Monitoring NetApp ONTAP REST

NetApp: ONTAP REST PowerPack version 101

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Chapter 1

Introduction

Overview

This manual describes how to monitor NetApp devices in SL1 using the "NetApp: ONTAP REST" PowerPack.

This chapter covers the following topics:

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What is NetApp ONTAP?

ONTAP data management software offers unified storage for applications that read and write block or file data. Options in storage configurations range from high-speed flash to lower-priced spinning media to cloud-based object storage.

What Does the NetApp: ONTAP REST PowerPack Monitor?

The "NetApp: ONTAP REST" PowerPack uses REST API to monitor NetApp ONTAP devices on version 9.14.1 and later and includes the following features:

- Dynamic Applications that discover, model, and collect data from NetApp ONTAP devices using REST API.
- Device classes for each of the NetApp component devices monitored.
- An event policy and a corresponding alert that trigger when NetApp component devices meet certain status criteria.
- A run book action policy and a run book automation policy for aligning a Dynamic Application.
- Sample credentials and guided discovery for discovering NetApp component devices.
- Alerts that trigger when NetApp metrics are above defined thresholds for Aggregates and Volumes.

Installing the NetApp: ONTAP REST PowerPack

Before completing the steps in this manual, you must import and install the latest version of the "NetApp: ONTAP REST" PowerPack.

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 NetApp ONTAP devices for monitoring in SL1 using the "NetApp: ONTAP REST" PowerPack.

This chapter covers the following topics:

Prerequisites for Monitoring NetApp: ONTAP REST

Before monitoring NetApp ONTAP REST devices using the "NetApp: ONTAP REST" PowerPack, you must have the following information about the ONTAP REST API:

- ONTAP version 9.14.1 or later
- Username and password for a user with read privileges for the ONTAP REST API
- IP address and port for the ONTAP REST API

Configuring NetApp: ONTAP REST Credentials

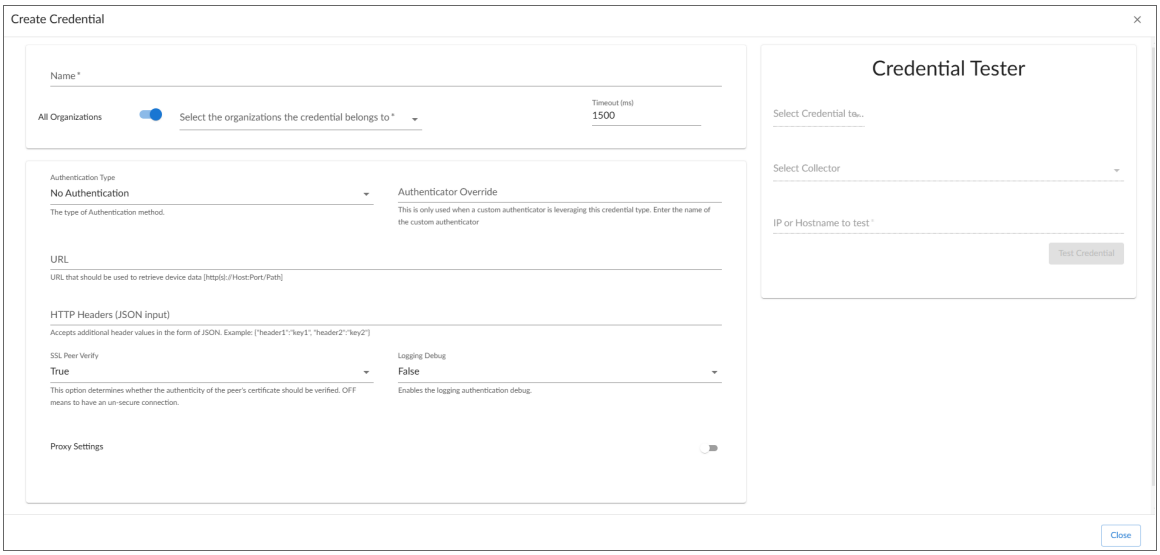
To use the Dynamic Applications in the "NetApp: ONTAP REST" PowerPack, you must first define credentials in SL1. These credentials allow SL1 to communicate with the NetApp appliances.

Creating a Credential for NetApp Guided Discovery

To allow SL1 to discover NetApp ONTAP devices with guided discovery, you must first create a NetApp REST credential. This credential allows the Dynamic Applications in the "NetApp: ONTAP REST" PowerPack to connect with the ONTAP REST API.

To configure a credential for guided discovery:

1. Go to the **Credentials** page (Manage>Credentials).
2. Click the **[Create New]** button and select ***NetApp REST V100 Credential***. The **Create Credential** modal appears.



3. 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 ***What organization manages this service?*** drop-down field to align the credential with those specific organizations. This field is required.
    - ***Authentication Type***. This field supports different authentication mechanisms, for more information see *REST Authentication*. Select **Basic Authentication** as it is the simplest form of authentication, using only a username and password and is built into the HTTP protocol.
    - ***URL***. Type the NETAPP IP Address and the port in the appropriate place in the URL provided in the sample credential.
    - ***HTTP Headers (JSON input)***. If applicable add a header value in the form of JSON. Example: `{"header1":"key1", "header2":"key2"}`
    - ***Username***. Type the username for a user with read privileges for the REST API.
    - ***Password***. Type the password for the user you specified in the Username field.

- ***SSL Peer Verify***. If your SL1 environment is configured with self-signed or self-generated certificates you should set this to Enable. Select *True* to enable, or *False* to disable.
- ***Logging Debug***. The default for "Logging Debug" is *False*. To Enable the logging authentication debug select *True*.

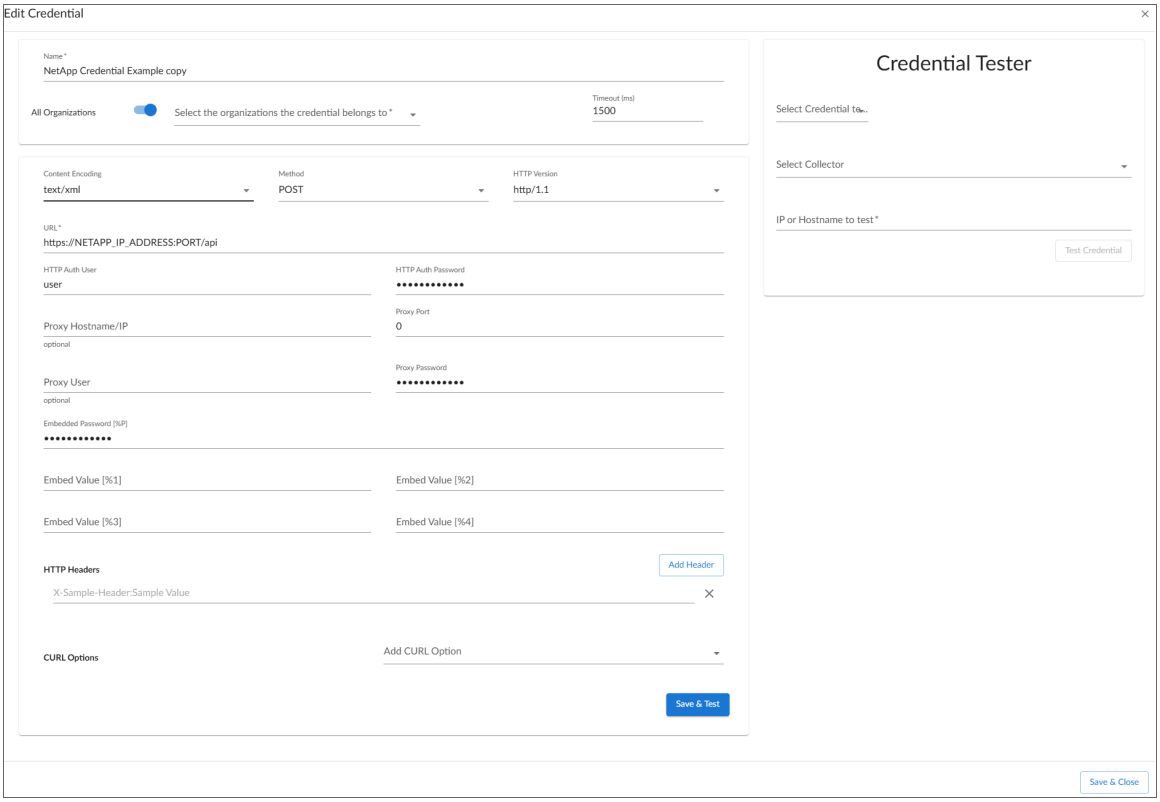
4. Click **[Save & Close]**.

Creating a SOAP/XML Credential

To allow SL1 to discover NetApp ONTAP devices with guided discovery, you can also use a SOAP/XML credential. This credential allows the Dynamic Applications in the "NetApp: ONTAP REST" PowerPack to connect with ONTAP REST API.

To create the SOAP/XML credential:

1. Go to the **Credentials** page (Manage > Credentials).
2. Locate the **NetApp Credential Example**, click its **[Actions]** icon (⋮), and select *Duplicate*. A copy of the credential, called **NetApp Credential Example copy** appears.
3. Click the **[Actions]** icon (⋮) for the **NetApp Credential Example copy** and select *Edit*. The **Edit Credential** 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 ***What organization manages this service?*** drop-down field to align the credential with those specific organizations. This field is required.
- ***Timeout***. Keep the default value.
- ***URL***. Type the NETAPP IP Address and the port in the appropriate place in the URL provided in the sample credential.
- ***HTTP Auth User***. Type the username for a user with read privileges for the REST API.
- ***HTTP Auth Password***. Type the password for the user you specified in the Username field.

5. For all remaining fields, use the default values.
6. Click **[Save & Close]**.

Creating a SOAP/XML Credential in the Classic User Interface

To allow SL1 to discover NetApp ONTAP devices with guided discovery, you can also use a SOAP/XML credential. This credential allows the Dynamic Applications in the "NetApp: ONTAP REST" PowerPack to connect with ONTAP REST API.

To create the SOAP/XML credential:

1. Go to the **Credential Management** page (System > Management > Credentials).
2. Locate the **NetApp Credential Example** credential, and click its wrench icon ( ). The **Edit SOAP/XML Credential** page appears.
3. Enter values in the following fields:
   - ***Profile Name***. Type a new name for the credential.
   - ***URL***. Type the NetApp IP Address and the port in the appropriate place in the URL provided in the sample credential.
   - ***HTTP Auth User***. Type the username for a user with read privileges for the REST API.
   - ***HTTP Auth Password***. Type the password for the user you specified in the ***HTTP Auth User*** field.
   - ***Timeout***. Keep the default value.
4. Click **[Save & Close]**.

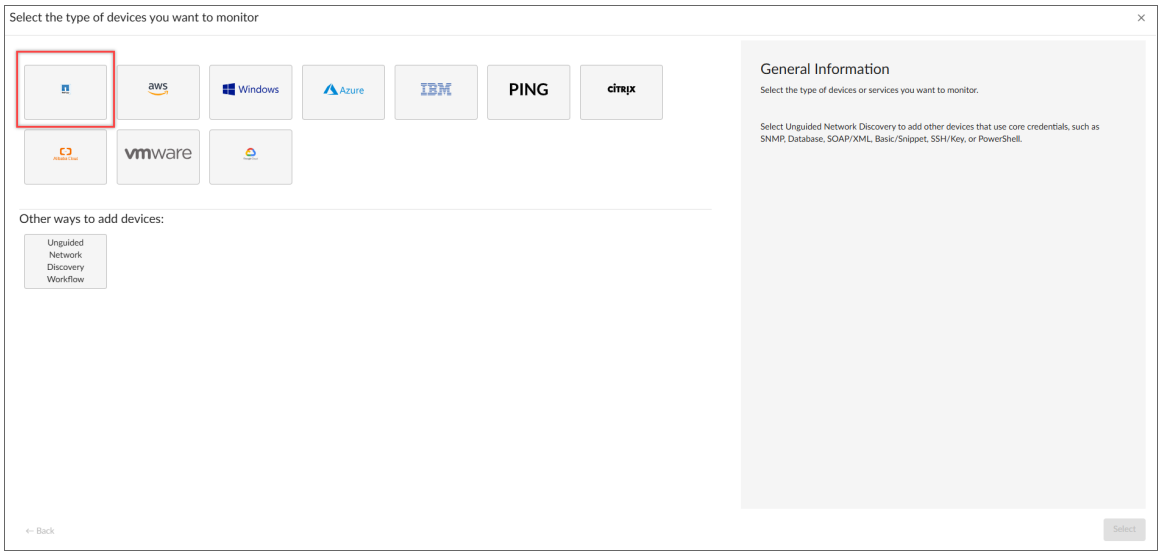
Running NetApp: ONTAP REST Guided Discovery

On the **Devices** page ( ) or the **Discovery Sessions** page (Devices > Discovery Sessions), you can add or "discover" new devices for monitoring in SL1. You add devices by creating a discovery session, which searches for devices on the network you specify.

The guided discovery process lets you select a discovery type specific to the type of devices you want to monitor. The guided discovery wizard provides a filtered list of relevant credentials, the ability to create new credentials, and a reduced set of application-specific fields to help you efficiently discover the devices you need.

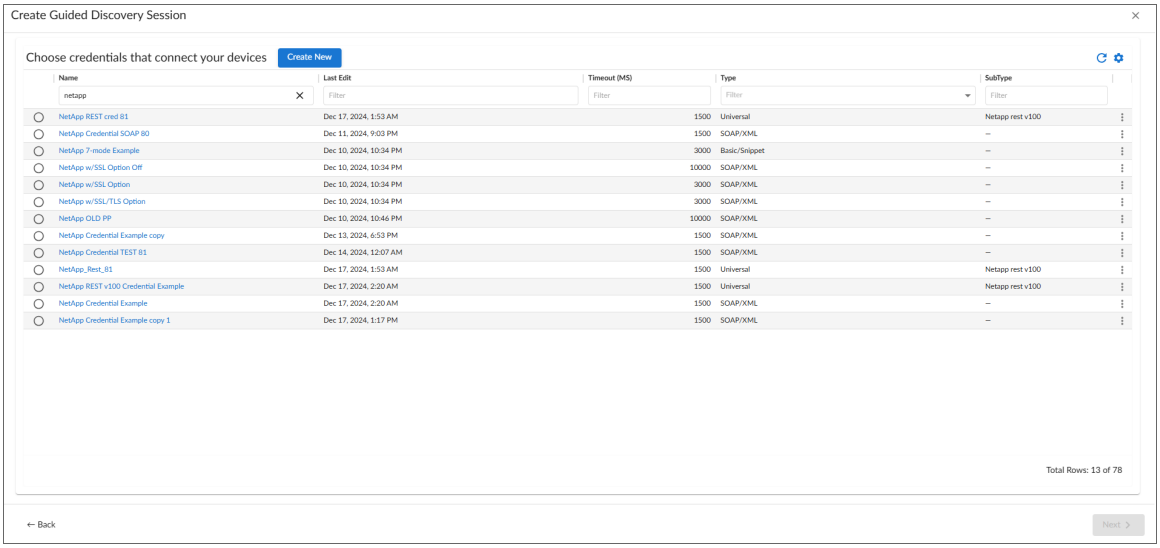
To run a guided discovery:

1. On the **Devices** page ( ) or the **Discovery Sessions** page (Devices > Discovery Sessions), click the **[Add Devices]** button. The **Select** page appears.



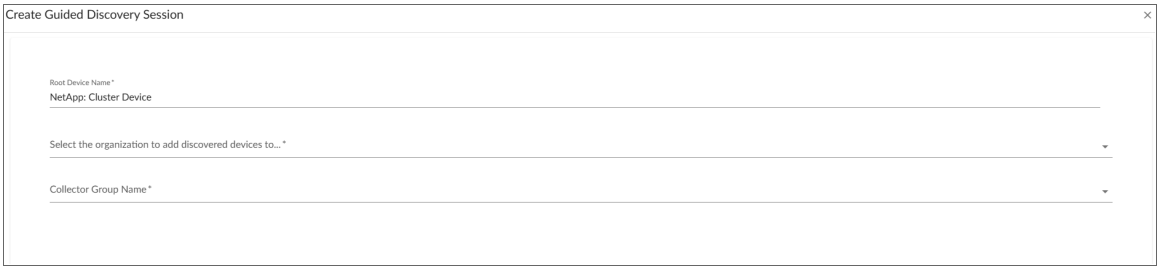
2. Select the**[NetApp]** button. Additional information regarding the requirements for device discovery appears in the General Information pane on the right.
3. Click **[Select]**. The **Credential Selection** page appears.

NOTE: You can select either a NetApp Universal credential or a SOAP/XML credential. However, only credentials created for guided discovery (Universal credentials) can be edited on the **Credential Selection** page. You can only edit SOAP/XML credentials for NetApp in Manage > Credentials or System > Manage > Credential in the classic SL1 user interface.



NOTE: During the guided discovery process, you cannot click **[Next]** until the required fields are completed on the page, nor can you skip to future steps. However, you can revisit previous steps that you have already completed.

4. On the **Credential Selection** page of the guided discovery process, select the *NetApp: ONTAP REST credential* radio button that you configured, and then click **[Next]**. The **Root Device Details** page appears.



5. Complete the following fields:
   - ***Root Device Name***.Type the name of the cluster you want to monitor. Ensure you provide a unique cluster name to help identify the specific cluster being monitored, especially if you have multiple clusters. ScienceLogic does not recommend that you use the default *'NetApp: Cluster Device'* name provided by the guided discovery.
   - ***Select the organization to add discovered devices to***. Select the name of the organization to which you want to add the discovered device.
   - ***Collector Group Name***. Collector Group Name. Select an existing collector group to communicate with the discovered device.
6. Click **[Next]**. SL1 creates the NetApp: ONTAP REST root device with the appropriate Device Class assigned to it and aligns the relevant Dynamic Applications. The Final Summary page appears.

7. Click **[Close]**.

> **NOTE:** The results of a guided discovery do not display on the **Discovery Sessions** page (Devices > Discovery Sessions).

Verifying Discovery and Dynamic Applications

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

1. After discovery has completed, do one of the following:
   - Go to the **Devices** page, find the device(s) you discovered, and click on its name. The **Device Investigator** page appears.
   - Go to the **Device Manager** page (Devices > Classic Devices, or Registry > Devices > Device Manager in the classic SL1 user interface) , find the device(s) you discovered, and click its wrench ( ) icon. The **Device Administration** panel appears.
2. Click the **[Collections]** tab.

> **NOTE:** It can take several minutes after discovery for Dynamic Applications to appear on the **Dynamic Application Collections** page. If the specified Dynamic Applications do not appear on this page, try clicking the **[Reset]** button.

3. Confirm that all applicable Dynamic Applications for the NetApp ONTAP devices were automatically aligned during discovery.

You should see the following Dynamic Applications aligned to the NetApp REST Cluster (root device):

- NetApp: Cluster Configuration
- NetApp: Cluster Performance
- NetApp: Storage Pool Performance
- NetApp: Nodes Container Discovery
- NetApp: SVM Container Discovery
- NetApp: Aggregates Container Discovery

You should see the following Dynamic Applications aligned to the NetApp Aggregates Container:

- NetApp: Aggregate Discovery

You should see the following Dynamic Applications aligned to the NetApp Aggregates:

- NetApp: Aggregate Configuration

You should see the following Dynamic Applications aligned to the NetApp Nodes Container:

- NetApp: Node Discovery

You should see the following Dynamic Applications aligned to the NetApp SVMs Container:

- NetApp: Storage Virtual Machine (SVM) Discovery

You should see the following Dynamic Applications aligned to the NetApp Nodes:

- NetApp: Node Configuration
- NetApp: Node Performance

You should see the following Dynamic Applications aligned to the NetApp SVM:

- NetApp: Storage Virtual Machine (SVM) Configuration
- NetApp: CIFS Protocol for SVM Performance
- NetApp: Volume Discovery

You should see the following Dynamic Applications aligned to the NetApp Volumes:

- NetApp: Volume Configuration

NOTE: The "NetApp: CIFS Protocol for SVM Performance" Dynamic Application will align by the run book action policy only if the Protocol CIFS is *Enabled* in the NetApp device.

NOTE: After upgrading to version 101, you must manually align the "NetApp: Aggregates Container Discovery" Dynamic Application to the Cluster root device. For more information on how to do so, see the section on "Manually Aligning a Dynamic Application to a Device" in the ***Device Management*** manual.the section on *Manually Aligning a Dynamic Application to a Device*.

NOTE: The ***Component Identifiers*** for the "Name" collection object has been updated to include an *Availability* option. For example, in the "Aggregate Name" collection object for the "NetApp: Aggregate Discovery" Dynamic Application, you will see *Availability* listed for ***Component Identifiers***. The *Availability* option is selected by default. If you experience false positives for devices showing as available, but not responsive for a busy API, deselect the *Availability* option from the ***Component Identifiers***.

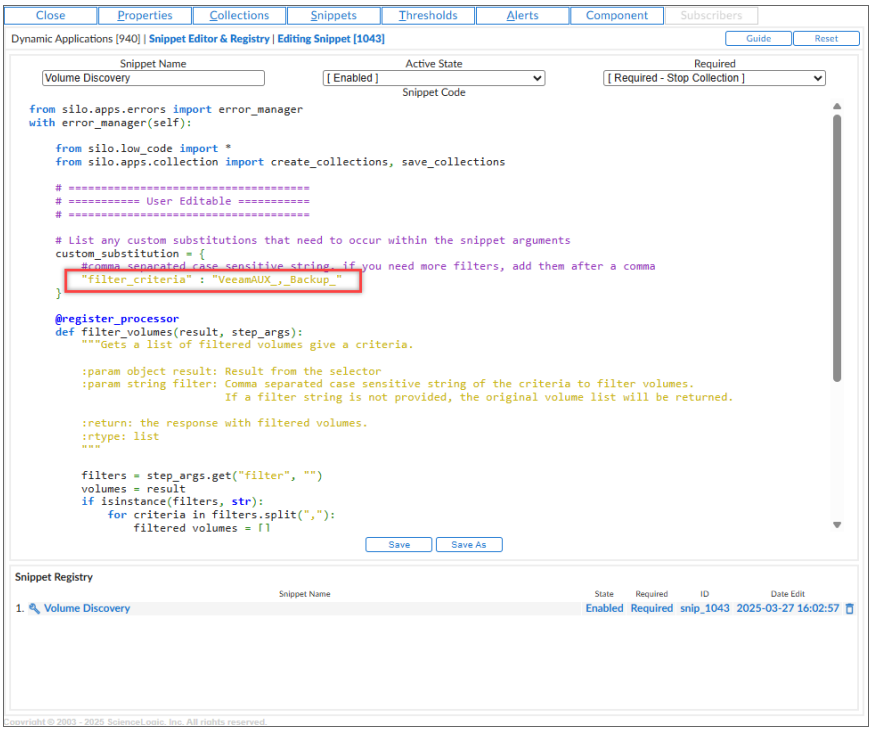
Customizing Volume Discovery

You can prevent the "NetApp: ONTAP REST" PowerPack from monitoring specific volumes by filtering them out in the "NetApp: Volumes Discovery" Dynamic Application snippet code.

To exclude unwanted volume components:

1. Go to the **Dynamic Applications Manager** page (System > Manage > Dynamic Applications).
2. Search for "NetApp: Volumes Discovery" Dynamic Application and click its wrench icon (🔧). The **Dynamic Applications Properties Editor** modal appears.
3. Click the **[Snippet]** tab and click the wrench icon (🔧) for the "Volume Discovery" Snippet.

4. In the **Snippet Editor & Registry** modal, locate the `"filter_criteria"` variable and modify the criteria. By default, this snippet is configured to filter out the Veeam Backups volumes (a mechanism that can be used in NetApp for backup volumes). You can replace or include more values in a case-sensitive list separated by commas. The code will filter out volumes that match the criteria, keeping only volumes that do not contain the specified criteria in the name.



Viewing NetApp Component Devices

In addition to the **Device Manager** page (Devices > Classic Devices, or Registry > Devices > Device Manager in the classic SL1 user interface), you can view NetApp component devices in the following places in the user interface:

- The **Device Components** page (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 NetApp cluster, find the NetApp cluster 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. 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 NetApp cluster, 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

Run Book Action and Automation Policies for NetApp ONTAP REST

Overview

The following sections describe how to use the run book action and run book automation policies that are included in the "NetApp: ONTAP REST" PowerPack:

This chapter covers the following topics:

About the NetApp ONTAP Run Book Action and Automation

The following table describes the run book automation policy and what it does:

Run Book Automation Policy Name	Result
NetApp: CIFS Performance Dynamic Application Alignment	If a component device has the CIF protocol enabled, SL1 aligns with the NetApp: CIFS Protocol for SVM Performance Dynamic Application after the event policy is triggered.

NOTE: The "NetApp: CIFS Performance Dynamic Application Alignment" run book automation policy might fail the first time it runs over a Storage Virtual Machine (SVM) component device. When this occurs, the log will indicate an unsuccessful automation execution. To ensure the automation runs successfully, wait until at least two data polls have completed.

CIFS Performance Dynamic Application Alignment

The "NetApp: CIFS Performance Dynamic Application Alignment" run book automation and run book action policies run only if the ***Protocol CIFS*** is *Enabled* in the NetApp device. The run book automation policy executes when the "NetApp: CIFS Protocol for SVM Performance Application Align" event is active on the matching devices. The run book action policy aligns the “NetApp: CIFS Protocol for SVM Performance” Dynamic Application with the “Data SVM” components. This action runs on the Database Server.

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