



Monitoring Nimble Storage Arrays

Nimble Storage (2.3) PowerPack Pilot version 0.5.3

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Chapter

1

Introduction

Overview

This manual describes how to monitor Nimble Storage Arrays in SL1 using the *Nimble Storage (2.3) PowerPack*.

The following sections provide an overview of Nimble Storage Arrays and the *Nimble Storage (2.3) PowerPack*:

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What is Nimble Storage?

Nimble Storage is a flash-based, single storage consolidation architecture for enterprise applications.

What Does the Nimble Storage (2.3) PowerPack Monitor?

The *Nimble Storage (2.3) PowerPack* enables you to discover, model, and collect data about Nimble Storage Arrays using Nimble Insight SNMP version 2.3 or later.

The *Nimble Storage (2.3)* PowerPack includes:

- Dynamic Applications to discover and monitor Nimble Storage Arrays
- Device Classes for Nimble Storage Arrays and Volumes
- Event Policies that are triggered when Nimble Storage Arrays meet certain status criteria
- Dashboards to display Nimble Storage Array and Volume performance

Installing the Nimble Storage (2.3) PowerPack

Before completing the steps in this manual, you must import and install the latest version of the *Nimble Storage (2.3)* 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.)

IMPORTANT: The minimum required MySQL version is 5.6.0.

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*.

Chapter

2

Configuration and Discovery

Overview

The following sections describe how to configure and discover Nimble Storage Arrays for monitoring in SL1 using the *Nimble Storage (2.3) PowerPack*:

This chapter covers the following topics:

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Prerequisites for Monitoring Nimble Storage Arrays

Before you can monitor Nimble Storage Arrays in SL1 using the *Nimble Storage (2.3) PowerPack*, you must have the following:


- Access to TCP port 161 from the SL1 Collector or SL1 All-In-One server
- Nimble Insight SNMP version 2.3 or later

Discovering Nimble Storage Arrays

The *Nimble Storage (2.3) PowerPack* uses SNMP to align to arrays. In order to discover a Nimble Storage Array, the array must be able to support Nimble Insight SNMP version 2.3 or later.

To discover Nimble Storage Arrays, 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:
 - **Name**. Type a unique name for the discovery session.
 - **IP Address/Hostname Discovery List**. Type the IP address of the Nimble Storage Array.
 - **SNMP Credentials**. Select the *SNMP Public V1* or *SNMP Public V2* credential.
 - **Discover Non-SNMP**. Select this checkbox.
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.

NOTE: The PowerPack uses the Volume Name to uniquely identify volume components. It's important that volume names on the Nimble Storage arrays are uniquely named and never reused to avoid any duplicate device creation on SL1.

Verifying Discovery and Dynamic Application Alignment

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

1. After the second discovery has completed, click the device icon for the Nimble Storage Array () . From the **Device Properties** page for the Nimble Storage Array, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.
2. All applicable Dynamic Applications for the switch are automatically aligned during discovery.

You should see the following Dynamic Applications aligned to the Nimble Storage Array:

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

Close	Properties	Thresholds	Collections	Monitors	Schedule		
Logs	Toolbox	Interfaces	Relationships	Tickets	Redirects	Notes	Attributes
Device Name	SNIA-Nimble			Managed Type	Physical Device		
IP Address / ID	10.1.135.33 11			Category	Storage_SAN		
Class	Nimble Storage			Sub-Class	Storage Array		
Organization	Nimble Storage			Uptime	0 days, 21:21:29		
Collection Mode	Active			Collection Time	2019-07-09 13:27:00		
Description	Nimble Storage SNIA-Nimble running software version 4.5.3.0-566043-0			Group / Collector	CUG_Automation KNT-Patch2-CU1-65		
Device Hostname							

Dynamic Application™ Collections						Expand	Actions	Reset	Guide
	Dynamic Application	ID	Poll Frequency	Type	Credential				
+	Nimble Storage: Array Performance	1490	5 mins	SNMP Performance	Default SNMP Credential				
+	Nimble Storage: Array Usage	1495	5 mins	Snippet Performance	Default SNMP Credential				
+	Nimble Storage: Array Config	1491	2 mins	Snippet Configuration	Default SNMP Credential				

[Select Action]

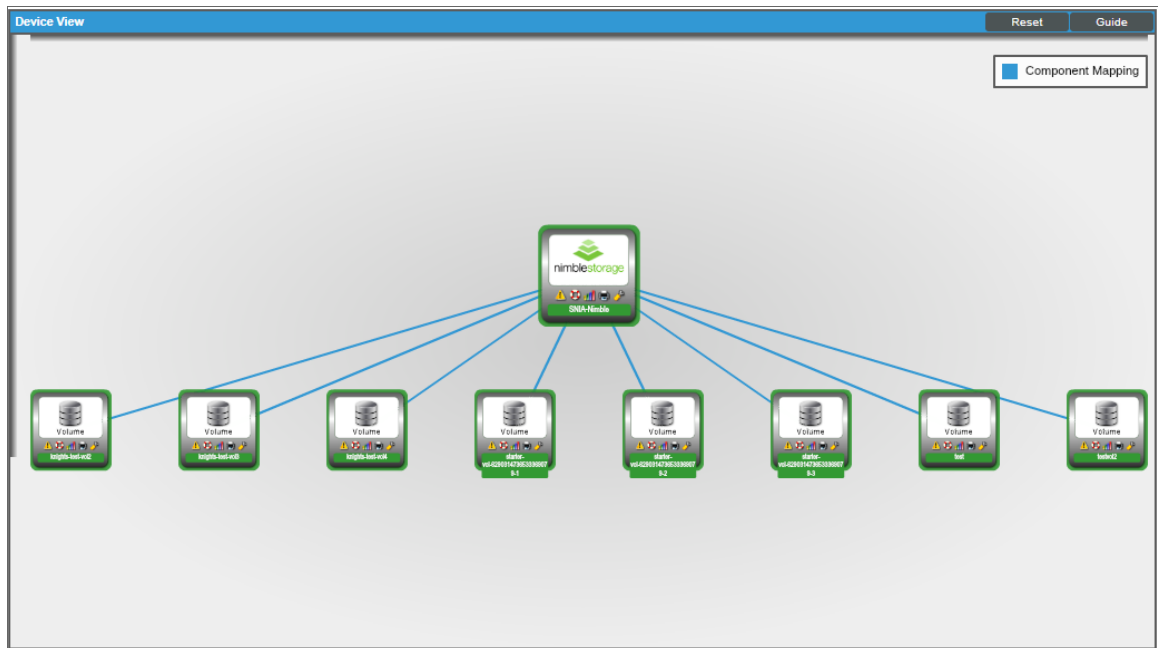
If the listed Dynamic Applications have not been automatically aligned during discovery, you can align them manually. To do so, perform the following steps:

1. Click the **[Action]** button and then select *Add Dynamic Application*. The **Dynamic Application Alignment** page appears.
2. In the **Dynamic Applications** field, select the Dynamic Application you want to align.
3. In the **Credentials** field, select the credential specified in the table.
4. Click the **[Save]** button.
5. Repeat steps 1-4 for the other unaligned Dynamic Applications.

Viewing Nimble Storage Component Devices

In addition to the **Device Manager** page (Registry > Devices > Device Manager), you can view the Nimble Storage Array and all associated component devices in the following places in the user interface:

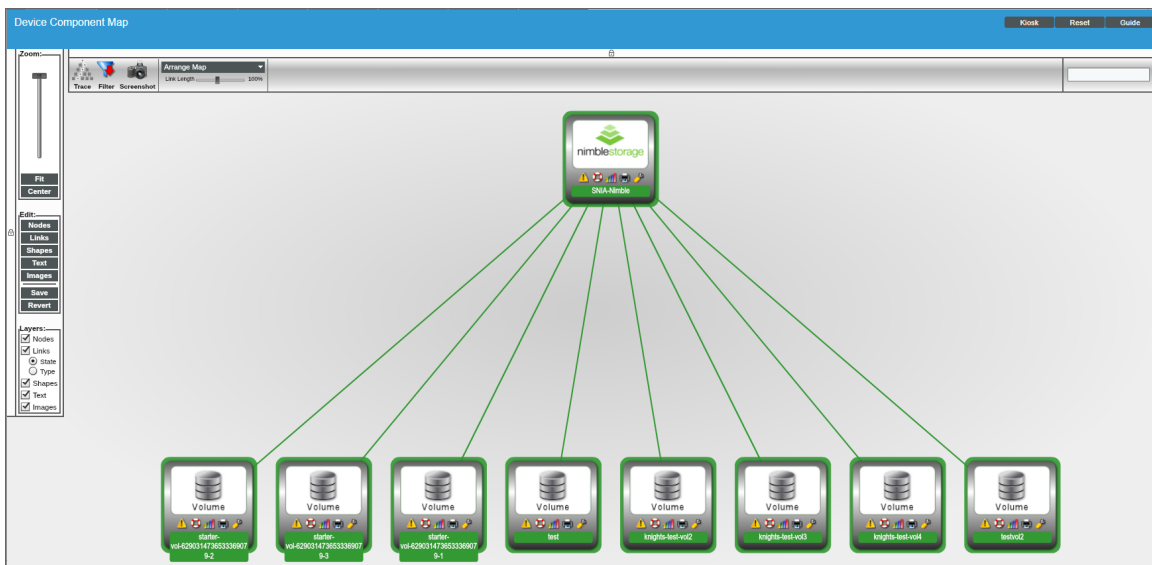
- The **Device View** modal page displays a map of a particular device and all of the devices with which it has parent-child relationships. Double-clicking any of the devices listed reloads the page to make the selected device the primary device:



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

Device Name	IP Address	Device Category	Device Class Sub-class	DD	Organization	Current State	Collection Group	Collection State
10.128.80.56	10.128.80.56	Pingable	Nutanix Management Device	20	Nutanix	Healthy	CUG_Automation	Active
SNA-Nimble	10.1.135.33	SAN	Nimble Storage Storage Array	11	Nimble Storage	Healthy	CUG_Automation	Active
knights-test-vol2	--	LUN	Nimble Storage Volume	16	Nimble Storage	Healthy	CUG_Automation	Active
knights-test-vol3	--	LUN	Nimble Storage Volume	17	Nimble Storage	Healthy	CUG_Automation	Active
knights-test-vol4	--	LUN	Nimble Storage Volume	18	Nimble Storage	Healthy	CUG_Automation	Active
starter-vol-6290314736533369079-1	--	LUN	Nimble Storage Volume	14	Nimble Storage	Healthy	CUG_Automation	Active
starter-vol-6290314736533369079-2	--	LUN	Nimble Storage Volume	32	Nimble Storage	Healthy	CUG_Automation	Active
starter-vol-6290314736533369079-3	--	LUN	Nimble Storage Volume	13	Nimble Storage	Healthy	CUG_Automation	Active
test	--	LUN	Nimble Storage Volume	15	Nimble Storage	Healthy	CUG_Automation	Active
testvol2	--	LUN	Nimble Storage Volume	19	Nimble Storage	Healthy	CUG_Automation	Active

- 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 page 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 a Nimble Storage Array, 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.



Chapter

3

Dashboards

Overview

The following sections describe the device dashboards that are included in the *Nimble Storage (2.3) PowerPack*:

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Nimble Storage: Volume Performance Dashboard

The Nimble Storage: Volume Performance dashboard displays the following information:

- Top 10 Total IOPS
- Volume usage by percentage
- A list of events associated with the Nimble Storage Array
- Usage: Volumes used by volume over time
- Operations: Total IOPS over time by volume
- Operations: Reads Per/Sec over time by volume
- Operations: Writes Per/Sec over time by volume
- Throughput: Total Bytes Per/Sec over time by volume
- Throughput: Total Read Bytes Per/Sec over time by volume

Device Dashboards

The *Nimble Storage (2.3)PowerPack* includes device dashboards that provide summary information for VNX component devices. Each of the device dashboards in the *Nimble Storage (2.3) PowerPack* are set as the default device dashboard for the equivalent device class.

Nimble Storage: Array Performance

The Nimble Storage: Array Performance device dashboard displays the following information:

- Latency per second over a specified period of time
- Throughput per second over a specified period of time
- Operations per second over a specified period of time
- Operations per five minutes over a specified period of time
- Sequential and Non-Sequential bytes per second over a specified period of time
- Capacity and Usage over a specified period of time

Nimble Storage: Volume Performance

The Nimble Storage: Volume Performance device dashboard displays the following information:

- Read Hits per second over a specified period of time
- Throughput per second over a specified period of time
- Operations per second over a specified period of time
- Operations per five minutes over a specified period of time
- Sequential bytes per second over a specified period of time
- Capacity and Usage over a specified period of time

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