Monitoring Nutanix

Nutanix: Base Pack PowerPack version 104

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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 is Nutanix?

The Nutanix Virtual Computing Platform converges server and storage resources into an easy-to-deploy integrated appliance. Data center capacity can be easily expanded one node at a time, delivering linear and predictable scale-out with pay-as-you-grow flexibility.

Nutanix delivers "invisible" infrastructure for next generation enterprise computing by natively converging compute, storage, and virtualization into a turnkey hyper-converged solution.

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.

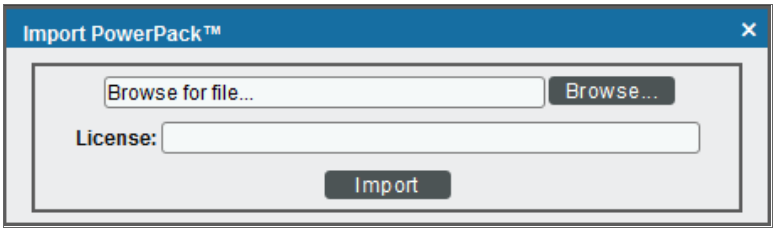
NOTE: If you are upgrading from an earlier version of the PowerPack, see the Release Notes for the version you are installing for upgrade instructions.

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 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 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:

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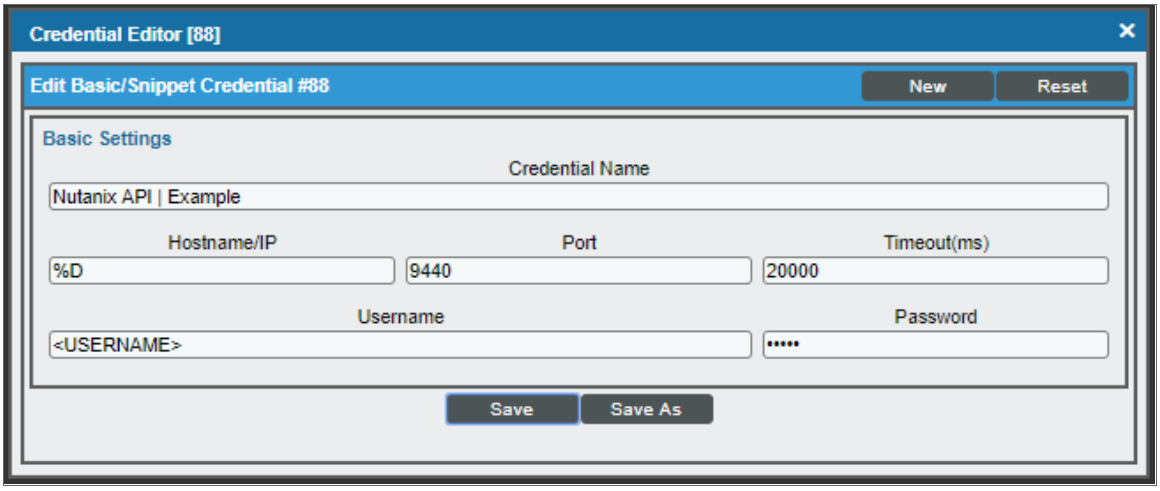
WARNING: You can monitor Prism Elements **or** Prism Central. You must choose between monitoring Prism Elements or Prism Central as the root device, and then run discovery accordingly. It is recommended that you monitor Prism Central in all cases, unless you have only Prism Elements instances with **no**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

Configuring the Nutanix Credentials

To use the Dynamic Applications in the *Nutanix Base Pack* PowerPack, you must first 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:



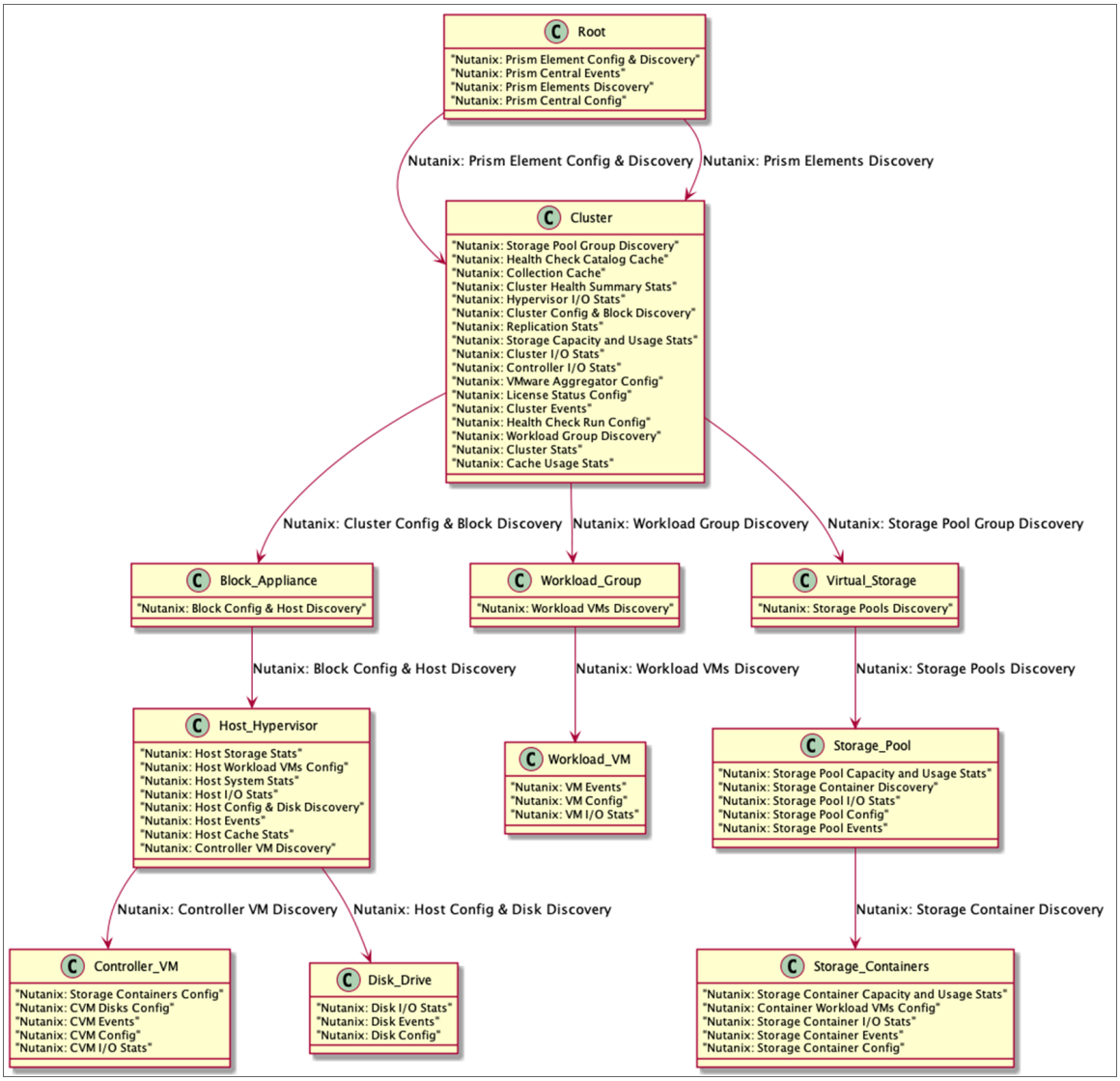
3. Enter values in the following fields:
   - ***Credential Name***. Type a new name for your Nutanix credential.
   - ***Hostname/IP***. Type %D.
   - ***Username***. Type the username that SL1 will use to connect to the Nutanix system.
   - ***Password***. Type the password for the username you entered.

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

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

Discovering Nutanix Systems

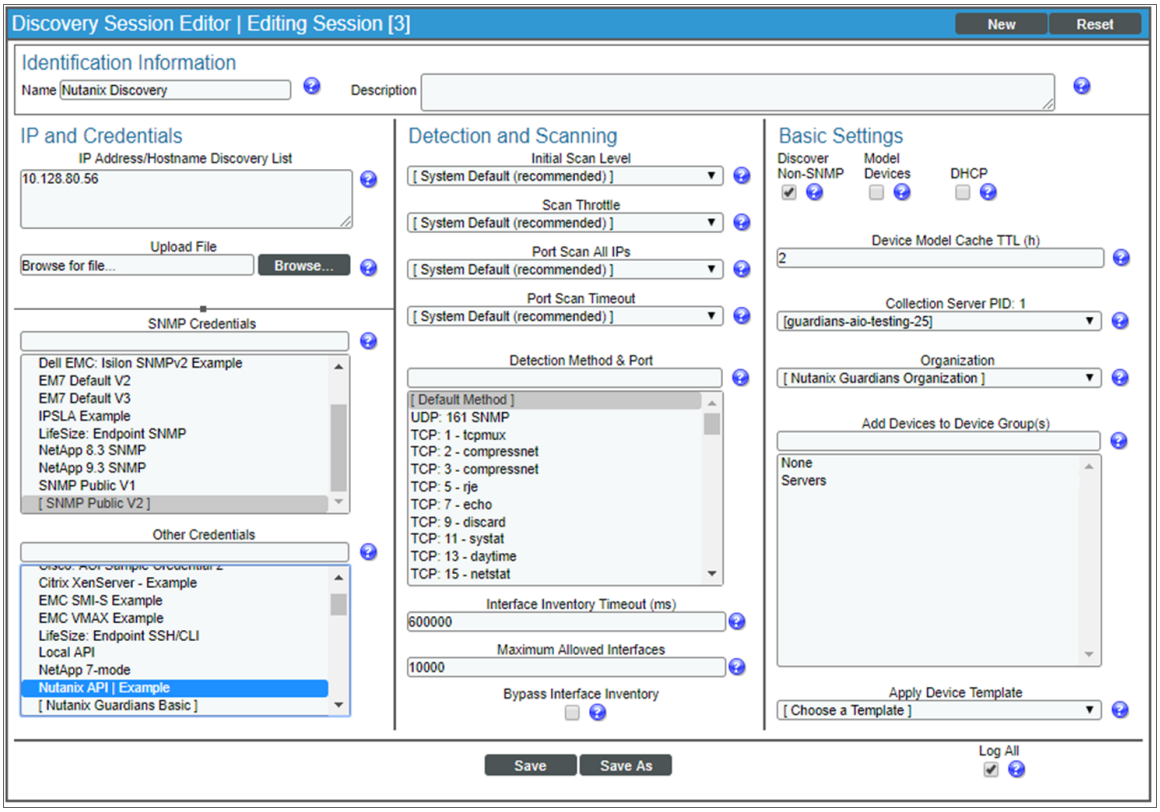
To model and monitor your Nutanix systems, you must run a discovery session to discover your Nutanix systems. The following diagram illustrates the way the discovery process works for Nutanix:



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 > Discovery).

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



3. 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.

4. 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:

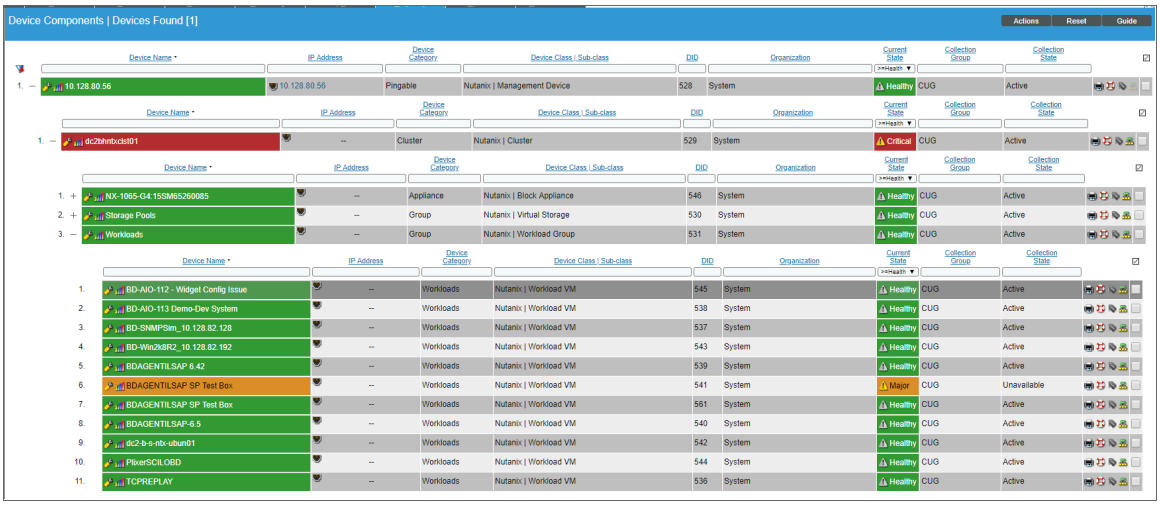
1. Go to the **Dynamic Applications Manager** (System > Manage > Dynamic Applications) page.
2. Find the "Nutanix: Prism Central Events" Dynamic Application and click its wrench icon ( ).
3. Click the **[Thresholds]** tab, and click the wrench icon ( ) for the "Display Workload VM Alerts" Threshold Object.
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

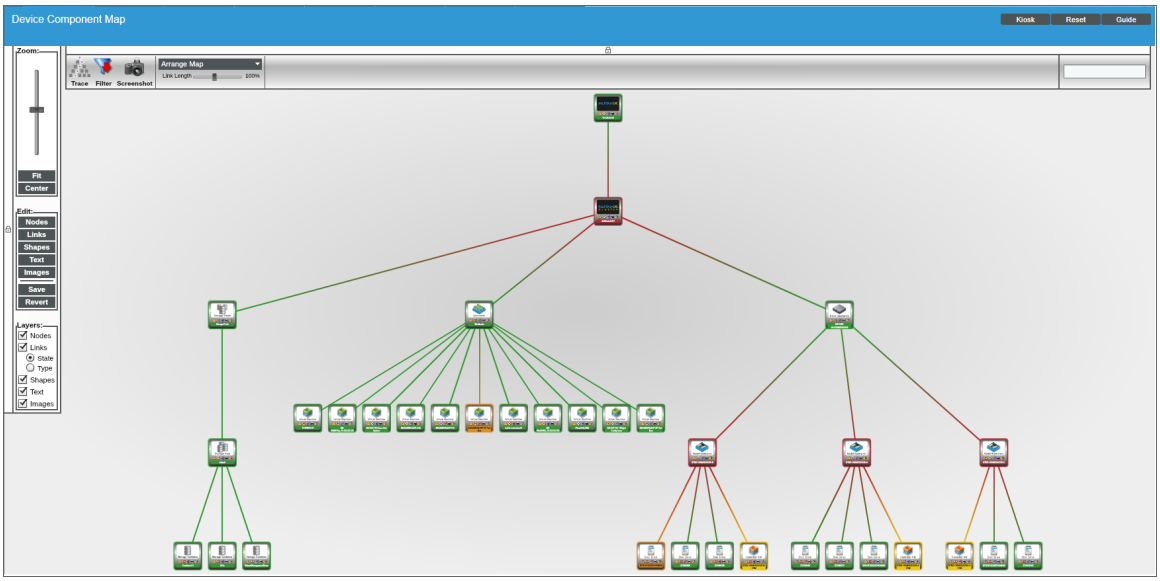
In addition to the **Device Manager** page (Registry > Devices > Device Manager), you can view the Nutanix system and all associated component devices in the following places in the user interface:

- 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 (+):



- 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. 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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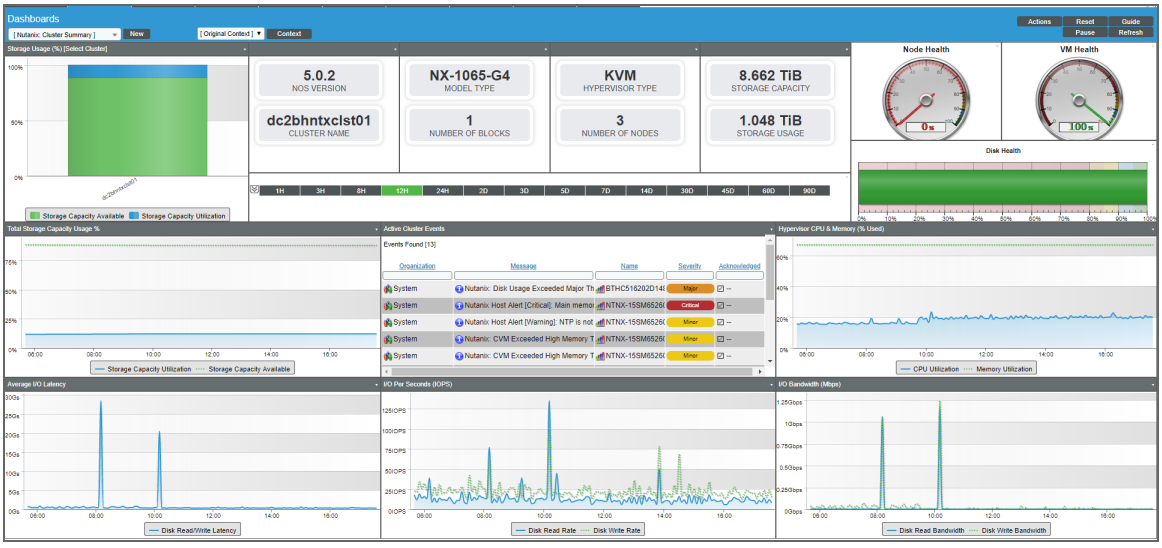
Nutanix: Cluster Summary

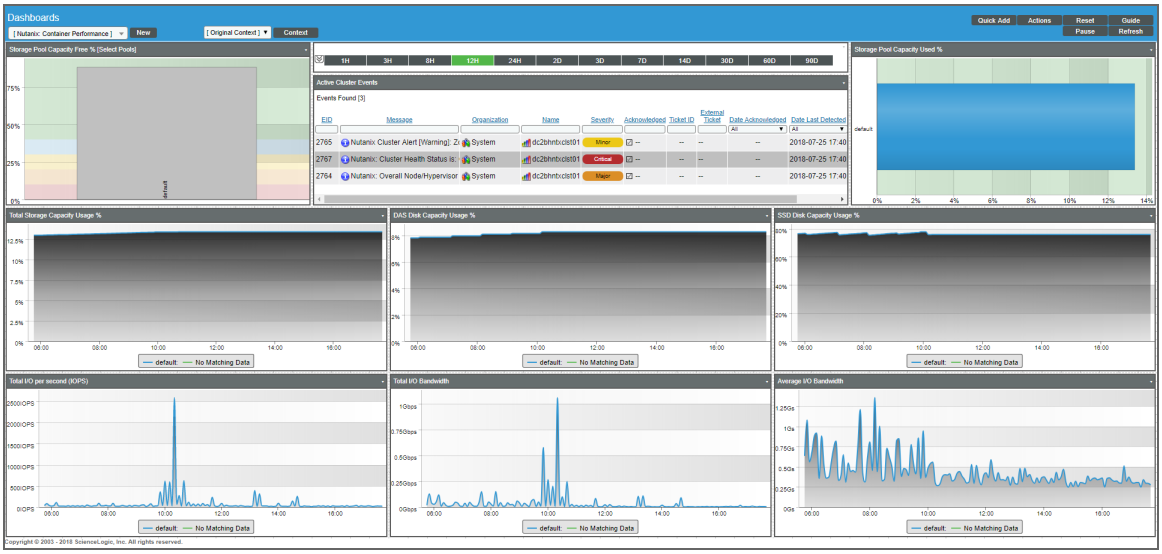
The "Nutanix: Cluster Summary" dashboard displays the following information:



- 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:



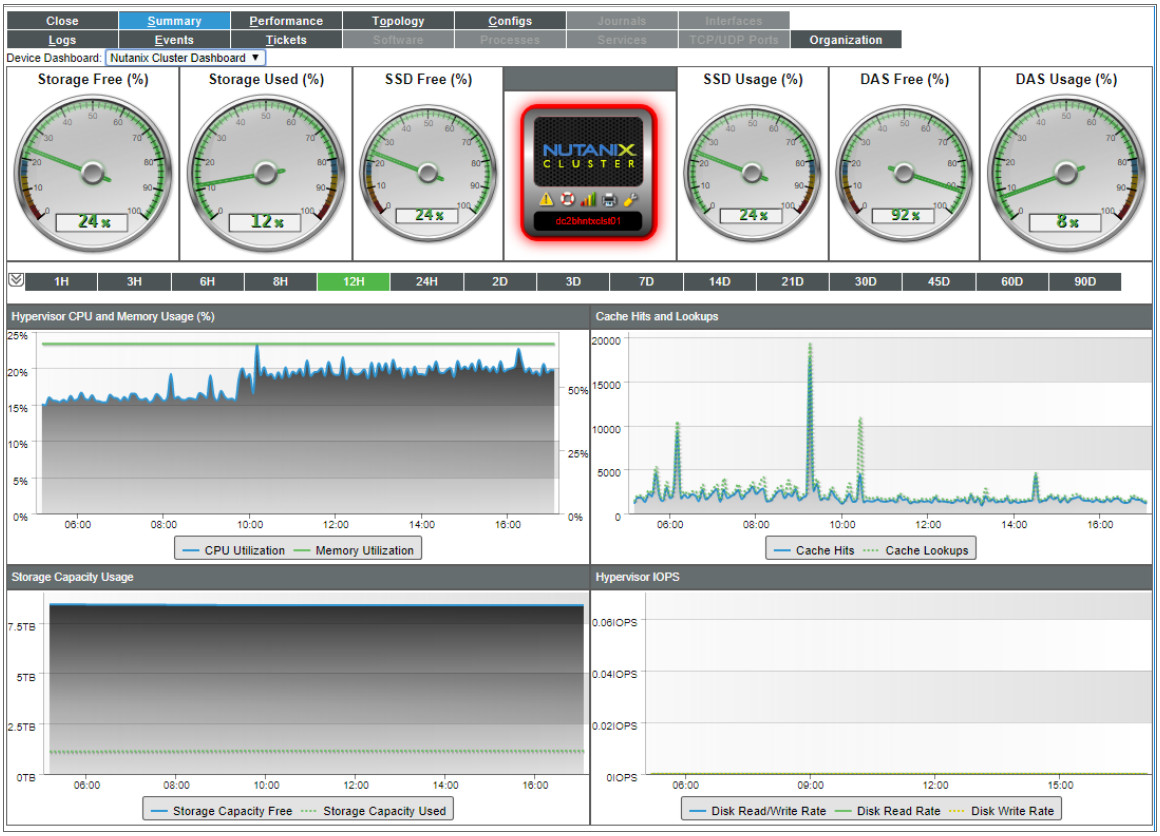
- A widget that displays the available storage pool capacity. You must select one of the pools (bars) in this widget to display information about that pool in the remaining widgets.
- A list of events associated with the storage pool
- A bar graph depicting storage pool capacity used
- Total storage 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

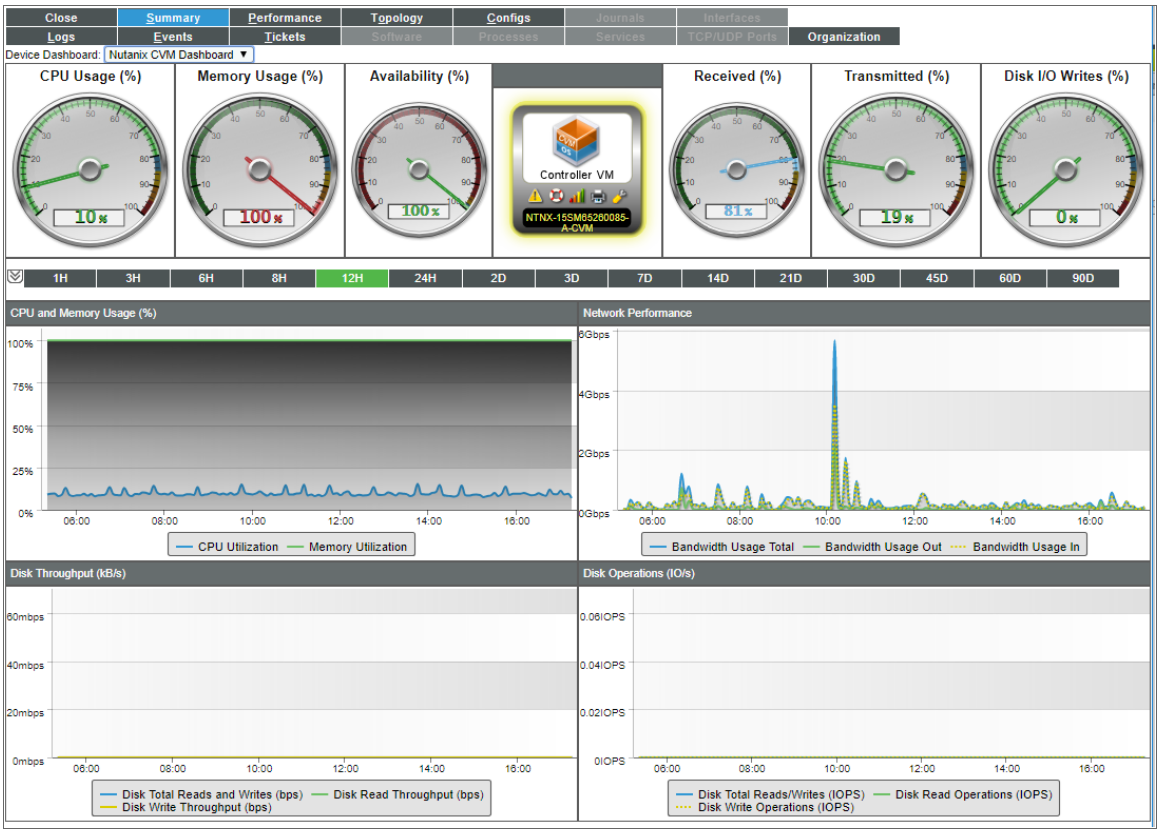
The "Nutanix Cluster" device dashboard displays the following information:



- 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

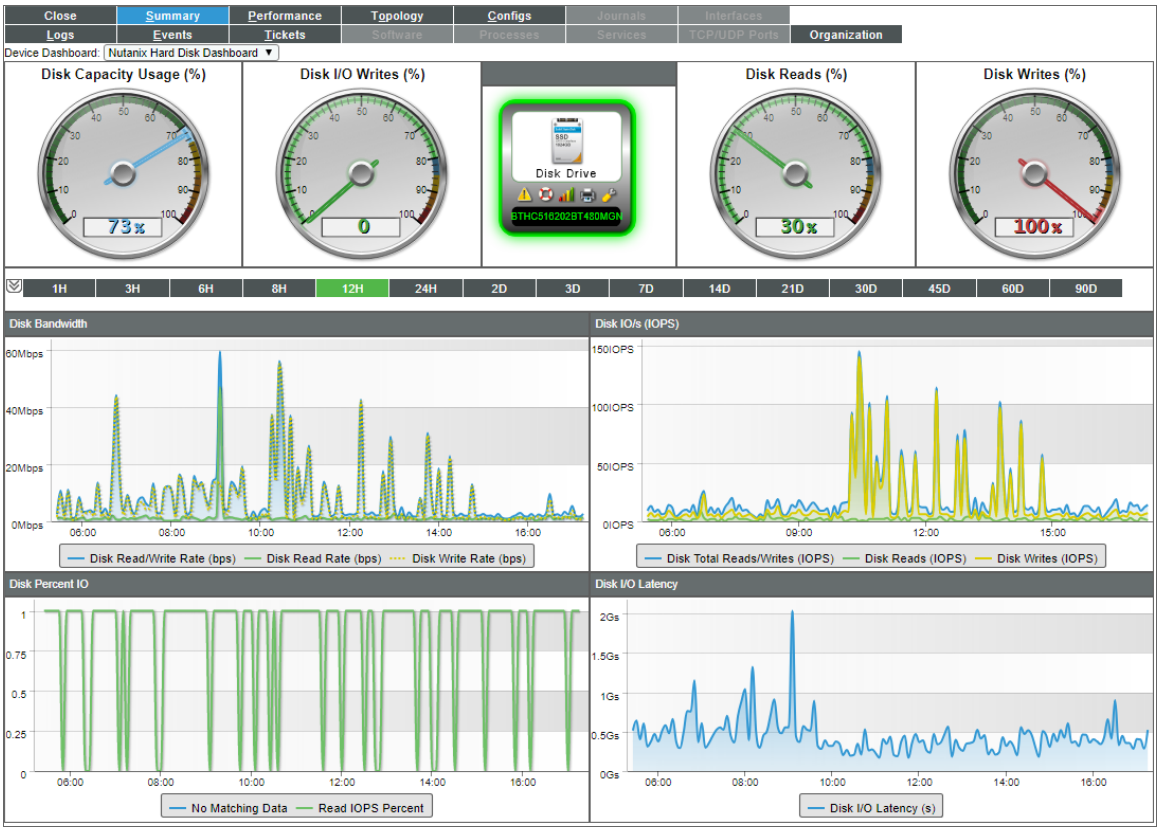
The "Nutanix CVM" device dashboard displays the following information:



- 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

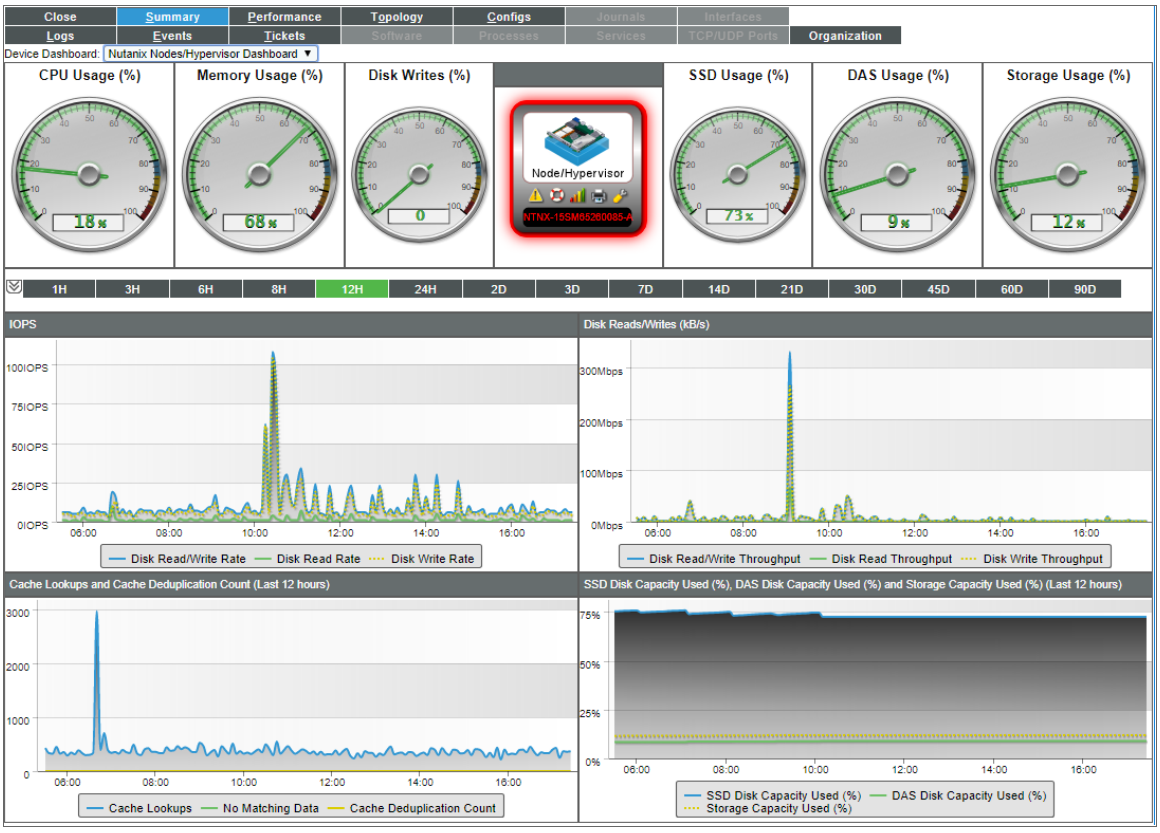
The "Nutanix Hard Disk" device dashboard displays the following information:



- 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

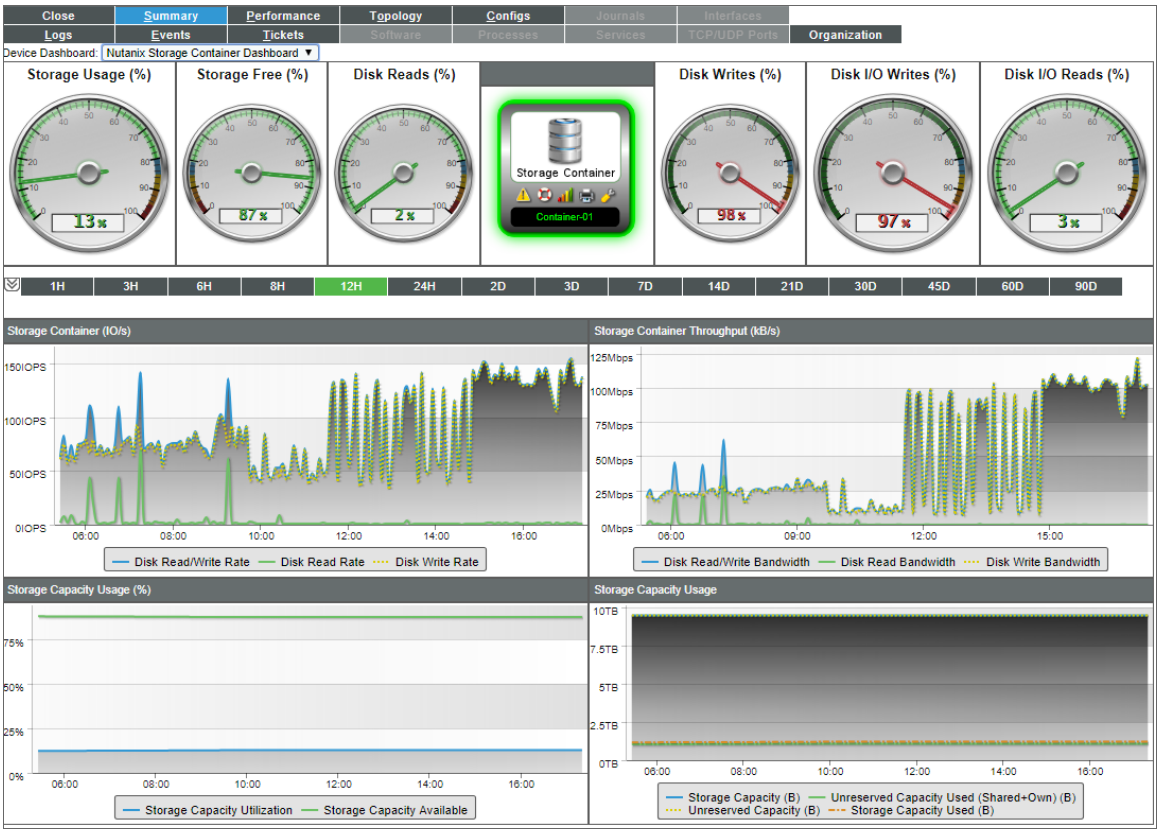
The "Nutanix Nodes/Hypervisor" device dashboard displays the following information:



- 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

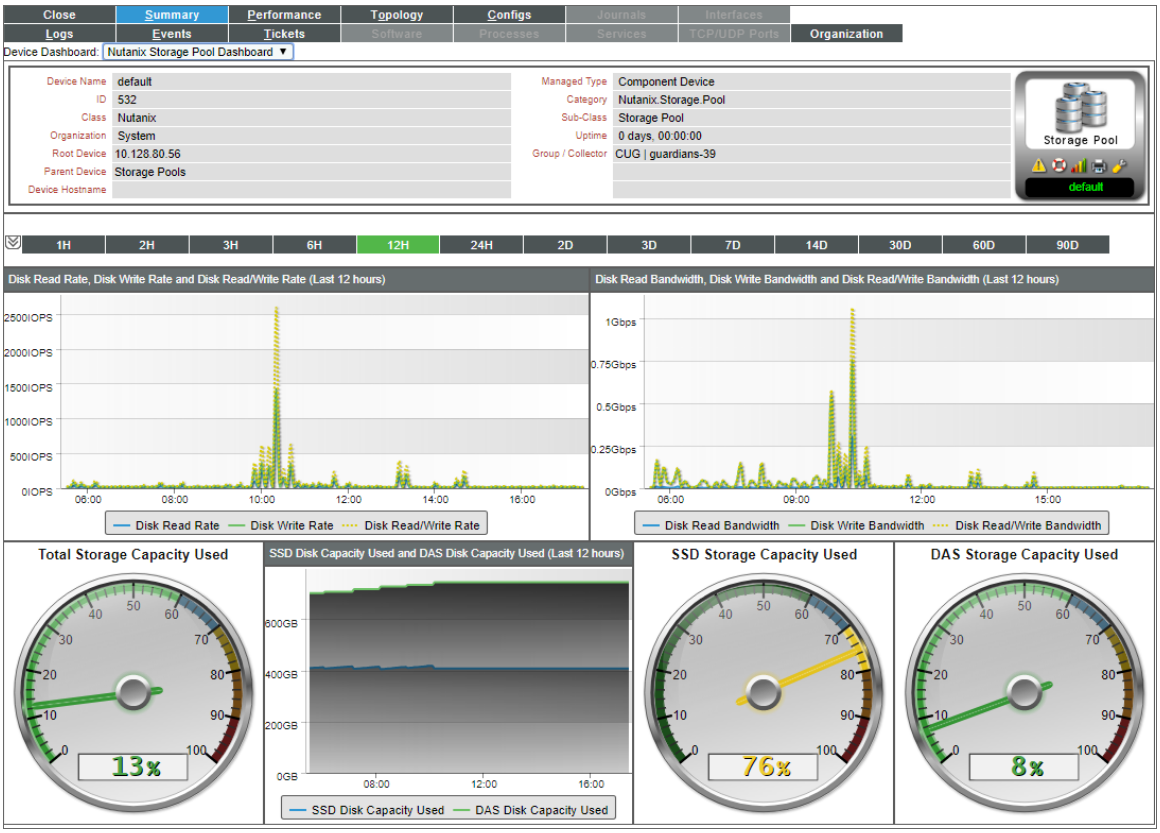
The "Nutanix Storage Container" device dashboard displays the following information:



- 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

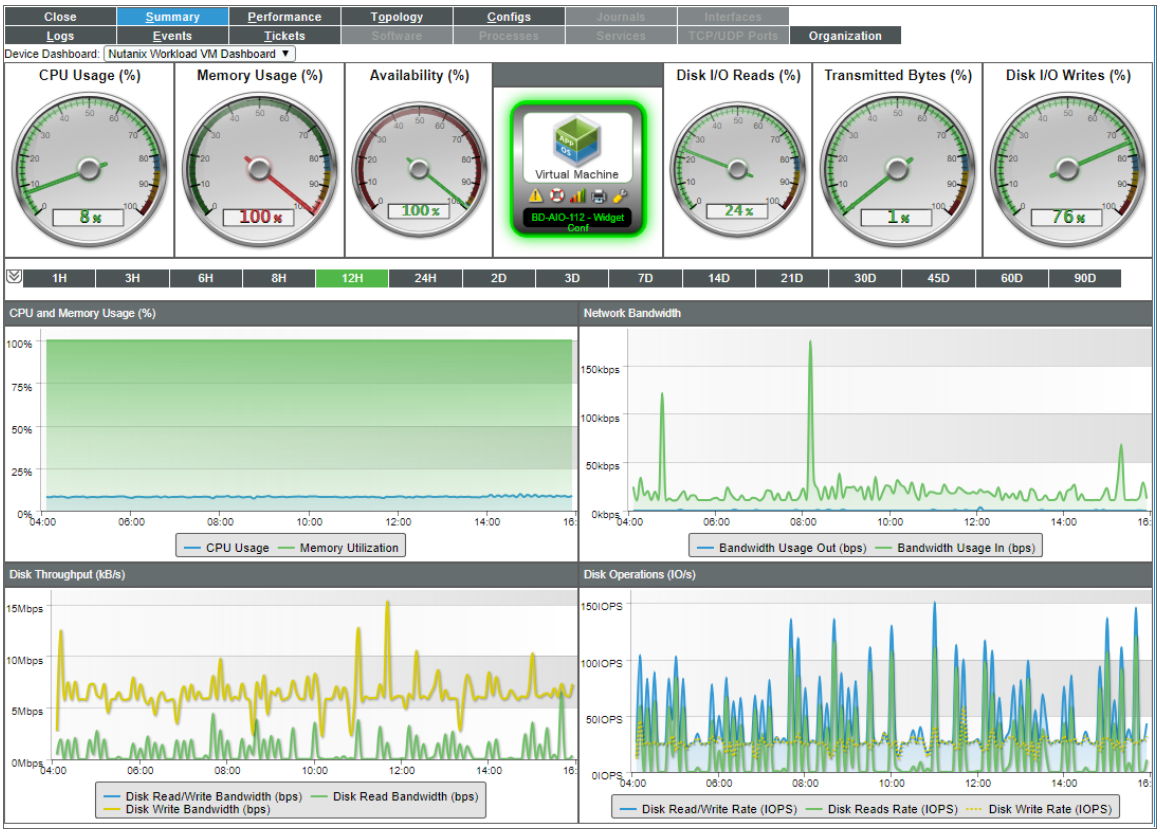
The "Nutanix Storage Pool" device dashboard displays the following information:



- 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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