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# **Micro Focus Security ArcSight SmartConnectors**

Software Version: 8.2.2

## **Configuration Guide for Linux Audit Syslog SmartConnector**

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# SmartConnector for Linux Audit Syslog

This guide provides information for installing the SmartConnector for Linux Audit Syslog and configuring the device for event collection.

## Intended Audience

This guide provides information for IT administrators who are responsible for managing the ArcSight SmartConnectors.

## Additional Documentation

The ArcSight SmartConnectors documentation library includes the following resources:

- *Installation Guide for ArcSight 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.
- *Release Notes for ArcSight SmartConnectors*, which provides information about the latest release

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

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# Product Overview

The Linux auditd daemon can help you detect violations of your security policies. It detects violations of security policy but does not enforce it. Rather, it is similar to network-based intrusion detection systems and host-based intrusion detection systems. Because the audit daemon is part of the Linux kernel, it is included in most major Linux distributions by default.

**Supported versions for Linux auditd to collect events from Red Hat Linux Enterprise (RHEL) are:** 6.4, 6.5, 6.7, 7.1, 7.2, 7.4, 7.5, 7.6, 8.1, 8.2, 8.3, and 8.4

# Configuration

For complete information about the Linux auditd daemon, see the man pages for auditd, auditd.conf, and auditctl. You can access these man pages by running the `man auditd` or `man auditctl` commands, from the command line of your Linux system.

Linux auditd does not log to syslog by default. To enable syslog logging, edit `# /etc/audit/plugins.d/syslog.conf` and change the line `active = no` to `active = yes`.

- `auditctl` is responsible for controlling the status and some basic system parameters of auditd. Using audit rules, `auditctl` controls which components of your system are subjected to the audit and to what extent they are audited. Audit rules can be passed to auditd on the `auditctl` command line as well as by composing a rule set and instructing auditd to process this file.
- auditd has built-in functions to watch access attempts to files without needing to monitor the applicable system calls. Administrators can add rules by amending the provided configuration files or at run time using the command line. The default location for the audit daemon rules in `/etc/auditd/audit.rules`.

Before you can start generating audit logs and processing them, configure the audit daemon itself. Configure how it is started in the `/etc/sysconfig/auditd` configuration file and configure how the audit system functions once the daemon has been started in `/etc/auditd.conf`.

## Configuring Event Merging

The Linux Audit system provides a way to track security-relevant information on the system. Based on pre-configured rules, Linux Audit generates log entries to record as much information as possible about the events happening on your system. These events often contains multiple sub-events that can span multiple lines. The event merging feature aggregates the related sub-events into one large event with a concatenated long message.

### To enable event merging:

1. Set up Linux Audit connector. See [Installing the SmartConnector](#).
2. Edit the `syslog.subagent.parsers` parameter in the `agent.properties` file (located in the `$ARCSIGHT_HOME/current/user/agent` folder) as follows:

```
agents[0].syslog.subagent.parsers=linux_auditd_syslog\:merge
```

### 3. [Run the SmartConnector.](#)

## Configuring to Recieve Syslog Events

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 the Linux Audit Syslog SmartConnector.

## Preparing to Install the SmartConnector

Before you install any SmartConnectors, make sure that the Micro Focus 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* guide, available on [ArcSight Documentation](#).

If you are adding a connector to the ArcSight Management Center, see the *ArcSight Management Center Administrator's Guide* 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 by Using the Wizard

The installation steps described in this section are specific to the Linux Audit Syslog Connector. For detailed installation steps or for manual installation steps, see [SmartConnector Installation and User Guide](#).

**To install and configure the Linux Audit Syslog Connector:**

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**, then specify the following parameters:

Parameters	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 <b>None</b> , <b>Rename</b> , or <b>Delete</b> 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 <b>None</b> .

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

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

Parameters	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"> <li>• <b>Solaris:</b> <code>\var\adm\messages</code></li> <li>• <b>Linux:</b> <code>\var\log\messages</code></li> </ul> <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"> <li>• <b>Date format log rotation:</b> 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 timestamp in <code>yyyy-MM-dd</code> date format. For example, <code>filename.yyyy-MM-dd.log</code></li> <li>• <b>Index log rotation:</b> 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.</li> </ul>
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 <b>None</b> , <b>Rename</b> , or <b>Delete</b> 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 <b>None</b> .
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 <b>Rename</b> . The default value is <b>Processed</b> , 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. 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.
8. Select whether you want to [run the connector as a service or in the standalone mode](#).
9. The connector cannot detect the network drive when running as a service on a Windows platform. This problem does not occur when the connector and IIS Server are installed on the same host.
10. Complete the installation.
11. [Run the SmartConnector](#).

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

# 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.

## Mappings to ArcSight Fields

ArcSight ESM Field	Device-Specific Field
Application Protocol	proto
Destination Address	One of (daddr,laddr,dst)
Destination Mac Address	dmac
Destination NT Domain	One of (new-seuser,acct)
Destination NT Domain	One of (new-seuser,acct)
Destination Port	One of (dest, dport, lport)
Destination Process ID	One of (egid,opid)
Destination Process Name	One of (exe, comm, cmd ,ocomm)
Destination Service Name	One of (com, ocomm, grantors)
Destination User ID	One of (auid, new auid, old auid, old-auid, oid)
Destination User Name	One of (new-seuder, acct, OUID)
Destination User Privilege	new-role
Device Action	op
Device Custom IPv6 Address 2	src
Device Custom IPv6 Address 3	dst
Device Custom Number 1	calipso_doi
Device Custom Number 2	One of (oses,ses,new ses, oldses,old-ses)
Device Custom Number 3	uid
Device Custom String 1	One of (dev, old, nsec)
Device Custom String 2	One of (key, calipso_type, new, sec)
Device Custom String 3	One of (success, res)

ArcSight ESM Field	Device-Specific Field
Device Custom String 4	One of(syscall,SYSCALL,op)
Device Custom String 5	subj
Device Custom String 6	One of (terminal, tty)
Device Event Class ID	One of (res, type, both (type, res))
Device Host Name	node
Device Inbound Interface	inif
Device Outbound Interface	outif
Device Process Name	'auditd'
Device Product	'auditd'
Device Receipt Time	timestamp
Device Vendor	'Unix'
Device Version	One of (ver, kernel)
Event Destination	ProcessId egid
Event Outcome	One of (result, res, __simpleMap(success,"yes=Successful","no=Failed"))
Event Reason	One of (reason, cause)
External ID	callid
File Hash	One of (proctitle, data, cmd, fp)
File ID	One of (watch_inode, cap_fver, sw)
File Name	One of (path, name, watch, obj)
File Path	One of (cwd, root_dir)
File Permission	One of (mode, perm)
File Size	ksize
Flex String2	One of (ppid, direction)
Message	msg
Name	One of (res, type, both (res, type), 'Linux Audit Message')
Old File Hash	mac
Old File ID	All of (a0, a1, a2, ...)
Old File Name	cipher
Old File Path	cmdline
Request URL	pfs



ArcSight ESM Field	Device-Specific Field
Source Address	One of (addr,saddr,src)
Source Host Name	hostname
Source Mac Address	smac
Source Port	One of (sport, rport)
Source Process ID	One of (pid, Spid, spid)
Source User ID	One of (saudit, uid, oaudit,AUID)
Source User Name	One of (user, old-seuser, EUID,OAUID)
Source User Privileges	One of (old-role, EGID)



**Note:** The connector will not receive events if MySQL JDBC driver 5.1.38 was used when you configured it. To fix this issue, apply MySQL JDBC driver 5.0.8.

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