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# Monitoring Dell EMC: Unity

Dell EMC: Unity PowerPack version 103

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# Chapter

# 1

## Introduction

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### Overview

This manual describes how to monitor Dell EMC Unity storage systems in SL1 using the Dynamic Applications in the "Dell EMC: Unity" PowerPack.

The following sections provide an overview of Dell EMC Unity and the "Dell EMC: Unity" PowerPack:

This chapter covers the following topics:

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### What is Dell EMC Unity?

Dell EMC Unity is a unified storage array. The "Dell EMC: Unity" PowerPack discovers the storage array and collects health, configuration, performance, and capacity information.

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## What Does the Dell EMC: Unity PowerPack Monitor?

To monitor Dell EMC: Unity storage devices with SL1, you must install the "Dell EMC: Unity" PowerPack. This PowerPack lets you discover, model, and collect data about Unity storage devices using the Unisphere REST API.

The "Dell EMC: Unity" PowerPack includes:

- Dynamic Applications to discover, model, and monitor performance metrics and collect configuration data for Dell EMC Unity devices
- Device Classes for each type of Unity device monitored
- Event Policies that are triggered when Unity devices meet certain status criteria
- Sample credentials you can use as a template to connect to Unity devices

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## Installing the PowerPack

Before completing the steps in this manual, you must import and install the latest version of the "Dell EMC: Unity" 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 section on [Global Settings](#).

To download and install the PowerPack:

1. Search for and download the PowerPack from the **PowerPacks** page (Product Downloads > PowerPacks & SyncPacks) at the [ScienceLogic Support Site](#).
2. In SL1, go to the **PowerPacks** page (System > Manage > PowerPacks).
3. Click the **[Actions]** button and choose *Import PowerPack*. The **Import PowerPack** dialog box appears.
4. Click **[Browse]** and navigate to the PowerPack file from step 1.
5. Select the PowerPack file and click **[Import]**. The **PowerPack Installer** modal displays a list of the PowerPack contents.
6. Click **[Install]**. The PowerPack is added to the **PowerPacks** page.

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

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# Chapter

# 2

## Configuration and Credentials

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### Overview

The following sections describe the prerequisites and how to configure the credential for monitoring Dell EMC Unity storage arrays by SL1 using the "Dell EMC: Unity" PowerPack:

This chapter covers the following topics:

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### Prerequisites for Monitoring Dell EMC Unity

Before you can monitor Dell EMC Unity systems using the "Dell EMC: Unity" PowerPack, you must have the following information about the Unisphere REST API:

- Username and password for a user with access to the Unisphere REST API
- IP address for the Unisphere REST API



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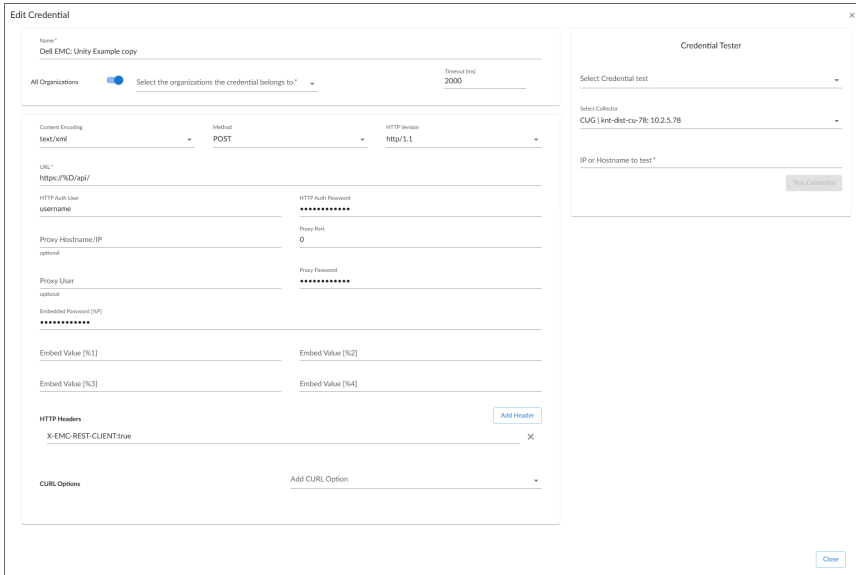
### Creating a SOAP/XML Credential for Dell EMC: Unity

To configure SL1 to monitor Dell EMC Unity storage arrays, you must first create a SOAP/XML credential. This credential allows the Dynamic Applications in the "Dell EMC: Unity" PowerPack to use the Unisphere REST API.

To configure the SOAP/XML credential to access the Unisphere REST API:

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

2. Locate the **Dell EMC: Unity Example** credential, click its **[Actions]** icon (  ), and select *Duplicate*. A copy of the credential, called **Dell EMC: Unity Example copy** appears.
3. Click the **[Actions]** icon (  ) for the **Dell EMC: Unity Example copy**, and select *Edit*. The **Edit Credential** page appears.



4. Enter values for the following fields:
  - **Name**. Type a name for the credential.
  - **All Organizations**. Toggle on (blue) to align the credential to all organizations, or toggle off (gray) and then select one or more specific organizations from the **What organization manages this service?** drop-down field to align the credential with those specific organizations. This field is required.
  - **Timeout**. Keep the default value.
  - **URL**. Type the URL replacing <%D> with the IP address of the Unisphere REST API. The %D format is still supported.
  - **HTTP Auth User**. Type the username for a user with access to the Unisphere REST API.
  - **HTTP Auth Password**. Type the password for the user you specified in the HTTP Auth User field.


**NOTE:** The HTTP Headers that are included in the example credential are required to receive a response from the Unisphere REST API. Do not delete or edit them.

5. For all remaining fields, use the default values.
6. Click **[ Save & Close ]**.

## Creating a SOAP/XML Credential in the Classic User Interface

To configure SL1 to monitor Dell EMC: Unity storage arrays, you must first create a SOAP/XML credential. This credential allows the Dynamic Applications in the "Dell EMC: Unity" PowerPack to use the Unisphere REST API.

To configure the SOAP/XML credential to access the Unisphere REST API:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the **Dell EMC: Unity Example** credential, and then click its wrench icon (). The **Edit SOAP/XML Credential** page appears:
3. Complete the following fields:
  - **Profile Name.** Type a new name for the credential.
  - **URL.** Type the URL replacing <%D> with the IP address of the Unisphere REST API. The %D format is still supported.
  - **HTTP Auth User.** Type the username for a user with access to the Unisphere REST API.
  - **HTTP Auth Password.** Type the password for the user you specified in the **HTTP Auth User** field.

**NOTE:** The HTTP Headers that are included in the example credential are required to receive a response from the Unisphere REST API. Do not delete or edit them.



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

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## Creating a Universal Credential

To configure SL1 to monitor Dell EMC Unity storage arrays, you can also use a Universal credential. This credential allows the Dynamic Applications in the "Dell EMC: Unity" PowerPack to use the Unisphere REST API.

To define a Universal credential:

1. Go to the **Credentials** page (Manage > Credentials).
2. Locate the **Dell EMC: Unity Example SF** credential, click its [**Actions**] icon () , and select *Duplicate*. A copy of the credential, called **Dell EMC: Unity Example SF copy** appears.
3. Click the [**Actions**] icon () for the **Dell EMC: Unity Example SF copy** and select *Edit*. The **Edit**

Credential page appears.

4. Enter values for the following fields:

- **Name.** Type a name for the credential.
- **All Organizations.** Toggle on (blue) to align the credential to all organizations, or toggle off (gray) and then select one or more specific organizations from the **What organization manages this service?** drop-down field to align the credential with those specific organizations. This field is required.
- **Authentication Type.** This field supports different authentication mechanisms. For more information see [REST Authentication](#). Select *Basic Authentication* as it is the simplest form of authentication, using only a username and password and is built into the HTTP protocol.
- **URL.** Type the URL replacing <%D> with the IP address of the Unisphere REST API. The %D format is still supported.
- **Username.** Type the username for a user with access to the Unisphere REST API.
- **Password.** Type the password for the user you specified in the **HTTP Auth User** field.

**NOTE:** The HTTP Headers that are included in the example credential are required to receive a response from the Unisphere REST API. Do not delete or edit them.

5. Click **[Save & Close]**.

An alternate method for creating a Universal credential is available. You can use the **Create Dell emc unity rest v100 Credential** credential template.

To create a Universal credential using the *Dell emc unity rest v100 Credential* template:



1. Go to the **Credentials** page (Manage > Credentials).
2. Click the **[Create New]** button and select *Create Dell emc unity rest v100 Credential* from the list.

3. Enter values for the following fields:
  - **Name**. Type a name for the credential.
  - **All Organizations**. Toggle on (blue) to align the credential to all organizations, or toggle off (gray) and then select one or more specific organizations from the **What organization manages this service?** drop-down field to align the credential with those specific organizations. This field is required.
  - **Authentication Type**. This field supports different authentication mechanisms. For more information see [REST Authentication](#). Select *Basic Authentication* as it is the simplest form of authentication, using only a username and password and is built into the HTTP protocol.
  - **URL**. Type the URL replacing <%D> with the IP address of the Unisphere REST API. The %D format is still supported.
  - **HTTP Headers (JSON Input)**. You must include the `{"X-EMC-REST-CLIENT": "true"}` header in this field.
  - **SSL Peer Verify**. Keep the default value.
4. Click **[Save & Close]**.

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# Chapter

# 3

## Discovery

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### Overview

The following sections describe how to discover Dell EMC Unity storage arrays for monitoring by SL1 using the "Dell EMC: Unity" PowerPack.

This chapter covers the following topics:

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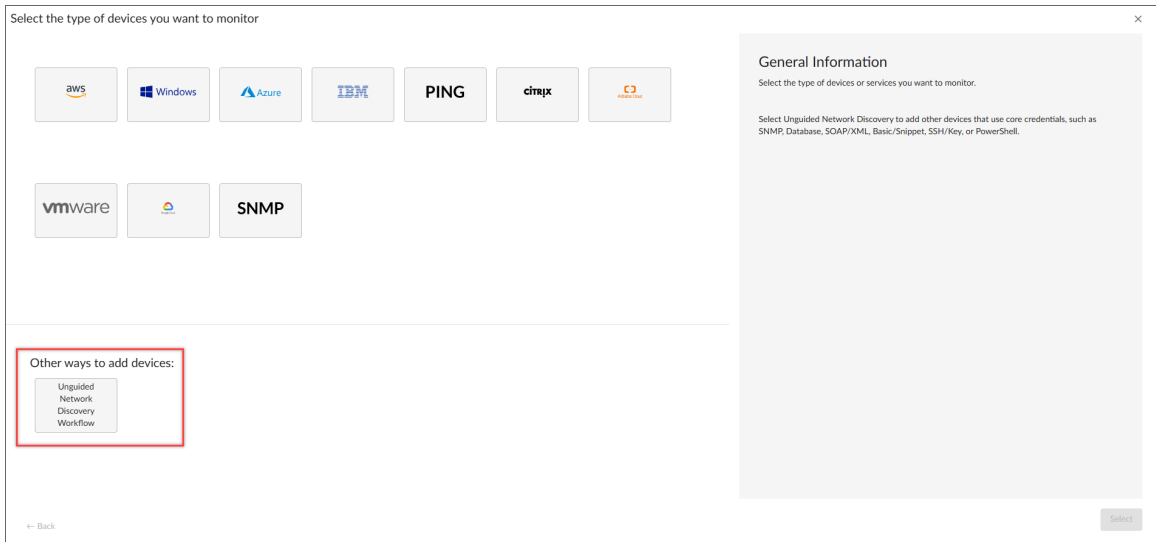
### Discovering Dell EMC: Unity Component Devices

To model and monitor your Dell EMC Unity storage arrays, you must run a discovery session to discover the Unisphere that SL1 will use as the root device for monitoring the Unity storage system.

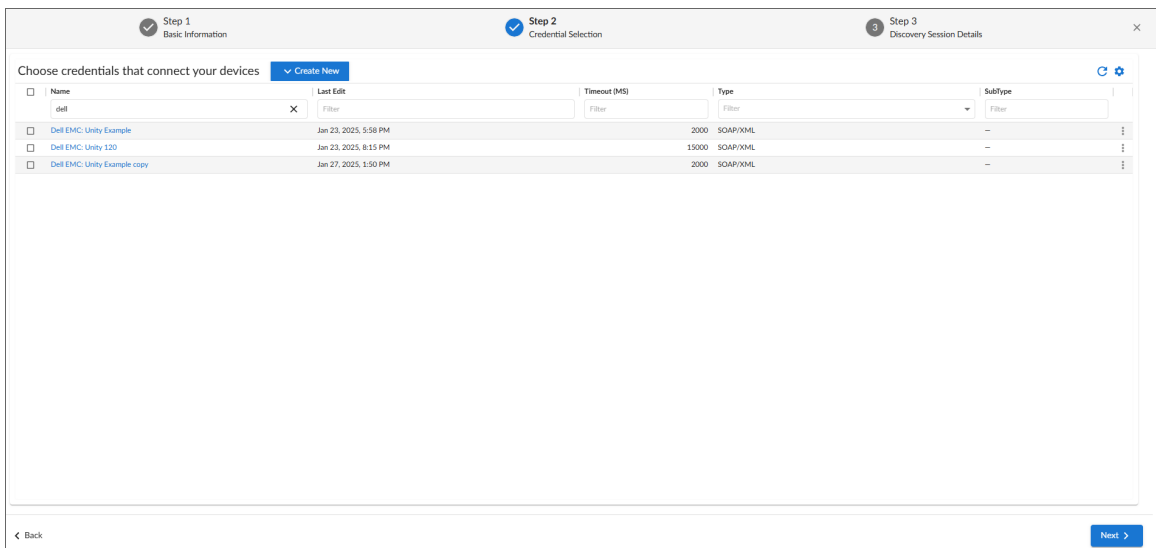
After the discovery session completes, the Dynamic Applications in the "Dell EMC: Unity" PowerPack automatically align to the storage array device, and then the PowerPack discovers, models, and monitors the remaining Unity component devices.

To discover the Unity arrays that you want to monitor, perform the following steps:

1. On the **Devices** page (🖨️) or the **Discovery Session** page (Devices > Discovery Sessions), click the **[Add Devices]** button. The **Select** page appears.
2. Click the **[Unguided Network Discovery Workflow]** button. Additional information about the requirements for discovery appears in the **General Information** pane to the right.



3. Click **[Select]**. The **Add Devices** page appears.
4. Complete the following fields:
  - **Discovery Session Name**. Type a unique name for this discovery session. This name is displayed in the list of discovery sessions on the **[Discovery Session]** tab.
  - **Description**. Type a short description of the discovery session. You can use the text in this description to search for the discovery session on the **[Discovery Session]** tab. Optional.
  - **Select the organization to add discovered devices to**. Select the name of the organization to which you want to add the discovered devices.
5. Click **[Next]**. The **Credentials** page of the **Add Devices** wizard appears.





6. On the **Credentials** page, locate and select the SOAP/XML credential you created for the Dell EMC Unity devices.
7. Click **[Next]**. The **Discovery Session Details** page of the **Add Devices** wizard appears.
8. Complete the following fields:
  - **List of IPs/Hostnames**. Type the IP addresses for the Dell EMC Unity devices you want to monitor.
  - **Which collector will monitor these devices?** Select an existing collector to monitor the discovered devices. Required.
  - **Run after save**. Select this option to run this discovery session as soon as you save the session.
  - **Advanced options**. Click the down arrow icon (∨) to complete the following fields:
    - **Discover Non-SNMP**. Enable this setting.
    - **Model Devices**. Enable this setting.
9. Click **[Save and Run]** if you enabled the **Run after save** setting, or **[Save and Close]** to save the discovery session. The **Discovery Sessions** page (Devices > Discovery Sessions) displays the new discovery session.

10. If you selected the **Run after save** option on this page, the discovery session runs, and the **Discovery Logs** page displays any relevant log messages. If the discovery session locates and adds any devices, the **Discovery Logs** page includes a link to the **Device Investigator** page for the discovered device.


## Discovering Dell EMC Unity Devices in the Classic User Interface

To discover the Unity arrays that you want to monitor, perform the following steps:

1. Go to the **Discovery Control Panel** page (System > Manage > Classic Discovery).
2. On the **Discovery Control Panel** page, click the **[Create]** button. The **Discovery Session Editor** page appears.
3. Complete the following fields:
  - **IP Adress/Hostname Discovery List**. Type the IP address for the Unisphere.
  - **Other Credentials**. Select the SOAP/XML or Universal credential that you created for Unity devices.
  - **Discover Non-SNMP**. Select this checkbox.
  - **Model Devices**. Select this checkbox.
4. Optionally, you can enter values in the other fields on this page. For more information about other fields on this page, see the [Discovery & Credentials](#) manual.
5. Click the **[Save]** button to save the discovery session 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. After the devices are discovered, click the device icon () to view the **Device Properties** page for each device.

## Verifying Discovery and Dynamic Application Alignment

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

1. After discovery has completed, click the device icon for the root device ()
2. From the **Device Properties** page for the array device, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.
3. All applicable Dynamic Applications for the 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.

The "Dell EMC: Unity Array Discovery" and "Dell EMC: Unity Components Config" Dynamic Applications are automatically aligned to the root device, after which the rest of the Dynamic Applications in the PowerPack will be aligned.

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## HTTP Retries for Dell EMC: Unity

Due to multiple calls to the Unisphere REST API, the Dynamic Applications may encounter unsuccessful HTTP responses, which can lead to intermittent data collection. Therefore, a custom step was added to support retries for HTTP API calls with the following parameters:

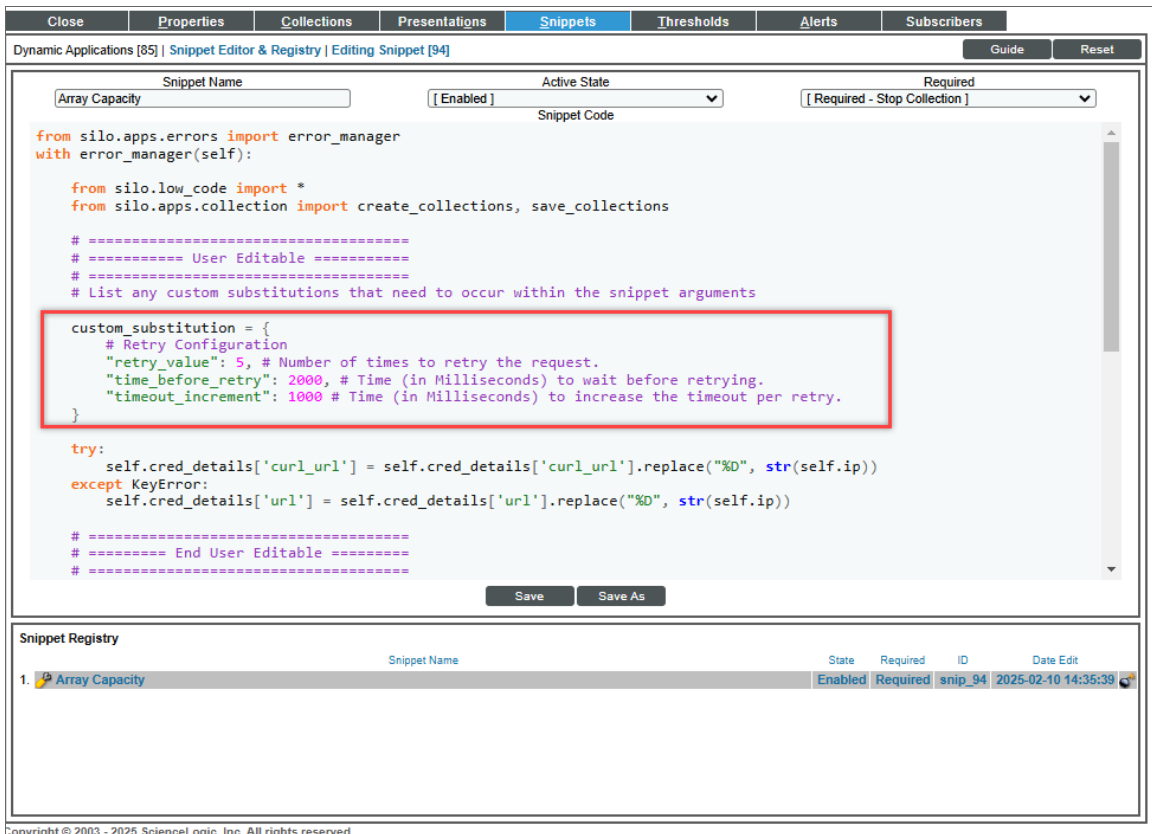
- **retry\_value**. Numbers of times to retry the request.
- **time\_before\_entry**. Time (in milliseconds) to wait before retrying.

- **timeout\_increment**. Time (in milliseconds) to increase the timeout per retry. If the value is 0, the timeout for each retry will be the same as the credential.

**IMPORTANT:** These parameters are located in the snippet code of the Dynamic Applications and should only be edited if you are experiencing intermittent data collection in any Dynamic Application.

To configure the HTTP retry:

1. Increase the Timeout in the credential used for the Dynamic Applications to 5 seconds (System > Manage > Credentials).
2. Go to the **Dynamic Applications Manager** page (System > Manage > Applications).
3. Select the Dynamic Application you want to edit. Click its wrench icon (🔧) and then select the **[Snippets]** tab. The **Snippet Editor & Registry** page appears.
4. Click the wrench icon (🔧) next to the Snippet Name.
5. Modify the retry parameter in the `custom_substitution` section. You must edit each snippet code that the Dynamic Application has.



- The default values are as follows, meaning that if the first attempt fails, only one retry will be made after 500 milliseconds:
  - `retry_value: 1`
  - `time_before_retry : 500`
  - `timeout_increment: 0`
- The suggested values, found in the snippet of the Dynamic Applications, are as follows, meaning that if the first attempt fails, it will retry 5 times, every 2000 milliseconds, and increases the timeout by 1000 milliseconds in each retry:
  - `retry_value: 5`
  - `time_before_retry : 2000`
  - `timeout_increment: 1000`


**NOTE:** The Dynamic Applications use the retry parameters from the snippet code in the `custom_substitution` section. Unless this section is commented out, the default values will be used. You can edit the values in the snippet, but ScienceLogic does not recommend that you use higher numbers.

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

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## Viewing Dell EMC: Unity Component Devices

In addition to the **Device Manager** page (Devices > Classic Devices, or Registry > Devices > Device Manager in the classic SL1 user interface), you can view the Unity storage 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 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 Dell EMC: Unity, find the Unity component 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** page as new component devices are discovered. The platform also updates each map with the latest status and event information. To view the map for an Dell EMC: Unity arrays, 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.

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