Monitoring Cisco Unified Computing System (UCS) Manager

Cisco: UCS PowerPack version 104, revision 3

Table of Contents

Introduction 3

What is Cisco UCS Manager? 4

What Does the Cisco: UCS PowerPack Monitor? 4

Installing the Cisco: UCS PowerPack 4

Configuration and Discovery 6

Prerequisites for Monitoring Cisco UCS Manager 6

Configuring the UCS System 7

Creating a SOAP/XML Credential 9

Discovering a UCS Manager 10

Viewing Component Devices 13

Availability for Component Devices 14

Relationships with Other Types of Component Devices 14

Chapter 1

Introduction

Overview

This manual describes how to monitor Cisco Unified Computing System (UCS) Manager devices in SL1 using the Dynamic Applications in the *Cisco: UCS* 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 ( ).

The following sections provide an overview of Cisco UCS Manager and the *Cisco: UCS* PowerPack:

This chapter covers the following topics:

What is Cisco UCS Manager? *4*

What Does the Cisco: UCS PowerPack Monitor? *4*

Installing the Cisco: UCS PowerPack *4*

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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.

What Does the Cisco: UCS PowerPack Monitor?

To monitor Cisco UCS Manager using SL1, 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 SL1 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

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.

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.)

IMPORTANT: The minimum required MySQL version is 5.6.0.

To download and install the PowerPack:

1. Search for and download the PowerPack from the **PowerPacks** page (Product Downloads > PowerPacks & SyncPacks) at the ScienceLogic Support Site.
2. In SL1, go to the **PowerPacks** page (System > Manage > PowerPacks).
3. Click the **[Actions]** button and choose *Import PowerPack*. The **Import PowerPack** dialog box appears.
4. Click **[Browse]** and navigate to the PowerPack file from step 1.

5. Select the PowerPack file and click **[Import]**. The **PowerPack Installer** modal displays a list of the PowerPack contents.
6. Click **[Install]**. The PowerPack is added to the **PowerPacks** page.

> **NOTE:** If you exit the **PowerPack Installer** modal without installing the imported PowerPack, the imported PowerPack will not appear in the **PowerPacks** 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*.

Chapter 2

Configuration and Discovery

Overview

The following sections describe how to configure and discover a Cisco Unified Computing System (UCS) Manager and component devices for monitoring by SL1 using the *Cisco: UCS* PowerPack:

This chapter covers the following topics:

Prerequisites for Monitoring Cisco UCS Manager 6

Configuring the UCS System 7

Creating a SOAP/XML Credential 9

Discovering a UCS Manager 10

Viewing Component Devices 13

Prerequisites for Monitoring Cisco UCS Manager

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 SL1 can use to access the UCS web service.

When the Dynamic Component Mapping Dynamic Applications are aligned to the UCS Manager, SL1 will collect information about all the components in the UCS system, such as UCS Chassis and Blades. SL1 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 SL1 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.

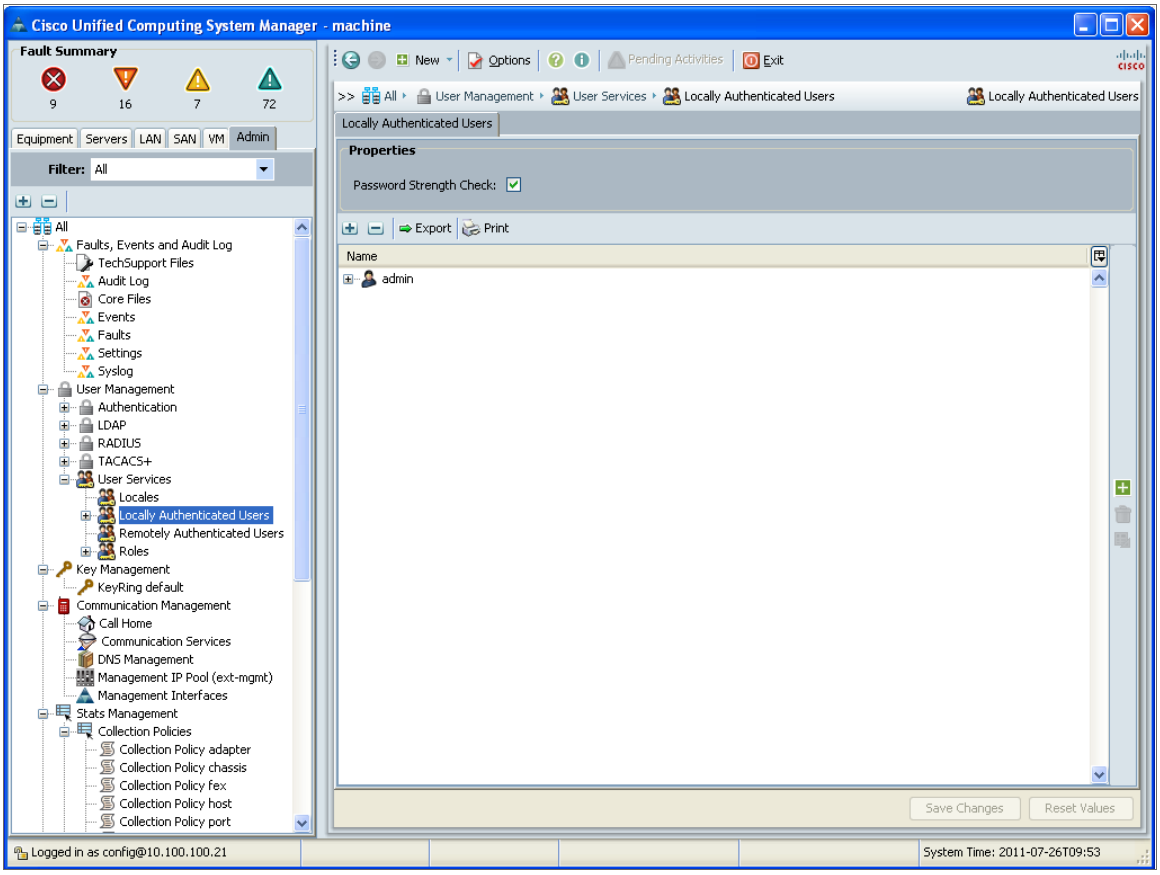
Configuring the UCS System

To configure a UCS system for monitoring by SL1, you must:

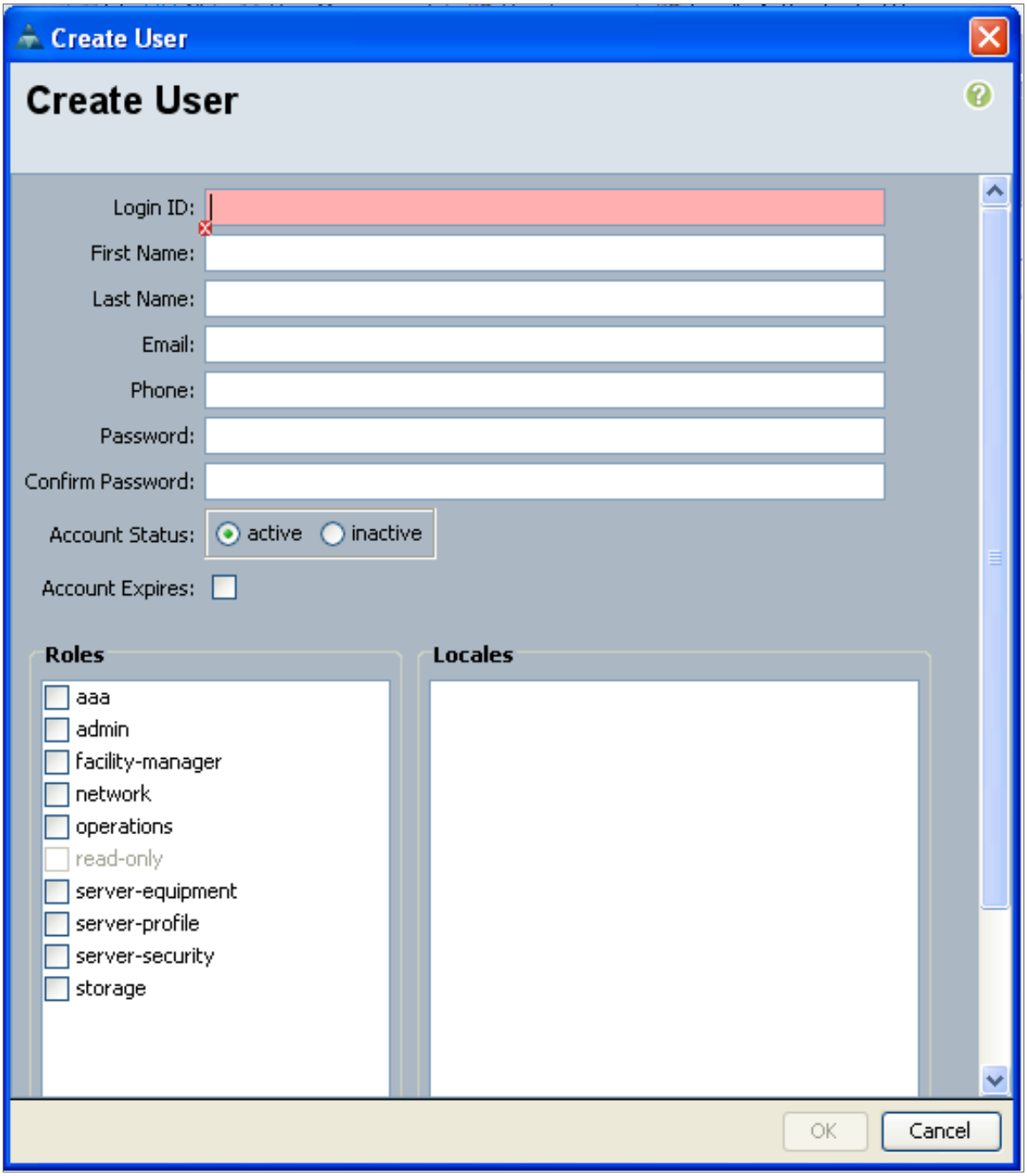
- Create a user account in UCS that SL1 can use to access the UCS web service
- Enable the CIM XML service

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:



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



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.

NOTE: When blade servers are replaced in a UCS chassis, and the old blade servers are not properly decommissioned, UCS Manager does not assign new Internal IDs to the new blade servers when they are inserted in the chassis. Instead, UCS Manager assigns an Internal ID of "none" to the new blade servers. This does not cause an error in SL1 if it occurs with only a single blade; however, if more than one blade that you are monitoring is replaced without being decommissioned, multiple blades will have the same Internal ID of "none", which in turn can cause blades to appear under the incorrect chassis or not appear at all in SL1. If this occurs, decommission the affected blades and then reinsert them. For more information, see the section on "Guidelines for Removing and Decommissioning Blade Servers" in the Cisco UCS documentation.

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).
2. Click the wrench icon ( ) for the **UCS - Example** credential. The **Credential Editor** modal window appears.
3. 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 > Classic Discovery).
2. Click the **[Create]** button to create a new discovery session. The **Discovery Session Editor** window appears.
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.
4. 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.

5. Click the **[Save]** button and then close the **Discovery Session Editor** window.
6. 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.
7. The **Discovery Session** window appears.

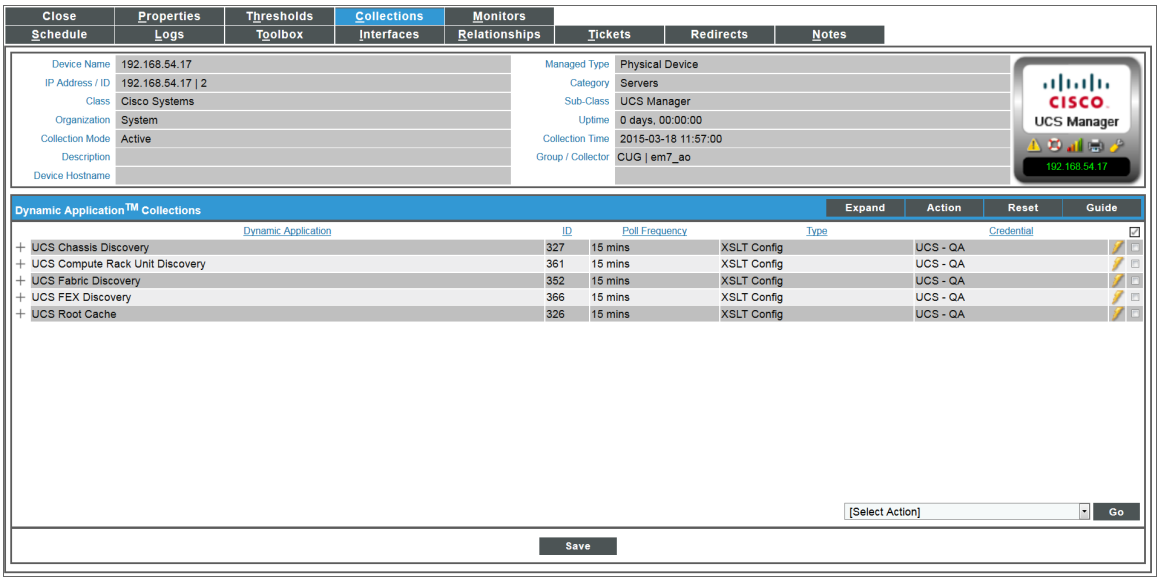
NOTE: After the discovery session completes, ScienceLogic recommends running the discovery session a second time to ensure that the "Cisco: UCS Cluster Information" Dynamic Application aligns with the UCS Manager root device.

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

To verify that SL1 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.

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

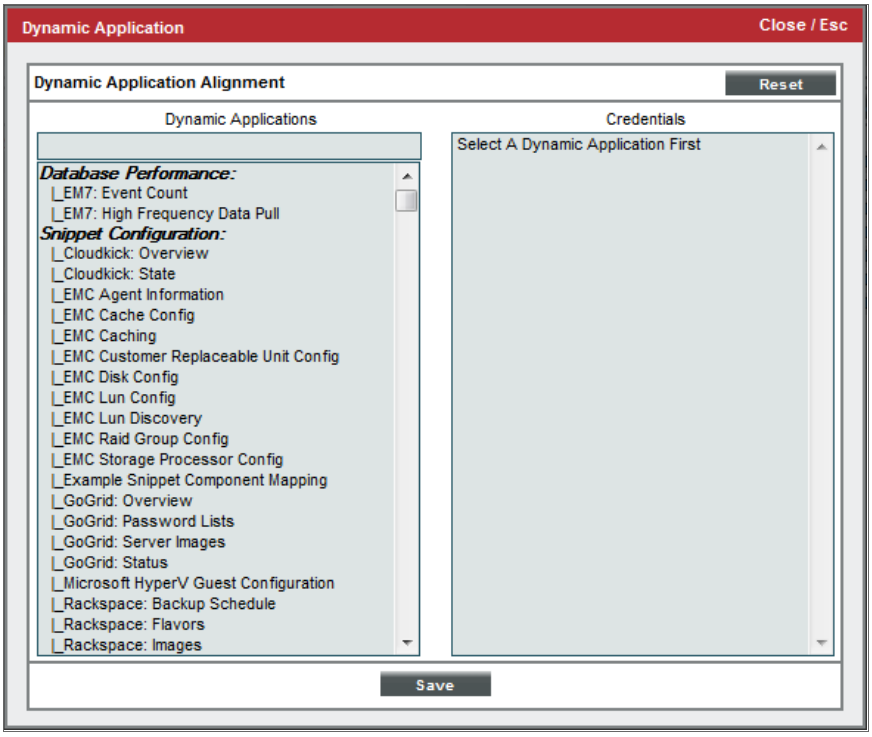


2. The following Dynamic Applications should display in the list of Dynamic Applications aligned to the UCS Manager:
   - "Cisco: UCS Chassis Discovery"
   - "Cisco: UCS Compute Rack Unit Discovery"
   - "Cisco: UCS Fabric Discovery"

- "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.

NOTE: In addition to the Dynamic Applications that might need to be manually aligned to the UCS Manager, you can also opt to manually align the "Cisco: UCS Fault Configuration" Dynamic Application to UCS C-Series Rack Mount Server component devices. Doing so allows fault alerts to appear in the device log for those rack units.

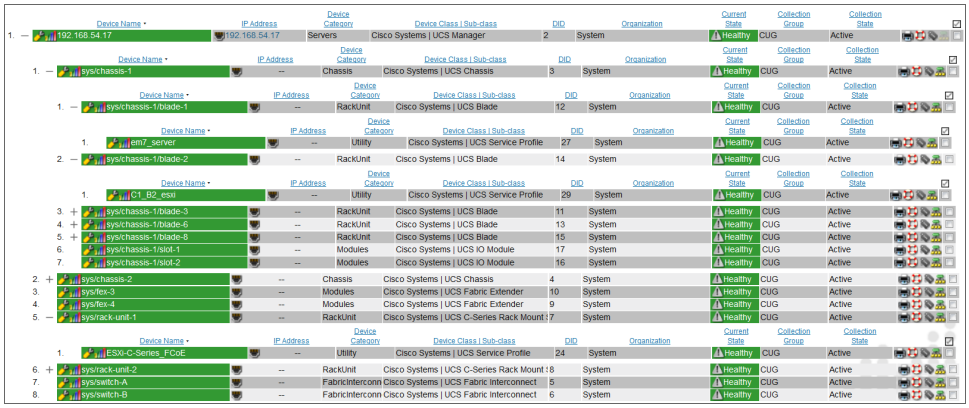
Viewing Component Devices

When SL1 performs collection for the "UCS Chassis Discovery" and "UCS Fabric Discovery" Dynamic Applications, SL1 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.

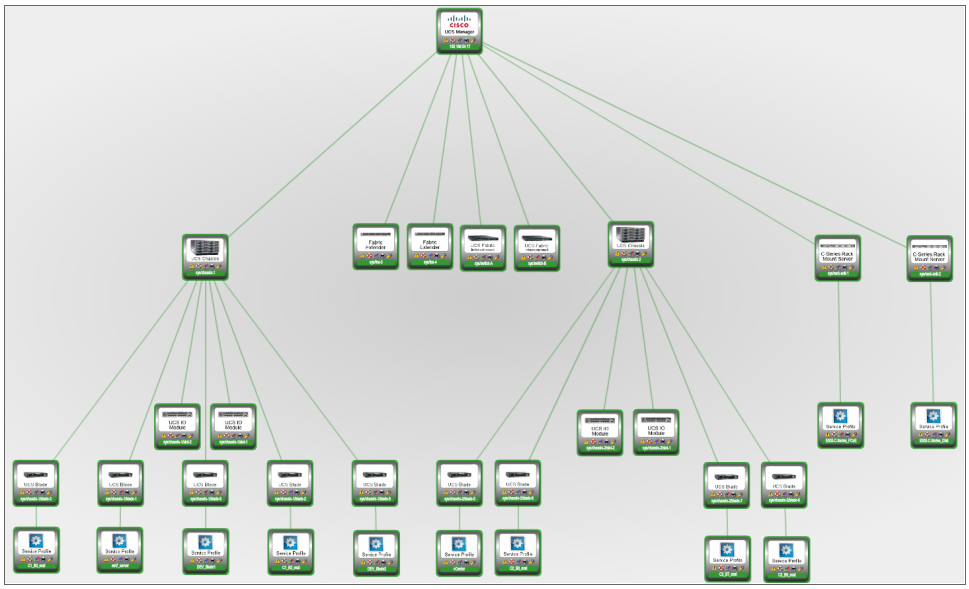
In addition to the **Device Manager** page, you can view the UCS Manager and all associated component devices in the following places in SL1:

- The **Device Components** page (Registry > Devices > Device Components) displays a list of all root devices and component devices discovered by SL1. 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 (+):



- The **Component Map** page (Classic Maps > 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. SL1 automatically updates the **Component Map** as new component devices are discovered. SL1 also updates each map with

the latest status and event information. To view the map for a UCS Manager, go to Classic Maps > 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, SL1 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

SL1 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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