



# **Configure traditional datastores and virtual machines**

VSC, VASA Provider, and SRA 9.7

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# Table of Contents

- Configure traditional datastores and virtual machines . . . . . 1
  - Provision datastores . . . . . 1
  - Map datastores to storage capability profiles . . . . . 3
  - Generate storage capability profiles automatically . . . . . 4
  - Verify datastore compliance with the mapped storage capability profile . . . . . 5
  - Monitor datastores and virtual machines using the traditional dashboard . . . . . 5
  - Edit ESXi host settings for VSC, VASA Provider, and SRA . . . . . 6

# Configure traditional datastores and virtual machines

You can use Virtual Storage Console (VSC) to configure datastores and virtual machines in your vCenter Server. The datastores and virtual machines that are provisioned by VSC are displayed on the dashboard of VSC. This enables you to easily monitor and manage these datastores and virtual machines.

## Provision datastores

Provisioning a datastore creates a logical container for your virtual machines and their virtual machine disks (VMDKs). You can provision a datastore, and then attach the datastore to a single host, to all of the hosts in a cluster, or to all of the hosts in a datacenter.

### Before you begin

- To provision a datastore on an SVM that is directly connected to Virtual Storage Console (VSC), you must have added the SVM to VSC by using a user account that has the appropriate privileges, not the default vsadmin user account or vsadmin role.

You can also provision a datastore by adding a cluster.

- You must ensure that the subnet details of all the networks to which the ESXi hosted is connected is entered in the `kaminoprefs.xml`.

See "Enabling datastore mounting across different subnets" section in *VSC 9.6 Deployment and Setup Guide*.

- If you use NFS or iSCSI, and the subnet is different between your ESXi hosts and your storage system, then the NFS or iSCSI settings in the `kaminoprefs` preferences file must include ESXi host subnet masks.

This preference file is also applicable to VVol datastore creation. *Virtual Storage Console, VASA Provider, and Storage Replication Adapter Deployment and Setup Guide for 9.6 release* has more information on preferences file and enabling datastore mounting across different subnets.

- If you have enabled VASA Provider and you want to specify storage capability profiles for your NFS datastores or VMFS datastores, then you must have created one or more storage capability profiles.
- To create an NFSv4.1 datastore, you must have enabled NFSv4.1 at the SVM level.

### About this task

The **Provision Datastore** option enables you to specify a storage capability profile for the datastore. Storage capability profiles help in specifying consistent service level objectives (SLOs) and simplify the provisioning process. You can specify a storage capability profile only if you have enabled VASA Provider. The virtual appliance for VSC, VASA Provider, and SRA supports the following protocols:

- NFSv3 and NFSv4.1
- VMFS5 and VMFS6

VSC can create a datastore on either an NFS volume or a LUN:

- For an NFS datastore, VSC creates an NFS volume on the storage system, and then updates the export policies.
- For a VMFS datastore, VSC creates a new volume (or uses an existing volume, if you selected that option), and then creates a LUN and an igroup.



VMware does not support NFSv4.1 with datastore clusters.

If a storage capability profile is not specified during provisioning, you can later use the Storage Mapping page to map a datastore to a storage capability profile.

### Steps

1. You can access the datastore provisioning wizard using one of the following:

If you select from ...	Perform the following...
<b>vSphere Client Home page</b>	<ol style="list-style-type: none"><li>a. Click <b>Hosts and Clusters</b>.</li><li>b. In the navigation pane, select the datacenter on which you want to provision the datastore.</li><li>c. To specify the hosts to mount the datastore, see the next step.</li></ol>
<b>Virtual Storage Console Home page</b>	<ol style="list-style-type: none"><li>a. Click <b>Overview</b>.</li><li>b. Click <b>Getting Started</b> tab.</li><li>c. Click <b>Provision</b> button.</li><li>d. Click <b>Browse</b> to select the destination to provision the datastore as per the next step.</li></ol>

2. Specify the hosts on which you want to mount the datastore.

To make the datastore available to...	Do this...
All of the hosts in a datacenter	Right-click a datacenter, and then select <b>NetApp VSC › Provision Datastore</b> .
All of the hosts in a cluster	Right-click a host cluster, and then select <b>NetApp VSC › Provision Datastore</b> .
A single host	Right-click a host, and select <b>NetApp VSC › Provision Datastore</b> .

3. Complete the fields in the **New Datastore** dialog box to create the datastore.

Most of the fields in the dialog box are self-explanatory. The following table describes some of the fields for which you might require guidance.

Section	Description
General	The <b>General</b> section of the <b>New Datastore provisioning</b> dialog box provides options to enter the destination, name, size, type, and protocol for the new datastore. You can select <b>NFS</b> or <b>VMFS</b> protocol to configure a traditional datastore. The VVol datastore type is used to configure a VVol datastore. If VASA Provider is enabled, then you can also decide whether to use storage capability profiles. The <b>Datastore cluster</b> option is available only for traditional datastores. You should use the <b>Advanced</b> option to specify <b>VMFS5</b> or <b>VMFS6</b> file system.
Storage system	You can select one of the listed storage capability profiles if you have selected the option in the <b>General</b> section. The system-recommended values for the storage system and storage virtual machine are populated for ease. But you can modify the values if required.
Storage attributes	By default, VSC populates the recommended values for <b>Aggregates</b> and <b>Volumes</b> options. You can customize the values based on your requirements. The <b>Space reserve</b> option available under <b>Advanced</b> menu is also populated to give optimum results.
Summary	You can review the summary of the parameters you specified for the new datastore.

4. In the **Summary** section, click **Finish**.

## Map datastores to storage capability profiles

You can map the datastores that are associated with VASA Provider for ONTAP to storage capability profiles. You can assign a profile to a datastore that is not associated with a storage capability profile.

### Before you begin

- You must have registered your VASA Provider instance with Virtual Storage Console for VMware vSphere.
- Virtual Storage Console (VSC) must have already discovered your storage.

### About this task

You can map traditional datastore with a storage capability profile or change the storage capability profile that is associated with a datastore. VASA Provider does *not* display any virtual volume (VVol) datastores on the **Storage Mappings** page. All the datastores that are referred to in this task are traditional datastores.

### Steps

1. From the VSC **Home** page, click **Storage Mapping**.

From the **Storage Mapping** page, you can determine the following information:

- The vCenter Server that is associated with the datastore
- How many profiles match the datastore

The **Storage Mapping** page displays only traditional datastores. This page does not display any VVol datastores or qtree datastores.

- Whether the datastore is currently associated with a profile

A datastore can match multiple profiles, but a datastore can be associated with only one profile.

- Whether the datastore is compliant with the profile that is associated with it

2. To map a storage capability profile to a datastore or to change the existing profile of a datastore, select the datastore.

To locate specific datastores or other information on the **Storage Mapping** page, you can enter a name or a partial string in the search box. VSC displays the search results in a dialog box. To return to the full display, you should remove the text from the search box, and then click **Enter**.

3. From the **Actions** menu, select **Assign matching profile**.
4. Select the profile that you want to map to the datastore from the list of matching profiles that is provided in the **Assign profile to datastore** dialog box, and then click **OK** to map the selected profile to the datastore.
5. Refresh the screen to verify the new assignment.

## Generate storage capability profiles automatically

VASA Provider for ONTAP enables you to automatically generate storage capability profiles for existing traditional datastores. When you select the auto-generate option for a datastore, VASA Provider creates a profile that contains the storage capabilities that are used by that datastore.

### Before you begin

- You must have registered your VASA Provider instance with Virtual Storage Console (VSC).
- VSC must have discovered your storage.

### About this task

After you create a storage capability profile, you can modify the profile to include more capabilities. The **Create storage capability profile** wizard provides information about the capabilities that you can include in a profile.

### Steps

1. From the VSC home page, click **Storage Mapping**.
2. Select the datastore from the available list.
3. From the **Actions** menu, select **Auto-generate**.
4. When the auto-generate process finishes, refresh the screen to view information about the new profile.

The new profile is listed in the **Associated profile** column. The name of the new profile is based on the

resources in the profile. You can rename the profile, if required.

## Verify datastore compliance with the mapped storage capability profile

You can quickly verify whether your datastores are compliant with the storage capability profiles that are mapped to the datastores.

### Before you begin

- You must have registered your VASA Provider instance with Virtual Storage Console for VMware vSphere (VSC).
- VSC must have discovered your storage.

### Steps

1. From the VSC **Home** page, click **Storage Mapping**.
2. Review the information in the **Compliance Status** column to identify non-compliant datastores and review the alerts for non-compliance reason.



When you click the **COMPLIANCE CHECK** button, VSC performs a rediscovery operation for all of the storage, which might take few minutes.

If a datastore is no longer compliant with its profile, then the **Compliance Status** column displays an alert stating the reason for non-compliance. For example, a profile might require compression. If that setting has been changed on the storage, compression is no longer used, and the datastore is non-compliant.

### After you finish

When you discover a datastore that is not compliant with its profile, you can modify the settings on the volume backing the datastore to make the datastore compliant, or you can assign a new profile to the datastore.

You can modify the settings from the **Storage Capability Profile** page.

## Monitor datastores and virtual machines using the traditional dashboard

You can monitor the traditional datastores and virtual machines using the traditional dashboard of the virtual appliance for Virtual Storage Console, VASA Provider, and Storage Replication Adapter. The dashboard data enables you to analyze the datastore usage and to take corrective action to prevent the virtual machines from running into space-related constraints.

### Before you begin

You should select either the **Enable Storage I/O Control and statistics collection** or **Disable Storage I/O Control but enable statistics collection** option in the Configure Storage I/O Control dialog box. You can enable Storage I/O Control only if you have the Enterprise Plus license from VMware.

[VMware vSphere Documentation: Enable Storage I/O Control](#)

### About this task

The VSC dashboard displays IOPS, space utilized, latency, and committed capacity metrics that are obtained from your vCenter Server. ONTAP provides volume space saving metrics to the VSC dashboard. These performance parameters enable you to identify performance bottlenecks in the virtual environment and to take corrective action to resolve the issues.

The traditional dashboard of the virtual appliance for VSC, VASA Provider, and SRA enables you to view either NFS datastores or VMFS datastores. You can click a datastore to navigate to the datastore details view that is provided by the vCenter Server instance to view and fix any issues with the datastores in your vCenter Server.

### Steps

1. From the vSphere Client home page, click **Virtual Storage Console**.
2. Select the required vCenter Server using the **vCenter Server** drop-down menu to view the datastores.
3. Click **Traditional Dashboard**.

The **Datastores** portlet provides the following details:

- The number of traditional datastores along with their performance metrics that are managed by VSC in your vCenter Server instance
- The top five datastores based on resource usage and performance parameters that can be modified, if required. You can change the listing of the datastores based on the space utilized, IOPS, or latency and in the order required.

The **Virtual Machines** portlet provides the following details:

- Number of virtual machines using NetApp datastores in your vCenter Server
- Top five virtual machines based on committed capacity, latency, and uptime

## Edit ESXi host settings for VSC, VASA Provider, and SRA

You can use the dashboard of the virtual appliance for Virtual Storage Console (VSC), VASA Provider, and Storage Replication Adapter (SRA) to editing your ESXi host settings.

### Before you begin

You must have configured an ESXi host system for your vCenter Server instance.

### About this task

If there is an issue with your ESXi host settings, the issue is displayed in the ESXi Host Systems portlet of the dashboard. You can click the issue to view the host name or the IP address of the ESXi host that has the issue.

### Steps

1. From the vSphere Client **Home** page, click **Virtual Storage Console**.
2. Edit the ESXi host settings.



If you want to edit the ESXi host settings from...	Do this...
Issues displayed	<ol style="list-style-type: none"> <li>Click the issue in the ESXi Host Systems portlet.</li> <li>Click the ESXi host names for which you want to modify the settings.</li> <li>Right-click the ESXi host name, and click <b>NetApp VSC › Set Recommended Values</b>.</li> <li>Modify the required settings, and then click <b>OK</b>.</li> </ol>
vSphere Client home page	<ol style="list-style-type: none"> <li>Click <b>Menu › Hosts and Clusters</b>.</li> <li>Right-click the required ESXi host, and select <b>NetApp VSC › Set Recommended Value</b>.</li> <li>Click <b>OK</b>.</li> </ol>
ESXi Host Systems portlet	<ol style="list-style-type: none"> <li>Click the <b>Traditional dashboard</b> tab in the Overview section of VSC.</li> <li>Click <b>Edit ESXi Host Settings</b>.</li> <li>Select the ESXi host name in the Host settings and status tab for which you want to modify the settings, and click <b>NEXT</b>.</li> <li>Select the required settings in the Recommended host settings tab, and then click <b>Next</b>.</li> <li>Review your selection in the Summary tab, and then click <b>FINISH</b>.</li> </ol>

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