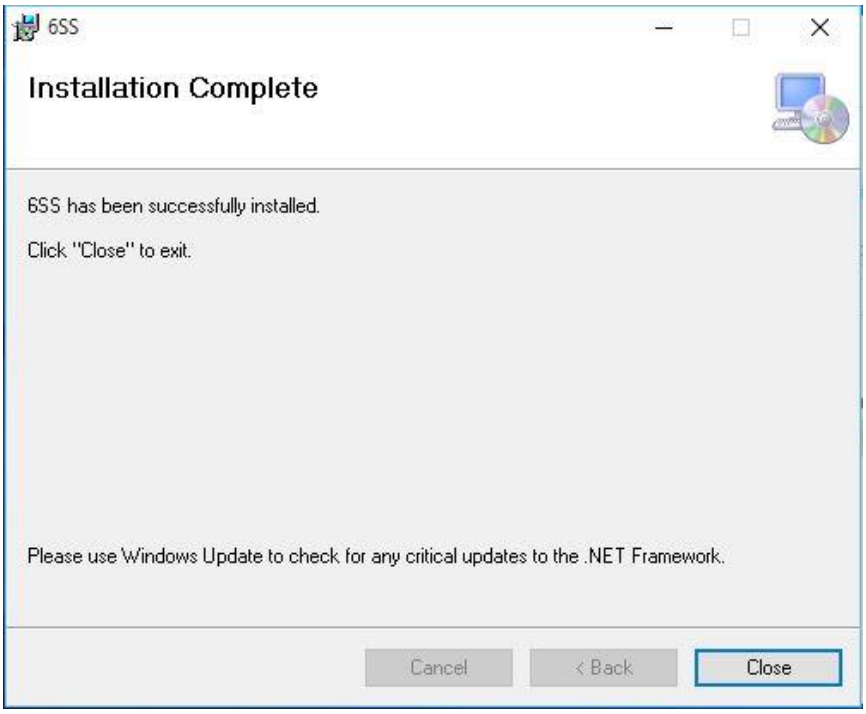

FIGURE 6: 6SS LPR CLIENT INSTALLATION SETUP

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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.

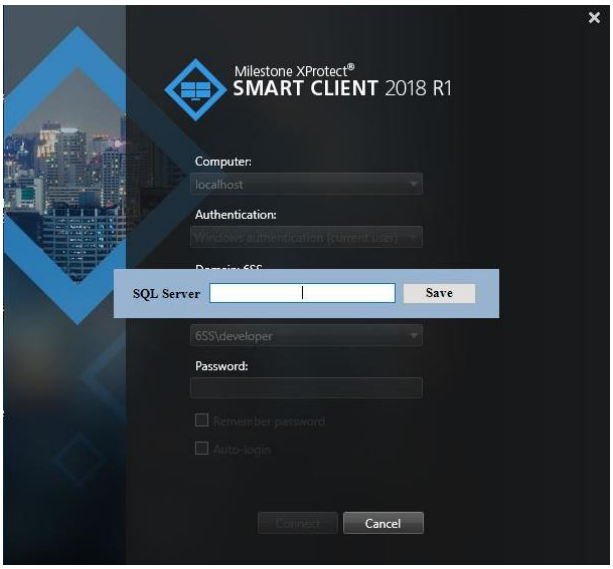

FIGURE 7: SQL SERVER NAME

Once connected click on **Setup** button, create a view and drag and drop "Live LPR" under **System Overview,** as shown in

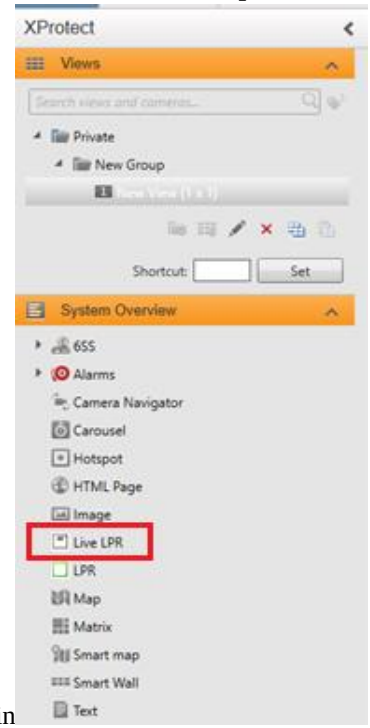

Figure 8, into the created view.

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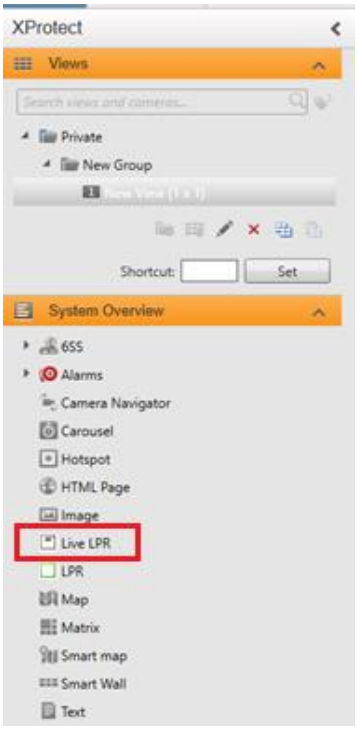

FIGURE 8: ADD THE PLUGIN

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.

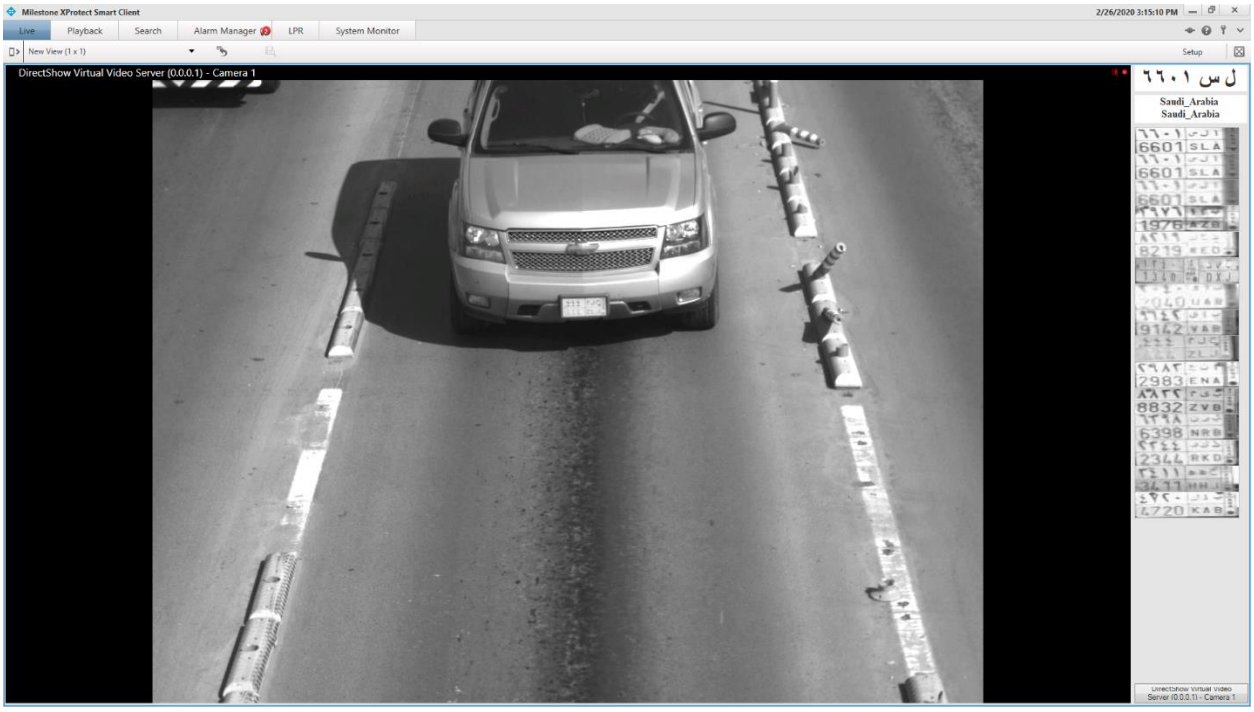

FIGURE 9: VIEW LIVE PLUGIN

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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 11**) and a pdf document (**Figure 12**) for your evidence proof or later investigation.

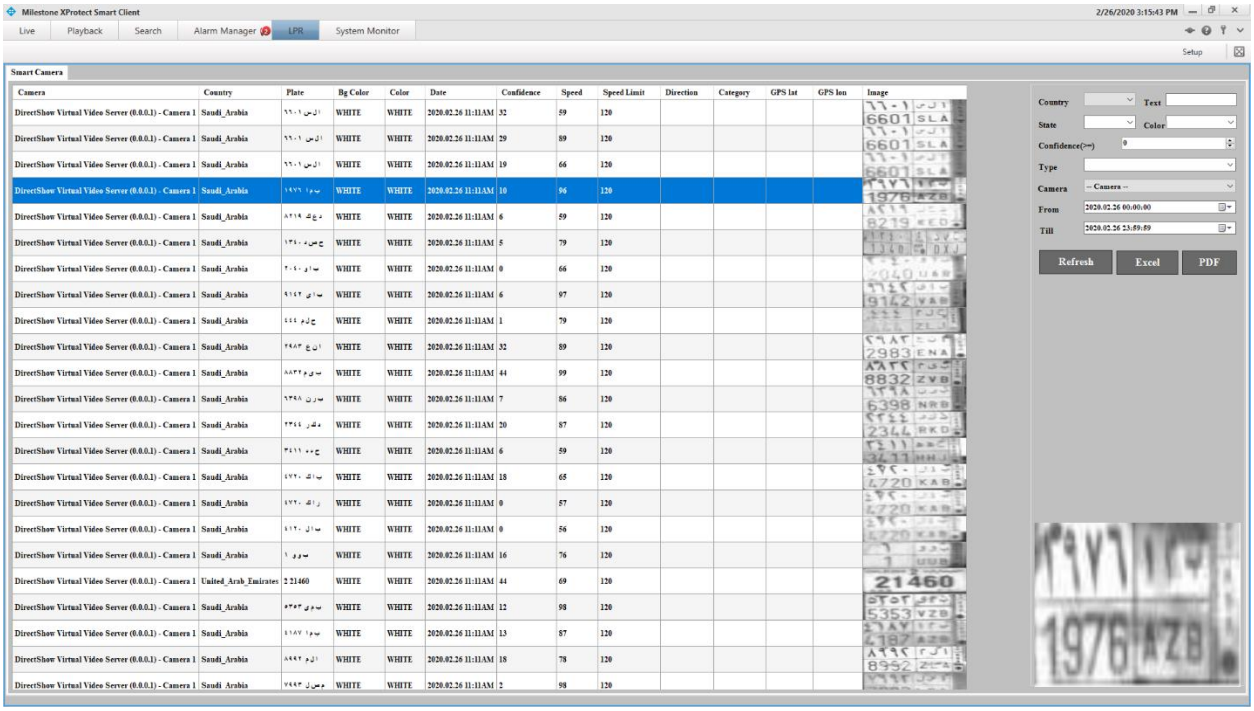

FIGURE 10: LPR HISTORY

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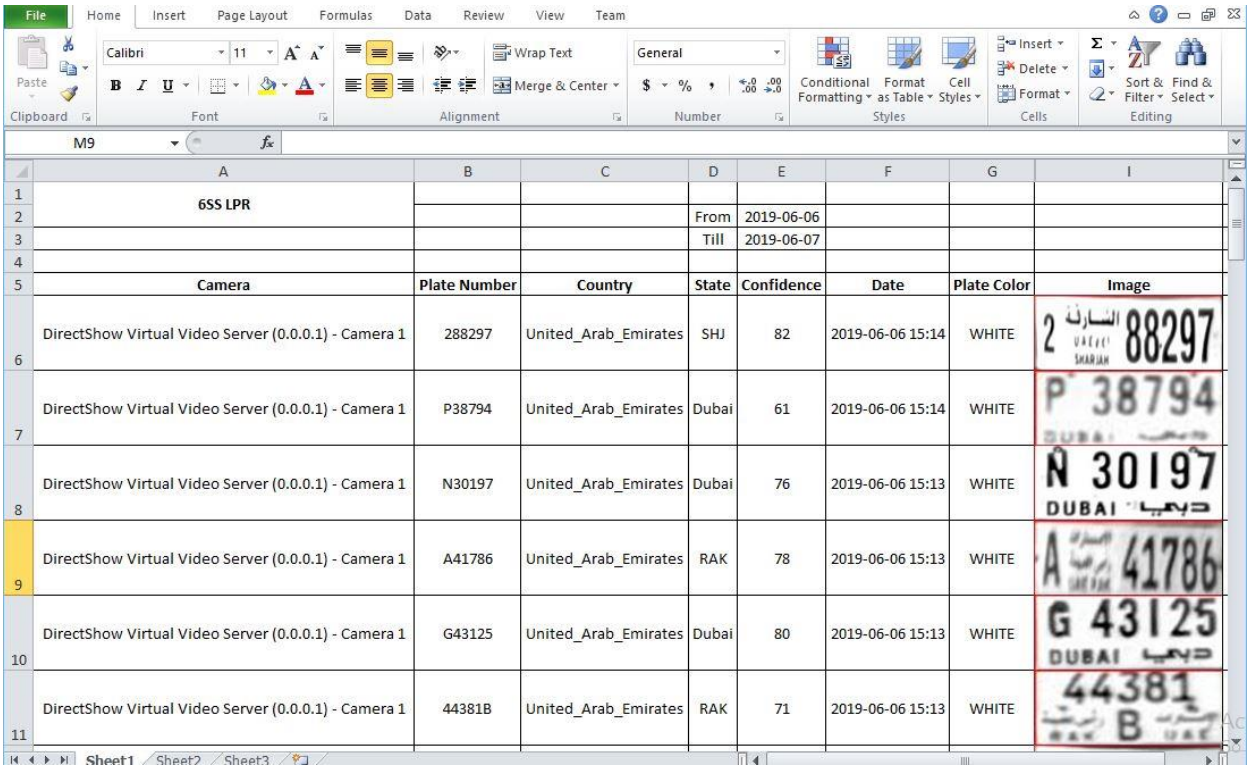
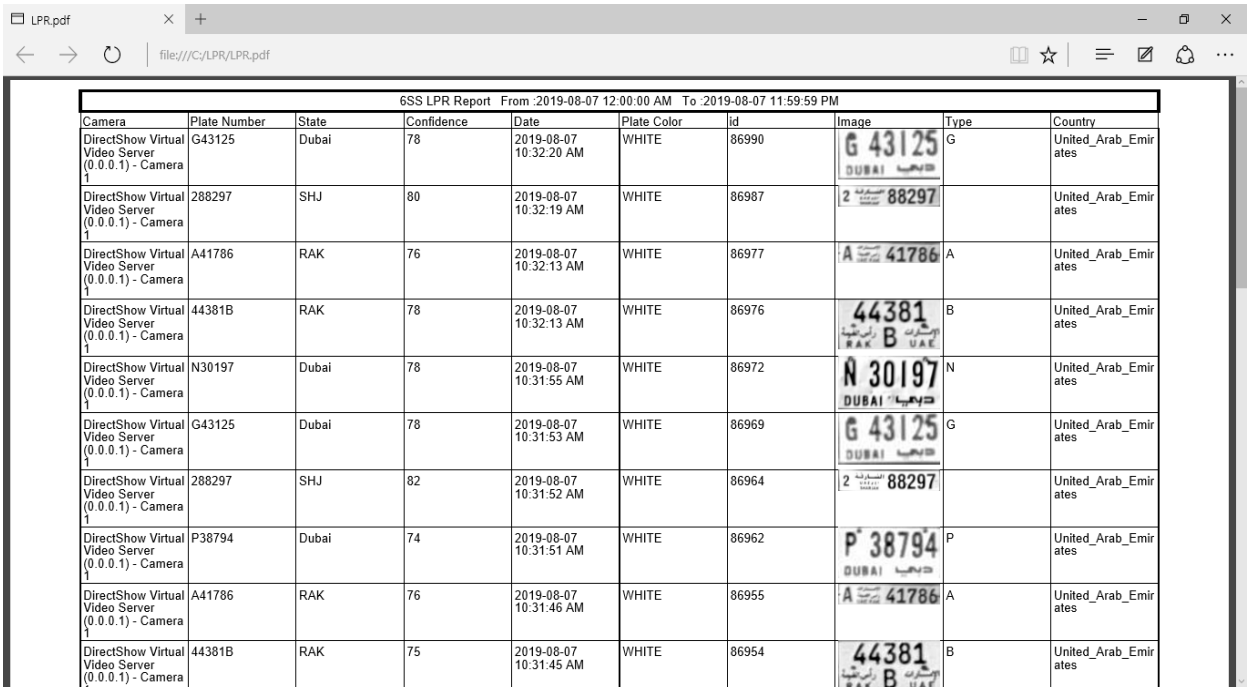


	A	B	C	D	E	F	G	I
1	6SS LPR							
2				From	2019-06-06			
3				Till	2019-06-07			
4								
5	Camera	Plate Number	Country	State	Confidence	Date	Plate Color	Image
6	DirectShow Virtual Video Server (0.0.0.1) - Camera 1	288297	United_Arab_Emirates	SHJ	82	2019-06-06 15:14	WHITE	
7	DirectShow Virtual Video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

FIGURE 11: LPR EXCEL FILE



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 12: LPR PDF FILE

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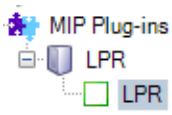
3.2.3. Management Client Interface

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.

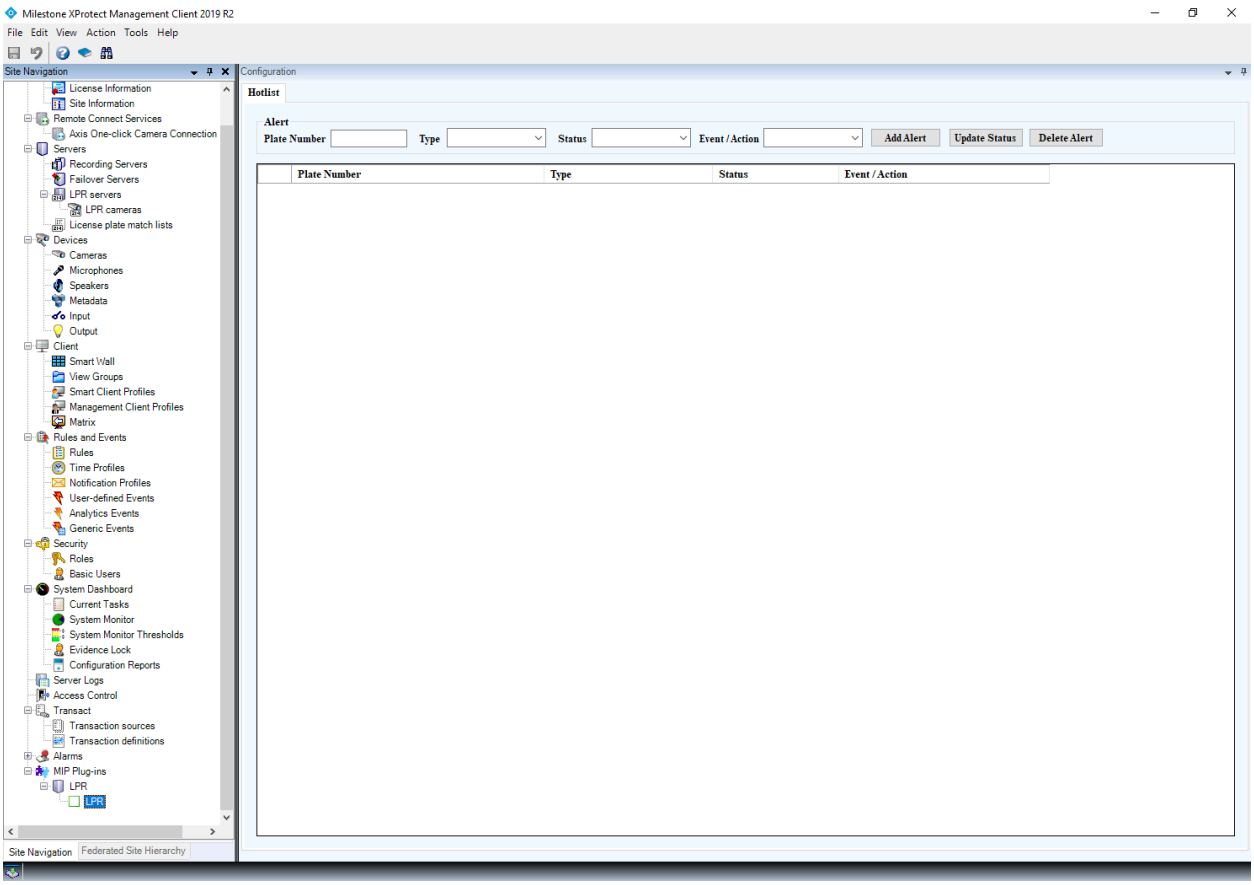


FIGURE 13: ARH EDGE LPR HOTLIST

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