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# **Datacenter Advanced Enrichment Actions PowerPack**

Datacenter Advanced Enrichment Actions PowerPack version 102

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
## Introduction to the Datacenter Advanced Enrichment Actions PowerPack

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### Overview

This manual describes how to use the automation actions in the *Datacenter Advanced Enrichment Actions PowerPack*.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ().
- To view a page containing all of the menu options, click the Advanced menu icon ().

This chapter covers the following topics:

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## What is the Datacenter Advanced Enrichment Actions PowerPack?

The *Datacenter Advanced Enrichment Actions PowerPack* contains automation actions that can be configured to collect additional diagnostic information when events occur and to provide instructions on how to troubleshoot issues. This additional information about an event is intended to assist the engineer responsible for troubleshooting and resolving that event.

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## What Technologies are Supported?

The *Datacenter Advanced Enrichment PowerPack* contains 314 automation actions that define different diagnostic information to be collected. In other words, you can execute 314 different sets of commands with this PowerPack. Each set of commands is specific to a type of device.

The following table lists the number of command sets for each type of device:

Device Type	Number
Cisco ACE	2
Cisco CSP	2
Cisco Route/Switch	33
Cisco IOS	80
Cisco IOS-XE	33
Cisco IOS-XR	35
Cisco NSO	3
Cisco NX-OS	12
Cisco OLT	1
Cisco StarOS	32
Cisco Collaboration	3
Cisco UCS	17

Device Type	Number
Cisco Wireless	18
Citrix NetScaler	10
F5	21
Juniper JUNOS	3
Juniper ScreenOS	3
NetApp	3

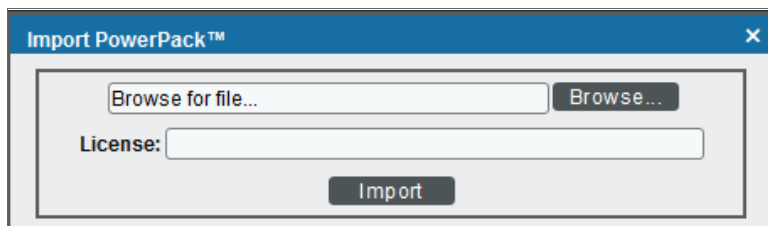
## Installing the Datacenter Advanced Enrichment Actions PowerPack

Before completing the steps in this manual, you must import and install the latest version of the *Datacenter Advanced Enrichment Actions* PowerPack.

**TIP:** By default, installing a new version of a PowerPack overwrites all content from a previous version of 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.)

To download and install a PowerPack:

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:



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 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. This page appears when you click the **[Actions]** menu and select *Install PowerPack*.

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## Overview of Configuring the Datacenter Advanced Enrichment Actions PowerPack

There are two general steps you need to take to configure the content in the *Datacenter Advanced Enrichment Actions* PowerPack:

1. Configure one or more automation policies that use the actions included in the PowerPack. This is described in the [Creating Automation Policies](#) chapter.
2. Configure credentials for the devices that are aligned with the automation policies. This is described in the [Configuring Device Credentials](#) chapter.

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## Unsupported Configurations

The following configurations are not supported by the *Datacenter Advanced Enrichment Actions* PowerPack:

- The PowerPack cannot be used on systems where the Military Unique Deployment (MUD) configurations have been applied.
- Customer-created automation actions that build command lists to be executed by the Enrichment: Util: Collect Enrichment Data automation action are not supported without prior authorization from ScienceLogic.
- Modifications of any kind to the code supplied in the *Datacenter Advanced Enrichment Actions* PowerPack are not supported without prior authorization from ScienceLogic.



## Creating Automation Policies

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### Overview

This chapter describes how to create automation policies using the automation actions in the *Datacenter Advanced Enrichment Actions* PowerPack.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ().
- To view a page containing all of the menu options, click the Advanced menu icon (.



This chapter covers the following topics:

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## Prerequisites

Before you create an automation policy using the automation actions in the *Datacenter Advanced Enrichment Actions* PowerPack, you will need to make the following decisions:

- Which set of commands you want to run on a monitored device when an event occurs. There are 314 automation actions in the PowerPack that build a list of commands to execute on the monitored device; each of the 314 automation actions builds a different list. This set of actions includes all actions in the PowerPack that do not have the prefix "Enrichment: Util:".
- What event criteria you want to use to determine when the automation actions will trigger, or the set of rules that an event must match before the automation is executed. This can include matching only specific event policies, event severity, associated devices, and so on. For a description of all the options that are available in Automation Policies, see the *Run Book Automation* manual.
- Where the output of the automation actions will be viewed by a user. The output is always available in the **Event Actions Log** page accessed through the SL1 **Event Console**. Optionally, you can include an additional automation action in your automation policy to send the output of the automation to an additional location. Typically, the additional location is the ticket that was generated for the event in your ticketing system. If you want to configure an Automation Policy that sends the output of the automation actions in the *Datacenter Advanced Enrichment Actions* PowerPack to a ticketing system, you must create or have access to the following additional content that is not supplied in the *Datacenter Advanced Enrichment Actions* PowerPack:
  - A process, either automated or manual, where SL1 events are associated with tickets. Examples of this process include:
    - A user clicking the life ring icon () in the ticket console to create a ticket in the SL1 ticketing system.
    - If your system has been configured so that the SL1 **Event Console** integrates with an external ticketing system, a user clicking the life ring icon () to request a ticket in your external ticketing system.
    - An Automation Policy that is configured to automatically create tickets for events, either in SL1 or an external ticketing system.
  - An *automation action* that sends the output from the previous automation action to the ticketing system. This action should specify that the ticket associated with the triggering event will be updated with this information.

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## Creating an Automation Policy

To create an automation policy that uses the automation actions in the *Datacenter Advanced Enrichment Actions* PowerPack, perform the following steps:

1. Go to the **Automation Policy Manager** page (Registry > Run Book > Automation).



- Click **[Create]**. The **Automation Policy Editor** page appears.

- Complete the following required fields:

- **Policy Name.** Enter a name for the automation policy.
- **Policy Type.** Select whether the automation policy will match events that are active, match when events are cleared, or run on a scheduled basis. Typically, you would select *Active Events* in this field.
- **Policy State.** Specifies whether the policy will be evaluated against the events in the system. If you want this policy to begin matching events immediately, select *Enabled*.
- **Organization.** Select the organization to scope this policy to. The automation policy will execute only for devices in the selected organization that match the other criteria in the policy. To configure a policy to execute for all devices in all organizations that match the other criteria in the policy, select *System*.
- **Aligned Actions.** To create a valid automation policy that uses the automation actions in the *Datacenter Advanced Enrichment Actions PowerPack*, you must configure the **Aligned Actions** field in the Automation Policy Editor to include multiple actions in a specific sequence. To add an action to the **Aligned Actions** field, select the action in the **Available Actions** field and click the right arrow (>>). To re-order the actions in the **Aligned Actions** field, select an action and use the up arrow or down arrow buttons to change that action's position in the sequence.

If you are not configuring the automation policy to send the output of the automation actions to a ticketing system, if users will view the output in the **Event Actions Log** page accessed through the SL1 **Event Console**, the automation must include four actions in the following sequence:

1. An automation action from this PowerPack that builds a list of commands to execute on the monitored device. There are 314 different actions of this type. This set of actions includes all actions in the PowerPack that do not have the prefix "Enrichment: Util:".

2. The "Enrichment: Util: Collect Enrichment Data" automation action. This action executes the list of commands provided by the previous action and sends the output to the next automation action in the sequence of actions.
3. The "Enrichment: Util: Format Command Output as HTML" automation action. This action formats the output of the "Enrichment: Util: Collect Enrichment Data" automation action in HTML format.
4. The "Enrichment: Util: Load HTML Work Instructions" automation action. If the library of work instructions included with the PowerPack contains a set of instructions for the event policy that triggered the event, the automation action will output that set of work instructions to HTML.

If you are configuring the automation policy to send the output of the automation actions to a ticketing system, the automation must include six actions in a specific sequence:

1. An automation action from this PowerPack that builds a list of commands to execute on the monitored device. There are 314 different actions of this type. This set of actions includes all actions in the PowerPack that do not have the prefix "Enrichment: Util".
2. The "Enrichment: Util: Collect Enrichment Data" automation action. This action executes the list of commands provided by the previous action and sends the output to the next automation action in the sequence of actions.
3. The following action to format the output of the "CMS: Util: Collect Enrichment Data" automation action:
  - The "Enrichment: Util: Format Command Output as HTML" automation action. This action formats the output of the "Enrichment: Util: Collect Enrichment Data" automation action in HTML format.
  - The "Enrichment: Util: Format Command Output as Plaintext" automation action. This action formats the output of the "Enrichment: Util: Collect Enrichment Data" automation action in plain-text format.
4. An automation action that performs a request to add the output of the previous action as a work note in your ticketing system. This automation action is not supplied in the *Datacenter Advanced Enrichment Actions* PowerPack. See the [Prerequisites](#) section for more information about the requirements for this action.
5. The "Enrichment: Util: Load HTML Work Instructions" or "Enrichment: Util: Load Plaintext Work Instructions" automation action. If the library of work instructions included with the PowerPack contains a set of instructions for the event policy that triggered the event, the automation action will output that set of work instructions. Select the HTML or Plaintext action, depending on the format accepted by your ticketing system.
6. An automation action that performs a request to add the output of the previous action as a work note in your ticketing system. This should be the same automation action you added in the 4th position in the sequence of automation actions. This automation action is not supplied in the *Datacenter Advanced Enrichment Actions* PowerPack. See the [Prerequisites](#) section for more information about the requirements for this action.

4. Optionally, supply values in the other fields on this page to refine when the automation will trigger. If you are configuring the automation policy to send the output of the automation actions to a ticketing system, you should ensure that the process for associating a ticket with the SL1 event occurs before this automation policy triggers. Typically, you would use the "and ticket IS created" or "and external ticket IS created" options in the **Criteria Logic** fields to do this.
5. Click **[Save]**.

After you have configured one or more Automation Policies that use the automation actions in the *Datacenter Advanced Enrichment Actions PowerPack*, you must configure credentials for the automation actions to use. See the [Configuring Device Credentials](#) chapter for instructions on how to do this.

## Example Automation Configuration

The following is an example of an automation policy that uses the automation actions in the *Datacenter Advanced Enrichment Actions PowerPack*:

The screenshot shows the 'Automation Policy Editor' interface for editing a policy named 'Cisco UCS Fabric Incident Enrichment'. The policy is configured with the following settings:

- Policy Name:** Cisco UCS Fabric Incident Enrichment
- Policy Type:** Active Events
- Policy State:** Enabled
- Policy Priority:** Default
- Organization:** System
- Criteria Logic:** Severity >= Minor
- Match Logic:** Text search
- Match Syntax:** (empty)
- Repeat Time:** Only once
- Align With:** Devices
- Include events for entities other than devices (organizations, assets, etc.):** unchecked
- Trigger on Child Rollup:** unchecked
- Available Devices:** System, AWS: Account: AIDAIHXVQSNXTUJBFOWYE, AWS: API Gateway Service: us-east-1 API Gateway Service
- Aligned Devices:** All devices
- Available Events:** [3283] Critical: AKCP: AC Voltage sensor detects no current, [3292] Critical: AKCP: DC Voltage sensor High Critical, [3293] Critical: AKCP: DC Voltage sensor Low Critical
- Aligned Events:** [3418] Minor: Cisco: UCS Fabric PSU Amperes has exceeded threshold, [3412] Minor: Cisco: UCS Fabric PSU Voltage has exceeded threshold, [3416] Minor: Cisco: UCS Fabric PSU Wattage has exceeded threshold.
- Available Actions:** SNMP Trap [1]: EM7 Event Trap, SNMP Trap [1]: Example Event Trap, SNMP Trap [1]: SL1 Event Trap
- Aligned Actions:** 1. Snippet [5]: Enrichment: Cisco-UCS: Fabric Show Commands, 2. Snippet [5]: Enrichment: Util: Collect Enrichment Data, 3. Snippet [5]: Enrichment: Util: Show Commands Enrichment Data HTML, 4. Snippet [5]: Enrichment: Util: Load Work Instructions

The policy uses the following settings:

- **Policy Name.** The policy is named "Cisco UCS Fabric Incident Enrichment".
- **Policy Type.** The policy is intended to run when an unhealthy event triggers, or is in an active state. *Active Events* is selected in this field.
- **Policy State.** *Enabled* is selected in this field.
- **Organization.** The policy is intended to execute for all devices in the system, regardless of organization, so *System* is selected in this field.

- **Criteria Logic.** The output of the actions will be viewed via the **SL1 Event Console**, and the actions in the policy are not configured to output to a ticket. As a result, the policy is configured to execute immediately when a matching event triggers using these criteria: "Severity >= Minor, and no time has elapsed since the first occurrence, and event is NOT cleared, and all times are valid".
- **Aligned Devices.** The policy is configured to trigger for all devices in the system.
- **Aligned Events.** The actions selected for the policy collect diagnostic information about UCS Fabric components. Therefore, the policy is configured to trigger only when the following events are triggered:
  - Cisco: UCS Fabric PSU Amperes has exceeded threshold
  - Cisco: UCS Fabric PSU Voltage has exceeded threshold
  - Cisco: UCS Fabric PSU Wattage has exceeded threshold
- **Aligned Actions.** Users will view the output of the automation actions in the Automation Log accessed through the **SL1 Event Console**. Therefore, the automation includes four actions in the following sequence:
  - Enrichment: Cisco-UCS: Fabric Show Commands
  - Enrichment: Util: Collect Enrichment Data
  - Enrichment: Util: Format Command Output as HTML
  - Enrichment: Util: Load Work Instructions
- **Policy Name.** The policy is named "Cisco UCS Fabric Incident Enrichment".
- **Policy Type.** The policy is intended to run when an unhealthy event triggers, or is in an active state. *Active Events* is selected in this field.
- **Policy State.** *Enabled* is selected in this field.
- **Organization.** The policy is intended to execute for all devices in the system, regardless of organization, so *System* is selected in this field.
- **Criteria Logic.** The output of the actions will be viewed via the **SL1 Event Console**, and the actions in the policy are not configured to output to a ticket. As a result, the policy is configured to execute immediately when a matching event triggers using these criteria: "Severity >= Minor, and no time has elapsed since the first occurrence, and event is NOT cleared, and all times are valid".
- **Aligned Devices.** The policy is configured to trigger for all devices in the system.
- **Aligned Events.** The actions selected for the policy collect diagnostic information about UCS Fabric components. Therefore, the policy is configured to trigger only when the following events are triggered:
  - Cisco: UCS Fabric PSU Amperes has exceeded threshold
  - Cisco: UCS Fabric PSU Voltage has exceeded threshold
  - Cisco: UCS Fabric PSU Wattage has exceeded threshold
- **Aligned Actions.** Users will view the output of the automation actions in the Automation Log accessed through the **SL1 Event Console**. Therefore, the automation includes four actions in the following sequence:
  - Enrichment: Cisco-UCS: Fabric Show Commands
  - Enrichment: Util: Collect Enrichment Data

- Enrichment: Util: Format Command Output as HTML
- Enrichment: Util: Load Work Instructions



## Configuring Device Credentials

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### Overview

This chapter describes how to configure the credentials required by the automation actions in the *Datacenter Advanced Enrichment Actions PowerPack*:

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ()
- To view a page containing all of the menu options, click the Advanced menu icon ()

This chapter covers the following topics:

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## Creating a Credential

To use the automation actions in the PowerPack to collect data from a device, you must create an SSH or Telnet credential that includes the username and password for that device.

**NOTE:** The automation actions in the PowerPack do not support SSH key-based authentication or non-standard SSH or Telnet ports. You must use the Basic/Snippet credential type when creating credentials for the *Datacenter Advanced Enrichment Actions* PowerPack.

To create a credential:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Click **[Actions]** and select *Create Basic/Snippet credential*. The Create New Basic/Snippet Credential page appears.
3. Supply values in the following fields:
  - **Credential Name**. Enter a name for the credential.
  - **Hostname/IP**. Enter "%D" in this field.
  - **Port**. To use SSH to connect to the device, enter "22" in this field. To use Telnet, enter "23" in this field.
  - **Timeout(ms)**. Enter a timeout, in milliseconds, for the connection.
  - **Username**. Enter the username for a user that can login to the device using SSH or telnet connect and execute diagnostic commands.
  - **Password**. Enter the password for the user you entered in the **Username** field.
4. Click **[Save]**.

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## Aligning Credentials to Devices

The *Datacenter Advanced Enrichment Actions* PowerPack includes the "Automation Remote Login" Dynamic Application. When the Enrichment: Util: Collect Enrichment Data executes, it uses the credential associated with the "Automation Remote Login" Dynamic Application for the device associated with the triggering event. The following sections describe how to align the "Automation Remote Login" Dynamic Application to devices using the credentials that you created.

**NOTE:** For automation actions that are designed to trigger for events associated with component devices (e.g. the automation actions for Cisco UCS components), this configuration must be performed on the root device. The "Automation Remote Login" Dynamic Application does not need to be associated with the component device(s).

## Aligning a Credential Manually to a Device

To manually align the "Automation Remote Login" Dynamic Application and credential to a device, perform the following steps:

1. Go to the **Device Manager** page (Registry > Devices > Device Manager).
2. Click the wrench icon () for the device. The **Device Administration** panel appears.
3. Click the **[Collections]** tab. The **Dynamic Application Collections** page appears.
4. Click the **[Actions]** button and select *Add Dynamic Application*. The **Dynamic Application Alignment** modal page appears.
5. In the **Dynamic Applications** field, select *Automation Remote Login*. In the **Credentials** field, select the credential you created in the previous section.
6. Click **[Save]**.

## Aligning Credentials Automatically During Discovery

The "Automation Remote Login" Dynamic Application includes a discovery object that you can use to automatically align the Dynamic Application to devices during discovery. To configure a discovery session to automatically align the "Automation Remote Login" Dynamic Application, select the credential you created in the previous section in the **Other Credentials** field in the Discovery Session Editor.



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