



Monitoring Cisco Cloud Center

Beta Version

Cisco: Cloud Center PowerPack version 105

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Chapter

1

Introduction

Overview

This manual describes how to monitor Cisco Cloud Center services in SL1 using the Dynamic Applications in the *Cisco: Cloud Center PowerPack*.

The following sections provide an overview of Cisco Cloud Center and the *Cisco: Cloud Center PowerPack*:

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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.

What is Cisco Cloud Center?

Cisco Cloud Center is a cloud-management platform used for deploying and managing applications in data centers, private clouds, and public clouds.

What Does the Cisco: Cloud Center PowerPack Monitor?

The *Cisco: Cloud Center PowerPack* enables you to discover and collect configuration and performance data about standard or high-availability Cloud Center deployments and their components. The *Cisco: Cloud Center PowerPack* can monitor Cloud Center Manager version 4.7 and later.

The *Cisco: Cloud Center PowerPack* includes:

- Sample Credentials you can use as templates to create your own Credentials to monitor Cloud Center deployments
- Dynamic Applications and Run Book Actions to discover, model, and monitor performance metrics and/or collect configuration data for the following Cloud Center components:
 - Cloud Center Clusters
 - Cloud Center Manager
 - Cloud Center Load Balancers
 - Cloud Center Postgres Databases
 - Cloud Center Health Monitor
 - Cloud Center Tenants
 - Cloud Center Application Instances
 - Cloud Center Clouds
 - Cloud Center Regions
 - Cloud Center Orchestrator
 - RabbitMQ Servers
 - RabbitMQ Load Balancers
- Device Classes for each of the Cloud Center components that SL1 monitors
- Event Policies and corresponding alerts that are triggered when Cloud Center components meet certain status criteria

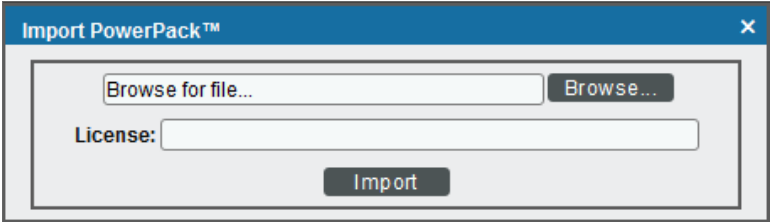
Installing the Cisco: Cloud Center PowerPack

Before completing the steps in this manual, you must import and install the latest version of the *Cisco: Cloud Center 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.)

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 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*.

Discovering Cisco Cloud Center Manager

Overview

The following sections describe how to configure and discover a Cloud Center Manager for monitoring by SL1 using the *Cisco: Cloud Center PowerPack*:

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Configuration and Discovery for Standard Cisco Cloud Center Deployments

The *Cisco: Cloud Center PowerPack* enables you to discover and collect configuration and performance data about standard or high-availability (HA) Cloud Center deployments and their components. The following sections describe the configuration and discovery steps for monitoring standard (non-HA) Cloud Center deployments.

For information about HA deployments, see the section on [Configuration and Discovery for High-Availability Cisco Cloud Center Deployments](#).

Prerequisites for Monitoring Standard Cloud Center Deployments

To configure the SL1 system to monitor standard (non-HA) Cisco Cloud Center deployments using the *Cisco: Cloud Center PowerPack*, you must first have the following information about the Cloud Center Manager that you want to monitor:


- The IP address of the Cloud Center Manager system
- The username and API key for a Cisco Cloud Center Manager user that has root tenant administration privileges. This account must be an API user, not a GUI user. For information about configuring API users in Cisco Cloud Center Manager, see <http://docs.cloudcenter.cisco.com/display/40API/API+Management+Key>.

Creating a Basic/Snippet Credential for Standard Deployments

To configure SL1 to monitor a standard (non-HA) Cloud Center Manager deployment, you must first create a Basic/Snippet credential. This credential allows the Dynamic Applications in the *Cisco: Cloud Center PowerPack* to communicate with your Cloud Center Manager.

The PowerPack includes an example Basic/Snippet credential (**Cisco Cloud Center EXAMPLE**) that you can edit for your own use.

To configure a Basic/Snippet credential to access a Cloud Center Manager:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the **Cisco Cloud Center EXAMPLE** credential, then click its wrench icon (). The **Edit Basic/Snippet Credential** modal page appears.

3. Enter values in the following fields:

The screenshot shows a 'Credential Editor' window with the following fields and values:

Field	Value
Credential Name	Cisco Cloud Center EXAMPLE
Hostname/IP	https://%D
Port	443
Timeout(ms)	5000
Username	<USER_NAME>
Password

- **Profile Name.** Type a name for the Cloud Center Manager credential.
- **Username.** Type the username for a Cloud Center Manager user that has root tenant administration privileges. This account must be an API user, not a GUI user.
- **Password.** Type the API key for the user you entered in the **Username** field.

4. Leave all other fields set to the default values. Click the **[Save As]** button.

Discovering the Cloud Center Manager Root Tenant for Standard Deployments

To discover Cloud Center Manager, perform the following steps:

1. Go to the **Discovery Control Panel** page (System > Manage > Discovery).
2. In the **Discovery Control Panel**, click the **[Create]** button.

- The **Discovery Session Editor** page appears. In the **Discovery Session Editor** page, define values in the following fields:

- **IP Address/Hostname Discovery List.** Enter the IP address for the Cloud Center Manager.
 - **SNMP Credentials.** Optionally, select the SNMP credential for the Cloud Center Manager you are discovering.
 - **Other Credentials.** Select the Basic/Snippet credential you created for the Cloud Center Manager root tenant.
 - **Discover Non-SNMP.** 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 to save the discovery session and then close the **Discovery Session Editor** window.
 - The discovery session you created appears at the top of the **Discovery Control Panel** page. Click its lightning-bolt icon (⚡) to run the discovery session.
 - The **Discovery Session** window appears. When the device is discovered, click the device icon (🖨️) to view the **Device Properties** page for the device.


Verifying Discovery and Dynamic Application Alignment

To verify that SL1 automatically aligned the correct Dynamic Applications during discovery:

1. From the **Device Properties** page for the Cloud Center Manager device, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.
2. All applicable Dynamic Applications for Cloud Center Manager are automatically aligned during discovery.

NOTE: It can take several minutes after the discovery session has completed for Dynamic Applications to appear in the **Dynamic Application Collections** page.

Close	Properties	Thresholds	Collections	Monitors	Schedule		
Logs	Toolbox	Interfaces	Relationships	Tickets	Redirects	Notes	Attributes
Device Name	ccm1-47		Managed Type	Physical Device			
IP Address / ID	10.199.88.40 2851		Category	Servers.Software			
Class	Cisco Systems		Sub-Class	Cloud Center Manager			
Organization	CCC		Uptime	0 days, 00:00:00			
Collection Mode	Active		Collection Time	2017-04-12 19:27:00			
Description			Group / Collector	CUG em7-r21-ova			
Root Device	Cloud Center Cluster 10.199.88.40		Parent Device	Cloud Center Cluster 10.199.88.40			



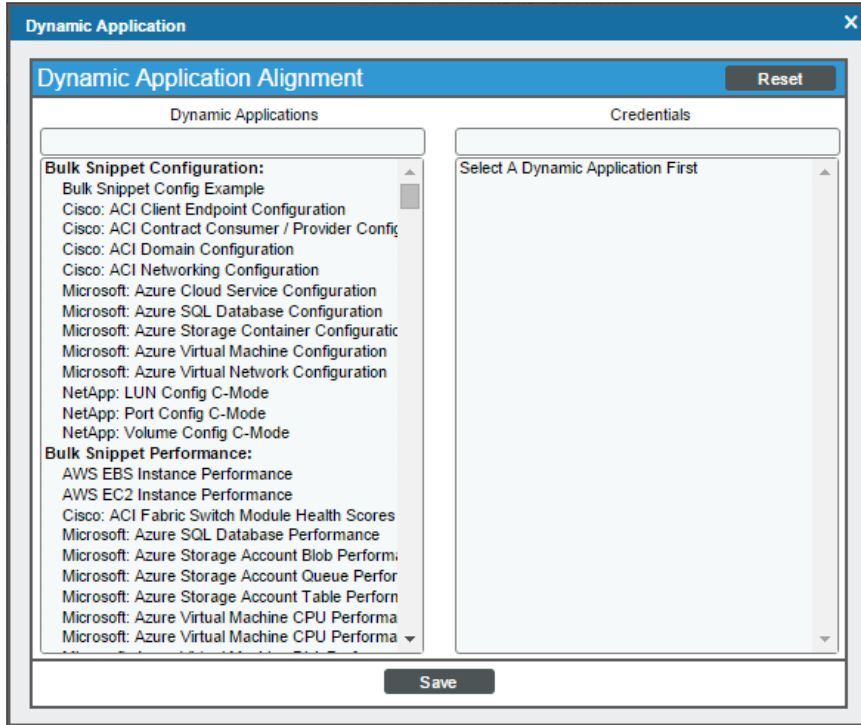
Dynamic Application™ Collections						Expand	Actions	Reset	Guide
Dynamic Application	ID	Poll Frequency	Type	Credential					
+ Cisco: Cloud Center CCM Component to Physical Merge	2046	15 mins	Snippet Configuration	Cisco Cloud Center https://					
+ Cisco: Cloud Center Cluster Discovery	2048	15 mins	Snippet Configuration	Cisco Cloud Center https://					
+ Cisco: Cloud Center Root Device Reclassification	2047	5 mins	Snippet Configuration	Cisco Cloud Center https://					

The following Dynamic Applications should be aligned to the device:

- Cisco: Cloud Center CCM Component to Physical Merge
- Cisco: Cloud Center Cluster Discovery
- Cisco: Cloud Center Root Device Reclassification

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

1. Click the **[Action]** button and then select *Add Dynamic Application*. The **Dynamic Application Alignment** page appears:



2. In the **Dynamic Applications** field, select the Dynamic Application you want to align.
3. In the **Credentials** field, select the Basic/Snippet credential you created for Cloud Center Manager.
4. Click the **[Save]** button.
5. Repeat steps 1-4 for the other unaligned Dynamic Applications.

Discovering Multiple Tenants for Standard Deployments

The *Cisco: Cloud Center PowerPack* can be used to monitor a Cloud Center Manager that includes multiple tenants. To discover multiple tenants, you must follow the steps in the following sections for each tenant in order (in other words, parents must be discovered before their children):

- [Creating a Credential for a Cloud Center Manager Tenant](#)
- [Discovering an additional Cloud Center Manager Tenant](#)

For each tenant, you must use the administrator account for that tenant when you create the credential.

Creating a Credential for a Cloud Center Manager Tenant

To configure a Basic/Snippet credential to access an additional Cloud Center Manager tenant:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the credential you used to discover the root tenant, then click its wrench icon (🔧). The **Edit Basic/Snippet Credential** modal page appears.
3. Enter values in the following fields:

The screenshot shows a modal window titled "Credential Editor [93]". Inside, there's a sub-header "Edit Basic/Snippet Credential #93" with "New" and "Reset" buttons. Below is a "Basic Settings" section with several input fields: "Credential Name" (Cisco Cloud Center EXAMPLE), "Hostname/IP" (https://%D), "Port" (443), "Timeout(ms)" (5000), "Username" (<USER_NAME>), and "Password" (masked with dots). At the bottom are "Save" and "Save As" buttons.

- **Profile Name.** Enter a new name for the Cloud Center Manager tenant credential.
 - **Username.** Enter the username for a Cloud Center Manager user that is an administrator for the tenant you want to discover. This account must be an API user, not a GUI user.
 - **Password.** Enter the API key for the user you entered in the **Username** field.
4. Leave all other fields set to the default values. Click the **[Save As]** button.

Discovering an Additional Cloud Center Manager Tenant

To discover an additional tenant:

1. From the **Device Properties** page for the Cloud Center Manager device, click the name of the Cloud Center Cluster device that appears in the **Root Device** field.
2. Click the **[Collections]** tab. The **Dynamic Application Collections** page appears.

Close	Properties	Thresholds	Collections	Monitors	Schedule	Logs	Toolbox	Interfaces	Relationships	Tickets	Redirects	Notes	Attributes	
Device Name	ccm1-47	Managed Type	Physical Device											
IP Address / ID	10.199.88.40 2851	Category	Servers.Software											
Class	Cisco Systems	Sub-Class	Cloud Center Manager											
Organization	CCC	Uptime	0 days, 00:00:00											
Collection Mode	Active	Collection Time	2017-04-12 19:27:00											
Description		Group / Collector	CUG em7-r21-ova											
Root Device	Cloud Center Cluster 10.199.88.40	Parent Device	Cloud Center Cluster 10.199.88.40											
Dynamic Application™ Collections											Expand	Actions	Reset	Guide
Dynamic Application	ID	Poll Frequency	Type	Credential										
+ Cisco: Cloud Center CCM Component to Physical Merge	2046	15 mins	Snippet Configuration	Cisco Cloud Center https://	<input type="checkbox"/>									
+ Cisco: Cloud Center Cluster Discovery	2048	15 mins	Snippet Configuration	Cisco Cloud Center https://	<input type="checkbox"/>									
+ Cisco: Cloud Center Root Device Reclassification	2047	5 mins	Snippet Configuration	Cisco Cloud Center https://	<input type="checkbox"/>									
[Select Action] <input type="button" value="Go"/>														
<input type="button" value="Save"/>														

3. Select the checkbox for the "Cisco: Cloud Center Tenant Discovery" Dynamic Application.
4. In the **Select Action** drop-down list, select the credential you created for the tenant.
5. Click **[Go]**.

Configuration and Discovery for High-Availability Cisco Cloud Center Deployments

The *Cisco: Cloud Center PowerPack* enables you to discover and collect configuration and performance data about standard or high-availability (HA) Cloud Center deployments and their components. The following sections describe the configuration and discovery steps for monitoring HA Cloud Center deployments.

For information about standard (non-HA) deployments, see the section on [Configuration and Discovery for Standard Cisco Cloud Center Deployments](#).

Prerequisites for Monitoring High-Availability Cloud Center Deployments

To configure the SL1 system to monitor HA Cisco Cloud Center deployments using the *Cisco: Cloud Center PowerPack*, you must first have the following information about the Cloud Center components that you want to monitor:

- The IP address or hostname for each of the following components:
 - RabbitMQ
 - RabbitMQ Load Balancer
 - Cisco Cloud Center Manager
 - Cisco Cloud Center Manager Load Balancer
 - Cloud Center PostgreSQL database
 - Cloud Center Orchestrator
 - Cloud Center Orchestrator Load Balancer
 - Cloud Center Health Monitor
- The username and API key for a Cisco Cloud Center Manager user that has root tenant administration privileges. This account must be an API user, not a GUI user. For information about configuring API users in Cisco Cloud Center Manager, see <http://docs.cloudcenter.cisco.com/display/40API/API+Management+Key>.
- The username and password for a RabbitMQ user that has read permission to the RabbitMQ API. For information about configuring users in RabbitMQ, see <https://www.rabbitmq.com/management.html>.
- The usernames and passwords for Cisco Cloud Center users that have API read permissions for each of the other components in the above list.

Creating Credentials for High-Availability Deployments

To configure SL1 to monitor HA Cisco Cloud Center deployments, you must create the following credentials:

- [SSH/Key credentials for Cloud Center Components](#)
- [A Basic/Snippet credential for RabbitMQ](#)
- [A "master" SOAP/XML credential](#) that references the Cloud Center Manager and RabbitMQ credentials and that you will use for discovering the high-availability Cloud Center deployment

Creating SSH/Key Credentials for Cloud Center Components

To configure SL1 to monitor HA Cisco Cloud Center deployments, you must create SSH/Key credentials that allow the Dynamic Applications in the *Cisco: Cloud Center PowerPack* to connect with the various components in your HA Cloud Center.

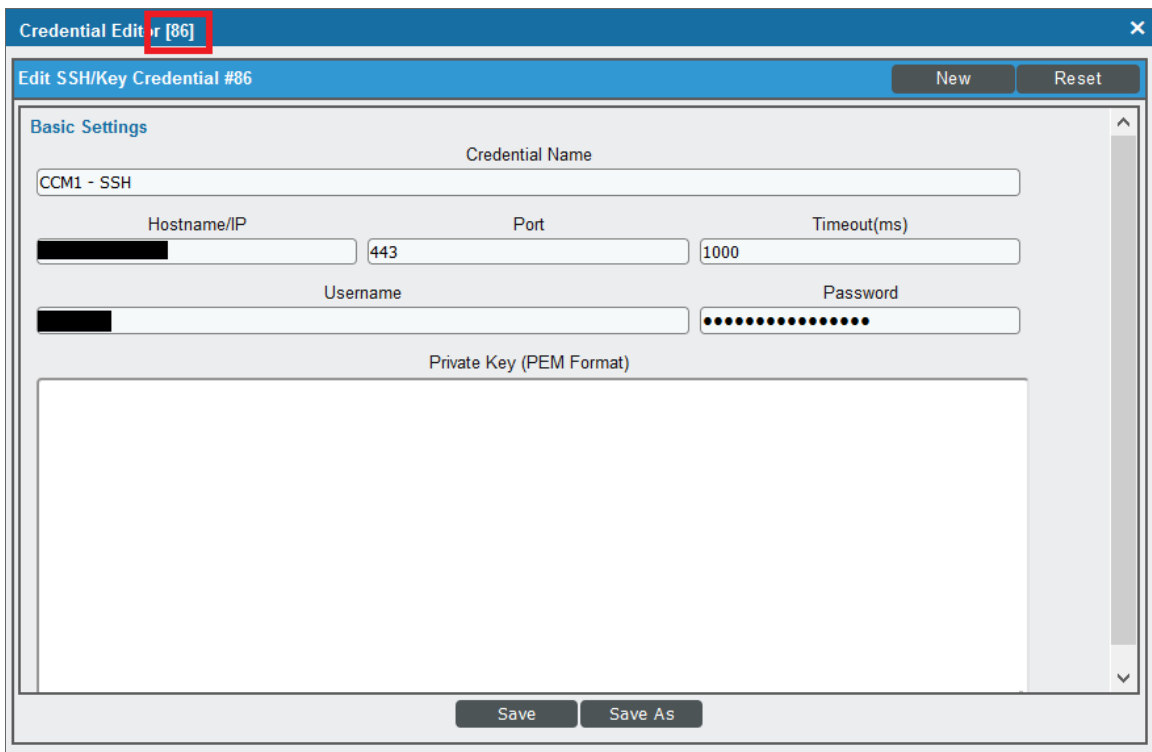
To create an SSH/Key credential to access a Cloud Center component:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Click **[Actions]**, and then select *Create SSH/Key Credential*.
3. Complete the following fields:

The screenshot shows a web-based 'Credential Editor' window titled 'Create New SSH/Key Credential'. The interface includes a 'Reset' button in the top right corner. Under the 'Basic Settings' section, there are several input fields: 'Credential Name' (empty), 'Hostname/IP' (empty), 'Port' (set to 22), 'Timeout(ms)' (empty), 'Username' (set to em7admin), and 'Password' (masked with dots). A large text area for 'Private Key (PEM Format)' is currently empty. A 'Save' button is located at the bottom center of the form.

- **Credential Name.** Type a name for the credential.

- **Hostname/IP.** Type the IP address for the component. **Do not use "%D"**.
 - **Port.** Type the port number required to access the component.
 - **Timeout(ms).** Type the time, in milliseconds, after which SL1 will stop trying to communicate with the component.
 - **Username.** Type the username for a user that has root tenant administration privileges for Cloud Center Manager, or read privileges for other components. This account must be an API user, not a GUI user.
 - **Password.** Type the API key for the user you entered in the **Username** field.
 - **Private Key (PEM Format).** Leave this field blank.
4. Click **[Save]**.
 5. SL1 assigns the credential an ID number. Take note of the ID number that appears in the Credential Editor heading, as you will need this when *creating the master SOAP/XML credential*.



6. Repeat these steps for each major component in your HA Cloud Center deployment.

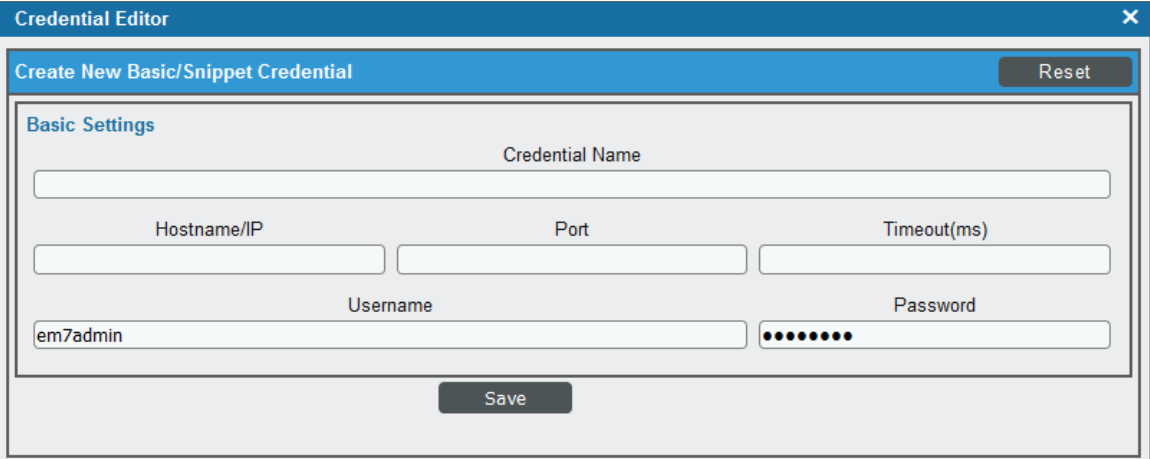
Creating a Basic/Snippet Credential for RabbitMQ

In addition to an SSH/Key credential that allows the Dynamic Applications in the *Cisco: Cloud Center PowerPack* to communicate with your RabbitMQ system, you must also create a Basic/Snippet credential for RabbitMQ. When you discover your HA Cloud Center deployment, these Dynamic Applications will discover and model the Cloud Center RabbitMQ components. These components will later be merged with the physical devices once they are discovered.

NOTE: When monitoring a high-availability Cloud Center deployment, the use of Basic/Snippet credentials will cause RabbitMQ Dynamic Applications to align to RabbitMQ devices, but those Dynamic Applications will not collect data. This is because SL1 discovers the RabbitMQ load balancer devices as the RabbitMQ components, rather than the actual RabbitMQ components themselves. This means that, even if you manually discover the RabbitMQ components, the *Cisco: Cloud Center PowerPack* has no way of linking them with the load balancers. If you would like to collect data for the non-load balancer RabbitMQ components, you can manually align the appropriate credentials.

To create a Basic/Snippet credential to access a RabbitMQ system:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Click **[Actions]**, and then select *Create Basic/Snippet Credential*.
3. Complete the following fields:



The screenshot shows a 'Credential Editor' dialog box with a blue header. Below the header is a sub-header 'Create New Basic/Snippet Credential' and a 'Reset' button. The main area is titled 'Basic Settings' and contains several input fields: 'Credential Name' (empty), 'Hostname/IP' (empty), 'Port' (empty), 'Timeout(ms)' (empty), 'Username' (containing 'em7admin'), and 'Password' (masked with dots). A 'Save' button is located at the bottom center of the dialog.

- **Profile Name.** Type a name for the RabbitMQ credential.
- **Hostname/IP.** Type the hostname or IP address for the RabbitMQ server.
- **Port.** Type the port number required to access the RabbitMQ server.
- **Timeout(ms).** Type the time, in milliseconds, after which SL1 will stop trying to communicate with the RabbitMQ server.
- **Username.** Type the username for a RabbitMQ user that has read permission to the RabbitMQ API.
- **Password.** Type the password for the user you entered in the **Username** field.

4. Click **[Save]**.

5. SL1 assigns the credential an ID number. Take note of the ID number that appears in the Credential Editor heading, as you will need this when *creating the master SOAP/XML credential*.

The screenshot shows a web-based interface for editing a credential. The window title is "Credential Editor [81]". The main heading is "Edit Basic/Snippet Credential #81" with "New" and "Reset" buttons. The "Basic Settings" section includes the following fields:

- Credential Name: RabbitMQ1
- Hostname/IP: [Redacted]
- Port: 443
- Timeout(ms): 0
- Username: [Redacted]
- Password: [Masked with dots]

Buttons for "Save" and "Save As" are located at the bottom of the form.

Creating the Master SOAP/XML Credential for High-Availability Discovery

After you have created the *SSH/Key* and *Basic/Snippet* credentials for the various components in your HA Cloud Center, you must create the SOAP/XML credential that will be used as the master credential to discover and model your HA Cloud Center deployment.

A sample credential (**Cisco Cloud Center - HA Example**) that you can use is included in the *Cisco: Cloud Center PowerPack*.

To create a SOAP/XML credential for discovering HA Cisco Cloud Center deployments:

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

2. Locate the **Cisco Cloud Center - HA Example** credential and then click its wrench icon (🔧). The **Edit SOAP/XML Credential** modal page appears:

3. Complete the following fields:

Basic Settings

- **Profile Name.** Type a new name for the credential.
- **HTTP Auth User.** Type the username for a Cloud Center Manager user that has root tenant administration privileges. This account must be an API user, not a GUI user.
- **HTTP Auth Password.** Type the API key for the user you entered in the **HTTP Auth User** field.

HTTP Headers

- **HTTP Headers.** Type the following information for each of the Cloud Center components, creating a separate header for each component:
 - **RabbitMQ:** Type the header in the following format:
<Component Name>:<SSH/Key Credential ID>:<Basic/Snippet Credential ID>:<RabbitMQ IP address>:<RabbitMQ Load Balancer IP Address>

Example: If the RabbitMQ has an SSH/Key credential with the ID 60, a Basic/Snippet Credential with the ID 70, an IP address of 10.123.34.45, and a load balancer IP address of 10.22.33.45, then you would type "RabbitMQ:60:70:10.123.34.45:10.22.33.45".

- **Cloud Center Manager:** Type the header in the following format:
<Component Name>:<SSH/Key Credential ID>:<IP address>

Example: If the Cloud Center Manager has an SSH/Key credential with the ID 80 and an IP address of 10.11.23.45, then you would type "CCM:80:10.11.23.45".
- **Cloud Center Manager Load Balancer:** Type the header in the following format:
<Component Name>:<SSH/Key Credential ID>:<IP address>

Example: If the Cloud Center Manager Load Balancer has an SSH/Key credential with the ID 90 and an IP address of 10.22.12.34, then you would type "CCMLB:90:10.22.12.34".
- **PostgreSQL Database:** Type the header in the following format:
<Component Name>:<SSH/Key Credential ID>:<IP address>

Example: If the PostgreSQL database has an SSH/Key credential with the ID 105 and an IP address of 10.32.54.76, then you would type "PostgreSQL:105:10.32.54.76".
- **Cloud Center Orchestrator:** Type the header in the following format:
<Component Name>:<SSH/Key Credential ID>:<Orchestrator IP address>:<Orchestrator Load Balancer IP Address>

Example: If the Cloud Center Orchestrator has an SSH/Key credential with the ID 120, an IP address of 10.33.22.11, and a load balancer IP address of 10.99.88.77, then you would type "CCO:120:10.33.22.11:10.99.88.77".
- **Cloud Center Orchestrator Load Balancer:** Type the header in the following format:
<Component Name>:<SSH/Key Credential ID>:<IP address>

Example: If the Cloud Center Orchestrator Load Balancer has an SSH/Key credential with the ID 120 and an IP address of 10.99.88.77, then you would type "CCOLB:120:10.99.88.77".
- **Cloud Center Health Monitor:** Type the header in the following format:
<Component Name>:<SSH/Key Credential ID>:<IP address>

Example: If the Health Monitor has an SSH/Key credential with the ID 135 and an IP address of 10.56.77.89, then you would type "Monitor:135:10.56.77.89".

NOTE: If you have more than one of the same component, then you can add numbers to the component name. For example: "CCM1", "CCM2", etc.

NOTE: Component names for load balancers must include "LB".

NOTE: If any of your components use a hostname instead of an IP address, you should include the hostname in place of the IP address.

CAUTION: The IP address or hostname used in the header for a given component must match the IP address or hostname in the discovery payload. If any of the headers for any of the components are incorrect, SL1 will be unable to discover and model your HA Cloud Center deployment.

4. For all other fields, use the default values.
5. Click **[Save As]**.
6. In the confirmation message, click **[OK]**.

Discovering Cisco Cloud Center High-Availability Deployments

To discover a Cisco Cloud Center HA deployment:

1. Go to the **Discovery Control Panel** page (System > Manage > Discovery).
2. In the **Discovery Control Panel**, click the **[Create]** button.

- The **Discovery Session Editor** page appears. In the **Discovery Session Editor** page, define values in the following fields:

- **Name.** Type a name for the discovery session.
 - **IP Address/Hostname Discovery List.** Type the IP address for the Cloud Center Manager.
 - **Other Credentials.** Select the **SOAP/XML credential** you created for the HA Cloud Center deployment.
 - **Discover Non-SNMP.** 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 to save the discovery session and then close the **Discovery Session Editor** window.
 - The discovery session you created appears at the top of the **Discovery Control Panel** page. Click its lightning-bolt icon (⚡) to run the discovery session.
 - The **Discovery Session** window appears. When the device is discovered, click the device icon (🖨️) to view the **Device Properties** page for the device.

Verifying Discovery and Dynamic Application Alignment

To verify that SL1 automatically aligned the correct Dynamic Applications during discovery:

1. From the **Device Properties** page for the Cloud Center HA root device, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.
2. All applicable Dynamic Applications for the Cloud Center root device are automatically aligned during discovery.

NOTE: It can take several minutes after the discovery session has completed for Dynamic Applications to appear in the **Dynamic Application Collections** page.

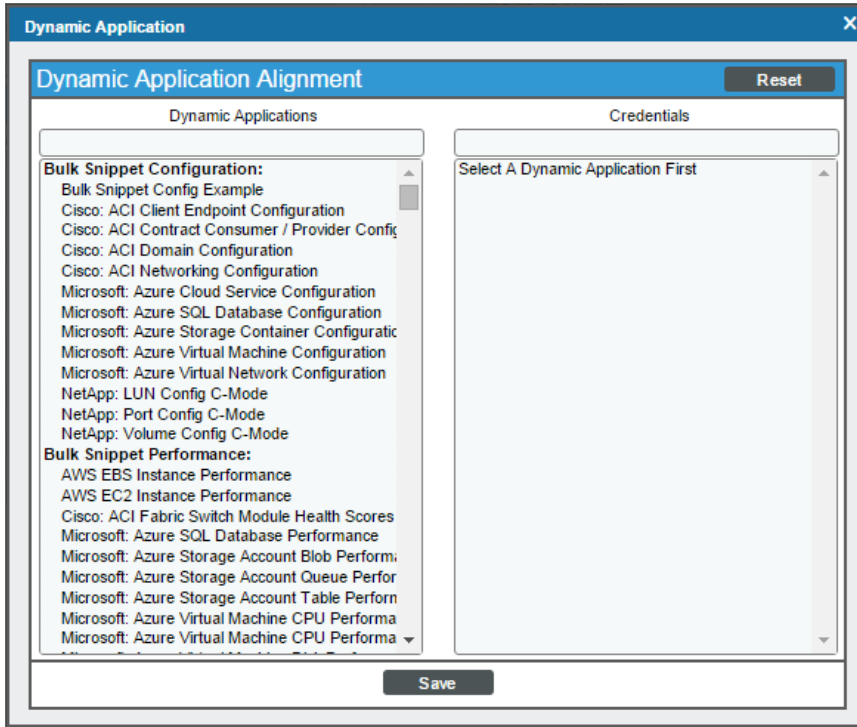
Dynamic Application	ID	Poll Frequency	Type	Credentials
+ Cisco: Cloud Center Component Counts	117	15 mins	Snippet Performance	Cisco Cloud Center - HA Example
+ Cisco: Cloud Center CCM Discovery	118	15 mins	Snippet Configuration	Cisco Cloud Center - HA Example
+ Cisco: Cloud Center CCM Load Balancer Health	1476	15 mins	Snippet Configuration	Cisco Cloud Center - HA Example
+ Cisco: Cloud Center HA Discovery	1454	15 mins	Snippet Configuration	Cisco Cloud Center - HA Example
+ Cisco: Cloud Center Tenant Discovery	124	15 mins	Snippet Configuration	Cisco Cloud Center - HA Example
+ Cisco: Cloud Center Tenant Parent Relationships	128	15 mins	Snippet Configuration	Cisco Cloud Center - HA Example

The following Dynamic Applications should be aligned to the device:

- Cisco: Cloud Center Component Counts
- Cisco: Cloud Center CCM Discovery
- Cisco: Cloud Center CCM Load Balancer Health
- Cisco: Cloud Center HA Discovery
- Cisco: Cloud Center Tenant Discovery
- Cisco: Cloud Center Tenant Parent Relationships

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

1. Click the **[Action]** button and then select *Add Dynamic Application*. The **Dynamic Application Alignment** page appears:



2. In the **Dynamic Applications** field, select the Dynamic Application you want to align.
3. In the **Credentials** field, select the **SOAP/XML credential** you created for Cloud Center.
4. Click the **[Save]** button.
5. Repeat steps 1-4 for the other unaligned Dynamic Applications.

Discovering Multiple Tenants for High-Availability Cloud Center Deployments


The Cisco: *Cloud Center* PowerPack can be used to monitor an HA Cloud Center deployment that includes multiple tenants. To discover multiple tenants, you must follow the steps in the following sections for each tenant in order (in other words, parents must be discovered before their children):

- [Creating a Credential for an HA Cloud Center Manager Tenant](#)
- [Discovering an additional HA Cloud Center Manager Tenant](#)

NOTE: For each tenant, you must use the administrator account for that tenant when you create the credential.

Creating a Credential for a High-Availability Cloud Center Tenant

To configure a SOAP/XML credential to access an additional HA Cloud Center tenant:

1. Create any additional [SSH/Key](#) and [Basic/Snippet](#) credentials that you might need to reference in the SOAP/XML credential headers.
2. Go to the **Credential Management** page (System > Manage > Credentials).
3. Locate the credential you used to discover the root device for your HA deployment, and then click its wrench icon (). The **Edit SOAP/XML Credential** modal page appears.

4. Enter values in the following fields:

Credential Editor [79]

Edit SOAP/XML Credential #79

New Reset

Basic Settings

Profile Name: Cisco Cloud Center - HA Example

Content Encoding: [text/xml]

Method: [POST]

HTTP Version: [HTTP/1.1]

URL [http(s)://Host.Port/Path | %D = Aligned Device Address | %N = Aligned Device Host Name]

https://%D

HTTP Auth User: <username>

HTTP Auth Password: ●●●●●●

Timeout (seconds): 5

Proxy Settings

Hostname/IP:

Port: 0

User:

Password:

CURL Options

CAINFO

CAPATH

CLOSEPOLICY

CONNECTTIMEOUT

COOKIE

COOKIEFILE

COOKIEJAR

COOKIELIST

CRLF

CUSTOMREQUEST

DNSCACHETIMEOUT

DNSUSEGLOBALCACHE

Soap Options

Embedded Password [%P]

Embed Value [%1]

Embed Value [%2]

Embed Value [%3]

Embed Value [%4]

HTTP Headers

+ Add a header

<RabbitMQ Name>: <SSH cred ID>: <API cre

<CCM Name>: <SSH cred ID>: <IP of CCM>

<CCM Load Balancer Name>: <SSH cred ID>

<PostGress Name>: <SSH cred ID>: <IP of cc

<Orchestrator Name>: <SSH cred ID>: <IP of

<Orchestrator LB: <SSH cred ID>: <IP of the

<Monitor Name>: <SSH cred ID>: <IP of mon

Save Save As

- **Profile Name.** Enter a new name for the credential.
- For all other fields, follow the instructions described in the [Creating a SOAP/XML Credential for High-Availability Discovery](#) section.

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

Discovering an Additional High-Availability Cloud Center Tenant

To discover an additional tenant:

1. From the **Device Properties** page for the Cloud Center HA root device, click the **[Collections]** tab. The **Dynamic Application Collections** page appears:

The screenshot shows the Cisco Cloud Center Manager interface. At the top, there are several tabs: Close, Properties, Thresholds, Collections (selected), Monitors, Schedule, Logs, Toolbox, Interfaces, Relationships, Tickets, Redirects, Notes, and Attributes. Below the tabs, there is a section for device properties. The 'Device Name' is 'Cloud Center Cluster | 198.18.134.190'. Other properties include ID (745), Class (Cisco Systems), Organization (System), Managed Type (Virtual Device), Category (Servers.Software), Sub-Class (Cloud Center), Uptime (0 days, 00:00:00), and Group / Collector (CUG | cliqrem7:8). There is also a 'Device Hostname' field. To the right of the properties is a 'Cloud Center Cluster' icon. Below the properties is a section titled 'Dynamic Application™ Collections'. This section has buttons for 'Expand', 'Actions', 'Reset', and 'Guide'. It contains a table with the following data:

Dynamic Application	ID	Poll Frequency	Type	Credential	
+ Cisco: Cloud Center Component Counts	117	15 mins	Snippet Performance	Cisco Cloud Center - HA Example	<input type="checkbox"/>
+ Cisco: Cloud Center CCM Discovery	118	15 mins	Snippet Configuration	Cisco Cloud Center - HA Example	<input type="checkbox"/>
+ Cisco: Cloud Center CCM Load Balancer Health	1476	15 mins	Snippet Configuration	Cisco Cloud Center - HA Example	<input type="checkbox"/>
+ Cisco: Cloud Center HA Discovery	1454	15 mins	Snippet Configuration	Cisco Cloud Center - HA Example	<input type="checkbox"/>
+ Cisco: Cloud Center Tenant Discovery	124	15 mins	Snippet Configuration	Cisco Cloud Center - HA Example	<input checked="" type="checkbox"/>
+ Cisco: Cloud Center Tenant Parent Relationships	128	15 mins	Snippet Configuration	Cisco Cloud Center - HA Example	<input type="checkbox"/>

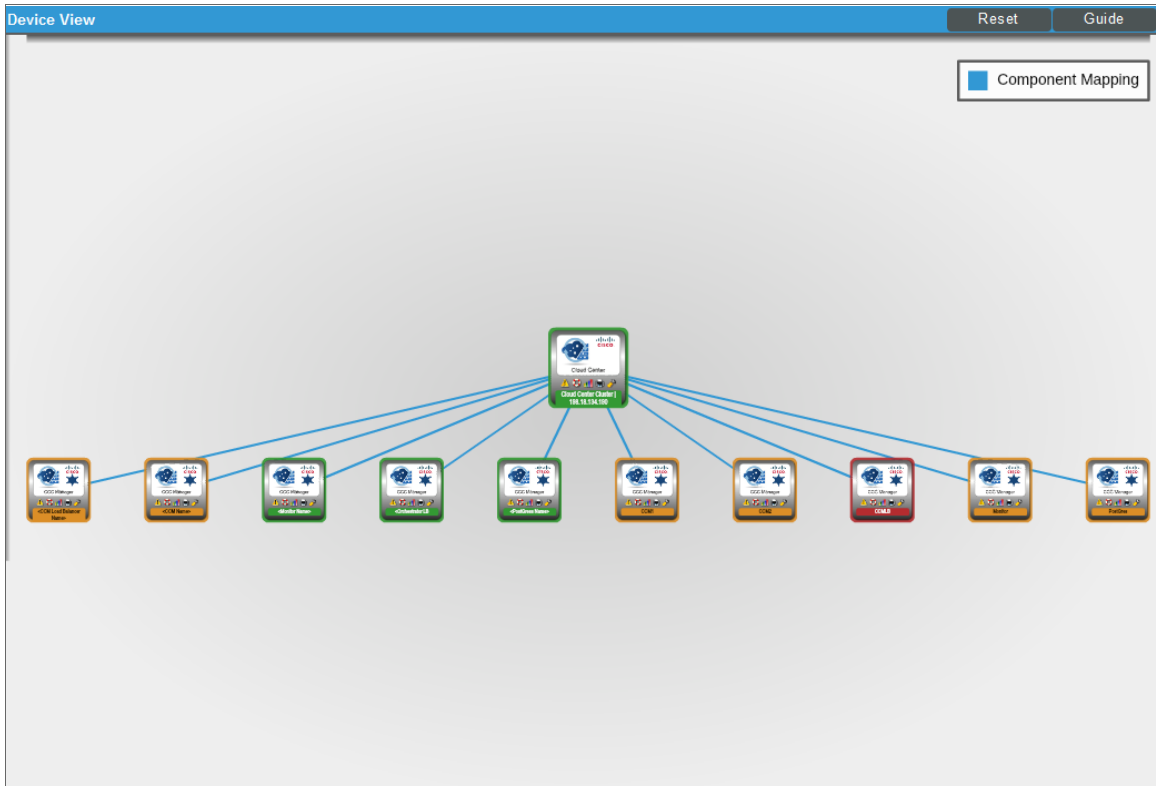
At the bottom of the table, there is a '[Select Action]' dropdown menu and a 'Go' button. Below the table is a 'Save' button.

2. Select the checkbox for the "Cisco: Cloud Center Tenant Discovery" Dynamic Application.
3. In the **Select Action** drop-down list, select the SOAP/XML credential you created for the tenant.
4. Click **[Go]**.

Viewing Cloud Center Component Devices

In addition to the **Device Manager** page (Registry > Devices > Device Manager), you can view Cloud Center component devices in the following places in the user interface:

- The **Device View** modal page displays a map of a particular device and all of the devices with which it has parent-child relationships. Double-clicking any of the devices listed reloads the page to make the selected device the primary device:



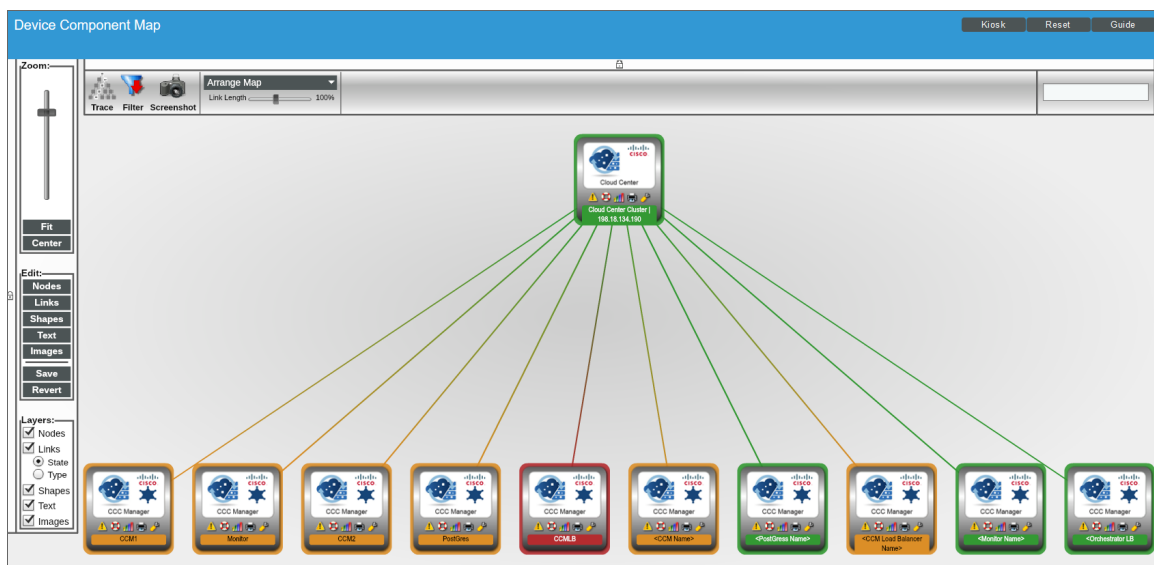
- The **Device Components** page (Registry > Devices > Device Components) displays a list of all root devices and component devices discovered by SL1 in an indented view, so you can easily view the hierarchy and relationships between child devices, parent devices, and root devices. To view the component devices associated with Cloud Center, find the Cloud Center root device and click its plus icon (+):

Device Components | Devices Found [2] Actions Reset Guide

	Device Name	IP Address	Device Category	Device Class Sub-class	IID	Organization	Current State	Collection Group	Collection State																																																																																																																										
1. +	Cisco Systems 198.18.134.190	--	Infrastructure	Cisco Systems Tenant	751	System	Healthy	CUG	Active																																																																																																																										
2. -	Cloud Center Cluster 198.18.134.190	--	Software	Cisco Systems Cloud Center	745	System	Healthy	CUG	Active																																																																																																																										
<table border="1"> <thead> <tr> <th></th> <th>Device Name</th> <th>IP Address</th> <th>Device Category</th> <th>Device Class Sub-class</th> <th>IID</th> <th>Organization</th> <th>Current State</th> <th>Collection Group</th> <th>Collection State</th> <th></th> </tr> </thead> <tbody> <tr> <td>1.</td> <td><CCM Load Balancer Name></td> <td>--</td> <td>Software</td> <td>Cisco Systems Cloud Center Manager</td> <td>764</td> <td>System</td> <td>Major</td> <td>CUG</td> <td>Active</td> <td></td> </tr> <tr> <td>2.</td> <td><CCM Name></td> <td>--</td> <td>Software</td> <td>Cisco Systems Cloud Center Manager</td> <td>762</td> <td>System</td> <td>Major</td> <td>CUG</td> <td>Active</td> <td></td> </tr> <tr> <td>3.</td> <td><Monitor Name></td> <td>--</td> <td>Software</td> <td>Cisco Systems Cloud Center Monitor</td> <td>765</td> <td>System</td> <td>Healthy</td> <td>CUG</td> <td>Active</td> <td></td> </tr> <tr> <td>4.</td> <td><Orchestrator LB></td> <td>--</td> <td>Software</td> <td>Cisco Systems Cloud Center Loadbalance</td> <td>766</td> <td>System</td> <td>Healthy</td> <td>CUG</td> <td>Active</td> <td></td> </tr> <tr> <td>5.</td> <td><PostGRES Name></td> <td>--</td> <td>Software</td> <td>Cisco Systems Cloud Center PostGRES</td> <td>763</td> <td>System</td> <td>Healthy</td> <td>CUG</td> <td>Active</td> <td></td> </tr> <tr> <td>6.</td> <td>CCM1</td> <td>--</td> <td>Software</td> <td>Cisco Systems Cloud Center Manager</td> <td>746</td> <td>System</td> <td>Major</td> <td>CUG</td> <td>Active</td> <td></td> </tr> <tr> <td>7.</td> <td>CCM2</td> <td>--</td> <td>Software</td> <td>Cisco Systems Cloud Center Manager</td> <td>748</td> <td>System</td> <td>Major</td> <td>CUG</td> <td>Active</td> <td></td> </tr> <tr> <td>8.</td> <td>CCMLB</td> <td>--</td> <td>Software</td> <td>Cisco Systems Cloud Center Loadbalance</td> <td>750</td> <td>System</td> <td>Critical</td> <td>CUG</td> <td>Active</td> <td></td> </tr> <tr> <td>9.</td> <td>Monitor</td> <td>--</td> <td>Software</td> <td>Cisco Systems Cloud Center Monitor</td> <td>747</td> <td>System</td> <td>Major</td> <td>CUG</td> <td>Active</td> <td></td> </tr> <tr> <td>10.</td> <td>PostGRES</td> <td>--</td> <td>Software</td> <td>Cisco Systems Cloud Center PostGRES</td> <td>749</td> <td>System</td> <td>Major</td> <td>CUG</td> <td>Active</td> <td></td> </tr> </tbody> </table>												Device Name	IP Address	Device Category	Device Class Sub-class	IID	Organization	Current State	Collection Group	Collection State		1.	<CCM Load Balancer Name>	--	Software	Cisco Systems Cloud Center Manager	764	System	Major	CUG	Active		2.	<CCM Name>	--	Software	Cisco Systems Cloud Center Manager	762	System	Major	CUG	Active		3.	<Monitor Name>	--	Software	Cisco Systems Cloud Center Monitor	765	System	Healthy	CUG	Active		4.	<Orchestrator LB>	--	Software	Cisco Systems Cloud Center Loadbalance	766	System	Healthy	CUG	Active		5.	<PostGRES Name>	--	Software	Cisco Systems Cloud Center PostGRES	763	System	Healthy	CUG	Active		6.	CCM1	--	Software	Cisco Systems Cloud Center Manager	746	System	Major	CUG	Active		7.	CCM2	--	Software	Cisco Systems Cloud Center Manager	748	System	Major	CUG	Active		8.	CCMLB	--	Software	Cisco Systems Cloud Center Loadbalance	750	System	Critical	CUG	Active		9.	Monitor	--	Software	Cisco Systems Cloud Center Monitor	747	System	Major	CUG	Active		10.	PostGRES	--	Software	Cisco Systems Cloud Center PostGRES	749	System	Major	CUG	Active	
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[Select Action] Go

- 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. SL1 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 Cloud Center, go to the **Component Map** page and select the map from the list in the left NavBar. To learn more about the **Component Map** page, see the **Views** manual.

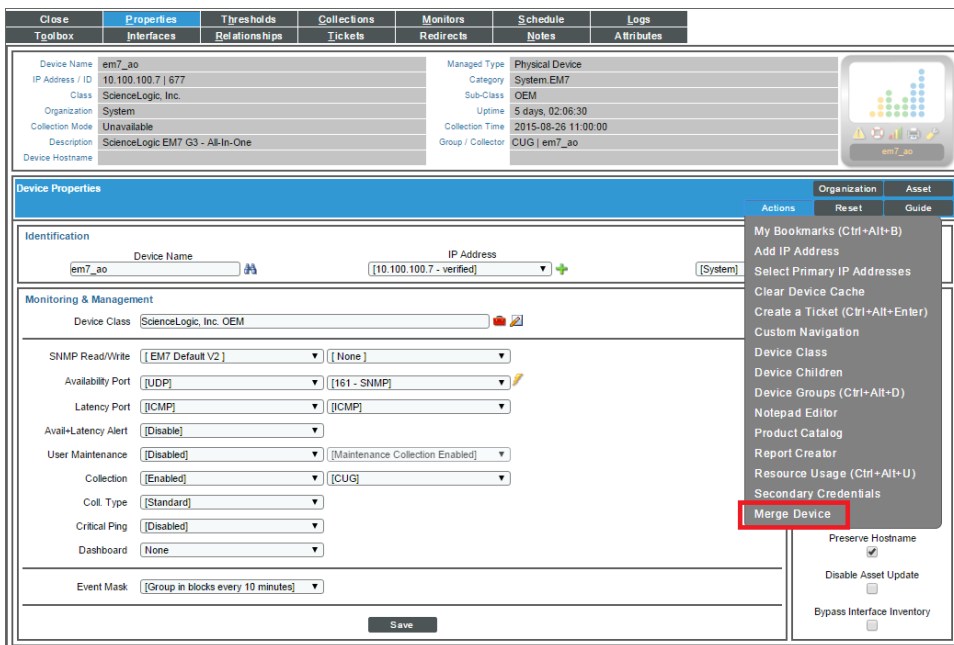


Merging RabbitMQ and Cloud Center Orchestrator Devices

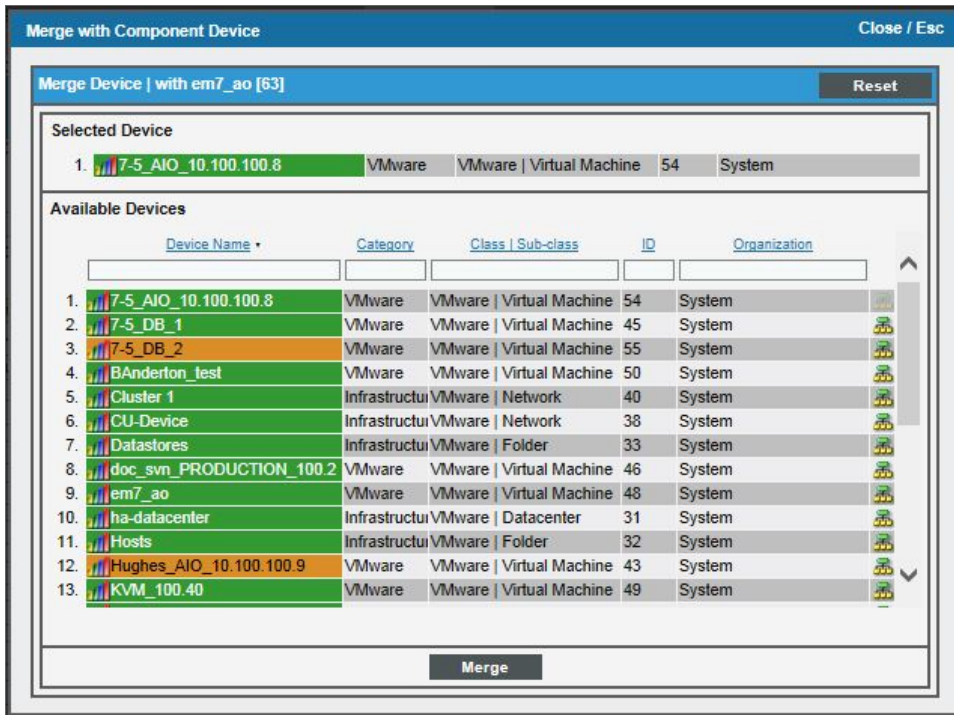
The Dynamic Applications in the *Cisco: Cloud Center PowerPack* create component devices for the RabbitMQ system and Cloud Center Orchestrator. Optionally, you can discover these devices as physical SNMP devices and merge the component device record and physical device record. For information about discovering and monitoring a RabbitMQ system, see the **Monitoring RabbitMQ Systems** manual.

To merge individual devices:

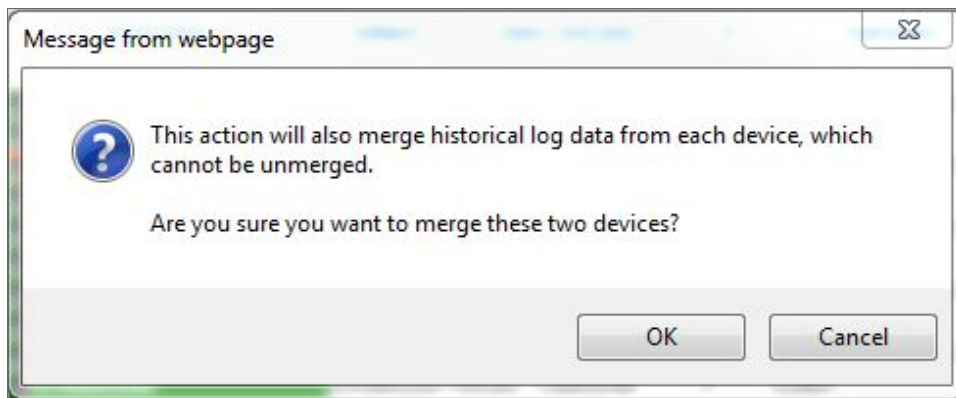
1. Go to the **Device Manager** page (Registry > Devices > Device Manager).
2. Click the wrench icon (🔧) for the physical device that you want to merge with a component device.
3. On the **Device Properties** page, click the **[Actions]** menu and then select **Merge Device**.



4. A list of component devices that are available for merging with the physical device displays. Click the merge icon (🔧) for the component device you want to merge with the physical device. Information for the component device then displays in the **Selected Device** panel.



5. Click the **[Merge]** button. A pop-up message appears that asks you to confirm the merge.



6. Click the **[OK]** button.

NOTE: To view an updated list of devices that includes your merged devices, click the **[Reset]** button on the **Device Manager** page.

Relationships Between Component Devices

SL1 can automatically build relationships between Cloud Center component devices and other associated devices:

- If you discover an ACI system using the Dynamic Applications in the *Cisco: ACI PowerPack* version 106 or later, SL1 will automatically create relationships between Cloud Center Applications and ACI Application Network Profiles.
- If you discover an AWS account using the Dynamic Applications in the *Amazon Web Services PowerPack* version 103 or later, SL1 will automatically create relationships between Cloud Center Applications and AWS EC2 Instances.
- If you discover an Azure account using the Dynamic Applications in the *Microsoft: Azure PowerPack* version 103 or later, SL1 will automatically create relationships between Cloud Center Applications and Azure Virtual Machines.
- If you discover a vCenter device using the Dynamic Applications in the *VMware: vSphere Base Pack PowerPack* version 207 or later, SL1 will automatically create relationships between Cloud Center Applications and VMware Virtual Machines.

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