Hewlett Packard Enterprise

HPE Security ArcSight Connectors

SmartConnector for Cisco Secure IPS SDEE

Configuration Guide

February 15, 2017

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Revision History

Date	Description
02/15/2017	End of support for versions 5.0, 5.1, 6.0, 6.1, 7.0, and 7.1 due to end of support by vendor.
11/30/2016	Updated installation procedure for setting preferred IP address mode.
09/30/2014	Added support for Secure IPS 7.2 and 7.3.
03/31/2014	Added Device Custom String 1 mapping to Alerts mappings table. Updated Alert Log, Error Log, and Status Log mappings.
09/30/2013	Updated parameters screen captures and mappings.
09/28/2012	Added support for Secure IPS 7.1.
06/30/2012	Updated procedure for obtaining sensor certificate.
05/15/2012	Added new installation procedure.
06/30/2011	Added information for how to enable xQuery parsing and how to change XML replace characters in connector processing.
02/15/2011	Added support for xQuery technology to improve the robustness and maintainability of the connector.
11/15/2010	Added IPv6 mappings for evAlert and evStatus events.

Contents

SmartConnector for Cisco Secure IPS SDEE

This guide provides information for installing the SmartConnector for Cisco Secure IPS SDEE and configuring the device for event collection. Cisco IOS IPS Sensor versions 7.2 and 7.3 are supported.

Product Overview

Cisco IPS Sensors are network security appliances that detect unauthorized activity over the network, analyzing traffic in real time, letting users quickly respond to security breaches. When unauthorized activity is detected, the sensors can send alarms providing details of the activity and can control other systems, such as routers, to terminate the unauthorized session or sessions. Sensor installation requires seven simple addressing parameters and no special training. When the sensor is installed, it immediately begins monitoring as a promiscuous device by default.

This SmartConnector also can receive events from multiple Cisco IPS sensors through direct connection.

Configure the Sensor for SmartConnector Event Collection

The SmartConnector Installation and Configuration wizard will ask you for a set of parameters during the installation process. Using these parameters, the wizard configures the sensor to send event information to the ArcSight SmartConnector.

> The following steps presume you have configured the IPS sensor to let the SmartConnector communicate with it. If you have not done so, see your vendor's documentation for information about the configuration of access lists or allowed hosts.

The SmartConnector can validate the Cisco IPS Sensor's authentication certificate. To operate in this configuration, first get the certificate from Cisco IPS Sensor and import it into the SmartConnector Java Runtime Environment before running the SmartConnector for Cisco IPS SDEE.

Obtain the Authentication Certificate from the Sensor

The following procedure is required only if you want the SmartConnector to validate the Cisco IPS sensor's authentication certificate.

> If you want the connector to validate the certificate, remember to select 'true' for the SmartConnector's Certificate Validation parameter during connector installation.

This section provides instructions for Microsoft Windows and Red Hat Linux for retrieving, importing, and verifying the authentication certificate. You will download and save the certificate file to a temporary location. During the SmartConnector installation process, you will be asked to copy this file to a SmartConnector subfolder.

On Windows

Microsoft Internet Explorer 7.0 or later is required.

1 From Internet Explorer, enter the IP address of the IPS sensor (for example `https://10l0.111.16`).

2 When the Certificate Error is displayed (as shown highlighted in pink below), click the arrow by **Certificate Error** and the following is displayed:
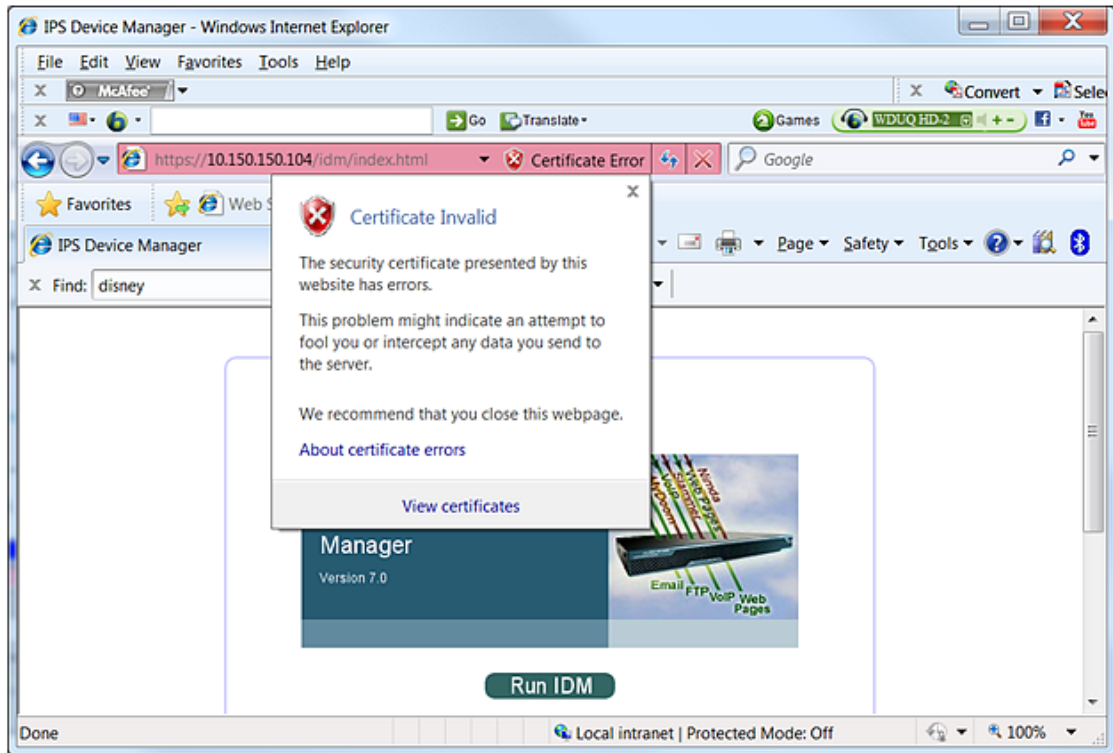
3 Click **View certificates**. When the Certificate Information is displayed, click **Install Certificate…**.
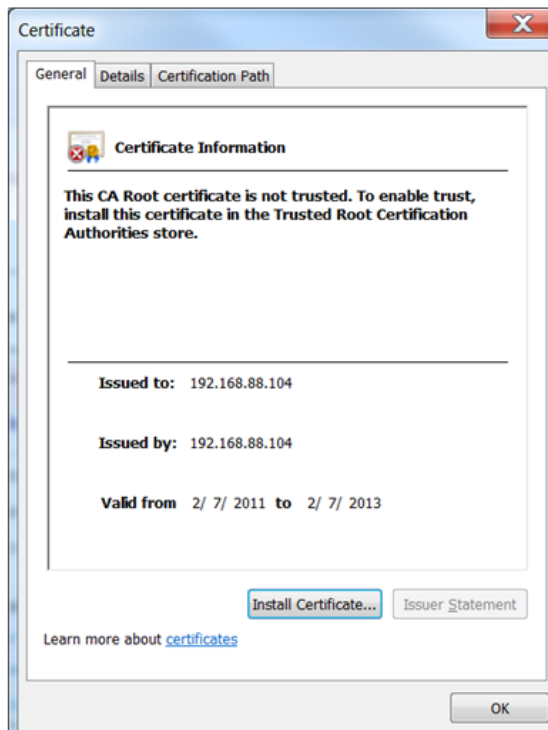
4   Click the **Details** tab and click **Copy to File…** The Certificate Export Wizard is displayed.
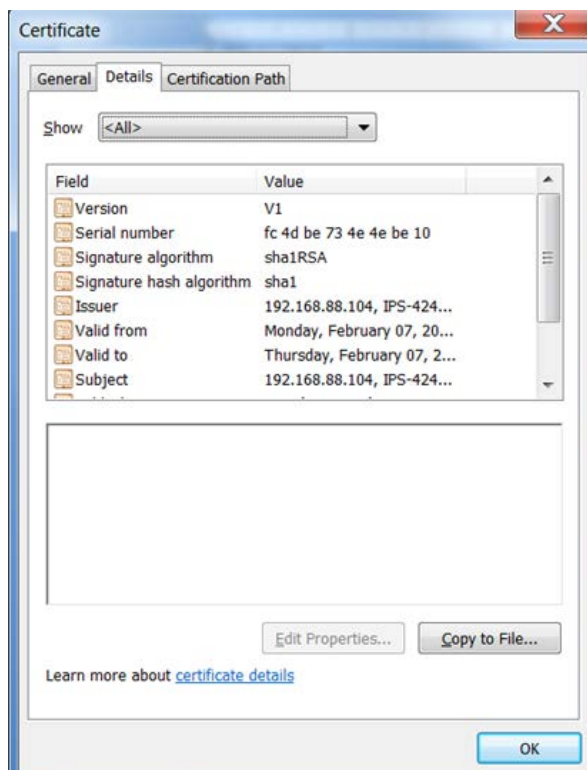
5   Click **Next**, then, on the next window, select **Base-64 encode X.509 (.CER)**, which is used by the SmartConnector for Cisco IPS SDEE.

6   Click **Next**; on the next window enter a temporary location and a file name (for example, `ips40_sensor.cer`) for the new certificate. You will be asked to copy this file to a SmartConnector subfolder during the installation process.

7   Click **Next**, then, on the window displayed, click **Finish** to exit the wizard.

On RedHat Linux

1   To obtain the certificate on RedHat Linux, enter the following:

```
/usr/bin/openssl s_client –connect 10.0.111.16:443 > openssl_output.txt
```

2   Edit **openssl_output.txt** using your preferred editor. Copy the Server certificate:

```
-----BEGIN CERTIFICATE-----
MIICHjCCAYcCCOmrUSHwwM2YMA0GCSqGSIb3DQEBBQUAMFQxCzAJBgNVBAYTAlVT
MRwwGgYDVQQKExNDaXNjbyBTeXN0ZW1zLCBJbmMuMREwDwYDVQQLEwhJRFMtNDIx
MDEUMBIGA1UEAxMLMTAuMC4xMDAuMTgwHhcNMDYwMTIzMTk0OTA5WhcNMDgwMTI0
MTk0OTA5WjBUMQswCQYDVQQGEwJVUzEcMBoGA1UEChMTQ2lzY28gU3lzdGVtcywg
SW5jLjERMA8GA1UECxMISURTLTQyMTAxFDASBgNVBAMTCzEwLjAuMTAwLjE4MIGf
MA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQCvNOLNyUcnMaVa8DHBkL5TeR2XO+Ja
zVLk44D4x1epwY+IqyZnAQs2FS+nWCvQ+u7Xai/wC7Vs95UmtuEMSMGL3aRRfavY
```

```
lCuxIt0hrI/PPScxMhWGPv05R1YsFeQ//XZTrcq0q/yoi0bzQM/bx0ayReM/dS0P
5EoIPJxGrjx8CQIDAQABMA0GCSqGSIb3DQEBBQUAA4GBABdspBcM5+5ve5Ie0Q+f
NIm/CvFQc/e2KMfRuGouw5zwH1hAeHBeT7zGq0uklCtGu9t/EwYtYkbJV/HemrJo
TeOHuyH4FUSlN7Kdvg1IwrxbtT7FEQicwe/zcq86h7IehZRp4IbdXTE6+elr6kw0
LCe+YZMwTTzfheki6UEz/eVg
-----END CERTIFICATE-----
```

3 Copy this selection into a new file (for example, `ips40_sensor.cer`) and save in a temporary location. You will import this certificate to the connector Local Java Runtime Environment during the SmartConnector installation and configuration process.

Install the SmartConnector

The following sections provide instructions for installing and configuring your selected SmartConnector.

Prepare to Install Connector

Before you install any SmartConnectors, make sure that the ArcSight products with which the connectors will communicate have already been installed correctly (such as ArcSight ESM or ArcSight Logger).

For complete product information, read the *Administrator's Guide* as well as the *Installation and Configuration* guide for your ArcSight product before installing a new SmartConnector. If you are adding a connector to the ArcSight Management Center, see the *ArcSight Management Center Administrator's Guide* for instructions, and start the installation procedure at "Set Global Parameters (optional)" or "Select Connector and Add Parameter Information."

Before installing the SmartConnector, be sure the following are available:

■ Local access to the machine where the SmartConnector is to be installed

■ Administrator passwords

Install Core Software

Unless specified otherwise at the beginning of this guide, this SmartConnector can be installed on all ArcSight supported platforms; for the complete list, see the *SmartConnector Product and Platform Support* document, available from the HPE SSO and Protect 724 sites.

1 Download the SmartConnector executable for your operating system from the HPE SSO site.

**2** Start the SmartConnector installation and configuration wizard by running the executable.

Follow the wizard through the following folder selection tasks and installation of the core connector software:

Introduction
Choose Install Folder
Choose Shortcut Folder
Pre-Installation Summary
Installing...

3 When the installation of SmartConnector core component software is finished, the following window is displayed:
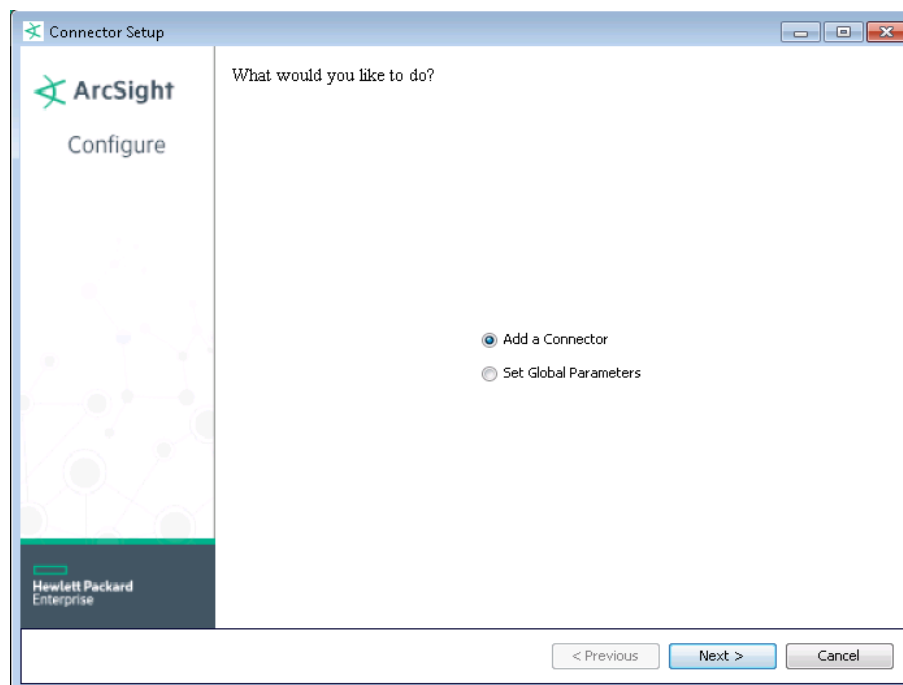
The following steps are for importing the sensor certificate to the connector's Local Java Run Environment; this example is for Windows systems. If you are making use of Linux or Unix, change the command to reflect your $ARCSIGHT_HOME and change \ to /.

A Click **Cancel** to exit the configuration wizard.

B From `$ARCSIGHT_HOME\current\user\agent`, create a `ciscoids` subdirectory; copy the certificate file you obtained during sensor configuration (for example, `ips40_sensor.cer`) and save it into this subdirectory.

C From `$ARCSIGHT_HOME\current\bin`, execute the **keytool** application to import the `ips40_sensor.cer` certificate obtained by following the steps in the previous section. Enter this **keytool** command on a single line.

```
arcsight agent keytool -import -alias ips40_10_0_111_16 -file
<\user\agent\ciscoids\ips40_sensor.cer> -store clientcerts
```

where `<\user\agent\ciscoids\ips40_sensor.cer>` is the path to and name of the sensor certificate file.

D Following the prompts, answer **yes** for the prompt **Trust this certificate?**.

```
Owner: CN=10.0.111.16, OU=IDS-IDS-4210, O="Cisco Systems, Inc.", C=US
Issuer: CN=10.0.111.16, OU=IDS-IDS-4210, o="Cisco Systems, Inc.", C=US
Serial number: 26fb5b6a69e0bca7
Valid from: Tue May 06 17:26:31 PDT 2003 until: Fri May 06
17:26:31 PDT 2005
```

```
Certificate fingerprints:
MD5: 14:BB:6A:6E:92:15:4E:7A:0A:40:EE:04:23:33:AE:EF
SHAI:
99:94:7E:30:43:53:A6:2A:DA:76:12:21:6A:C5:F3:09:E5:68:A8:36
Trust this certificate? [no]: yes
Certificate was added to keystore
```

E Verify the imported certificate by entering the following command from `$ARCSIGHT_HOME\current\bin`:

```
arcsight agent keytool -list -store clientcerts
```

The new certificate (alias=ids40_10_0_111_16) is displayed in the list:

```
Keystore type: jks
keystore provider:SUN
Your keystore contains 12 entries:
ids40_10_0_111_16, Fri May 09 18:37:11 PDT 2003,
trustedCertEntry,
Certificate fingerprint (MDS):
14:BB:6A:6E:92:15:4E:7A:0A:40:EE:04:23:33:AE:EF
```

F From `$ARCSIGHT_HOME/current/bin`, double-click `runagentsetup` to return to the SmartConnector Configuration Wizard.

Set Global Parameters (optional)

If you choose to perform any of the operations shown in the following table, do so before adding your connector. You can set the following parameters:

Global Parameter	Setting
Set FIPS mode	Set to 'Enable' to enable FIPS compliant mode. To enable FIPS Suite B Mode, see the SmartConnector User Guide under "Modifying Connector Parameters" for instructions. Initially, this value is set to 'Disable'.
Set Remote Management	Set to 'Enable' to enable remote management from ArcSight Management Center. When queried by the remote management device, the values you specify here for enabling remote management and the port number will be used. Initially, this value is set to 'Disable'.
Remote management listener port	The remote management device will listen to the port specified in this field. The default port number is 9001.
Preferred IP Version	If both IPv4 and IPv6 IP addresses are available for the local host (the machine on which the connector is installed), you can choose which version is preferred. Otherwise, you will see only one selection. When both values are present, the initial setting is IPv4.

After making your selections, click **Next**. A summary screen is displayed. Review the summary of your selections and click **Next**. Click **Continue** to return to the "Add a Connector" window. Continue the installation procedure with "Select Connector and Add Parameter Information."

Select Connector and Add Parameter Information

1   Select **Add a Connector** and click **Next**. If applicable, you can enable FIPS mode and enable remote management later in the wizard after SmartConnector configuration.

2   Select **Cisco Secure IPS SDEE** and click **Next**.

3   Enter the required SmartConnector parameters to configure the SmartConnector, then click **Next**.
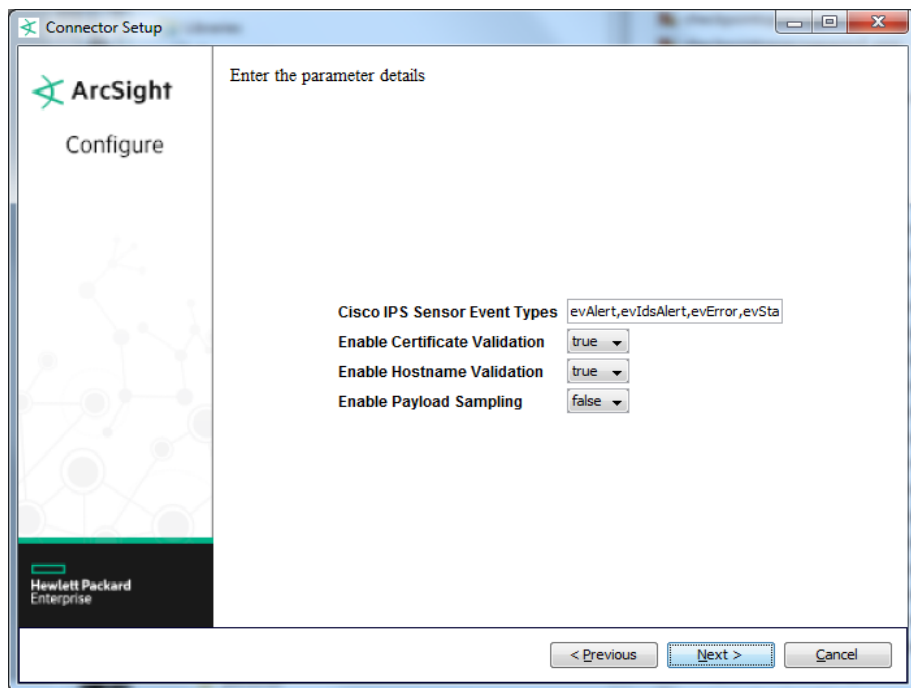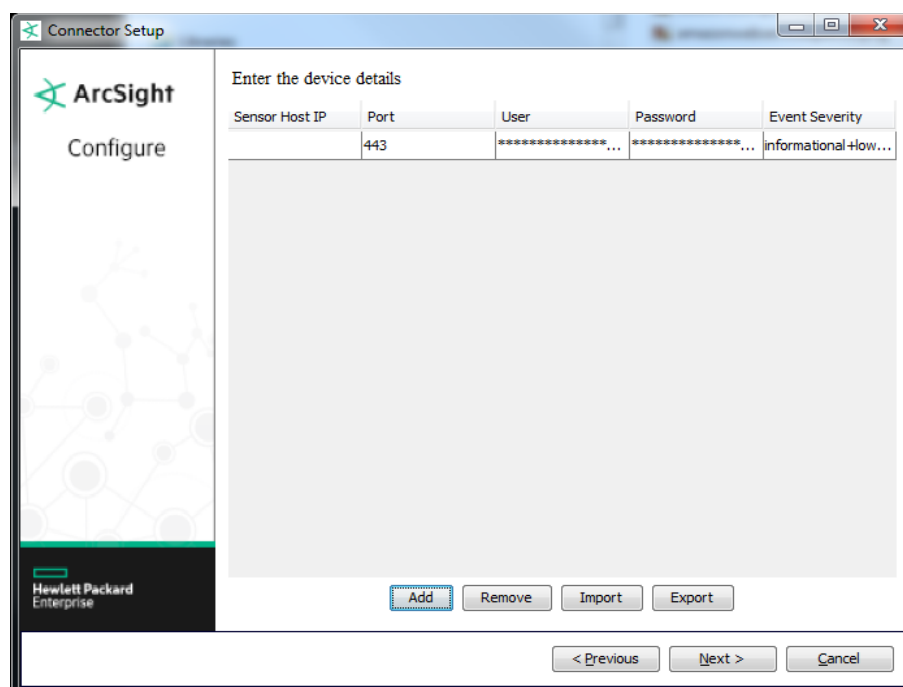
You can click the 'Export' button to export the host name data you have entered into the able into a CSV file; you can click the 'Import' button to select a CSV file to import into the table rather than add the data manually. See the "SmartConnector User's Guide" for more information.

Parameter	Description
Cisco IPS Sensor Event Types	Specify event types to retrieve. evAlert, evIdsAlert, evError, and evStatus types are filled in by default. If your appliance uses SDEE, select evError, evStatus, and evIdsAlert, or any subset of the three event types. If your appliance uses CIDEE (a Cisco extension to SDEE), select evError, evStatus, and evAlert, or any subset of those three event types.
Enable Certificate Validation	Specify whether the SmartConnector is to to enable the validation of the sensor's certificate for the client. Certificate validation is enabled (true) by default.
Enable Hostname Validation	Specify whether the SmartConnector is to enable the validation of the sensor's hostname. Hostname validation is enabled (true) by default.
Enable Payload Sampling	Set this option to true to enable payload sampling, thus making payload available for the device for selected events through the Console. Because event payloads are relatively large, ArcSight does not store them by default. Click Next and enter values for the following parameters.
Sensor Host IP	Enter the Cisco IPS Sensor's IP Address.
Port	Enter the Cisco IPS Port.
User	Enter the Cisco IPS user name.
Password	Enter the password for the Cisco IPS user.
Event Severity	Specify the event severity to retrieve (by default, the severity is set to Informational plus low, medium, and high).

Select a Destination

1   The next window asks for the destination type; select a destination and click **Next**. For information about the destinations listed, see the *ArcSight SmartConnector User Guide*.

2   Enter values for the destination. For the ArcSight Manager destination, the values you enter for **User** and **Password** should be the same ArcSight user name and password you created during the ArcSight Manager installation. Click **Next**.

3   Enter a name for the SmartConnector and provide other information identifying the connector's use in your environment. Click **Next**. The connector starts the registration process.

4   If you have selected ArcSight Manager as the destination, the certificate import window for the ArcSight Manager is displayed. Select **Import the certificate to the connector from destination** and click **Next**. (If you select **Do not import the certificate to connector from destination**, the connector installation will end.) The certificate is imported and the **Add connector Summary** window is displayed.

Complete Installation and Configuration

1   Review the **Add Connector Summary** and click **Next**. If the summary is incorrect, click **Previous** to make changes.

2   The wizard now prompts you to choose whether you want to run the SmartConnector as a stand-alone process or as a service. If you choose to run the connector as a stand-alone process, select **Leave as a standalone application**, click **Next**, and continue with step 5.

3   If you chose to run the connector as a service, with **Install as a service** selected, click **Next**. The wizard prompts you to define service parameters. Enter values for **Service Internal Name** and **Service Display Name** and select **Yes** or **No** for **Start the service automatically**. The **Install Service Summary** window is displayed when you click **Next**.

4   Click **Next** on the summary window.

5   To complete the installation, choose **Exit** and Click **Next**.

For instructions about upgrading the connector or modifying parameters, see the *SmartConnector User Guide*.

Access Advanced Parameters

After SmartConnector installation, you can change the connector's advanced parameters by editing the `agent.properties` file found at `$ARCSIGHT_HOME\current\user\agent`.

Enable XQuery Processing

To enable xquery processing:

1   Access advanced parameters as described above.

2   Locate the `usexquery` parameter and change the default value of `false` to `true`.

3   Save the file and restart the connector for your changes to take effect.

Change XML Replacing Characters

To use '[' and ']' in place of '<' and '>' in connnector processing:

1 Access advanced parameters as described above.

2 Locate the `changexmlreplacingcharacters` parameter and change the default value of `false` to `true`.

3 Save the file and restart the connector for your changes to take effect.

Run the SmartConnector

SmartConnectors can be installed and run in stand-alone mode, on Windows platforms as a Windows service, or on UNIX platforms as a UNIX daemon, depending upon the platform supported. On Windows platforms, SmartConnectors also can be run using shortcuts and optional Start menu entries.

If the connector is installed in stand-alone mode, it must be started manually and is not automatically active when a host is restarted. If installed as a service or daemon, the connector runs automatically when the host is restarted. For information about connectors running as services or daemons, see the *ArcSight SmartConnector User Guide*.

To run all SmartConnectors installed in stand-alone mode on a particular host, open a command window, go to `$ARCSIGHT_HOME\current\bin` and run: `arcsight connectors`

To view the SmartConnector log, read the file `$ARCSIGHT_HOME\current\logs\agent.log`; to stop all SmartConnectors, enter `Ctrl+C` in the command window.

Device Event Mapping to ArcSight Fields

The following section lists the mappings of ArcSight data fields to the device's specific event definitions. See the *ArcSight Console User's Guide* for more information about the ArcSight data fields.

Alert Payload Mappings

ArcSight ESM Field	Device-Specific Field
Device Custom String 5	triggerPacket
Device Custom String 6	eventId
Device Event Class ID	sigId

Alert Log Mappings

ArcSight ESM Field	Device-Specific Field
Agent (Connector) Severity	High = high; Medium = medium; Low = informational, low
Base Event Count	baseCount
Destination Address	victimAddr
Destination Port	victimPort
Device Action	One of ('Denied', 'Permitted')
Device Custom IPv6 Address 2	attackerIPv6Addr (Source IPv6 Address)
Device Custom IPv6 Address 3	victimIPv6Addr (Destination IPv6 Address)
Device Custom Number 1	Risk Rating Value
Device Custom Number 2	interfaceGroup
Device Custom Number 3	vlan

ArcSight ESM Field	Device-Specific Field
Device Custom String 1	Signature version
Device Custom String 2	subSigId
Device Custom String 3	fromAttacker
Device Custom String 4	fromVictim
Device Custom String 5	One of(signature or marsCategory)
Device Custom String 6	payloadSample
Device Event Category	'evAlert'
Device Event Class ID	sigId
Device Host Name	hostId
Device Inbound Interface	interface
Device Payload ID	ipLogId
Device Process Name	appName
Device Product	'Cisco Intrusion Prevention System'
Device Receipt Time	time
Device Severity	severity
Device Vendor	'CISCO'
External ID	eventId
Message	alertDetails
Name	sigName
Reason	globalCorrelationRiskDelta
Request Context	interfaceContext
Source Address	attackerAddr
Source Port	attackerPort
Transport Protocol	protocol
Type	'AGGREGATED'

Error Log Mappings

ArcSight ESM Field	Device-Specific Field
Agent (Connector) Severity	High = fatal, Medium = error, Low = warning
Device Custom String 1	HostId
Device Event Category	'evError'
Device Host Name	hostId
Device Process Name	appName
Device Product	'Cisco Intrusion Prevention System'
Device Receipt Time	time
Device Severity	severity
Device Vendor	'CISCO'
External ID	eventId
Message	errorMessage
Name	errorName

Status Log Mappings

ArcSight ESM Field	Device-Specific Field
Agent (Connector) Severity	High = false; Low = true, Unknown
Bytes In	One of (ipLogBytesCaptured, ipLogAddedIpLogBytesCaptured, ipLogCompletedIpLogBytesCaptured, ipLogStartedIpLogBytesCaptured)
Destination Address	One of (ipLogAddedIpLogAddr, ipLogCompletedIpLogAddr, ipLogStartedIpLogAddr)
Destination Host Name	One of (shunEntryAddedInfoDestAddr, shunEntryRemovedInfoDestAddr)
Destination Port	One of (shunEntryAddedInfoDestPort, shunEntryRemovedInfoDestPort)
Destination Process Name	One of (appName, executionStatusChangeApplication)
Destination User Name	One of (clockChangedUser,shutdownUser)
Device Action	loginActionAttributeAction
Device Custom IPv6 Address 3	One of (ipLogStartedIPv6Addr, ipLogAddedIPv6Addr) (Destination IPv6 Address)
Device Custom String 1	HostId
Device Event Category	'evStatus'
Device Event Class ID	One of ((descriptionParentNode, descriptionParentNode, resultParentNode)
Device Host Name	hostId
Device Outbound Interface	One of (netInterfaceAddedInterface, netInterfaceRemovedInterface)
Device Process Name	appName
Device Product	'Cisco Intrusion Prevention System'
Device Receipt Time	time
Device Severity	One of (cmdStatus, 'Unknown')
Device Vendor	'CISCO'
Event Outcome	shutdownSuccessful
External ID	eventId
Message	One of (syslogMessage,cmdDescription, applicationStoppedReason, executionStatusChangeDescription, globalCorrUpdateCompletedDescript, globalCorrUpdateStartedDescript, rebootDescription,softwareUpgradeCompletedDescription, softwareUpgradeInitiatedDescription, deniedAttckLstClrByUsrDescript, controlTransRespDataCompWarning, statusDescription,shutdownDescription)
Name	One of (statusDescription, descriptionParentNode, resultParentNode)
Source Host Name	One of (cmdHostId, loginActionUserAddress, shunEntryAddedInfoSourceAddr, shunEntryRemovedInfoSourceAddr, denyAttackerCompletedAddress, denyAttackerStartedAddress)
Source Port	One of (loginActionPort, shunEntryAddedInfoSourcePort, shunEntryRemovedInfoSourcePort)
Source Process Name	cmdAppName
Source User ID	One of (loginActionUserName, cmdUser, rebootUser)
Start Time	One of (ipLogBeginTime, ipLogCompletedIpLogBeginTime, ipLogStartedIpLogBeginTime)

Payload Support

Payload support is available with this SmartConnector. *Payload* refers to the information carried in the body of an event's network packet, as distinct from the packet's header data. While security event

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detection and analysis usually centers on header data, packet payload may also be forensically significant.

You can retrieve, preserve, view, or discard payloads using the ArcSight ESM Console. Because event payloads are relatively large, ArcSight does not store them by default. Instead, you can request payloads from devices for selected events through the Console. If the payload is still held on the device, the ArcSight SmartConnector retrieves it and sends it to the Console.

Payloads are downloaded and stored only on demand; you must configure ESM to log these packets. By default, 256 bytes of payload will be retrieved.

Whether an event has a payload to store is visible in event grids. Unless you specifically request to do so, only the event's "payload ID" (information required to retrieve the payload from the event source) is stored. Payload retention periods are controlled by the configuration of each source device.

The first step in handling event payloads is to be able to **locate payload-bearing events** among the general flow of events in a grid view. In an ArcSight Console Viewer panel grid view, right-click a column header and choose **Add Column < Device > Payload ID**. Look for events showing a Payload ID in that column.
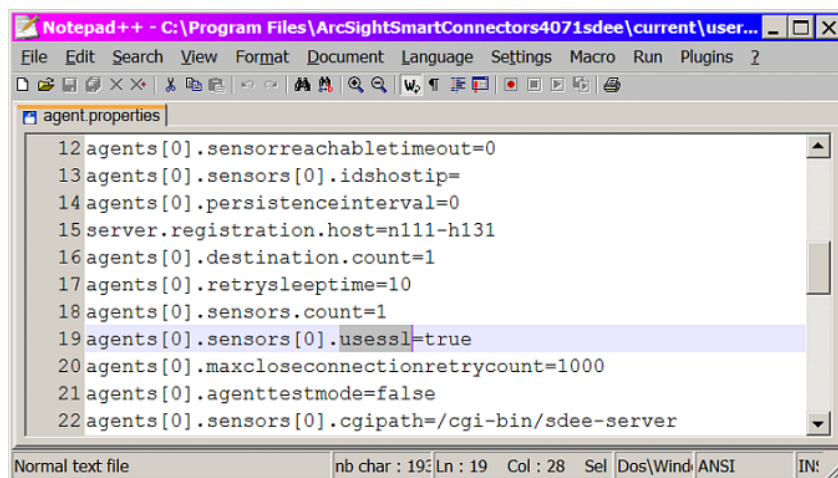
Turn Off SSL for Debugging or Troubleshooting

An advanced option named `usessl` has been added to turn off SSL for debugging/troubleshooting purposes. The value of this option is `true` by default.   To change the value of this parameter:

1   After connector installation, locate the `$ARCSIGHT_HOME\current\user\agent` directory.
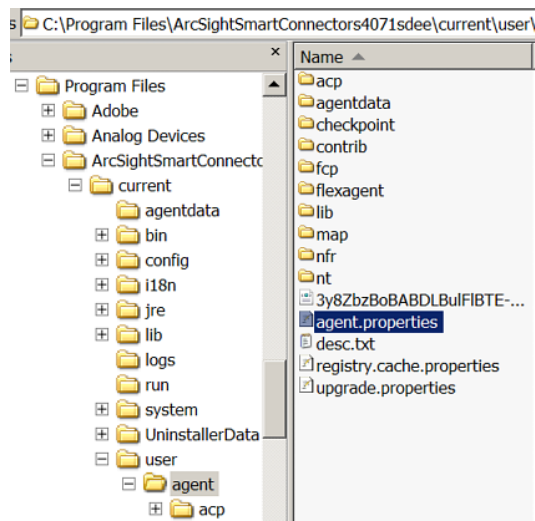
2   Open `agent.properties` to edit.

3   Locate the `usessl` parameter and set its value to `false`.

4 Save your change and exit the file.

5 Restart the connector for your changes to take effect.

Troubleshooting

How can I see the raw events received from the SDEE device?

Set the value of the `traceallxml` parameter to `true` in `$ARCSIGHT_HOME/current/user/agent/agent.properties` and restart the connector. From the console, enable tracing for the SDEE sensor in which you are interested and retrieve the trace.

Why does the connectotr5s sometimes fail to collect the Cisco IDS log?

Try selecting `Attacker and victim addresses and ports` in the Meta Key section of the Cisco IDS Edit Signature panel and apply. If you select only `Attacker address` in this section, the connector sometimes fails to collect the log. If you set 'Attacker and victim addresses and ports' in Meta Key, target address and attacker/target port information is added in the original log. If `addr` and `port` have no value, the value `'0'` (port) or `'0.0.0.0'` (address) are added in the original log.