



Monitoring Cisco Unified Communications Manager

Cisco: CUCM Unified Communications Manager PowerPack version 109

Table of Contents

Introduction	3
What is Cisco Unified Communications Manager?	3
Prerequisites	4
What Does the Cisco: CUCM Unified Communications Manager PowerPack Monitor?	4
Supported Versions	4
Installing the Cisco: CUCM Unified Communications Manager PowerPack	5
Configuring Cisco Unified Communications Manager for Monitoring	6
Enabling the CUCM AXL Web Service	6
Configuring a CUCM User Account	8
Configuring Prime License Manager	14
Creating a CUCM Credential	16
Manually Creating Host File Entries for CUCM Nodes	17
Discovering Cisco Unified Communications Manager Clusters	19
Discovering a CUCM Cluster	19
Verifying Discovery and Dynamic Application Alignment	21
Manually Aligning Dynamic Applications	23
Viewing Component Devices	25
Cisco Unified Communications Dashboards	28
Installing the CUCM Dashboards	28
Cisco: CUCM Performance Dashboard	30
Cisco: CUCM Locations LBM	31
Cisco: CUCM Media Resources	32
Cisco: CUCM Media Resources (Simple)	33
Cisco: CUCM Tomcat	34
Cisco: CUCM Overall Cluster Health	35
Cisco: CUCM Active Calls	36

Chapter 1

Introduction

Overview

The following sections provide an overview of Cisco Unified Communications Manager (CUCM) and the Cisco: CUCM Unified Communications Manager PowerPack:

- What is Cisco Unified Communications Manager?* 3
- Prerequisites* 4
- What Does the Cisco: CUCM Unified Communications Manager PowerPack Monitor?* 4
- Supported Versions* 4
- Installing the Cisco: CUCM Unified Communications Manager PowerPack* 5

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 Unified Communications Manager?

Cisco Unified Communications Manager (CUCM) is a unified call control and communications platform that provides services such as session management, voice, video, messaging, mobility, and web conferencing.

Prerequisites

During the discovery process, the ScienceLogic platform automatically aligns the IP addresses and hostnames for each node in a CUCM cluster via DNS.

If you do not have access to DNS for the CUCM systems that you want to monitor with the ScienceLogic platform, ensure that you know or have access to the following information about each node:

- IP address
- Hostname

What Does the Cisco: CUCM Unified Communications Manager PowerPack Monitor?

To monitor CUCM using the ScienceLogic platform, you must install the *Cisco: CUCM Unified Communications Manager PowerPack*. This PowerPack enables you to discover, model, and collect data about your CUCM system and clusters.

The *Cisco: CUCM Unified Communications Manager PowerPack* includes:

- An example credential you can use as a template to create a Basic/Snippet credential to connect to the CUCM clusters you want to monitor
- Dynamic Applications to discover, model, and monitor performance metrics and collect configuration data for CUCM clusters
- Device Classes for each of the CUCM clusters that the ScienceLogic platform monitors
- Event Policies and corresponding alerts that are triggered when CUCM clusters meet certain status criteria
- Dashboards that display graphical information about CUCM clusters
- A Run Book Action that assigns the CUCM cluster root device to the appropriate Device Class

NOTE: The Run Book Action disables the CUCM cluster root device's **Auto-Update** option.

Supported Versions

You can use this PowerPack to configure versions 8.x, 9.x, 10.x, 11.x, and 12.x of Cisco Unified Communications Manager (CUCM).

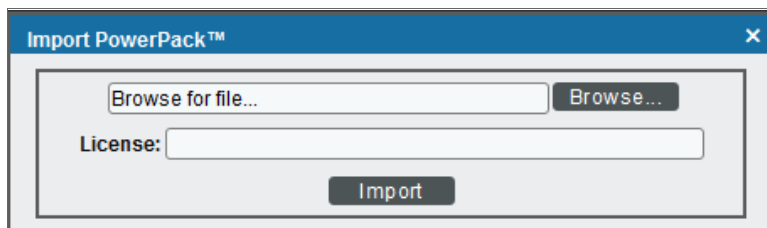
Installing the Cisco: CUCM Unified Communications Manager PowerPack

Before completing the steps in this manual, you must import and install the latest version of the *Cisco: CUCM Unified Communications Manager 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*.

Configuring Cisco Unified Communications Manager for Monitoring

Overview

The following sections describe how to configure a Cisco Unified Communications Manager (CUCM) system for monitoring by the ScienceLogic platform using the *Cisco: CUCM Unified Communications Manager PowerPack*:

<i>Enabling the CUCM AXL Web Service</i>	6
<i>Configuring a CUCM User Account</i>	8
<i>Configuring Prime License Manager</i>	14
<i>Creating a CUCM Credential</i>	16
<i>Manually Creating Host File Entries for CUCM Nodes</i>	17

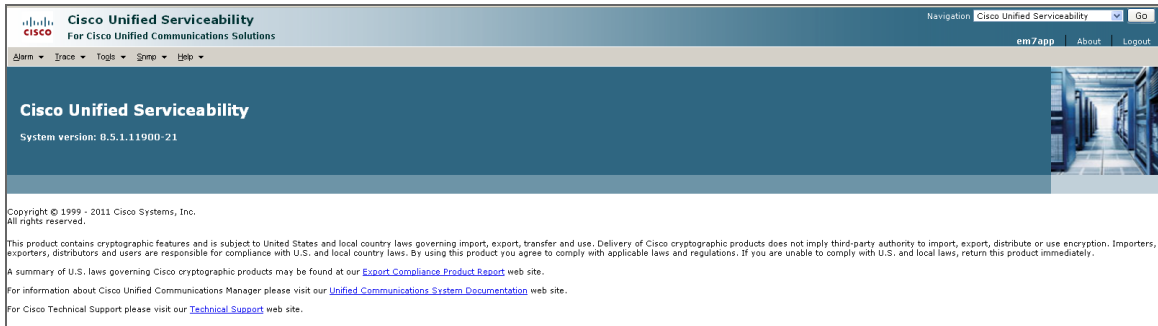
Enabling the CUCM AXL Web Service

The ScienceLogic platform can monitor a Cisco Unified Communications Manager (CUCM) system by requesting detailed information about the system from the CUCM AXL Web Service.

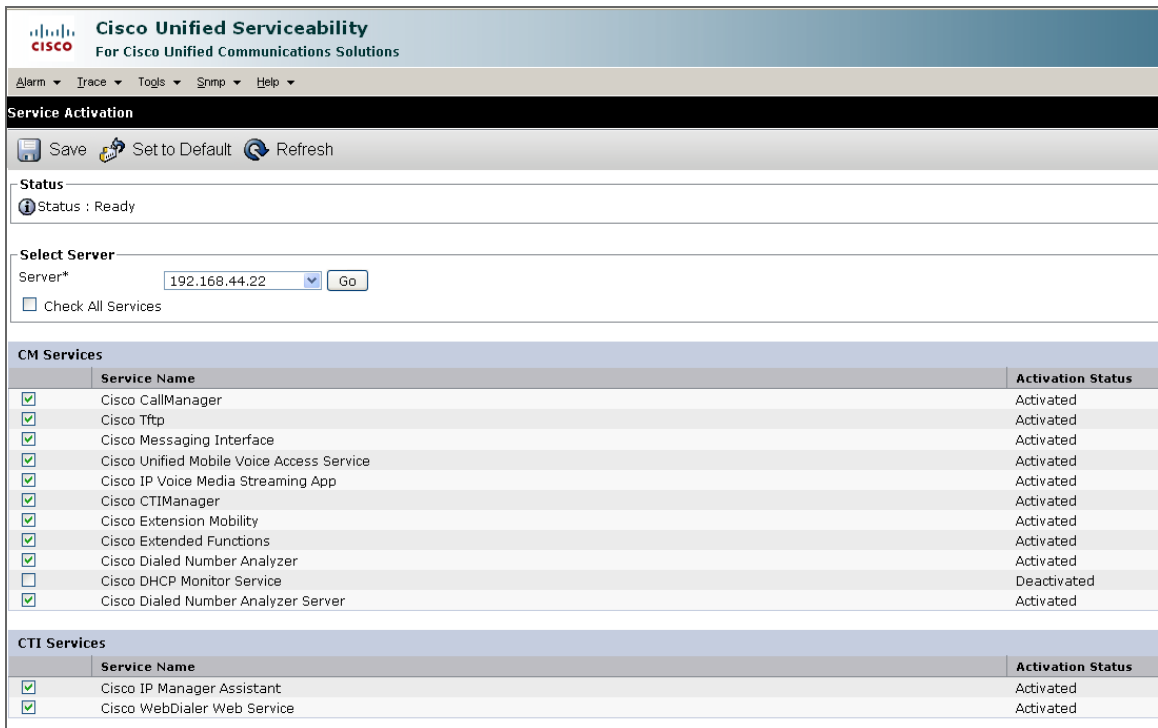
The CUCM AXL web service is disabled by default. To enable the AXL web service, perform the following steps:

1. In a browser window, navigate to the following address:
`https://ip-address-of-cucm-system:8443/ccadmin/showHome.do`
2. Log in to the Cisco Unified CM Administration site as an administrator.

- In the **Navigation** drop-down list at the top-right corner of the page, select *Cisco Unified Serviceability*, and then click the **[Go]** button. The **Cisco Unified Serviceability** page appears:



- In the navigation bar at the top-left of the page, hover over **Tools**, then select **Service Activation**. The **Service Activation** page appears:



- In the **Server** drop-down list, select the CUCM server for which you want to enable the AXL web service, and then click the **[Go]** button.
- In the list of services, locate the **Database and Admin Services** section. If the *Activation Status* of the **Cisco AXL Web Service** is "Activated", the AXL web service is already enabled.
- If the *Activation Status* of the **Cisco AXL Web Service** is not "Activated", select the checkbox for the **Cisco AXL Web Service**.

8. Click the **[Save]** button at the bottom of the page to save your changes, and then click the **[OK]** button in the pop-up window that appears.

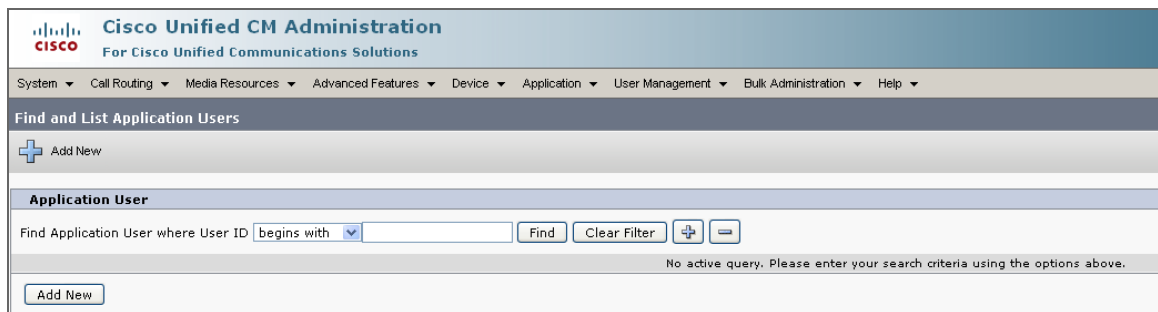
Configuring a CUCM User Account

ScienceLogic recommends that you create a CUCM user account that will be used only by the ScienceLogic platform to access the AXL web service. To create a user account in CUCM that can access only the AXL web service, perform these two steps:

- Create a user account.
- Create a user group that includes the user account and has permission to access only the AXL web service.

To create a new CUCM user group and user account, perform the following steps:

1. In a browser window, navigate to the following address:
`https://ip-address-of-cucm-system:8443/ccmadmin/showHome.do`
2. Log in to the Cisco Unified CM Administration site as an administrator.
3. In the navigation bar at the top-left of the page, hover over **User Management**, then select **Application User**. The **Find and List Users** page appears:



4. Click the [+ Add New] button. The **Application User Configuration** page appears:

The screenshot shows the Cisco Unified CM Administration interface for configuring an application user. The page title is "Application User Configuration". At the top, there is a navigation menu with options: System, Call Routing, Media Resources, Advanced Features, Device, Application, User Management, Bulk Administration, and Help. Below the navigation menu is a "Save" button. The main content area is divided into three sections: "Status", "Application User Information", and "Device Information".

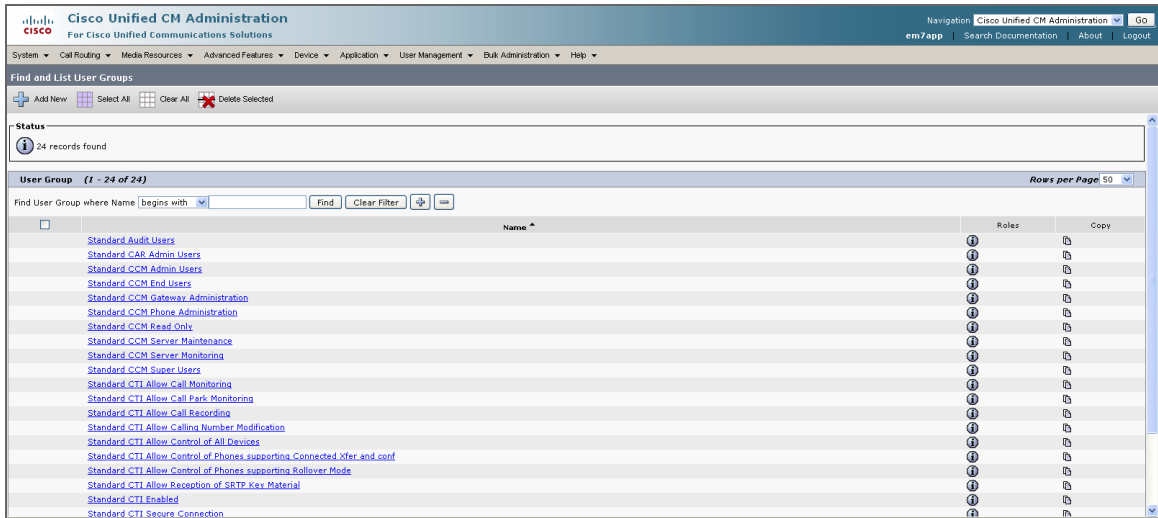
Status
Status: Ready

Application User Information
User ID* [text input]
Password [text input]
Confirm Password [text input]
Digest Credentials [text input]
Confirm Digest Credentials [text input]
Presence Group* [Standard Presence group (dropdown)]
 Accept Presence Subscription
 Accept Out-of-dialog REFER
 Accept Unsolicited Notification
 Accept Replaces Header

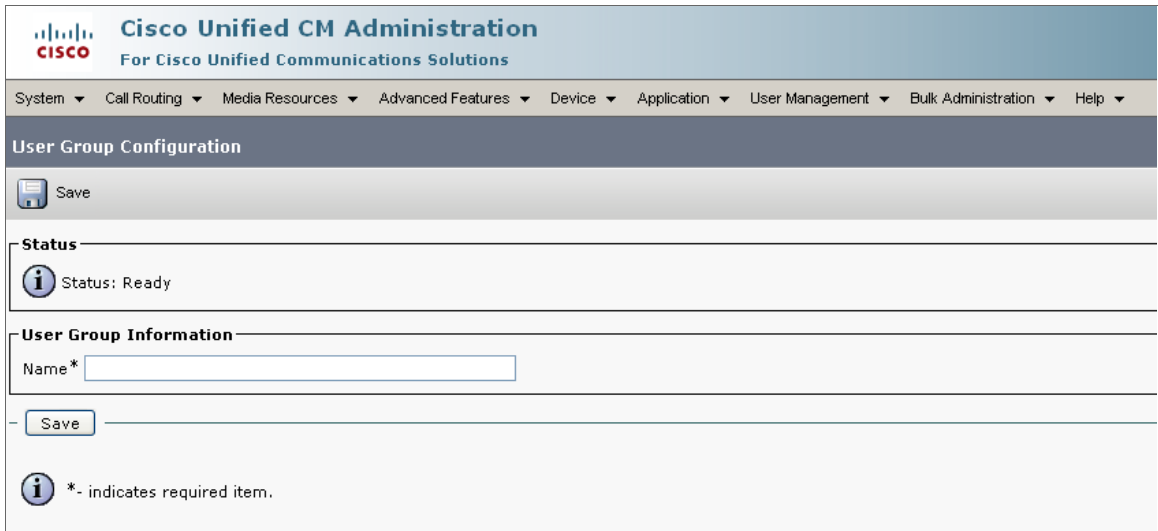
Device Information
Available Devices [Assistant_RP, SEP000F909341F2, SEP001A6C8AC697, SEP04C5A4B0AD9F, SEP44E4D945EF47]
Controlled Devices [empty list]
[Find more Phones] [Find more Route Points]

5. Supply values in the following fields:
- **User ID**. Type a username for the new user.
 - **Password**. Type a password for the new user.
 - **Confirm Password**. Type the password for the new user again.
6. Click the [Save] button.

- In the navigation bar at the top-left of the page, hover over **User Management**, then select **User Group**. The **Find and List User Groups** page appears:

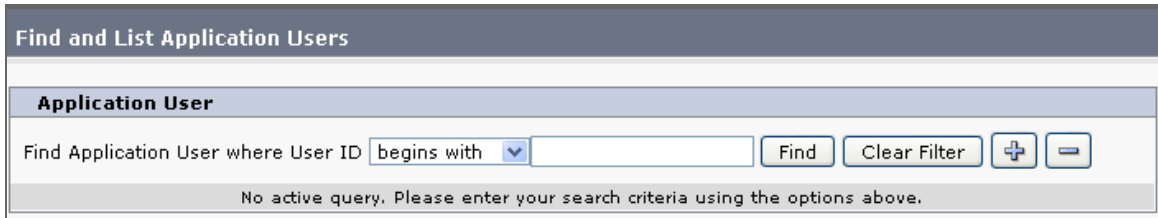


- Click the [+ Add New] button. The **User Group Configuration** page appears:

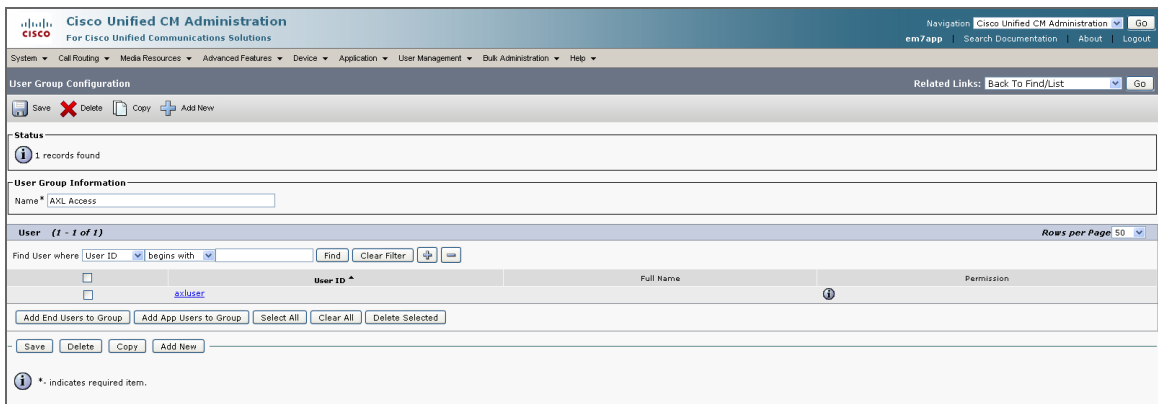


- In the **Name** field, type a name for the user group. For example, you could call the user group "AXL Access".
- Click the **[Save]** button.

- Click the **[Add App Users to Group]** button. The **Find and List Application Users** window appears:



- Click the **[Find]** button. In the list of users, select the checkbox for the user account that you created, then click the **[Add Selected]** button at the bottom of the page.
- The **Find and List Application Users** window closes. In the **User Group Configuration** page, the user account is included in the list of users:



14. In the **Related Links** drop-down list at the top-right hand corner of the page, select *Assign Role to User Group*, and then click the **[Go]** button. The **User Group Configuration** page appears:

The screenshot shows the Cisco Unified CM Administration interface for User Group Configuration. At the top, there is a navigation menu with options: System, Call Routing, Media Resources, Advanced Features, Device, Application, User Management, Bulk Administration, and Help. The main heading is "User Group Configuration". Below this, there is a "Save" button. The "Status" section shows "Status: Ready". The "User Group Information" section shows "Name* AXL Access". The "Role Assignment" section features a "Role" dropdown menu, an "Assign Role to Group" button, and a "Delete Role Assignment" button. At the bottom, there is another "Save" button and three informational messages: "i *- indicates required item.", "i **The role Standard CCM Admin Users must be assigned to a user group to enable its members to logon to CCMAdmin web site", and "i ***The role Standard CCM End Users must be assigned to a user group to enable its members to logon to CCMUser web site".

15. Click the **[Assign Role to Group]** button. The **Find and List Roles** window appears:

The screenshot shows the "Find and List Roles" window. It has a title bar "Find and List Roles" and a "Role" section. Below this, there is a search interface with the text "Find Role where" followed by two dropdown menus: "Name" and "begins with". To the right of these is an input field, a "Find" button, and a "Clear Filter" button. Further right are two small square buttons with "+" and "-" symbols. Below the input field is a dropdown menu with the text "Select item or enter search text". At the bottom of the window, there is a message: "No active query. Please enter your search criteria using the options above."

16. Click the **[Find]** button. A list of roles appears:

Find and List Roles

Select All Clear All Add Selected Close

Status
 39 records found

Role (1 - 39 of 39) Rows per Page 50

Find Role where Name begins with Find Clear Filter + -
 Select item or enter search text

<input type="checkbox"/>	Name ^	Application	Description	Copy
<input type="checkbox"/>	Standard AXL API Access	Cisco Call Manager AXL Database	Access the AXL APIs	
<input type="checkbox"/>	Standard Admin Rep Tool Admin		Administer CAR	
<input type="checkbox"/>	Standard Audit Log Administration	Cisco Call Manager Serviceability	Serviceability Audit Log Administration	
<input type="checkbox"/>	Standard CCM Admin Users		All users with access to CCM web site	
<input type="checkbox"/>	Standard CCM End Users		Access to CCM User Option Pages	
<input type="checkbox"/>	Standard CCM Feature Management	Cisco Call Manager Administration	Standard CCM Feature Management	
<input type="checkbox"/>	Standard CCM Gateway Management	Cisco Call Manager Administration	Standard CCM Gateway Management	
<input type="checkbox"/>	Standard CCM Phone Management	Cisco Call Manager Administration	Standard CCM Phone Management	
<input type="checkbox"/>	Standard CCM Route Plan Management	Cisco Call Manager Administration	Standard CCM Route Plan Management	
<input type="checkbox"/>	Standard CCM Service Management	Cisco Call Manager Administration	Standard CCM Service Management	
<input type="checkbox"/>	Standard CCM System Management	Cisco Call Manager Administration	Standard CCM System Management	
<input type="checkbox"/>	Standard CCM User Management	Cisco Call Manager Administration	Standard CCM User Management	

17. Select the checkboxes for the following roles:

- *Standard AXL API Access*
- *Standard CCM Admin Users*
- *Standard SERVICEABILITY Read Only*

18. Click the **[Add Selected]** button at the bottom of the page.

19. The **Find and List Roles** window closes. In the **User Group Configuration** page, the **Roles** field includes the *Standard AXL API Access* role:

The screenshot displays the Cisco Unified CM Administration interface for User Group Configuration. The top navigation bar includes System, Call Routing, Media Resources, Advanced Features, Device, Application, User Management, Bulk Administration, and Help. The main content area is titled 'User Group Configuration' and contains a 'Save' button. Below this is a 'Status' section showing 'Status: Ready'. The 'User Group Information' section shows 'Name * AXL Access'. The 'Role Assignment' section features a dropdown menu with three roles: 'Standard AXL API Access', 'Standard CCM Admin Users', and 'Standard SERVICEABILITY Read Only'. To the right of the dropdown are two buttons: 'Assign Role to Group' and 'Delete Role Assignment'. At the bottom left is another 'Save' button. Below the form are three information icons with text: '*- indicates required item.', '**The role Standard CCM Admin Users must be assigned to a user group to enable its members to logon to CCMAAdmin web site', and '***The role Standard CCM End Users must be assigned to a user group to enable its members to logon to CCMUser web site'.

20. Click the **[Save]** button.

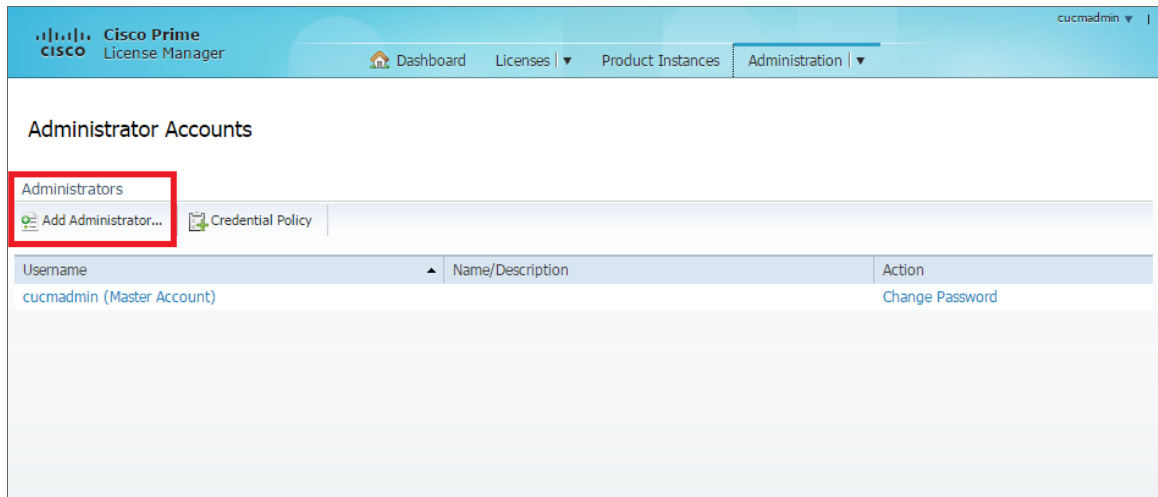
Configuring Prime License Manager

If you want to monitor CUCM license information from Cisco Prime License Manager (PLM), you must create an administrator user account that the ScienceLogic platform can use to access PLM.

To create an administrator user in PLM:

1. In a browser window, navigate to the following address:
`https://ip-address-of-plm-server/elm-admin/`
2. Log in to the Cisco PLM site as an administrator.
3. In the **Administration** drop-down menu, select *Administrator Accounts*.

4. Click the **[Add Administrator]** button.



5. In the **Add Administrator Account** modal page, make entries in the following fields:

The screenshot shows a modal dialog box titled 'Add Administrator Account'. It contains a warning message: '- The minimum password length is 1.' Below the message are four input fields: 'Name/Description:', '*Username:', '*Password:', and '*Re-enter Password:'. At the bottom right of the dialog are 'OK' and 'Cancel' buttons.


- **Name/Description.** Type a name or description for the account.
- **Username.** Type the account username.
- **Password.** Type the account password.
- **Re-enter Password.** Type the account password again.

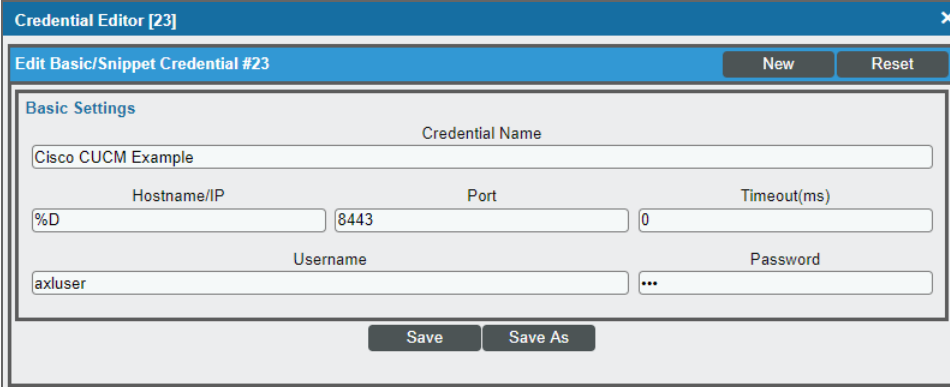
6. Click **[OK]**.

Creating a CUCM Credential

To use the Dynamic Applications in the *Cisco: CUCM Unified Communications Manager PowerPack*, you must first define a CUCM credential in the ScienceLogic platform. This credential allows the platform to communicate with the CUCM cluster. The *Cisco: CUCM Unified Communications Manager PowerPack* includes a template for a CUCM credential.

To modify the template for use with your CUCM cluster, perform the following steps:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Click the wrench icon () for the *Cisco CUCM Example* credential. The **Credential Editor** modal window appears:



3. Supply values in the following fields:
 - **Credential Name.** Type a new name for the credential.
 - **Hostname/IP.** Type the hostname or IP address, or you can type the variable "%D".
 - **Port.** Type the port number.

NOTE: The example credential included in older versions of the *Cisco: CUCM Unified Communications Manager PowerPack* used "80" as the default **Port** number. If your CUCM credential specifies port 80, the ScienceLogic platform will automatically override that value and use port 8443 instead. If your CUCM credential specifies any port other than 80, the platform will use that specified port.

- **Timeout (ms).** Type the timeout value of each request, in milliseconds.
- **Username.** Type the username for the CUCM user account that you created to access the AXL web service. For details, see the [Configuring a CUCM User Account](#) section.
- **Password.** Type the password for the username you entered in the **Username** field.

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

NOTE: If you are monitoring CUCM license information with the Cisco Prime License Manager (PLM) and your PLM administrator username and password are the same as the user account you created to access the AXL web service, then you can use the same credential to access PLM. However, if your PLM administrator user information is different, then repeat these steps to create a credential to access PLM.

Manually Creating Host File Entries for CUCM Nodes

During the discovery process, the ScienceLogic platform automatically aligns the IP addresses and hostnames for each node in a CUCM cluster via DNS.

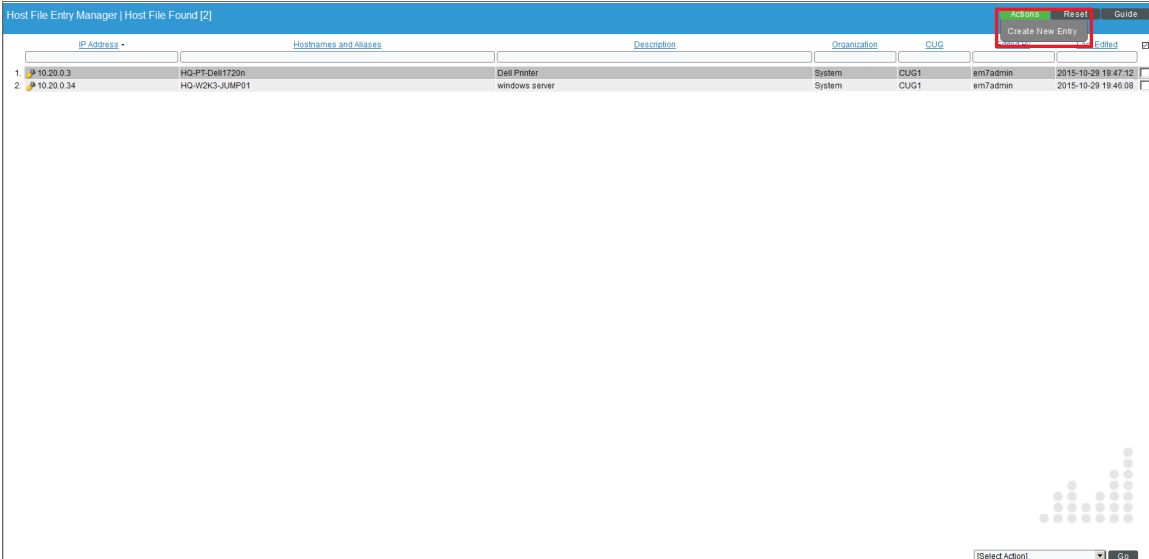
If you do not have access to DNS for the CUCM system you want to monitor, you must manually create host file entries in the ScienceLogic platform for each node in the CUCM cluster. Each host file entry must contain the IP address and hostname of a node in the CUCM cluster.

NOTE: If you have access to DNS for the CUCM system you want to monitor with the ScienceLogic platform, you do not need to perform the steps to manually configure host file entries. Continue to the section on [Discovering a CUCM Cluster](#).

Repeat the following steps for each node in the CUCM cluster.

To create a host file entry:

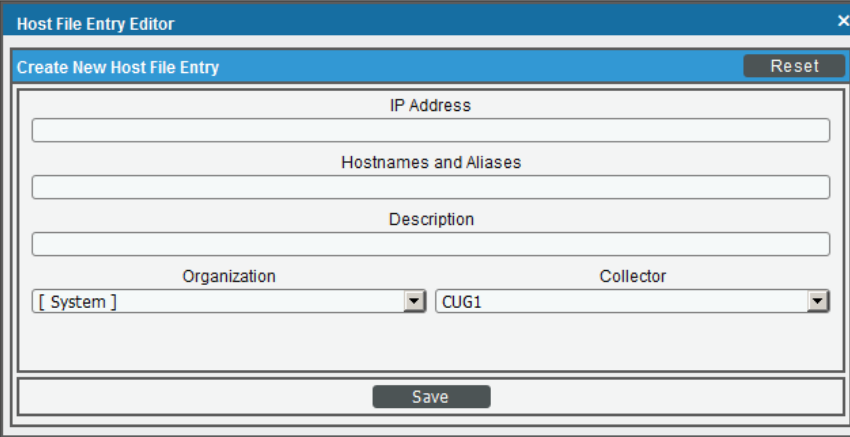
1. Go to the **Host File Entry Manager** page (System > Customize > Host Files).



The screenshot shows the 'Host File Entry Manager' interface with a table of host file entries. The table has columns for IP Address, Hostnames and Aliases, Description, Organization, CUG, and a date column. Two entries are visible:

	IP Address	Hostnames and Aliases	Description	Organization	CUG	
1	10.20.0.3	HQ-PF-Dell1720n	Dell Printer	System	DUG1	em7admin 2015-10-29 19:47:12
2	10.20.0.34	HQ-W2K3-JUMP01	windows server	System	CUG1	em7admin 2015-10-29 19:46:08

2. Click the **[Action]** menu and choose **Create New Entry**. The **Create New Host File Entry** modal page appears.



3. In the **Create New Host File Entry** modal page, supply values in the following fields:
 - **IP Address**. The IP address to resolve with the hostname.

NOTE: Server hostnames should be aligned to external IP addresses when supporting Network Address Translation (NAT) environments.

- **Hostnames and Aliases**. The hostname to align with the specified IP address. You can also include a space-delimited list of aliases for the host name.
 - **Description**. Description of the host entry. This field is not written to the host file. This field is for administrators to use when managing host file entries.
 - **Organization**. Organization associated with the host. You can select from a list of all existing organizations. This field is not written to the host file. This field is for administrators to use when managing host file entries. For example, a service provider could assign each customer its own organization and then use this field to manage host file entries for each customer.
4. Click the **[Save]** button to save the new host entry.

Discovering Cisco Unified Communications Manager Clusters

Overview

The following sections describe how to discover Cisco Unified Communications Manager (CUCM) clusters in the ScienceLogic platform using the *Cisco: CUCM Unified Communications Manager PowerPack*:

<i>Discovering a CUCM Cluster</i>	19
<i>Verifying Discovery and Dynamic Application Alignment</i>	21
<i>Manually Aligning Dynamic Applications</i>	23
<i>Viewing Component Devices</i>	25

Discovering a CUCM Cluster

To create and run a discovery session that will discover a CUCM cluster, perform the following steps:

1. Go to the **Discovery Control Panel** page (System > Manage > Discovery).

- Click the **[Create]** button to create a new discovery session. The **Discovery Session Editor** window appears:



- Enter values in the following fields:

- IP Address/Hostname Discovery List.** Type the IP addresses for the CUCM Publishers.

NOTE: To monitor CUCM servers that are registered by name within their clusters, you might need to go to the **Host File Entry Manager** page (System > Customize > Host Files) and map the server names to their IP addresses if you do not have access to DNS for the CUCM system you want to monitor. For Network Address Translation (NAT) environments, server hostnames should be mapped to external IP addresses. For more information, see the section [Manually Creating Host File Entries for CUCM Nodes](#).

- SNMP Credential.** Select an SNMP credential to use with the CUCM cluster. (For more information on SNMP credentials, see the **Discovery and Credentials** manual.)

NOTE: An SNMP credential is needed only to properly classify the devices in the cluster. If SNMP is not available on the CUCM cluster, then you do not need to select an SNMP credential; in that scenario, the root device will be discovered as a pingable device and you must manually change it to a CUCM cluster.

- **Other Credentials.** Select the *Cisco CUCM Example* credential that you edited in the section on [Creating a CUCM Credential](#).
4. You can enter values in the other fields on this page, but are not required to and can simply accept the default values. For more information about the other fields on this page, see the **Discovery and Credentials** manual.
 5. Click **[Save]** and then close the **Discovery Session Editor** window.
 6. 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.
 7. The **Discovery Session** window appears.
 8. When the CUCM cluster is discovered, click its device icon () to view the **Device Properties** page for the CUCM cluster.

Verifying Discovery and Dynamic Application Alignment

The Dynamic Applications for monitoring CUCM are aligned during discovery.

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

1. In the **Discovery Session** page, click the device icon () for the newly discovered CUCM cluster to view its **Device Properties** page.

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

Dynamic Application	ID	Poll Frequency	Type	Credential
+ Cisco CM: Registration Counters	188	15 mins	SNMP Performance	Default SNMP Credential
+ Cisco CM: Alarm Configs	197	1440 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: Call Manager	195	1440 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: CCM Status	196	1 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: Device Pools	173	1440 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: Gateway MGCP	174	1 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: Global Config	175	1440 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: H323 Device Status	191	5 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: Media Device Status	192	5 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: Media Resources	177	1440 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: Phone	178	1440 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: Phone Status	193	5 mins	SNMP Configuration	Default SNMP Credential
+ Cisco CM: Regions	179	1440 mins	SNMP Configuration	Default SNMP Credential
+ Host Resource: CPU Config	470	1440 mins	SNMP Configuration	Default SNMP Credential
+ Host Resource: Software	467	120 mins	SNMP Configuration	Default SNMP Credential
+ Cisco: CUCM Cluster Information	1086	15 mins	Snippet Configuration	N/A
+ Cisco: CUCM Cluster Root Cache	1085	15 mins	Snippet Configuration	Default SNMP Credential
+ Cisco: CUCM Gatekeeper Cache	1154	15 mins	Snippet Configuration	Default SNMP Credential
+ Cisco: CUCM H323 Trunk Cache	1149	15 mins	Snippet Configuration	Default SNMP Credential
+ Cisco: CUCM Media Resource Big Cache	1070	15 mins	Snippet Configuration	Default SNMP Credential
+ Cisco: CUCM MGCP Gateway Cache	1061	15 mins	Snippet Configuration	Default SNMP Credential
+ Cisco: CUCM Misc Perf Counters Fast Cache	1124	15 mins	Snippet Configuration	Default SNMP Credential
+ Cisco: CUCM Misc Perf Counts Slow Cache	1058	15 mins	Snippet Configuration	Default SNMP Credential
+ Cisco: CUCM Service Performance Cache	1076	15 mins	Snippet Configuration	Default SNMP Credential
+ Cisco: CUCM Service States Cache	1082	15 mins	Snippet Configuration	Default SNMP Credential

- The following Dynamic Applications should appear on the **Dynamic Application Collections** page for the CUCM cluster:

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.

- Cisco: CUCM Cluster Information
- Cisco: CUCM Cluster Root Cache
- Cisco: CUCM CTI Device Cache
- Cisco: CUCM Gatekeeper Cache
- Cisco: CUCM H323 Trunk Cache
- Cisco: CUCM Media Resource Big Cache
- Cisco: CUCM MGCP Gateway Cache
- Cisco: CUCM Misc Perf Counters Fast Cache
- Cisco: CUCM Misc Perf Counts Slow Cache

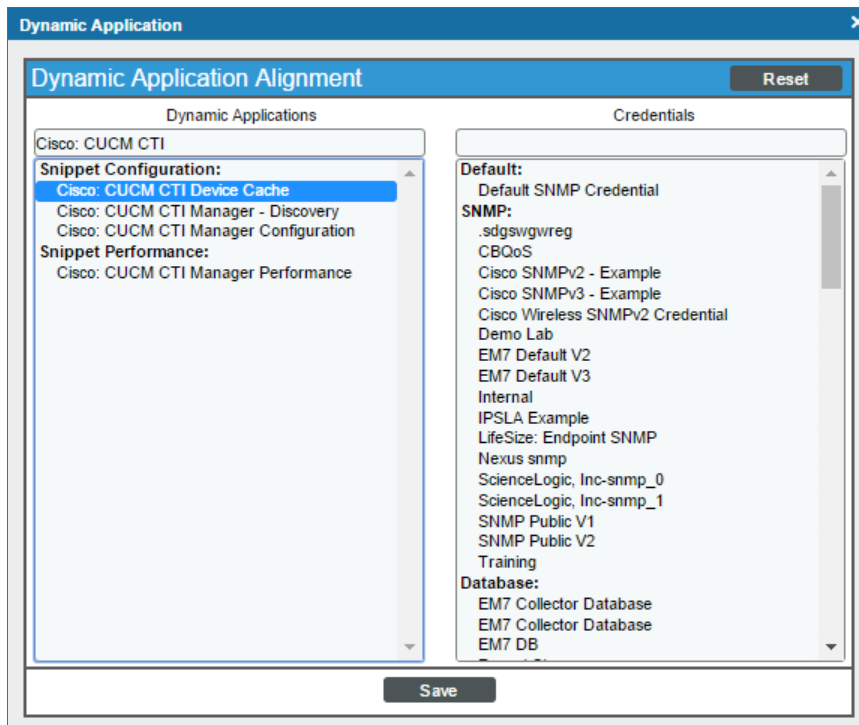
- Cisco: CUCM Partition Cache
- Cisco: CUCM Process Cache
- Cisco: CUCM Service Performance Cache
- Cisco: CUCM Service States Cache
- Cisco: CUCM SIP Trunk Cache

Manually Aligning Dynamic Applications

If the Dynamic Applications have not been automatically aligned, you can align them manually.

To manually align Dynamic Applications:


1. From the **Device Properties** page for the CUCM cluster, click the **[Collections]** tab.
2. Click the **[Actions]** button and then click *Add Dynamic Applications*. The **Dynamic Application Alignment** page appears:




3. In the **Dynamic Applications** field, select the Dynamic Application you want to align.
4. In the **Credentials** field, select the SNMP credential you created for monitor the CUCM cluster.
5. Repeat steps 2-4 for the remaining Dynamic Applications to align with the device.

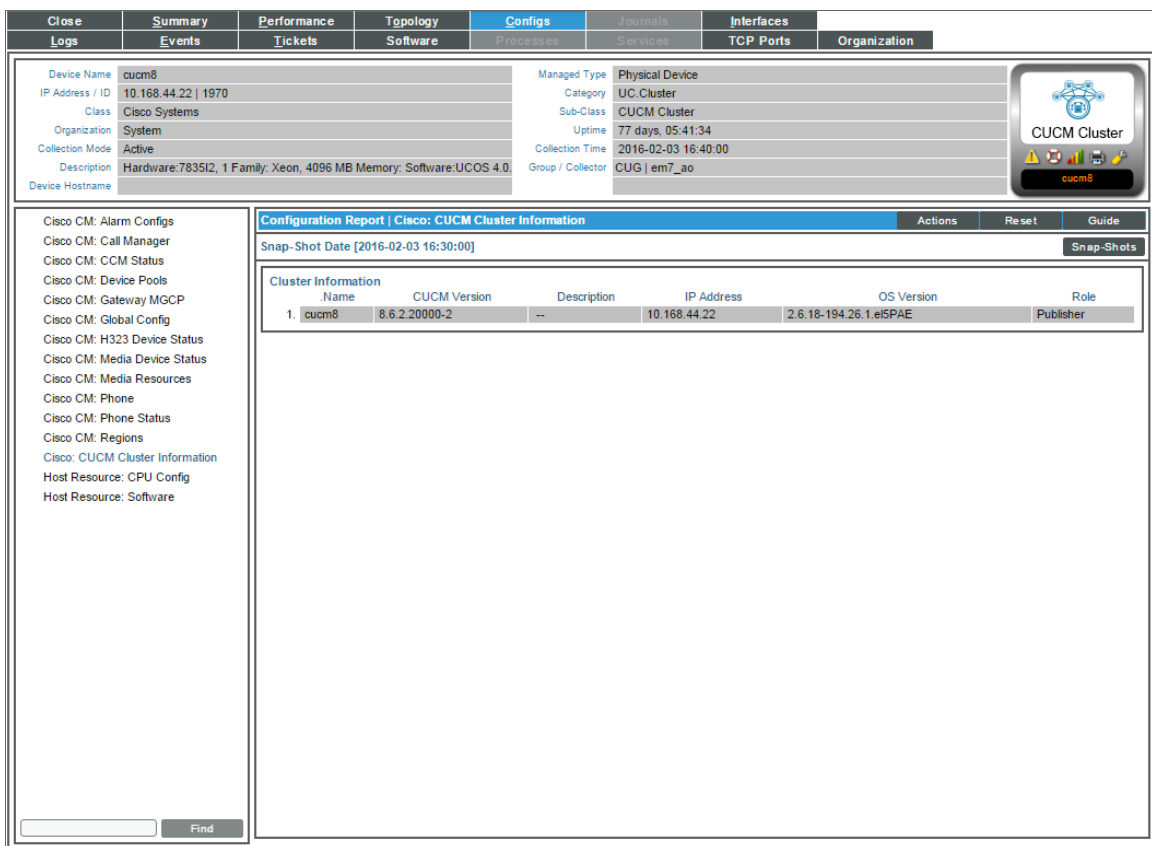
- After aligning the Dynamic Applications, click the **[Reset]** button and then click the plus icon (+) for the Dynamic Application. If collection for the Dynamic Application was successful, the graph icons (📊) for the Dynamic Application are enabled:

Close	Properties	Thresholds	Collections	Monitors	Schedule	Logs
Toolbox	Interfaces	Relationships	Tickets	Redirects	Notes	Attributes
Device Name	cucm8			Managed Type	Physical Device	
IP Address / ID	10.168.44.22 1970			Category	UC.Cluster	
Class	Cisco Systems			Sub-Class	CUCM Cluster	
Organization	System			Uptime	77 days, 05:21:31	
Collection Mode	Active			Collection Time	2016-02-03 16:15:00	
Description	Hardware:7835I2, 1 Family: Xeon, 4096 MB Memory; Software:UCOS			Group / Collector	CUG em7_a0	
Device Hostname						



Dynamic Application™ Collections							Expand	Actions	Reset	Guide
Cisco CUCM: Cluster Information		932	15 mins	Snippet Configuration	N/A					
Name	Collection Object	Cid	Found	Collecting	Edited By					
Cluster Information		p_11751	yes	yes	--					<input checked="" type="checkbox"/>
CUCM Version		p_12950	no	yes	--					<input checked="" type="checkbox"/>
Description		p_11749	yes	yes	--					<input checked="" type="checkbox"/>
Discovery Object		p_11752	yes	yes	--					<input checked="" type="checkbox"/>
IP Address		p_15148	no	yes	--					<input checked="" type="checkbox"/>
OS Version		p_11750	yes	yes	--					<input checked="" type="checkbox"/>
Role		p_11754	yes	yes	--					<input checked="" type="checkbox"/>
Unique ID 1		p_11755	yes	yes	--					<input checked="" type="checkbox"/>
+	Cisco: CUCM Cluster Root Cache	1085	15 mins	Snippet Configuration	Cisco CUCM Example					<input checked="" type="checkbox"/>
+	Cisco: CUCM Gatekeeper Cache	1154	15 mins	Snippet Configuration	Cisco CUCM Example					<input type="checkbox"/>
+	Cisco: CUCM H323 Trunk Cache	1149	15 mins	Snippet Configuration	Cisco CUCM Example					<input type="checkbox"/>
+	Cisco: CUCM Media Resource Big Cache	1070	15 mins	Snippet Configuration	Cisco CUCM Example					<input type="checkbox"/>
+	Cisco: CUCM MGCP Gateway Cache	1061	15 mins	Snippet Configuration	Cisco CUCM Example					<input type="checkbox"/>
+	Cisco: CUCM Misc Perf Counters Fast Cache	1124	15 mins	Snippet Configuration	Cisco CUCM Example					<input type="checkbox"/>
+	Cisco: CUCM Misc Perf Counts Slow Cache	1058	15 mins	Snippet Configuration	Cisco CUCM Example					<input type="checkbox"/>
+	Cisco: CUCM Service Performance Cache	1076	15 mins	Snippet Configuration	Cisco CUCM Example					<input type="checkbox"/>
+	Cisco: CUCM Service States Cache	1082	15 mins	Snippet Configuration	Cisco CUCM Example					<input type="checkbox"/>

- 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 CUCM cluster:



Configuration Report Cisco: CUCM Cluster Information						
Snap-Shot Date [2016-02-03 16:30:00]						
Cluster Information						
	Name	CUCM Version	Description	IP Address	OS Version	Role
1.	cucm8	8.6.2.20000-2	--	10.168.44.22	2.6.18-194.26.1.eISPAE	Publisher

Viewing Component Devices

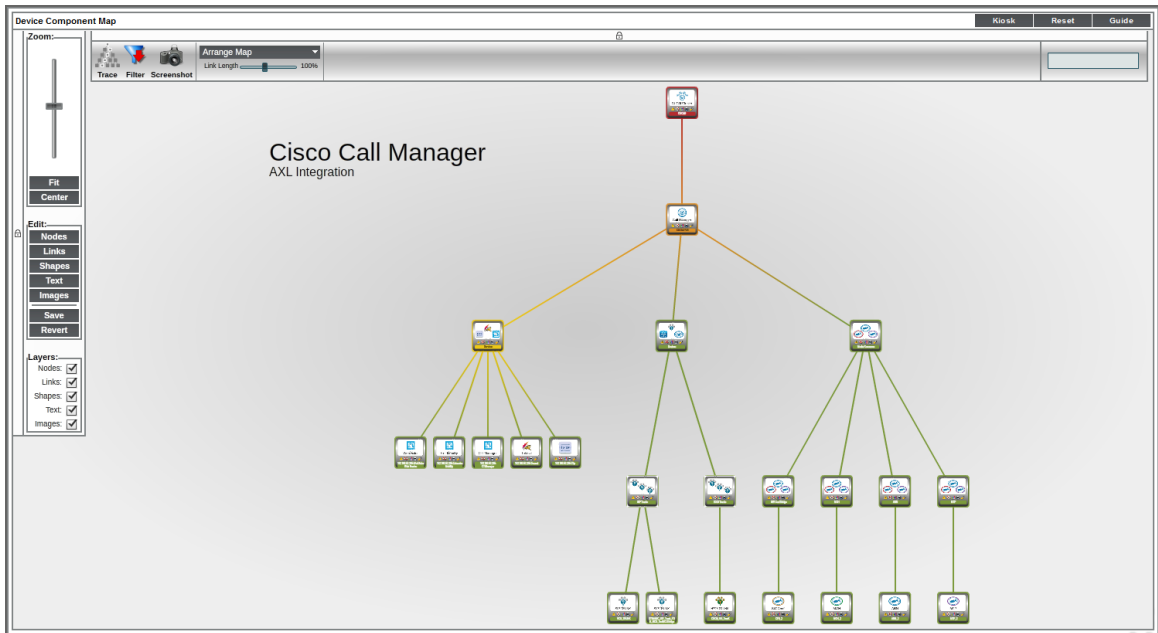
When the ScienceLogic platform performs collection for a CUCM cluster, the platform will create component devices for the components in the CUCM cluster and align other Dynamic Applications to those component devices. Some of the Dynamic Applications aligned to the component devices will also be used to create additional component devices. All component devices appear in the **Device Manager** page just like devices discovered using the ScienceLogic discovery process.

In addition to the **Device Manager** page, you can view the CUCM cluster and all associated component devices in the following places in the user interface:

- 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 CUCM cluster, find the CUCM cluster and select its plus icon (+):

Device Components Devices Found [4]										Actions	Reset	Guide
	Device Name	IP Address	Device Category	Device Class Sub-class	DUID	Organization	Current State	Collection Group	Collection State			
1.	+ [CUCM9]	10.188.84.22	Cluster	Cisco Systems CUCM Cluster	228	Branch Office A	[Healthy]	CUG_LOCAL	Active			
2.	- [CUCM9]	192.168.53.245	Cluster	Cisco Systems CUCM Cluster	208	Branch Office A	[Critical]	CUG_LOCAL	Active			
1.	+ [CUCM-PUB]	--	CallControl	Cisco Systems Call Manager	262	Branch Office A	[Major]	CUG_LOCAL	Unavailable			
3.	+ [nexus_a]	192.168.54.10	Switches	Cisco Systems Nexus 5548UP	155	System	[Minor]	CUG_LOCAL	Active			
4.	+ [nexus_b]	192.168.54.11	Switches	Cisco Systems Nexus 5548UP	156	System	[Minor]	CUG_LOCAL	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 CUCM cluster, 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.



Cisco Unified Communications Dashboards

Overview

The *Cisco: CUCM Unified Communications Manager* PowerPack comes paired with the *Cisco: CUCM Dashboards* PowerPack, which contains dashboards that present data related to different aspects of CUCM clusters.

The following sections describe how to install the *Cisco: CUCM Dashboards* PowerPack and provide a description of each dashboard:

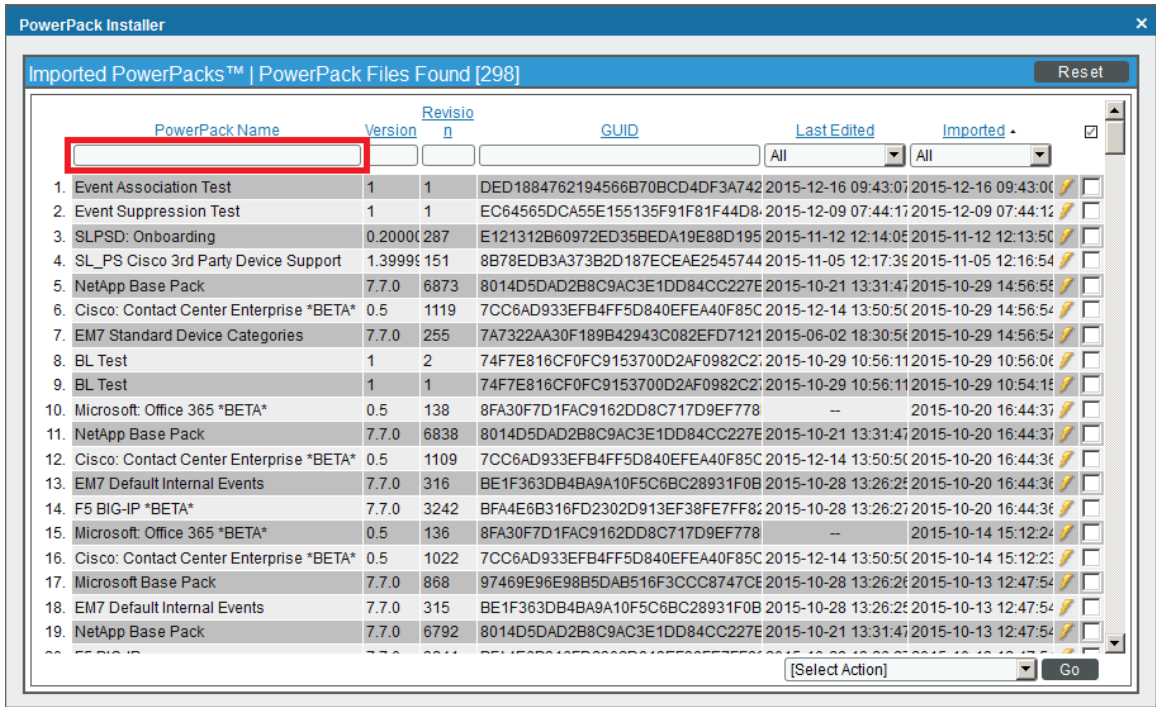
<i>Installing the CUCM Dashboards</i>	28
<i>Cisco: CUCM Performance Dashboard</i>	30
<i>Cisco: CUCM Locations LBM</i>	31
<i>Cisco: CUCM Media Resources</i>	32
<i>Cisco: CUCM Media Resources (Simple)</i>	33
<i>Cisco: CUCM Tomcat</i>	34
<i>Cisco: CUCM Overall Cluster Health</i>	35
<i>Cisco: CUCM Active Calls</i>	36

Installing the CUCM Dashboards

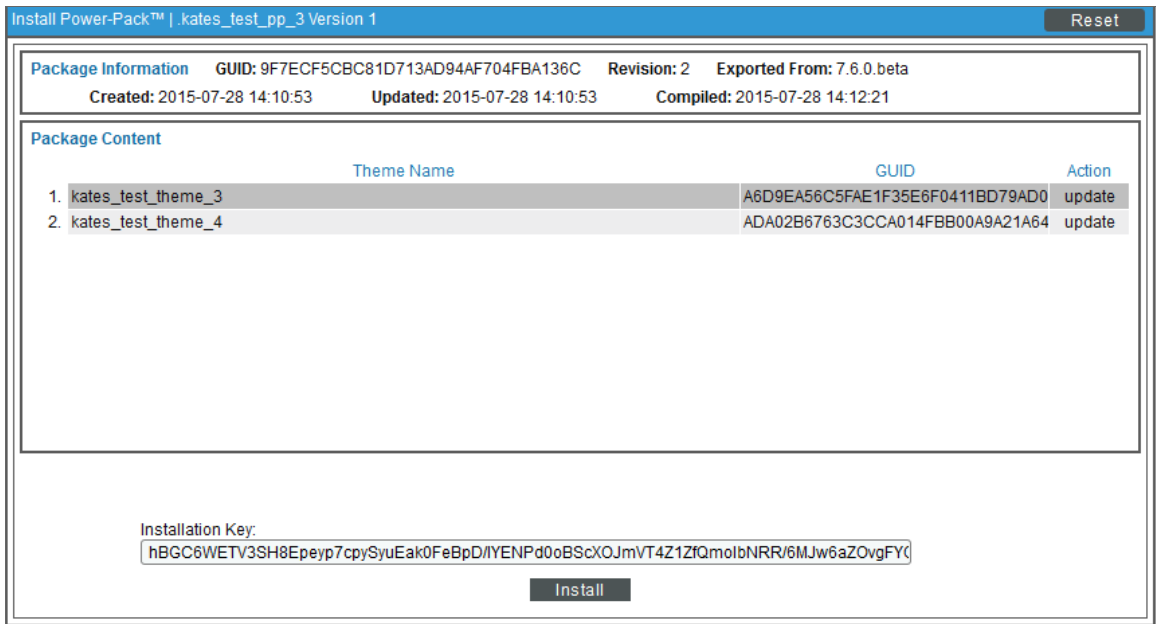
To view the CUCM dashboards in the ScienceLogic platform, you must install the *Cisco: CUCM Dashboards* PowerPack. To do so:

1. Go to the **PowerPack Manager** page (System > Manage > PowerPacks).
2. Click the **[Actions]** button, then select *Install PowerPack*. The **Imported PowerPacks** modal page appears.

- Use the search filter in the **PowerPack Name** column heading to locate the PowerPack you want to install. To do so, enter text to match, including special characters, and the **Imported PowerPacks** modal page displays only PowerPacks that have a matching name.



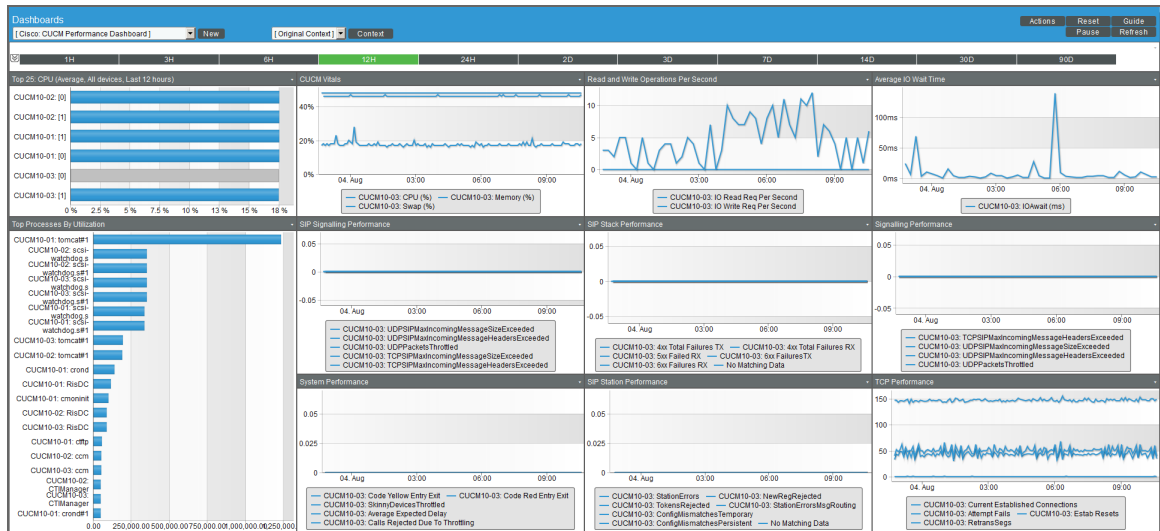
- Click the lightning-bolt icon (⚡) for the PowerPack that you want to install.
- The **Install PowerPack** modal page appears. To install the PowerPack, click **[Install]**.



- The PowerPack now appears in the **PowerPack Manager** page. The contents of the PowerPack are automatically installed in your ScienceLogic system.

Cisco: CUCM Performance Dashboard

The Cisco: CUCM Performance dashboard displays 11 widgets.



The dashboard includes the following widgets:

- **Top 25: CPU (Average, All devices, Last 12 Hours).** This widget displays a bar graph that depicts the 25 Cisco: Call Manager devices that used the highest percentage of CPU time over the last 12 hours.
- **Top Processes By Utilization.** This widget displays a bar graph that depicts all CUCM processes in the cluster, ordered by utilization from highest to lowest.
- **CUCM Vitals.** This widget displays a line graph that depicts the cluster's vitals by percent, including CPU time, Swap Utilization, and Memory Utilization, over time.
- **Read and Write Operations Per Second.** This widget displays a line graph that depicts read and write requests per second over time.
- **Average IO Wait Time.** This widget displays a line graph that depicts the average IO wait time over time.
- **SIP Signaling Performance.** This widget displays a line graph that depicts SIP signaling performance over time.
- **SIP Stack Performance.** This widget displays a line graph that depicts SIP stack performance over time.
- **Signaling Performance.** This widget displays a line graph that depicts overall signaling performance over time.
- **System Performance.** This widget displays a line graph that depicts multiple system performance metrics over time.

- **SIP Station Performance.** This widget displays a line graph that depicts multiple SIP station performance metrics over time.
- **TCP Performance.** This widget displays a line graph that depicts TCP performance over time.

Cisco: CUCM Locations LBM

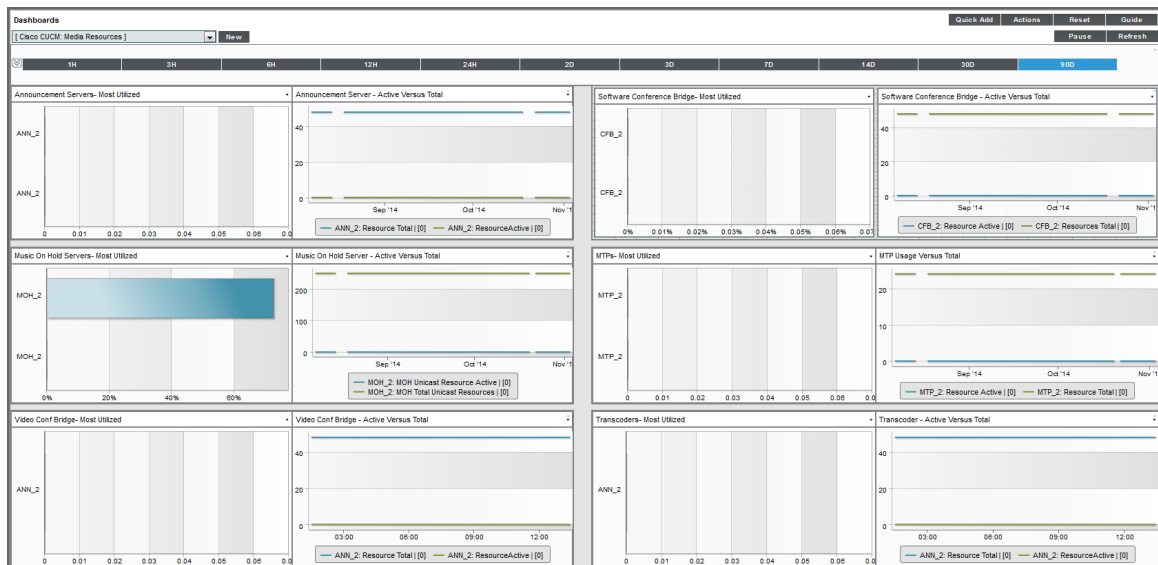
The Cisco: CUCM Locations LBM (Location Bandwidth Manager) dashboard displays eight widgets.

The dashboard includes the following widgets:

- **Top Locations by Audio Bandwidth.** This widget displays a horizontal bar graph that depicts a list of locations, ordered by audio bandwidth usage by percent, from highest to lowest.
- **Location - Audio Bandwidth Utilization.** This widget displays a line graph that depicts audio bandwidth utilization over time.
- **Top Locations by Available Bandwidth.** This widget displays a horizontal bar graph that depicts a list of locations, ordered by available bandwidth in kpbs, from highest to lowest.
- **Location - Available Bandwidth.** This widget displays a line graph that depicts available bandwidth over time.
- **Top Locations by Video Bandwidth.** This widget displays a line graph that a list of locations, ordered by video bandwidth by percent, from highest to lowest.
- **Location - Video Bandwidth Utilization.** This widget displays a line graph that depicts video bandwidth utilization over time.
- **Top Locations by Telepresence Bandwidth Utilization.** This widget displays a horizontal bar graph that depicts a list of locations, ordered by TelePresence bandwidth usage in percent, from highest to lowest.
- **Location - Telepresence BW Utilization.** This widget displays a line graph that depicts TelePresence bandwidth utilization over time.

Cisco: CUCM Media Resources

The Cisco: CUCM Media Resources dashboard displays 12 widgets that display the most utilized and active versus total metrics for transcoding, announcement servers, streaming music to callers on hold, video, conferencing, and media termination points.



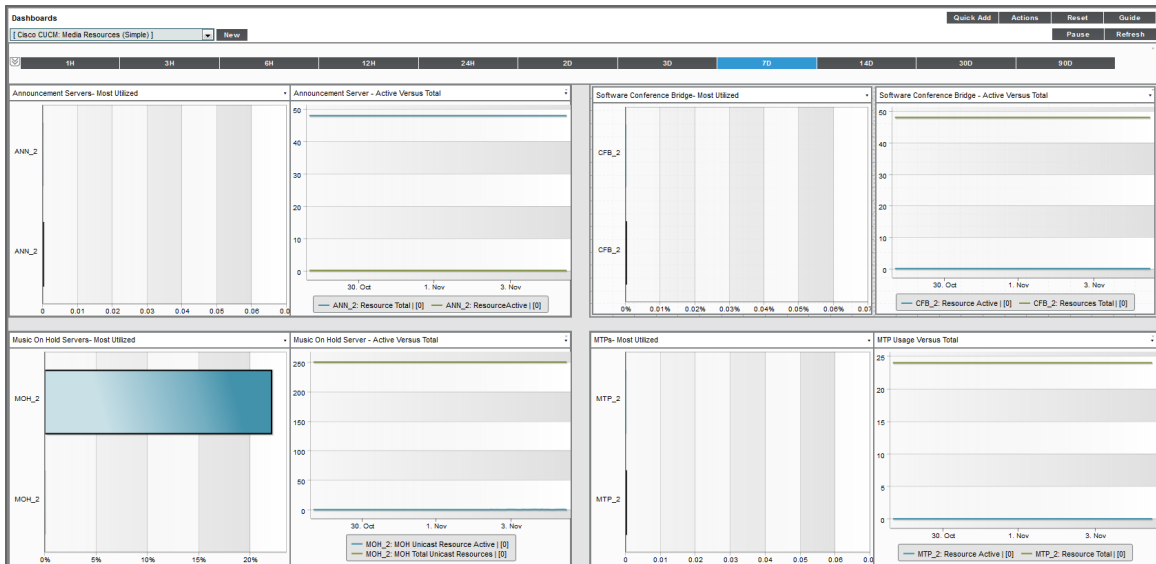
The dashboard includes the following widgets:

- **Announcement Servers - Most Utilized.** This widget displays a horizontal bar graph that depicts the most utilized announcement servers.
- **Announcement Server - Active Versus Total.** This widget displays a line graph that depicts the active announcement servers versus the total announcement servers over time.
- **Software Conference Bridge - Most Utilized.** This widget displays a horizontal bar graph that depicts the most utilized software conference bridges by percent.
- **Software Conference Bridge - Active Versus Total.** This widget displays a line graph that depicts the active versus total software conference bridges over time.
- **Music On Hold Servers - Most Utilized.** This widget displays a horizontal bar graph that depicts the most utilized music-on-hold servers by percent.
- **Music On Hold Servers - Active Versus Total.** This widget displays a line graph that depicts the active versus total music-on-hold servers over time.
- **MTPs - Most Utilized.** This widget displays a horizontal bar graph that depicts the most utilized Media Transfer Protocols (MTPs) by percent.
- **MTP Usage Versus Total.** This widget displays a line graph that depicts the usage versus total Media Transfer Protocols (MTPs) over time.

- **Video Conf Bridge - Most Utilized.** This widget displays a horizontal bar graph that depicts the most utilized video conference bridges by percent.
- **Video Conf Bridge - Active Versus Total.** This widget displays a line graph that depicts the active versus total video conference bridges over time.
- **Transcoders - Most Utilized.** This widget displays a horizontal bar graph that depicts the most utilized transcoders by percent.
- **Transcoders - Active Versus Total.** This widget displays a line graph that depicts the active versus total transcoders over time.

Cisco: CUCM Media Resources (Simple)

The Cisco: CUCM Media Resources dashboard displays eight widgets which display the most utilized and active versus total metrics for announcement servers, streaming music to callers on hold, conferencing, and media termination points.



The dashboard includes the following widgets:

- **Top SIP Trunks by Number of Active Calls.** This widget displays a horizontal bar graph that depicts the most utilized SIP trunks.
- **SIP Trunk Active Calls (Per Trunk).** This widget displays a line graph that depicts the number of active calls per SIP Trunk over time.
- **Software Conference Bridge - Most Utilized.** This widget displays a horizontal bar graph that depicts the most utilized software conference bridges by percent.
- **Software Conference Bridge - Active Versus Total.** This widget displays a line graph that depicts the active versus total software conference bridges over time.

- **Music On Hold Servers - Most Utilized.** This widget displays a horizontal bar graph that depicts the most utilized music-on-hold servers by percent.
- **Music On Hold Servers - Active Versus Total.** This widget displays a line graph that depicts the active versus total music-on-hold servers over time.
- **MTPs - Most Utilized.** This widget displays a horizontal bar graph that depicts the most utilized Media Transfer Protocols (MTPs) by percent.
- **MTP Usage Versus Total.** This widget displays a line graph that depicts the usage versus total Media Transfer Protocols (MTPs) over time.

Cisco: CUCM Tomcat

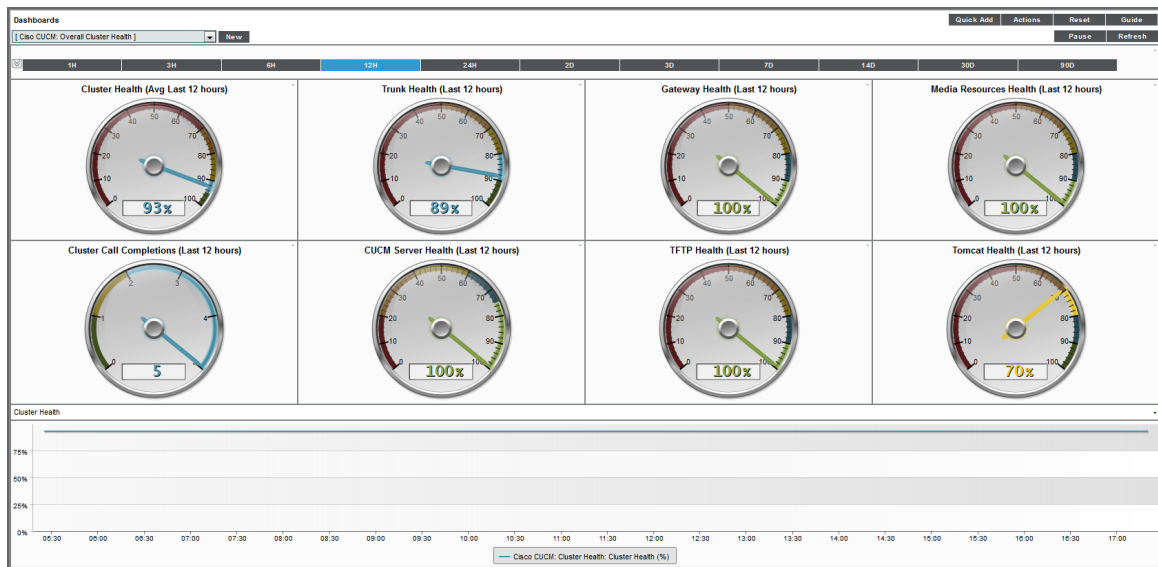
The Cisco: CUCM Tomcat dashboard displays 12 widgets that monitor servers and services that use the Tomcat Java Webserver.

The dashboard includes the following widgets:

- **Tomcat - Top Servers by Number of Requests.** This widget displays a horizontal bar graph that depicts the servers with the highest number of requests.
- **Tomcat % Memory Utilization.** This widget displays a line graph that depicts the percentage of memory utilization over time.
- **Tomcat % Total Errors.** This widget displays a line graph that depicts the percentage of errors over time.
- **Tomcat Connector - Total Sessions Active.** This widget displays a line graph that depicts the total active Tomcat Connector sessions over time.
- **Tomcat - Top 10 Services By Number of Requests.** This widget displays a horizontal bar graph that depicts the ten services with the most requests.
- **Tomcat - Number of Requests (Per Service).** This widget displays a line graph that depicts the number of requests per service over time.
- **Tomcat - Top 10 Services by Errors.** This widget displays a horizontal bar graph that depicts the ten services with the most errors.
- **Tomcat - Errors (Per Service).** This widget displays a line graph that depicts errors per service over time.
- **Tomcat - Top 5 Services by Sessions Active.** This widget displays a horizontal bar graph that depicts the five services with the most active sessions.
- **Tomcat - Sessions Active.** This widget displays a line graph that depicts active Tomcat sessions over time.
- **Tomcat - Top Connectors By Errors/Threads Busy.** This widget displays a horizontal bar graph that depicts the Connectors with the most errors and busy threads.
- **Tomcat - Connector Errors or Threads Busy (Per Connector).** This widget displays a line graph that depicts connector errors or busy threads per connector over time.

Cisco: CUCM Overall Cluster Health

The Cisco: CUCM Overall Cluster Health dashboard contains nine widgets that monitor aspects of the cluster's overall health.

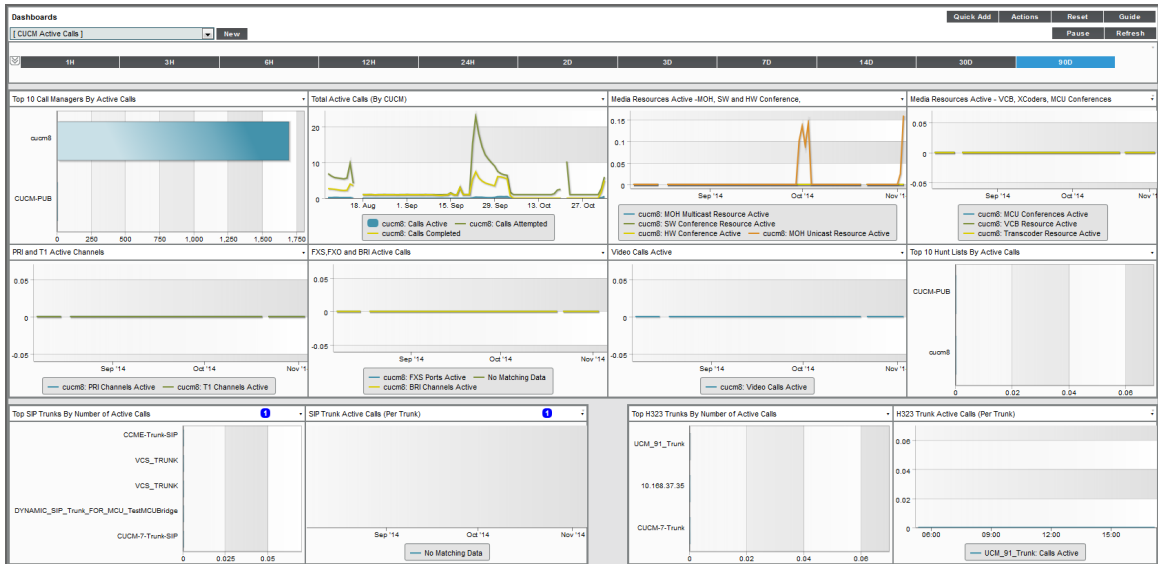


The dashboard includes the following widgets:

- Eight gauge widgets use IT Service Monitor Policies to display the following:
 - Cluster Health
 - Trunk Health
 - Gateway Health
 - Media Resources Health
 - Cluster Call Completions
 - CUCM Server Health
 - TFTP Health
 - Tomcat Health
- At the bottom of the dashboard, a line graph depicts the overall cluster health by percentage over time.

Cisco: CUCM Active Calls

The Cisco: CUCM Active Calls widget displays 12 graphs that monitor active calls, conferences, and active channels.



The widgets display:

- **Top 10 Call Managers By Active Calls.** This widget displays a horizontal bar graph that depicts the ten call managers with the highest number of active calls.
- **Total Active Calls (By CUCM).** This widget displays a line graph that depicts total active calls by CUCM over time.
- **Media Resources Active - MOH, SW and HW Conferences.** This widget displays a line graph that depicts active MOH, SW, and HW conference media resources over time.
- **Media Resources Active - VCB, Xcoders, MCU Conferences.** This widget displays a line graph that depicts active VCB, Xcoders, and MCU conferences over time.
- **PRI and T1 Active Channels.** This widget displays a line graph that depicts the active PRI and T1 channels over time.
- **FXS, FXO, and BRI Active Calls.** This widget displays a line graph that depicts FXS, FXO, and BRI active calls over time.
- **Video Calls Active.** This widget displays a line graph that depicts active video calls over time.
- **Top 10 Hunt Lists By Active Calls.** This widget displays a horizontal bar graph that depicts the ten hunt lists with the highest number of active calls.
- **Top SIP Trunks By Number of Active Calls.** This widget displays a horizontal bar graph that depicts the SIP trunks with the highest number of active calls.

- **SIP Trunk Active Calls (Per Trunk)**. This widget displays a line graph that depicts active SIP trunk calls over time.
- **Top H323 Trunks By Number of Active Calls**. This widget displays a horizontal bar graph that depicts the H323 trunks with the highest number of active calls.
- **H323 Trunk Active Calls (Per Trunk)**. This widget displays a line graph that depicts active H323 trunk calls over time.

© 2003 - 2018, ScienceLogic, Inc.

All rights reserved.

LIMITATION OF LIABILITY AND GENERAL DISCLAIMER

ALL INFORMATION AVAILABLE IN THIS GUIDE IS PROVIDED "AS IS," WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED. SCIENCELOGIC™ AND ITS SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT.

Although ScienceLogic™ has attempted to provide accurate information on this Site, information on this Site may contain inadvertent technical inaccuracies or typographical errors, and ScienceLogic™ assumes no responsibility for the accuracy of the information. Information may be changed or updated without notice. ScienceLogic™ may also make improvements and / or changes in the products or services described in this Site at any time without notice.

Copyrights and Trademarks

ScienceLogic, the ScienceLogic logo, and EM7 are trademarks of ScienceLogic, Inc. in the United States, other countries, or both.

Below is a list of trademarks and service marks that should be credited to ScienceLogic, Inc. The ® and ™ symbols reflect the trademark registration status in the U.S. Patent and Trademark Office and may not be appropriate for materials to be distributed outside the United States.

- ScienceLogic™
- EM7™ and em7™
- Simplify IT™
- Dynamic Application™
- Relational Infrastructure Management™

The absence of a product or service name, slogan or logo from this list does not constitute a waiver of ScienceLogic's trademark or other intellectual property rights concerning that name, slogan, or logo.

Please note that laws concerning use of trademarks or product names vary by country. Always consult a local attorney for additional guidance.

Other

If any provision of this agreement shall be unlawful, void, or for any reason unenforceable, then that provision shall be deemed severable from this agreement and shall not affect the validity and enforceability of any remaining provisions. This is the entire agreement between the parties relating to the matters contained herein.

In the U.S. and other jurisdictions, trademark owners have a duty to police the use of their marks. Therefore, if you become aware of any improper use of ScienceLogic Trademarks, including infringement or counterfeiting by third parties, report them to Science Logic's legal department immediately. Report as much detail as possible about the misuse, including the name of the party, contact information, and copies or photographs of the potential misuse to: legal@sciencelogic.com



800-SCI-LOGIC (1-800-724-5644)

International: +1-703-354-1010