6SS LPR

Administrator Guide

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1. INTRODUCTION

License plate recognition (LPR) has numerous applications in everyday life, besides the ones that drivers know from relation with the state. There are many areas where automatic license plate recognition can be used successfully, and all of them rely on the two most important values a LPR system brings: automation and greater security.

6SSLPR software is meant to fix problems in parking, security, retail, and comes with extra advantages of management and reports. It can also be integrated in a state institution parking, a private company, universities, a transport company, a real estate, retail, traffic management, bus lane enforcement, toll stations.

The main element is the 6SSLPR Smart Client Interface. Vehicles recordings, receipts, reports and statistics are accessible in this program and can be accessed from any Smart Client with valid authentication.

6SSLPR enable the user to set different actions to be executed when a license plate from the database is recognized: can open a barrier, can change a traffic light or can send an e-mail, popup on screen. It can thus be used for a more efficient management of a parking, office buildings, residential area of any size. For example, when entering a parking the plate is scanned and the time is recorded. When exiting, depending on time spent inside, a cost can be calculated.

In addition, 6SSLPR have also the option to save plate numbers as blacklist/whitelist that can be used to trigger actions like close/open barrier, fire siren alarm sound, etc...

6SS LPR Main Features

- Fully integrated with All Milestone XProtect versions
- Supports all cameras supported by Milestone VMS (approximately 6700 camera types)
- Filter through history based on various criteria
- One click data Excel Export
- Scheduled reports (Daily, Weekly, Monthly)
- Auto data retention period handling
- Alarming capabilities (Email, SMS)

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2. GETTING STARTED

2.1. System Requirements

- Windows OS 7 or above
- Milestone Smart Client (2016 or above)
- 6SS-LPR Recognition
- ARH Carmen FreeFlow (version 7.3.11 or above)

2.2. Quick Start

- Unpack the Recognition Server Folder on your drive.
- Start the installation process by opening the “Setup.exe”.
- Choose the installation folder of the recognition server.
- Finalize installation to the PC.
- Once the process completes, the Recognition Server Plugin will be ready to use.

2.3. System Introduction

The server part of the system consists of 2 main components: Management and Recognition. Each LPR system contains only one Management server, and one or more Recognition 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.

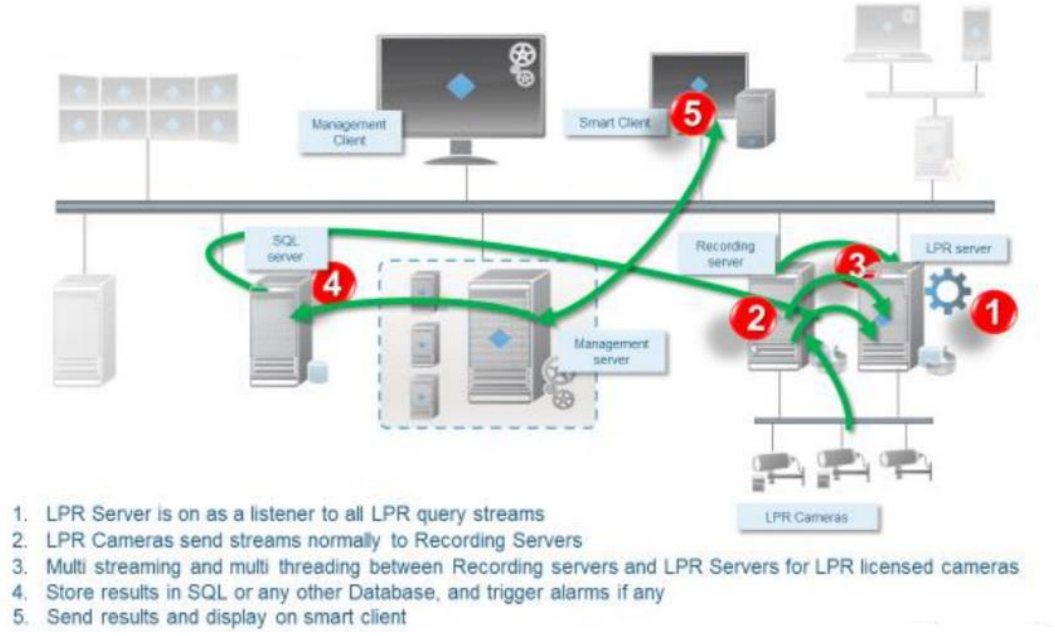

FIGURE 1: 6SS LPR ARCHITECTURE

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3. 6SS LPR INSTALLATION

3.1.SQL Server Configuration

The configuration for the 6SS LPR database needs to be done on the server where Microsoft SQL server is installed.

3.1.1. Database Creation

Double click the given SQL script in order to create 6SS Database and click the execute button to run the query.

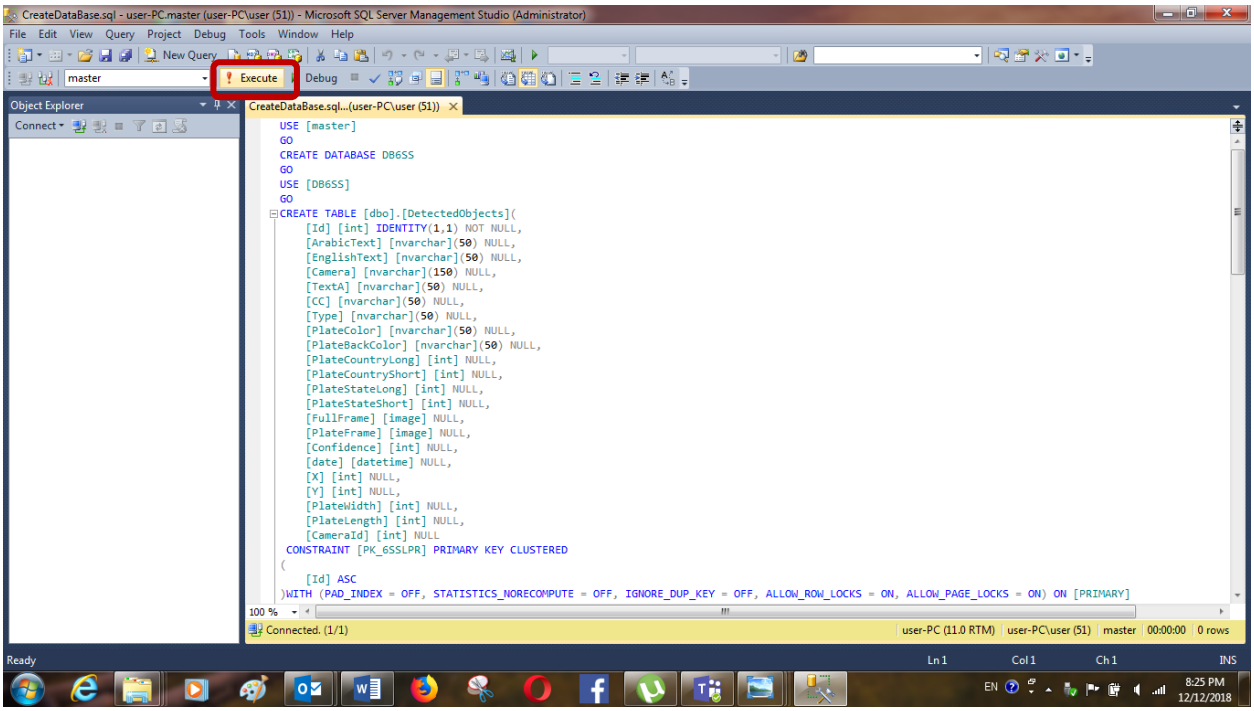

FIGURE 2: CREATE 6SS DATABASE USING SQL QUERY

DB6SS database is created and appears in SQL server as shown below:

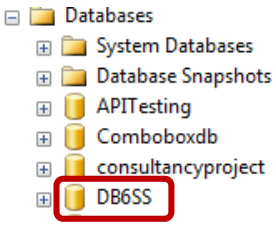

FIGURE 3: DATABASE CREATED

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3.1.2. User Creation and Authentication

Open the “Security” tab, right-click on Logins and select “New Login”.

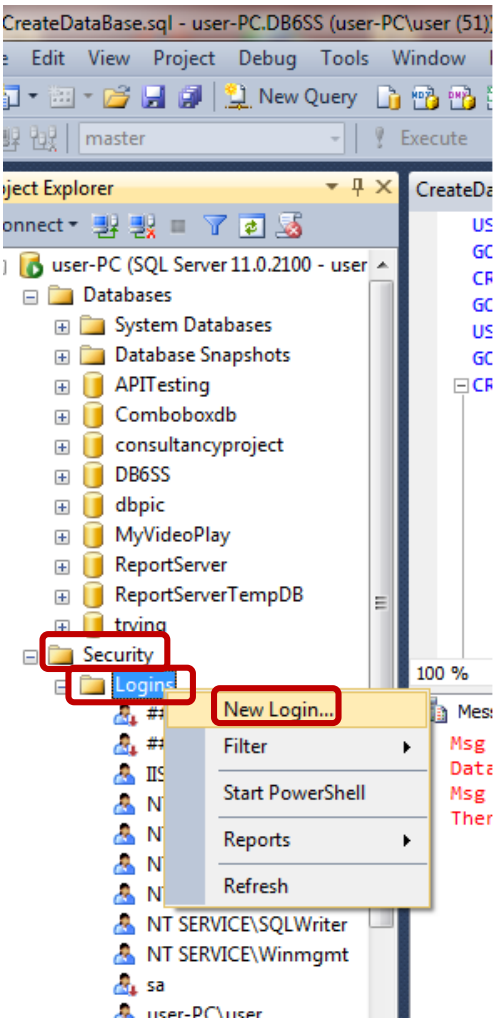

FIGURE 4: ADD NEW LOGIN

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In the Login window:

- Click General tab on the left side
- Set Login Name “6ssLpr” and Password “6ssLpr”
- Select DB6SS as Default Database

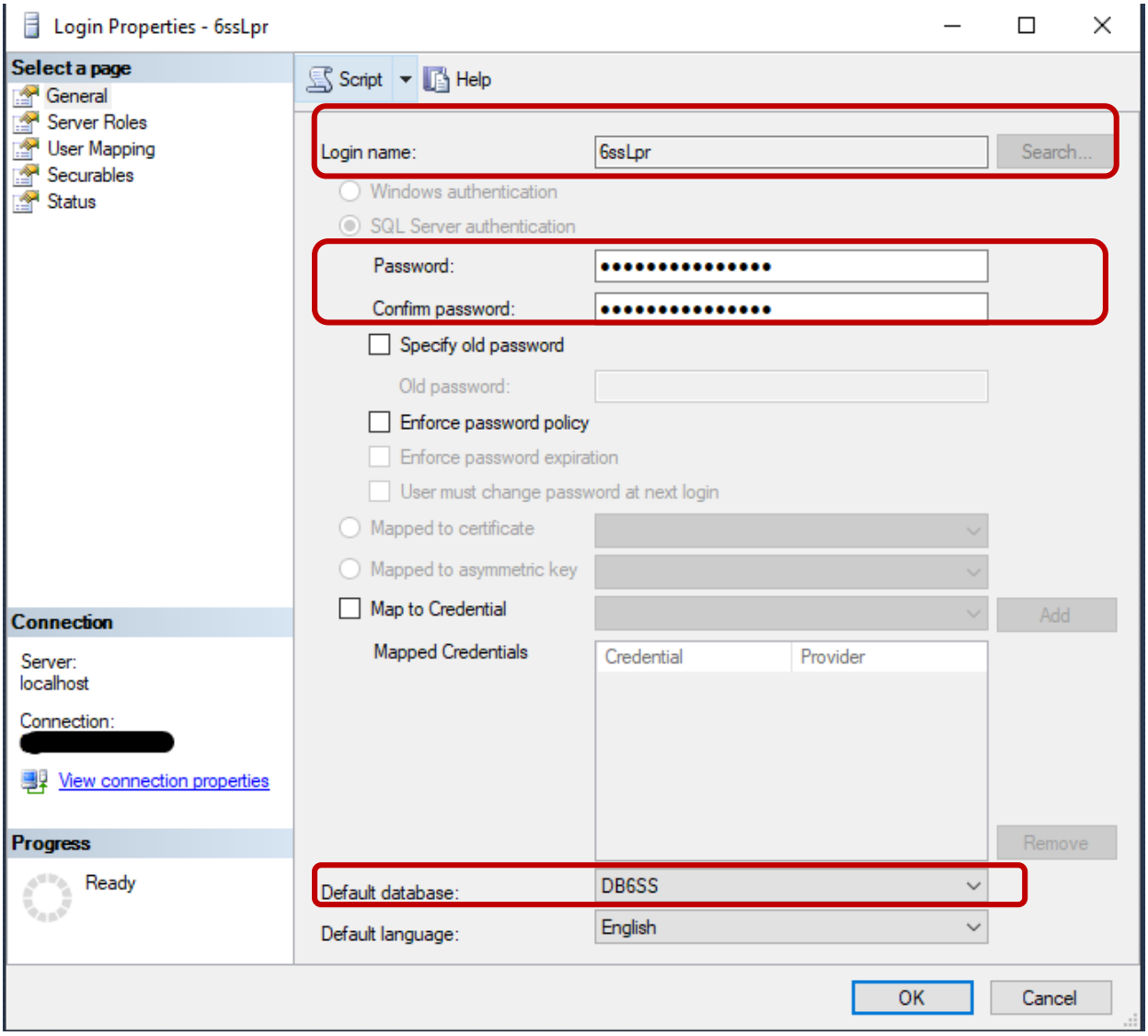

FIGURE 5: FILL THE FIELDS TO ADD NEW LOGIN

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In User Mapping, check DB6SS, db_owner and public checkboxes as shown in Figure 6.

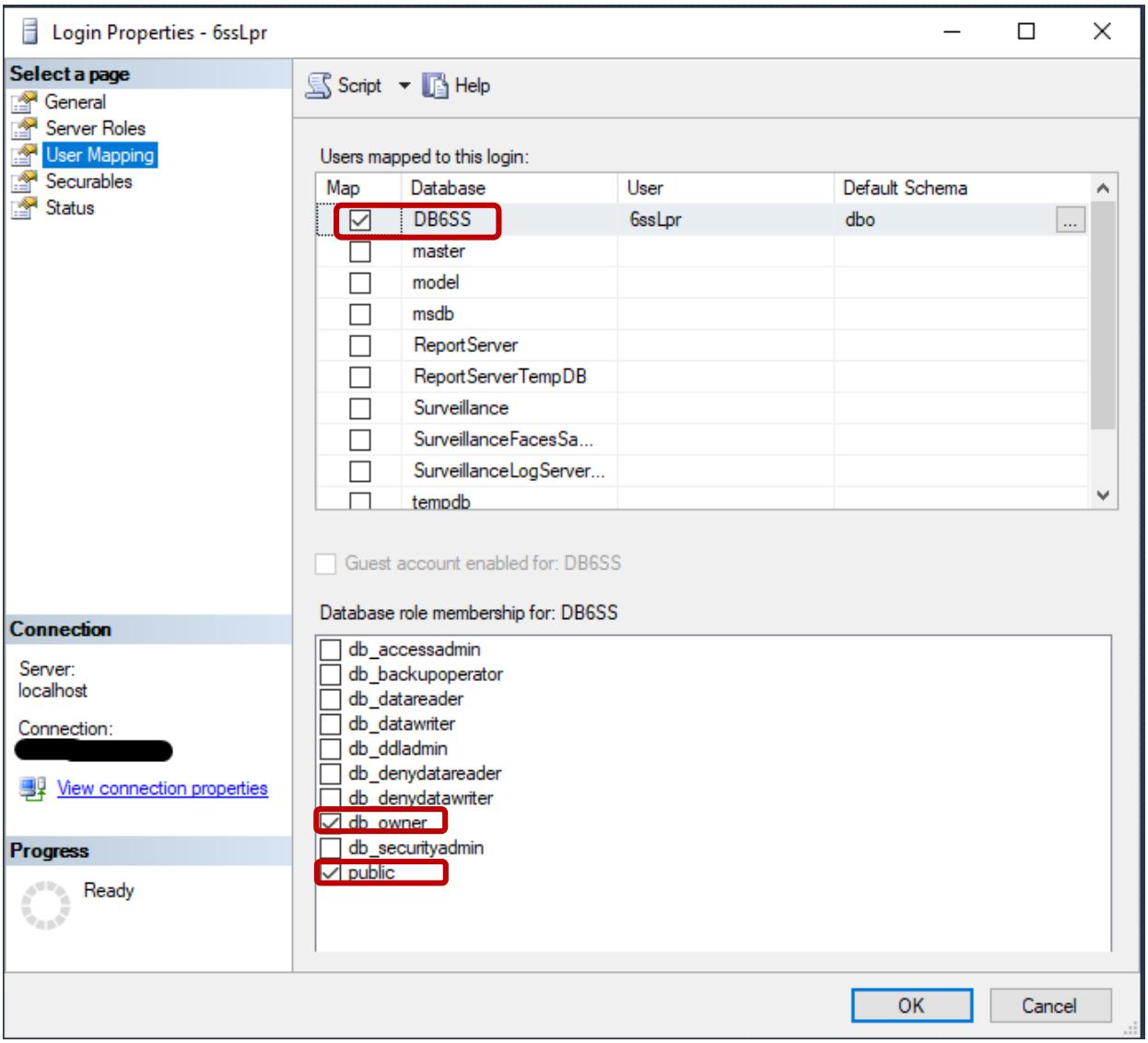

FIGURE 6: USER MAPPING

Click ok when finish and notice the 6ssLpr login appears under Security - Logins.

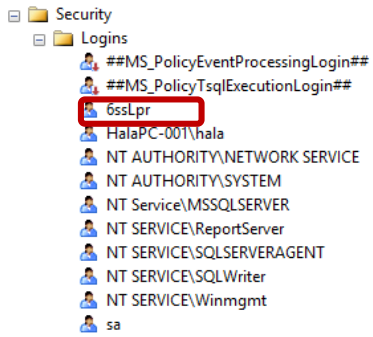

FIGURE 7: ADDED LOGIN

3.1.3. Server Authentication

Right click on the server and select Properties, select security tab and choose SQL Server and Windows Authentication mode.

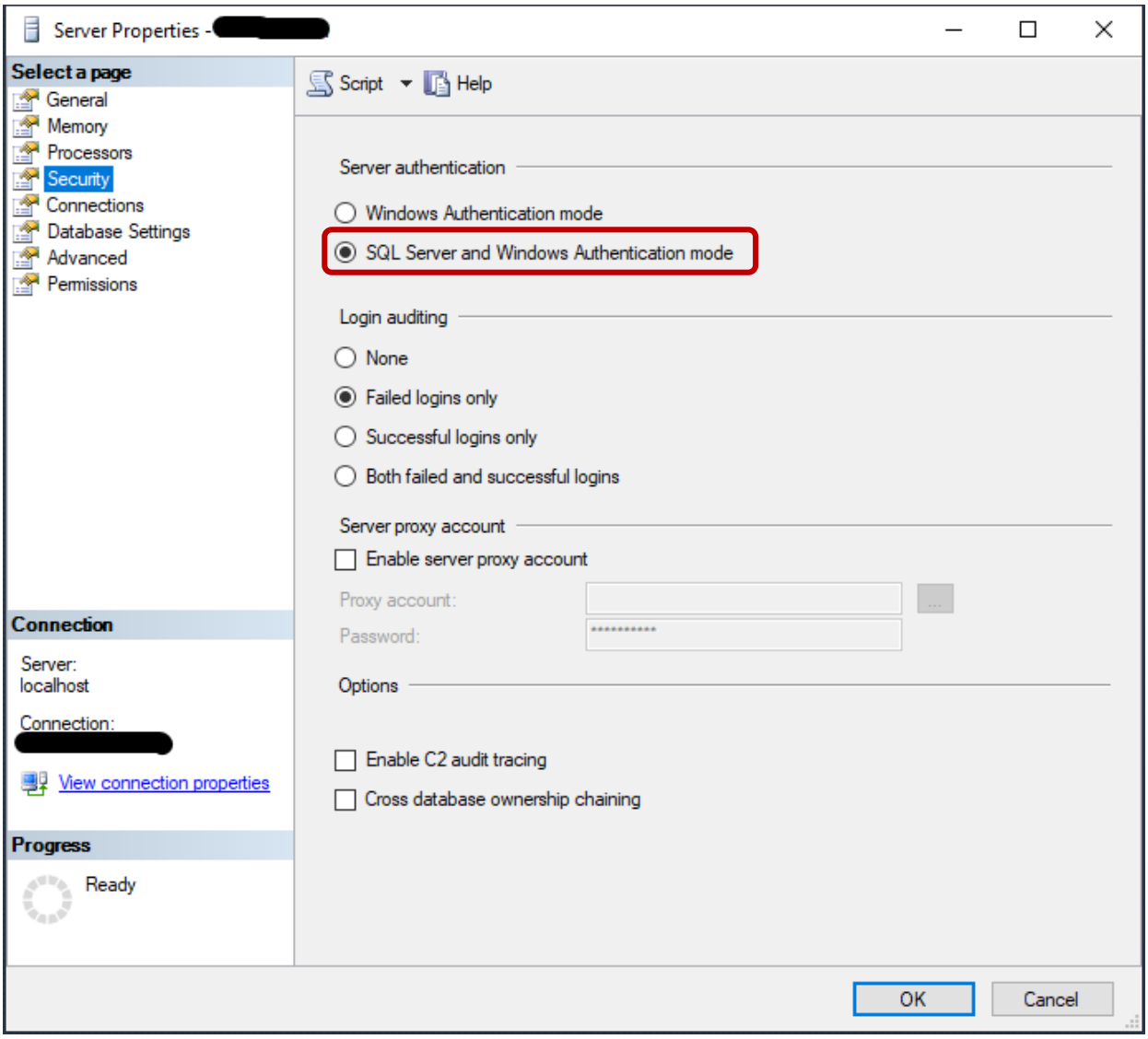

FIGURE 8: SERVER AUTHENTICATION

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A restart must be done for SQL Server and SQL Server Agent instances as shown in the below figure.

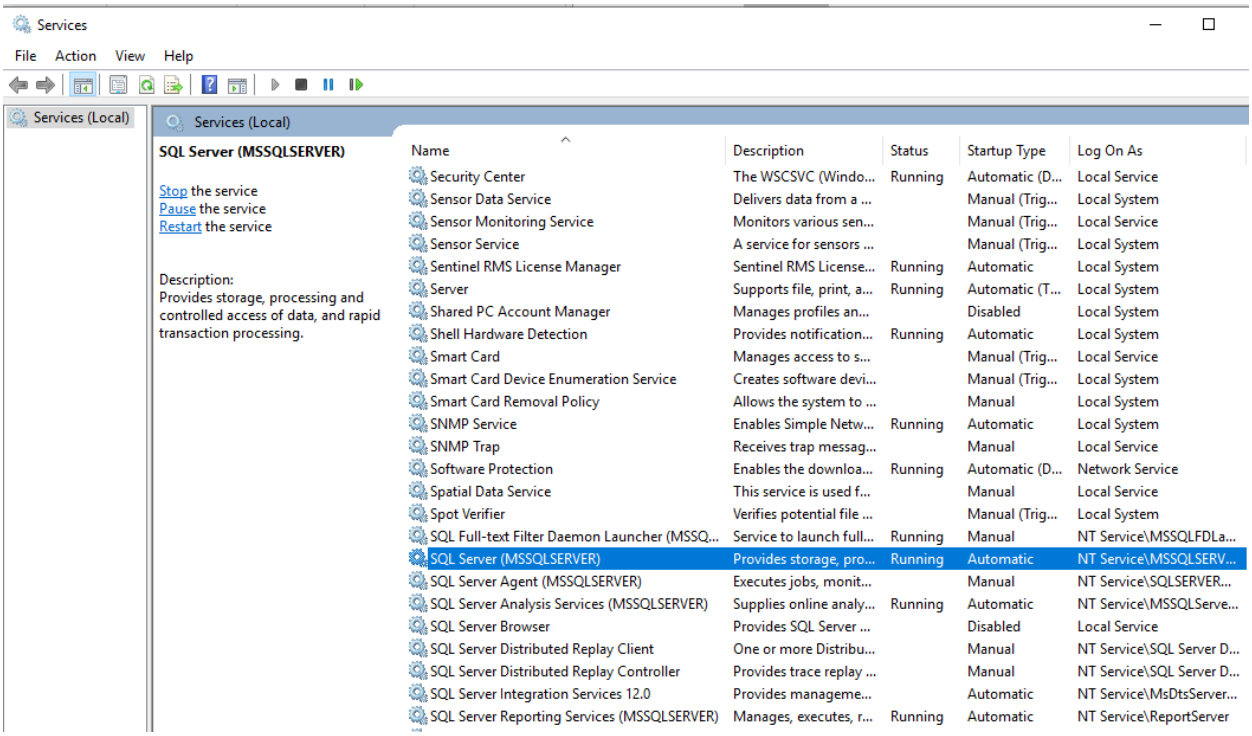

FIGURE 9: RESTART SQL SERVER INSTANCES

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3.2.Carmen FreeFlow Installation

3.2.1. Setup Wizard

Navigate to Carmen FreeFlow setup folder and run setup as shown in **Figure 10**.

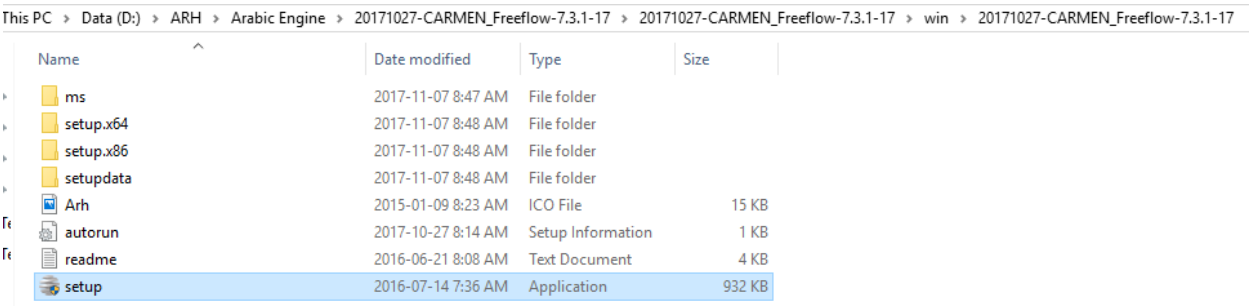

FIGURE 10: CARMEN FREEFLOW SETUP

Select the 3rd option "CARMEN Full" for full installation package and click on **Next**.

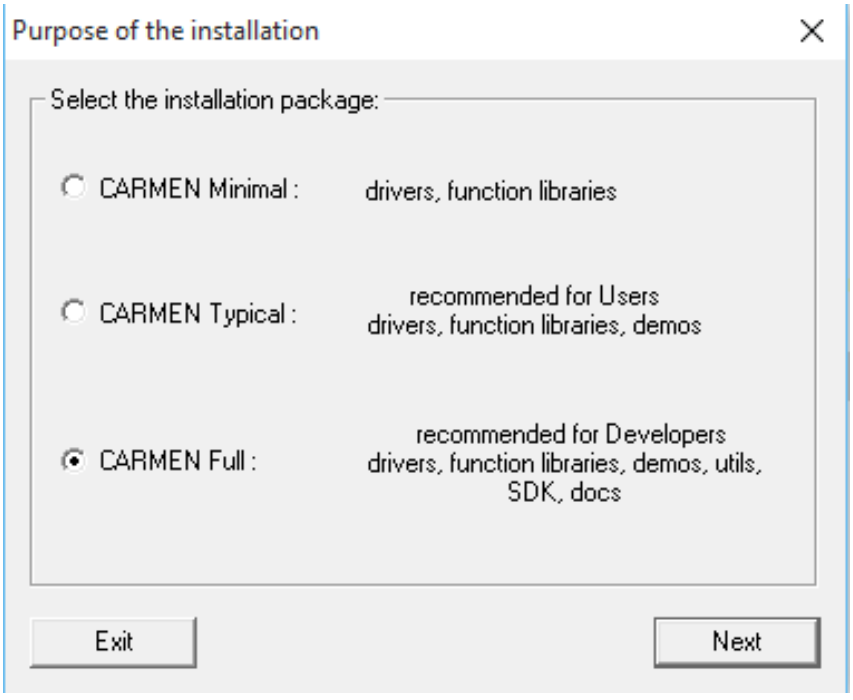

FIGURE 11: CARMEN INSTALLATION PURPOSE

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You will be presented by the Carmen FreeFlow Software window with installation progress. Click ok once the installation is completed.

FIGURE 12: CARMEN FREEFLOW SOFTWARE INSTALLATION

3.2.2. Engine Manager

Search for Engine Manager and click to open.

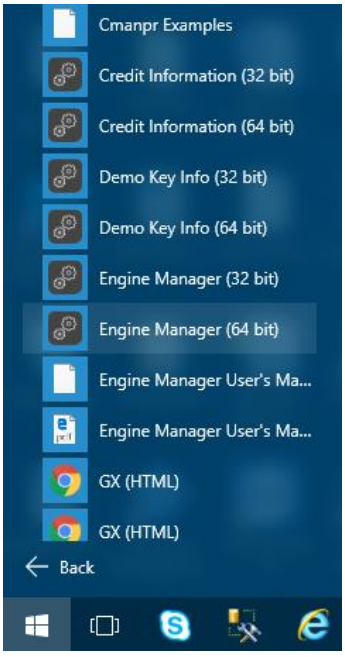

FIGURE 13: ENGINE MANAGER

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Click on **Browse** (1) and navigate to the Arabic engine folder and choose either "cmanpr-arab-7.3.10.175_19Q1-x64" or "cmanpr-arab-7.3.10.175_19Q1-x86" depending on your platform. Then click **Install engines** (2) and select the downloaded Arabic engine from the **Installed engines** (3) and click on **Change** (4) to set it as default engine, you will be notified that the "Default engine has been set successfully" as shown in **Figure 14**, click on **OK** (5).

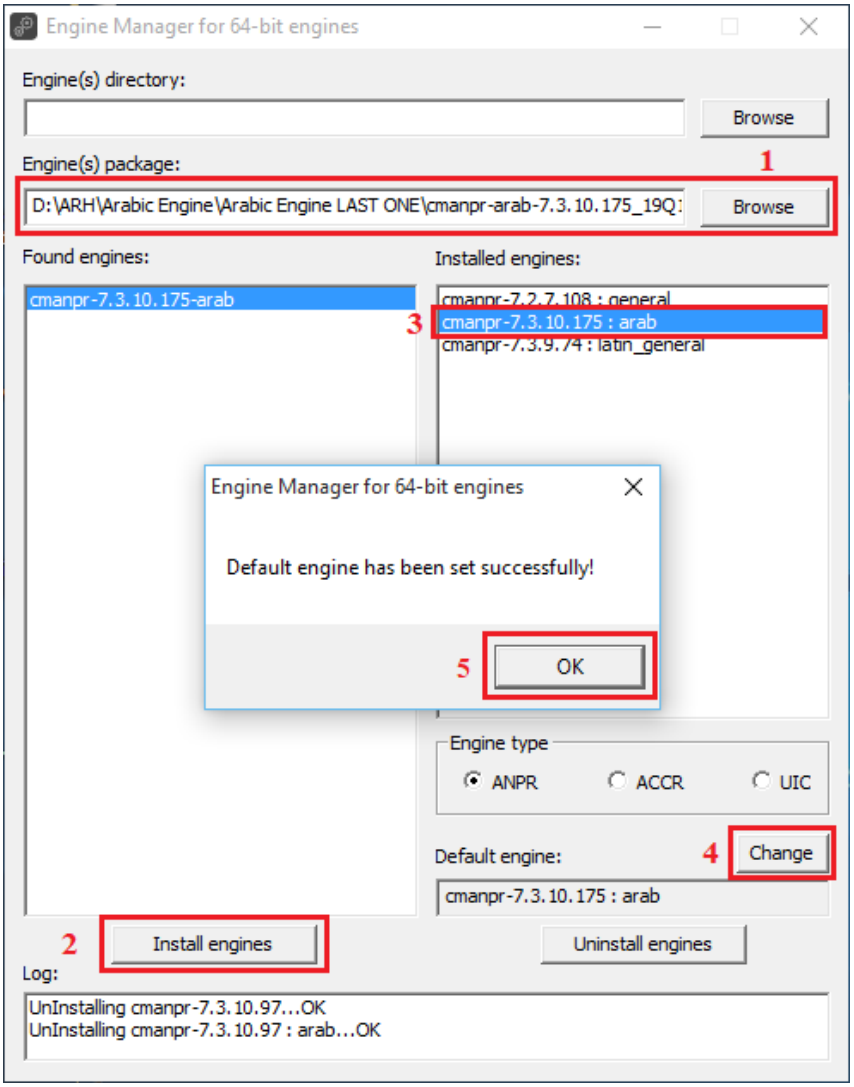

FIGURE 14: INSTALL ARABIC ENGINE

3.3. Recognition Server

3.3.1. Setup Wizard

First open the copied Recognition Server Folder and navigate to Setup > Debug and double click on Setup. The setup wizard opens, click **Next** to continue.

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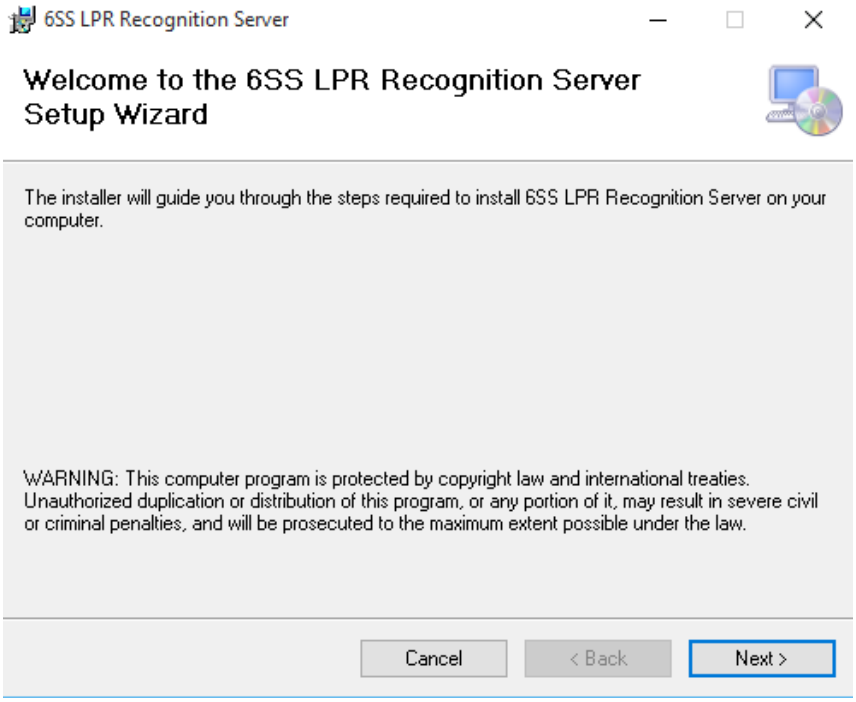

FIGURE 15: RECOGNITION SERVER SETUP WIZARD

The installation folder windows let you specify the path to where the recognition server folder will be created as shown in **Figure 16**. In this folder you will find the Recognition Server setup application along with the DLL used. Click next to continue and the setup will be installed as shown in **Figure 17**.

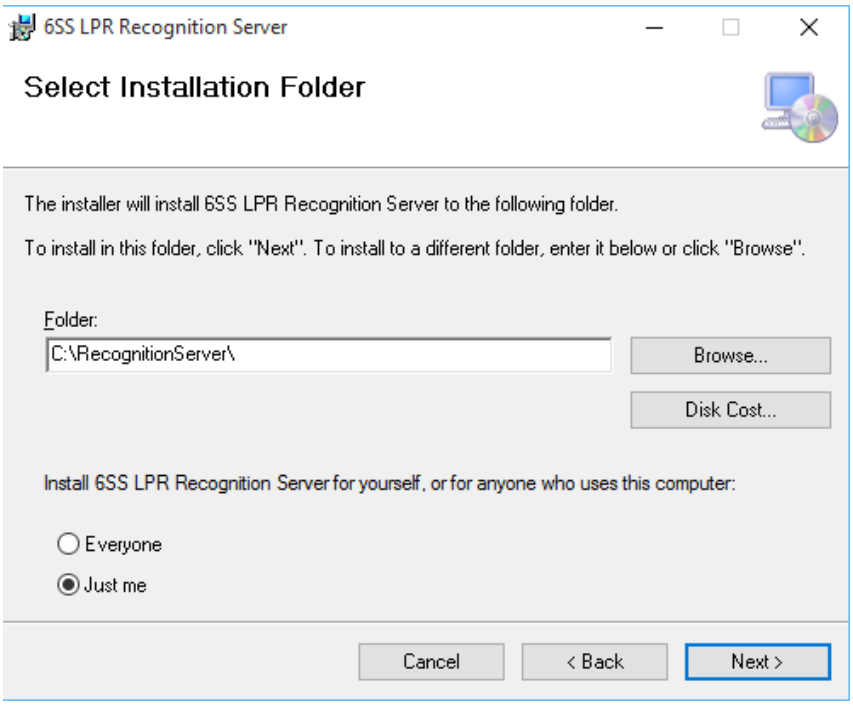

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FIGURE 16: RECOGNITION SERVER INSTALLATION FOLDER

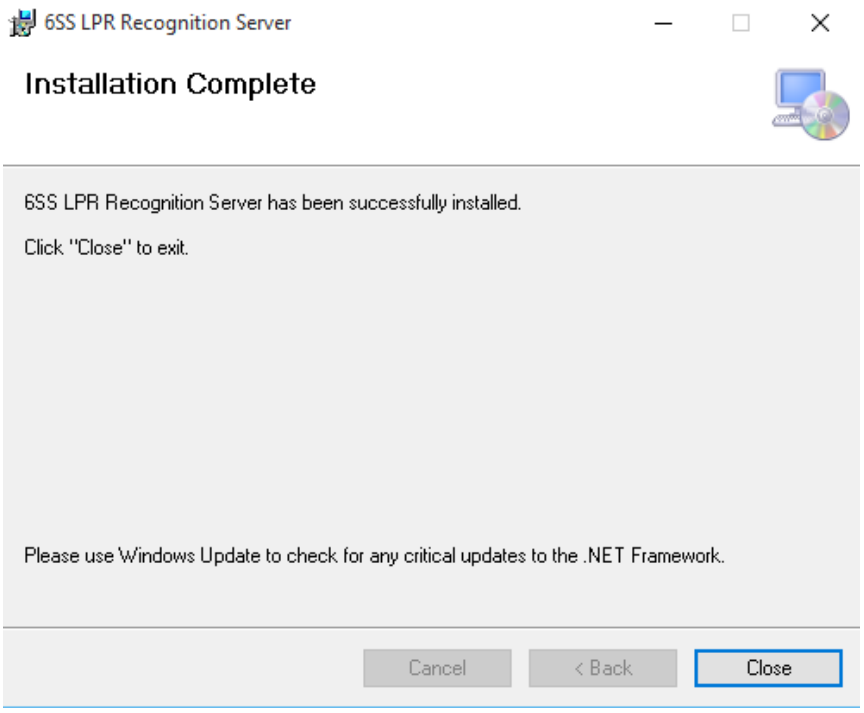

FIGURE 17: INSTALLATION SETUP

Once the recognition server setup is installed right click on “RecognitionServer” application found under the specified destination folder as shown below and choose copy to create a shortcut on your desktop.

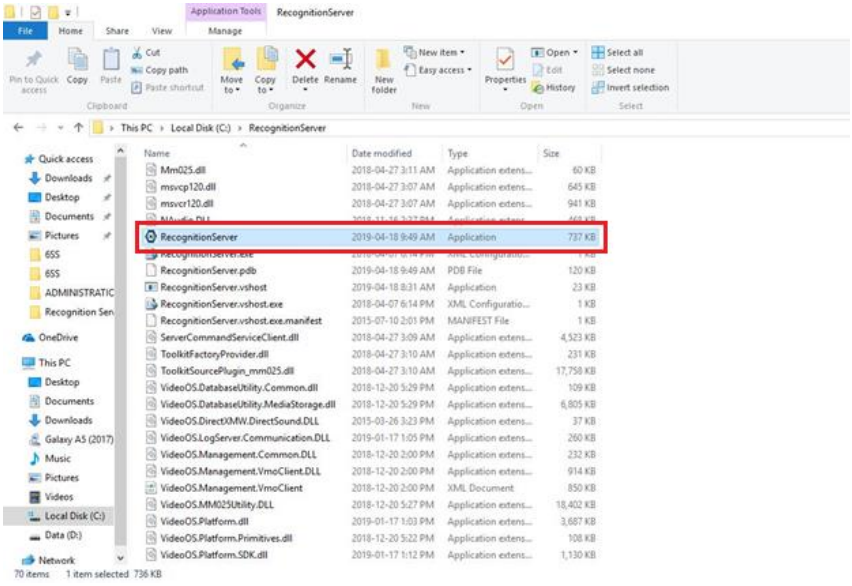

FIGURE 18: RECOGNITION SERVER FOLDER

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3.3.2. Recognition Server Interface

Running the application for first time use will prompt you to enter the management server's IP address. Choose windows authentication mode and make sure to check "Auto-login" checkbox to reconnect directly to the server next time you launch the application.

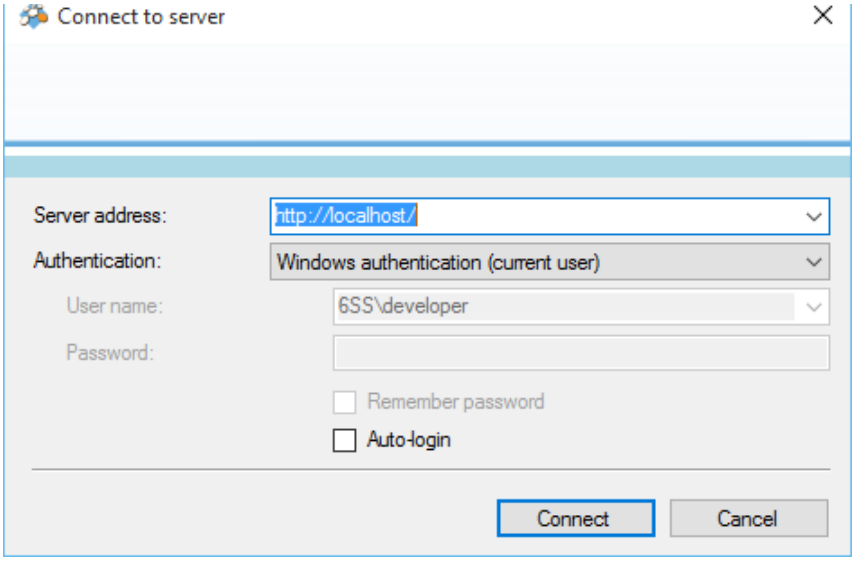

FIGURE 19: CONNECT TO MANAGEMENT SERVER

The first tab shown in **Figure 20** is **LPR Recognition**. Here you can find all the cameras already defined in the "ANPR Camera" tab. You can anytime stop the LPR engine if you require to do any additional changes.

You will notice after properly setting the required cameras, SQL server name and given a proper license, a set of detected license plate number will be filled line by line listing the camera name that has captured the plate number along with its country, state, region, and the date when the plate number is recognized by the camera, in addition to the plate number color and its appropriate screenshot image.

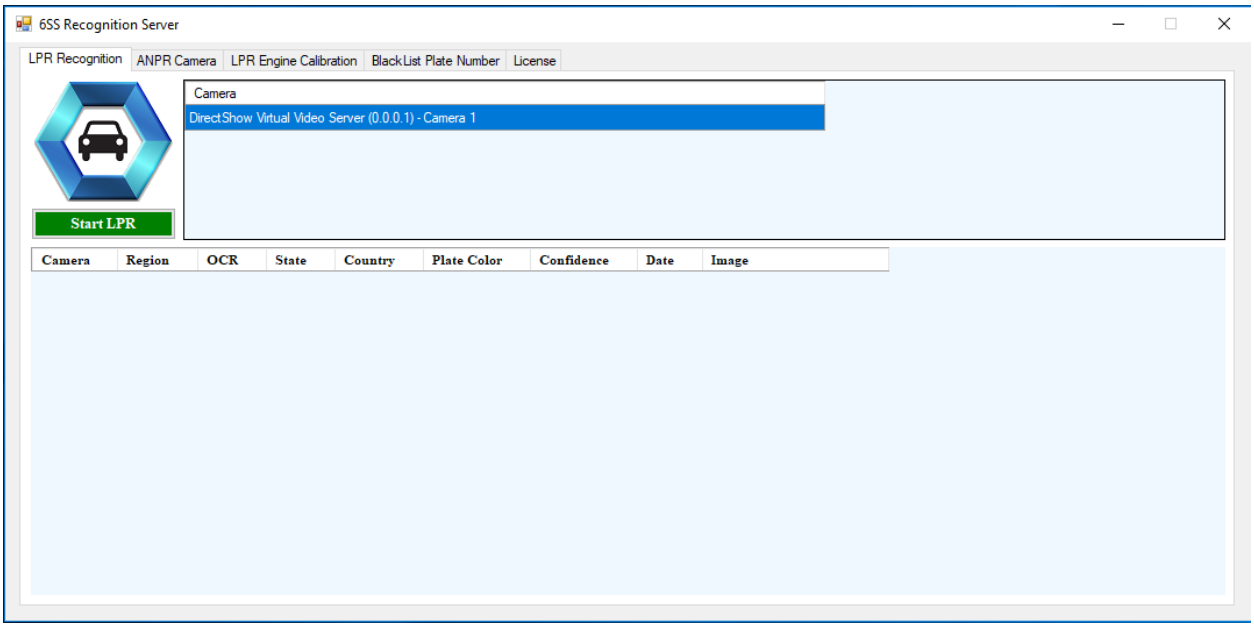

FIGURE 20: "LPR RECOGNITION" TAB

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In the "**ANPR Camera**" tab specify all the cameras needed for LPR detection. If you disable any of the listed cameras, only the enabled ones will appear in the previous window. Make sure also to specify the SQL server address/name and notice the number of cameras available based on the license request.

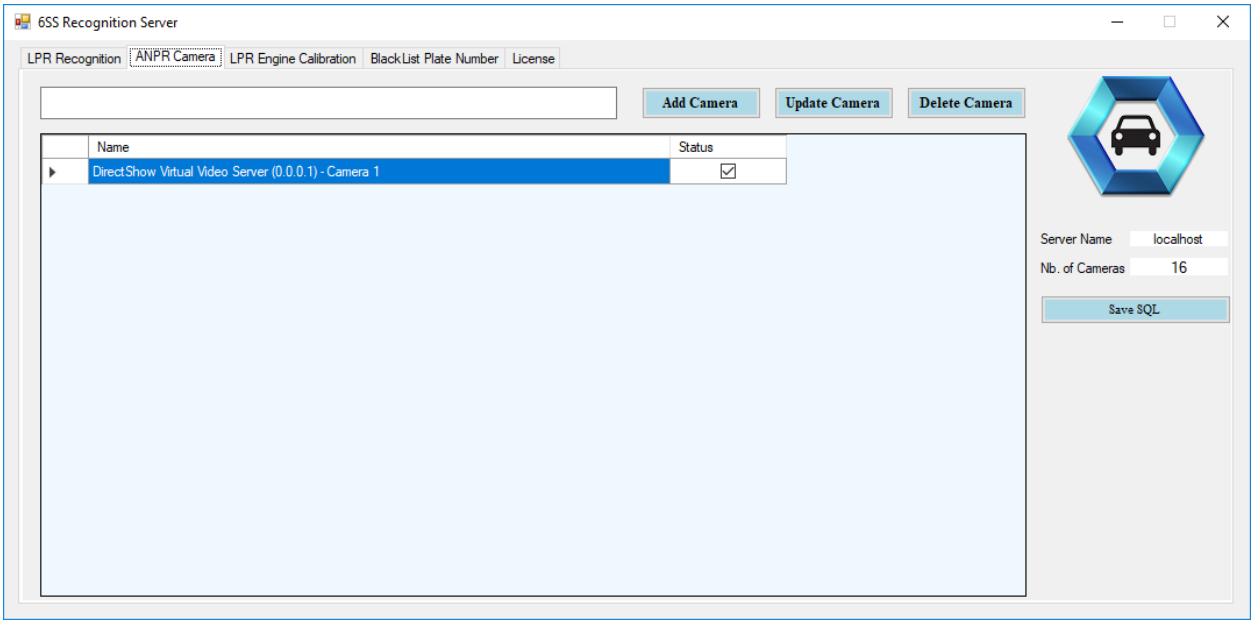

FIGURE 21: "ANPR CAMERA" TAB

For the engine calibration use the fields shown in **Figure 22** under "**LPR Engine Calibration**" tab to adjust/manipulate the parameters for better results and accuracy. Click "Save" button once finished to save the calibration parameters.

below is an example of calibration for the Arabic engine.

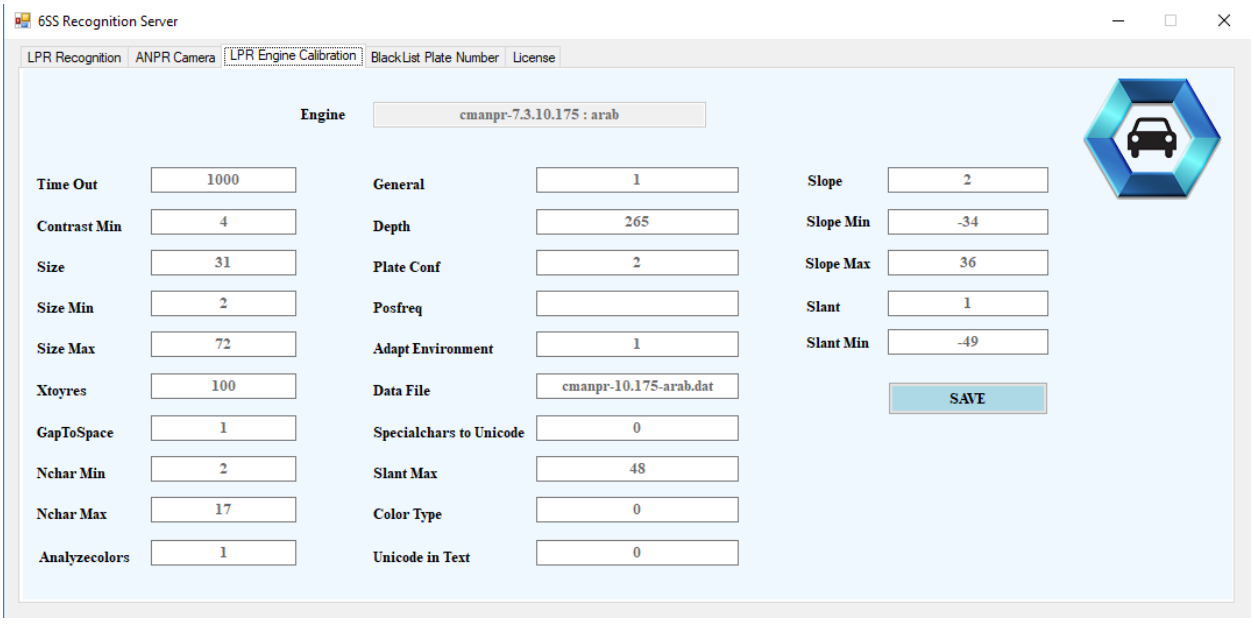

FIGURE 22: "LPR ENGINE CALIBRATION" TAB

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A plate number can be listed as a blacklist or whitelist using the "**Blacklist Plate Number**" tab. Specify the plate number, type, status (enabled/disabled), and the event/action that may be attached to this plate number as shown in the below figure. If you already have a predefined list, you can choose to import the latter using the button "**Import from Excel**".

Note that for the engine to check for rotated license plates, you must enable this feature by checking the "**Rotated Plate"** checkbox under the button "**Import From Excel"**.

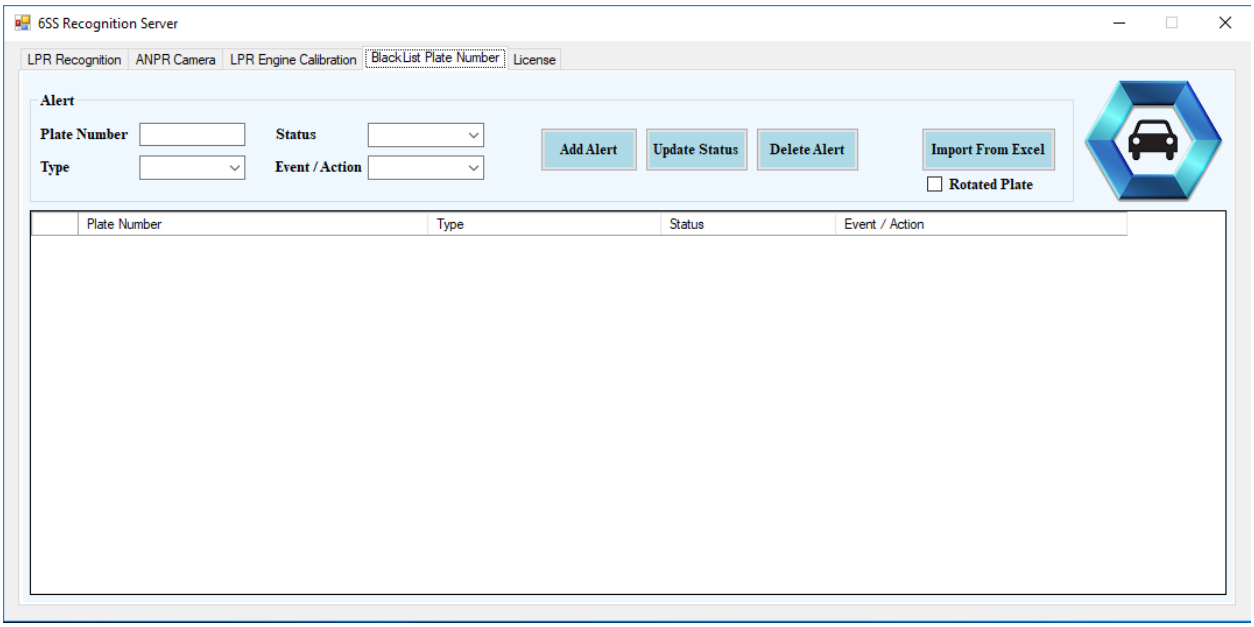

FIGURE 23: "BLACKLIST PLATE NUMBER" TAB

A license is needed for the LPR engine to work. For this purpose, click "**Generate the requested license**" button under "**License**" tab and send the generated file to info@6ss.co. Once you receive the license file, place it in the specified path highlighted in green as shown in the below figure.

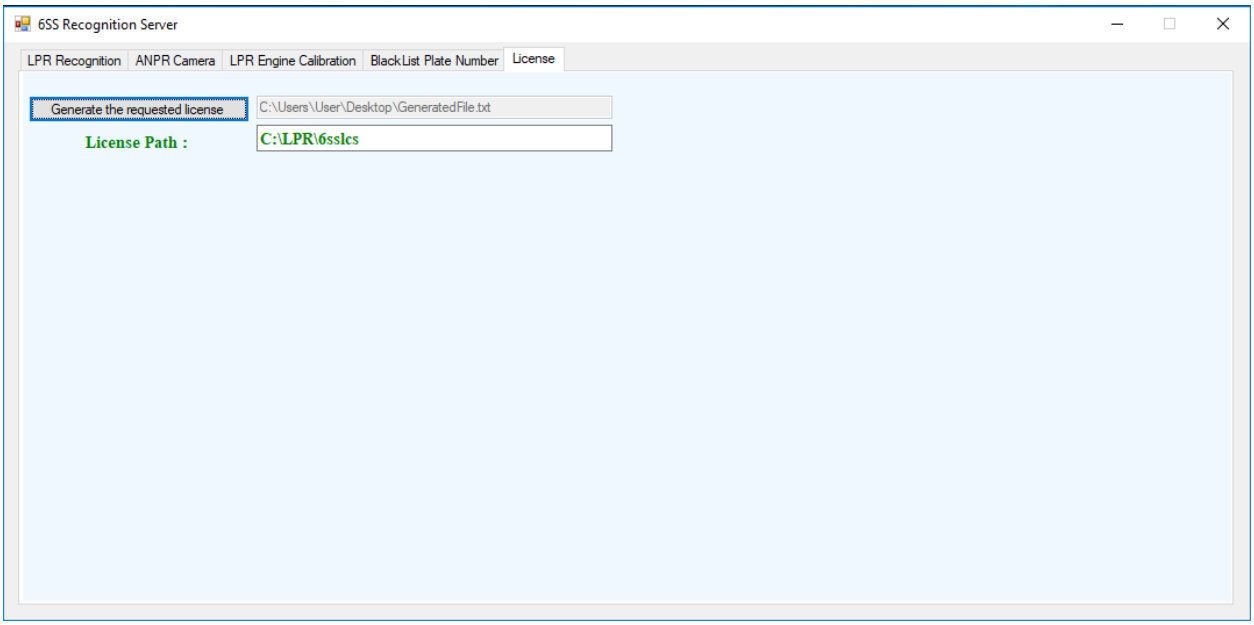

FIGURE 24: "LICENSE" TAB

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