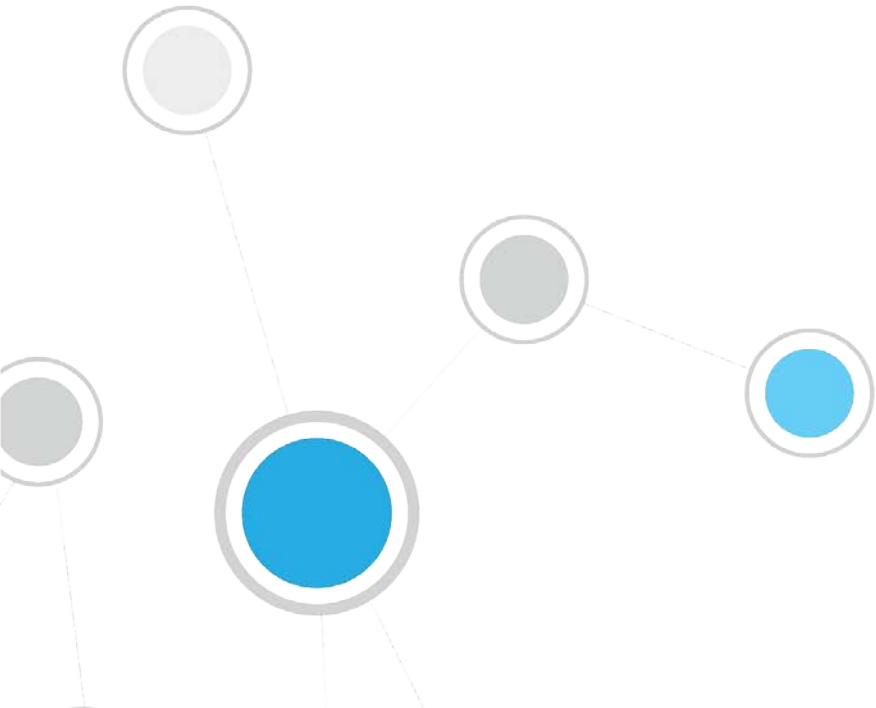
ForeScout CounterACT®

Core Extensions Module: CEF Plugin

Configuration Guide

Version 2.7



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About the CounterACT CEF Plugin

The CEF Plugin is a component of the ForeScout CounterACT® Core Extensions Module. See Core Extensions Module Information for details about the module.

The CEF Plugin lets CounterACT send policy compliance and other host information detected by CounterACT to SIEM systems using the CEF messaging format.

In addition, SIEM servers can trigger remediation actions by sending alert messages to CounterACT. This functionality uses the alert messaging function common to most SIEM servers, and non-CEF-standard text messages.

Automated Reporting Using CEF

CounterACT can automatically update SIEM servers in several ways:

Compliance-based Reporting - CounterACT can automatically notify SIEM servers of endpoints that pass or fail CounterACT *Compliance* policies. For example, such policies detect hosts running out-of-date antivirus signature files; hosts using unauthorized Peer to Peer applications, or hosts with missing vulnerability patches.

Host Property Tracking – This plugin lets CounterACT send customized CEF messages based on any policy conditions. Typically, CEF messaging is used to report a change in the broad range of host conditions that CounterACT monitors.

Trigger CounterACT Actions Based on SIEM Messages

You can implement a variety of CounterACT actions on hosts, based on messages received from the SIEM server. To trigger actions, SIEM servers send CounterACT a simple text message. See Receiving SIEM Messages – Policy Properties for details.

CounterACT/CEF Architecture

- Several CounterACT devices can be assigned to a specific SIEM server or to several SIEM servers.
- A default server can be defined and handles CounterACT devices that have not been assigned to a SIEM server.
- Each CounterACT device can only be assigned to one SIEM server.

How it Works

When using the plugin for the first time, CounterACT updates CEF with compliance status changes in real-time. CounterACT reports the compliance status of each endpoint whenever it changes.

Predefined periodic update messages can be sent as well. The time interval of the periodical report is configurable.

Automated compliance status reporting is based on evaluation of CounterACT *Compliance* policies.

In addition, customized CEF messages can report host information for hosts that satisfy the conditions of any CounterACT policy.

What to Do

Perform the following in order to work with this plugin:

- Verify that requirements are met. See Requirements.
- Configure and start the plugin. See Configure the Plugin.
- Configure CounterACT Compliance policies to handle CEF events.
- Set up the CEF Console to view CounterACT information.

Requirements

The plugin requires the following CounterACT releases and CounterACT components:

- CounterACT version 8.0.
- An active Maintenance Contract for CounterACT devices is required.
- Target SIEM servers must parse CEF messages.
- Target SIEM servers must be able to receive messages from CounterACT Appliances and Enterprise Managers.

About Support for Dual Stack Environments

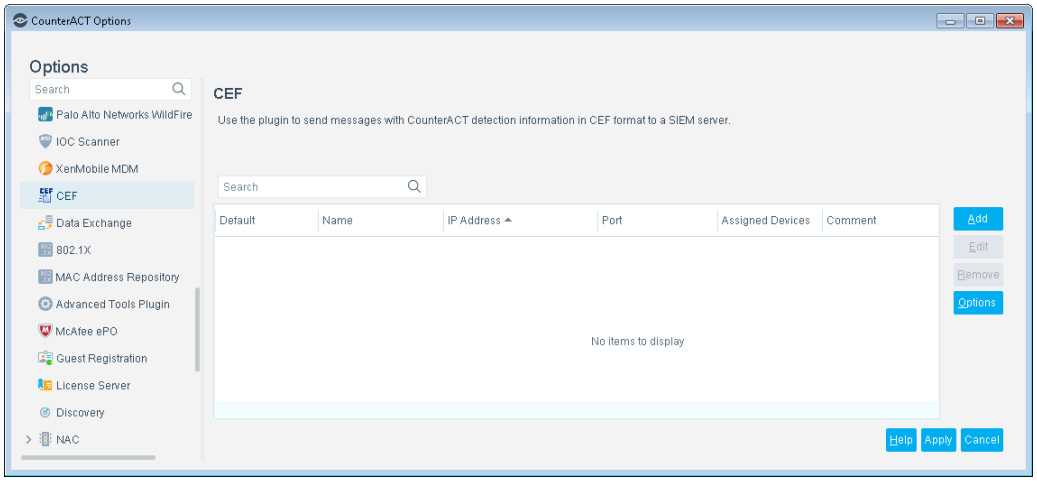
CounterACT version 8.0 detects endpoints and interacts with network devices based on both IPv4 and IPv6 addresses. However, ***IPv6 addresses are not yet supported by this component.*** The functionality described in this document is based only on IPv4 addresses. IPv6-only endpoints are typically ignored or not detected by the properties, actions, and policies provided by this component.

Configure the Plugin

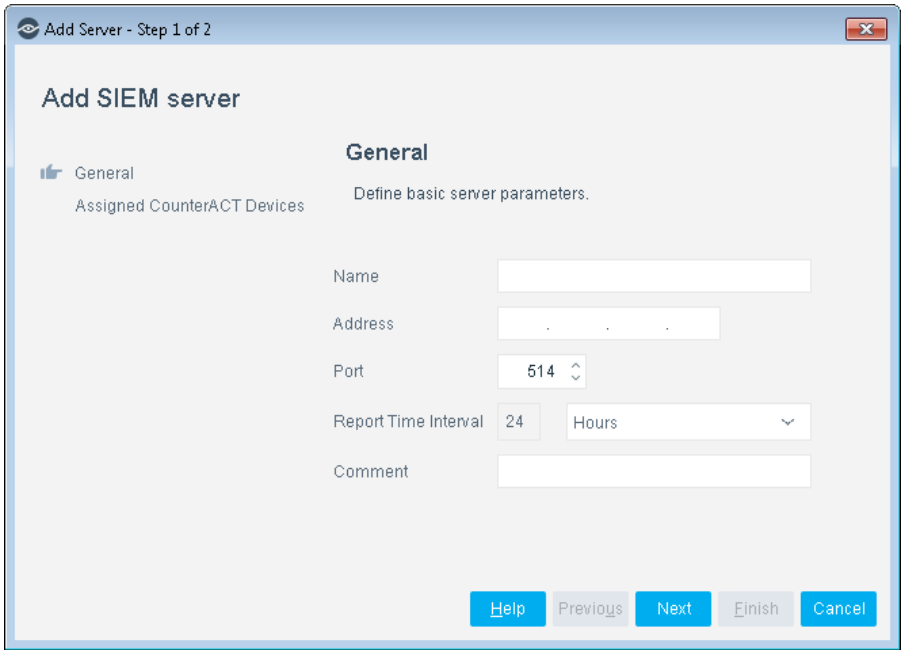
Configuration information is needed to ensure authentication and connection from the plugin to the SIEM server and to handle message transaction. Several CounterACT devices can be assigned to a specific SIEM server. A default server can be defined and handles CounterACT devices that have not been assigned to a SIEM server.

To configure the plugin:

1. Select **Configure**. The CEF configuration pane opens.



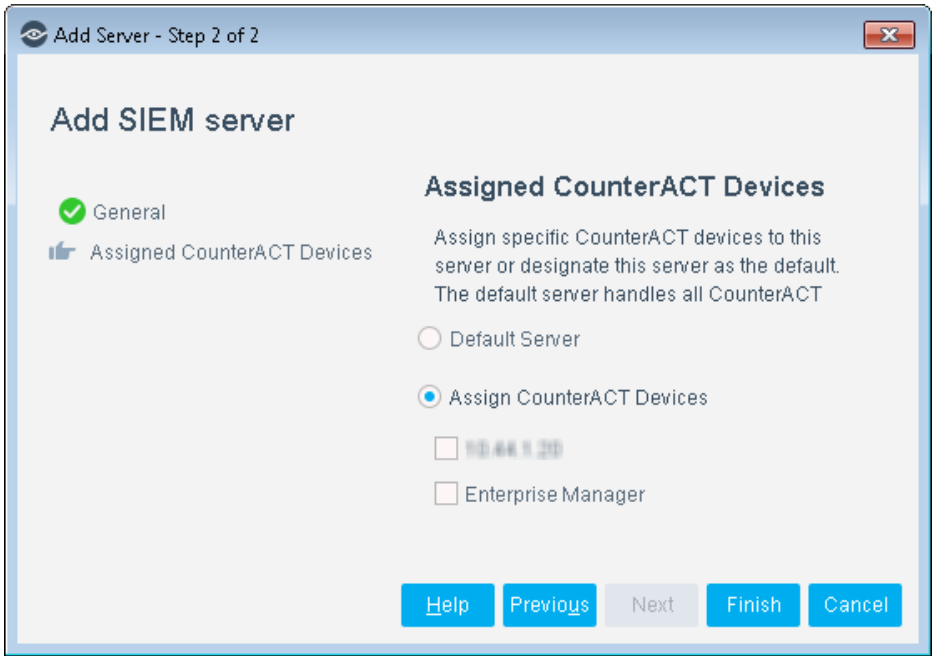
2. To add a SIEM server, select **Add**. The Add SIEM server wizard opens.



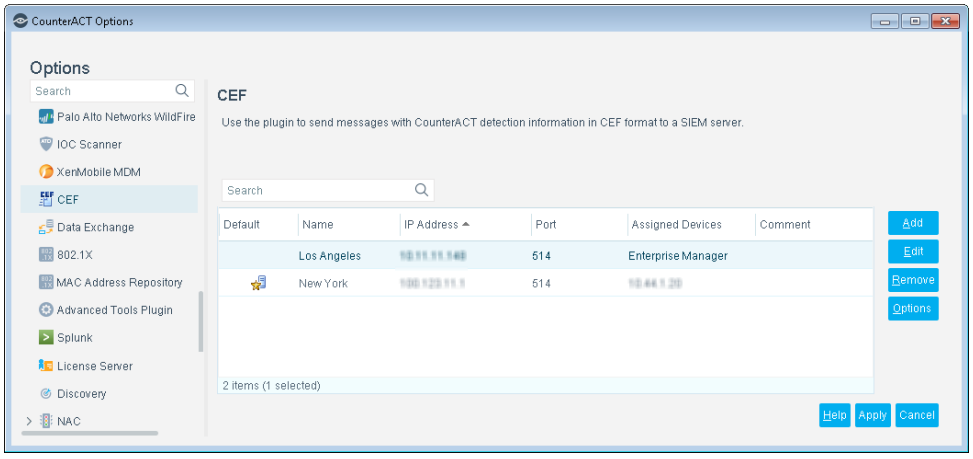
3. In the General pane, enter basic server parameters.

Name	The name of the SIEM server.
Address	The IP address of the SIEM server.
Port	The UDP Syslog port used by CEF.
Report time interval	The frequency with which to update the SIEM server with compliance information. If a compliance event occurs before this time period elapses, a message is sent. CounterACT reports the compliance status of each endpoint both periodically and whenever this status changes.
Comment	Comments regarding the server.

4. Select **Next**. The Assigned CounterACT Devices pane opens.



5. Do one of the following:
   - Select **Default Server** to designate this server as the default server. The default server handles all CounterACT devices that are not assigned to an SIEM server.
   - Select **Assign CounterACT Devices** to assign specific CounterACT devices to this server. You can later define another server to function as the default.
6. Select **Finish**. The server configuration appears in the CEF pane.



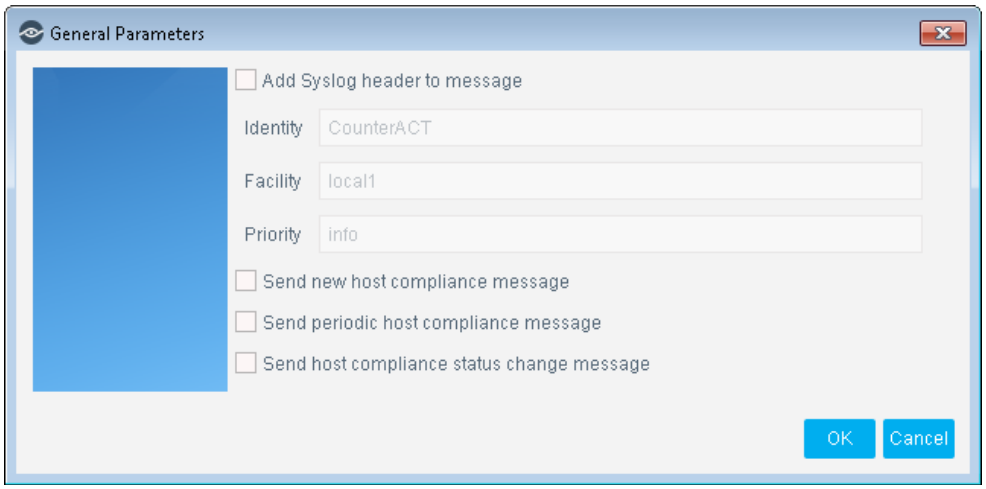
7. Use **Add/Edit/Remove** to manage the CEF configurations.

Include Syslog Message Header

You can add a syslog header to all CEF messages delivered to the SIEM servers. Using this option may require additional configuration on the SIEM servers.

To include syslog message headers in CEF messages:

1. Select the **Options** from the CEF pane. The General Parameters dialog box opens.



2. Select **Add Syslog header to message** and define the following fields.

Identity	A string to identify the source of the syslog message (default: CounterACT)
Facility	Syslog message facility (default: local1)
Priority	Syslog message priority (default: info)

Verify That the Plugin Is Running

After configuring the plugin, verify that it is running.

To verify:

1. Select **Tools**>**Options** and then select **Modules**.
2. Navigate to the plugin and select **Start** if the plugin is not running.

Create Custom CEF Policies

Custom CounterACT policy tools provide you with an extensive range of options for detecting and handling endpoints. Specifically, use the policy to instruct CounterACT to apply a policy action to hosts that match (or do not match) property values defined in policy conditions.

For more information about working with policies, select **Help** from the policy wizard.

To create a custom policy:

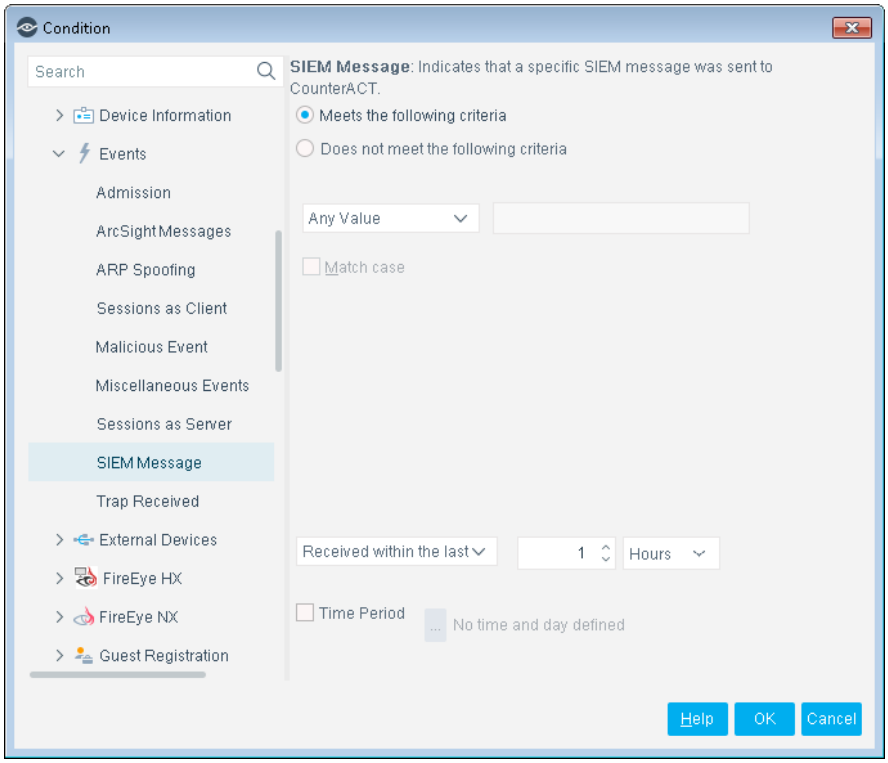
1. Log in to the CounterACT Console.
2. Select the **Policy** icon from the Console toolbar.

3. Create or edit a policy.

Receiving SIEM Messages – Policy Properties

CounterACT policy properties let you instruct CounterACT to detect hosts with specific attributes. For example, create a policy that instructs CounterACT to detect hosts running a certain Operating System or with a certain application installed.

In addition to the bundled CounterACT properties and actions available for detecting and handling endpoints, you can work with plugin related properties to create custom policies. -



To access properties:

1. Navigate to the Properties tree from the Policy Conditions dialog box.
2. Expand the **Events** folder in the Properties tree. The following property is available:
   - SIEM Message

SIEM Message

This property stores an unordered list of SIEM message strings. Messages are added to a host when the message references that host. For example, the SIEM Messages field for a host can contain the following values:

`VulnerabilityDetected, AntiVirusUpdate, RestoreFromVLAN`

Each entry corresponds to a message string that is sent by the SIEM server. New message strings are added to the existing values – but the queue contains only one instance of each message string. For example, if another vulnerability is detected on a host, the new *VulnerabilityDetected* message overwrites the existing message in the list.

You can use this property with the alert messaging capabilities of most SIEM servers to trigger CounterACT actions. For example, you can configure a CounterACT policy to assign hosts to a specific VLAN when the message *VulnerabilityDetected* is sent by the SIEM server.

To set up this functionality:

- Define a CounterACT policy with a condition that detects hosts based on SIEM messages.
- Use the messaging or alert capabilities of your SIEM server to define a message to CounterACT with the desired message string.

When SIEM server logic generates an alert or remediation condition:

1. The SIEM server sends the predefined message to CounterACT.
2. CounterACT parses the message and stores the message text in the SIEM Messages property of the relevant host.
3. The CounterACT policy detects hosts by matching values in the SIEM Messages property.
4. CounterACT implements the actions defined in the policy.
5. The SIEM Message event appears in the CounterACT Console, for example in the Profile tab.

SIEM Server Event Messages

Embed the following command strings in the message that the SIEM server sends to CounterACT. When CounterACT receives these messages, it parses the command strings to modify the *SIEM Message* property of the target host.

Add a string to the SIEM Messages host property

To update the value of the *SIEM Messages* host property, embed the following command string in the message that the SIEM server sends to CounterACT:

```
fstool siem_update [-N] [-O] <MessageString> <IPAddress>
```

Where

<MessageString> is a one-word string. No spaces are allowed. This string is added to the contents of the *SIEM Messages* property.

Use a string related to the trigger condition at the SIEM server, or to the action you want CounterACT to implement.

<IPAddress> identifies the host on which the action is performed. CounterACT updates the *SIEM Messages* property of this host with the *MessageString* value.

You can use the following optional flags with this command:

-N creates a new host if the host does not exist

-O updates online status when updating a property

Delete a string from the SIEM messages host property

To delete a value in the *SIEM Messages* host property, embed the following command string in the message that the SIEM server sends to CounterACT:

```
fstool siem_update -d <MessageString> <IPAddress>
```

Where

<MessageString> is a one-word string. No spaces are allowed. If this string exists in the *SIEM Messages* list for the host, it is deleted.

<IPAddress> identifies the host on which the action is performed. CounterACT deletes the *MessageString* entry from the *SIEM Messages* property of this host.

Clear the SIEM messages host property

To delete *all* values in the *SIEM Messages* host property, embed the following command string in the message that the SIEM server sends to CounterACT:

```
fstool siem_update -D <IPAddress>
```

Where **<IPAddress>** identifies the host on which the action is performed. CounterACT clears the SIEM Messages property for the specified host.

Sending CEF Messages – Policy Actions

CounterACT policy actions let you instruct CounterACT how to control detected devices. For example, assign potentially compromised endpoints to an isolated VLAN, or send the endpoint user or IT team an email.

In addition to the bundled CounterACT actions available for handling endpoints, you can work with the plugin related actions to create custom policies. -.

To access actions:

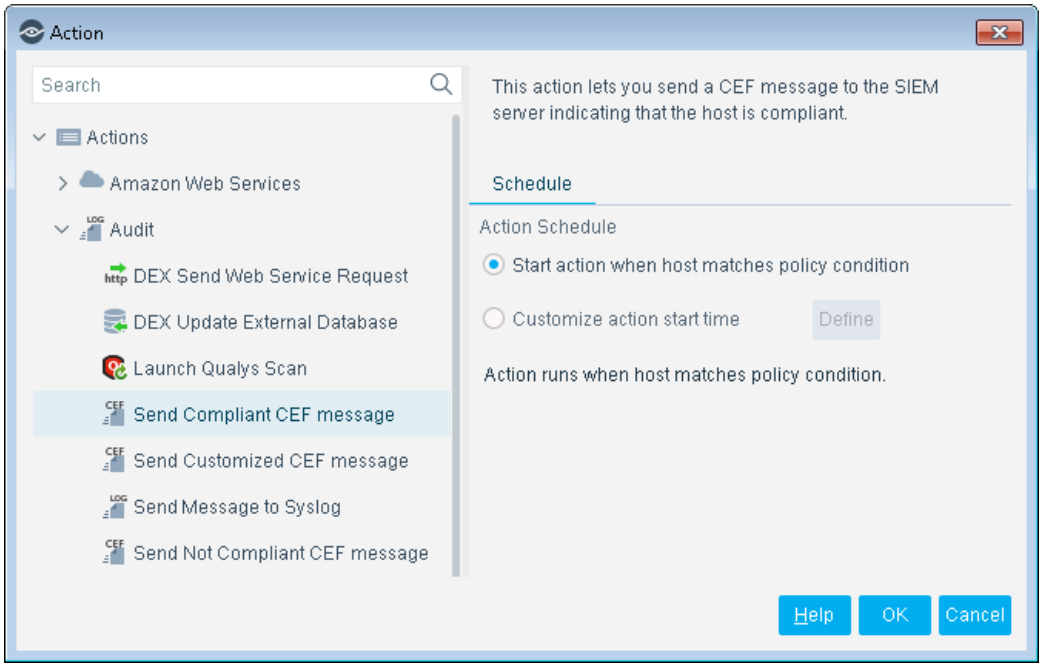
1. Navigate to the Actions tree from the Policy Actions dialog box.
2. Expand the **Audit** folder in the Actions tree. The following actions are available:
   - Send Compliant CEF message
   - Send Customized CEF Message
   - Send Not Compliant CEF message

Send Compliant CEF message

This action sends a CEF message to the SIEM server for each host that satisfies the conditions of the policy. It is located in the Audit group of the Actions tree.

You can apply standard scheduling options to this action.

The message combines standard CEF message and dictionary fields with extension fields defined by CounterACT. For more information on message data fields, see Device Event Mapping to CEF Data Fields.



A sample message in CEF format is shown below.

Field	Sample Message
Version	CEF:0 |
Device vendor	ForeScout Technologies |
Device product	CounterAct |
Device version	6.3.4 |
Signature ID	COMPLIANCE |
Name	host is compliant |
Priority	1 |
CounterACT CEF extension fields	cs1Label=Compliancy Policy Name cs2Label=Compliancy Policy Subrule Name cs3Label=Host Compliancy Status cs4Label=Compliancy Event Trigger cs1=AntiVirus Compliance cs2=Compliant cs3=yes cs4=CounterAct Action
Host MAC address	dmac=00:1c:7e:d3:36:a4
Host IP address	dst=10.31.1.101
Destination domain name	dntdom=DOM31
Host name	dhost=QA-LAP-TOSHIBA
Host user	duser=administrator (local)
CounterACT device IP	dvc=10.31.1.153
CounterACT device name	dvchost=Q31A
Event report time	rt=1346923305000

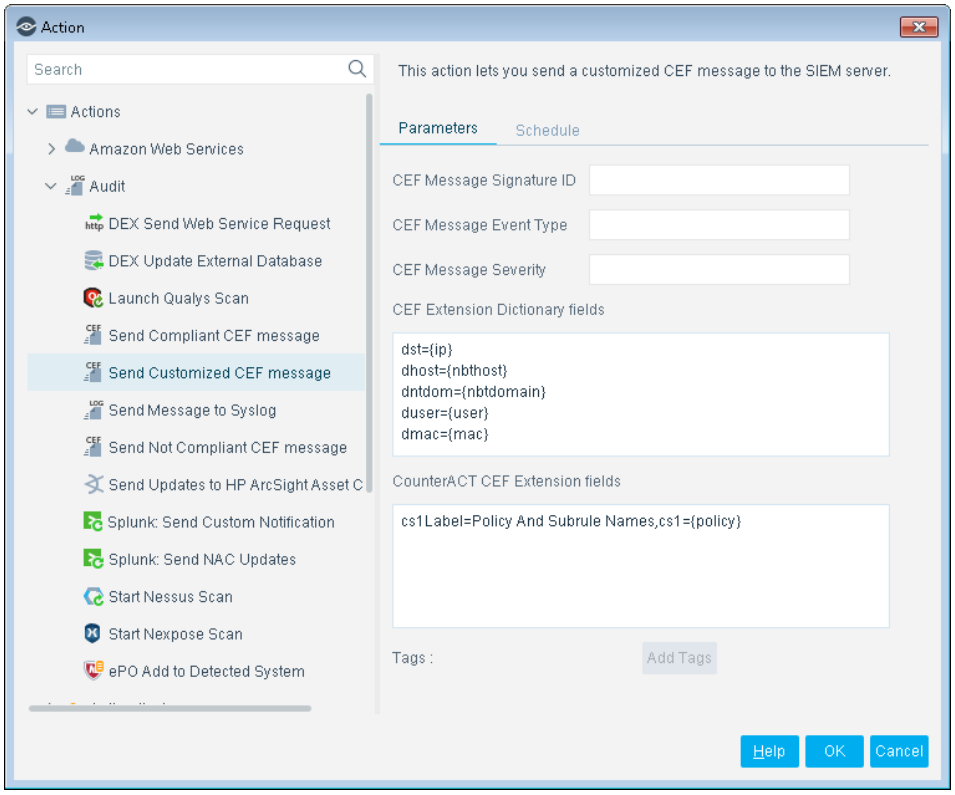
Send Customized CEF Message

This action sends a customized CEF message to the SIEM server for each host that satisfies the conditions of the policy.

For more information on message data fields, see Device Event Mapping to CEF Data Fields.

To configure a customized CEF message:

1. Edit a policy.
2. Add an action. In the Actions tree, open the Audit group and select the **Send CEF message** action.



3. Specify the following fields of the CEF message header:
   - Signature ID
   - Event Type
   - Severity

   CounterACT automatically adds vendor-specific fields to the final message header.
4. (Optional) Click in the **CEF Extension Dictionary fields** area to edit the list of dictionary fields that is included in the message. Each entry in the list has the following format:

   <CEF event data field>={CounterACT property tag}

   Select **Add Tags** to insert a CounterACT property tag in an entry.

5. (Optional) Click in the **CounterACT CEF Extension fields** area to define CounterACT-specific fields that are included in the message. Each entry in the list has the following format:

   Cs#Label=<field label>,cs#={CounterACT property tag}

   Select **Add Tags** to insert a CounterACT property tag in an entry.

6. (Optional) Select the **Schedule** tab to apply standard scheduling options to the action.

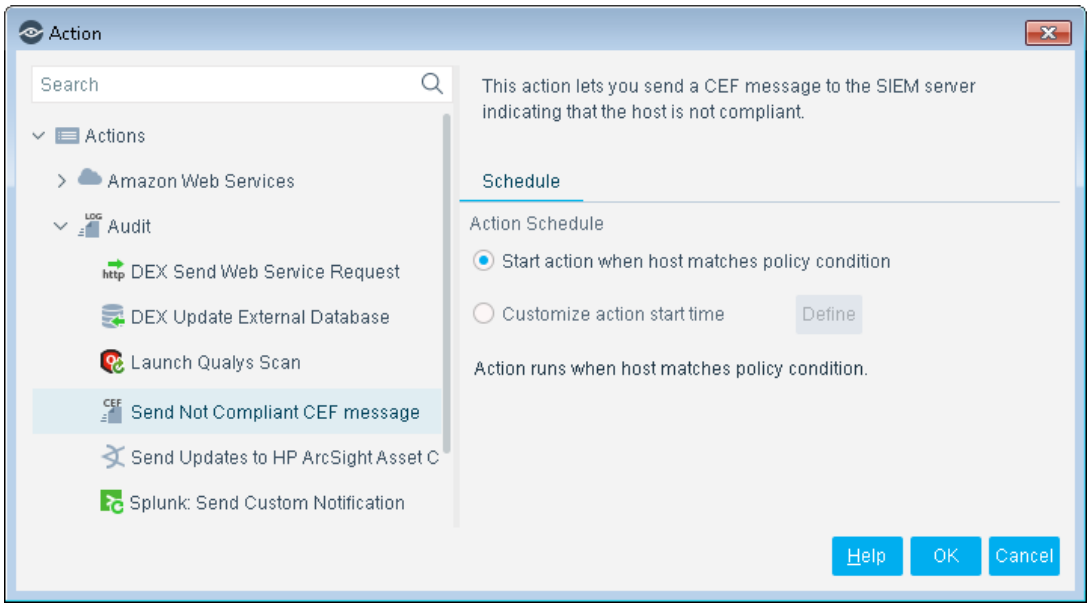
7. Select **OK** to add the action to the policy.

Send Not Compliant CEF message

This action sends a CEF message to the SIEM server for each host that does not satisfy the conditions of the policy. It is located in the Audit group of the Actions tree.

You can apply standard scheduling options to this action.

The message combines standard CEF message and dictionary fields with extension fields defined by CounterACT. For more information on message data fields, see Device Event Mapping to CEF Data Fields.



A sample message in CEF format is shown below.

Field	Sample Message
Version	CEF:0 |
Device vendor	ForeScout Technologies |
Device product	CounterAct |
Device version	6.3.4 |
Signature ID	NONCOMPLIANCE |
Name	host is not compliant |
Priority	1 |
CounterACT CEF extension	cs1Label=Compliancy Policy Name

fields	cs2Label=Compliancy Policy Subrule Name cs3Label=Host Compliancy Status cs4Label=Compliancy Event Trigger cs1=AntiVirus Compliance cs2=AV Not Installed cs3=no cs4=CounterAct Action
Host MAC address	dmac=00:0c:29:fa:72:9d
Host IP address	dst=10.31.1.1
Destination domain name	dntdom=DOM31
Host name	dhost=Q31DC1
Host user	duser=User
CounterACT device IP	dvc=10.31.1.153
CounterACT device name	dvchost=Q31A
Event report time	rt=1346923402000

Device Event Mapping to CEF Data Fields

This section describes the data fields in CEF notification messages.

CEF Header Fields

The following table maps CEF header data fields to CounterACT event definitions.

CEF Event Data Field	Data Field Meaning	CounterACT Event Definition	Values
Version	CEF format version	Version	0
Device Vendor	Name of vendor	Device Vendor	ForeScout Technologies
Device Product	Product Name	Device Product	CounterACT
Device Version	CounterACT Version	Device Version	6.3.4
Signature ID	Host event identifier	Compliancy Event Signature ID	COMPLIANCE
		Non-Compliancy Event Signature ID	NONCOMPLIANCE
Name	Host event name	Compliancy Event Name	Host is compliant
		Non-Compliancy Event Name	Host is not compliant
Priority	Importance of the host event	Compliancy Event Severity	3
		Non-Compliancy Event Severity	5

CounterACT Extension Fields

The following table lists CounterACT-defined CEF extension fields. These fields are always included in *Compliant* and *Not Compliant* messages.

CEF Event Data Field ID	Data Field Label	CounterACT Host Property	Values
cs1	Compliancy Policy Name	Compliancy Policy Name	CounterACT policy name. This is a compliance policy, or the name of a policy that contains a CEF messaging action.
cs2	Compliancy Policy Sub-rule Name	Compliancy Policy Sub-Rule Name	The sub-rule that classified the host as compliant or not compliant
cs3	Host Compliancy Status	Host Compliance Status	▪ Yes: For compliant host ▪ No: For non-compliant host
cs4	Compliancy Event Trigger	Compliancy Event Trigger	▪ New host: For newly discovered host ▪ Compliancy status changed: For a host whose status changed ▪ Periodical: When host status is unchanged within reporting time interval

CEF Dictionary Fields

The following table lists standard CEF dictionary extension fields that are always included in *Compliant* and *Not Compliant* messages.

CEF Event Field ID	CounterACT Property Tag	Description
Dst	Ip	The host IP address, in dot-separated format
Dmac	Mac	The host MAC address, in colon- separated format
Duser	user	String identifying the user logged onto the host when the event occurred

Dhost	The host name
Dvc	CounterACT device IP address, in dot-separated format
Dvchost	CounterACT device host name
Rt	Event detection time, in milliseconds elapsed since Jan 1, 1970

Core Extensions Module Information

The CEF plugin is installed with the CounterACT Core Extensions Module.

The Core Extensions Module provides an extensive range of capabilities that enhance the core CounterACT solution. These capabilities enhance detection, classification, reporting, troubleshooting and more, and include the following components:

Advanced Tools Plugin	DNS Query Extension Plugin	NetFlow Plugin
CEF Plugin	External Classifier Plugin	Reports Plugin
Device Classification Engine	Flow Analyzer Plugin	Syslog Plugin
DHCP Classifier Plugin	IOC Scanner Plugin	Technical Support Plugin
DNS Client Plugin	IoT Posture Assessment Engine	Web GUI Plugin
DNS Enforce Plugin	NBT Scanner Plugin	

The Core Extensions Module is a ForeScout Base Module. Base Modules are delivered with each CounterACT release.

Components listed above are installed and rolled back with the Core Extensions Module.

Refer to the *CounterACT Core Extensions Module Overview Guide* for more module information, such as module requirements, upgrade and rollback instructions.

Additional CounterACT Documentation

For information about other CounterACT features and modules, refer to the following resources:

- Documentation Downloads
- Documentation Portal
- CounterACT Help Tools

Documentation Downloads

Documentation downloads can be accessed from one of two ForeScout portals, depending on which licensing mode your deployment is using.

- ***Per-Appliance Licensing Mode*** - Product Updates Portal

- ***Centralized Licensing Mode*** - Customer Portal

Software downloads are also available from these portals.

To learn which licensing mode your deployment is using, see Identifying Your Licensing Mode in the Console.

Product Updates Portal

The Product Updates Portal provides links to CounterACT version releases, Base and Content Modules, and Extended Modules, as well as related documentation. The portal also provides a variety of additional documentation.

To access the Product Updates Portal:

1. Go to https://updates.forescout.com/support/index.php?url=counteract.
2. Select the CounterACT version you want to discover.

Customer Portal

The Downloads page on the ForeScout Customer Portal provides links to purchased CounterACT version releases, Base and Content Modules, and Extended Modules, as well as related documentation. Software and related documentation will only appear on the Downloads page if you have a license entitlement for the software. The Documentation page on the portal provides a variety of additional documentation.

To access documentation on the ForeScout Customer Portal:

1. Go to https://forescout.force.com/support/.
2. Select **Downloads** or **Documentation**.

Documentation Portal

The ForeScout Documentation Portal is a searchable, web-based library containing information about CounterACT tools, features, functionality and integrations.

If your deployment is using Centralized Licensing Mode, you may not have credentials to access this portal.

To access the Documentation Portal:

1. Go to www.forescout.com/docportal.
2. Use your customer support credentials to log in.
3. Select the CounterACT version you want to discover.

CounterACT Help Tools

Access information directly from the CounterACT Console.

Console Help Buttons

Use context sensitive *Help* buttons to quickly access information about the tasks and topics you are working with.

CounterACT Administration Guide

Select **CounterACT Help** from the **Help** menu.

Plugin Help Files

1. After the plugin is installed, select **Options** from the **Tools** menu and then select **Modules**.
2. Select the plugin and then select **Help**.

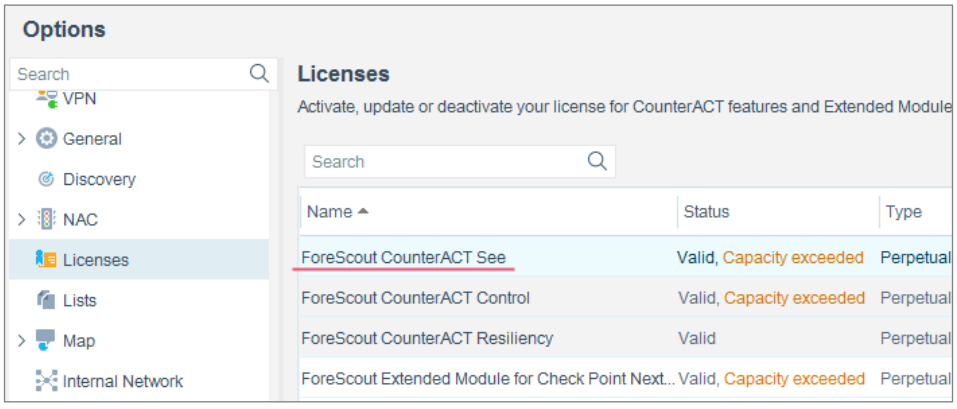
Documentation Portal

Select **Documentation Portal** from the **Help** menu.

Identifying Your Licensing Mode in the Console

If your Enterprise Manager has a *ForeScout CounterACT See* license listed in the Console, your deployment is operating in Centralized Licensing Mode. If not, your deployment is operating in Per-Appliance Licensing Mode.

Select **Options > Licenses** to see whether you have a *ForeScout CounterACT See* license listed in the table.



Contact your ForeScout representative if you have any questions about identifying your licensing mode.

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Send comments and questions about this document to: support@forescout.com

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