

# Monitoring Amazon Web Services ELK Stacks

ELK: AWS CloudTrail PowerPack version 100

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# Chapter

# Introduction

### Overview

This manual describes how to monitor Amazon Web Services (AWS) component devices that are part of an Elasticsearch, Logstash, and Kibana (ELK) stack in the ScienceLogic platform using the *ELK:* AWS CloudTrail PowerPack.

The following sections provide an overview of AWS ELK stacks and the ELK: AWS CloudTrail PowerPack:

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**NOTE:** The *ELK:* AWS CloudTrail PowerPack is meant to be used in conjunction with the Amazon Web Services PowerPack. For more information about the Amazon Web Services PowerPack, including how to install the PowerPack and discover AWS devices, see the **Monitoring Amazon Web Services** manual.

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## What is an AWS ELK Stack?

An ELK stack is a centralized log management platform consisting of three open-source products:

- Elasticsearch, a storage solution with search and indexing capabilities
- Logstash, a server-side data collection engine
- Kibana, a web user interface used for visualizing stored data

In an ELK stack, Logstash collects data, Elasticsearch indexes and stores the data, and Kibana visually presents the data in a user-friendly manner.

You can install an ELK stack on an Amazon Web Services instance to collect, store, and visualize data about that instance.

## What Does the ELK: AWS CloudTrail PowerPack Monitor?

The ELK: AWS CloudTrail PowerPack includes the following features:

- A sample Credential that you can use to create Basic/Snippet credentials to monitor AWS component devices in ELK stacks
- Dynamic Applications that align to AWS component devices in ELK stacks and then monitor CloudTrail logs and states changes on EC2 instances
- An Event Policy that notifies users when the ELK Dynamic Applications have aligned to AWS components
- Run Book Policies and Actions that align the ELK Dynamic Applications to AWS components and update the alignment status on the ScienceLogic Data Collector or All-In-One Appliance

# Installing the ELK: AWS CloudTrail PowerPack

Before completing the steps in this manual, you must import and install the latest version of the ELK: AWS CloudTrail PowerPack.

To download and install a PowerPack:

TIP: By default, installing a new version of a PowerPack overwrites all content in that PowerPack that has already been installed on the target system. You can use the *Enable Selective PowerPack Field Protection* setting in the **Behavior Settings** page (System > Settings > Behavior) to prevent new PowerPacks from overwriting local changes for some commonly customized fields. (For more information, see the *System Administration* manual.)

- 1. Download the PowerPack from the ScienceLogic Customer Portal.
- 2. Go to the **PowerPack Manager** page (System > Manage > PowerPacks).
- 3. In the **PowerPack Manager** page, click the **[Actions]** button, then select *Import PowerPack*.

4. The Import PowerPack dialog box appears:

Import Powe	rPack™	×
Brow	wse for file Erowse Import	

- 5. Click the [Browse] button and navigate to the PowerPack file.
- 6. When the **PowerPack Installer** modal page appears, click the **[Install]** button to install the PowerPack.

**NOTE:** If you exit the **PowerPack Installer** modal page without installing the imported PowerPack, the imported PowerPack will not appear in the **PowerPack Manager** page. However, the imported PowerPack will appear in the **Imported PowerPacks** modal page. This page appears when you click the **[Actions]** menu and select *Install PowerPack*.

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# **Configuring AWS ELK Stack Monitoring**

### Overview

The following sections describe how to configure AWS component devices in ELK stacks for monitoring by the ScienceLogic platform using the *ELK*: AWS CloudTrail PowerPack:

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## Prerequisites for Monitoring AWS ELK Stacks

To configure the ScienceLogic platform to monitor AWS component devices in ELK stacks using the ELK: AWS CloudTrail PowerPack, you must first:

- Install the Amazon Web Services PowerPack.
- Create a virtual device in the ScienceLogic platform to represent your AWS service.
- Discover AWS component devices by manually aligning the "AWS Account Discovery" Dynamic Application to the virtual device.
- Ensure that your AWS CloudTrail bucket is properly configured for all read/write events.

**NOTE:** For more information about the Amazon Web Services PowerPack, including how to install the PowerPack and discover AWS devices, see the **Monitoring Amazon Web Services** manual.

# Creating an AWS ELK Credential

To use the Dynamic Applications in the *ELK*: AWS *CloudTrail* PowerPack, you must first define a credential in the ScienceLogic platform. This credential enables the Dynamic Applications in the *ELK*: AWS *CloudTrail* PowerPack to monitor your AWS component devices in ELK stacks. The PowerPack includes a sample Basic/Snippet credential (**ELK**: AWS **Example**) that you can use as a template.

To define an AWS ELK credential:

- 1. Go to the Credential Management page (System > Manage > Credentials).
- 2. Click the wrench icon ( if for the ELK: AWS Example credential. The Credential Editor modal page appears:

Credential Editor [108]		×
Edit Basic/Snippet Credential #108	New	Reset
Basic Settings		
Credential Name		
ELK: AWS Example		
Hostname/IP Port	Timeout(ms)	
10.2.8.200 9200 5000		
Username	Password	
<ul> <li><user></user></li> <li><ul> <li><ul> <li><ul> <li><ul> <li><ul> <li><ul></ul></li></ul></li></ul></li></ul></li></ul></li></ul></li></ul>		
Save Save As		

- 3. Enter values in the following fields:
  - Credential Name. Type a new name for your AWS ELK credential.
  - Hostname/IP. Type the IP address or hostname for the Logstash server that collects data for the AWS components in your ELK stack.
  - Port. Type "9200".

Use the default values for the remaining fields.

**NOTE:** The Basic/Snippet credential requires values in the **Username** and **Password** fields, but the values themselves do not matter.

4. Click the [Save As] button, and then click [OK].

## Aligning the AWS ELK Dynamic Applications

To monitor your AWS component devices in ELK stacks, you must manually align the "ELK: AWS Alignment" Dynamic Application with the AWS virtual device. When you do so, the remaining Dynamic Applications from the *ELK:* AWS CloudTrail PowerPack automatically align to the appropriate AWS component devices.

To manually align the "ELK: AWS Alignment" Dynamic Application to your virtual device:

- 1. Go to the **Device Manager** page (Registry > Devices > Device Manager).
- 2. Locate your AWS virtual device and click its wrench icon (
- 3. In the **Device Administration** panel, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.

Close	Properties	T <u>h</u> resholds	<u>C</u> ollections	<u>M</u> onitors	<u>S</u> chedule			
<u>L</u> ogs	T <u>o</u> olbox	Interfaces	<u>R</u> elationships	<u>T</u> ickets	Redirects	<u>N</u> otes	<u>A</u> ttributes	
Device Name E ID 2 Class A Organization A Device Hostname	ELK 200 2448 W/S W/S_For_ELKSupport			Managed Type Category Sub-Class Uptime Group / Collector	Virtual Device Cloud.Service Service 0 days, 00:00:00 CUG1   SL_DIST_IS	SO2_CU		Service
Dynamic Application	on <sup>TM</sup> Collections					Expand	Actions Reset	Guide
		Dynamic Application		ID	Poll Frequency	Type	Credenti	al 🗹
+ AWS Account Di	scovery			258 5	mins	Snippet Configuration	AWS_ELK_Support	1
+ ELK: AWS Align	ment			1619 60	) mins	Snippet Configuration	AWS_ELKSupport	1
						[Select Action]		T Go
				Save				

- 4. Click the [Actions] button, and then select Add Dynamic Application from the menu.
- 5. In the **Dynamic Application Alignment** modal page, select *ELK: AWS Alignment* in the **Dynamic Applications** field.
- 6. In the Credentials field, select the credential you created for your AWS ELK components.
- 7. Click [Save].

**NOTE:** By default, the "ELK: AWS Alignment" Dynamic Application begins collecting data after 60 minutes. If you want to begin collecting data immediately, click the lightning bolt icon (*F*) for the "ELK: AWS Alignment" Dynamic Application on the **Dynamic Application Collections** page.

When you align the "ELK: AWS Alignment" Dynamic Application to the AWS root device, the platform then aligns the following Dynamic Application from the *ELK: AWS CloudTrail* PowerPack to the appropriate component devices:

- ELK: AWS CloudTrail
- ELK: AWS CloudTrail EC2 Stats

To view the data collected by the "ELK: AWS CloudTrail" Dynamic Application, navigate to the **Journal View** page (Registry > Devices > Device Manager > bar-graph icon > Journals) and click **ELK: AWS CloudTrail** on the left menu:

Close <u>S</u> ummary Logs Events	Performance Tickets	Topology Software	<u>C</u> onfigs <u>Jour</u> Processes Serv	mals Interfa-	Ports Organization						
Device Name us-east-2b ID 633 Class AWS Organization System Root Device Volume AWS - new Parent Device us-east-2b E Device Hostname	2.micro: i-0acbcc1456ce6864 RAj C2.Service	a7			Managed Type Com Category Clou Sub-Class EC2 Uptime 0 dia Group / Collector CUG	nponent Device nd Compute Instance micro ys, 00:00:00   elk					Mi A R at R /
ELK: AWS CloudTrail	Journal View   ELK: AWS Region	AWS CloudTrail [19 en Event Name	tries] Event Source	Event Type	Timestamp	User Name	Source IP Address	s User Agent	Action Event Version	ins <u>State</u>	Reset Guide
	1 un cont 2	Reheatlestances	mon automatic ma	Awe ApiCall	2010 02 02712-47-20 0007	amaida@scioncologic.com	200 07 179 242	men average for allocate	1.05	Closed	Last week
	2. us.opst 2	Startiostances	ecz.amazonawa.com	AwsApiCall	2018 02 01720 25 48 0007	amaida@sciencelogic.com	200.07.175.242	console oc2 amazonaws.com	1.05	Closed	2010/02/02 01:07:02
	3 us-east-2	Stoplastances	ec2 amazonaws com	AwsApiCall	2018-02-01120-20-30-0002	amaida@sciencelogic.com	186 121 202 98	console ec2 amazonaws com	1.05	Closed	2018-02-01 15:32:05
	4 us-east-2	StartInstances	ec2 amazonaws com	AwsApiCall	2018-02-01T16:03:01 000Z	amaida@sciencelogic.com	200 58 87 55	console ec2 amazonaws com	1.05	Closed	2018-02-01 11:37:04
	5 us-east-2	StopInstances	ec2 amazonaws com	AwsApiCall	2018-02-01T15:57:29.000Z	amaida@sciencelogic.com	186 121 202 98	console ec2 amazonaws com	1.05	Closed	2018-02-01 11:15:05
	6. us-east-2	StopInstances	ec2 amazonaws.com	AwsApiCall	2018-02-01T14-21-15.000Z	amaida@sciencelogic.com	200.87.179.242	console.ec2 amazonaws.com	1.05	Closed	2018-02-01 10:45:04
	7. us-east-2	StartInstances	ec2.amazonaws.com	AwsApiCall	2018-02-01T15:07:36.000Z	amaida@sciencelogic.com	200.58.87.55	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:45:04
	8. us-east-2	StartInstances	ec2.amazonaws.com	AwsApiCall	2018-02-01T14:26:59.000Z	amaida@sciencelogic.com	200.58.87.55	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:45:04
	9. us-east-2	StopInstances	ec2.amazonaws.com	AwsApiCall	2018-02-01T15:01:08.000Z	amaida@sciencelogic.com	200.58.87.55	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:27:04
	10. us-east-2	RebootInstances	ec2.amazonaws.com	AwsApiCall	2018-01-31T17:58:58.000Z	tsafi@sciencelogic.com	72.165.86.42	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:21:08
	11. us-east-2	StopInstances	ec2.amazonaws.com	AwsApiCall	2018-02-01T13:21:48.000Z	amaida@sciencelogic.com	200.106.244.55	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:21:08
	12. us-east-2	RebootInstances	ec2.amazonaws.com	AwsApiCall	2018-01-31T17:11:13.000Z	tsafi@sciencelogic.com	72.165.86.42	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:21:08
	13. us-east-2	StartInstances	ec2.amazonaws.com	AwsApiCall	2018-02-01T13:28:26.0002	amaida@sciencelogic.com	200.87.179.242	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:21:08
	14. us-east-2	RebootInstances	ec2.amazonaws.com	AwsApiCall	2018-01-31T16:36:59.000Z	tsafi@sciencelogic.com	72.165.86.42	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:21:08
	15. us-east-2	RebootInstances	ec2.amazonaws.com	AwsApiCall	2018-01-31T17:58:50.000Z	tsafi@sciencelogic.com	72.165.86.42	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:21:08
	16. us-east-2	RebootInstances	ec2.amazonaws.com	AwsApiCall	2018-01-31T17:20:45.000Z	tsafi@sciencelogic.com	72.165.86.42	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:21:08
	17. us-east-2	RebootInstances	ec2.amazonaws.com	AwsApiCall	2018-01-31T16:37:53.000Z	tsafi@sciencelogic.com	72.165.86.42	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:21:08
	18. us-east-2	RebootInstances	ec2.amazonaws.com	AwsApiCall	2018-01-31T16:39:34.000Z	tsafi@sciencelogic.com	72.165.86.42	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:21:08
	19 us-east-2	RebootInstances	ec2.amazonaws.com	AwsApiCall	2018-01-31T17:11:17.000Z	tsafi@sciencelogic.com	72.165.86.42	console.ec2.amazonaws.com	1.05	Closed	2018-02-01 10:21:08

To view the data collected by the "ELK: AWS CloudTrail EC2 Stats" Dynamic Application, navigate to the **Device Performance** page (Registry > Devices > Device Manager > bar-graph icon > Performance) and click **ELK: AWS CloudTrail** on the left menu:



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