



User Manual
Gunshot Detection
to
Milestone VMS Integration

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Overview

This User manual is intended to be used as a reference. This manual covers all of the components used in the C2P Gunshot Detection integration with Milestone. 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 GUNSHOT DETECTION 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 Milestone 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 operator's 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:

- *GUNSHOT DETECTION text captured by C2P is time synchronized with any and all video cameras attached to the Milestone VMS.*
- *GUNSHOT DETECTION text can be viewed in real-time from any Milestone Smart Client.*
- *All GUNSHOT DETECTION 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.*

The screenshot displays the Milestone XProtect Smart Client interface. The top navigation bar includes 'Live', 'Playback', and 'Sequence Explorer'. The main window is titled 'Hypermedia Search™'. It features a search filter section with 'Search Type' set to 'iWeigh', an 'Add Parameter' button, and date/time filters for 'From' (01/27/2019 23:59) and 'To' (01/28/2019 23:59). A 'Spreadsheet' button is also present. Below the search filters is a table of search results.

View Event	Date	Total Amount	Docket Number	Account Name	Waste Type1
Show Cameras Expand	20:21:01 1/28/2019	10	40006101	ABBIE LANE	GREEN WASTE (DOM)
Show Cameras Expand	20:20:51 1/28/2019	1000	40006103	Omara Road	RECYCLABLES (DOM)
Show Cameras Expand	20:20:41 1/28/2019	28	40006102	WASHINGTON HEIGHTS	RECYCLABLES (DOM)
Show Cameras Expand	20:20:31	10	40006101	ABBIE LANE	GREEN WASTE

Below the table, a timeline shows the playback of the selected event at 8:20:51.000 PM. On the right side, a video preview window shows a white truck. Below the video, a metadata panel displays details for 'CTP Camera2 - 1/28/2019 8:20:50.379 PM', including a date/time stamp, total amount, docket number, and waste type information.

19/04/2018 5:02:42 PM
Total: \$ 1000.0000
Docket#: 40006103
Rego: Test3
Omara Road
Site: Omara Road - SUIPLANE
RECYCLABLES(DOM)
MIXED DOMESTIC (KERBSIDE COLLECTION)
CLEAN FILL(DOM)
GREEN WASTE(DOM)
HAZARDOUS(DOM)
Procedure - 1/28/2019 8:20:50.935 PM
iWeigh
Recyclables
Waste Type Contains: RECYCLABLES

Installation

For new installations you will need both the C2P Gunshot Detection driver installer as well as the C2P Milestone System Installer. Shown below is the Gunshot Detection installer software being installed onto the recording server, but the C2P distributed Framework allows the software components to be placed anywhere in the network.

Note: included in the C2P / Milestone System installer is the HSE, HSE Proxy, ESE and License server.
Included in the Gunshot Detection installer is the Gunshot Detection driver and the ESE.

Typical C2P Gunshot Detection software Deployment

Gunshot Detection monitors

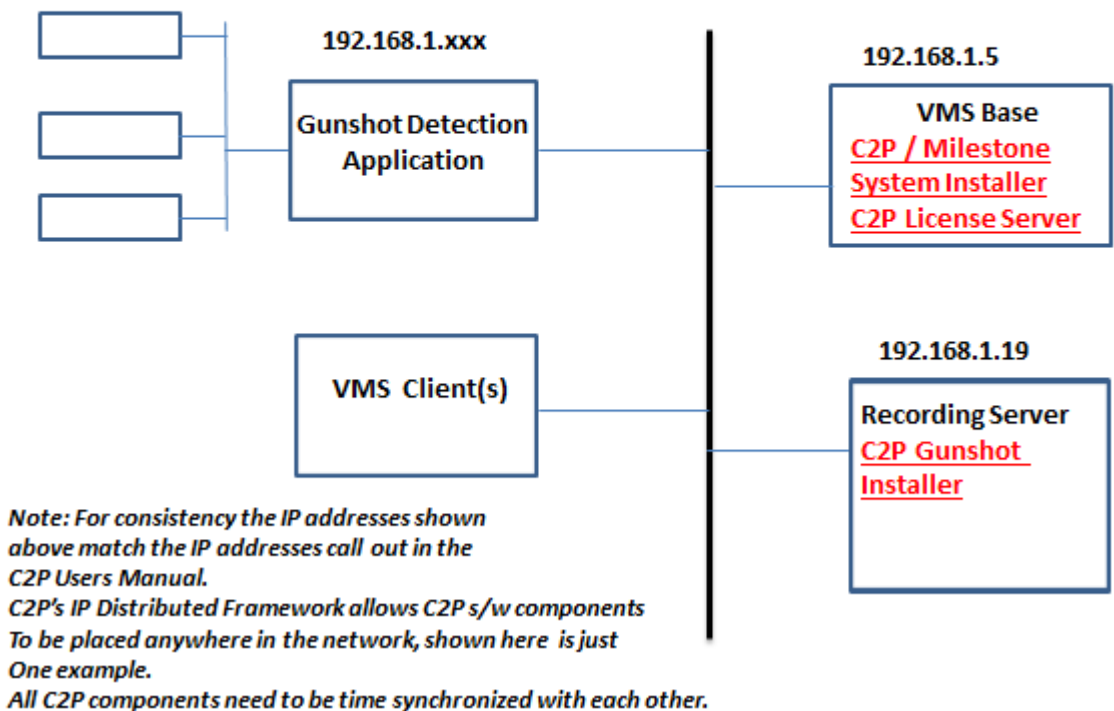


Figure 1

Figure depicts a typical C2P GUNSHOT DETECTION deployment topology.

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 Windows 7 minimum.
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 GUNSHOT DETECTION 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.
Valid Smart Client login credentials Basic or Windows.
Administrator account for use when installing CTP software
The machine hosting the HSE needs to only host the copy of Apache and MySQL installed by C2P.
No other copies of Apache or MySQL can be installed on the same machine that is hosting the C2P HSE.

Installation Process

C2P Base

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

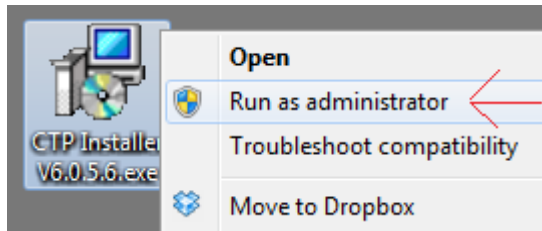
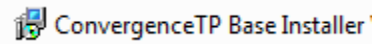
The C2P Base software installs all of the components needed for the C2P Base system.

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*

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.

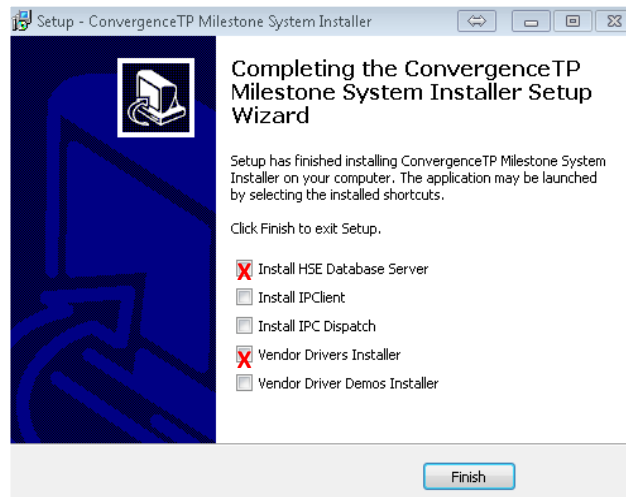
- 1) Execute the C2P Base installer. "Run as administrator"



- 2) Follow the default selections during the C2P Base install
- 3) Select the features being installed. See: C2P HSE Database Server component selection menu. See Figure 1 above for a definition of where each component is to be installed.

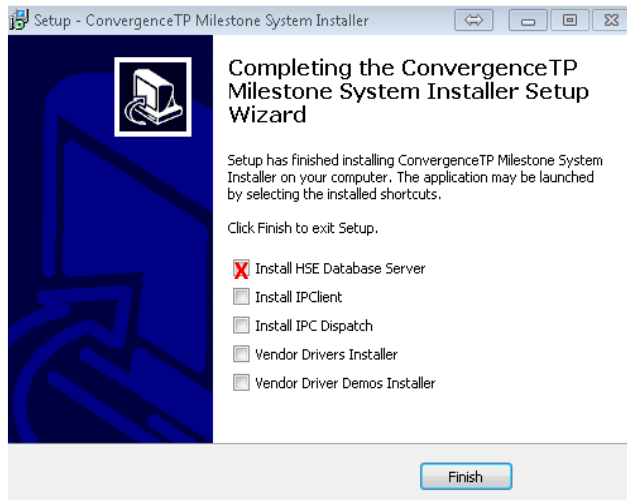
Note1: You will need to run the C2P Milestone System installer on both the PC/server hosting the Milestone Base and the PC/Server hosting the recording server(s). Once the C2P base installer is run you can then select which component you want to install.

Note 2: For example as shown in Figure 1 the HSE database is installed on the same machine as the Milestone base = 192.168.1.5. Installing the CTP s/w components on the same machine will use the diagram below showing the two checked boxes.

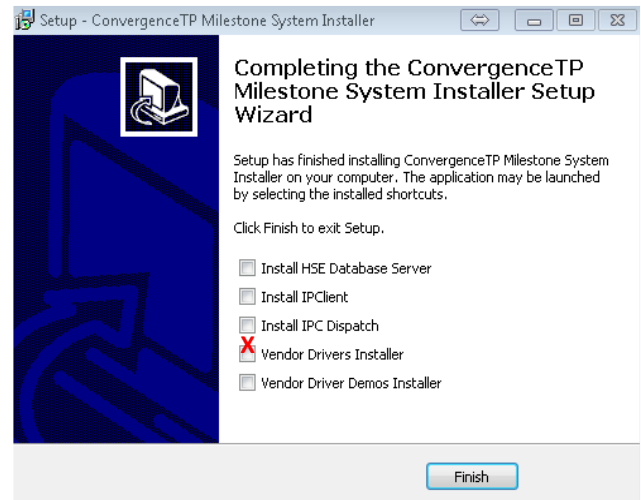


Note3: Installing the components on two different machines will use the diagram below showing one checked box on the server where the HSE Database is installed and one checked box where the Gunshot Detection driver is installed.

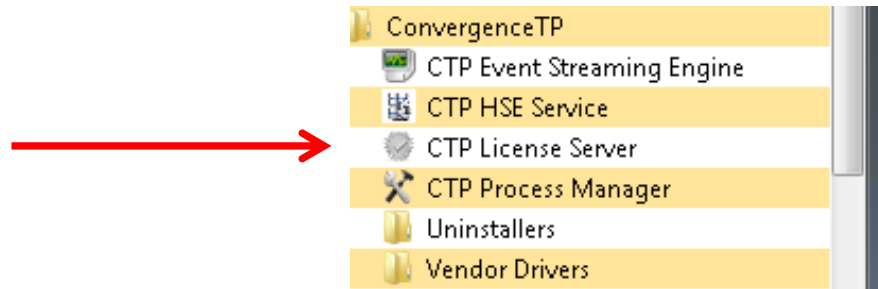
Milestone Base



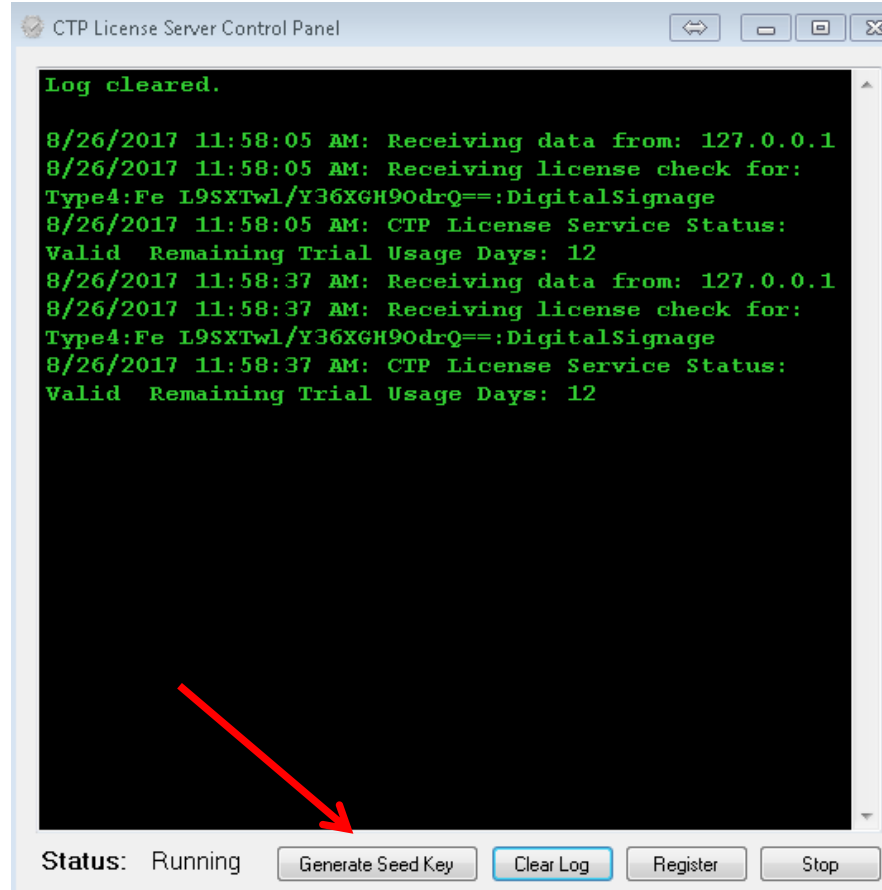
Recording Server (Gunshot Detection driver)



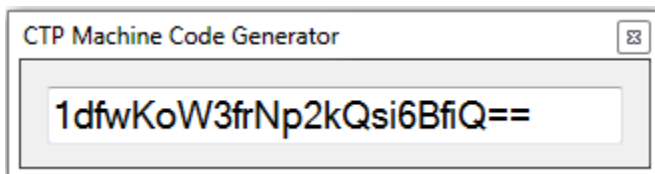
To access the C2P License Server use the Start Menu and select >Programs > ConvergenceTP >



The License Server control panel will come up and you will select Generate Seed Key



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 Sales@c2p.com.

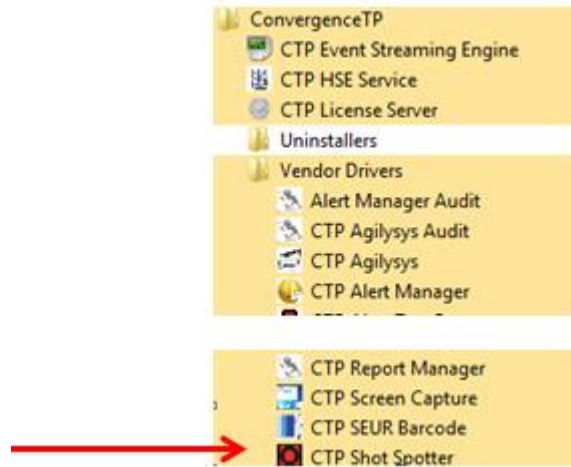


Note: Cut-n-paste the above seed text above into an email. Do not send a screenshot of the text.

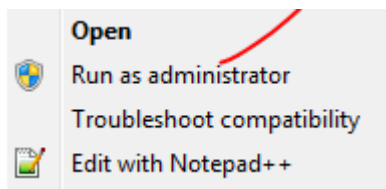
Sample C2P Machine code generator output. Email to sales @c2p.com

Installing the C2P GUNSHOT DETECTION Proxy

- 1) To access the C2P Gunshot Detection Driver (use the Start Menu) select >Programs > ConvergenceTP > Vendor Drivers > CTP ShotSpotter



- 2) >Execute the CTP GUNSHOT DETECTION installer. "Run as administrator"



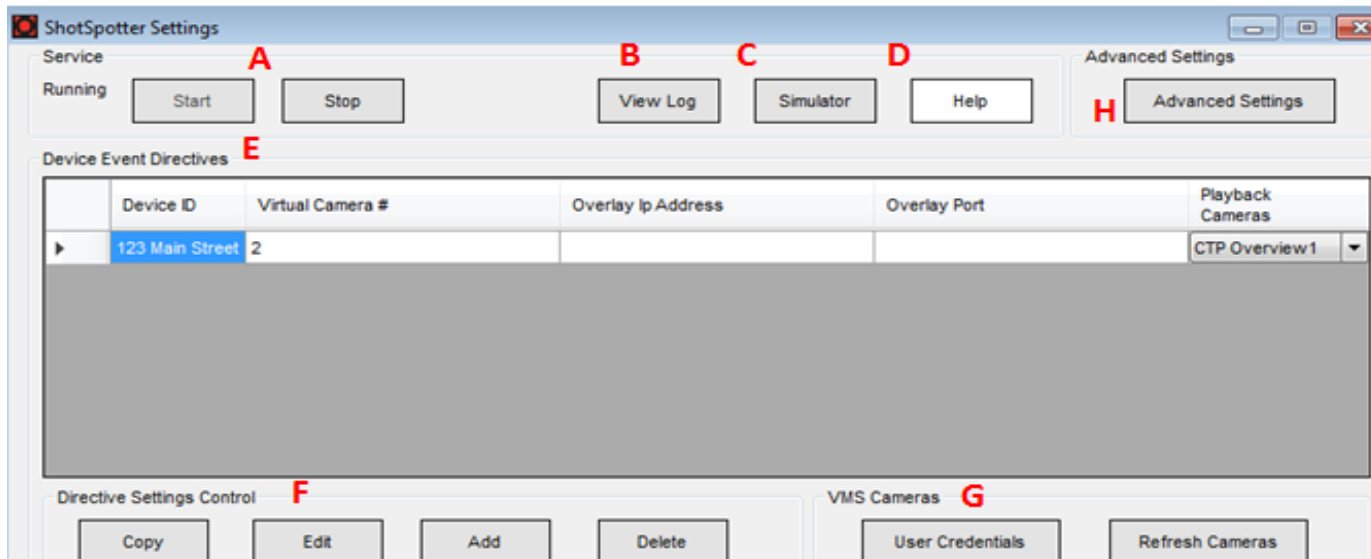
- 3) Follow the default selections

Configuration

If the C2P GUNSHOT DETECTION Installer and the C2P Base are installed on the same PC/Server then no configuration is needed to run the C2P GUNSHOT DETECTION 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.

The Gunshot Detection controller needs to be setup as well, see Appendix D for Gunshot Detection setting.

Below is the C2P GUNSHOT DETECTION Installer configuration GUI for demo purposes.(Virtual cameras are all set for Virtual camera #2, not a typical deployment, see sample GUI configuration in Appendix D).



C2P GUNSHOT DETECTION Proxy configuration GUI

A = GUNSHOT DETECTION Service manual Stop and Start controls. When changes are made to the GUNSHOT DETECTION proxy GUI they can manually be loaded into the GUNSHOT DETECTION 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 GUNSHOT DETECTION Proxy is connected to the GUNSHOT DETECTION application. This log file is the first place to look before testing anything else related to the C2P GUNSHOT DETECTION integration. See also [Appendix A: Sample C2P GUNSHOT DETECTION proxy log files](#)

C = C2P GUNSHOT DETECTION Simulator. The C2P GUNSHOT DETECTION simulator is another very powerful resource for bringing up new installations. The C2P GUNSHOT DETECTION simulator works in parallel with any Gunshot Detection data being sent by the GUNSHOT DETECTION system. This allows all of the components of the C2P GUNSHOT DETECTION integration to be completely tested prior to the GUNSHOT DETECTION 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 GUNSHOT DETECTION system.

Note: Data from the C2P GUNSHOT DETECTION Simulator DOES 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 Gunshot Detection device name received from THE GUNSHOT DETECTION DEVICE. These properties are used by both the C2P GUNSHOT DETECTION DEVICE proxy and the C2P Hypermedia Search Engine (HSE) during playback of event 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 GUNSHOT DETECTION DEVICE proxy. The “Overlay address and Port” are optional fields that allow the user to send a copy of the Gunshot Detection text received to the overlay data port of external overview camera of the Gunshot Detection 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 Gunshot Detection captured event, giving the user overview video of the event at the time the text was received.

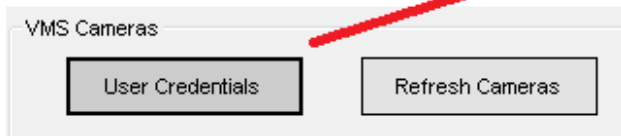
F = Directives Setting Control. These are the controls used to add new entries to the Device Event Directives table as well as allow the user to edit existing entries in the table. [See Appendix D for a sample configuration.](#)

G = Milestone Smart Client. The Smart Client controls are used to provide the C2P GUNSHOT DETECTION DEVICE proxy with valid Milestone client login credentials. The C2P GUNSHOT DETECTION 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.

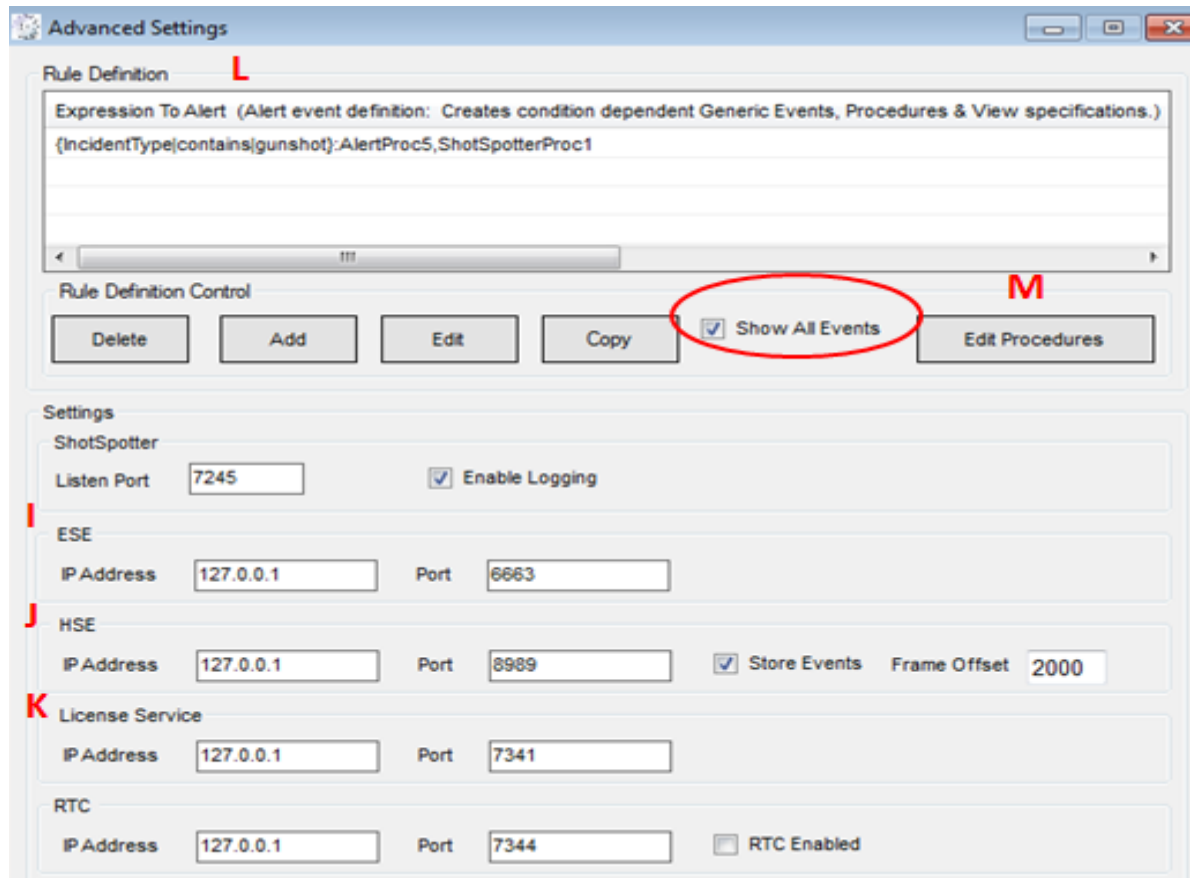
The VMS Cameras button is shown below.

Note: Url = IP address and port for Milestone Base

A screenshot of the VMS Login dialog box. It contains the following fields and controls:

- User Name:** A text box containing the text "admin".
- Password:** A text box with masked characters (X's).
- Url:** A text box containing the IP address "192.168.1.75:85".
- Enable Logging:** A checkbox that is checked.
- Buttons:** "View Log", "Save", and "Cancel" buttons at the bottom.

H = Advanced Setting.



I = Event Streaming Engine (ESE). The ESE is normally installed on a recording server associated the GUNSHOT DETECTION video. 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.

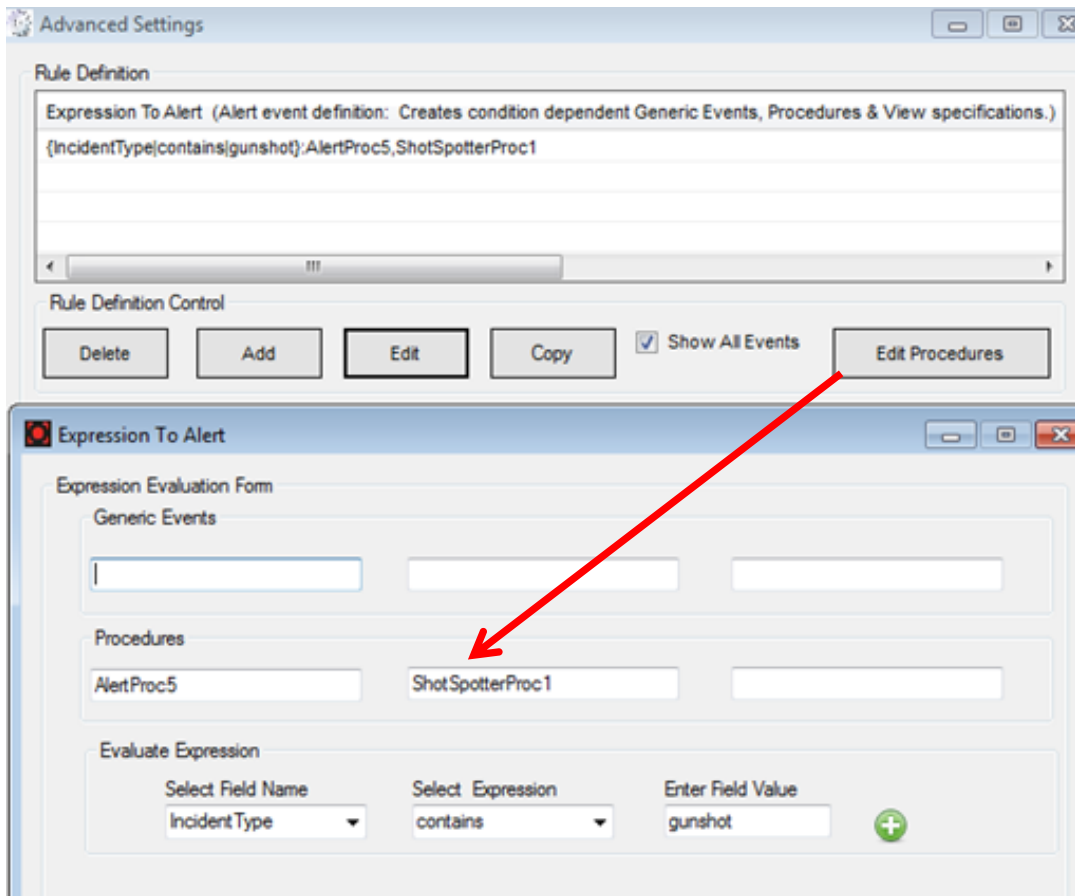
L = Rule Definition. The Rules Engine is where users can specify unique Gunshot Detection data to trigger live events in the Smart Client as well as generate “Generic Events” to Milestone Base. When the “Show All Events” check box directly under the Rules Definition list box is not checked then ONLY 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 Gunshot Detection event 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 of Gunshot Detection event data being sent by the C2P/ GUNSHOT DETECTION Virtual cameras can make it nearly impossible to see specific events of interest.

All data received from the system is stored for future viewing in the Hypermedia database so no 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 \(C2P GUNSHOT DETECTION GUI Rules Engine\)](#)

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 Gunshot Detection 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.

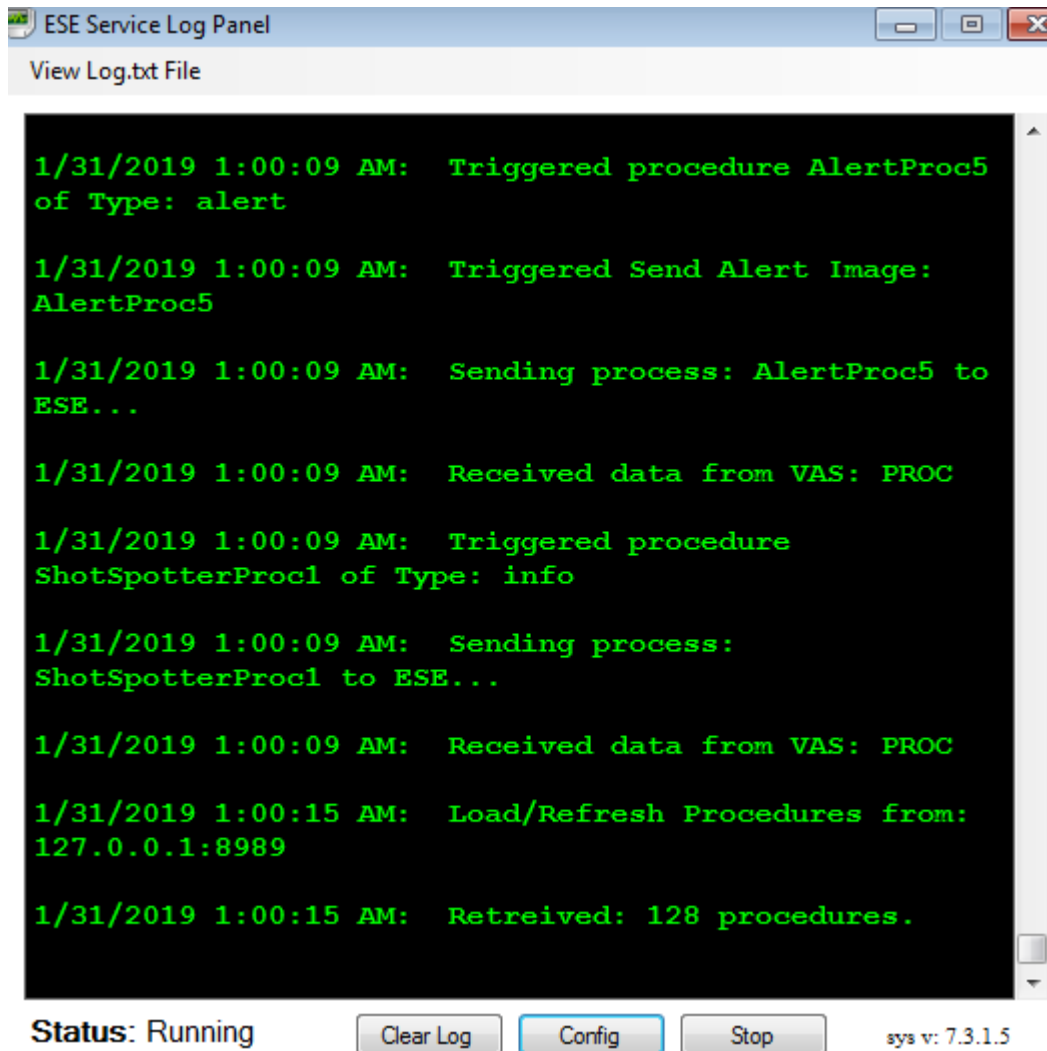
In the example below the Generic Event sent to Milestone when the Gunshot Detection transaction event occurs will be “ShotSpotterProc1” as specified in the “Name” field of the Procedure.

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 Gunshot Detection transactions are being sent as 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 one setting that will likely need to change is the Generic Event IP address.

Configure Event Streaming Engine

Help

Settings

Proxy Port 1

6662

☒ Enable Proxy 1 Port

Proxy Port 2

6663

☒ Enable Proxy 2 Port

Back Office Port

6661

☒ Enable Back Office Port

Digital Signage Port

7346

☒ Enable Digital Signage Port

Graph Port

7348

☒ Enable Graph Port

Screen Capture Port

7345

☒ Enable Screen Capture Port

RTC Port

7347

☒ Enable RTC Port

Procedure Port

6664

☒ Enable Procedure Port

Dwell Time

8

☒ Include Http Header

Max View Ports

25

Fps

2

Log Messaging

☒ Enable Logging

☒ Enable Proxy Comm Logging

☐ Enable Camera Logs

☐ Enable Canvas Logs

Settings

Save

Exit

VMS

Camera Settings

Typeget

Port89

Camera Credentials

Generic Events

☐ Enabled

IP Address127.0.0.1

Port1234

Procedure Manager

HSE IP Adr127.0.0.1

Port8989

Edit Procedures

Alert Virtual Camera

☒ Enabled

Alert Image5

Alert Procedure4

IPC Dispatcher Alert Video Pop Ups

IP Address

Port7213

Virtual Camera Image Defaults

Default Images

Screen Overlay Canvas Settings

Screen Overlay

Camera Elapsed Time Allowance5

Template Attributes

Text ColorDefault

☒ Include LPR Images

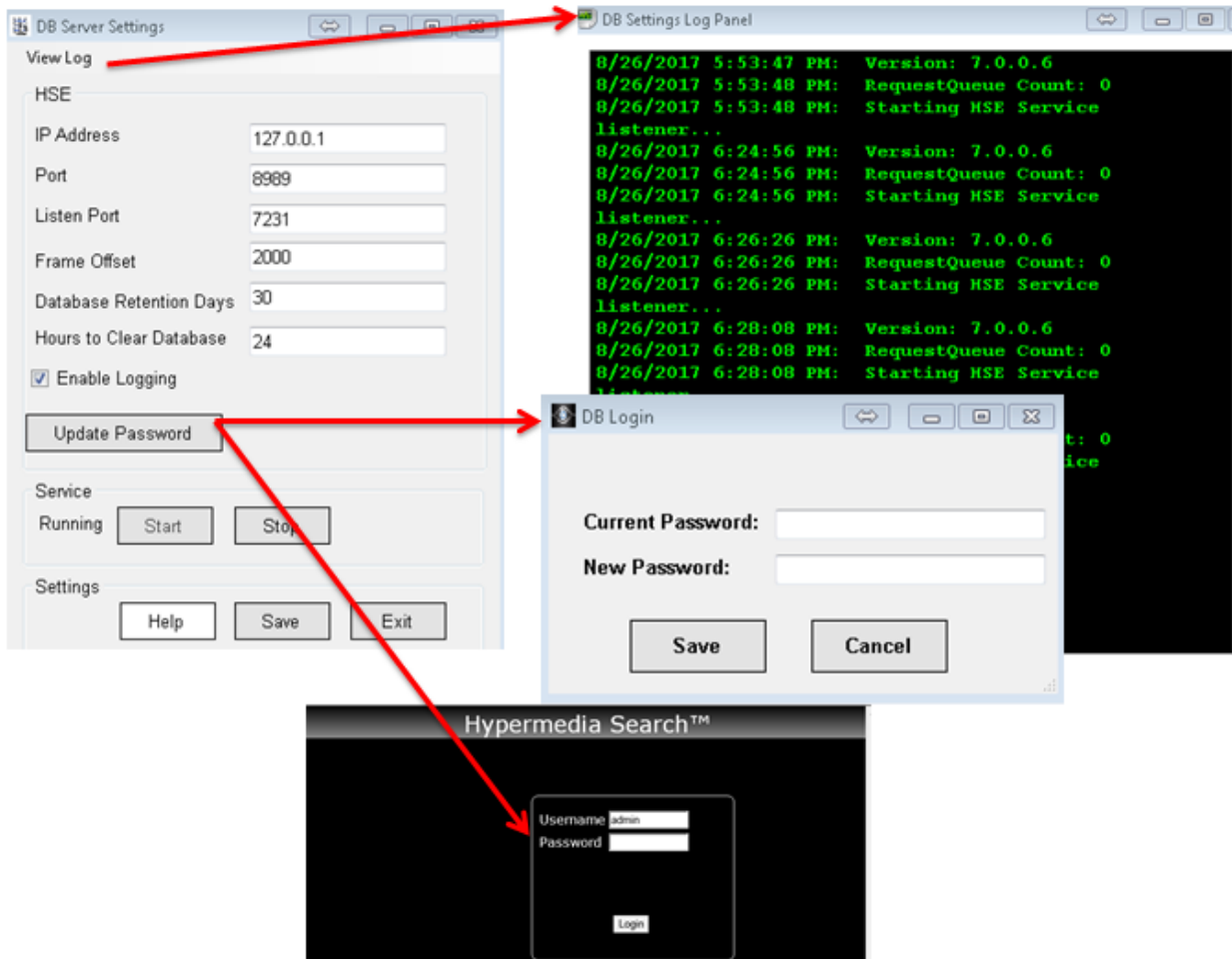
C2P HSE Proxy GUI

The HSE Proxy GUI contains the configuration needed for the C2P GUNSHOT DETECTION Proxy to send Gunshot Detection transactional 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 on 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 click on the Update Password button.



- 2) If the user wanted to change the HSE database retention time from the default 30 days, enter the new time period.

Note: Hours to clear the data base is shown here as 24 hours. Once the 30 day retention has been reached the data base will start to be cleared in 24 hour blocks starting with the first 24 hour storage period. A non-zero number is used to represent how often the database is truncated to the selected number of days specified in "Database Retention Days". If "Hours to Clear Database" is zero (0) then the database is never cleared.

- 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 View Log file as shown above.

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.

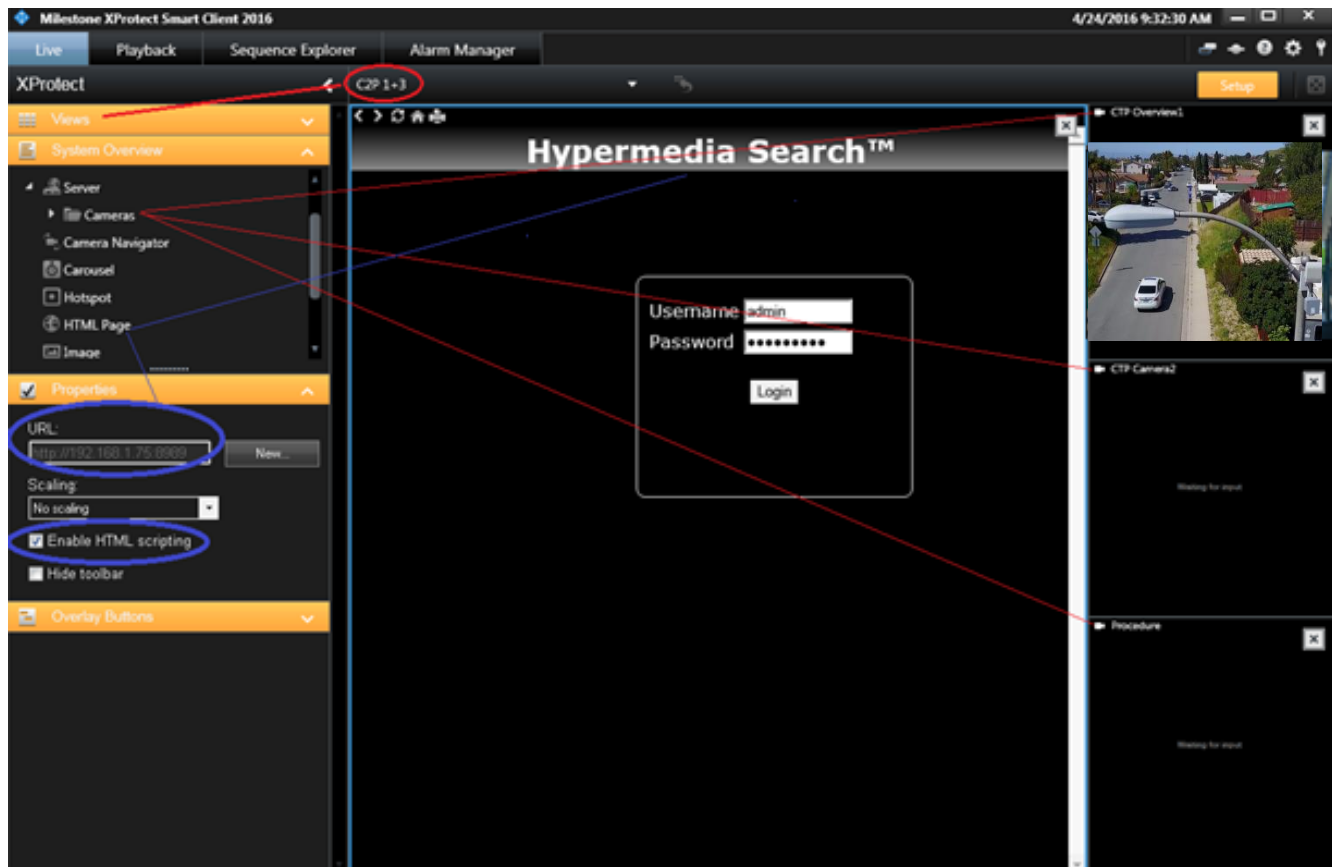
Below is an example of a screenshot for the 1 + 3 view setup screen in the Smart Client.

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](#)

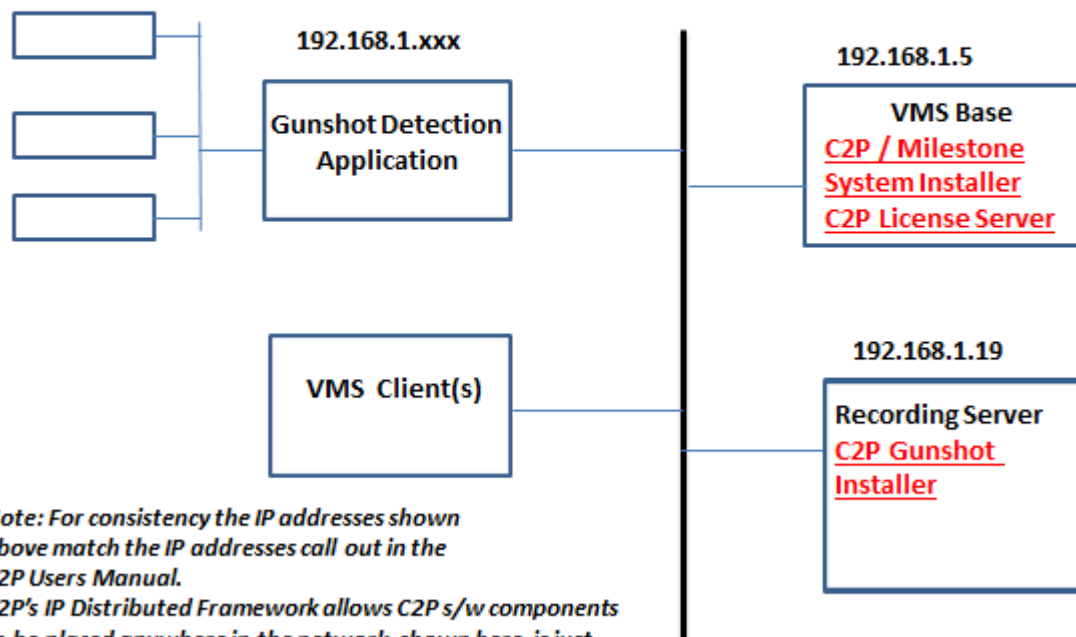


Troubleshooting

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.

Typical C2P Gunshot Detection software Deployment

Gunshot Detection monitors



*Note: For consistency the IP addresses shown above match the IP addresses call out in the C2P Users Manual.
C2P's IP Distributed Framework allows C2P s/w components To be placed anywhere in the network, shown here is just One example.
All C2P components need to be time synchronized with each other.*

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 above shows where all of the C2P software components are located with the source located on the machine hosting the GUNSHOT DETECTION 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 GUNSHOT DETECTION Proxy is receiving data from the GUNSHOT DETECTION application. Check the C2P GUNSHOT DETECTION Proxy log file first to verify that the C2P proxy is actually receiving data from the GUNSHOT DETECTION application. The process of checking the log is simple as was illustrated earlier in this User Manual See item "B" in C2P GUNSHOT DETECTION Proxy configuration GUI and also Appendix A: Sample C2P GUNSHOT DETECTION proxy log files

Each of the other C2P software components shown in Appendix A 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.

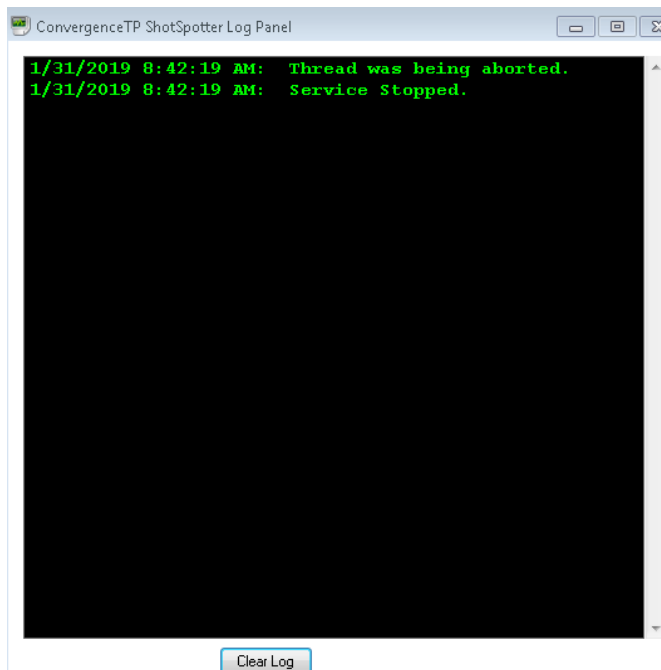
Appendix A: Sample C2P GUNSHOT DETECTION proxy log files

This first screenshot is a log trace of a valid connection between the C2P GUNSHOT DETECTION proxy and the GUNSHOT DETECTION application.

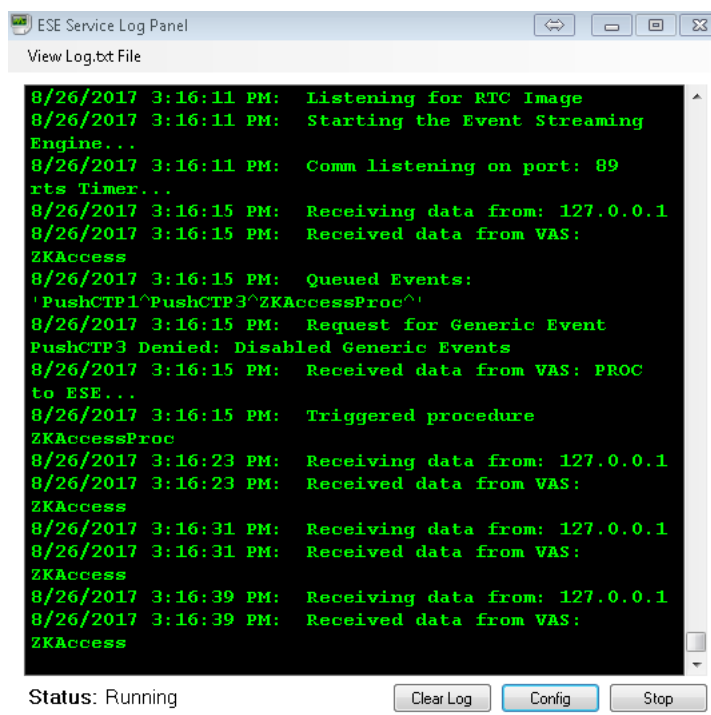
Each GUNSHOT DETECTION proxy has a log file on the front end of the proxy to log every GUNSHOT DETECTION received.

If nothing is being received by this log file then nothing is being sent by the GUNSHOT DETECTION application.

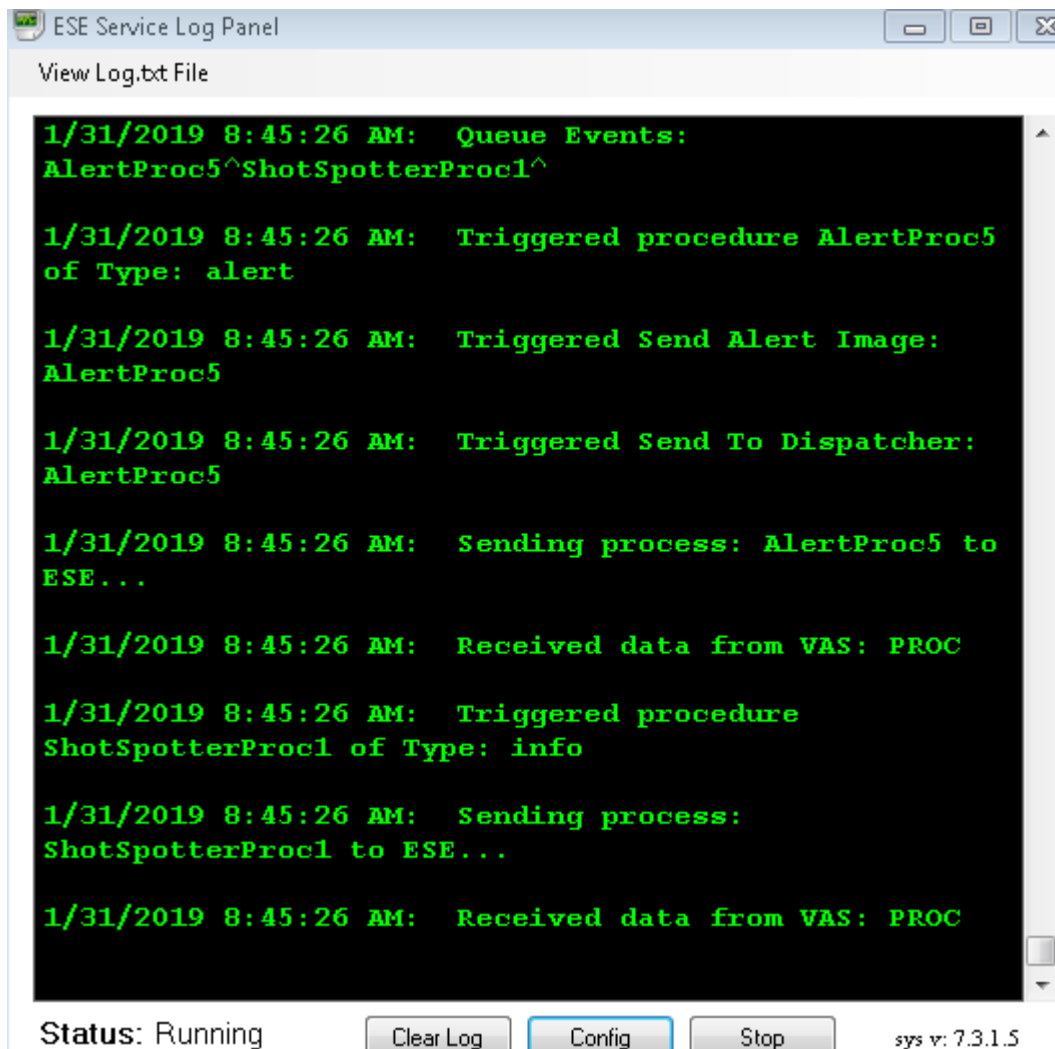
The screen below shows what to expect if no connection can be made by the C2P proxy to the GUNSHOT DETECTION application.



The screen shot below shows active data being received by the C2P Gunshot Detection log file.



The screen below shows activity in the C2P ESE when data is being received from the C2P Gunshot Detection integration.



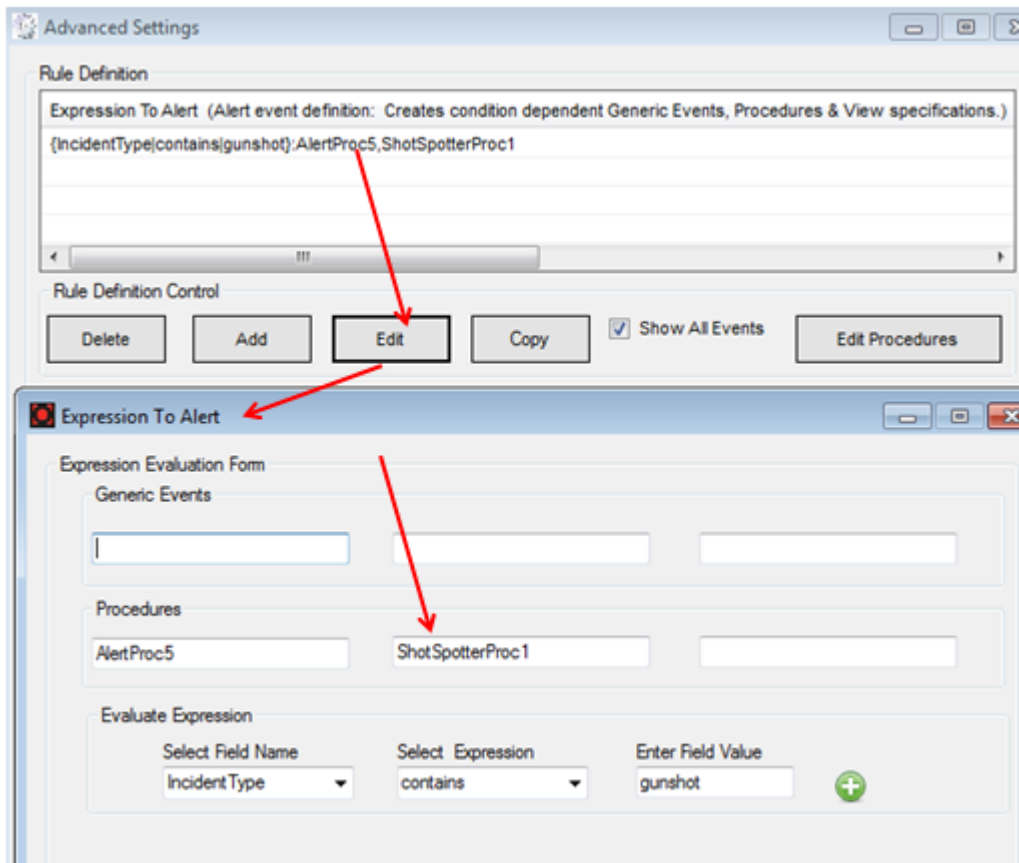
Appendix B: C2P GUNSHOT DETECTION GUI Rules Engine

The C2P Rules engine allows users to create their own rules based on the **Live** text received from the Gunshot Detection system.

These rules are evaluated for each GUNSHOT DETECTION transaction received from the data sourcing point which is sent from the Gunshot Detection system to the C2P integration.

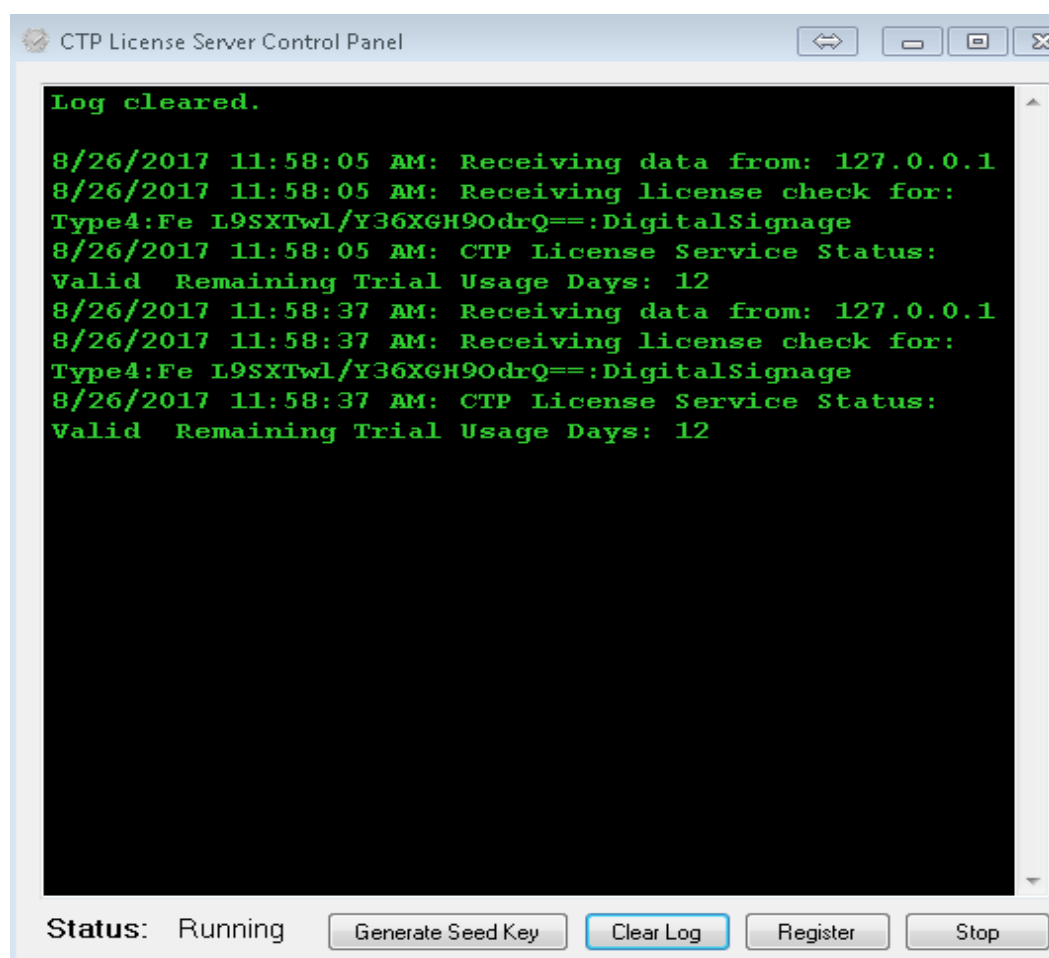
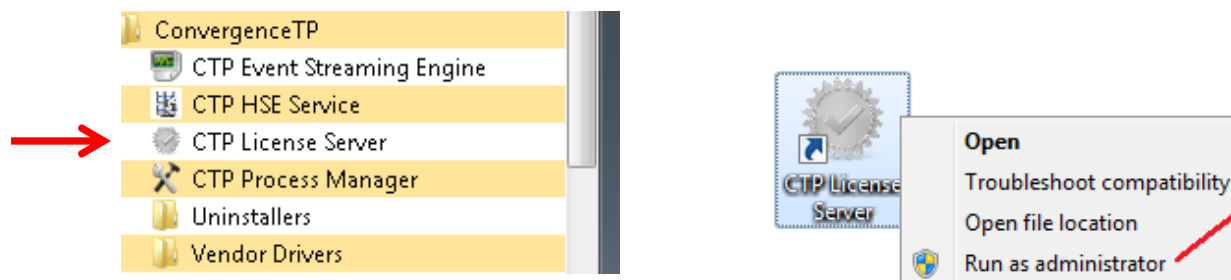
The GUI for the Rules Engine makes it very easy to add, delete or edit a rule. The Rules GUI provides dropdown selections for adding field names. Rules can be a single expression or several expressions AND'd together.

Rules can push a 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.

The License Server is also where the Generation of a Seed Key is initiated so a permanent C2P license can be generated and returned to be installed using the Registration button.

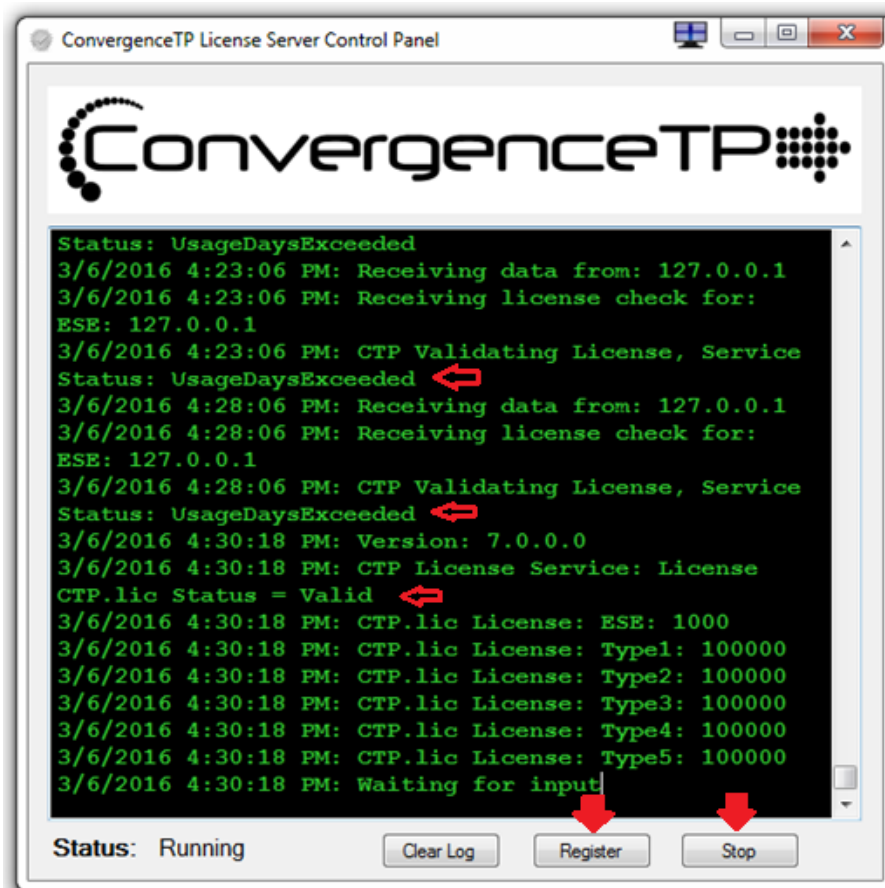
The License Server is also used to install the registered license, by clicking on the Register button and following the instructions.

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.

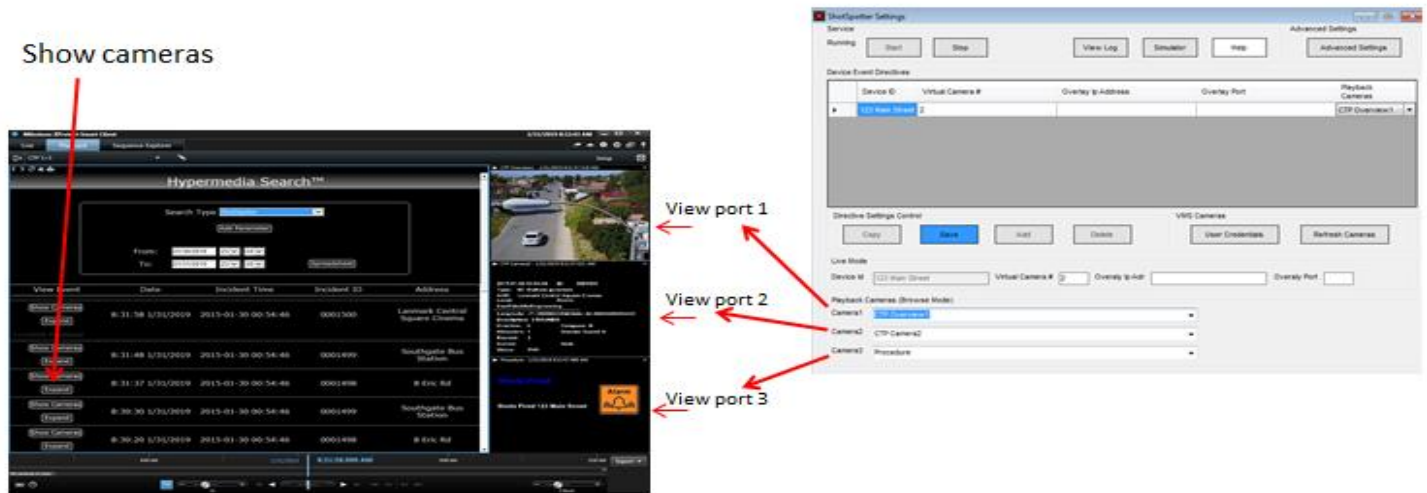
Note: The new license is not read in until the License Server service is restarted so it’s important to stop then start the service using the “Stop” button below, which turns into a “Start” button once the service has stopped.

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.



Appendix D: C2P Gunshot Detection Settings Configuration Panel

The diagram below shows the association between the C2P Gunshot Detection GUI and the C2P HSE search Engine embedded in the Smart Client. The GUI is used to establish which Device ID's data will be placed in the client viewport when Show Cameras button on the client is selected in the search engine. The GUI allows the selection of cameras to be viewed using the drop down menu*. When Show Cameras button is selected the assigned camera views (CTP Overview1, CTP Camera2 and Procedure) will be brought up and will be time synchronized with the device ID data and placed in the client as viewports 1, 2 and 3, respectively. In the case shown below the CTP Camera2 Gunshot Detection data will appear in viewport2 along with time synchronized video from CTP Overview1 in viewport1. Viewport3 is also time synchronized and is showing a Procedure (Virtual camera named Procedure) for security personnel to be aware of when that event is detected.

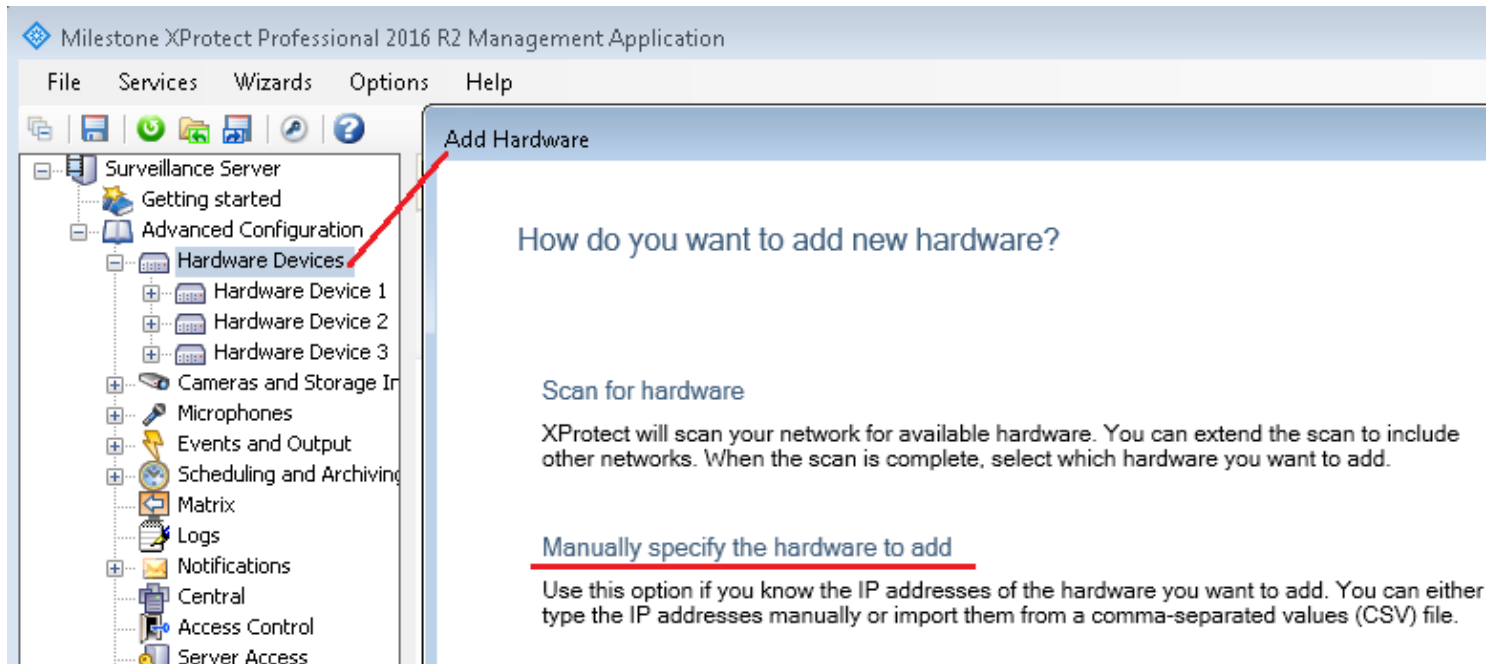


* Note: when using the drop down camera view list, only cameras Views you have privileges to view will be listed.

If only one camera view is selected in addition to the Gunshot Detection data it is recommended to have a separate camera view placed in viewport3. If you are not using a Procedure as shown above you may use any other camera but do not use "blank screen" camera here.

Appendix E: Milestone Enterprise, Professional and Express setup

This section outlines how to setup Virtual Cameras using the Milestone Universal Cameras for either 16 or 64 channel cameras.



Next select “Manual” mode for the hardware detection method.

Select “Universal” as the camera type

In the Add Hardware form:

The Address is the address of the PC/Server hosting the C2P ESE

The Port is 89

The Hardware model is Universal “xx” channels where xx can be 1, 16 or 64

Add Hardware

Type IP addresses

Type the IP addresses of the hardware you want to add to your system or import the information from a comma separated values (CSV) file. You can speed up the scanning process by selecting the manufacturer(s) of the devices you want to add.

IP Address	Port	User Name	Password	Driver
192.168.1.19	89	<default>		Universal 16 channels d ▼
IP Address	80	<default>		Auto-detect ▼

Next enable the Universal channels needed being sure to DISABLE ALL MICROPHONE CHANNELS

This completes adding the Universal Camera definitions.

Next you will need to name the individual camera names and configure each individual camera and setup each virtual camera.

Hint: Use camera names that are easy to associate with your access points.

Milestone XProtect Professional 2016 R2 Management Application

File Services Wizards Options Help

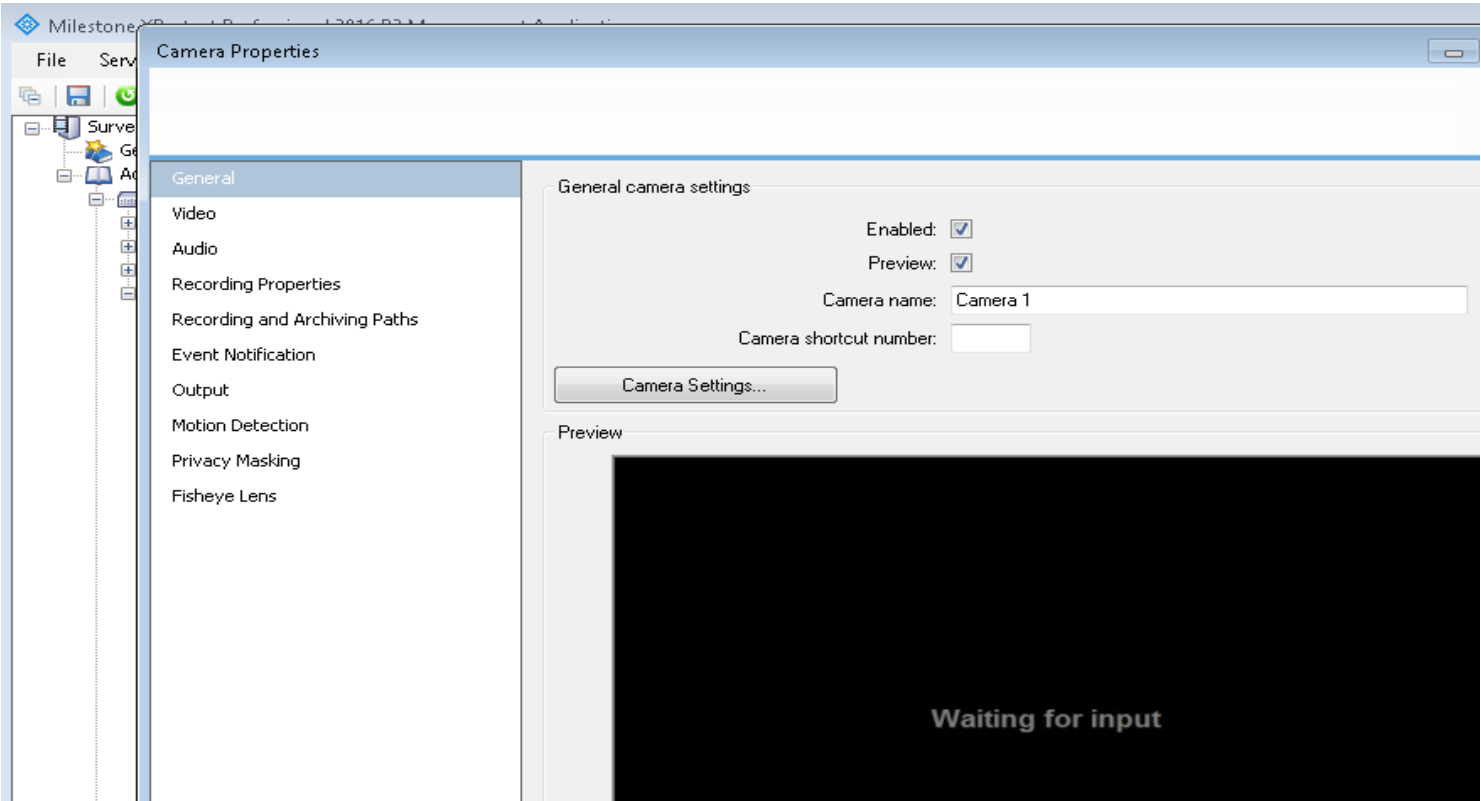
Surveillance Server

- Getting started
- Advanced Configuration
 - Hardware Devices
 - Hardware Device
 - Hardware Device
 - Hardware Device
 - Hardware Device
 - Camera 1
 - Camera 18
 - Camera 19
 - Camera 33
 - Camera 34
 - Camera 35
 - Camera 36

Camera Settings Summary:

Enabled	Camera Name	Properties	Video Format	Record on	Retention Time	Recording Path
<input checked="" type="checkbox"/>	Camera 1	Open	Querying...	Motion Detection	7	Day(s) X:\MediaDatabase\

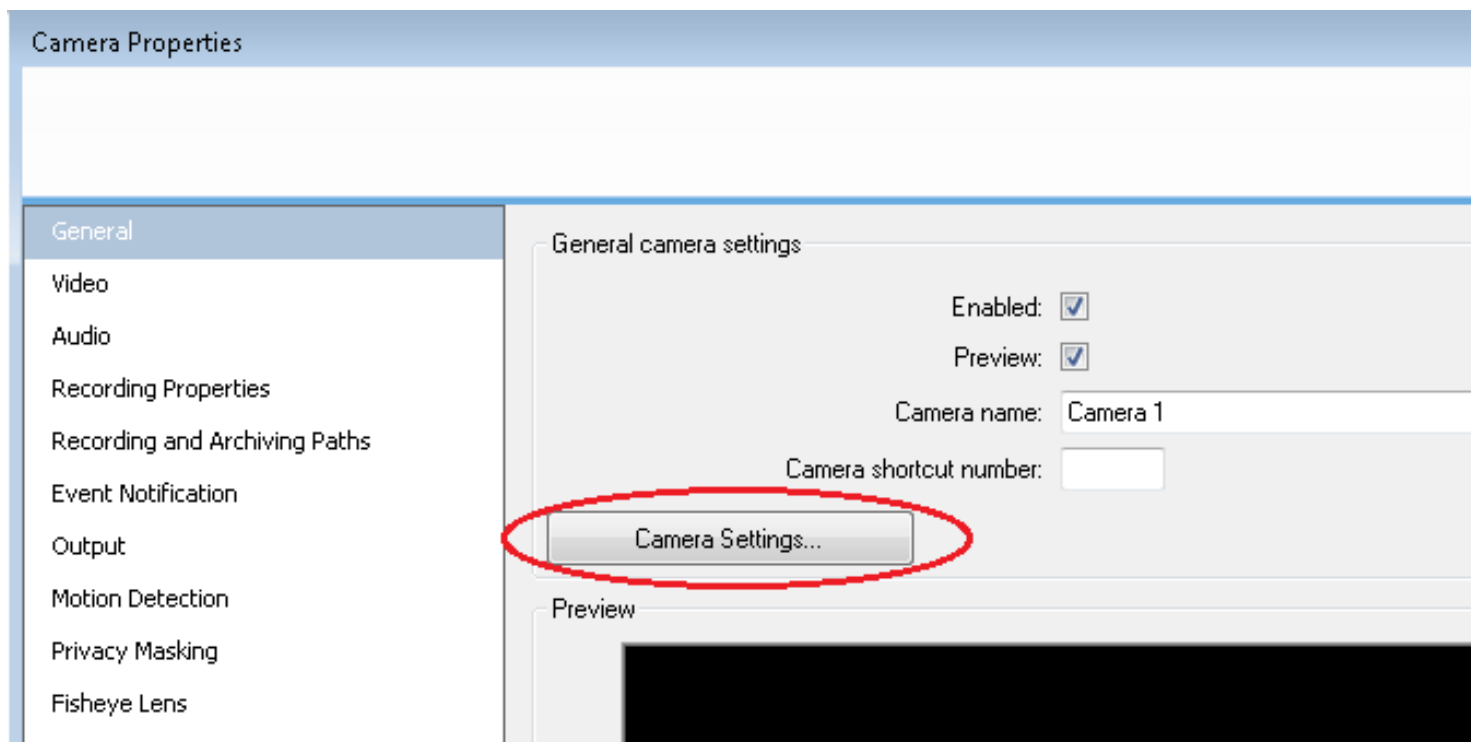
Select camera properties and follow settings outlined below.

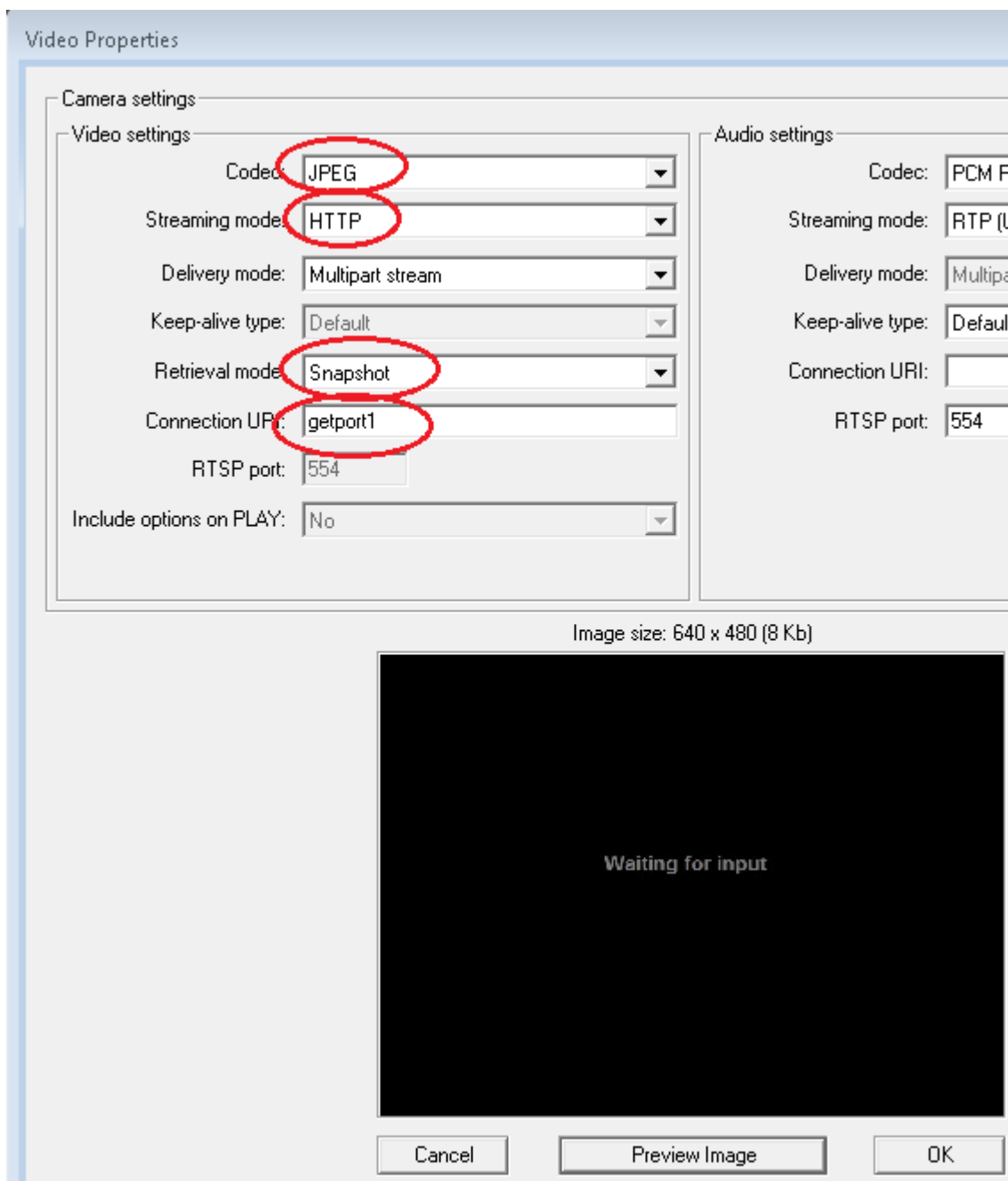


Configure Camera properties as shown below. Assign the getportX URL connection for each Gunshot Detection transaction data sourcing point where X is the virtual camera differentiator. If you have 20 Gunshot Detection points you will have getport1 thru getport20 virtual cameras.

As an example a table would help in keeping track of the Gunshot Detection to device ID and virtual camera assignment.

Gunshot Detection name	Device ID	Virtual camera #	Virtual camera name (optional)	comment
123 Main Street	1	1	Camera1	getport1
5 Eric Road	2	2	Camera2	getport2
City Garage 2 nd Level	3	3	VC3	getport3





Note : Retrieval mode used here is Snapshot, this is different when using Milestone Plus Series mode.

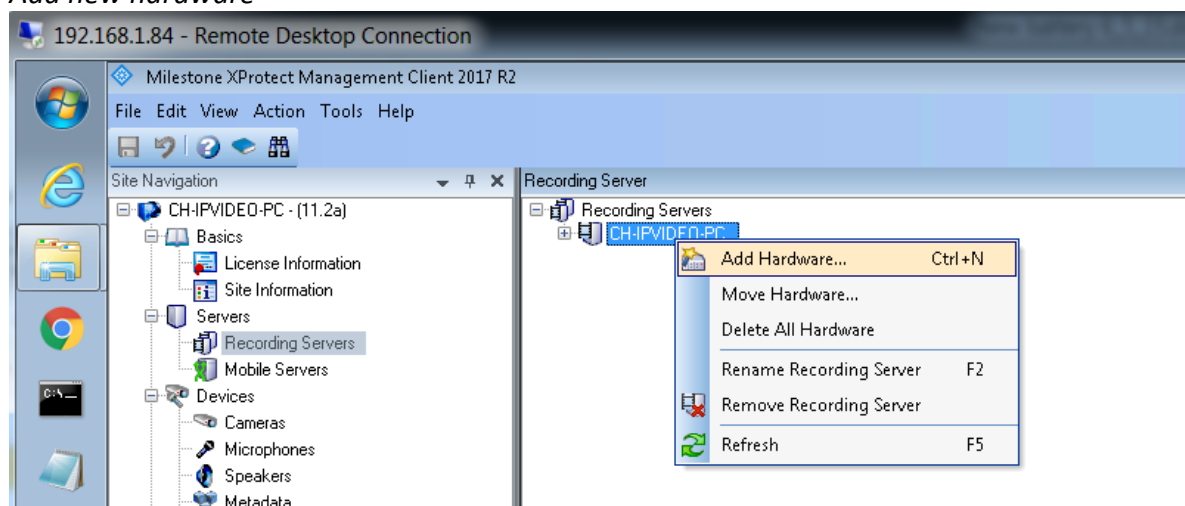
Appendix F: Universal Camera Setup using Plus Series Platform

Login defaults to Windows authentication.

You can add a “Basic” account if needed

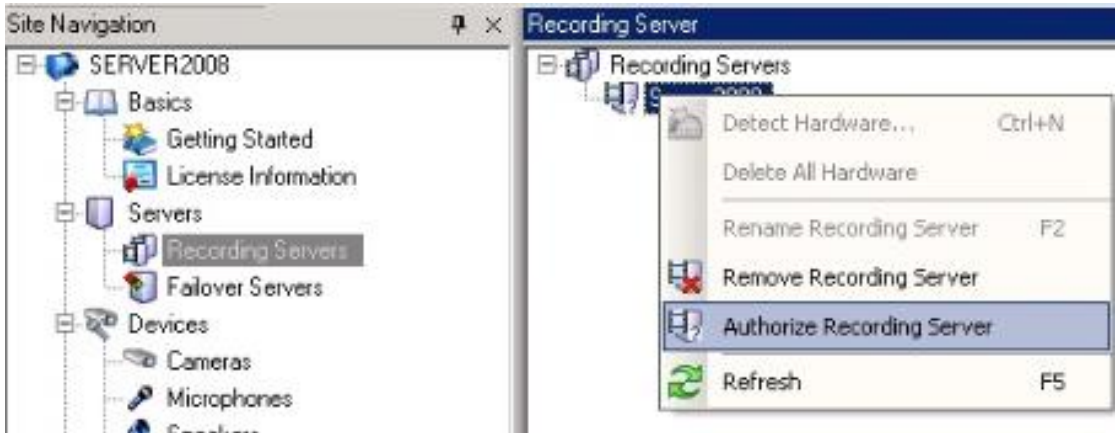


Add new hardware



Note Milestone Corporate and Expert may require this step below

When you go to your recording server for the first time you need to right click on it to “Authorize” it, then you can add hardware devices.



When prompted deselect the Universal cameras not used.

Add Hardware

Hardware and cameras are enabled per default. Manually enable additional devices to be used.
The hardware and its devices will be assigned auto-generated names. Alternatively, enter names manually.

Hardware name template:
Default

Device name template:
Default

Hardware to Add	Enabled	Name
Universal 16 channels driver - 192.168.1.84		
Hardware:	<input checked="" type="checkbox"/>	Universal 16 channels driver (192.168.1.84)
Camera port 1:	<input checked="" type="checkbox"/>	Universal 16 channels driver (192.168.1.84) - Camera 1
Camera port 2:	<input checked="" type="checkbox"/>	Universal 16 channels driver (192.168.1.84) - Camera 2
Camera port 3:	<input checked="" type="checkbox"/>	Universal 16 channels driver (192.168.1.84) - Camera 3
Camera port 4:	<input type="checkbox"/>	Universal 16 channels driver (192.168.1.84) - Camera 4
Camera port 5:	<input type="checkbox"/>	Universal 16 channels driver (192.168.1.84) - Camera 5
Camera port 6:	<input type="checkbox"/>	Universal 16 channels driver (192.168.1.84) - Camera 6
Camera port 7:	<input type="checkbox"/>	Universal 16 channels driver (192.168.1.84) - Camera 7
Camera port 8:	<input type="checkbox"/>	Universal 16 channels driver (192.168.1.84) - Camera 8

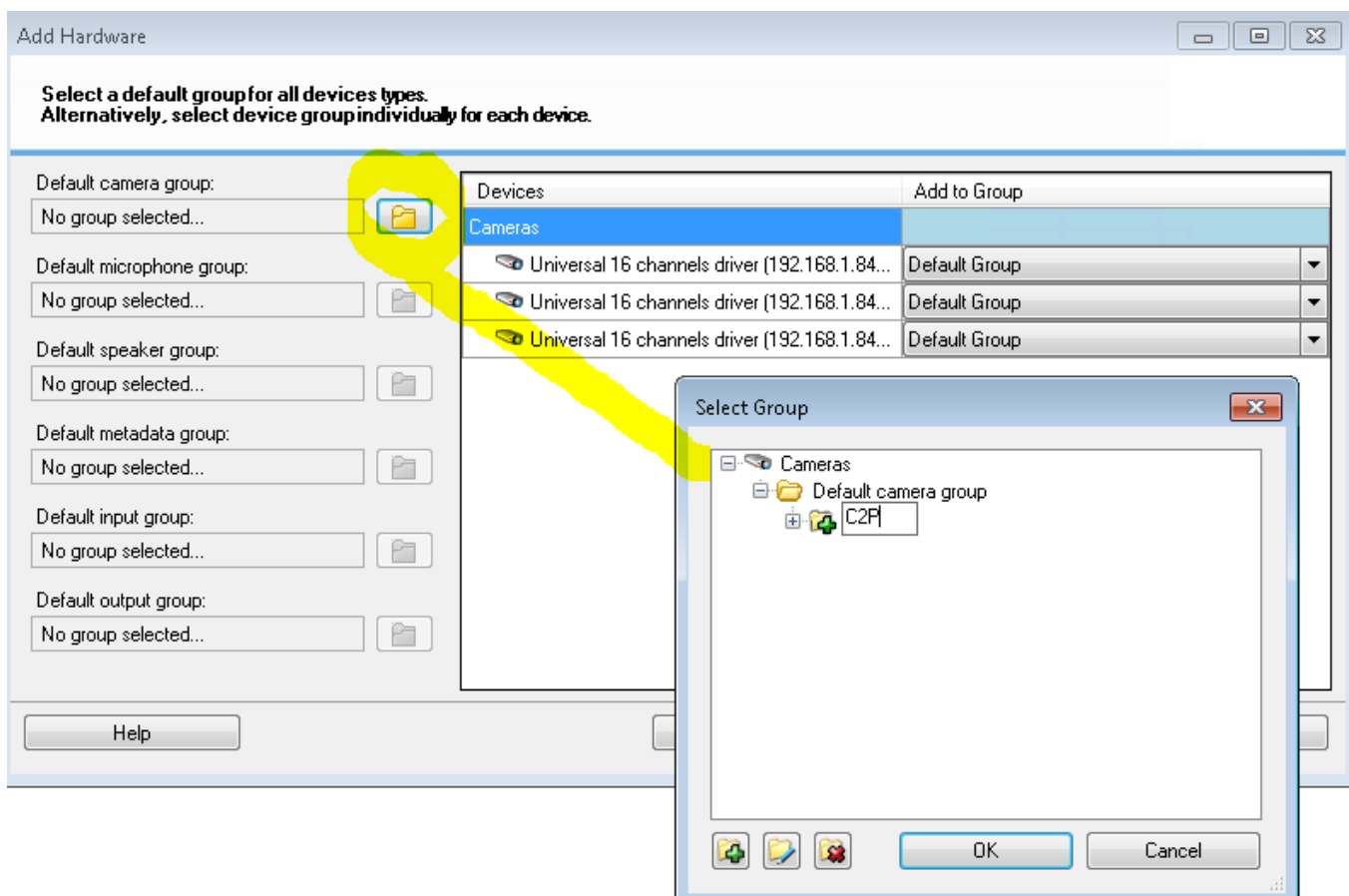
Help

< Back

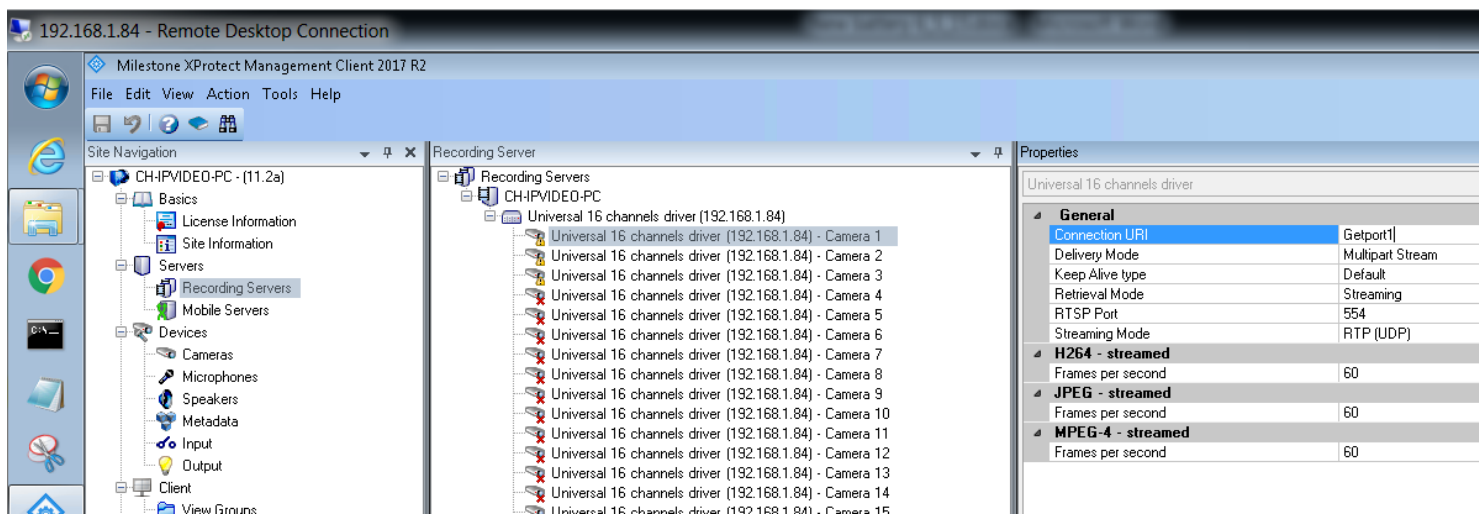
Next >

Cancel

Next create a C2P group



Next build the individual C2P cameras



Name the camera using the "Info" tab at the bottom of the screen

Properties

Device information

Name: CTP Overview1

Short name:

Description:

Hardware name: Universal 16 channels driver (192.168.1.50)

Port number: 1

Positioning information

Info Settings Streams Record Motion

Note that Milestone “Plus” systems requires “streaming mode” below for the universal cameras.

Properties

Universal 16 channels driver

General

Connection URI	Getport1
Delivery Mode	Multipart Stream
Keep Alive type	Default
Retrieval Mode	Streaming
RTSP Port	554
Streaming Mode	HTTP

H264 - streamed

Frames per second	60
-------------------	----

JPEG - streamed

Frames per second	2
-------------------	---

MPEG-4 - streamed

Frames per second	60
-------------------	----

Properties

Recording settings

☒ Recording

☒ Record on related devices

☒ Stop manual recording after: 5 minutes

☒ Pre-buffer

Location: Memory

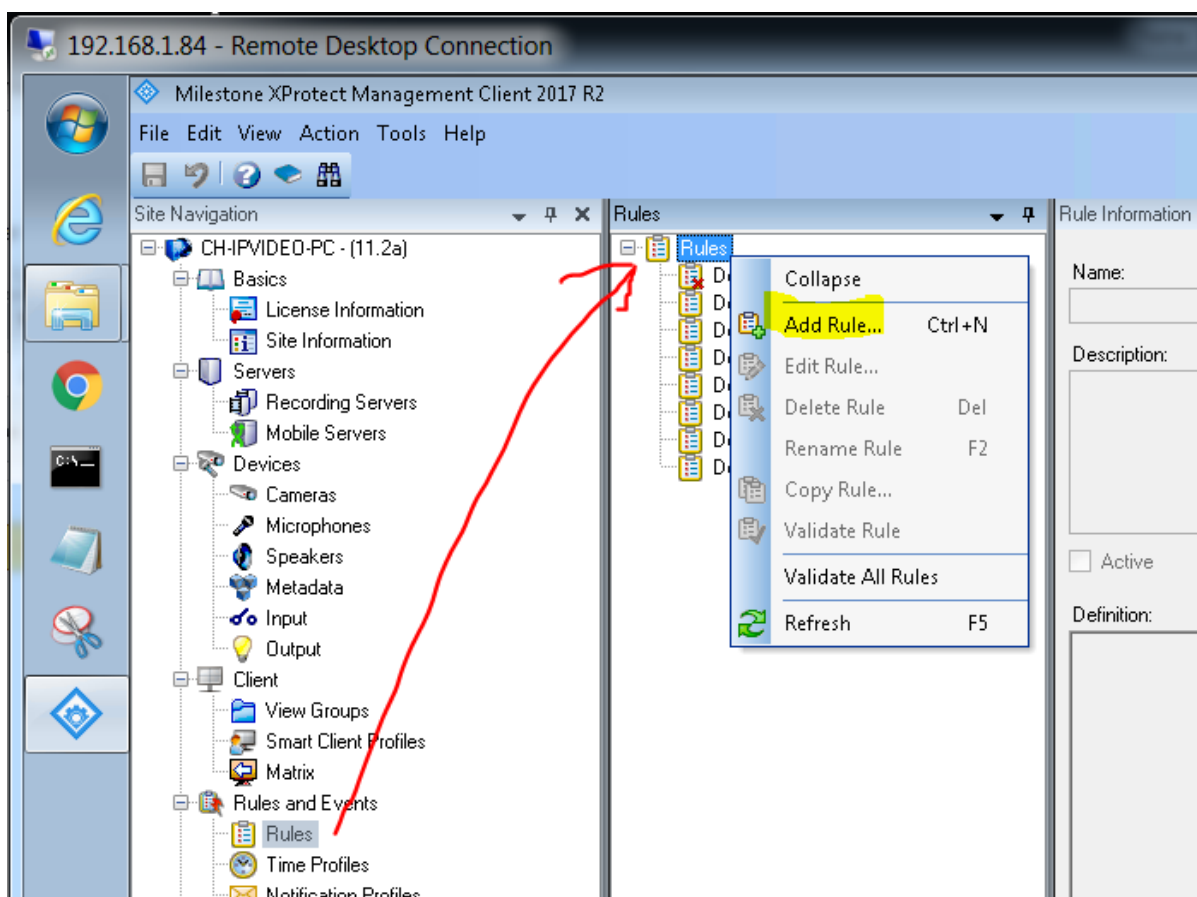
Time: 3 seconds

Recording frame rate

JPEG: 2 FPS

MPEG-4/H.264/H.265: ☐ Record keyframes only

Add a Rule to set C2P cameras to record always



Manage Rule

Name: C2P Record Always

Description:

Active: ☒

Step 1: Type of rule

Select the rule type you want to create

☐ Perform an action on <event>
☒ Perform an action in a time interval

Edit the rule description (click an underlined item)

Perform an action in a time interval

Manage Rule

Name: C2P Record Always

Description:

Active: ☒

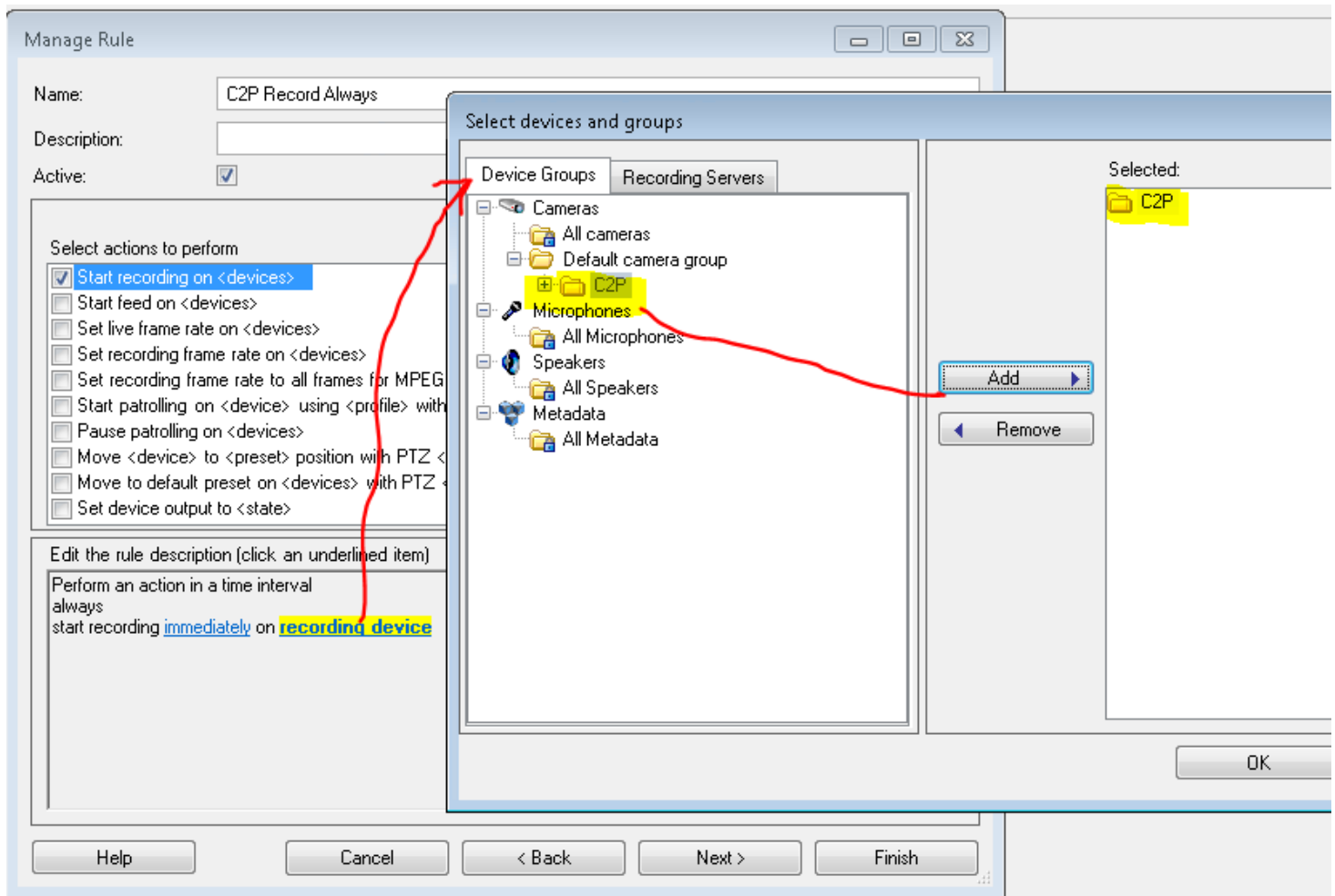
Step 2: Conditions

Select conditions to apply

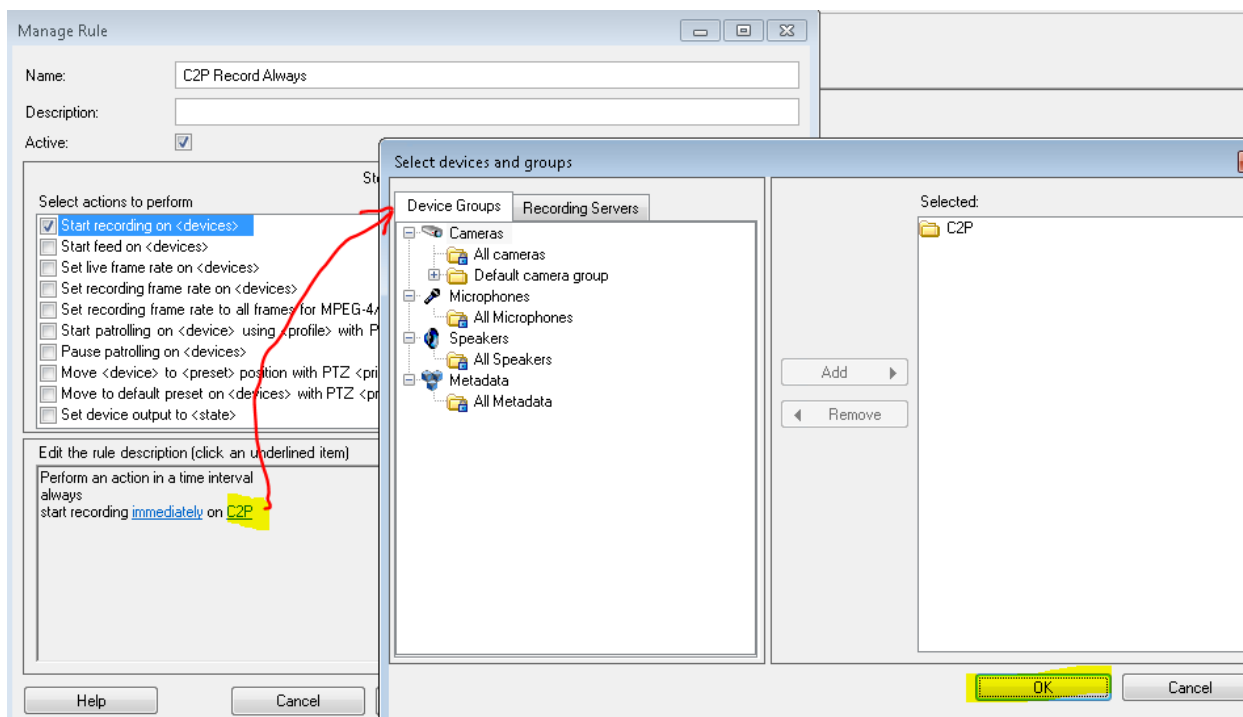
☐ Within selected time in <time profile>
☐ Outside selected time in <time profile>
☐ Within the time period <start time> to <end time>
☐ Day of week is <day>
☒ Always

Edit the rule description (click an underlined item)

Perform an action in a time interval
always



Done, this is your Rule below



Manage Rule

Name: C2P Record Always

Description:

Active: ☒

Step 5: Stop actions

Select stop action to perform

- ☒ Stop recording
- ☐ Stop feed
- ☐ Restore default live frame rate
- ☐ Restore default recording frame rate
- ☐ Restore default recording frame rate of keyframes for MPEG-4/H.264/H.265
- ☐ Resume patrolling
- ☐ Stop patrolling
- ☐ Move <device> to <preset> position with PTZ <priority>
- ☐ Move to default preset on <devices> with PTZ <priority>
- ☐ Set device output to <state>

Edit the rule description (click an underlined item)

Perform an action in a time interval
always
start recording [immediately](#) on [C2P](#)

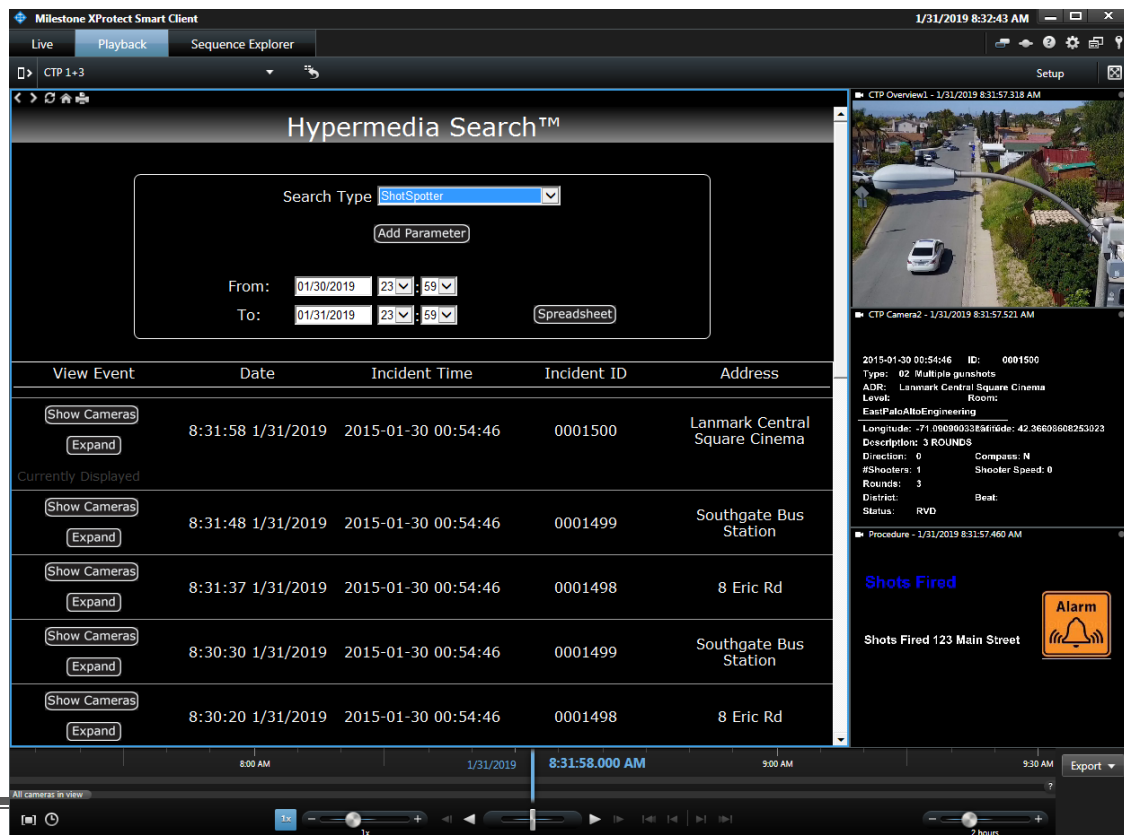
Perform an action when time interval ends
stop recording [immediately](#)

Help Cancel < Back Next > Finish

The C2P cameras should be ready to go now.



- Integrate your Gunshot Detection system with XProtect establishing a Unified Security monitoring and analysis platform making your video management system (VMS) the ideal head-end.
- All Gunshot Detection Alerts are time synchronized with the networks video surveillance system.
- Real-time onscreen access control activity provides pop-up alerts when user defined events occur.
- Powerful Hypermedia Search Engine links all text received with all stored surveillance video.
- All shot detection alerts are stored and searchable using the Hypermedia Search Engine.
- User defined real-time event notifications can be sent as Email and SMS alerts via generic events.
- Export search engine table as CSV files.
- Report Manager spreadsheet provides a simple one-click selection of an event bringing up detailed parameters of the event along with the associated video(s).
- Export recorded video evidence directly from the Report Manager's audit entry table.



Hypermedia Search™

Search Type: **ShotSpotter**

From: 01/30/2019 23:59 To: 01/31/2019 23:59

Spreadsheet

View Event	Date	Incident Time	Incident ID	Address
Show Cameras Expand	8:31:58 1/31/2019	2015-01-30 00:54:46	0001500	Lanmark Central Square Cinema
Show Cameras Expand	8:31:48 1/31/2019	2015-01-30 00:54:46	0001499	Southgate Bus Station
Show Cameras Expand	8:31:37 1/31/2019	2015-01-30 00:54:46	0001498	8 Eric Rd
Show Cameras Expand	8:30:30 1/31/2019	2015-01-30 00:54:46	0001499	Southgate Bus Station
Show Cameras Expand	8:30:20 1/31/2019	2015-01-30 00:54:46	0001498	8 Eric Rd

Currently Displayed

2015-01-30 00:54:46 ID: 0001500
Type: 02 Multiple gunshots
ADR: Lanmark Central Square Cinema
Level: Room:
EastPaloAltoEngineering
Longitude: -71.0609063 Latitude: 42.3660608 253023
Description: 3 ROUNDS
Direction: 0 Compass: N
#Shooters: 1 Shooter Speed: 0
Rounds: 3
District: RVD Beat:
Status: RVD

Procedure - 1/31/2019 8:31:57:460 AM

Shots Fired

Shots Fired 123 Main Street

Alarm

8:31:58.000 AM

Hypermedia Search Engine finds events and recalls the associated video

Hypermedia Search™

ShotSpotter

Incident ID: [dropdown] Contains: [dropdown] 1438

Address: [dropdown] Contact: [dropdown] 123 Main

Is Equal To [dropdown] Is Not Equal To [dropdown] Does Not Contain [dropdown]

From: 07/06/2018 23:59 To: 07/06/2018 23:59 [Spreadsheet]

Spreadsheet Fields

Incident Time Incident ID Address Add Fields

Add a Field [dropdown]

[Download] [View]

Callouts:

- Select search parameter from drop down tab.
- Use full or partial keywords from metadata to setup the search.
- Filter your search by adding multiple keywords.
- Once your search parameters are defined, select view to present results in table.
- Add new columns to your spread sheet using drop down menu.
- Select Download to export data in CSV format to a spread sheet where you can create a visual representation of the data.
- Qualify your search with equal to, not equal to, contains, etc.
- Setup your spread sheet columns using either default settings or add or delete columns.

Report Manager provides results of audit investigations based on user defined Rules, user defined Pop-up comments and allows annotation of audit status of events.

Alert Manager adds Pop-Up events to push alerts to the client in real time and puts operator's comments into the Audit table.

Export video of events using Video DB Export tool.

Playback video of the event, bring in alternate camera views if needed and set status of event all from the audit entry table.

Alert

Shots Fired

7/10/2018 5:00:00 PM

ID: 000100

Type: 02 Multiple gunshot

ADR: 123 Main Street

Level:

Room:

Source: EastPatrolEngineering

Longitude: -82.131275 latitude: 31.807508

Comment: detected near hospital entrance

ShotSpotter Report Entries: 133

Timestamp	IncidentID	Latitude	Longitude	Address	Description	Rounds	ShooterSpeed
1/31/2019 9:06:14 AM	0001500	42.3601	-71.0942	MIT	3 ROUNDS	3	0
1/31/2019 9:06:03 AM	0001506	42.4075	-71.119	Tufts University	3 ROUNDS	3	0
1/31/2019 9:05:53 AM	0001505	42.377	-71.1167	Harvard University	3 ROUNDS	3	0
1/31/2019 9:05:42 AM	0001503	42.3637	-71.0537	Paul Revere House	3 ROUNDS	3	0
1/31/2019 9:05:32 AM	0001502	42.3764	-71.0608	Bunker Hill Bridge	3 ROUNDS	3	0
1/31/2019 9:05:22 AM	0001500	42.36608606253023	-71.0909003336352	Landmark Central Square Cinema	3 ROUNDS	3	0
1/31/2019 9:05:11 AM	0001499	42.35042940589	-71.057078523952	Southgate Bus Station	3 ROUNDS	3	0
1/31/2019 9:05:01 AM	0001498	42.357351	-71.134397	B Eric Rd	3 ROUNDS	3	0



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