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# Monitoring Cisco Unified Computing System (UCS) Manager

Cisco: UCS PowerPack version 103

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## Introduction to Monitoring Cisco UCS Manager

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### Overview

This manual describes how to configure the ScienceLogic platform to monitor Cisco Unified Computing System (UCS) Manager.

**NOTE:** ScienceLogic provides this documentation for the convenience of ScienceLogic customers. Some of the configuration information contained herein pertains to third-party vendor software that is subject to change without notice to ScienceLogic. ScienceLogic makes every attempt to maintain accurate technical information and cannot be held responsible for defects or changes in third-party vendor software. There is no written or implied guarantee that information contained herein will work for all third-party variants. See the End User License Agreement (EULA) for more information.

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### What is Cisco UCS Manager?

Cisco UCS Manager is a management system for all of the components in Cisco's Unified Computing System. Cisco UCS combines computing, network, and storage technologies, including fabric interconnects, blade servers, server chassis, and other components.

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### What Does the Cisco: UCS PowerPack Monitor?

To monitor Cisco UCS Manager using the ScienceLogic platform, you must install the *Cisco: UCS PowerPack*. This PowerPack enables you to discover, model, and collect data about a UCS Manager and its component devices.

The *Cisco: UCS PowerPack* includes:

- Dynamic Applications that enable the ScienceLogic platform to discover, model, and monitor Cisco UCS Manager devices
- Event Policies that are triggered when Cisco UCS Manager component devices meet certain status criteria
- Device Classes for each type of Cisco UCS Manager component device monitored
- A sample credential for discovering Cisco UCS Manager component devices

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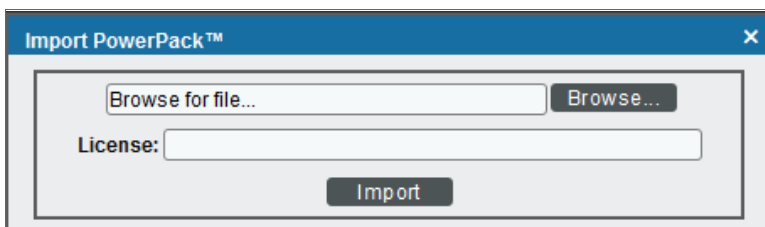
## Installing the Cisco: UCS PowerPack

Before completing the steps in this manual, you must import and install the latest version of the *Cisco: UCS 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:



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*.

## Monitoring Cisco Unified Computing System Manager

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### Overview

The following sections describe how to configure and discover a Cisco Unified Computing System (UCS) Manager and component devices for monitoring by the ScienceLogic platform using the *Cisco: UCS PowerPack*:

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### Prerequisites

To use the Dynamic Component Mapping Dynamic Applications included in the *Cisco: UCS PowerPack*, you must log in to the UCS Manager GUI and create a user account that the ScienceLogic platform can use to access the UCS web service.

When the Dynamic Component Mapping Dynamic Applications are aligned to the UCS Manager, the ScienceLogic platform will collect information about all the components in the UCS system, such as UCS Chassis and Blades. The platform will then create a device record for each component and automatically align other Dynamic Applications from the *Cisco: UCS PowerPack* to each component device.

**NOTE:** Each component device created by the ScienceLogic platform is included in the calculations for collector group capacity. You should check that the collector group you will use to monitor the UCS Manager has enough capacity for all components in the UCS system. For more information about collector capacity, see the *System Administration* manual.

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## Configuring the UCS System

To configure a UCS system for monitoring by the ScienceLogic platform, you must:

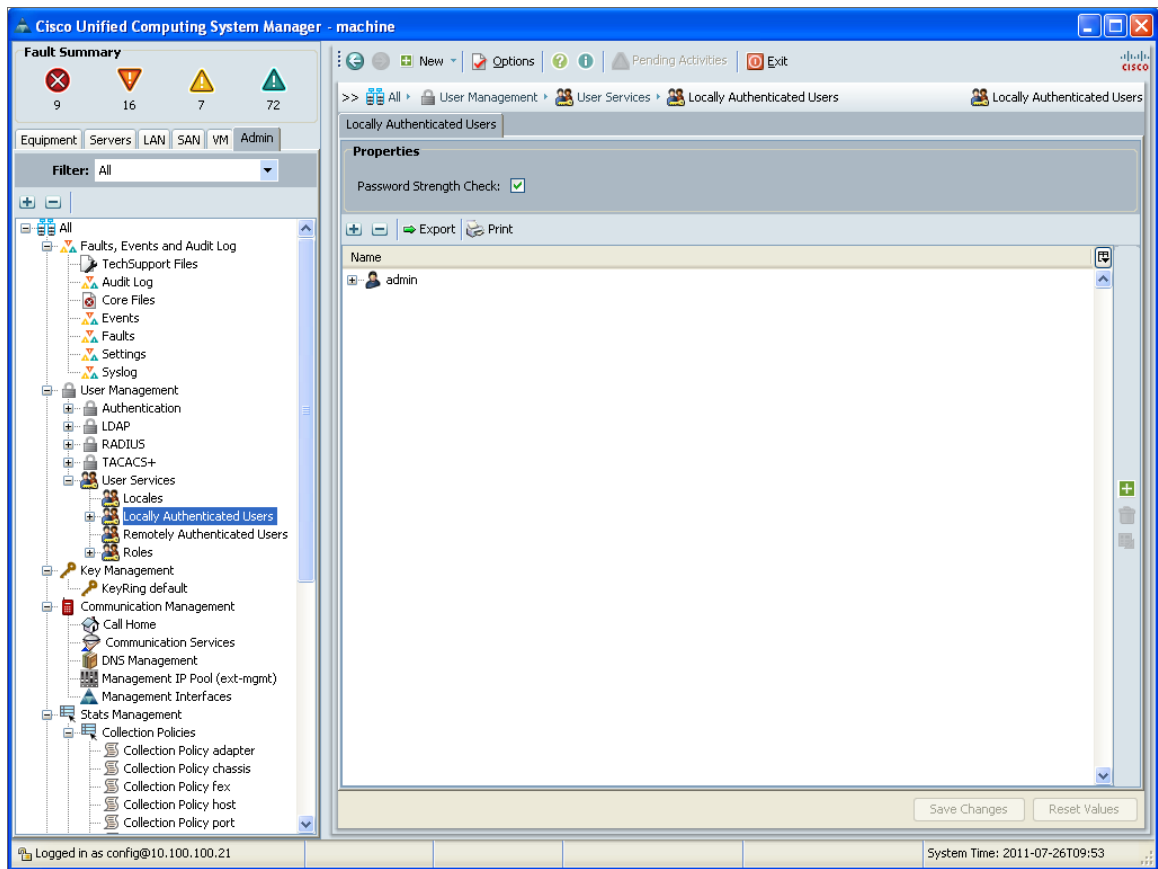
- Create a user account in UCS that the ScienceLogic platform can use to access the UCS web service
- Enable the CIM XML service

**NOTE:** Older versions of the UCS software do not include the option to disable the CIM XML service. If the option to enable/disable the CIM XML service does not appear, the service is already enabled.

Perform the following steps to complete these tasks:

1. Log in to the UCS Manager GUI as an administrator.
2. At the top of the left pane, click the **[Admin]** tab.

3. In the left pane, go to All > User Management > User Services > Locally Authenticated Users. The **Locally Authenticated Users** page appears in the right pane:



2

4. Click the green plus icon on the right side of the **Locally Authenticated Users** page. The **Create User** window appears:

**Create User**

Login ID:

First Name:

Last Name:

Email:

Phone:

Password:

Confirm Password:

Account Status:  active  inactive

Account Expires:

**Roles**

- aaa
- admin
- facility-manager
- network
- operations
- read-only
- server-equipment
- server-profile
- server-security
- storage

**Locales**

OK Cancel

5. Supply values in the following fields:

- **Login ID.** Enter a username for the user.
- **Password.** Enter a password for the user.
- **Confirm Password.** Re-enter the password you entered in the **Password** field.



- **Account Status.** Select *active*.
  - **Account Expires.** Make sure that this checkbox is not selected.
  - **Roles.** To create a read-only user, do not select any checkboxes.
6. Click the **[OK]** button, and then click the **[OK]** button in the confirmation pop-up window.
  7. In the left pane of the UCS Manager GUI, go to All > Communication Management > Communication Services. The **Communication Services** page appears in the right pane.
  8. In the **Admin State** field in the **CIM XML** section, select *Enabled*.

**NOTE:** Older versions of the UCS software do not include the option to disable the CIM XML service. If the option to enable/disable the CIM XML service does not appear, the service is already enabled.

9. Click the **[Save Changes]** button.

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## Creating a SOAP/XML Credential

To use the Dynamic Applications in the *Cisco: UCS PowerPack*, you must configure a SOAP/XML credential for the UCS Manager web service. The *Cisco: UCS PowerPack* includes a template for a SOAP/XML credential that you can edit for use with your UCS system.

To create a new UCS credential using the example credential:

1. Go to the **Credential Management** page (System > Manage > Credentials).

- Click the wrench icon (  ) for the **UCS - Example** credential. The **Credential Editor** modal window appears:

- Supply values in the following fields:

- Profile Name.** Type a new name for the credential.
- URL.** Keep the default value: **https://%D/nuova**
- Embed Value [%1].** Type the username for the user account that you configured in the UCS Manager.

**NOTE:** If your user account does not use the default UCS Manager authentication realm, then you must prefix the username entered in this field with the authentication realm name for that user. In this scenario, the username should be in the following format: `ucs-[realm name]\[username]`.

For example, if your UCS Manager username is "EM7admin" and it is authenticated in the "Local" realm (i.e., "Local" is the realm in which the user "EM7admin" is authenticated), you would enter the following value in this field:

```
ucs-Local\EM7admin
```

UCS Manager authentication realm names are case-sensitive.

- Embedded Password [%P].** Type the password for the user account that you configured in the UCS Manager.

4. Click the **[Save As]** button.

## Discovering a UCS Manager


To create and run a discovery session that will discover a UCS Manager:

1. Go to the **Discovery Control Panel** page (System > Manage > Discovery).
2. Click the **[Create]** button to create a new discovery session. The **Discovery Session Editor** window appears:


The screenshot shows the 'Discovery Session Editor | Create New' window. It is divided into three main sections: Identification Information, IP and Credentials, and Detection and Scanning. The Identification Information section has fields for Name and Description. The IP and Credentials section has an IP Address/Hostname Discovery List with an Upload File button and a list of SNMP Credentials. The Detection and Scanning section has dropdown menus for Initial Scan Level, Scan Throttle, Port Scan All IPs, and Port Scan Timeout, and a list for Detection Method & Port. The Basic Settings section has checkboxes for Discover Non-SNMP, Model Devices, and DHCP, and fields for Device Model Cache TTL (h), Collection Server PID, Organization, and Add Devices to Device Group(s). A Save button is at the bottom center, and a Log All checkbox is at the bottom right.

3. Enter values in the following fields:

- **IP Address Discovery List.** Enter the IP address for the UCS Manager.
- **SNMP Credentials.** UCS Manager does not support SNMP. Do not select any credentials in this field.
- **Other Credentials.** Select the [Cisco UCS credential you created](#).
- **Initial Scan Level.** Select 5. *Deep Discovery*. The Cisco: UCS PowerPack includes a "UCS Manager" device class. The "UCS Manager" device class is a **Non-SNMP** device class that is aligned only during deep discovery. If you do not select 5. *Deep Discovery* in this field, the UCS Manager will be discovered and assigned a device class for a Linux pingable device.
- **Detection Method & Port.** Select 443 - HTTPS. You can select additional ports, but must include port 443 - HTTPS.
- **Discover Non-SNMP.** Because UCS Manager does not support SNMP, you must select this checkbox.

- Optionally, you can enter values in the other fields on this page. For more information about the other fields on this page, see the **Discovery & Credentials** manual.
- Click the **[Save]** button and then close the **Discovery Session Editor** window.
- The discovery session you created will display at the top of the **Discovery Control Panel** page. Click its lightning-bolt icon (  ) to run the discovery session.
- The **Discovery Session** window appears.

**NOTE:** After the discovery session completes, ScienceLogic recommends running the discovery session a second time to ensure that the "Cisco: UCS Cluster Information" Dynamic Application aligns with the UCS Manager root device.

- When the UCS Manager is discovered, click its device icon (  ) to view the **Device Properties** page for the UCS Manager server.

To verify that the ScienceLogic platform has automatically aligned the correct Dynamic Applications during discovery:

**NOTE:** It can take several minutes after discovery for Dynamic Applications to display on the **Dynamic Application Collections** page. If the listed Dynamic Applications do not display on this page, try clicking the **[Reset]** button.

- From the **Device Properties** page for the UCS Manager, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.

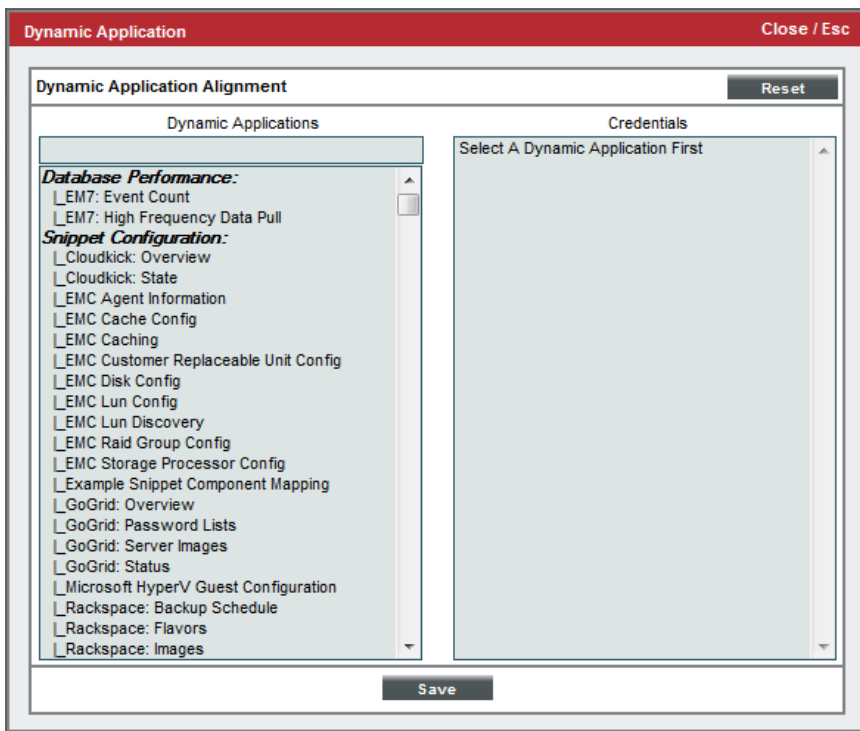
| Dynamic Application™ Collections | ID  | Poll Frequency | Type        | Expand | Action   | Reset | Guide |
|----------------------------------|-----|----------------|-------------|--------|----------|-------|-------|
| UCS Chassis Discovery            | 327 | 15 mins        | XSLT Config |        | UCS - QA |       |       |
| UCS Compute Rack Unit Discovery  | 361 | 15 mins        | XSLT Config |        | UCS - QA |       |       |
| UCS Fabric Discovery             | 352 | 15 mins        | XSLT Config |        | UCS - QA |       |       |
| UCS FEX Discovery                | 366 | 15 mins        | XSLT Config |        | UCS - QA |       |       |
| UCS Root Cache                   | 326 | 15 mins        | XSLT Config |        | UCS - QA |       |       |

2. The following Dynamic Applications should display in the list of Dynamic Applications aligned to the UCS Manager:

- "Cisco: UCS Chassis Discovery"
- "Cisco: UCS Compute Rack Unit Discovery"
- "Cisco: UCS Fabric Discovery"
- "Cisco: UCS FEX Discovery"
- "Cisco: UCS Root Cache"
- "Cisco: UCS Cluster Information"

If the listed Dynamic Applications have not been automatically aligned, you can align them manually. To do so:

1. For the "Cisco: UCS Root Cache" Dynamic Application, click the **[Action]** button in the **Dynamic Application Collections** page of the device and then select *Add Dynamic Application* from the menu. The **Dynamic Application Alignment** page appears.



2. In the **Dynamic Applications** field, select *Cisco: UCS Root Cache*.
3. In the **Credentials** field, select the SOAP/XML credential you configured for the UCS Manager.
4. Click the **[Save]** button.
5. Repeat steps 1–4 for the "Cisco: UCS Chassis Discovery" Dynamic Application.
6. Repeat steps 1–4 for the "Cisco: UCS Compute Rack Unit Discovery" Dynamic Application.
7. Repeat steps 1–4 for the "Cisco: UCS Fabric Discovery" Dynamic Application.
8. Repeat steps 1–4 for the "Cisco: UCS FEX Discovery" Dynamic Application.

9. Repeat steps 1-4 for the "Cisco: UCS Cluster Information" Dynamic Application.
10. After aligning the Dynamic Applications, click the **[Reset]** button and then click the plus icon (+) for the Dynamic Application. If collection for the Dynamic Application was successful, the graph icons (📊) for the Dynamic Application are enabled.
11. Click a graph icon (📊) to view the collected data. The **Configuration Report** page will display the number of components of each type and the total number of components managed by the device.

## Viewing Component Devices

When the ScienceLogic platform performs collection for the "UCS Chassis Discovery" and "UCS Fabric Discovery" Dynamic Applications, the platform will create component devices for the components in the UCS system and align other Dynamic Applications to those component devices. Some of the Dynamic Applications aligned to the component devices will also be used to create additional component devices. All component devices display on the **Device Manager** page just like devices discovered using the ScienceLogic discovery process.

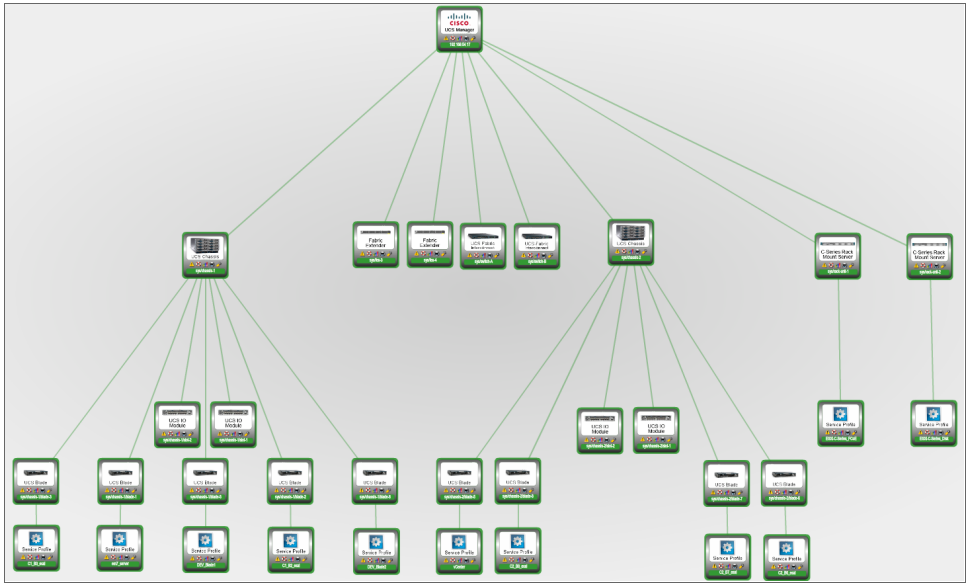
**NOTE:** It can take several minutes after initial collection of the "UCS Chassis Discovery" and "UCS Fabric Discovery" Dynamic Applications for all component devices to be discovered.

In addition to the **Device Manager** page, you can view the UCS Manager and all associated component devices in the following places in the ScienceLogic platform:

- The **Device Components** page (Registry > Devices > Device Components) displays a list of all root devices and component devices discovered by the ScienceLogic platform. The **Device Components** page displays all root devices and component devices in an indented view, so you can easily view the hierarchy and relationships between child devices, parent devices, and root devices. To view the component devices associated with a UCS Manager, find the UCS Manager and select its plus icon (+):

| Device Name           | IP Address    | Device Category | Device Class   Sub-class                | DD | System | Organization | Current State | Collection Group | Collection State |
|-----------------------|---------------|-----------------|---|----|--------|--------------|---------------|------------------|------------------|
| 192.168.54.17         | 192.168.54.17 | Servers         | Cisco Systems   UCS Manager             | 2  | System |              | Healthy       | CUG              | Active           |
| sys/chassis-1         | --            | Chassis         | Cisco Systems   UCS Chassis             | 3  | System |              | Healthy       | CUG              | Active           |
| sys/chassis-1/blade-1 | --            | RackUnit        | Cisco Systems   UCS Blade               | 12 | System |              | Healthy       | CUG              | Active           |
| em7_server            | --            | Utility         | Cisco Systems   UCS Service Profile     | 27 | System |              | Healthy       | CUG              | Active           |
| sys/chassis-1/blade-2 | --            | RackUnit        | Cisco Systems   UCS Blade               | 14 | System |              | Healthy       | CUG              | Active           |
| CT_B2_esx             | --            | Utility         | Cisco Systems   UCS Service Profile     | 29 | System |              | Healthy       | CUG              | Active           |
| sys/chassis-1/blade-3 | --            | RackUnit        | Cisco Systems   UCS Blade               | 11 | System |              | Healthy       | CUG              | Active           |
| sys/chassis-1/blade-4 | --            | RackUnit        | Cisco Systems   UCS Blade               | 13 | System |              | Healthy       | CUG              | Active           |
| sys/chassis-1/blade-5 | --            | RackUnit        | Cisco Systems   UCS Blade               | 15 | System |              | Healthy       | CUG              | Active           |
| sys/chassis-1/blade-1 | --            | Modules         | Cisco Systems   UCS IO Module           | 17 | System |              | Healthy       | CUG              | Active           |
| sys/chassis-1/svd-2   | --            | Modules         | Cisco Systems   UCS IO Module           | 16 | System |              | Healthy       | CUG              | Active           |
| sys/chassis-2         | --            | Chassis         | Cisco Systems   UCS Chassis             | 4  | System |              | Healthy       | CUG              | Active           |
| sys/flex-3            | --            | Modules         | Cisco Systems   UCS Fabric Extender     | 10 | System |              | Healthy       | CUG              | Active           |
| sys/flex-4            | --            | Modules         | Cisco Systems   UCS Fabric Extender     | 9  | System |              | Healthy       | CUG              | Active           |
| sys/rack-unit-1       | --            | RackUnit        | Cisco Systems   UCS C-Series Rack Mount | 7  | System |              | Healthy       | CUG              | Active           |
| ESXi-C-Series_FCOE    | --            | Utility         | Cisco Systems   UCS Service Profile     | 24 | System |              | Healthy       | CUG              | Active           |
| sys/rack-unit-2       | --            | RackUnit        | Cisco Systems   UCS C-Series Rack Mount | 8  | System |              | Healthy       | CUG              | Active           |
| sys/switch-A          | --            | FabricInterconn | Cisco Systems   UCS Fabric Interconnect | 5  | System |              | Healthy       | CUG              | Active           |
| sys/switch-B          | --            | FabricInterconn | Cisco Systems   UCS Fabric Interconnect | 6  | System |              | Healthy       | CUG              | Active           |

- The **Component Map** page (Views > Device Maps > Components) allows you to view devices by root node and view the relationships between root nodes, parent components, and child components in a map. This makes it easy to visualize and manage root nodes and their components. The ScienceLogic platform automatically updates the **Component Map** as new component devices are discovered. The platform also updates each map with the latest status and event information. To view the map for a UCS Manager, go to Views > Device Maps > Components and select the map from the list in the left NavBar. To learn more about the **Component Map** page, see the **Views** manual.



## Availability for Component Devices

The Dynamic Applications that discover the component devices in a UCS system include collection objects that define the availability status of those component devices.

The following types of component devices are considered unavailable if the UCS system does not include information about those components in the appropriate response:

- Blade
- Chassis
- Compute Rack Unit
- Fabric Extender
- Fabric Interconnect
- IO Module
- Service Profile

## Relationships with Other Types of Component Devices

In addition to the parent/child relationships between component devices, the Dynamic Applications in the *Cisco: UCS PowerPack* automatically create relationships between the following Cisco UCS component devices:

- UCS Blades and UCS IO Modules
- UCS Compute Rack Units and UCS Fabric Extenders
- UCS Fabric Interconnects and UCS Fabric Extenders
- UCS Fabric Interconnects and UCS IO Modules

Additionally, the ScienceLogic platform can automatically build relationships between Cisco UCS component devices and other associated devices. If you discover one or more of the following:

- A Cisco Hyperflex cluster using the Dynamic Applications in the *Cisco: Hyperflex PowerPack*
- A Cisco Nexus switch using the Dynamic Applications in the *Cisco Base Pack PowerPack*
- An EMC VNX LUN using the Dynamic Applications in the *EMC: VNX PowerPack*
- An EMC XtremIO LUN using the Dynamic Applications in the *Dell EMC: XtremIO PowerPack*
- A NetApp device using the Dynamic Applications in the *NetApp Base Pack PowerPack*
- A vCenter device using the Dynamic Applications in the *VMware vSphere Base Pack PowerPack*

The platform will automatically create relationships between the following types of component devices, where appropriate:

- Cisco Hyperflex clusters and UCS Rack Servers
- Cisco Nexus switches and UCS Fabric Interconnects
- EMC VNX LUNs and UCS Service Profiles
- EMC XtremIO LUNs and UCS Service Profiles
- NetApp LUNs and UCS Service Profiles
- NetApp Volumes and UCS Service Profiles
- VMware Hosts and UCS Service Profiles



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