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Configuration Guide for Cisco ISE Syslog SmartConnector

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Document Changes

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Configuration Guide for Cisco ISE Syslog SmartConnector

This guide provides information for installing the SmartConnector for Cisco Identity Services Engine (ISE) Syslog and configuring the ISE device for syslog event collection.

Intended Audience

This guide provides information for IT administrators who are responsible for managing the ArcSight software and its environment.

Additional Documentation

The ArcSight SmartConnector documentation library includes the following resources:

- [Technical Requirements Guide for SmartConnector](#), which provides information about operating system, appliance, browser, and other support details for SmartConnector.
- [Installation and User Guide for SmartConnectors](#), which provides detailed information about installing SmartConnectors.
- [Configuration Guides for ArcSight SmartConnectors](#), which provides information about configuring SmartConnectors to collect events from different sources.
- [Configuration Guide for SmartConnector Load Balancer](#), which provides detailed information about installing Load Balancer.

For the most recent version of this guide and other ArcSight SmartConnector documentation resources, visit the [documentation site for ArcSight SmartConnectors 8.4](#).

Contact Information

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Product Overview

Cisco Identity Services Engine (ISE) is the next generation of Cisco ACS. ACS Appliance 1121 is upgradable to ISE. Cisco ISE is an identity and access control policy platform that enables enterprises to enforce compliance, enhance infrastructure security, and streamline their service operations. The architecture of Cisco ISE allows enterprises to gather real-time contextual information from networks, users, and devices. Administrators can use that information to make proactive governance decisions by tying identity to various network elements including access switches, wireless LAN controllers (WLCs), virtual private network (VPN) gateways, and data center switches. Cisco ISE is a key component of the Cisco Security Group Access Solution.

Configuration

Configuring the Device for Event Collection

To collect logs externally, you must configure external syslog servers, called targets.

To configure a Cisco ISE device to send syslog events to a syslog server:

1. From the ISE Administration Interface, select **Administration > System > Logging > Remote Logging Targets**. Click **Add** in the Remote Logging Targets page.
2. Configure the following fields:
 - **Name:** Enter the name of the new target.
 - **Target Type:** By default it is set to Syslog. The value of this field cannot be changed.
 - **Description:** Enter a brief description of the new target.
 - **IP Address:** Enter the IP address of the destination machine where you want to store the logs.
 - **Port:** Enter the port number of the destination machine.
 - **Facility Code:** Choose the syslog facility code to be used for logging. Valid options are Local0 through Local7.
 - **Maximum Length:** Enter the maximum length of the remote log target messages. Valid options are from 200 to 1024 bytes.
 - **Buffer Message When Server Down:** Set the buffer size for each target. By default, it is set to 100 MB.
 - **Buffer Size (MB):** Set the buffer size for each target. By default, it is set to 100 MB.
 - **Reconnect Timeout (Sec):** Give in seconds how long the TCP and secure syslogs will be kept before being discarded, when the server is down.
 - **Select CA Certificate:** Select a client certificate.
 - **Ignore Server Certificate Validation:** Select if you want ISE to ignore server certificate authentication and accept any syslog server.
3. Click **Save**.
4. Go to the **Remote Logging Targets** page and verify the creation of the new target.



After you have created the syslog storage location on Remote Logging Target page, you should map the storage location to the required logging categories to receive the logs. You must add a syslog category to the logging categories at **Administration > System > Logging > Logging Categories** before setting remote target. Remote target must be set before configuring remote logging. Remember to set all Cisco ISE nodes to the Coordinated Universal Time (UTC) timezone to ensure reports and logs from the various nodes in your deployment are always in sync with regard to the timestamps.

Enabling Time-Stamps on Log Messages

By default, log messages are not time-stamped. To enable time-stamping of log messages and debug messages, use the following commands in global configuration mode:

```
<Endpoint device>(Config)#service timestamps log datetime localtime  
<Endpoint device>(Config)#service timestamps debug datetime localtime
```

Enabling System Message Logging

System message logging is enabled by default. It must be enabled to send messages to any destination other than the console. To reenable message logging after it has been disabled, use the following command in global configuration mode:

```
<Endpoint device>(config)#logging on
```

Limiting the Error Message Severity Level

You can limit the number of messages by specifying the severity level of the error message. To do so, use the following command in global configuration mode:

```
<Endpoint device>(config)#logging trap Level
```

Keyword	Level	Description	Syslog Def
emergencies	0	System unusable	LOG_EMERG
alerts	1	Immediate action needed	LOG_ALERT
critical	2	Critical conditions	LOG_CRIT
errors	3	Error conditions	LOG_ERR
warnings	4	Warning conditions	LOG_WARNING

Keyword	Level	Description	Syslog Def
notifications	5	Normal but significant condition	LOG_NOTICE
informational	6	Informational messages only	LOG_INFO
debugging	7	Debugging messages	LOG_DEBUG

Defining the UNIX System Logging Facility

You can log messages produced by UNIX system utilities. To do this, enable this type of logging and define the UNIX system facility from which you want to log messages. Consult the operator manual for your UNIX operating system for more information about these UNIX system facilities.

To define UNIX system facility message logging, use the following command in global configuration mode:

```
<Endpoint device>(config)#logging facility facility-type
```

Configuring for the Syslog SmartConnectors

The syslog SmartConnectors use a sub-connector architecture that lets them receive and process syslog events from multiple devices. There is a unique regular expression that identifies the device. For example, the same SmartConnector can process events from a Cisco Router and a NetScreen Firewall simultaneously. The SmartConnector inspects all incoming messages and automatically detects the type of device that originated the message.

You can install the syslog SmartConnector as a syslog daemon, pipe, or file connector. You can use the Syslog Daemon, Syslog Daemon NG, or Syslog File connector types depending on your requirement. The Syslog File type SmartConnectors also support Syslog Pipe.

Syslog Daemon SmartConnector

The Syslog Daemon SmartConnector is a syslogd-compatible daemon designed to work in operating systems that have no syslog daemon in their default configuration, such as Microsoft Windows. The SmartConnector for Syslog Daemon implements a UDP receiver on port 514 by default, or can be configured on another port to receive syslog events. You can also configure to use the TCP protocol.

To use the SmartConnector for Syslog Daemon, add the following statement in the *rsyslog.conf* file:

```
*.* @@(remote/local-host-IP):514
```

Example: local1.warning @@10.0.0.1:514

- To read all Syslog events, use *.*
- To filter specific events, replace regex with the specific event name.
- For example: *.* @@(remote/local-host-IP):514 and local1.warning @@10.0.0.1:514.
- To send events over a TCP connection, use @@ and to send events over an UDP connection, use @.

If you are running SmartConnector for Syslog Daemon on the same machine as the server, you must provide the IP address of the local host. If you want to forward events to other machines, you must provide the IP address of the same.

Messages longer than 1024 bytes might be split into multiple messages on syslog daemon. No such restriction exists on syslog file or pipe.

Syslog Pipe and File SmartConnectors

When a syslog daemon is already in place and configured to receive syslog messages, an extra line in the syslog configuration file *rsyslog.conf* can be added to write the events to either a file or a system pipe and the ArcSight SmartConnector can be configured to read the events from it. In this scenario, the ArcSight SmartConnector runs on the same machine as the syslog daemon. The additional configurations for the ArcSight syslog file or syslog pipe SmartConnectors in the system where all Syslog Daemon SmartConnector configurations are done.

The Syslog Pipe SmartConnector is designed to work with an existing syslog daemon. This SmartConnector is especially useful when storage is a factor. In this case, syslogd is configured to write to a named pipe, and the Syslog Pipe SmartConnector reads from it to receive events.

The Syslog File SmartConnector is similar to the Pipe SmartConnector. However, this SmartConnector monitors events written to a syslog file such as messages.log rather than to a system pipe.

Using the SmartConnector for Syslog Pipe or File

This section provides information to set up your existing syslog infrastructure to send events to the ArcSight Syslog Pipe or File SmartConnector.

The standard UNIX implementation of a syslog daemon reads the configuration parameters from the */etc/rsyslog.conf* file, which contains specific details about which events to write to files, write to pipes, or send to another host.

For Syslog Pipe:

1. Execute the following command to create a pipe:

```
mkfifo /var/tmp/syspipe
```

2. Add one of the following lines depending on your OS to the */etc/rsyslog.conf* file:

```
*.debug /var/tmp/syspipe
```

or

```
*.debug | /var/tmp/syspipe
```

3. Restart the syslog daemon in one of the following methods:

Enter the following commands:

```
/etc/init.d/syslogd stop  
/etc/init.d/syslogd start
```

or

Execute the following command to send a configuration restart signal:

On RedHat Linux:

```
service syslog restart
```

On Solaris:

```
kill -HUP `cat /var/run/syslog.pid`
```

For Syslog File:

1. Create a file or use the default file into which log messages must be written.
2. Modify the /etc/rsyslog.conf file

The syslog daemon is forced to reload the configuration and start writing to the pipe.

3. Restart the syslog daemon in one of the following methods:
 - a. Restart the syslog daemon in one of the following methods:
Enter the following commands:

```
/etc/init.d/syslogd stop  
/etc/init.d/syslogd start
```

or

Execute the following command to send a configuration restart signal:

On RedHat Linux:

```
service syslog restart
```

On Solaris:

```
kill -HUP `cat /var/run/syslog.pid`
```

Installing the SmartConnector

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

Preparing to Install Connector

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

For complete product information, refer to the *Administrator's Guide to ArcSight Platform*, available on [ArcSight Documentation](#).

If you are adding a connector to the ArcSight Management Center, see the *ArcSight Management Center Administrator's Guide* available on [ArcSight Documentation](#) for instructions.

Before installing the SmartConnector, make sure that the following are available:

- Local access to the machine where the SmartConnector is to be installed
- Administrator passwords

Installing and Configuring the SmartConnector

Unless specified otherwise at the beginning of this guide, this SmartConnector can be installed on all ArcSight supported platforms.

1. Start the installation wizard.
2. Follow the instructions in the wizard to install the core software.
3. Specify the relevant [Global Parameters](#), when prompted.
4. Do one of the following depending on your requirement:

- Select **Syslog Daemon** from the **Type** drop-down:
 - a. Click **Next** and specify the following parameters:

Parameter	Description
Network port	The SmartConnector for Syslog Daemon listens for syslog events from this port.
IP Address	The SmartConnector for Syslog Daemon listens for syslog events only from this IP address, apart from the default (ALL) to bind to all available IP addresses.
Protocol	Specify whether to read files in batch mode or real-time mode. In batch mode, all files are read from the beginning.
Forwarder	This option applies to Batch Mode only. Specify None , Rename , or Delete as the action to be performed to the file when the connector finishes reading and reaches end of file . For the real-time mode, retain the default value None .

- b. Click **Next**.
- Select **Syslog File** from the **Type** drop-down:

a. Click **Next**, and specify the following parameters:

Parameter	Description
Pipe Absolute Path Name	Specify an absolute path to the pipe, or accept the default value: <code>/var/tmp/syspipe</code> .
File Absolute Path Name	<p>Specify the full path name for the file from which this connector will read events. The following are default values:</p> <ul style="list-style-type: none"> • Solaris: <code>\var\adm\messages</code> • Linux: <code>\var\log\messages</code> <p>You can use a wildcard pattern in the file name.</p> <p>In the real-time mode, rotation can occur only if the file is over-written or removed from the folder. The real-time processing mode assumes the following external rotation:</p> <ul style="list-style-type: none"> • Date format log rotation: The device creates a new log at a specified time in the with the naming convention <code>filename.timestamp.log</code>. The connector detects the new log and terminates the reader thread to the previous log after the processing is complete. The connector then creates a new reader thread to the new <code>filename.timestamp.log</code> and begins processing that file. To enable this log rotation, specify timestap in <code>yyyy-MM-dd</code> date format. For example, <code>filename.yyyy-MM-dd.log</code> • Index log rotation: The device writes to indexed files in the following format: <code>filename.log.001</code>, <code>filename.log.002</code>, <code>filename.log.003</code>, and so on. At startup, the connector processes the log with highest index. When the device creates a log with a greater index, the connector terminates the reader thread to the previous log after processing completes, creates a thread to the new log, and begins processing that log. To enable this log rotation, use an index format, as shown in the following example: <code>filename '%d,1,99,true'.log</code>; Specifying <code>true</code> indicates that the index can be skipped. For example, if 5 appears before 4, processing proceeds with 5 and will not read 4. Use of <code>true</code> is optional.
Reading Events Real Time or Batch	Specify whether to read files in batch mode or real-time mode. In batch mode, all files are read from the beginning.
Action Upon Reaching EOF	This option applies to Batch Mode only. Specify None , Rename , or Delete as the action to be performed to the file when the connector finishes reading and reaches end of file . For the real-time mode, retain the default value None .
File Extension If Rename Action	This option applies to Batch Mode only. Specify the extension to be added to the file name if the action on reaching the end of file is specified as Rename . The default value is Processed , which adds a <code>.processed</code> extension.

b. Click **Next**.

5. Select a [destination and configure parameters](#).

6. Specify a name for the connector.
7. (Conditional) 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 then click **Next**. The certificate is imported and the **Add connector Summary** window is displayed.



Note: If you select Do not import the certificate to connector from destination, the connector installation will end.

8. Select whether you want to install the connector as a service or in the standalone mode.
9. Complete the installation.
10. [Run the SmartConnector](#).

For instructions about upgrading the connector or modifying parameters, see [Installation and User Guide for SmartConnector](#).

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.

Cisco ISE 2.2 Syslog Mappings to ArcSight ESM Events

ArcSight ESM Field	Device-Specific Field
Destination User Privileges	UserType
Destination Address	DestinationIPAddress
Destination MAC Address	Called-Station-ID
Destination Port	DestinationPort
Destination Service Name	SelectedAccessService
Destination Translated Address	Device IP Address
Device Custom String 3	Device Type
Device Custom String 4	AuthenticationStatus
Device Action	Response, Action
Device Custom Number 1	Configuration Version ID
Device Custom Number 2	NAS Port
Device Custom Number 3	Device Port
Device Custom String 3 Label	Device Type or __stringConstant("Device Type")
Device Custom String 4 Label	Authentication Status
Device Custom String 5	Response
Device Custom String 6	Network Device Groups
Reason	AD-Error-Details
Source Address	Framed-IP-Address
Source Host Name	NetworkDeviceName

ArcSight ESM Field	Device-Specific Field
Source MAC Address	Calling-Station-ID
Source User Name	oneOf(dot1xAuthSessionUserName,UserName,User-Name,OriginalUserName)
Source User Name	oneOf(dot1xAuthSessionUserName,UserName,User-Name,OriginalUserName)

Cisco ISE v1.3 Syslog Mappings to ArcSight ESM Events

ArcSight ESM Field	Device-Specific Field
Agent (Connector) Severity	Very High = FATAL; High = ERROR; Medium = WARN; Low = INFO, DEBUG, NOTICE, UNKNOWN
Device Event Category	msg
Device Event Class ID	One of (msgcode,tag)
Device Facility	tag
Device Host Name	address
Device Product	'Cisco ISE'
Device Receipt Time	timestamp
Device Severity	severity
Device Vendor	'Cisco'
Device Version	'1.3'
Message	Message
Name	One of (msg,tag)

Cisco ISE Syslog Mappings to ArcSight ESM Events

ArcSight ESM Field	Device-Specific Field
Agent (Connector) Severity	Very High = FATAL; High = ERROR; Medium = WARN; Low = INFO, DEBUG, NOTICE, UNKNOWN
Device Event Category	msg
Device Event Class ID	One of (msgcode,tag)
Device Facility	tag

ArcSight ESM Field	Device-Specific Field
Device Host Name	address
Device Receipt Time	One of (timestamp,timestamp_header)
Device Severity	One of (mergedevent.deviceSeverity, severity, "UNKNOWN")
Event Outcome	msg
External ID	msgid
File ID	SSID
Message	message
Name	One of (msg,tag)

Cisco ISE Key Value Event Mappings to ArcSight ESM Events

ArcSight ESM Field	Device-Specific Field
Destination MAC Address	Called-Station-ID
Destination User Name	User-Name
Device Action	Response, Action
Device Custom Number 1	Configuration Version ID
Device Custom Number 2	NAS Port
Device Custom Number 3	Framed-MTU
Device Custom String 1	Authentication Method
Device Custom String 2	Service Type
Device Custom String 5	Response
Device Custom String 6	Network Device Groups
Source MAC Address	Calling-Station-ID
Source User Name	One of (UserName, Response)

Cisco ISE TACACS Diagnostics Event Mappings to ArcSight ESM Events

ArcSight ESM Field	Device-Specific Field
Destination Host Name	Remote-Address
Destination User Name	User
Destination Translated Address	Device IP Address
Device Custom String 6 Label	CPMSessionID or CPM SessionID
Device Custom String 3	Acs Session ID
Device Custom String 3 Label	Acs Session ID
Device Custom Number 2	Privilege-Level
Device Custom Number 2 Label	Privilege-Level
Device Custom String 1	Service
Device Custom String 1 Label	Service
Device Custom String 4	Session ID
Device Custom String 4 Label	Session ID
Device Custom String 6	CPMSessionID

Cisco ISE Authentication Flow Event Mappings to ArcSight ESM Events

ArcSight ESM Field	Device-Specific Field
Destination Host Name	Remote-Address
Destination Address	Device IP Address
Destination Service Name	SelectedAccessService
Destination User Name	User
Device Custom String 6 Label	CPMSessionID or CPM SessionID
Device Custom String 3 Label	Acs Session ID
Device Custom String 3	AcsSessionID
Device Custom String 6	CPMSessionID

Cisco ISE Identity Stores Diagnostics Event Mappings to ArcSight ESM Events

ArcSight ESM Field	Device-Specific Field
Application Protocol	Protocol
Destination Service Name	SelectedAccessService
Destination User Name	User
Device Custom String 6 Label	CPMSessionID or CPM SessionID
Device Custom String 3 Label	Acs Session ID
Device Custom String 3	AcsSessionID
Device Custom String 6	CPMSessionID

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