

Sending Syslog Notifications to SIEMs

Lumeta [superusers](#) can use the CEF logging feature to send syslog output to an external viewer in a common-event format. By enabling it, all event notifications to which the superuser has subscribed can be displayed in one preferred Security Information and Event Management (SIEM) viewer such as HP ArcSight, Splunk, or QRadar.

CEF Notifications are either system-related or device-related. The system-related notifications are global and pertain to all of Lumeta. Device notifications pertain to a particular zone. Subscribe to receive notifications at Settings > Lumeta Systems > CEF Notifications > System and Device tabs.

System License CEF Notifications eth0			
Configuration Device System			
Edit ▾			
Subscribed	Name	Priorit	Event Type
No	Agent Connected		AGENT_CONNECTED
Yes	Agent Started		AGENT_START
No	Agent Status		AGENT_STATUS
Yes	Agent Stopped		AGENT_STOP

- **System notices** report when an Agent, Collector, Scout, or Zone has been created, started or stopped. They also alert on license status (e.g., reminder, warning, and violation).
- **Device notices** report findings about your network architecture such as when a device, edge, or node has been discovered, updated, or removed.

This section provides an example of integrating to the representative event manager HP ArcSight.

Configure CEF Server

Enable the CEF logging feature to make Lumeta compile all subscribed event notifications to a logging server. Here's an example of how to enable logging to a HP ArcSight console via the Lumeta graphical user interface (GUI) or the Lumeta command-line interface (CLI).

Configure CEF Server via GUI

1. [Log in](#) Lumeta.
2. Select **Settings > Lumeta Systems**.
3. Click the **CEF Notifications** tab.
4. Identify the logging server to which you want to send event notifications.
 - a. **Protocol:** Type TCP-IPv4, UDP-IPv4, TCP-IPv6, UDP-IPv6
Note: Use TCP-IPv4 or UDP-IPv4 for HP ArcSight.)
 - b. **Host Name or IP Address:** Must be an IPv4-type IP address
 - c. **Port number:** Must be a valid integer
5. When you are ready to send CEF-formatted event notifications, click the **CEF Enabled** checkbox.
6. Click **Submit**.
A message displays, indicating that your configuration settings were saved.
Lumeta is now configured to display CEF-formatted syslog output in your ArcSight console.

Configure CEF Server via CLI

1. Log in the Command-Line Interface (CLI).
 - a. Open a host or server that supports SSH.
 - b. At the prompt, type **ssh admin@<yourservername>** and press **Enter**.
 - c. Enter your password (i.e., **admin**) and press **Enter**.
2. At the command prompt, type
log cefserver <enable/disable> <protocol> <IP address> <port number> and press **Enter**.
 - a. **Protocol:** Type TCP-IPv4, UDP-IPv4, TCP-IPv6, UDP-IPv6 (Note: Use TCP-IPv4 or UDP-IPv4 for HP ArcSight.)
 - b. **IP Address:** Must be an IPv4-type IP address
 - c. **Port number:** Must be a valid integer
 - d. **Enable:** Enables the CEFserver
 - e. **Disable:** Disables the CEFserver

Lumeta is now configured to display CEF-formatted syslog output in your HP ArcSight console.

Configuring CEF-Formatted Syslog Output

1. On the CEF Notifications tab, click the tab for the type of CEF Notifications to which you want to subscribe: either **System** or **Device**.
2. To edit the prioritization of the event and whether you subscribe to it, click Edit and update the form.
 - a. **Subscribed:** Indicates whether or not you've opted to send notifications of the particular event type.
 - b. **Name:** Name of the event
 - c. **Priority:** Indicates level of severity: informational, alert, or warning.
 - d. **Event Type:** The Event Type is the predefined category of event.
3. To Add a device notification, click Add and update the form.
4. To apply additional filters to your device notifications, update this form:

Optional filtering criteria for Device Notifications				
Device Type:	All			
Vendor:	All	Model:	All	
OS:	All	OS Version:	All	
Ports:	Enter one or more ports separated by commas			

CEF Output

Header Syntax

<syslogheader> CEF:Version|Device Vendor|Device Product|Device Version|Signature ID|Name|Severity

Header Sample

22 Jul 2014 13:28:59 grog CEF:0|Lumeta|Lumeta|3.2.4.9086|DEVICE_DISCOVERED|Device Discovered|5

Message Sample

msg=Device stealth:c:3038:1 created.

Lumeta-specific Fields

The message is followed by Lumeta specific custom fields mapped to CEF attributes. All custom fields are appended after "msg."

CEF Event Mapping

Following is a CEF notification and how it maps to custom fields in Lumeta.

0|Lumeta|Lumeta|3.2.4.9086|DEVICE_DISCOVERED| Device Discovered |5|msg=Device stealth:c:3038:1 created. cat= DISCOVERY dvchost=CCM-AMC
rt=Nov 02 2017 13:19:55 cn1=1 cn1Label=Facility Zone1 dhost= c6a3= mac=

	Lumeta Custom Fields			
CEF Key Name	Full Name	DataType	Lumeta name	Mapping to a notification from Lumeta
Device Vendor			Lumeta	Lumeta
Device Product			Lumeta	Lumeta
Device Version			2.1 (version of Lumeta)	3.2.4
Signature ID		String or integer	Notification Type	DEVICE_DISCOVERED
Name		String	NotificationName/NotificationType	Device Discovered
Severity		Integer	1, 5, 10	5
cat	deviceEventCategory	String	DISCOVERY("/discovery"), SYSTEM("/system"), CONFIG("/config")	DISCOVERY
deviceMacAddress	deviceMacAddress	MAC Address	mac	
dvc	deviceAddress	IPV4 Address	ip	
rt	receiptTime	TimeStamp	event.getTimeStamp()	Nov 02 2017 13:19:55
dvchost	deviceHostName	String	systemName	CCM-AMC

dhost	destinationHostName	String	ip	c6a3
c6a3	destination format	IPv6	ip	
suser	sourceUserName	String	userName	
cn1	deviceCustomNumber1	Long	zoneId	1
cn1Label	deviceCustomNumber1Label	String	zoneName	Facility Zone1

CEF Event Type	Description	Sample Message
AGENT_CONNECTED	A connection was created between discovery-agent and lumeta-webapp	Discovery Agent Connected
AGENT_START	Displays one of the following Agent and that it has started: TCP Port Scanner Host Discovery Snmp Hunter Snmp Scanner Path Scanner Broadcast Discovery CIFSScanner DNSScanner Http Scanner Leak Discovery	Host Discovery (or any other agent name) Started Agents: TCP Port Scanner Host Discovery Snmp Hunter Snmp Scanner Path Scanner Broadcast Discovery CIFSScanner DNSScanner Http Scanner Leak Discovery
AGENT_STATUS	Displays the Agent Name (to show that the Agent is currently running): TCP Port Scanner Host Discovery Snmp Hunter Snmp Scanner Path Scanner Broadcast Discovery CIFSScanner DNSScanner Http Scanner Leak Discovery	Host Discovery (or any other agent name)
AGENT_STOP	Displays one of the following Agent and that it has stopped: TCP Port Scanner Host Discovery Snmp Hunter Snmp Scanner Path Scanner Broadcast Discovery CIFSScanner DNSScanner Http Scanner Leak Discovery	Host Discovery (or any other agent name) Stopped
COLLECTOR_CREATED	New Lumeta Collector created containing device discovery configuration	Collector <> created
COLLECTOR_REMOVED	Indicated existing Lumeta Collector has been removed	Collector <> removed
COLLECTOR_UPDATED	Updated discovery configuration was applied to a Lumeta Collector	Collector <> Config Inserted
DEVICE_ACTIVITY	Discovered device's status has changed from active to inactive (or vice versa)	Device <> became active. Earlier state : inactive OR Device <> became inactive. Earlier state : active
DEVICE_DISCOVERED	New entry for a Device discovered. Multiple entries for each scan technique	Device<>created
DEVICE_PROFILED	Discovered device's profile information has changed. Profile information includes device type, operating system, operating system version and vendor.	Device<>profileattributeschanged: DeviceType=<>,OS=<>,Vendor=<>, Version=<> 2017-11-0709:24:13.384338
DEVICE_REMOVED	Discovered device has become inactive and removed	Device<>removed
DEVICE_UPDATED	Discovered Device has been updated with new information. Multiple entries for each scan technique.	Device<>updated. IPassignedto<> IPchangedto<>
FORWARDER_DISCOVERED	Discovered device has been identified as a forwarding device based on TTL	Device<>forwardstraffic
JOB_COMPLETED	Displays status of a background job that was deployed on the Lumeta box (example: importing pattern file, importing zone attributes)	Job Success (jobId : 1, jobName : importPatterns-job)
JOB_STARTED	Displays initialization of a background job that was deployed on the Lumeta box (example: importing pattern file, importing zone attributes)	Job Started (jobId : 1, jobName : importPatterns-job)
LEAK_DISCOVERED	Lumeta has identified a potential Leak Path to / from a protected network	
LICENSE_REMINDER	User notification that the Lumeta license is about to expire	License expiration imminent – contact support@lumeta.com

LICENSE_VIOLATION	User notification that the Lumeta license has exceeded the IP Count	License expired – new license required – contact support@lumeta.com IP count exceeded – contact support@lumeta.com
LICENSE_WARNING	User notification that the Lumeta license is approaching the IP Count limit	License expired – contact support@lumeta.com IP count exceeded – contact support@lumeta.com
LINK_DISCOVERED	Path has been discovered between two IPs	Linkdiscoveredbetween<>and<>
LOGLEVEL_UPDATED	Log level has been changed to INFO/WARN/DEBUG	Service <> log level set to <>
NOTIFICATION_ACKNOWLEDGED	Displays the Notification ID that was acknowledged by the user on Lumeta System's map.	Notification<notificationnumber>acknowledged
NOTIFICATION_ACKNOWLEDGED_ALL	All Notifications on Lumeta System's map have been acknowledged for a specific priority.	AllNotificationsacknowledgedforpriority<INFO WARN ALERT>
OPENPORT_DISCOVERED	Discovered Device has been found with an open port	
ROUTER_DISCOVERED	Discovered Device is now profiled as a router	
ROUTER_REMOVED	Discovered Device that was profiled as a router has now been removed	
SYSTEM_CONNECT	User notification that a connection has been created between CC <-> Portal, CC <-> Scout	Peer connection established (<> <-> <>)
SYSTEM_DISCONNECT	User notification that a disconnection occurred between CC <-> Portal, CC <-> Scout	Peer connection closed (<> <-> <>)
UPDATE_ERROR		
UPDATE_REMOTE		
UPDATE_STEP		
UPDATE_WARNING		
USER_CREATED	New Lumeta user was created	User <> created
USER_REMOVED	Lumeta user was deleted	User <> removed
USER_UPDATED	Changes were made to an existing Lumeta user	User <> updated
ZONE_CREATED	New Lumeta Zone created containing device discovery configuration	Created zone. (name = <>, description = <>, updatenotes = "time"=>"2017-11-07 13:35:07.257405-05")
ZONE_REMOVED	Indicated existing Lumeta Zone has been removed	Deleted zone. (name = <>, description = <>, updatenotes = "time"=>"<>", "user"=>"<>")
ZONE_UPDATED	Updated discovery configuration was applied to a Lumeta Zone	Zone <> CIDRs Updated