



VMWARE VREALIZE OPERATIONS MANAGEMENT PACK FOR
Nimble Storage

Installation & Configuration Guide

TABLE OF CONTENTS

1. Purpose	3
2. Installation and Configuration Requirements	3
3. Licensing Requirements	3
4. Installing the Management Pack	4
4.1 Uploading the Installation File	4
4.2 Adding a License Key	6
5. Configuring the Management Pack	7
5.1 Creating an Adapter Instance and Credential	7
5.2 Manually Discovering Resources	10
5.3 Validating Data Collection	12
6. Appendix I: Management Pack Folders and Files	13
7. Appendix II: Revision Notes	14

NOTE: This document supports the version of each product listed, as well as all subsequent versions, until a new edition replaces it.

You can find the most up-to-date technical documentation on the Blue Medora support site at: <http://support.bluemedora.com>.

The Blue Medora website also provides the latest product updates. If you have comments about this documentation, submit your feedback to: support@bluemedora.com.

1. Purpose

The *Blue Medora VMware vRealize Operations (vROps) Management Pack for Nimble Storage Installation and Configuration Guide* describes how to set up Blue Medora’s Management Pack for Nimble Storage to use within vRealize Operations.

2. Installation and Configuration Requirements

Before installing and configuring the Management Pack for Nimble Storage, ensure your system meets the following requirements:

Table 1: Management Pack Installation & Configuration Requirements

	VREALIZE OPERATIONS (VROPS) REQUIREMENTS	NIMBLE STORAGE REQUIREMENTS
VERSION(S)	vRealize Operations v6.x (Advanced or Enterprise editions) NOTE: For OS monitoring, vROps v6.1 is required.	Nimble Storage CS210+ Nimble OS 2.x+ Nimble API 1.3+
CREDENTIALS	N/A	Nimble User Name/Password Optional for group performance data: SNMP v2 Community String NOTE: Nimble user accounts of all access levels will work with the Management Pack.
CONNECTION	vROps hostname or IP address	Nimble Storage hostname (or IP address) The Management Pack collects data via the Group’s REST API (via port 5392) Optional for group performance data: SNMP v2 API (via port 161) NOTE: IPv4/IPv6 is supported.

3. Licensing Requirements

When purchased individually, the Management Pack for Nimble Storage is licensed **per array**.

Alternatively, customers who have purchased Blue Medora’s True Visibility Suite (Standard, Advanced, or Enterprise) can access all management packs within that suite (and the edition below it, if applicable). The Management Pack for Nimble Storage is part of Blue Medora’s Advanced True Visibility Suite (TVS), which means a TVS Advanced license or higher is required to use it. For more information, visit <http://www.bluededora.com/true-visibility-suite-for-vmware/>.

A license key will be provided by Blue Medora when the Management Pack or True Visibility Suite is purchased and must be added as a Nimble Storage Adapter License within vRealize Operations before the Management Pack can be configured and used. Refer to section “4.2 Adding a License Key”, for details.

4. Installing the Management Pack

Installing the Management Pack in vRealize Operations involves completing the following tasks:

- Uploading the Installation File
- Adding the License Key

4.1 Uploading the Installation File

The Management Pack for Nimble Storage is installed using a .pak file.

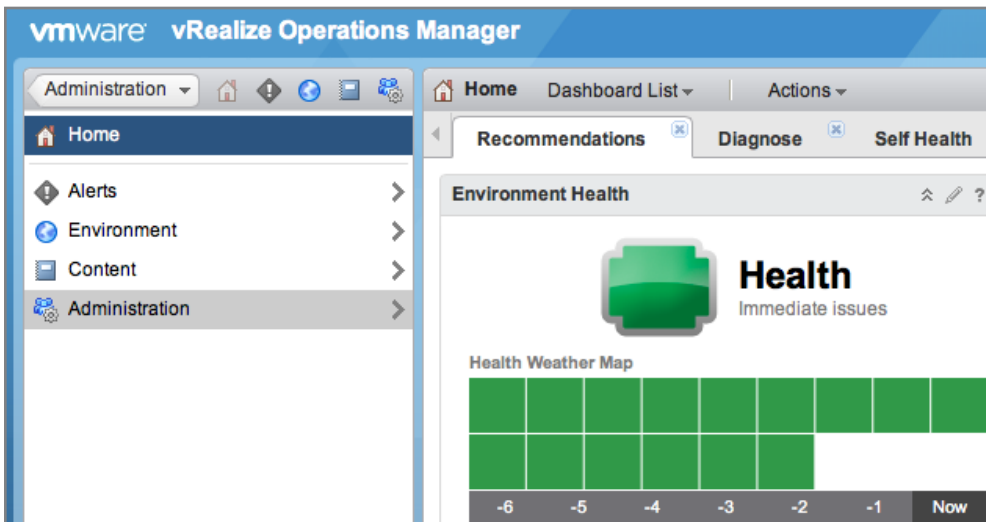
4.1.1 Prerequisites

- Obtain the Management Pack installation file from <http://www.bluemedora.com/true-visibility-suite-for-vmware/>.
- Read the release notes that are included with the .pak file.

4.1.2 Procedure

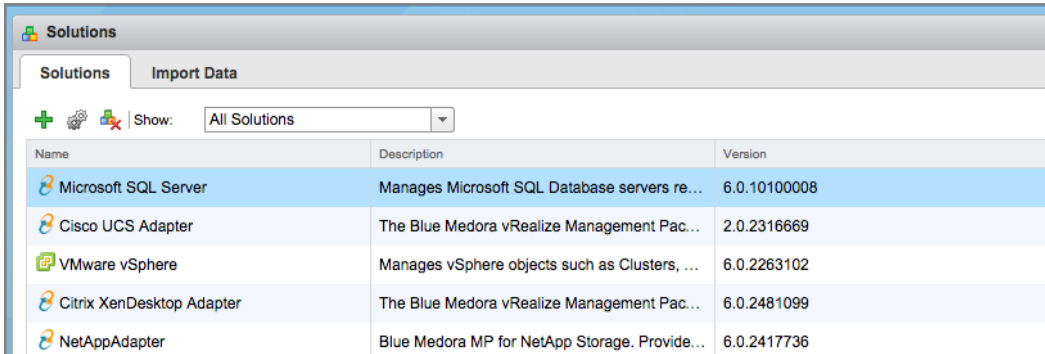
1. Save the .pak file in a temporary location.
2. Log in to vRealize Operations as an admin user.
3. Click the *Home* icon, then select the *Administration* navigation shortcut from the panel on the left.

Figure 1: Home > Administration



- In the right panel, the *Solutions* tab will be displayed.

Figure 2: Solutions Tab

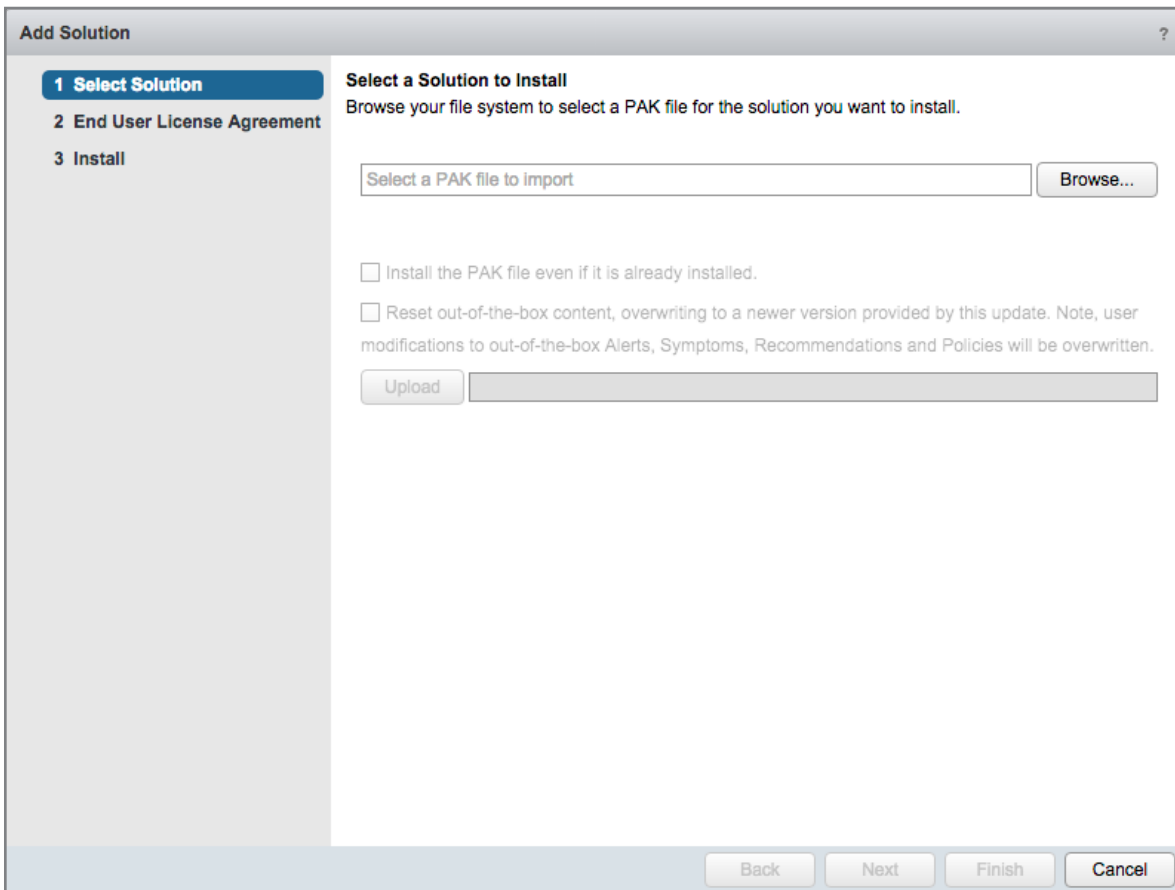


Name	Description	Version
Microsoft SQL Server	Manages Microsoft SQL Database servers re...	6.0.10100008
Cisco UCS Adapter	The Blue Medora vRealize Management Pac...	2.0.2316669
VMware vSphere	Manages vSphere objects such as Clusters, ...	6.0.2263102
Citrix XenDesktop Adapter	The Blue Medora vRealize Management Pac...	6.0.2481099
NetAppAdapter	Blue Medora MP for NetApp Storage. Provide...	6.0.2417736

- Click the *Add* icon (+) to upload the .pak file to the vRealize Operations server. In the dialog that appears, browse to the location of the saved .pak file, then click *Upload*.

NOTE: The .pak file upload may take several minutes to complete. Status information appears in the Installation Details text box throughout the installation process.

Figure 3: Select the .pak file to upload



Add Solution ?

1 Select Solution

2 End User License Agreement

3 Install

Select a Solution to Install

Browse your file system to select a PAK file for the solution you want to install.

Select a PAK file to import

Install the PAK file even if it is already installed.

Reset out-of-the-box content, overwriting to a newer version provided by this update. Note, user modifications to out-of-the-box Alerts, Symptoms, Recommendations and Policies will be overwritten.

6. Click *Next* when the upload has finished. Read the *End User License Agreement (EULA)* and click the 'I accept the terms of this agreement' checkbox to accept, then click *Next*.
7. Click *Finish* when the installation process is complete.

NOTE: The installation utility creates the `nimblestorage_adapter3` folder and `nimblestorage_adapter3.jar` file in the `$VCOPS_BASE/user/plugins/inbound` folder. Refer to section "6. Appendix I: Management Pack Folders and Files" for more information.

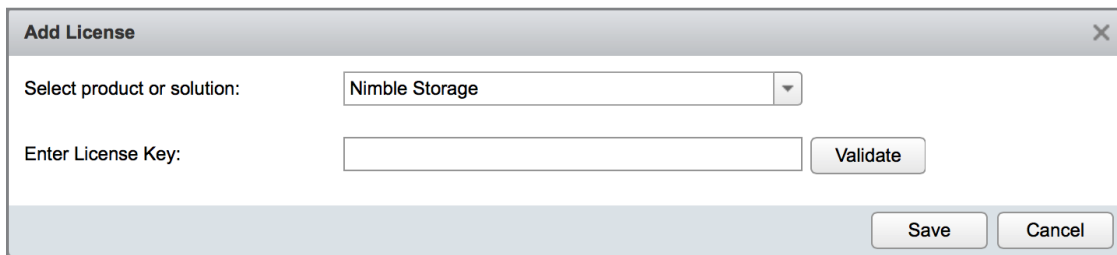
4.2 Adding a License Key

The Management Pack requires a valid license for full operation. Complete the following steps to license the Management Pack.

4.2.1 Install the License

1. In vRealize Operations Manager, navigate to *Administration > Licensing > License Keys*.
2. Click the *Add* icon (+). In the dialog that appears, select 'Nimble Storage'.

Figure 4: Add License



3. Enter your Blue Medora license key, then click *Validate*. If successful, "License key validated successfully" will be displayed.
4. Click *Save* to finish adding your license key.

4.2.2 Add the License to a Group

NOTE: Adding a license to a license group is only necessary if using vROps 6.0.0. In later versions, the License will automatically be added to a group.

1. Navigate to *License Groups*.
2. Select the license group 'Nimble Storage Licensing', then click the *Edit* icon (✎).
3. Check the newly added license.
4. Enter a name for this license group, then click *Next*.
5. Select the resources to include/exclude in this group, then click *Next*.
6. Click *Finish*.
7. Navigate back to *License Keys* and click the *Refresh License Usage* icon (🔄).

5. Configuring the Management Pack

Configuring the Management Pack for Nimble Storage includes the following tasks:

- Creating an Adapter Instance and Credential
- Manually Discovering Resources (if necessary)
- Validating Management Pack Data Collection

5.1 Creating an Adapter Instance and Credential

Creating an adapter instance and credential defines the adapter type and identifies the host and user account from which the Management Pack will retrieve data.

5.1.1 Prerequisites

Install the Management Pack for Nimble Storage. Refer to section “4. Installing the Management Pack”.

5.1.2 Procedure


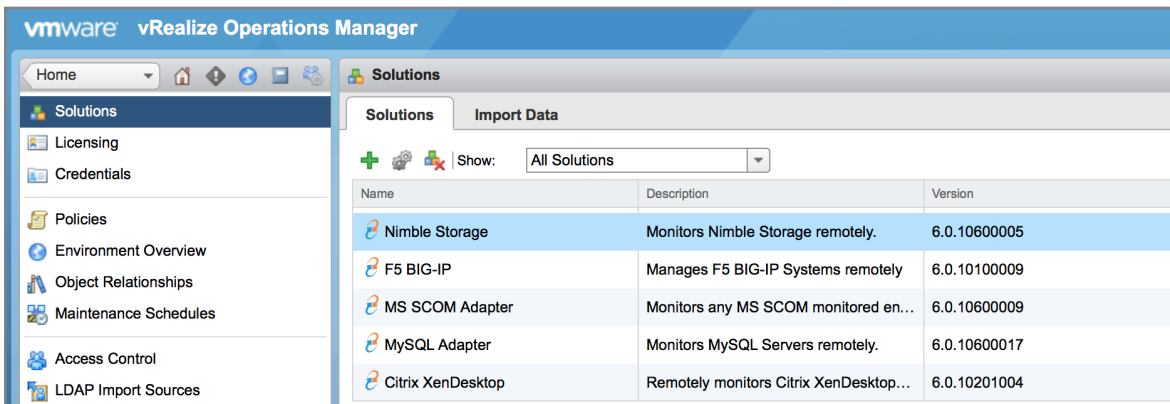
1. Log in to vRealize Operations as an administrator.
2. Click on the *Administration* navigation shortcut (). The *Solutions* view should automatically open.
3. Select ‘Nimble Storage’ from the *Solutions* list.

Figure 5: Solutions List



The screenshot shows the vRealize Operations Manager interface. The left sidebar contains navigation options: Home, Solutions (selected), Licensing, Credentials, Policies, Environment Overview, Object Relationships, Maintenance Schedules, Access Control, and LDAP Import Sources. The main content area is titled 'Solutions' and features a table with the following data:

Name	Description	Version
Nimble Storage	Monitors Nimble Storage remotely.	6.0.1060005
F5 BIG-IP	Manages F5 BIG-IP Systems remotely	6.0.1010009
MS SCOM Adapter	Monitors any MS SCOM monitored en...	6.0.1060009
MySQL Adapter	Monitors MySQL Servers remotely.	6.0.1060017
Citrix XenDesktop	Remotely monitors Citrix XenDesktop...	6.0.1020104


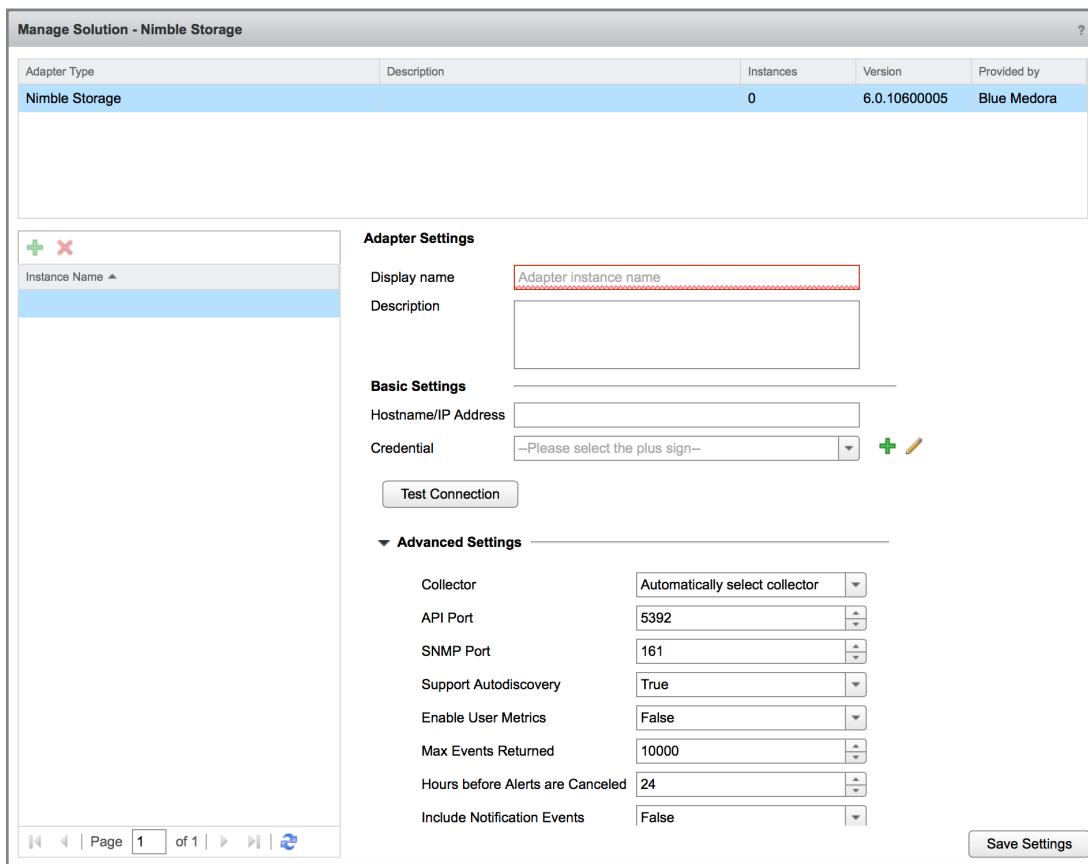
- Click the *Configure* icon (). The *Manage Solution* window will appear.

Figure 6: Manage Solution Window



Adapter Type	Description	Instances	Version	Provided by
Nimble Storage		0	6.0.10600005	Blue Medora



Adapter Settings

Display name:

Description:

Basic Settings

Hostname/IP Address:

Credential:  

Advanced Settings

Collector:

API Port:

SNMP Port:

Support Autodiscovery:

Enable User Metrics:

Max Events Returned:

Hours before Alerts are Canceled:

Include Notification Events:

Page 1 of 1

NOTE: If creating multiple adapter instances, click the *Add* icon () above the list of *Instance Names* on the left.

- In the *Manage Solution* window, enter the following information:

Adapter Settings:

- **Display Name:** A name for this particular instance of the Management Pack
- **Description:** Optional; most helpful for describing multiple adapter instances of the Management Pack

Basic Settings:

- **Hostname/IP Address:** Nimble Storage Hostname or IP address

NOTE: The Management Pack supports IPv4 and IPv6.

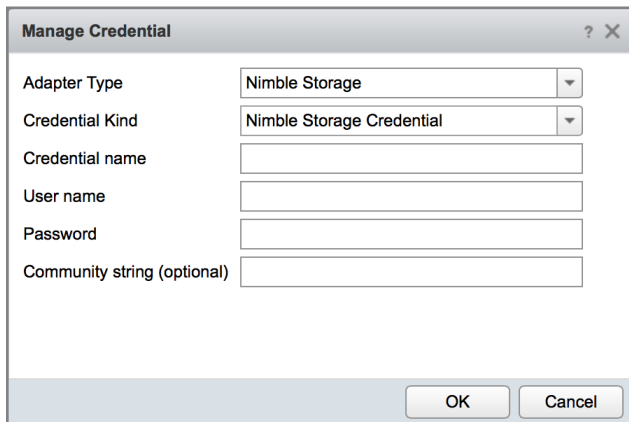
- **Credential:** Click the *Add* icon () , then enter the credential information as shown (refer to Figure 7).

Advanced Settings:

- **Collector:** Automatically selected
- **API Port:** Default is 5392, but can be changed if your configuration differs
- **SNMP Port:** Default is 161, but can be changed if your configuration differs
- **Support Autodiscovery:** Default is True, which enables the adapter instance to create resources for you. If you select False, you must manually discover your Nimble resources.

- **Enable User Metrics:** Default is False, but can be changed to return user metrics
- **Max Events Returned:** Default value is 10000, but can be changed if desired
- **Hours before Alerts are Canceled:** Default is 24, but can be changed if desired
- **Include Notification Events:** Default is False, but can be changed if desired to include notification events from Nimble

Figure 7: Manage Credential



- **Credential name:** Assign a name to your set of credentials
 - **User Name:** Nimble User Name
 - **Password:** Nimble Password
 - **Community string (optional):** Enter the SNMP v2 community string, if collecting group performance data
6. Click *OK* to save your credential.
 7. Click *Test Connection* to ensure vRealize Operations can connect properly to the server(s).
 8. Click *Save Settings* to save your adapter instance configuration.

5.2 Manually Discovering Resources

If Autodiscovery was set to False when configuring the adapter instance, you will need to manually discover resources as described in this section. With manual discovery, the adapter sends a request to the server to return resources, which you then manually select to import into vRealize Operations.

5.2.1 Prerequisites

Create a Nimble Storage adapter instance and credential. Refer to the previous section, “5.1 Creating an Adapter Instance and Credential”, for details.

5.2.2 Procedure


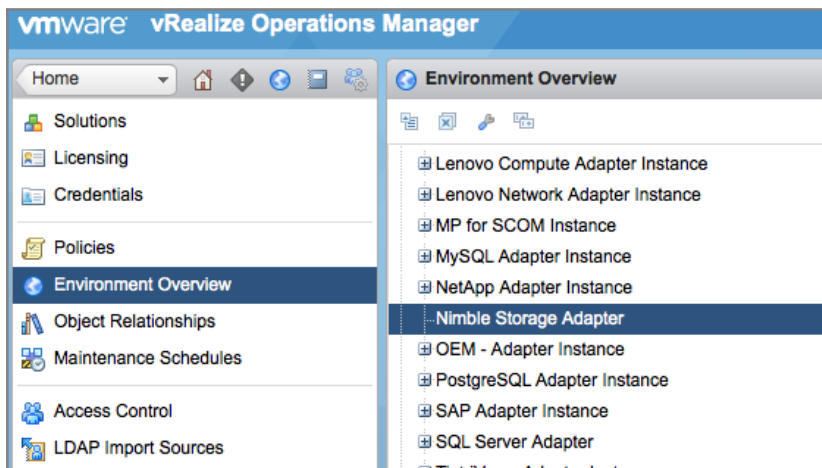
1. Log in to vRealize Operations as an administrator.
2. Click the *Administration* navigation shortcut ().
3. Click *Environment Overview (Inventory Explorer in vROps 6.1+)* in the navigator pane.

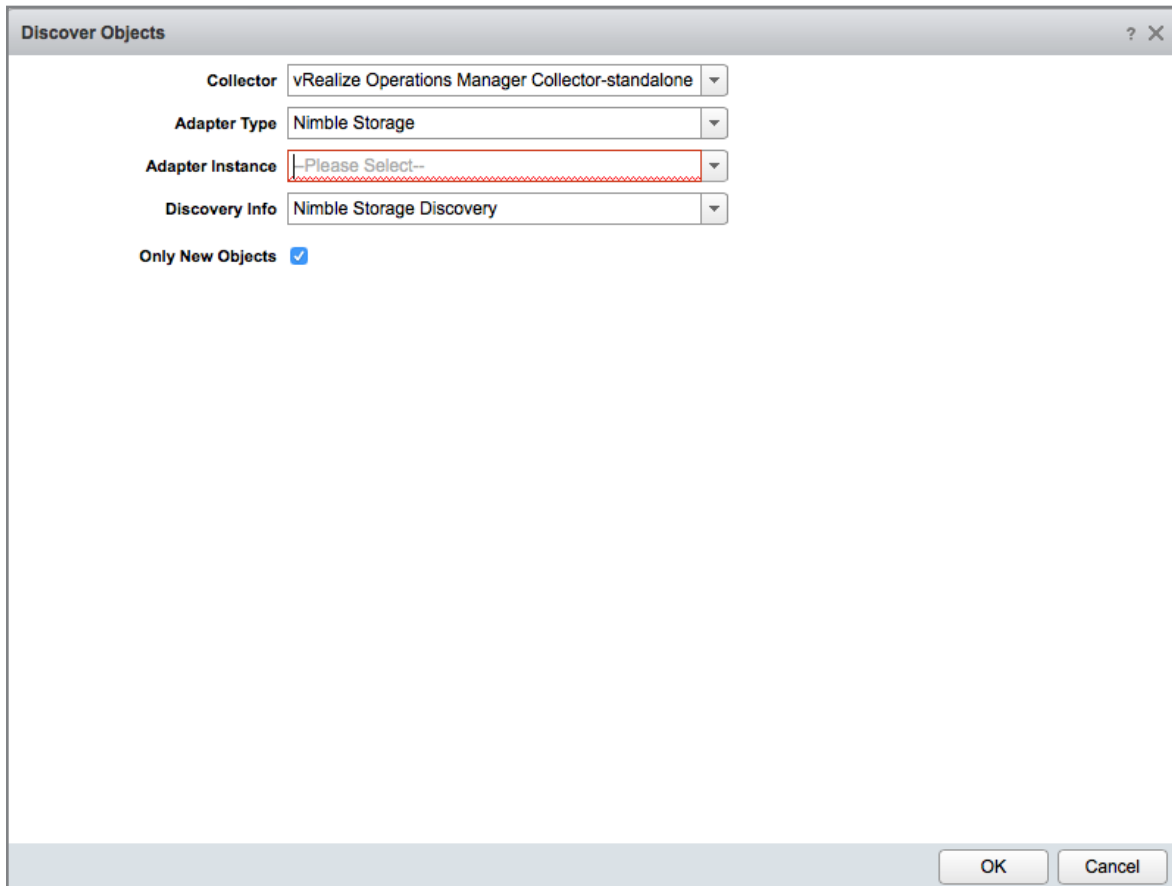
Figure 8: Environment Overview (Inventory Explorer) > Adapter Instances



4. Under *Adapter Instances*, select ‘Nimble Storage Adapter Instance’.

5. Click the *Discover Resources* icon () to open the *Discover Objects* window.

Figure 9: *Discover Objects* Window



6. In the *Discover Objects* window, select the following information:
 - The *Collector* to use

NOTE: Unless you added additional collectors, the only available collector is your vROps server.

- 'Nimble Storage' for *Adapter Type*
 - The applicable *Adapter Instance*
 - 'Nimble Storage Discovery' for *Discovery Info*
 - Whether *Only New Objects* (select/de-select checkbox) should be collected
7. Click *OK* to start the discovery process.
 8. The discovery process can take several seconds to several minutes. When it has finished, the *Discovery Results* window lists your resources.
 9. Double-click each resource kind that contains resources to add.
 10. Select options for each kind of resource. Refer to Table 2.

Table 2: Resource Options

OPTION	DESCRIPTION
Import	Import the resources but do not start collecting data. Resources appear in the resource list as Not Collecting; data is not stored; analysis is not performed.
Collect	Import the resources and start collecting data. When you select the Collect check box, the Import check box is also selected.

11. Click OK. The *Discovery Results* window closes and the new resources appear.

5.2.3 What To Do Next

If you did not select the option to start metric collection when you defined a resource, you can start metric collection after the resource is defined. To start collecting metrics for a resource, choose the resources, then click the *Start Collecting* icon (🟢).

5.3 Validating Data Collection

After you add a Nimble Storage adapter instance, you will want to validate the data that it collects in vRealize Operations.

5.3.1 Prerequisites

Add a Nimble Storage adapter instance. Refer to section “5.1 Creating an Adapter Instance and Credential”, for details.

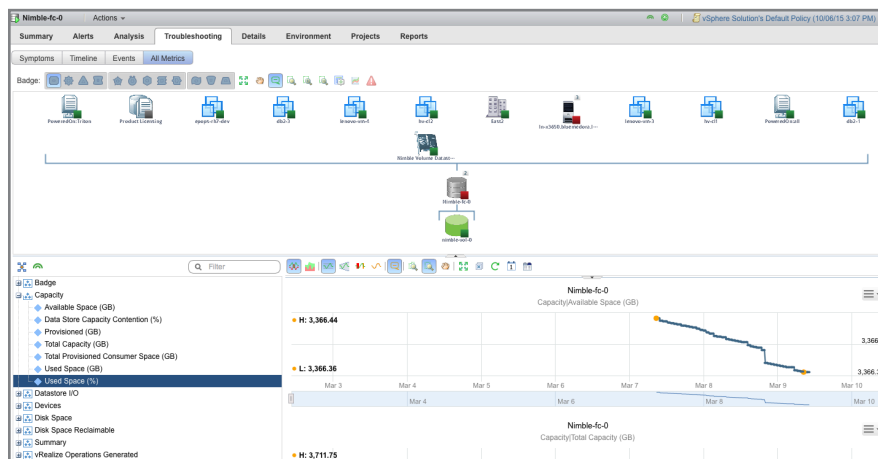
5.3.2 Procedure

1. Select the *Environment* shortcut.

NOTE: If you enabled Autodiscovery for the adapter instance, it will create resources as soon as it begins collecting metrics. If you disabled Autodiscovery for the adapter instance, you must go back and discover resources manually before you can validate data collection. Refer to section “5.2 Manually Discovering Resources”.

2. Under Inventory Trees, select *All Objects*, then expand the *Nimble Storage Adapter* objects list.
3. Select a resource from the list, then click the *Troubleshooting* tab and *All Metrics* view to validate values against the data source.

Figure 10: Nimble Storage Adapter Objects Troubleshooting



6. Appendix I: Management Pack Folders and Files

The installer places the Management Pack files in the `nimblestorage_adapter3` folder under the `$VCOPS_BASE/user/plugins/inbound` folder as shown below.

Table 3: Management Pack Folders and Files

FOLDER/FILE(S)	FOLDER/FILE(S)	DESCRIPTION
conf	dashboards (folder)	Contains .json files for Management Pack Dashboards
	describe.xml	Describes the Management Pack
	describeSchema.xsd	Used to validate describe.xml
	images (folder)	Contains .png files for AdapterKind, ResourceKinds, and TraversalSpec
	nimblestorage.properties	Contains properties that can be modified to adjust adapter operation
	oss_attribution.txt	Describes open source libraries used by the Management Pack
	reports (folder)	Contains .xml files for Management Pack Reports
	reskndmetrics (folder)	Contains .xml files for Dashboard Metric configuration
	resources (folder)	Contains resources.properties file
	scripts (folder)	Contains .sdm files consumed by the Management Pack
	version.txt	Contains version information
	views (folder)	Contains .xml files for Management Pack Views
lib	Refer to lib folder for entire list	.jar files that contain the classes and resources used to implement the Management Pack
work	lastcollect.properties	Tracks when the last collection for each adapter instance was performed (used when historic mode is enabled)
	events_<adapterInstanceId>.xml	Stores the timestamp of when to delete an alert after collection so that it can then be deleted by the adapter after the time specified in advanced configuration (24 hours by default)

7. Appendix II: Revision Notes

This installation guide is updated with each release of the product, or when necessary. The following table provides its revision history.

REVISION	DATE	DESCRIPTION
REV-03	23-SEP-2016	<ul style="list-style-type: none">Added information to section “3. Licensing Requirements” about Blue Medora’s True Visibility Suite
REV-02	30-AUG-2016	<ul style="list-style-type: none">Updated “Table 1: Management Pack Installation & Configuration Requirements” to include a note about the requirements for OS monitoring
REV-01	25-MAR-2016	Initial release



You can find the most up-to-date technical documentation on the Blue Medora support site at: <http://support.bluemedora.com>.

The Blue Medora website also provides the latest product updates. If you have comments about this documentation, submit your feedback to: support@bluemedora.com.

Copyright © 2016 Blue Medora Inc. All rights reserved. U.S. and international copyright and intellectual property laws protect this product. Blue Medora is a registered trademark or trademark of Blue Medora in the United States and/or other jurisdictions.

The Nimble Storage name and logo are trademarks or registered trademarks of Nimble Storage company in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

Blue Medora
3225 N Evergreen Dr. NE Suite 103
Grand Rapids, MI 49525

bluemedora.com