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Configuration Guide for Cisco Catalyst OS Syslog SmartConnector

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Configuration Guide for Cisco Catalyst OS Syslog SmartConnector

This guide provides information for installing the SmartConnector for Cisco Catalyst OS 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 provide 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](#).

Contact Information

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Product Overview

The Cisco Catalyst Switches are fixed-configuration, stackable standalone switches that provide wire-speed Fast Ethernet and Gigabit Ethernet connectivity. Differing models of the Catalyst switches offer distinct sets of software features and a range of configurations.

Configuration

Configuring the System Message Log

The system message logging facility provides you with logging information for monitoring and troubleshooting, and lets you select the types of logging information captured and the destination of the captured information.

By default, Cisco Catalyst logs normal but significant system messages to its internal buffer and sends these messages to the system console. You can specify which system messages should be saved based on the type of facility and the severity level. Messages can be time-stamped to enhance real-time debugging and management.

The Cisco Catalyst switches ship with the following default configuration:

- System message logging to the console is enabled
- System message logging to Telnet sessions is enabled
- Logging server is disabled
- Syslog server IP address is not configured
- Server facility is LOCAL7
- Server severity is Warnings (4)
- Logging buffer size is 500
- Logging history size is 1
- Timestamp option is disabled

When you first log on to the switch console, enter the `show logging` command to display the default configuration.

Changing Logging Defaults

To change the default system message logging facility and severity levels, perform one of these tasks in privileged mode:

- Set the default facility and severity level for system messages.

```
set logging level facility severity [default]
```

- Disable system message logging to the console.

```
set logging console disable
```

Examples:

To change the default system message logging facility and severity levels for the Cisco Discovery Protocol (CDP) to severity level 3:

```
Console> (enable) set logging level cdp 3
```

To disable system message logging to the console:

```
Console> (enable) set logging console disable
```

Configuring the Syslog Daemon

Before you can send system log messages to a UNIX syslog server, you must configure the syslog daemon on the UNIX server. To configure the syslog daemon, log in as root and perform the following steps:

1. Add a line such as the following in the `/etc/syslog.conf` file:

```
user.debug /var/log/myfile.log
```



There must be five tab characters between `user.debug` and `/var/log/myfile.log`. Refer to entries in the `/etc/syslog.conf` file for further examples.

The switch sends messages according to specified facility types and severity levels. The `user` keyword specifies the UNIX logging facility. The messages from the switch are generated by user processes. The `debug` keyword specifies the severity level of the condition being logged. You can set UNIX systems to receive all messages from the switch.

2. Create the log file by entering these commands at the UNIX shell prompt:

```
$ touch /var/log/myfile.log  
$ chmod 666 /var/log/myfile.log
```

3. Make sure the syslog daemon reads the new changes by entering this command:

```
$ kill -HUP \Qcat /etc/syslog.pid
```

Configuring Syslog Servers

To configure the switch to log messages to a syslog server, perform this task in privileged mode:

1. Add a syslog server to the configuration.

```
set logging server ip_addr
```
2. Enable system message logging to configured syslog servers.

```
set logging server enable
```
3. Set the facility and severity level for syslog server messages.

```
set logging server facility server_facility_parameter
set logging server severity server_severity_level
```

You can configure a maximum of three syslog servers at any time.

Examples

To add a new syslog server with an IP address of 171.69.192.205 to the system logging server table:

```
Console> (enable) set logging server 171.69.192.205
```

To enable system message logging to a configured syslog server:

```
Console> (enable) set logging server enable
```

To set the syslog server facility to local0:

```
Console> (enable) set logging server facility local0
```

To set the syslog server severity level to 4:

```
Console> (enable) set logging server severity 4
```

To remove a syslog server from the configuration, perform this task in privileged mode:

```
clear logging server ip_addr
```

To remove a syslog server from the configuration, perform this task in privileged mode:

```
clear logging server ip_addr
```

To delete the syslog server 171.69.192.207 from the configuration:

```
Console> (enable) clear logging server 171.69.192.207
```

To disable logging to the syslog server, perform this task in privileged mode:

```
set logging server disable
```

To disable system message logging to a configured syslog server:

```
Console> (enable) set logging server disable
```

To limit the number of messages buffered, perform this task in privileged mode:

```
set logging buffer buffer_size
```

To limit to 200 the number of messages stored in the buffer:

```
Console> (enable) set logging buffer 200
```

To enable or disable the system logging messages timestamp, perform this task in privileged mode:

```
set logging timestamp {enable | disable}
```

To enable the timestamp display on system logging messages:

```
Console> (enable) set logging timestamp enable
```

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 Deamon, Syslog Deamon NG, or Syslog File connector types depending on your requirement. The Syslog File type SmartConnectors also support Syslog Pipe.

Syslog Daemon SmartConnector

The Syslog Deamon 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 Deamon 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 Deamon, 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 Deamon 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 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*, 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**, 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 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**, 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"> • 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 timestamp 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>; <p>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.</p> |
| 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. 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. Complete the installation.
10. 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.

Cisco Catalyst OS Field Mappings

| ArcSight ESM Field | Device-Specific Field |
|-------------------------------|-----------------------|
| Additional Data | asic |
| Additional Data | BusIFRegister |
| Additional Data | ConfigurationBlock |
| Additional Data | ConfigurationSize |
| Additional Data | MacAddressRange |
| Additional Data | NvramAvailable |
| Additional Data | NvramSize |
| Additional Data | Port rxTotalDrops |
| Additional Data | RelnitCount |
| Additional Data | RxTotoalDrops |
| Additional Data | seq |
| Additional Data | SourceMemoryLocation |
| Additional Data | srcidx |
| Additional Data | TargetMemoryLocation |
| Application Protocol | 'UDP' |
| ArcSight Severity (High) | 2 or 3 |
| ArcSight Severity (Low) | 6 or 7 |
| ArcSight Severity (Medium) | 4 or 5 |
| ArcSight Severity (Very High) | 0 or 1 |
| Destination Address | Destination IP |
| Destination Mac Address | Destination Mac |
| Destination Port | Destination port |

Configuration Guide for Cisco Catalyst OS Syslog SmartConnector

Device Event Mapping to ArcSight Fields

| ArcSight ESM Field | Device-Specific Field |
|---------------------------|----------------------------|
| Destination Process Name | ProcessId |
| Device Action | Action taken by the device |
| Device Custom String 1 | Source Module |
| Device Custom String 2 | Destination Module |
| Device Custom String 3 | Socket |
| Device Custom String 4 | VLAN |
| Device Custom String 5 | Port State |
| Device Event Class ID | MessageId |
| Device Inbound Interface | Source Interface |
| Device Outbound Interface | Destination Interface |
| Device Product | 'CatOS' |
| Device Receipt Time | DetectTime |
| Device Severity | CiscoSeverity |
| Device Time Zone | TimeZone |
| Device Vendor | 'CISCO' |
| Name | Text of message |
| Source Address | Source IP |
| Source Port | Source port |
| Transport Protocol | protocol |

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