Monitoring Nutanix

Nutanix: Base Pack PowerPack version 107

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Chapter 1

Introduction

Overview

This manual describes how to monitor Nutanix systems and their components in Skylar One using the "Nutanix: Base Pack" PowerPack.

This chapter covers the following topics:

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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
- Run Book Actions and Automation policies 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 section on *Global Settings*.

NOTE: For details on upgrading Skylar One, see the relevant *Skylar One Platform Release Notes*.

To download and install the PowerPack:

1. Search for and download the PowerPack from the **PowerPacks** page at the ScienceLogic Support Center (Skylar One > PowerPacks, login required).
2. In Skylar One, 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 your Nutanix system for monitoring by Skylar One using the "Nutanix: Base Pack" PowerPack in Skylar One:

This chapter covers the following topics:

Prerequisites for Monitoring Nutanix

Before discovering your Nutanix system in Skylar One, consider the configuration of the Nutanix system you want to discover.

The PowerPack utilizes both the Prism Central (PC) and the Prism Element (PE) APIs for data collection, so it's essential that user credentials match across both systems. To use Discovery and Collection as a Nutanix user, the permissions for that user must have identical credentials created in both the PE and PC systems.

- 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.

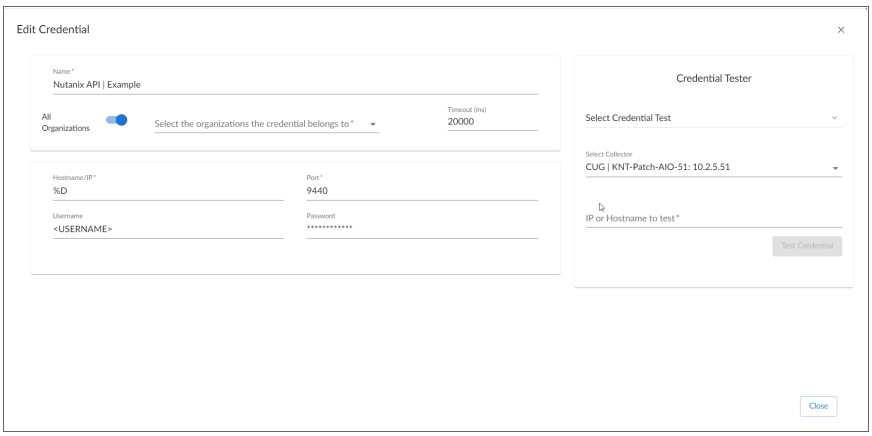
WARNING: You can monitor Prism Elements **or** Prism Central. You must choose between monitoring Prism Elements or Prism Central as the root device, and then run discovery accordingly. It is recommended that you monitor Prism Central in all cases, unless you have only Prism Elements instances with **no**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

Configuring a Basic/Snippet Credential for Nutanix

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

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.



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.
    - ***Timeout***. Keep the default.
    - ***Hostname/IP***. Type "%D".
    - ***Port***. Keep the default.
    - ***Username***. Type the username that Skylar One will use to connect to the Nutanix system.
    - ***Password***. Type the password for the username you entered.
5. Click **[Save & Close]**.

Configuring a Basic/Snippet Credential for Nutanix in the Skylar One Classic Interface

To use the Dynamic Applications in the "Nutanix: Base Pack" PowerPack, you must first configure the credential in Skylar One. This credential allows Skylar One 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 Skylar One 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]**.

Configuring a SOAP/XML Credential for Nutanix Enterprise AI

To use the Nutanix Enterprise AI Dynamic Applications in the "Nutanix: Base Pack" PowerPack, you must first define a SOAP/XML credential in Skylar One. This credential allows Skylar One to collect data from your Nutanix system.

To configure a SOAP/XML credential for Nutanix: Base Pack, perform the following steps:

1. Go to the **Credentials** page (Manage > Credentials).
2. Locate the "Nutanix Enterprise AI | Example" sample credential, click its **[Actions]** icon (⋮) and select ***Duplicate***. A copy of the credential appears.
3. Click the **[Actions]** icon (⋮) for the "Nutanix Enterprise AI | Example copy" credential copy and select ***Edit***. The **Edit Credential** modal page appears.
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.
    - ***Timeout***. Keep the default.
    - ***Hostname/IP***. Keep the default.
    - ***HTTP Auth User***. Type the username that Skylar One will use to connect to the Nutanix system.
    - ***HTTP Auth Password***. Type the password for the username you entered.
5. Click **[Save & Close]**.

Configuring a SOAP/XML Credential for Nutanix Enterprise AI in the Skylar One Classic Interface

To use the Nutanix Enterprise AI Dynamic Applications in the "Nutanix: Base Pack" PowerPack, you must first define a SOAP/XML credential in Skylar One. This credential allows Skylar One to collect data from your Nutanix system.

To configure the Nutanix credential:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the "Nutanix Enterprise AI | Example" credential and click its wrench icon (🔧). The **Credential Editor** modal page appears:
3. Enter values in the following fields:
    - ***Profile Name***. Type a new name for your Nutanix credential.
    - ***URL***. Keep the default.

- ***HTTP Auth User***. Type the username that Skylar One will use to connect to the Nutanix system.
- ***HTTP Auth Password***. Type the password for the username you entered.

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

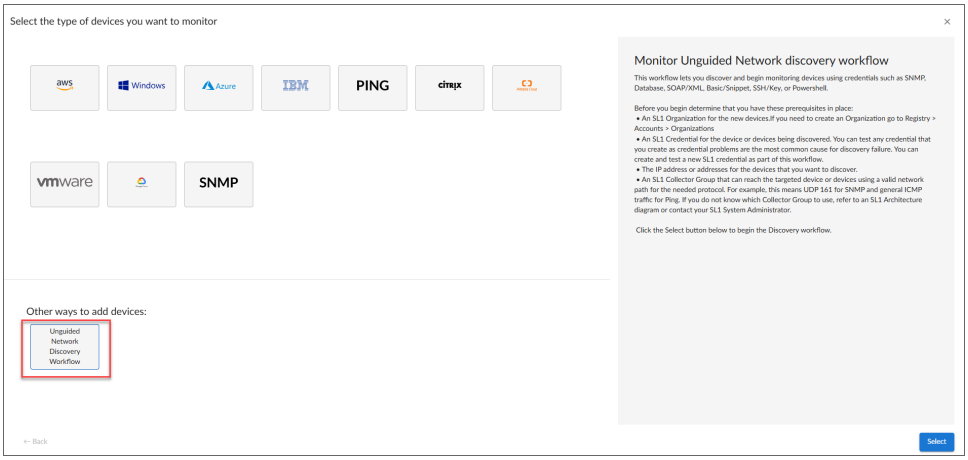
4. Click the **[Save As]** button, and then click **[OK]**.

Discovering Nutanix Systems

To monitor your Nutanix system, you must run a discovery session to discover the server on which Nutanix is installed.

To create and run a discovery session that will discover a Nutanix appliance:

1. Go to the **Devices** page ( ) or the **Discovery Sessions** page (Devices > Discovery Sessions) and click the **[Add Devices]** button.
2. Click the **[Unguided Network Discovery Workflow]** button. Additional information about that requirements for discovery appears in the **General Information** pane to the right.



3. Click **[Select]**. The three-step wizard appears starting with the **[Step 1 Basic Information]** tab.
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 Sessions]** tab.
    - ***Description***.Optional. 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 Sessions]** tab.
    - ***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 **[Step 2 Credential Selection]** tab of the wizard appears.
6. On the **[Credential Selection]** tab, locate and select the Basic/Snippet credential you created for Nutanix appliances.
7. Click **[Next]**. The **[Step 3 Discovery Session Details]** tab of the wizard appears.
8. Complete the following fields:
    - ***List of IP/Hostnames***. Type the IP address for the Nutanix appliance.
    - ***Which collector will discover these devices?***. Required. Select an existing collector to monitor the discovered devices.
    - ***Run after save***. Toggle on (blue) to run this discovery session as soon as you save the session.
    - ***Advanced options***. Click the down arrow (⌄) to complete the following fields:
        - ***Discover Non-SNMP***. Toggle on (blue) to enable this setting.
        - ***Model Devices***. Toggle on (blue) to enable this setting.
        - ***Select Device Template***. If you configured a Nutanix device template, select it here. Otherwise, leave the default selection.
9. If you enabled the ***Run after save*** option, click the**[Save and Run]** button. The discovery session will run and the **Discovery Logs** page will display any relevant log messages. If the discovery session locates and adds any devices, the **Discovery Logs** page will include a link to the **Device Investigator** page for the discovered device.
10. If you did not enable the ***Run after save*** option, click the **[Save and Close]** button. The **Discovery Sessions** page (Devices > Discovery Sessions) will display the new discovery session.

Discovering Nutanix Systems in the Skylar One Classic User Interface

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

1. Go to the **Discovery Control Panel** page (System > Manage > Classic Discovery or System > Manage > Discovery in the classic user interface).
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.

Discovering Nutanix Enterprise AI Systems

To monitor your Nutanix Enterprise AI system, you must run a discovery session to discover the server on which Nutanix is installed.

To create and run a discovery session that will discover a Nutanix appliance:

1. Go to the **Devices** page ( ) or the **Discovery Sessions** page (Devices > Discovery Sessions) and click the **[Add Devices]** button.
2. Click the **[Unguided Network Discovery Workflow]** button. Additional information about that requirements for discovery appears in the **General Information** pane to the right.
3. Click **[Select]**. The three-step wizard appears starting with the **[Step 1 Basic Information]** tab.
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 Sessions]** tab.
    - ***Description***.Optional. 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 Sessions]** tab.
    - ***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 **[Step 2 Credential Selection]** tab of the wizard appears.
6. On the **[Credential Selection]** tab, locate and select the SOAP/XML credential you created for Nutanix Enterprise AI appliances.
7. Click **[Next]**. The **[Step 3 Discovery Session Details]** tab of the wizard appears.
8. Complete the following fields:

- ***List of IP/Hostnames***. Type the IP address for the Nutanix Enterprise AI appliance.
- ***Which collector will discover these devices?***. Required. Select an existing collector to monitor the discovered devices.
- ***Run after save***. Toggle on (blue) to run this discovery session as soon as you save the session.
- ***Advanced options***. Click the down arrow (⌄) to complete the following fields:
    - ***Discover Non-SNMP***. Toggle on (blue) to enable this setting.
    - ***Model Devices***. Toggle on (blue) to enable this setting.
    - ***Select Device Template***. Required. Select *Nutanix: Enterprise AI Dynamic Application Template*. This will automatically align the Nutanix Enterprise AI Dynamic Applications to the root Nutanix Enterprise AI device.

9. If you enabled the ***Run after save*** option, click the**[Save and Run]** button. The discovery session will run and the **Discovery Logs** page will display any relevant log messages. If the discovery session locates and adds any devices, the **Discovery Logs** page will include a link to the **Device Investigator** page for the discovered device.
10. If you did not enable the ***Run after save*** option, click the **[Save and Close]** button. The **Discovery Sessions** page (Devices > Discovery Sessions) will display the new discovery session.

Monitoring Nutanix Kubernetes Platform

If you want to monitor the Nutanix Kubernetes Platform feature of Nutanix, you can use the "Kubernetes" PowerPack to discover nodes and collect metrics. Be advised, metrics specific to the Nutanix Kubernetes Platform/ Nutanix Enterprise AI cluster are not currently collected by the "Kubernetes" PowerPack.

The following Dynamic Applications are disabled by default. If required, you must manually enable and align the Dynamic Applications to the "Kubernetes | Cluster" and "Kubernetes | Node" device components respectively to begin metric collection. Both Dynamic Applications will use the same SOAP/XML credentials you created for the Nutanix Enterprise AI Dynamic Applications.

- Nutanix: Enterprise AI Kubernetes Cluster Configuration
- Nutanix: Enterprise AI Kubernetes Node Configuration

For more information about monitoring Kubernetes systems, see the *Monitoring Kubernetes manual*.

Discovering Nutanix Enterprise AI Systems in the Skylar One Classic User Interface

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

1. Go to the **Discovery Control Panel** page (System > Manage > Classic Discovery or System > Manage > Discovery in the classic user interface).
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 Enterprise AI systems you want to discover.
- ***SNMP Credentials***. Select *SNMP Public V2* if applicable.
- ***Other Credentials***. Select the SOAP/XML credential that you configured previously for Nutanix Enterprise AI systems.
- ***Discover Non-SNMP***. If you are not using an SNMP credential, ensure that this checkbox is selected.
- ***Organization***. Select your organization.
- ***Apply Device Template***. Required. Select *Nutanix: Enterprise AI Dynamic Application Template*. This will automatically align the Nutanix Enterprise AI Dynamic Applications to the root Nutanix Enterprise AI device.

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 Enterprise AI system is discovered, click its device icon ( ) to view the **Device Properties** page for the Nutanix Enterprise AI system.
9. After the Nutanix Enterprise AI system is discovered, the child components and devices associated with that system will also appear in the **Device Manager** page.

Verifying Discovery and Dynamic Application Alignment

Verifying Prism Elements Discovery and Dynamic Application Alignment

To verify that Skylar One 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 Skylar One 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 LCM 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.

Switching from Monitoring Prism Elements to Monitoring Prism Central

If you are monitoring Prism Elements (PE) and want to monitor Prism Central (PC), follow the instructions below, depending on whether you need to keep historical data.

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.

Preserve Historical Data

If you need to preserve historical data, follow the steps below:

1. Go to the **Device Components** page (Devices > Device Components) and select the ***Prism Element Component*** checkbox.
2. In the ***Select Action*** drop-down field, under **Change Collection State**, select *Disabled (recursive)*.
3. Discover your Prism Central device. Once discovered, all Prism Element devices that are part of Prism Central will be listed as component devices under the root device.
4. If you discover a Prism Central containing Prism Element devices that have been previously discovered and disabled, the Prism Element devices will need to be enabled so that standard Dynamic Application alignment and data collection can proceed.
5. Go to the **Device Components** page (Devices > Device Components) and select the checkbox fields for the Prism Element devices that have been disabled in that tree.
6. In the ***Select Action*** drop-down field, under **Change Collection State**, select *Active (recursive)*.

Do Not Preserve Historical Data

If you do not need to preserve historical data, follow the steps below:

1. Go to the **Device Components** page (Devices > Device Components) and select the ***Prism Element Component*** checkbox.
2. In the ***Select Action*** drop-down field, under **Change Collection State**, select *Disabled (recursive)*.
3. After disabling the components, in the ***Select Action*** drop-down field, select *DELETE Select Devices (recursive)*.
4. After deleting the Prism Element components, discover your Prism Central 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 (Devices > Classic Devices, or Registry > Devices > Device Manager in the classic user interface), 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 (Devices > Device Components) displays a list of all root devices and component devices discovered by Skylar One 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 (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. Skylar One 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:

This chapter covers the following topics:

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

Appendix

4

Nutanix Collection Objects Missing in API v4

Overview

This appendix describes the list of Nutanix API v1, v2, and v3 collection objects that do not have a Nutanix API v4 equivalent.

Nutanix Collection Objects Missing in API v4

The following table lists each collection object missing in Nutanix API v4, along with their corresponding Dynamic Application and legacy v3 Uniform Resource Identifier (URI).

Collection Object	Dynamic Application	Legacy v3 URI
Internal ID	Nutanix Block Config Host Discovery	/PrismGateway/services/rest/v1/clusters
Location	Nutanix Block Config Host Discovery	/PrismGateway/services/rest/v1/clusters
Cache Deduplication Count	Nutanix Cache Usage Stats	/PrismGateway/services/rest/v1/clusters
Cache Hits	Nutanix Cache Usage Stats	/PrismGateway/services/rest/v1/clusters
Cache Logical Memory Usage	Nutanix Cache Usage Stats	/PrismGateway/services/rest/v1/clusters
Cache Logical SSD Usage	Nutanix Cache Usage Stats	/PrismGateway/services/rest/v1/clusters
Cache Lookups	Nutanix Cache Usage Stats	/PrismGateway/services/rest/v1/clusters
Cache Physical Memory	Nutanix Cache Usage Stats	/PrismGateway/services/rest/v1/clusters

Collection Object	Dynamic Application	Legacy v3 URI
Usage		
Cache Physical SSD Usage	Nutanix Cache Usage Stats	/PrismGateway/services/rest/v1/clusters
Cache Saved Memory Usage	Nutanix Cache Usage Stats	/PrismGateway/services/rest/v1/clusters
Cache Saved SSD Usage	Nutanix Cache Usage Stats	/PrismGateway/services/rest/v1/clusters
Cluster UUID For Block Appliances	Nutanix Cluster Config Block Discovery	/PrismGateway/services/rest/v1/clusters
Enable Lock Down	Nutanix Cluster Config Block Discovery	/PrismGateway/services/rest/v1/clusters
Enable Shadow Clones	Nutanix Cluster Config Block Discovery	/PrismGateway/services/rest/v1/clusters
Fingerprint Content Cache Percentage	Nutanix Cluster Config Block Discovery	/PrismGateway/services/rest/v1/clusters
Internal ID	Nutanix Cluster Config Block Discovery	/PrismGateway/services/rest/v1/clusters
Is Multicluster	Nutanix Cluster Config Block Discovery	/PrismGateway/services/rest/v1/clusters
Location	Nutanix Cluster Config Block Discovery	/PrismGateway/services/rest/v1/clusters
Support Verbosity	Nutanix Cluster Config Block Discovery	/PrismGateway/services/rest/v1/clusters
Disk Health Summary	Nutanix Cluster Health Summary Stats	/PrismGateway/services/rest/v1/clusters
Disk Percent Healthy	Nutanix Cluster Health Summary Stats	/PrismGateway/services/rest/v1/clusters
Node Health Summary	Nutanix Cluster Health Summary Stats	/PrismGateway/services/rest/v1/clusters
Node Percent Healthy	Nutanix Cluster Health Summary Stats	/PrismGateway/services/rest/v1/clusters
CVM Health Summary	Nutanix Cluster Health Summary Stats	/PrismGateway/services/rest/v1/vms
CVM Percent Healthy	Nutanix Cluster Health Summary Stats	/PrismGateway/services/rest/v1/vms
Nutanix Storage Container to Workload VM	Nutanix Container Workload VMs Config	/PrismGateway/services/rest/v1/vms
Availability	Nutanix Controller VM Discovery	/PrismGateway/services/rest/v1/vms
Guest Operating System	Nutanix Controller VM Discovery	/PrismGateway/services/rest/v1/vms

Collection Object	Dynamic Application	Legacy v3 URI
Memory Reserved	Nutanix CVM Config	/PrismGateway/services/rest/v1/vms
Protection Domain Name	Nutanix CVM Config	/PrismGateway/services/rest/v1/vms
Nutanix CVM to Disk Drives	Nutanix CVM Disks Config	/PrismGateway/services/rest/v1/disks
Availability	Nutanix CVM I O Stats	/PrismGateway/services/rest/v1/vms
Alert ID	Nutanix Health Check Run Config	/PrismGateway/services/rest/v2.0/health_checks
Check ID	Nutanix Health Check Run Config	/PrismGateway/services/rest/v2.0/health_checks
Description	Nutanix Health Check Run Config	/PrismGateway/services/rest/v2.0/health_checks
Severity	Nutanix Health Check Run Config	/PrismGateway/services/rest/v2.0/health_checks
Type	Nutanix Health Check Run Config	/PrismGateway/services/rest/v2.0/health_checks
Name	Nutanix Health Check Run Config	/PrismGateway/services/rest/v2.0/health_checks
Cache Deduplication Count	Nutanix Host Cache Stats	/PrismGateway/services/rest/v1/hosts
Cache Logical Memory Usage	Nutanix Host Cache Stats	/PrismGateway/services/rest/v1/hosts
Cache Logical SSD Usage	Nutanix Host Cache Stats	/PrismGateway/services/rest/v1/hosts
Cache Lookups	Nutanix Host Cache Stats	/PrismGateway/services/rest/v1/hosts
Cache Physical Memory Usage	Nutanix Host Cache Stats	/PrismGateway/services/rest/v1/hosts
Cache Physical SSD Usage	Nutanix Host Cache Stats	/PrismGateway/services/rest/v1/hosts
Cache Saved Memory Usage	Nutanix Host Cache Stats	/PrismGateway/services/rest/v1/hosts
Cache Saved SSD Usage	Nutanix Host Cache Stats	/PrismGateway/services/rest/v1/hosts
DCM Device Name	Nutanix Host Config Disk Discovery	/PrismGateway/services/rest/v1/hosts
Metadata Store Status	Nutanix Host Config Disk Discovery	/PrismGateway/services/rest/v1/hosts
Hardware Vendor	Nutanix Host Config Disk Discovery	/PrismGateway/services/rest/v1/hosts
DAS Disk Capacity Free	Nutanix Host Storage Stats	/PrismGateway/services/rest/v1/hosts
DAS Disk Capacity Total	Nutanix Host Storage Stats	/PrismGateway/services/rest/v1/hosts
DAS Disk Capacity Used	Nutanix Host Storage Stats	/PrismGateway/services/rest/v1/hosts

Collection Object	Dynamic Application	Legacy v3 URI
SSD Disk Capacity Free	Nutanix Host Storage Stats	/PrismGateway/services/rest/v1/hosts
SSD Disk Capacity Total	Nutanix Host Storage Stats	/PrismGateway/services/rest/v1/hosts
SSD Disk Capacity Used	Nutanix Host Storage Stats	/PrismGateway/services/rest/v1/hosts
Untransformed Usage	Nutanix Host Storage Stats	/PrismGateway/services/rest/v1/hosts
Recieved Bytes	Nutanix Host Storage Stats	/PrismGateway/services/rest/v1/hosts
Transmitted Bytes	Nutanix Host Storage Stats	/PrismGateway/services/rest/v1/hosts
Nutanix Hypervisor to Workload VM	Nutanix Host Workload VMs Config	/PrismGateway/services/rest/v1/vms
Hypervisor Average Latency	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Hypervisor Average Read I O Latency	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Hypervisor Average Write I O Latency	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Hypervisor IOPS Reads	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Hypervisor IOPS Total	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Hypervisor IOPS Writes	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Hypervisor I O Bandwidth	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Hypervisor I O Read Bandwidth	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Hypervisor I O Reads	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Hypervisor I O Write Bandwidth	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Hypervisor I O Writes	Nutanix Hypervisor I O Stats	/PrismGateway/services/rest/v1/clusters
Prism Central Name	Nutanix Prism Central Config	/api/nutanix/v3/clusters/list
Cluster Check Count	Nutanix Prism Element Config Discovery	/PrismGateway/services/rest/v1/clusters/
Replication Received Bandwidth	Nutanix Replication Stats	/PrismGateway/services/rest/v1/clusters/
Replication Received	Nutanix Replication Stats	/PrismGateway/services/rest/v1/clusters/
Replication Transmitted	Nutanix Replication Stats	/PrismGateway/services/rest/v1/clusters/
Replication Transmitted Bandwidth	Nutanix Replication Stats	/PrismGateway/services/rest/v1/clusters/

Collection Object	Dynamic Application	Legacy v3 URI
DAS Disk Capacity Free	Nutanix Storage Capacity and Usage Stats	/PrismGateway/services/rest/v1/clusters/
DAS Disk Capacity Total	Nutanix Storage Capacity and Usage Stats	/PrismGateway/services/rest/v1/clusters/
DAS Disk Capacity Used	Nutanix Storage Capacity and Usage Stats	/PrismGateway/services/rest/v1/clusters/
SSD Disk Capacity Free	Nutanix Storage Capacity and Usage Stats	/PrismGateway/services/rest/v1/clusters/
SSD Disk Capacity Total	Nutanix Storage Capacity and Usage Stats	/PrismGateway/services/rest/v1/clusters/
SSD Disk Capacity Used	Nutanix Storage Capacity and Usage Stats	/PrismGateway/services/rest/v1/clusters/
Untransformed Usage	Nutanix Storage Capacity and Usage Stats	/PrismGateway/services/rest/v1/clusters/
Datastore Type	Nutanix Storage Container Config	/PrismGateway/services/rest/v1/containers
Fingerprint On Write	Nutanix Storage Container Config	/PrismGateway/services/rest/v1/containers
Internal ID	Nutanix Storage Container Config	/PrismGateway/services/rest/v1/containers
URL	Nutanix Storage Container Config	/PrismGateway/services/rest/v1/containers
Virtual Datastore Name	Nutanix Storage Container Config	/PrismGateway/services/rest/v1/containers
Nutanix CVM to Storage Containers	Nutanix Storage Container Config	/PrismGateway/services/rest/v1/containers
Transformed Usage	Nutanix Storage Pool Capacity and Usage Stats	/PrismGateway/services/rest/v1/storage_pools
Untransformed Usage	Nutanix Storage Pool Capacity and Usage Stats	/PrismGateway/services/rest/v1/storage_pools
Nutanix Storage Pool to Disk Drives	Nutanix Storage Pool Config	/PrismGateway/services/rest/v1/storage_pools
Down Migrate Threshold	Nutanix Storage Pool Config	/PrismGateway/services/rest/v1/storage_pools
Reserved Capacity	Nutanix Storage Pool Config	/PrismGateway/services/rest/v1/storage_pools
Storage Pool Name	Nutanix Storage Pool Config	/PrismGateway/services/rest/v1/storage_pools
Reserved Capacity	Nutanix Storage Pools Discovery	/PrismGateway/services/rest/v1/storage_pools
Unique ID	Nutanix Storage Pools	/PrismGateway/services/rest/v1/storage_pools

Collection Object	Dynamic Application	Legacy v3 URI
	Discovery	
Storage Pool Name	Nutanix Storage Pools Discovery	/PrismGateway/services/rest/v1/storage_pools
Guest Operating System	Nutanix VM Config	/PrismGateway/services/rest/v1/vms
Protection Domain	Nutanix VM Config	/PrismGateway/services/rest/v1/vms
VMware Datastore Matches	Nutanix VMware Aggregator Config	/PrismGateway/services/rest/v1/containers
VMware Host Matches	Nutanix VMware Aggregator Config	/PrismGateway/services/rest/v1/hosts
VMware Virtual Machine Matches	Nutanix VMware Aggregator Config	/PrismGateway/services/rest/v1/vms
Availability	Nutanix Workload VMs Discovery	/PrismGateway/services/rest/v1/vms
Free Capacity	Nutanix Storage Container Discovery	/PrismGateway/services/rest/v1/containers
Used Capacity	Nutanix Storage Container Discovery	/PrismGateway/services/rest/v1/containers
Provisioned Capacity	Nutanix Storage Container Discovery	/PrismGateway/services/rest/v1/containers
Reserved Capacity	Nutanix Storage Container Discovery	/PrismGateway/services/rest/v1/containers
Reserved Capacity Free	Nutanix Storage Container Discovery	/PrismGateway/services/rest/v1/containers
Reserved Capacity Used	Nutanix Storage Container Discovery	/PrismGateway/services/rest/v1/containers

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