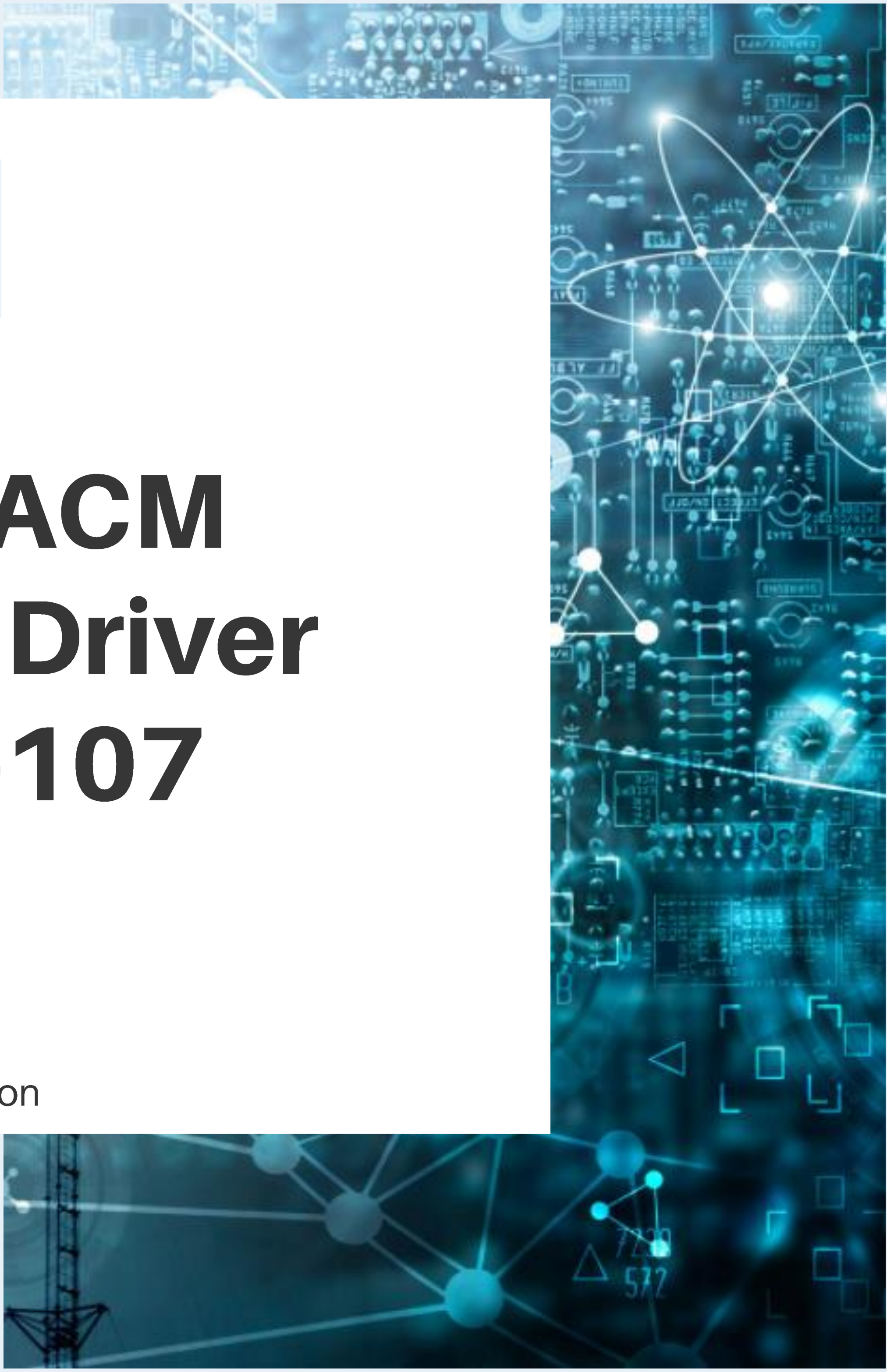
CHIPKIN

Avigilon ACM Ethernet Driver FS-8705-107



Chipkin - Enabling Integration

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Driver Version:
Document Revision:

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1 Avigilon ACM Description

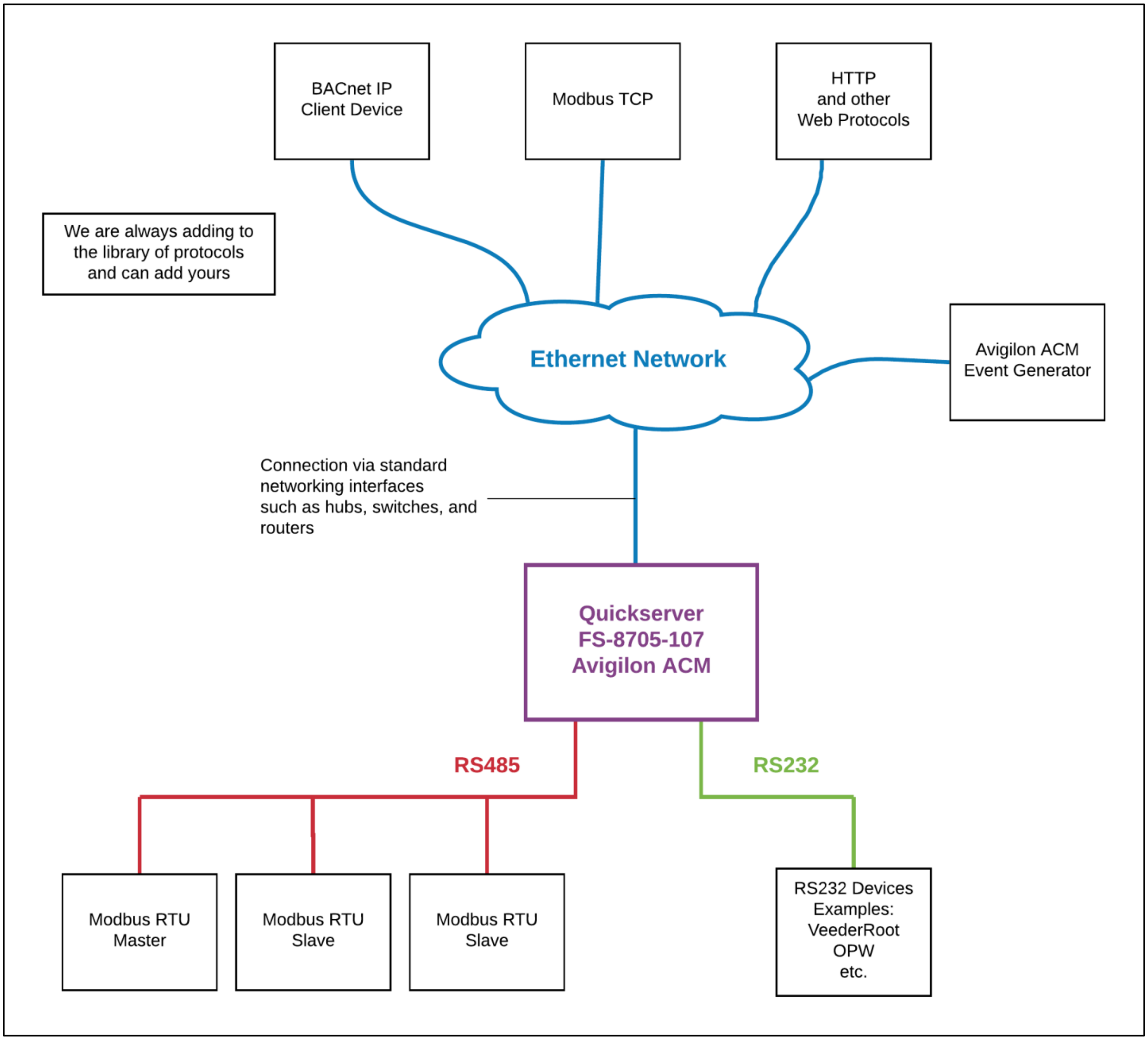
The Avigilon ACM Driver allows the FieldServer to transfer Avigilon ACM XML event data from devices over Ethernet. The Avigilon ACM Driver uses TCP. The port is configurable and the driver supports opening multiple TCP ports to receive Avigilon ACM XML event data.

The FieldServer is a passive Server, listening on the configured TCP port. When configured, the FieldServer listens for Avigilon ACM XML event data. Upon receiving the data, the data is parsed based on the configured Tasks and the values are extracted. These values are stored on the FieldServer to be mapped to other protocols or simply to be viewed.

The information that follows describes how to expand upon the factory defaults provided in the configuration files included with the FieldServer.

2 Connection Diagram

This block diagram lists common network connections that can monitor Avigilon ACM XML event data using other protocols like Modbus® RTU/TCP, BACnet® and HTTP.


BACnet IP Client Device
Modbus TCP
HTTP and other Web Protocols
We are always adding to the library of protocols and can add yours
Ethernet Network
Avigilon ACM Event Generator
Connection via standard networking interfaces such as hubs, switches, and routers
Quickserver FS-8705-107 Avigilon ACM
RS485
RS232
Modbus RTU Master
Modbus RTU Slave
Modbus RTU Slave
RS232 Devices Examples: VeederRoot OPW etc.

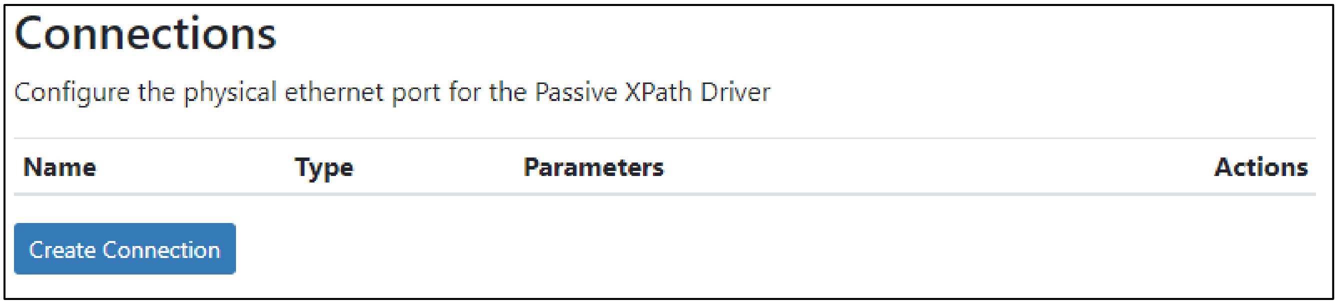
3 Avigilon ACM Configuration

To configure the Avigilon ACM driver, from the home page, visit the following link:
http://{IP_ADDRESS}/chipkin/ui/#/avigilonACM

To configure the FieldServer, follow the instructions below to add a Connection (physical port), Nodes (TCP Ports to listen for data), and finally Tasks (the data to extract from the Avigilon ACM XML event data).

3.1 Create Connection

To set up the FieldServer as an Avigilon ACM server, first create a connection. The connection contains information about the physical port to use.



Connections

Configure the physical ethernet port for the Passive XPath Driver

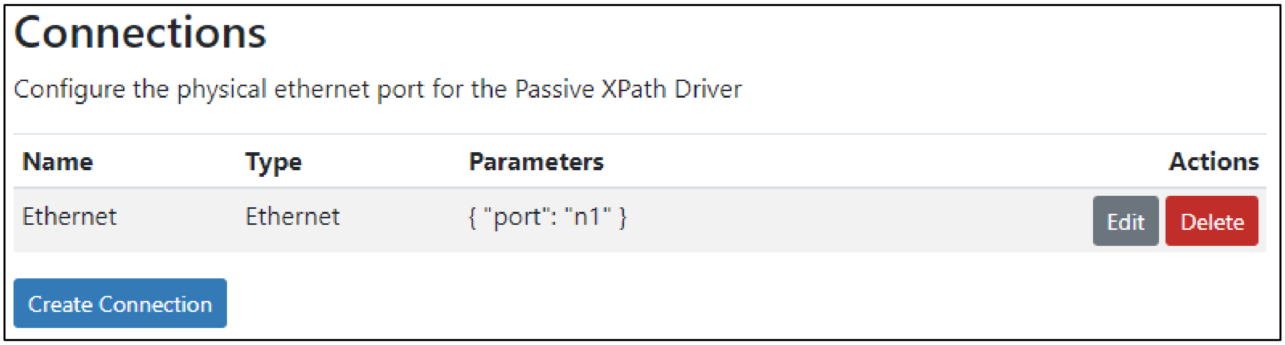
Name	Type	Parameters	Actions

1. Click on the “Create Connection” button to open the Create Connection form.
2. Fill out the fields in the form. The fields are as follows:

COLUMN TITLE	FUNCTION	LEGAL VALUES
Name	Name of the server, used internally as an identifier	Text, must be unique
Type	The type of connection this is	**ethernet**
Parameters: Port	The physical port on the FieldServer to use	**n1**

3. Click the “Save” button to add the connection.

If successful, the new entry will be populated in the Connections table:



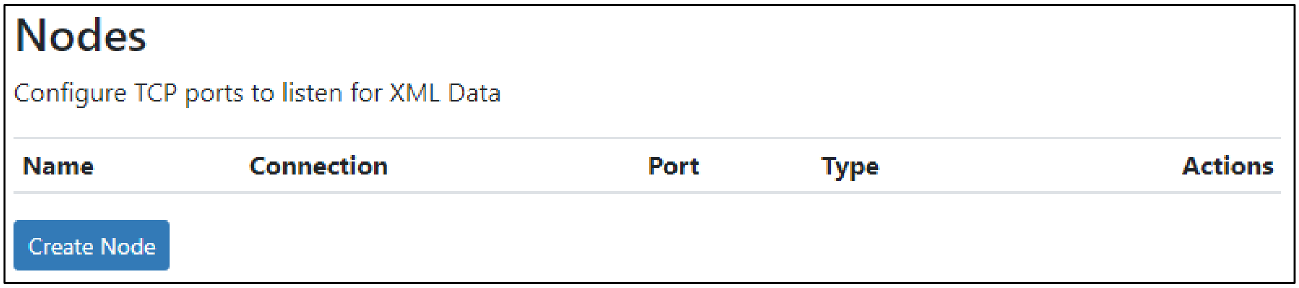
Connections

Configure the physical ethernet port for the Passive XPath Driver

Name	Type	Parameters	Actions
Ethernet	Ethernet	{ "port": "n1" }	Edit Delete

3.2 Create Node

Follow the instructions below to configure the TCP ports to open for receiving Avigilon ACM XML event data.



Nodes

Configure TCP ports to listen for XML Data

Name	Connection	Port	Type	Actions

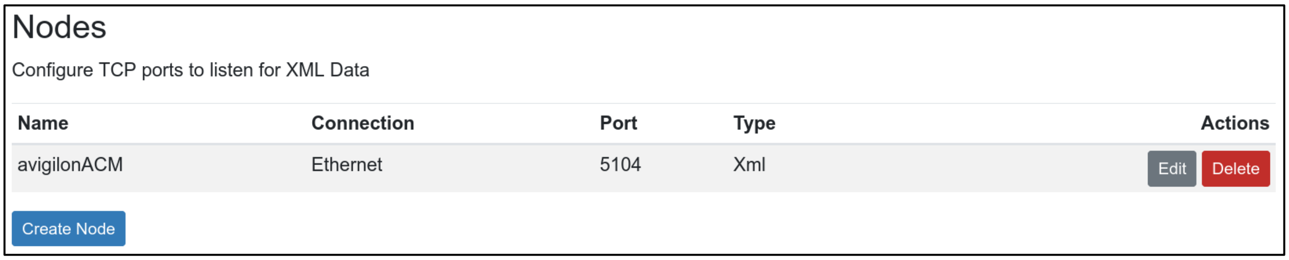
1. Click on the “Create Node” button to open the Create Node form.
2. Fill out the fields in the form. The fields are as follows:

COLUMN TITLE	FUNCTION	LEGAL VALUES
Name	The name of the Avigilon ACM XML event data being received	Text, must be unique
Connection	The name of the physical port.	Text (Use the name of the Connection created in the previous section)
Port	The TCP port to use to receive the Avigilon ACM XML event data	Any valid TCP port not in use, **5104**
Type	The type of data being received	**xml**

* Bolded values are defaults

3. Click on the “Save” button to add the node.

If successful, the new entry will be populated in the Nodes table:



Nodes

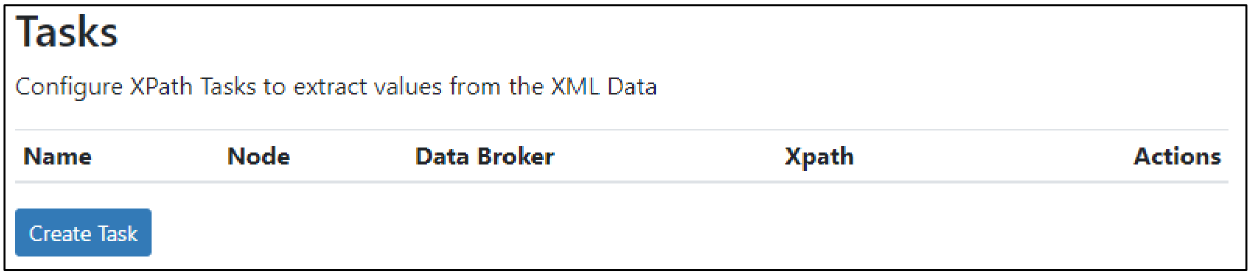
Configure TCP ports to listen for XML Data

Name	Connection	Port	Type	Actions
avigilonACM	Ethernet	5104	Xml	Edit Delete

Repeat the above steps to add additional ports to receive other Avigilon ACM XML event data.

3.3 Create Task

Create tasks to add Avigilon ACM Event Names and Source Names used to extract values from the Avigilon ACM XML event data.



Tasks

Configure XPath Tasks to extract values from the XML Data

Name	Node	Data Broker	Xpath	Actions

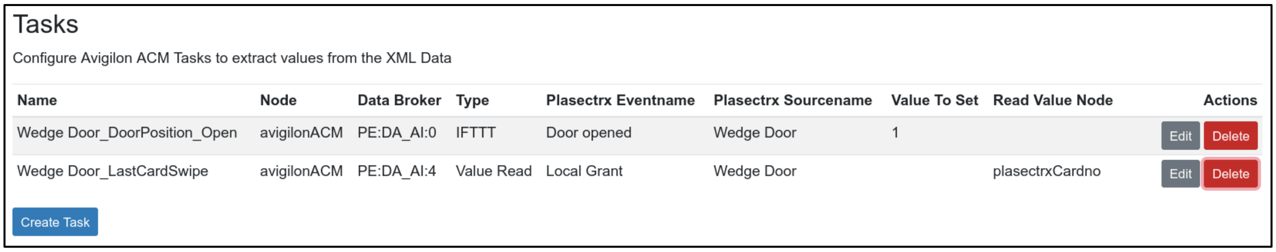
1. Click on the “Create Task” button to open the Create Task form.
2. Fill out the fields in the form. The fields are as follows:

COLUMN TITLE	FUNCTION	LEGAL VALUES
Name	The name of the variable to add.	Text, must be unique
Node	The node that this variable belongs to.	Text (Use the name of a node created in the previous section)
DataBroker: Name	The data array in the protocol engine to retrieve the value.	One of the Data Array names
DataBroker: Start	The starting offset in the array to retrieve the value	0 to (“Data_Array_length” - 1)
Type	The expected payload to receive, either “IFTTT”, or "Value Read”	IFTTT - (If This Then That) Set the value specified in “Value To Set” Value Read – Read the value from the element specified in “Read Value Node”

Plasectrx Eventname	(case insensitive) The name of the event to find within a payload element plasectrxEventname	Text (case insensitive)
Plasectrx Sourcename	(case insensitive) The name of the event to find within a payload element plasectrxSourcename	Text (case insensitive)
Value To Read	If this task type is IFTTT then this is the value that will be written to the database	Integer
Read Value Node	The name of the XML node that will be read and stored in the system	String

3. Click the “Save” button to add the task.

If successful, the new entry will be populated in the Tasks table:



Tasks

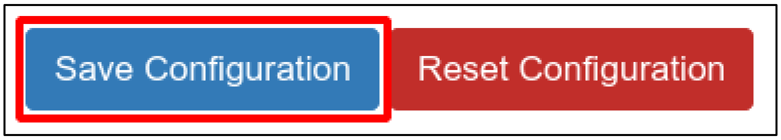
Configure Avigilon ACM Tasks to extract values from the XML Data

Name	Node	Data Broker	Type	Plasectrx Eventname	Plasectrx Sourcename	Value To Set	Read Value Node	Actions
Wedge Door_DoorPosition_Open	avigilonACM	PE:DA_AI:0	IFTTT	Door opened	Wedge Door	1		Edit Delete
Wedge Door_LastCardSwipe	avigilonACM	PE:DA_AI:4	Value Read	Local Grant	Wedge Door		plasectrxCardno	Edit Delete

Repeat the above steps to add additional Avigilon ACM values.

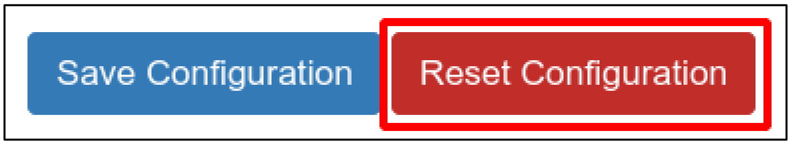
3.4 Saving the Server Configuration

When the configuration is complete, click on the “Save Configuration” button to save all of the updates and changes. For the configuration to take effect, reboot the system.



3.5 Resetting the Server Configuration

To clear the configuration and start over, click the “Reset Configuration” button. Then follow the instructions in the sections above to create new connections, nodes, and tasks

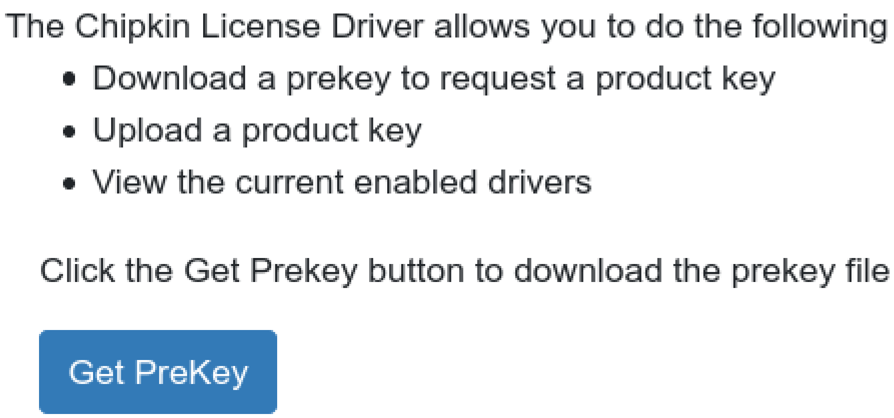


4 License

Some drivers such as Avigilon ACM require a license product key. To generate this license product key a pre-key from the hardware is required.

4.1 How to generate a pre-key

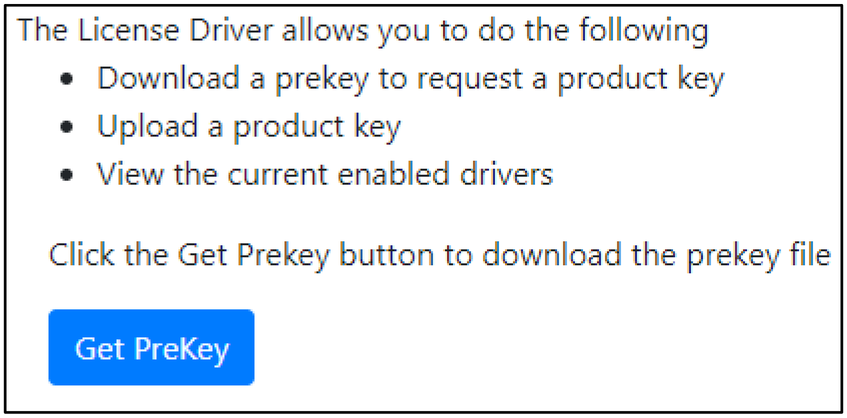
1. Goto the license page http://{IP_ADDRESS}/chipkin/ui/#/chipkinLicenseDriver
2. Click the Get Pre-Key button.



The Chipkin License Driver allows you to do the following

- Download a prekey to request a product key
- Upload a product key
- View the current enabled drivers

Click the Get Prekey button to download the prekey file



The License Driver allows you to do the following

- Download a prekey to request a product key
- Upload a product key
- View the current enabled drivers

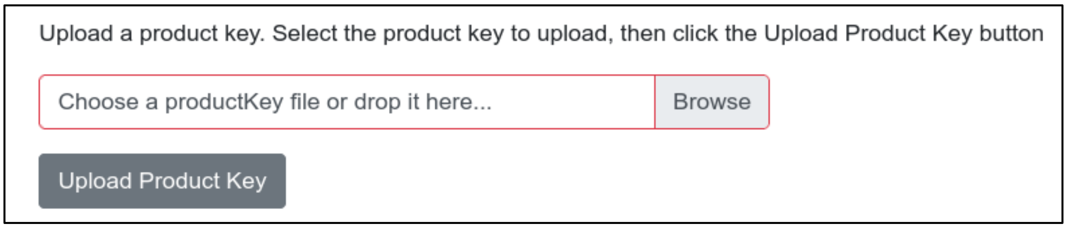
Click the Get Prekey button to download the prekey file

A pre-key.txt file will be created and downloaded to your system. Send this pre-key.txt and your Job number (FSE####) to Chipkin support.

4.2 How to activate a product key

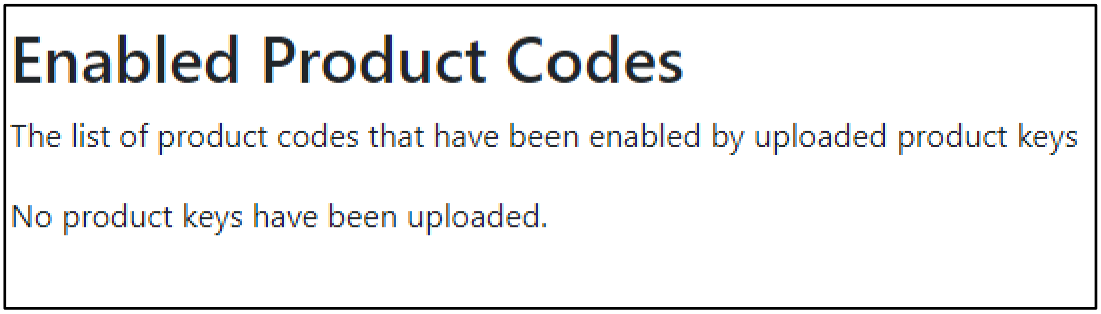
Chipkin support can generate a license product key from the hardware pre-key. The product key will be sent as a text file via email.

1. Goto the license page http://{IP_ADDRESS}/chipkin/ui/#/chipkinLicenseDriver
2. Click “Browse” button and select the productkey-XXXXX.txt file provided to you by Chipkin Support.
3. Click the “Upload Product Key” button and wait for the product key to finish uploading.



Upload a product key. Select the product key to upload, then click the Upload Product Key button

The list of enabled product codes can be viewed in the “Enabled Product Codes” list.



Enabled Product Codes

The list of product codes that have been enabled by uploaded product keys

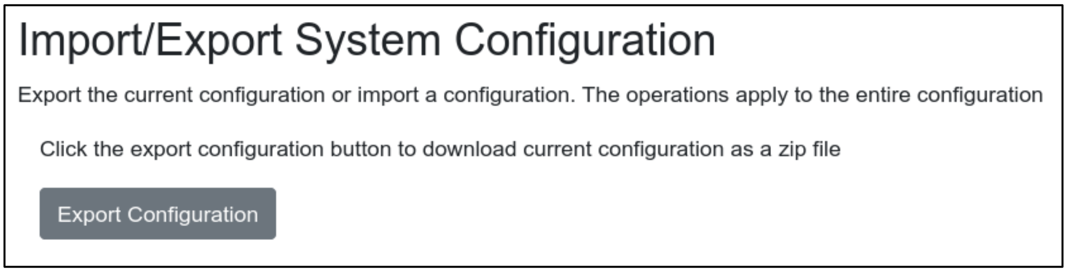
No product keys have been uploaded.

5 Importing and Exporting Configurations

It is possible to export the current configuration to back it up or simply to make some edits. Users can also import either the entire configuration via a zip file or a PE (Protocol Engine) configuration.

5.1 How to Export the Configuration

1. Goto the system configuration page http://{IP_ADDRESS}/chipkin/ui/#/chipkinLicenseDriver
2. Click the Export Configuration button.



Import/Export System Configuration

Export the current configuration or import a configuration. The operations apply to the entire configuration

Click the export configuration button to download current configuration as a zip file

5.2 How to Import the Configuration

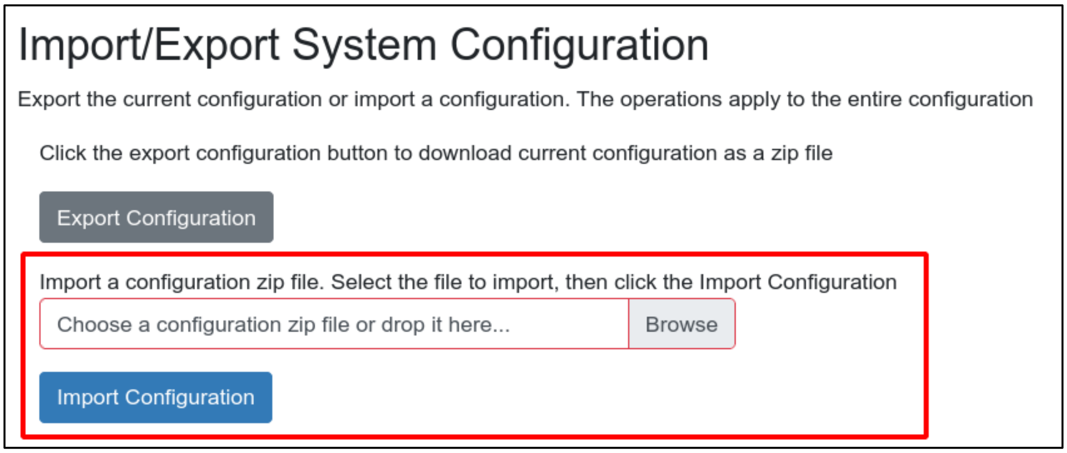
The file to import the configuration must be a zip file. The zip file should contain the following folders:

- ae - this folder contains any configuration files for the ae configuration
- documents - this folder contains any driver specific documents. For example, license product keys, etc.
- pe - this folder contains one config.csv file for the pe configuration.

To make sure the folder directory is correct, do an Export first, then extract the files, edit them, then zip them up again.

To import the configuration:

1. Goto the system configuration page http://{IP_ADDRESS}/chipkin/ui/#/chipkinConfiguration
2. Click the “Browse” button in the “Import/Export System Configuration” section and select the zip file containing the configuration to import.
3. Click the “Import Configuration” button and wait for the configuration to finish importing.
4. If successful, a success message will appear prompting a reboot of the Fieldserver for the changes to take effect.

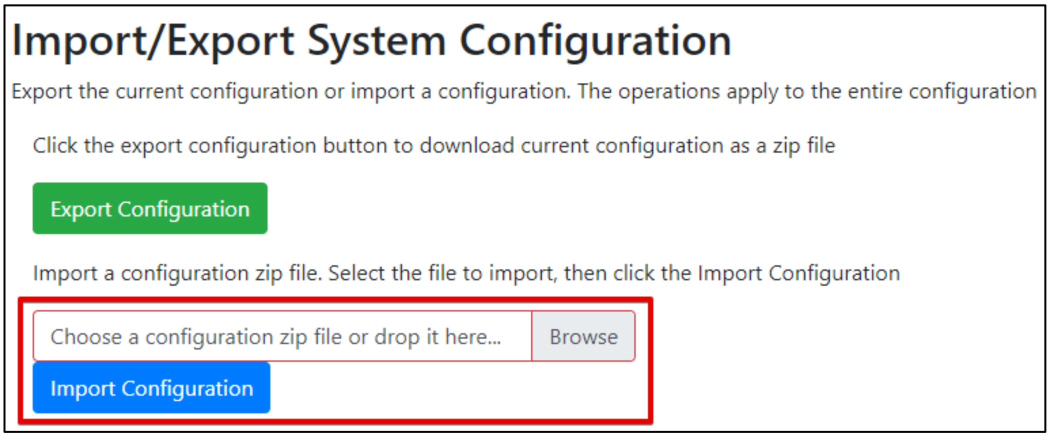


Import/Export System Configuration

Export the current configuration or import a configuration. The operations apply to the entire configuration

Click the export configuration button to download current configuration as a zip file

Import a configuration zip file. Select the file to import, then click the Import Configuration



Import/Export System Configuration

Export the current configuration or import a configuration. The operations apply to the entire configuration

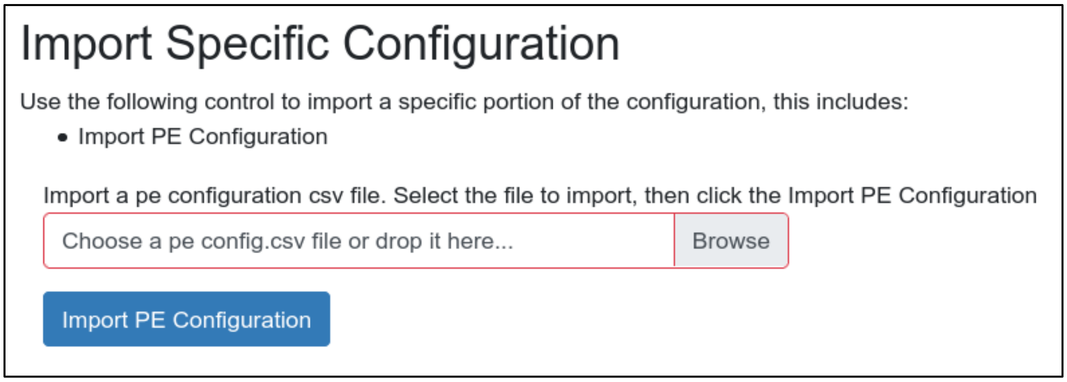
Click the export configuration button to download current configuration as a zip file

Import a configuration zip file. Select the file to import, then click the Import Configuration

5.3 How to Import a PE Configuration

It is possible to import a PE (Protocol Engine) configuration separately. To import a PE configuration:

1. Goto the system configuration page http://{IP_ADDRESS}/chipkin/ui/#/chipkinConfiguration
2. Click the “Browse” button in the “Import Specific Configuration” section and select the csv file containing the pe configuration to import.
3. Click the “Import PE Configuration” button and wait for the configuration to finish importing.
4. If successful, a success message will appear prompting a reboot of the Fieldserver for the changes to take effect.



Import Specific Configuration

Use the following control to import a specific portion of the configuration, this includes:

- Import PE Configuration

Import a pe configuration csv file. Select the file to import, then click the Import PE Configuration

6 Revision History

This table summarizes the update history for this document. Please contact Chipkin for an updated version of this document if required.

DATE	AGENT	REVISION	COMMENTS
20 Apr 2021	JJK	1	Created initial document
30 Apr 2021	YC	2	Updated to new template

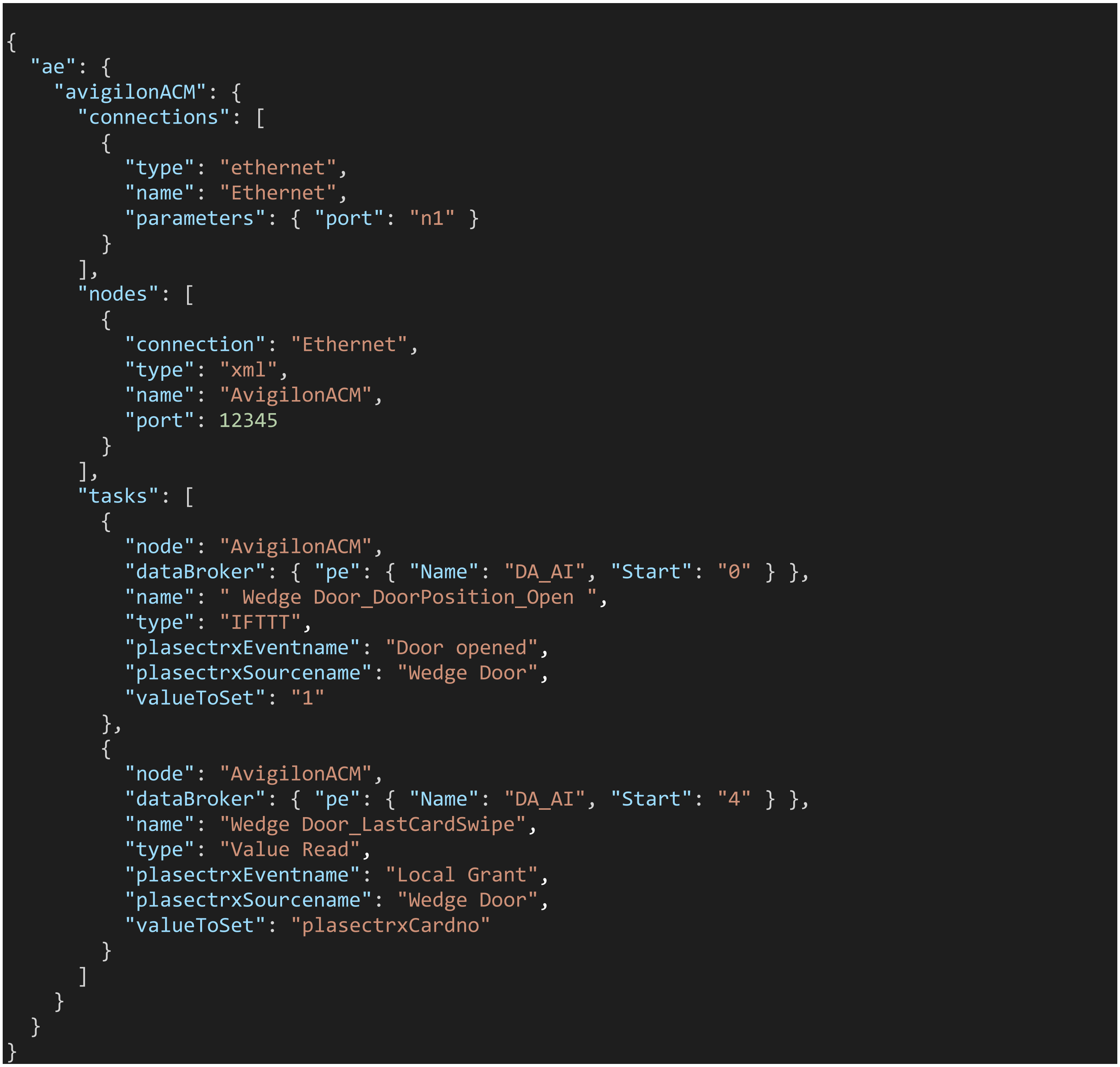
Appendix A. Advanced Topics

Appendix A.1 Debugging the Avigilon ACM Server

- If the FieldServer is not receiving any Avigilon ACM XML event data, verify in that the device sending the Avigilon ACM XML event data is using the correct IP Address of the FieldServer and is using the configured TCP port.
- Check the Stats page to see if the server is listening and receiving data.
- If the FieldServer is not extracting values from the Avigilon ACM XML event Data, check that the PlasectrxEventname and the PlasectrxSourcename are valid.

Appendix B. Examples

Appendix B.1 Examples Configuration



```
{
  "ae": {
    "avigilonACM": {
      "connections": [
        {
          "type": "ethernet",
          "name": "Ethernet",
          "parameters": { "port": "n1" }
        }
      ],
      "nodes": [
        {
          "connection": "Ethernet",
          "type": "xml",
          "name": "AvigilonACM",
          "port": 12345
        }
      ],
      "tasks": [
        {
          "node": "AvigilonACM",
          "dataBroker": { "pe": { "Name": "DA_AI", "Start": "0" } },
          "name": " Wedge Door_DoorPosition_Open ",
          "type": "IFTTT",
          "plasectrxEventname": "Door opened",
          "plasectrxSourcename": "Wedge Door",
          "valueToSet": "1"
        },
        {
          "node": "AvigilonACM",
          "dataBroker": { "pe": { "Name": "DA_AI", "Start": "4" } },
          "name": "Wedge Door_LastCardSwipe",
          "type": "Value Read",
          "plasectrxEventname": "Local Grant",
          "plasectrxSourcename": "Wedge Door",
          "valueToSet": "plasectrxCardno"
        }
      ]
    }
  }
}
```

Appendix B.2 Avigilon ACM IFTTT XML Example Payload

```
<?xml version="1.0" encoding="UTF-8"?>
<EVENT>
        <plasectrxGatewayDN>
                cn=141efa1afdf04121,ou=gateways,dc=plasec
        </plasectrxGatewayDN>
        <cn>930e6fcd55904191</cn>
        <plasectrxRecdate>20210309085856-0600</plasectrxRecdate>
        <plasectrxPaneldate>20210309085857-0600</plasectrxPaneldate>
        <plasectrxRecdateUTC>20210309145856Z</plasectrxRecdateUTC>
        <plasectrxPaneldateUTC>20210309145857Z</plasectrxPaneldateUTC>
        <plasectrxEvtypename>System</plasectrxEvtypename>
        <plasectrxBackgroundColor></plasectrxBackgroundColor>
        <plasectrxForegroundColor></plasectrxForegroundColor>
        <plasectrxAckBackgroundColor></plasectrxAckBackgroundColor>
        <plasectrxAckForegroundColor></plasectrxAckForegroundColor>
        <plasectrxEventname>Door opened</plasectrxEventname>
        <plasectrxPanelname>Demo_Wedge</plasectrxPanelname>
        <plasectrxSourcename>Wedge Door</plasectrxSourcename>
        <plasectrxPointaddress>446</plasectrxPointaddress>
        <plasectrxPointDN>cn=446,ou=points,dc=plasec</plasectrxPointDN>
        <plasectrxEvtypeaddress>10</plasectrxEvtypeaddress>
</EVENT>
```

B.2.1. Avigilon ACM Value Read XML Example Payload

```
<?xml version="1.0" encoding="UTF-8"?>
<EVENT>
        <plasectrxGatewayDN>cn=141efa1afdf04121,ou=gateways,dc=plasec</plasectrxGatewayDN>
        <cn>4720e87d8a424a10</cn>
        <plasectrxRecdate>20210309090010-0600</plasectrxRecdate>
        <plasectrxPaneldate>20210309090011-0600</plasectrxPaneldate>
        <plasectrxRecdateUTC>20210309150010Z</plasectrxRecdateUTC>
        <plasectrxPaneldateUTC>20210309150011Z</plasectrxPaneldateUTC>
        <plasectrxLastacc>20210309090011-0600</plasectrxLastacc>
        <plasectrxEvtypename>Valid Credential</plasectrxEvtypename>
        <plasectrxBackgroundColor></plasectrxBackgroundColor>
        <plasectrxForegroundColor></plasectrxForegroundColor>
        <plasectrxAckBackgroundColor></plasectrxAckBackgroundColor>
        <plasectrxAckForegroundColor></plasectrxAckForegroundColor>
        <plasectrxEventname>Local Grant</plasectrxEventname>
        <plasectrxPanelname>Demo_Wedge</plasectrxPanelname>
        <plasectrxSourcename>Wedge Door</plasectrxSourcename>
        <plasectrxPointaddress> 400</plasectrxPointaddress>
        <plasectrxPointDN>cn=400,ou=points,dc=plasec</plasectrxPointDN>
        <plasectrxEvtypeaddress> 8</plasectrxEvtypeaddress>
        <plasectrxSourceDN>
          cn=5,ou=doors,cn=141efa1afdf04121,ou=gateways,dc=plasec
        </plasectrxSourceDN>
        <plasectrxSourceUUID>aa019c40-05aa-103b-8852-3f3d7730e27d</plasectrxSourceUUID>
        <plasectrxSourcetype> 30</plasectrxSourcetype>
        <plasectrxPri> 100</plasectrxPri>
        <plasectrxIdentityDN>cn=1c911a7093b549f0,ou=identities,dc=plasec</plasectrxIdentityDN>
        <plasectrxIdentityUUID>c57207cc-0b35-103b-90f9-3b386f099f1f</plasectrxIdentityUUID>
        <plasectrxCardno>316042</plasectrxCardno>
        <plasectrxLname>V</plasectrxLname>
        <plasectrxFname>P</plasectrxFname>
        <plasectrxExpiredat>20220224214833Z</plasectrxExpiredat>
        <plasectrxActivdat>20210224214833Z</plasectrxActivdat>
        <plasectrxIssuedat>20210224214833Z</plasectrxIssuedat>
        <plasectrxHasCamera>0</plasectrxHasCamera>
        <plasectrxHasNotes>0</plasectrxHasNotes>
        <plasectrxHasSoftTriggerSet>0</plasectrxHasSoftTriggerSet>
        <plasectrxShowVideo>0</plasectrxShowVideo>
        <plasectrxSeqno>0</plasectrxSeqno>
</EVENT>
```

Appendix C. Marketing

Appendix C.1 Case Study

A series of case studies for Avigilon can be found here

[ToDo] – Add Case Study or link to Case Studies…

Appendix C.2 Keyword

XML, Avigilon ACM, Avigilon ACM XML Server, XML-TCP

Appendix D. Glossary of terms

- **XML** – Extensible Markup Language
- **TCP** – Transmission Control Protocol
- **ACM** – Access Control Manager