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# Monitoring SMI-S Storage Devices

SMI-S: Array PowerPack version 101

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## Introduction

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### Overview

This manual describes how to monitor SMI-S storage devices in the ScienceLogic platform using the SMI-S: Array PowerPack.

The following sections provide an overview of SMI-S and the SMI-S: Array PowerPack:

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### What is SMI-S?

Storage Management Initiative Specification, or SMI-S, is a standard that allows users to manage heterogeneous storage devices in a Storage Area Network (SAN).

An HTTP server, called a **provider**, sends and receives XML requests to the storage devices to manage those devices and retrieve information about those devices.

The ScienceLogic platform communicates with the provider to retrieve information about the SAN and its devices.

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## What Does the SMI-S: Array PowerPack Monitor?

To monitor storage arrays using the ScienceLogic platform, you must install the *SMI-S: Array PowerPack*. This PowerPack enables you to discover, model, and collect data about storage arrays and their component devices.

The *SMI-S: Array PowerPack* includes:

- An example credential you can use to create Basic/Snippet credentials to connect to the SMI-S Provider.
- Dynamic Applications to discover and monitor the storage arrays
- Device Classes for each type of storage array component device monitored by the ScienceLogic platform

**NOTE:** If you are monitoring EMC VNX storage arrays, then you should install and use the *EMC: VNX PowerPack*. For more information, see the *Monitoring Dell EMC VNX* manual.

If you are monitoring EMC VMAX storage arrays, then you should install and use the *EMC: VMAX PowerPack*. For more information, see the *Monitoring Dell EMC VMAX* manual.

If you are monitoring Hitachi Data Systems Virtual Storage Platform arrays, then you should install and use the *Hitachi Data Systems: VSP PowerPack*. For more information, see the *Monitoring Hitachi Data Systems* manual.

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## Installing the SMI-S: Array PowerPack

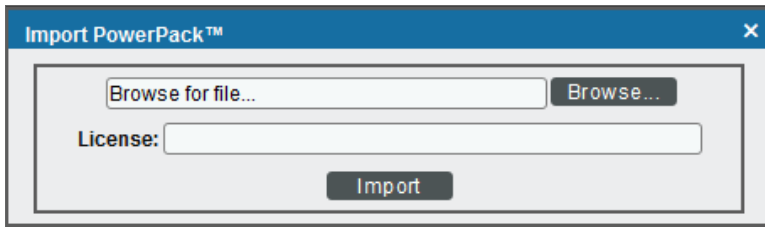
Before completing the steps in this manual, you must import and install the latest version of the *SMI-S: Array PowerPack*.

To download and install a 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.)

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*.

## Monitoring Storage Arrays

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### Overview

The following sections describe how to configure SMI-S storage arrays for monitoring by the ScienceLogic platform using the *SMI-S: Array PowerPack*:

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### Prerequisites

Before performing the tasks in this chapter, you must have the following information about an SMI-S Provider that has already been properly installed and configured:

- IP address and port for the SMI-S Provider
- Username and password for a user with access to the SMI-S Provider


The SMI-S Provider will act as the root device during discovery by the ScienceLogic platform.

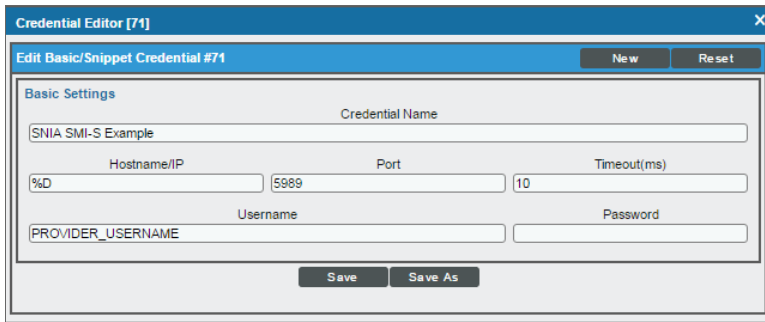
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### Creating a Credential to Monitor Storage Arrays

To configure the ScienceLogic platform to monitor storage arrays, you must first create a Basic/Snippet credential. This credential allows the Dynamic Applications in the *SMI-S: Array PowerPack* to connect with an SMI-S Provider. An example Basic/Snippet credential that you can edit for your own use is included in the *SMI-S: Array PowerPack*.

To create a Basic/Snippet credential to access an SMI-S Provider:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the **SNIA SMI-S Example** credential and then click its wrench icon (). The **Edit Basic/Snippet Credential** modal page appears.
3. Enter values in the following fields:



The screenshot shows a window titled "Credential Editor [71]" with a sub-header "Edit Basic/Snippet Credential #71". There are "New" and "Reset" buttons in the top right. The "Basic Settings" section contains the following fields:

- Credential Name: SNIA SMI-S Example
- Hostname/IP: %D
- Port: 5989
- Timeout(ms): 10
- Username: PROVIDER\_USERNAME
- Password: (empty)

At the bottom are "Save" and "Save As" buttons.

- **Credential Name.** Enter a new name for the credential.
  - **Hostname/IP.** Enter "%D".
  - **Port.** Enter "5989" for an HTTPS connection.
  - **Username.** Enter the username for a user with access to the SMI-S Provider.
  - **Password.** Enter the password for the SMI-S Provider account username.
4. Click the **[Save As]** button.
  5. When the confirmation message appears, click **[OK]**.

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## Discovering Storage Arrays



To model and monitor your storage system, you must first run a discovery session to discover the SMI-S Provider that the platform will use as the root device for monitoring the storage system.

The discovery session will discover the SMI-S Provider as a pingable device using *the Basic/Snippet credential that you created*. You must then manually align the "SMI-S: Array Discovery" Dynamic Application to the SMI-S Provider pingable device. When you do so, the ScienceLogic platform will discover, model, and monitor the remaining component devices in your storage system.

To discover the storage system that you want to monitor, perform the following steps:

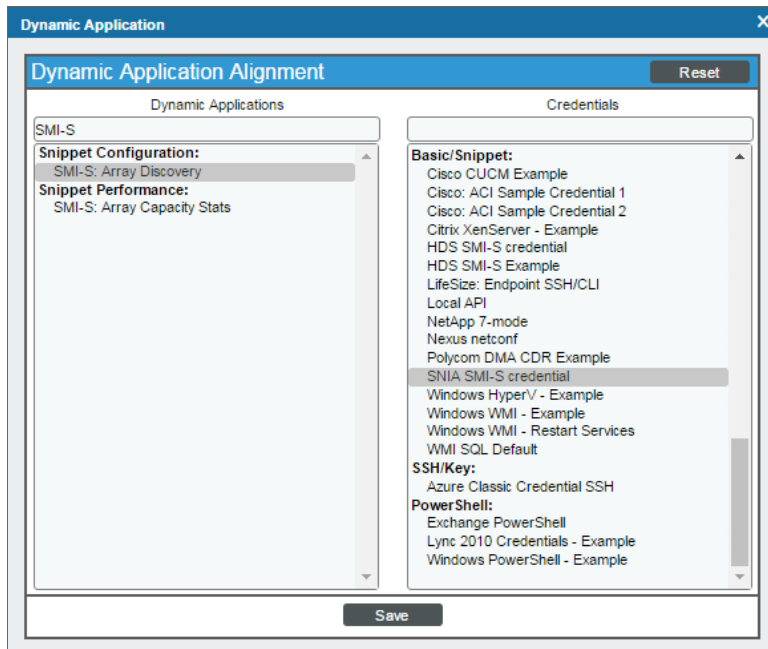
1. Go to the **Discovery Control Panel** page (System > Manage > Discovery).
2. In the **Discovery Control Panel**, click the **[Create]** button.

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

- **IP Address Discovery List.** Enter the IP address for the SMI-S Provider.
  - **Other Credentials.** Select the Basic/Snippet credential you created for the SMI-S Provider.
  - **Discover Non-SNMP.** Select this checkbox.
  - **Model Devices.** Select this checkbox.
- Optionally, you can enter values in the other fields on this page. For more information about the other fields on this page, see the **Discovery & Credentials** manual.
  - Click the **[Save]** button to save the discovery session and then close the **Discovery Session Editor** window.
  - The discovery session you created appears at the top of the **Discovery Control Panel** page. Click its lightning-bolt icon (  ) to run the discovery session.
  - The **Discovery Session** window appears. When the SMI-S Provider is discovered, click its device icon (  ) to view the **Device Properties** page for the SMI-S Provider.
  - From the **Device Properties** page for the SMI-S Provider, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.



9. Click the **[Actions]** button and then select *Add Dynamic Application* from the menu. The **Dynamic Application Alignment** page appears:




10. In the **Dynamic Applications** field, select *SMI-S: Array Discovery*.
11. In the **Credentials** field, select the Basic/Snippet credential you configured for the SMI-S Provider.
12. Click the **[Save]** button.

14. The "SMI-S: Array Discovery" Dynamic Application appears on the **Dynamic Application Collections** page and begins auto-aligning the other Dynamic Applications in the SMI-S: Array PowerPack to the SMI-S Provider and discovering the other component devices in the storage system.

Close	Properties	Thresholds	Collections	Monitors	Schedule		
Logs	Toolbox	Interfaces	Relationships	Tickets	Redirects	Notes	Attributes

Device Name	10.2.117.3	Managed Type	Physical Device	
IP Address / ID	10.2.117.3   11048	Category	Pingable	
Class	Ping	Sub-Class	ICMP	
Organization	SMI-S Org	Uptime	0 days 00:00:00	
Collection Mode	Unavailable	Collection Time	2017-11-10 14:27:00	
Description		Group / Collector	CUG1   KNT-ISO2-CU2-47	
Device Hostname				

Dynamic Application™ Collections						Expand	Actions	Reset	Guide
	Dynamic Application	ID	Poll Frequency	Type	Credential				
+ SMI-S: Array Discovery		2842	5 mins	Snippet Configuration	Pure Storage				


[Select Action]

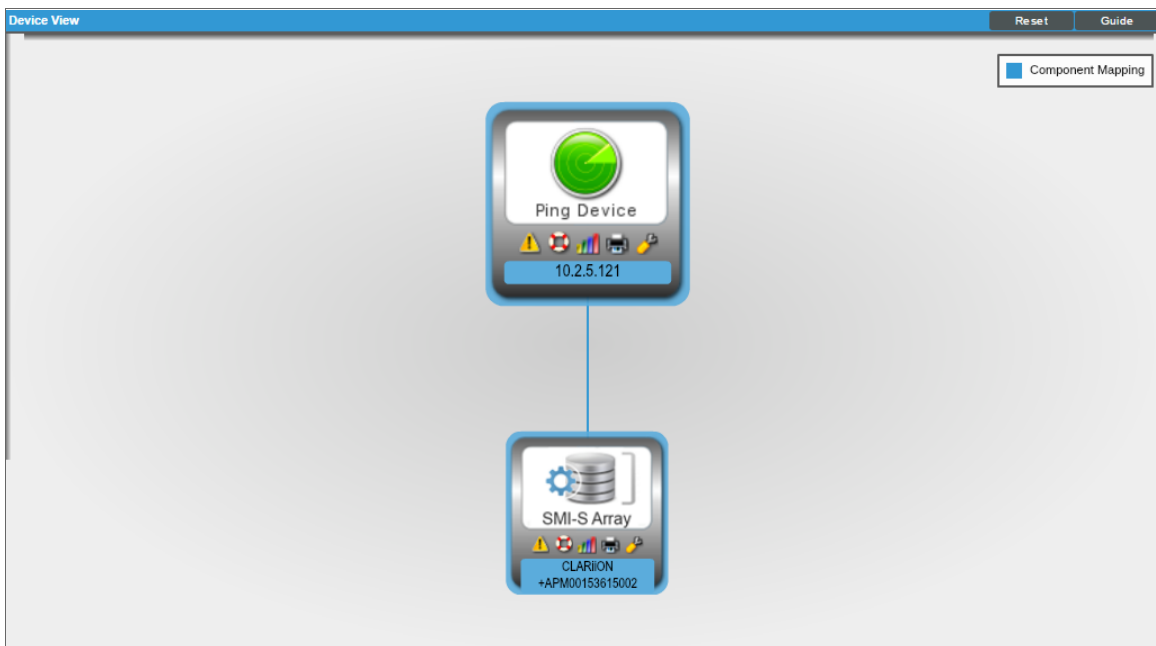
**NOTE:** It might take several minutes after manually aligning the discovery Dynamic Application for the ScienceLogic platform to discover and model the remaining component devices in the storage system.

## Viewing Storage Devices

When the ScienceLogic platform discovers your storage system, the platform will create component devices that represent each component in your storage system.

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

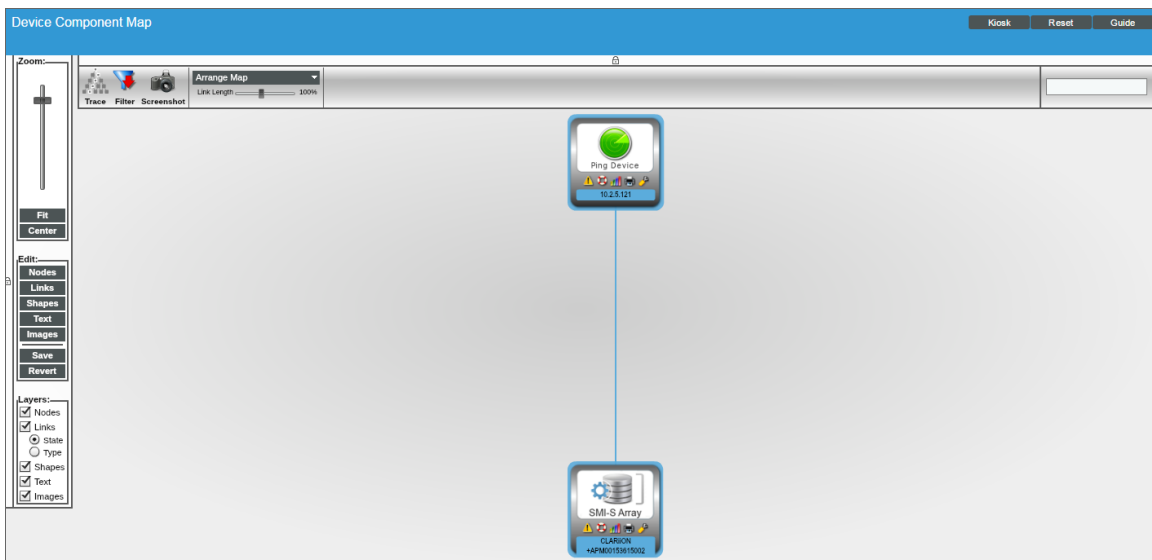
- The **Device View** modal page (click the bar-graph icon  for a device, then click the **Topology** tab) displays a map of the selected device and all of the devices with which it has parent-child relationships. Double-clicking any of the devices listed reloads the page, with the selected device as the primary device:



- The **Device Components** page (Registry > Devices > Device Components) displays a list of all root devices and component devices discovered by the ScienceLogic platform 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 storage system, find the root device and click its plus icon (+):

Device Name	IP Address	Device Category	Device Class   Sub-class	DIID	Organization	Current State	Collection Group	Collection State
10.2.5.121	10.2.5.121	Pingable	Ping   ICMP	10	System	Notice	CUG	Active
CLARIION+APM00153615002	--	Array	SMI-S   SMI-S Array Storage System	11	System	Notice	CUG	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 your storage system, 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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