Monitoring Cisco Cloud Services Platform 2100

Cisco: CSP-2100 PowerPack version 106

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Chapter 1

Introduction

Overview

This manual describes how to monitor Cisco Cloud Services Platform (CSP) 2100 clusters in SL1 using the *Cisco: CSP-2100* PowerPack.

The following sections provide an overview of CSP-2100 devices and the *Cisco: CSP-2100* PowerPack.

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What is Cisco Cloud Services Platform 2100?

Cisco Cloud Services Platform 2100 is a platform for virtualizing data center network functions. The hardware and software platform includes REST APIs, a command-line interface, and a web user interface for creating and managing virtual machines.

What Does the Cisco: CSP-2100 PowerPack Monitor?

To monitor CSP-2100 devices using SL1, you must install the *Cisco: CSP-2100* PowerPack. This PowerPack enables you to discover, model, and collect data about CSP-2100 clusters, nodes, and services.

The *Cisco: CSP-2100* PowerPack includes:

- Four example credentials (two SNMP credentials, a Basic/Snippet credential, and an SSH/Key credential) you can use to create the credentials that enable you to collect data from CSP-2100 devices
- Dynamic Applications to discover and monitor the CSP-2100 component devices
- Device Classes for each type of CSP-2100 component device SL1 monitors
- Event Policies and corresponding alerts that are triggered when CSP-2100 component devices meet certain status criteria
- Run Book Actions and Policies that align the correct device class to CSP-2100 component devices based on GUID and that merge CSP-2100 component devices with the appropriate physical components
- Device dashboards for each type of discovered CSP-2100 component device

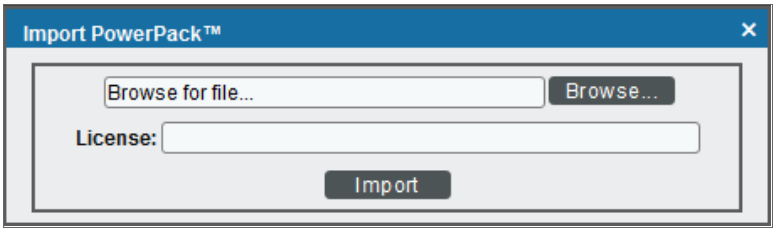
Installing the Cisco: CSP-2100 PowerPack

Before completing the steps in this manual, you must import and install the latest version of the *Cisco: CSP-2100* PowerPack.

TIP: By default, installing a new version of a PowerPack overwrites all content from a previous version of that PowerPack that has already been installed on the target system. You can use the ***Enable Selective PowerPack Field Protection*** setting in the **Behavior Settings** page (System > Settings > Behavior) to prevent new PowerPacks from overwriting local changes for some commonly customized fields. (For more information, see the ***System Administration*** manual.)

To download and install a PowerPack:

1. Download the PowerPack from the ScienceLogic Support Site.
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 appears, click the **[Install]** button to install the PowerPack.

> **NOTE:** If you exit the **PowerPack Installer** modal without installing the imported PowerPack, the imported PowerPack will not appear in the **PowerPack Manager** page. However, the imported PowerPack will appear in the **Imported PowerPacks** modal. This page appears when you click the **[Actions]** menu and select *Install PowerPack*.

Chapter 2

Configuration and Discovery

Overview

The following sections describe how to configure and discover Cisco Cloud Services Platform (CSP) 2100 clusters for monitoring by SL1 using the *Cisco: CSP-2100* PowerPack:

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Prerequisites for Monitoring CSP-2100 Clusters

To configure the SL1 system to monitor CSP-2100 clusters using the *Cisco: CSP-2100* PowerPack, you must have the following information about the clusters that you want to monitor:

- Username and password of a user with REST API read access and a role of operator-group or admin-group
- SNMP community string with read privileges and the port set to 161

NOTE: For more information about these requirements, see http://www.cisco.com/c/en/us/td/docs/switches/datacenter/csp_2100/config_guide/b_Cisco_CSP_2100_Config_Guide.html.

Additionally, you must establish a Net-SNMP public community string with the port set to 1610. To do so:

1. Log in to the command line of the CSP-2100 device as an administrative user.
2. Run the following commands:

```
netsnmp agent port 1610
netsnmp community public
```

Creating SNMP Credentials for CSP-2100 Clusters

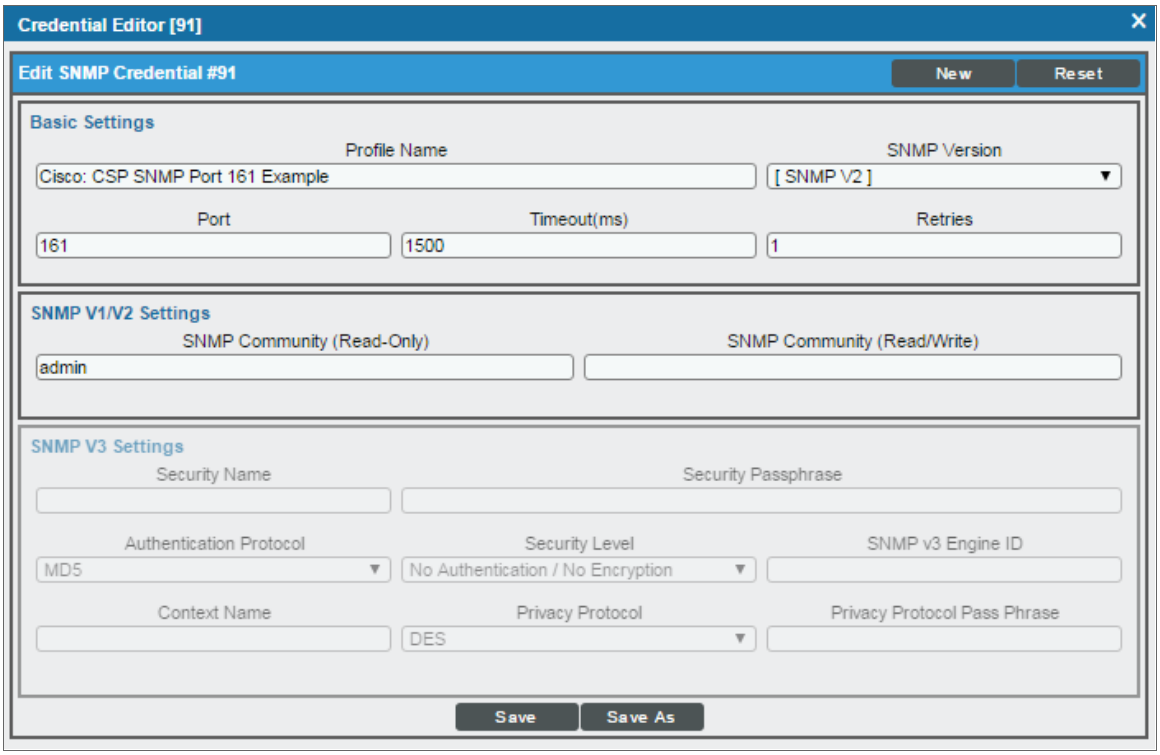
Before you can discover and monitor CSP-2100 clusters in SL1, you must first create two SNMP credentials (one for port 161 and another for port 1610) in SL1. These credentials, along with a ***Basic/Snippet credential*** and ***SSH/Key credential*** that you must also create, enable SL1 to collect data from the clusters. Two example SNMP credentials that you can edit for your own use are included in the *Cisco: CSP-2100* PowerPack.

NOTE: For more information about the configuration required for the two SNMP credentials, see the ***Prerequisites*** section.

To configure the port 161 SNMP credential for CSP-2100:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the **Cisco: CSP SNMP Port 161 Example** credential, then click its wrench icon ( ). The **Edit SNMP Credential** modal page appears.

3. Make entries in the following fields:



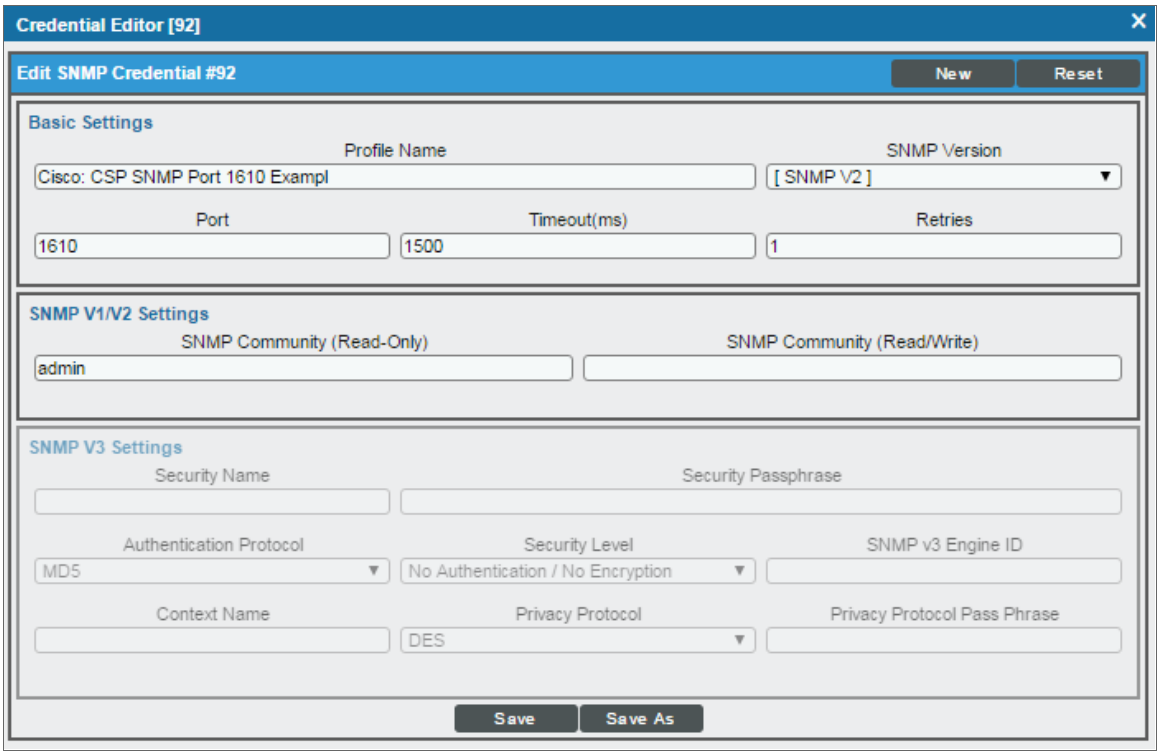
- ***Profile Name***. Enter a new name for the credential.
- ***SNMP Community (Read Only)***. Enter the port 161 community string for the CSP-2100 cluster.

4. Use the default values for the other fields on this page.
5. Click the **[Save As]** button.
6. When the confirmation message appears, click **[OK]**.

To configure the port 1610 SNMP credential for CSP-2100:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the **Cisco: CSP SNMP Port 1610 Example** credential, then click its wrench icon ( ). The **Edit SNMP Credential** modal page appears.

3. Make entries in the following fields:



- ***Profile Name***. Enter a new name for the credential.
- ***SNMP Community (Read Only)***. Enter the port 1610 community string for the CSP-2100 cluster.

4. Use the default values for the other fields on this page.
5. Click the **[Save As]** button.
6. When the confirmation message appears, click **[OK]**.

Creating a Basic/Snippet Credential for CSP-2100 Clusters

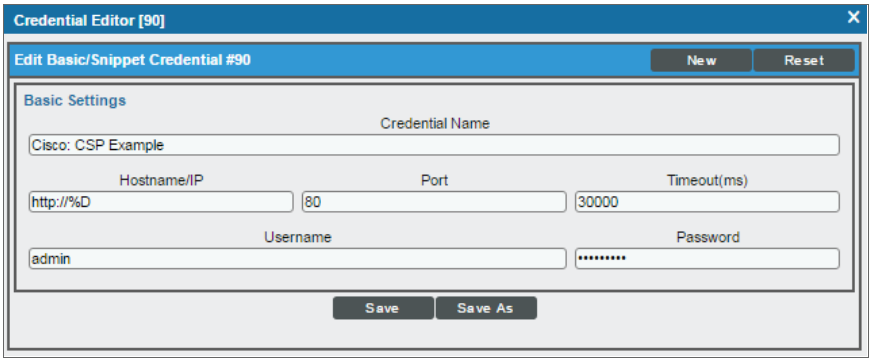
Some Dynamic Applications in the *Cisco: CSP-2100* PowerPack collect data from CSP-2100 clusters using REST API. These Dynamic Applications require a Basic/Snippet credential to enable SL1 to communicate with the cluster. An example Basic/Snippet credential that you can edit for your own use is included in the *Cisco: CSP-2100* PowerPack.

NOTE: For more information about the configuration required for the Basic/Snippet credential, see the *Prerequisites* section.

To create a Basic/Snippet credential to monitor CSP-2100:

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

2. Locate the **Cisco: CSP Example** credential, and then click its wrench icon ( ). The **Edit Basic/Snippet Credential** modal page appears.
3. Enter values in the following fields:



- ***Credential Name***. Enter a new name for the credential.
- ***Username***. Enter the username for a user with REST API read access to the CSP-2100 cluster and a role of operator-group or admin-group.
- ***Password***. Enter the password for the REST API user.

4. Use the default values for the other fields on this page.
5. Click the **[Save As]** button.
6. When the confirmation message appears, click **[OK]**.

Creating an SSH/Key Credential for CSP-2100 Clusters

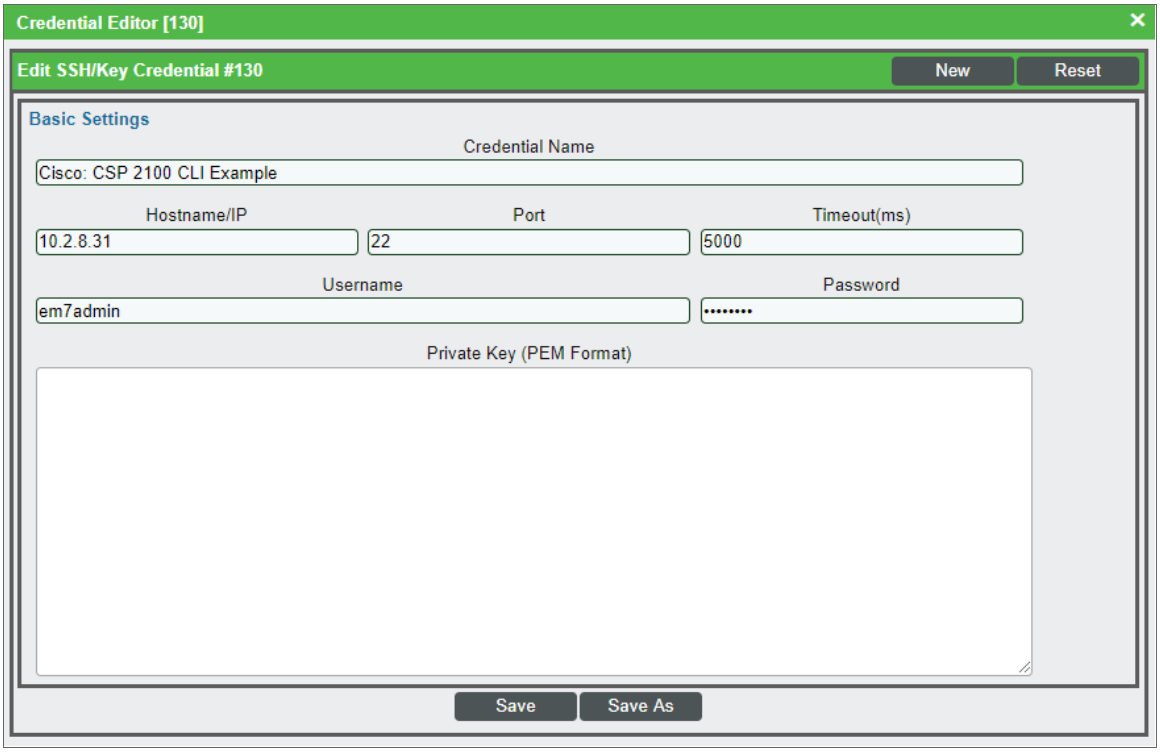
Some Dynamic Applications in the *Cisco: CSP-2100* PowerPack collect data from CSP-2100 clusters from the command line interface instead of the API. These Dynamic Applications require an SSH/Key credential to enable SL1 to communicate with the cluster. An example SSH/Key credential that you can edit for your own use is included in the *Cisco: CSP-2100* PowerPack.

NOTE: This functionality utilizes MD5 password encryption. As such, it is not currently available for use in Federal Information Processing Standard (FIPS)-compliant installations of SL1. If you attempt to discover CSP-2100 cluster data using an SSH/Key credential in FIPS-compliant installations of SL1, the cluster component device will not be created and an exception error message appears in the system log.

To create an SSH/Key credential to monitor CSP-2100:

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

2. Locate the **Cisco: CSP 2100 CLI Example** credential, and then click its wrench icon ( ). The **Edit SSH/Key Credential** modal page appears.
3. Enter values in the following fields:



- ***Credential Name***. Type a new name for the credential.
- ***Hostname/IP.*** Type the IP address or hostname of the CSP 2100 cluster you want to monitor.
- ***Port.*** Type the SSH port number for the CSP-2100 cluster you want to monitor.
- ***Timeout(ms).*** Keep the default setting.
- ***Username***. Type the username for a user with administrator access to the CSP-2100 cluster command line interface.
- ***Password***. Type the user's password.
- ***Private Key (PEM Format)***. Keep this field blank.

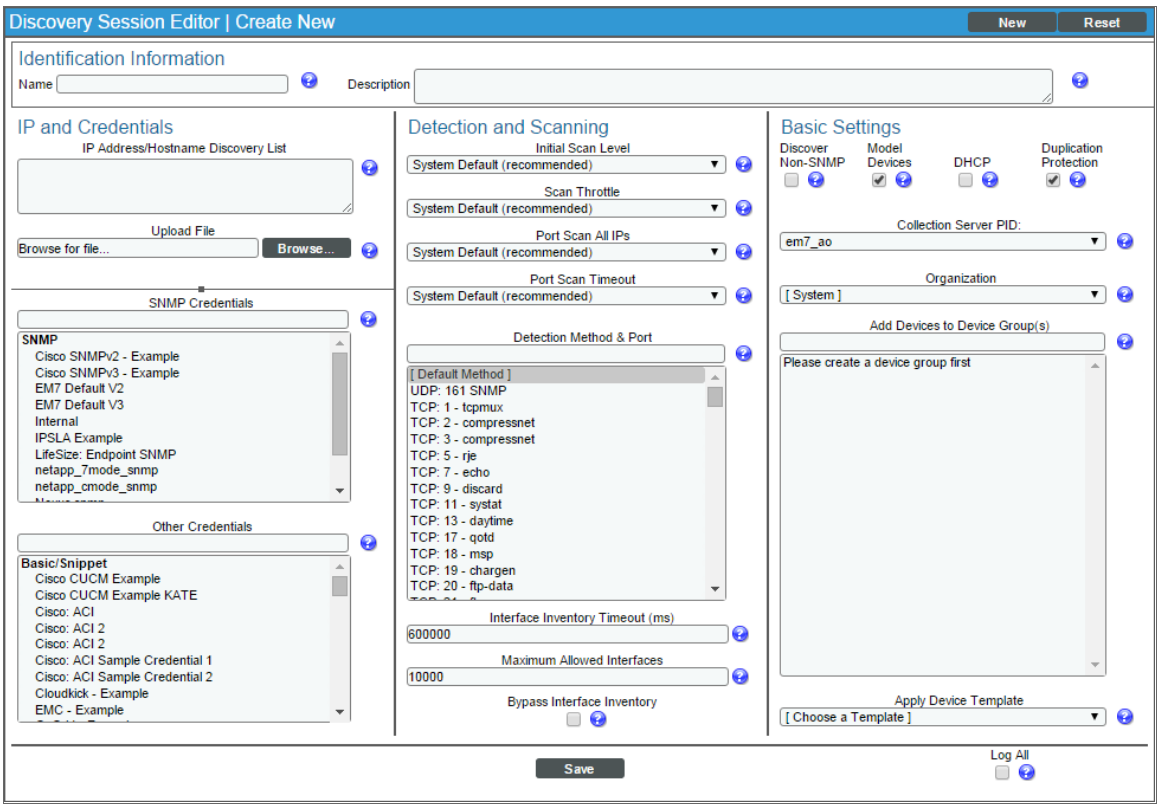
4. Click the **[Save As]** button.
5. When the confirmation message appears, click **[OK]**.

Discovering CSP-2100 Clusters

When you discover your CSP-2100 cluster with SL1, SL1 auto-aligns a series of Dynamic Applications to discover, configure, and monitor the CSP-2100 cluster and all of its associated component devices.

To discover your CSP-2100 cluster, perform the following steps:

1. Go to the **Discovery Control Panel** page (System > Manage > Classic Discovery).
2. Click the **[Create]** button. The **Discovery Session Editor** page appears:



3. Supply values in the following fields:

   - ***IP Address/Hostname Discovery List***. Enter the IP address of each CSP-2100 node you want to discover.
   - ***SNMP Credentials***. Select the two SNMP credentials that you created (one for port 161 and the other for port 1610) for each of the CSP-2100 nodes you want to discover.
   - ***Other Credentials***. Select the Basic/Snippet credential and the SSH/Key credential for each of the CSP-2100 nodes you want to discover.
   - ***Discover Non-SNMP***. Select this checkbox.

NOTE: You must include a minimum of three credentials (one SNMP credential and two Basic/Snippet credentials) for each CSP-2100 node with unique credential information.

NOTE: If you are running a Federal Information Processing Standard (FIPS)-compliant installations of the ScienceLogic platform, then you should not select an SSH/Key credential in the ***Other Credentials*** field.

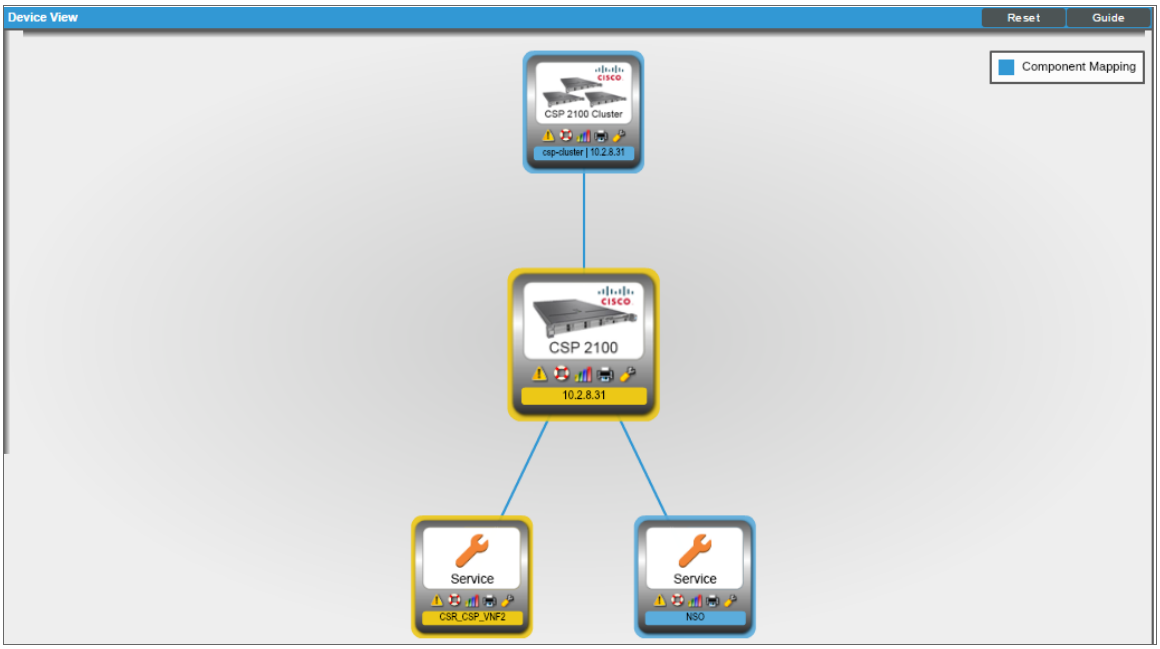
4. Optionally, supply values in the other fields in this page. For a description of the fields in this page, see the ***Discovery & Credentials*** manual.
5. Click the **[Save]** button.
6. The **Discovery Control Panel** page will refresh. Click the lightning bolt icon ( ) for the discovery session you created.
7. In the pop-up window that appears, click the **[OK]** button. The **Discovery Session** page displays the progress of the discovery session.

Viewing CSP-2100 Component Devices

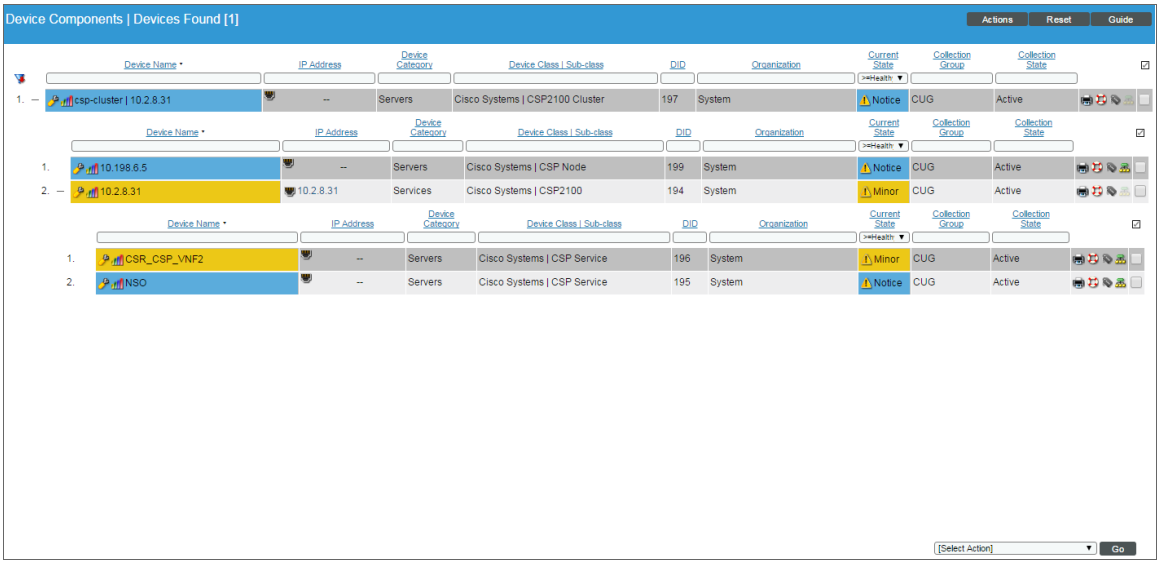
When SL1 discovers your CSP-2100 cluster, SL1 creates component devices that represent each component in the cluster.

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

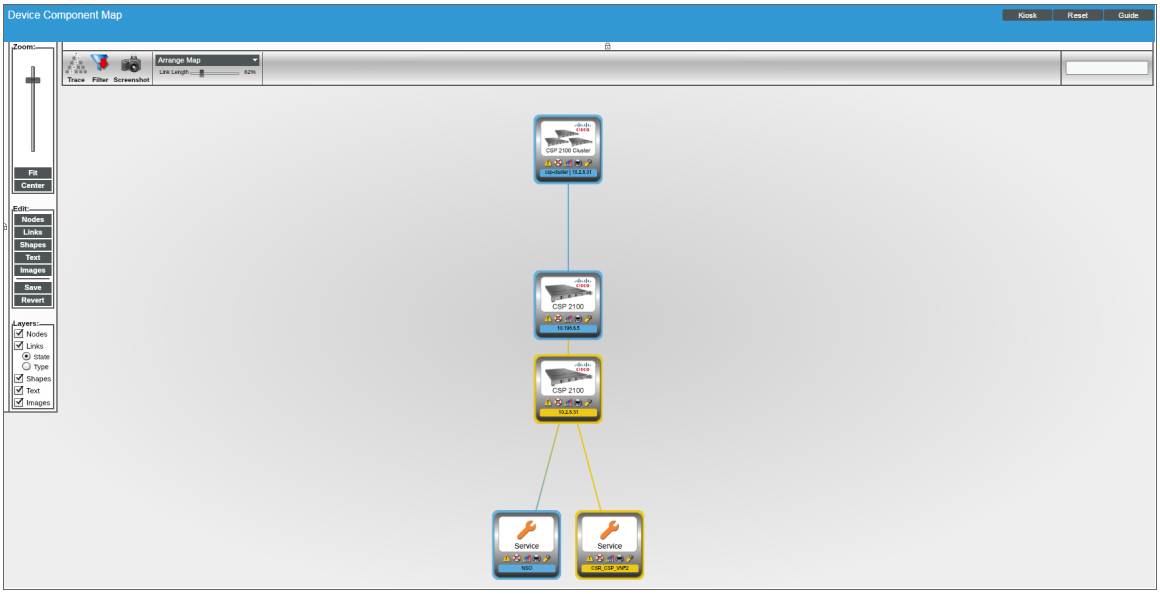
- The **Device View** modal page (click the bar-graph icon [ ] for a device, then click the **Topology** tab) displays a map of the selected device and all of the devices with which it has parent-child relationships. Double-clicking any of the devices listed reloads the page to make the selected device 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 your CSP-2100 cluster, find the root device and click its plus icon (+):



- The **Component Map** page (Classic Maps > Device Maps > Components) allows you to view devices by root node and view the relationships between root nodes, parent components, and child components in a map. This makes it easy to visualize and manage root nodes and their components. SL1 automatically updates the **Component Map** as new component devices are discovered. The platform also updates each map with the latest status and event information. To view the map for your CSP-2100 cluster, 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.



Relationships Between Component Devices

In addition to parent/child relationships between component devices, SL1 also creates relationships between CSP-2100 nodes and Cisco UCS Standalone servers.

Chapter 3

Dashboards

Overview

The following sections describe the device dashboards that are included in the *Cisco: CSP-2100* PowerPack.

Device Dashboards ***16***

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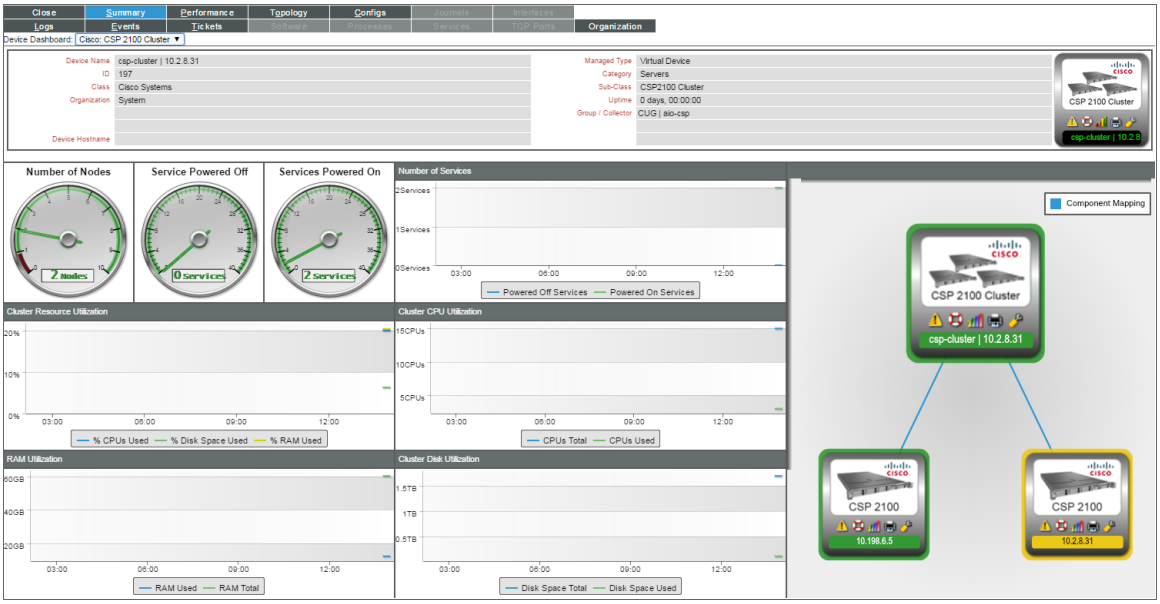
Cisco: CSP 2100 Node *18*

Cisco: CSP 2100 Service *19*

Device Dashboards

The *Cisco: CSP-2100* PowerPack includes device dashboards that provide summary information for Cisco Cloud Services Platform (CSP) 2100 component devices. Each of the device dashboards in the *Cisco: CSP-2100* PowerPack are set as the default device dashboard for the equivalent device class.

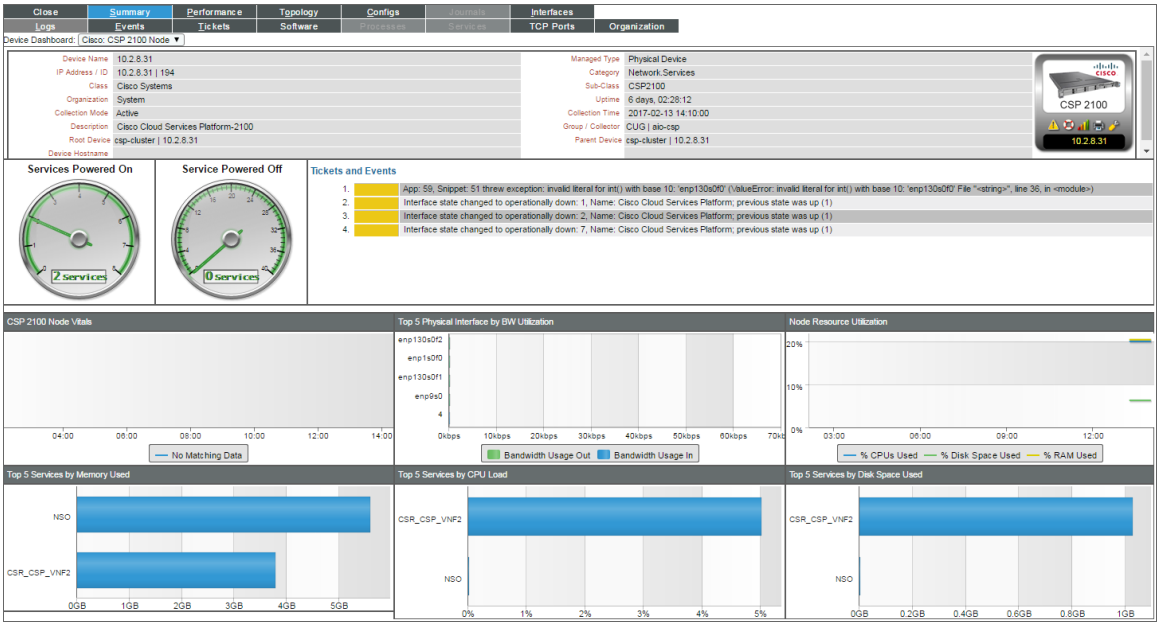
Cisco: CSP 2100 Cluster



The Cisco: CSP 2100 Cluster device dashboard displays the following information:

- Gauges that indicate:
  - The number of nodes in the cluster
  - The number of services in the cluster that are currently powered off
  - The number of services in the cluster that are currently powered on
- The number of services over a specified period of time
- Cluster resource utilization over a specified period of time
- Cluster CPU utilization over a specified period of time
- RAM utilization over a specified period of time
- Cluster disk utilization over a specified period of time
- A topology map displaying the component device and its parent-child relationships

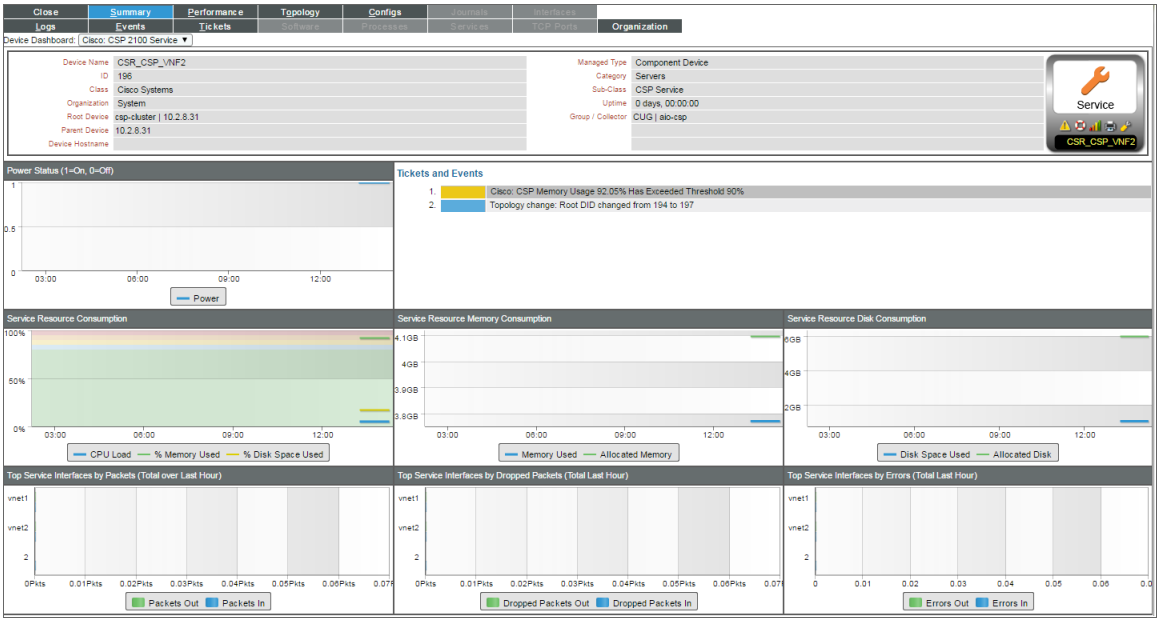
Cisco: CSP 2100 Node



The Cisco: CSP 2100 Node device dashboard displays the following information:

- Gauges that indicate:
    - The number of services in the node that are currently powered on
    - The number of services in the node that are currently powered off
- A list of tickets and events relating to the node
- Node vitals over a specified period of time
- The top 5 physical interfaces in the node based on bandwidth utilization
- Node resource utilization over a specified period of time
- The top 5 services in the node based on memory utilization
- The top 5 services in the node based on CPU load
- The top 5 services in the node based on disk space utilization

Cisco: CSP 2100 Service



The Cisco: CSP 2100 Service device dashboard displays the following information:

- The service's power status (i.e., on or off) over a specified period of time
- A list of tickets and events relating to the service
- Service resource consumption over a specified period of time
- Service resource memory consumption over a specified period of time
- Service resource disk consumption over a specified period of time
- The top service interfaces based on packets in and out over the previous hour
- The top service interfaces based on dropped packets in and out over the previous hour
- The top service interfaces based on errors in and out over the previous hour

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