



ALPR to Milestone VMS Integration

User Manual

Contents

Overview	3
Introduction	3
<i>Critical features include:</i>	4
Installation	5
Figure 1	5
Pre-install requirements	6
Installation Process	6
C2P Base	6
Installing the C2P Base.....	6
C2P Base installer component selection menu.	7
Sample C2P Machine code generator output. Email to support @c2p.com.....	7
Installing the C2P ALPR Proxy	8
Configuration	9
C2P ALPR Proxy configuration GUI	9
C2P Event Streaming Engine (ESE) GUI.....	13
C2P HSE Proxy GUI	14
Smart Client view setup for C2P integration	15
Troubleshooting.....	16
Appendix A: Sample C2P ALPR proxy log files.....	17
Appendix B: C2P ALPR GUI Rules Engine.....	18
Appendix C: CTP License Server Control Panel.....	19
Loading a new CTP License File.....	19
Contact Information	20

Overview

This User manual is intended to be used as a reference. This manual covers all of the components used in the C2P ALPR integration. A large portion of this manual covers the configuration of Milestone components as well as the C2P components.

The C2P portion of this integration can be installed in minutes and in many cases will work as shipped without any configuration needed. This manual serves as a reference for applications that go beyond a basic install of the C2P ALPR to Milestone integration.

Introduction

ConvergenceTP (C2P) is the market leader in bringing text and alert information from virtually any TCP/IP enabled appliance or sensor into the users Video Management System (VMS). Video surveillance is a powerful tool for security professionals, but the true benefits of video surveillance can only be realized when users have access to the data (all the data) from every TCP/IP enabled device in the customer enterprise. This Internet of Things (IoT) concept is the basis for the C2P middleware that connects the users VMS to their TCP/IP enabled devices.

The value for the user when their IP appliance and sensor data is captured and stored time synchronized with the video in the video surveillance system is they now have a way to index video in their surveillance system. With the C2P Hypermedia Search Engine (HSE) users can search on text received from a Point of sale terminal, License plate reader, Access control reader, Bar code reader, RFID sensor, etc. and then watch video of that specific event as it happened. Having the data time synchronized with the surveillance video means users can then bring up a view from any camera in their video surveillance enterprise and follow the person or object of interest as it moves out of view of one camera and into view of another.

Users can also setup the easy to use C2P real-time Rules Engine which allows them to flag specific events for immediate viewing, or push user defined procedures for that specific event to the VMS operators screen. The Rules engine also allows the user to push generic events to the VMS system to synchronize, annotate and bookmark the detected event within the VMS event database.

Critical features include:

- ALPR text captured by C2P is time synchronized with any and all video cameras attached to the Milestone VMS.
- ALPR text can be viewed in real-time from any Milestone Smart Client.
- All ALPR text received is stored and therefore available for future back office forensics searches.
- C2P provides an intuitive and powerful Hypermedia Search Engine (HSE) for use in researching specific events.
- HSE search results provide the full text of the events that are linked to the actual Milestone stored video of the event.
- C2P provides many real-time analytic tools that users can setup to trigger on specific events of interest.

Hypermedia Search™

Search Type: **ALPR**

From: 04/22/2016 23:59
To: 04/23/2016 23:59

Spreadsheet Fields

- Plate
- State
- Confidence
- Camera

Add Fields

Download View

View Event	Date	Plate	State	Confidence	Camera
Show Cameras Expand	10:14:32 4/23/2016	CAK4171	NC	95	Lane2
Currently displayed					
Show Cameras Expand	10:14:22 4/23/2016	SRY5167	NC	94	Lane1

CTP Overview1

CTP Camera2

4/23/2016 10:52:52 AM

CLASS: Invariant
STATE: NC
CONFIDENCE: 96

LICENSE PLATE: BFP8535

LPR CAMERA: Lane1

Stolen Car

Alarm

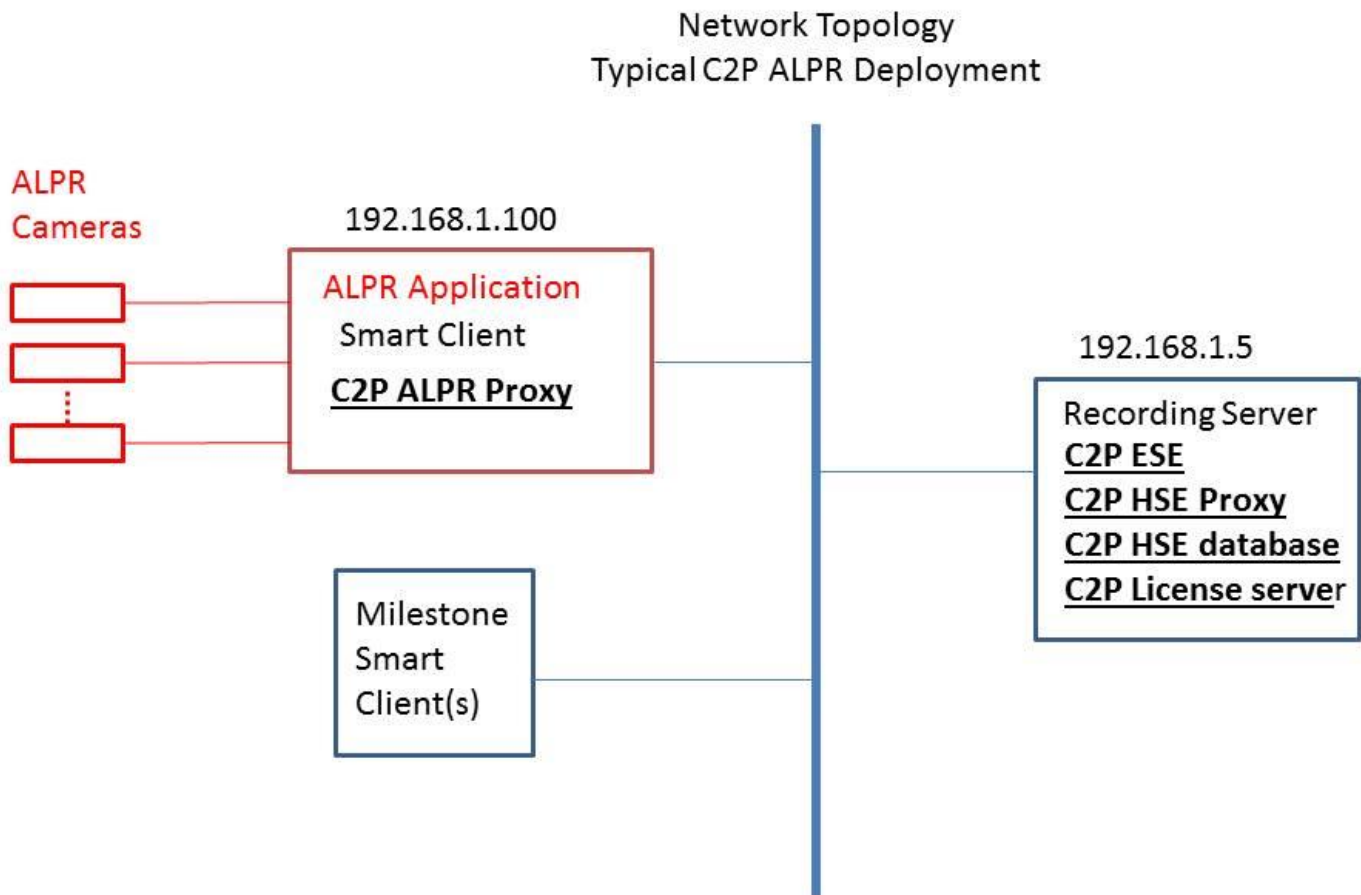
Plate# BFP8535 "NC"

Alert security: Ext:999
Alert police : 911

Installation

For new installations you will need both the C2P ALPR proxy installer as well as the C2P Base installers.
Note: included in the C2P Base installer is the ESE, HSE, HSE Proxy and License server.

Figure 1 below depicts a typical C2P ALPR deployment topology.



Note: For consistency the IP addresses shown above match the IP addresses call out in the C2P Users Manual.

Figure 1

Note:
For evaluation and demo applications all of the components listed above can be installed on the same system.
Without any further configuration required.

Pre-install requirements

The PC/server used to host any of the C2P Base components needs to have i7 class processor min.¹
Microsoft Windows® operating system Win 7/Server 2008 or Win 8/Server 2012²
The machine to be used for the install needs to be relatively current with Windows Updates.
Ensure that the PCs/servers used to host the ESE and HSE are time synchronized with the VMS.
During the install temporarily disable any antivirus SW and drop the local firewall.
Milestone Smart Client installed on the PC/Server hosting the C2P ALPR Proxy software.
Internet Explorer 9 or above installed on any PC hosting Smart Client workstations
At least 1 Universal Camera license from Milestone is needed . Defaults to 30 day demo on initial install.
Ability to temporarily set UAC to off while doing the install.
Smart Client “Basic” login account with valid credentials
Administrator account for use when installing CTP software

Installation Process

C2P Base

Note: Installing C2P Base for the first time may require a restart of the machine after the install completes.

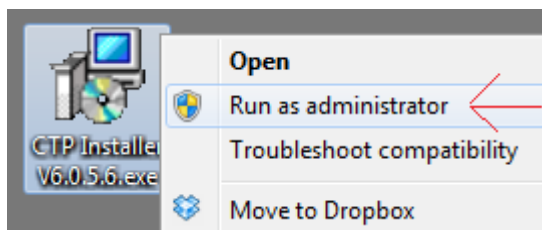
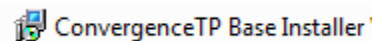
The C2P Base software installs all of the components needed for the C2P Base system.

These components include:

- The C2P Event Streaming Engine (ESE)
- The C2P Hypermedia Search Engine (HSE)
- The C2P Hypermedia Search Engine Proxy (HSE Proxy)
- The C2P License Server

Installing the C2P Base

1) Execute the C2P Base installer. “Run as administrator”



2) Follow the default selections during the C2P Base install

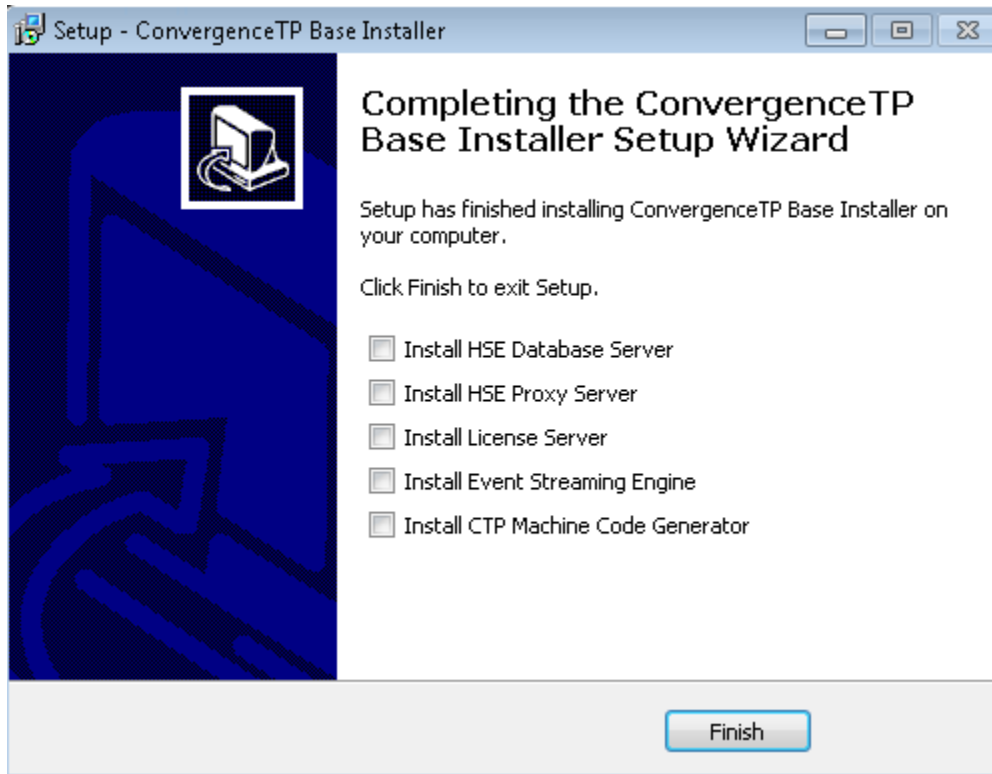
3) Select the features being installed. See: [C2P Base installer component selection menu](#).

¹ The system requirements are the minimum of what will be required for satisfactory performance; your particular needs may differ or exceed the minimum requirements listed. Your specific needs will be dependent on several factors including number of IP appliances connected, number of users, the type of connected devices and the level of usage per device.

² If installing the C2P Real-Time charting or graphing package the OS needs to be 64-bit.

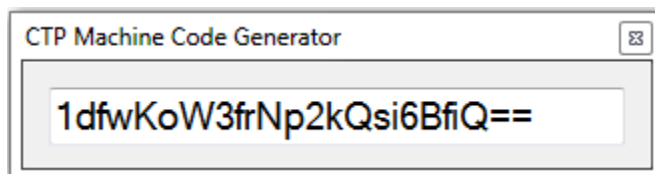
See [Figure 1](#) above for a definition of where each component is to be installed.

Note1: You will need to run the C2P Base installer on both the PC/server hosting the Milestone Base and the PC/Server hosting the recording server(s). Once the C2P base installer is run you can then select which component you want to install.
For example as shown in [Figure 1](#) the HSE database is installed on the same hardware as the Milestone base = 192.168.1.5



C2P Base installer component selection menu.

Note2: The “Machine code generator” is only run on the Milestone Base PC/Server. The resultant seed code produced when the Machine code generator is run should then be cut and pasted into an email and sent to Support@c2p.com.

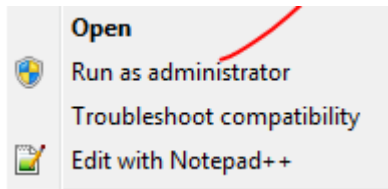


Note: Cut-n-paste the above seed text above into an email. Do not send a screenshot of the text.

Sample C2P Machine code generator output. Email to support @c2p.com

Installing the C2P ALPR Proxy

1) *Execute the C2P ALPR installer. "Run as administrator"*

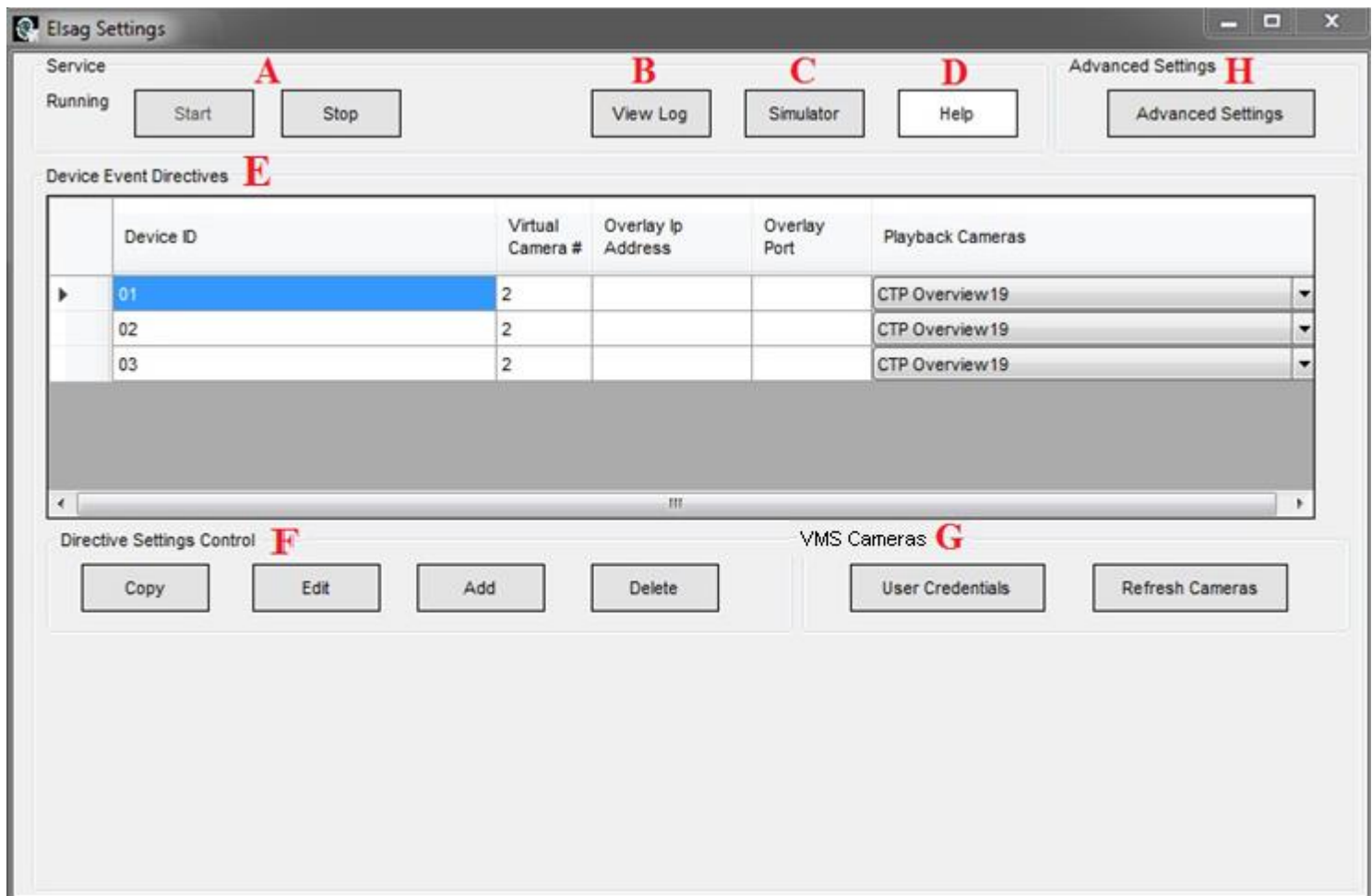


2) *Follow the default selections*

Configuration

If the C2P ALPR Proxy and the C2P Base are installed on the same PC/Server then no configuration is needed to run the C2P ALPR to Milestone VMS integration. This works out nice for setting up demo systems but is not how the system is deployed in practice. Refer to [Figure 1](#) for the expected deployment topology.

Below is the C2P ALPR Proxy configuration GUI



C2P ALPR Proxy configuration GUI

A = ALPR Service Manual Stop and Start controls. When changes are made to the ALPR proxy GUI they can manually be loaded into the ALPR proxy service by manually stopping and then re-starting the Service or alternatively the user is prompted to have the service restarted automatically when the GUI is closed.

B = View Log. This is an extremely useful real-time **log file** because it tells the user if the ALPR Proxy is connected to the ALPR application. This log file is the first place to look before testing anything else related to the C2P ALPR integration. See also [Appendix A: Sample C2P ALPR proxy log files](#)

C = C2P ALPR Simulator. The C2P ALPR simulator is another very powerful resource for bringing up new installations. The C2P ALPR simulator works in parallel with any traffic being sent by the ALPR system. This allows all of the components of the C2P ALPR integration to be completely tested prior to the ALPR system running or even installed. Installers can run the simulator and ensure all of the integration components are functional and then turn on or install the ALPR system.

Note: Data from the C2P ALPR Simulator DOES NOT get reported in the log file described in item B above.

D = Help button. Explains how to use the F1 key in the GUI to get help text for each item in the GUI.

E = Device Event Directives. This table is used to assign properties to each unique ALPR LPR camera names received from ALPR. These properties are used by both the C2P ALPR proxy and the C2P Hypermedia Search Engine (HSE) during playback of LPR events.

The “Virtual camera” property defines which generic camera in the recording server will be used to display live exceptions defined in the Rules engine portion of the C2P ALPR proxy.

The “Overlay address and Port” are optional fields that allow the user to send a copy of the LPR text received to the overlay data port of external overview camera of the LPR event.

The “Playback Cameras” are the cameras that will be called up for viewing as a result of the user selecting “Show Cameras” in the Hypermedia Search Engine (HSE). This powerful feature further ties the relevant cameras to the LPR event, giving the user overview video of the vehicle at the time of the LPR event.

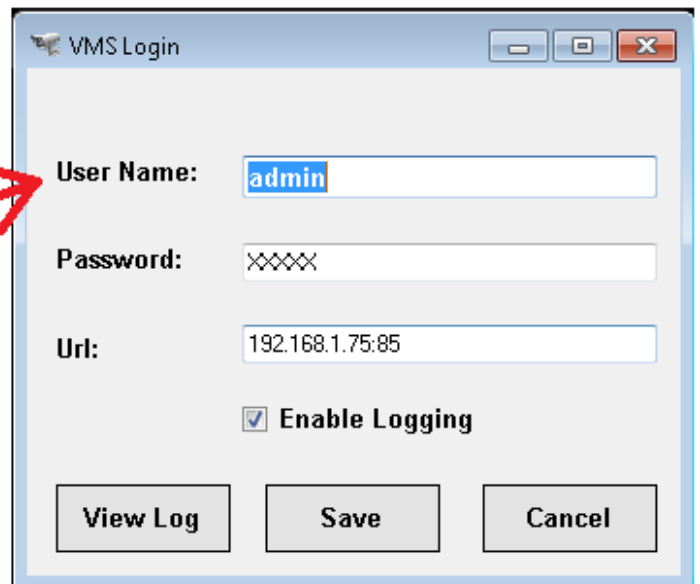
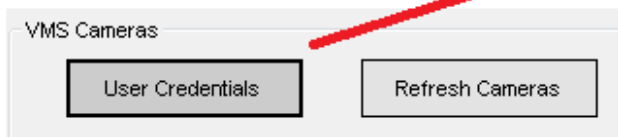
F = Directives Setting Control. These are the controls used to add new lines to the Device Event Directives table as well as allows the user to edit existing entries in the table.

G = Milestone Smart Client. The Smart Client controls are used to provide the C2P ALPR proxy with valid Milestone client login credentials. The C2P ALPR proxy uses this login to receive the valid camera names that are assigned to these login credentials. The camera names are then available to the user for use in “Playback Cameras” portion of the Device Event Directives table.

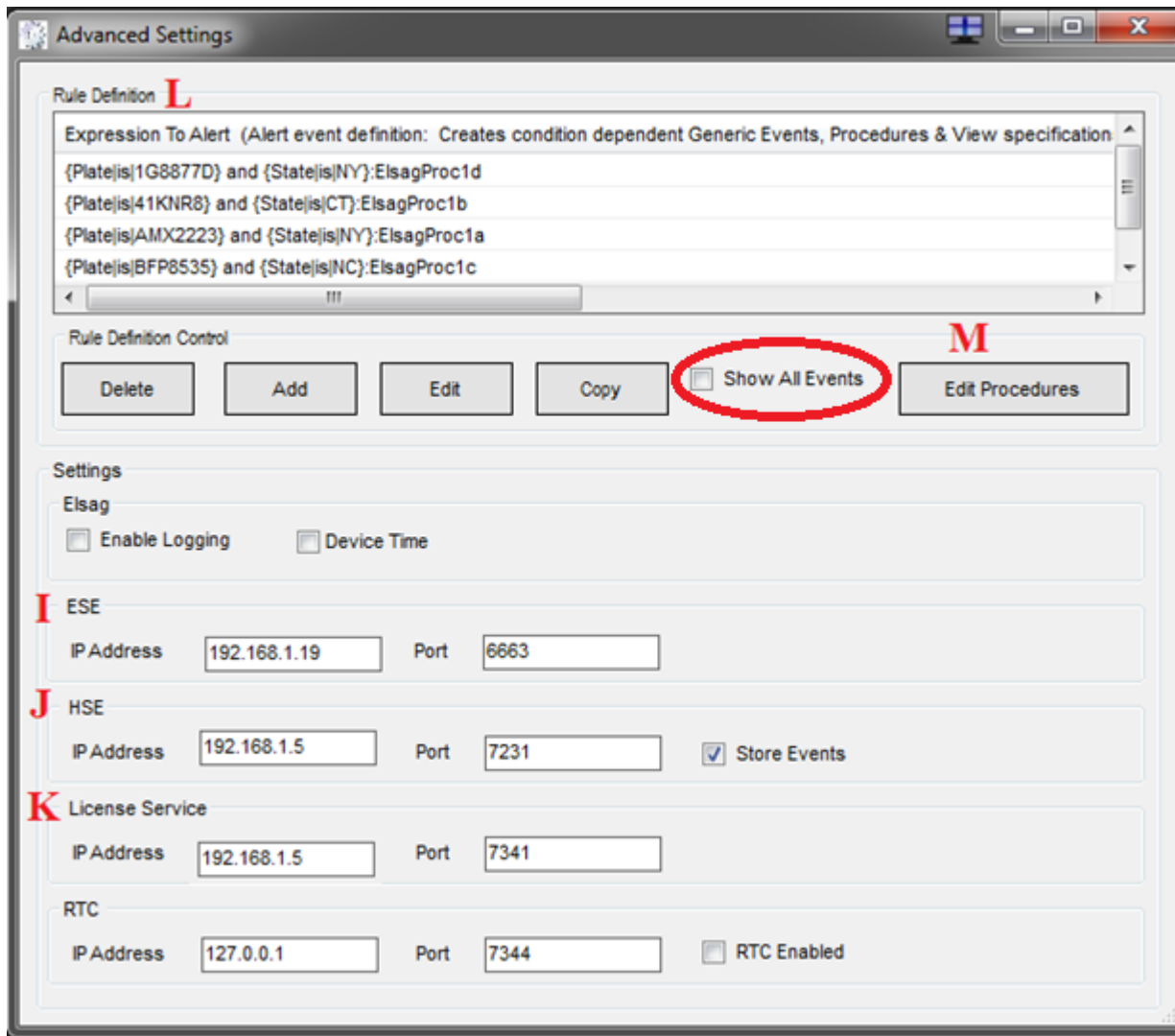
In the expanded view of the VMS Cameras GUI below you can also see that there is a **log file** associated with this function. The log file works extremely well and will give you the detail of why your credentials did or didn't work. If the credentials entered in the GUI are valid then the log file gives you a list of cameras that those credentials allow you to view.

The VMS Cameras button is shown below.

Note: Url = IP address and port for Milestone Base



H = Advanced Setting.



I = Event Streaming Engine (ESE). The ESE is normally installed on a recording server associated the ALPR LPR events. See also [Figure 1](#)

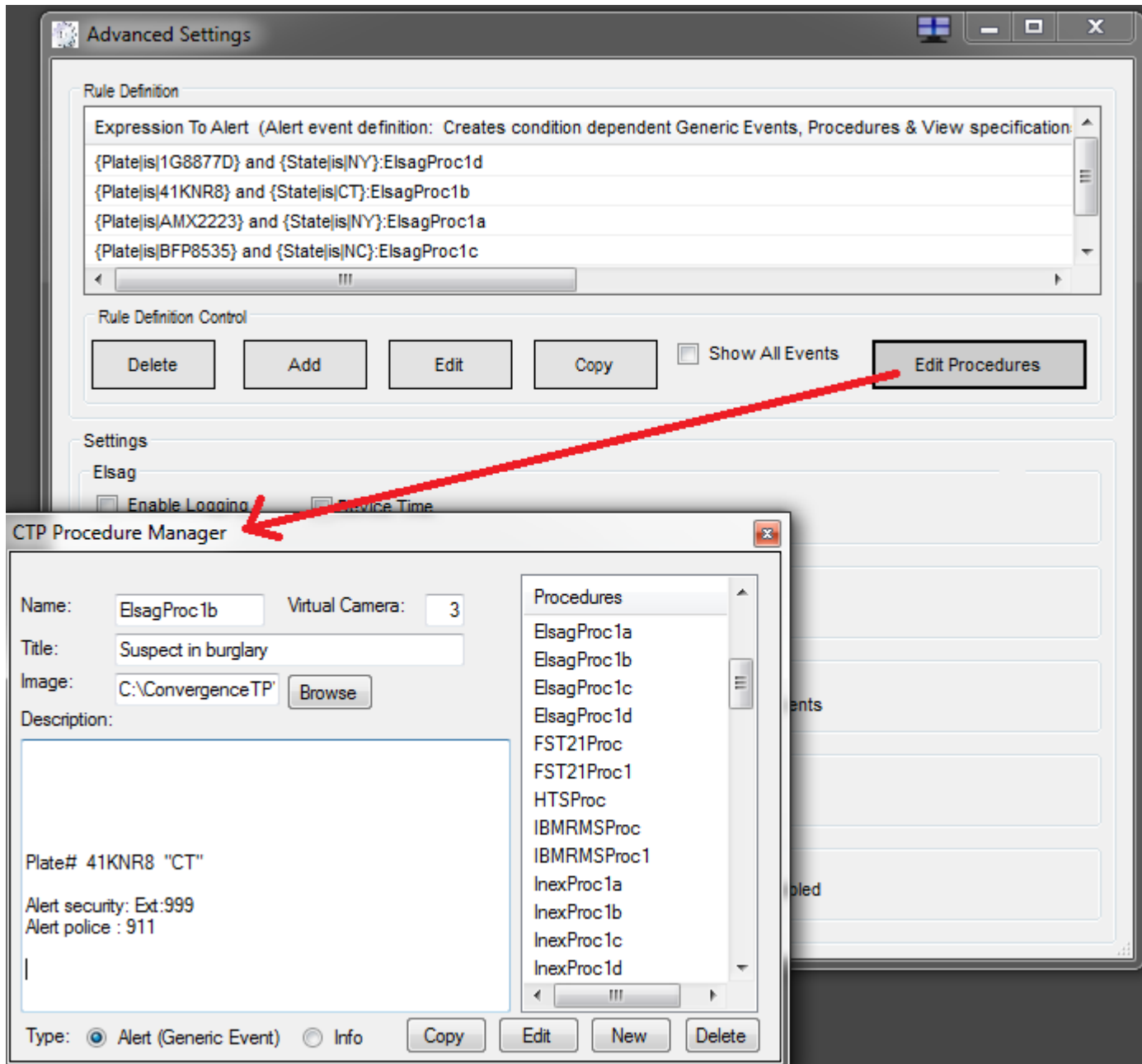
J = Hypermedia Search Engine (HSE). The HSE is normally located on the server hosting Milestone Base.

K = License Server. The C2P License Server is normally located on the server hosting Milestone Base.

L = Rule Definition. The Rules Engine is where users can specify specific LPR data to trigger live events in the Smart Client as well as generate “Generic Events” to Milestone Base. When the “Show All Events” check box directly under the Rules Definition list box is not checked then ONLY the events defined in the Rule Definition list will be shown as live events in the Smart Client. This is done to limit the amount of LPR traffic sent to the Milestone client to allow the user to see just the critical events happening live. If this is not done the amount to LPR event data being sent by the ALPR LPR cameras can make it nearly impossible to see specific events of interest. All data received from the ALPR LPR system is stored for future viewing in the Hypermedia database so no LPR events are ever lost. The “Show All Events” checkbox has no effect on what is being stored in the Hypermedia database. See also [Appendix B \(C2P ALPR GUI Rules Engine\)](#)

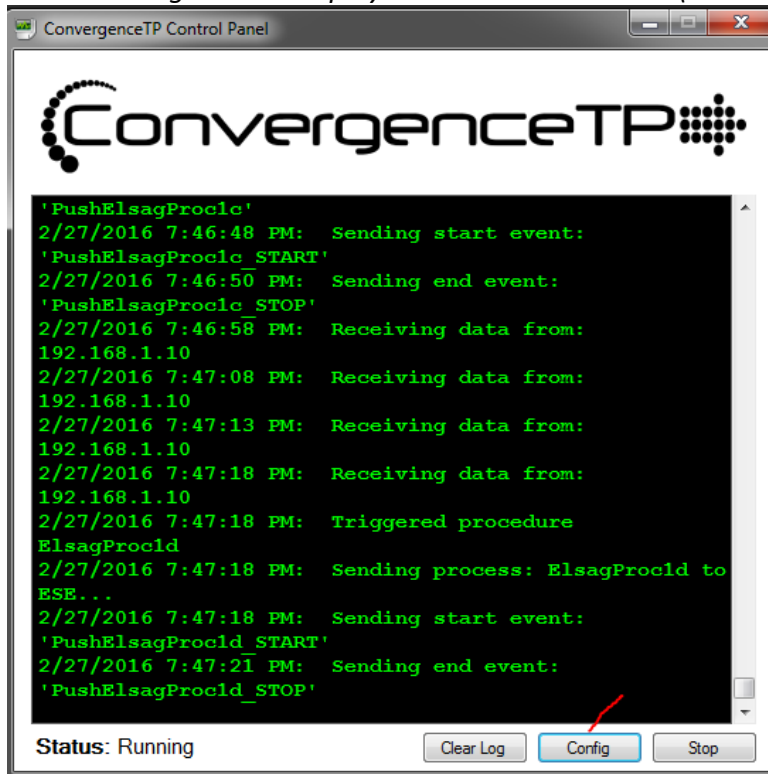
M = Edit Procedure. This feature allows the user to create their own text annotation that is displayed as a camera view in the Milestone client in real-time as the LPR event is triggered by the Rules Engine. The procedure can also be setup to generate a Generic Event to the Milestone System if the procedure "Type" is set to "Alert". The Generic Event sent to Milestone will use the "Name" of the procedure as the Generic Event text. In the example below the Generic Event sent to Milestone when this event occurs will be "ElsagProc1b" as specified in the "Name" field of the Procedure.

Note: Anytime a procedure is edited or created you must select "Yes" when prompted while closing the procedure manager to allow the ESE to be restarted. The ESE reads in the procedures on a re-start.

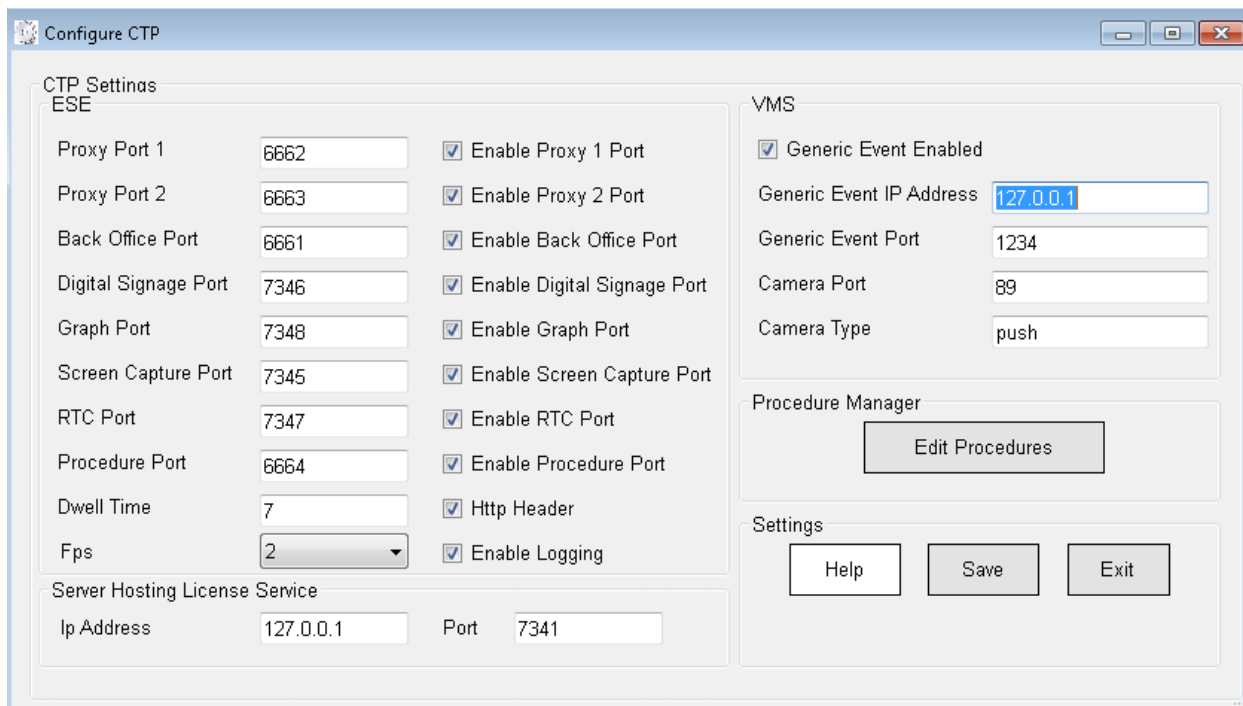


C2P Event Streaming Engine (ESE) GUI

The ESE Control Panel/Log file provides real-time feedback as to what the C2P Proxy is sending the VMS as live LPR text images to be displayed in the Smart Client. (Including procedures)



The "Config" button on the bottom of the ESE control panel brings up some configuration settings for the ESE. For non-demo installations the 2 settings that will likely need to change are identified below. The Generic Event IP address as well as the C2P License Server IP address both are normally located on the Milestone Base system. See also [Figure 1](#)



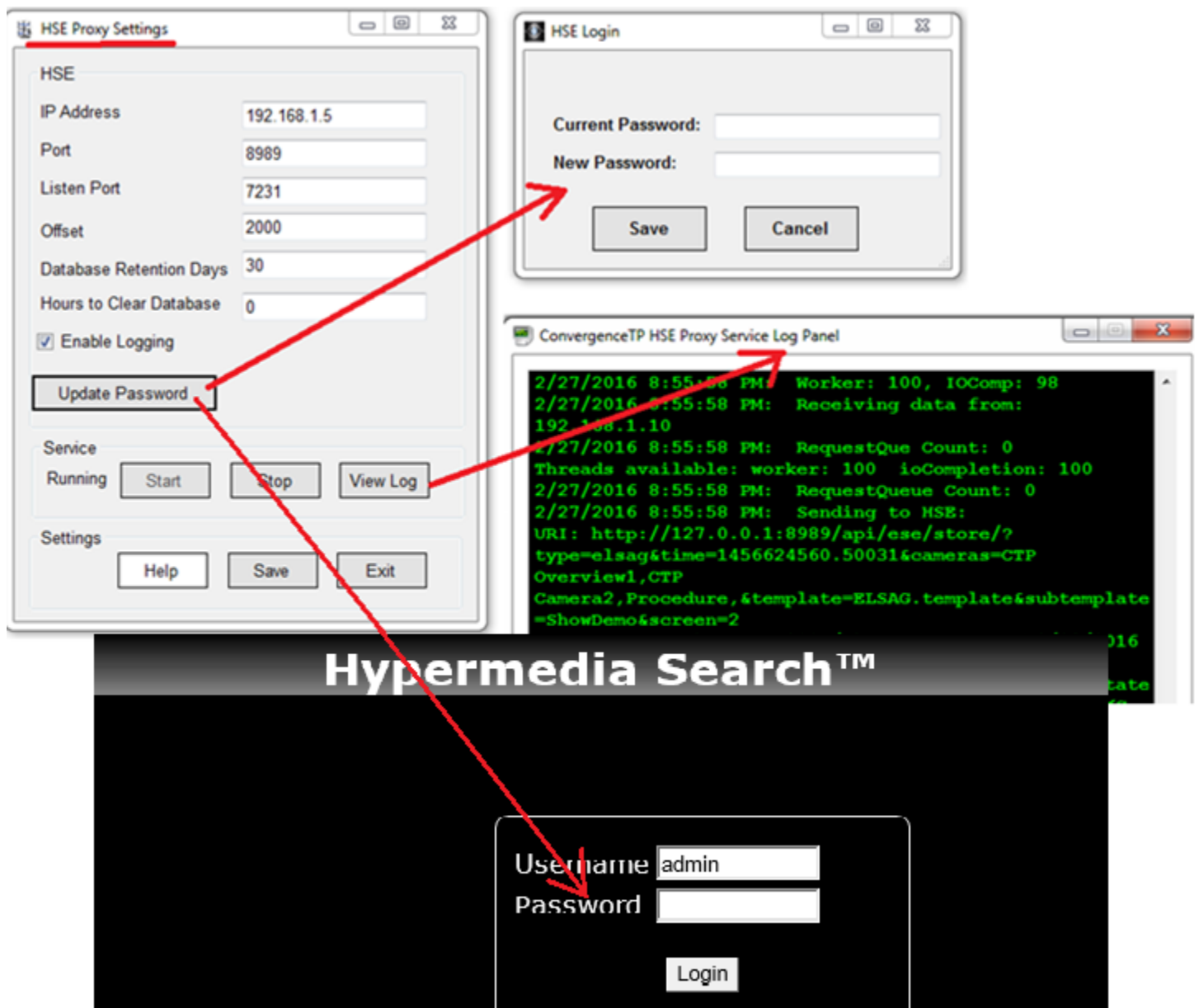
C2P HSE Proxy GUI

The HSE Proxy GUI contains the configuration needed for the C2P ALPR Proxy to send LPR data to the C2P Hypermedia Search Engine (HSE)

In most cases the user never needs to open the HSE Proxy GUI as all of the defaults work as installed as long as the HSE Proxy is installed and the same machine as the HSE = normal case.

Reasons to use this GUI would be

- 1) If the user wanted to change the default Password used by the HSE
- 2) If the user wanted to change the HSE database retention time from the default 30 days.
Note: If "Hours to Clear Database" is zero as shown below then the database is never cleared. Otherwise if a non-zero number is used then that number represents how often the database is truncated to the selected number of days specified in "Database Retention Days"
- 3) If the user wants to verify that data is actually being sent to the HSE database. For this they could look at the HSE Proxy Log file as shown below.



Smart Client view setup for C2P integration

C2P uses a common Smart Client view for all C2P integrations. The view is a 1 + 3 view with the Hypermedia Search Engine (HSE) being in the "1" view and the "3" corresponds to the 3 camera views that are to the immediate right of the HSE view.

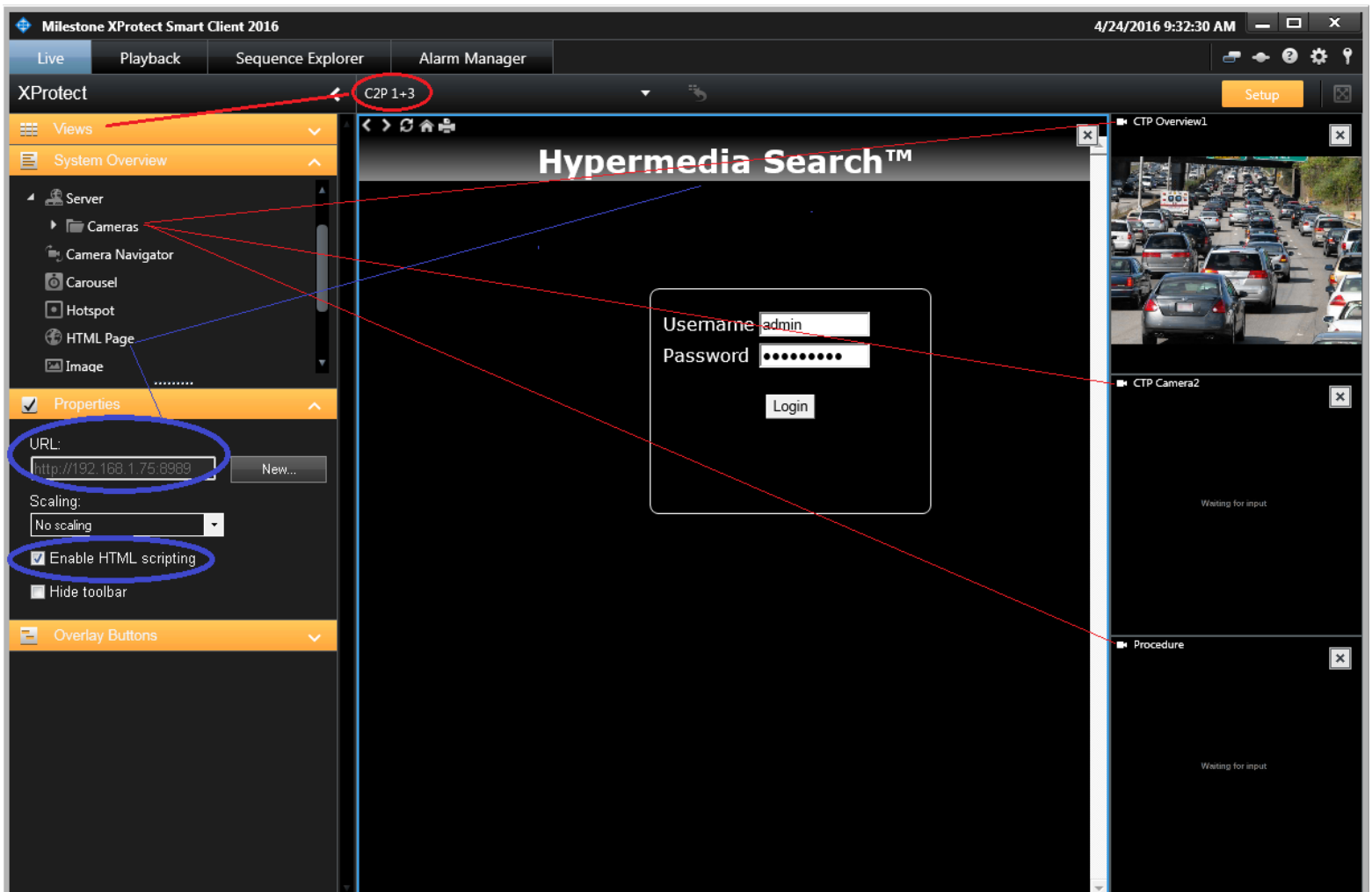
Below is a screenshot of the 1 +3 view setup screen in the Smart Client.

The HSE uses the Web portal for its view.

The URL used = http://IP_Adr:8989 Below this is shown as <http://192.168.1.19:8989>

The cameras are simply drag and drop from the Camera tab.

Note: The default HSE login password is Password1. To change the password see [C2P HSE Proxy GUI](#)



Troubleshooting

In the event that your install doesn't work as planned, or your system stops working at some point, below are some basic troubleshooting tips.

If you are not seeing metadata events being reported in the VMS client, the first thing you need to do is move to the point in the system where the data first enters the C2P integration.

This is where most people get hung up.

In troubleshooting the rule is:

"The output device is great for alerting you that there is a problem, but that's all it is good for."

As with troubleshooting any electronic device the same basic principles apply = start at the source and work your way through the system to determine where the data goes bad.

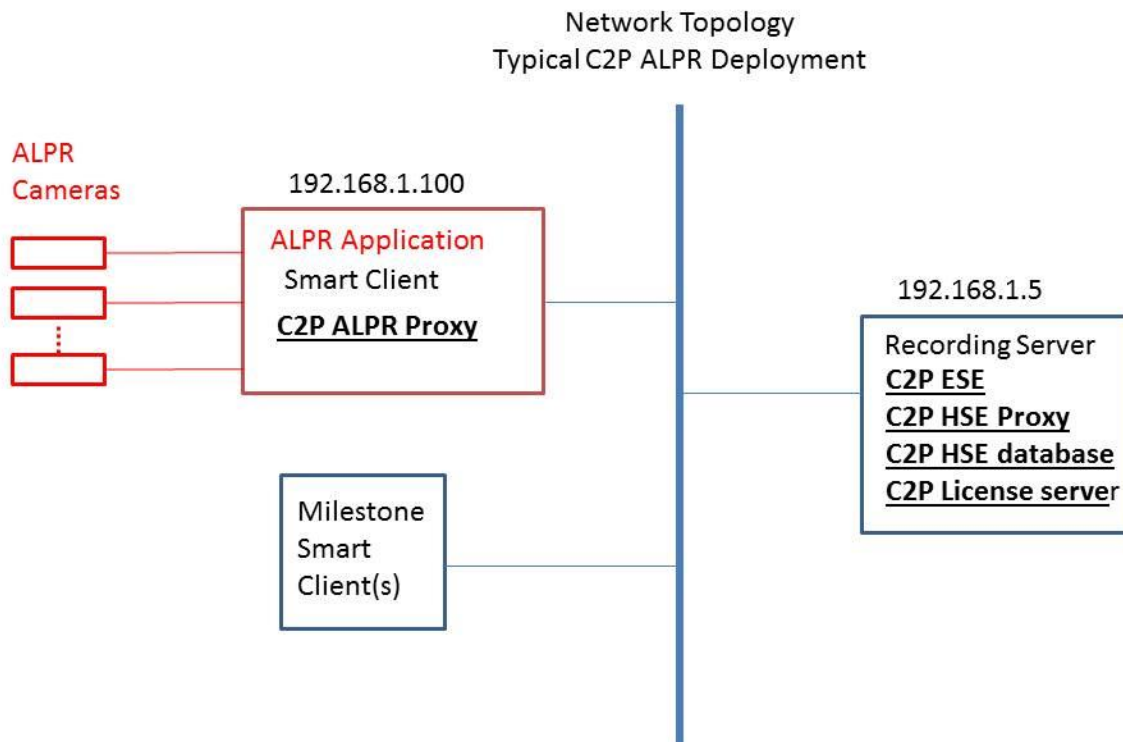
Look for things like a blocked port (firewalled) or wrong IP Address specified in one of the C2P settings GUIs.

The block diagram below shows where all of the C2P software components are located with the source located on the machine hosting the ALPR Application. This is the starting point, and most likely where the problem resides.

The first thing that you want to do is to verify that the C2P ALPR Proxy is receiving data from the ALPR application. Check the C2P ALPR Proxy log file first to verify that the C2P proxy is actually receiving data from the ALPR application. The process of checking the log is simple as was illustrated earlier in this User Manual See item "B" in [C2P ALPR Proxy configuration GUI](#) and also [Appendix A: Sample C2P ALPR proxy log files](#)

Each of the other C2P software components shown below all have their own respective Log Files as explained in each of their respective sections of this manual. Use the log files first when troubleshooting.

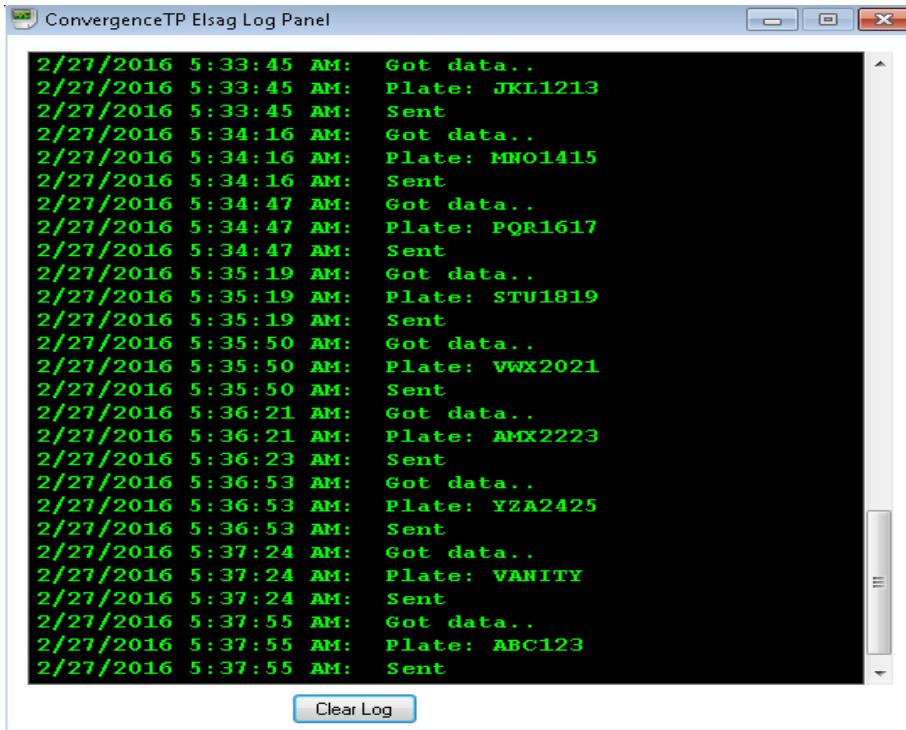
That's what they are there for.



Note: For consistency the IP addresses shown above match the IP addresses call out in the C2P Users Manual.

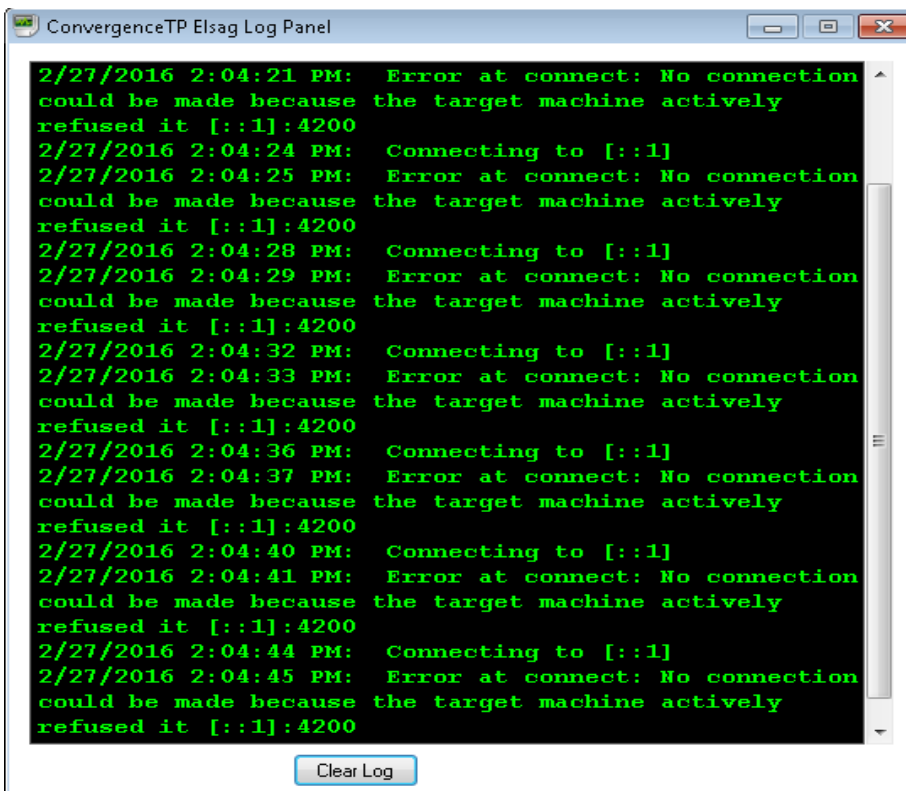
Appendix A: Sample C2P ALPR proxy log files

This first screenshot is a log trace of a valid connection between the C2P ALPR proxy and the ALPR application. Each ALPR proxy has a log file on the front end of the proxy to log every ALPR received. If nothing is being received by this log file then nothing is being sent by the ALPR application.



```
ConvergenceTP Elsag Log Panel
2/27/2016 5:33:45 AM: Got data..
2/27/2016 5:33:45 AM: Plate: JKL1213
2/27/2016 5:33:45 AM: Sent
2/27/2016 5:34:16 AM: Got data..
2/27/2016 5:34:16 AM: Plate: MNO1415
2/27/2016 5:34:16 AM: Sent
2/27/2016 5:34:47 AM: Got data..
2/27/2016 5:34:47 AM: Plate: PQR1617
2/27/2016 5:34:47 AM: Sent
2/27/2016 5:35:19 AM: Got data..
2/27/2016 5:35:19 AM: Plate: STU1819
2/27/2016 5:35:19 AM: Sent
2/27/2016 5:35:50 AM: Got data..
2/27/2016 5:35:50 AM: Plate: VWX2021
2/27/2016 5:35:50 AM: Sent
2/27/2016 5:36:21 AM: Got data..
2/27/2016 5:36:21 AM: Plate: AMX2223
2/27/2016 5:36:23 AM: Sent
2/27/2016 5:36:53 AM: Got data..
2/27/2016 5:36:53 AM: Plate: YZA2425
2/27/2016 5:36:53 AM: Sent
2/27/2016 5:37:24 AM: Got data..
2/27/2016 5:37:24 AM: Plate: VANITY
2/27/2016 5:37:24 AM: Sent
2/27/2016 5:37:55 AM: Got data..
2/27/2016 5:37:55 AM: Plate: ABC123
2/27/2016 5:37:55 AM: Sent
Clear Log
```

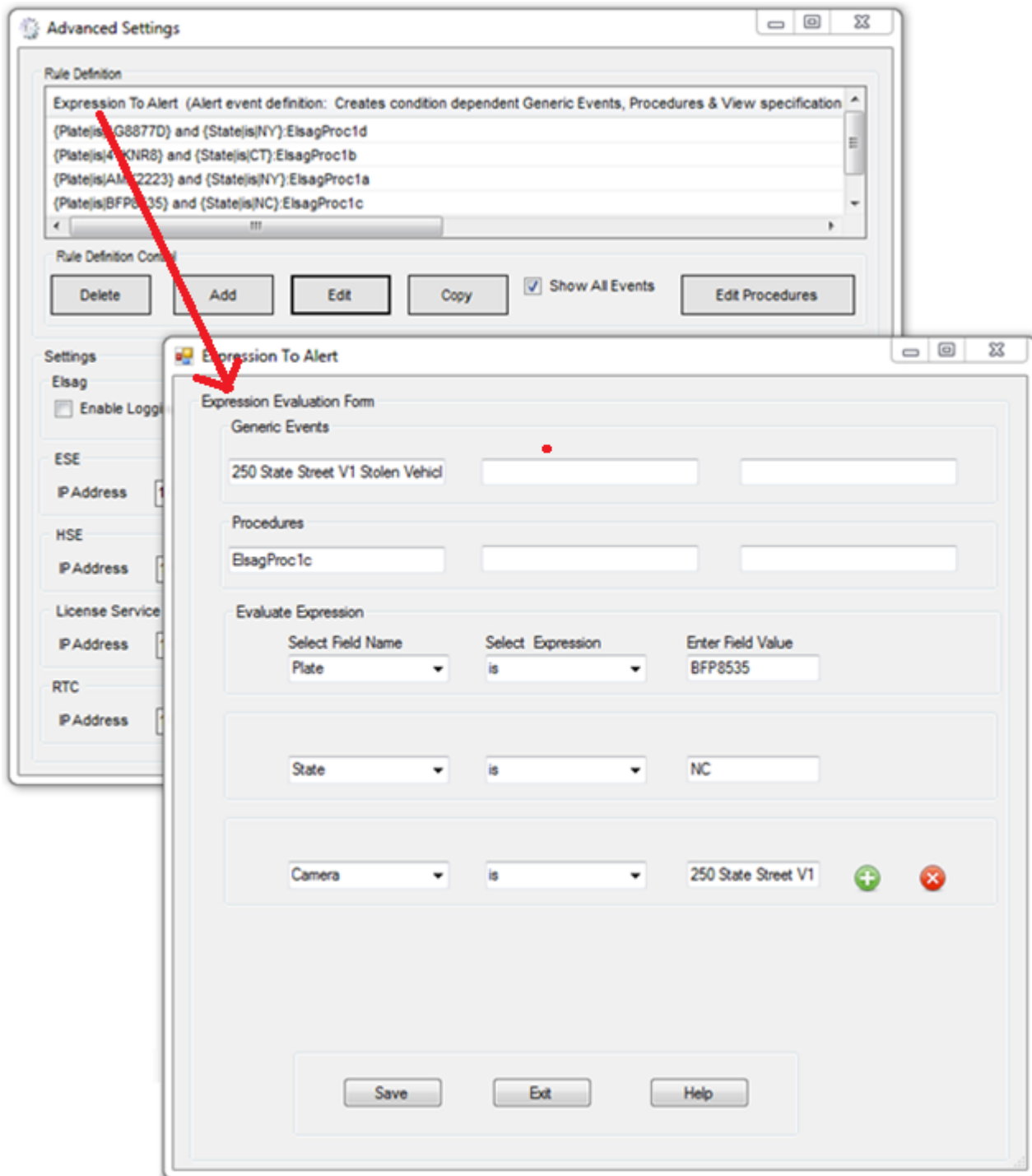
The screen below shows what to expect if no connection can be made by the C2P proxy to the ALPR application.



```
ConvergenceTP Elsag Log Panel
2/27/2016 2:04:21 PM: Error at connect: No connection
could be made because the target machine actively
refused it [::1]:4200
2/27/2016 2:04:24 PM: Connecting to [::1]
2/27/2016 2:04:25 PM: Error at connect: No connection
could be made because the target machine actively
refused it [::1]:4200
2/27/2016 2:04:28 PM: Connecting to [::1]
2/27/2016 2:04:29 PM: Error at connect: No connection
could be made because the target machine actively
refused it [::1]:4200
2/27/2016 2:04:32 PM: Connecting to [::1]
2/27/2016 2:04:33 PM: Error at connect: No connection
could be made because the target machine actively
refused it [::1]:4200
2/27/2016 2:04:36 PM: Connecting to [::1]
2/27/2016 2:04:37 PM: Error at connect: No connection
could be made because the target machine actively
refused it [::1]:4200
2/27/2016 2:04:40 PM: Connecting to [::1]
2/27/2016 2:04:41 PM: Error at connect: No connection
could be made because the target machine actively
refused it [::1]:4200
2/27/2016 2:04:44 PM: Connecting to [::1]
2/27/2016 2:04:45 PM: Error at connect: No connection
could be made because the target machine actively
refused it [::1]:4200
Clear Log
```

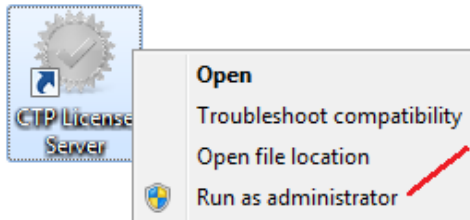
Appendix B: C2P ALPR GUI Rules Engine

The C2P Rules engine allows users to create their own rules based on the Live text received from the LPR system. These rules are evaluated for each LPR read sent from the LPR system to the C2P integration. The GUI for the Rules Engine makes it very easy to add, delete or edit a rule. The Rules GUI provides dropdown selections for adding field names. Rules can be a single expression or several expressions AND'd together. Rules can push procedure for immediate viewing on the Milestone Smart Client. Rules can be sent Milestone or other 3rd party applications TCP/IP Generic event text.



Appendix C: CTP License Server Control Panel

To see the CTP License Server Control Panel you need to be on the machine hosting Milestone Base.
To view the Control Panel you can “Run as administrator” the CTP License Server desktop icon. See below.



If the CTP License Server icon is not on the desktop you can also run the executable in:

C:\ConvergenceTP\License server  CTP License Control Panel.exe

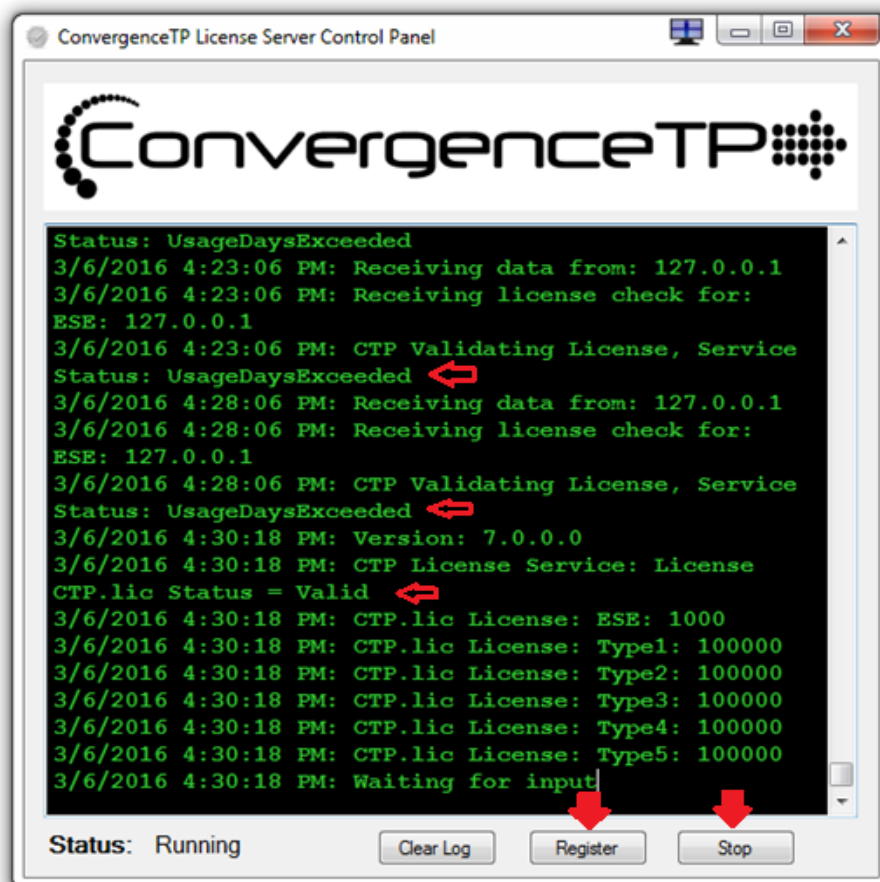
The License Server Control Panel is where real-time licensing information is displayed.

Loading a new CTP License File

You can also load in your purchased license files using the “Register” button on the bottom of the panel.
If you do Register a new license using the Control Panel BE SURE TO STOP AND START THE CONTROL PANEL afterwards.

Note: The new license is not read in until the License Server service is restarted so it’s important to stop then start the service using the “Stop” button below, which turns into a “Start” button once the service has stopped.

Also shown below is what the Control Panel looks like when a demo license expires and then a valid license is loaded using the Register button process. The valid license was loaded in at 4:30:18 PM.



Contact Information

ConvergenceTP

PO Box 3713

Danbury, CT 06813

Website www.c2p.com

Sales Support Sales@c2p.com 800.252.6840 x 1

Technical Support Support@c2p.com 800.252.6840 x 2