



Monitoring Nutanix

Nutanix: Base Pack PowerPack version 105

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Chapter

1

Introduction

Overview

This manual describes how to monitor Nutanix systems and their components in SL1 using the *Nutanix Base Pack PowerPack*.

The following sections provide an overview of Nutanix and the *Nutanix Base Pack PowerPack*:

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What Does the Nutanix Base Pack PowerPack Monitor?

The *Nutanix Base Pack PowerPack* includes Dynamic Applications that can monitor performance metrics and collect configuration data for all Nutanix devices.

In addition to Dynamic Applications, the PowerPack includes the following features:

- Event Policies and corresponding alerts that are triggered when Nutanix component devices meet certain status criteria

- Device Classes for each of the Nutanix devices monitored
- A sample Credential for discovering Nutanix devices
- Dashboards that display information about Nutanix instances and component devices
- A Run Book Action and an Automation policy to assign the proper device class to the Nutanix root device

Installing the Nutanix PowerPack

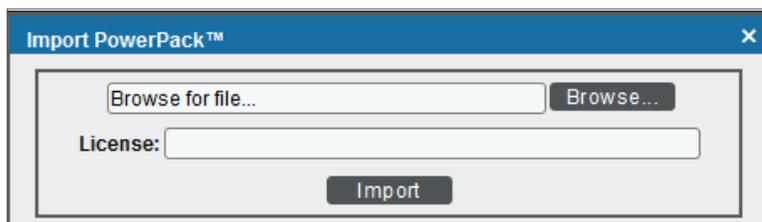
Before completing the steps in this manual, you must import and install the latest version of the *Nutanix Base Pack* PowerPack.

NOTE: If you are upgrading from an earlier version of the PowerPack, see the [Release Notes](#) for the version you are installing for upgrade instructions.

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 your Nutanix system for monitoring by SL1 using the *Nutanix Base Pack PowerPack* in the New User Interface:

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WARNING: You can monitor Prism Elements **or** Prism Central. You must choose between monitoring Prism Elements or Prism Central as the root device, and then run discovery accordingly. It is recommended that you monitor Prism Central in all cases, unless you have only Prism Elements instances with **no** Prism Central instances.

Configuring the Nutanix Credentials

To use the Dynamic Applications in the Nutanix: Base Pack PowerPack, you must first define a Basic/Snippet credential in SL1. This credential allows SL1 to collect data from your Nutanix system.

NOTE: To use Discovery and Collection as a Nutanix user, the permission settings for that use require identical credentials created at both the PE and PC levels. For PE, you will need the role_cluster_viewer credential. For PC, you will need the role_cluster_admin, role_multicluster_admin, role_user_admin, and role_cluster_viewer credentials.

NOTE: You will need to create a separate credential for each APIC that you want to discover.

NOTE: If you are using an SL1 system prior to version 11.1.0, the new user interface does not include the **Duplicate** option for sample credential(s). ScienceLogic recommends that you use [the classic user interface and the Save As button](#) to create new credentials from sample credentials. This will prevent you from overwriting the sample credential(s).

To configure a Basic/Snippet credential for Nutanix: Base Pack, perform the following steps:

1. Go to the **Credentials** page (Manage > Credentials).
2. Locate the "Nutanix API Example" sample credential, click its **[Actions]** icon (☰) and select **Duplicate**. A copy of the credential appears.
3. Click the **[Actions]** icon (☰) for the "Nutanix API Example copy" credential copy and select **Edit**. The **Edit Credential** modal page appears.

Edit Credential

Name*
Nutanix API | Example

All Organizations Select the organizations the credential belongs to* Timeout (ms)
20000

Hostname/IP* Port*
%D 9440

Username Password
<USERNAME> *****

Credential Tester

Select Credential Test

Select Collector
CUG | KNT-Patch-AIO-51: 10.2.5.51

IP or Hostname to test*

Test Credential

Close

4. Enter values in 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 **Select the organizations the credential belongs to** drop-down field to align the credential with those specific organizations.
 - **Hostname/IP.** Type %D.
 - **Username.** Type the username that SL1 will use to connect to the Nutanix system.
 - **Password.** Type the password for the username you entered.
5. Click **[Save & Close]**.
6. In the confirmation message, click **[OK]**.

Configuring the Nutanix Credentials in the SL1 Classic Interface

To use the Dynamic Applications in the *Nutanix Base Pack PowerPack*, you must first configure the credential in SL1. This credential allows SL1 to communicate with the Nutanix API. The PowerPack includes the "Nutanix API | Example" credential that you can use as a template.

To configure the Nutanix credential:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the **Nutanix API | Example** credential and click its wrench icon (🔧). The **Credential Editor** modal page appears:

The screenshot shows a modal window titled "Credential Editor [88]" with a close button (X) in the top right corner. Below the title bar is a sub-header "Edit Basic/Snippet Credential #88" and two buttons: "New" and "Reset". The main content area is titled "Basic Settings" and contains the following fields:

- Credential Name:** A text input field containing "Nutanix API | Example".
- Hostname/IP:** A text input field containing "%D".
- Port:** A text input field containing "9440".
- Timeout(ms):** A text input field containing "20000".
- Username:** A text input field containing "<USERNAME>".
- Password:** A password input field containing "*****".

At the bottom of the form are two buttons: "Save" and "Save As".

3. Enter values in the following fields:

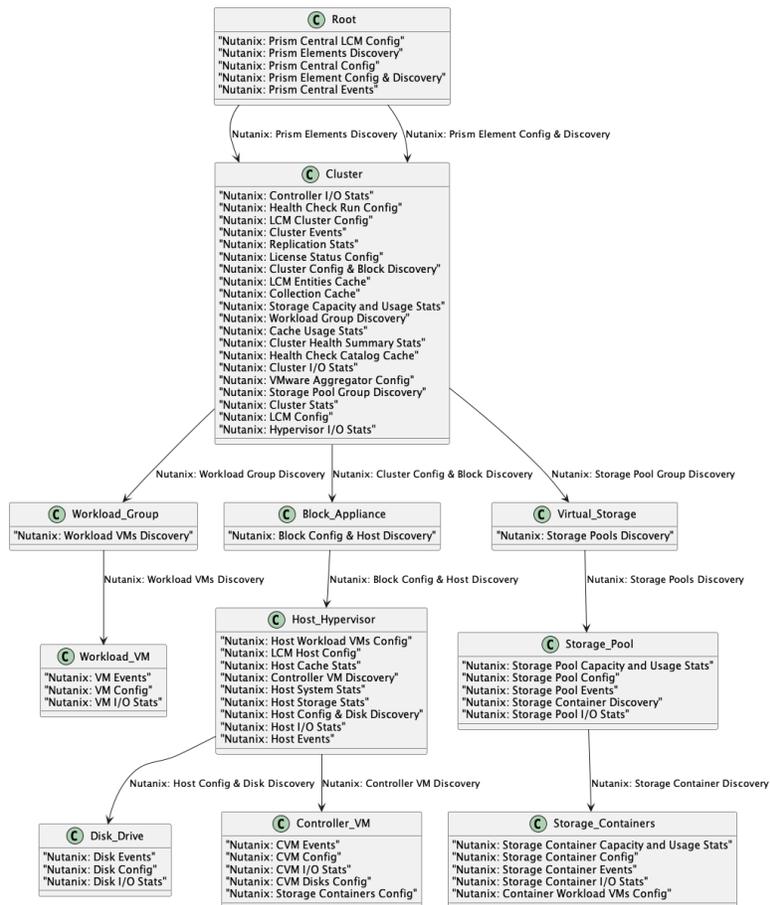
- **Credential Name.** Type a new name for your Nutanix credential.
- **Hostname/IP.** Type %D.
- **Username.** Type the username that SL1 will use to connect to the Nutanix system.
- **Password.** Type the password for the username you entered.

NOTE: You can use the default values for the remaining fields.

4. Click the **[Save As]** button, and then click **[OK]**.

Discovering Nutanix Systems

To model and monitor your Nutanix systems, you must run a discovery session to discover your Nutanix systems. The following diagram illustrates the way the discovery process works for Nutanix:



To create and run a discovery session that will discover your Nutanix system, perform the following steps:

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

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

The screenshot shows the 'Discovery Session Editor | Editing Session [3]' window. It is divided into three main sections: Identification Information, IP and Credentials, and Detection and Scanning, with a Basic Settings section on the right.

- Identification Information:** Name: Nutanix Discovery, Description: (empty).
- IP and Credentials:**
 - IP Address/Hostname Discovery List:** 10.128.80.56
 - SNMP Credentials:** List includes Dell EMC, EM7, IPSLA, LifeSize, NetApp, and SNMP Public V1/V2. 'SNMP Public V2' is selected.
 - Other Credentials:** List includes Citrix, EMC, LifeSize, Local API, NetApp, and Nutanix API. 'Nutanix API | Example' is selected.
- Detection and Scanning:**
 - Initial Scan Level:** [System Default (recommended)]
 - Scan Throttle:** [System Default (recommended)]
 - Port Scan All IPs:** [System Default (recommended)]
 - Port Scan Timeout:** [System Default (recommended)]
 - Detection Method & Port:** List includes UDP: 161 SNMP, TCP: 1-15 (icmp, compressnet, rje, echo, discard, systat, daytime, netstat).
 - Interface Inventory Timeout (ms):** 600000
 - Maximum Allowed Interfaces:** 10000
 - Bypass Interface Inventory:**
- Basic Settings:**
 - Discover Non-SNMP:**
 - Model Devices:**
 - DHCP:**
 - Device Model Cache TTL (h):** 2
 - Collection Server PID:** 1
 - Organization:** [Nutanix Guardians Organization]
 - Add Devices to Device Group(s):** None Servers
 - Apply Device Template:** [Choose a Template]

Buttons at the bottom include 'Save', 'Save As', and 'Log All' (checked).

- Enter values in the following fields:

- IP Address Discovery List.** Type the IP addresses for the Nutanix systems you want to discover.

NOTE: Do not include both Prism Element and Prism Central devices in the **IP Address Discovery List** field. The *Nutanix: Base Pack PowerPack* supports discovery of individual Prism Element clusters OR a Prism Central device with multiple Prism Element clusters. It is recommended that customers use only one of these options.

- SNMP Credentials.** Select *SNMP Public V2* if applicable.
- Other Credentials.** Select the credential that you configured in the previous section.
- Discover Non-SNMP.** If you are not using an SNMP credential, ensure that this checkbox is selected.
- Organization.** Select your organization.

- 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 & Credentials** manual.

5. Click the **[Save]** button and then close the **Discovery Session Editor** window.
6. The discovery session you created will appear at the top of the **Discovery Control Panel** page. Click its lightning-bolt icon (⚡) to run the discovery session.
7. The **Discovery Session** window will be displayed.
8. When the Nutanix system is discovered, click its device icon (🖥️) to view the **Device Properties** page for the Nutanix system.
9. After the Nutanix system is discovered, the child components and devices associated with that system will also appear in the **Device Manager** page.

NOTE: It can take up to 30 minutes for the Dynamic Applications and device class to align.

Verifying Discovery and Dynamic Application Alignment

Verifying Prism Elements Discovery and Dynamic Application Alignment

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

1. From the **Device Properties** page for the Nutanix system, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.
2. The "Nutanix: Prism Element Config & Discovery" Dynamic Application should be displayed in the list of Dynamic Applications aligned to the Nutanix system.

In addition, the "Nutanix: Prism Element Classify Root Device Class" Run Book Action will be triggered to automatically align the correct device class to the discovered root device.

Verifying Prism Central Discovery and Dynamic Application Alignment

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

1. From the **Device Properties** page for the Nutanix system, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.
2. The following Dynamic Applications should be displayed in the list of Dynamic Applications aligned to the Nutanix system:
 - Nutanix: Prism Central Config
 - Nutanix: Prism Central Events
 - Nutanix: Prism Elements Discovery

In addition, the "Nutanix: Prism Central Classify Root Device Class" Run Book Action will be triggered to automatically align the correct device class to the discovered root device.

Configuring Virtual Device Alerts for Prism Central Devices

If you have chosen not to model virtual devices, but want to see alerts for those devices, you can configure virtual device alerts to appear on Prism Central devices.

To configure your Prism Central devices to display alerts for virtual devices:

1. Go to the **Dynamic Applications Manager** (System > Manage > Dynamic Applications) page.
2. Find the "Nutanix: Prism Central Events" Dynamic Application and click its wrench icon (🔧).
3. Click the **[Thresholds]** tab, and click the wrench icon (🔧) for the "Display Workload VM Alerts" Threshold Object.
4. In the **Threshold Value** field, type 1 and then click **[Save]**. Alerts for virtual devices will now appear on your Prism Central devices. By default, the Threshold Value is set to 0, and alerts will appear on the VM.

Viewing Nutanix Component Devices

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

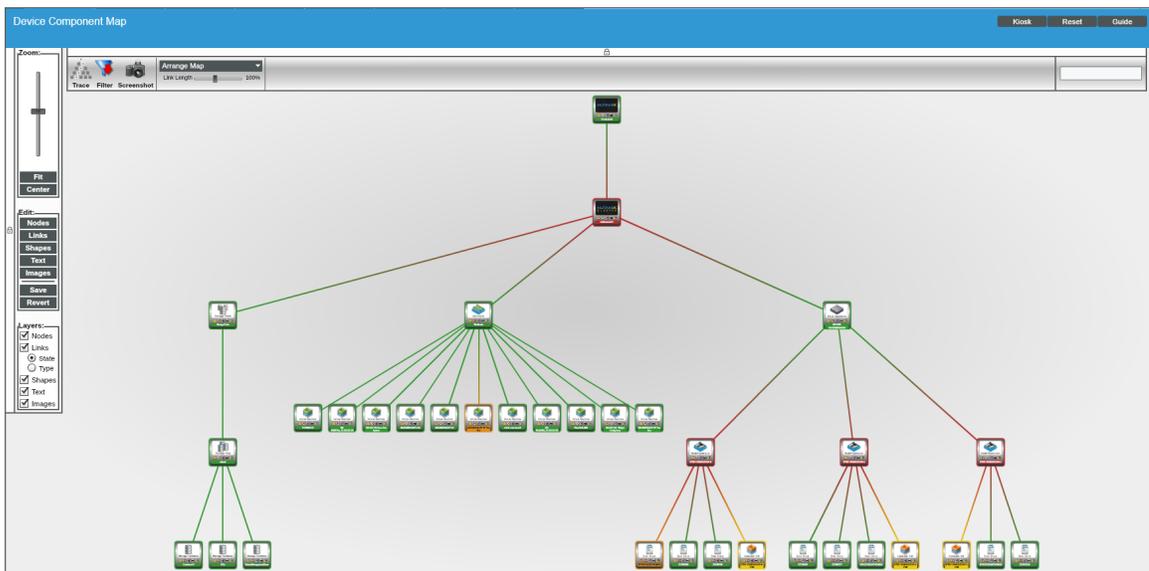
- The **Device View** modal page (click the bar-graph icon [📊]) for a device, then click the **Topology** tab) displays a map of a particular device and all of the devices with which it has parent-child relationships. Double-clicking any of the devices listed reloads the page to make the selected device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

Device Name	IP Address	Device Category	Device Class Sub-class	DID	Organization	Current State	Collection Group	Collection State
10.128.80.56	10.128.80.56	Pingable	Nutanix Management Device	528	System	Healthy	CUG	Active
dc2hwibk801	--	Cluster	Nutanix Cluster	529	System	Critical	CUG	Active
NX-1065-G4-15SM5250085	--	Appliance	Nutanix Block Appliance	546	System	Healthy	CUG	Active
Storage Pools	--	Group	Nutanix Virtual Storage	530	System	Healthy	CUG	Active
Workloads	--	Group	Nutanix Workload Group	531	System	Healthy	CUG	Active
BD-AIO-112 - Widget Config Issue	--	Workloads	Nutanix Workload VM	545	System	Healthy	CUG	Active
BD-AIO-113 Demo-Dev System	--	Workloads	Nutanix Workload VM	538	System	Healthy	CUG	Active
BD-SNMPsim_10.128.82.128	--	Workloads	Nutanix Workload VM	537	System	Healthy	CUG	Active
BD-Win2k8R2_10.128.82.192	--	Workloads	Nutanix Workload VM	543	System	Healthy	CUG	Active
BDAGENTLSAP 6.42	--	Workloads	Nutanix Workload VM	539	System	Healthy	CUG	Active
BDAGENTLSAP SP Test Box	--	Workloads	Nutanix Workload VM	541	System	Major	CUG	Unavailable
BDAGENTLSAP SP Test Box	--	Workloads	Nutanix Workload VM	561	System	Healthy	CUG	Active
BDAGENTLSAP-6.5	--	Workloads	Nutanix Workload VM	540	System	Healthy	CUG	Active
dc2-b-rfb-ubun01	--	Workloads	Nutanix Workload VM	542	System	Healthy	CUG	Active
PowerSCILORD	--	Workloads	Nutanix Workload VM	544	System	Healthy	CUG	Active
TCPREPLAY	--	Workloads	Nutanix Workload VM	536	System	Healthy	CUG	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 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 Nutanix 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.



Chapter

3

Dashboards

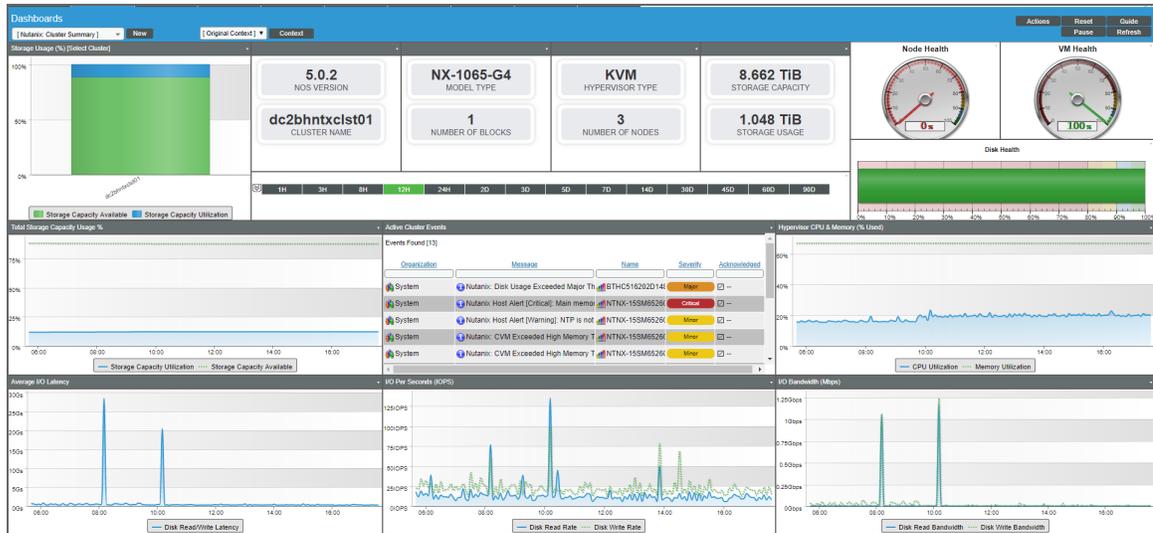
Overview

The following sections describe the two built-in dashboards and the device dashboards that are included in the *Nutanix: Base Pack PowerPack*:

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Nutanix: Cluster Summary

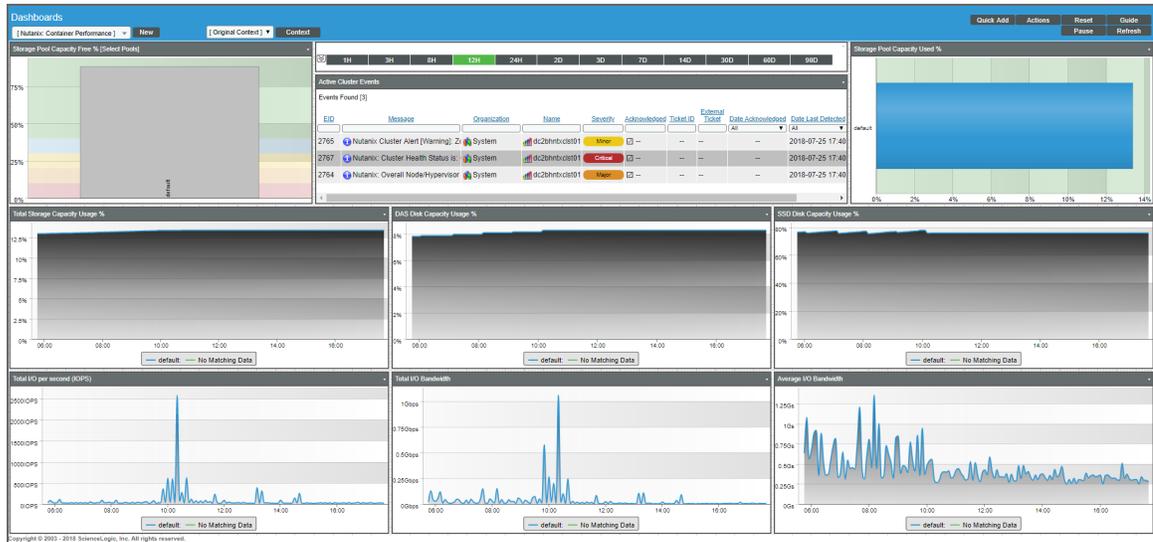
The "Nutanix: Cluster Summary" dashboard displays the following information:



- A widget that displays the available storage capacity and storage capacity utilization. You must select one of the clusters (bars) in this widget to display information about that cluster in the remaining widgets.
- Informational widgets that include:
 - NOS Version and Cluster Name
 - Model Type and Number of Blocks
 - Hypervisor Type and Number of Nodes
 - Storage Capacity and Storage Usage
- Gauges for Node Health and VM Health, and a bar representing Disk Health
- Total storage capacity usage over a period of time
- A list of events associated with the cluster
- Hypervisor CPU and memory used over a period of time
- Average I/O latency over a period of time
- I/O per second over a period of time
- I/O bandwidth over a period of time

Nutanix: Container Performance

The "Nutanix: Container Performance" dashboard displays the following information:



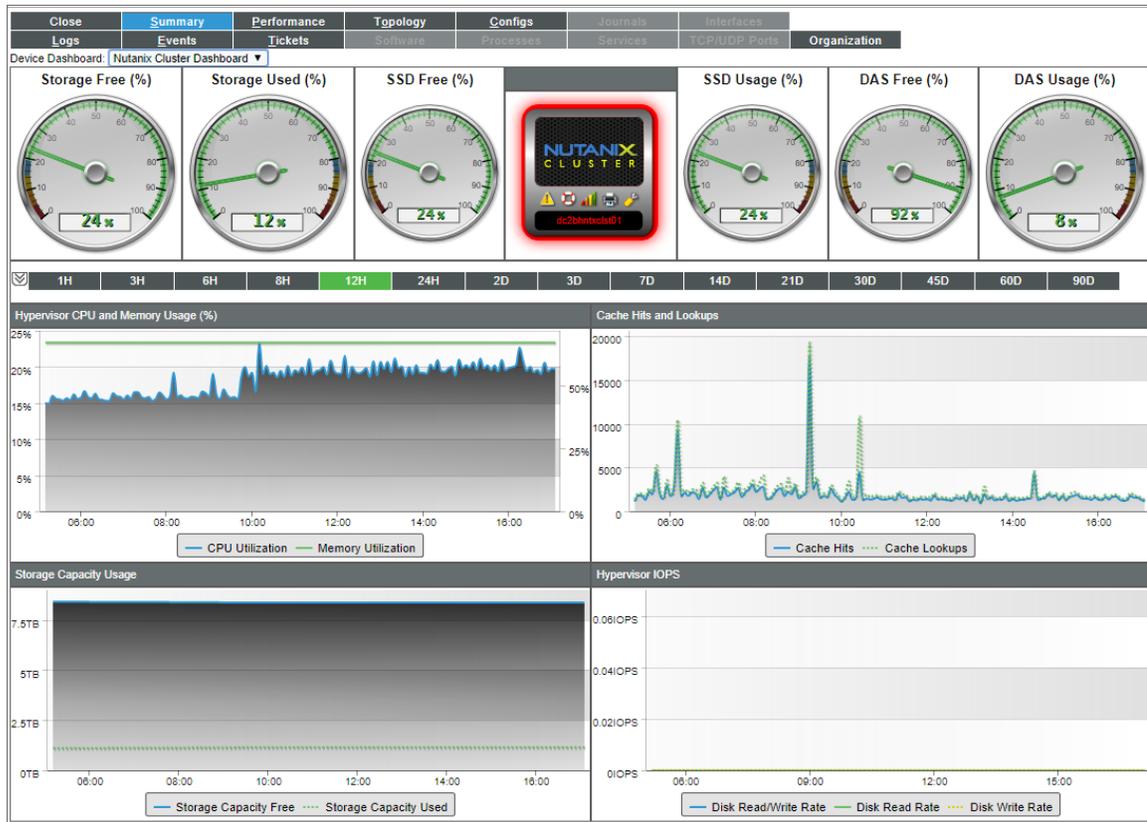
- A widget that displays the available storage pool capacity. You must select one of the pools (bars) in this widget to display information about that pool in the remaining widgets.
- A list of events associated with the storage pool
- A bar graph depicting storage pool capacity used
- Total storage capacity usage over a period of time
- DAS disk capacity usage over a period of time
- SSD disk capacity usage over a period of time
- Total I/O per second over a period of time
- Total I/O bandwidth over a period of time
- Average I/O bandwidth over a period of time

Device Dashboards

The *Nutanix: Base Pack PowerPack* includes device dashboards that provide summary information for Nutanix devices.

Nutanix Cluster Dashboard

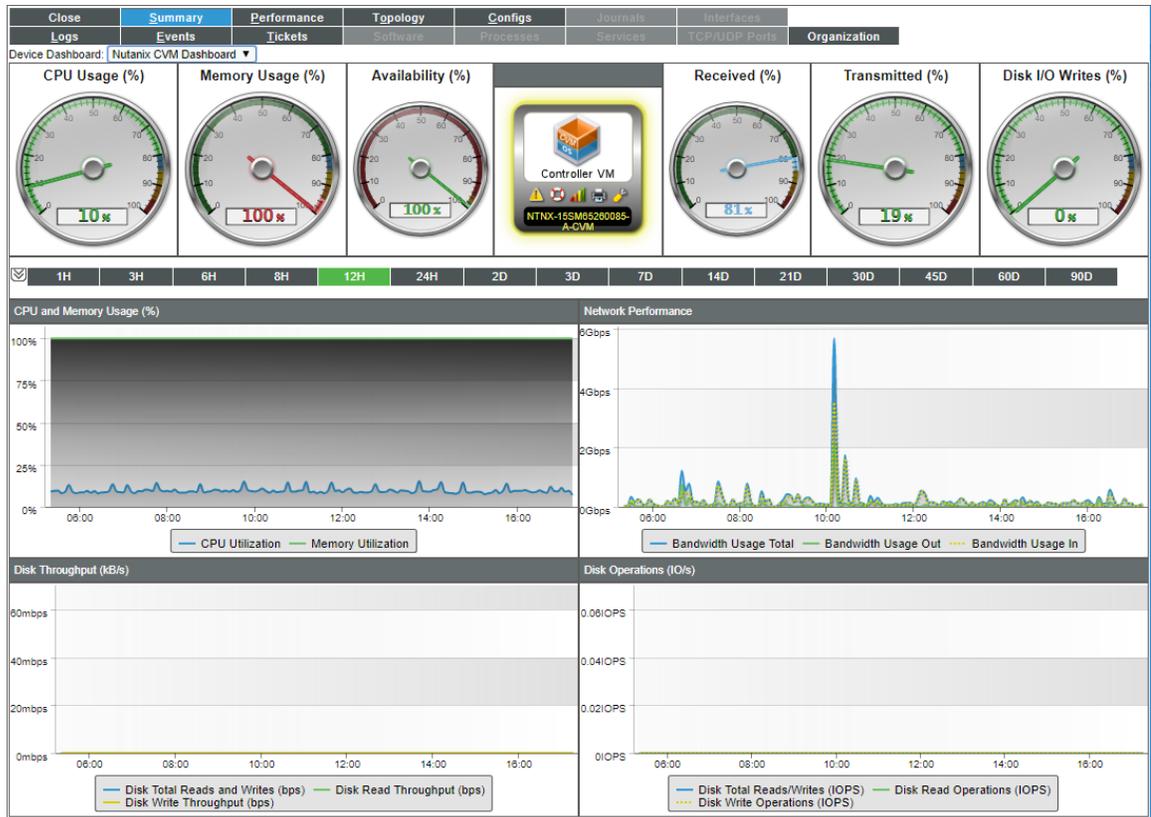
The "Nutanix Cluster" device dashboard displays the following information:



- Hypervisor CPU and memory usage over a specified period of time
- Storage capacity usage over a specified period of time
- Cache hit ratio over a specified period of time
- Hypervisor IOPs over a period of time
- Percentage of free and used storage, SSD, and DAS

Nutanix CVM Dashboard

The "Nutanix CVM" device dashboard displays the following information:



- A number of gauges that display the following:
 - CPU Usage
 - Memory Usage
 - Availability
 - Received and Transmitted data
 - Disk I/O Wires
- CPU and Memory usage over a period of time
- Network performance over a period of time
- Disk throughput over a period of time
- Disk operations over a period of time

Nutanix Hard Disk Dashboard

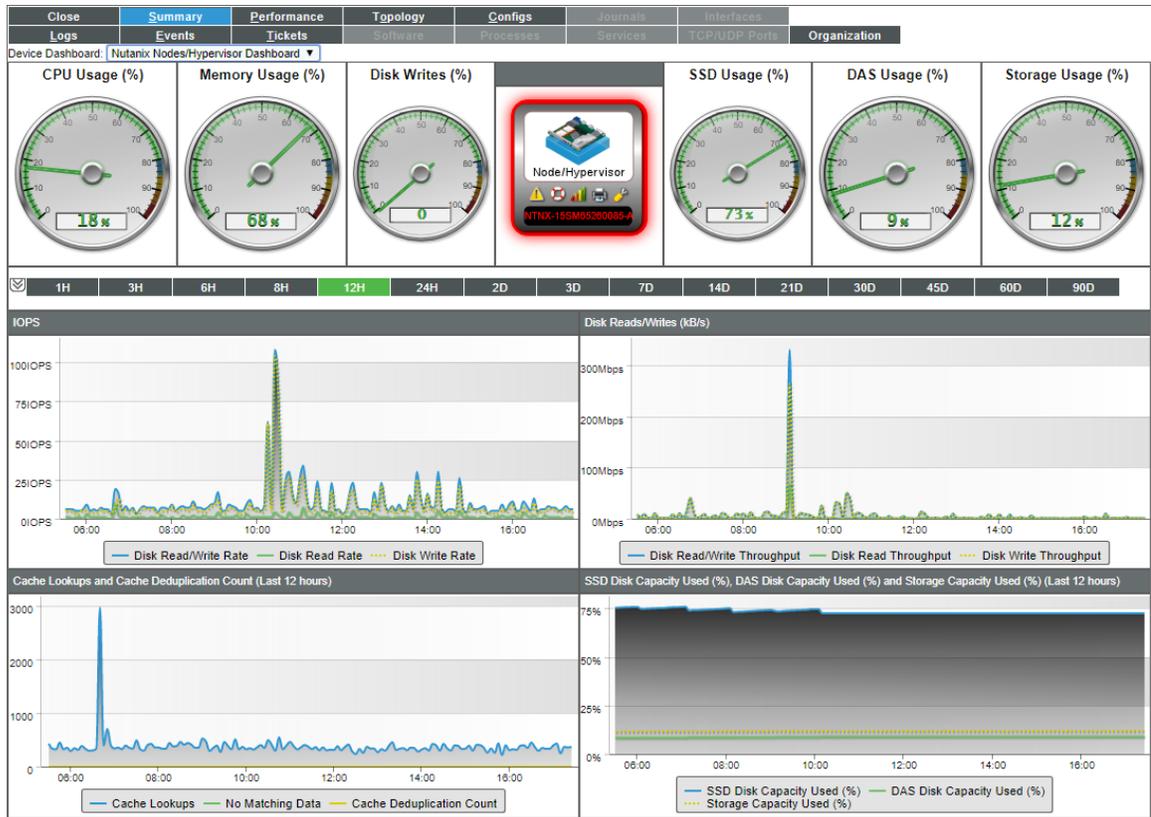
The "Nutanix Hard Disk" device dashboard displays the following information:



- A number of gauges that display the following:
 - Disk Capacity Usage
 - Disk I/O Writes
 - Disk Reads
 - Disk Writes
- Disk bandwidth over a period of time
- Disk IO/s over a period of time
- Disk percent I/O over a period of time
- Disk I/O latency over a period of time

Nutanix Nodes/Hypervisor Dashboard

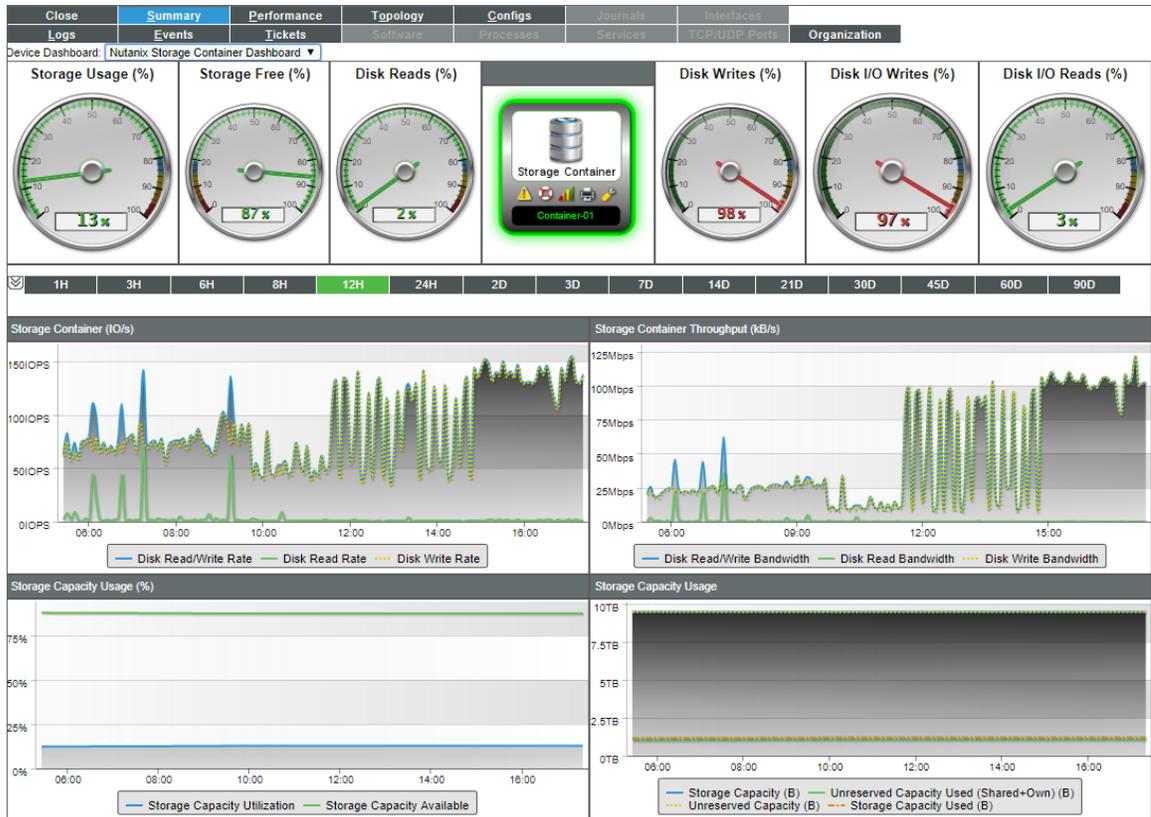
The "Nutanix Nodes/Hypervisor" device dashboard displays the following information:



- A number of gauges that display the following:
 - CPU Usage
 - Memory Usage
 - Disk Writes
 - SSD Usage
 - DAS Usage
 - Storage Usage
- IOPS over a period of time
- Disk reads and writes over a period of time
- Cache lookups and deduplication counts over a period of time
- SSD disk capacity used and storage capacity used over a period of time

Nutanix Storage Container Dashboard

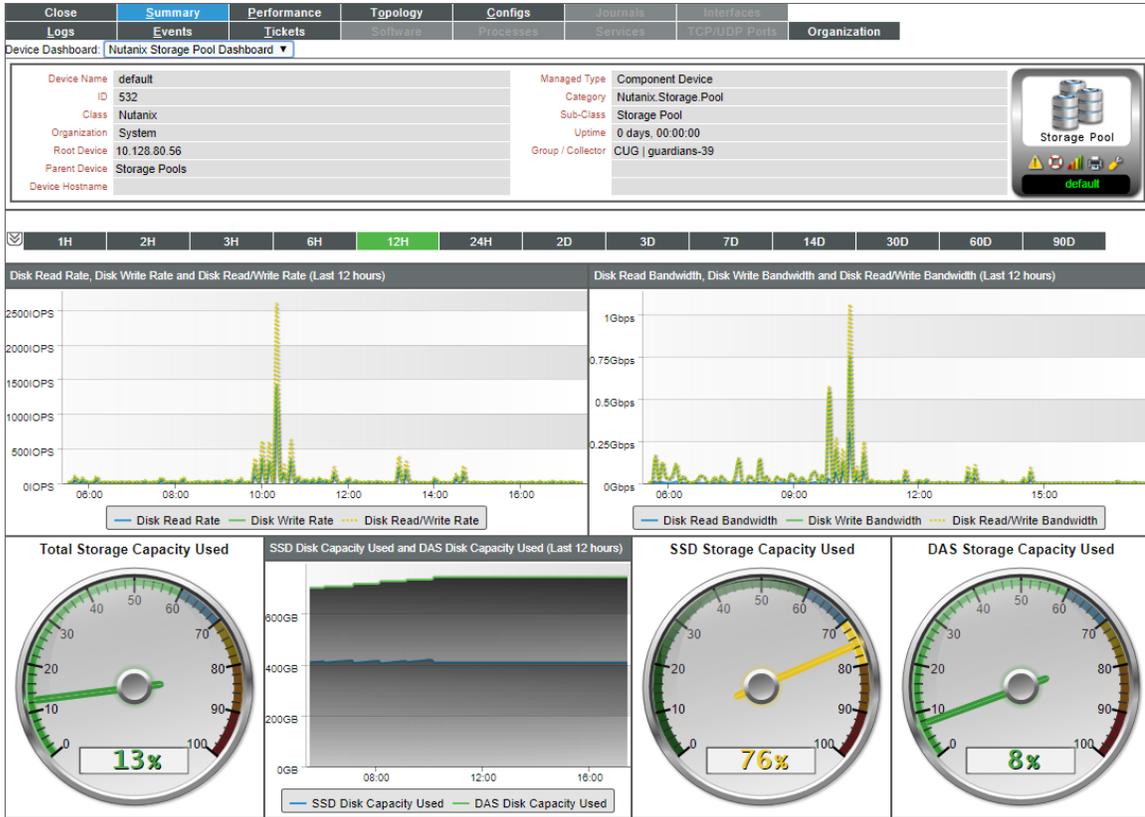
The "Nutanix Storage Container" device dashboard displays the following information:



- A number of gauges that display the following:
 - Storage Usage and Storage Free
 - Disk Reads and Disk Writes
 - Disk I/O Writes and Disk I/O Reads
- Storage container IO/s over a period of time
- Storage container throughput over a period of time
- Storage capacity usage over a period of time
- Storage capacity and unreserved capacity over time

Nutanix Storage Pool Dashboard

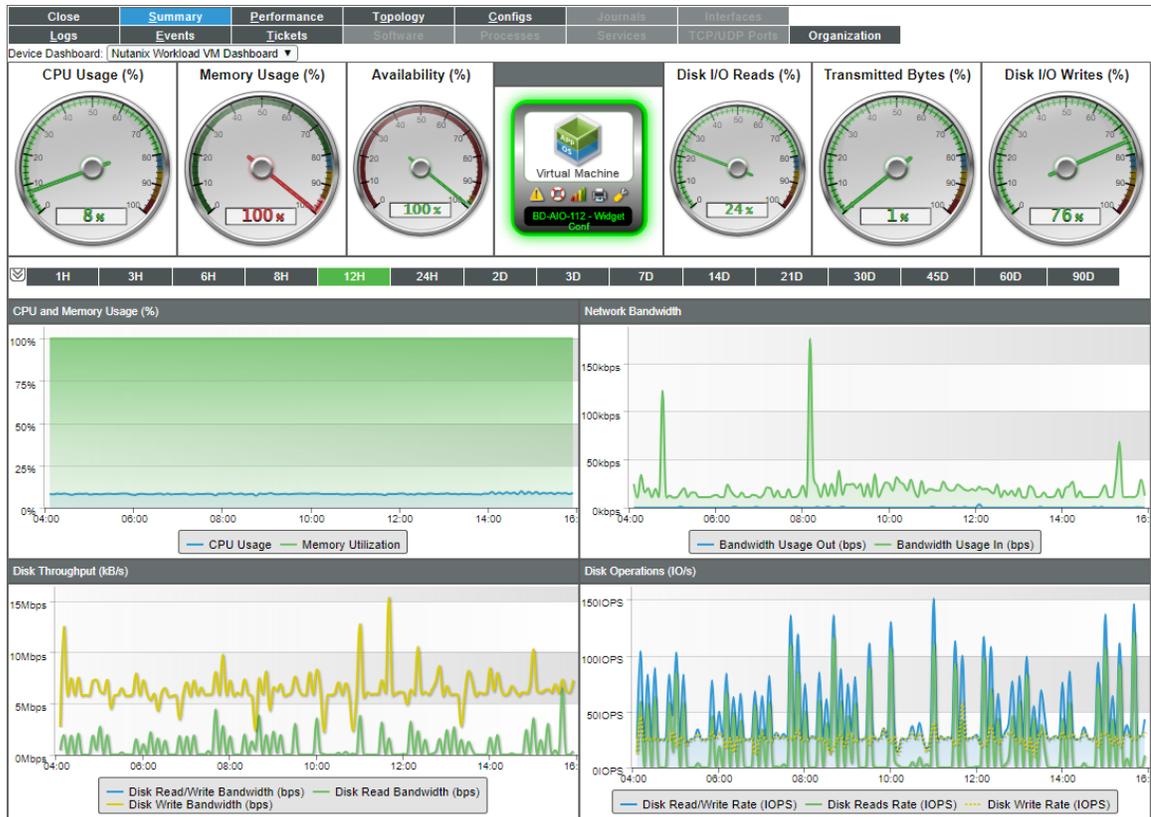
The "Nutanix Storage Pool" device dashboard displays the following information:



- A number of gauges that display the following:
 - Total Storage Capacity Used
 - SSD Capacity Used
 - DAS Storage Capacity Used
- Disk read rate and write rate over a period of time
- Disk read and write bandwidth over a period of time
- SSD disk capacity used over a period of time
- Storage capacity and unreserved capacity over time

Nutanix Workload VM Dashboard

The "Nutanix Workload VM" device dashboard displays the following information:



- A number of gauges that display the following:
 - CPU Usage, Memory Usage, and Availability
 - Disk I/O Reads and Disk I/O Writes
 - Transmitted Bytes
- CPU and memory usage over a period of time
- Network bandwidth over a period of time
- Disk throughput over a period of time
- Disk operations over a period of time

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